12/03/2019

ADDENDUM 02

Project:
Kinesiology Labs and Aquatic Center
Liberal Arts Campus
Long Beach, CA 90806

WW Project No. 16042.01
DSA Application No. 03-119628
File No. 19-C3

Owner:
Long Beach City College
4901 East Carson Street
Long Beach, CA 90806

Architect:
WestbergWhite Architects, Inc.
14471 Chambers Road, Suite 210
Tustin, CA 92780
(714) 508-1780

TO: PROSPECTIVE BIDDERS

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated September 18, 2019.

The following changes, additions, deletions, or corrections, becomes a part of the Contract Documents for the above named Project. All other conditions remain the same.
The bidders shall be responsible for transmitting this information to all affected subcontractors and suppliers prior to the closing of the bids.
Prospective Bidders must acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject Bidder to disqualification.

Item No. AD-02-1 **CHANGES TO SPECIFICATIONS**

Item No. AD-02-2 **REVISIONS TO DRAWINGS**

Item No. AD-02-3 **ATTACHMENTS**

SECTION 03 3000

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Formwork for cast-in-place concrete and installation of embedded items.
      a. Work includes footings for chain link and decorative metal fence and gates.
   2. Reinforcing steel for concrete unless specifically noted otherwise.
   3. Reinforced concrete with compressive strengths as shown.
   4. Under-slab moisture vapor barrier/retarder
   5. Stair fill.
   6. Exterior site walls.
      a. **Includes sound walls.**
   7. Concrete Finishing:
      a. Includes mock-up panels for finishes
   8. Concrete sealers.

B. Related Sections:

1.	Section 04 2200:	Concrete Unit Masonry
2.	Section 05 5000:	Metal Fabrications; metal fences and gates
3.	Section 07 1923:	Water Repellent/Graffiti-Resitiant Coatings
4.	Section 07 9200:	Joint Sealants
5.	Section 09 0561:	Concrete Moisture Testing
6.	Section 09 0562:	Moisture Vapor Emission Control System; emissions control for floor coverings and coatings.
7.	**Section 09 7726:**	**Wall Surfacing Films**
8.	Section 32 0523:	Concrete for Exterior Improvements; miscellaneous site concrete not specified elsewhere.
9.	Section 32 1313:	Concrete Paving; walks, curbs, and driveways.

C. Products Furnished But Not Installed Under This Section:
   1. Reinforcing steel for masonry work

D. Products Installed But Not Furnished Under This Section:
   1. Built-in anchors, inserts, bolts and other embedded items for connection of other Work.
   2. Built-in sleeves, thimbles, and dovetail slots

1.02 REFERENCES

A. California Code of Regulations (CCR), Title 24, Part 2, California Building Code (CBC), Volumes 1 and 2, 2016 edition.
   1. Chapter 19A – Concrete

B. ASTM International (ASTM):
   1. ASTM A 615 – Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
   2. ASTM A 706 – Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement
   3. ASTM A 1064 – Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
   4. ASTM C 31 – Standard Practice for Making and Curing Concrete Test Specimens in the Field
   5. ASTM C 39 – Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
   6. ASTM C 42 – Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams
   7. ASTM C 88 – Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
   8. ASTM C 94 – Standard Specification for Ready-Mixed Concrete
   9. ASTM C 143 – Standard Test Method for Slump of Hydraulic-Cement Concrete
   10. ASTM C150 – Standard Specification for Portland Cement
   11. ASTM C 595 – Standard Specification for Blended Hydraulic Cements
   12. ASTM C 685 – Standard Specification for Concrete Made By Volumetric Batching and Continuous Mixing
   13. ASTM D 882 – Test Method for Tensile Properties of Thin Plastic Sheeting
   14. ASTM D 1434 – Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting
   15. ASTM D 1709 – Test Methods for Impact Resistance of Plastic Film by Free-Falling Dart Method
   16. ASTM D1751 – Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
   17. ASTM D1752 – Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
   18. ASTM E 1745 – Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs
   19. ASTM F 1249 – Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor

C. American Concrete Institute (ACI):
   1. **ACI 117 – Specification for Tolerances for Concrete Construction and Materials (ACI 117-10) and Commentary-Reapproved 2015**
   2. ACI 301 – Specification for Structural Concrete for Buildings.
   3. ACI 302.1R – Guide to Concrete Floor and Slab Construction
   4. ACI 302.2R – Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials.
   5. ACI 304 – Recommended Practice for Measuring, Mixing and Placing Concrete.
   6. ACI 305 – Recommended Practice for Hot Weather Concreting.
   7. ACI 306 – Recommended Practice for Cold Weather Concreting.
   8. ACI 318 – Building Code Requirements for Reinforced Concrete.
   9. ACI 347 – Recommended Practice for Concrete Formwork

D. California Department of Transportation (Caltrans):
   1. Office of Materials Engineering and Testing Services:
      a. California Test Methods (CTM):
         1) CTM 217 – Method of Test for Sand Equivalent.
         2) CTM 227 – Method of Test for Evaluating Cleanness of Coarse Aggregate

E. The Engineered Wood Association (APA):
   1. Voluntary Product Standard Structural Plywood (PS 1-09)
   2. Guide to Plywood Grades

F. West Coast Lumber Inspection Bureau (WCLIB):
   1. Standard Grading Rules No. 17, current edition.

G. South Coast Air Quality Management District (SCAQMD):
   1. Rule 1113 – Architectural Coatings

1.03 SUBMITTALS

A. Product Data:
   1. Manufacturer's product data with installation instructions for proprietary materials including reinforcement and forming accessories, form coatings, admixtures, joint materials, sealers/hardeners, curing materials (when permitted), and others as requested by Architect.

B. Mix Designs:
   1. Prepare mix designs for Architect’s review.
      a. Include following information in mix design data:
      b. Design:
         1) Project name, address, Site location, and location of design usage.
         2) Contractor, Sub-Contractor, Supplier and Plant Location.
         3) Mix Number.
         4) Specified compressive strength, maximum aggregate size, slump, and placement method.
         5) Application and location in structure.
         6) Signature and stamp of licensed civil engineer responsible for mix design.
   2. Materials:
      a. Design Method.
      b. Water-Cement Ratio.
      c. Cement:
         1) Type, amount, and compliance with specified criteria statement.
      d. Aggregates:
         1) Source(s), gradations (Individual and combined).
      e. Admixtures:
         1) Brand, classification, dosage, addition method.
         2) Obtain specified approvals for admixtures prior to including in mix designs.
      f. Water source.
      g. Test Results, Batch Quantities, Yield (calculations).
   3. Special Considerations:
      a. Unit Weight.

b. Other considerations relative to placement, curing, finish, and testing.

C. Shop Drawings:
1. Cast-in-place Concrete:
a. Show construction joint locations and details.
2. Reinforcing Steel:
a. No submittals are required.
b. Providing steel reinforcing as indicated on Drawings and as specified herein is responsibility of Contractor.
c. Prepared Shop Drawings are solely for use by Contractor and will not be reviewed or approved by Architect or Structural Engineer.

1.04 QUALITY ASSURANCE

A. Formwork and Accessories:
1. Design Criteria: Formwork conforming to ACI 347.
a. Design Formwork to:
1) Prevent leakage or washing out of cement mortar.
2) Resist spread, shifting, and settling.
3) Reproduce accurately required lines, grades, and surfaces within tolerances specified.
b. Safety:
1) Responsibility for adequate strength and safety of formwork including falsework, and shoring rests with Contractor.
2. Allowable Tolerances:
a. Construct Formwork to produce concrete within tolerance limits recommended in ACI 347, unless otherwise noted.

B. Reinforcing:
1. Welders' Qualifications:
a. Qualify welders in accordance with AWS D1.4 and AWS D1.
2. Do not permit reinforcing steel to rust where there is danger of staining exposed surfaces of adjacent concrete.
a. Replace rust-stained concrete at Contractor’s expense.
3. Allowable Tolerances:
a. Place reinforcing steel within tolerances permitted by ACI 318, Section 26.6.2, unless otherwise approved by Architect.
4. Owner's Testing Agency will provide tests in accordance with CBC Chapter 17A.
a. Collect mill test reports for reinforcement.
b. Take samples from bundles at fabricators.
1) When bundles are identified by heat number and accompanied by mill analysis, take two specimens from each ten tons, or fraction thereof, of each size and grade.
2) When reinforcement is not positively identified by heat numbers or when random sampling is intended, take two specimens from each 2 tons, or fraction thereof, of each size and grade.
5. Test for Tensile and Bending Strengths:
a. Provide inspection of welding, including prior fit-up, welding equipment, weld quality and welder certification in accordance with AWS D1.4 and AWS D1.8

b. Perform chemical analysis sufficient to determine carbon equivalent and minimum preheat temperature when reinforcement does not conform to low-alloy steel requirements of CBC Section 1903A.8.

C. Concrete:
1. Testing Laboratory Qualifications:
2. Testing Laboratory under direction of registered Civil Engineer licensed in State of California, having operated successfully for four years prior to this Work, conforming to requirements of ASTM E 329.
3. Requirements of ACI 301 govern Work, materials, and equipment related to this Section.
   a. Specifications set minimum results required, and references to procedures are intended to establish minimal guides.
4. Responsibility for quality of concrete in place rests with Contractor who also bears burden of proof that concrete meets minimum requirements.
5. Placing of concrete by means of pumping will be acceptable method of placement providing that Contractor can demonstrate that:
   a. Specified concrete strengths will be met.
   b. Equipment has record of satisfactory performance under similar conditions and using similar mix.
   c. Trial batches have been made.

D. Mock-Up Slab Panels:
1. Size:
   a. Approximately 5 feet by 5 feet, unless otherwise indicated.
2. Construct mock-up slab panels for following finishes:
   a. Trowel Finish
   b. Light Textured Broom Finish
3. Do not proceed with placing and finishing of concrete slab areas indicated to receive light broom finish until mock-up panel is accepted by Architect.
4. Apply specified concrete sealer to one-half of mock-up slab panel, when requested by Architect,
5. Retain mock-up slab panel on Project Site for comparison purposes with actual slab finish work.
   a. Demolish and remove mock-up panel from Project Site after completion and acceptance of final slab finish.

E. Mock-Up Wall Panels:
1. Size:
   a. Approximately 6 feet wide by 8 feet high by 8 inches thick, unless otherwise indicated.
2. Construct mock-up wall panels for following finishes:
   a. Smooth Form Finish:
      1) Upon Architect's review of smooth form finish, Architect may request that subsequent ~~sack~~ **grout cleaned (sack)** finish or paint finish be applied to portion of mock-up panel.
   b. **Grout Cleaned (Sack) Finish:**
      1) **Construct mock-up panel for grout cleaned (sack) finish approximately 2 feet by 2 feet, for surface appearance and texture.**
      2) **Mock-up panel may be part of smooth form finish panel.**

3. Do not proceed with placing and finishing of concrete wall areas indicated to receive smooth form finish **or grout cleaned (sack) finish** until mock-up panel is accepted by Architect.
4. Retain mock-up wall panel on Project Site for comparison purposes with actual finish work.
    a. Demolish and remove mock-up panel from Project Site after completion and acceptance of final wall finish.

B. Certifications:
1. Batch Plant Certificates:
    a. Accompany each load of materials or concrete with signed copy of batch plant certificate stating quantity of each material, amount of water, admixtures, departure time and date.
    b. When continuous batch plant inspection is waived, provide affidavit in accordance with Title 24, CBC, Part 2, Section 1704A.3.3 to Owner's Testing Laboratory.
2. Contractor's Certifications:
    a. Testing Laboratory's Certificate of Compliance.
    b. Certified copies of mix designs for each concrete class specified including compressive strength test reports.
    c. Certification that materials meet requirements specified.
    d. Certification from vendor that samples originate from and are representative of each lot proposed for use.

C. Testing and Inspection Reports:
1. Owner's Testing Agency:
    a. Laboratory Reports:
        1) Laboratory test or evaluation reports for concrete materials and mix designs, performed in accordance with Section 01 4500, to Owner, Architect, Contractor, and Division of the State Architect.
        2) Do not begin concrete production until mix designs have been reviewed and accepted by Architect.
2. Reinforcing Steel Reports:
    a. Certified mill test reports (tensile and bending) for each heat or melt of steel prior to delivery of material to Project Site.
    b. Where reinforcing is to be welded, furnish mill test reports verifying weldability of steel.

1.02 DELIVERY, STORAGE, AND HANDLING

A. General:
1. Ensure storage facilities are weather tight and dry.
2. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use

B. Reinforcing:
1. Deliver reinforcement and accessories to Project Site not more than 48 hours before placement.
2. Store in manner to prevent excessive rusting and fouling with grease, dirt, or other bond-weakening coatings.
3. Take precautions to maintain identification after bundles are broken.

C. Cast-in-Place Concrete:
   1. Store bulk cement in bins capable of preventing exposure to moisture.
   2. Use sacked cement in chronological order of delivery.
      a. Store each shipment so that it may be readily distinguishable from other shipments.

1.06 PROJECT CONDITIONS

A. Sequencing Schedule for Formwork:
   1. Ensure timely delivery of embedded items.
   2. Be responsible for cutting and patching necessitated by failure to place embedded items.
   3. Plan erection and removal to permit proper sequence of concrete placing without damage to concrete.

B. Coordination:
   1. Coordinate with other trades for placement of their work within formwork.

PART 2 PRODUCTS

2.01 MATERIALS

A. Formwork and Accessories:
   1. Forming Materials:
      a. Panel or board forms at Contractor's option.
         1) Panel Forms:
            a) Minimum 5/8 inch thick exterior grade plywood with sealed edges, PS 1 grade Plyform Class I and II B-B Exterior or HDO Exterior.
   2. Wood Framing:
      a. WCLIB standard grade or better Douglas Fir.
   3. Form Ties and Spreaders:
      a. Metal type acting as spreaders, leaving no metal within one inch of concrete face and no fractures, spalls, depressions or other surface disfigurations greater than 3/4 inch in diameter.
   4. Expansion Joint Filler:
      a. Fiber Type:
         1) Premolded non-extruding preformed bituminous saturated fiberboard units, ASTM D 1751, 1/4 inch thick unless otherwise noted.
         2) Provide one of following, or approved equal:
            a) W. R. Meadows, Inc. - Sealtight Fibre Expansion Joint (Basis-of-Design)
            b) J.D. Russell Company – Fiberflex Fiber Expansion Joint
            c) Right / Pointe Company – Fibre Expansion Joint
            d) SpecChem Fiber Expansion Joint
      b. Cork Type:
         1) Preformed cork, ASTM D1752, Type II, 1/2-inch size unless otherwise noted.
            a) Right / Pointe Company – Cork-Standard Expansion Joint, or approved equal.

5. Form Release Agent:
    a. Must not stain or otherwise adversely affect architectural concrete surfaces.
    b. Provide one of following, or approved equal:
        1) Atlas Construction Supply, Inc. – Atlas Premium Gold Release
        2) Nox-Crete Co. – Nox-Crete Form Coating
        3) Right / Pointe Company – Right Release Water Base

B. Waterstops:
1. Sodium bentonite based waterstop conforming to following physical properties:
    a. Sodium Bentonite Content: 75 percent.
    b. Hydrostatic Head Resistance: 231 ft.
    c. Wet/Dry Cycling, (25 cycles at 231 ft.): No effect
    d. Specific gravity, (ASTM 0 71): 1.57
    e. Flash Point, (ASTM 093): > 300 °F.
2. Product and Manufacturer:
    a. Waterstop-RX by CETCO div. Minerals Technologies.
    b. Waterstop Adhesive: CETSEAL by CETCO

C. Under Slab Moisture Barrier/Retarder:
1. Vapor Retarder:
    a. Minimum 15 mil thick, complying with ASTM E 1745, Class A and following:
        1) Water Vapor Permeance, ASTM F 1249 / E 154, Section 7: 0.01 perms or less.
        2) Puncture Resistance, ASTM D 1709: Minimum 2266 grams.
        3) Tensile Strength, ASTM D 882: 70.6 lbf/in
        4) Methane Transmission Rate, ASTM D 1434: 192.8 GTR mL(STP)/m^2/day.
2. Provide one of following products, or approved equal:
    a. Fortifiber Building Systems Group – Moistop Ultra 15.
    b. Raven Industries, Inc. – VaporBlock 15.
    c. Stego Industries, LLC – Stego Wrap Vapor Barrier.

D. Reinforcing:
1. Bars:
    a. New billet steel, ASTM A615 Grade 60, and ASTM A706.
        1) Grade 60, where welded.
        2) Refer to Structural Drawings for use of Grade 40 bars.
2. Tie Wires and Spirals: ASTM A 1064.
3. Bar Supports:
    a. As required for assembling and supporting reinforcement in place.
    b. Typical: CRSI Class B, pregalvanized.
    c. Concrete adobes for foundations and slabs on grade.
4. Threaded Coupler:
    a. Lenton Standard coupler by ERICO, or approved equal.
    b. Coupler is to develop 125 percent of specified yield strength reinforcement.
5. Welded Wire Fabric:
    a. Conforming to ASTM A 1064
    b. Fabricated from as-drawn steel wire into flat sheets.

c. For use with concrete stair fill only.

E. Concrete:
1. General Requirements:
a. Furnish cement and aggregates with proven history of successful use with one another.
1) Sources of cement and aggregate are to remain unchanged throughout Work, unless Architect approves request for change made at least 10 days prior to anticipated date of casting.
b. Ready-mixed concrete meeting requirements of ASTM C 94.
c. Deviations in properties of materials tested by Owner's Testing Agency is cause for their rejection pending additional test results and redesign of mix by Contractor's Testing Laboratory.
d. Use of frozen aggregates is not permitted.
2. Cement:
a. Conforming to ASTM C150, Type II / V, low alkali.
b. Use one brand of cement throughout Project, unless otherwise acceptable to Architect.
3. Aggregates:
a. Conform to Chapter 19A, Concrete, CCR, Title 24, Part 2 CBC Sections 1705A.3.2, 1903A.5, and following:
b. Coarse Aggregate:
1) Conforming to ASTM C 33.
2) Consisting of clean, hard, fine grained, sound crushed rock, or washed gravel, or combination of both.
3) Free from oil, organic matter or other deleterious substances and not contain more than two percent by weight of shale or cherty material.
c. Fines:
1) Conforming to ASTM C 33.
2) Sand Equivalent:
a) Not less than 75 when tested per ASTM D 2419.
d. Provide aggregates from single source for exposed concrete.

F. Water:
1. Clean and potable, free from impurities detrimental to concrete.

G. Admixtures:
1. Use of admixtures is not permitted unless request is submitted to Architect and Structural Engineer for review and Structural Engineer’s approval.
2. Use of calcium chloride or admixtures containing calcium chloride is prohibited.
3. Upon receipt of Structural Engineer approval, Contractor modifies mix designs as necessary, and submits modifications to Owner's Testing Agency for testing and acceptance.
4. When approved, following types of admixtures may be used, conforming to manufacturer’s recommendations for use:
a. Water Reducing: Conforming to ASTM C 494, Type A.
b. Accelerating or Retarding: Conforming to ASTM C 494
c. Air Entraining: Conforming to ASTM C 260.
5. Do not use admixtures which have not been incorporated and tested in accepted mix designs.

H. Fly Ash:
   1. Fly ash conforming to ASTM C 618, Class N or F may be used at Contractor's option.
      a. Use of Class C is not permitted.
   2. Do not substitute more than 15 percent by weight of fly ash or other pozzolan, for ASTM C 150, Portland Cement.

I. Non-Shrink, Non-Metallic Grout:
   1. Premixed high strength grout requiring only addition of water at Project Site.
      a. BASF Corporation, Construction Chemicals – MasterFlow 928
      b. Five Star Products, Inc. – Five Star Grout.
      c. Sika Corporation – SikaGrout 428 FS

J. Curing Materials:
   1. Concrete Curing Paper:
      a. Conforming to ASTM C 171, non-staining, reinforced type.
         1) Orange Label Sisalkraft by Fortifiber Building Systems Group.
         2) Approved equal
   2. Liquid Curing Compound:
      a. Conforming to ASTM C 309, Type 1, Class B, approved standard product resin type.
      b. Deliver in unopened labeled containers.
      c. Water based acrylic polymer blend, free of wax or oil, compatible with subsequent applied finishes or floor coverings.
      d. Do not apply curing compounds in areas designated to receive floor coverings.
         1) **Obtain Architect's acceptance for use of liquid curing compounds in other areas.**

K. Joint Sealing Compound:
   1. Refer to Section 07 9200.

2.02 SOURCE QUALITY CONTROL

A. Furnish Plywood bearing APA grade-trademark.

B. Owner's Testing Agency will:
   1. Review mix designs, certificates of compliance, and samples of materials Contractor proposes to use.
   2. Test and inspect materials, as necessary, in accordance with ACI 318 and CBC Sections 1705A, 1903A, and 1910A for compliance with requirements.
   3. Take samples as required from Contractor's designated sources.
   4. Take one grab sample for each 100 tons of Portland cement except that, when used in bulk loading ready-mix plants where separate bins for pretested cement are not available, take grab samples for each shipment of cement placed in bin with not less than one sample being taken for each day's pour and subsequently test such samples when required by Architect who may be so advised by DSA.
   5. Test coarse, intermediate, and fine aggregate by use of solution of sodium or magnesium sulfate, or both whenever in judgment of Architect such tests are necessary to determine quality of material.
      a. Perform such tests in accordance with ASTM C 88.

b. Loss not to exceed 6 percent of either fine intermediate or coarse aggregate.
c. Aggregate failing to comply with this requirement may be used in Work provided it contains less than 2 percent of shale and other deleterious particles and shows loss in soundness test of not more than 10 percent when tested in sodium sulphate solution.
d. Test aggregates as required by CBC Sections 1705A.3.2 and 1903A.5.

6. Test for sand equivalent of fine aggregate in accordance with California Test 217.
7. Test for cleanness value of coarse and intermediate aggregate in accordance with California Test 227.
8. Inspect plant prior to starting Work to verify following:
   a. Plant is equipped with approved metering devices for determining moisture content of fine aggregate.
   b. Other plant quality controls are adequate.
9. Continuously inspect quality and quantity of materials used in transit mixed concrete, in batched aggregates and ready-mixed concrete at mixing plant or other location per CBC Sections 1705A.3, 1905A.1.16, 1910A.1, and ACI 318 Section 26.12 as modified, where other materials are measured.

C. Waiver of Batch Plant Inspection:
1. Continuous batch plant inspection may be waived in accordance with CBC Section 1705A.3.3.1
2. Following requirements apply when batch plant inspection is waived:
   a. Qualified technician of Testing Agency to perform check of first batch at start of day.
   b. Licensed weighmaster to positively identify materials as to quantity and certify to each load by batch ticket.
   c. Batch tickets, including material quantities and weights, are to:
      1) Accompany load
      2) Be transmitted to Project Inspector by truck driver with load identified thereon.
      3) Do not place load without batch ticket identifying mix.
      4) Inspector will keep daily record of placements, identifying each truck, its load, time of receipt, and approximate location of deposit in structure, and will transmit copy of daily record to enforcement agency.

2.03 MIXES

A. General Requirements:
1. Perform tests or assemble necessary data indicating conformance with Specifications.
2. For each mix submit data showing that proposed mix will attain required strength in accordance with requirements of CBC Sections 1705A.3 and 1905A.1.16 per ACI 318 Section 26.12.2 (a) as modified
3. Instruct Laboratory to base mix design on use of materials tested and approved by Owner's Testing Agency.
4. Include compression strength test reports with mix design per CBC Section 1904A and 1905A.1.16

5. Design Mix, test, and adjust when necessary in ample time before first concrete is scheduled to be placed.
    a. Submit laboratory data and strength test results for revised mix design to Architect prior to using Mix in Project.
6. Ensure mix designs will produce concrete to strengths specified and of uniform density without segregation.
7. When mix yield exceeds 1-cubic yard, modify mix design to no more than one cubic yard without changing cement content.
8. Contractor's mix designs are subject to review by Architect and Owner's Testing Agency.
9. Introduction of calcium chloride will not be permitted.

B. Admixtures:
1. Where use of admixtures has been approved, provide admixtures produced by establish reputable manufacturers.
    a. Conform to types of admixtures specified under “Materials” Article.
    b. Use in compliance with manufacturer’s printed directions.
    c. Do not use admixtures which have not been incorporated and tested in accepted mix designs.
    d. Refer to CBC Section 1903A.6 and ACI 318 Section 26.4.2.2(b) as modified.

C. Patching Mortar:
1. Mix in proportions by volume of one part cement to two parts fine sand.

D. Non-Shrink, Non-Metallic Grout:
1. Follow approved manufacturer's printed instructions and recommendations.

D. Stair Fill Mix:
1. Normal weight concrete for steel pan stair treads and landings, consisting of:
    a. Portland cement, fine and coarse aggregate
    b. Coarse Aggregate:
        1) Maximum 3/8 inch, size No.8, conforming to ASTM C 33
    c. Minimum 2500 psi compressive strength at 28 days
    d. Water/Cement Ratio: 0.45 maximum.
2. Laboratory mix not required

2.04 MIXING

A. Batching Plant Conditions:
1. Ensure equipment and plant will afford accurate weighing, minimize segregation and will efficiently handle materials to satisfaction of Architect and Owner's Testing Agency.
2. Use approved moisture meter capable of determining moisture content of sand.

B. General Requirements:
1. Thoroughly clean concrete equipment before use for architectural concrete mixes to avoid contamination.
2. Mix cement, fine and coarse aggregates, admixtures and water to exact proportions of mix designs.
    a. Use method of mixing complying with ACI 318, Section 26.4

3. Measure fine and coarse aggregates separately according to approved method which provides accurate control and easy checking.
4. Adjust grading to improve workability; do not add water unless otherwise directed.
5. Maintain proportions, values, or factors of approved mixes throughout Work.
6. Mix concrete in transit mixers five minutes immediately prior to discharge in addition to mixing as called for by ACI 304 and ASTM C 94.

C. Admixtures:
1. Use automatic metering dispenser to introduce admixture into mix.
2. Use Dispenser recommended and calibrated by admixture manufacturer

2.05 FINISH MATERIALS

A. General:
1. Provide concrete sealer materials complying with requirements of SCAQMD Rule 1113.

B. Concrete Sealer **Type 1**:
1. Clear, non-yellowing, acrylic resin.
2. Use for concrete slabs, walls, and columns, where indicated in Finish Schedule.
3. Products: Subject to compliance with specified requirements, provide following, or approved equal:
   a. General Polymers 4502 Acrylic Sealer by Sherwin-Williams Protective and Marine Coatings.
   b. Comply with SCAQMD Rule 1113 and requirements for low-emitting materials as specified in Section 01 3329.
   c. Comply with ANSI/NFSI B101.3 for slip-resistance.

C. Concrete Sealer **Type 2**:
1. Lithium-Silicate sealer, hardener, and densifier.
2. Use for concrete slabs where indicated in Finish Schedule:
3. Products:
   a. Subject to compliance with specified requirements, provide following, or approved equal:
      1) Conslideck LS by Prosoco, Inc.
   b. Comply with SCAQMD Rule 1113 and requirements for low-emitting materials as specified in Section 01 3329.
   c. Comply with ANSI/NFSI B101.3 for slip-resistance.

D. Concrete Sealer **Type 3**:
1. Clear penetrating water repellent/graffiti-resistant coating as specified in Section 07 1923.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine areas where formwork will be constructed and verify that:
1. Excavations are sufficient to permit placement, inspection and removal of forms.

2. Excavations for earth forms have been neatly and accurately cut.
3. Conditions are otherwise proper for formwork construction.
4. Do not start Work until unsatisfactory conditions have been corrected.

B. Examine units of Work to be cast and verify that:
1. Construction of formwork is complete.
2. Required reinforcement, inserts, and embedded items are in place.
3. Form ties at construction joints are tight.
4. Concrete-receiving places are free of debris.
5. Depths of depressed slab conditions are correct for delayed finish noted and for its proper bonding to concrete.
6. Conveying equipment is clean and properly operating.
7. Architect has reviewed formwork and reinforcing steel and that preparations have been checked with Project Inspector.

C. Do not begin placement of concrete before unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Obtain necessary information for coordination of formwork with items to be embedded in concrete and other related work.

B. Ensure availability of sufficient labor, equipment and materials to place concrete correctly in accordance with scheduled casting.

C. Protect finished surfaces adjacent to concrete-receiving places.

D. Clean transportation and handling equipment at frequent intervals and flush thoroughly with water before each day's run.
1. Do not discharge wash water into concrete form.

E. Construction Joints:
1. Clean and roughen construction joint contact surfaces by removing surface laitance and exposing sound mortar.
2. Sandblasting and bush-hammering are acceptable methods

3.03 FORMWORK CONSTRUCTION

A. General:
1. Design, erect, support, brace, and maintain formwork to support vertical and lateral, static, and dynamic loads that might be applied until concrete structure can support such loads.
   a. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation and position.
   b. Maintain formwork construction tolerances complying with ACI 347.
2. Construct forms to sizes, shapes, lines and dimensions shown, and to obtain accurate alignment, location, grades, level and plumb Work in finished structures.
   a. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required in Work.

b. Use selected materials to obtain required finishes.
c. Solidly butt joints and provide back-up at joints to prevent leakage of cement paste.

3. Frame openings where indicated on Architectural, Structural, Mechanical, Plumbing and Electrical Drawings.

B. Earth Forms:
1. Construct wood edge strips at top sides of excavations.
2. Provide forms for footings wherever concrete cannot be placed against solid earth excavation.
3. Remove loose dirt and debris prior to concrete pours.
4. Foundation concrete may be placed directly into neat excavations provided foundation trench walls are stable as determined by Geotechnical Engineer, subject to approval of DSA.
   a. In such case, minimum formwork shown on Drawings is mandatory to insure clean excavations immediately prior to and during placing of concrete.
   b. Refer to Structural Drawings for footing requirements where footings are not formed.

C. Formed Elements:
1. Carefully align inside and outside forms before tightening ties.
2. Plywood Forms: Insure vertical joints are plumb and horizontal joints are level; arrange joints and ties in geometrical pattern as approved by Architect.
3. Form inside corners at exposed conditions with mitered boards or plywood so that no concrete is placed against form ends.
4. After erection, seal cracks, holes, slits, gaps, and apertures in forms so that they will withstand the pressure and will remain completely watertight.
5. Provide means to seal bottom of forms at construction joints such as foam tape or other gasket devices.
6. Apply coating of release agent prior to erection of formwork following approved manufacturer's recommendations.

D. Expansion Joints:
1. Provide in exterior concrete on grade at maximum 24 feet on center or as noted and at intersections with vertical surfaces, curbs, manholes or other penetrations through slabs.
2. Use fiber type expansion joint fillers typically and depress 1/4 inch unless otherwise noted.
3. Use cork type expansion joint fillers at conditions with non-bituminous waterproofing, liquid waterproofing, or sealant systems.

E. Construction Joints:
1. Provide where shown on Drawings as directed by Architect and per ACI 318, Section 26.5.6.
2. Provide key indentations at joints.
3. Provide pour strips on inside face of forms at horizontal joints, but remove strips and thoroughly clean out reglets before placing subsequent portions of wall.
4. Prevent formations of shoulders and ledges.

5. Provide means for drawing forms into firm contact with concrete before placing additional concrete over previous pours where shrinking and warping has separated concrete from forms.

F. Embedded Items:
   6. Properly locate, unless locating is specified elsewhere, and place inserts and embedded items required by other trades prior to casting concrete.

3.04 REINFORCING PLACEMENT

A. General:
   1. Place bars as noted.
   2. Reinforcement to be continuous.
      a. Refer to Structural Drawings for lap splice schedule.
      b. Stagger splices where possible.
      c. Securely wire contact lap splices together to maintain alignment.
   3. Ensure placement will permit concrete protection in conformance with CRSI or to extent shown.
   4. Support and fasten bars securely with spacers, chairs or ties to permit their being walked upon without displacement or movement both before and during placement of concrete.
      a. Wire-tie bar intersections.
   5. Do not bend bars around openings or sleeves.
      a. Wherever conduits, piping, inserts, or sleeves, and like items interfere with placing of reinforcement, obtain Architect's approval of placing before concreting.
   6. Do not field bend bars unless expressly noted in Contract Documents.

B. Prior to placing concrete, verify reinforcement has been bent, positioned, and secured in accordance with Drawings; ensure removal of oil, grease, dirt, or other bond-weakening coatings; replace severely rust-pitted reinforcing bars.

C. Quality Assurance:
   1. Project Inspector will inspect placement of reinforcement and notify Structural Engineer of discrepancies in placement.
   2. Owner's Testing Agency will inspect shop and field welding of reinforcing bars in accordance with CBC Section 1903A.8; 1705A.3.1 - Table 1705A.3, Item 2 and Table 1705A.2.1, Item 5b

3.05 CONCRETE PLACEMENT

A. Notify Project Inspector, Architect, Structural Engineer, Testing Laboratory and DSA at least 48 hours before placing concrete.

B. Place concrete in accordance with CBC Section 1705A.3.5, 1705A.3.6, and ACI 318.

C. Place concrete in cycles as continuous operation to permit proper and thorough integration and to complete scheduled placement.
   1. Do not place concrete where sun, wind, heat, or facilities prevent proper finishing and curing.

D. Convey concrete as rapidly and directly as practicable to preserve quality and to prevent separation from re-handling and flowing.
   1. Do not deposit concrete initially set.
   2. Place concrete within ninety minutes after adding water unless otherwise noted.
   3. Re-tempering of concrete which has partially set will not be permitted.

E. Take precautions to avoid damage to under-slab moisture barrier and displacement of reinforcement and formwork.

F. Deposit concrete vertically in its final position.
   1. Avoid free falls in excess of six feet where reinforcement will cause segregation and in typical conditions unless Architect approves otherwise.

G. Keep forms and reinforcement clean above pour line by removing clinging concrete with wire brush before placing next lift.
   1. Remove leakage through forms.

H. Interruption in placement longer than 60-minutes will be cause for discontinuing placement for remainder of day.
   1. In this event, cut back concrete and provide construction joints as Architect directs
   2. Clean forms and reinforcement as necessary to receive concrete at later time.

I. Hot Weather Concreting: Conform to ACI 305 and following requirements when mean daily temperature rises above 75 degrees F.
   1. Establish upper temperature limit of concrete mixes for each class of concrete.
      a. Ensure that concrete temperature during placing are not so high as to cause difficulty from loss of slump, flash set, or cold joints, and do not exceed 90 degrees F.
      b. Consider other project climatic conditions detrimental to concrete quality such as relative humidity, wind velocity, and solar radiation.
   2. Make trial batches of concrete for each mix design at limiting mix temperature selected.
      a. In lieu of trial batches, submit compression strength test reports (20 minimum) at limiting temperature for each proposed mix to Owners testing laboratory for review.
   3. Employ practices to maintain concrete below maximum limiting temperature in accordance with ACI 305.
      a. Concrete ingredients may be cooled before mixing, or flake ice or well-crushed ice of size that will melt completely during mixing may be substituted for part of mixing water.
   4. Employ practices to avoid potential problems of hot weather concreting in accordance with ACI 305.
   5. When temperature of reinforcing steel or steel deck forms is greater than 120 degrees F, spray reinforcing and forms with water just prior to placing concrete.

J. Cold Weather Concreting:
   1. No placement of concrete will be allowed at temperatures below 20 degrees Fahrenheit or when mean daily temperature for curing period is anticipated to be below 20 degrees Fahrenheit.
   2. No concrete placement will be allowed on frozen sub-grade.

3. Conform to ACI 306 and following requirements when mean daily temperature falls below 40 degrees Fahrenheit.
    a. Ensure that reinforcement, forms, or ground to receive concrete are completely free from frost.
    b. Temperature of concrete at time of placement for footings not to be lower than 50 degrees Fahrenheit.
        1) Minimum temperature at time of placement for other concrete to be 60 degrees Fahrenheit.
        2) Maximum temperature at time of placement to be 90 degrees Fahrenheit.
    c. Maintain concrete at temperature no lower than 50 degrees Fahrenheit for minimum 7 day period after placement by means of blanket insulation, heaters, or other methods as approved by Architect.
    d. Keep record of concrete surface temperature for first 7 days after each pour.
        1) Make Record open to inspection by Architect..

K. Consolidating:
1. Use vibrators for thorough consolidation of concrete.
2. Provide vibrators for each location during simultaneous placing to ensure timely consolidation around reinforcement, embedded items and into corners of forms; ensure availability of spare vibrators in case of failures.
    a. Vibrate through full depth of freshly placed concrete.
3. Do not place vibrators against reinforcement, attach to forms, or use to spread concrete.
4. Exposed Concrete:
    a. Vibrate with rubber type heads and, in addition, spade along forms with flat strap or plate.

L. Construction Joints:
1. Verify location and conformance with typical details
    a. Provide only where designated or approved by Architect.
    b. Comply with ACI 318, Section 26.5.6
2. Horizontal and vertical construction joints to be thoroughly sandblasted to clean and roughen entire surface to minimum 1/4-inch relief exposing clean coarse aggregate solidly embedded in mortar matrix.
3. Just prior to depositing concrete, wet surface of construction joint thoroughly..

M. Contraction (Control) Joints in Slabs-on-Grade:
1. Construct contraction joints in slabs-on-ground to form panels of patterns indicated on Shop Drawings.
    a. Use saw cuts 1/8 inch x 1/4 slab depth, unless otherwise indicated.
2. Time saw cutting to allow sufficient curing of concrete to prevent raveled or broken edges.
3. Contraction joints in unexposed floor slabs may be formed by saw cuts as soon as possible after slab finishing as may be safely done without dislodging aggregate, maximum 24 hours after pouring.
4. When joint pattern is not shown, provide joints not exceeding 15 feet in either direction and located to conform to bay spacing wherever possible; at column centerlines, half bays, third-bays

N. Formed Elements:
1. Space points of deposit to eliminate need for lateral flow.
a. Placing procedures of concrete in forms permitting escape of mortar, or flow of concrete itself, will not be permitted.
2. Level top surface upon stopping Work.
3. Take special care to fill each part of forms by depositing concrete directly as near final position as possible, and to force concrete under and around reinforcement, embedded items, without displacement.
4. After concrete has taken its initial set, exercise care to avoid jarring forms or placing strain on ends of projecting reinforcement.

3.06 CURING

A. General Requirements:
1. Deploy curing measures immediately after placement and for measures other than application of curing compound, extend for seven days.
a. Architect may recommend longer periods based upon prevailing temperature, wind and relative humidity.
b. Comply with ACI 318, Section 26.5.3.
2. Avoid alternate wetting and drying and fluctuations of concrete temperature.
3. Protect fresh concrete from direct rays of sun, rain, freezing, drying winds, soiling, and damage.
4. Do not permit curing method to affect adversely finishes or treatments applied to finish concrete.

B. Curing Method, Typical:
1. Keep forms and concrete surfaces moist during period forms are required to remain in place.
2. Obtain Architect's approval of alternate measures.

3.07 FORM REMOVAL

A. Secure Architect's approval for time and sequence of form removal.

B. Form Removal:
1. Remove forms carefully to avoid damaging corners and edges of exposed concrete.
2. Remove forms after concrete has developed sufficient strength to sustain its own weight and superimposed loads, but not before time listed below:

MEMBER	STRENGTH	MINIMUM TIME*
Vertical surfaces of walls	0.60 f'c	7 days

3. *Estimated curing time required to obtain desired strength.
a. Present results of 7 day test cylinder break to Architect to demonstrate compliance with above specified strength requirements prior to form removal.
b. Where 7 day test cylinder break demonstrates strength that is less than that specified, Contractor may elect to take additional cylinders at time of next pour to demonstrate strength requirements.
c. Cost of taking and testing additional sample will be borne by Contractor.

C. Reuse of Forms:
   1. Architect will approve reuse of forms provided they are straight, clean, free from nails, dirt, hardened concrete, or other injurious matter and edges and surfaces are in good condition.
   2. Clean and repair damage caused by placing, removal, or storage.
      a. Reuse of formwork with repairs or patches which would result in adverse effects to architectural concrete finish will not be permitted.
   3. Store formwork in manner to prevent damage or distortion.
   4. Reseal as required to achieve concrete of specified quality.
      a. Form Sealer:
         1) Pre-Form 100 by Nox-Crete Products Group, Omaha, NE, or approved equal.

3.08 CLEANING, PATCHING, AND DEFECTIVE WORK

A. Where concrete is under strength, out of line, level or plumb, or shows objectionable cracks, honeycombing, rock pockets, voids, spalling, exposed reinforcement, signs of freezing, or is otherwise defective, and, in Architect's judgment, these defects impair proper strength or appearance of Work, Architect will require its removal and replacement at Contractor's expense.

B. Immediately after stripping and before concrete is thoroughly dry, patch minor defects, form-tie holes, honeycombed areas, and similar areas, with patching mortar.
   1. Install patch to match finish of adjacent surface unless otherwise noted.
   2. Remove ledges and bulges.

C. Compact mortar into place and neatly file defective surfaces to produce level, true planes.
   1. After initial set, dress surfaces of patches mechanically or manually to obtain same texture as surrounding surfaces.

D. Rock Pockets:
   1. Cut out to full solid surface and form key.
   2. Thoroughly wet before placing mortar.
   3. Where Architect deems rock pocket too large for satisfactory mortar patching as described, cut out defective section to solid surface, key and pack solid with concrete to produce firm bond and match adjacent surface.

E. Cleaning
   1. Ensure removal of bituminous materials, form release agents, bond breakers, curing compounds when permitted, and other materials employed in concrete work which would otherwise prevent proper application of sealants, liquid waterproofing, and other delayed finishes and treatments.
   2. Where cleaning is required, take care not to damage surrounding surfaces or leave residue from cleaning agents.

3.09 CONCRETE FINISHING – GENERAL

A. Finish of Formed Surfaces:
   1. Smooth formed.

2. **Grout Cleaned (Sack) Finish:**
    a. **After removal of formwork, wet surface and apply cementitious material grout consisting of:**
        1) **1 part by volume of Portland cement and 1½ parts of sand.**
        2) **Mix to consistency of thick paint.**
            a) **Scrub grout into voids and remove excess grout.**
    b. **Conform to following in accordance with ACI 301:**
        1) **Surface Finish-3.0 (SF-3.0):**
            a) **Patch voids larger than 3/4 inch wide or 1/2 inch deep**
            b) **Remove projections larger than 1/8 inch**
            c) **Patch tie holes**
    c. **Surface Tolerance:**
        1) **Class A as specified in ACI 117.**
    d. **Surface finish is required to match sample (mock-up) panel as specified in Article 1.04.**

3.08 CONCRETE SLAB FINISHES

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

B. Broom Finishes:
    1. Light Textured Broom Finish:
        a. Provide light texture by drawing soft bristle broom lightly across concrete surface in one directions, as indicated on Drawings, to provide uniform fine line texture finish.
    2. Match finish of approved mock-up panel specified in “Quality Assurance” Article.

3.09 CONCRETE SEALER APPLICATION

A. Apply specified sealers only to concrete surfaces where scheduled in Finish Schedule.

B. Apply sealers only to surfaces that are sound, properly troweled and finished, and that are clean, dry, and free of form release agents, retarders, alkali, curing compounds, oil, grease and other contaminants.
    1. Acid-clean and etch discolored or stained slabs before sealer is applied when, in Architect's judgment, satisfactory uniform finish cannot be otherwise achieved.

C. Apply Sealer Type 1 to following surfaces:
    1. Floor slabs, not scheduled to receive other floor coverings or Sealer Type 2.
    2. Walls and columns where scheduled or indicated. .

D. Apply Sealer Type 2 only to concrete slabs where scheduled or indicated.

E. Apply Sealer Type 3 to vertical surface of exterior site walls where scheduled or indicated.

F. **Application Exceptions:**
   1. **Do not apply concrete sealers to concrete walls indicated to receive wall surfacing films specified in Section 09 7726**.

3.10 CLEANING

A. Perform Work to keep affected portions of Project Site neat, clean, and orderly.
   1. Remove, immediately upon completion of Work, surplus materials, rubbish, and equipment associated with or used in performance.
   2. Be aware that failure to perform clean-up operations within 24 hours of notice by Architect will be considered adequate grounds for having work done by others at no added expense to Owner.

3.11 FIELD QUALITY CONTROL

A. Owner's Testing Agency will:
   1. Perform testing in accordance with ACI 318 and CBC Section 1905A.1.16 and 1905A.
   2. Review concrete mix designs.
   3. Inspect concrete and grout placement continuously.
   4. Test concrete to control slumps according to ASTM C143.
   5. Continuously monitor concrete temperature as it arrives on Project Site.
   6. Test concrete for required compressive strength in accordance with CBC Section 1705A.3 – Table 1705A.3, Item 6; 1905A.1.16; and ACI 318 – Section 26.12 as modified:
      a. Make and cure three specimen cylinders according to ASTM C 31 for each 50 cubic yards, or fraction thereof, of each class poured at Project Site each day.
      b. Retain one cylinder for 7 day test and two for 28-day test.
      c. Number each cylinder 1A, 1B, 1C, 2A, 2B, 2C, and so on.
         1) Date each set; and keep accurate record of pour each set represents.
      d. Transport specimen cylinders from Project to laboratory after cylinders have cured for 24 hours on Project Site.
      e. Cover cylinders and keep at air temperatures between 60 and 80 degrees Fahrenheit.
      f. Test specimen cylinders at age 7 days and age 28 days for specified strength according to ASTM C 39.
      g. Base strength value on average of two cylinders taken for 28 day test.
   7. Test and inspect materials, as necessary, in accordance with ACI 318, MM Test Method 227 (Coarse and Intermediate Aggregates) and MM Test Method 217 (Fine Aggregates), for compliance with requirements specified in this Section.

B. Submit ticket for each batch of concrete delivered to Project Site.
   1. Provide following information on Ticket:
      a. Design mix number.
      b. Signature or initials of ready mix representative.
      c. Time of batching.
      d. Weight of cement, aggregates, water and admixtures in each batch with maximum aggregate size.

e. Total volume of concrete in each batch.
f. Notation to indicate equipment was checked for contaminants prior to batching.

2. Pay Owner's Testing Agency for taking core specimens of hardened structure and testing specimen according to ASTM C 88 and C 42 when laboratory tests of specimen cylinders show compressive strengths below specified minimum.

3.12 REQUIRED TESTS AND INSPECTIONS

A. Following Tests and Inspections are required, as set forth in California Building Code and ACI 318, as referenced.

B. Concrete (Chapters 17A and 19A):
1. Materials:
a. Portland Cement: 1705A.3.2; 1910A.1
b. Concrete Aggregates: 1705A.3.2; 1903A.5
c. Shotcrete Aggregates: 1908A.3
d. Reinforcing Bars: 1705A.3.2; 1910A.2
e. Prestressing Steel and Anchorage: 1705A.3.2; 1910A.3
2. Quality:
a. Proportions of Concrete: 1705A.3 – Table 1705A.3, Item 5; 1910A.1, and ACI 318 – Section 26.4.3
b. Strength Tests of Concrete: 1705A.3 – Table 1705A.3, Item 6; 1905A.1.16; and ACI 318 – Section 26.12 as modified.
c. Shotcrete Proportions: 1908A.2
d. Shotcrete Cores: 1908A.5
e. Composite Construction Cores: 1910A.4
f. Mixing: 1903A, 1904A
g. Placing Record: 1705A.3.6
3. Inspection:
a. Job Site: ACI 318 – Sections 26.5.1, 26.5.2.1 (A) and (B), 26.6.1.2 (D), 26.11.1.1 (A)
b. Batch Plant: 1705A.3.3
c. Waiver of Batch Plant: 1705A.3.3.1
d. Preplacement and Placing 1705A.3.5; 1705A.3.6
e. Prestressed Concrete: 1705A.3.4
f. Shotcrete: 1705A.19; 1908A
g. Post Installed Anchors: 1705A.3 – Table 1705A.3, Items 4a and 4b; 1910A.5 b.
h. Reinforcing Bar Welding: 1705A.3.1 – Table 1705A.3, Item 2, Table 1705A.2.1, Item 5b, 1903A.8

3.13 PROTECTION

A. Protect concrete from injurious action of elements and defacement during construction operations.

B. Protect exposed corners of concrete from traffic or use which will damage them.

C. Make provisions to keep exposed concrete free from laitance caused by spillage or leaking forms or other contaminants.

1. Do not allow laitance to penetrate, stain, or harden on surfaces which have been textured.

END OF SECTION 03 3000

SECTION 05 5000

METAL FABRICATIONS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
1. Miscellaneous metal fabrications as shown.
   a. Includes items fabricated from iron and steel shapes, plates, and bars which are not part of other metal systems specified elsewhere.
2. Work includes, but is not necessarily limited to:
   a. Anchor bolts, not specified elsewhere.
   b. Miscellaneous steel framing and supports
      1) Includes framing and supports for counter tops.
   c. Miscellaneous steel trim
   d. Metal Ladders:
      1) Interior Ladders:
         a) Roof Access **Ship's Ladders**
         b) Elevator Pit
   e. Steel guard posts (Bollards).
   f. Metal stairs.
   g. Steel pipe handrails and railing systems.
      1) Includes stainless steel tube guardrails with mesh infill.
   h. Custom decorative metal fences and gates.
      1) Perforated metal panels at gates.
   i. Trash Enclosure Gates
3. Furnishing inserts and anchoring devices which must be set in concrete for installation of miscellaneous metal work.
   a. Provide setting drawings, templates, instructions, and directions for installation of anchorage devices.
   b. Coordinate delivery with other Work to avoid delay..

B. Related Sections:

1.	Section 03 3000:	Cast-in-Place Concrete; concrete stair fill.
2.	Section 05 1200:	Structural Steel Framing; tests and inspections.
3.	Section 05 4000:	Cold-Formed Metal Framing; load bearing steel stud framing
4.	Section 07 1813:	Pedestrian Traffic Coatings; stair treads.
5.	Section 07 7233:	Roof Hatches; ladder safety posts and safety railing system.
6.	Section 09 2216:	Non-Structural Metal Framing; backing and mounting reinforcement for cabinets and equipment items.
7.	Section 09 9100:	Painting; shop priming and field painting of exposed metal work not indicated to receive shop-applied or high performance coatings.
8.	Section 09 9600:	High Performance Coatings; shop priming and field painting of exposed steel components where indicated.

1.02 REFERENCES

A. California Code of Regulations, Title 24, 2016 edition, California Building Code (CBC), Part 2, Volumes 1 and 2.
   1. **Chapter 11B – Accessibility to Public Buildings, Public Accommodations, Commercial Buildings, and Public Housing.**

B. ASTM International (ASTM):
   1. ASTM A 36 – Standard Specification for Carbon Structural Steel
   2. ASTM A123 – Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
   3. ASTM A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
   4. ASTM A 307 – Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60000 PSI Tensile Strength
   5. ASTM A 500 – Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
   6. ASTM A 501 – Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing
   7. ASTM A 554 – Standard Specification for Welded Stainless Steel Mechanical Tubing
   8. ASTM A 780 – Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
   9. ASTM B209 – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
   10. ASTM B221 – Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
   11. ASTM C1107 – Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)

C. American Society of Civil Engineers/Structural Engineering Institute (ASCE/SEI):
   1. ASCE/SEI 7-16 – Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

D. American Welding Society (AWS):
   1. AWS D1.1 – Structural Welding Code – Steel.
   2. AWS D1.3 – Structural Welding Code – Sheet Steel.
   3. AWS D1.6 – Structural Welding Code – Stainless Steel
   4. AWS QC1 – Standard for AWS Certification of Welding Inspectors.

E. American Institute of Steel Construction (AISC):
   5. AISC 360 – Specification for Structural Steel Buildings.

F. American Iron and Steel Institute (AISI):
   1. AISI S100 – North American Specification for the Design of Cold-Formed Steel Structural Members.

G. **American National Standards Institute (ANSI):**
   1. **ANSI ASC A14.3 - American National Standards For Ladders - Fixed - Safety Requirements**

H. Aluminum Association (AA):
   1. Aluminum Design Manual, current edition
   2. CA-92 – Care of Aluminum
   3. DAF-45 – Designation System for Aluminum Finishes

I. National Association of Architectural Metal Manufacturers (NAAMM):
   1. AMP 500 – Metal Finishes Manual

J. American Galvanizers Association, Inc. (AGA):
   1. AGA - Inspection of Hot-Dip Galvanized Steel Products

K. The Society for Protective Coatings (SSPC):
   1. SSPC-SP 1 – Solvent Cleaning.
   2. SSPC-SP 2 – Hand Tool Cleaning.
   3. SSPC-SP 3 – Power Tool Cleaning.
   4. SSPC-SP 6 – Commercial Blast Cleaning (NACE No. 3)
   5. SSPC-SP 7 – Brush-off Blast Cleaning (NACE No. 4)

L. NACE International (NACE):
   1. National Association of Corrosion Engineers

1.03 SUBMITTALS

A. Product Data:
   1. Manufacturer's specifications, anchor details, and installation instructions for products to be used in fabrication of miscellaneous metal, including paint products.
   2. Product Data for Specified Shop Primer System:
      a. Material List:
         1) Provide inclusive list of required coating materials Identify material by manufacturer's catalog number and general classification.
      b. Manufacturer's Information:
         1) Provide manufacturer's technical information, including label analysis and instructions for handling, storing, and applying coating material proposed for use.

B. Shop Drawings:
   1. For fabrication and erection of miscellaneous metal assemblies.
      a. Include plans and elevations at not less than 1/2 inch to 1 foot scale.
      b. Provide large scale construction details of various parts, including, but not necessarily limited to:
         1) Methods of joining.
         2) Thickness of metals.
         3) Profiles of surfaces.
         4) Reinforcing, anchorage, and accessory items.
      c. Include details of sections and connections at not less than 3 inch to 1 foot scale.
   2. Include information regarding concealed and exposed joints, welds, and fastenings.
   3. Provide templates for anchor and bolt installation by others.

C. Samples:
   1. As requested by Architect.

D. Electrode Requirements:
   1. Package weld filler metals conforming to requirements of AWS D.1.1.
      a. FCAW Electrodes: Received in undamaged moisture-resistant containers.
      b. Protect electrodes against contamination and injury during shipment and storage.
      c. When removed from protective packaging and installed on machines, take care to protect electrodes and coatings from deterioration or damage.

E. Welding Procedures:
   1. Procedures are to:
      a. Assign responsibility to person or position.
      b. Contain enough detail to be useful to workforce without reference to governing specifications.
      c. Be dated and indicate person or position that has authority to maintain procedure.
   2. Welding Procedure Specifications (WPS):
      a. Conform to requirements of AWS D1.1.
      b. Submit Welding Procedure Specifications (WPS) and Procedure Qualification Records (PQR) as required by AWS D1.1, to be used on Project to Owner's Testing Agency.
         1) Owner's Testing Agency will review and approve WPS.
         2) Use forms provided in Annex E of AWS D1.1 or equivalent.
   3. Procedures need not act as work instructions.
   4. Weld Sequence Procedures:
      a. Submit written procedures indicating field welding sequences for each type of connection with multiple field-welded joints, and sequence of such connections to be field-welded at each level.
   5. Weld Shrinkage and Distortion Control Plan:
      a. Where shrinkage is likely to cause distortion or other problems, submit mitigation plan.
      b. Contractor is responsible for determining conditions requiring Weld Shrinkage and Distortion Control Plan.

1.04 QUALITY ASSURANCE

A. Design Criteria:
   1. Design Work to support normally imposed loads and conform to AISC, AISI, and ASCE/SEI 7-16 requirements.

B. Standards:
   1. Conform to applicable provisions and performance referenced standards where indicated.

C. Field Measurements:
   1. Take field measurements prior to preparation of shop drawings and fabrication, where possible.
   2. Do not delay job progress; allow for trimming and fitting wherever taking field measurements before fabrication might delay Work.

D. Qualifications:
   1. Fabricator Qualifications:
      a. Successfully engaged for minimum of 5 years in manufacture of metal fabrications work, similar to to that specified and indicated for this Project.
      b. Fabricator qualifications are subject to Owner and Project Inspector's review and approval before subcontract is awarded.
   2. Qualifications for Welding Work:
      a. Qualify welding procedures and welding operators in compliance with AWS Qualification requirements of AWS D1.1.
      b. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, when pertinent, has undergone recertification..
      c. When recertification of welders is required, retesting will be Contractor's responsibility.
   3. Welding Inspector Qualifications:
      a. Welding Inspectors:
         1) Trained and thoroughly experienced in inspecting welding operations.
         2) Qualified as Certified Welding Inspectors (CWI) in accordance with AWS D1.1, AWS D1.3, and AWS QC1.
   4. Welder Qualifications:
      a. Qualify welders, welding operators, and tackers in accordance with AWS D1.1.

E. Shop Assembly:
   1. Preassemble items in shop to greatest extent possible to minimize field splicing and assembly.
   2. Disassemble units only as necessary for shipping and handling limitations.
   3. Clearly mark units for reassembly and coordinated installation.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle packaged materials in original containers with seals unbroken and labels intact until time of use.

B. Discharge materials carefully and store on clean concrete surface or raised platform in safe, dry area.

1.06 PROJECT CONDITIONS

A. Scheduling and Sequencing:
   1. Ensure timely fabrication of items to be embedded or enclosed by other Work.
   2. Furnish information and assistance required for locating embedded items and be responsible for proper locations.

1.07 WARRANTY

A. Pipe Railing Warranty:
   1. Manufacturer's standard warranty, agreeing to repair or replace components of pipe railings that fail in materials or workmanship within specified warranty period.

a. Failures include, but are not necessarily limited to:
   1) Structural failures.
   2) Deterioration of metals, metal finishes, and other materials, beyond normal weathering.
b. Warranty Periods:
   1) Two years
   2) Five year finish warranty for railings scheduled to receive high performance coating specified in Section 09 9600.

B. **Manufacturer's Limited Warranty for Prefabricated Ship's Ladder s:**
   1. **Warranty Period: 5 years from date of Substantial Completion**.

PART 2 PRODUCTS

2.01 MATERIALS AND COMPONENTS – GENERAL

A. Metal Surfaces – General:
   1. For fabrication of miscellaneous metal work which will be exposed to view, only use materials which are smooth and free of surface blemishes
   2. Do not use materials having exposed-to-view surfaces exhibiting pitting, seam marks, roller marks, rolled trade names, roughness, oil canning, stains, discoloration or other imperfections.

B. Steel Plates, Shapes and Bars:
   1. Conforming to ASTM A 36.

C. **Carbon** Steel Tube:
   1. HSS Shapes:
      a. Manufactured (rolled and seam welded) in USA
      b. Conforming to ASTM A 500 **or A 501**.

D. Stainless Steel Tube:
   1. HSS Shapes:
      a. Manufactured (rolled and seam welded) in USA
      b. Conforming to ASTM A 554.

E. Steel Sheets:
   1. Conforming to ASTM A 1011, Grade C.

F. Steel Pipe:
   1. Conforming to ASTM A 53; Type S; Grade B; black finish unless galvanizing is required.
      a. Standard Weight (Schedule 40) for railings, unless otherwise shown or specified.
      b. Heavy Weight (Schedule 80) for posts.

G. Structural Steel Sheet:
   1. Hot-rolled, conforming to ASTM A 570, or cold-rolled conforming to ASTM A 611, Class 1.
   2. Grade required for design loading.

H. Steel Plates:
   1. For cold forming or bending:
   2. Conforming to ASTM A 283, Grade C.

I. Metal Decking for Gates:
   1. 18 gage metal decking.
   2. Depth: 1-1/2 inches
   3. Profile:
      a. PLB as manufactured by Verco Decking, Inc., or approved equal.
   4. Furnish unprimed and ungalvanized for priming and painting after fabrication.

J. Aluminum Members:
   1. Alloy and temper recommended by manufacturer for strength, corrosion resistance, and application of required finish:
   2. 6061-T6 or 6063-T5 aluminum alloy, conforming to ASTM B 221 for extrusions and ASTM B 209 for sheet/plate.

K. Welding Electrodes and Filler Metal:
   1. Carbon Steel: Use electrodes recommended by AWS.

L. Fasteners:
   1. Use fasteners made of same basic metal as fastened metal, unless otherwise indicated.
      a. Do not use metals which are corrosive or incompatible with materials joined.

      b. Do not use exposed fasteners except where unavoidable.
         1) Match finish of metal surrounding fastener.
   2. Provide Phillips flat-head machine screws for exposed fasteners, unless otherwise indicated.
   3. Select fasteners for type, grade and class required.
   4. Steel Bolts and Nuts: Regular hexagon head type, ASTM A 307, Grade A; with hex nuts.
   5. Lag Bolts: Square head type, ASME B 18.2.1
   6. Machine Screws: Cadmium plated steel, ASME B 18.6.3
   7. Wood Screws: Flat head carbon steel, ASME B 18.6.1
   8. Plain Washers: Round, carbon steel, ASME B 18.21.1
   9. Lock Washers: Helical spring type carbon steel, ASME B 18.21.1
   10. Expansion Bolts:
      a. Concrete Anchorage: Hilti Kwik Bolt TZ; ICC ESR-1917
      b. Masonry Anchorage: Hilti Kwik Botl 3; ICC ESR-1385

M. Anchors and Inserts:
   1. Furnish inserts for setting in concrete and provide other anchoring devices as required for installation of fabricated metal items.

N. Nonshrink Nonmetallic Grout:
   1. Factory premixed, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107.
   2. Provide one of following or grout specifically recommended by manufacturer for types of applications indicated:
      a. Masterflow 713 Plus; BASF Building Systems

b. Sealtight 588 Grout; W.R. Meadows
c. Five Star Grout; Five Star Products, Inc.
d. SikaGrout 212; Sika Corporation..

O. Shop Primer for Ferrous Metal:
1. Carbozinc 859 VOC Organic Zinc-Rich Epoxy Primer by Carboline Company, Hydro-Zinc 94-H20 by Tnemec Company, or approved equal; VOC compliant.
2. Coordinate selection of primer with finish paint requirements in Section 09 9600.
a. Primer and finish coat materials for exposed steel are required to be complete system by one manufacturer
3. Prime painting with specified shop primer is required of structural steel, exposed or concealed, except where indicated otherwise.

P. Galvanizing:
1. Provide zinc coating for those items shown or specified to be galvanized, as follows:
a. Conform to ASTM A 123:
1) For galvanizing rolled, pressed and forged steel shapes, plates, bars and strip 1/8 inch thick and heavier.
2) For galvanizing assembled steel products.
b. Conform to ASTM A 153:
1) For galvanizing iron and steel hardware.
2. Perform galvanizing after fabrication with Work assembled in as large sections as can be handled.
3. Remove projections, barbs, and icicles after galvanizing.
4. Galvanizing Repair Paint:
a. Organic zinc rich paint complying with SSPC-Paint 20, with dry film containing not less than 94 percent zinc dust by weight.
5. Do not galvanize exposed steel and components indicated or specified to receive zinc-rich primer and high performance paint system.

Q. Isolation Between Dissimilar Materials:
1. Provide single-component, inert-type non-corrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.
a. VOC compliant.
2. Elasto-Deck BT as manufactured by Pacific Polymers, div. ITW Polymers Sealants North America, or equivalent product acceptable to Architect.

R. Joint Sealant:
1. Comply with requirements of Section 07 9200 and following.
a. Nonsag, nonstaining, silicone sealant complying with ASTM C 920.
b. Of type and grade required to seal joints in formed metal
c. As recommended in writing by formed metal manufacturer or fabricator.

2.02 FABRICATION – GENERAL

A. Fabricate items to comply with requirements indicated, including those for quality, thickness and finish of material as well as those indicating dimensions and details.
1. Use heavier metal gages, stiffeners or metal backing as required to produce surface flatness, free of "oil-canning", and to impart sufficient strength for use indicated.

2. When not otherwise indicated, provide following minimum thickness of metal and comply with SMACNA recommendations for fabrication and installation details:
   a. Sheet Steel: 16 gage.
   b. Galvanized Sheet Steel: 16 gage.
3. Work to dimensions shown or accepted on shop drawings, using proven details of fabrication and support.
4. Use type of materials shown or specified for various components of Work.

B. Use hot-rolled steel bars for work fabricated from bar stock, unless shown or specified to be fabricated from cold-finished or cold-rolled stock.

C. Supply as part of this Section, miscellaneous small parts of material thinner than 10 gage, or items specifically called out, when such supply is normal and accepted part of Work.

D. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.
1. Ease exposed edges to radius of approximately 1/32 inch, unless otherwise shown.
2. Form bent metal corners to smallest radius possible without causing grain separation or otherwise impairing Work.

E. Form sheet metal items in maximum lengths and keep joints to minimum.
1. Do not exposed cut edges of sheet metal except as indicated.
2. Fold back exposed ends of unsupported sheet metal to form 1/2 inch wide hem on concealed side, or ease exposed edges with backing to radius of approximately 1/32 inch.
3. Form items with flat, flush surfaces, true to line and level, and without cracking and grain separation at bends.

F. Continuously weld joints and seams except where other methods of joining are indicated
1. Grind welds smooth and flush on exposed surfaces.
2. Comply with AWS recommendations.
3. Use filler metals and welding procedures which will blend with and match color of sheet metal being joined and will avoid discoloration at welds.

G. Provide type of anchorage shown.
1. Coordinate with supporting structure.
2. Fabricate and space anchoring devices as shown and as required to provide adequate support for intended use.

H. Cut, reinforce, drill and tap miscellaneous metal work as required to receive finish hardware and similar items.

I. Fabricate joints which will be exposed to weather in manner to exclude water or provide weep holes where water may accumulate.

2.03 MISCELLANEOUS METAL FABRICATIONS

A. Manufacture or fabricate items to sizes, shapes and dimensions required.

1. Furnish malleable iron washers for heads and nuts which bear on wood structural connections; elsewhere, furnish steel washers.

B. Miscellaneous Framing and Supports:
   1. Provide miscellaneous steel framing and supports which are not part of structural steel framework, as required to complete Work.
   2. Fabricate miscellaneous units to sizes, shapes and profiles shown or, where not shown, of required dimensions to receive adjacent other work to be retained by framing.
   3. Except as otherwise shown, fabricate from structural steel shapes and plates and steel bars, of welded construction using mitered joints for field connection.
   4. Cut, drill and tap units to receive hardware and similar items.
   5. Equip units with integrally welded anchor straps for casting into poured concrete or building into masonry wherever required.
   6. Except as otherwise shown, space anchors 24 inches on center and provide minimum anchor units of 1-1/4 by 1/4 by 8 inch steel straps.

C. Miscellaneous Steel Trim:
   1. Provide shapes and sizes as required for profiles shown.
   2. Except as otherwise noted, fabricate units from structural steel shapes and plates and steel bars, with continuously welded joints and smooth exposed edges.
   3. Provide cutouts, fittings and anchorages as required for coordination of assembly and installation of other work.
   4. Galvanize miscellaneous steel trim where indicated.

D. Metal Ladders:
   1. Fabricate ladders for locations shown, with dimensions, spacing, details and anchorages indicated.
   2. Comply with requirements of ANSI A 14.3, except as otherwise indicated.
   3. Unless otherwise shown, provide 1/2 by 2-1/2 inch continuous structural steel flat bar side rails with eased edges, spaced 18 inches apart.
   4. Provide 3/4 inch diameter solid structural steel bar rungs, spaced 12 inches on center.
   5. Fit rungs in centerline of side rails, plug weld and grind smooth on outer rail faces.
   6. Support each ladder at top and bottom and at intermediate points spaced not more than 5 feet on center
   7. Use welded or bolted steel brackets, designed for adequate support and anchorage, and to hold ladder clear of wall surface with minimum 7 inch clearance from wall to centerline of rungs.
   8. Return top of rails to wall or structure as indicated.
   9. Hot-dip galvanize ladders, brackets, and fasteners, unless indicated to be painted.

E. **Ship's Ladders:**
   1. **Designed for use with roof hatches as specified in Section 07 7233.**
      a. **Provide with heavy duty aluminum top and bottom brackets and handrails for fixed, permanent installation.**
   2. **Materials:**
      a. **Fabricated from 6061-T6 aluminum alloy.**

3. **Construction:**
   a. **Ladder:**
      1) **Width: 24 inches**
      2) **Furnished with 4 mounting brackets.**
      3) **Height: Up to 19 feet.**
   b. **Steps:**
      1) **4-1/4 inches wide steps with nonslip ridges.**
      2) **Mounted on 12 inch centers.**
   c. **Flush Handrails:**
      1) **Consisting of 1-1/4 inch round serrated aluminum tubing with cast aluminum fittings.**
4. **Type:**
   a. **75 degrees for roof hatch access.**
5. **Finish:**
   a. **Manufacturer's standard mill finish.**
6. **Product and Manufacturer:**
   a. **Model H75 as manufactured by ALACO Ladder Company, Chino, CA, or approved equal.**

F. Trash Enclosure Gates:
1. Steel Channel Jambs:
   a. Material and size as indicated, with steel masonry anchors per details on Drawings.
2. Gate Frames:
   a. Fabricated from HSS steel tubes of sizes as indicated on Drawings.
3. Gate Panels:
   a. Metal decking welded to gate frame.
4. Gate Hardware:
   a. Hinges:
      1) Heavy weight
      2) 6 by 6 inches
      3) Model 83361 by Builder's Fence Company, or approved equal.
   b. Locking Slide Bolt:
      1) Model 1134 by National Hardware, or approved equal.
      2) Finish: Painted to match gate.
5. Cane Bolts:
   a. Steel – 5/8 inch diameter by 18 inches long.
      1) Model 835 by National Hardware, or approved equal.
      2) Finish: Painted to match gate.
6. Finishing of Trash Enclosure Gates:
   a. Perform shop preparation and prime painting in accordance with Article 2.02 B and C.
      1) Touch up in accordance with Article 3.03 A and C:
         a) Primer and welds after fabrication.
         b) Field welds and damage to primer after installation.
   b. Field apply High Performance Finish Type B as specified in Section 09 9600.

2.04 METAL STAIR FABRICATION

A. Form steel stairs from materials of size, thickness, and shapes indicated, but not less than that needed to comply with performance requirements indicated.
   1. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support.

B. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.
   1. Form bent metal corners to smallest radius possible without causing grain separation or otherwise impairing Work.

C. Shear and punch metals cleanly and accurately.

D. Remove sharp or rough areas on exposed surfaces.
   1. Ease exposed edges to radius of approximately 1/32 inch, unless otherwise indicated.

E. Weld corners and seams continuously to comply with following:
   1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
   2. Obtain fusion without undercut or overlap.
   3. Remove welding flux immediately.
   4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and welded surface matches contours of adjoining surfaces.

F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible.
   1. Use exposed fasteners of type indicated or, were not indicated, Phillips flat-head (countersunk) screws or bolts.
   2. Locate joints where least conspicuous.

G. Shop Assembly:
   1. Preassemble in shop to greatest extent possible to minimize field splicing and assembly.
   2. Use connections that maintain structural value of joined pieces.
   3. Clearly mark units for field assembly and coordinated installation.

H. Fabricate joints that will be exposed to weather in manner to exclude water, or provide weep holes where water may accumulate.

I. Construct stairs to conform to sizes and arrangements shown.
   1. Join pieces together by welding unless otherwise indicated.
   2. Provide complete stair assemblies including metal framing, hangers, columns, struts, clips, brackets, bearing plates, and other components necessary for support of stairs and platforms and as required to anchor and contain stairs on supporting structure.

J. Stair Framing:
   1. Fabricate stringers of structural steel channels, or plates, or combination thereof.

2. Provide closures for exposed ends of stringers.
3. Construct platforms of structural steel channel headers and miscellaneous framing members.
4. Bolt or weld headers to stringers and framing members to stringers and headers, fabricate and join so that bolts, when used, do not appear on finish or surfaces.

K. Metal Pan Risers, Subtreads, and Subplatforms:
1. Shape metal pans for risers and subtreads to conform to configuration shown.
2. Provide thicknesses of structural steel sheet for metal pans indicated but not less than that required to support total design loading.
3. Form metal pans of uncoated cold-rolled steel sheet or hot-rolled or cold-rolled carbon steel sheet
4. Attach extruded abrasive nosings to pan risers.
   a. Make nosings full width of tread flush with tread surfaces.
5. Attach risers and subtreads to stringers by means of brackets made of steel angles or bars.
   a. Weld brackets to stringers and attach metal pans to brackets by welding.
   b. Continuously weld bracket and metal pan to stringer.

L. Provide subplatforms of configuration and construction indicated, of same metal as risers and subtreads and in thicknesses required to support design loading.
1. Weld subplatform to platform framing members.

M. Stair Tread Nosing:
1. Fabricate units with extruded aluminum base, sizes, and configurations indicated with abrasive filler material bonded and locked into channels in base.
2. Provide abrasive grit of aluminum oxide, silicone carbide, or combination of both.
3. Color: As selected by Architect.
4. Manufacturers:
   a. Subject to compliance with specified requirements, provide products by one of following:
      1) Ampstep Products, LLC.
      2) American Safety Tread Co., Inc.
      3) Safe-T-Metal Company, Inc.
      4) Wooster Products Inc.
5. Provide types for use on concrete filled steel stairs.
   a. Provide nosing full length of step for concrete filled steel pan stairs.
6. Provide anchors for embedding units in concrete, either integral or applied to units, as standard with manufacturer.

N. Stair Tread Finish:
1. Refer to Section 07 1813 for traffic coating application on stair treads where scheduled or indicated on Drawings.

2.05 STEEL PIPE HANDRAIL AND RAILING SYSTEM FABRICATION

A. Fabricate pipe handrails and railing systems to dimensions and details shown, with smooth bends and welded joints ground smooth and flush.

1. Comply with requirements indicated for design, finish, member sizes, including wall thickness of pipe, post spacing, and anchorage, but not less than that required to support structural loads.
2. Use nominal 1-1/4 inch N.P.S. (1.66 inch O.D.):
   a. Schedule 40 steel pipe for railings.
   b. Schedule 80 steel pipe for posts.
3. Interconnect railing and handrail members by butt-welding or welding with internal connectors, at fabricator's option, unless otherwise indicated.
   a. At tee and cross intersections, cope ends of intersecting members to fit contour of pipe to which end is joined, and weld all around.
   b. Form changes in direction of handrails and rails by welding in prefabricated flush elbow fittings.
   c. Form simple and compound curves by bending pipe in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross section of pipe throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of pipe.

B. Brackets, Flanges, Fittings, and Anchors:
1. Provide wall brackets, end closures, flanges, miscellaneous fittings, and anchors for interconnections of pipe and attachment of handrails and railing systems to other work.
2. Furnish inserts and other anchorage devices for connecting handrails and railing systems to concrete work.
3. Close exposed ends of pipe by welding 3/16 inch thick steel plate in place or with prefabricated fittings, except where clearance of end of pipe and adjoining wall surface is 1/4 inch or less.

C. Fittings for Steel Handrails and Railing Systems:
1. Provide galvanized ferrous metal fittings, brackets, and fasteners for railings specified or indicated to have galvanized finish.
2. Provide non-galvanized ferrous metal fittings, brackets, and fasteners for railings specified to be shop primed and field painted.
3. Galvanize anchors and sleeves embedded in concrete construction.

2.06 STAINLESS STEEL TUBE GUARDRAIL SYSTEM FABRICATION

A. Fabricate stainless steel HSS tube guardrail systems to dimensions and details shown, with welded joints ground smooth and flush.
1. Comply with requirements indicated for design, finish, member sizes, including wall thickness of tubing, post spacing, and anchorage, but not less than that required to support structural loads.
2. Use 2 inches x 2 inches by 0.180 inch (3/16 inch) wall thickness square tubing:
   a. Type 304 with No. 4 finish.
3. Interconnect guardrail members by butt-welding or welding with internal connectors, at fabricator's option, unless otherwise indicated.

B. Guardrail Infill Panel:
1. Fabricate of rectangular, Type 304 untrimmed stainless steel welded wire mesh.

2. Mesh Size:
   a. Nominal 3 inches by 1-1/2 inches (2.8800 inches x 1.3800 inches) rectangular opening.
   b. Long Way of Opening (LWO) parallel to width of sheet.
   c. Wire Size: 0.120 inch thick.
   d. Open Area: 73 percent
3. Wire Mesh:
   a. Item 383412003A as manufactured by McNichols Company, Cerritos, CA
4. Install in 1 inch x 16 gage stainless steel channel frame.
5. Provide 1/2 inch x 1-1/4 inch double angle x 2 inch stainless steel brackets attached to guard rail posts and top and bottom rails.

C. Refer to Drawing details for additional miscellaneous components for a complete installation.

2.07 CUSTOM DECORATIVE METAL FENCES AND GATES

A. Materials for Fence and Gates:
1. Fence and Gate Posts:
   a. HSS steel tube with steel cap welded to top of each post.
2. Gate Frames:
   a. 2 inch by 2 inch 1/8 inch HSS steel tube.
3. Fence and Gate Pickets:
   a. 1 inch by 1 inch by 11 gage square steel tube.
4. Perforated Metal Panel for Fence and Gates:
   a. Material – General:
      1) Carbon Steel (CS), Cold Rolled (CR).
      2) 20 Gage (.0359 inch Thick).
   b. Panel **Type 1**:
      1) Hole Type: Round,
      2) Hole Pattern:
         a) 1/16 inch Round on 1/8 inch Staggered Centers
         b) 23 percent Open Area
      3) Hole Size (Diameter): 1/16 inch
      4) Hole Centers: 1/8 inch
      5) Hole Arrangement: 60 degree Staggered Centers.
      6) Weight: 1.15 lbs./square foot.
      7) Product and Manufacturer:
         a) Item Number 1611182041 by McNichols Co., Inc.
   c. Panel **Type 2**:
      1) Hole Type: Round,
      2) Hole Pattern:
         a) 1/8 inch Round on 1/4 inch Staggered Centers
         b) 23 percent Open Area
      3) Hole Size (Diameter): 1/8 inch
      4) Hole Centers: 1/4 inch
      5) Hole Arrangement: 60 degree Staggered Centers.
      6) Weight: 1.16 lbs./square foot.
      7) Product and Manufacturer:
         a) Item Number 1618142041 by McNichols Co., Inc.
   d. Installation of Panels:
      1) Factory install perforated metal panels on gates as follows:

a) Install Panel Type 1 on rolling gate where indicated on Drawings.
b) Install Panel Type 2 on swing gates where indicated on Drawings.

e. Finishing of Custom Decorative Metal Fences and Gates:
1) Perform shop preparation and prime painting in accordance with Article 2.02 B and C.
2) Touch up in accordance with Article 3.03 A and C:
a) Primer and welds after fabrication.
b) Field welds and damage to primer after installation.
3) Field apply High Performance Finish Type B as specified in Section 09 9600.
4) Avoid bridging perforations during primer and finish paint application.

B. Swing Gate Hardware:
1. Hinges:
a. Pedestrian Gates:
1) Standard Hinges.
a) Heavy Duty Steel Barrel Hinge with Weld Tabs.
b) Model NW6215-P M180BL by Hoover Fence Company, or approved equal.
c) Minimum of one for gates up to and including 7 feet high.
d) Minimum of two for gates over 7 foot high.
e) Finish: Painted to match gates.

C. Accessible Gate Hardware:
1. Self-Closing Hinges:
a. Mammoth 180 Self-Closing Hinge Set – Model M180BL by Hoover Fence Company, or approved equal.
1) Minimum of two per gate.
2. Exit Devices:
a. Provide exit device where indicated on Drawings when gate is part of accessible path of travel for required means of egress.
1) Comply with requirements of CBC, Chapter 11B.
2) Exit devices are specified in Section 08 7100.

2.08 FINISHES

A. Comply with NAAMM Metal Finishes Manual for recommendations relative to application and designations of finishes, as applicable.
1. Protect mechanical finishes on exposed surfaces by application of strippable, temporary protective covering prior to shipment.
2. Variations in appearance of abutting or adjacent pieces are not acceptable when they are within 1/2 of range of approved samples.
a. Noticeable variations in same piece are not acceptable.
b. Variations in appearance of other components are acceptable when they are within range of approved samples and are assembled or installed to minimize contrast.
3. Apply heavy coat of specified isolation material to metal surfaces in contact with concrete or dissimilar materials.

a. Do not apply on exposed surfaces.

B. Preparations of Surfaces:
1. Thoroughly clean mill scale, rust, dirt, grease, and other foreign matter from ferrous metal prior to application of shop primer..
2. Where hand cleaning methods are not adequate, clean in accordance with SSPC SP 1, SSPC SP 2, SSPC SP 3, or SSPC SP 6, as required.
3. Completely eliminate burrs, rough spots and pitting from normally exposed ferrous metal items.

C. Shop Painting:
1. Apply specified shop primer to uncoated surfaces of miscellaneous metal work, except members or portions of members to be embedded in concrete surfaces and edges to be field welded, and galvanized surfaces, unless otherwise specified.
2. Immediately after surface preparation, brush or spray on primer in accordance with manufacturer's instructions, and at rate to provide uniform dry film thickness of 2.0 mils for each coat.
   a. Use painting methods which will result in full coverage of joints, corners, edges and exposed surfaces.
3. Apply one shop coat to fabricated metal items, except apply 2 coats of paint to surfaces inaccessible after assembly or erection.
4. Where shop primer is removed or damaged by assembly procedures, touch up abraded areas with specified primer.

D. Galvanized Finish:
1. Where specified, galvanize items after fabrication.
2. Conform to requirements for galvanizing as specified in “Materials and Components” Article.
3. Where galvanizing is removed by assembly procedures, touch up abraded areas with zinc-rich paint.
4. Do not galvanize items indicated or specified to receive organic zinc-rich epoxy shop primer.
5. Brush-off blast steel pipe railings after fabrication in accordance with SSPC-SP7 (NACE 4) to remove rough spots and burrs.

2.09 STRUCTURAL PERFORMANCE REQUIREMENTS

A. Stair Framing:
1. Capable of withstanding stresses resulting from loads specified as well as stresses resulting from railing system loads.

B. Steel Stairs and Treads:
1. Capable of withstanding concentrated load of 300 Ibf Applied at center of tread span.

C. Steel Stair Platforms:
1. Capable of withstanding uniform load of 100 Ibf per square foot of projected plan area.

D. Steel Handrails and Railing Systems:
1. Apply each load to produce maximum stress in each of respective components of each metal fabrication.

a. Comply with ASCE/SEI 7-16.

2. Designed to resist concentrated load of 200 Ibf applied vertically downward and horizontally in perpendicular direction at any point on top rail.
3. Uniform load of 50 Ibf per linear foot applied in any direction.
4. Concentrated and uniform loads above are not to be assumed to act concurrently.

PART 3 EXECUTION

3.01 PREPARATION

A. Examine areas to receive Work and verify that setting conditions and dimensions are correct to receive items.
   1. Do not start installation until unsatisfactory conditions have been corrected.

B. Field Measurements:
   1. Perform sheet metal work in cooperation with other trades.
   2. Where possible, verify size, location and placement of miscellaneous sheet metal work prior to fabrication.
   3. Coordinate field measurements and shop drawings with fabrication and shop assembly.

C. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, such as concrete inserts, anchor bolts and miscellaneous items having integral anchors, which are to be embedded in concrete construction.
   1. Coordinate delivery of such items to Project Site.

3.02 INSTALLATION

A. Cutting and Fitting:
   1. Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications.
   2. Fit exposed connections accurately together to form tight hairline joints.
   3. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations.
   4. Grind joints smooth and touch-up shop paint coat.
   5. Do not weld, cut or abrade surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.

B. Placement:
   1. Set Work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels.
   2. Provide temporary bracing or anchors in formwork for items which are to be built into concrete, masonry or similar construction.
   3. Galvanize exposed fasteners to secure to in-place construction.
   4. Fasten work tightly to prevent rattle or vibration.
   5. Do not tighten fasteners through finish alone without spacer washers.
   6. Use nonshrink grout mixed in accordance with manufacturer's direction for setting frames, plates, sills, bolts and similar items.

7. Locate and place sheet metal items plumb, level and in alignment with adjacent work.
8. Tolerances:
   a. Offset from true horizontal, vertical and design location:
      1) Not to exceed 1/16 inch in 10 feet of length for any component, non-cumulative.
   b. Maximum offset from true alignment between abutting components:
      1) Not to exceed 1/32 inch.

C. Use concealed anchorages where possible.
1. Provide brass or lead washers fitted to screws where required to protect sheet metal surfaces.
2. Provide concealed gaskets, flashing, sealants and fillers and install as Work progresses to make installations weathertight or sealed.

D. Form tight joints with exposed connections accurately fitted together.
1. Provide reveals and openings for sealants and joint fillers, as indicated.

E. Protect non-ferrous metal surfaces from corrosion or galvanic action by application of heavy coating of specified isolation coating material on concealed contact surfaces of dissimilar materials, before assembly and installation, where there is possibility of corrosive or electrolytic action.

F. Field Welding:
1. Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of welds made, and methods used in correcting welding work.

G. Installation of Decorative Metal Fence and Gates:
1. Install fence and gates in accordance with approved shop drawings.
2. Set fence and gate posts in concrete footings as detailed and specified.
3. Install gate hardware as specified and detailed, complying with applicable code provisions for accessibility.

H. **Installation of Ship's Ladder's:**
1. **Verify clear floor space required for ship's ladders in installed position.**
2. **Install ship's ladders in accordance with manufacturer's installation instructions**
3. **Install flush handrails on both sides of ladder side rails**

3.03 FIELD PAINTING

A. Touch-up Painting:
1. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting.
2. Apply by brush or spray to provide minimum dry film thickness of 2.0 mils.

B. Repair of Galvanized Surfaces:
1. Repair areas damaged by welding, cutting or during handling, transport or erection in accordance with ASTM A 780 by application of multiple coats of galvanizing repair paint, to dry film thickness of 8 mils.

C. Repair of Finished Surfaces:
   1. Repair finishes damaged by cutting, welding, soldering and grinding operations required for shop fitting and jointing.
   2. Restore finishes so that there is no evidence of corrective work.
   3. Return items which cannot be refinished in field to shop, make required alterations, and refinish entire unit or provide new units, at fabricator's option.

3.04 CLEANING

A. Remove protective devices only when items will be safe from other construction operations or removal is required to permit related Work.

3.05 PROTECTION

A. Protect metal work from damage to surface, profile, and shape

END OF SECTION 05 5000

SECTION 07 2100

BUILDING INSULATION

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Thermal blanket/batt insulation in exterior wall construction.
   2. Sound attenuation blanket/batt insulation in interior partitions.

B. Related Sections:
   1. Section 06 1053: Miscellaneous Carpentry
   2. Section 07 5216: Modified Bituminous Membrane Roofing; roof insulation
   3. Section 07 8400: Firestopping; fire-protective (safing) insulation.
   4. Section 09 2900: Gypsum Board

C. Related Requirements:
   1. Refer to Division 21 through 23 Sections for piping and HVAC insulation requirements.

1.02 REFERENCES

A. California Code of Regulations (CCR), Title 24:
   1. Part 2, California Building Code (CBC), Volumes 1 and 2, 2016 edition.
   2. Part 6, California Energy Code, 2016 edition.

B. ASTM International (ASTM):
   1. ASTM C 423 – Test Method for Sound Absorption Coefficient by the Reverberation Room Method.
   2. ASTM C 518 – Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter.
   3. ASTM C 665 – Specification for Mineral Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
   4. ASTM E 84 – Test Method for Surface Burning Characteristics of Building Materials.
   5. ASTM E 136 – Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C.

1.03 SUBMITTALS

A. Product Data:
   1. Manufacturer's product literature and installation instructions for each type of insulation required.

B. Certified Test Reports:
   1. Include with product data, copies of certified test reports showing compliance with specified performance values, including R-values, characteristics, and perm ratings.

C. Quality Certification:
   1. Manufacturer's certification stating insulating materials comply with Standards for Insulating Material.

1.04 QUALITY ASSURANCE

A. Standard:
   1. Provide products complying CBC Chapter 7, Section 707 and Part 12, Chapter 12-13, Standards for Insulating Materials.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to Project Site and store in safe, dry place, with labels intact and legible at time of installation.

B. Protect insulation from physical damage and from becoming wet or soiled.
   1. Comply with manufacturer's recommendations for handling, storage and protection during installation.
   2. Do not install insulation that has become wet or soiled.
      a. Immediately remove wet or soiled materials from Project Site.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Inorganic mineral or glass fibers formed into flexible resilient blankets/batts of definite dimension and controlled density as manufactured by one of following:
   1. **CertainTeed Corp., Insulation Group, Malvern, PA**
   2. **Knauf Insulation, Shelbyville, IN**
   3. **Johns Manville, Denver, CO**
   4. **Owens Corning Insulating Systems, LLC, Toledo, OH**
   5. **Rockwool, Byhalia, MS**

2.02 THERMAL INSULATION

A. Blankets/batts, with reflective (foil-faced) vapor retardant membrane facing complying with ASTM C 665, Type III, Class B, Category 1:
   1. Surface Burning Characteristics, ASTM E 84:
      a. Flame spread index of 75 or less
      b. Smoke developed index of 150 or less.
   2. Permeability, ASTM E 96: Foil - 0.05 Perms
   3. Provide Type III in exterior walls where indicated.
   4. Foil-Faced Batts by Johns Manville, or approved equal

B. Provide thermal insulation with material only “R" value as follows:
   1. Exterior wall cavities: R-19
   2. Nominal Thickness: 6 inches

C. Sag Wires: 18 gage steel wires.

2.03 SOUND ATTENUATION INSULATION

A. Wall Cavity:
   1. Unfaced g(lass fiber insulation blankets/batts, complying with ASTM C 665, Type I.
   2. Blankets/batts without membrane facing in manufacturer's standard lengths and widths as required, conforming to following:
      a. Surface Burning Characteristics, ASTM E 84:
         1) Flame spread index of 10 or less
         2) Smoke developed index of 10 or Iess.

B. Provide sound attenuation insulation in interior partitions conforming to following:
   1. Nominal 6 inches thick, minimum, friction fit.
   2. NRC Rating of 1.0 on E-405 mounting.
   3. Provide sound attenuation insulation to produce STC Ratings indicated on Drawings.

2.04 ACCESSORIES

A. Provide accessory materials, not specifically described but required for complete and proper installation, as selected by Contractor, subject to approval of Architect.
   1. Provide metal clips, impaling pins and washers, hardware, zinc-coated wires, furring channels, and other items for anchoring insulation to substrates as required and recommended by insulation manufacturer.

PART 3 EXECUTION

3.01 INSPECTION AND PREPARATION

A. Inspect substrate and conditions under which insulation work is to be performed.

B. Clean substrates of substances harmful to insulations, including removal of projections which might interfere with installation.

C. Do not proceed until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Comply with manufacturer's instructions for particular conditions of installation in each case.
   1. Where printed instructions are not available or do not apply to project conditions, consult manufacturer's technical representative for specific recommendations before proceeding with Work.

B. Extend insulation full thickness as shown over entire surface to be insulated.
   1. Cut and fit insulation tightly around pipes, conduits and penetrations.
   2. Remove projections which interfere with placement.

C. Apply single layer of insulation of required thickness, unless otherwise shown or required to make up total thickness.
   1. Maintain total insulation integrity over entire area to be insulated, including areas between closely spaced members.

D. Apply insulation units to substrate by method indicated, complying with manufacturer's recommendations.
   1. Where specific method is not indicated, use mechanical anchorage to provide permanent placement and support of units.
   2. Prevent insulation from sagging during and after installation by installing adequate sag wires.

E. Make insulation continuous at corners and overlaps.
   1. Fit tightly against adjoining insulation and frames.
   2. Extend insulation from floor to ceiling or above as indicated.
   3. Avoid gaps, bulges or extreme compression.
      a. Do not compress insulation in excess of 10 percent.

F. Set vapor barrier faced units with vapor barrier to warm side of construction
   1. Do not obstruct ventilation spaces
   2. Tape joints and ruptures in vapor barriers, and seal each continuous area of
      a. insulation to surrounding construction to ensure vapor-tight installation.
   3. Set reflective foil-faced units accurately with air space in front of foil as shown.
      a. Provide 0.75 inch air space where possible.

3.03 PROTECTION

A. Protect installed insulation from harmful weather exposures and from possible physical abuse, by temporary covering or enclosure, where installation of concealing work is delayed.
   1. Installer to advise Contractor of exposure hazards, including possible sources of deterioration and fire hazards.

3.04 CLEANING

A. Remove and legally dispose of rubbish, debris, and waste materials off Project Site.
   1. Comply with requirements of Division 01.

END OF SECTION 07 2100

SECTION 07 7233

ROOF HATCHES

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
   1. Metal roof hatch units.for Ship Stair Access.
   2. Roof hatch rail system

B. Related Sections:
   1. Section 06 1053: Miscellaneous Carpentry; wood blocking and nailers.
   2. Section 07 5216: Modified Bituminous Membrane Roofing; curb flashing
   3. Section 07 6200: Sheet Metal Flashing and Trim; roof flashing.
   4. ~~Section 08 7100: Door Hardware; padlock for locking roof hatch~~
   5. Section 09 9100: Painting; field painting of roof hatch

1.02 REFERENCES

A. United States Department of Labor.
   1. Occupational Safety and Health Administration (OSHA):
      a. OSHA 29 CFR 1910.23 – Walking -Working Surfaces.

B. State of California – Department of Industrial Relations.
   1. California Code of Regulations (CCR), Title 8 – Industrial Relations
   2. Chapter 4 – Division of Industrial Safety, Subchapter 7 – General Industry Safety Orders (GISO).
      a. Group 1 – General Physical Conditions and Structures, Article 2 – Standard Specifications
         1) Section 3212. Floor Openings, Floor Holes, Skylights and Roofs.

C. National Roofing Contractors Association (NRCA):
   1. NRCA Roofing and Waterproofing Manual

1.03 SUBMITTALS

A. Product Data:
   1. Manufacturer's technical product data, rough-in diagrams, details, installation instructions and general product recommendations.

1.04 QUALITY ASSURANCE

A. Comply with requirements of NRCA Roofing and Waterproofing Manual for installation details.

1.05 WARRANTY

A. Manufacturer's Standard Warranty:
   1. Materials free of defects in material and workmanship for period of five years from date of substantial completion.
   2. Should part fail to function in normal use within this period, manufacturer agrees to furnish new part at no charge.

PART 2 PRODUCTS

2.01 GENERAL

A. Provide manufacturer's standard units, modified as necessary to comply with requirements.
   1. Shop fabricate each unit to greatest extent possible.

2.02 ROOF HATCHES

A. Provide metal roof hatch units of sizes shown, complete with curbs, anchorage system, gaskets, hardware, and accessories

B. Basis-of-Design:
   1. Design for roof hatch is based on Type NB Ship Stair Access.
      a. Model NB-50 as manufactured by The Bilco Company, New Haven, CT.
   2. Size 2 feet – ~~60~~ **6** inches by 4 feet – 6 inches.
   3. Subject to compliance with specified requirements, provide named product or comparable product by one of following manufacturers:
      a. Babcock-Davis Assoc. Inc.
      b. Lane-Aire Mfg. Corp.
      c. Nystrom Building Products

C. Wood Nailers:
   1. Softwood lumber, pressure treated with water-borne preservatives for above-ground use, complying with AWPB LP-2; not less than 1-1/2 inch thick.
   2. Comply with requirements of Section 06 1053.

D. Metal:
   1. Mill finish aluminum.
   2. Gages as specified.

E. Frame:
   1. Provide 11 gage aluminum frame with cap flashing.

F. Hatch Cover:
   1. Provide double-wall cover construction with insulation core:
      a. Cover: 11 gage aluminum
      b. Cover Liner: 18 gage aluminum
      c. Insulation Core: Minimum 1 inch thick fiberglass.

G. Curb Construction:
   1. Provide self-flashing units with integral, self-supporting metal double wall enclosing minimum 1 inch glass fiber board, or equivalent, insulation, with minimum 3 inch roof flanges; welded or sealed mechanical joints at corners.

H. Curb Heights:
   1. Fabricate units with curbs for mounting at heights indicated:-

I. Hardware:
   1. Equip units with complete hardware set including hinges, self-lifting devices, hold-open device, latch, interior padlock hasp, and interior and exterior operating handle.
   2. Provide gasketing.
   3. Provide lock mechanism to accept padlock furnished by Owner.

2.03 ROOF HATCH RAIL SYSTEM

A. Provide hatch rail at each roof hatch..
   1. Comply with requirements of OSHA 29 CFR 1910.23.
   2. Bil-Guard Model ~~RL-S~~ **RL2-NB** as manufactured by The Bilco Company, or approved equal.

B. Performance characteristics:
   1. Attach hatch rail system to cap flashing of roof hatch.
      a. Do penetrate roofing material.
   2. Meet OSHA strength requirements with factor of safety of two.
   3. UV and corrosion resistant construction with five year warranty.
   4. Provide with self-closing gate.

C. Posts and Rails:
   1. Round pultruded reinforced fire retardant fiberglass treated with UV inhibitor.
   2. Color: High visibility molded in safety yellow.

D. Hardware:
   1. Mounting Brackets:
      a. 1/4 inch thick, hot dip galvanized steel.
   2. Hinges and Post Guides:
      a. 6063-T5 aluminum.
   3. Fasteners:
      a. Type 316 stainless steel.

2.02 EXPOSED METAL FINISHES

A. Shop Primed Metal:
   1. Pre-treat and shop prime exposed metal surfaces of roof hatches with metal primer as specified for aluminum.

B. Finish Painting:
   1. Field paint primed metal surface as specified.

C. Shop and field paint complying with paint system specified for aluminum in Section 09 9100.

PART 3 EXECUTION

3.01 ROOF HATCH INSTALLATION

A. General: Comply with manufacturer's instructions and recommendations.
   1. Coordinate with substrates to receive roof hatch units as required to ensure That each element of Work performs properly.
   2. Anchor units securely to supporting structural substrates, adequate to withstand lateral and thermal stresses as well as inward and outward loading pressures.

B. Test operate units with operable components.
   1. Clean and lubricate joints and hardware.
   2. Adjust for proper operation.

3.02 ROOF HATCH RAIL SYSTEM INSTALLATION

A. Hatch rail system is designed to be field assembled.

B. Install in strict accordance with manufacturer’s instructions and approved submittals.
   1. Locate units level, plumb, and in proper alignment with adjacent work.
   2. Test units for proper function and adjust until proper operation is achieved.
   3. Repair or restore finishes damaged during installation so that no evidence remains of corrective work.

3.03 CLEANING AND PROTECTION

A. Clean exposed metal surfaces in accordance with manufacturer's instructions.
   1. Touch up damaged metal coatings.

END OF SECTION 07 7233

SECTION 08 7100

DOOR HARDWARE

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
1. Door hardware.
2. Exterior storefront entrance door hardware.
3. Interior storefront door hardware.
4. Gate hardware, as noted.
5. Electrified hardware.
6. Stand Alone Access Control Hardware (OMNILOCK).
7. Third-party inspection report for fire-rated door assemblies.
8. Cylinders for doors fabricated with locking hardware, where noted.
9. Key Cabinets

B. Related Sections:

1.	Section 06 4000:	Architectural Woodwork; cabinet hardware.
2.	Section 07 9200:	Joint Sealants; sealant for thresholds.
3.	Section 08 1113:	Hollow Metal Doors and Frames
4.	Section 08 4113:	Aluminum Entrances and Storefront; door seals
5.	Section 08 4314:	Interior Aluminum Storefront; stile and rail doors and door seals
6.	Section 10 1400:	Signage; including signage on doors.
7.	Section 32 3113:	Chain Link Fences and Gates; gate hardware.
8.	Section 32 3119:	Decorative Metal Fences and Gates; gate hardware.

C. Related Requirements:
1. Refer to Division 26, 27, and 28 Sections for electrical, intrusion alarm, and fire alarm requirements related to door hardware.

D. Specific Omissions:
1. Hardware for following is specified or indicated elsewhere:
    a. Door seals for exterior and interior storefront doors.
    b. Cabinets, including open wall shelving and cabinet hardware.
    c. Signage, including signage on doors.
    d. Toilet accessories, including grab bars.
    e. Rough hardware.
    f. Access doors and panels, except cylinders where specified and detailed.
    g. Chain link gate hardware, except panic devices or locksets where specified and detailed.
    h. Decorative metal gates, except panic devices or locksets where specified and detailed.
    i. Padlocks will be provided by Owner.

1.02 REFERENCES

A. California Code of Regulations (CCR), Title 24, Part 2, California Building Code (CBC), Volumes 1 and 2, 2016 edition.
   1. Chapter 11B – Accessibility to Public Buildings, Public Accommodations, Commercial Buildings, and Public Housing.

B. American National Standards Institute (ANSI):
   1. ANSI A156.4 – Door Controls – Closers.
   2. ANSI 156.18 – Materials and Finishes.

C. American National Standards Institute/Builders Hardware Manufacturers Association (ANSI/BHMA):
   1. ANSI/BHMA A156 Series Standards

D. Door and Hardware Institute (DHI):
   1. DHI Handbooks

E. National Fire Protection Association (NFPA):
   1. NFPA 80 – Standard for Fire Doors and Other Opening Protectives
   2. NFPA 105 – Standard for Smoke Door Assemblies and Other Opening Protectives
   3. NFPA 252 – Fire Tests of Door Assemblies

F. UL, LLC (UL):
   1. UL10C – Positive Pressure Fire Tests of Door Assemblies.
   2. UL 305 – Panic Hardware
   3. UL 1784 – Standard for Air Leakage Tests of Door Assemblies and Other Opening Protectives

G. Steel Door Institute (SDI):
   1. Technical Documents and Standards (Fact File).

H. Woodwork Institute (WI):
   1. North American Architectural Woodwork Standards (NAAWS), U.S. Version 3.1

I. National Association of Architectural Metal Manufacturers (NAAMM):
   1. Hollow Metal Manufacturers Association (HMMA):
      a. HMMA 830 – Hardware Selection for Hollow Metal Doors and Frames
      b. HMMA 831 – Recommended Hardware Locations for Hollow Metal Doors and Frames

1.03 QUALITY ASSURANCE

A. Qualifications:
   1. Hardware Supplier:
      a. Direct factory contract supplier who employs certified Architectural Hardware Consultant (AHC), available at reasonable times during course of Work for project hardware consultation to Owner, Architect, and Contractor.
      b. Responsible for detailing, scheduling and ordering of finish hardware.

1) Detailing implies that the submitted schedule of hardware is correct and complete for intended function and performance of openings.

B. Hardware – General:
1. Free of defects, blemishes and excessive play.
2. Obtain each kind of hardware (latch and locksets, exit/panic devices, hinges and closers) from one manufacturer.

C. Exit Door Hardware:
1. Operable from inside with single motion without use of key or special knowledge or effort.

D. Fire-Rated Openings:
1. Comply with NFPA 80 and following:
   a. Hardware UL10C (positive pressure) compliant for given type/size opening and degree of label.
   b. Provide proper latching hardware, non-flaming door closers, approved bearing hinges, and resilient seals.
   c. Furnish openings complete.

E. Furnish hardware items required to complete Work in accordance with specified performance level and design intent, complying with manufacturers' instructions and code requirements.

F. Pre-Installation Meeting:
1. Initiate and conduct with supplier, installer, and related trades
2. Coordinate materials and techniques, and sequence complex hardware items and systems installation.
3. Include manufacturers' representatives of locks, Exit/panic hardware, and door closers in meeting.
4. Convene meeting prior to commencement of related Work.

G. Coordination:
1. Coordinate door and hardware submittals for Project to include:
   a. Hardware for exterior and interior aluminum doors
      1) Except for door seals specified to be provided by door manufacturer.
   b. Exterior gate hardware not provided by gate manufacturers.
   c. Other door hardware not being provided by primary door and hardware supplier
2. Incorporate into one submittal for Architect and Owner review and acceptance..

1.04 SUBMITTALS

A. Door Schedule:
1. Copies of schedule complying with requirements of Division 01 Sections for submittals and as follows:
   a. Only submittals printed one sided will be accepted and reviewed.
   b. Organize vertically formatted schedule into "Hardware Sets" with index of doors and headings, indicating complete designations of every item required for each door or opening.
      1) Minimum 10 point font size.

2. Include following information:
    a. Type, style, function, size, quantity and finish of hardware items.
    b. Use BHMA Finish codes per ANSI A156.18.
    c. Name, part number and manufacturer of each item.
    d. Fastenings and other pertinent information.
    e. Location of hardware set coordinated with floor plans and door schedule.
    f. Explanation of abbreviations, symbols, and codes contained in schedule.
    g. Mounting locations for hardware.
    h. Door and frame sizes, materials and degrees of swing.
    i. List of manufacturers used and their nearest representative with address and phone number.
    j. Catalog cuts with submitted items specifically identified.
    k. Point-to-point wiring diagrams.
    l. Manufacturer's technical data and installation instructions for electronic hardware.
    m. Date of Project Site visit.

B. Bid and submit manufacturer's updated/improved item when scheduled item is discontinued.
    1. Identify substituted items in "Schedule of Door Hardware".
    2. Substituted items are subject to Architect's review and acceptance.

C. Deviations:
    1. Highlight, encircle or otherwise identify deviations from "Schedule of Door Hardware" on submittal with notations clearly designating those portions as deviating from this Section.

D. Where discrepancy exists between Drawings and specified material in this Section:
    1. Bid more expensive of two choices.
    2. Note discrepancy in submittal.
    3. Request direction from Architect for resolution.

E. Substitutions:
    1. Requests for substitutions in accordance with requirements of Division 01 Sections.
    2. Include product data and indicate benefit to Project.
    3. Furnish operating samples on request.

F. Items listed with no substitute manufacturers have been requested by Owner to meet existing District Standards

G. Furnish as-built/as-installed schedule with closeout documents, including keying schedule, riser and point-to-point wiring diagrams, manufacturer's installation, adjustment and maintenance information, and supplier's final inspection report.

1.05 ABBREVIATIONS

A. Manufacturers:
    1. Refer to table in Article 2.01

B. Finishes:
   1. Refer to Article 2.08

1.06 PROJECT CONDITIONS AND COORDINATION

A. Where exact types of hardware specified are not adaptable to finished shape or size of members requiring hardware, provide suitable types having as nearly as practical same operation and quality as type specified, subject to Architect's approval.

B. Coordination:
   1. Coordinate hardware with other Work.
   2. Furnish hardware items of proper design for use on doors and frames of thickness, profile, swing, security and similar requirements indicated, as necessary for proper installation and function, regardless of omissions or conflicts in information on Contract Documents.
   3. Furnish related trades with following information:
      a. Location of:
         1) Embedded and attached items to concrete.
         2) Wall-mounted hardware, including wall stops.
         3) Finish floor materials and floor-mounted hardware.
         4) Conduit and raceways as needed for electrical and electronic hardware items.
      b. Fire/life-safety system interfacing.
      c. Point-to-point wiring diagrams plus riser diagrams to related trades.
      d. Coordinate:
         1) Low-voltage power supply locations.
         2) Back-up power for doors with automatic operators.
         3) Flush top rails of outswinging exteriors doors, and throughout where adhesive-mounted seals occur.
      e. Manufacturers' templates to door and frame fabricators.

C. Review shop drawings for doors and entrances to confirm that adequate provisions will be made for proper hardware installation.
   1. Do not order hardware until submittal has been reviewed by frame and door suppliers for compatibility with their products.

D. Environmental Considerations:
   1. Dispose of unused recyclable paper and paper product packaging, uninstalled metals, and plastics, in accordance with requirements of Division 01 Sections.

E. Prior to submittal, carefully inspect existing conditions to verify finish hardware required to complete Work, including sizes, quantities, existing hardware scheduled for re-use, and sill condition material.
   1. When conflict may exist between specified/scheduled hardware and existing conditions, submit request for direction from Architect.
   2. Submittals prepared without thorough Project Site visit by qualified hardware expert will be rejected as non-compliant.

1.07 DELIVERY, STORAGE AND HANDLING

A. Delivery: Coordinate delivery to appropriate locations (shop or field).

1. Permanent Keys and Cores: Secured delivery direct to Owner's representative.

B. Acceptance at Site: Items individually packaged in manufacturer's original containers, complete with proper fasteners and related pieces.
   1. Clearly mark packages to indicate contents, locations in hardware schedule and door numbers.

C. Storage: Provide securely locked storage area for hardware.
   1. Protect from moisture, sunlight, paint, chemicals, dust, excessive heat and cold

1.08 REGULATORY REQUIREMENTS

A. Locate latching hardware between 34 inches to 44 inches above finished floor, per CBC Section 11B-404.2.7.
   1. Exit/Panic hardware:
      a. Locate between 36 inches to 44 inches above finished floor.

B. Handles, Pull, Latches, Locks, Other Operable Parts:
   1. Readily openable from egress side with one hand and without tight grasping, tight pinching, or twisting of wrist to operate, per CBC Section 11B-309.4.
   2. Force Required to Activate Operable Parts:
      a. 5.0 pounds maximum, per CBC Section 11B-309.4

C. Adjust doors to open with not more than 5.0-pounds pressure to open at exterior doors and 5.0-pounds at interior doors.
   1. As allowed per CBC Section 11B-404.2.9, local authority may increase allowable pressure for fire doors to achieve positive latching, not to exceed 15 pounds.

D. Adjust door closer sweep periods so that from open position of 90 degrees, door will take at least 5 seconds to move to point 12 degrees from latch, measured to landing side of door, per CBC Section 11B-404.2.7.

E. Smooth surfaces at bottom 10 inches of push sides of doors, facilitating push-open with wheelchair footrests, per CBC Section 11B-404.2.10.

F. Door opening clear width no less than 32 inches, measured from face of frame stop, or edge of inactive leaf of pair of doors, to door face with door opened to 90 degrees.
   1. Hardware projection not factor in clear width when located above 30 inches and below 80 inches, and hardware projects no more than 4 inches per CBC Section 11B-404.2.3.
   2. Exception:
      a. Doors not requiring full passage through opening, (i.e spaces less than 24 inches in depth), may have clear opening width reduced to 20 inches.

G. Door Closers and Overhead Stops: Not less than 78 inches above finished floor or ground, per CBC Section 11B-307.4.

H. Thresholds:
   1. Floor or landing no more than 0.50 inches below top of threshold of doorway, per CBC Section 11B-404.2.5.
   2. Vertical rise no more than 0.25 inches

a. Change in level between 0.25 inches and 0.50 inches**.**
b. Beveled to slope not greater than 1**:**2 (50 percent slope). per CBC Sections 11B-303.2 and 11B-303.3..

I. Floor Stops:
1. Do not locate in path of travel.
2. Locate no more than 4 inches from walls, per DSA Policy No. 98-08 (Access).

J. Pairs of Doors with Independently-Activated Hardware Both Leafs:
1. Limit swing of right-hand or right-hand-reverse leaf to 90 degrees to protect persons reading wall-mounted tactile signage, per CBC Section 11B-703.4.2.

K. Door and Door Hardware Encroachment:
1. When door is swung fully-open into means-of-egress path, door may not encroach/project more than 7 inches into required exit width, with exception of door release hardware such as lockset levers or Exit/panic hardware.
2. These hardware items must be located not less than 34 inches and not more than 44 inches above floor/ground, per CBC Section 11B-404.2.7.
3. Do not provide hardware (including exit/panic hardware) with "night latch" (NL) function for accessible doors

1.09 WARRANTY

A. Part of respective manufacturers' regular terms of sale.
1. Provide manufacturers' written warranties.

B. Include factory order numbers with close-out documents to validate warranty information, required for Owner in making future warranty claims:

C. Minimum Warranties:

1.	Locksets:	Three years
2.	Exit Devices:	Three years mechanical One year electrical
3.	Closers:	Thirty years mechanical
4.	Hinges:	One year
5.	Other Hardware:	Two years

1.10 COMMISSIONING

A. Conduct these tests with installer present prior to request for certificate of substantial completion:
1. Test door hardware operation with climate control system both at rest and while in full operation.
2. With access control contractor and electrical contractor present, test electrical and electronic hardware systems for satisfactory operation.
3. With electrical contractor present, test hardware interfaced with fire/life-safety system for proper operation and release.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Listed Acceptable Alternate Manufacturers:
   1. Alternate manufacturers may be considered, subject to review of products with equivalent function and features of scheduled products.

Item:	Basis-of-Design Manufacturer:	Acceptable Alternate:
Hinges	Ives (IVE)	Stanley
Continuous Hinges	Ives (IVE)	Pemko (PEM)
Key System	Medeco (MED) (M3 Conventional)	District Standard
Mechanical Locks	Schlage (SCH) (L9000 Series Mortise)	District Standard
Exit Devices	Von Duprin (VON)	District Standard
Stand Alone Access Control	OMNILOCK (BEST)	District Standard
Surface Closers	LCN (LCN)	District Standard
Manual Flush Bolts	Ives (IVE)	DCI
Constant Latching Flush Bolts	Ives (IVE)	DCI
Coordinators	Ives (IVE)	DCI
Silencers	Ives (IVE)	Pemko (PEM)
Push and Pull Plates	Trimco (TRI)	Ives (IVE)
Kickplates	Trimco (TRI)	Ives (IVE)
Stops and Holders	Trimco (TRI)	Ives (IVE)
Overhead Stops	Glynn-Johnson (GLY)	
Thresholds	Pemko (PEM)	NGP
Cast Abrasive Thresholds	Wooster Products (WP)	
Seals and Door Bottoms	Pemko (PEM)	NGP
Key Cabinets	Lund (LUN)	Telkee
Cylinder Guard Rings	Keedex (KEE)	
Mullion Seal	Williams Products, Inc. (WPI)	None
Key Switch	Security Door Controls (SDC)	
Power Supply (Panic Device)	Von Duprin (VON)	None
Power Supply (OMNILOCK)	Securitron (SEC)	
Armored Door Loop	Alarm Controls/Assa Abloy	AC

2.02 HINGING METHODS

A. Drawings typically depict doors at 90 degrees, doors will actually swing to maximum allowable.
   1. Use wide-throw conventional or continuous hinges as needed up to 8 inches in width to allow door to stand parallel to wall for true 180-degree opening.
      a. Advise Architect where 8 inch width is insufficient.

B. Conform to manufacturer's published hinge selection standard for door dimensions, weight and frequency, and to hinge selection as scheduled.
   1. Where manufacturer's standard exceeds the scheduled product, furnish the heavier of the two choices.

2. Notify Architect of deviation from scheduled hardware.

C. Conventional Hinges:
   1. Steel or stainless steel pins and approved bearings.
   2. Hinge Open Widths:
      a. Minimum, but of sufficient throw to permit maximum door swing.
   3. Outswinging Exterior Doors:
      a. Non-ferrous with non-removable (NRP) pins and security studs.
   4. Non-ferrous material exteriors and at doors subject to corrosive atmospheric conditions.

D. Continuous Hinges:
   1. Geared-Type Aluminum:
      a. Use wide-throw units where needed for maximum degree of swing.
      b. Advise Architect where commonly available hinges are insufficient.
   2. Pinned Steel/Stainless Steel Type:
      a. Continuous stainless steel with 0.25 inch diameter stainless-steel hinge pin.
      b. Use engineered application-specific wide-throw units as needed to provide maximum swing degree of swing.
      c. Advise Architect when required width exceeds 8 inches.

2.03 LOCKSETS, LATCHSETS, AND DEADBOLTS

A. Accessibility Requirement:
   1. Require not more than 5 lb to retract latchbolt or deadbolt, or both, per CBC Sections 11B-309.4 and 11B-404.2.7.

B. Mortise Locksets and Latchsets – General:
   1. Chassis:
      a. Cold-rolled steel, handing field-changeable without disassembly.
   2. Universal Lock Case:
      a. 10 functions in one case.
      b. Floating mounting tabs automatically adjusts to fit beveled door edge.
   3. Latchbolts: 0.75 inch throw stainless steel anti-friction type.
   4. Lever Trim:
      a. Through-bolted, accessible design
      b. Cast lever or solid extruded bar type levers as scheduled.
      c. Filled hollow tube design unacceptable.
      d. Spindles:
         1) Security design independent breakaway.
         2) Breakage of outside lever does not allow access to inside lever's hubworks to gain wrongful entry.
      e. Inside lever applied by screwless shank mounting – no exposed trim mount screws.
      f. Levers rotate up or down for ease of use
      g. Vandalgard Locks:
         1) Locked lever freely rotates down while remaining securely locked, preventing damage to internal lock components when subjected to excessive force.
   5. Furnish solid cylinder collars with wave springs.

a. Wall of collar to cover rim of mortise cylinder.
6. Field reversible handing without opening lock case.
7. Turnpieces:
   a. Accessible offset turn-lever design not requiring pinching or twisting motions to operate.
8. Deadbolts:
   a. Stainless steel 1 inch throw.
9. Strikes:
   a. 16 gage curved steel, bronze or brass with 1 inch deep box construction, with lips of sufficient length to clear trim and protect clothing.
10. Scheduled Lock Series and Design:
    a. Schlage L Series, 06L Design.
11. Certifications:
    a. ANSI A156.13, 1984, Grade 1 Operational, ANSI/ASTM F476-84 Grade 31 UL Listed.

2.04 EXIT DEVICES / PANIC HARDWARE

A. General Features**:**
   1. Push-through push-pad design.
      a. No exposed push-pad fasteners
      b. No exposed cavities when operated.
      c. Return stroke fluid dampeners and rubber bottoming dampeners, plus anti-rattle devices..
   2. Deadlocking Latchbolts: 0.75 inch projection.
   3. End Caps:
      a. Impact-resistant, flush-mounted.
      b. No raised edges or lips to catch carts or other equipment.
   4. No exposed screws to show through glass doors.
   5. Non-handed basic device design with center case interchangeable with every functions.
      a. No extra parts required to effect change of function.
   6. Exterior Doors Scheduled With XP Series Devices:
      a. Static load force resistance of at least 2000 pounds.
   7. Accessibility:
      a. Require not more than 5 lb to retract latchbolt, per CBC Sections 11B-309.4 and 11B-404.2.7.
      b. Mechanical Method:
         1) Von Duprin “AX“ feature, where touchpad directly retracts latchbolt with 5 lb or less of force.
      c. Provide testing lab certification confirming that mechanical device is independent third-party tested to meet 5 lb requirement.

B. Specific Features:
   1. Cylinder Dogging:
      a. Non-fire rated devices only
   2. Lever Trim:
      a. Breakaway type, forged brass or bronze escutcheon.
      b. Minimum 0.130 inch thickness.
      c. Compression spring drive.
      d. Match lockset lever design.

3. Fire-Labeled Devices:
    a. UL label indicating “Fire Exit Hardware”.
4. Sloped metal end caps to deflect carts.
5. No pinch points to catch skin between touchbar and door.
6. Removable Mullions:
    a. Removable with single turn of building key.
    b. Securely reinstalled without need for key.
    c. Furnish storage brackets for securely stowing mullion away from door when removed.

2.05 STAND ALONE ACCESS CONTROL

A. Wireless Access Control System (WAMS):
    1. OMNILOCK by Stanley Security Solutions, Inc.

B. OMNILOCK System Components:
    1. Pair of doors with automatic door operator and rim type exit devices with electric latch retraction.
        a. Provide OMNI Wireless Controller with keypad and proximity reader.

C. OMNILOCK trim to always be in secure mode.
    1. Provide mortise locks with security indicator feature.
    2. Provide exit devices as follows:
        a. Non-fire rated doors with exit hardware with cylinder dogging:
            1) CDSI dogging indicator.
        b. Fire rated doors with exit hardware:
            1) 2SI security indicator with double cylinder.

2.06 CLOSERS

A. Provide Door Closers Conforming to Following Requirements:
    1. Conform to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory.
        a. ISO 9000 certified closers.
        b. Stamp units with date of manufacture code.
        c. Exterior door closers: tested to 100 hours of ASTM B 117 salt spray test,
            1) Furnish data on request.
    2. Cylinder:
        a. Consisting of 1-1/2 inch diameter with 3/4 inch diameter double heat-treated pinion shaft, single piece forged piston, and chrome-silicon steel spring.
        b. Full rack-and-pinion type cylinder with removable non-ferrous cover and cast iron body.
        c. Non-sized, non-handed, and adjustable with spring power continuously adjustable over full range of closer sizes, providing reduced opening force as required by accessibility codes and standards.
    3. Hydraulic Fluid:
        a. Fireproof, passing requirements of UL10C.
        b. Non-flaming fluid, will not fuel door or floor covering fires.
        c. Exterior Doors:
            1) Seasonal closer adjustment not required for temperatures ranging from 120 degrees F to minus 30 degrees F.

4. Hydraulic Regulation:
    a. By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.
    b. Separate adjusting valves for closing speed, latching speed and backcheck.
        1) Fourth valve for delayed action where scheduled.
    c. Adjust doors to open with not more than 5.0 pounds pressure to open at exterior doors and 5.0 pounds at interior doors.
        1) As allowed per CBC Section 11B-404.2.9, local authority may increase allowable pressure for fire doors to achieve positive latching, not to exceed 15 pounds.
    d. Pressure Relief Valve (PRV) Technology: Not permitted.
5. Closer Arms:
    a. Solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
    b. Provide Extra-Duty Arms (EDA) at exterior doors scheduled with parallel arm units.
6. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.
7. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers:
    a. Powder coated finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B 117, or has special rust inhibitors

2.07 OTHER HARDWARE

A. Automatic Flush Bolts:
    1. Low operating force design.

B. Overhead Stops:
    1. Non-plastic mechanisms and finished metal end caps.
    2. Field-changeable hold-open, friction and stop-only functions

C. Door Stops:
    1. Provide stops to protect walls, casework or other hardware.
    2. Unless otherwise noted in Hardware Sets, provide floor type with appropriate fasteners.
        a. Where floor type cannot be used, provide wall type.
        b. When neither can be used, provide overhead type.
    3. Locate overhead stops for maximum possible opening.
        a. Consult with Owner for furniture locations.
        b. Minimum: 90 degree stop / 95 degree deadstop.
        c. Note degree of opening in submittal.

D. Smoke Seals:
    1. Tested in accordance with UL1784.
    2. Provide where scheduled.

E. Automatic Door Bottoms:
    1. Low operating force units.

2. Doors with automatic door bottoms plus head and jamb seals cannot require more than two pounds operating force to open when closer is disconnected.

F. Thresholds
   1. General:
      a. As scheduled and per details.
      b. Comply with CBC Section11B-404.2.5.
   2. Substitute Products:
      a. Certify that products equal or exceed specified material's thickness.
      b. Submit proposed substitutions for Architect's review and acceptance.
   3. Saddle Thresholds:
      a. Minimum Thickness: 0.125 inch.
   4. Thresholds for Exterior and Acoustic Openings:
      a. Seal perimeter to exclude water and vermin.
      b. Set thresholds in full bed of silicone sealant complying with requirements in Section 07 9200
         1) Leave no air space between threshold and substrate..
   5. Fire-Rated Openings:
      a. Openings of 90-Minutes or Less Duration:
         1) Use thresholds to interrupt floor covering material under door where material has critical radiant flux value less than 0.22 watts per square centimeter, per NFPA 253.
         2) Use threshold unit as scheduled.
         3) Where none scheduled, include 0.25 inch high saddle of width equal to or less than depth of door frame rabbet in bid.
            a) Request direction from Architect.
   6. Threshold Fasteners:
      a. Flat Head Sleeve Anchors:
         1) Minimum 1/4-20 stainless steel sleeve anchors:
            a) Pemko Manufacturing "FHSL".(Basis-of-Design)
         2) Optional Products:
            a) National Guard Products' "COMBO"
            b) Zero No. 226
            c) Red-Head No. SFS-1420
      b. Exposed Screw Heads:
         1) Phillips or Robertson drive.
         2) Pinned TORX drive at high security areas.
      c. 10-24 machine screws with lead anchors are not acceptable.

G. Hardware Fasteners:
   1. Manufacturers' fasteners furnished with hardware items, unless indicated otherwise.
      a. Where manufacturer-furnished fasteners are not adequate, submit Request for Substitution to Architect.
   2. Sleeve Nuts:
      a. Full length, equal to door thickness, to prevent door compression.
   3. Sheet Metal and Wood Screws:
      a. Where acceptable for use.
      b. Furnish full-threaded
   4. Provide expansion shields where wall stops occur at concrete or concrete masonry walls.

a. Plastic plugs for use with wood or sheet metal screws are not acceptable substitute for specified fastening methods.

5. Through-bolts:
   a. Use of through-bolts is not permitted.
   b. Coordinate with metal doors and frames to ensure provision of proper reinforcement to support machine screws for mounting exit/panic hardware and door closers.
   c. Coordinate with wood doors to ensure provision of proper blocking to support wood screws for mounting panic hardware and door closers.

H. Silencers:
1. Interior Hollow Metal Frames:
   a. Provide 3 for single doors.
   b. Provide 4, in head frame, for pairs of doors.
   c. Do not leave pre-punched silencer holes unfilled or uncovered.
2. Provide silencers by one of following, or approved equal:
   a. Ives No. SR64 by Ives Architectural Hardware, division of Allegion
   b. Rockwood No. 608 by Rockwood Manufacturing Company, divsion of Assa Abloy
   c. Trimco No. 1229A
2. Color: Gray

I. Key Cabinet:
1. Basis-of-Design:
   a. Key Cabinet and Key ID System as manufactured by LUND Equipment Co. Inc., Bath, OH, or approved equal.
      1) Model number and size as selected by Owner
      2) Furnish with locking system as selected by Owner.
2. Accessories:
   a. Provide pockets on door for index binder and key collection envelopes
   b. Furnish cross reference index binder, key and file tags, key collection envelopes, receipt cards and holders, required for complete key control system.
3. Locate as directed by Architect.
4. Finish: As selected by Architect.

2.08 FINISH

A. BHMA 626 – Satin Chromium, except where indicated otherwise.
1. Areas Using BHMA 626:
   a. Furnish push-plates, pulls and protection plates of BHMA 630 – Satin Stainless Steel, unless otherwise scheduled.

B. Door Closers:
1. Factory powder coated to match other hardware, unless noted otherwise..

2.09 KEYING REQUIREMENTS

A. Key System:
1. Conform to existing Medeco system for Liberal Arts Campus.
2. Key blanks available only from factory-direct sources.
   a. Not available from after-market key blank manufacturers.

b. For estimate use factory GMK charge.

3. Initiate and conduct meetings with Owner and hardware supplier representative to determine system keyways, structure, and degree of geographic exclusivity.
   a. Furnish Owner's written approval of system
4. Do not order keys or cylinders without written confirmation of actual requirements from Owner.
   a. Owner will receive permanent cores.
   b. Owner/Contractor will install permanent cores.

B. Construction Keying:
1. Furnish temporary keyed-alike cores.
   a. Furnish 10 construction keys.
   b. Furnish 2 construction control keys
2. Remove temporary cores at time of Substantial Completion,.
   a. Demonstrate that construction key no longer operates.

C. Permanent Keying:
1. Key Cylinders:
   a. Furnish Medeco cylinders conforming to Campus Standard.
2. Cylinders/Cylinder Cores:
   a. Furnish keyed at factory of lock manufacturer where permanent records are maintained.
   b. Locks and cylinders by same manufacturer, unless indicated otherwise.
3. Permanent Keys:
   a. Use secured shipment direct from point of origination to Owner's designated representative.
      1) For Estimating Purposes:
         a) 3 keys per change combination.
         b) 5 master keys per group.
         c) 5 grand-master keys.
         d) 3 control keys.
         e) VKC stamping, plus "**DO NOT DUPLICATE**".
4. Bitting List:
   a. Use secured shipment direct from point of origination to Owner's designated representative upon completion.
5. Installation of Permanent Cylinders/Cores:
   a. One of following as directed by Owner:
      1) By Contractor in Owner's presence.
      2) By Owner's designated representative.

PART 3 EXECUTION

3.01 ACCEPTABLE INSTALLERS

A. Experienced craftsperson with resume of successful projects similar in scope to this Project.
1. Capable of performing following:
   a. Read and understand manufacturers' templates, supplier's hardware schedule, and printed installation instructions.

b. Readily differentiate between manufacturer's furnished fasteners, number 10-24 machine screws and drywall screws and explain their correct usage.
c. Readily differentiate between number 2 and number 3 Phillips-drive screws and screwdrivers.
d. Available to meet with manufacturer's representatives and related trades to discuss installation of hardware.

3.02 PREPARATION

A. Ensure that walls and frames are square and plumb before hardware installation.
1. Make corrections before commencing hardware installation.
2. Installation denotes acceptance of wall/frame condition.

B. Locate hardware per SDI-100 and applicable building, fire, life-safety, accessibility, and security codes.
1. Notify Architect of code conflicts before ordering material.
2. Locate latching hardware between 34 inches to 44 inches above finished floor, per CBC Section 11B.404.2.7.
3. Locate panic hardware between 36 inches to 44 inches above finished floor.

C. Overhead Stops:
1. When possible, determine proposed locations of furniture items, fixtures, and other items to be protected by overhead stops prior to installation.

3.03 INSTALLATION

A. Install hardware per manufacturer's instructions and recommendations.
1. Use manufacturers' fasteners furnished with hardware items as specified in Article 2.06 F 3.
a. Submit Request for Substitution with Architect for alternate fasteners..
2. Do not install surface-mounted items until finishes have been completed on substrate.
3. Set units level, plumb and true to line and location.
4. Adjust and reinforce attachment substrate for proper installation and operation.
5. Remove and reinstall or replace work deemed defective by Architect.
6. Door Seals and Gaskets:
a. Install jamb-applied doors seals and gaskets before closers, overhead stops, rim strikes, and like items.
b. Fasten hardware over and through these seals.
c. Install sweeps across bottoms of doors before astragals.
1) Cope sweeps around bottom pivots, trim astragals to tops of sweeps.
7. When hardware is to be attached to existing metal surface where insufficient reinforcement exists:
a. Use RivNuts, NutSerts or similar anchoring device for screws.
8. Do not use power-driven tools to install fasteners.

B. Locate floor stops not more that 4 inches from walls and not within paths of travel.
1. Refer to Article 2.02 regarding hinge widths.
a. Door should be well clear of point of wall reveal.
b. Point of door contact no closer to the hinge edge than half door width.

c. Where situation is questionable or difficult, contact Architect for direction

C. Locate overhead stops for minimum 90 degrees at rest and for maximum allowable degree of swing.

3.04 STAND ALONE ACCESS CONTROL

A. General:
1. Provide most up to date OMNILOCK components that are compatible with OMNILOCK system version that is currently adopted by District.

B. OMNILOCK System Components:
1. Doors with Automatic Door Operators:
a. OMNI Wireless Controller with keypad and proximity reader.
1) Wall mount with hardwired power supply with battery backup.
2) Key wall mount applications to District override key.
3) Refer to hardware sets for specific OMNILOCK model number.
4) Install specified SDC switch on door frame, keyed on District's Medeco keyway.
2. Doors with Mechanical Exit Devices:
a. OMNI Wireless Door Mount Controller with keypad and proximity reader.
1) Omni battery operated Von Duprin trim compatible with specified Von Duprin mechanical exit device with cylinder dogging.
2) Refer to hardware sets for specific OMNILOCK model number.
3. OMNI Portal Gateway:
a. Wireless device, similar to wireless router.
1) For each OMNILOCK.
b. Locate in ceiling near door
1) Provide 1-data connection, which will connect Porta! Gateway to nearest IDF/BDF and provide for power over Ethernet.
c. Model: OMX-12811, PK-K-64
4. Software and programming:
a. It is responsibility of supplier and installer of upgrades or updates to District system that may be needed for it to be active.
b. Direct correspondence through Bond Management Team (BMT) and District.

3.05 ADJUSTING

A. Adjust and check for proper operation and function.
1. Replace units, which cannot be adjusted to operate freely and smoothly.
2. Repair or replace hardware damaged by improper installation or adjustment methods: to Owner’s satisfaction.
3. Adjust doors to fully latch with no more than 1 pound of pressure.
a. Door closer valves: turn valves clockwise until at bottom – Do Not Force.
b. Turn valves back out one and one-half turns and begin adjustment process from that point.
c. Do not force valves beyond three full turns counterclockwise.
4. Adjust door closers per Article 1.08.

3.06 THIRD PARTY INSPECTION

A. Inspection of Fire Door Assemblies and Means of Egress Doors with Exit/Panic Hardware:
   1. Comply with current edition of NFPA 80. Article 5.2.1:
      a. Doors, hardware, and installation will be inspected by independent third party inspection service selected by Architect/Owner, paid for by Owner, to prepare report listing these doors.
      b. Include statement that there are zero deficiencies with fire-rated assemblies and openings with exit/panic hardware.
   2. Use third party inspector not associated with construction, supply, or installation of materials for Project to develop field survey of doors and hardware.
      a. Survey is to be performed by member certified as FDAI (Fire Door Assembly Inspector), Certified AHC (Architectural Hardware Consultant), or certified testing laboratory, such as UL, LLC (UL), or Intertek Group, plc.
      b. Certified Inspectors may be found at DHI.org, Intertek.com, or CAFDI.org.

B. Fire-Rated Doors:
   1. Adjust wood and steel doors to 0.125 inches clearance at heads, jambs, and meeting stiles.
   2. Adjust wood and steel doors to 0.75 inches maximum clearance (undercut) from concrete slab to underside of door.

C. Final inspection:
   1. Installer to provide letter to Owner that upon completion that installer has visited Project and has accomplished following:
      a. Re-adjusted hardware.
      b. Evaluated maintenance procedures and recommend changes or additions, and instructed Owner's designated personnel.
      c. Identified items that have deteriorated or failed.
      d. Submitted written report identifying problems.

3.07 DEMONSTRATION

A. Demonstrate mechanical hardware and electrical and electronic hardware systems, including adjustment and maintenance procedures

3.08 PROTECTION / CLEANING

A. Cover installed hardware, protect from paint, cleaning agents, weathering, carts/barrows, and like items.
   1. Remove covering materials and clean hardware just prior to substantial completion

B. Clean adjacent wall, frame and door surfaces soiled from installation / reinstallation process.

3.09 MAINTENANCE

A. Maintenance Materials:
   1. Furnish following to Owner at Substantial Completion:
      a. As-built hardware schedule.
      b. Copies of warranty information for each hardware type.
         1) Include requirement for factory order numbers, needed by Owner, should claim need to be made.
      c. Binder of catalog cuts or complete catalog sections, when necessary, of items used/installed.
         1) Include installation and maintenance/adjustment information.

3.10 SCHEDULE OF FINISH HARDWARE

A. Refer to Door Schedule in Drawings for hardware set assignments.

B. Do not order material until submittal has been reviewed, stamped, and signed by Architect's door hardware consultant.

HW SET 01

Qty		Description	Catalog Number	Finish	Mfr
2	EA	CONT. HINGE	112XY	628	IVE
1	SET	MANUAL FLUSH BOLT	FB457	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	LV9080L 06A L283-150	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
2	EA	OVHD STOP	90S SERIES	626	GLY
1	EA	CYL. GUARD RING	K-24	626	KEE
1	EA	BENT ALUM PLATE	AS DETAILED AND PER SECTION 05 5000	---	---

HW SET 02

Qty		Description	Catalog Number	Finish	Mfr
2	EA	CONT. HINGE	112XY	628	IVE
1	SET	MANUAL FLUSH BOLT	FB457	626	IVE
1	EA	DUST PROOF STRIKE	DP1	626	IVE
1	EA	STOREROOM LOCK	LV9080L LLL 06A L283-150	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	DOOR PULL	VR900 LLP	630	IVE
2	EA	OVHD STOP	90S SERIES x 105 DEGREE	626	GLY
1	EA	RAIN DRIP	346C	CLR ANO	PEM
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
2	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	ASTRAGAL	319CN EACH LEAF	CLR ANO	PEM
1	EA	THRESHOLD	272A FHSL **(Door W136B Only)**	A	PEM
1	**EA**	**THRESHOLD**	**2727A FHSL**	**A**	**PEM**
1	EA	CYL. GUARD RING	K-24	626	KEE

HW SET 03

Qty		Description	Catalog Number	Finish	Mfr
2	EA	CONT. HINGE	112XY	628	IVE
1	SET	MANUAL FLUSH BOLT	FB457	626	IVE
1	EA	DUST PROOF STRIKE	DP1	626	IVE
1	EA	STOREROOM LOCK	LV9080L LLL 06A L283-150	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	DOOR PULL	VR900 LLP	630	IVE
1	EA	OVHD STOP	90S SERIES	626	GLY
1	EA	RAIN DRIP	346C	CLR ANO	PEM
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
2	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	ASTRAGAL	319CN EACH LEAF	CLR ANO	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24	626	KEE

HW SET 03A

Qty		Description	Catalog Number	Finish	Mfr
2	EA	CONT. HINGE	700	630	IVE
1	SET	CONSTANT LATCHING FLUSH BOLT	FB51P	630	IVE
1	EA	DUST PROOF STRIKE	DP1	626	IVE
1	EA	STOREROOM LOCK	LV9080L LLL 06A L283-150	630	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	630	MED
1	EA	DOOR PULL	VR900 LLP	630	IVE
2	EA	OVHD STOP	90S SERIES	630	GLY
1	EA	RAIN DRIP	346C	CLR ANO	PEM
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
2	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	ASTRAGAL	357SP INACTIVE LEAF	PTD	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24	626	KEE

HW SET 04

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	CLASSROOM SECURITY	LV9071L 06A	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	THUMBTURN	09-509 x L583-363	626	SCH`
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM

HW SET 05

Qty		Description	Catalog Number	Finish	Mfr
2	EA	CONT. HINGE	112XY EPT	628	IVE
2	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	REMOVABLE MULLION	KR4954 STAB	689	VON
1	EA	ELEC PANIC HARDWARE	RX-EL-PA-AX-99-EO-CON	626	VON
1	EA	ELEC PANIC HARDWARE	RX-EL-PA-AX-99-NL-OP-110MD-CON	626	VON
1	EA	OMNILOCK (Wall Mount)	OMWMS-BE-PDVW-B-W		BEST
1	EA	KEY SWITCH	701NUL2	630	SDC
1	EA	MULLION STORAGE KIT	MT54	689	VON
2	EA	RIM CYLINDER (Panic Devices)	10T0400H	626	MED
1	EA	MORTISE CYLINDER (Mullion)	10T0500 114 CAM REQUIRED (MUL)	626	MED
1	EA	MORTISE CYLINDER (Key Switch)	10T0500 114 CAM REQUIRED	626	MED
2	EA	DOOR PULL	8103EZHD-0 (10”) TYPE O MOUNTING	630	IVE
1	EA	OVHD STOP	90S SERIES	630	GLY
1	EA	RAIN DRIP	346C	CLR ANO	PEM
1	EA	MULLION SEAL	1040 NN-1 PSA	GRAY	WPI
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24	626	KEE
2	EA	WIRE HARNESS	CON-(LENGTH AS REQUIRED		SCH
1	EA	POWER SUPPLY (Panic Devices)	PS914 900-2RS 900-BBK		VON
1	EA	POWER SUPPLY (Omnilock)	BPS 12/24-1		SEC

HEAD AND JAMB SEALS PROVIDED BY ALUMINUM STOREFRONT MANUFACTURER REFER TO SECTION 08 7113 FOR AUTOMATIC. DOOR OPERATOR, OPERATION, AND ACCESSORIES
OMNILOCK TO BE KEYED TO DISTRICT OVERRIDE KEY

HW SET 09

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	CLASSROOM DEAD LOCK	L463L XB11-720	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	PUSH PLATE	8200 6" X 16" CFC	626	IVE
1	EA	PULL PLATE	8300 10" X 6" X 16" CFT	630	IVE
1	EA	SURFACE CLOSER	4040XP	689	LCN
1	EA	WALL STOP	WS407CVX	630	IVE
1	EA	RAIN DRIP	346C	CLR ANO	PEM
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24	626	KEE

HW SET 09A

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	EXIT DEVICE	CDSI-PA-AX-99-NL-OP-110MD	626	VON
1	EA	MORTISE CYLINDER (Cylinder Dogging)	10T0500 114 SCH "L" CAM	626	MED
1	EA	RIM CYLINDER (Exit Device)	10T0400H	626	MED
1	EA	SURFACE CLOSER	4040XP PARALLEL ARM	689	LCN
1	EA	OVHD STOP	90S SERIES	630	GLY
1	EA	RAIN DRIP	346C	CLR ANO	PEM
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	272A FHSL **(Door W148A Only)**	A	PEM
1	**EA**	**THRESHOLD**	**2727A FHSL**	**A**	**PEM**
1	EA	CYL. GUARD RING	K-24	626	KEE

HW SET 10

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	STOREROOM LOCK	LV9080L LLL 06A L283-150	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	DOOR PULL	VR900	630	IVE
1	EA	OVHD STOP	90S SERIES	630	GLY
1	EA	RAIN DRIP	346C	CLR ANO	PEM
1	EA	SET SEAL	319CN {AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24	626	KEE

HW SET 10A

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	STOREROOM LOCK	LV9080L LLL 06A L283-150	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	DOOR PULL	VR900	630	IVE
1	EA	OVHD STOP	90S SERIES	630	GLY
1	EA	RAIN DRIP	346C	CLR ANO	PEM
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24	626	KEE

MOUNT HEAD SEAL BEFORE STOP ARM.

HW SET 11

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	STOREROOM LOCK	LV9080L LLL 06A L283-150	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	DOOR PULL	VR900	630	IVE
1	EA	OVHD STOP	90S SERIES	630	GLY
1	EA	RAIN DRIP	346C	CLR ANO	PEM
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24	626	KEE

MOUNT HEAD SEAL BEFORE STOP ARM

HW SET 12

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	CLASSROOM SECURITY	LV9071L 06A L283-711	630	SCH
2	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	630	MED
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24A	626	KEE

HEAD AND JAMB SEALS PROVIDED BY ALUMINUM STOREFRONT MANUFACTURER

HW SET 13A

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	CORRIDOR LOCK W/DEADBOLT	LV9456L 06A L583-363 L283-722	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	WALL STOP	WS407CVX	630	IVE
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24	626	KEE
1	EA	SURFACE CLOSER	4040XP	689	LCN

HW SET 13B

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	CORRIDOR LOCK W/DEADBOLT	LV9456L 06A L583-363 L283-722	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	WALL STOP	WS407CVX	630	IVE
1	EA	RAIN DRIP	346C	CLR ANO	PEM
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24	626	KEE
1	EA	SURFACE CLOSER	4040XP PARALLEL ARM	689	LCN
1	EA	OVHD STOP	90S SERIES	630	GLY

HW SET 14

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	STOREROOM LOCK	LV9080L 06A	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	SURFACE CLOSER	4040XP	689	LCN
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24	626	KEE
1	EA	WALL STOP	WS407CVX	630	IVE

HW SET 14A

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	STOREROOM LOCK	LV9080L 06A	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	SURFACE CLOSER	4040XP	689	LCN
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP WITH RAIN DRIP	345APK	MILL FIN.	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24	626	KEE
1	EA	WALL STOP	WS407CVX	630	IVE

HW SET 15

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	OFFICE/ENTRY LOCK	LV9050L 06A L583-363 L283-711	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	FLOOR STOP	FS18S	BLK	IVE
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	RAIN DRIP	346C	CLR ANO	PEM

HW SET 16

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	CLASSROOM SECURITY	LV9071L 06A L283-711	626	SCH
2	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	SURFACE CLOSER	4040XP	689	LCN
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24A	626	KEE
1	EA	OVHD STOP	90S SERIES	630	GLY

HW SET 17

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	STOREROOM LOCK	LV9080L LLL 06A L283-150	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	DOOR PULL	VR900	630	IVE
1	EA	RAIN DRIP	346C	CLR ANO	PEM
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24	626	KEE
1	EA	OVHD STOP	90S SERIES	630	GLY

HW SET 17A

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	STOREROOM LOCK	LV9080L LLL 06A L283-150	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	DOOR PULL	VR900	630	IVE
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24	626	KEE

HW SET 18

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	PANIC HARDWARE	LD-PA-AX-99-NL-OP-110MD	626	VON
1	EA	RIM CYLINDER	10T0400H	626	MED
1	EA	MORTISE CYLINDER	10T0500 114 CAM REQUIRED (DOG)	626	MED
1	EA	DOOR PULL	VR910 NL	630	IVE
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	CYL. GUARD RING	K-24	626	KEE

HW SET 19

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY EPT	628	IVE
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	DELAYED PANIC HARDWARE	CXPA-99-NL-OP-110MD (1)	626	VON
1	EA	RIM CYLINDER	10T0400H	626	MED
1	EA	MORTISE CYLINDER	10T0500 114 CAM REQUIRED (CX)	626	MED
1	EA	DOOR PULL	VR910 NL	630	IVE
1	EA	SURFACE CLOSER	4040XP	689	LCN
1	EA	FLOOR STOP	FS18L	BLK	IVE
1	EA	CYL. GUARD RING	K-24	626	KEE
1	EA	WIRE HARNESS	CON-(LENGTH AS REQUIRED)		SCH
1	EA	POWER SUPPLY	PS914 900-2RS-FA 900-BBK		VON

(1) Maximum 30 second delay or as directed by Owner

HW SET 20

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	CLASSROOM LOCK	LV9070L 06A	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	THRESHOLD	TYPE 114 MODIFIED PER DETAIL	CAST ABR AL	WP
3	EA	SILENCER	SR64	GRY	IVE
1	EA	OVHD STOP	90S SERIES	630	GLY
2	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE

HW SET 21

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	CLASSROOM SECURITY	LV9071L 06A L283-711	626	SCH
2	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	RAIN DRIP	346C	CLR ANO	PEM
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24A	626	KEE

MOUNT HEAD SEAL BEFORE CLOSER ARM.

HW SET 22

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	CORRIDOR LOCK W/DEADBOLT	LV9456L 06A L583-363 L283-722	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24	626	KEE

HW SET 23

Qty		Description	Catalog Number	Finish	Mfr
2	EA	CONT. HINGE	112XY EPT	628	IVE
2	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	REMOVABLE MULLION	KR4954 STAB	689	VON
1	EA	ELEC PANIC HARDWARE	RX-EL-PA-AX-99-EO-CON	626	VON
1	EA	ELEC PANIC HARDWARE	RX-EL-PA-AX-99-NL-OP-CON-110MD	626	VON
1	EA	OMNILOCK (Wall Mount)	OMWMS-BE-PDVW-B-W		BEST
1	EA	KEY SWITCH	701NUL2	630	SDC
1	EA	MULLION STORAGE KIT	MT54	689	VON
1	EA	RIM CYLINDER (Panic Devices)	10T0400H	626	MED
1	EA	MORTISE CYLINDER (Mullion)	10T0500 114 CAM REQUIRED (MUL)	626	MED
1	EA	MORTISE CYLINDER (Key Switch)	10T0500 114 CAM REQUIRED	626	MED
2	EA	DOOR PULL	8103EZHD-0 (10”) TYPE O MOUNTING	630	IVE
1	EA	MULLION SEAL	1040 NN-1 PSA	GRY	WPI
2	EA	OVHD STOP	454S-J	626	GLY
2	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24	626	KEE
2	EA	WIRE HARNESS	CON-(LENGTH AS REQUIRED)		SCH
1	EA	POWER SUPPLY (Panic Devices)	PS914 900-2RS 900-BBK		VON
1	EA	POWER SUPPLY (Omnilock)	BPS 12/24-1		SEC

HEAD, JAMB, AND DOOR BOTTOM SEALS PROVIDED BY ALUMINUM STOREFRONT MANUFACTURER

REFER TO SECTION 08 7113 FOR HARDWARE PROVIDED BY AUTOMATIC DOOR OPERATOR MANUFACTURER

OMNILOCK TO BE KEYED TO DISTRICT OVERRIDE KEY

HW SET 23A

Qty		Description	Catalog Number	Finish	Mfr
2	EA	CONT. HINGE	112XY EPT	628	IVE
2	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	REMOVABLE MULLION	KR4954 STAB	689	VON
1	EA	ELEC PANIC HARDWARE	RX-EL-PA-AX-99-EO-CON	626	VON
1	EA	ELEC PANIC HARDWARE	RX-EL-PA-AX-99-NL-OP-CON-110MD	626	VON
1	EA	OMNILOCK (Wall Mount)	OMWMS-BE-PDVW-B-W		BEST
1	EA	KEY SWITCH	701NUL2	630	SDC
1	EA	MULLION STORAGE KIT	MT54	689	VON
1	EA	RIM CYLINDER (Panic Devices)	10T0400H	626	MED
1	EA	MORTISE CYLINDER (Mullion)	10T0500 114 CAM REQUIRED (MUL)	626	MED
1	EA	MORTISE CYLINDER (Key Switch)	10T0500 114 CAM REQUIRED	626	MED
2	**EA**	**SURFACE CLOSER**	**4040XP SCUSH**	**689**	**LCN**
2	EA	DOOR PULL	8103EZHD-0 (10”) TYPE O MOUNTING	630	IVE
1	EA	MULLION SEAL	1040 NN-1 PSA	GRY	WPI
2	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	~~272A~~ **2727A** FHSL	A	PEM
1	EA	CYL. GUARD RING	K-24	626	KEE
2	EA	WIRE HARNESS	CON-(LENGTH AS REQUIRED)		SCH
1	EA	POWER SUPPLY (Panic Devices)	PS914 900-2RS 900-BBK		VON
1	EA	POWER SUPPLY (Omnilock)	BPS 12/24-1		SEC

HEAD, JAMB, AND DOOR BOTTOM SEALS PROVIDED BY ALUMINUM STOREFRONT MANUFACTURER

HW SET 23B

Qty		Description	Catalog Number	Finish	Mfr
2	EA	CONT. HINGE	112XY	628	IVE
1	EA	REMOVABLE MULLION	KR4954 STAB	689	VON
1	EA	PANIC HARDWARE	CDSI-PA-AX-99-EO	626	VON
1	EA	PANIC HARDWARE	CDSI-PA-AX-99-996L	626	VON
1	EA	MULLION STORAGE KIT	MT54	689	VON
1	EA	RIM CYLINDER	10T0400H	626	MED
2	EA	MORTISE CYLINDER	10T0500 114 CAM REQUIRED (DOG)	626	MED
1	EA	MORTISE CYLINDER	10T0500 114 CAM REQUIRED (MUL)	626	MED
~~1~~	~~EA~~	~~CONST. MORT. CYL.~~	~~10T0500 114 CAM REQUIRED (MUL)~~	~~626~~	~~MED~~
~~2~~	~~EA~~	~~DOOR PULL~~	~~8103EZHD-0 (10")~~ ~~TYPE O MOUNTING~~	~~630~~	~~IVE~~
2	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
2	EA	FLOOR STOP	FS18L	BLK	IVE
1	EA	MULLION SEAL	1040 NN-1 PSA	GRY	WPI
2	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	272A FHSL **(Door W156A Only)**	A	PEM
1	**EA**	**THRESHOLD**	**2727A FHSL**	**A**	**PEM**
1	EA	CYL. GUARD RING	K-24	626	KEE

HEAD, JAMB, AND DOOR BOTTOM SEALS PROVIDED BY ALUMINUM STOREFRONT MANUFACTURER

HW SET 24

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	PUSH PLATE	8200 6" X 16"	630	IVE
1	EA	PULL PLATE	8303 10" X 6" X 16" PLATE	630	IVE
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
3	EA	SILENCER	SR64	GRY	IVE

HW SET 24A

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	PUSH PLATE	8200 6" X 16"	630	IVE
1	EA	PULL PLATE	8303 10" X 6" X 16" PLATE	630	IVE
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	WALL STOP	WS407CVX	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET 25

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	5BB1HW 4.5 X 4.5	626	IVE
1	EA	OFFICE/ENTRYLOCK	L9050L 06A L583-363 L283-711	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	FLOOR STOP	FS18S	BLK	IVE

HEAD AND JAMB SEALS PROVIDED BY ALUMINUM STOREFRONT MANUFACTURER

HW SET 26A

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	5BB1HW 4.5 X 4.5	626	IVE
1	EA	PRIVACY W/DEADBOLT	LV9486 06A L583-363 L283-722	626	SCH
1	EA	SURFACE CLOSER	4040XP	689	LCN
2	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET 27

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	5BB1HW 4.5 X 4.5	626	IVE
1	EA	STOREROOM LOCK	L9080L 06A	626	SCH
1	EA	MORT. CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET 27A

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	5BB1HW 4.5 X 4.5	626	IVE
1	EA	STOREROOM LOCK	L9080L 06A	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	WALL STOP	WS407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET 27B

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	5BB1HW 4.5 X 4.5	626	IVE
1	EA	STOREROOM LOCK	L9080L 06A	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	SURFACE CLOSER	4040XP	689	LCN
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	272A FHSL	A	PEM

MOUNT HEAD SEAL BEFORE CLOSER ARM.

HW SET 28

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	5BB1HW 4.5 X 4.5	626	IVE
1	EA	PUSH PLATE	8200 6" X 16"	630	IVE
1	EA	PULL PLATE	8303 10" X 6" X 16" PLATE	630	IVE
1	EA	SURFACE CLOSER	4040XP	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET 29

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	5BB1HW 4.5 X 4.5	626	IVE
1	EA	CLASSROOM SECURITY	L9071L 06A L283-711	626	SCH
~~2~~ **1**	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	**EA**	**THUMBTURN**	**09-509 x L583-363**	**626**	**SCH`**
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET 30

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	5BB1HW 4.5 X 4.5	626	IVE
1	EA	OFFICE/ENTRY LOCK	L9050L 06A L583-363 L283-711	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	OH STOP	90S SERIES	630	GLY
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET 31

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	5BB1HW 5 x 4.5	626	IVE
1	EA	STOREROOM LOCK	L9080L 06A	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS407CVX	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET 31A

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	5BB1HW 5 X 4.5	626	IVE
1	EA	STOREROOM LOCK	L9080L 06A	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	OVHD STOP	90S SERIES	626	GLY
3	EA	SILENCER	SR64	GRY	IVE

HW SET 32

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	5BB1HW 4.5 X 4.5	626	IVE
1	EA	CLASSROOM SECURITY	L9071L 06A L283-711	626	SCH
~~2~~ **1**	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	THUMBTURN	09-509 x L583-363	626	SCH
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS407CVX	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET 32A

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	CLASSROOM SECURITY	L9071L 06A L283-711	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	THUMBTURN	09-509 x L583-363	626	SCH`
1	EA	WALL STOP	WS407CVX	630	IVE
~~3~~	~~EA~~	~~SILENCER~~	~~SR64~~	~~GRY~~	~~IVE~~
1	**EA**	**SET SEAL**	**319CN (AT HEAD AND JAMBS)**	**CLR ANO**	**PEM**

HW SET 33

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	5BB1HW 4.5 X 4.5	626	IVE
1	EA	STOREROOM LOCK	L9080L 06A	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	OVHD STOP	90S SERIES	626	GLY
3	EA	SILENCER	SR64	GRY	IVE

HW SET 34

Qty		Description	Catalog Number	Finish	Mfr
6	EA	HINGE	5BB1HW 4.5 X 4.5	626	IVE
1	SET	MANUAL FLUSH BOLT	262	626	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	L9080L 06A	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
2	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
2	EA	WALL STOP	WS407CVX	630	IVE
1	EA	ASTRAGAL	357SP INACTIVE LEAF	PTD	PEM
2	EA	SILENCER	SR64	GRY	IVE

HW SET 35

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	5BB1HW 4.5 X 4.5	626	IVE
1	EA	STOREROOM LOCK	L9080L 06A	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	WALL STOP	WS407CVX	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET 36

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	5BB1HW 4.5 X 4.5	626	IVE
1	EA	STOREROOM LOCK	L9080L 06A	626	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	SET SEAL	319CN (AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	272A FHSL	A	PEM

MOUNT HEAD SEAL BEFORE CLOSER ARM.

HW SET 38

Qty		Description	Catalog Number	Finish	Mfr
6	EA	HINGE	5BB1HW 4.5 X 4.5	626	IVE
1	SET	CONSTANT LATCHING FLUSH BOLT	FB51P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	L9080L 06A	626	SCH
1	EA	MORT. CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	COORDINATOR	COR X FL	628	IVE
2	EA	SURFACE CLOSER	4040XP	689	LCN
2	EA	WALL STOP	WS407CVX	626	IVE
1	EA	ASTRAGAL	357SP INACTIVE LEAF	PTD	PEM
1	EA	SET SEAL	319CN AT HEAD AND JAMBS)	CLR ANO	PEM
1	EA	DOOR SWEEP	315CN	CLR ANO	PEM
1	EA	THRESHOLD	272A FHSL	A	PEM

MOUNT HEAD SEAL BEFORE CLOSER ARM.

HW SET 39

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	STOREROOM LOCK	L9080L 06A	626	SCH
1	EA	MORT. CYLINDER	10T0500 114 SCH "L" CAM	626	MED
1	EA	WALL STOP	WS407CVX	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

HW SET 40

Qty		Description	Catalog Number	Finish	Mfr
1	EA	PANIC HARDWARE	CD-PA-AX-99-EO	630	VON
1	EA	MORTISE CYLINDER (Cylinder Dogging)	10T0500 114 CAM REQUIRED (DOG)	626	MED

REFER TO SECTION 05 5000 FOR REMAINDER OF GATE HARDWARE PROVIDED BY DECORATIVE METAL GATE MANUFACTURER

HW SET 41

Qty		Description	Catalog Number	Finish	Mfr
1	EA	PANIC HARDWARE	CD-PA-AX-99	630	VON
1	EA	MORTISE CYLINDER (Cylinder Dogging)	10T0500 114 CAM REQUIRED (DOG)	626	MED
1	EA	OMNILOCK	QAXOM-0-15-PDVW-B-W		BEST
1	EA	ADAPTER PLATE	VD9		BEST
1	EA	KEY SWITCH	701NUL2	630	SDC
1	EA	MORTISE CYLINDER (Key Switch)	10T0500 114 CAM REQUIRED	626	MED

REFER TO SECTION 05 5000 FOR REMAINDER OF GATE HARDWARE PROVIDED BY DECORATIVE METAL GATE MANUFACTURER

HW SET 42

Qty		Description	Catalog Number	Finish	Mfr
1	EA	ELEC PANIC HARDWARE	RX-EL-PA-AX-99-NL-OP-110MD-CON	630	VON
1	EA	OMNILOCK (Wall Mount)	OMWMS-BE-PDVW-B-W		BEST
1	EA	KEY SWITCH	701NUL2	630	SDC
1	EA	MORTISE CYLINDER (Key Switch)	10T0500 114 CAM REQUIRED	626	MED
1	EA	ARMORED DOOR LOOP	DL-2		AC
1	EA	POWER SUPPLY (Panic Device)	PS914 900-2RS 900-BBK		VON
1	EA	POWER SUPPLY (Omnilock)	BP12/24-1 BB		SEC

REFER TO SECTION 05 5000 FOR REMAINDER OF GATE HARDWARE PROVIDED BY DECORATIVE METAL GATE MANUFACTURER
REFER TO SECTION 08 7113 FOR AUTO. DOOR OPER. AND ACCESSORIES

HW SET 43

Qty		Description	Catalog Number	Finish	Mfr
1	EA	PANIC HARDWARE	CD-PA-AX-99-Nl-OP-110MD	630	VON
1	EA	RIM CYLINDER (Panic Device)	10T0400H	626	MED
1	EA	MORTISE CYLINDER (Cylinder Dogging)	10T0500 114 CAM REQUIRED (DOG)	626	MED

REFER TO SECTION 32 3113 FOR REMAINDER OF GATE HARDWARE PROVIDED BY CHAIN LINK GATE MANUFACTURER

HW SET 44

Qty		Description	Catalog Number	Finish	Mfr
1	EA	STOREROOM LOCK	L9080L 06A	630	SCH
1	EA	MORTISE CYLINDER	10T0500 114 SCH "L" CAM	626	MED

REFER TO SECTION 32 3113 FOR REMAINDER OF GATE HARDWARE PROVIDED BY CHAIN LINK GATE MANUFACTURER

HW SET 45

Qty		**Description**	**Catalog Number**	**Finish**	**Mfr**
1	**EA**	**CYLINDER LOCK**	**L9464**	**630**	**SCH**
1	**EA**	**MORTISE CYLINDER**	**10T0500 114 SCH "L" CAM**	**626**	**MED**

REFER TO SECTION 32 3113 FOR REMAINDER OF GATE HARDWARE PROVIDED BY CHAIN LINK GATE MANUFACTURER

END OF SECTION 08 7100

SECTION 09 3000

TILE

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Porcelain tile.
   2. Crack isolation and waterproofing membranes for tile.
   3. Thin set beds for floor and wall tile.
   4. Sanded and unsanded grout.
   5. Epoxy grout **for floors and walls**.

B. Related Sections:
   1. Section 03 3000: Cast-In-Place Concrete.
   2. Section 07 9200: Joint Sealants
   3. Section 08 3100: Access Doors and Panels; occurring in tile walls.
   4. Section 09 2900: Gypsum Board; tile backer board
   5. Section 09 6500: Resilient Flooring
   6. Section 09 6800: Carpet
   7. Section 13 1104: Swimming Pool Ceramic Tile
   7. Section 22 0515: Access Doors and Panels; occurring in tile walls.

C. Releated Requirements:
   1. Access doors and panels specified in Plumbing and HVAC Sections and indicated on Drawings as occurring in tile walls are to conform to requirements of Section 08 3100 for type and finish.

1.02 REFERENCES

A. California Code of Regulations (CCR), Title 24, Part 2, California Building Code (CBC), Volumes 1 and 2, 2016 edition.
   1. Chapter 11B – Accessibility to Public Buildings, Public Accommodations, Commercial Buildings, and Public Housing.

B. ASTM International (ASTM):
   1. ASTM A1064 – Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
   2. ASTM C144 – Standard Specification for Aggregate for Masonry Mortar
   3. ASTM C150 – Standard Specification for Portland Cement
   4. ASTM C206 – Standard Specification for Finishing Hydrated Lime
   5. ASTM C207 – Standard Specification for Hydrated Lime for Masonry Purposes
   6. ASTM C645 – Standard Specification for Nonstructural Steel Framing Members
   7. ASTM D2047 – Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine
   8. ASTM D4551 – Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Flexible Concealed Water-Containment Membrane

C. American National Standards Institute, Inc. (ANSI):
   1. ANSI A108 – Standard Specifications for the Installation of Ceramic Tile.
   2. ANSI A118 – Standard Specifications for Ceramic Tile Installation Materials.
   3. ANSI A137.1 – Standard Specifications for Ceramic Tile.

D. Tile Council of North America (TCNA):
   1. TCNA Handbook for Ceramic, Glass, and Stone Tile Installation, current edition.

1.03 SUBMITTALS

A. Product Data: Manufacturer's data, standard specifications, and other technical information for each product specified.

B. Samples:
   1. Minimum of four samples, or four sample sets for each type of tile and for each color and texture required, not less than 12 inches square, on plywood or hardboard backing and grouted as required.
      a. Provide minimum of four board-mounted tiles for sizes 4-1/4 inches and larger.
   2. Full size samples for each type of trim, accessory and for each color.
   3. Minimum of four 6 inch long sample of stone thresholds.
   4. Samples of metal edge strips.

C. Mock-ups: At area on Site approved by Architect, provide mock-up ceramic tile installation.
   1. Make mock-up approximately 4 by 4 feet.
   2. Blend tiles to achieve smooth transition within range approved in advance by Architect.
   3. Provide one mock-up for each type, class, and color of installation required.
   4. Accepted mock-ups in undisturbed condition at time of completion may be used as part of work, and may be included in finished work, when so approved by Architect.
   5. Revise as necessary to secure Architect's approval.
   6. Mock-ups, when approved by Architect, will be used as basis for comparison with remainder of tile work for purposes of acceptance or rejection.
   7. When mock-up panels are not permitted to be part of finished Work, completely demolish and remove them from Project Site upon completion and acceptance of tile.

D. Installation Instructions: Manufacturer's preparation and installation instructions.

E. Certificates:
   1. Manufacturer's certification that grout materials being provided are suitable for intended use, meet or exceed referenced standards.
   2. DCOF AcuTest friction test reports for floor tile.

F. Reference Methods: Copies of TCNA and ANSI Methods.

1.04 QUALITY ASSURANCE

A. Laboratory Testing: Test tile for compliance with ASTM C 2047 by testing laboratory approved by DSA.

B. Qualifications of Tile Manufacturer: Company specializing in ceramic tile, mosaics, pavers, trim units, and thresholds with five years minimum experience. Obtain tile from a single source with resources to provide products of consistent quality in appearance and physical properties.

C. Qualification of Installation System Manufacturer: Company specializing in installation systems/ mortars, grouts/ adhesives with ten years minimum experience. Obtain products from single source manufacturer to insure consistent quality and compatibility.

D. Qualifications of Installer: Company specializing in installation of ceramic tile, mosaics, pavers, trim units and thresholds with five years experience with installations of similar scope, materials, and design.

E. Pre-Installation Meetings:
   1. Prior to start of Work and after approval of submittals, schedule on-site meeting with Contractor, Owner, Architect, Project Inspector, and representatives of material manufacturer and tile installer:
      a. Review construction conditions and Drawings for conformance with requirements of this specification for each substrate.
   2. Prior to setting tile and after surfaces to receive tile are installed, schedule an on-site meeting with Contractor, Owner, Architect, Project Inspector, and representatives of material manufacturer and tile installer:
      a. Review tile, tile installation materials, and finishing equipment for conformance with requirements of this specification.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store packaged tile materials in original in manufacturer's sealed containers, with seals unbroken and manufacturer's labels intact until time of use.
   1. Prevent damage or contamination to materials by water, foreign matter or other causes.

B. Keep materials clean and dry.

1.06 PROJECT CONDITIONS

A. Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer's printed recommendations.

B. Maintain temperatures at not less than 50 degrees F in tiled areas during installation and for 7 days after completion, unless higher temperatures are required by referenced installation standard or manufacturer's instructions.

C. Shade Work area from direct sunlight during installation as needed to prevent rapid evaporation caused by excessive heat.

D. Observe manufacturer's recommended safety precautions, including those pertaining to ventilation.

E. Illuminate Work area during installation, providing same level and angle of illumination as will be available for final inspection.

F. Protection:
   1. Protect adjacent surfaces during progress of Work of this Section.
   2. Close rooms and spaces to traffic until mortar and grout have set for 72 hours.

1.07 REGULATORY REQUIREMENTS

A. Comply with requirements of 2016 California Building Code and Chapter 11B

B. Comply with applicable parts of following codes or standards as minimum requirement:
   1. ANSI A108.
   2. ANSI A118.
   3. ANSI A137.1, Section 9.6 – DCOF AcuTest.

1.08 EXTRA MATERIAL

A. Provide minimum of 5 percent of each type and color of tile and accessory shapes, from same run or lot as installed tile.
   1. Furnish full size units matching units installed, packaged with protective covering for storage, in manufacturers' cartons identified with appropriate labels.

1.09 WARRANTY

A. Manufacturer shall provide 5-year material warranty.

B. Installer shall provide 5-year labor warranty.

C. For crack isolation membrane, manufacturer shall provide a 10-year material warranty for crack isolation membrane installation, tile setting, and grouting materials.

PART 2 PRODUCTS

2.01 PRODUCTS – GENERAL

A. Comply with ANSI A137.1 for types, compositions, and grades of tile indicated.
   1. Furnish tile complying with "Standard Grade" requirements unless otherwise indicated.

B. Comply with ANSI standard referenced with products and materials indicated for setting and grouting

C. Dynamic Coefficient of Friction (DCOF): Provide floor tiles with coefficient of friction equal to or greater than 0.42 when tested in accordance with provisions of ANSI A137.1, Section 9.6 – DCOF AcuTest.

D. Condition of Surfaces to Receive Tile:
   1. Verify that surfaces to receive mortar setting bed and tile are firm, dry, clean, and free from oily or waxy films and curing compounds.

2.02 TILE PRODUCTS

A. Porcelain Tile: **PT-1**
   1. Porcelain Floor Tile – Field
   2. Face Size: Nominal 2 inches by 2 inches
      a. Dot-mounted on 12 inch by 24 inch sheet
   3. Nominal Thickness: 1/4 inch
   4. Surface/Texture: Unglazed
   5. Style: Keystones Colorbody Porcelain Mosaics
   6. Color: D200 Desert Gray Speckle.
   7. Manufacturer: Daltile .
   8. Stacked Bond Pattern.

B. Porcelain Floor Tile: **PT-2**
   1. Porcelain Floor Tile – Field
   2. Face Size: Nominal 12 inches by 24 inches (297 mm by 597 mm).
   3. Nominal Thickness: 10.5 mm
   4. Surface/Texture: UPS – Unpolished
   5. Style: Moonstruck
   6. Color: AV302 Luna
   7. Manufacturer: Porcelain Stone by Crossville, Inc.

C. Porcelain Floor Tile: **PT-3**
   1. Porcelain Tile – Base
   2. Face Size: Nominal 6 inches by 24 inches (147 mm by 597 mm).
   3. Nominal Thickness: 10.5 mm
   4. Surface/Texture: UPS – Unpolished
   5. Style: Moonstruck
   6. Color: AV302 Luna
   7. Manufacturer: Porcelain Stone by Crossville, Inc.

D. Porcelain Floor Tile: **PT-4**
   1. Porcelain Floor Tile – Field
   2. Face Size: Nominal 12 inches by 24 inches (297 mm by 597 mm).
   3. Nominal Thickness: 10.5 mm
   4. Surface/Texture: UPS – Unpolished
   5. Style: Moonstruck
   6. Color: AV305 Apollo
   7. Manufacturer: Porcelain Stone by Crossville, Inc.

E. Porcelain Wall Tile: **PT-5**
   1. Porcelain Wall Tile – Field
   2. Face Size: Nominal 4 inches by 12 inches (3-3/4 inches by 11-3/4 inches).
   3. Nominal Thickness: 5/16 inch
   4. Surface/Texture: UPS – Unpolished
   5. Style: Retro Active 2.0
   6. Color: RET03 Featherstone
   7. Manufacturer: Porcelain Stone by Crossville, Inc.

F. Porcelain Floor Tile: **PT-6**
   1. Porcelain Tile – Base
   2. Face Size: Nominal 6 inches by 12 inches (5-3/4 inches by 11-3/4 inches).
   3. Nominal Thickness: 10.5 mm
   4. Surface/Texture: UPS – Unpolished
   5. Style: Retro Active 2.0
   6. Color: RET03 Featherstone
   7. Manufacturer: Porcelain Stone by Crossville, Inc. `

G. Porcelain Wall Tile: **PT-7**
   1. Porcelain Wall Tile – Field
   2. Face Size: Nominal 4 inches by 12 inches (3-3/4 inches by 11-3/4 inches).
   3. Nominal Thickness: 5/16 inch
   4. Surface/Texture: PO –Polished
   5. Style: Retro Active 2.0
   6. Color: RET05 Snow Blind
   7. Manufacturer: Porcelain Stone by Crossville, Inc. `

H. Porcelain Floor Tile: **PT-8**
   1. Porcelain Tile – Base
   2. Face Size: Nominal 6 inches by 12 inches (5-3/4 inches by 11-3/4 inches).
   3. Nominal Thickness: 10.5 mm
   4. Surface/Texture: UPS – Unpolished
   5. Style: Retro Active 2.0
   6. Color: RET05 Snow Blind
   7. Manufacturer: Porcelain Stone by Crossville, Inc. `

2.03 INSTALLATION MATERIALS

A. Mortar Sand: ASTM C 144.

B. Portland Cement: ASTM C 150, Type I or II.

C. Hydrated Lime: ASTM C 207, Type S; or ASTM C 206.

D. Portland Cement Mortar: ANSI 108.1B

E. Waterproof Membrane:
   1. Cold-applied laminated CPE composite waterproofing membrane for thin-set tile setting application of latex-modified mortar and grout.
   2. Products: NobleSeal TS Membrane Waterproofing System by Nobel Company, or approved equal.
      a. Zero VOC

F. Crack Isolation Membrane:
   1. Sheet membrane product specifically manufactured for use in thin-set tile installations at slab-on-grade conditions as a crack isolation sheet to prevent cracks in concrete slab from telegraphing through to tile.
   2. NobleSeal® TS or CIS Membrane by Noble Company, or approved equal.
      a. Zero VOC

2.04 MORTARS

A. Latex Portland Cement Mortar: Latex modified Portland cement dry-set mortar; ANSI A 118.4.
   1. Sand-cement mortar mix gauged with Laticrete 38 Acrylic Admix, Custom Building Products Acrylic Mortar Admix, or approved equal by Mapei Corporation

B. Latex Portland Cement Bond Mortar: Laticrete 317 Floor & Wall Thinset gauged with Laticrete 3701 Admix, or Custom Building Products Master Blend mixed with Acrylic Mortar Admix.

2.05 GROUT

~~A. Latex Portland Cement Grout: Laticrete Sanded Grout (1500 Series) or Unsanded Grout (1600 Series, for joints smaller than 1/8 inch).~~

~~B. Wall Grout: Polymer Modified: ANSI A118.7. Approved standard product factory mixed and packaged Portland cement tile grout material containing waterproofing and curing admixtures.~~
~~1. Grout colors: As selected by Architect.~~

~~C, Floor Grout: Chemical resistant, water cleanable, tile setting and grouting epoxy:~~
~~1. Complying with ANSI A118.3~~
~~2. Provide product capable of withstanding continuous and intermittent exposure to temperatures up to 140 degrees F and 212 degrees F, respectively, and certified by grout manufacturer for intended use.~~
~~3. Laticrete SP-100 Stainless Epoxy Grout for Floors and Walls (Series 700), or approved equal.~~
~~4. Use unsanded grout on joints 1/8 inch or less; use sanded grout on joints greater than 1/8 inch~~

A. Floor and Wall Grout:
   1. Chemical-resistant, water-cleanable, epoxy grout:
      a. Complying with ANSI A118.3
   2. Provide product capable of withstanding continuous and intermittent exposure to temperatures up to 140 degrees F and 212 degrees F, respectively, and certified by grout manufacturer for intended use.
   3. Product and Manufacturer:
      a. CEG-lite 100 percent Solids Epoxy Grout by Custom Building Products.
      b. Laticrete SP-100 Stainless Epoxy Grout for Floors and Walls (Series 700).
      c. Kerapoxy by Mapei Corporation

B. Grout Colors:
   1. As selected by Architect.

2.06 MISCELLANEOUS MATERIALS

A. Separation Material: For sealant joints, including perimeters and floor mortar beds.
   1. Quality Foam, QF 200 White, 3/8 inch wide x 5 inches high.

B. Cleaner and Sealer:
   1. From one manufacturer, acceptable to tile and grout manufacturers.
      a. Basis-of-Design: Specified cleaner and sealer are based on products by Aqua Mix Inc., Torrington, CT
      b. Equivalent products from Miracle Sealants Co. or other approved equal may be provided, subject to compatibility with specified tile and grout materials..
   2. Cleaner:
      a. Neutral Phosphate-Free Cleaner:
         1) Concentrated Tile Cleaner by Aqua Mix.
         2) Tile Lab Concentrated Tile/Stone Cleaner by Custom Building Products, Huntington Beach, CA
         3) Tile & Stone Cleaner by Miracle Sealants Company, div. of Rust-Oleum Corporation, Vernon Hills, IL
   3. Sealer:
      a. Fungus and Bacteria Resistant, Stain and Slip-Resistant as specified for Tile:
         1) Penetrating Sealer by Aqua Mix.
         2) Tile Lab Surface Gard by by Custom Building Products, Huntington Beach, CA
         3) 511 Impregnator by by Miracle Sealants Company, div. of Rust-Oleum Corporation, Vernon Hills, IL

C. Sealant and Backer Rod: Refer to Section 07 9200
   1. Provide sealant and primer from one manufacturer, acceptable to tile and grout manufacturers.
   2. Provide backer rod as specified for compatibility with sealants.

2.07 SOURCE QUALITY CONTROL

A. Source of Materials: Provide materials obtained from one source for each type and color of tile, grout, and setting materials.

PART 3 EXECUTION

3.01 EXAMINATION AND PREPARATION

A. Examine substrates, areas, and conditions under which Work will be performed for compliance with specified requirements for installation tolerances and other conditions affecting performance of installed tile.
   1. Coordinate with other trades as needed to assure that proper substrata are provided to receive work
   2. Verify that vents, drains, piping, and other projections through substrate have been installed.
   3. Correct conditions detrimental to timely and proper completion of work.
   4. Do not proceed until unsatisfactory conditions are corrected.

B. Verify that substrates for setting tile are firm; dry, clean and within flatness tolerances required by relevant ANSI A108 tile installation standards and following:
   1. Where Portland cement mortar setting bed will be installed, do not commence installation of setting bed until substrata are within following tolerances:
      a. Horizontal Surfaces: Level within 1/4 inch in 10 feet in any direction.

b. Vertical Surfaces: Plumb within 1/4 inch in 8 feet in any direction.

2. Where tile units will be thin-set directly to substrata, do not commence installation of tile units until substrata are within following tolerances:
   a. Horizontal Surfaces: Level within 1/8 inch in 10 feet in any direction, except for slope to floor drains.
   b. Vertical Surfaces: Plumb within 1/8 inch in 8 feet in any direction.

C. Surface Preparation:
   1. Condition of Surfaces to Receive Tile:
      a. Concrete Floors:
         1) Allow concrete floors to cure for 28 days minimum before beginning tile and grout installation.
         2) Verify that surfaces to receive mortar setting bed and tile are firm, dry, clean, and free from oily or waxy films and curing compounds.
         3) Remove laitance, sand, dust, and loose particles with air blast.
         4) Where coatings, such as curing compounds and other substances containing soap, wax, oil, or silicone remain and are incompatible with tile-setting materials, remove them using terrazzo or concrete grinder, drum sander, polishing machine equipped with heavy-duty wire brush, or shot-blast system.
      b. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical items of Work, and similar items located in or behind tile have been completed before installing tile.

3.02 SUBSTRATA AND SETTING BEDS

A. Floors:
   1. Install reinforcing and latex Portland-cement mortar setting bed over cured concrete slab.
      a. Lap reinforcing at least one full mesh, and support or lift so that it is approximately in middle of mortar bed.
      b. Do not abut against vertical surfaces.
         1) Install foam separation material at perimeters and expansion joint locations for sealant joints.
   2. Mix setting mortar in accordance with ANSI A.108.1a.2.2.
   3. Once begun, mortar installation must continue until room is completely filled.
      a. Discard batch not floated and finished within 1/2 hour of mixing.
      b. Firmly compact before screeding.
      c. Screed to true plane and pitch as indicated.
      d. Slope mortar bed sufficiently that water flows to drain and no puddling will occur.
      e. Slope mortar down to floor drains for proper installation of waterproof membrane.
      f. After screeding, firmly rub down with steel or wood float.
   4. Cure mortar bed with light fog spray of water and cover with 6 mil polyethylene for 72 hours.

B. Crack Isolation and Waterproof Membranes:
   1. Crack Isolation Membrane:
      a. Install cleavage membrane over cured mortar bed in accordance with TCNA Method F122 at Ground Level (slab-on-grade) rooms scheduled to have tile.

1) Use of liquid products will not be permitted.

2. Waterproof Membrane:
   a. Install waterproof membrane over concrete slab in accordance with TCNA Method F122 at upper floor rooms scheduled to have tile.
      1) Use of liquid products will not be permitted.

C. Walls:
   1. Substrate for Wall Tile and Base:
      a. Cementitious tile backer board, as specified in Section 09 2900
   2. Installing cementitious backer units on walls:
      a. Pre-cut units to size, and make necessary cutouts.
      b. Fasten units at 8 inches on center where joints occur over stud, using manufacturer's approved fasteners and washers.
         1) Use fastener combined with countersunk washer to secure two abutting units.
   3. Where two units abut, leave gap from 1/8 inch to 3/16 inch wide.
      a. Fill solid with mortar, and cover with fiberglass tape embedded in skim coat of mortar.

D. Verify that joints in tile substrates are coordinated with sealed tile joint locations
   1. Where not coordinated, adjust as required by Architect.

E. Do not install tile until construction in spaces is completed and ambient temperature and humidity conditions are being maintained to comply with referenced standards and manufacturer's written instructions.

F. Protect adjacent surfaces during progress of the Work.

3.03 TILE INSTALLATION – GENERAL

A. General:
   1. Conform to manufacturers printed instructions, and applicable requirements of ANSI and TCNA Standards.

   2. Install tile by pressing and beating tile into place to obtain 100 percent coverage by mortar on back of each tile.
      a. Back-butter tiles if necessary to achieve 100 percent coverage.
   3. Maintain minimum temperature limits and installation practices recommended by setting materials manufacturers.
   4. Minimum Coverage of Bond Mortar: 80 percent.
      a. 95 percent in shower areas or exterior installations

B. Limits of Tile:
   1. Extend tile into recesses and under equipment and fixtures to achieve complete covering without interruptions, unless otherwise indicated.
   2. Terminate tile neatly at obstructions, edges, and corners, without disruption of pattern or joint alignment.

C. Joining Pattern:
   1. Install tile in grid pattern, unless otherwise indicated.
   2. Align joints when adjoining tiles on floor, base, trim, and walls are same size.

3. Layout tile work, and center tile fields both directions in each space or on each wall area.
   a. Adjust to minimize tile cutting.
4. Provide uniform joint widths in accordance with manufacturers recommendations, unless indicated otherwise.

D. Tile Mounted in Sheets:
1. Install joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished Work.

E. Accurately form intersections and returns.
1. Perform cutting and drilling of tile without marring visible surfaces.
2. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints.
3. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

F. Allowable Variations in Finished Work:
1. Do not exceed following deviations from level and plumb, and from elevations, locations, slopes, and alignments shown:
   a. Horizontal surfaces: 1/8 inch in 10 feet in any direction.
   b. Vertical surfaces: 1/8 inch in 8 feet in any direction.

3.04 TILE INSTALLATION – FLOOR

A Install tile over properly cured setting bed and cleavage or waterproof membrane utilizing thin-set method with latex Portland cement bond mortar, in accordance with manufacturer's printed instructions and ANSI A108.5.
1. Confirm substrate is completely clean and free of dust.
2. Cut foam at floor perimeters flush with top of mortar bed.
3. Ensure that bond coats do not intrude into joints to receive sealant.

B. Placement Method:
1. Place tile into fresh mortar and move and press or beat in tile to ensure full contact.
2. Before setting proceeds, set and remove three tiles or sheets of tiles to confirm specified coverage of bond mortar.
3. When coverage is insufficient, utilize larger toothed trowel or back butter tiles until proper coverage is provided.

3.05 TILE INSTALLATION – WALLS

A. Install wall tile over properly installed tile backer board, utilizing thin-set method with latex Portland cement bond mortar, in accordance with manufacturer's printed instructions and ANSI A108.5.
1. Confirm substrate is completely clean and free of dust.
2. Insure that bond coats do not intrude into joints to receive sealant.

B. Lay out tile wainscots, where occurring, to next full tile beyond dimensions indicated.

C. Spot tile backer board substrate with mortared tile, set plumb and true, to accurately indicate plane of finished tile surfaces.

D. Set tile with horizontal joints level and vertical joints plumb, with surfaces true and plumb, and edges of tiles flush.

E. Rub exposed cuts smooth with fine stone.
   1. Do not set cut edge against fixture or adjoining surface without 1/16 inch sealant joint.

3.06 ACCESS DOOR AND PANEL INSTALLATION

A. Install access doors and panels, furnished under other sections, where required, in correct location, plumb or level, flush with adjacent construction, and securely fastened to framing.

3.07 EXPANSION / CONTROL JOINTS

A. Comply with TCNA Handbook, Method EJ171.
   1. Locate expansion, control, contraction, or isolation joints where indicated on Drawings, and as follows:
      a. Interior: 20 feet to 25 feet in each direction
      b. Exterior: 8 feet to 12 feet in each direction
      c. Interior tilework exposed to direct sunlight or moisture: 8 feet to 12 feet in each direction.

B. Other Sealant Filled Joints:
   1. Directly above joints in concrete substrates where tile abuts restraining surfaces such as perimeter walls, dissimilar floors, curbs, columns, pipes, ceilings, and where changes occur in backing materials.
   2. At horizontal and vertical changes in plane.
   3. At perimeter walls in rooms and spaces larger than 12 feet on one side.
   4. As continuation of expansion joints, control joints, cold joints, and seismic joints in building structure which occur in tiled areas, making such joints in tile work not less in width than joint which is being continued.
   5. Where indicated during installation of mortar beds.
   6. Do not saw-cut joints after installing tiles.

C. Extend openings for joints completely through tile, mortar, mortar bed, and reinforcing.
   1. Make openings for joints same width as tile joints.
   2. Keep joints open and free from mortar and grout until filled with sealant.
   3. Apply joint primer in wet areas, and apply elsewhere as recommended by sealant manufacturer.
   4. Make joint edges free from dirt, oils, wax, and other contaminants.

3.08 GROUTING

A. General:
   1. Do not begin grouting floor tiles until they are firmly set and, in no case, in less than 48 hours after they have been installed.
   2. Remove spacers, ropes, glue, and similar foreign matter prior to grouting.
   3. When using proprietary grout, adhere strictly to manufacturer's directions unless otherwise specified or approved in advance by Architect.
   4. Prior to start of grouting, ensure that wall and floor tile surfaces are clean and excessive bond mortar is scraped and vacuumed from joints.

a. Approximately 2/3 depth of tile should be open for grouting.

B. Installation – General:
1. Follow manufacturer's instructions and following for mixing grout:
a. Mix grout by hand or with slow-speed drill motor not exceeding 300 rpm, achieving stiff non-slumping consistency, and using minimum amount of liquid to achieve workable mix.
2. Once grout Work commences, proceed until complete wall or floor area is finished utilizing one batch of grout.

~~C. Latex Portland Cement Grouting:~~
~~1. Dampen tile surface and joints with water using sponge, but leaving no puddles in joints.~~
~~2. Force maximum amount of approved grout into joints in accordance with pertinent recommendations contained in ANSI A 108.10~~
~~a. Use sufficient pressure on rubber float so as to fill joints completely.~~
~~1) Fill joints of cushion edge tile to depth of cushion.~~
~~2) Fill joints of square edge tile flush with surface.~~
~~b. Scrape excess grout off tile surface with rubber float.~~
~~c. Smooth or tool grout to uniform joint finish.~~
~~d. Do not over water.~~
~~5. Fill gaps and skips.~~
~~a. Do not permit mortar or mounting mesh to show through grouted joints.~~
~~b. Provide hard finished grout which is uniform in color, smooth, and without voids, pin holes, or low spots.~~
~~c. Leave tile clean.~~

C. Epoxy Grouting:
1. Comply with manufacturer's installation instructions for mixing and application of epoxy grouts.
2. Grouting Procedure:
a. Force epoxy into joint with epoxy float.
1) Apply enough pressure to fully fill joint.
a) Fill all voids.
b. Remove excess grout with epoxy float held at 90 degree angle.
c. Removing epoxy grout from tile during grouting process will make clean-up easier.
3. Cleaning Tile:
a. After grouting is completed, perform cleaning of tile in accordance with manufacturer's instructions and procedures for cleaning.

3.09 CURING OF TILE INSTALLATION AND GROUT

A. Damp cure tile installations, including latex Portland cement grouts, for 72 hours minimum.
1. Remove final grout haze with clean soft cloth.
2. Cover with 40 Ib. kraft paper.
3. Leave paper in place for protection.
4. Do not use polyethylene sheets directly over tile on horizontal surfaces.

3.10 SEALANT INSTALLATION

A. Prepare and clean joints to receive sealant to ensure joints are free and clear of setting and grouting materials and construction debris.

B. Install sealants in accordance with requirements of Section 07 9200.

C. Seal between tile and penetration and restraining surfaces with sealant matching color of grout / joint filler.

3.11 CLEANING AND SEALING OF TILE AND GROUT

A. After completion of tile installation and curing, thoroughly clean tile using neutral cleaner acceptable to manufacturers of tile and grout, complying with manufacturer's instructions.
   1. Do not use acid or acid cleaners to clean tile.

B. Apply specified sealer in accordance with manufacturer's instructions.
   1. Avoid overlapping, puddling, and rundown.
   2. Completely wipe surface dry within 3 to 5 minutes using cotton or paper towels.
   3. Do not allow sealer to dry on tile.
   4. After 2 hours, test surface by applying water droplets to surface.
      a. When water is absorbed, apply second coat.
   5. Avoid surface traffic for 24 hours.

C. Remove and replace cracked, broken or defective Work with proper material.

3.12 REPLACEMENT

A. Replace cracked, chipped, broken, and otherwise defective tiles.
   1. Replace grout as necessitated due to replacement of tile.
   2. Match existing color without evidence of replacement.

B. Remove Work not complying with requirements of Contract Documents or referenced standards, and promptly replace with Work which does comply.

3.13 CLEANING

A. Remove and legally dispose of rubbish, debris, and waste material off Project Site.
   1. Comply with requirements of Sections 01 7419 and 01 7423.

3.14 PROTECTION

A. Do not permit foot traffic on installed tile until mortar and grout has set for minimum of 72 hours.

B. Do not permit foot traffic on installed sealant for minimum of 48 hours or protect with hardboard strips.

C. Protect Work until Substantial Completion.

END OF SECTION 09 3000

SECTION 10 1472

CUSTOM SITE SIGNAGE

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Following Sign Types:
      a. Monument Signs
      b. Freestanding Building Identification Signs
      c. Parking Lot Entrance Signs
      d. Pedestrian Directional Signs
      e. Wall Mounted Directional Signs
      f. Directory Map
      g. Building Identification Letters
      h. Custom Designation Signs
      i. Video Surveillance Sign
      j. **Project Identification sign**
   2. Painting of custom site signage

B. Related Sections:

1.	Section 03 3000:	Cast-in-Place Concrete; concrete bases
2.	Section 05 1200:	Structural Steel Framing; anchor rods.
3.	Section 05 5000:	Metal Fabrications; welding requirements.
4.	Section 06 6000::	Plastic Fabrications; translucent engineered resin panels and letters.
5.	Section 07 9200:	Joint Sealants
6.	Section 09 9100:	Painting.
7.	Section 09 9600:	High Performance Coatings
8.	Section 10 1400:	Signage

1.02 REFERENCES

A. California Code of Regulations, Title 24, 2016 edition, California Building Code (CBC), Part 2, Volumes 1 and 2.

B. ASTM International (ASTM):
   1. ASTM A 36 – Standard Specification for Carbon Structural Steel
   2. ASTM A123 – Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
   3. ASTM B 209 – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
   4. ASTM B 221 – Standard Specification for Aluminum and Aluminum Alloy Extruded Bars, Rods, Wires, Profiles and Tubes
   5. ASTM A 500 – Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
   6. ASTM C1107 – Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)

7. ASTM D 1308 – Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes.
8. ASTM F 593 – Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs
9. ASTM F 594 – Standard Specification for Stainless Steel Nuts

C. American Society of Civil Engineers/Structural Engineering Institute (ASCE/SEI): ASCE/SEI 7-16 – Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

D. American Welding Society (AWS):
1. AWS D1.1 – Structural Welding Code – Steel.
2. AWS D1.2 – Structural Welding Code – Aluminum.
3. AWS QC1 – Standard for AWS Certification of Welding Inspectors.

E. Aluminum Association (AA):
1. Aluminum Design Manual, current edition
2. CA-92 – Care of Aluminum
3. DAF-45 – Designation System for Aluminum Finishes

F. The Society for Protective Coatings (SSPC):
1. SSPC-SP 1 – Solvent Cleaning.
2. SSPC-SP 2 – Hand Tool Cleaning.
3. SSPC-SP 3 – Power Tool Cleaning.
4. SSPC-SP 6 – Commercial Blast Cleaning (NACE No. 3)

G. NACE International (NACE):
1. National Association of Corrosion Engineers

H. South Coast Air Quality Management District (SCAQMD):
2. Rule 1113 – Architectural Coatings
3. Rule 1168 – Adhesive and Sealant Applications

1.03 SUBMITTALS

A. Product Data:
1. Manufacturer's technical data, product specifications, installation instructions, and other pertinent information as applicable for each product or material specified.

B. Shop Drawings:
1. For fabrication and erection of custom signage assemblies
   a. Include plans and elevations at not less than 1/2 inch to 1 foot scale.
   b. Indicate gages, profiles, sections of materials, details of construction, hardware, methods of attachment or anchoring, as applicable for specified materials.
   c. Provide large scale construction details of various parts, including, but not necessarily limited to:
      1) Methods of joining.
      2) Thickness of metals.
      3) Profiles of surfaces.
      4) Reinforcing, anchorage, and accessory items.

d. Include details of sections and connections at not less than 3 inch to 1 foot scale.

2. Include information regarding concealed and exposed joints, welds, and fastenings.
3. Provide templates for anchor and bolt installation by others.

C. Samples:
1. Minimum of four, 3 inch x 5 inch samples of each material and color specified or scheduled..

1.04 QUALITY ASSURANCE

A. Fabricator Qualifications:
2. Successfully engaged for minimum of 5 years in manufacture of custom metal sign fabrication work, similar to that specified and indicated for this Project.
3. Fabricator qualifications are subject to Owner and Architect's review and approval before subcontract is awarded.

B. Qualifications for Welding Work:
1. Refer to qualifications specified in Section 05 5000.
2. Conform to welding requirements in accordance with referenced AWS Codes.

C. Design Criteria:
1. Design Work to support normally imposed loads and conform to AISC, AISI, and ASCE/SEI 7-16 requirements.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle packaged materials in original containers with seals unbroken and labels intact until time of use.

B. Discharge materials carefully and store on clean concrete surface or raised platform in safe, dry area.

C. Provide means necessary to protect signs before, during, and after installation.

1.06 PROJECT CONDITIONS

A. Field measure prior to preparation of shop drawings and fabrication to ensure proper fit.

B. Verify that exterior wall surfaces are true and plumb and are prepared and ready to receive wall mounted signs.

C. Scheduling and Sequencing:
1. Coordinate with related Work of other sections, including excavation and cast-in-place concrete for bases.
2. Ensure timely fabrication of items to be embedded or enclosed by other Work.
3. Furnish information and assistance required for locating embedded items and be responsible for proper locations.

1.07 REGULATORY REQUIREMENTS

A. Conform to following Codes and Standards:
   1. CBC, Part 2, Volume 2 for structural requirements.
   2. ASCE/SEI 7-16
   3. AWS Structural Welding Codes for materials specified to be welded.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Paint Products for Custom Site Signage:
   1. Paint systems for custom site signs are based on products of Matthews Paint Company, Delaware, OH

2.02 MATERIALS

A. Metal Surfaces – General:
   1. For fabrication of metal work which will be exposed to view, only use materials which are smooth and free of surface blemishes
   2. Do not use materials having exposed-to-view surfaces exhibiting pitting, seam marks, roller marks, rolled trade names, roughness, oil canning, stains, discoloration or other imperfections.

B. Steel Plates, Shapes and Bars:
   1. Conforming to ASTM A 36.

C. Steel Tube:
   1. HSS Shapes:
      a. Manufactured (rolled and seam welded) in USA
      b. Conforming to ASTM A 500.

D. Aluminum:
   1. Use alloy and temper recommended by manufacturer for strength, corrosion resistance, and application of required finish.
   2. Comply with following standards for forms and types of aluminum for required items of Work:
      a. Plate and Sheet: ASTM B 209, alloy 3003-H16.
      b. Bars, Rods and Wire: ASTM B 211.
      c. Extruded Pipe: ASTM B 429, 6063-T6 (Schedule 40).

E. Stainless Steel:
   1. Comply with following standards for forms and types of stainless steel for required items of Work:
      a. Type: AISI Type 316
      b. Bar Stock: ASTM A 276.
      c. Plate, Sheet and Strip: ASTM A 240.
      d. Pipe: ASTM A 312
   2. Finishes:
      a. Concealed: No. 2B Mill Finish.
      b. Exposed: No.4 Satin Finish.

F. Fasteners:
   1. Use fasteners made of same basic metal as fastened metal, unless otherwise indicated.
      a. Do not use metals which are corrosive or incompatible with materials joined.
      b. Do not use exposed fasteners except where unavoidable.
         1) Match finish of metal surrounding fastener.
   2. Provide Phillips flat-head machine screws for exposed fasteners, unless otherwise indicated.
   3. Select fasteners for type, grade and class required.
   4. Steel Bolts and Nuts: Regular hexagon head type, ASTM A 307, Grade A; with hex nuts.
   5. Stainless Steel Bolts and Nuts: Regular hexagon head type annealed stainless steel bolts, nuts, and flat washers.
      a. Alloy Group 2, Type 316, stainless steel bolts complying with
      b. ASTM F 593 and nuts complying with ASTM F 594.
   6. Machine Screws: Cadmium plated steel, ASME B 18.6.3
      a. Stainless steel where exposed.
   7. Plain Washers: Round, carbon steel, ASME B 18.21.1
   8. Lock Washers: Helical spring type carbon steel, ASME B 18.21.1
   9. Expansion Bolts:
      b. Concrete Anchorage: Hilti Kwik Bolt TZ; ICC ESR-1917

G. Anchors and Inserts:
   1. Furnish inserts for setting in concrete and provide other anchoring devices as required for installation of fabricated metal items.
   2. Anchor Rods and Nuts:
      a. Conforming to ASTM F 1554.
   3. Threaded Rods:
      a. As noted on Drawings.
   4. Refer to Section 05 1200 for additional information.

H. Nonshrink Nonmetallic Grout:
   1. Factory premixed, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107.
   2. Provide one of following or grout specifically recommended by manufacturer for types of applications indicated:
      a. Masterflow 713 Plus; BASF Building Systems
      b. Sealtight 588 Grout; W.R. Meadows
      c. Five Star Grout; Five Star Products, Inc.
      d. SikaGrout 212; Sika Corporation.

I. Shop Primer for Metal:
   1. Matthews 274 530SP Epoxy Primer by Matthews Paint Company.
      a. VOC compliant in accordance with SCAQMD Rule 1113.
      b. Coordinate selection of primer with finish paint requirements.
         1) Primer and finish coat materials for exposed steel are required to be complete system by one manufacturer
   2. Prime painting with specified shop primer is required of structural steel, exposed or concealed, except where indicated otherwise.

J. Galvanizing:
   1. Provide zinc coating for those items shown or specified to be concealed or embedded as follows:
      a. Conform to ASTM A 123:
         1) For galvanizing rolled, pressed and forged steel shapes, plates, bars and strip 1/8 inch thick and heavier.
         2) For galvanizing assembled steel products.
   2. Perform galvanizing after fabrication with Work assembled in as large sections as can be handled.
   3. Remove projections, barbs, and icicles after galvanizing.
   4. Galvanizing Repair Paint:
      a. Organic zinc rich paint complying with SSPC-Paint 20, with dry film containing not less than 94 percent zinc dust by weight.

K. Isolation Between Dissimilar Materials:
   1. Coating for Embedded Items in Concrete:
      a. Provide single-component, inert-type non-corrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.
         1) VOC compliant.
      b. Elasto-Deck BT as manufactured by Pacific Polymers, div. ITW Polymers Sealants North America, or equivalent product acceptable to Architect.
      c. Apply to items to be embedded in concrete and to galvanized surfaces inside aluminum tubes.
   2. Isolation Sheets:
      a. Use between concrete and metal surfaces.
      b. Commercial Grade Dense Neoprene.
         1) Conforming to ASTM D 2000.
      c. Williams Everlastic 1200 Series by Williams Products, Inc., Troy, MI, or approved equal.
         1) Minimum Thickness: 1/4 inch
      d. Physical Properties:
   3. Post Pads:
      a. Use under post bases.
      b. Commercial Grade Dense Neoprene.
         1) Conforming to ASTM D 2000
      c. Williams Everlastic by Williams Products, Inc., Troy, MI, or approved equal.
         1) Minimum Thickness: 1/4 inch
      d. Physical Properties:
         1) Same as for isolation sheets.
   2. Gaskets and Washers:
      a. Use to isolate metal components and fasteners from aluminum and concrete.
      b. Provide neoprene gaskets and washers of sizes as required.

L. Painting Systems:
   1. Use following paint system for custom signage and components, unless indicated otherwise:
      a. Epoxy Primer:
         1) Matthews 274 530SP White

b. Color Coat:
   1) Matthews Acrylic Polyurethane Ultra Low VOC
      a) MAP-LVS
   2) Colors: As scheduled on Drawings.
c. Clear Topcoat:
   1) Matthews Acrylic Polyurethane Ultra Low VOC
      a) MAP-LVC228, Satin Clear.

2. Exposed metal components not scheduled to receive sign paint system:
   a. Refer to Section 09 9600 for high performance coatings.

2.03 FABRICATION

A. Fabricate items to comply with requirements indicated, including those for quality, thickness and finish of material as well as those indicating dimensions and details.
   1. Use heavier metal gages, stiffeners or metal backing as required to produce surface flatness, free of "oil-canning", and to impart sufficient strength for use indicated.
   2. Work to dimensions shown or accepted on shop drawings, using proven details of fabrication and support.
   3. Use type of materials shown or specified for various components of Work.

B. Miscellaneous Framing and Supports:
   1. Provide miscellaneous steel framing and supports which are not part of structural steel framework, as required to complete Work.
   2. Concealed steel components are to be galvanized in accordance with ASTM A 123.

C. Supply as part of this Section, miscellaneous small parts of material thinner than 10 gage, or items specifically called out, when such supply is normal and accepted part of Work.

D. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.
   1. Ease exposed edges to radius of approximately 1/32 inch, unless otherwise shown.
   2. Form bent metal corners to smallest radius possible without causing grain separation or otherwise impairing Work.

E. Form sheet metal items in maximum lengths and keep joints to minimum.
   1. Do not exposed cut edges of sheet metal except as indicated.
   2. Fold back exposed ends of unsupported sheet metal to form 1/2 inch wide hem on concealed side, or ease exposed edges with backing to radius of approximately 1/32 inch.
   3. Form items with flat, flush surfaces, true to line and level, and without cracking and grain separation at bends.

F. Continuously weld joints and seams except where other methods of joining are indicated
   1. Grind welds smooth and flush on exposed surfaces.
   2. Comply with AWS recommendations.
   3. Use filler metals and welding procedures which will blend with and match color of sheet metal being joined and will avoid discoloration at welds.

G. Provide type of anchorage shown.
   1. Coordinate with supporting structure.
   2. Fabricate and space anchoring devices as shown and as required to provide adequate support for intended use.

H. Cut, reinforce, drill and tap metal work as required for attachment to related work..

I. Fabricate joints which will be exposed to weather in manner to exclude water or provide weep holes where water may accumulate.

2.01 PROJECT IDENTIFICATION SIGN

A. **Provide two painted signs, of not less than 32 sq. ft. area each, with painted graphic content to include:**
   1. **Title of Project.**
   2. **Name of Owner.**
   3. **Names and Titles of:**
      a. **Architect.**
      b. **Professional Consultants.**
      c. **Prime Contractor.**
   4. **Graphic Design, Style of Lettering, and Colors:**
      a. **As designated by Architect.**
   5. **Erect on Project Site at lighted locations of high public visibility, adjacent to main entrance to Project Site as directed by Architect.**
      a. **Support on posts or framing of preservative treated wood or steel.**
   6. **Submit shop drawing of sign layout.**
      a. **Refer to detail on Drawings.**

PART 3 EXECUTION

3.01 PREPARATION

A. Field Measurements:
   1. Take field measurements prior to preparation of shop drawings and fabrication where possible, to ensure proper fitting of Work.
   2. Allow for trimming and fitting wherever taking of field measurements before fabrication might delay Work.

3.02 INSTALLATION

A. Install boards in locations and mounting heights as shown on Drawings and in accordance with manufacturer's instructions and reviewed Shop Drawings
   1. Provide grounds, clips, backing materials, brackets and anchors, trim, and accessories required for complete installation.
   2. Fasteners for Assembly of Trim and Frame Units:
      a. Truss head aluminum or stainless steel self-tapping screws.

B. Coordinate job-assembled units with grounds, trim, and accessories.
   1. Join parts with neat, precision fit.

C. Install units with concealed hangers plumb and level, in accordance with manufacturer's printed instructions.

D. Install panels after finish painting of wall surfaces has been completed and paint is cured.
   1. Install panels level, plumb and neatly assembled.

3.03 CLEANING

A. Prior to Substantial Completion, completely clean trim of dirt, finger-marks, or other foreign material.
   1. Clean signage in accordance with manufacturer's instructions.

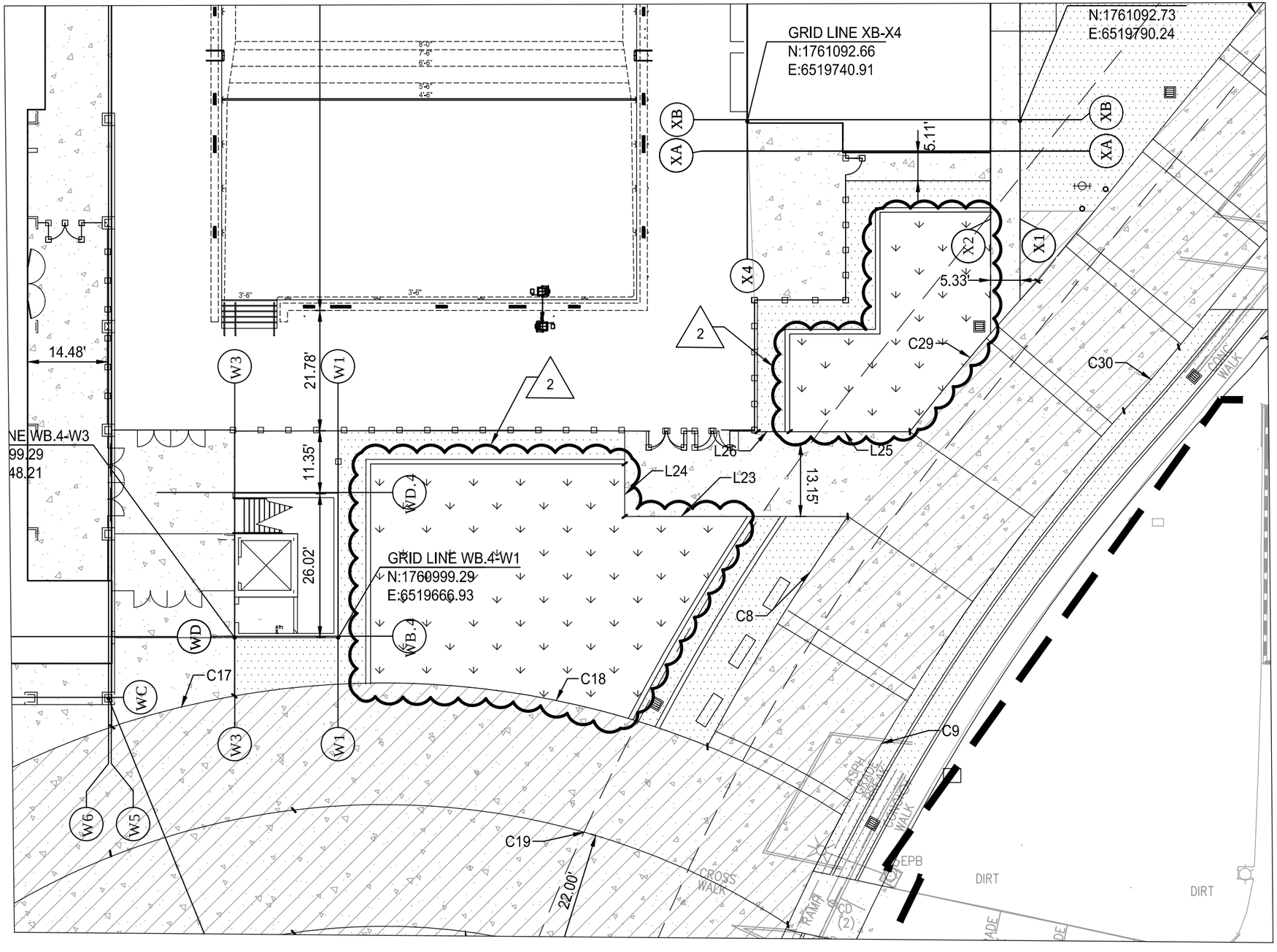
B. Remove and legally dispose of rubbish, debris, and waste materials off Project Site.

3.04 PROTECTION

A. Protect Work from damage to surface, profile, and shape until Substantial Completion.

B. Remove protective devices only when items will be safe from other construction operations or removal is required to permit related Work.

END OF SECTION 10 1472



20' 10' 0' 20' 40'

GRAPHIC SCALE

SCALE: 1" = 20'

architecture
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14471 CHAMBERS RD, SUITE 210
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(714) 508-1780 508-1790 FAX

ARCHITECT:

REGISTERED PROFESSIONAL ENGINEER
ALYSEN J. WETLAND
No. C69927
CIVIL
STATE OF CALIFORNIA

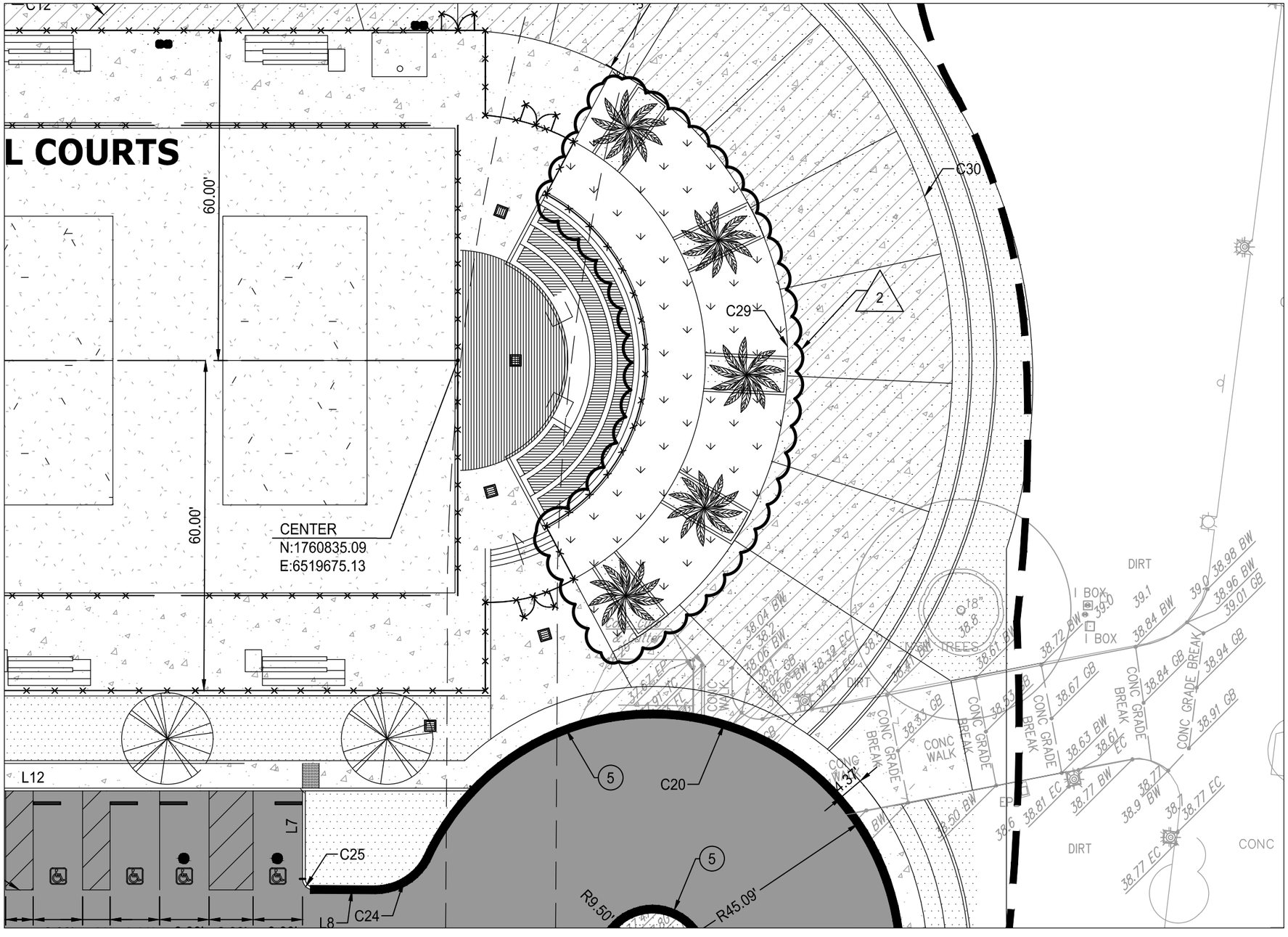
PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
HORIZONTAL CONTROL AND STRIPING PLAN - C2.02

DATE:	12-03-19
JOB NO:	16042.02
DRAWN:	SKC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET

SKC-01



20' 10' 0' 20' 40'

GRAPHIC SCALE

SCALE: 1" = 20'

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westbergwhite

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PROJECT:
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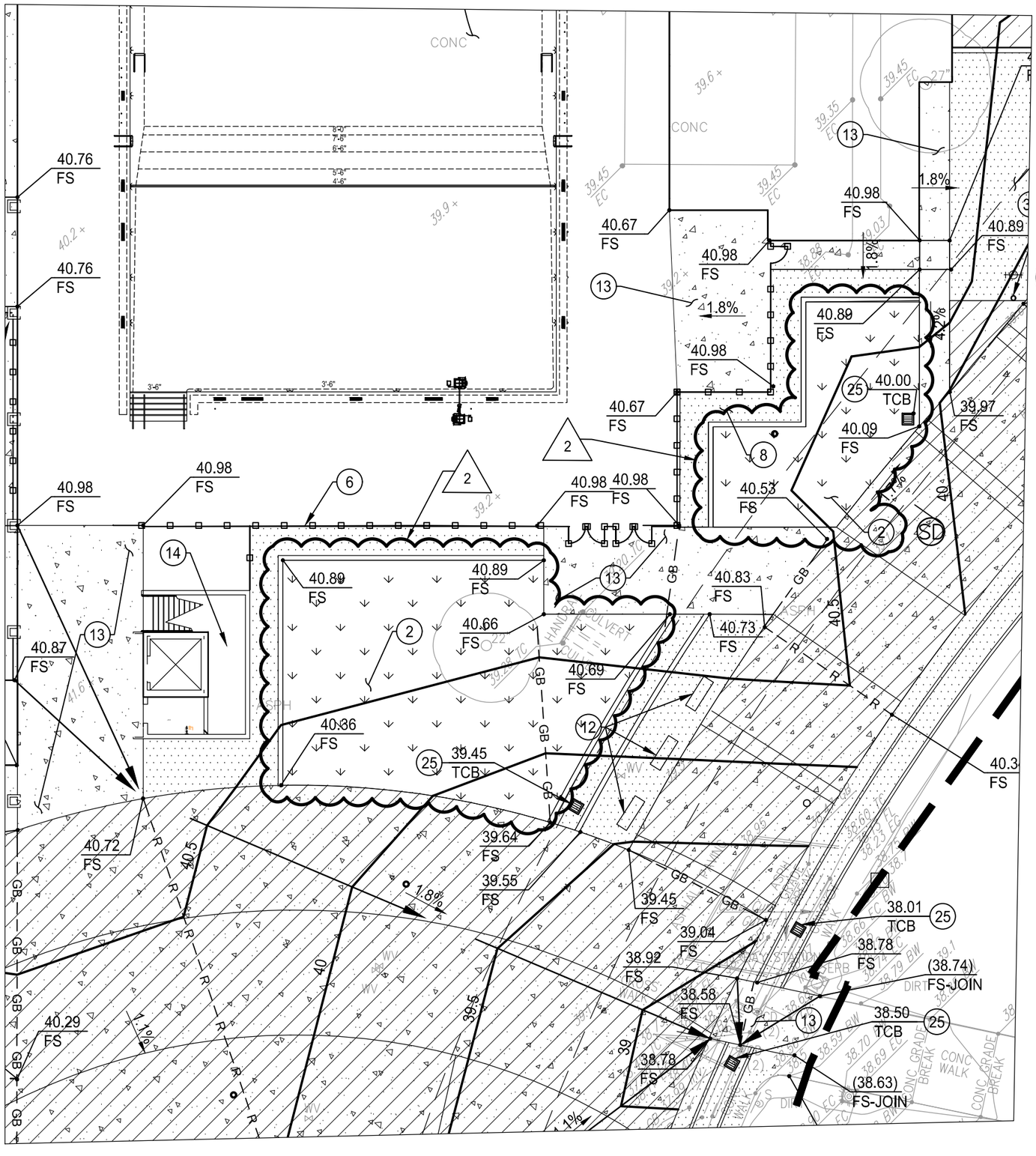
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
HORIZONTAL CONTROL AND STRIPING PLAN - C2.04

DATE:	12-03-19
JOB NO:	16042.02
DRAWN:	SKC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET

SKC-02



CONSTRUCTION NOTES:

- CONSTRUCT
- EXISTING TO REMAIN -PROTECT IN PLACE
- EXISTING TO REMOVE
- REMOVE & RELOCATE
- ADJUST TO GRADE
- WORK BY OTHERS

1. TENNIS COURT PER ARCHITECTURAL DESIGN
2. SYNTHETIC TURF PER ARCHITECTURAL PLAN
3. VOLLEYBALL FIELD PER ARCHITECTURAL PLAN
4. AQUATIC CENTER PER ARCHITECTURAL PLAN
5. BUILDING PER ARCHITECTURAL PLAN
6. FENCE PER ARCHITECTURAL PLAN
7. BLEACHERS PER ARCHITECTURAL PLAN
8. LANDSCAPE AREA
9. CONCRETE CURB AND GUTTER PER SPPWC STD. PLAN 120-2
10. ASPHALT PAVEMENT PER DETAIL 3/SHEET C9.01
11. INSTALL FILTER IN EXISTING CATCH BASIN
12. BENCH PER ARCHITECTURAL PLAN
13. CONCRETE PAVEMENT PER DETAIL 4/SHEET C9.01. REFERENCE ARCHITECTURAL PLANS FOR CONCRETE COLOR AND FINISH.

2 ARCHITECTURAL DETAIL

17. TERRACED SEATING PER ARCHITECTURAL PLAN
18. SOFTBALL FIELD PER ARCHITECTURAL PLAN
19. 6" ROLLED CURB PER DETAIL 1/ SHEET F002
20. FENCE ON CURB DETAIL 5/SHEETC9.03
21. SCOREBOARD
22. DRIVEWAY APPROACH PER CITY OF LONG BEACH STANDARD PLAN. SEE DETAIL HEREON.
23. LONGITUDINAL GUTTER PER SPPWC STD PLAN 122-2
24. 6" CURB PER SPPWC STD PLAN 120-2
25. 24" X 24" CATCH BASIN PER BROOKS 2424CB OR EQUAL WIT PEDESTRIAN RATED GRATE. INSTALL FILTER PER DETAIL 9/C9.01
26. RAMP PER ARCHITECTURAL PL
27. 0" CURB
28. NOT USED
29. NYLOPLAST BASIN PER DETAIL 2/SHEET C9.03
30. **AREA DRAIN**

20' 10' 0' 20' 40'

GRAPHIC SCALE

SCALE: 1" = 20'

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ARCHITECT:

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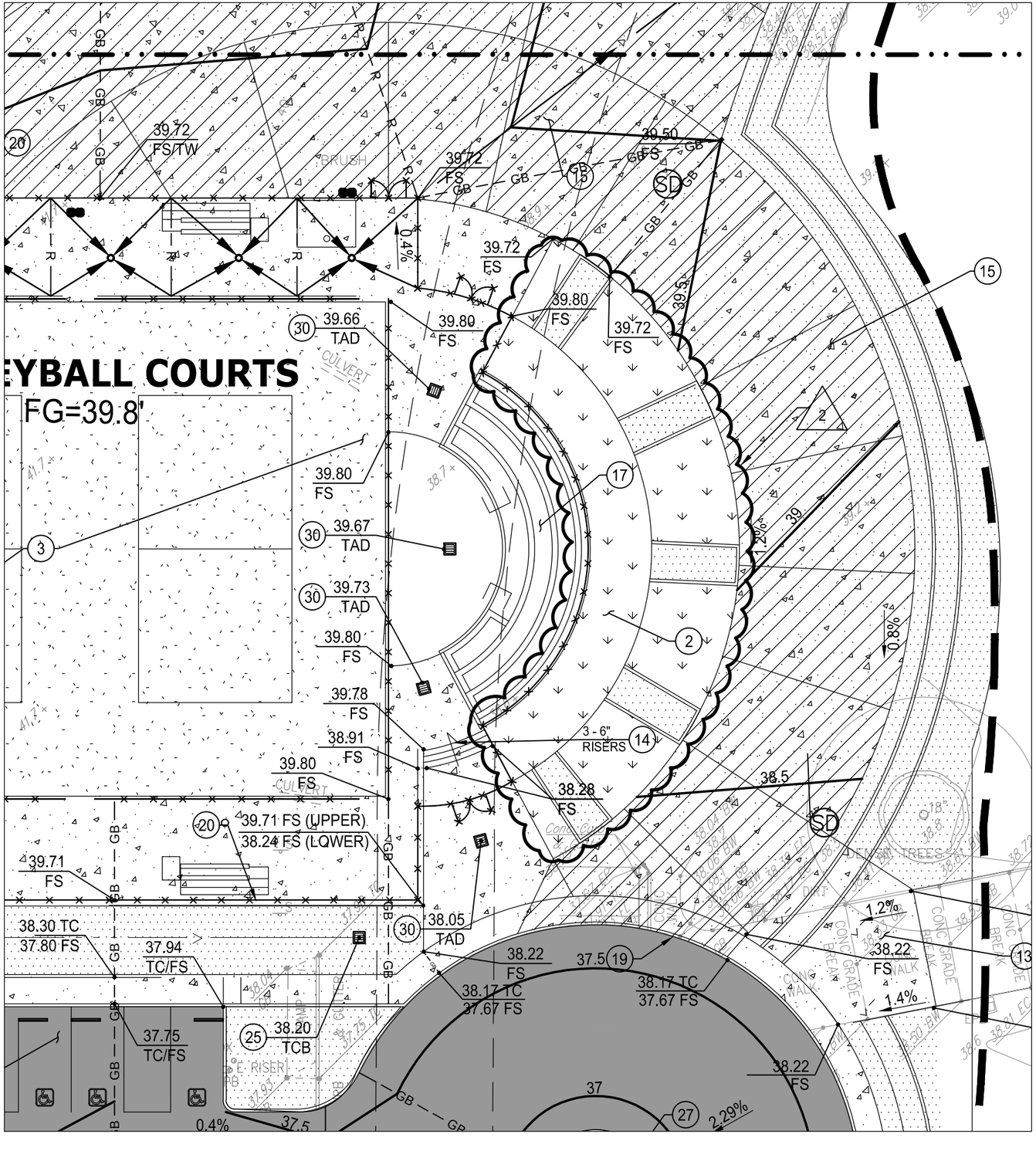
STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
GRADING PLAN - C3.02

DATE:	12-03-19
JOB NO:	16042.02
DRAWN:	SKC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	
SHEET	SKC-03



CONSTRUCTION NOTES:

- CONSTRUCT
- EXISTING TO REMAIN -PROTECT IN PLACE
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- REMOVE & RELOCATE
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1. TENNIS COURT PER ARCHITECTURAL DESIGN
2. SYNTHETIC TURF PER ARCHITECTURAL PLAN
3. VOLLEYBALL FIELD PER ARCHITECTURAL PLAN
4. AQUATIC CENTER PER ARCHITECTURAL PLAN
5. BUILDING PER ARCHITECTURAL PLAN
6. FENCE PER ARCHITECTURAL PLAN
7. BLEACHERS PER ARCHITECTURAL PLAN
8. LANDSCAPE AREA
9. CONCRETE CURB AND GUTTER PER SPPWC STD. PLAN 120-2
10. ASPHALT PAVEMENT PER DETAIL 3/SHEET C9.01
11. INSTALL FILTER IN EXISTING CATCH BASIN
12. BENCH PER ARCHITECTURAL PLAN
13. CONCRETE PAVEMENT PER DETAIL 4/SHEET C9.01. REFERENCE ARCHITECTURAL PLANS FOR CONCRETE COLOR AND FINISH.

2 ARCHITECTURAL DETAIL

17. TERRACED SEATING PER ARCHITECTURAL PLAN
18. SOFTBALL FIELD PER ARCHITECTURAL PLAN
19. 6" ROLLED CURB PER DETAIL 1/ SHEET F002
20. FENCE ON CURB DETAIL 5/SHEETC9.03
21. SCOREBOARD
22. DRIVEWAY APPROACH PER CIT" OF LONG BEACH STANDARD PLAN. SEE DETAIL HEREON.
23. LONGITUDINAL GUTTER PER SPPWC STD PLAN 122-2
24. 6" CURB PER SPPWC STD PLAN 120-2
25. 24" X 24" CATCH BASIN PER BROOKS 2424CB OR EQUAL WIT PEDESTRIAN RATED GRATE. INSTALL FILTER PER DETAIL 9/C9.01
26. RAMP PER ARCHITECTURAL PL/
27. 0" CURB
28. NOT USED
29. NYLOPLAST BASIN PER DETAIL 2/SHEET C9.03
30. **AREA DRAIN**

20' 10' 0' 20' 40'

GRAPHIC SCALE
SCALE: 1" = 20'

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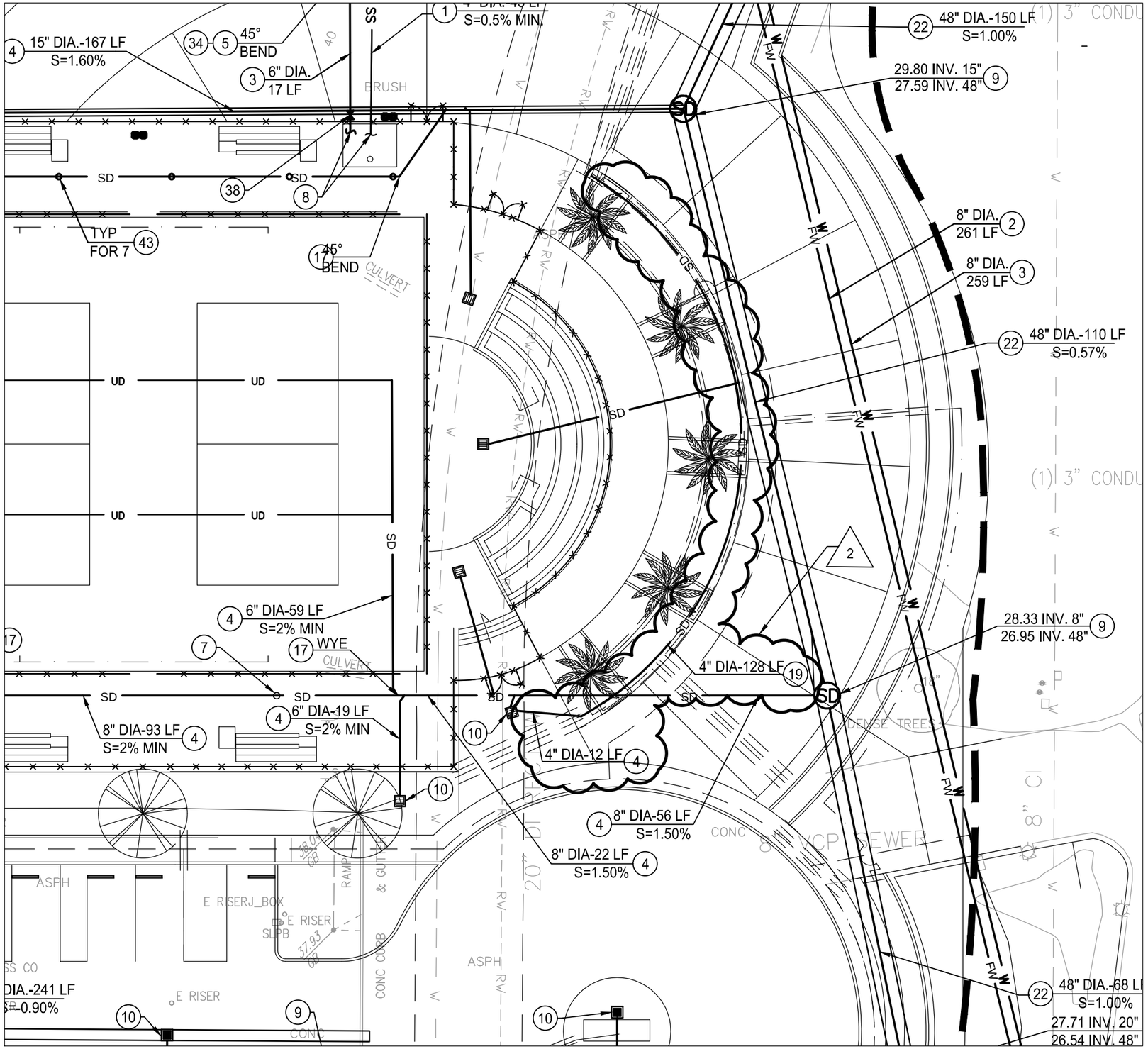
PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
GRADING PLAN - C3.04

DATE:	12-03-19
JOB NO:	16042.02
DRAWN:	SKC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKC-04



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LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
CIVIL UTILITY PLAN - C4.04

DATE:	12-03-19
JOB NO:	16042.02
DRAWN:	SKC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET

SKC-05

NOTES:

1. REFERENCE MECHANICAL, ELECTRICAL AND TELECOMMUNICATION PLANS FOR DEMOLITION OF M, E, & T UTILITIES AND STRUCTURE.
2. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF EXISTING PIPE PRIOR TO CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH COLLEGE PRIOR TO CONNECTION.
3. UTILITY LINES TO BE REMOVED, SHALL BE REMOVED IN THEIR ENTIRETY AND PROPERLY DISPOSED OF.\
4. EXISTING UNDERGROUND UTILITIES AND IMPROVEMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATIONS BASED UPON RECORD INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF PLANS. NO GUARANTEE IS MADE AS TO THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND/OR LOCATION OF THOSE UTILITIES SHOWN ON THESE PLANS. ANY ADDITIONAL COSTS INCURRED AS A RESULT OF CONTRACTOR'S FAILURE TO VERIFY LOCATIONS OF EXISTING UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION IN THEIR VICINITY SHALL BE BORNE BY THE CONTRACTOR AND ASSUMED INCLUDED IN THE CONTRACT.
5. PRIOR TO INSTALLATION, ALL PLANS AND SPECIFICATIONS SHALL BE APPROVED BY DSA. REFER TO DSA IR A-25 FOR DESIGN, INSTALLATION, AND MAINTENANCE GENERAL REQUIREMENTS.
6. INSPECTIONS ARE REQUIRED: 1) PRIOR TO THRUST BLOCKS, 2) FOR HYDROSTATIC TESTING, AND 3) FOR FLUSH.
7. INSTALLATION, INSPECTION, AND TESTING SHALL CONFORM TO 2016 EDITIONS CFC, NFPA 13, AND NFPA 24.
8. PRIVATE FIRE HYDRANTS SHALL BE APPROVED WET BARREL STYLE WITH A MINIMUM OF ONE $2\frac{1}{2}$" AND ONE 4" OUTLET. THE 4" OUTLET SHALL FACE THE FIRE DEPARTMENT ACCESS ROAD. ALL OUTLETS SHALL BE PROVIDED WITH NATIONAL STANDARDS THREADS (NST). NFPA 24, 7.1.1.2.
9. FIRE HYDRANTS SUPPLY PIPING SHALL BE MINIMUM OF SIX INCHES IN DIAMETER. THE CENTER OF THE HOSE OUTLETS SHALL BE NOT LESS THAN 18" ABOVE FINAL GRADE OR, WHERE LOCATED IN A HOSE HOUSE, 12" ABOVE THE FLOOR. NFPA 21. 7.1.1 AND 7.3.3.
10. FIRE HYDRANTS SHALL BE MINIMUM OF 40 FEET FROM ALL STRUCTURES. NFPA 24, 7.2.3.
11. A KEYED GATE VALVE SHALL BE PROVIDED FOR EACH HYDRANT IN AN ACCESSIBLE LOCATION. VALVES SHALL NOT BE LOCATED IN PARKING STALLS. NFPA 24, 7.1.1.1.
12. ALL PIPING SHALL BE LISTED FOR USE IN FIRE PROTECTION SERVICE AND COMPLY WITH AWWA STANDARDS (CLASS 150 MIN.) CLASS 200 PIPE SHALL BE USED WHERE THE PRESSURE MAY EXCEED 150 PSI. NFPA 24, 10.1.1.
13. ALL BOLTED JOINTS SHALL BE CLEANED AND THOROUGHLY COATED WITH ASPHALT OR OTHER CORROSION RETARDING MATERIAL AFTER INSTALLATION. NFPA 24 10.4.1.1.
14. BACKFILL SHALL BE WELL TAMPED LAYERS TO CONSIST OF 6" MINIMUM BED OF CLEAN FILL SAND OR PEA GRAVEL BELOW AND 12" ABOVE THE PIPE (TOTAL 18" MIN.) NFPA 24, 10.9.1.
15. FITTINGS SHALL BE OF AN APPROVED TYPE. NFPA 24, 10.2.1.
16. A MINIMUM OF 30" OF COVER, FROM FINISH GRADE TO THE TOP OF THE PIPE, SHALL BE PROVIDED. WHEN SURFACE LOADS ARE EXPECTED, A MINIMUM OF 36" COVER SHALL BE PROVIDED. NFPA 24, 10.4.2.2.2 AND 10.3.
17. THRUST BLOCKS, OR OTHER APPROVED METHOD OF THRUST RESTRAINT, SHALL BE PROVIDED WHEREVER PIPE CHANGE DIRECTION. BACK-FILL BETWEEN THE JOINTS TO PREVENT MOVEMENT OF THE PIPE. PROVIDE DETAILS AND CALCULATIONS FOR SIZING THRUST BLOCKS BASE ON ACTUAL SOIL CONDITIONS. NFPA 24, 10.6.
18. A HYDROSTATIC TEST (200 PSI FOR TWO HOURS OR 50 PSI OVER MAXIMUM STATIC PRESSURE, WHICHEVER IS GREATER) SHALL BE PERFORMED. NFPA 24, 10.10.2.2.1.
19. THE SYSTEM SHALL BE THOROUGHLY FLUSHED BEFORE CONNECTION IS MADE TO OVERHEAD PIPING. FLOW SHALL BE THROUGH A MINIMUM 4" HOSE OF PIPE. NFPA 24, 10.10.2.1.
20. ALL CONTROL VALVES SHALL BE LOCKED IN THE OPEN POSITION. VALVES SHALL BE MONITORED IF THEY SERVE 6 OR MORE SPRINKLER HEADS. CBC/CFC 903.4
21. ALL CONTROL VALVES SHALL LISTED INDICATING TYPE UNLESS A NON-INDICATING VALVE, SUCH AS AN UNDERGROUND GATE VALVE WITH APPROVED ROADWAY BOX COMPLETE WITH T-WRENCH, IS ACCEPTABLE TO AUTHORITY HAVING JURISDICTION (AHJ). NFPA 24, 6.1.1.
22. POST INDICATING VALVES (PIV)SHALL BE TESTED TO INSURE THE THE "TARGETS" (OPEN, CLOSED) ARE CLEARLY IDENTIFIED WHEN VALVE IS OPENED AND CLOSED. NFPA 24, 10.10.1 AND 14.1.
23. TESTS SHALL BE MADE BY THE INSTALLING CONTRACTOR IN THE PRESENCE OF THE (AHJ). PROVIDE A COMPLETED CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING TO DSA. NFPA 24, 10.10, 14.1, AND CFC 901.5 AND 6.
24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH LBWD AND PAYING FOR NEW WATER SERVICE CONNECTIONS. REQUIRED ENGINEERING EXHIBITS WILL BE PROVIDED BY THE ENGINEER.

2

CONSTRUCTION NOTES:

- CONSTRUCT
- EXISTING TO REMAIN -PROTECT IN PLACE
- EXISTING TO REMOVE
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1. SANITARY SEWER LINE PVC (SDR 35)/ SIZE, LEGNTH, AND SLOPE PER PLAN. PIPE BEDDING AND TRENCH PER DETAIL 6/SHEET C9.01.
2. FIRE WATER SERVICE LINE (PVC C-900, CL 200) PIPE SIZE AND LENGTH PER PLAN.
3. WATER LINE, (PVC C-900, CL 200), SIZE AND LENGTH PER PLAN. PIPE BEDDING AND TRENCH PER DETAIL 6/SHEET C9.01.
4. STORM DRAIN LINE-PVC (SDR 35) . SIZE, LENGTH, AND SLOPE PER PLAN. PIPE BEDDING AND TRENCH PER DETAIL 6/SHEET C9.01.
5. INSTALL DUCTILE IRON MECHANICAL JOINT FITTING, CLASS 350 RATED WORKING PRESSURE PER AWWA STANDARD C110. SIZE PER ADJOINING PIPE AND TYPE PER PLAN. PROTECT WITH PETROLEUM WAX TAPE PER AWWA STANDARD C217.09, PETROLATUM AND PETROLEUM WAX TAPE COATING FOR THE EXTERIOR OF CONNECTIONS AND FITTINGS FOR STEEL WATER PIPELINES.
6. CONNECT TO EXISTING WATER LINE. CONTRACTOR TO FIELD VERIFY LOCATION, DEPTH, SIZE , AND CONDITION PRIOR TO CONSTRUCTION. *SEE NOTE 24 HEREON.
7. CLEANOUT PER SPPWC STD. PLAN 321-2.
8. PLUMBING CONNECTION. SEE PLUMBING PLANS FOR CONTINUATION.
9. STORM DRAIN MANHOLE PER SPPWC STD. PLAN 312-2.
10. CATCH BASIN PER GRADING PLAN
11. 1"X12" FLAT DRAIN PER DETAIL 6/SHEET C-9.03.
12. STUB OUT FOR HOSEBIB.
13. FIRE HYDRANT PER DETAIL 1/SHEET C9.01.
14. SADDLE CONNECTION PER SPPWC STD. PLAN 340-2.
15. DOMESTIC WATER METER , HOT TAP AND SERVICE LATERAL TO BE INSTALLED BY LBWD. *SEE NOTE 24 HEREON.

2

2

2

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ARCHITECT:

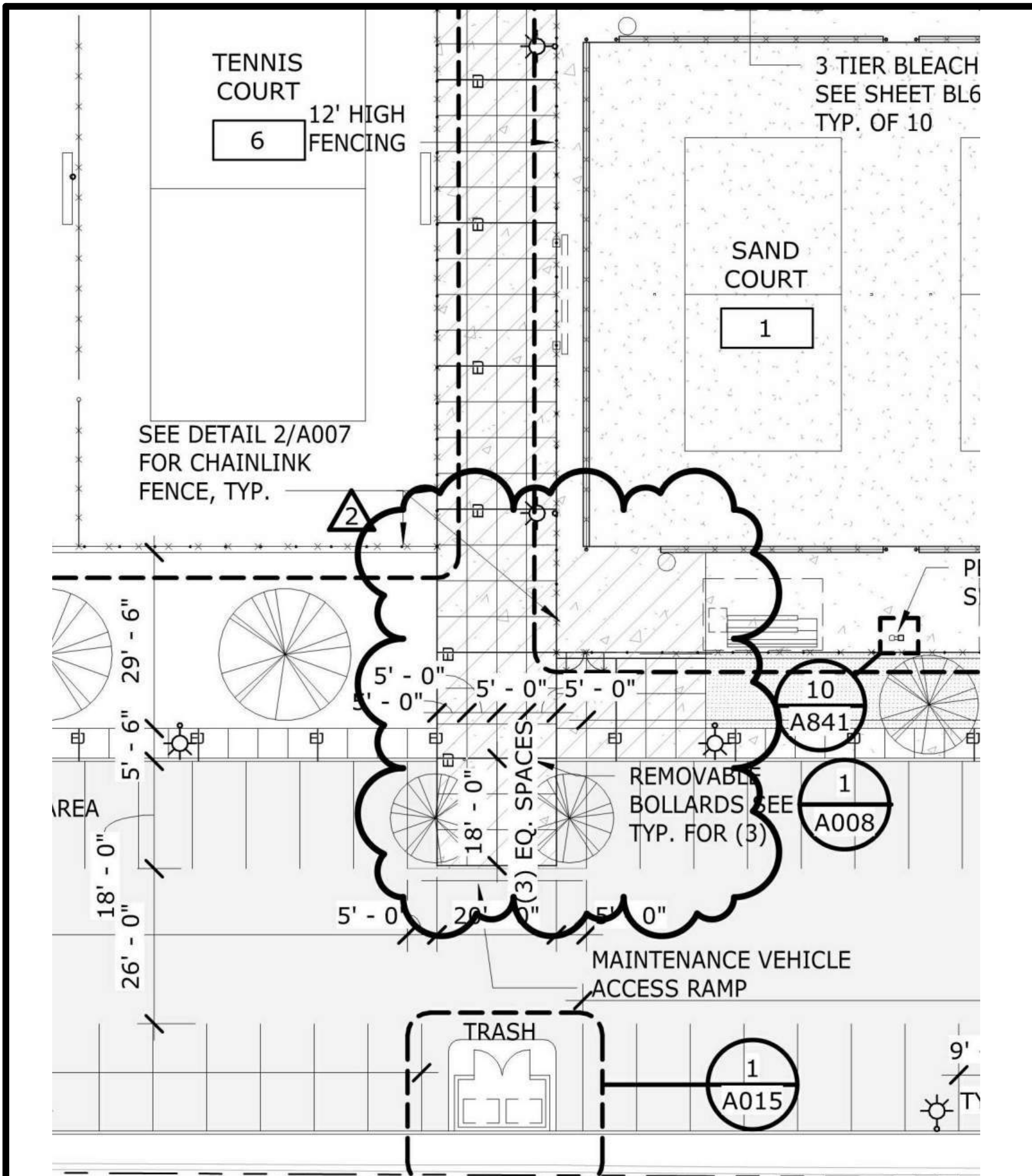
REGISTERED PROFESSIONAL ENGINEER
ALYSEN J. WEILAND
No. C69927
CIVIL
STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
CIVIL UTILITY PLAN - C4.05

DATE:	12-03-19
JOB NO:	16042.02
DRAWN:	SKC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKC-06



12/4/2019 12:37:52 PM SKA13

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ARCHITECT: LICENSED ARCHITECT PAUL DENNIS WESTBERG C-11... EX... STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

DSA FILE NO: 19-C3	DATE: 12/03/19	
DSA #: 03-119628	JOB NO: 16042.01	
ADDENDA #: 02	DRAWN: EM / JC	
CCD #:	SHEET	
BULLETIN #:	SKA-13	
RFI #:		

SHEET DESCRIPTION:
ENLARGED PARTIAL SITE PLAN - NORTH SIDE
REVISED EXTENT OF HEAVY DUTY PAVING A001
(N.T.S.)

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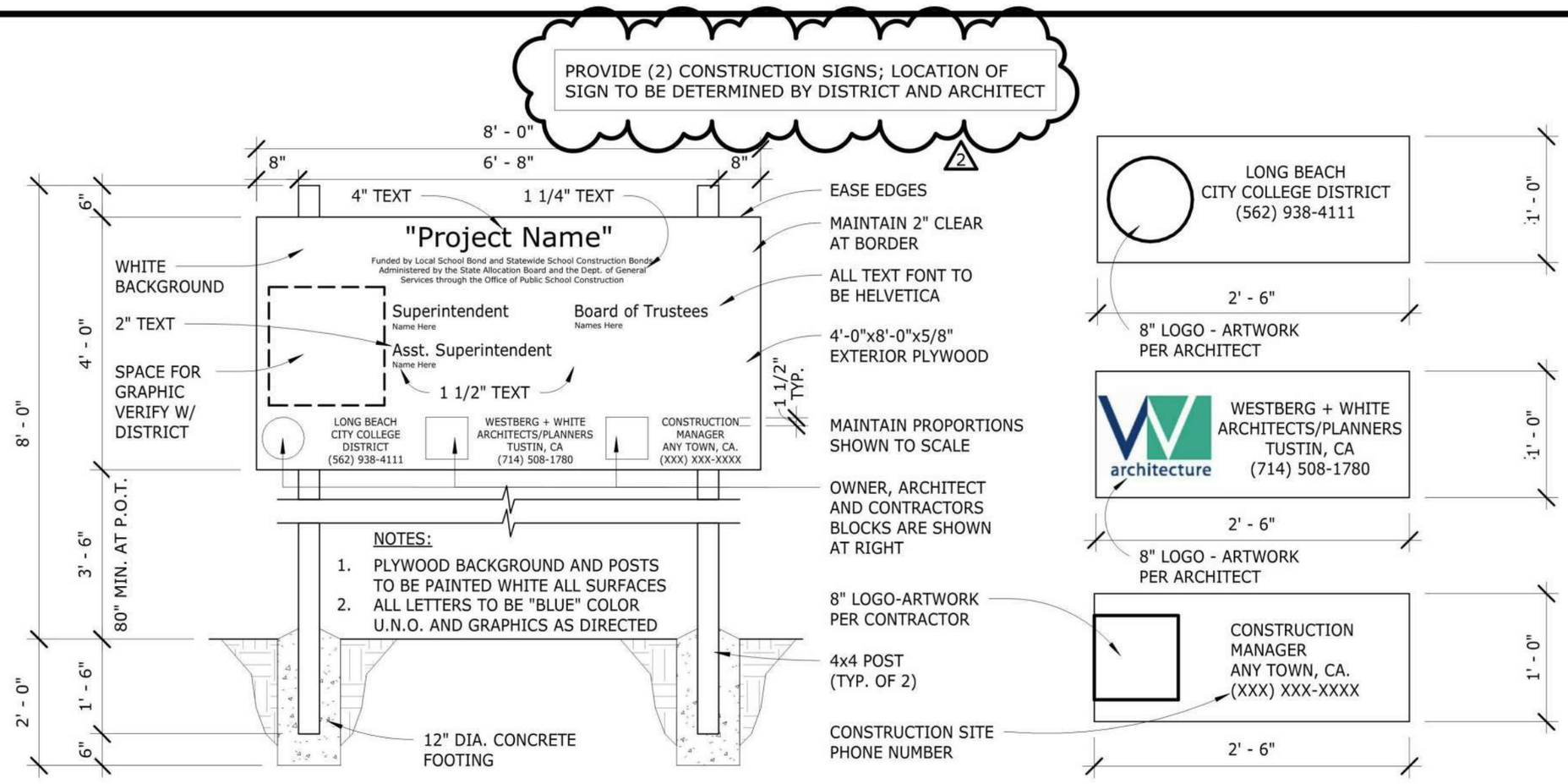

CONSTRUCTION SIGN

1/2" = 1'-0"

16

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(714) 508-1780 508-1790 FAX

ARCHITECT:

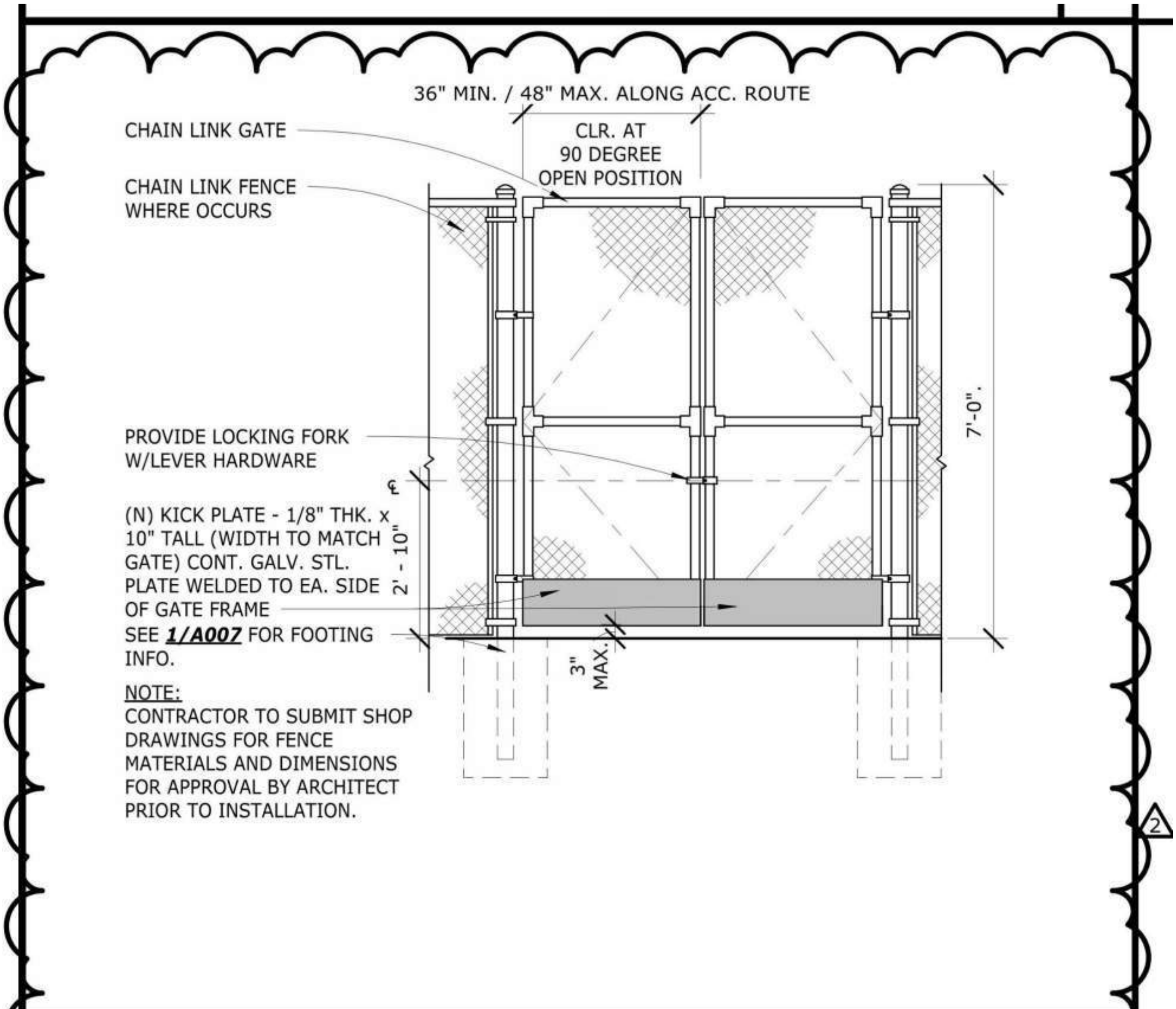
LICENSED ARCHITECT PAUL EMMETT WESTBERG STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
REVISED DETAIL 16/A006 (N.T.S.)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKA-14



CHAIN LINK DOUBLE GATE 3/8" = 1'-0" 18

12/4/2019 12:37:53 PM SKA15

ARCHITECT:
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PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
NEW DETAIL 18/A007 (N.T.S.)

DSA FILE NO: 19-C3	DATE: 12/03/19
DSA #: 03-119628	JOB NO: 16042.01
ADDENDA #: 02	DRAWN: EM / JC
CCD #:	SHEET
BULLETIN #:	SKA-15
RFI #:	

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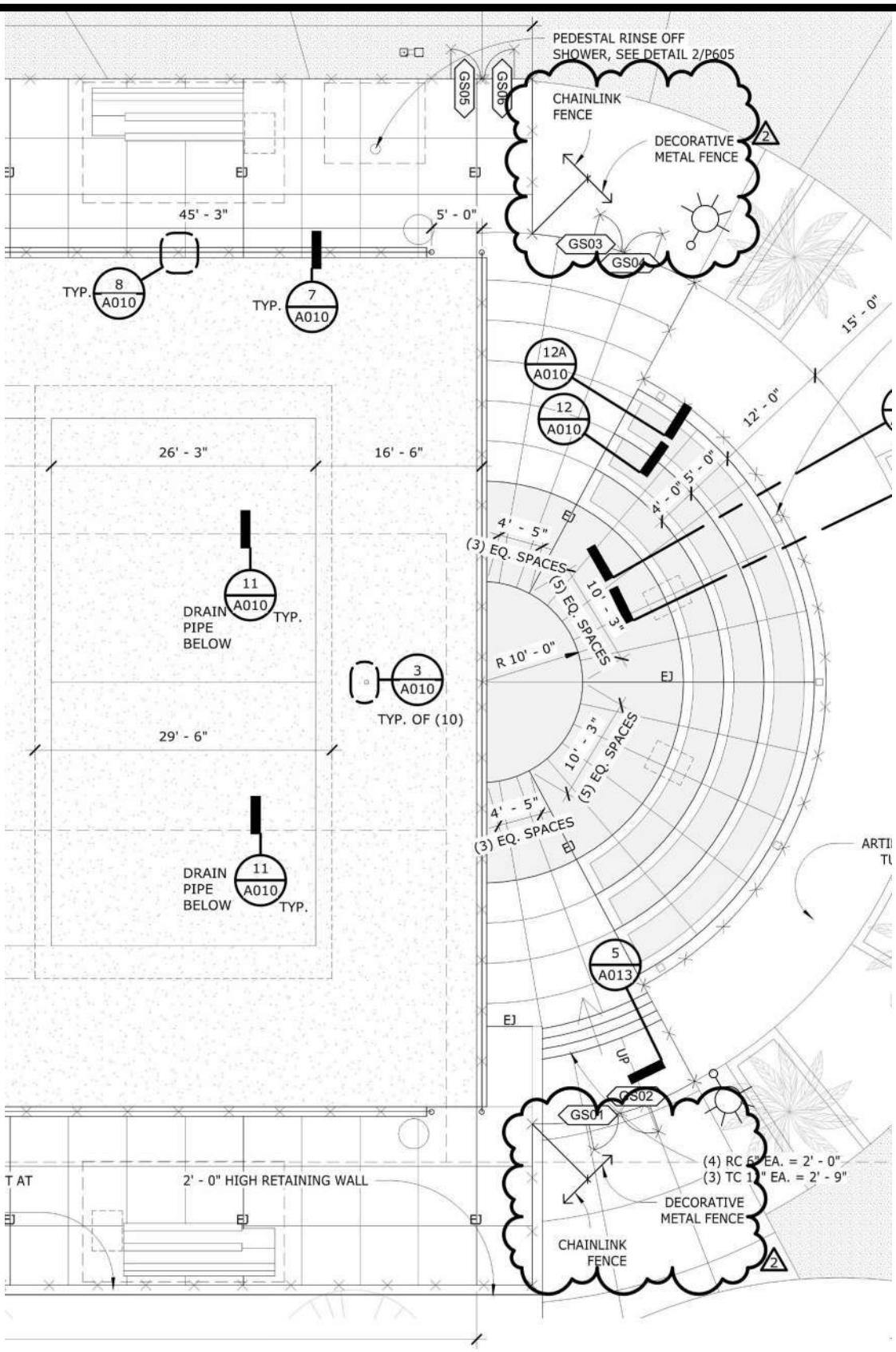

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ARCHITECT:

LICENSED ARCHITECT PAUL [illegible] WESTBERG STATE OF CALIFORNIA

PROJECT:

LIBERAL ARTS CAMPUS

KINESIOLOGY LABS and AQUATIC CENTER

LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:

REVISED ENLARGED SAND VOLLEYBALL COURT PLAN 1/A010 (N.T.S.)

DSA FILE NO: 19-C3	DATE: 12/03/19
DSA #: 03-119628	JOB NO: 16042.01
ADDENDA #: 02	DRAWN: EM / JC
CCD #:	SHEET
BULLETIN #:	SKA-16
RFI #:	

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MULTI-PURPOSE ATHLETIC EVENT CENTER
W201

A/V CLOSET
W205

ELECTRICAL
W206
1 HR

STORAGE ROOM
W207

KITCHENETTE
W204

CUSTODIAL
W203

(M) R/R
W208

(W) R/R
W209

ALL GENDER
W202

1-HR

W205A
W206A
W207A
W204A
W203A
W209A
W208A
W202A
W201A
W201B

3DW-A608

BN023

GW20
GW21

6" SEISM

TYP.
TYP. AT 2
TYP. OF 3 (SKA-38)

1' - 11"
10' - 11"
28' - 2"
10' - 10"
2' - 2"
13' - 11"

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ARCHITECT:

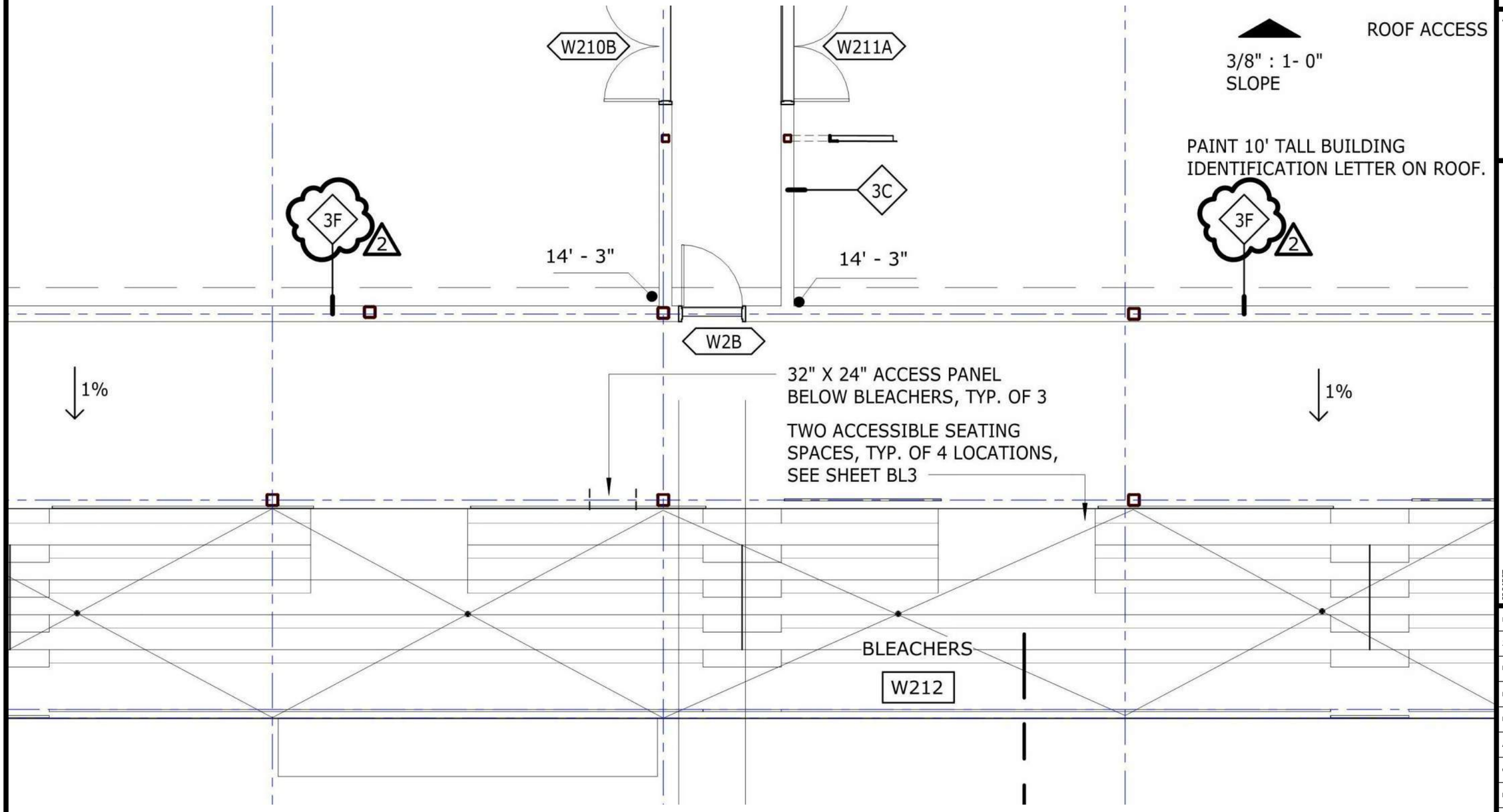
LICENSED ARCHITECT
PAUL EMIL WESTBERG
STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
BLDG 'W1', PARTIAL SECOND FLOOR PLAN – SOUTH END - 1/W-A102.1 (N.T.S.)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKA-17



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ARCHITECT:

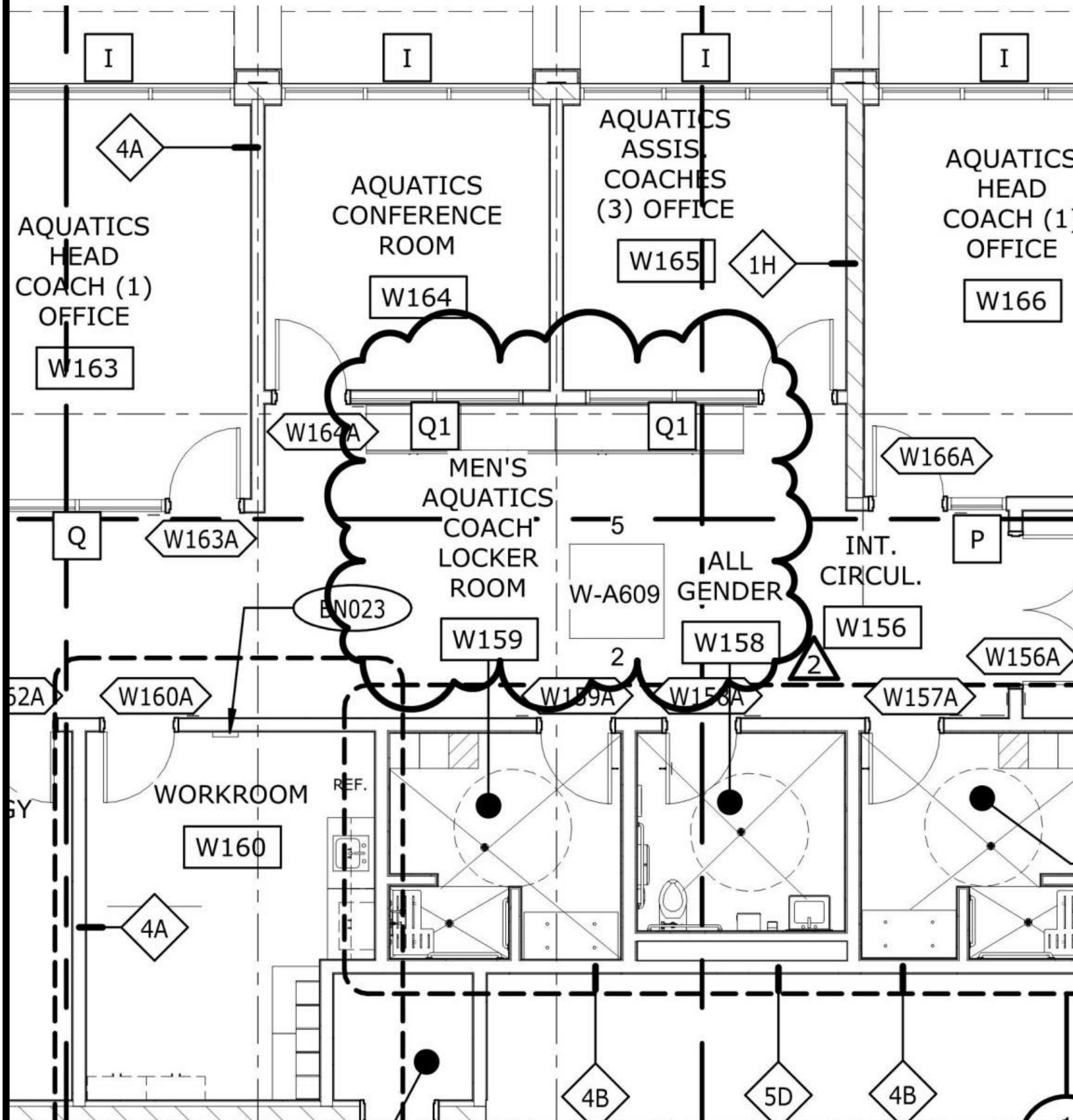
LICENSED ARCHITECT
PAUL [illegible] WESTBERG
[illegible]
EXP [illegible]
STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
BLDG 'W1', PARTIAL SECOND FLOOR PLAN – NORTH END - 1/W-A102.2
(N.T.S.)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKA-18



12/11/2019 9:55:30 AM SKA19

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ARCHITECT: LICENSED ARCHITECT — PAUL DENNIS WESTBERG — STATE OF CALIFORNIA

PROJECT: LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION: BLDG 'W2', FLOOR PLAN - 1/W-A103 (N.T.S.)

DSA FILE NO:	19-C3
DSA #:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	
DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
SHEET	SKA-19

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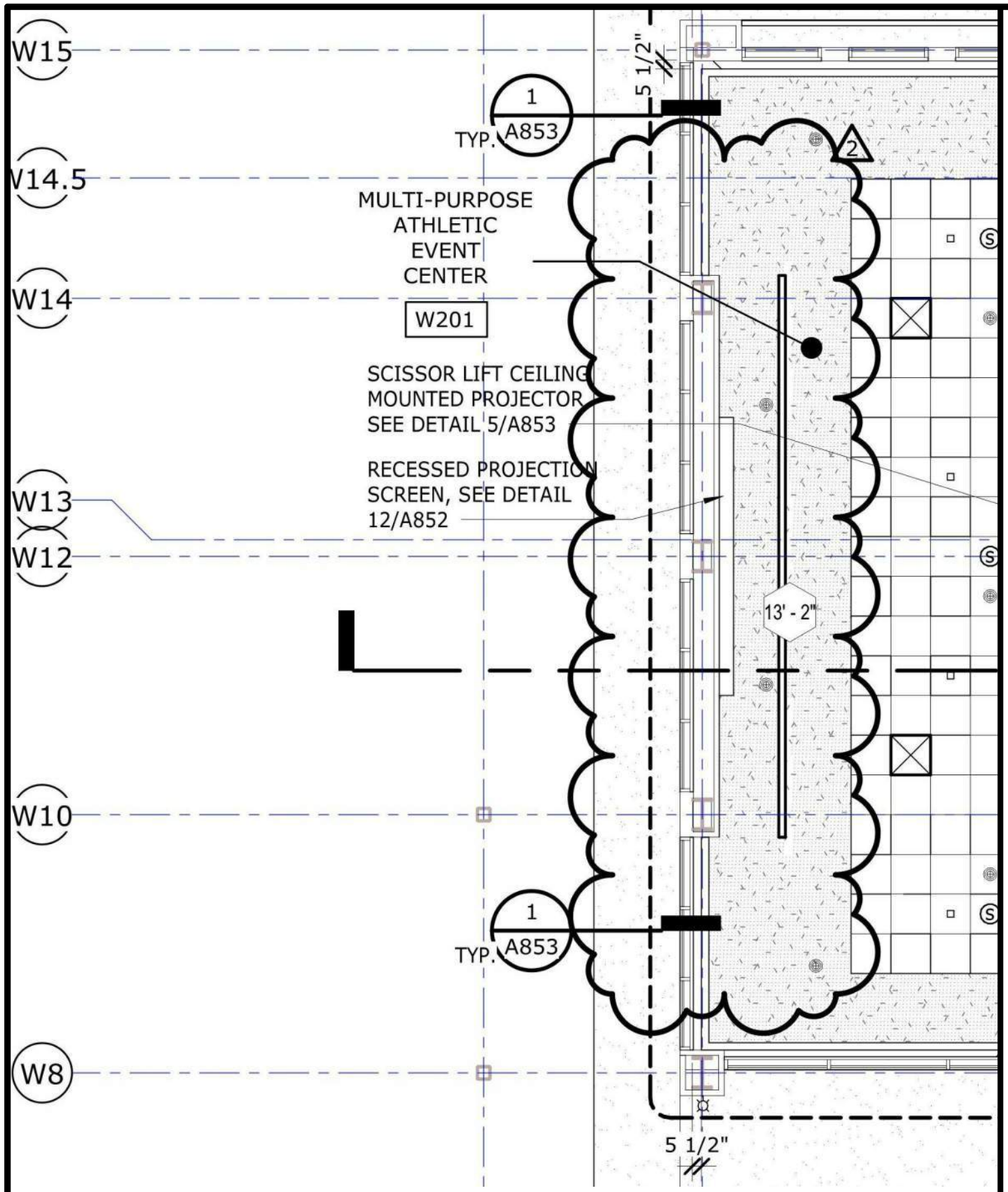

PARTIAL SECOND FLOOR RCP - 1/W-A202.1 - W201

1. FOR TYPICAL SYMBOLS AND ABBREVIATIONS, SEE SHEET G001.
2. FOR WALL TYPES, SEE "WALL LEGEND" ON CORRESPONDING FLOOR PLAN.
3. FOR TYPICAL CEILING NOTES, SEE SHEET A850, AND DETAILS SEE SHEETS A851, A852 AND A853
4. HEIGHTS INDICATED ARE TO THE UNDERSIDE OF THE FINISH CEILING OR SOFFIT FROM THE F.F. .
5. PRIOR TO THE INSTALLATION OF MECHANICAL, PLUMBING, ELECTRICAL AND ARCHITECTURAL EQUIPMENT AND COMPONENTS, ALL SUBCONTRACTORS SHALL COORDINATE WITH THE CONTRACTOR AND OTHER SUBCONTRACTORS USING THE SAME SPACE FOR SUCH INSTALLATION TO ENSURE THAT ALL COMPONENTS FIT WITHIN THE SPACE AVAILABLE.
6. ALL LIGHTS SHALL BE CENTERED IN SPACES AS SHOWN, UNLESS NOTED OTHERWISE BY DIMENSION.
7. PROVIDE CEILING ACCESS PANELS (NOT SHOWN) AT HARD CEILINGS WHERE REQUIRED TO ACCESS PLUMBING AND MECHANICAL CONTROLS.
8. LIGHT FIXTURES, MECHANICAL REGISTERS AND SPRINKLER HEADS ARE SHOWN FOR LOCATION ONLY. FOR ACTUAL TYPES AND SIZES, SEE ELECTRICAL AND MECHANICAL PLANS.
9. FOR VISUAL INSPECTION AND TESTING PROVIDE ATTIC/ CEILING ACCESS IN ALL HARD SURFACE CEILINGS WHERE HEAT DETECTORS OR SPRINKLER HEADS OCCUR ABOVE CEILING.
10. LIGHT FIXTURES NOT DIMENSIONALLY LOCATED OR IN A SUSPENDED CEILING GRID CANNOT BE INSTALLED UNTIL DIMENSIONALLY LOCATED BY ARCHITECT.

2

CEILING PLAN GENERAL NOTES

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ARCHITECT:

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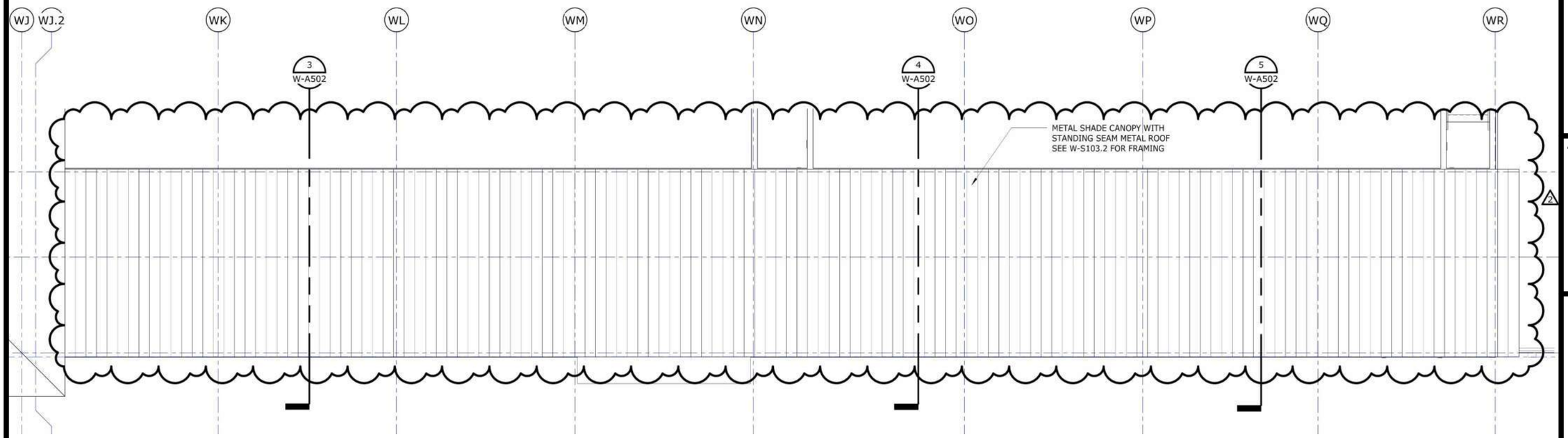
PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

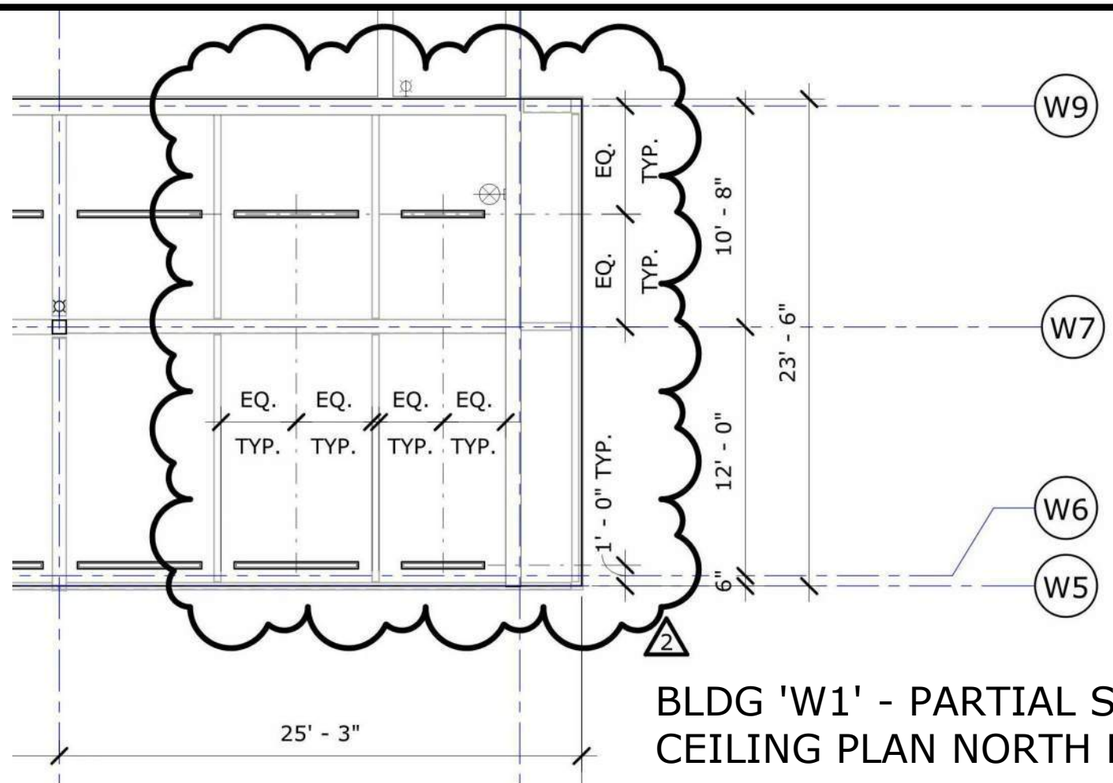
SHEET DESCRIPTION:
REVISED CEILING PLAN GENERAL NOTES - TYPICAL ALL RCP SHEETS, BLDG. 'W1' - SOUTH END - PARTIAL SECOND FLOOR REFLECTED CEILING PLAN FOR MULTI-PURPOSE ROOM W201 - W-A202.1 (N.T.S.)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKA-20



BLDG 'W1' - PARTIAL ROOF PLAN NORTH END - 2/W-A202.2



BLDG 'W1' - PARTIAL SECOND FLOOR REFLECTED CEILING PLAN NORTH END - 1/W-A202.2

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ARCHITECT:

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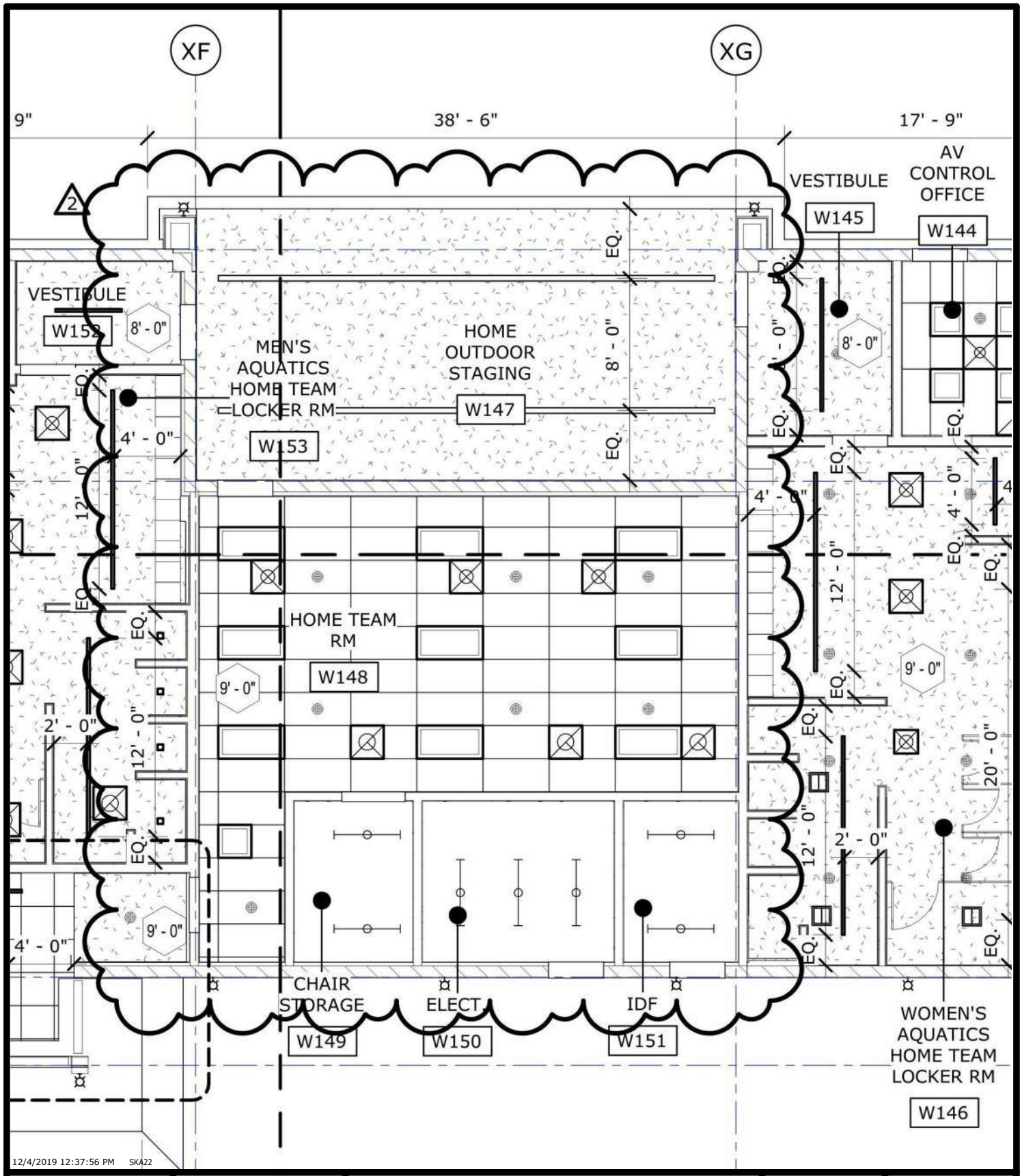
PAUL E. WESTBERG
STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
BLDG 'W1' - PARTIAL SECOND FLOOR REFLECTED CEILING PLAN NORTH END - 1/W-A202.2 AND BLDG 'W1' - PARTIAL ROOF PLAN NORTH END - 2/W-A202.2 (N.T.S.)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKA-21



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ARCHITECT:

LICENSED ARCHITECT
PAUL [illegible] WESTBERG
STATE OF CALIFORNIA

PROJECT:

LIBERAL ARTS CAMPUS

KINESIOLOGY LABS and AQUATIC CENTER

LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:

BLDG. 'W2' REFLECTED CEILING PLAN - 1/W-A203 (N.T.S.)

DSA FILE NO: 19-C3	DATE: 12/03/19
DSA #: 03-119628	JOB NO: 16042.01
ADDENDA #: 02	DRAWN: EM / JC
CCD #:	SHEET
BULLETIN #:	SKA-22
RFI #:	

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XA XB XC XD XD.5 XE XF

13' - 10"

17' - 8"

15' - 4"

4' - 0"

9 "

13' - 3 1/2"

15' - 4"

12' - 8"

2

71' - 2"

13' - 11"

13' -

MECHANICAL SCREEN WALL,
SEE STRUCTURAL DRAWINGS
AND DETAIL 12/A871

HVAC EQUIPMENT, SEE
MECHANICAL DRAWINGS, TYP.

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ARCHITECT:

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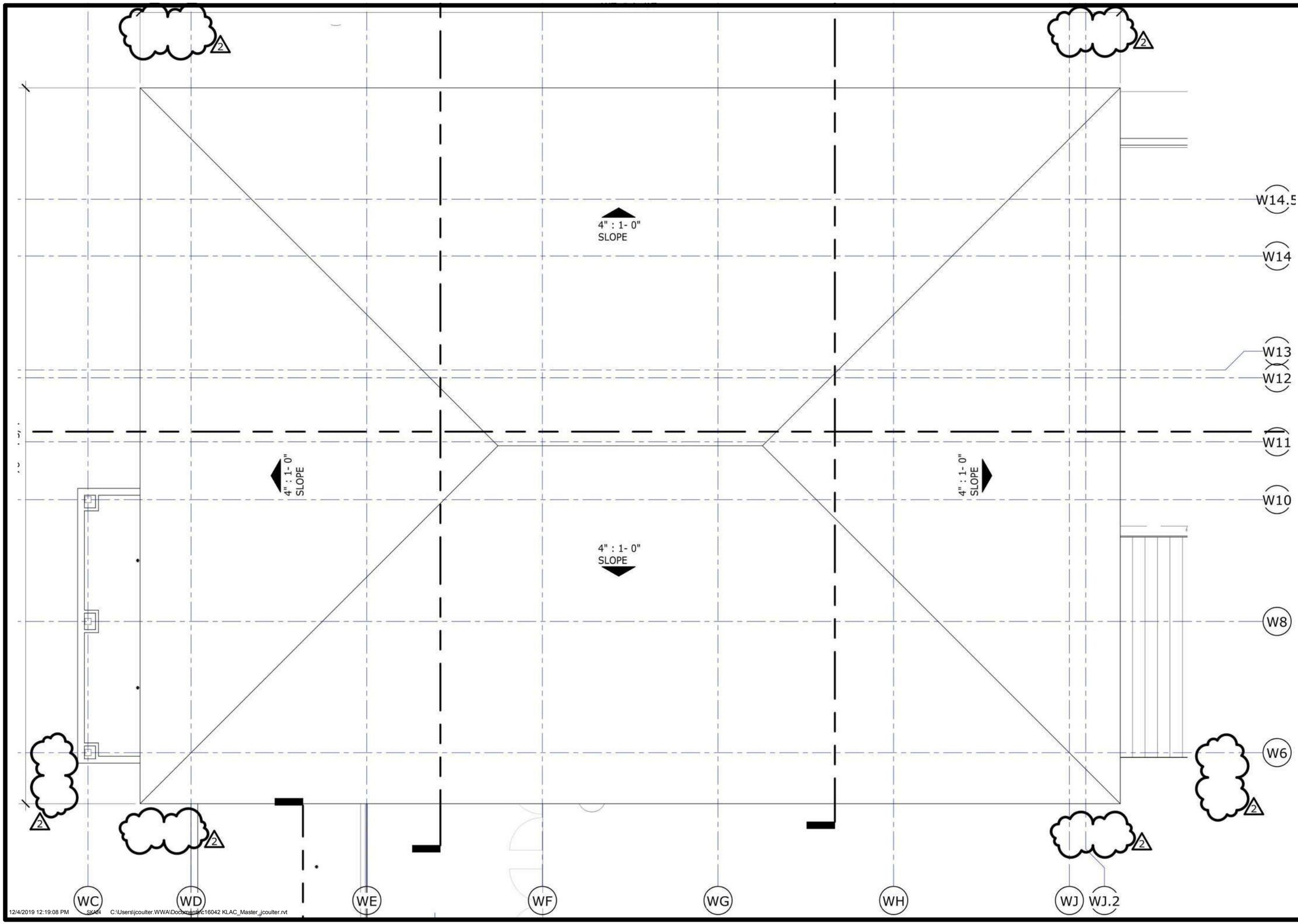
STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
BLDG. 'W2' ROOF PLAN - 2/W-A203 (N.T.S)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKA-23



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ARCHITECT:

LICENSED ARCHITECT
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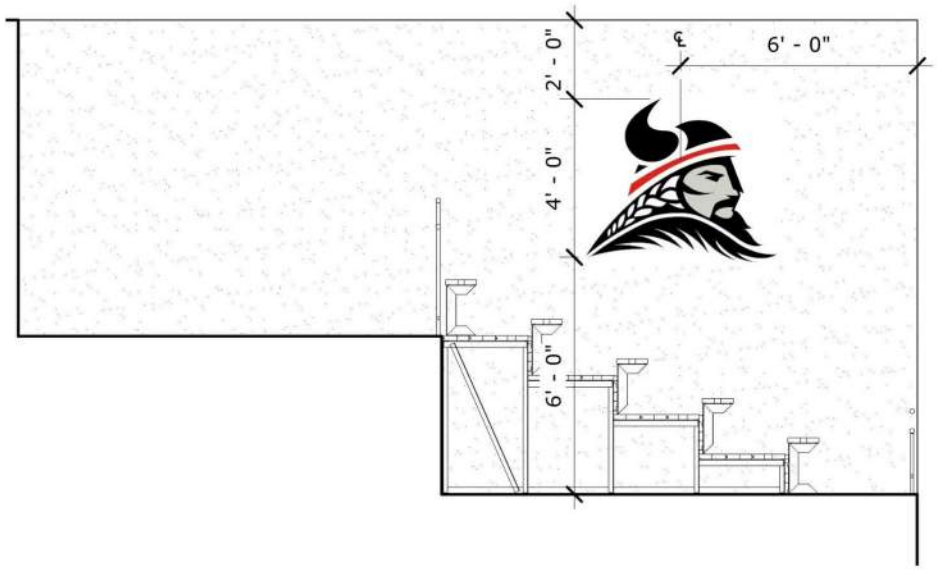
[illegible]
EXP [illegible]
STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
BLDG. 'W1' – SOUTH END – PARTIAL ROOF PLAN - W-A301 (N.T.S.)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKA-24



AQUATIC EXT. NORTH BLEACHER

1/4" = 1'-0"

6

12/4/2019 12:37:57 PM SKA25

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PROJECT:

LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:

NEW EXTERIOR ELEVATION 6/W-A401 (N.T.S.)

DSA FILE NO: 19-C3	DATE: 12/03/19
DSA #: 03-119628	JOB NO: 16042.01
ADDENDA #: 02	DRAWN: EM / JC
CCD #:	SHEET
BULLETIN #:	SKA-25
RFI #:	

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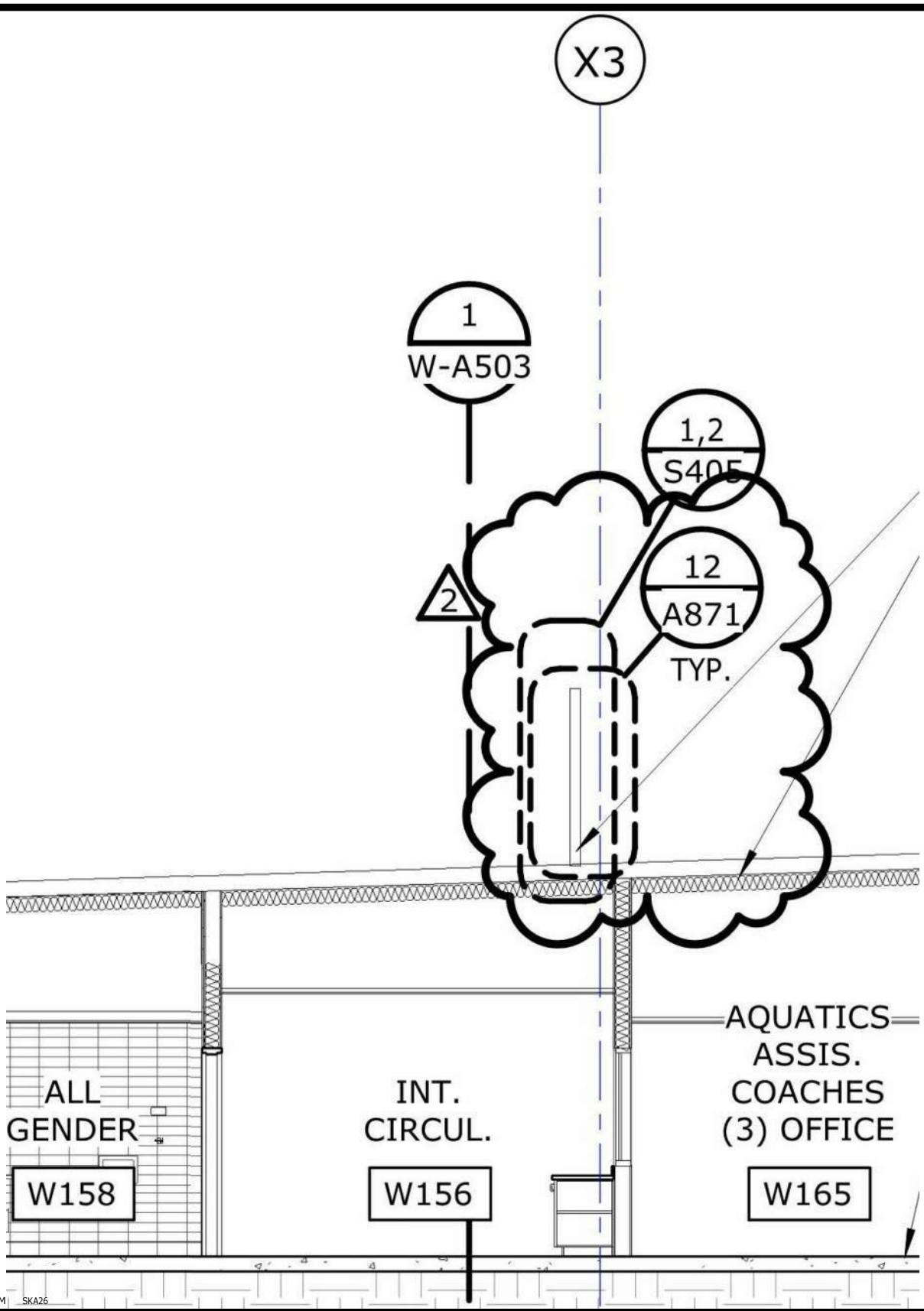

12/4/2019 12:37:57 PM SKA26

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PROJECT:

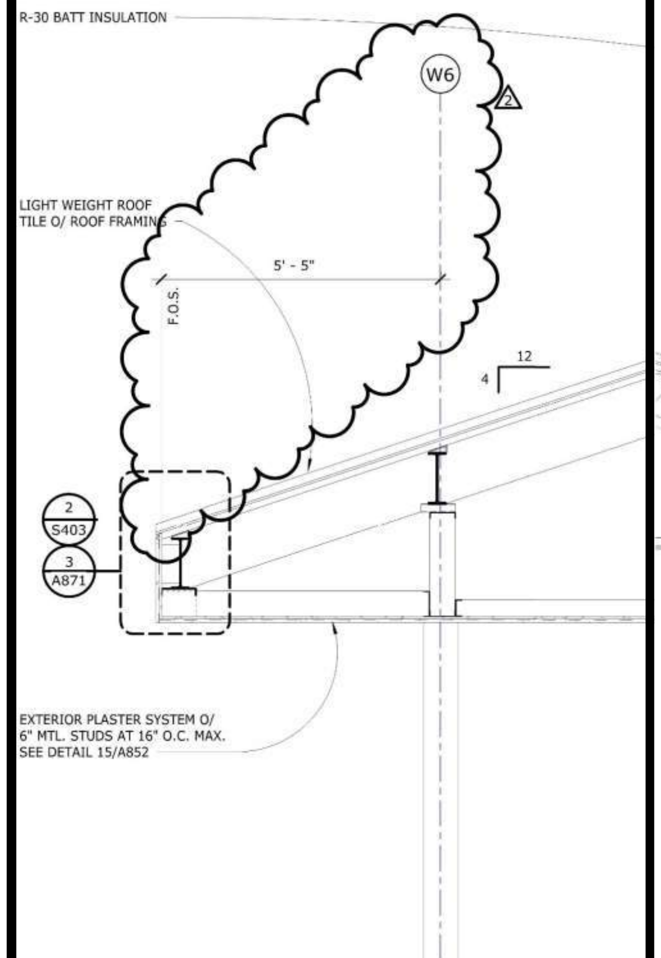
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:

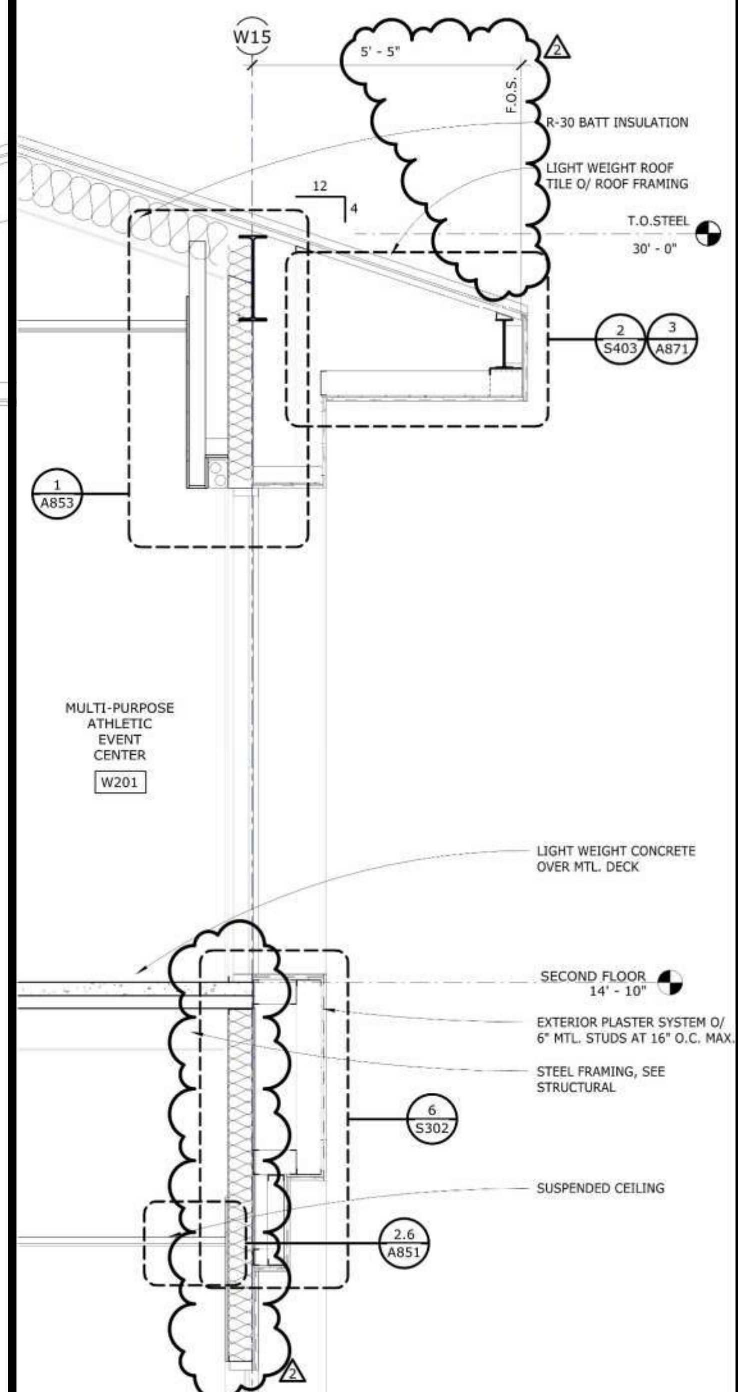
BLDG. 'W2' SECTION 4/W-A503 (N.T.S.)

DSA FILE NO: 19-C3	DATE: 12/03/19
DSA #: 03-119628	JOB NO: 16042.01
ADDENDA #: 02	DRAWN: EM / JC
CCD #:	SHEET
BULLETIN #:	SKA-26
RFI #:	

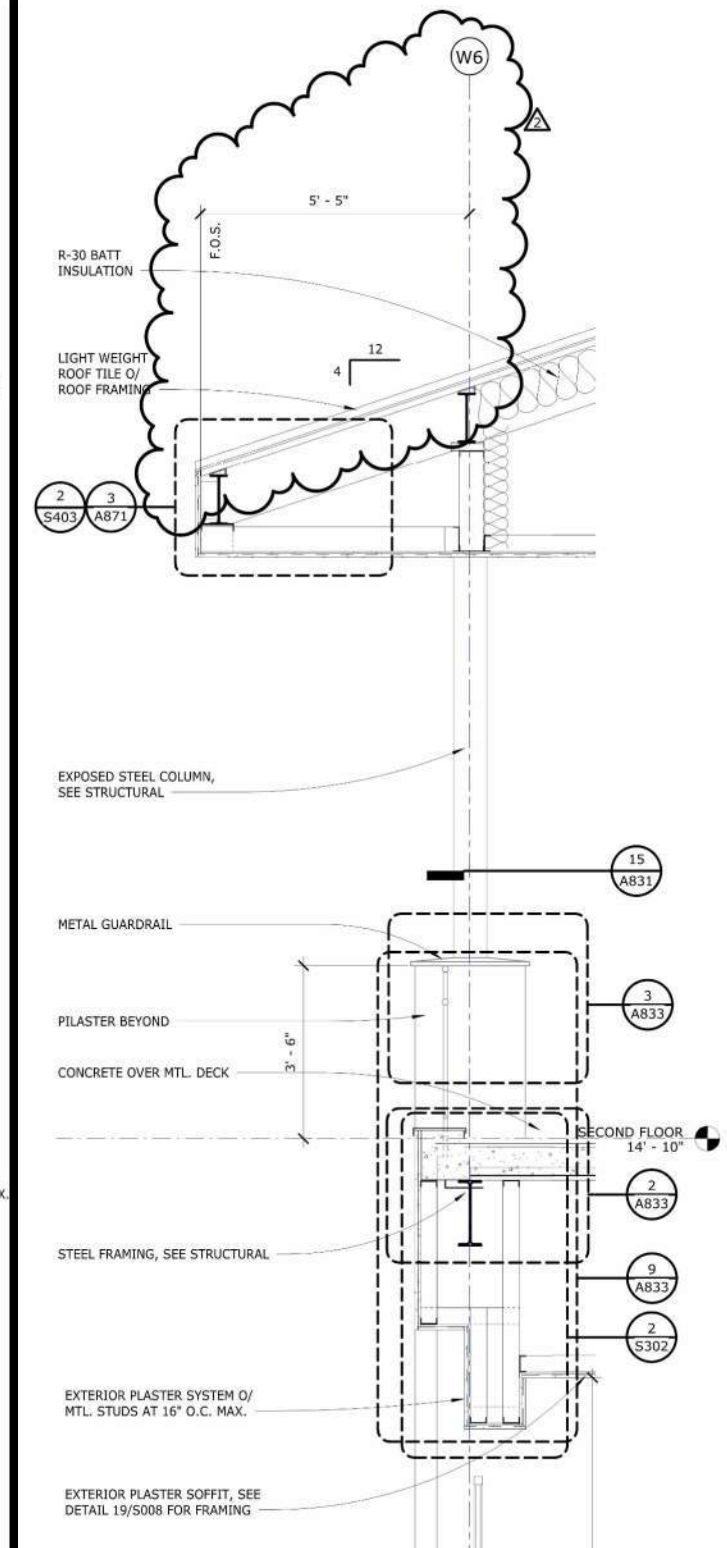
C:\Users\jcoulter.WWA\Documents\c16042 KLAC_Master_jcoulter.rvt



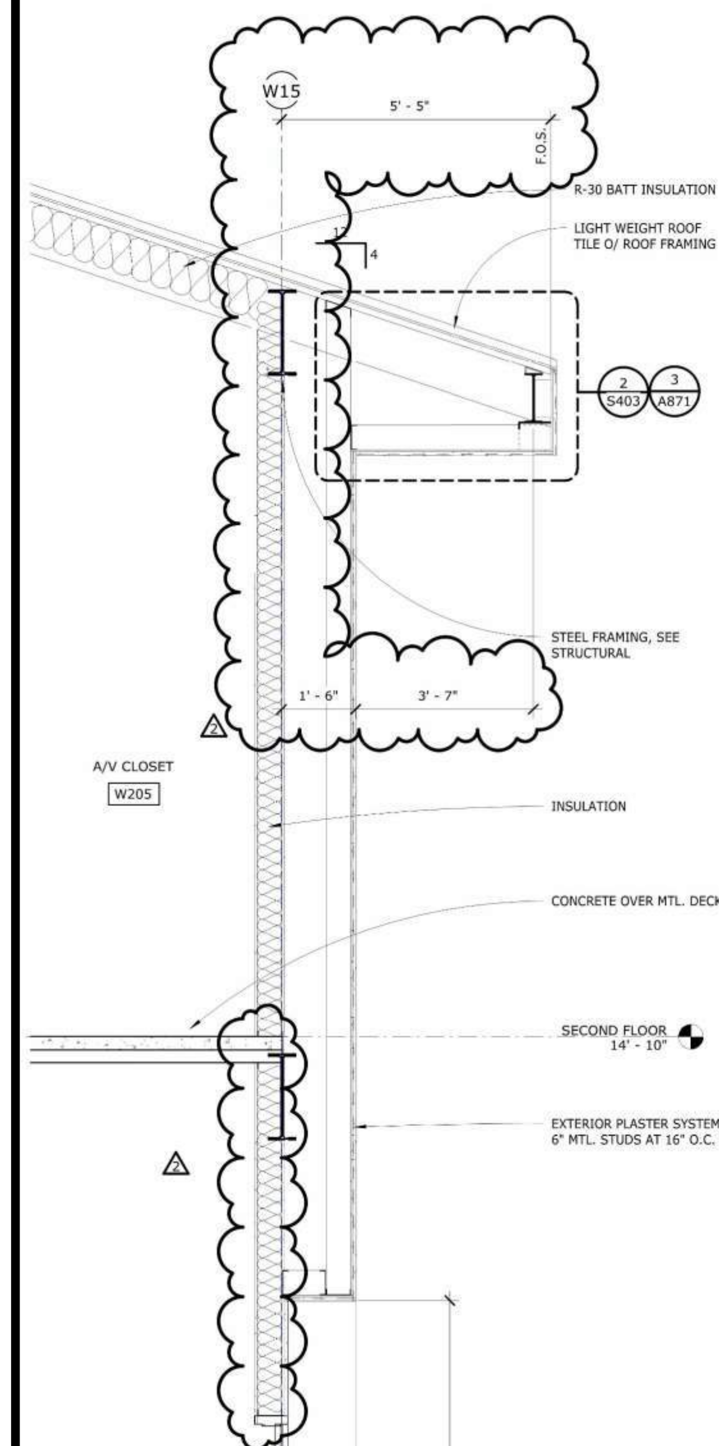
WALL SECTION 4/W-A504



WALL SECTION 3/W-A504



WALL SECTION 2/W-A504



WALL SECTION 1/W-A504

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PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
BUILDING 'W' WALL SECTIONS - W/A504 (N.T.S.)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKA-27

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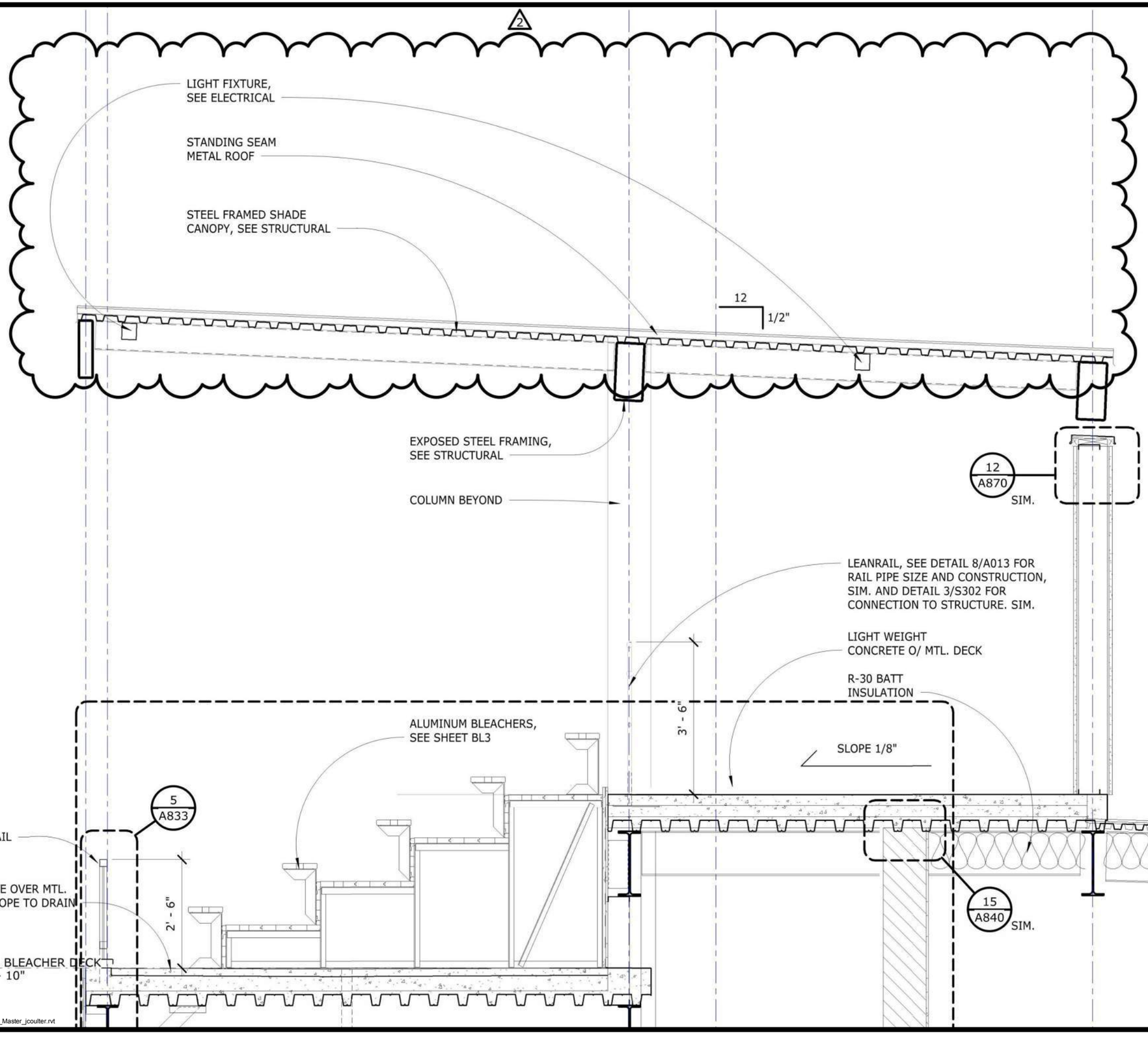

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ARCHITECT:

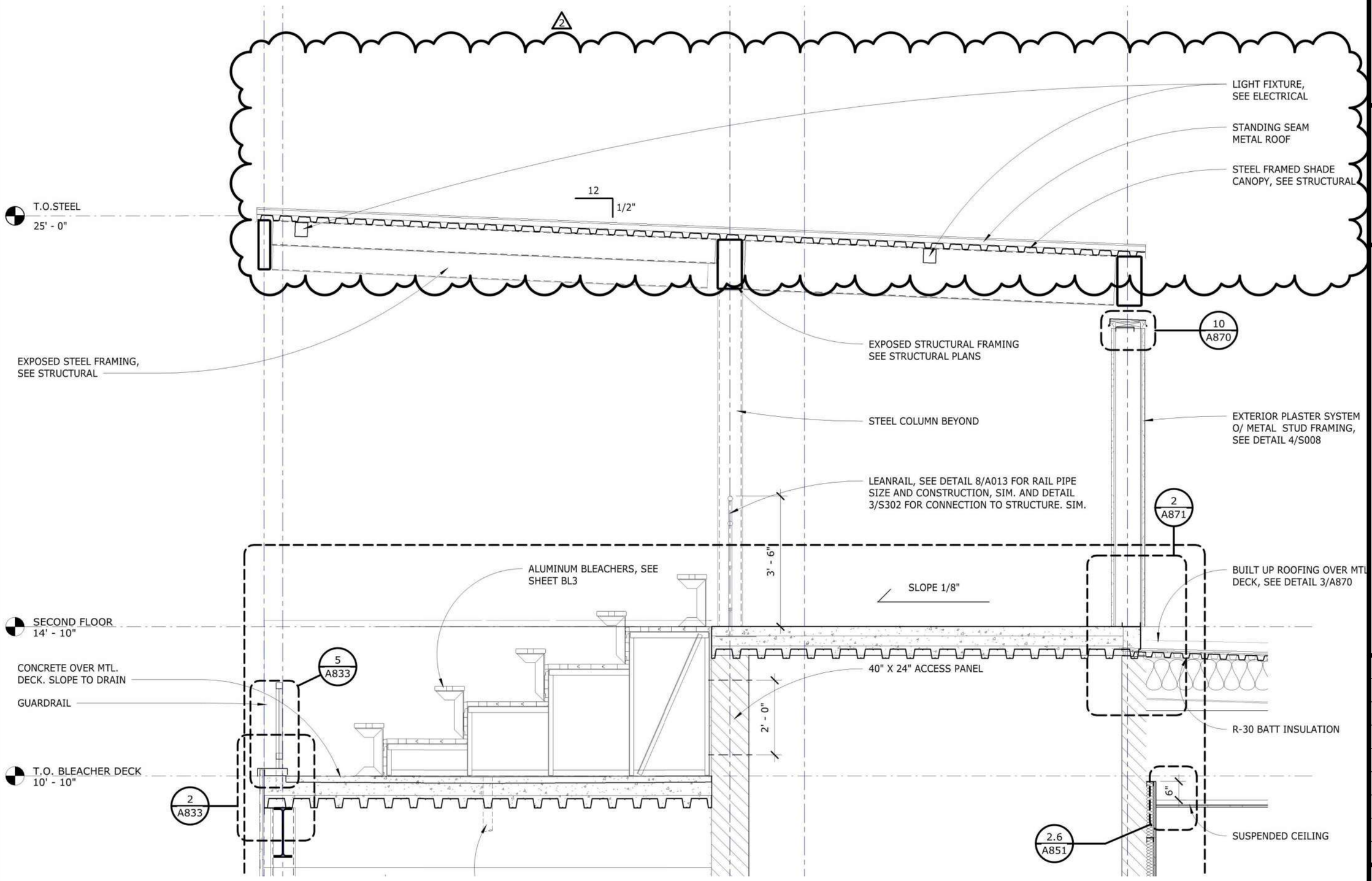
LICENSED ARCHITECT
PAUL EMIL WESTBERG
STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
BUILDING 'W' WALL SECTION 1/W-A505 (N.T.S.)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKA-28



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ARCHITECT:

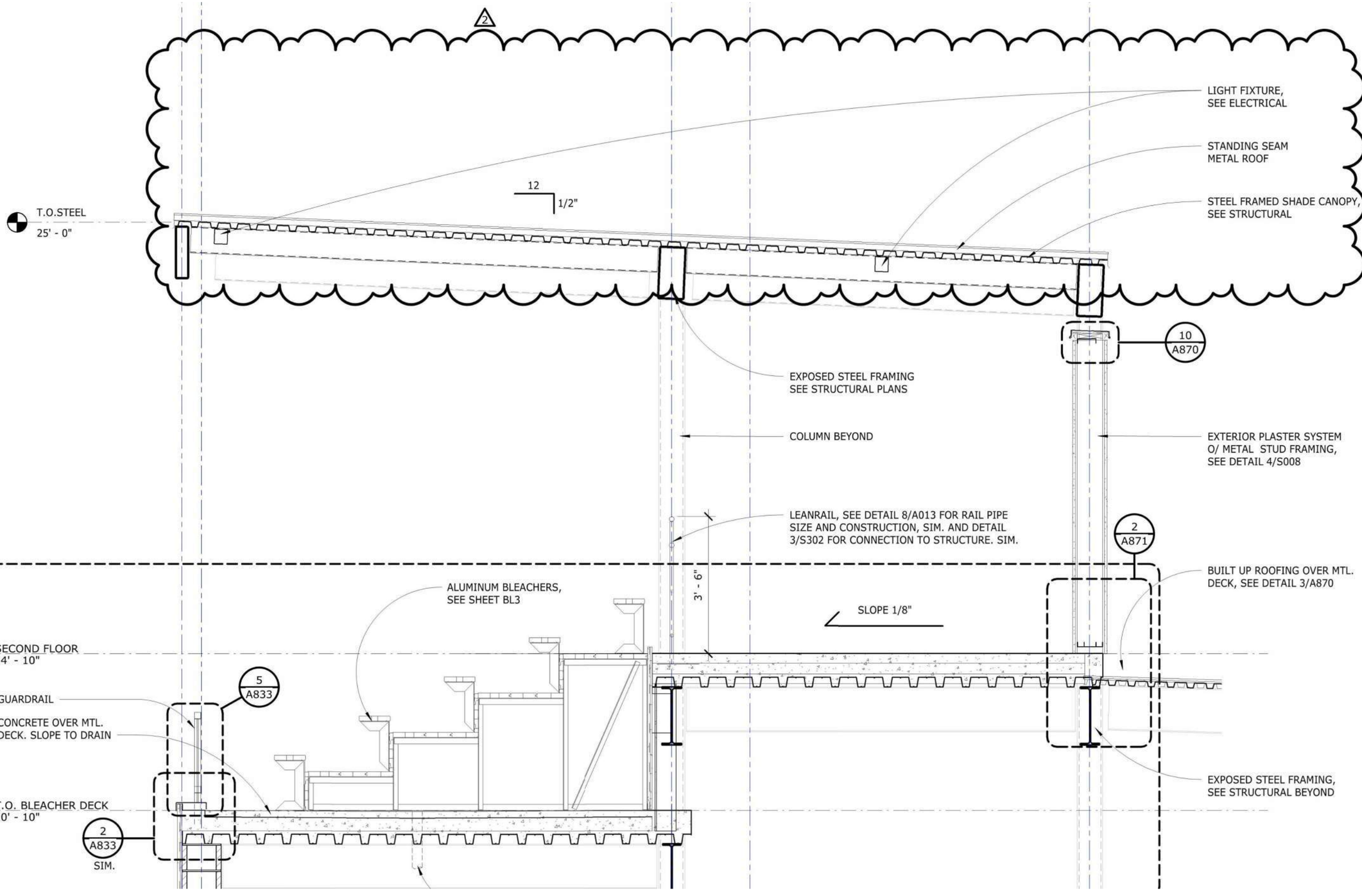
LICENSED ARCHITECT
PAUL [illegible] WESTBERG
[illegible]
EXP [illegible]
STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
BUILDING 'W' WALL SECTION 1/W-A506 (N.T.S.)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKA-29



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westbergwhite
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TUSTIN, CA 92780
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ARCHITECT:

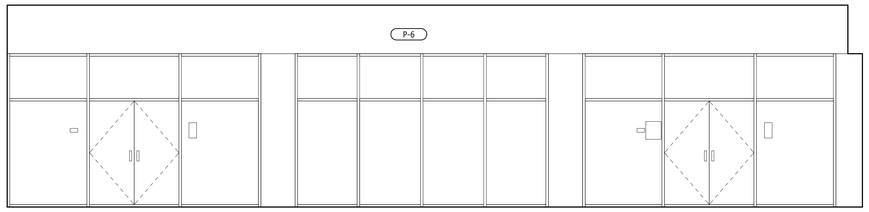
LICENSED ARCHITECT
PAUL E. WESTBERG
STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

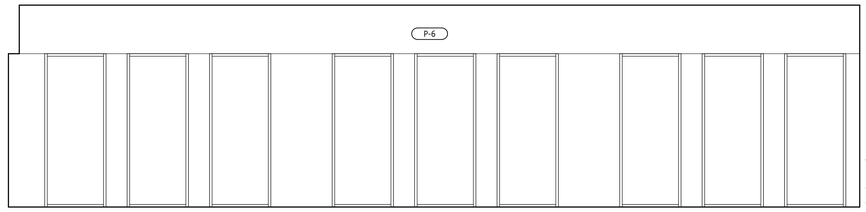
SHEET DESCRIPTION:
BUILDING 'W' WALL SECTION 2/W-A506 (N.T.S.)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

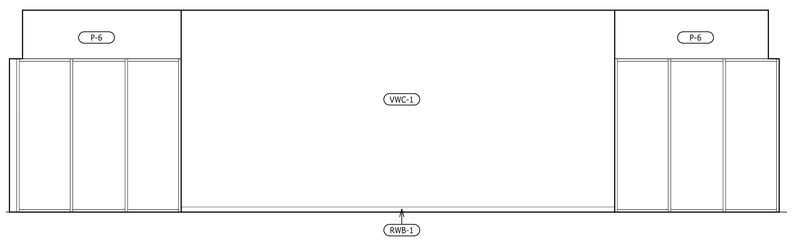
SHEET
SKA-30



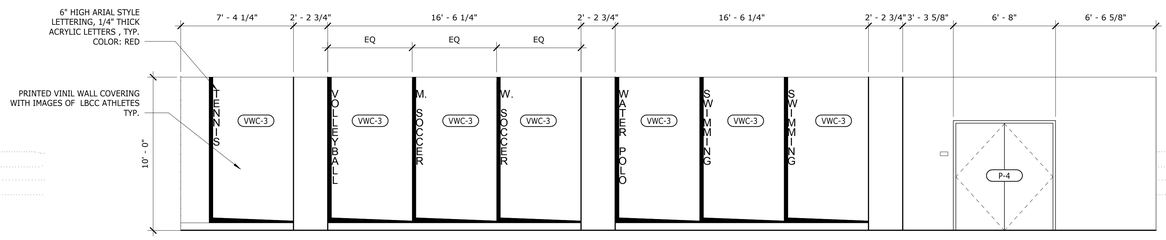
W1 MULTI PURPOSE ROOM EAST ELEVATION 1/4" = 1'-0" | 9



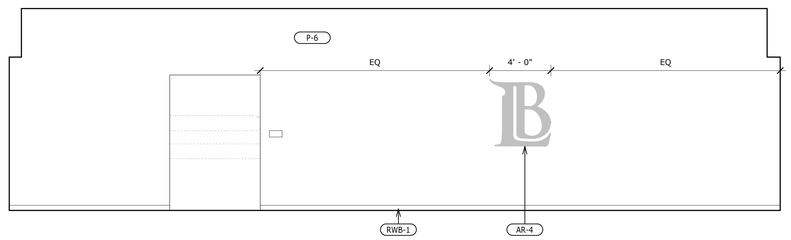
W1 MULTI PURPOSE ROOM WEST ELEVATION 1/4" = 1'-0" | 4



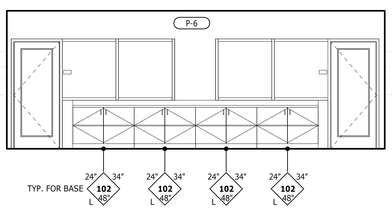
W1 MULTI PURPOSE ROOM SOUTH ELEVATION 1/4" = 1'-0" | 8



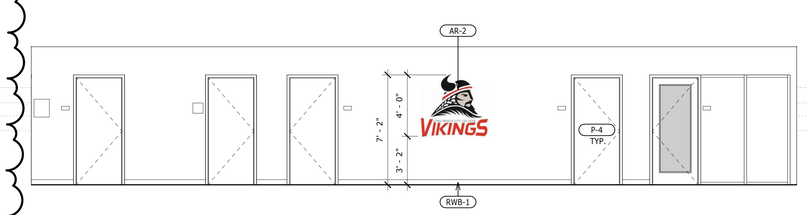
W1 EXTERIOR LOBBY ELEVATION (EXTERIOR WALL ADJACENT TO 'TICKETING' - W101) 1/4" = 1'-0" | 3



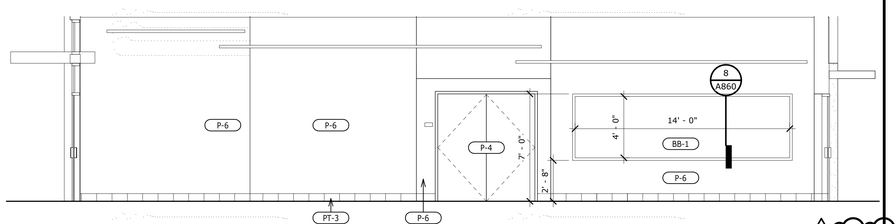
W1 MULTI PURPOSE ROOM NORTH ELEVATION 1/4" = 1'-0" | 7



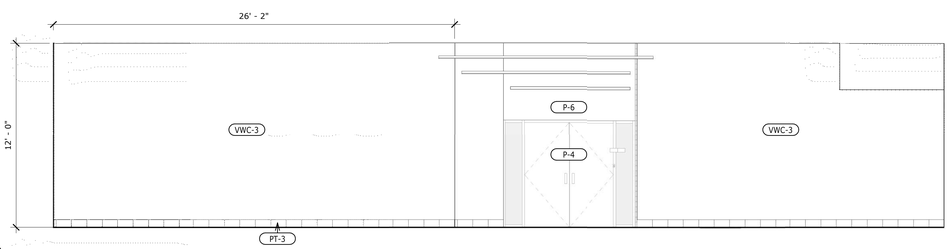
W2 OFFICE CIRC. WEST ELEV. - W156 1/4" = 1'-0" | 5



W2 OFFICE CIRCULATION EAST ELEVATION - W156 1/4" = 1'-0" | 2



W2 LOBBY CORRIDOR 1/4" = 1'-0" | 6



W2 LOBBY ELEVATION 1/4" = 1'-0" | 1

KEYNOTES

PT-7 COLOR TAG, SEE COLOR SCHEDULE SHEET A704

LEGEND

STATE:

ARCHITECT:

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LICENSED ARCHITECT PAUL DENNIS WESTBERG C-11045 EXP.9-2019 STATE OF CALIFORNIA

CONSULTANT:

PROJECT NAME:

LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
4901 EAST CARSON STREET
LONG BEACH, CA 90806

CLIENT:

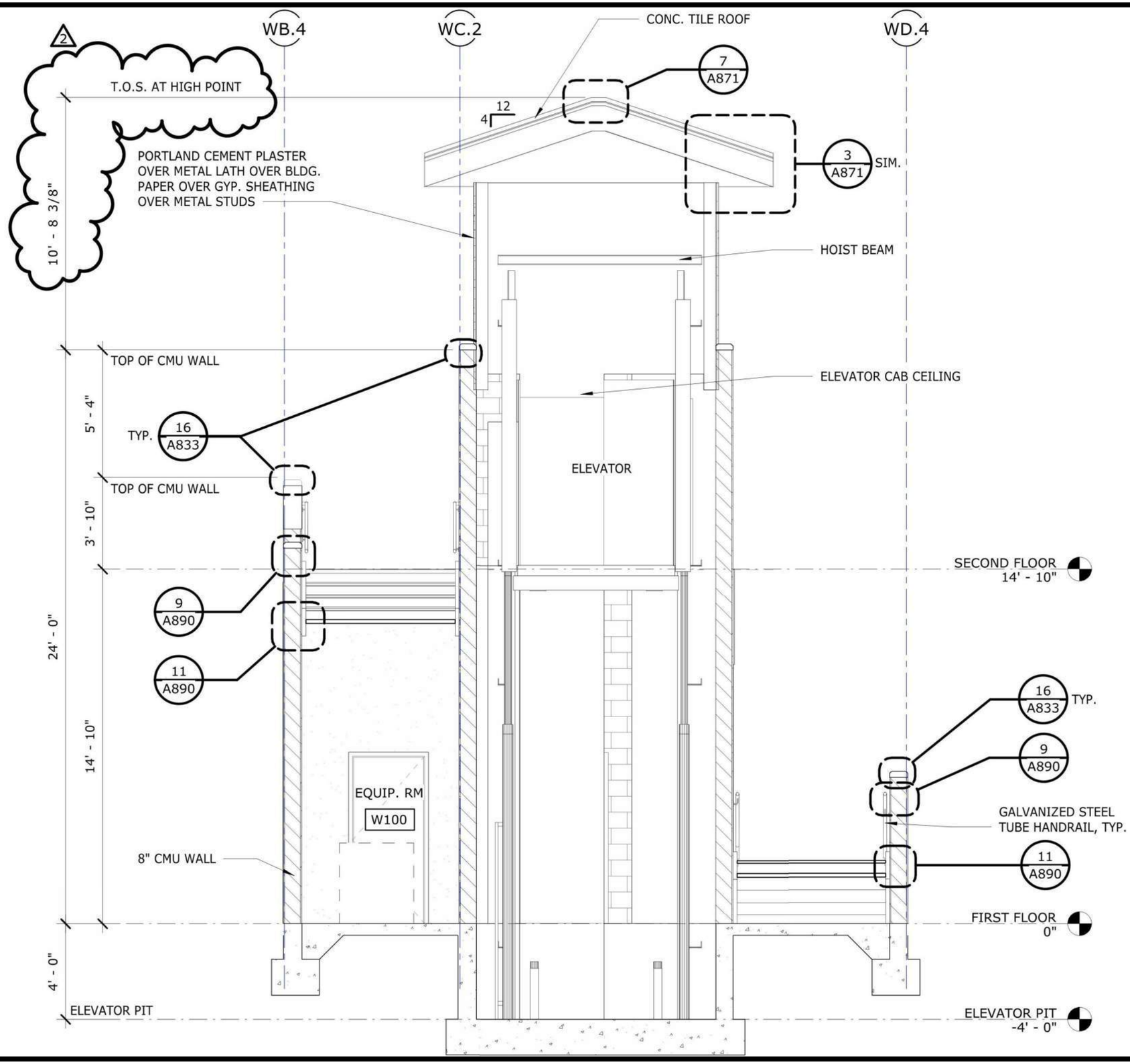
LONG BEACH CITY COLLEGE
4901 EAST CARSON STREET
LONG BEACH, CA 90806

No.	Rev. Date	Description
2	12-03-19	ADDENDUM 2

JOB NO: 16042.01
DATE: 09/18/19
DRAWN: EM / MS
CHECK: JC
ARCHITECT: PDW
ENGINEER:

SHEET DESCRIPTION:
INTERIOR ELEVATIONS

SHEET NO:
W-A609



architecture
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TUSTIN, CA 92780
(714) 508-1780 508-1790 FAX

ARCHITECT:

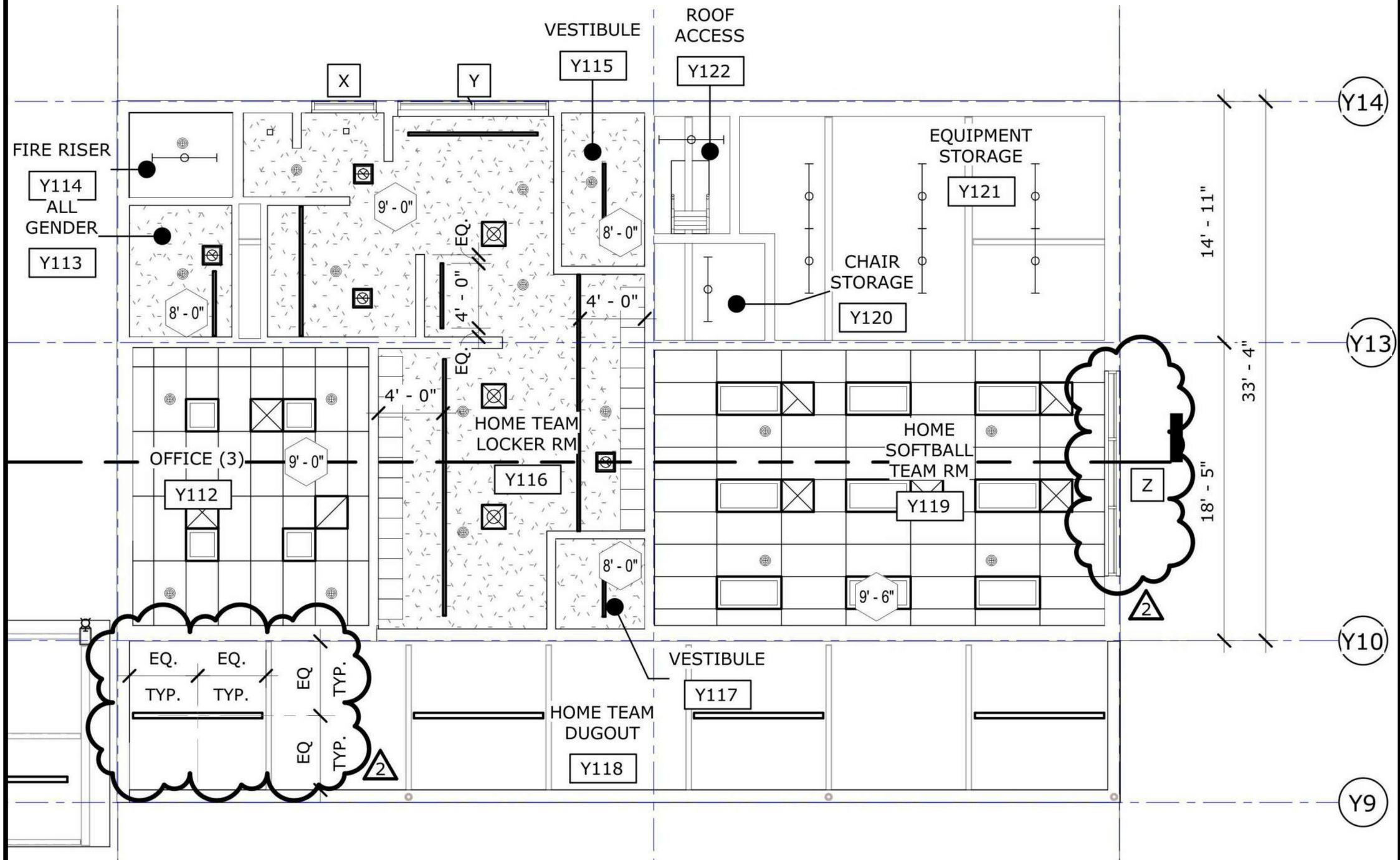
LICENSED ARCHITECT
PAUL E. M. WESTBERG
STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
ELEVATOR AND STAIR #1 SECTION 5/W-A650 (N.T.S.)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKA-31



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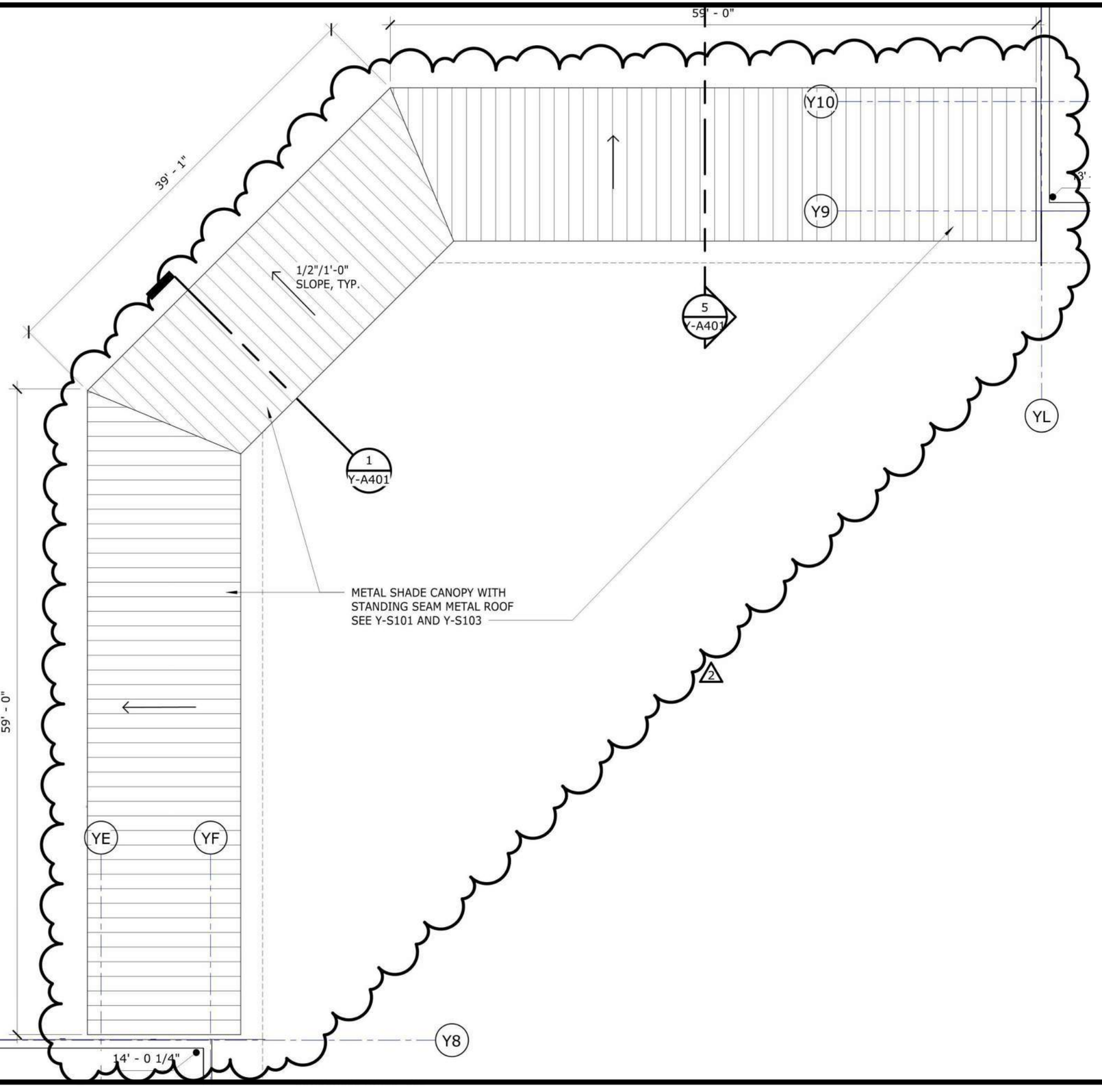
ARCHITECT:
LICENSED ARCHITECT
PAUL [illegible] WESTBERG
STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
BLDG. 'Y' PARTIAL REFLECTED CEILING PLAN - Y-A201 (N.T.S.)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKA-32



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ARCHITECT:

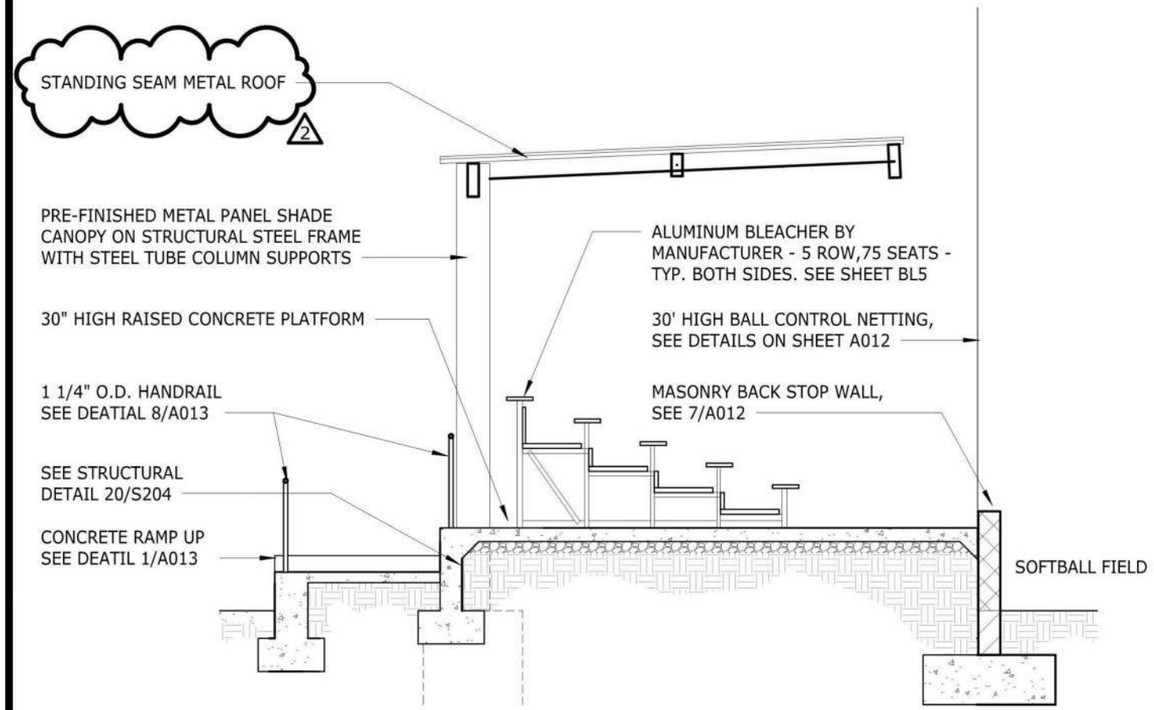
LICENSED ARCHITECT
PAUL [illegible] WESTBERG
[illegible]
EXP [illegible]
STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
BLDG. 'Y' - ROOF PLANS - Y-A301 (N.T.S.)

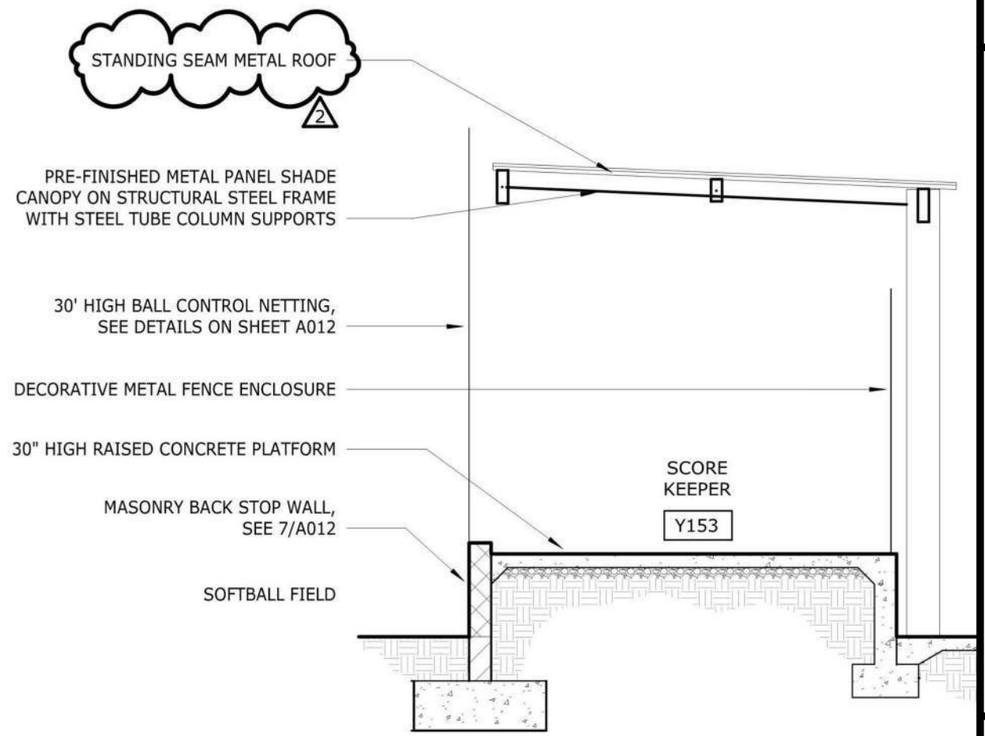
DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKA-33



SPECTATOR BLEACHER PLATFORM 1/4" = 1'-0"

5



SCORE KEEPER PLATFORM

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ARCHITECT:

LICENSED ARCHITECT PAUL [illegible] WESTBERG STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
BLDG. 'Y' SCORE KEEPER PLATFORM SECTION 1/Y-A401 AND SPECTATOR BLEACHER PLATFORM SECTION 5/Y-A401 (N.T.S.)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKA-34

BUILDING 'W'

DOOR DESCRIPTION					FRAME AND HARDWARE						DETAILS				
NO.	SIZE	TYPE	MATERIAL	FINISH	MATERIAL	FINISH	CLOSER	PANIC HDWR.	HDWR. GROUP	RATING	HEAD	JAMB HINGE	JAMB STRIKE	THRESHOLD	
W2A	3'-8" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	Yes	18	---	7/A880	7/A880	7/A880	---	Emergency Exit Only
W2B	3'-6" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	Yes	19	---	14/A880	12/A880	12/A880	---	Emergency Exit Only. Von Duprin Local Alarm Hardware
W3A	3'-8" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	Yes	18	---	7/A880	7/A880	7/A880	---	Emergency Exit Only
W3B	3'-6" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	Yes	19	---	14/A880	12/A880	12/A880	---	Emergency Exit Only. Von Duprin Local Alarm Hardware
W100A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	No	No	11	---	7/A880	7/A880	7/A880	2/A880	
W101A	3'-0" x 7'-0" x 1 3/4"	B	HM	P	HM	P	Yes	No	14	---	14/A880	12/A880	12/A880	2/A880	
W102A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	No	No	17	---	14/A880	12/A880	12/A880	2/A880	
W103A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	13A	---	14/A880	12/A880	12/A880	2/A880	DOOR LOUVER, SEE MECHANICAL FOR FREE AREA SIZE
W104A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	09	---	14/A880	12/A880	12/A880	2/A880	
W105A	3'-0" x 7'-0" x 1 3/4"	A	SC	P	HM	P	Yes	No	28	---	11/A880	10/A880	10/A880	---	
W106A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	No	No	33	---	11/A880	10/A880	10/A880	6/A880	
W107A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	09	---	14/A880	12/A880	12/A880	2/A880	
W108A	3'-0" x 7'-0" x 1 3/4"	A	SC	P	HM	P	Yes	No	28	---	11/A880	10/A880	10/A880	---	
W109A	6'-0" x 7'-0" x 1 3/4"	C	HM	P	HM	P	No	No	03	---	14/A880	12/A880	12/A880	2/A880	
W110A	6'-0" x 7'-0" x 1 3/4"	C	SC	P	HM	P	No	No	34	---	11/A880	10/A880	10/A880	---	
W111A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	04	---	14/A880	12/A880	12/A880	2/A880	
W112A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	No	No	35	---	11/A880	10/A880	10/A880	6/A880	DOOR LOUVER, SEE MECHANICAL FOR FREE AREA SIZE
W113A	3'-0" x 7'-0" x 1 3/4"	A	SC	P	HM	P	Yes	No	26A	---	11/A880	10/A880	10/A880	---	DOOR LOUVER, SEE MECHANICAL FOR FREE AREA SIZE
W114A	6'-0" x 7'-0" x 1 3/4"	D	ALUM	F	ALUM	F	Yes	Yes	05	---	18/A880	17/A880	17/A880	2/A880	OMNILock
W114B	6'-0" x 7'-0" x 1 3/4"	D	ALUM	F	ALUM	F	Yes	Yes	05	---	18/A880	17/A880	17/A880	2/A880	OMNILock
W115A	3'-0" x 7'-0" x 1 3/4"	B	HM	P	HM	P	Yes	No	21	---	14/A880	12/A880	12/A880	2/A880	
W151A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	No	No	10	---	7/A880	7/A880	7/A880	2/A880	
W152A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	09A	---	7/A880	7/A880	7/A880	2/A880	
W153A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	24	---	7/A880	10/A880	10/A880	6/A880	
W154A	3'-0" x 7'-0" x 1 3/4"	A	SC	P	HM	P	Yes	No	26A	---	11/A880	10/A880	10/A880	6/A880	DOOR LOUVER, SEE MECHANICAL FOR FREE AREA SIZE
W155A	6'-0" x 7'-0" x 1 3/4"	D	ALUM	F	ALUM	F	Yes	Yes	23	---	18/A880	17/A880	17/A880	2/A880	OMNILock and Auto Door Operator
W155B	6'-0" x 7'-0" x 1 3/4"	D	ALUM	F	ALUM	F	Yes	Yes	23A	---	18/A880	17/A880	17/A880	2/A880	OMNILock
W156A	6'-0" x 7'-0" x 1 3/4"	D	ALUM	F	ALUM	F	Yes	No	23B	---	18/A880	17/A880	10/A880	---	
W156B	3'-0" x 7'-0" x 1 3/4"	E	ALUM	F	ALUM	F	Yes	No	09A	---	18/A880	17/A880	17/A880	2/A880	
W157A	3'-0" x 7'-0" x 1 3/4"	A	SC	P	HM	P	Yes	No	26A	---	11/A880	10/A880	10/A880	6/A880	DOOR LOUVER, SEE MECHANICAL FOR FREE AREA SIZE
W158A	3'-0" x 7'-0" x 1 3/4"	A	SC	P	HM	P	Yes	No	26A	---	11/A880	10/A880	10/A880	---	DOOR LOUVER, SEE MECHANICAL FOR FREE AREA SIZE
W159A	3'-0" x 7'-0" x 1 3/4"	A	SC	P	HM	P	Yes	No	26A	---	11/A880	10/A880	10/A880	6/A880	DOOR LOUVER, SEE MECHANICAL FOR FREE AREA SIZE
W160A	3'-0" x 7'-0" x 1 3/4"	B	SC	P	HM	P	No	No	32	---	11/A880	10/A880	10/A880	---	
W161A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	No	No	10	---	7/A880	7/A880	7/A880	2/A880	
W162A	3'-0" x 7'-0" x 1 3/4"	E	ALUM	F	ALUM	F	No	No	25	---	11/A880	10/A880	10/A880	---	
W163A	3'-0" x 7'-0" x 1 3/4"	E	ALUM	F	ALUM	F	No	No	25	---	11/A880	10/A880	10/A880	---	
W164A	3'-0" x 7'-0" x 1 3/4"	E	SC	P	ALUM	P	No	No	25	---	11/A880	10/A880	10/A880	---	
W166A	3'-0" x 7'-0" x 1 3/4"	E	ALUM	F	ALUM	F	No	No	25	---	11/A880	10/A880	10/A880	---	
W201A	6'-0" x 7'-0" x 1 3/4"	D	ALUM	F	ALUM	F	Yes	Yes	23B	---	18/A880	17/A880	17/A880	2/A880	EXIT Only
W201B	6'-0" x 7'-0" x 1 3/4"	D	ALUM	F	ALUM	F	Yes	Yes	23A	---	18/A880	17/A880	17/A880	2/A880	OMNILock
W202A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	26A	---	14/A880	12/A880	12/A880	2/A880	DOOR LOUVER, SEE MECHANICAL FOR FREE AREA SIZE
W203A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	No	No	14	---	14/A880	12/A880	12/A880	2/A880	DOOR LOUVER, SEE MECHANICAL FOR FREE AREA SIZE
W204A	3'-0" x 7'-0" x 1 3/4"	B	HM	P	HM	P	Yes	No	09A	---	14/A880	12/A880	12/A880	2/A880	
W205A	3'-0" x 7'-0" x 1 3/4"	A	SC	P	HM	P	No	No	27B	---	11/A880	10/A880	10/A880	6/A880	
W206A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	No	No	27B	1 HR	11/A880	10/A880	10/A880	6/A880	
W207A	6'-0" x 7'-0" x 1 3/4"	C	HM	P	HM	P	No	No	38	1 HR	11/A880	10/A880	10/A880	6/A880	
W208A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	09	---	14/A880	12/A880	12/A880	2/A880	
W209A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	09	---	14/A880	12/A880	12/A880	2/A880	
W209C	3'-0" x 7'-0" x 1 3/4"	E	SC	P		P	No	No	25	---	11/A880	10/A880	10/A880	---	
W210A	6'-0" x 7'-0" x 1 3/4"	C	HM	P	HM	P	No	No	01	---	14/A880	12/A880	12/A880	---	
W210B	6'-0" x 7'-0" x 1 3/4"	C	HM	P	HM	P	No	No	01	---	14/A880	12/A880	12/A880	---	
W211A	6'-0" x 7'-0" x 1 3/4"	C	HM	P	HM	P	No	No	01	---	14/A880	12/A880	12/A880	---	
W211B	6'-0" x 7'-0" x 1 3/4"	C	HM	P	HM	P	No	No	01	---	14/A880	12/A880	12/A880	---	

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ARCHITECT:

LICENSED ARCHITECT PAUL WESTBERG STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
BUILDING 'W' PARTIAL DOOR SCHEDULE, A701 (N.T.S.)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKA-35

BUILDING 'Y'

DOOR DESCRIPTION					FRAME AND HARDWARE						DETAILS				
NO.	SIZE	TYPE	MATERIAL	FINISH	MATERIAL	FINISH	CLOSER	PANIC HDWR.	HDWR. GROUP	RATING	HEAD	JAMB HINGE	JAMB STRIKE	THRESHOLD	
Y101A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	13B	---	7/A880	7/A880	7/A880	2/A880	DOOR LOUVER, SEE MECHANICAL FOR FREE AREA SIZE
Y102A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	No	No	10	---	7/A880	7/A880	7/A880	2/A880	DOOR LOUVER, SEE MECHANICAL FOR FREE AREA SIZE
Y103A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	No	No	11	---	7/A880	7/A880	7/A880	2/A880	
Y104A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	No	No	11	---	7/A880	7/A880	7/A880	2/A880	
Y105A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	No	No	11	---	7/A880	7/A880	7/A880	2/A880	
Y106A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	20	---	7/A880	7/A880	7/A880	---	
Y107A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	16	---	7/A880	7/A880	7/A880	2/A880	2
Y108A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	10A	---	7/A880	7/A880	7/A880	2/A880	
Y108B	8'-0" x 9'-0" x 1 3/4"	F	STL	F	STL	F	No	No	-	---	7/A880	8/A880	8/A880	4/A880	
Y109A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	09	---	7/A880	7/A880	7/A880	2/A880	DOOR LOUVER, SEE MECHANICAL FOR FREE AREA SIZE
Y110A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	No	No	27A	---	11/A880	10/A880	10/A880	6/A880	
Y111A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	09	---	7/A880	7/A880	7/A880	2/A880	DOOR LOUVER, SEE MECHANICAL FOR FREE AREA SIZE
Y112A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	15	---	7/A880	7/A880	7/A880	2/A880	
Y113A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	22	---	7/A880	7/A880	7/A880	2/A880	DOOR LOUVER, SEE MECHANICAL FOR FREE AREA SIZE
Y114A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	No	No	17A	---	7/A880	7/A880	7/A880	2/A880	2
Y115A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	09	---	7/A880	7/A880	7/A880	2/A880	
Y116A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	24A	---	11/A880	10/A880	10/A880	6/A880	
Y116B	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	24A	---	11/A880	10/A880	10/A880	6/A880	
Y117A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	24A	---	11/A880	10/A880	10/A880	6/A880	
Y118A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	20	---	7/A880	7/A880	7/A880	---	
Y119A	3'-0" x 7'-0" x 1 3/4"	A	HM	P	HM	P	Yes	No	16	---	7/A880	7/A880	7/A880	2/A880	2
Y120A	3'-6" x 7'-0" x 1 3/4"	A	HM	P	HM	P	No	No	39	---	11/A880	10/A880	10/A880	6/A880	

PARTIAL GATE SCHEDULE

GS44	PR 8'-0" x 8'-0"	A	CL	F	CL	F	No	No	--	---	---	9/A007	9/A007	---		
GS45	PR 8'-0" x 8'-0"	A	CL	F	CL	F	No	No	--	---	---	9/A007	8/A007	---		
GS46	18'-0" x 8'-0"		CL	F	CL	F	No	No	--			11/A007	11/A007			Rolling Gate
GS47	20'-0" x 8'-0"		CL	F	CL	F	No	No	--			11/A007	11/A007			Rolling Gate
GS48	24'-0" x 8'-0"		STL	P	STL	P	No	No	--	---	---	3/A007	3/A007	---		Motorized Rolling Gate
GW01	3'-6" x 8'-0"	B	STL	P	STL	P	Yes	Yes	40	---	---	4/A007	4/A007	---		EXIT Only
GW02	3'-6" x 8'-0"	B	STL	P	STL	P	Yes	Yes	40	---	---	4/A007	4/A007	---		EXIT Only
GW03	3'-6" x 8'-0"	B	STL	P	STL	P	Yes	Yes	40	---	---	4/A007	4/A007	---		EXIT Only

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ARCHITECT:
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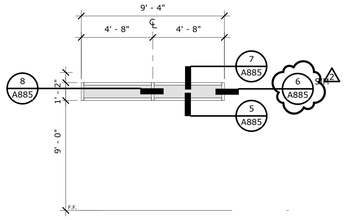
PAUL [illegible] WESTBERG
STATE OF CALIFORNIA
EXP [illegible]

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

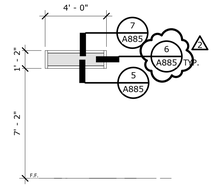
SHEET DESCRIPTION:
BUILDING 'Y' PARTIAL DOOR SCHEDULE, A701, AND PARTIAL SITE GATE SCHEDULE, A701.1 (N.T.S.)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

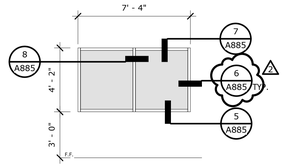
SHEET
SKA-36



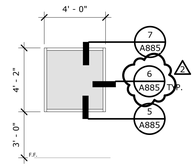
Y	GLAZING TYPE	*
	FRAME MATL.	AL
	FRAME FIN.	F
	FRAME COLOR	-



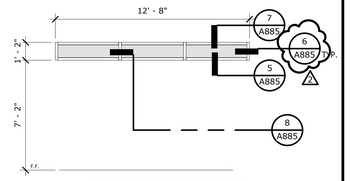
X	GLAZING TYPE	*
	FRAME MATL.	AL
	FRAME FIN.	F
	FRAME COLOR	-



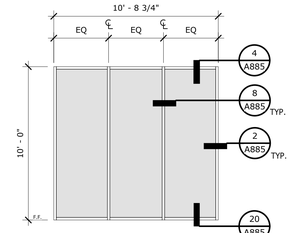
W	GLAZING TYPE	*
	FRAME MATL.	AL
	FRAME FIN.	F
	FRAME COLOR	-



V	GLAZING TYPE	*
	FRAME MATL.	AL
	FRAME FIN.	F
	FRAME COLOR	-



Z	GLAZING TYPE	*
	FRAME MATL.	AL
	FRAME FIN.	F
	FRAME COLOR	-



U	GLAZING TYPE	*
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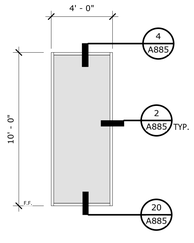
NOTE: FOR WINDOW U1 USE SPANDREL GLAZING



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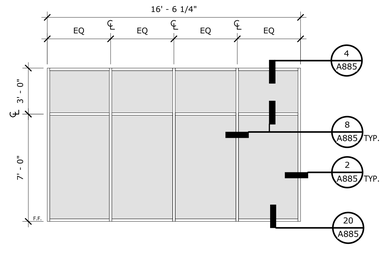

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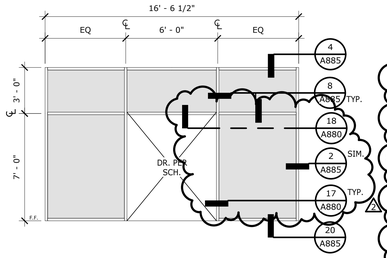

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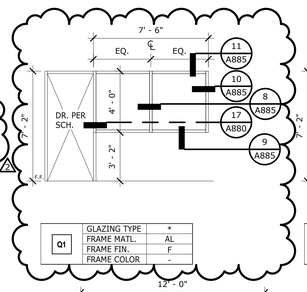

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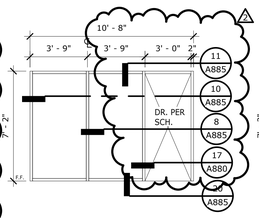

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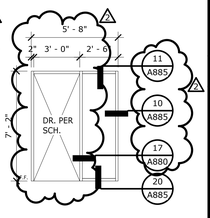

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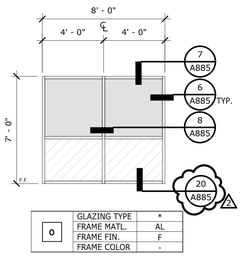

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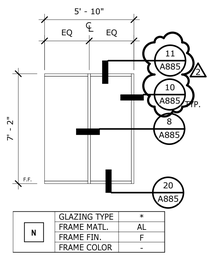

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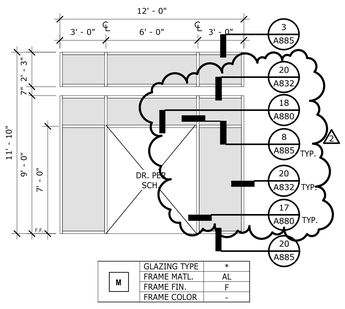

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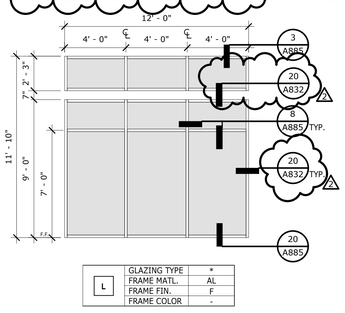

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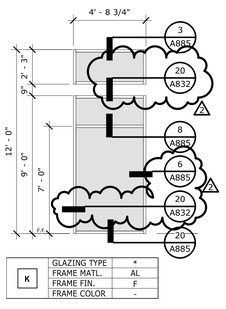

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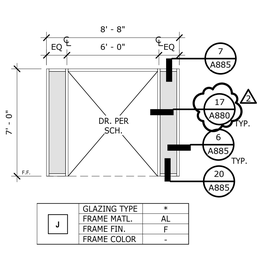

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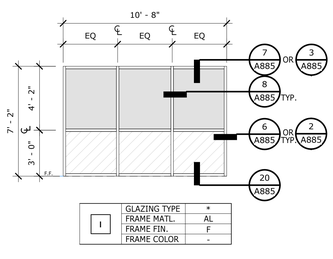

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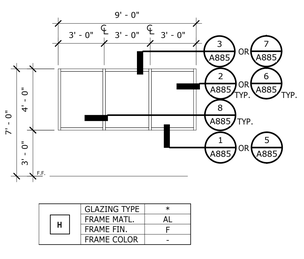

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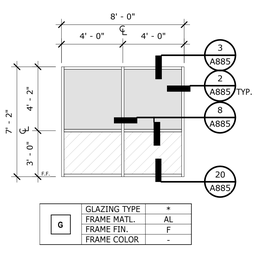

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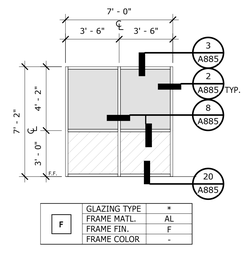

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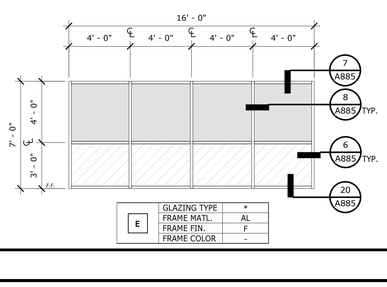

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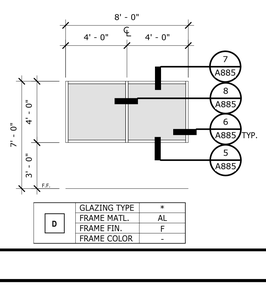

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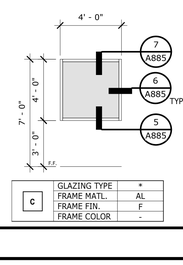

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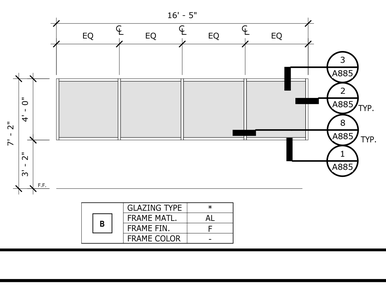

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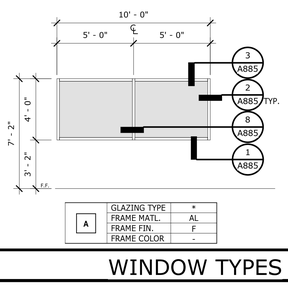


A	GLAZING TYPE	*
	FRAME MATL.	AL
	FRAME FIN.	F
	FRAME COLOR	-

SHEET GENERAL NOTES

1. FIELD VERIFY ALL DOOR AND WINDOW OPENING DIMENSIONS.
2. ALUMINUM STOREFRONT FINISH SHALL BE CLEAR ANODIZED.
3. ALL INTERIOR GLAZING TO BE 1/4" CLEAR GLASS WHERE NOT RATED.
4. ALL NON RATED EXTERIOR GLASS SHALL BE 1" INSULATED GLASS W/ 1/4" EXTERIOR GLASS - 1/2" AIR SPACE 1/4" CLEAR (OR LAMINATED WHERE NOTED).
5. PROVIDE LABEL OR ETCHING ON TEMPERED GLASS WITHIN 18" OF A DOOR.
6. FOR ADDITIONAL REQUIREMENTS REFER TO CBC SECTION 718.1. PARTICULAR 715.4.3.1 SMOKE & DRAFT, 715.3.2 GLASS IN DOORS, 715.4.5.1 LABEL REQUIREMENTS, 715.4.5.3 SMOKE & DRAFT LABEL, 715.4.5.4 FRAME LABEL, 715.4.6.3 GLASS LABEL.
7. REFER DOORS TO DOOR SCHEDULE.
8. PROVIDE ROLLER SHADES AT ALL EXTERIOR WINDOWS & STOREFRONT U.O.N.

ABBREVIATIONS

AL = ALUMINUM
HM = HOLLOW METAL
SS = SUN SHADE
M = MULLION

GLAZING LEGEND

GLAZING GL-1 1/4"
CLEAR TEMPERED

GLAZING GL-2 LOW-E,
TRANSLUCENT TEMPERED

GLAZING GL-3 LOW-E,
SPANDREL TEMPERED

WINDOW TYPES

WINDOW TYPE LEGEND

STATE:

ARCHITECT:

architecture
westbergwhite
14471 CHAMBERS RD, SUITE 210
TUSTIN, CA 92780
(714) 508-1780 508-1790 FAX

LICENSED ARCHITECT
PAUL DENNIS WESTBERG
C-11045
EXP.9-2019
STATE OF CALIFORNIA

CONSULTANT:

PROJECT NAME:

LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
4901 EAST CARSON STREET
LONG BEACH, CA 90806

CLIENT:

LONG BEACH CITY COLLEGE
4901 EAST CARSON STREET
LONG BEACH, CA 90806

No.	Rev. Date	Description
2	12-03-19	ADDENDUM 2

JOB NO: 16042.01
DATE: 09/18/19
DRAWN: EM
CHECK: JG
ARCHITECT: PDW
ENGINEER:

SHEET DESCRIPTION:
WINDOW SCHEDULE

SHEET NO:

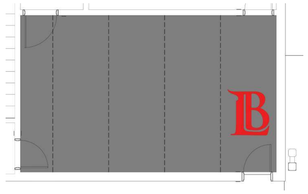
A702

MOCKUP ABOVE

TOTAL NUMBER OF ITEMS: 1

DESCRIPTION: APPROXIMATE 8' X 8' PAINTED LOGO OVER PLASTER WALL. SEE DETAIL 3/W-A403

PAINTED LB LOGO | x



MOCKUP ABOVE

TOTAL NUMBER OF ITEMS: 6

DESCRIPTION: ATHLETIC FLOORING WITH RED LB LOGO INSERT SEE FLOORING FINISH PLANS SHEETS A901-A904

TEAM ROOM FLOORING | s

EXAMPLE IMAGE ABOVE

TOTAL NUMBER OF ITEMS: 1 WALL

DESCRIPTION: FULL-HEIGHT SURFACE APPLIED VINYL WALL GRAPHICS. CUSTOM DESIGN WITH VIKINGS LOGO. SEE DETAIL 3D/W-A608

TRAINING GRAPHIC WALL | o

EXAMPLE IMAGE ABOVE (WILL VARY PER LBCC DISTRICT STANDARDS)

TOTAL NUMBER OF ITEMS: 3

DESCRIPTION: BUILDING ID SIGNS FOR BUILDINGS 'W' AND 'Y' PER LLBC DISTRICT STANDARDS. REFER TO DETAIL 4/A014

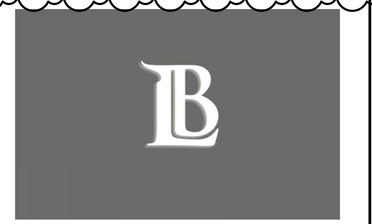
LAC BUILDING ID SIGN | j

MOCKUP ABOVE (PER LBCC DISTRICT STANDARDS)

TOTAL NUMBER OF ITEMS: 2

DESCRIPTION: MONUMENT SIGN PER LBCC DISTRICT STANDARDS. REFER TO DETAIL 2/A014

LAC MONUMENT SIGN | e

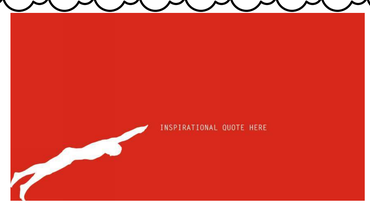


MOCKUP ABOVE

TOTAL NUMBER OF ITEMS: 1

DESCRIPTION: 1/2" THICK ACRYLIC LOGO ATTACHED TO WALL WITH 3M ADHESIVE, TYP. SEE DETAIL 7/W-A609 (SEE ADDENDA 2 RE-ISSUED SHEET)

ACRYLIC LB LOGO | w



MOCKUP ABOVE (ACTUAL GRAPHICS TO BE FURTHER DEVELOPED)

TOTAL NUMBER OF ITEMS: 6 WALLS (GRAPHIC DIFFERS BY TEAM ROOM)

DESCRIPTION: PRINTED VINYL WALL COVERING WITH WHITE ATHELETE SILLOUETTE AND WHITE INSPIRATIONAL QUOTE

TEAM ROOM GRAPHIC WALL | r

EXAMPLE IMAGE ABOVE (ACTUAL PRODUCT/DESIGN WILL DIFFER)

TOTAL NUMBER OF ITEMS: APPLIES TO ALL ATHLETIC BLEACHERS

DESCRIPTION: SOUTHERN BLEACHER DUR-KYN FINISH CRIMSON RED RISER BOARDS

ATHLETIC BLEACHERS | n

MOCKUP ABOVE

TOTAL NUMBER OF ITEMS: 2

DESCRIPTION: 1/2" THICK FLAT CUT OUT ALUMINUM LOGO WITH PAINTED FINISH. ATTACHED TO CABINET WITH CONCEALED FASTENERS

ALUMINUM LB LOGO | i

MOCKUP ABOVE

TOTAL NUMBER OF ITEMS: 13

DESCRIPTION: HEAVY DUTY LAMINATED VINYL WINDSCREEN FOR SOFTBALL OUTFIELD FENCE, TENNIS AND VOLLEYBALL SOUTH PERIMETER FENCE AND VOLLEYBALL COURTS LOW FENCE

VINYL WINDSCREEN | d

MOCKUP ABOVE

TOTAL NUMBER OF ITEMS: 2

DESCRIPTION: 4' X 8' SURFACE APPLIED VINYL VIKING LOGO OVER RED PAINTED EXTERIOR PLASTER WALL AT EACH SOFTBALL DUGOUT. SEE ENLARGED ELEVATIONS ON SHEET Y-A603

SOFTBALL DUGOUT | v

MOCKUP ABOVE (ACTUAL GRAPHICS TO BE FURTHER DEVELOPED)

TOTAL NUMBER OF ITEMS: 1 WALL (3 SEPARATE SECTIONS)

DESCRIPTION: FULL-HEIGHT SURFACE APPLIED VINYL WALL GRAPHIC. CUSTOM DESIGN WITH IMAGES OF SWIMMING, LACROSSE, TENNIS, SAND VOLLEYBALL, SOCCER SEE DETAIL 3/W-A609 (SEE ADDENDA 2 RE-ISSUED SHEET)

W1 EXTERIOR LOBBY GRAPHIC WALL | m

MOCKUP ABOVE

TOTAL NUMBER OF ITEMS: 8

DESCRIPTION: 3/4" THICK ACRYLIC LOGO ATTACHED TO WALL. SEE DETAIL 3/A825

ACRYLIC LB LOGO | h

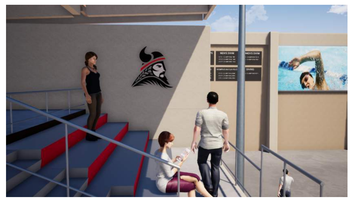
MOCKUP ABOVE

TOTAL NUMBER OF ITEMS: 4 (ONE ON EACH SIDE OF THE TOWER)

DESCRIPTION: ACRYLIC LLBC RED LOGO ON TOWER WALLS. SEE DETAIL 1/A825

TOWER SIGNAGE | c

GENERAL NOTE: GRAPHICS AND LOGOS TO BE PROVIDED AND APPROVED BY DISTRICT



MOCKUP ABOVE

TOTAL NUMBER OF ITEMS: 1

DESCRIPTION: SURFACE APPLIED VINYL VIKING LOGO OVER EXTERIOR PLASTER WALL SEE DETAIL 6/W-A401 (SEE ADDENDA 2 RE-ISSUED SHEET)

VIKING LOGO | u

MOCKUP ABOVE

TOTAL NUMBER OF ITEMS: 8 FULL LENGTH WALLS

DESCRIPTION: DE106 'RED CONTRAST' PAINTED WALL

ACCENT WALL COLOR | q

EXAMPLE IMAGE ABOVE (ACTUAL DESIGN WILL DIFFER)

TOTAL NUMBER OF ITEMS: 1

DESCRIPTION: RED HOME PLATE LBCC LOGO ARTIFICIAL TURF INSERT BEHIND HOME PLATE. REFER T OFIELD TURF DRAWINGS

HOME PLATE | l

MOCKUP ABOVE

TOTAL NUMBER OF ITEMS: 2

DESCRIPTION: FIELDTURF ARTIFICIAL TURF SOCCER/LACROSS FIELD WITH LBCC LOGO AT CENTER FIELD. REFER TO FIELD TURF DRAWINGS

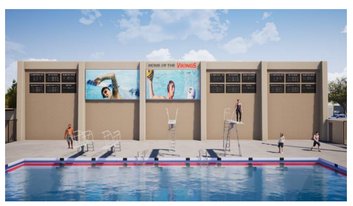
FIELD TURF WITH LOGO | g

EXAMPLE IMAGE ABOVE (ACTUAL DESIGN WILL DIFFER)

TOTAL NUMBER OF ITEMS: 5

DESCRIPTION: SUNBRELLA 100% SOLUTION DYED ACRYLIC MARINE FABRIC. TIED TO CHAIN LINK FENCE

FIELD/COURT ENTRANCE SIGN | b



MOCKUP ABOVE

TOTAL NUMBER OF ITEMS: 1

DESCRIPTION: PAINTED "HOME OF THE VIKINGS" LOGO OVER PAINTED CONCRETE WALL SEE DETAIL 3/W-A402 FOR ELEVATION

SCOREBOARD WALL | y

MOCKUP ABOVE

TOTAL NUMBER OF ITEMS: 1

DESCRIPTION: 8' X 8' SURFACE APPLIED VINYL LOGOS OVER PAINTED CONCRETE WALL SEE DETAIL 4/W-A402 FOR ELEVATION

NORTH SOUND WALL | t

MOCKUP ABOVE (ACTUAL GRAPHICS TO BE FURTHER DEVELOPED)

TOTAL NUMBER OF ITEMS: 2

DESCRIPTION: 1/2" THICK ACRYLIC LOGO ATTACHED TO WALL WITH 3M ADHESIVE, TYP. SEE DETAIL 2/W-A609 (SEE ADDENDA 2 RE-ISSUED SHEET)

ACRYLIC VIKING LOGO | p

MOCKUP ABOVE (ACTUAL GRAPHICS TO BE FURTHER DEVELOPED)

TOTAL NUMBER OF ITEMS: 2 WALLS

DESCRIPTION: FULL-HEIGHT WALL ADHESIVE VINYL WALL GRAPHICS. CUSTOM DESIGN WITH IMAGES OF SWIMMING, DIVING AND WATER POLO. SEE DETAIL 1/ W-A609

LOBBY GRAPHIC WALL | k

MOCKUP ABOVE (ACTUAL DESIGN TO BE FURTHER DEVELOPED)

TOTAL NUMBER OF ITEMS: 23' FULL LENGTH WALL

DESCRIPTION: LASER-CUT ACRYLIC PIN-MOUNTED AND WALL-MOUNTED DISPLAY ITEMS WITH TEAM AWARDS / RECCORD BOARDS. SEE DETAIL 12/A825

CORRIDOR TEAM DISPLAYS | f

EXAMPLE IMAGE ABOVE

TOTAL NUMBER OF ITEMS: 25 TOTAL

DESCRIPTION: SUNBRELLA 100% SOLUTION DYED ACRYLIC MARINE FABRIC. INCLUDE MIX OF LBCC LOGO DESIGN, LBCC ATHLETICS DESIGN AND SPORT-SPECIFIC DESIGN ON BANNERS. SEE DETAIL 17/A014

POLE-MOUNTED BANNERS | a

STATE:

ARCHITECT:

architecture
westbergwhite
14471 CHAMBERS RD, SUITE 210
TUSTIN, CA 92780
(714) 508-1780 508-1790 FAX

LICENSED ARCHITECT PAUL DENNIS WESTBERG STATE OF CALIFORNIA C-11045 EXP.9-2019

CONSULTANT:

PROJECT NAME:

LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
4901 EAST CARSON STREET
LONG BEACH, CA 90806

CLIENT:

LONG BEACH CITY COLLEGE
4901 EAST CARSON STREET
LONG BEACH, CA 90806

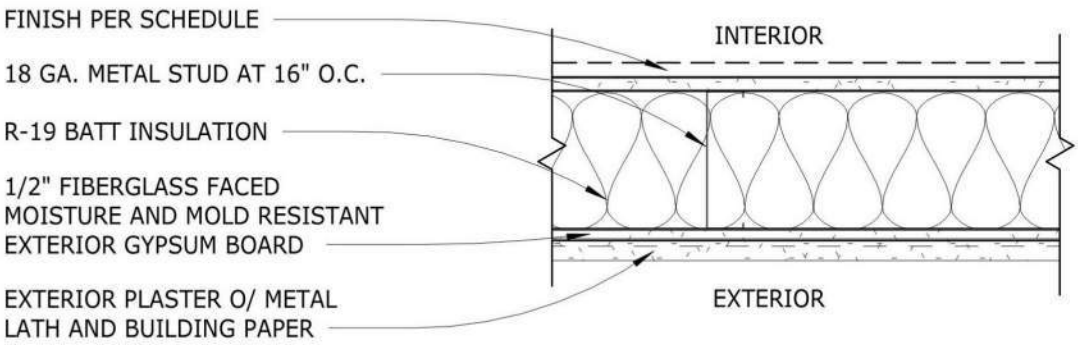
No.	Rev. Date	Description
2	12-03-19	ADDENDUM 2

JOB NO: 16042.01
DATE: 09/18/19
DRAWN: EM
CHECK: JC
ARCHITECT: PDW
ENGINEER:

SHEET DESCRIPTION:
BRANDING INFORMATION

SHEET NO:

A824



3A 6"x 18 GA. METAL STUDS AT 16" O.C. W/ EXTERIOR PLASTER SYSTEM AND 5/8" TYPE "X" GYP. BOARD

3B 6"x 18 GA. METAL STUDS AT 16" O.C. W/ EXTERIOR PLASTER SYSTEM AND W/ TILE O/ THINSET MORTAR O/ CEMENTITIOUS BACKER BOARD O/ WATER PROOF MEMBRANE

3C 6"x 18 GA. METAL STUDS AT 16" O.C. W/ EXTERIOR PLASTER SYSTEM ON BOTH SIDES OF WALL

3D 4"x 18 GA. METAL STUDS AT 16" O.C. W/ EXTERIOR PLASTER SYSTEM

3E 2-1/2"x 18 GA. METAL STUDS AT 16" O.C. W/ EXTERIOR PLASTER SYSTEM

3F 8"x 18 GA. METAL STUDS AT 16" O.C. W/ EXTERIOR PLASTER SYSTEM ON BOTH SIDES OF WALL

2

FOR TYPICAL TOP AND BASE CONNECTIONS
SEE SHEETS S008 AND S009

EXTERIOR METAL STUD WALL TYPES

1 1/2" = 1'-0"

3

12/4/2019 12:37:58 PM SKA37

architecture
westbergwhite
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TUSTIN, CA 92780
(714) 508-1780 508-1790 FAX

ARCHITECT:

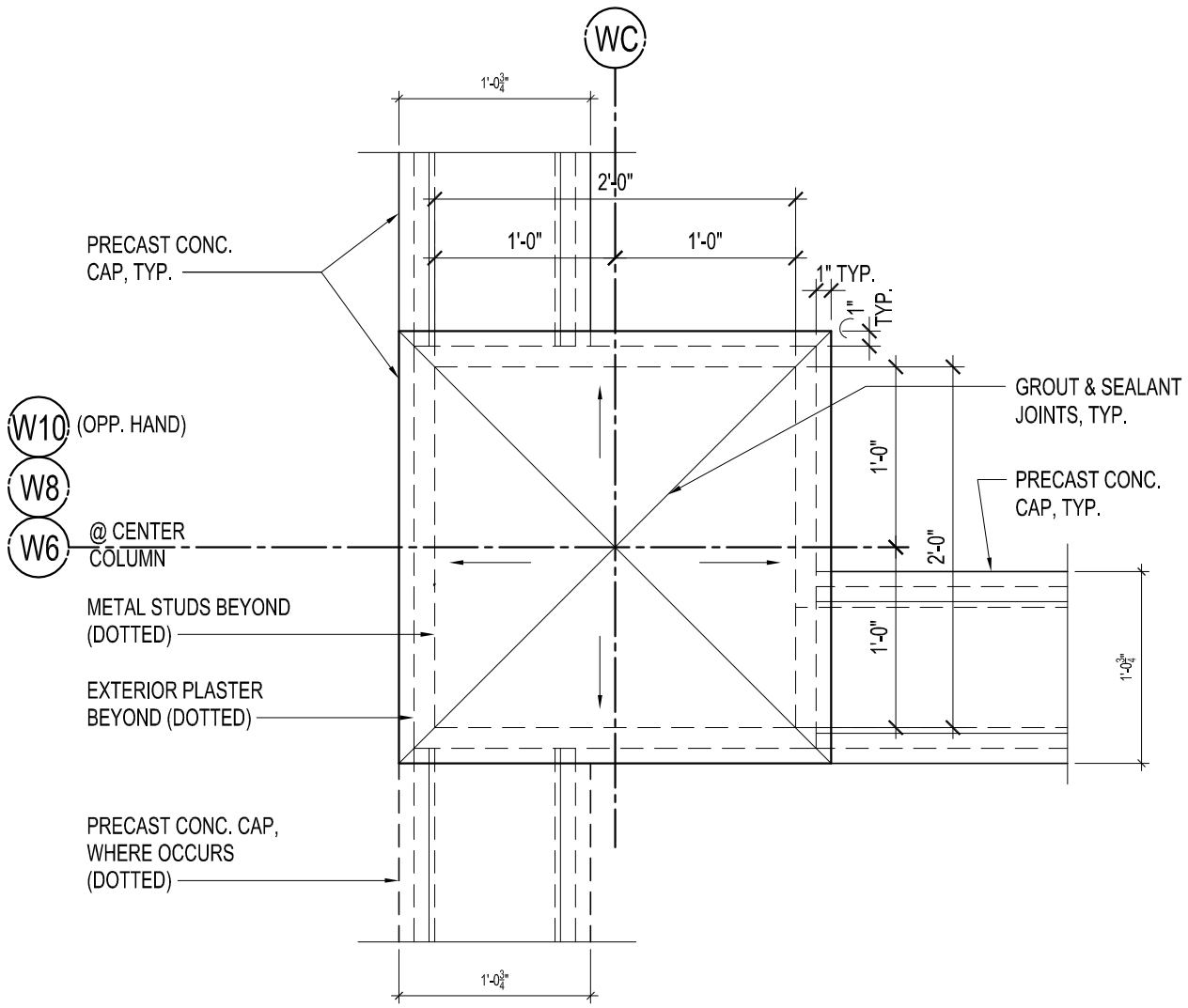
LICENSED ARCHITECT PAUL WESTBERG STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
REVISED DETAIL 3/A830 (N.T.S.)

DSA FILE NO: 19-C3	DATE: 12/03/19
DSA #: 03-119628	JOB NO: 16042.01
ADDENDA #: 02	DRAWN: EM / JC
CCD #:	SHEET
BULLETIN #:	SKA-37
RFI #:	

C:\Users\jcoulter.WWA\Documents\c16042 KLAC_Master_jcoulter.rvt



TYP. EXT. PILASTER CONC. CAP @ WALL

1" = 1'-0"

19

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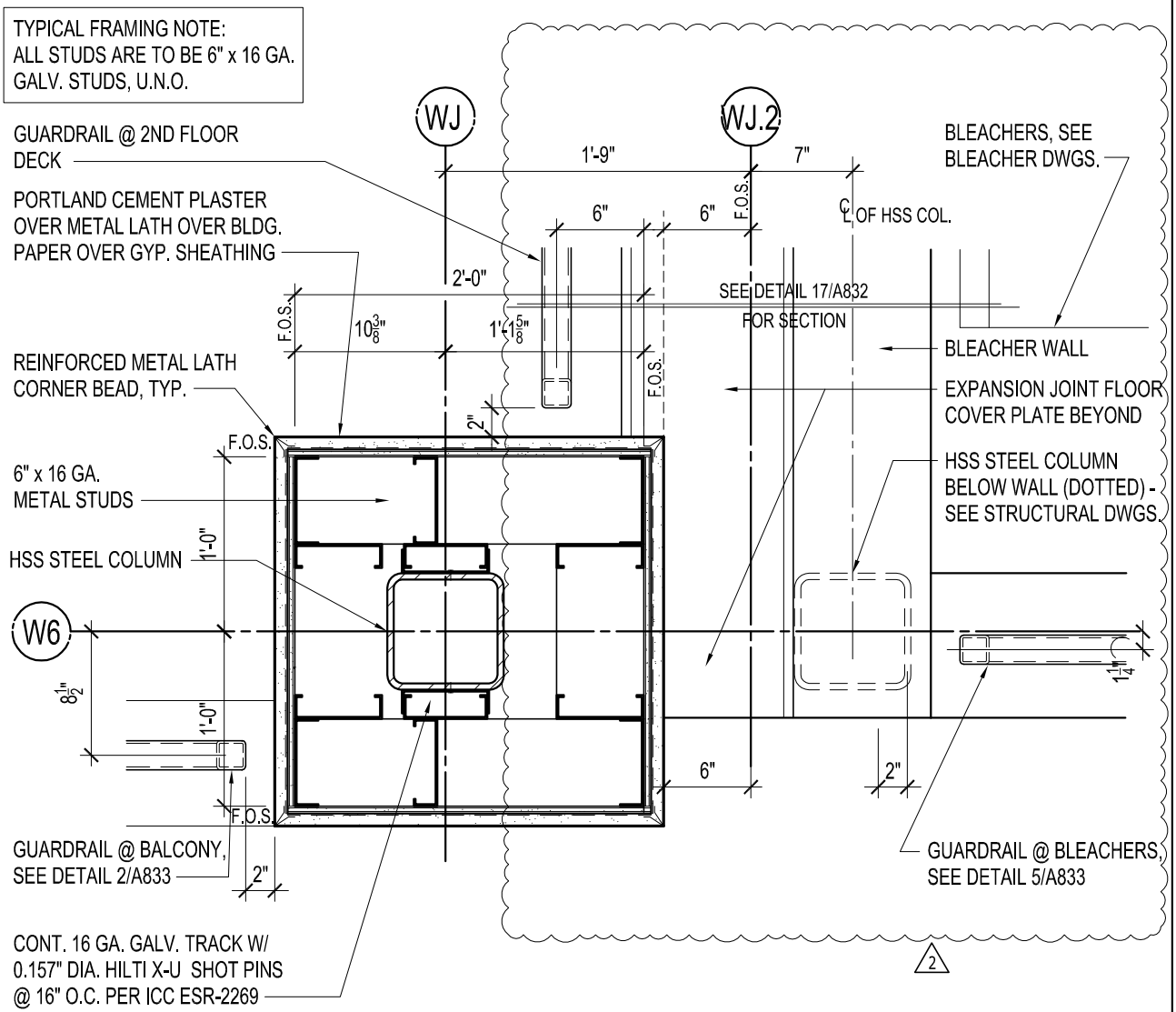
14471 CHAMBERS RD, SUITE 210
TUSTIN, CA 92780
(714) 508-1780 508-1790 FAX

ARCHITECT:

PROJECT:
Long Beach City College
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH COMMUNITY COLLEGE DISTRICT

SHEET DESCRIPTION:
NEW DETAIL ON 19/A831

DSA FILE NO: 19-C3	DATE: 12-03-19
DSA #: 03-119628	JOB NO: 16042.01
ADDENDA #: #02	DRAWN: JG
CCD #:	SHEET
BULLETIN #:	SKA-38
RFI #:	



EXTERIOR COLUMN @ EXPANSION JOINT

1" = 1'-0"

1

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westbergwhite
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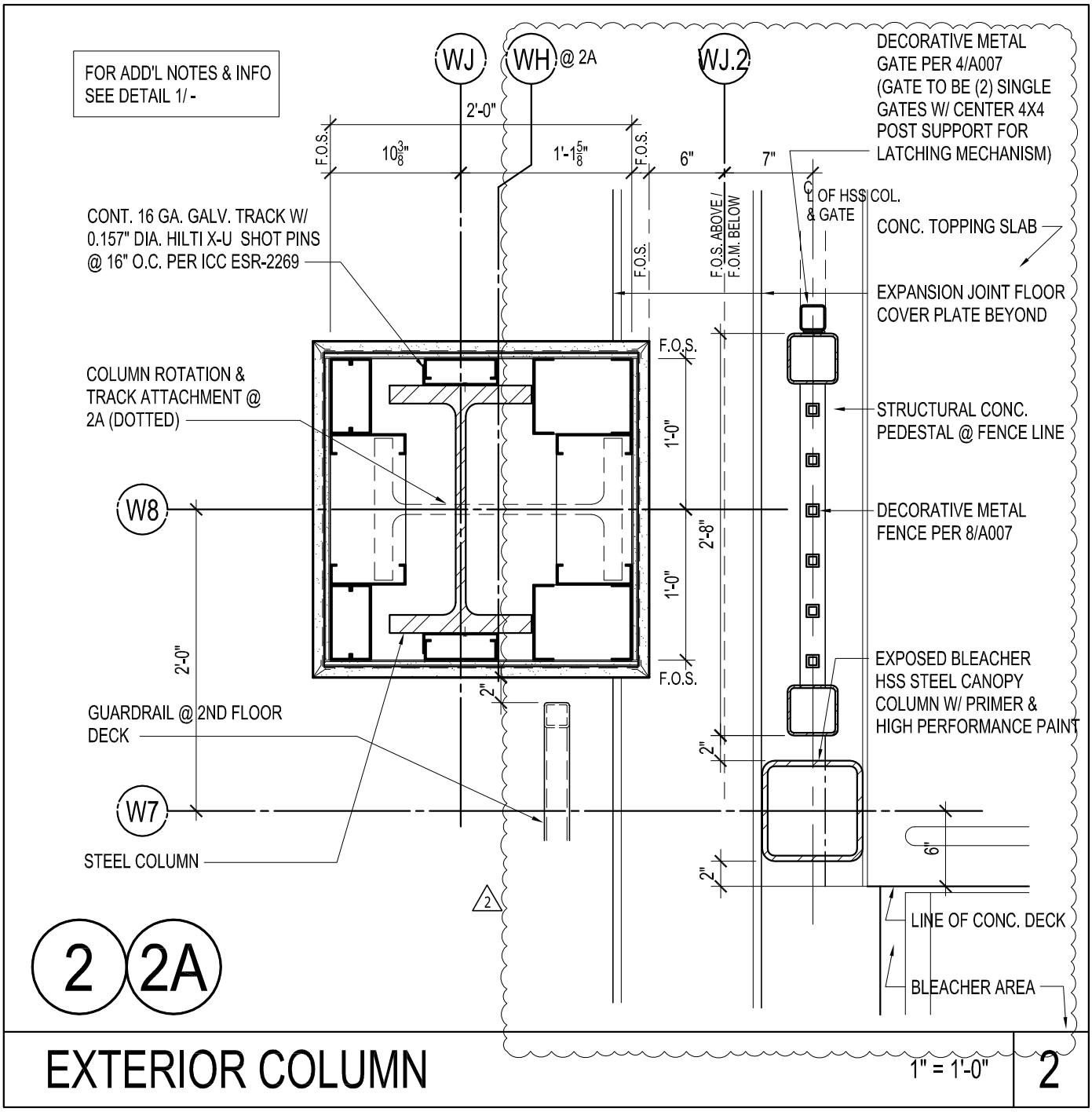
ARCHITECT:

PROJECT:
Long Beach City College
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH COMMUNITY COLLEGE DISTRICT

SHEET DESCRIPTION:
REVISED DETAIL 1/A832

DSA FILE NO: 19-C3	DATE: 12-03-19
DSA #: 03-119628	JOB NO: 16042.01
ADDENDA #: #02	DRAWN: JG
CCD #:	SHEET
BULLETIN #:	SKA-39
RFI #:	



EXTERIOR COLUMN

1" = 1'-0"

2

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TUSTIN, CA 92780
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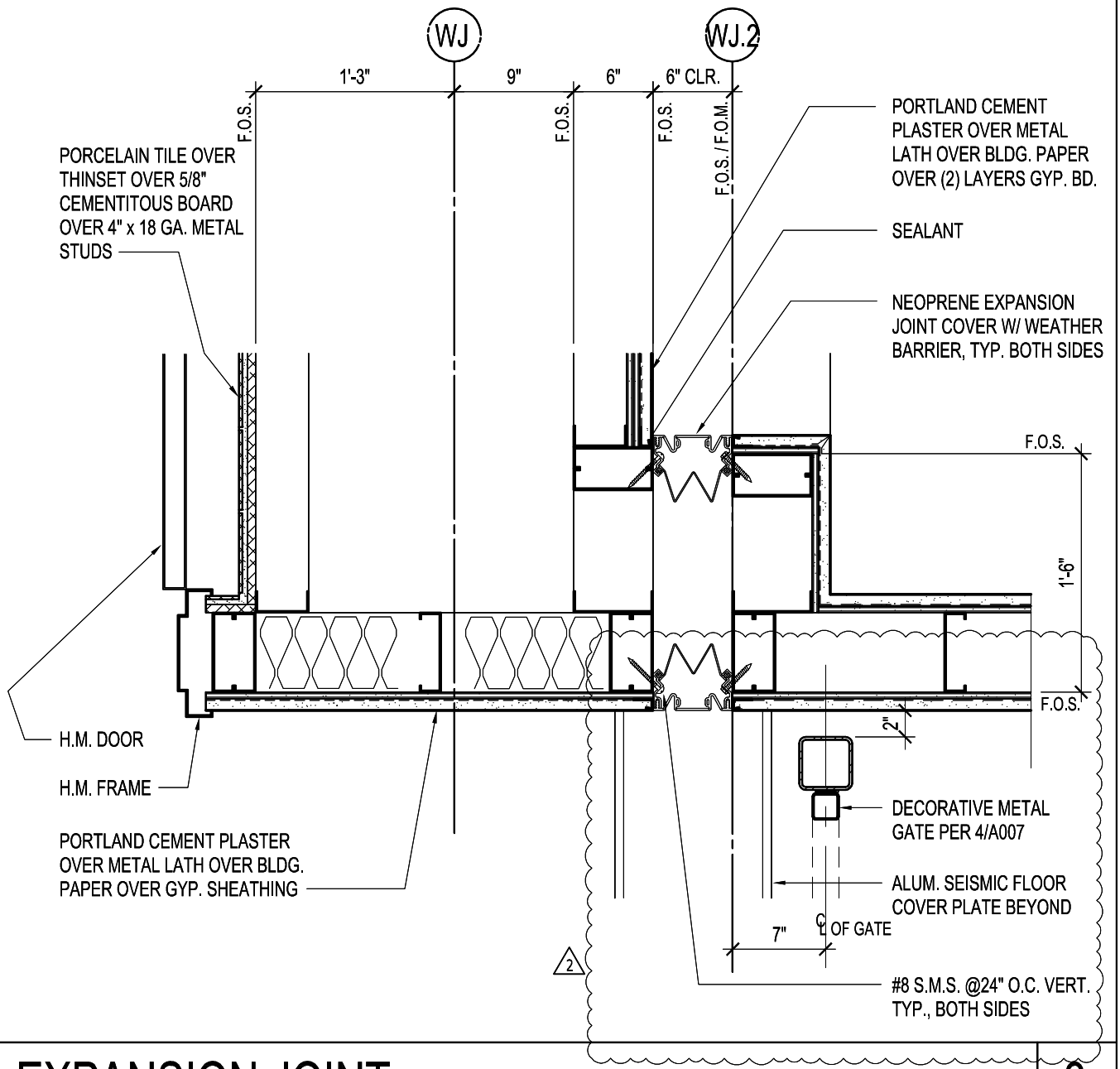
ARCHITECT:

PROJECT:
Long Beach City College
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH COMMUNITY COLLEGE DISTRICT

SHEET DESCRIPTION:
REVISED DETAIL 2/A832

DSA FILE NO: 19-C3	DATE: 12-03-19
DSA #: 03-119628	JOB NO: 16042.01
ADDENDA #: #02	DRAWN: JG
CCD #:	SHEET
BULLETIN #:	SKA-40
RFI #:	



EXPANSION JOINT

1" = 1'-0"

3

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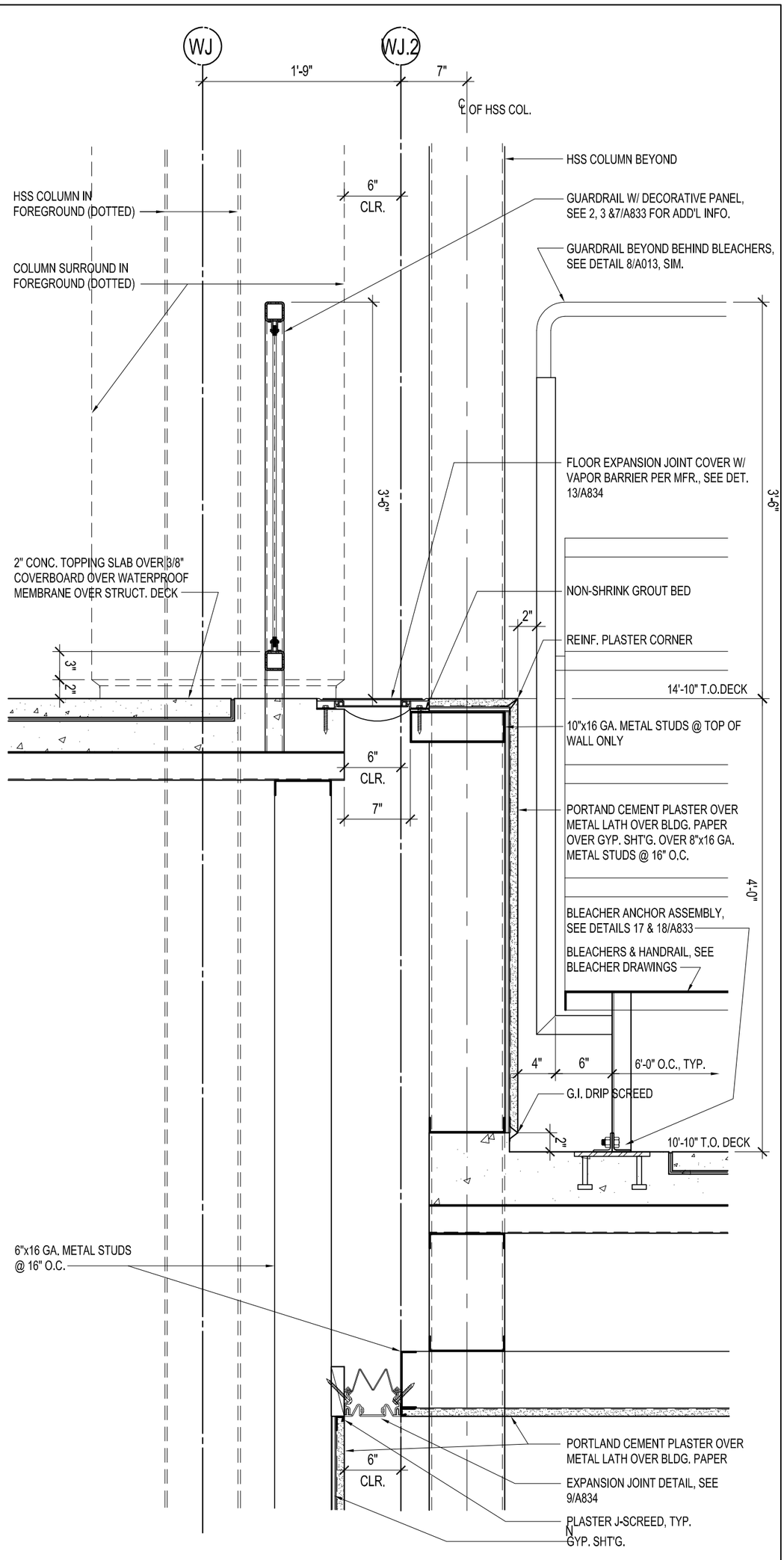
ARCHITECT:

PROJECT:
Long Beach City College
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH COMMUNITY COLLEGE DISTRICT

SHEET DESCRIPTION:
REVISED DETAIL 3/A832

DSA FILE NO: 19-C3	DATE: 12-03-19
DSA #: 03-119628	JOB NO: 16042.01
ADDENDA #: #02	DRAWN: JG
CCD #:	SHEET
BULLETIN #:	SKA-41
RFI #:	



EXP. JOINT @ COLUMN & BLEACHERS

1" = 1'-0"

17

SHEET: SKA-42

RFI #:

BULLETIN #:

CCD #:

ADDENDA #: #02

DSA APP NO: 03-119628

DSA FILE NO: 19-C3

DRAWN: JG

JOB NO.: 16042.01

DATE: 12-03-19

PROJECT:
Long Beach City College
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH COMMUNITY COLLEGE DISTRICT

SHEET DESCRIPTION:
NEW DETAIL ON 17/A832

ARCHITECT:
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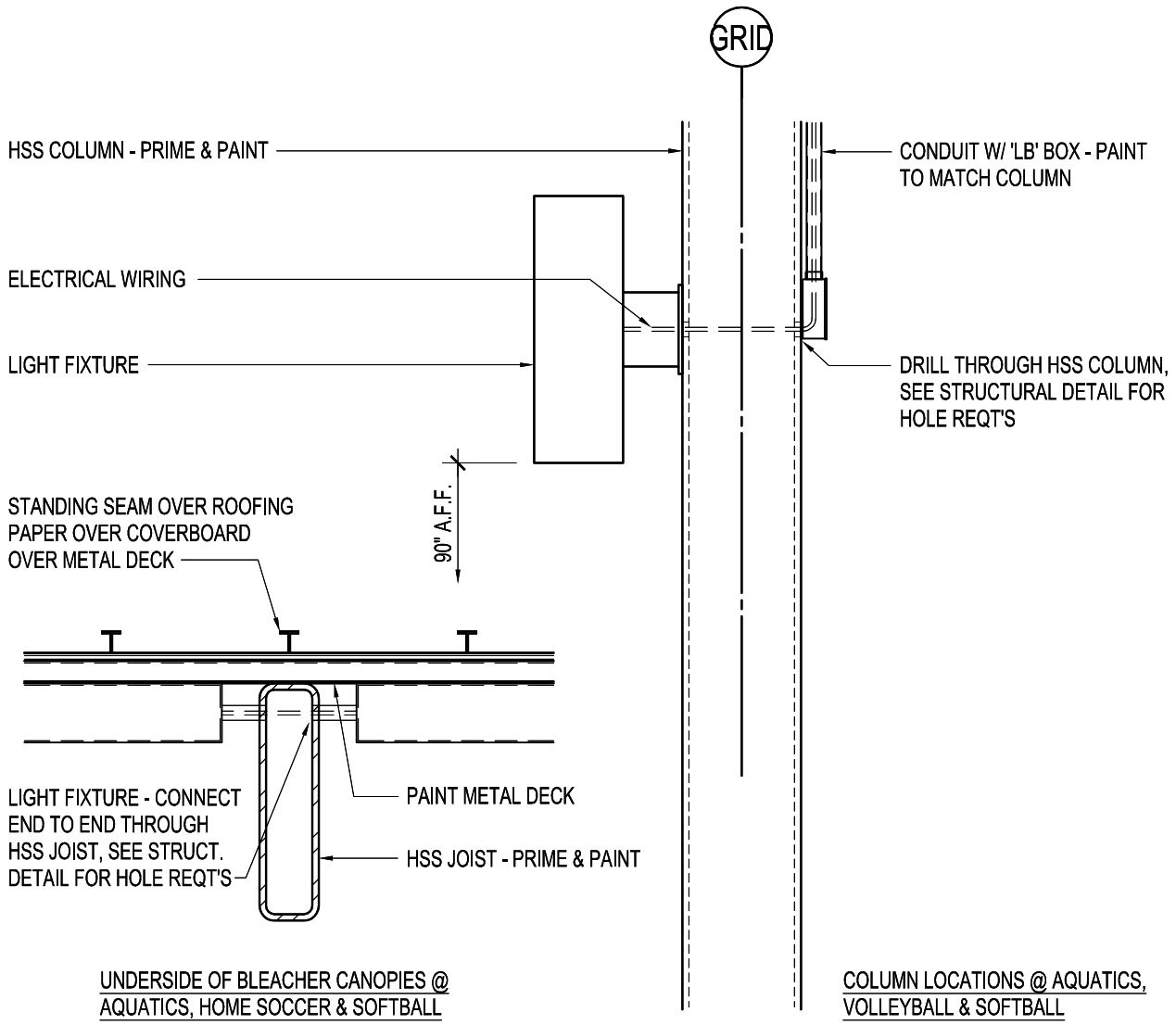

LIGHT FIXTURE CONN. TO HSS STEEL

1" = 1'-0"

19

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westbergwhite
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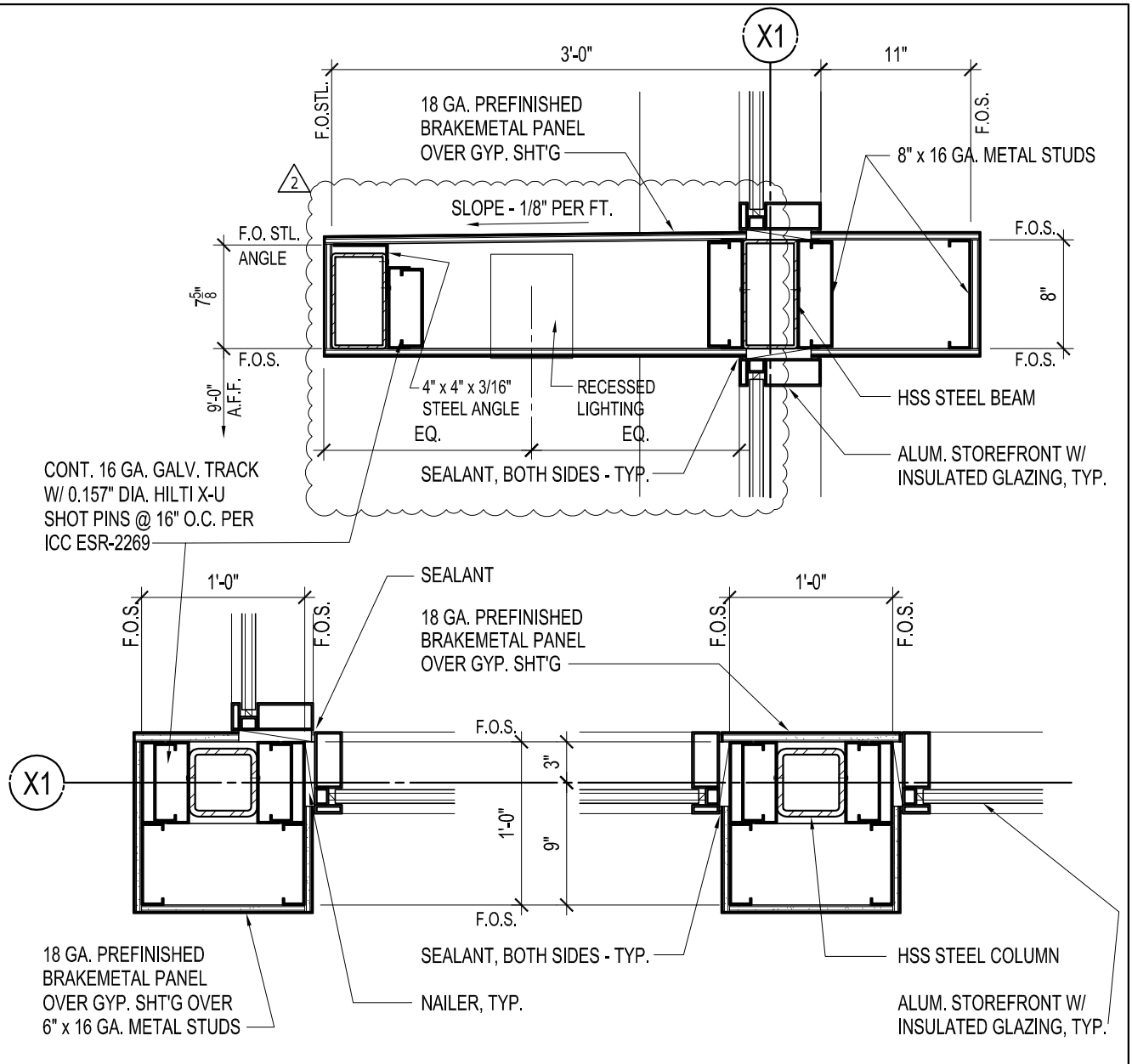
ARCHITECT:

PROJECT:
Long Beach City College
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH COMMUNITY COLLEGE DISTRICT

SHEET DESCRIPTION:
NEW DETAIL ON 19/A832

DSA FILE NO: 19-C3
DSA #: 03-119628
ADDENDA #: #02
CCD #:
BULLETIN #:
RFI #:

DATE: 12-03-19
JOB NO: 16042.01
DRAWN: JG
SHEET
SKA-43



EXTERIOR HSS COLUMN @ BLDG. W2

1" = 1'-0"

20

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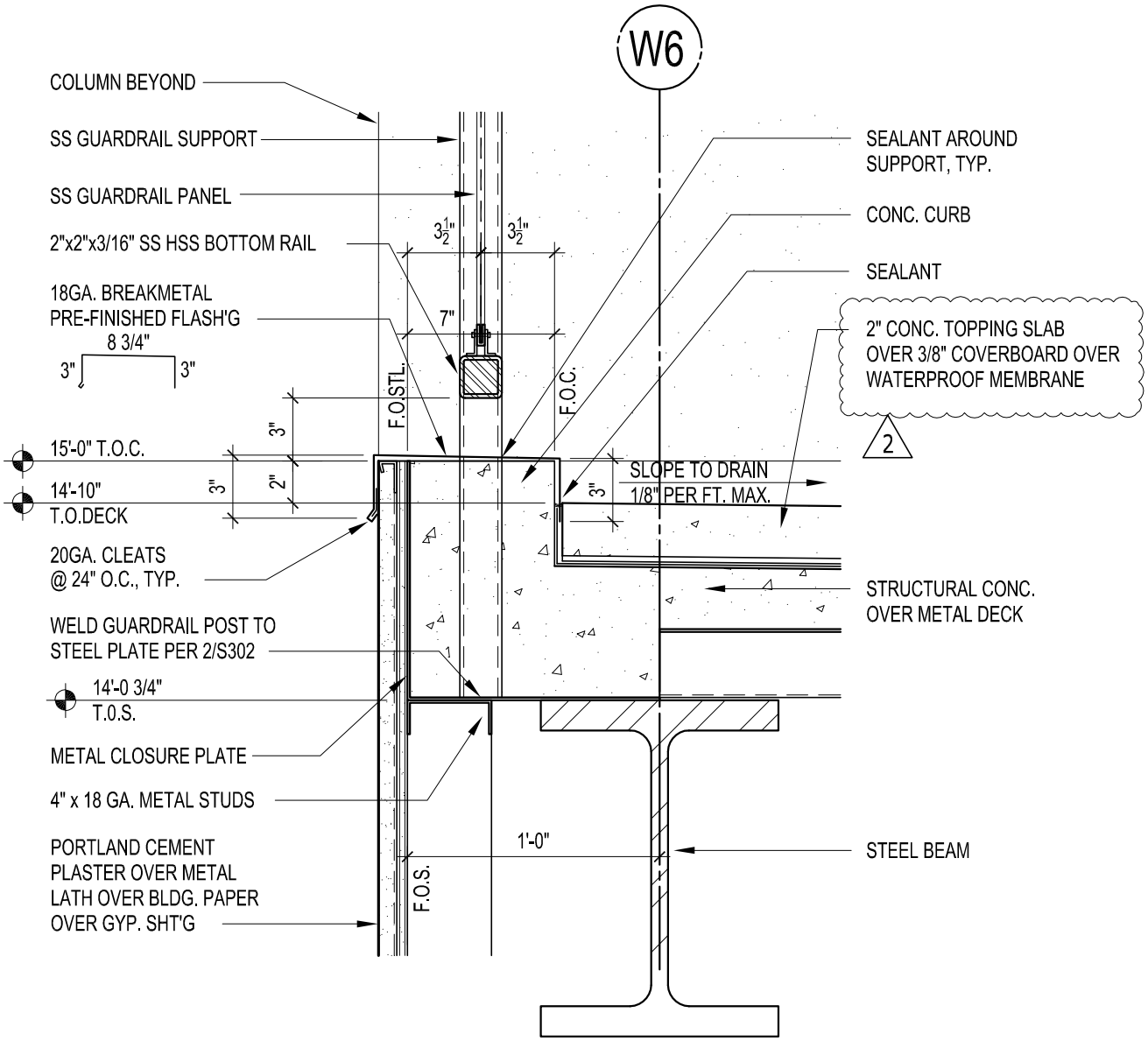
ARCHITECT:

PROJECT:
Long Beach City College
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH COMMUNITY COLLEGE DISTRICT

SHEET DESCRIPTION:
REVISED DETAIL 20/A832

DSA FILE NO: 19-C3	DATE: 12-03-19
DSA #: 03-119628	JOB NO: 16042.01
ADDENDA #: #02	DRAWN: JG
CCD #:	SHEET
BULLETIN #:	SKA-44
RFI #:	



GUARDRAIL @ BALCONY CURB

1 1/2"-1'-0" | 2

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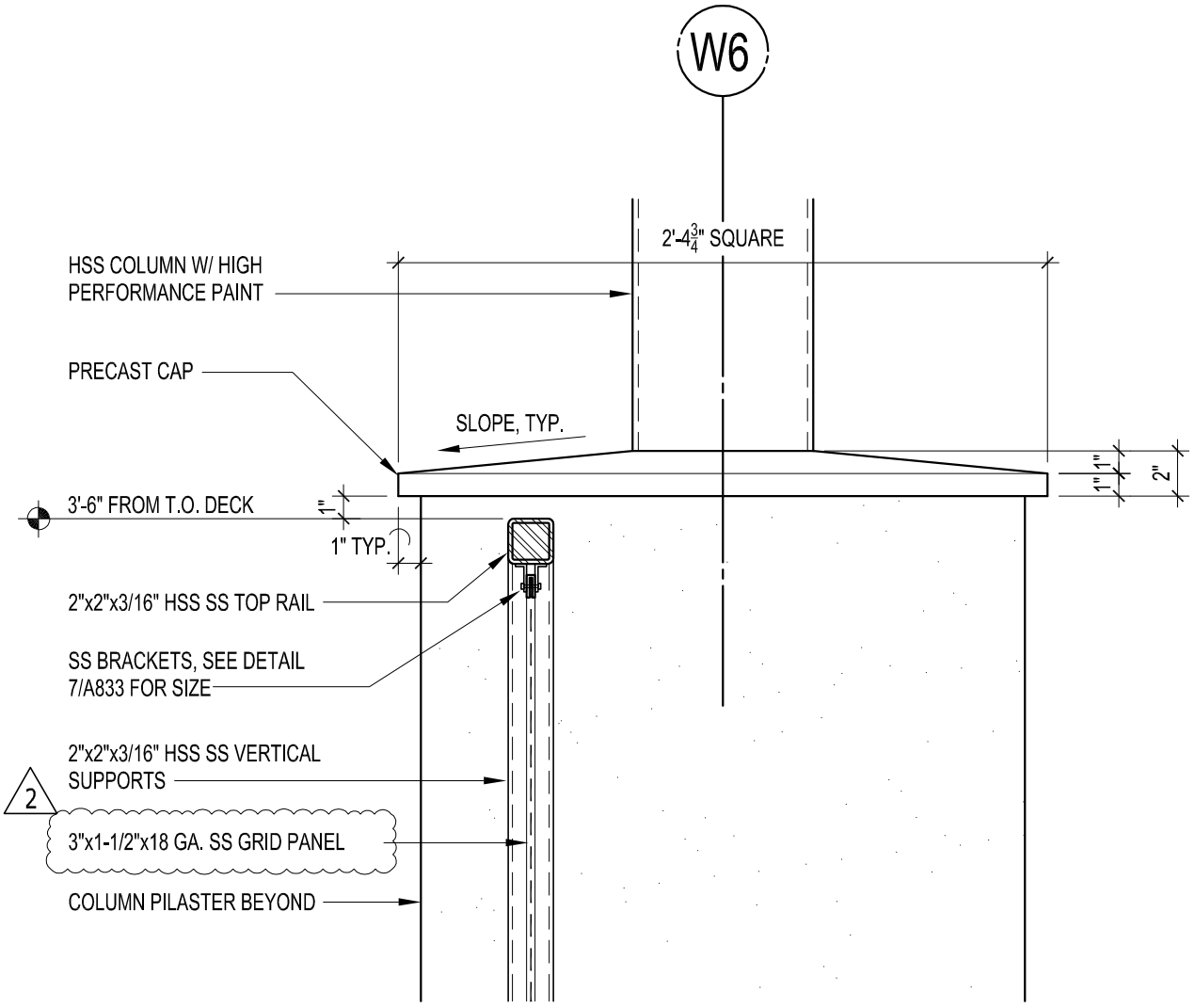
ARCHITECT:

PROJECT:
Long Beach City College
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH COMMUNITY COLLEGE DISTRICT

SHEET DESCRIPTION:
REVISED DETAIL 2/A833

DSA FILE NO: 19-C3	DATE: 12-03-19
DSA #: 03-119628	JOB NO: 16042.01
ADDENDA #: #02	DRAWN: JG
CCD #:	SHEET
BULLETIN #:	SKA-45
RFI #:	



PRECAST CONCRETE CAP

1 1/2"-1'-0" | 3

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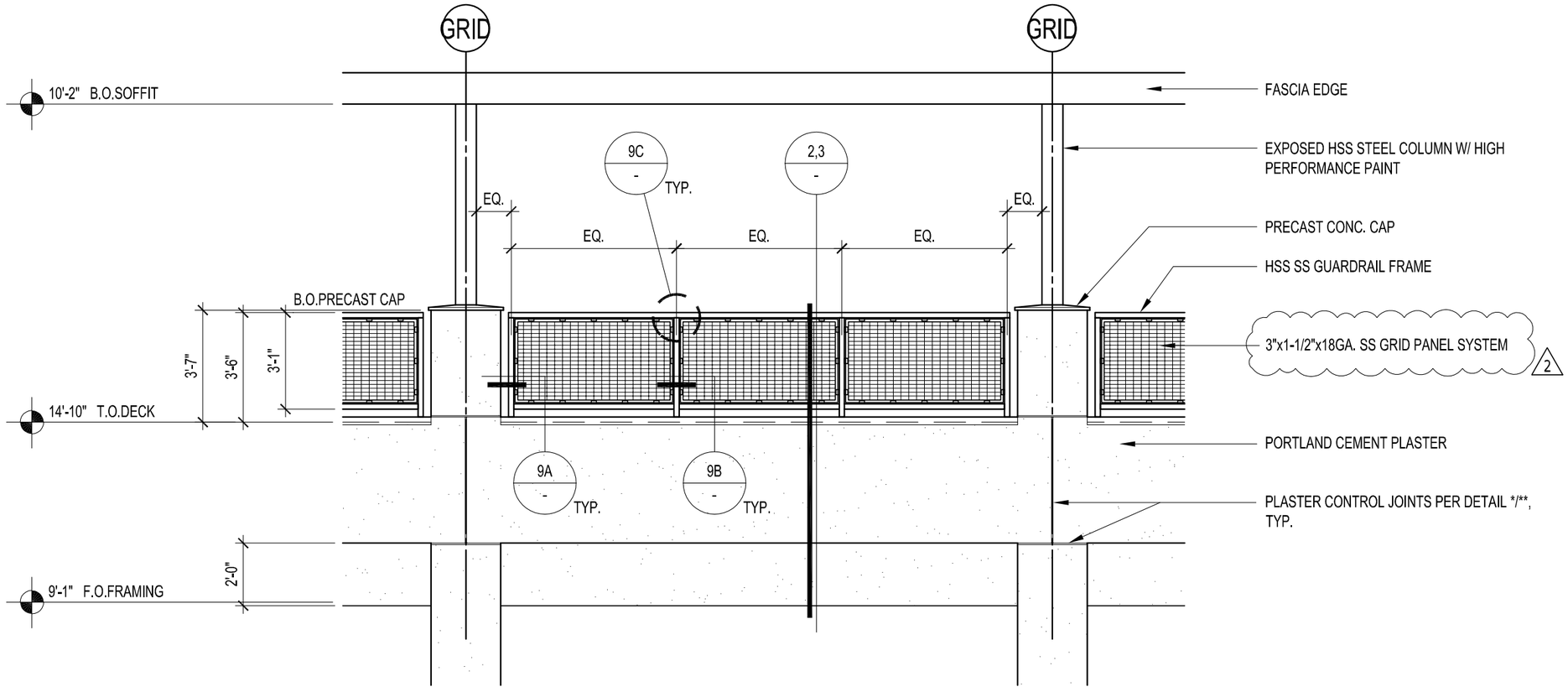
ARCHITECT:

PROJECT:
Long Beach City College
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH COMMUNITY COLLEGE DISTRICT

SHEET DESCRIPTION:
REVISED DETAIL 3/A833

DSA FILE NO: 19-C3
DSA #: 03-119628
ADDENDA #: #02
CCD #:
BULLETIN #:
RFI #:

DATE: 12-03-19
JOB NO: 16042.01
DRAWN: JG
SHEET
SKA-46



GUARDRAIL ELEVATION

1/4" = 1'-0"

4

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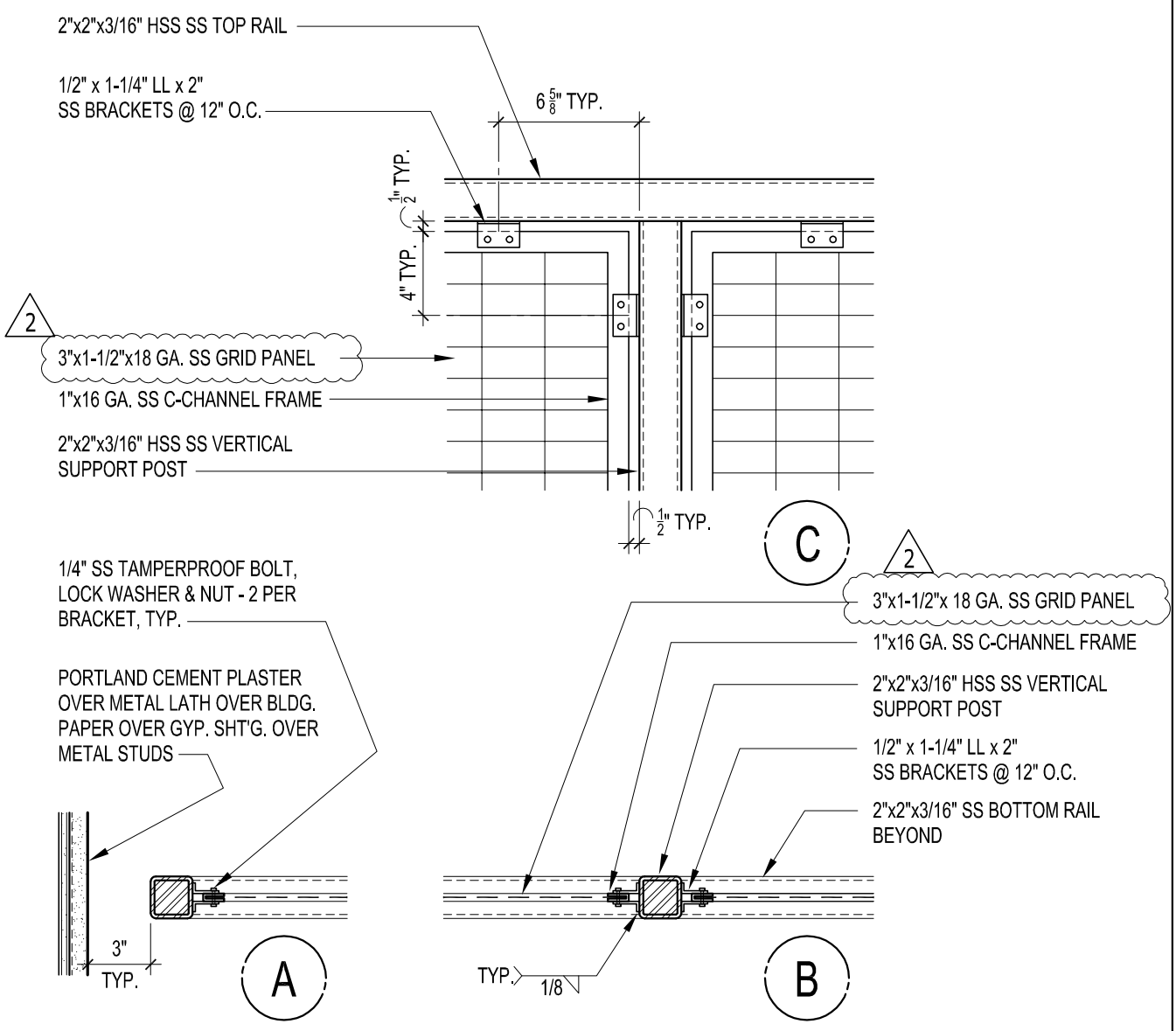
ARCHITECT:

PROJECT:
Long Beach City College
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH COMMUNITY COLLEGE DISTRICT

SHEET DESCRIPTION:
REVISED DETAIL 4/A833

DATE:	12-03-19
JOB NO:	16042.01
DRAWN:	JG
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	#02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKA-47



GUARDRAIL CONNECTION DETAILS

1 1/2"-1'-0" | 7

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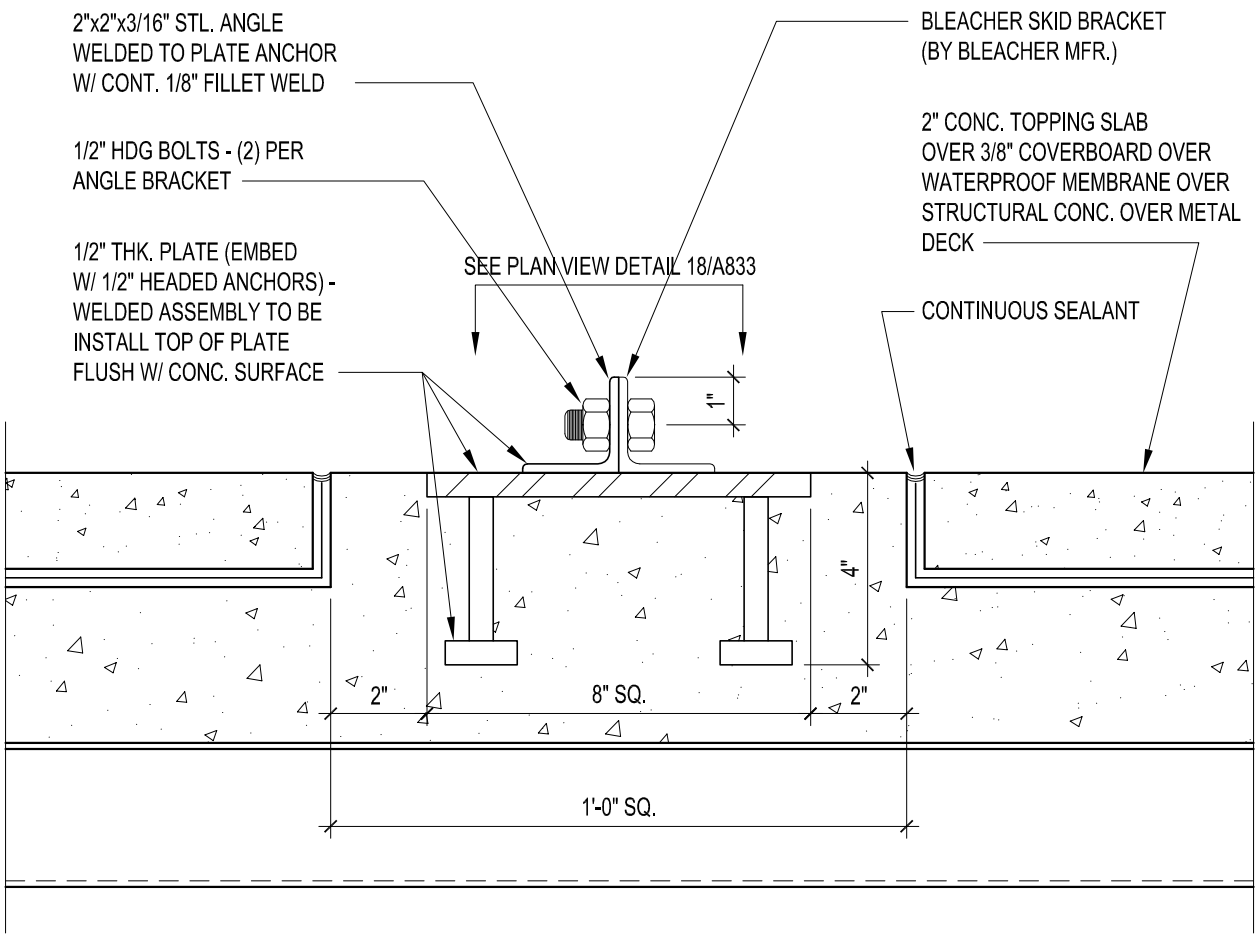
PROJECT:
Long Beach City College
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH COMMUNITY COLLEGE DISTRICT

SHEET DESCRIPTION:
REVISED DETAIL 7/A833

DSA FILE NO: 19-C3	DATE: 12-03-19
DSA #: 03-119628	JOB NO: 16042.01
ADDENDA #: #02	DRAWN: JG
CCD #:	SHEET
BULLETIN #:	SKA-48
RFI #:	



ANCHOR ASSEMBLY @
AQUATIC BLEACHERS ONLY

PROVIDE (3) ANCHOR PLATE
ASSEMBLIES @ EA. BLEACHER
SUPPORT FRAME. SUPPORT
FRAMES ARE 6'-0" O.C. PER MFR.

SECTION

BLEACHER ANCHOR ASSEMBLY

3"=1'-0" | 17

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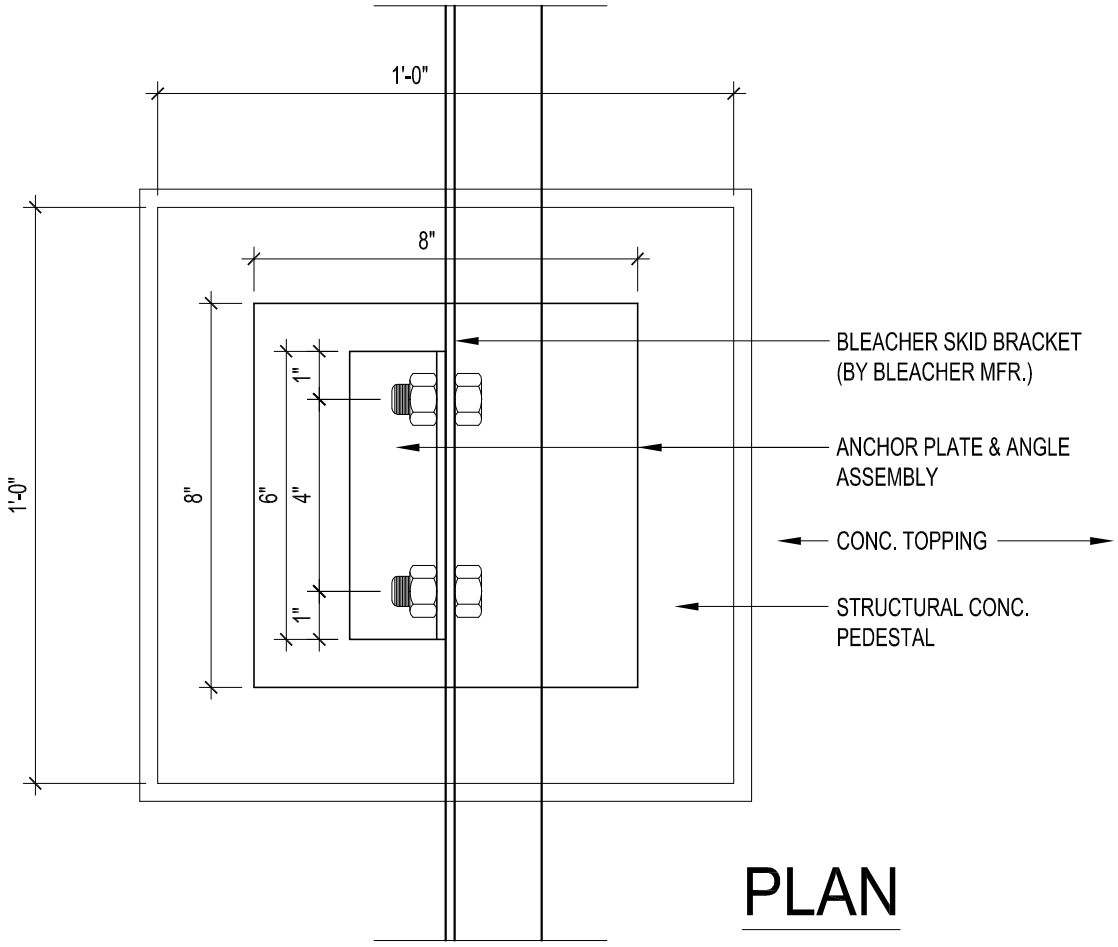
ARCHITECT:

PROJECT:
Long Beach City College
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH COMMUNITY COLLEGE DISTRICT

SHEET DESCRIPTION:
NEW DETAIL ON 17/A833

DSA FILE NO: 19-C3	DATE: 12-03-19
DSA #: 03-119628	JOB NO: 16042.01
ADDENDA #: #02	DRAWN: JG
CCD #:	SHEET
BULLETIN #:	SKA-49
RFI #:	



PLAN

BLEACHER ANCHOR ASSEMBLY

3"=1'-0" | 18

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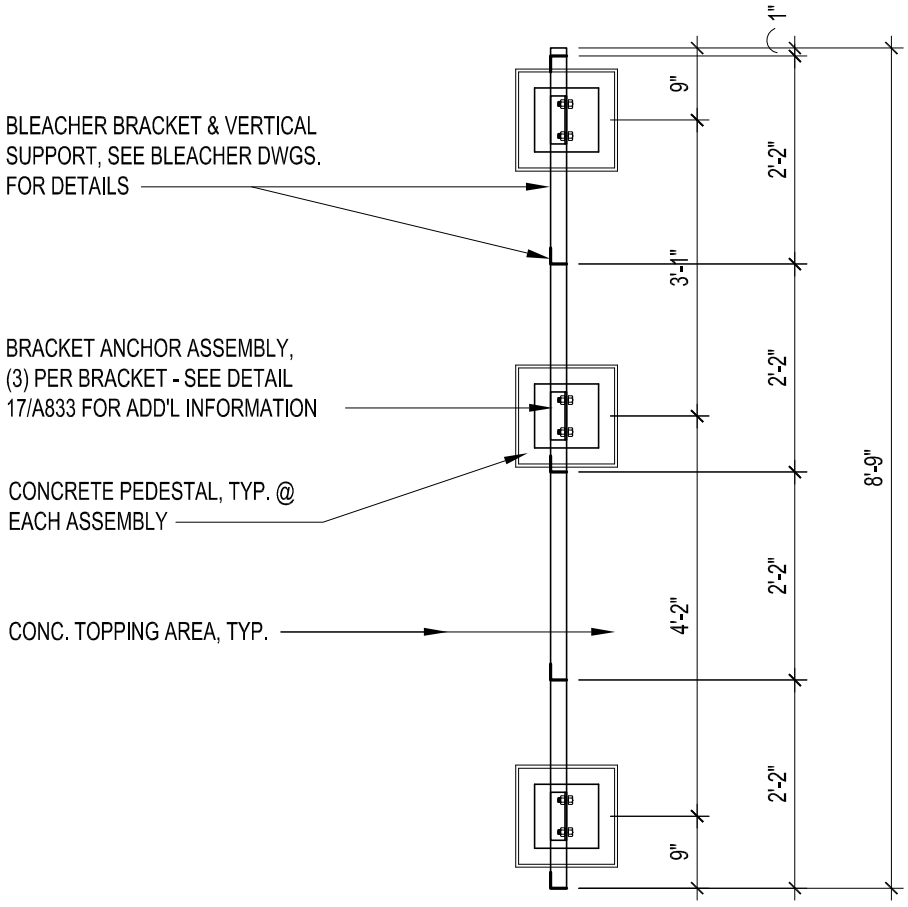
ARCHITECT:

PROJECT:
Long Beach City College
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH COMMUNITY COLLEGE DISTRICT

SHEET DESCRIPTION:
NEW DETAIL ON 18/A833

DSA FILE NO: 19-C3
DSA #: 03-119628
ADDENDA #: #02
CCD #:
BULLETIN #:
RFI #:

DATE: 12-03-19
JOB NO: 16042.01
DRAWN: JG
SHEET
SKA-50



ANCHOR POINTS @ BLEACHER BRACKET

1/2" = 1'-0"

19

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TUSTIN, CA 92780
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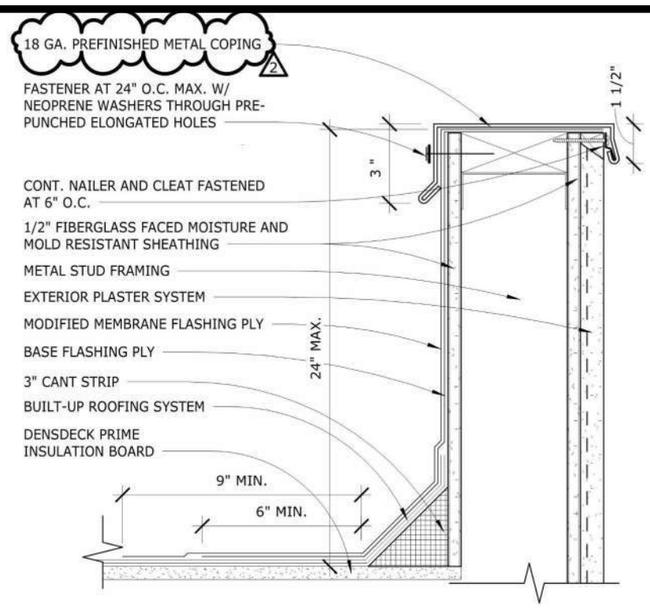
ARCHITECT:

PROJECT:
Long Beach City College
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH COMMUNITY COLLEGE DISTRICT

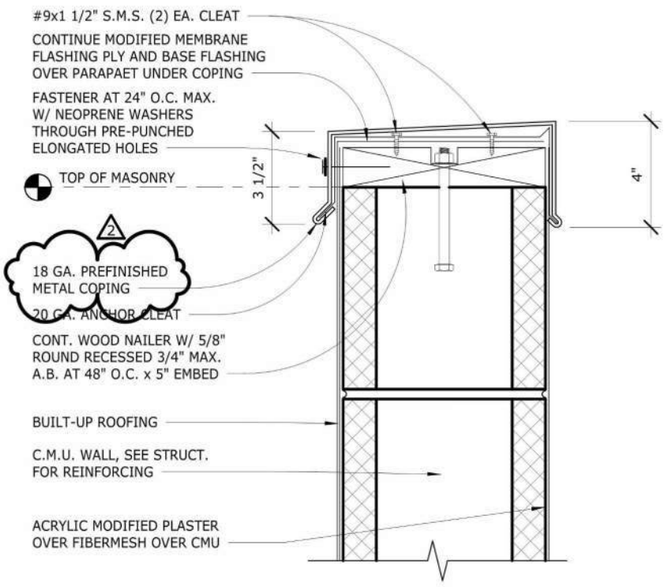
SHEET DESCRIPTION:
NEW DETAIL ON 19/A833

DSA FILE NO: 19-C3	DATE: 12-03-19
DSA #: 03-119628	JOB NO: 16042.01
ADDENDA #: #02	DRAWN: JG
CCD #:	SHEET
BULLETIN #:	SKA-51
RFI #:	



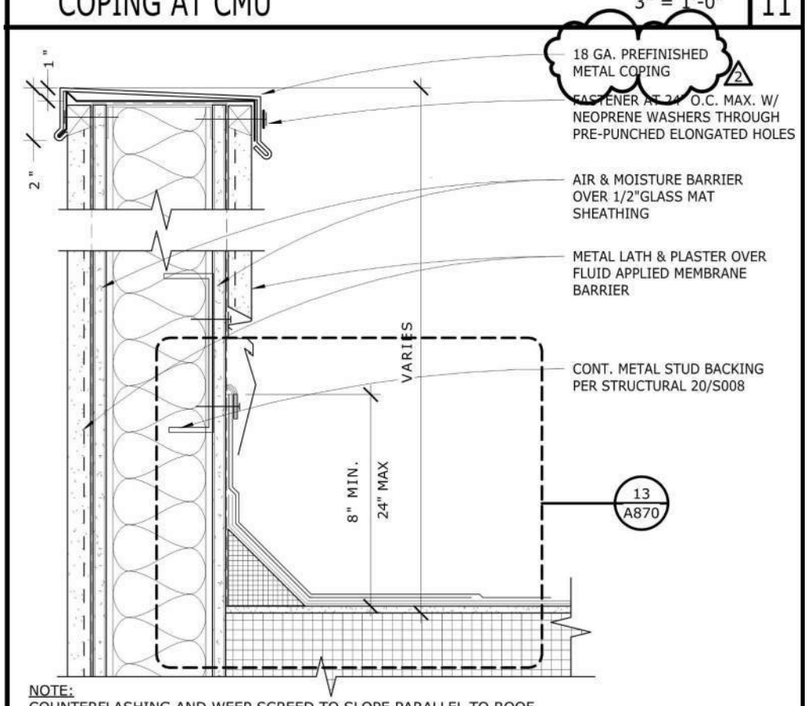
COPING AT METAL STUD

3" = 1'-0" | 12



COPING AT CMU

3" = 1'-0" | 11



NOTE:
COUNTERFLASHING AND WEEP SCREED TO SLOPE PARALLEL TO ROOF AND/OR CRICKET WHERE OCCURS

COPING AT PLASTER

3" = 1'-0" | 10

SHEET: SKA-52

RFI #:

BULLETIN #:

CCD #:

ADDENDA #: 02

DSA APP NO: 03-119628

DSA FILE NO: 19-C3

DRAWN: EM / JC

JOB NO: 16042.01

DATE: 12/03/19

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
REVISED DETAILS 10, 11 AND 12/A870 (N.T.S.)

ARCHITECT:

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TUSTIN, CA 92780
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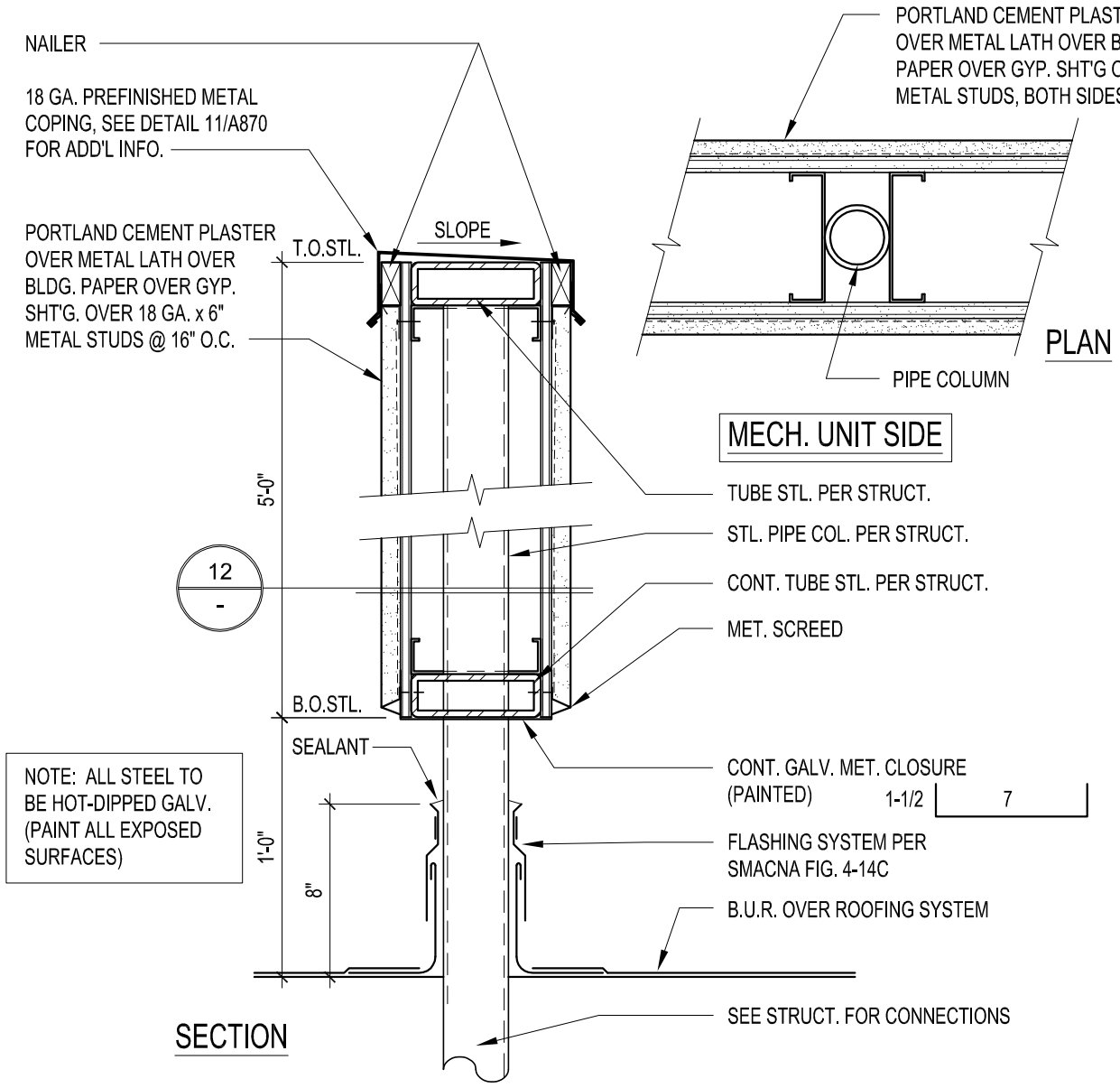

MECHANICAL SCREEN DETAIL

1 1/2"-1'-0" | 12

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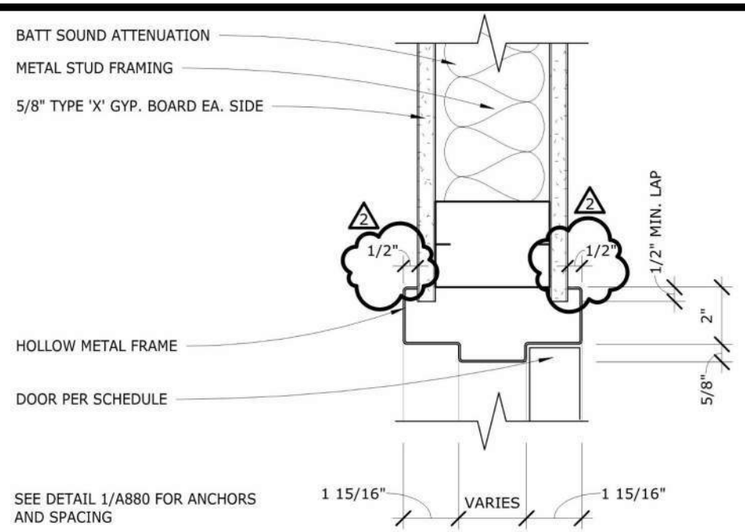
ARCHITECT:

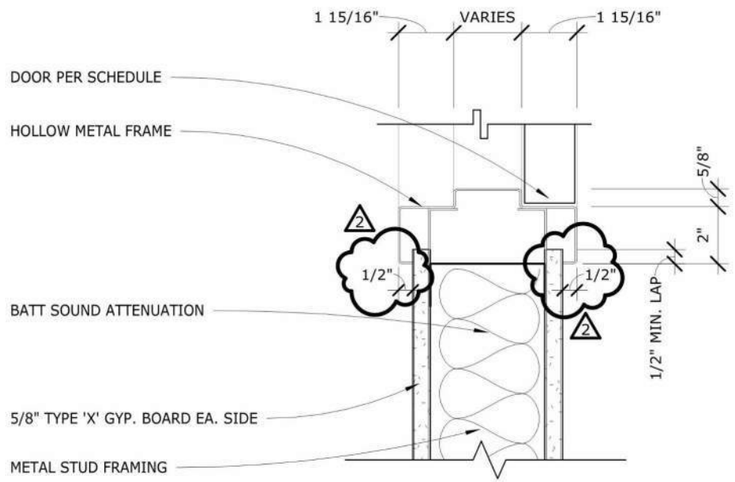
PROJECT:
Long Beach City College
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH COMMUNITY COLLEGE DISTRICT

SHEET DESCRIPTION:
NEW DETAIL ON 12/A871

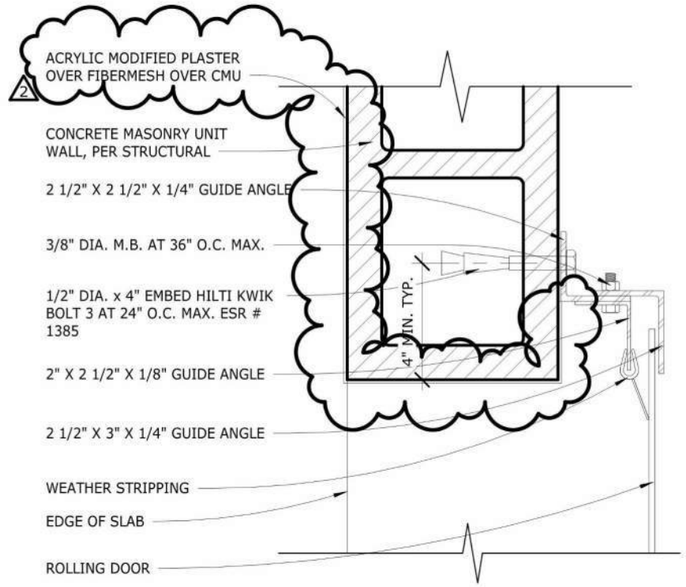
DSA FILE NO: 19-C3	DATE: 12-03-19
DSA #: 03-119628	JOB NO: 16042.01
ADDENDA #: #02	DRAWN: JG
CCD #:	SHEET
BULLETIN #:	SKA-53
RFI #:	



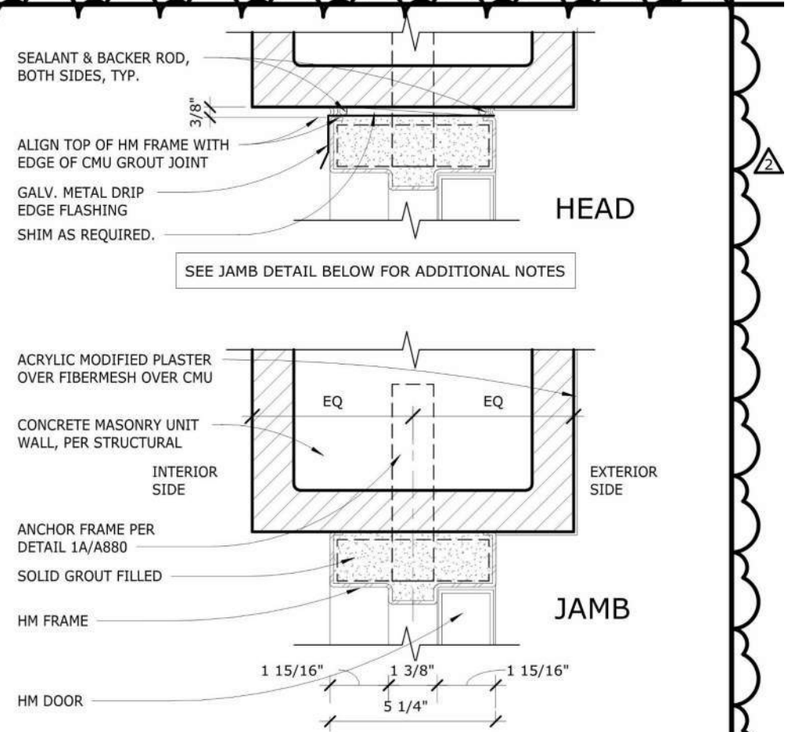
DOOR-INT HM HEAD 3" = 1'-0" 11



DOOR-INT HM JAMB 3" = 1'-0" 10



ROLL-UP DOOR JAMB 3" = 1'-0" 8



EXT. HM DOOR HEAD/JAMB 3" = 1'-0" 7

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TUSTIN, CA 92780
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ARCHITECT:

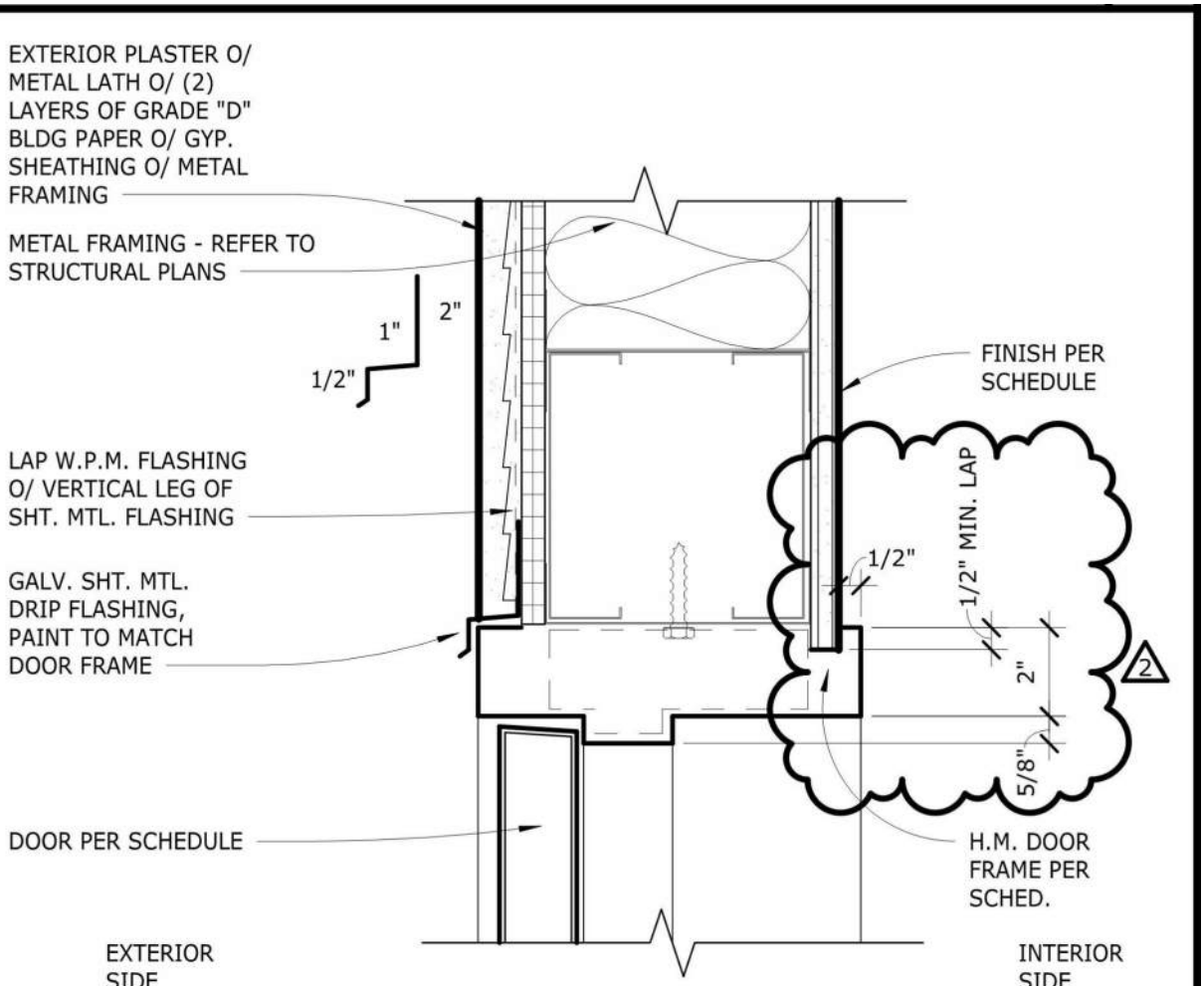
LICENSED ARCHITECT PAUL E. WESTBERG STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
REVISED DETAILS 7, 8, 10, 11/A880 (N.T.S.)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKA-54



SEE DETAIL 1/A880 FOR ANCHORS AND SPACING

DOOR-EXT. HM HEAD

3" = 1'-0"

14

12/4/2019 12:37:58 PM SKA55

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ARCHITECT:

LICENSED ARCHITECT PAUL WESTBERG STATE OF CALIFORNIA

PROJECT:

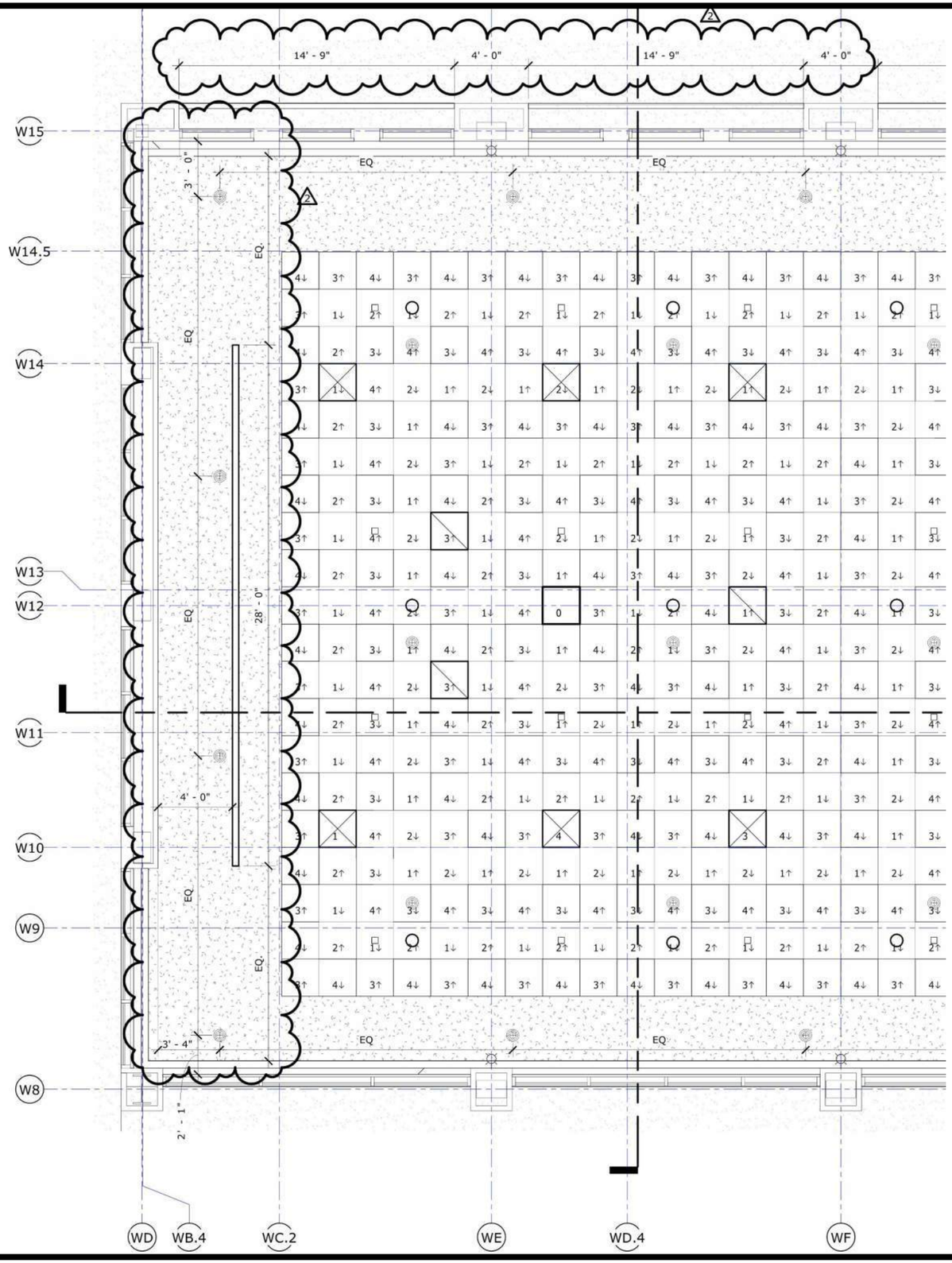
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:

REVISED DETAIL 14/A880 (N.T.S.)

DSA FILE NO: 19-C3	DATE: 12/03/19
DSA #: 03-119628	JOB NO: 16042.01
ADDENDA #: 02	DRAWN: EM / JC
CCD #:	SHEET
BULLETIN #:	SKA-55
RFI #:	

C:\Users\jcoulter.WWA\Documents\c16042 KLAC_Master_jcoulter.rvt



architecture
westbergwhite

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TUSTIN, CA 92780
(714) 508-1780 508-1790 FAX

ARCHITECT:

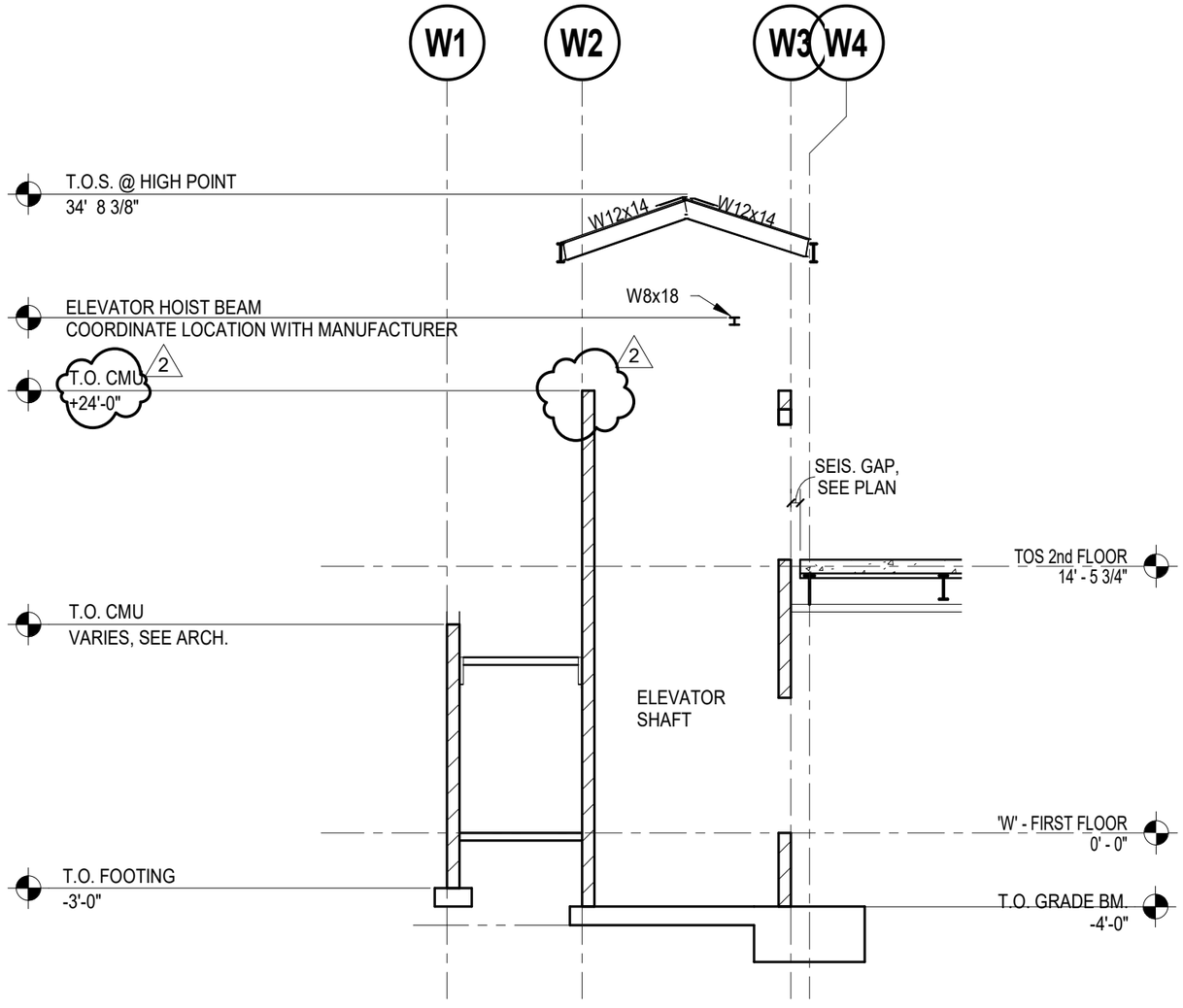
LICENSED ARCHITECT
PAUL [illegible] WESTBERG
STATE OF CALIFORNIA

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
MULTI PURPOSE ROOM W201 ENLARGED CEILING PLAN - 1/A900 (N.T.S.)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKA-56



REVISED PARTIAL DETAIL 1/W-S107.2

SCALE: 1/8" = 1'-0"

KNA STRUCTURAL ENGINEERS
9931 Muirlands Boulevard, Irvine, CA 92618
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REGISTERED PROFESSIONAL ENGINEER
DAVID R. NELSON
No. 2553
Exp. 3-31-20
STRUCTURAL
STATE OF CALIFORNIA

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TUSTIN, CA 92780
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ARCHITECT:

PROJECT: LIBERAL ARTS CAMPUS
Long Beach City College

SHEET DESCRIPTION: REVISED PARTIAL DETAIL 1/WS107.2

DETAIL 1/WS107.2

DATE:	12-03-19
JOB NO:	16042.01
DRAWN:	SR
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKS-04

CHORED AND INSTALLED PER
NO DETAIL IS INDICATED, THE
FORCE AND DISPLACEMENT
H 1616.10.24 AND ASCE 7-10

HED (E.G. HARD WIRED) TO
ER.

E THAN 8 HOURS AND
TEMPORARY ATTACHMENTS.

ONENTS SHALL BE POSITIVELY
THESE COMPONENTS SHALL
SSOCIATED DUCTWORK,

ER OF MASS LOCATED 4 FEET
TLY SUPPORT THE

F DISTRIBUTED SYSTEMS,

OR FLOOR OR HUNG FROM

DRAWINGS, THE INSTALLATION
ECORD AND THE DSA DISTRICT

C. AT EVERY 100 FT OF STRAIGHT RUN OF HORIZONTAL PIPING.

D. AT EACH AGGREGATE HORIZONTAL CHANGE IN DIRECTION EXCEEDING ONE HUNDRED THIRTY-FIVE (135) DEGREES.

E. AT EACH HORIZONTAL DRAINAGE PIPE UPPER TERMINAL

F. ABOVE EACH URINAL.

G. BELOW EACH SINK.

58. PROVIDE SEDIMENT TRAP AS CLOSE AS POSSIBLE TO ALL GAS APPLIANCES AND GAS FIRED EQUIPMENTS INLET EXCEPT FOR APPLIANCES LISTED PER 2016 CPC SECTION 1212.8. SEE SEDIMENT TRAP INSTALLATION PER 2016 CPC FIGURE 1212.8.

59. DOMESTIC WATER PIPING AND COMPONENTS SHALL BE PROVIDED AND INSTALLED IN COMPLIANCE WITH CALIFORNIA AB 1953 LEGISLATION, WHICH LIMITS THE ALLOWABLE LEAD CONTENT IN CERTAIN DOMESTIC WATER SYSTEM COMPONENTS.

60. WRAP ALL PIPES THAT RUN THROUGH THICKENED PORTIONS OF SLAB WITH MINIMUM 1 INCH THICK ELASTOMERIC MATERIALS BEFORE POURING CONCRETE.

2

THIS SKETCH MODIFIED DRAWING P001

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(714) 508-1780 508-1790 FAX

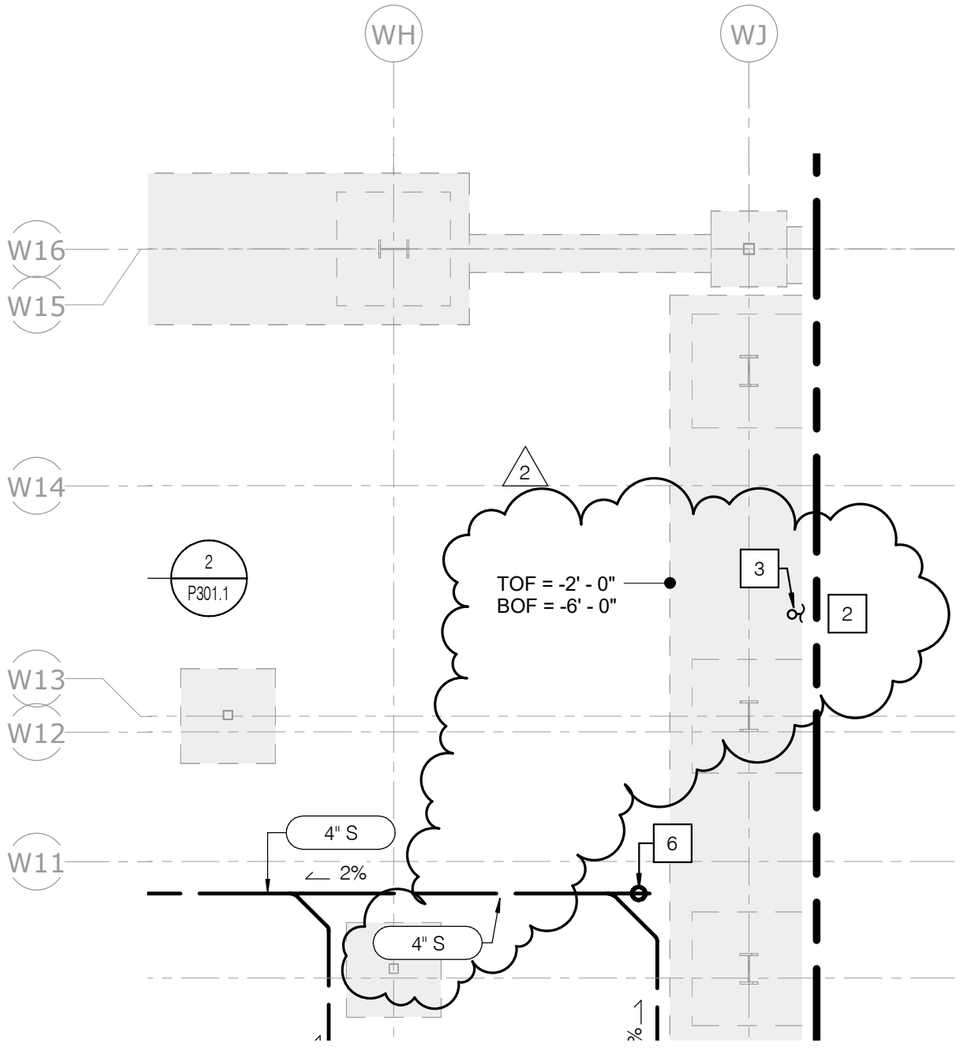
ARCHITECT:

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
PLUMBING GENERAL NOTES

DATE:	12/03/2019
JOB NO:	16042.01
DRAWN:	SK
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	2
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKP-1



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ARCHITECT:

PROJECT:
LIBERAL ARTS CAMPUS
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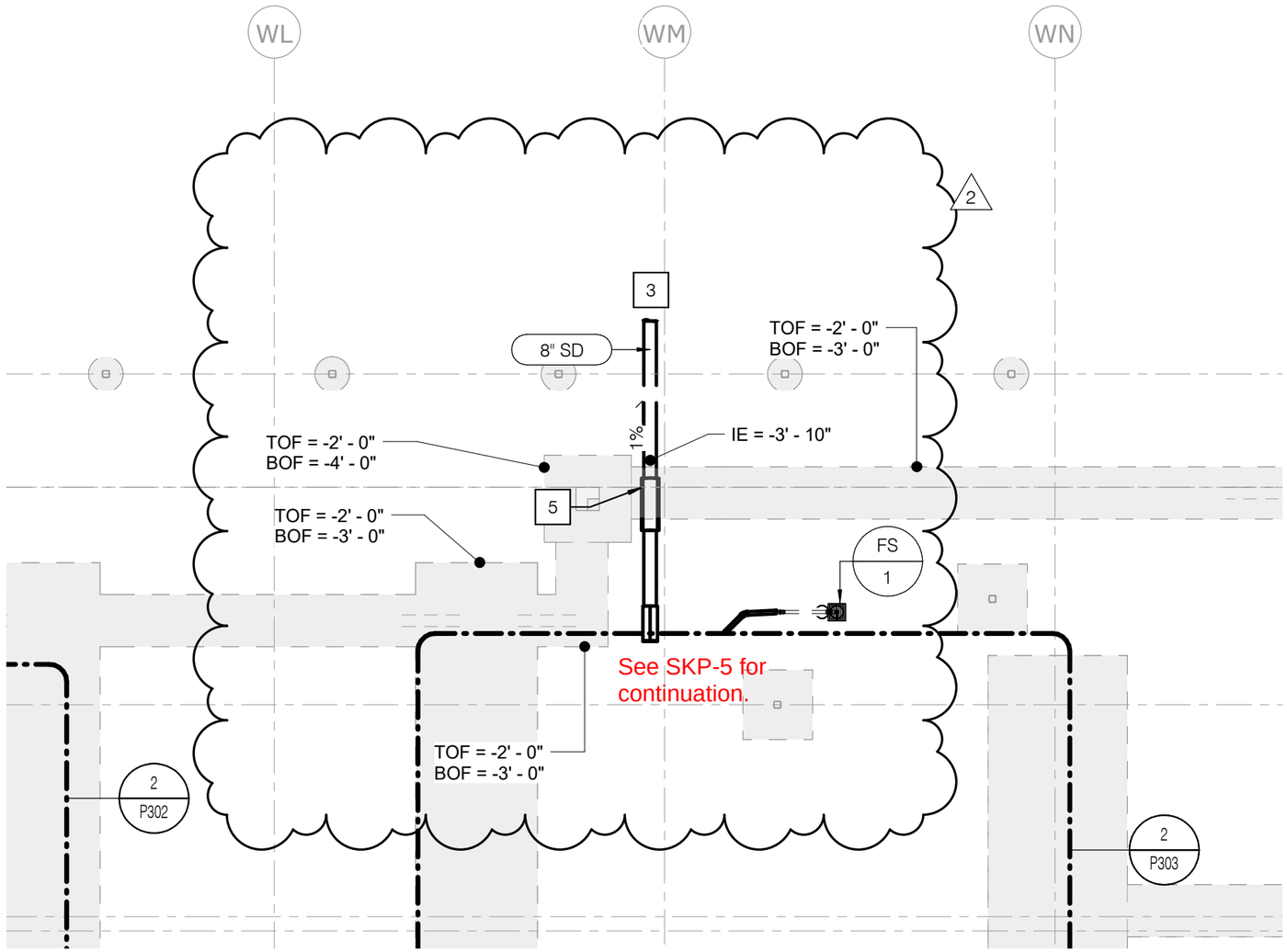
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
PLUMBING UNDERGROUND PLAN W-P200.1

DATE:	12/03/2019
JOB NO:	16042.01
DRAWN:	SK
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	2
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKP-2



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11/26/2019 10:04:10 AM SKP-3 C:\Users\Shahpoor Khosravi\Documents\Revit 2018\J9032_MEPT-Central-R18_shahpoor.khosravi@p2sinc.com.rvt

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ARCHITECT:

PROJECT:
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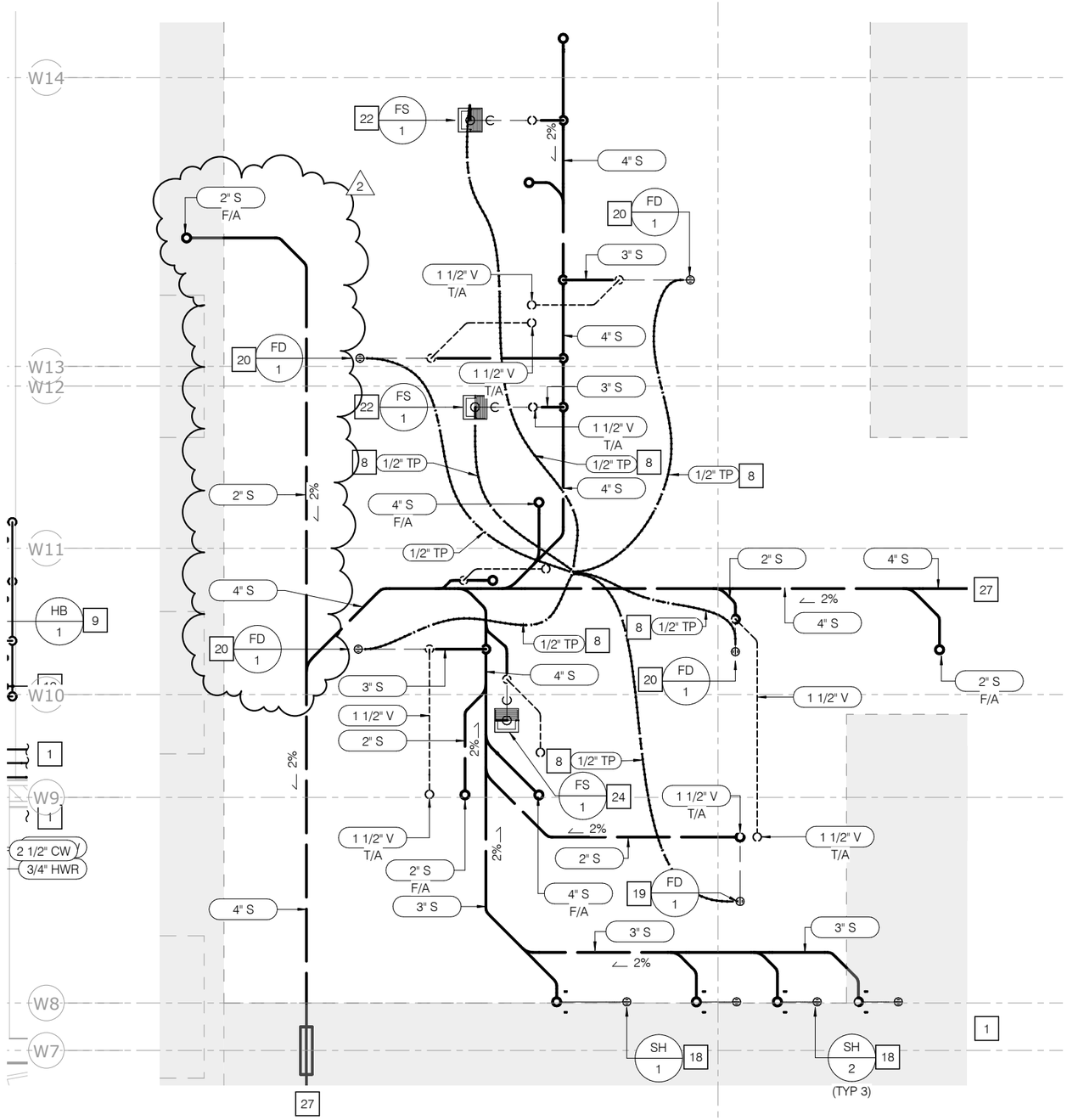
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
PLUMBING UNDERGROUND PLAN W-P200.2

DATE:	12/03/2019
JOB NO:	16042.01
DRAWN:	SK
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	2
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKP-3



2 BLDG. "W1" ROOMS W118, W119, & W121 (WASTE & VENT) - BELOW GRADE

SCALE: 1/4" = 1'-0"

THIS SKETCH MODIFIED DRAWING P302

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ARCHITECT:

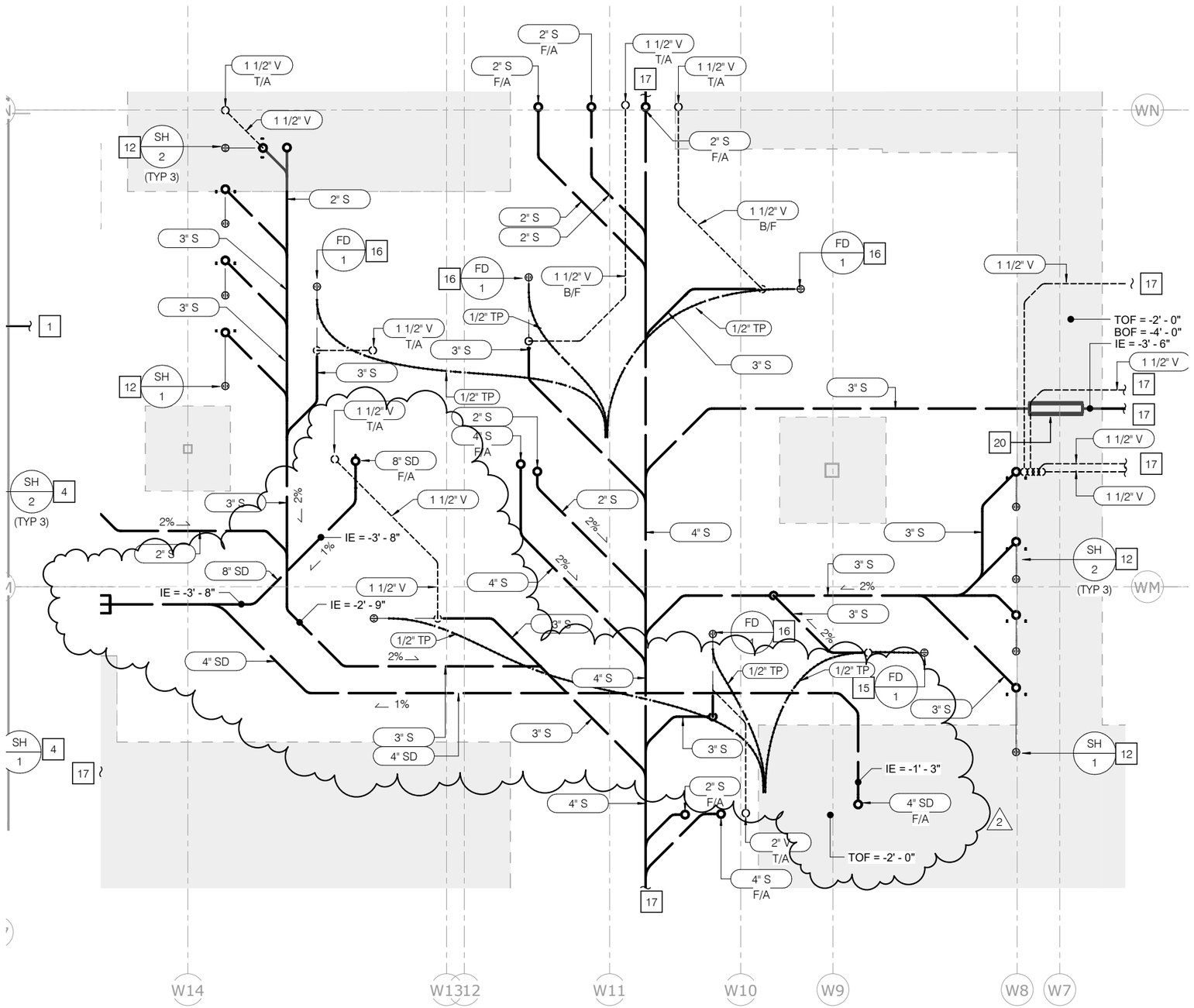
PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
PLUMBING UNDERGROUND PLAN P302

DATE:	12/03/2019
JOB NO:	16042.01
DRAWN:	SK
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	2
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKP-4

SCALE:



2 BLDG. "W" ROOMS W126 & W131 (WASTE & VENT) - BELOW GRADE

SCALE: 1/4" = 1'-0"

THIS SKETCH MODIFIED DRAWING P303

11/26/2019 10:04:11 AM SKP-5 C:\Users\Shahpoor Khosravi\Documents\Revit 2018\J9032_MEPT-Central-R18_shahpoor.khosravi@p2sinc.com.rvt

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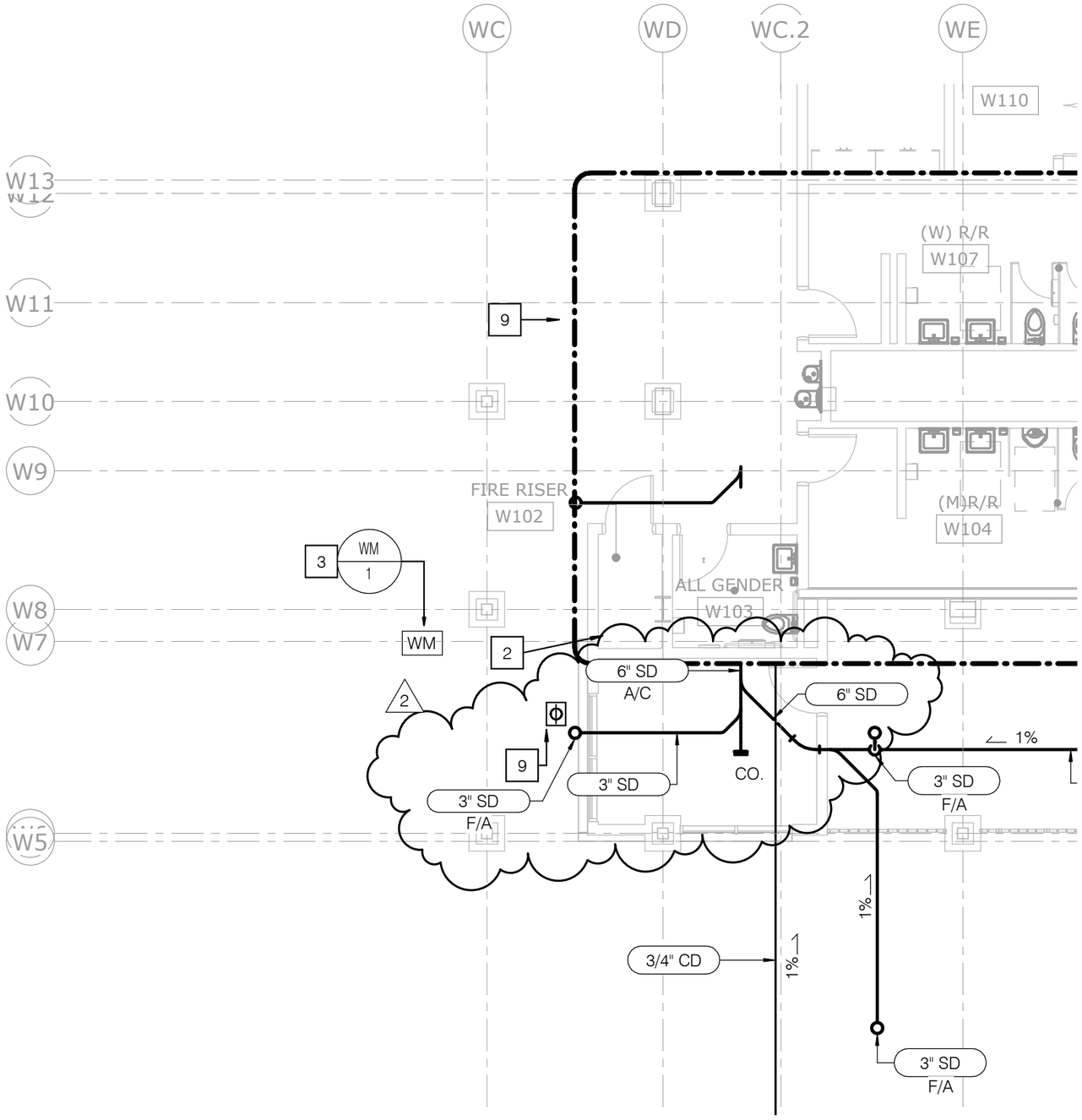
ARCHITECT:

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
PLUMBING UNDERGROUND PLAN P303

DATE:	12/03/2019
JOB NO:	16042.01
DRAWN:	SK
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	2
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKP-5



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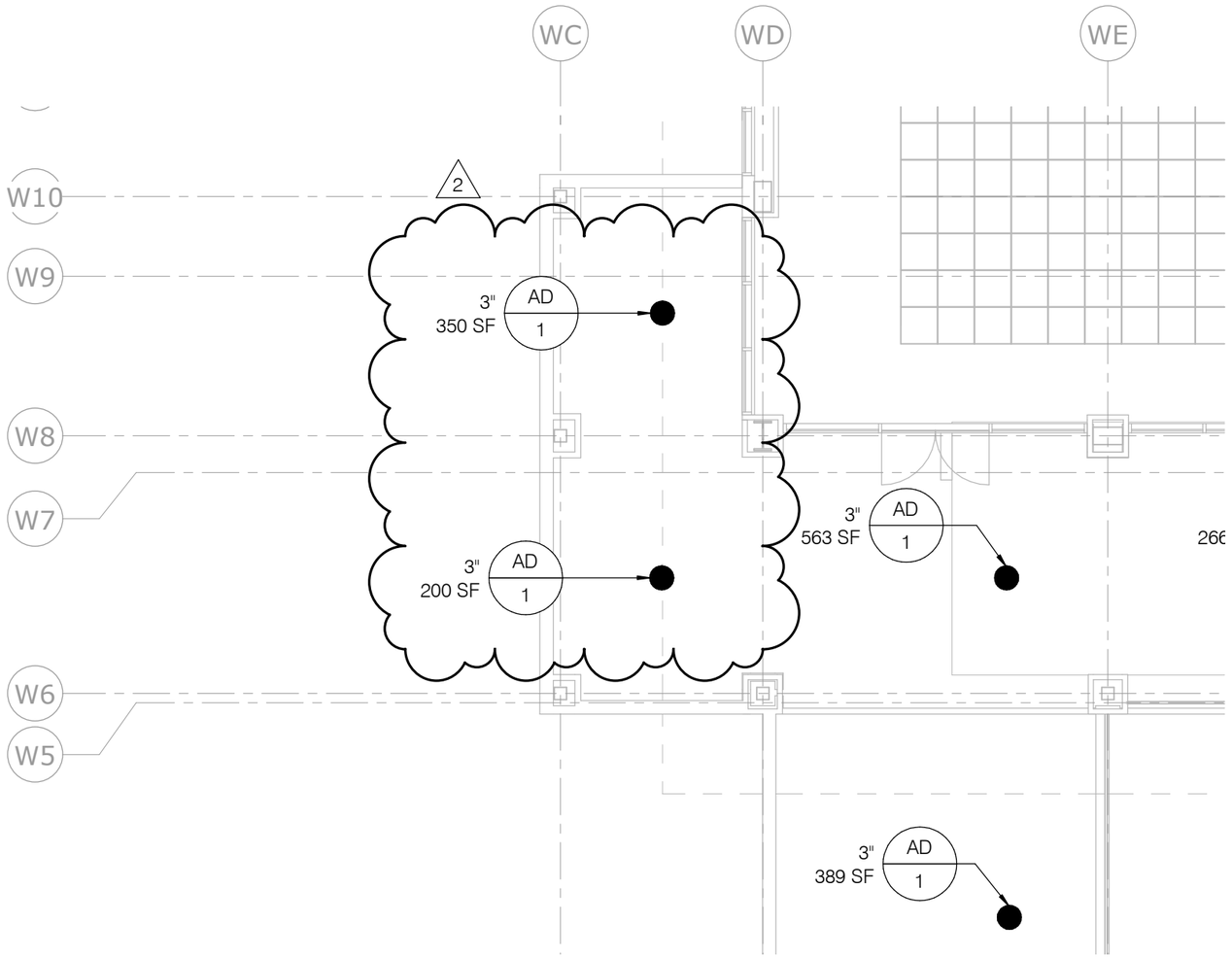
ARCHITECT:

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
BLDG 'W1', SOUTH END PARTIAL FIRST FLOOR PLUMBING PLAN

DATE:	12/03/2019
JOB NO:	16042.01
DRAWN:	SK
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	2
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKP-6



THIS SKETCH MODIFIED DRAWING W-P202.1

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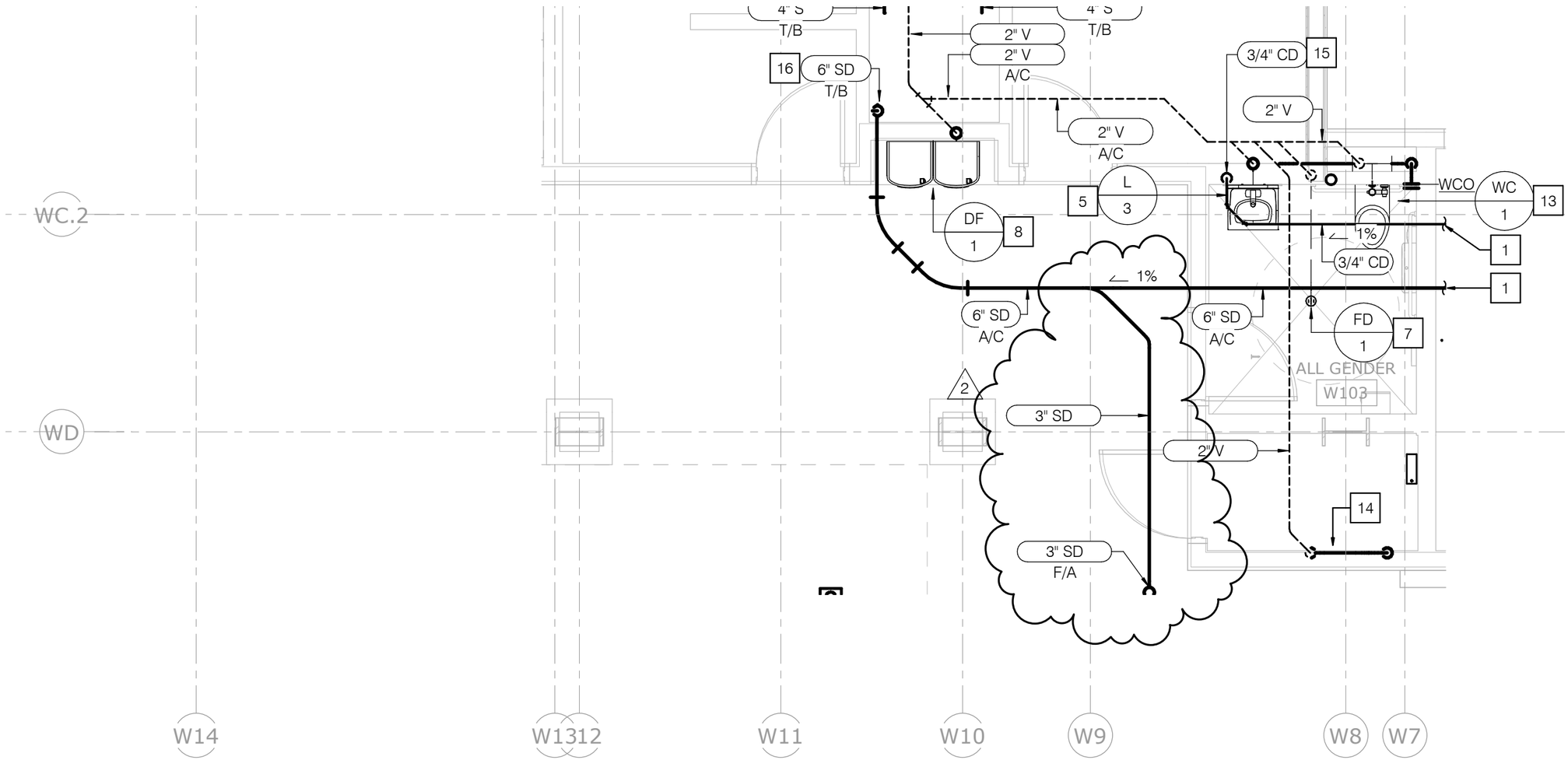
ARCHITECT:

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
BLDG 'W1', SOUTH END PARTIAL SECOND FLOOR PLUMBING PLAN

DATE:	12/03/2019
JOB NO:	16042.01
DRAWN:	SK
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	2
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKP-7



1 BLDG. "W1" ROOMS W103, W104, W105, W107 & W108 (WASTE & VENT)

SCALE: 1/4" = 1'-0"

THIS SKETCH MODIFIED DRAWING W-P301.1

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ARCHITECT:

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
BLDG 'W1', ENLARGED FLOOR PLANS

DATE:	12/03/2019
JOB NO:	16042.01
DRAWN:	SK
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	2
CCD #:	
BULLETIN #:	
RFI #:	

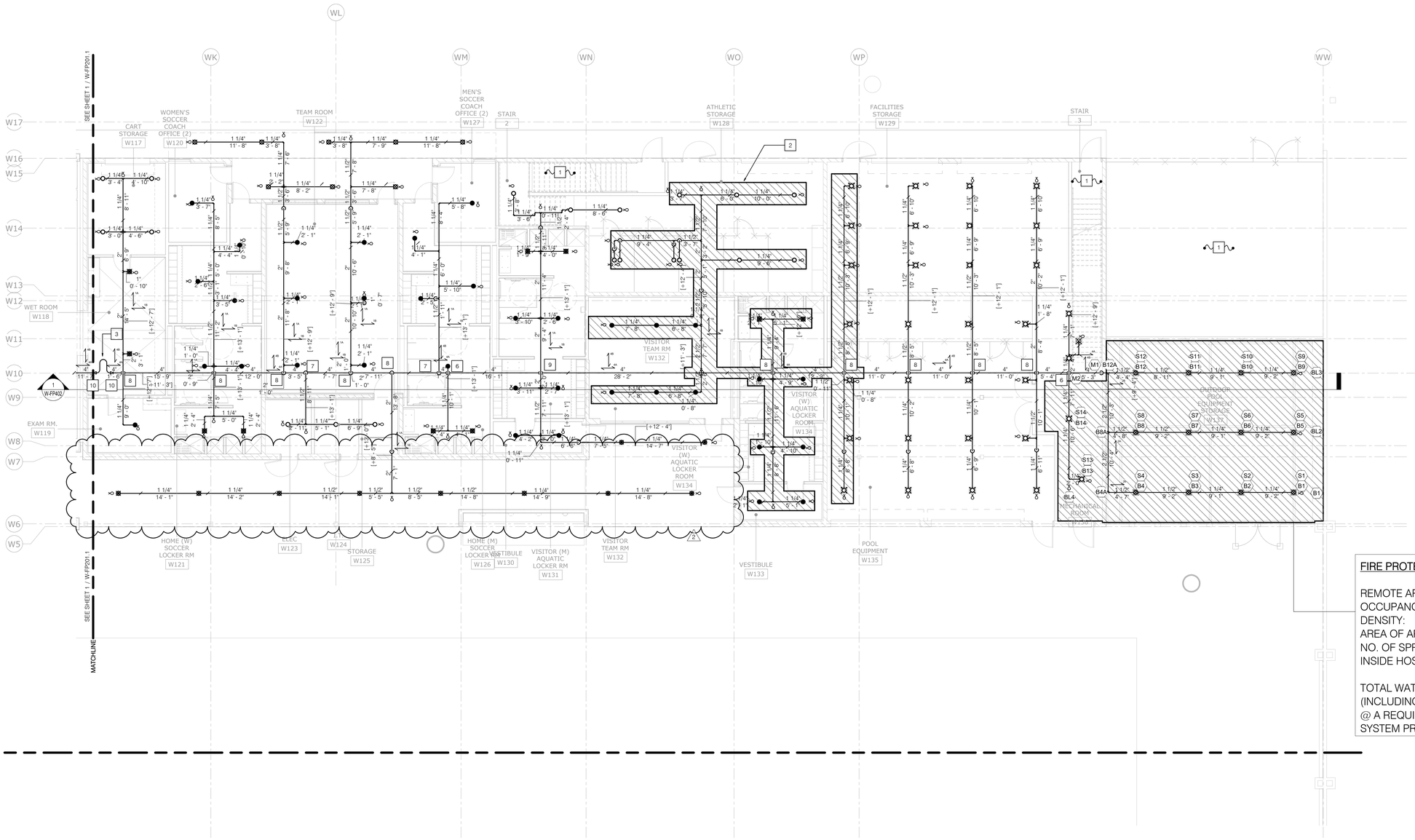
SHEET
SKP-8

GENERAL NOTES

A. EXPOSED PIPE IN MECHANICAL ROOMS, ELECTRICAL ROOMS, PLUMBING CHASE AND BUILDING EXTERIOR SHALL BE PAINTED TO MATCH SURROUNDING AREA.

NOTES

1. OPEN TO ABOVE
2. ZONE OF INFLUENCE. SEE SHEET FP605 FOR LOAD CALCULATIONS
3. METRAFLEX SEISMIC JOINT. DETAIL 5/FP603
4. -
5. 1" RISER NIPPLE
6. 1.25" RISER NIPPLE
7. 1.5" RISER NIPPLE
8. 2" RISER NIPPLE
9. 2.5" RISER NIPPLE
10. SEISMIC RESTRAINTS ON BOTH SIDES OF METRAFLEX SEISMIC JOINT



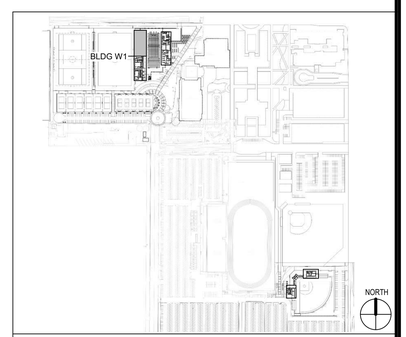
FIRE PROTECTION SYSTEM DEMAND

REMOTE AREA NAME:	W1 - A
OCCUPANCY CLASSIFICATION:	OH I
DENSITY:	0.15 GPM/SQFT
AREA OF APPLICATION:	1500 SQFT
NO. OF SPRINKLERS CALCULATED:	14
INSIDE HOSE STREAMS:	250 GPM
TOTAL WATER REQUIRED (INCLUDING HOSE STREAM):	576.527 GPM
@ A REQUIRED SYSTEM PRESSURE OF:	60.532 PSI

SPRINKLER HEAD SCHEDULE AND LEGEND

SYMBOL	LOCATION	MANUFACTURER	SIN	K-FACTOR	SR/OR	TYPE	TEMP.	FINISH	THREAD SIZE	COMMENTS
○	EXPOSED STRUCTURE	VIKING	VK300	5.6	QR	SSU	175°	BRASS	1/2"	UPRIGHT SPRINKLER
●	GYP. BOARD/ ACOUST. TILES.	VIKING	VK462	5.6	QR	SSP	175°	WHITE	1/2"	CONCEALED PENDENT SPRINKLER
⊠	EXTERIOR, MECH. / ELEC. ROOMS	VIKING	VK300	5.6	QR	SSU	200°	NICKEL PTFE	1/2"	ENT COATED WEATHER PROOF UPRIGHT SPRINKLER OUTDOOR
▣	EXTERIOR	VIKING	VK462	5.6	QR	SSP	200°	NICKEL PTFE	1/2"	ENT COATED WEATHER PROOF CONCEALED PENDANT SPRINKLER
⊠	PLUMB CHASE, POOL STORAGE	VIKING	VK300	5.6	QR	SSU	200°	WHITE	1/2"	POLYESTER CORROSION RESISTANT UPRIGHT SPRINKLER INDOOR
▣	SHOWERS, WET ROOMS	VIKING	VK462	5.6	QR	SSP	200°	WHITE	1/2"	POLYESTER CORROSION RESISTANT CONCEALED PENDANT SPRINKLER
△	ELEVATOR SHAFT	VIKING	VK305	5.6	QR	-	200°	BRASS	1/2"	SIDEWALL DISCHARGE W/ GUARD

Scale: 1/8" = 1'-0"



KEYMAP

STATE:

ARCHITECT:

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TUSTIN, CA 92780
(714) 508-1780 508-1790 FAX

CONSULTANT:

P2S ENG
Long Beach | Los Angeles
San Diego | San Jose
p2sinc.com

PROJECT NAME:

LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
4901 EAST CARSON STREET
LONG BEACH, CA 90806

CLIENT:

LONG BEACH CITY COLLEGE
4901 EAST CARSON STREET
LONG BEACH, CA 90806

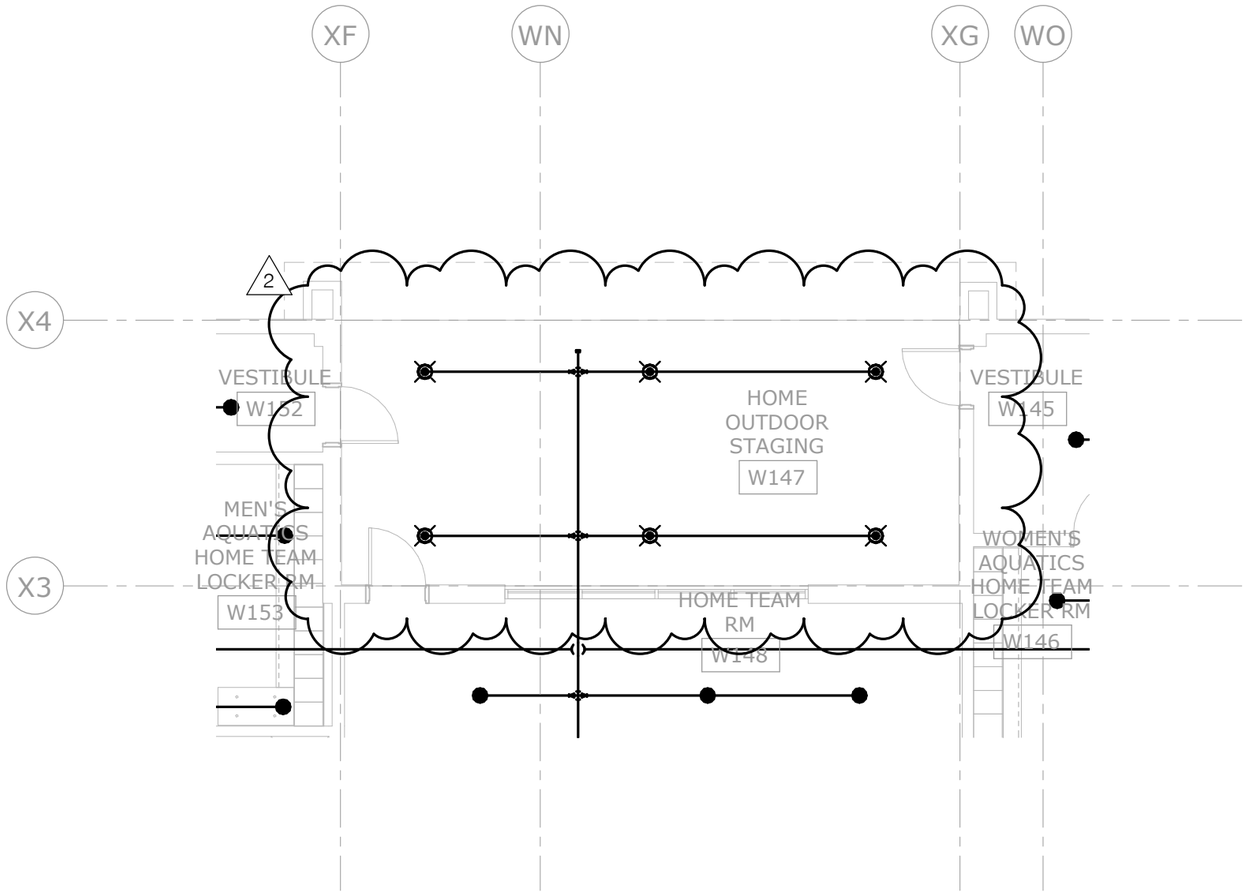
No.	Rev. Date	Description
2	12/03/19	Addendum 02

JOB NO:	16042.01
DATE:	09/18/19
DRAWN:	SK
CHECK:	EG
ARCHITECT:	PDW
ENGINEER:	

SHEET DESCRIPTION:
BLDG 'W1', NORTH END - PARTIAL FIRST FLOOR FIRE PROTECTION PLAN

SHEET NO:

W-FP201.2



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ARCHITECT:

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
W2 FP HOME OUTDOOR STAGING

DATE:	12/03/2019
JOB NO:	16042.01
DRAWN:	Author
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	2
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKFP-01

LIGHTING CONTROL SCHEDULE

	DEVICE	ROOM NO	ROOM NAME	SWITCH ID	OCC SENSOR	DAYLIGHTING ZONE	SWITCHING TYPE	PANEL	CIRCUIT	NOTES
	nPP16-D	2	STAIR	a	N	N	DIMMING	W4L3	9	1,3
	nPP16-D	W101	TICKETING	a	Y	Y	DIMMING	W4L3	7	2,4
	nPP16-D-ER	W102-1	FIRE RISER-1	a	Y	N	LOW VOLTAGE	INVW1	1	7
	nPP16-D	W104	(M)R/R	a	Y	N	DIMMING	W4L3	7	1,3
	nPP16-D-ER	W104	(M)R/R	a	Y	N	DIMMING	INVW1	1	1,3
	nPP16-D	W105-1	(M) R/R-1	a	Y	N	DIMMING	W4L3	7	1,3
	nPP16-D-ER	W105-1	(M) R/R-1	a	Y	N	DIMMING	INVW1	1	1,3
	nPP16-D	W106	PLUMBING CHASE	a	Y	N	LOW VOLTAGE	W4L3	7	7
	nPP16-D	W107	(W) R/R	a	Y	N	DIMMING	W4L3	7	1,3
	nPP16-D-ER	W107	(W) R/R	a	Y	N	DIMMING	INVW1	1	1,3
	nPP16-D-ER	W108-1	(W) R/R-1	a	Y	N	DIMMING	INVW1	1	1,3
	nPP16-D	W108-1	(W) R/R-1	a	Y	N	DIMMING	W4L3	7	1,3
	nPP16-D	W109	COURT SPORTS EQUIP. STOR.	a	Y	N	LOW VOLTAGE	W4L3	7	2,4
	nPP16-D	W111	SHARED TEAM ROOM	c	Y	Y	DIMMING	W4L3	7	2,4
	nPP16-D	W111	SHARED TEAM ROOM	b	Y	Y	DIMMING	W4L3	7	2,4
	nPP16-D	W111	SHARED TEAM ROOM	a	Y	N	DIMMING	W4L3	7	2,4
	nPP16-D-ER	W111	SHARED TEAM ROOM	a	Y	N	DIMMING	INVW1	1	2,4
	nPP16-D	W114	PASSAGEWAY	a	Y	N	DIMMING	W4L3	7	1,3
	nPP16-D-ER	W114	PASSAGEWAY	a	Y	N	DIMMING	INVW1	1	1,3
	nPP16-D	W115	ATHLETIC TRAINING ROOM	a	Y	Y	DIMMING	W4L3	7	2,4
	nPP16-D	W115	ATHLETIC TRAINING ROOM	b	Y	Y	DIMMING	W4L3	7	2,4
	nPP16-D	W115	ATHLETIC TRAINING ROOM	c	Y	N	DIMMING	W4L3	7	2,4
	nPP16-D-ER	W115	ATHLETIC TRAINING ROOM	c	Y	N	DIMMING	INVW1	1	2,4
	nPP16-D	W116	ADJUNCT FACULTY OFFICE (3)	a	Y	N	DIMMING	W4L3	7	2,4,6
	nPP16-D	W117	CART STORAGE	a	Y	N	DIMMING	W4L3	9	2,4
	nPP16-D-ER	W118	WET ROOM	a	Y	N	DIMMING	INVW1	2	1,3
	nPP16-D	W118	WET ROOM	a	Y	N	DIMMING	W4L3	9	1,3
	nPP16-D	W119	EXAM RM.	a	Y	N	DIMMING	W4L3	9	2,4
	nPP16-D	W120	WOMEN'S SOCCER COACH OFFICE (2)	a	Y	Y	DIMMING	W4L3	9	2,4,6
	nPP16-D	W121	HOME (W) SOCCER LOCKER RM	a	Y	N	DIMMING	W4L3	11	1,3
	nPP16-D-ER	W121	HOME (W) SOCCER LOCKER RM	a	Y	N	DIMMING	INVW1	2	1,3
	nPP16-D	W122	TEAM ROOM	a	Y	Y	DIMMING	W4L3	9	2,4
	nPP16-D	W122	TEAM ROOM	b	Y	Y	DIMMING	W4L3	9	2,4
	nPP16-D	W122	TEAM ROOM	c	Y	N	DIMMING	W4L3	9	2,4
	nPP16-D-ER	W122	TEAM ROOM	c	Y	N	DIMMING	INVW1	2	2,4
	nPP16-D-ER	W122	TEAM ROOM	a	Y	Y	DIMMING	INVW1	2	2,4
	nPP16-D-ER	W123	ELEC	a	N	N		INVW1	2	8
	nPP16-D-ER	W124	I.T.	a	N	N		INVW1	2	8
	nPP16-D-ER	W126	HOME (M) SOCCER LOCKER RM	a	Y	N	DIMMING	INVW1	2	1,3
	nPP16-D	W126	HOME (M) SOCCER LOCKER RM	a	Y	N	DIMMING	W4L3	11	1,3
	nPP16-D	W127	MEN'S SOCCER COACH OFFICE (2)	a	Y	Y	DIMMING	W4L3	9	2,4,6
	nPP16-D-ER	W128	ATHLETIC STORAGE	a	Y	N	DIMMING	INVW1	2	2,4
	nPP16-D-ER	W129	FACILITIES STORAGE	a	Y	N	DIMMING	INVW1	2	2,4
	nPP16-D	W129	FACILITIES STORAGE	a	Y	N	DIMMING	W4L3	9	2,4
	nPP16-D	W130	VESTIBULE	a	Y	N	DIMMING	W4L3	11	1,3
	nPP16-D-ER	W130	VESTIBULE	a	Y	N	DIMMING	INVW1	2	1,3
	nPP16-D-ER	W131	VISITOR (M) AQUATIC LOCKER RM	a	Y	N	DIMMING	INVW1	2	1,3
	nPP16-D	W131	VISITOR (M) AQUATIC LOCKER RM	a	Y	N	DIMMING	W4L3	11	1,3
	nPP16-D	W132	VISITOR TEAM RM	a	Y	Y	DIMMING	W4L3	9	2,4
	nPP16-D	W132	VISITOR TEAM RM	b	Y	Y	DIMMING	W4L3	9	2,4
	nPP16-D	W132	VISITOR TEAM RM	c	Y	N	DIMMING	W4L3	9	2,4
	nPP16-D-ER	W132	VISITOR TEAM RM	c	Y	N	DIMMING	INVW1	2	2,4
	nPP16-D-ER	W132	VISITOR TEAM RM	a	Y	N	DIMMING	INVW1	2	2,4
	nPP16-D	W133	VESTIBULE	a	Y	N	DIMMING	W4L3	11	1,3
	nPP16-D-ER	W134	VISITOR (W) AQUATIC LOCKER ROOM	a	Y	N	DIMMING	INVW1	2	1,3
	nPP16-D	W134	VISITOR (W) AQUATIC LOCKER ROOM	a	Y	N	DIMMING	W4L3	11	1,3
	nPP16-D-ER	W134	VISITOR (W) AQUATIC LOCKER ROOM	a	Y	N	DIMMING	INVW1	2	1,3
	nPP16-D	W135	POOL EQUIPMENT	a	N	N	LOW VOLTAGE	W4L3	11	2,4
	nPP16-D-ER	W135	POOL EQUIPMENT	a	N	N	LOW VOLTAGE	INVW1	2	2,4
	nPP16-D-ER	W136	MECHANICAL ROOM	a	N	N		INVW1	2	8
	nPP16-D	W136	MECHANICAL ROOM	a	N	N		W4L3	11	8
	nPP16-D-ER	W143	POOL PUMP & EQUIP. RM	a	N	N		INVW2	2	8
	nPP16-D	W144	AV CONTROL OFFICE	a	Y	N	DIMMING	W4L2	3	2,4,6
	nPP16-D	W145	VESTIBULE	a	Y	N	DIMMING	W4L2	3	1,3
	nPP16-D-ER	W145	VESTIBULE	a	Y	N	DIMMING	INVW2	2	1,3
	nPP16-D	W146	WOMEN'S AQUATICS HOME TEAM LOCKER RM	a	Y	N	DIMMING	W4L2	3	1,3
	nPP16-D-ER	W146	WOMEN'S AQUATICS HOME TEAM LOCKER RM	a	Y	N	DIMMING	INVW2	2	1,3
	nPP16-D	W147	HOME OUTDOOR STAGING	a	Y	N	DIMMING	W4L2	5	1,3
	nPP16-D-ER	W147	HOME OUTDOOR STAGING	a	Y	N	DIMMING	INVW2	2	1,3
	nPP16-D	W148	HOME TEAM RM	a	Y	Y	DIMMING	W4L2	3	2,4
	nPP16-D	W148	HOME TEAM RM	b	Y	Y	DIMMING	W4L2	3	2,4
	nPP16-D-ER	W148	HOME TEAM RM	a	Y	Y	DIMMING	INVW2	2	2,4
	nPP16-D-ER	W148	HOME TEAM RM	b	Y	Y	DIMMING	INVW2	2	2,4
	nPP16-D-ER	W150	ELECT.	a	N	N		INVW2	2	8
	nPP16-D-ER	W151	IDF	a	N	N		INVW2	2	8
	nPP16-D-ER	W152	VESTIBULE	a	Y	N	DIMMING	INVW2	2	1,3
	nPP16-D	W153	MEN'S AQUATICS HOME TEAM LOCKER RM	a	Y	N	DIMMING	W4L2	3	1,3
	nPP16-D-ER	W153	MEN'S AQUATICS HOME TEAM LOCKER RM	a	Y	N	DIMMING	INVW2	2	1,3
	nPP16-D	W155	LOBBY	p	Y	Y	DIMMING	W4L2	5	1,3,6
	nPP16-D-ER	W155	LOBBY	a	Y	Y	DIMMING	INVW2	2	1,3,6

LIGHTING CONTROL SCHEDULE

	DEVICE	ROOM NO	ROOM NAME	SWITCH ID	OCC SENSOR	DAYLIGHTING ZONE	SWITCHING TYPE	PANEL	CIRCUIT	NOTES
	nPP16-D	W156	INT. CIRCUL.	a	Y	N	DIMMING	W4L2	3	1,3
	nPP16-D-ER	W156	INT. CIRCUL.	a	Y	N	DIMMING	INVW2	2	1,3
	nPP16-D	W157	WOMEN'S AQUATICS COACH LOCKER ROOM	a	Y	N	DIMMING	W4L2	3	1,3
	nPP16-D-ER	W157	WOMEN'S AQUATICS COACH LOCKER ROOM	a	Y	N	DIMMING	INVW2	2	1,3
	nPP16-D	W159	MEN'S AQUATICS COACH LOCKER ROOM	a	Y	N	DIMMING	W4L2	3	1,3
	nPP16-D-ER	W159	MEN'S AQUATICS COACH LOCKER ROOM	a	Y	N	DIMMING	INVW2	2	1,3
	nPP16-D-ER	W161	FIRE RISER	a	Y	N	LOW VOLTAGE	INVW2	2	7
	nPP16-D	W162	KINESIOLOGY ADJUNCT FACULTY OFFICE	a	Y	Y	DIMMING	W4L2	3	2,4,6
	nPP16-D	W162	LOBBY	c	Y	N	DIMMING	W4L2	5	1,3,6
	nPP16-D	W162	LOBBY	b	Y	N	DIMMING	W4L2	5	1,3,6
	nPP16-D-ER	W162	LOBBY	c	Y	N	DIMMING	INVW2	2	1,3,6
	nPP16-D	W163	AQUATICS HEAD COACH (1) OFFICE	a	Y	Y	DIMMING	W4L2	3	2,4,6
	nPP16-D	W163	AQUATICS HEAD COACH (1) OFFICE	b	Y	N	DIMMING	W4L2	3	2,4,6
	nPP16-D	W164	AQUATICS CONFERENCE ROOM	a	Y	Y	DIMMING	W4L2	3	2,4,6
	nPP16-D	W165	AQUATICS ASSIS. COACHES (3) OFFICE	a	Y	Y	DIMMING	W4L2	3	2,4,6
	nPP16-D	W166	AQUATICS HEAD COACH (1) OFFICE	a	Y	Y	DIMMING	W4L2	3	2,4,6
	nPP16-D	W166	AQUATICS HEAD COACH (1) OFFICE	b	Y	N	DIMMING	W4L2	3	2,4,6
	nPP16-D	W201	MULTI-PURPOSE ATHLETIC EVENT CENTER-2	a	Y	Y	DIMMING	W4L4	7	2,4
	nPP16-D	W201	MULTI-PURPOSE ATHLETIC EVENT CENTER-2	b	Y	N	DIMMING	W4L4	7	2,4
	nPP16-D-ER	W201	MULTI-PURPOSE ATHLETIC EVENT CENTER-2	b	Y	N	DIMMING	INVW1	3	2,4
	nPP16-D	W201	MULTI-PURPOSE ATHLETIC EVENT CENTER-2	c	Y	Y	DIMMING	W4L4	7	2,4
	nPP16-D	W201	MULTI-PURPOSE ATHLETIC EVENT CENTER-2	a	Y	Y	DIMMING	W4L4	7	2,4
	nPP16-D	W201	MULTI-PURPOSE ATHLETIC EVENT CENTER-2	d	Y	N	DIMMING	W4L4	7	2,4
	nPP16-D	W204	KITCHENETTE	a	Y	N	DIMMING	W4L4	7	1,3,6
	nPP16-D-ER	W204	KITCHENETTE	a	Y	N	DIMMING	INVW1	3	1,3,6
	nPP16-D-ER	W205	A/V CLOSET	a	Y	N		INVW1	3	8
	nPP16-D-ER	W206	ELECTRICAL	a	N	N		INVW1	3	8
	nPP16-D	W207	STORAGE ROOM	a	Y	N	DIMMING	W4L4	7	2,4
	nPP16-D	W208	(M) R/R	a	Y	N	DIMMING	W4L4	7	1,3
	nPP16-D-ER	W208	(M) R/R	a	Y	N	DIMMING	INVW1	3	1,3
	nPP16-D	W209	(W) R/R	a	Y	N	DIMMING	W4L4	7	1,3
	nPP16-D-ER	W209	(W) R/R	a	Y	N	DIMMING	INVW1	3	1,3
	nPP16-D-ER	Y104	ELECT.	a	N	N		INVY1	2	8
	nPP16-D-ER	Y105	IDF ROOM	a	N	N		INVY1	2	8
	nPP16-D-ER	Y107	VISITOR TEAM ROOM	a	Y	N	DIMMING	INVY1	2	2,4
	nPP16-D	Y107	VISITOR TEAM ROOM	a	Y	N	DIMMING	Y4L1	5	2,4
	nPP16-D	Y108	FACILITIES STORAGE	a	Y	N	DIMMING	Y4L1	5	2,4
	nPP16-D	Y108	FACILITIES STORAGE	b	Y	N	DIMMING	Y4L1	5	2,4
	nPP16-D-ER	Y108	FACILITIES STORAGE	b	N	N	DIMMING	INVY1	2	2,4
	nPP16-D	Y109	(W) R/R	a	Y	N	DIMMING	Y4L1	5	1,3
	nPP16-D-ER	Y109	(W) R/R	a	Y	N	DIMMING	INVY1	2	1,3
	nPP16-D	Y110	PLUMBING CHASE	a	N	N	LOW VOLTAGE	Y4L1	5	7
	nPP16-D	Y111	(M) R/R	a	Y	N	DIMMING	Y4L1	5	1,3
	nPP16-D-ER	Y111	(M) R/R	a	Y	N	DIMMING	INVY1	2	1,3
	nPP16-D	Y112	OFFICE (3)	a	Y	Y	DIMMING	Y4L1	7	2,4,6
	nPP16-D	Y112	OFFICE (3)	b	Y	N	DIMMING	Y4L1	7	2,4,6
	nPP16-D-ER	Y112	OFFICE (3)	a	N	N	DIMMING	INVY1	3	2,4,6
	nPP16-D	Y113	ALL GENDER	a	Y	N	DIMMING	Y4L1	7	1,3
	nPP16-D-ER	Y114	FIRE RISER	a	N	N	LOW VOLTAGE	INVY1	3	7
	nPP16-D-ER	Y115	VESTIBULE	a	Y	N	DIMMING	INVY1	3	1,3
	nPP16-D	Y116	HOME TEAM LOCKER RM	a	Y	N	DIMMING	Y4L1	7	1,3
	nPP16-D-ER	Y116	HOME TEAM LOCKER RM	a	Y	N	DIMMING	INVY1	3	1,3
	nPP16-D-ER	Y117	VESTIBULE	a	Y	N	DIMMING	INVY1	3	1,3
	nPP16-D	Y119	HOME SOFTBALL TEAM RM	a	Y	N	DIMMING	Y4L1	7	2,4
	nPP16-D-ER	Y119	HOME SOFTBALL TEAM RM	a	Y	N	DIMMING	INVY1	3	2,4
	nPP16-D	Y119	HOME SOFTBALL TEAM RM	a	N	N	DIMMING	Y4L1	7	2,4
	nPP16-D	Y121	EQUIPMENT STORAGE	a	Y	N	DIMMING	Y4L1	7	2,4
	nPP16-D-ER	Y121	EQUIPMENT STORAGE	a	Y	N	DIMMING	INVY1	3	2,4
	nPP16-D	Y122	ROOF ACCESS	a	N	N	LOW VOLTAGE	Y4L1	7	7

NOTES:
1. LIGHTS SHALL BE TURNED ON AUTOMATICALLY WHEN OCCUPANT IS DETECTED.
OCCUPANCY SENSOR SHALL TURN LIGHTS OFF AFTER 15 MINUTES OF NOT DETECTING AN OCCUPANT.
2. LIGHTS SHALL BE TURNED ON MANUALLY. OCCUPANCY SENSOR SHALL TURN LIGHTS OFF AFTER 15 MINUTES OF NOT DETECTING AN OCCUPANT.
3. EGRESS, LOCKER ROOM, RESTROOM LIGHTS AT BUILDING INTERIOR AND EXTERIORS SHALL BE CONTROLLED BY NLIGHT GATEWAY TIMECLOCK:
   - DURING NORMAL SCHOOL HOURS, LIGHTS SHALL TURN ON 100% AUTOMATICALLY UPON DETECTING OCCUPANT. LIGHTS SHALL DIM 80% AFTER 15 MINUTES OF SPACE VACANCY.
   - DURING CLOSED HOURS, LIGHTS SHALL TURN ON 100% AUTOMATICALLY UPON DETECTING OCCUPANT. LIGHTS SHALL TURN OFF AFTER 15 MINUTES OF SPACE VACANCY.
4. CLASSROOM, STORAGE, BACK OF HOUSE, MULTIPURPOSE ROOM AND OFFICE LIGHTS AT BUILDING INTERIOR SHALL BE CONTROLLED BY MANUAL SWITCH ON. LIGHTS SHALL AUTOMATICALLY DIM 80% AFTER 15 MINUTES OF SPACE VACANCY, AND TURN OFF AFTER 2O MINUTES OF VACANCY.
5. PROVIDE DRY CONTACT INPUT, WITH 3/4"C-2#10 BACK TO NEAREST EMS CENTRAL PANEL. CONTRACTOR SHALL PROGRAM LIGHTS TO TURN ON/OFF BASED ON DESCRIPTION ABOVE.
6. LOCAL RECEPTACLE CONTROL RELAY SHALL ACTIVATE UPON LIGHTS SWITCHING ON, AND DEACTIVATE UPON 15 MINUTES OF VACANCY.
7. CONTROL RELAY TO SERVE BOH SPACES. LIGHTS SHALL BE TURNED ON AND OFF WITH MANUAL LOW VOLTAGE SWITCH.
8. SEE PLANS FOR CONTROLS.

LIGHT FIXTURE SCHEDULE

TYPE	DESCRIPTION	LOAD	LAMP TYPE	MTG.	VOLTAGE	MANUFACTURER / REMARKS	NOTES
E3A	WALLPACK MOUNTED - 2167 LM	20 W	LED	W	UNV	RAYON TECH D: T630LED-20-UNI12-40-T2-MTO #LIGMAN LIGHTING USA: UVK-30001-21w-T2-W40-07-120/277v	
E3B	WALLPACK MOUNTED - 1083 LM	10 W	LED	W	UNV	RAYON TECH D: T630LED-10-UNI12-40-T2-MTO #LIGMAN LIGHTING USA: UVK-30001-21w-T2-W40-07-120/277v	
E3C	WALLPACK MOUNTED - 2167 LM	20 W	LED	W	UNV	RAYON TECH D: T630LED-20-UNI12-40-T4-MTO #LIGMAN LIGHTING USA: UVK-30001-21w-T4-W40-07-120/277v	
E3D	WALLPACK MOUNTED - 3251 LM	30 W	LED	W	UNV	RAYON TECH D: T630LED-30-UNI12-40-T4-MTO #LIGMAN LIGHTING USA: UVK-30001-28w-T4-W40-07-120/277v	
E6	RECESSED INGRADE UPLIGHT	21 W	LED	IG	277	WE-EF: 611-3021-277V #TARGETTI: KPLM-10-GMB-FL-L1-40-1E2525-1DU2521	
E9A	LINEAR INGRADE UPLIGHT - 2FT	22 W	LED	IG	277	INSIGHT MIG-11-40K-ASYD-24"-277-DIM-AS-PGS-SK #TARGETTI:JE-R-10-WW-24-40-C-LV-1E2749	
E9B	LINEAR INGRADE UPLIGHT - 3FT	21 W	LED	IG	277	INSIGHT MIG-7-40K-ASYD-36"-277-DIM-AS-PGS-SK #TARGETTI:JE-R-10-WW-36-40-C-LV-1E2750	
E12	STEM LIGHT POLE	28 W	LED	PO	120/277	PERFORMANCE IN LIGHTING: AMON MAXI 070248 #LIGMAN LIGHTING USA:UVA-20001-39w-W40-07-120/277v-DIM	
E13A	POLE MOUNT SITE LTG, TYPE IV DISTRIBUTION, 20FT MOUNTING HEIGHT FROM GRADE	75 W	LED	PO	UNV	LITHONIA MR1-LED-42C-530-40K-SR4-MVOLT-SPA-DDBXD; -SSS POLE; FINISH TO BE VERIFIED WITH CAMPUS	NOTES 3,4
E13B	POLE MOUNT SITE LTG, TYPE II DISTRIBUTION, 20FT MOUNTING HEIGHT FROM GRADE	75 W	LED	PO	UNV	LITHONIA MR1-LED-42C-530-40K-SR2-MVOLT-SPA-DDBXD; -SSS POLE; FINISH TO BE VERIFIED WITH CAMPUS	NOTES 3,4
E13C	POLE MOUNT SITE LTG-LOW OUTPUT, TYPE II DISTRIBUTION, 20FT MOUNTING HEIGHT FROM GRADE	49 W	LED	PO	UNV	LITHONIA MR1-LED-42C-350-40K-SR2-MVOLT-SPA-DDBXD; -SSS POLE; FINISH TO BE VERIFIED WITH CAMPUS	NOTES 3,4
E14	POLE MOUNT SITE LTG, 41FT MOUNTING HEIGHT FROM GRADE	334 W	LED	PO	480	MCGRAW EDISON GALEON: GLEON-AF-08-LED-E1-AFL-800-HSS, PROVIDE 41 FT POLE TO MATCH EXISTING ON CAMPUS, VALMONT 39FT DS210 STEEL	NOTES 1
E15A	SURFACE MOUNT CANOPY	46 W	LED	S	UNV	LITHONIA DSXSC LED-20C-700-4K-T5W-MVOLT-SRM-PIR3FC3V-DDBXD	
E16	SURFACE MOUNT BATTING CAGE, POLYCARBONATE	82 W	LED	S	UNV	KURTZON WL-SEG-1520-6LO-940-FP-UNV-DIM1-RMB (FIELD VERIFY MOUNTING WITH CEILING TYPE AT CAGES) #LITHONIA: VAP 8000LM FST MD MVOLT GZ10 40K 90CRI	
E17A	POLE MOUNT SITE LTG, FORWARD THROW DISTRIBUTION, HIGH OUTPUT, 20FT MOUNTING HEIGHT FROM GRADE	132 W	LED	PO	UNV	LITHONIA MR2-LED-60C-700-40K-TFTM-HS-MVOLT-SPA-DDBXD; -SSS POLE	NOTES 3,4,6
E17B	POLE MOUNT SITE LTG, TYPE III DISTRIBUTION, HIGH OUTPUT, 20FT MOUNTING HEIGHT FROM GRADE	132 W	LED	PO	UNV	LITHONIA MR2-LED-60C-700-40K-T3M-HS-MVOLT-SPA-DDBXD; -SSS POLE	NOTES 3,4,6
E18	POLE MOUNTED SPORTS	1150 W	LED	PO	480	MUSCO TLC-LED-1150 - REFER TO SPORTS LIGHTING PLANS (ALTERNATE EPHASUS LUMAPADT 24 OR ALL FIELD SERIES)	NOTE 9
E19	POLE MOUNTED SPORTS	450 W	LED	PO	480	MUSCO TLC-LED-450 - REFER TO SPORTS LIGHTING PLANS (ALTERNATE EPHASUS LUMAPADT 24 OR ALL FIELD SERIES)	NOTE 9
E20	POLE MOUNTED SPORTS	600 W	LED	PO	480	MUSCO TLC-LED-600 - REFER TO SPORTS LIGHTING PLANS (ALTERNATE EPHASUS LUMAPADT 24 OR ALL FIELD SERIES)	NOTE 9
FA1	LINEAR LED - HARSH ENVIRONMENT WITH STAINLESS STEEL HARDWARE	80 W	LED	P	UNV	KURTZON WL-SEG-1540-3LO-840-CP-UNV-DIM5-RMB/V-HOOK	NOTES 5
FB1	2X2 RECESSED LED	21 W	LED	R	UNV	CORELITE D3X-WO-25L-8-40-LD5-UNV-22-T1-STD #MARK ARCHITECTURAL LIGHTING: WHSPR-LCTR-2X2-2000LM-40K-80CRI-MIN1-NLIGHT-MVOLT-PDT	
FB2	2X4 RECESSED LED	38 W	LED	R	UNV	CORELITE D3X-WO-50L-8-40-LD5-UNV-24-T1-STD #MARK ARCHITECTURAL LIGHTING: WHSPR-LCTR-2X4-4800LM-40K-80CRI-MIN1-NLIGHT-MVOLT-PDT	
FB3	2X2 RECESSED LED	40 W	LED	R	UNV	CORELITE D3X-WO-44L-8-40-LD5-UNV-22-T1-STD #MARK ARCHITECTURAL LIGHTING: WHSPR-LCTR-2X2-4000LM-40K-80CRI-MIN1-NLIGHT-MVOLT-PDT	
FB4	2X2 RECESSED LED	16 W	LED	R	UNV	CORELITE D3X-WO-20L-8-40-LD5-UNV-22-T1-STD #MARK ARCHITECTURAL LIGHTING: WHSPR-LCTR-2X2-2000LM-40K-80CRI-MIN1-NLIGHT-MVOLT-PDT	
FC1	LINEAR RECESSED LED	12 W	LED	R	UNV	FOCAL POINT FSM4LWL-FL-275LF-40K-1C-UNV-LDI-TF-WH-(LENGTH PER PLANS)-(4FT '1EC' WHERE INDICATED ON PLANS) #AXIS LIGHTING: BBRLED-400-80-35-FL-(LENGTH PER PLANS)-_-W-UNV-DP-1-DF	NOTE 2
FC2	LINEAR RECESSED LED	4W/LFT	LED	R	UNV	FOCAL POINT FSM4LWL-FL-375LF-40K-1C-UNV-LDI-TF-WH-(LENGTH PER PLANS) #AXIS LIGHTING: BBRLED-400-80-35-FL-(LENGTH PER PLANS)-_-W-UNV-DP-1-DF	NOTE 2
FC3	LINEAR RECESSED LED	9.25W/LFT	LED	R	UNV	FOCAL POINT FSM4LWL-FL-875LF-40K-1C-UNV-LDI-TF-WH-(LENGTH PER PLANS)-(4FT '1EC' WHERE INDICATED ON PLANS) #AXIS LIGHTING: WBRLED-750-80-40-S-(LENGTH PER PLANS)-W-UNV-DP-1-DF	NOTE 2
FC4	LINEAR RECESSED LED	6.5W/LFT	LED	R	UNV	FOCAL POINT FSM4L-FL-625LF-40K-1C-UNV-LDI-TF-WH-(LENGTH PER PLANS)-(4FT '1EC' WHERE INDICATED ON PLANS) #AXIS LIGHTING: BBRLED-1000-80-40-FL-(LENGTH PER PLANS)-_-W-UNV-DP-1-DF	NOTE 2
FC5	LINEAR RECESSED LED	9.25 W/LFT	LED	R	UNV	FOCAL POINT FSM4LWL-FL-875LF-40K-1C-UNV-LDI-TF-(LENGTH PER PLANS)-(4FT '1EC' WHERE INDICATED ON PLANS) #AXIS LIGHTING: WBRLED-750-80-40-S-(LENGTH PER PLANS)-W-UNV-DP-1-DF	NOTE 2
FC6	LINEAR RECESSED LED	9.25W/LFT	LED	R	UNV	FOCAL POINT FSM4L-FL-875LF-40K-1C-UNV-LDI-TF-(LENGTH PER PLANS)-(4FT '1EC' WHERE INDICATED ON PLANS #AXIS LIGHTING: BBRLED-1000-80-40-FL-(LENGTH PER PLANS)-_-W-UNV-DP-1-DF	NOTE 2
FC7	LINEAR PENDANT LED	9.25W/LFT	LED	P	UNV	FOCAL POINT FSM4LS-FL-875LF-40K-1C-UNV-LDI-TF-WH-(LENGTH PER PLANS)-(4FT '1EC' WHERE INDICATED ON PLANS) #AXIS LIGHTING: WBRLED-750-80-40-S-(LENGTH PER PLANS)-W-UNV-DP-1-DF	NOTE 2
FD1	14' LINEAR LED LIGHT	15.5W/LFT	LED	P	UNV	NULITE-SRO-20-19H40-UNV-D-1C-CC-(VERIFY GRID TYPE)-48"-14' (ALTERNATE PER CLIENT AND ARCHITECT APPROVAL)	
FD2	6' LINEAR LED LIGHT	15.5W/LFT	LED	P	UNV	NULITE-SRO-20-19H40-UNV-D-1C-CC-(VERIFY GRID TYPE)-48"-6' (ALTERNATE PER CLIENT AND ARCHITECT APPROVAL)	
FF	4" SQUARE LED RECESSED FIXTURE	11 W	LED	R	UNV	PORTFOLIO LDSQ4B10-D010-EU4B-1020-80-40-4LB-PSSQ-0-H-LGSKTSQ4IP66 #LITHONIA: LDN4SQ-40/10-LS4-WR-MVOLT-GZ1	
FG1	6" SQUARE DOWNLIGHT (3000 LM OUTPUT)	28 W	LED	R	UNV	PORTFOLIO LDSQ6B30-D010-EU6B-1020-80-40-6LB-SQ-0-H-LGSKTSQ4IP66 #LITHONIA: LDN6SQ-40/30-LS6-WR-MVOLT-GZ1	
FG2	6" SQUARE DOWNLIGHT (1500 LM OUTPUT)	14 W	LED	R	UNV	PORTFOLIO LDSQ6B15-D010-EU6B-1020-80-40-6LB-SQ-0-H-LGSKTSQ4IP66 #LITHONIA: LDN6SQ-40/15-LS6-WR-MVOLT-GZ1	
FG3	6" SQUARE DOWNLIGHT (6000 LM OUTPUT)	63 W	LED	R	UNV	PORTFOLIO LDSQ6B60-D010-EU6B-1020-80-40-6LB-SQ-0-H-LGSKTSQ4IP66 #LITHONIA: LDN6SQ-40/50-LS6-WR-MVOLT-GZ1	
FJ1	SURFACE MOUNTED LINEAR VAPORTITE LED	33 W	LED	P	UNV	LITHONIA XVML-L48-3500LM-MVOLT-40K-80CRI	
FJ2	SURFACE MOUNTED LINEAR VAPORTITE LED		LED	P	UNV	LITHONIA XVML-L48-5000LM-MVOLT-50K-80CRI	
FP1	EXTERIOR VERTICAL LINEAR RECESSED WALLMOUNTED	43 W	LED	W/R	UNV	SPI LIGHTING AEW10489-L43W-120-277V-DF_REC-4000K-DF_CG00-FP01- (CUSTOM FINISH PER ARCH)	
FS1	LED STRIP LIGHT	41 W	LED	P	UNV	LITHONIA ZL1D-L48-SMR-5000LM-FST-MVOLT-40K-80 CRI	
FS2	LED STRIP LIGHT	30 W	LED	P	UNV	LITHONIA ZL1D-L48-SMR-3000LM-FST-MVOLT-40K-80 CRI	
FS3	LED STRIP LIGHT	59 W	LED	P	UNV	LITHONIA ZL1D-L48-SMR-7000LM-FST-MVOLT-40K-80 CRI	
FT1	SURFACE LINEAR, WET LOCATION	30 W	LED	S	UNV	ALW LP3.5SMBWL-4'-LOW-0/10V/1%-EXT/F-(FINISH PER ARCH)-UNV-('EMC/1' WHERE INDICATED ON PLANS) #AXIS LIGHTING: WBWLED-750-80-40-S-4-(FINISH PER ARCHITECT)-UNV-DP-1	
FT2	SURFACE LINEAR, WET LOCATION		LED	S	UNV	ALW LP3.5SMBWL-6'-LOW-0/10V/1%-EXT/F-(FINISH PER ARCH)-UNV-('EMC/1' WHERE INDICATED ON PLANS) #AXIS LIGHTING: WBWLED-750-80-40-S-(LENGTH PER PLANS)-(FINISH PER ARCHITECT)-UNV-DP-1	
FT3	SURFACE LINEAR, WET LOCATION	60 W	LED	S	UNV	ALW LP3.5SMBWL-8'-LOW-0/10V/1%-EXT/F-(FINISH PER ARCH)-UNV-('EMC/1' WHERE INDICATED ON PLANS) #AXIS LIGHTING: WBWLED-750-80-40-S-8-(FINISH PER ARCHITECT)-UNV-DP-1	
WS1	LED WALL MOUNT LIGHT	22	LED	W	UNV	WAC DS-WE0622-F-40S-(FINISH PER ARCH); (ALTERNATE PER CLIENT AND ARCHITECT APPROVAL)	
WS2	LED WALL SCONCE	20 W	LED	W	UNV	WAC WS-W91816-40-(FINISH PER ARCHITECT) #EUREKA: 3455-KDH-2XLED.8-40-277V-(FINISH PER ARCHITECT)-CFR	
WW2	PENDANT WALL WASH WET	12W/LFT	LED	P	277	CALI LIGHTING ALS450T-ASM-SA-4.0K-12W-10V-1%-SF-WET-IP67-277V-(LENGTH PER PLANS, INCLUDE END MOUNTS MC-3 AND STEM); (ALTERNATE PER CLIENT AND ARCHITECT APPROVAL)	
WW3	PENDANT WALL WASH	12W/LFT	LED	P	277	CALI LIGHTING ALS450T-ASM-SA-4.0K-12W-10V-1%-SF-DRY-277V-(LENGTH PER PLANS, INCLUDE END MOUNTS MC-3 AND STEM); (ALTERNATE PER CLIENT AND ARCHITECT APPROVAL)	
WW6	LINEAR WALL WASH (CUSTOM)	12W/LFT	LED	P	277	CALI LIGHTING ALS450T-ASM-SA-4.0K-12W-10V-1%-SF-DRY-277V-(LENGTH PER PLANS, INCLUDE END MOUNTS MC-3 AND STEM); (ALTERNATE PER CLIENT AND ARCHITECT APPROVAL)	
X1	EXIT SIGN INTERIOR	<5W	LED	W,S	UNV	ISOLITE ELT-FT-EM-G-1W/2W(PER PLANS)-BA-RC/SW(PER PLANS)-(DIRECTIONS PER PLANS)-SD	NOTE 7,8
X2	EXIT SIGN EXTERIOR	<5W	LED	W,S	UNV	ISOLITE RWL-EM-G-S&D (PER PLANS)-UN-WH-SD-3(277V)-(DIRECTIONS PER PLANS)	

NOTES:
1. PROVIDE WITH CONCRETE POLE FOOTING. SEE DETAIL#3, SHEET E604.
2. PROVIDE CONTINUOUS LENS/HOUSING AS A SINGLE PIECE LUMINAIRE. PROVIDE MULTIPLE DRIVER CONNECTIONS TO FIXTURE, COORDINATE WITH MANUFACTURER FOR PROVISIONS (ACCOUNT CONNECTIONS FOR EVERY 4 LINEAR FEET OF FIXTURE).
3. PROVIDE WITH CONCRETE POLE FOOTING. SEE DETAIL#4, SHEET E603.
4. PROVIDE POLE TO MOUNT FIXTURE AT 20FT ABOVE FNISHED GRADE. ACCOMODATE POLE HEIGHT WITH RESPECT TO EXPOSED FOOTNG HEIGHT NOTED ON PLANS.
5. FIXTURE SHALL BE STAINLESS STEEL AND CORROSIVE RESISTANT HARDWARE ONLY, NO ALUMINUM. KNOCKOUTS AND CUTS SHALL BE FACTORY MADE OR PER MANUFACTURER'S WARRANTY.
6. PROVIDE 277V, STAND ALONE AUXILIARY OCCUPANCY SENSOR WHERE NOTED (SENSOR SWITCH SBOR-6-OEX-D-_-_-_-BZ-3V OR APPROVED EQUAL). INSTALL SENSOR INTO POLE JUST BELOW FIXTURE HEAD, FACE SIDE. INCLUDE PROGRAMMING TO DIM TO 50% DURING VACANCY OF SPACE.
7. INTEGRATED BATTERY FIXTURES SHALL HAVE CAPACITY TO OPERATE AT FULL LOAD FOR A MINIMUM OF 90 MINUTES.
8. FIELD COORDINATE MOUNTING WITH CARPENTRY TRADES. ACCOUNT PENDANT HARDWARE WHERE 'P' INDICATED ON PLANS.
9. WHERE ALTERNATE IS CHOSEN, INCLUDE POLES, FULL STRUCTURAL DRAWINGS SIGNED BY A LICENSED STRUCTURAL ENGINEER, PHOTOMETRICS, CONTROL DIAGRAMS FOR DSA REVIEW AND CAMPUS APPROVAL.

ABBREVIATIONS:
P = PENDANT/CHAIN
PO = POLE
R = RECESSED
S = SURFACE
T = TRACK
U = UNIVERSAL
W = WALL
B = BOLLARD
IG = IN GRADE RECESSED

GENERAL NOTES:
1. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL DETAILS: CEILINGS, FINISHES, MOUNTING TYPE, ETC.
2. END PLATES TO HAVE COUNTER SINK HOLES FOR A SMOOTH FINISH.
3. FOR ALL EMERGENCY FIXTURES, RELAYS, AND EXIT SIGNS, PROVIDE AN ADDITIONAL UNSWITCHED CIRCUIT FEED FOR POWER SENSING (AHEAD OF ANY CONTROLS). FEED FROM SAME CIRCUIT SERVING NEIGHBORING FIXTURES.
4. LIGHTING CIRCUITED TO INVERTER SHALL BE OPERABLE FOR A MINIMUM OF 90 MINUTES AT FULL LOAD.
5. FIELD COORDINATE FIXTURE MOUNTING TO BE CLEAR OF BEAMS AND OTHER OBSTRUCTIONS.

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CLIENT:

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STREET
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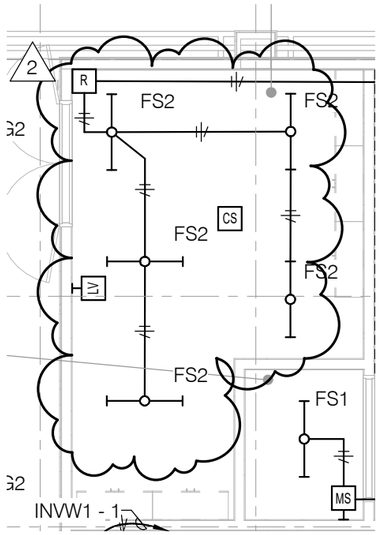
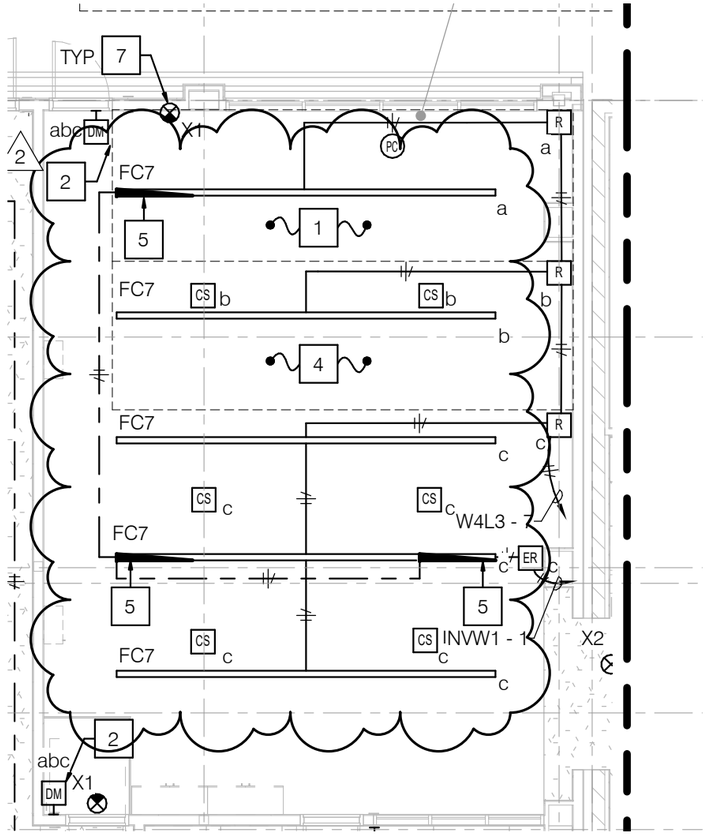
No.	Rev. Date	Description
1	11/07/19	Addendum 01
2	12/03/19	Addendum 02

JOB NO: 16042.01
DATE: 09/18/19
DRAWN: CN
CHECK: WM
ARCHITECT: PDW
ENGINEER:

SHEET DESCRIPTION:
SCHEDULES

SHEET NO:
E002





Scale: 1/8" = 1'-0"

SHEET DESCRIPTION:
BLDG 'W1', SOUTH END - PARTIAL FIRST FLOOR LIGHTING PLAN

SHEET NO:
W-E201.1

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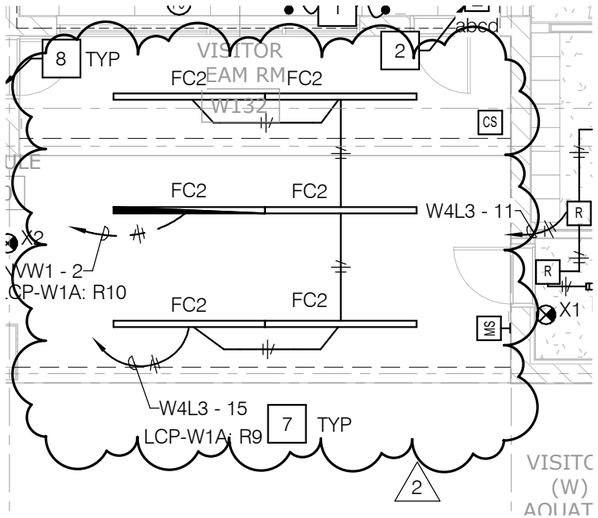
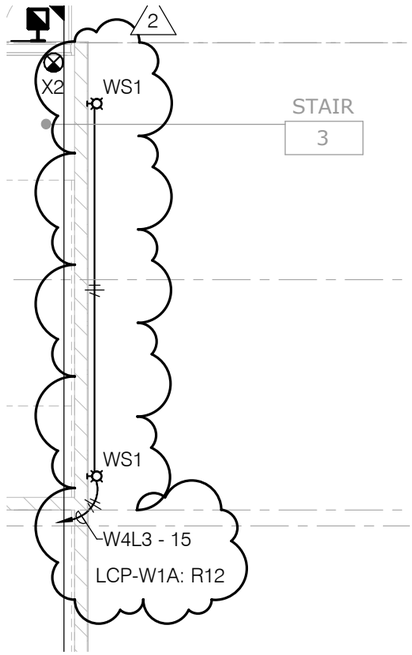
SHEET DESCRIPTION:
ELECTRICAL SKETCH - 03

DATE:	12-03-2019
JOB NO:	16042.01
DRAWN:	LH
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	2
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKE-03





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Scale: 1/8" = 1'-0"

SHEET DESCRIPTION:
BLDG 'W1', NORTH END - PARTIAL FIRST FLOOR LIGHTING PLAN

SHEET NO:
W-E201.2

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PROJECT:
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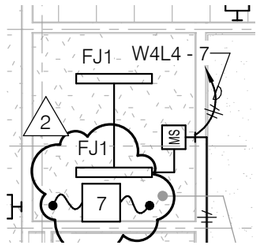
SHEET DESCRIPTION:
ELECTRICAL SKETCH - 04

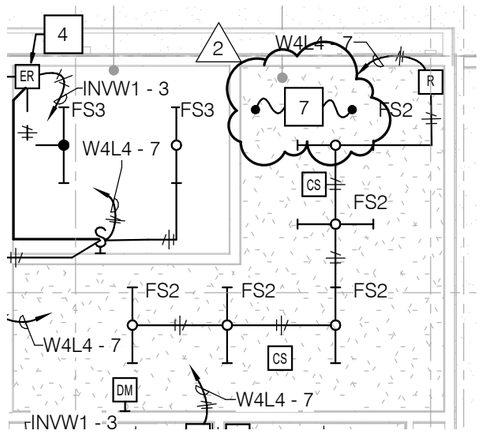
DATE:	12-03-2019
JOB NO:	16042.01
DRAWN:	LH
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	2
CCD #:	
BULLETIN #:	
RFI #:	

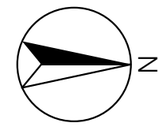
SHEET
SKE-04

UNSWITCHED AHEAD OF CONTROLS/RELAYS.

2 7 PROVIDE SURFACE MOUNTING FOR FIXTURES.







Scale: 1/8" = 1'-0"

SHEET DESCRIPTION:
BLDG 'W1', SOUTH END - PARTIAL SECOND FLOOR LIGHTING PLAN

SHEET NO:

W-E202.1

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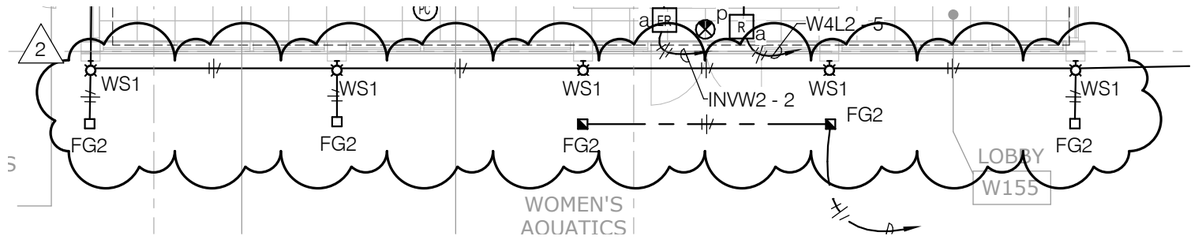
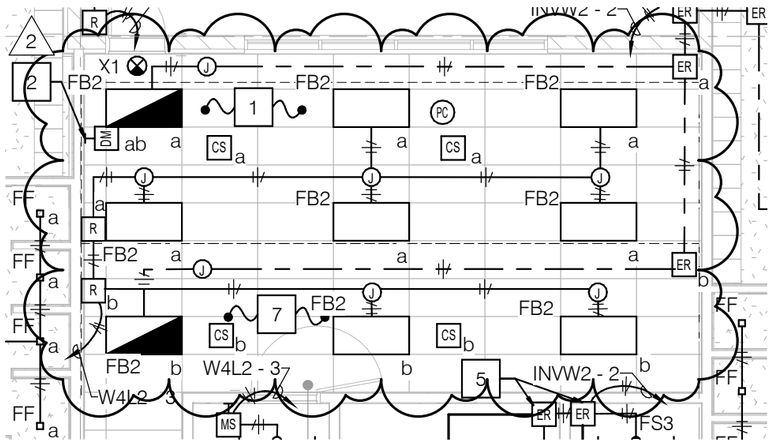
SHEET DESCRIPTION:
ELECTRICAL SKETCH - 05

DATE:	12-03-2019
JOB NO:	16042.01
DRAWN:	LH
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	2
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKE-05





Scale: 1/8" = 1'-0"

SHEET DESCRIPTION:
BLDG 'W2', FIRST FLOOR LIGHTING PLAN

SHEET NO:
W-E203

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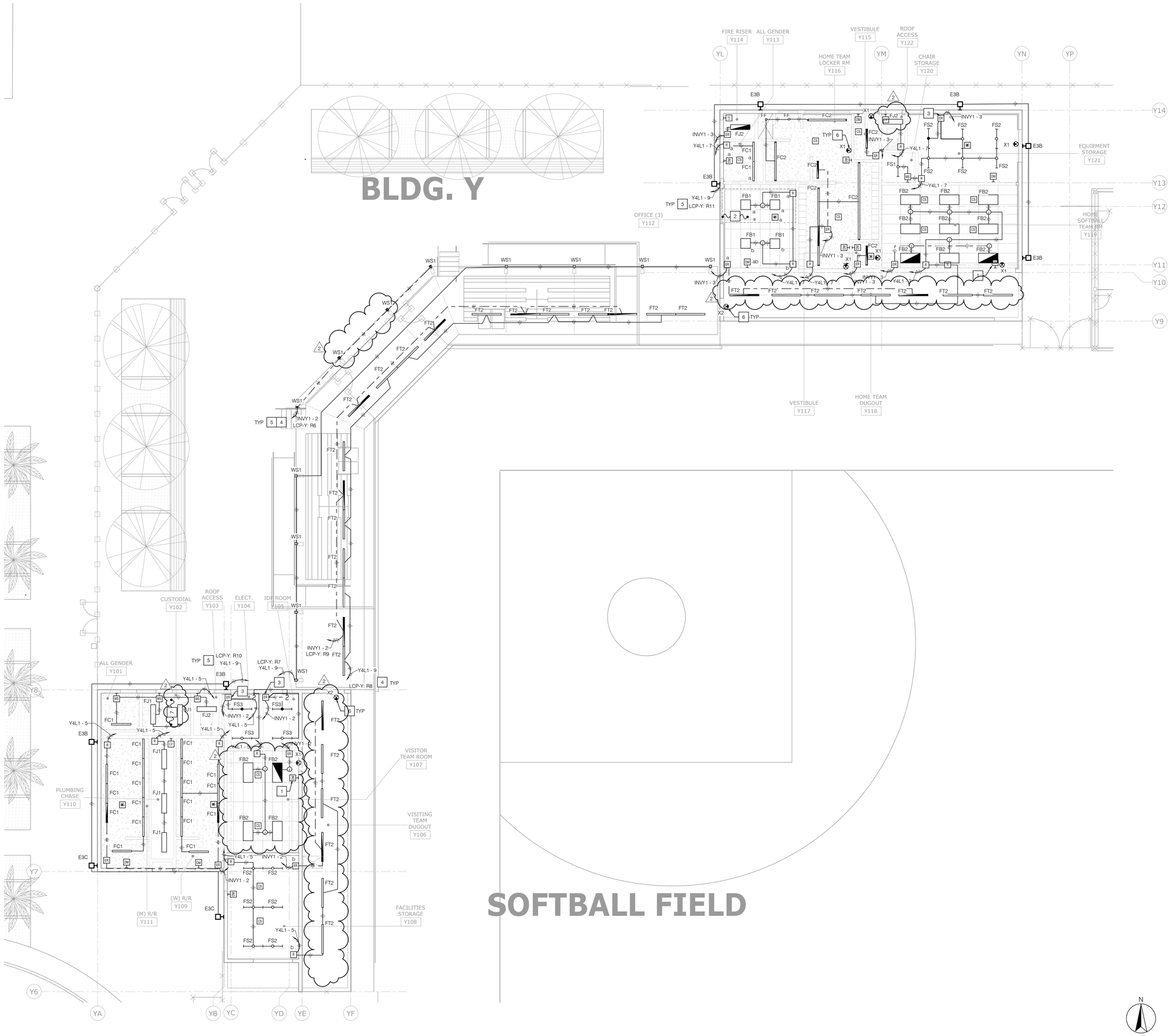
SHEET DESCRIPTION:
ELECTRICAL SKETCH - 06

DATE:	12-03-2019
JOB NO:	16042.01
DRAWN:	LH
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	2
CCD #:	
BULLETIN #:	
RFI #:	

SHEET
SKE-06



NOTES

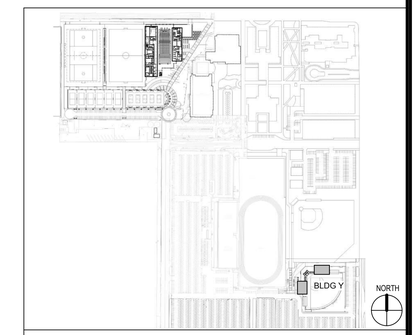
1. PROVIDE PRESET SCENE CONTROLLER. INCLUDE SEPARATE ZONE FOR DUGOUT.
2. PRIMARY DAYLIGHT ZONE.
3. PROVIDE UL924 RELAY FOR EMERGENCY FIXTURES (FUNCTIONAL DEVICES ESRBE277C, OR APPROVED EQUAL). PROVIDE CONNECTION TO BOTH TOGGLE SWITCH AND UNSWITCHED FEEDS (DETAIL 6, E603).
4. PROVIDE TRENCH HOMERUNS FROM CANOPY.
5. REFER TO LIGHTING CONTROL RELAY SCHEDULES ON SHEET E003 FOR SITE LIGHTING CONTROLS.
6. PROVIDE CIRCUIT TO EXIT SIGN FROM SAME CIRCUIT SERVING NEIGHBORING FIXTURES. CONNECT UNSWITCHED AHEAD OF CONTROL DISCLAIM.
7. PROVIDE SURFACE MOUNTING FOR FIXTURES.

GENERAL NOTES

1. ALL LIGHTING CIRCUITS TO HOME SOFTBALL TEAM BUILDING SHALL BE TRENCHED, #10 CONDUCTORS MINIMUM.
2. REFER TO SHEETS E603 FOR LIGHTING CONTROL DETAILS.
3. FOR HARD-LID CEILING INSTALLATIONS, LOCATE RELAYS AND REMOTE DRIVERS INTO ADJACENT SPACE WHERE ACCESSIBLE CEILINGS ARE AVAILABLE.

N

Scale: 1/8" = 1'-0"



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No.	Rev. Date	Description
2	12/03/19	Addendum 02

JOB NO: 16042.01
DATE: 09/18/19
DRAWN: CN
CHECK: LH
ARCHITECT: PDW
ENGINEER:

SHEET DESCRIPTION:
BLDG. 'Y', FIRST FLOOR LIGHTING PLAN

SHEET NO:

Y-E201

ANNOTATION LEGEND

SYMBOL	DESCRIPTION
Ⓒ	OSP EQUIPMENT CALLOUT
▢ -	NOTE CALLOUT
⊖	DETAIL CALLOUT - NUMBER ON TOP DENOTES DETAIL NUMBER - NUMBER ON BOTTOM DENOTES SHEET DETAIL IS SHOWN
①	BUILDING NUMBER
- - (N) - -	NEW UNDERGROUND CONDUIT
—(N)—	NEW BUILDING CONDUIT
——○	CONDUIT TURNED UP
——●	CONDUIT TURNED DOWN
——]	CONDUIT WITH CAP
[——]	CONDUIT SLEEVE

SECURITY LEGEND

CR	CARD READER WITH KEY PAD (HID 921 SERIES - TYPICAL, AND 910 SERIES AT MULLION MOUNT LOCATIONS)
▭◁	FIXED WALL MOUNT CAMERA PROVIDE AND INSTALL CAMERA PER CAMERA SCHEDULE DETAIL 2/T4.02. PROVIDE AND INSTALL (1) CAT6 CABLE/JACK. PROVIDE AND INSTALL 5S J-BOX WITH SINGLE GANG MUDRING AND 1" CONDUIT STUBBED TO AN ACCESSIBLE CEILING SPACE.
(▭◁)	FIXED CEILING MOUNT CAMERA PROVIDE AND INSTALL CAMERA PER CAMERA SCHEDULE DETAIL 4/T4.02. PROVIDE AND INSTALL (1) CAT6 CABLE/JACK. PROVIDE AND INSTALL 5S J-BOX WITH SINGLE GANG MUDRING AND 1" CONDUIT STUBBED TO AN ACCESSIBLE CEILING SPACE.
REX	REQUEST TO EXIT DEVICE
SDC	SECURITY DOOR CONTACT
ELM	ELECTRONIC LOCKING MECHANISM
P	PANIC/ DURESS BUTTON
K	ARMING STATION
ACP	ALARM CONTROL PANEL
AEP	ALARM EXPANSION PANEL
-Ⓜ-	MOTION DETECTOR
OMNI	OMNI-LOCK
GW	GATEWAY

MECHANICAL COMPONENT ANCHORAGE NOTES:

ALL MECHANICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CBC, SECTIONS 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7-10 CHAPTER 13, 26 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER.
3. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE FOLLOWING MECHANICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT:

- A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
- B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR THE STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

PIPING AND DUCTWORK DISTRIBUTION SYSTEM BRACING NOTE:

PIPING AND DUCTWORK DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-10 SECTION 13.3 AS DEFINED IN ASCE 7-10 SECTION 13.6.8, 13.6.7, 13.6.5.6, AND 2016 CBC SECTIONS 1616A.1.23, 1616A.1.24, 1616A.1.25 AND 1616A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR THE IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G., SMACNA OR OSHPD OPM), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS.THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MP ☐ MD ☐ PP☐ E X - OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.
MP ☐ MD ☐ PP☐ E ☐ - OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVED (OPM#) #_______.
MP ☐ MD ☐ PP☐ E ☐ - OPTION 3: SHALL COMPLY WITH THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION (2009), INCLUDING ANY ADDENDA. FASTENERS AND OTHER ATTACHMENTS NOT SPECIFICALLY IDENTIFIED IN THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION, ARE DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. THE DETAILS SHALL ACCOUNT FOR THE APPLICABLE SEISMIC HAZARD LEVEL _______AND CONNECTION LEVEL______FOR THE PROJECT AND CONDITIONS.

TELECOM LEGEND

▼	VOICE / DATA OUTLET - WALL MOUNTED. PROVIDE AND INSTALL (2) CAT 6A BLUE CMP CABLES / JACKS TERMINATED IN A 4-PORT FACEPLATE AT 18" AFF. PROVIDE AND INSTALL 5S JBOX WITH SINGLE GANG MUDRING AND 1-1/4" CONDUIT LOCATION. PROVIDE BUSHINGS AND PULLSTRING, U.O.N.
▼X	DATA OUTLET - WALL MOUNTED. PROVIDE AND INSTALL (2) QUANTITY OF CAT 6A BLUE CMP CABLES / JACKS TERMINATED IN A 6-PORT FACEPLATE AT 18" AFF. PROVIDE AND INSTALL 5S JBOX WITH SINGLE GANG MUDRING AND1-1/4" CONDUIT LOCATION. PROVIDE BUSHINGS AND PULLSTRING, U.O.N.
TV ▼	DATA OUTLET. PROVIDE AND INSTALL (2) CAT6A BLUE CMP CABLES AND (1) RG-6 CABLE. JACKS TERMINATED IN A CONSOLIDATED 5S BACK BOX AT THE DESIGNATED HEIGHT AS SHOWN ON DRAWINGS. REFER TO AUDIOVISUAL SHEETS FOR CONSOLIDATED BACK BOX TYPE. PROVIDE BUSHINGS AND PULLSTRING, U.O.N. MOUNT OUTLET AT 60" AFF U.O.N.
W ▽	WALL PHONE OUTLET - WALL MOUNTED. PROVIDE AND INSTALL (2) CAT 6A BLUE CMP CABLE TERMINATED ON A STAINLESS STEEL WALL PHONE FACE PLATE AT 48" AFF. PROVIDE AND INSTALL 5S JBOX WITH 1-1/4" CONDUIT LOCATION. PROVIDE BUSHINGS AND PULLSTRING, U.O.N.
EP ▽	EMERGENCY BLUE PHONE. PROVIDE AND INSTALL EP-MFG. BACK-BOX AND (1) 1-1/4" CONDUIT AT 42" AFF. WITH IN-SET EP BACKBOX. PROVIDE AND INSTALL (1) CAT6A CMP CABLE.
▣	DATA OUTLET - FLOORBOX. PROVIDE AND INSTALL (4) CAT 6A BLUE CMP CABLES / JACKS TERMINATED IN FLOOR BOX, U.O.N.. PROVIDE AND INSTALL 1-1/4" CONDUIT TO NEAREST FURRED WALL , ROUTE CONDUIT ABOVE FINISHED CEILING. PROVIDE BUSHINGS AND PULLSTRING, U.O.N.
▣	DATA OUTLET - POKE THRU. PROVIDE AND INSTALL (4) CAT 6A BLUE CMP CABLES / JACKS TERMINATED IN FLOOR BOX, U.O.N.. PROVIDE AND INSTALL 1-1/4" CONDUIT TO NEAREST FURRED WALL , ROUTE CONDUIT ABOVE FINISHED CEILING. PROVIDE BUSHINGS AND PULLSTRING, U.O.N.
F ▼	VOICE/DATA SYSTEMS FURNITURE OUTLET. PROVIDE AND INSTALL (2) CAT 6A BLUE CMP CABLES/ JACKS TERMINATED IN 3-PORT FURNITURE MOUNT FACEPLATE WITH BLANK INSERT.
Ⓙ	FURNITURE FEED DEDICATED JUNCTION BOX. PROVIDE AND INSTALL 5S JUNCTION BOX RACO 260 OR APPROVED EQUAL 2-GANG RING AND PLATE WITH (2) 2" CONDUITS. FOR COMMUNICATIONS CABLING ONLY.
[Ⓙ]	FLOOR MOUNTED FURNITURE FEED. PROVIDE AND INSTALL 2" CONDUITS AS REQUIRED TO SERVE FURNITURE SYSTEM AS SHOWN ON THE DRAWINGS. ROUTE CONDUIT TO NEAREST FURRED WALL. FOR COMMUNICATIONS CABLING ONLY.
WAP	WIRELESS ACCESS POINT OUTLET - CEILING MOUNTED. PROVIDE AND INSTALL (2) CAT 6A BLUE CMP CABLES / JACKS TERMINATED IN A SURFACE MOUNT BOX ABOVE FINISHED CEILING. CEILING LOCATIONS PROVIDE AND INSTALL 4S JBOX WITH 1-1/4" CONDUIT LOCATION. PROVIDE BUSHINGS AND PULLSTRING, U.O.N. TERMINATE CABLES ON JACKS IN 2-PORT FACE PLATE.
WAP	WIRELESS ACCESS POINT OUTLET - WALL MOUNTED. PROVIDE AND INSTALL (2) CAT 6A BLUE CMP CABLES / JACKS TERMINATED IN A 2-PORT FACEPLATE AT NOTED HEIGHT AFF. PROVIDE AND INSTALL 4S JBOX WITH 1-1/4" CONDUIT LOCATION, BUSH AND PROVIDE PULLSTRING, U.O.N.
◉	DATA OUTLET - CEILING MOUNTED. PROVIDE AND INSTALL (2) CAT 6A BLUE CMP CABLES / JACKS TERMINATED IN A 2-PORT FACEPLATE AT FINISHED CEILING. (NOTE: AT HARDLID CEILING LOCATIONS PROVIDE AND INSTALL 4S JBOX WITH 1-1/4" CONDUIT LOCATION. PROVIDE BUSHINGS AND PULLSTRING, U.O.N.)
⬡	PAD MOUNTED NETWORK ENCLOSURE WITH OPTICAL FIBER TERMINATION.
▭	CABLE TRAY, SIZE AS NOTED
╪╪╪	LADDER RACK, SIZE AS NOTED
⊟	19" X 7' EQUIPMENT RACK

NOTE:
SEE LBCC STANDARD OUTLET INFORMATION AND DEVICE OUTLET SIZES ON SHEET T002 FOR ADDITIONAL INSTALLATION INFORMATION

TELECOM DEMO NOTES

INTRA BUILDING

1. CONTRACTOR SHALL VERIFY THAT ALL WORKING SERVICES ARE TRANSFERRED FROM OLD CABLES TO THE NEW NETWORK. THIS INCLUDES BUT IS NOT LIMITED TO, SERVICE TO PAY PHONES, MONITORING DEVICES, EMERGENCY PHONES, ELEVATOR PHONES, AS WELL AS SWITCH SERVICES, AND NON SWITCH SERVICES (IE: ISDN, HICAP, T-I LINES).
2. AFTER EXISTING VOICE AND DATA SERVICES ARE CUTOVER TO THE NEW NETWORK, REMOVE ALL NON-WORKING COPPER RISER AND ENTRANCE CABLES. REMOVE ALL ABANDONED TERMINATION BLOCKS, JUMPERS AND EQUIPMENT.
3. DEMOLITION PLAN TO BE REVIEWED AND APPROVED BY LBCC REPRESENTATIVE PRIOR TO WORK, REMOVE ABANDONED FIBER OPTIC CABLES AND TERMINATING EQUIPMENT UNLESS SPECIFICALLY INDICATED OR DIRECTED BY A IT DEPARATMENT DISTRICT REPRESENTATIVE.

INTRA BUILDING

1. THE COPPER CABLE PLAN INDICATES THE COPPER CABLES TO BE REMOVED UPON COMPLETION OF CUTTING THEM OVER TO A NEW CONFIGURATION. THESE CABLES AND ANY OTHER ABANDONED (CUT AT BOTH ENDS) COPPER CABLES SHALL BE REMOVED.
2. ANY ABANDONED (CUT AT BOTH ENDS) COAXIAL CABLE SHALL BE REMOVED.
3. CHECK WITH PROJECT CONSTRUCTION MANAGEMENT TEAM PRIOR TO REMOVING ANY EXISTING MEDIA.
4. CONTRACTOR SHALL DISCONNECT AND REMOVE ALL VOICE/DATA CABLES BACK TO (E) BDF/IDF AND PROPERLY DISPOSED OF.

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
(#)	NUMBER IS QUANTITY
0dBm	STANDARD-LEVEL RATIO OF MEASUREMENT THAT REPRESENTS A ZERO-DECIBEL READING FROM ONE MILLIWATT OF POWER
A OR AMP	AMPERES
A/E	ARCHITECT/ENGINEER
ACCU	AIR COOLED CONDENSING UNIT
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AH	AMPERE HOUR
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDING UNIT
AIA	AMERICAN INSTITUTE OF ARCHITECTS
AIC	AMPERE INTERRUPTING CAPACITY
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AP	ACCESS POINT
ARCH.	ARCHITECT; ARCHITECTURAL
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR-CONDITIONING ENGINEERS
ASP	ALUMINUM, STEEL, POLYETHYLENE
ASTM®	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWG	AMERICAN WIRE GAUGE
B/BUR	BURIED
BACnet®	BUILDING AUTOMATION AND CONTROL NETWORK – BROADCAST MANAGEMENT DEVICE
BC	BONDING CONDUCTOR
BDF	BUILDING DISTRIBUTION FRAME
BIC	BUILDING INDUSTRY CONSULTANT
BICSI	BUILDING INDUSTRY CONSULTING SERVICES
BMS	BUILDING MANAGEMENT SYSTEM
BTU	BRITISH THERMAL UNIT
C	COMMUNICATIONS (LOW-VOLTAGE CABLING OR OPTICAL FIBER CABLE)
C.O.	CONDUIT ONLY WITH PULL WIRE
CA	CONSTRUCTION ADMINISTRATION (ARCHITECTURAL PHASE)
CAD	COMPUTER AIDED DESIGN
CAM	COMPUTER-AIDED MANUFACTURING
CATV	COMMUNITY ANTENNA TELEVISION (CABLE TELEVISION)
CBC	COMMUNICATIONS BONDING CONDUCTOR
CBSC	CALIFORNIA BUILDING STANDARDS COMMISSION
CCTV	CLOSED CIRCUIT TELEVISION
CD	CONSTRUCTION DESIGN (ARCHITECTURAL PHASE)
CDMA	CODE DIVISION MULTIPLE ACCESS
CEC	CALIFORNIA ELECTRICAL CODE
CF/CI	CONTRACTOR FURNISHED / CONTRACTOR INSTALLED
CKT	CIRCUIT
CM	CONSTRUCTION MANAGER
CMP	COMMUNICATIONS PLENUM (CABLE JACKET RATING)
CMR	COMMUNICATIONS RISER (CABLE JACKET RATING)
CP	CONSOLIDATION POINT
CSI	CONSTRUCTION SPECIFICATION INSTITUTE
CT	CABLE TRAY
D	DELTA – REFERS TO A DOCUMENTED CHANGE IN DWG OR SPECS AFTER PUBLISHED
DAS	DISTRIBUTED ANTENNA SYSTEM
DB	DIRECT-BURIED OR DUCT BANK
dc	DIRECT CURRENT
DIST	DISTRIBUTION
DL	DUCTLINER (INNERDUCT)
DSA	DEPARTMENT OF STATE ARCHITECTS
DWG	DRAWING
E	ELECTRICAL
E/W	EQUIPPED WITH
EA	EACH
EBC	EQUIPMENT BONDING CONDUCTOR
EF	ENTRANCE FACILITY
EMI	ELECTROMAGNETIC INTERFERENCE
EMS	EMERGENCY MANAGEMENT SYSTEM
EMT	ELECTRICAL METALLIC TUBING
ENT	ELECTRICAL NONMETALLIC TUBING
EQUIP	EQUIPMENT
EXIST / (E)	EXISTING
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FCC	FEDERAL COMMUNICATION COMMISSION
FCU	FAN COIL UNIT
FD	FLOOR DISTRIBUTION
FDC	OPTICAL – FIBER DISTRIBUTION CENTER
FDDI	(OPTICAL) FIBER DISTRIBUTED DATA INTERFACE
FDR	FEEDER
FEP	FLUORINATED ETHYLENE PROPYLENE
FEXT	FAR END CROSSTALK
FIC	FACILITY INTERFACE CODE
FIN.	FINISH
FIXT	FIXTURE
FLR	FLOOR
FO	FIELD ORDER
FOC	FIBER OPTIC CABLE
FOR	FIELD OBSERVATION REPORT
FPN	FINE PRINT NOTE
FS	FIRESTOP (DEFINED BY “T-RATING – TEMPERATURE-TRANSFER & “F-RATING = FLAME) – MAY ALSO HAVE A “SMOKE-TRANSFER” REQUIREMENT
FT	FEET
FTP	FIELD TERMINATED PLUG
FTU	FIBER TERMINAL UNIT
GA	GAUGE
Gb	GIGABIT
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
GPR	GROUND POTENTIAL RISE
GRC	GALVANIZED RIGID CONDUIT
H	HOUR
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
I	CURRENT
IB	INTELLIGENT BUILDING
ICEA	INSULATED CABLE ENGINEERS ASSOCIATION, INC.
ID	INSIDE DIAMETER OR INSIDE DIMENSION
IDC	INSULATION DISPLACEMENT CONDUCTOR
IDF	INTERMEDIATE DISTRIBUTION FRAME
IEC	INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
IG	ISOLATED GROUND
IR	INFRARED
ISO	INTERNATIONAL ORGANIZATION OF STANDARDIZATION
ISP	INTERNET SERVICE PROVIDER
JB	JUNCTION BOX
KP	OMNI-LOCK
LAC	LIBERAL ARTS CAMPUS
LBCC	LONG BEACH CITY COLLEGE
LBCCD	LONG BEACH CITY COLLEGE DISTRICT
LED	LIGHT EMITTING DIODE
LVD	LOW VOLTAGE DISCONNECT
M	METER

ABBREVIATION	DESCRIPTION
MAC	MEDIA ACCESS CONTROL
MB	MEGABIT
MDF	MAIN DISTRIBUTION FRAME
MH	MAINTENANCE HOLE(OSP CONFINED SPACE)
MHT	MOUNTING HEIGHT
MM	MULTIMODE
MM	MULTI-MODE
MSDS	MATERIAL SAFETY DATA SHEET
MTG.	MOUNTING
MTU	MULTI TENNENT UNIT
MUTOA	MULTI-USER TELECOMMUNICATION OUTLET ASSEMBLY
MUX	MULTIPLEXER
N	NORTH
ND	NETWORK DEVICE
NE	NETWORK ENCLOSURE
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NESC	NATIONAL ELECTRICAL SAFETY CODE
NEXT	NEAR END CROSSTALK
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NIU	NETWORK INTERFACE UNIT
NO.	NUMBER
OAR	OWNER APPROVED REPRESENTATIVE
OD	OUTSIDE DIAMETER
OF	OPTICAL FIBER
OF/CI	OWNER FURNISHED / CONTRACTOR INSTALLED
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OSHPD	CALIFORNIA OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT
OSP	OUTSIDE PLANT
OTDR	OPTICAL TIME DOMAIN REFLECTOMETER
PA	PUBLIC ADDRESS SYSTEM
PB	PULL BOX
PCC	PACIFIC COAST CAMPUS
PH	PHASE
PIC	PLASTIC INSULATED CONDUCTOR
PLT	PLANT
PNL	PANEL
POC	POINT OF CONNECTION
POTS	PLAN OLD TELEPHONE SERVICE
PR	PAIR
PRO	PROTECTED TERMINAL
PSF	POUNDS PER SQUARE FOOT
PSU	POWER SUPPLY UNIT
PTP	POINT-TO-POINT
PVC	POLYVINYL CHLORIDE
PWR	POWER
REC/RECEPT	RECEPTACLE
REQ'D	REQUIRED
RET	REMOTE TERMINAL
RM	ROOM
RMC	RIGID METAL CONDUIT
RMS	RACK MOUNTED SPACE
RNC	RIGID NONMETALLIC CONDUIT
RU	RACK UNIT
S	SOUTH
SAC	SECURITY AND ACCESS CONTROL
SCS	STRUCTURED CABLING SOLUTION
SD	SCHEMATIC DESIGN
SF	SQUARE FEET
SFF	SMALL FORM FACTOR
SHT	SHEET
SL	SLEEVE
SM	SINGLE MODE
SNR	SIGNAL TO NOISE RATIO
SP	SINGLE POLE
SPD	SURGE PROTECTION DEVICE
SPECS	SPECIFICATIONS
SQ	SQUARE
SR	SURFACE RUNWAY
STA	STATION
STD	OPTICAL FIBER STRAND
STP	SHIELDED TWISTED-PAIR
SW	SWITCH
SYS	SYSTEM
T	TEMPERATURE
T&C	TERMS AND CONDITIONS
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TDD	TELECOMMUNICATIONS DEVICE FOR THE DEAF
TDMM	TELECOMMUNICATIONS DISTRIBUTION METHODS MANUAL
TE	TELECOMMUNICATIONS ENCLOSURE
TEL	TELEPHONE
TELCO	TELEPHONE UTILITY
TERM.	TERMINATION
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
TP	TRANSITION POINT
TR	TELECOMMUNICATIONS ROOM OR SPACE
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TYP	TYPICAL
UD	UNDERGROUND DUCT
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORIES INC.
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTC	UNDERCARPET TELECOMMUNICATIONS CABLE
UTP	UNSHIELDED TWISTED PAIR
V	VOLTS
V-A	VOLT-AMPERES
VESDA	VERY EARLY SMOKE DETECTION APPARATUS
W	WATTS
W/	WITH
W/O	WITHOUT
WAO	WORK AREA OUTLET/ WORK STATION OUTLET
WBS	WORK BREAKDOWN STRUCTURE
WiFi	WIRELESS FIDELITY
WP	WATERPROOF OUTLET BOX
WS	WORK STATION
WW	WIRE WAY
μm	MICRON: ONE MILLIONTH OF A METER (0.000001 METER); ALSO MICROMETER – MEASUREMENT MOST COMMON USED WITH MULTI-MODE FIBER (MM)
μV/m	MICROVOLTS PER METER
□C	DEGREES CELSIUS
□F	DEGREES FAHRENHEIT

GENERAL NOTES

1. ALL TELECOMMUNICATIONS WORK SHALL COMPLY WITH THE LATEST EDITION OF THE LBCC TELECOMMUNICATIONS INFRASTRUCTURE STANDARDS AND CURRENT INDUSTRY RECOGNIZED BEST PRACTICES. THESE STANDARDS HAVE BEEN ESTABLISHED TO EXCEED ALL CURRENT CODE AND INDUSTRY STANDARD INSTSALLATION PRACTICE. ANY ITEMS THAT RAISE QUESTION SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND LBCC REPRESENTATIVE IN WRITING. IT IS ALWAYS A BEST PRACTICE TO PROVIDE THE AHJ WITH DETAIL ON ANY AND ALL CONSTRUCTION ITEMS THAT COULD BE QUESTIONED BY THE AHJ. THE PROJECT DOCUMENTATION PACKAGE ASSOCIATED LBCC STANDARD ARE NOT TO BE INTERPRETED NOR CONSIDERED AS AUTHORIZATION TO DEVIATE FROM ANY CODE OR REGULATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VALIDATE THAT THESE REQUIREMENTS WILL MEET THE EQUIPMENT MANUFACTURER'S REQUIREMENT TO PROVIDE LBCC WITH A MINIMUM 20-YEARS SCS FOR ALL LABOR AND MATERIALS WARRANTIES.
2. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS AND/OR SPECIFICATIONS OR WITH AHJ REQUIREMENTS, THE DOCUMENT WHICH PRESCRIBES AND ESTABLISHES THE COMPLETE JOB OR THE HIGHER STANDARD SHALL PREVAIL. ALL DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND THE LBCC REPRESENTATIVE IN WRITING IMMEDIATELY UPON DISCOVERY.
3. OMISSIONS FROM THE DRAWINGS OR SPECIFICATIONS OR THE MISDESCRIPTION OF DETAILS OF WORK WHICH ARE CLEAR AND NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS AND SPECIFICATIONS, OR WHICH ARE CUSTOMARILY PERFORMED SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMITTED OR MISDESCRIBED DETAILS OF THE WORK. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER AND LBCC REPRESENTATIVE UPON IDENTIFICATION OF SUCH OMISSIONS, MISDESCRIPTION, AND UNCLEAR DIRESTIONS IMMEDIATELY. THE CONTRACTOR SHALL PERFORM ALL PROJECT TASKS AND ASSEMBLY BUILDS AS PER INDUSTRY STANDARDS AND MANUFACTURER'S REQUIREMENTS ALONG WITH COORDINATING AND WORKING WITH LBCC TO CORRECT SUCH DOCUMENTATION ERRORS.
4. THE CONTRACTOR SHALL CHECK ALL DRAWINGS FURNISHED IMMEDIATELY UPON THEIR RECEIPT AND PROMPTLY NOTIFY LBCC OF ANY DISCREPANCIES. THIS INCLUDES BUT NOT LIMITED TO, DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS, OR DRAWINGS AND MANUFACTURER INSTALLATION INSTRUCTIONS THAT WILL CAUSE EXTENDED WARRANTY ISSUES, OR DRAWINGS AND GOVERNING CODES AND BEST PRACTICES. THE CONTRACTOR SHALL BRING TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND LBCC REPRESENTATIVE ANY DISCREPANCIES BETWEEN DRAWINGS AND HOW THE CONTRACTOR NORMALLY DELIVERS THE SERVICES DESCRIBED IN THE DRAWINGS OR SPECIFICATIONS.
5. ALL MATERIALS AND EQUIPMENT FURNISHED AND INSTALLED SHALL BE NEW AND FREE FROM ANY KNOWN DEFECT. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL (UL™) LISTING, CLASSIFIED, AND/OR PERFORMANCE VERIFIED MARK OR FROM A LBCC APPROVED ALTERNATIVE TESTING ORGANIZATION. ALL MATERIALS SHALL BE INSTALLED AND USED IN THE MANNER FOR WHICH THE MANUFACTURER INTEND THEM FOR. THIS APPLIES FOR BOTH PIECE PARTS AND COMPLETE FUNCTIONING ASSEMBLIES.
6. CONTRACTOR IS REQUIRED TO RECEIVE WRITTEN APPROVAL FOR ALL RECOMMENDED AND REQUIRED WORK DEVIATIONS AND CLARIFICATIONS TO THE PLANS AND SPECIFICATIONS OF THIS PROJECT BY LBCC AND ITS REPRESENTATIVES PRIOR TO ANY FIELD ACTIVITY.
7. ALL WORK MUST BE COMPLETED IN A NEAT AND WORKMAN LIKE MANNER. LBCC DEMANDS THE UTMOST PROFESSIONALISM WHEN WORK IS BEING PERFORMED CAMPUS AND HOLDS ALL CONTRACTORS TO THAT LEVEL OF PROFESSIONALISM. THE WORK SITE SHALL BE KEPT CLEAN AND FREE FROM DEBRIS. IT IS EVERY CONTRACTOR AND ALL THEIR REPRESENTATIVE'S RESPONSIBILITY TO GUARD AGAINST ANY DAMAGE TO LBCC PROPERTY AND THE IMMEDIATE REPAIR IF ANY DAMAGE IS CAUSED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING A FINAL CLEANUP OF THE WORK SITE PRIOR TO FINAL SYSTEM ACCEPTANCE AS PART OF THE PUNCH-LIST PROCESS.
8. THE CONTRACTOR SHALL NOT BORE, NOTCH, OR IN ANY WAY CUT INTO ANY STRUCTURAL MEMBER WITHOUT WRITTEN APPROVAL FROM LBCC, ARCHITECT, STRUCTURAL ENGINEER, AND DSA. WITH PERMISSION FROM THE ABOVE AND PRIOR TO ALL CUTTING, DRILLING, NOTCHING, CORING, ETC. OF CONCRETE STRUCTURE AND FAÇADE THESE SURFACES SHALL BE X-RAYED OR GROUND PENETRATING RADAR USED TO ACCURATELY LOCATE REBAR, POST-TENSION CABLES & RODS, CONDUITS, AND ANY OTHER EMBEDDED POTENTIAL OBSTRUCTIONS TO ENSURE THAT NO DAMAGE IS CAUSED TO ANY STRUCTURAL REINFORCEMENTS.
9. FOR THE PURPOSE OF CLEARNESS AND LEGIBILITY THE TELECOM DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC. THE SIZE AND LOCATION OF EQUIPMENT IS SHOWN TO SCALE WHEREVER POSSIBLE. THE CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS WITH INFORMATION INDICATED ON THE DRAWINGS AND DESCRIBED IN THE SPECIFICATION SECTIONS WHERE TELECOM WORK INTERFACES WITH OTHER TRADES.
10. THE CONTRACTOR SHALL TAKE SPECIAL PRECAUTIONS WHEN WORKING IN AREAS WITH EXISTING CEILINGS AND SHALL BE RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILING TILES WITHOUT DAMAGING OR SOILING THE CEILING TILES. CHIPPED, DAMAGED, CRACKED, OR BROKEN TILES ARE THE CONTRACTOR'S RESPONSIBILITY TO REPLACE WITH LIKE TILES.
11. ALL FOOTAGES IDENTIFIED ON DRAWINGS OR SCALED OFF OF DRAWINGS ARE TO BE CONSIDERED ESTIMATES AND ARE REQUIRED TO BE FIELD VERIFIED BY CONTRACTOR PRIOR TO ORDERING OF MATERIAL.
12. ALL CABLE TRAYS, LADDER (TYPE) RACKING, CONDUIT, EQUIPMENT RACKS, PROTECTION PANELS, AND CABLE SHEATHS SHALL BE BONDED TO AN APPROVED TELECOMMUNICATIONS BONDING ASSEMBLY.
13. ACCORDING TO TIA STANDARDS AND BICSI METHODOLOGIES PULL-BOXES LOCATED WITHIN A STRUCTURE ARE TO BE PLACED AT 100' INCREMENTS AND PROPERLY SPACED WITHIN RUNS OF MORE THAN 150'. PULL-BOXES ARE TO BE PLACED IN CONDUIT RUNS THAT EXCEED A MAXIMUM OF 180-DEGREES IN CHANGES OF DIRECTION. TELECOMMUNICATIONS PULL-BOXES ARE TO BE SIZED AT A MINIMUM OF TWELVE (12) TIMES THE DIAMETER OF THE LARGEST CONDUIT. PULL-BOXES SHOULD NOT BE USED FOR CHANGES OF DIRECTION. THESE STANDARDS ARE TO BE ADHERED TO WHERE EVER PRACTICAL AND ANY DEVIATION TO THESE STANDARDS REQUIRES A SHOP-DRAWING, IF DISCOVERED DURING THE SUBMITTAL PHASE, TO REMEDIATE THE ISSUE OR BY AN RFI DURING THE CONSTRUCTION INSTALLATION PHASE. LBCC MAY ELECT TO INCREASE THE CONDUIT SIZE OR QUANTITY OF CONDUITS TO MITIGATE THE ISSUE FOR THE EXCESS LENGTH, ADDITIONAL QUANTITY OF CHANGES OF DIRECTION, AND/OR THE REDUCED SIZE OF PULL-BOXES WITHIN THE GIVEN PATHWAY. THE CONTRACTOR IS REQUIRED TO HAVE APPROVAL IN WRITING PRIOR TO ANY ROUGH-IN WORK OR MATERIAL PROCUREMENT.
14. AS A STANDARD, ALL INTRA-BUILDING PATHWAYS SHALL HAVE A MINIMUM OF 25% AVAILABLE CAPACITY AT THE SCHEDULED END OF THE PROJECT. SHOULD THIS PERCENTAGE NOT BE ACHIEVABLE, THIS ISSUE MUST BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND LBCC REPRESENTATIVE.
15. WHERE PATHWAY CONSISTS OF MULTIPLE CONDUITS OR SLEEVES, A PATHWAY MUST BE FILLED TO CURRENT TIA AND BICSI INSTALLATION RECOGNIZED MAXIMUM FILL BEFORE UTILIZING THE NEXT VACANT OR PARTIALLY FILLED PATHWAY, UNLESS OTHER MORE STRINGENT REQUIREMENT FOR SUCH THINGS AS EXTENDED WARRANT, LBCC REQUIREMENTS, ETC.
16. USE OF “J” HOOKS FOR STATION CABLE DISTRIBUTION IN OPEN CEILING ENVIRONMENTS IS NOT ACCEPTABLE TO LBCC. LOW-VOLTAGE/SIGNAL PATHWAY SHALL BE INSTALLED PER LBCC DIVISION 27 AND 26 SPECIFICATIONS. DO NOT USE CEILING SUPPORT WIRE OR CEILING HANGERS. DO NOT USE SUPPORTS FOR ANY OTHER BUILDING SERVICES UNLESS PRIOR WRITTEN APPROVAL FOR THEIR USE IS GIVEN AND VERIFIED WITH PROJECT STRUCTURAL ENGINEER. NEVER IS IT ACCEPTABLE FOR CABLING TO IMPEDE OR HINDER THE ACCESSING OF THE ABOVE CEILING SPACE OR ANY ABOVE CEILING MOUNTED EQUIPMENT. CABLES ARE NOT TO BE WRAPPED AROUND ANY BUILDING STRUCTURAL SUPPORTS OR BUILDING SERVICES. ALL APPROPRIATE LBCC AND BICSI INSTALLATION PRACTICE CLEARANCES FROM FIXTURES, CONTROLS, AND ACCESS DEVICES OF ANY KIND ARE TO BE ADHERED TO. CABLING IS NEVER TO RUN THROUGH OR IMPEDE THE OPERATION OF ANY AIR-HANDLING DUCTS OR DAMPERS.
17. OVERHEAD AND WALL MOUNTED LADDER (TYPE) RACKING INSTALLATION SHALL MATCH THE DRAWINGS AS CLOSELY AS POSSIBLE AND REQUIRES A SHOP DRAWING FOR EACH ROOM LOCATION. THE PACKAGE IS TO INCLUDE A BILL OF MATERIALS WITH PART NUMBERS FROM RACKING MANUFACTURER FOR MOUNTING AND CONNECTION PIECE PARTS. PRIOR TO ANY ROUGH-IN WORK BEING PERFORMED THESE SUBMITTALS MUST BE APPROVED BY LBCC REPRESENTATIVE.
18. ALL CABLING AND THEIR PATHWAYS PASSING THROUGH A RATED FIRE OR SMOKE BARRIER MUST BE PROPERLY SLEEVED AND FIRE STOPPED USING APPROVED (UL CLASSIFIED) FIRE STOP ASSEMBLIES. FIRESTOP ASSEMBLIES ARE TO BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS FOR THE TYPE OF BARRIER, PATHWAY SIZE, AND QUANTITY OF CABLES THE FIRESTOP ASSEMBLY IS BEING INSTALLED FOR. CONTRACTOR IS REQUIRED TO MAINTAIN TRAINING RECORDS FOR ALL STAFF PERFORMING FIRESTOP ASSEMBLY INSTALLATION WORK.
19. CABLE PULLING - LINE/ROPE/TAPE SHALL BE PLACED IN ALL NEW CONDUITS. ALL UNUSED CONDUITS SHALL ALSO BE CAPPED AND/OR PROPERLY FIRE STOPPED IN A MANNER APPROVED BY LBCC AND/OR THE AHJ.
20. EACH OSP CABLE SHALL BE EQUIPPED WITH A PERMANENT LABEL INDICATING CABLE TYPE, PAIR OR OPTICAL STRANDS COUNTS, DISTANT AND COMMONLY USED BUILDING NAME/NUMBER AND CABLE LENGTH. BOTH ENDS OF EACH CABLE SHALL BE LABELED CLEARLY SO THAT THEY CAN BE EASILY MATCHED TO EACH OTHER.
21. ALL OSP CABLE SHALL BE CONTAINED WITHIN AN APPROVED SPLICE CASE DESIGNED FOR THE LOCATION AND PURPOSE. THE SUBMITTAL FOR THE ENCLOSURE SHALL IDENTIFY WEATHER THE ENCLOSURE IS RE-ENTERABLE. AS PART OF THE SUBMITTAL A LISTING OF ANY AND ALL ADDITIONAL PARTS ARE REQUIRED TO RESTORE THE INTEGRITY OF THE ENCLOSURE SHOULD THE SPLICE CASE BE REQUIRED TO BE ENTERED OPERATIONALLY.
22. OPTICAL FIBER CABLE SHALL BE PLACED WITH A MINIMUM OF THREE (3) METER MAINTENANCE LOOP AT EACH END OF THE RUN, AT EACH SIDE OF A SEISMIC JOINT, IN EACH MAINTENANCE HOLE (MH), VAULT, ETC. THE MAINTENANCE LOOP SHALL BE SECURED IN SUCH A MANNER TO PROVIDE MECHANICAL PROTECTION OF THE CABLE. AS PART OF THE SUBMITTAL PHASE THE CONTRACTOR IS TO PROVIDE SINGLE-LINE SHOP DRAWINGS OF THE LOCATIONS OF ALL MAINTENANCE LOOPS AND TO INCLUDE ANY RECOMMENDED LOOPS TO BE ADDED IN PULL BOXES FOR EACH INDIVIDUAL PATHWAY RUNS.
23. ALL OPTICAL FIBER CABLE SHALL BE TESTED USING AN INDUSTRY STANDARDS APPROVED TESTING PLATFORM. THIS TEST MUST BE PERFORMED BI-DIRECTIONALLY ON ALL STRANDS AND ALL RECORDS ARE TO BE OPENED AND VIEWED IN A STANDARD PLATFORM THAT DOES NOT CAUSE LBCC TO PURCHASE OR LICENSE FOR SUCH VIEWING. LBCC AT ITS DESCRETION MAY REQUIRE TO SEE THE TESTER'S CALIBRATION RECORD AND WILL NOTIFY THE CONTRACTOR OF THIS REQUEST PRIOR TO OR POST TESTING OPERATION.
24. OPTICAL FIBER CABLE SPLICING SHALL UTILIZE FUSION SPLICING TECHNIQUES AND REQUIRE A SHOP DRAWING DURING THE SUBMITTAL PHASE OF THE PROJECT PRIOR TO ANY ROUGH-IN. ANY AND ALL CABLE SPLICING REQUIRES A WRITTEN APPROVAL BY THE LBCC BEFORE ANY MATERIAL PURCHASING OR ROUGH-IN.
25. CONTRACTOR TO COORDINATE WAO AND SUPPORTING CONDUIT WITH THE ELECTRICAL CONTRACTOR WHERE THE ELECTRICAL CONTRACTOR IS A DIFFERENT ORGANIZATION THAN LOW-VOLTAGE CABLING/ CONDUIT CONTRACTOR FOR PROPER PLACEMENT.
26. ALL STATION CABLES SHALL BE NEATLY DRESSED AND SECURED EVERY FIVE FEET (5') MAXIMUM.
27. ALL STATION CABLES SHALL BE TERMINATED ON THE SAME FLOOR AS THE FLOOR SERVING BDF/IDF UNLESS OTHERWISE NOTED IN THESE DRAWINGS.
28. ALL STATION CABLING IS TO BE MECHANICALLY PROTECTED IN PLACE UNLESS OTHERWISE IDENTIFIED IN THESE DRAWINGS, BY A CONTRACT CHANGE RECORD, OR BY A RFI RESPONSE FROM THE LBCC REPRESENTATIVE IN WRITING DIRECTING SURFACE-MOUNT EXPOSED AS THE CABLE INSTALLATION MEANS.
29. ALL NEW AND REUSED STATION CABLES SHALL BE TESTED AND DOCUMENTED USING RECOGNIZED INDUSTRY STANDARDS AND BEST PRACTICES. UTP (CATEGORY) CABLE TESTING RESULTS SHALL BE ONE TEST RECORD FOR EACH CABLE AND THE RECORD MUST INCLUDE THE LBCC'S APPROVED CABLE IDENTIFICATION STANDARD NAMING/NUMBERING SCHEME. OPTICAL FIBER TESTING SHALL FOLLOW ALL LBCC AND INDUSTRY BEST PRACTICES. COAX TESTING SHALL FOLLOW BOTH LBCC AND SCTE CABLE TESTING PRACTICES.
30. THE LBCC REQUIRES A ONE (1) METER SLACK LOOP FOR ALL WAO SUPPORTED BY OPEN CEILING CABLE DISTRIBUTION. THE SLACK LOOP MUST BE SUPPORTED ABOVE THE WAO IN NEAT AND REPEATABLE FASHION THAT MEETS BOTH INDUSTRY AND MAUFACTURER PRACTICES.
31. ALL STATION OUTLETS, WAO, AND TERMINATION POINTS INCLUDING EXISTING WAO UTILIZED UNDER THIS PROJECT SCOPE SHALL BE PROPERLY LABELED AND IDENTIFIED USING THE STANDARD LBCC INTERNAL DISTRIBUTION NAMING/NUMBERING SCHEME, IDENTIFIED IN THIS DRAWING SET. ALL LABELS ARE TO BE MACHINE GENERATED AND AN EXCEL TYPE MATRIX CREATED DEFINING LOCATION OF BOTH ENDS OF EACH LABELED CABLE. AS-BUILT CLOSEOUT PACKAGE MUST INCLUDE THESE STATION AND TERMINATION POINTS IDENTIFIED ON FLOOR PLANS FOR EACH LEVEL/FLOOR IN ADDITION TO THE STATION CABLING MATRIX. THE SAME CABLE IDENTIFICATION IS ALSO REQUIRED TO BE INCLUDED ON EACH CABLE TESTED RECORD BOTH HARD AND SOFT-COPY RECORD.
32. STANDARD (NEW) WORKSTATION OUTLET (AKA WORK AREA OUTLETS OR WAO) SHALL CONSIST OF A DOUBLE-GANG 5S x 2-7/8" DEEP METAL BOX, FED WITH A MINIMUM 1-1/4" CONDUIT. BACK BOX TO BE FITTED WITH SINGLE-GANG FINISH RING FOR 4-PORT FACEPLATE.
33. STANDARD WAO FACEPLATE SHALL CONSIST OF A SINGLE-GANG PLATE, 4-POSITION, WHITE IN COLOR, AND UNIVERSAL MULTI-PURPOSE PORTS TO SUPPORT THE FOLLOWING TERMINATIONS; UTP, SCTP, COAX, OPTICAL FIBER, USB, VARIOUS A/V CONNECTORS, ETC. ALL UNUSED PORTS SHALL BE FITTED WITH BLANK INSERTS.
34. STANDARD WORKSTATIONS CONSISTS OF A MINIMUM OF TWO (2) CATEGORY 6A, CMP, CABLES.
35. VOICE - ONE (1) CABLE BEING "BLUE" FOR VOICE USE, AND TERMINATED ON A "BLUE" CATEGORY 6A COMMSCOPE - STYLE IDC RJ45 INSERT. DATA - ONE (1) CABLES ARE TO BE "BLUE" FOR THE DATA USE TERMINATED ON A "WHITE" CATEGORY 6A COMMSCOPE - STYLE PATCH PANEL MODULE.
36. INCLUDED AS PART OF THE CABLING AS-BUILT DOCUMENTATION PACKAGE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE TO LBCC THE STRUCTURED CABLING SOLUTION MANUFACTURER'S 25-YEAR WARRANTY CERTIFICATE FOR THE PROJECT.
37. THE WAO UTP 8-CONDUCTOR JACKS ARE DESCRIBED WITHIN THIS DOCUMENT SET AS RJ-45 JACKS/INSERTS. THE DESIGNERS ARE AWARE THAT ABBREVIATION RJ-45 IS A FCC-REGISTERED JACK WITH 8-CONDUCTORS AND DESCRIPTION IN THIS DOCUMENT SET IS FOR A UTP CATEGORY CABLE RATED JACK/INSERT AND NOT FOR FCC INTERFACE JACKS.
38. ALL NEW CABLING SHALL CONFORM TO UNIPRISE/COMMSCOPE SCS INCLUDING BEING INSTALLED BY A CERTIFIED COMMSCOPE UTP INSTALLER AND SIGNED OFF BY A MANUFACTURER REPRESENTATIVE.
39. NOT ALL SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET ARE USED IN THE DRAWING SET CURRENTLY, BUT ARE THERE, SHOULD THE SCOPE GROW TO INCLUDE SUCH WORK.
40. THE CONTRACTOR SHALL PROVIDE WIRE GUARDS FOR ALL EXPOSED AUDIO, VISUAL, AND NETWORK DEVICES LOCATED IN AREAS THAT CAN BE SUBJECT TO VANDALISM SUCH AS GYMS, RESTROOMS, LOCKERS AND SHOWER ROOMS, MULTI-PURPOSE/DINING, CLASSROOMS/LABS, ASSEMBLY ROOMS AND ALL HALLWAYS AND CORRIDORS ASSOCIATED WITH THESE SPACES.
41. ALL CONDUITS CROSSING BUILDING SEISMIC SEPERATIONS OR EXPANSIONS JOINTS SHALL BE PROVIDED WITH APPROVED CONNECTORS. REFER TO ARCHITECTURAL PLANS FOR ALL EXPANSION JOINT LOCATIONS.
42. PABX WILL BE FURNISHED AND INSTALLED BY LBCC. PABX PHONES WILL BE FURNISHED BY LBCC BUT CONTRACTOR WILL BE RESPONSIBLE FOR ALL WIRING AND INSTALLATION OF THE PHONES.
43. COORDINATE INSTALLATION OF LIGHTING FIXTURES WITH CABLE TRAY AND EQUIPMENT IN BDF, IDF AND ALL A/V ROOMS/SPACES TO MAINTAIN REQUIRED LIGHTING LEVELS WITH ALL EQUIPMENT IN PLACE.
44. LBCC STANDARDS AND INDUSTRY BEST PRACTICES FOR PROJECT SUBMITALS AND SHOP DRAWINGS ARE IDENTIFIED IN SPECIFICATIONS SECTIONS LISTED IN DIVISION 27 OF THE PROJECT CONTRACT SPECIFICATION DOCUMENTATION SET.
45. CONTRACTOR SHALL UPGRADE TESTER FOR CAT-6A TESTING TO THE LATEST FIRMWARE THAT SUPPORT ANSI/TIA 568D-2.

SHEET INDEX

SHEET	DESCRIPTION
T001	GENERAL NOTES, LEGEND, ABBREVIATIONS AND SHEET INDEX
T002	GENERAL NOTES, LEGEND, ABBREVIATIONS AND SHEET INDEX
T101	OVERALL SITE PLAN
T101D	SITE DEMOLITION PLAN
T102	ENLARGED SITE PLAN - NORTH END
T103	ENLARGED SITE PLAN - SOUTH END
W-T201.1	BLDG 'W1', SOUTH END - PARTIAL FIRST FLOOR TELECOM PLAN
W-T201.2	BLDG 'W1', NORTH END - PARTIAL FIRST FLOOR TELECOM PLAN
W-T202.1	BLDG 'W1', SOUTH END - PARTIAL SECOND FLOOR TELECOM PLAN
W-T202.2	BLDG 'W1', NORTH END - PARTIAL SECOND FLOOR TELECOM PLAN
W-T203	BLDG 'W2', PARTIAL FIRST FLOOR TELECOM PLAN
Y-T201	BLDG 'Y', FIRST FLOOR TELECOM PLAN
T301	BLDG 'W1', ENLARGED FLOOR PLANS - ROOM W124
T302	BLDG 'W2', ENLARGED FLOOR PLANS - ROOM W151
T303	BLDG 'W1', ENLARGED FLOOR PLANS - ROOM W205
T304	BLDG 'Y', ENLARGED FLOOR PLANS - ROOM Y105
T401	SCHEDULES
T501	SINGLE LINE RISER DIAGRAM
T502	SINGLE LINE RISER DIAGRAM
T503	SINGLE LINE RISER DIAGRAM
T601	DETAILS
T602	DETAILS
T603	DETAILS
T604	DETAILS
T605	DETAILS
T606	DETAILS
T607	DETAILS
T608	DETAILS

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LARS HENDERSON
No. E22361
Lars Henderson

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2	12/03/19	Addendum 02

JOB NO: 16042.01
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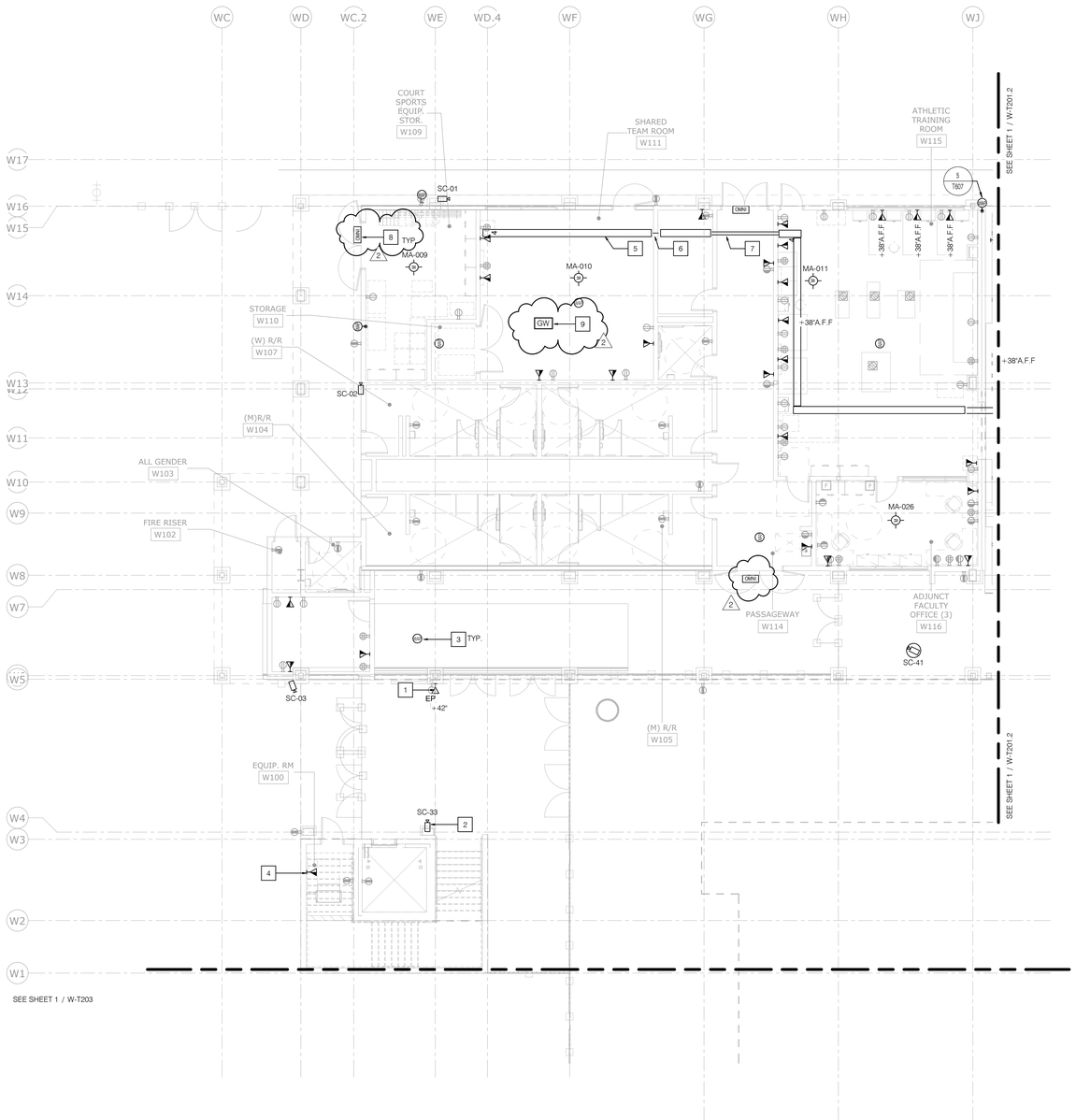
DRAWN: CN
CHECK: JK
ARCHITECT: PDW
ENGINEER:

SHEET DESCRIPTION:
GENERAL NOTES, LEGEND, ABBREVIATIONS AND SHEET INDEX

SHEET NO:
T001



GENERAL NOTES

1. WORK AREA OUTLET(WAO) SHALL CONSIST OF 1-1/4" EMT CONDUIT WITH A SS*2-7/8" DEEP BACK-BOX WITH A SINGLE GANG MUD-RING.
2. CONDUIT SHALL EXTEND 6" ABOVE FINISHED LAY-IN CEILING.
3. FOR HARD-LID ENVIRONMENT ALL WAO CONDUIT SHALL EXTEND TO NEAREST ACCESS CABLE TRAY OR HOME-RUN TO IDF.
4. ALL WAO SHALL HAVE 1M OF SLACK LOOP COILED AT THE CONDUIT ABOVE THE BACK-BOX.
5. WAO AT COUNTER SHALL BE ABOVE THE FINISHED COUNTER(38" A.F.F FOR KLAC PROGRAM)OR SHALL REQUIRE CONTRACTOR TO PROVIDE CORD PASS-THRU WITH FINISHED GROMMET.
6. ALL HORIZONTAL CABLING AND INNER-DUCT SHALL MEET OR EXCEED CMP RATING.
7. CMP CABLING FOR CAMERA OR WAP SHALL NOT BE PERMITTED TO EXPOSED TO DIRECT SUNLIGHT UNLESS PRIOR APPROVAL IN WRITING AND APPROVED BY GENERAL CONTRACTOR.
8. ALL OSP CONDUITS SHALL START WITH BELL END LEAVING THE MAINTANCE SPACE.
9. ALL OSP CONDUITS SHALL TRANSITION TO RGD FOR LAST STICK PLUS SWEEP UP.
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17. CABLING SHALL BE INSTALLED BY A CONTRACTOR WITH CURRENT COMMSCOPE CERTIFICATION TO ADD THIS PROJECT TO THE CURRENT 25 YEAR EXTENDED WARRANTY.
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NOTES

1. FURNISH AND INSTALL BLUE LIGHT PHONE WALL MOUNTED AT ADA HEIGHT. BLUELIGHT BACKBOX WILL NEED TO BE INSET IN WALL.
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3. FURNISH AND INSTALL OBERON WIFI ENCLOSURE FOR OFCI WAP. TERMINATE (2) CAT6A CABLES WITH FIELD TERMINATED JACKS AND TESTED WITH MPTL ADAPTER.
4. PROVIDE AND INSTALL WAO FOR ELEVATOR PHONE. CONTRACTOR SHALL COORDINATE CABLE TERMINTATION WITH ELEVATOR CONTROLS CONTRACTOR.
5. FURNISH AND INSTALL 12" X 4" CABLE TRAY.
6. FURNISH AND INSTALL 4" SLEEVES.
7. FURNISH AND INSTALL 2" X 4" CONDUITS.
8. CONTRACTOR SHALL PROVIDE AND INSTALL OMNI LOCK. CONTRACTOR SHALL COORDINATE SELECTION OF SPECIFIC OMNILOCK MODEL REQUIRED WITH DIVISION 8 CONTRACTOR. PROVIDE AND INSTALL INFRASTRUCTURE AS SHOWN IN DETAIL 1/T608 FOR SINGLE DOOR AND 2/T608 FOR DOUBLE DOOR.
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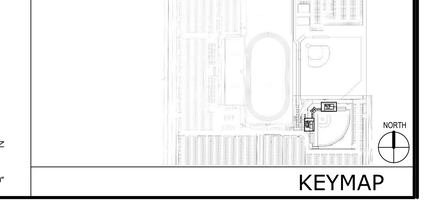

KEYMAP

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JOB NO:	16042.01
DATE:	09/18/19
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ENGINEER:	

SHEET DESCRIPTION:
BLDG 'W1', SOUTH END - PARTIAL FIRST FLOOR TELECOM PLAN

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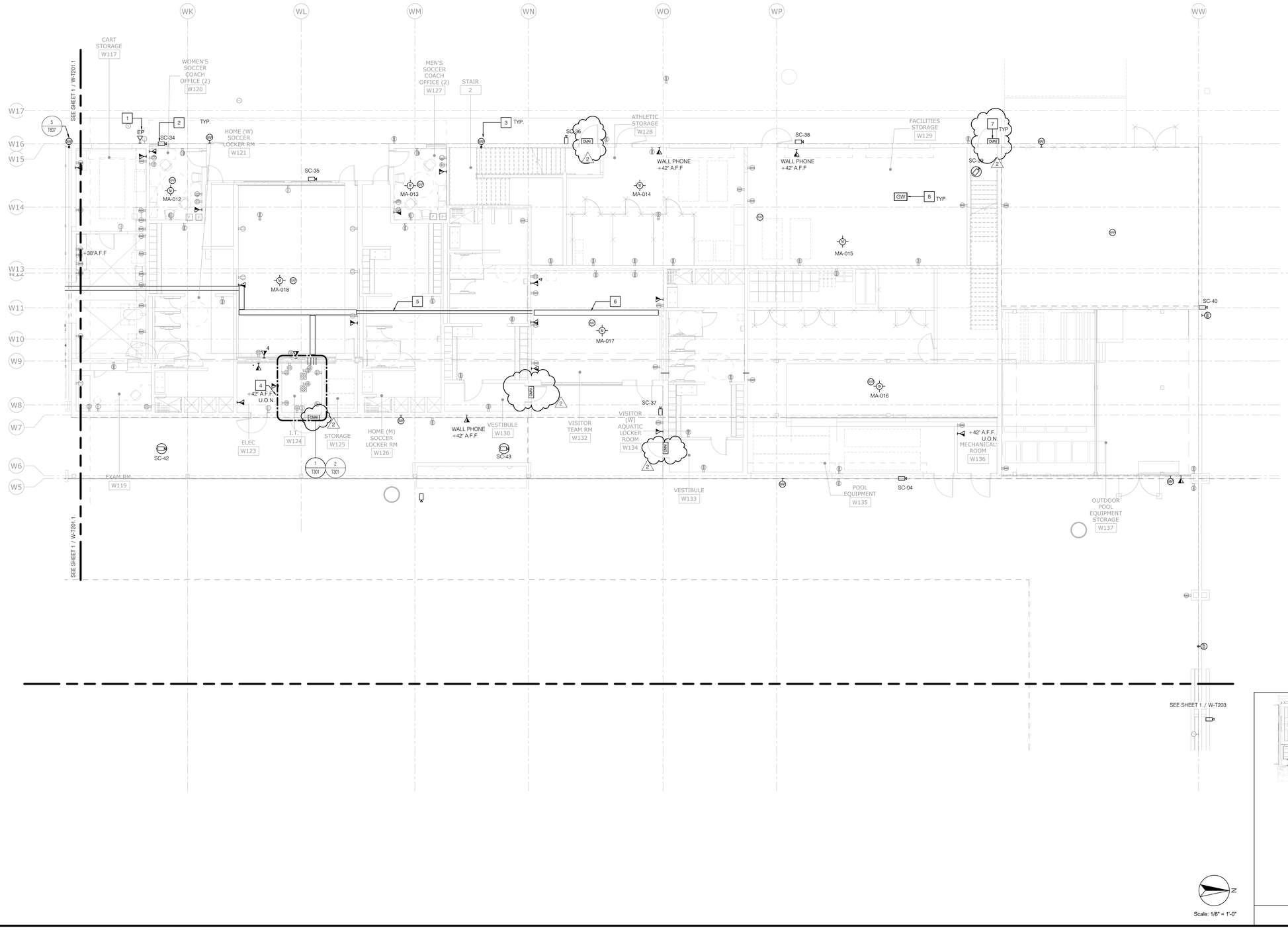

GENERAL NOTES

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2. CONDUIT SHALL EXTEND 6" ABOVE FINISHED LAY-IN CEILING.
3. FOR HARD-LID ENVIRONMENT ALL WAO CONDUIT SHALL EXTEND TO NEAREST ACCESS CABLE TRAY OR HOME-RUN TO IDF.
4. ALL WAO SHALL HAVE 1M OF SLACK LOOP COILED AT THE CONDUIT ABOVE THE BACK-BOX.
5. WAO AT COUNTER SHALL BE ABOVE THE FINISHED COUNTER(38" A.F.F FOR KLAC PROGRAM)OR SHALL REQUIRE CONTRACTOR TO PROVIDE CORD PASS-THRU WITH FINISHED GROMMET.
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JOB NO: 16042.01
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DRAWN: CN
CHECK: JK
ARCHITECT: PDW
ENGINEER:

SHEET DESCRIPTION:
BLDG 'W1', NORTH END - PARTIAL FIRST FLOOR TELECOM PLAN

SHEET NO:
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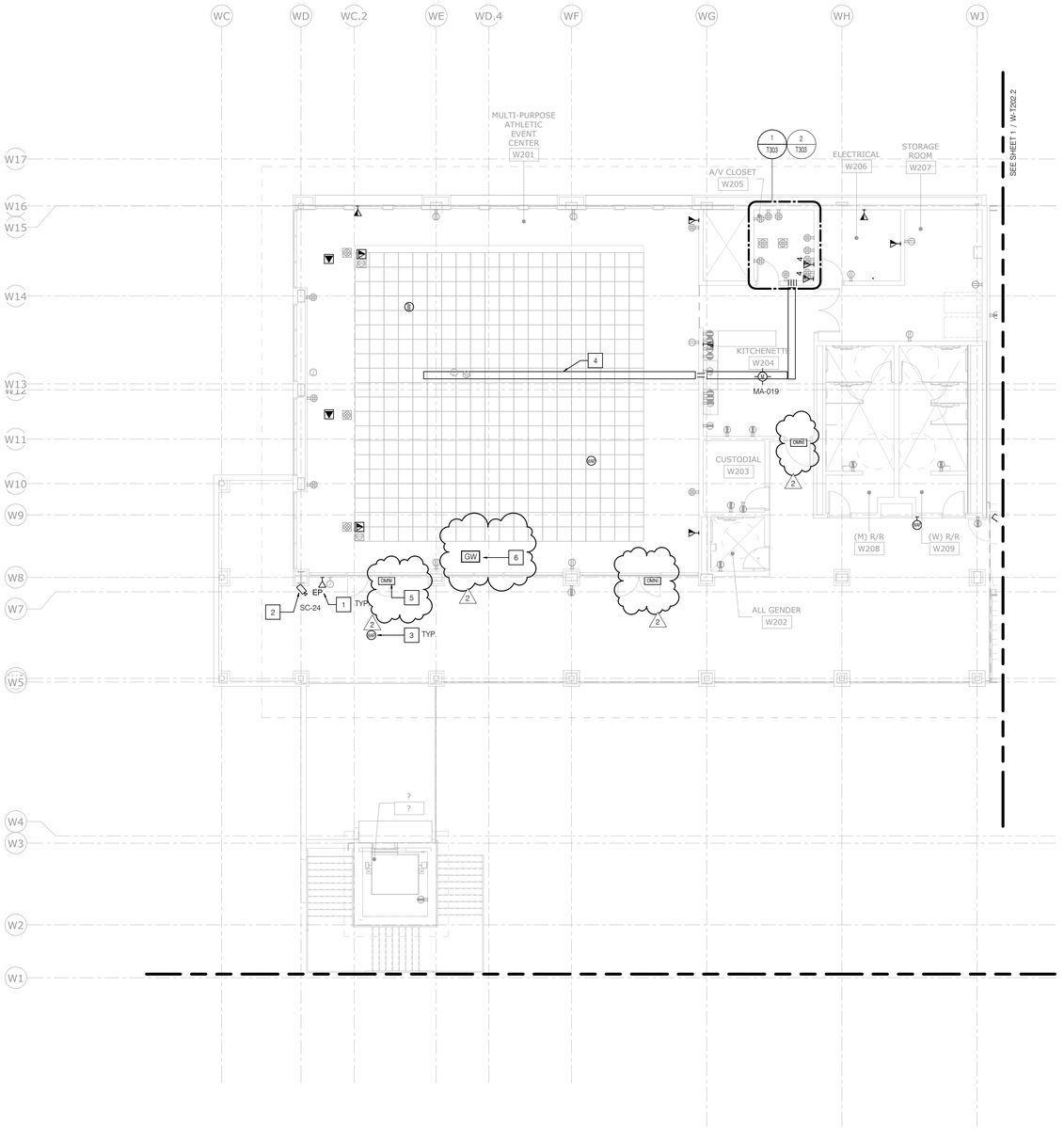

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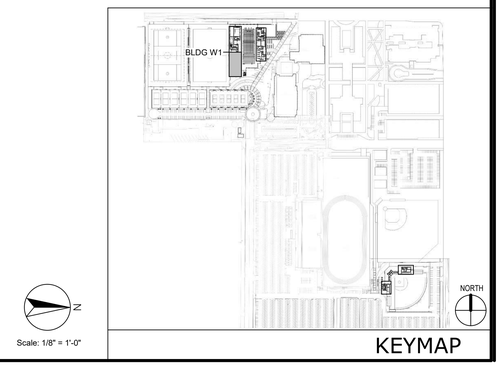

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SHEET DESCRIPTION:
BLDG 'W1', SOUTH END - PARTIAL SECOND FLOOR TELECOM PLAN

SHEET NO:
W-T202.1

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4. LOCATION OF OWNER PROVIDED CONTRACTOR INSTALLED SCOREBOARD CONTROLLER (SYS-6 HOST).
5. PROVIDE (12) STRAND MM(OM4) (6) STRAND SM(OS2) TO IDF TERMINATE IN WALL OPTICAL FIBER CONTROL.
6. FURNISH AND INSTALL 12" X 4" CABLE TRAY
7. PROVIDE AND INSTALL (2) 4" CONDUITS.
8. CONTRACTOR SHALL PROVIDE AND INSTALL OMNI LOCK. CONTRACTOR SHALL COORDINATE SELECTION OF SPECIFIC OMNILOCK MODEL REQUIRED WITH DIVISION 8 CONTRACTOR. PROVIDE AND INSTALL INFRASTRUCTURE AS SHOWN IN DETAIL 1/T608 FOR SINGLE DOOR AND 2/T608 FOR DOUBLE DOOR.
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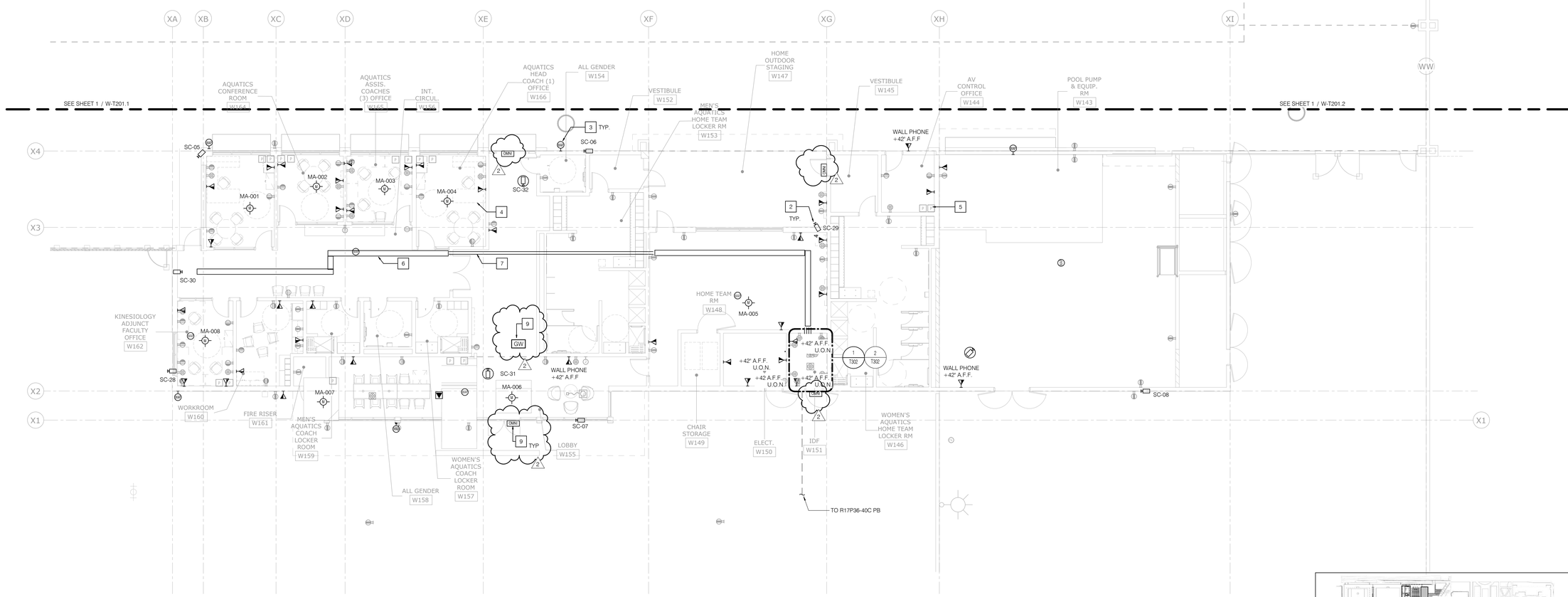

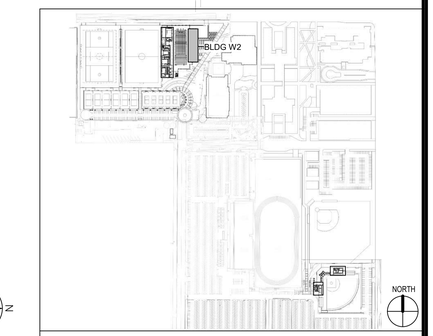

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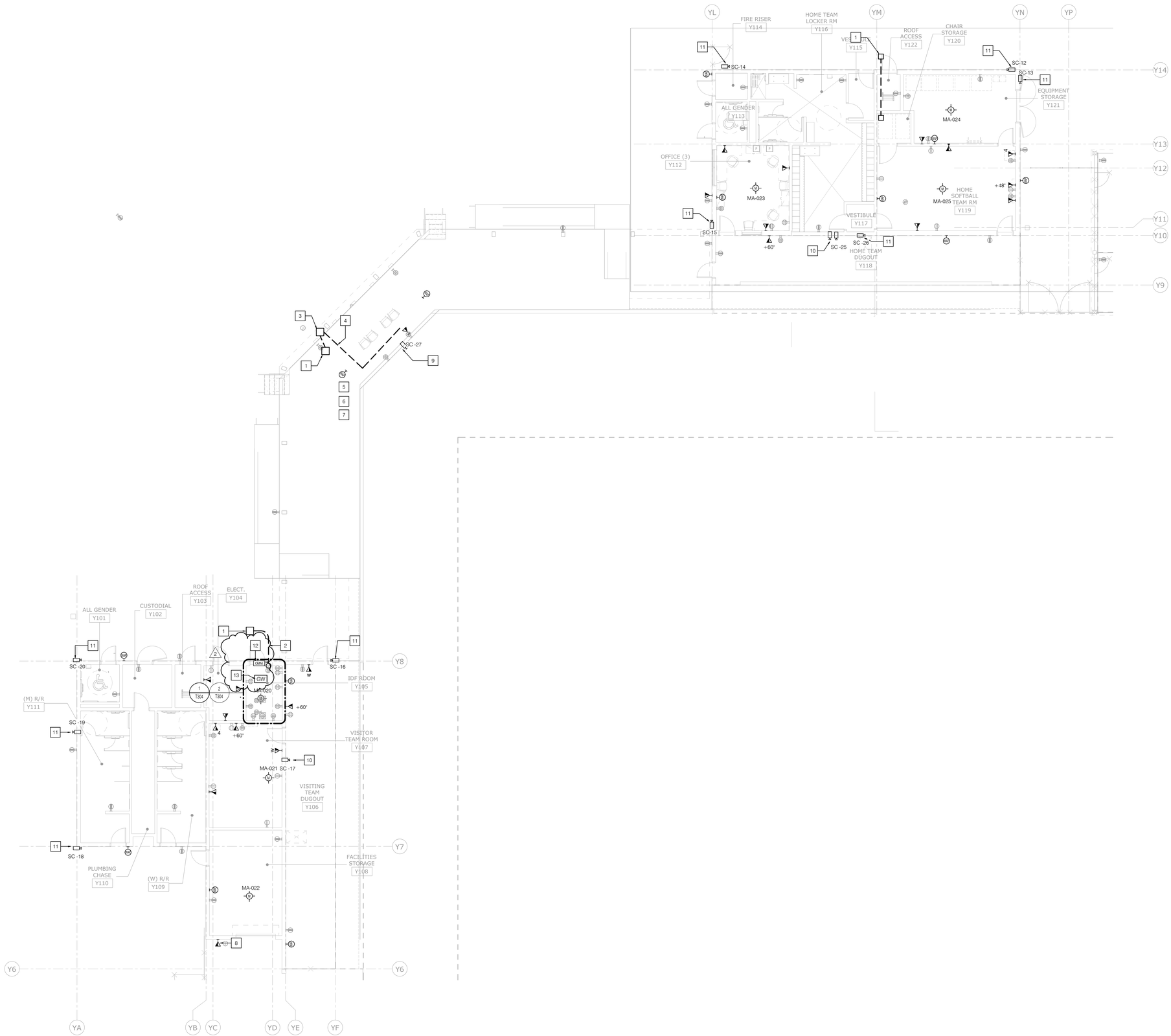
BLDG 'W2', PARTIAL FIRST FLOOR TELECOM PLAN

SHEET NO:
W-T203



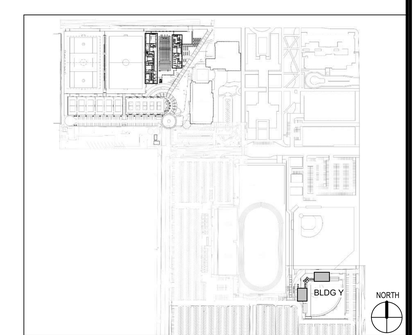
NOTES

1. FURNISH AND INSTALL (1) PULL-BOX Y-#01 2336 FPB. FOLLOW ALL MANUFACTURER'S REQUIREMENTS.
2. FURNISH AND INSTALL (4) 4" AND (2) 2" FROM PULL-BOX Y#01 TO IDF ROOM Y105 PROVIDE RE-ENTERABLE DUCT PLUGS IN ALL CONDUITS ENTERING Y#01 ALONG WITH INDIVIDUAL COTTON MEASURING CORD (MULE-TAPE).
3. PROVIDE PEDISTAL FOR LOW-VOLTAGE CABLE DISTRIBUTION.
4. PROVIDE (2) 2" CONDUITS
5. FURNISH AND INSTALL (2) 2" CONDUITS WITH RGD SWEEPS INTO WALL MOUNTED PB-Y#05 - 18"X18"X10" NEMA 3 PULL-BOX WITH HINGED LID AND CLASP.
6. FURNISH AND INSTALL (2) 2" SLEEVES FROM PB-Y#05 INTO STRUCTURE AND INTO ACCESSIBLE CEILING.
7. FURNISH AND INSTALL (1) 2" SLEEVE FROM PB-Y#05 UP TO ROOF AND TERMINATED IN OUTDOOR RATED PB-Y#05 CONNECTING VIA CPCI CONDUIT TO WEATHER RATED BACKBOX WITH RE-ENTERABLE COVER.
8. WALL MOUNTED IRRIGATION CONTROLS.
9. PROVIDE (1) 1-1/4" CONDUIT PENETRATION TO ROOF FOR CAT6A CONNECTION TO BROADCAST CAMERA.
10. PROVIDE OUTSIDE BACKBOX FOR WALL MOUNTED BROADCAST CAMERA LOCATION.
11. CCTV OUTSIDE BACKBOX FOR WALL MOUNTED SECURITY CAMERA LOCATION.
12. CONTRACTOR SHALL PROVIDE AND INSTALL OMNI LOCK. CONTRACTOR SHALL COORDINATE SELECTION OF SPECIFIC OMNILOCK MODEL REQUIRED WITH DIVISION 8 CONTRACTOR. PROVIDE AND INSTALL INFRASTRUCTURE AS SHOWN IN DETAIL 1/T608 FOR SINGLE DOOR AND 2/T608 FOR DOUBLE DOOR.
13. CONTRACTOR SHALL PROVIDE AND INSTALL GATEWAY PER SPECIFICATIONS. LOCATION OF GATEWAY SHOWN ON DRAWINGS IS DIAGRAMATIC IN NATURE, AND CONTRACTOR SHALL PROVIDE, LOCATE, AND INSTALL A SUFFICIENT NUMBER OF GATEWAYS TO ALLOW FOR FULL SYSTEM OPERATIONS. GATEWAYS SHALL BE CABLED WITH CATEGORY 6A CABLING TO NEAREST IDF.

2

N

Scale: 1/8" = 1'-0"



KEYMAP

STATE:

ARCHITECT:

architecture
westbergwhite
14471 CHAMBERS RD, SUITE 210
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CONSULTANT:

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Long Beach | Los Angeles
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PROJECT NAME:

LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
4901 EAST CARSON STREET
LONG BEACH, CA 90806

CLIENT:

LONG BEACH CITY COLLEGE
4901 EAST CARSON STREET
LONG BEACH, CA 90806

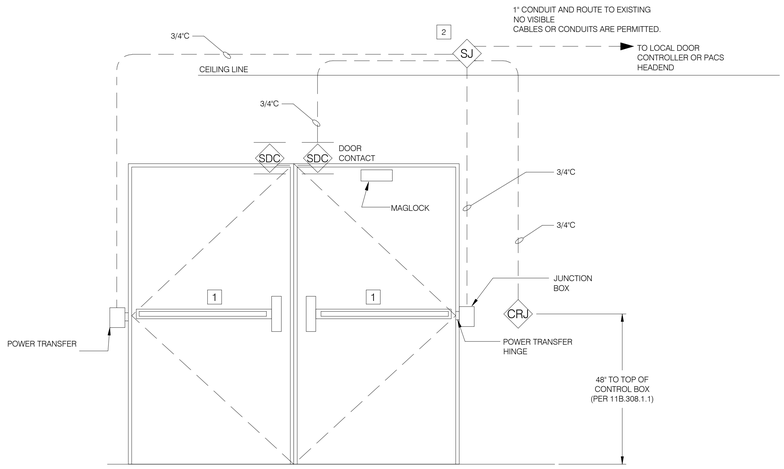
No.	Rev. Date	Description
2	12/03/19	Addendum 02

JOB NO: 16042.01
DATE: 09/18/19
DRAWN: CN
CHECK: JK
ARCHITECT: PDW
ENGINEER:

SHEET DESCRIPTION:
BLDG 'Y', FIRST FLOOR TELECOM PLAN

SHEET NO:

Y-T201



LEGEND

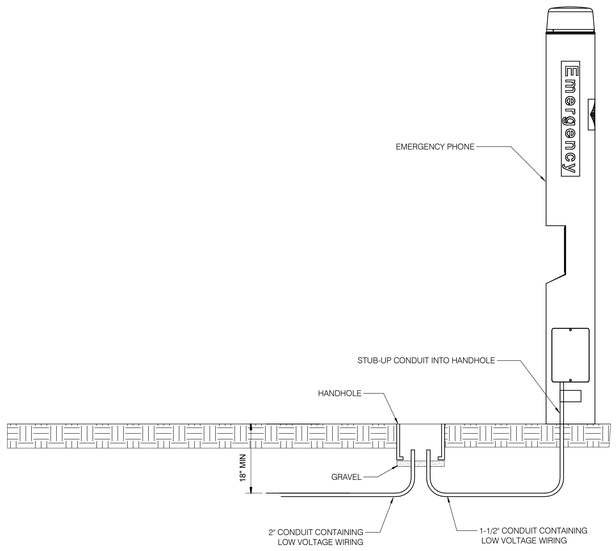
SYMBOL	DESCRIPTION
SDC	SECURITY DOOR CONTACT.
SJ	SECURITY JUNCTION BOX 4-11/16" SQ.
CRJ	CARD READER JUNCTION BOX 4"SQ. WITH SINGLE GANG MUD RING AND STAINLESS STEEL COVER.

NOTES

1. PANIC/EXIT DEVICE WITH INTEGRAL REQUEST TO EXIT FUNCTIONALITY
2. CONTRACTOR SHALL PROVIDE AND INSTALL A CATEGORY 6A CABLE FROM NEAREST IDF TO THIS BOX WITH A 3 METER SLACK LOOP.

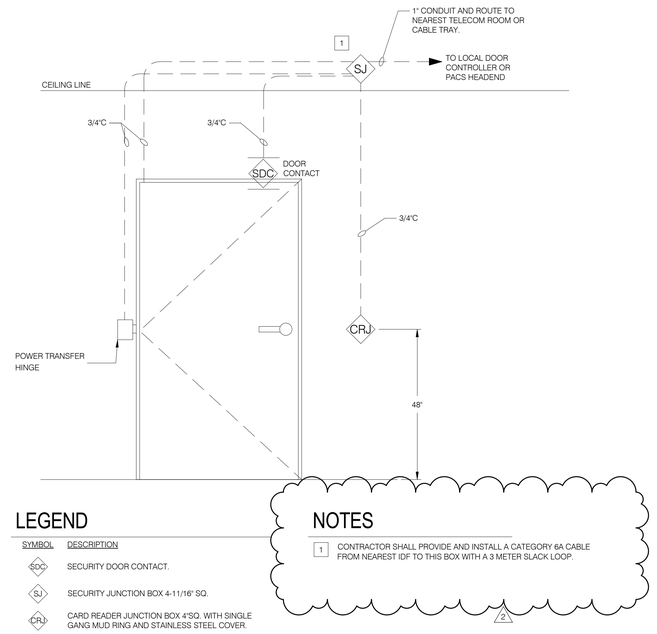
2 ELECTRIFIED LOCKSET W/ POWER TRANSFER HINGE - DOUBLE DOOR

NO SCALE



3 EMERGENCY PHONE CONDUIT PATH

SCALE: NONE



LEGEND

SYMBOL	DESCRIPTION
SDC	SECURITY DOOR CONTACT.
SJ	SECURITY JUNCTION BOX 4-11/16" SQ.
CRJ	CARD READER JUNCTION BOX 4"SQ. WITH SINGLE GANG MUD RING AND STAINLESS STEEL COVER.

NOTES

1. CONTRACTOR SHALL PROVIDE AND INSTALL A CATEGORY 6A CABLE FROM NEAREST IDF TO THIS BOX WITH A 3 METER SLACK LOOP.

1 ELECTRIFIED LOCKSET W/ POWER TRANSFER HINGE - SINGLE DOOR

NO SCALE

STATE:

ARCHITECT:

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LONG BEACH, CA 90806

No.	Rev. Date	Description
2	12/03/19	Addendum 02

JOB NO: 16042.01
DATE: 09/18/19
DRAWN: Author
CHECK: Checker
ARCHITECT: PDW
ENGINEER:

SHEET DESCRIPTION:
DETAILS

SHEET NO:

T608

AUDIOVISUAL LEGEND

SYMBOL	DESCRIPTION
-	NOTE CALLOUT
- -	DETAIL CALLOUT - NUMBER ON TOP DENOTES DETAIL NUMBER - NUMBER ON BOTTOM DENOTES SHEET DETAIL IS SHOWN
1	BUILDING NUMBER
	CONCEALED CONDUIT
	EXPOSED CONDUIT
	UNDERGROUND CONDUIT
	FUTURE CONDUIT
	CABLE TO BE REMOVED
	EXISTING CABLE TO BE ABANDONED OR RETURNED
	CONDUIT TURNED UP
	CONDUIT TURNED DOWN
	CONDUIT WITH CAP
1G	PROVIDE A SINGLE GANG BACKBOX WITH (1) 1-1/4" CONDUIT SPACE. MOUNT AT 18" AFF U.O.N. ON DRAWINGS.
2G	PROVIDE A DOUBLE GANG BACKBOX WITH (2) 1-1/4" CONDUITS SPACE. MOUNT AT 18" AFF U.O.N. ON DRAWINGS.
3G	PROVIDE A THREE GANG BACKBOX WITH (3) 1-1/4" CONDUITS SPACE. MOUNT AT 18" AFF U.O.N. ON DRAWINGS.
AV	PROVIDE A CEILING MOUNTED TWO GANG BACKBOX.
AV	PROVIDE A FLOOR MOUNTED JUNCTION BOX. PROVIDE 1-1/4" CONDUIT TO NEAREST WALL AND STUB TO ACCESSIBLE CEILING SPACE.
COLL	PROVIDE A CONDUIT COLLECTOR BOX SIZED AT 6" x 6" x 3". REFER TO CONDUIT QUANTITY AND SIZE ON DRAWINGS. CONDUIT STUBBED TO ACCESSIBLE CEILING SPACE.
S	SCREEN RAISE LOWER SWITCH. PROVIDE A SINGLE GANG GACKBOX WITH (1) 1" CONDUIT TO LOW VOLTAGE CONTROL. MOUNT AT 48" AFF U.O.N. ON DRAWINGS.
Y G U	CONSOLIDATED POWER, DATA, AND AV WALL BOX. CHIEF PAC 525. PROVIDE (2) 1-1/4" CONDUITS STUBBED UP TO ACCESSIBLE CEILING SPACE FOR AV U.O.N. HOMERUN FOR POWER AND IT REQUIRED. CONSOLIDATED POWER, DATA, AND AV FLOORBOX OR POKE THRU. FOR FLOORBOX, PROVIDE EVOLUTION EFBIS WITH (2) 1-1/4" CONDUITS STUBBED UP TO ACCESSIBLE CEILING SPACE FOR AV U.O.N. FOR POKE THRU, PROVIDE EVOLUTION 8AT WITH (2) 1-1/4" CONDUITS STUBBED TO ACCESSIBLE CEILING FOR AV. CONDUIT SHALL BE HOMERUN FOR POWER AND IT REQUIRED.
V AV C	
CP	WALL MOUNTED AV CONTROL PANEL. REFER TO AUDIOVISUAL BOX AND CONDUIT SCHEDULES FOR INFRASTRUCTURE REQUIREMENTS.
CP	TABLE MOUNTED AV CONTROL PANEL
VC	WALL MOUNTED VOLUME CONTROL
CAM	WALL MOUNTED VIDEO CONFERENCING CAMERA
CAM	CEILING MOUNTED VIDEO CONFERENCING CAMERA
M	CEILING MOUNTED MICROPHONE
M	TABLE MICROPHONE
S	WALL MOUNTED SPEAKER
S	CEILING MOUNTED SPEAKER
ANT	AV ANTENNA, WIRELESS MIC. OR ALS
SW	AV SPEAKER, SUB-WOOFER
TP	TOUCH PANEL, WALL MOUNTED
	FLAT PANEL DISPLAY (SIZE AS NOTED ON DRAWINGS)
	PROJECTION SCREEN (SIZE AS NOTED ON DRAWINGS)
	PROJECTOR
WAP	WIRELESS ACCESS POINT OUTLET - CEILING MOUNTED. PROVIDE AND INSTALL (2) CAT 6A CABLES / JACKS TERMINATED IN A SURFACE MOUNT BOX ABOVE FINISHED CEILING. (NOTE: AT HARDLID CEILING LOCATIONS PROVIDE AND INSTALL 4S JBOX WITH 1-1/4" CONDUIT STUBBED TO ACCESSIBLE CEILING LOCATION. PROVIDE BUSHINGS AND PULLSTRING, U.O.N. TERMINATE CABLES ON JACKS IN 2-PORT FACE PLATE.
WAP	WIRELESS ACCESS POINT OUTLET - WALL MOUNTED. PROVIDE AND INSTALL (2) CAT 6A CABLES / JACKS TERMINATED IN A 2-PORT FACEPLATE AT NOTED HEIGHT AFF. PROVIDE AND INSTALL 4S JBOX WITH 1-1/4" CONDUIT STUBBED TO ACCESSIBLE CEILING LOCATION. BUSH AND PROVIDE PULLSTRING, U.O.N.

NOTE:
SEE LBCC STANDARD OUTLET INFORMATION AND DEVICE OUTLET SIZES ON SHEET T002 FOR ADDITIONAL INSTALLATION INFORMATION.

2

AUDIOVISUAL DIAGRAM ABBREVIATIONS

ABBREVIATION	DESCRIPTION
2-GANG / DP	2-GANG DEEP ELECTRICAL BOX
ADAx-x	AUDIO DISTRIBUTION AMPLIFIER
ACMBx-x	AUDIO COMBINER/SPLITER MODULE
AFMRXx-x	AM/FM OFF AIR BROADCAST RECEIVER
AMPx-x	AUDIO AMPLIFIER
ANTx-x	ANTENNA
ANTDAx-x	ANTENNA DISTRIBUTION AMP/SPLITTER
AVBx-x	AUDIO VIDEO TO USB BRIDGE
BDx-x	BLU-RAY UNIVERSAL DISK PLAYER
BPTXx-x	BELT PACK MICROPHONE TRANSMITTER
CAMx-x	CAMERA
CATVx-x	CATV RECEIVER
CBLKx-x	CONTROL BUS TERMINAL BLOCK
CDx-x	CD PLAYER
CNTLx-x	CONTROL PROCESSOR
CODECx-x	VIDEO CONFERENCING CODEC
CPx-x	CONTROL PANEL, GENERIC
DISPx-x	DISPLAY
DLIFTx-x	DISPLAY LIFT, IN FURNATURE
DMSWTx-x	CRESTRON DIGITAL MEDIA SWITCHER
DMRXx-x	CRESTRON DIGITAL MEDIA RECEIVER
DMRXx-x	CRESTRON DIGITAL MEDIA RECEIVER
DSPx-x	DIGITAL SIGNAL PROCESSOR, AUDIO
DTPSWTx-x	EXTRON DTP SWITCHER
DTPRXx-x	EXTRON DTP RECEIVER
DTPTXx-x	EXTRON DTP TRANSMITTER
DSPx-x	DIGITAL SIGNAL PROCESSOR, AUDIO
DTPSWTx-x	EXTRON DTP SWITCHER
FBPx-x	FLOOR BOX PANEL
GNMICx-x	GOOSE NECK MICROPHONE
HDMIDAx-x	HDMI DISTRIBUTION AMPLIFIER
HHMTXx-x	HAND HELD MICROPHONE TRANSMITTER
IPODx-x	IPOD/IPHONE/MP3 PLAYER
KBDMx-x	KEYBOARD & MOUSE
KVMx-x	KEYBOARD, VIDEO AND MOUSE SWITCHER
LVCx-x	LOW VOLTAGE MOTOR CONTROLLER
MACx-x	APPLE MAC COMPUTER
MIXx-x	AUDIO MIXING CONSOLE
NETSWTx-x	NETWORK SWITCH
PCx-x	PC COMPUTER
PROJx-x	PROJECTOR
PROCx-x	VIDEO PROCESSOR, GENERIC
PRTSx-x	PARTITION SENSOR
RACKx-x	EQUIPMENT RACK
RCDRx-x	RECORDER, AUDIO/VIDEO
SCNx-x	PROJECTION SCREEN
SWTx-x	AUDIO/VIDEO SWITCH, GENERIC
TPx-x	TOUCH PANEL
UPSx-x	AV UN-INTERUPTIBLE POWER SUPPLY
VCx-x	VOLUME CONTROL, ATTENUATOR
WAPAVx-x	AV WIRELESS ACCESS POINT
WMRXx-x	WIRELESS MICROPHONE SYSTEM RECEIVER
XFRMx-x	TRANSFORMER, AUDIO
XTPSWTx-x	EXTRON XTP SWITCHER
XTPRXx-x	EXTRON XTP RECEIVER
XTPTXx-x	EXTRON XTP TRANSMITTER

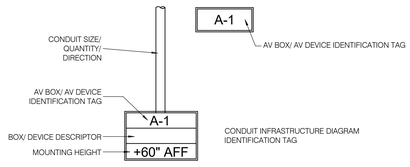
- NUMBER ON LEFT DENOTES EQUIPMENT TYPE.
- NUMBER ON RIGHT DENOTES EQUIPMENT QUANTITY

REFERENCE WILL BE MADE TO ANSI Y1.1, MILITARY STANDARD IN THE EVENT ABBREVIATIONS NOT MENTIONED HEREIN ARE USED, ABBREVIATIONS, AND OTHER STANDARD INDUSTRY CONVENTIONS.

SCOPE OF WORK

- INSTALL EMPTY CONDUIT RACEWAY SYSTEM BETWEEN FIRST FLOOR IDF AND SECOND FLOOR ROOMS AS INDICATED.
- RESTORE ARCHITECTURAL FINISHES (FLOOR, WALL, CEILING) BEING DISTURBED BY THE WORK TO ORIGINAL CONDITION.
- PROVIDE THROUGH PENETRATION FIRE-STOPPING AT ALL RATED FLOOR/WALL BARRIER.
- ALL SLEEVES (BOTH ENDS) & CONDUITS THAT END INTO AN IDF OR AT A CABLE TRAY SHALL BE FIRE-STOPPED WITH AN APPROVED ASSEMBLE CONSISTING OF AN APPROPRIATE AMOUNT OF MINERAL WOOL (SAFING INSULATION) & RE-ENTERABLE INTUMESCENT FIRESTOP PUTTY INSTALLED AS PER ALL MANUFACTURERS INSTRUCTIONS AND APPROVED FOR USE BY THE CONSTRUCTION MANAGER.

AV INFRASTRUCTURE IDENTIFIER KEY



GENERAL ABBREVIATIONS

ABBREVIATION	DESCRIPTION
A OR AMP	AMPERES
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISTICTION
ALS	ASSISTIVE LISTENING SYSTEM
ARCH.	ARCHITECT; ARCHITECTURAL
AVC	AUDIOVISUAL CONTRACTOR
AWG	AMERICAN WIRE GAUGE
BTU	BRITISH THERMAL UNITS
C	CONDUIT
CKT	CIRCUIT
CLG.	CEILING
C.O.	CONDUIT ONLY WITH PULL WIRE
CSC	CAPTURED SCREW CONNECTOR
DWG	DRAWING
EA	EACH
E.C.	ELECTRICAL CONTRACTOR
ELEC.	ELECTRIC
EMT	ELECTRICAL METALLIC TUBING
ENT	ELECTRICAL NONMETALLIC TUBING
EQUIP	EQUIPMENT
EXIST / (E)	EXISTING
FB	FLOOR BOX
FIN.	FINISH
FIXT	FIXTURE
FLR	FLOOR
FOC	FIBER OPTIC CABLE
FT.	FEET, MEASUREMENT
G.C.	GENERAL CONTRACTOR
GND	GROUND
H., W., D., L.	HEIGHT, WIDTH, DEPTH, LENGTH
IC	INTERCOM
IDF	INTERMEDIATE DISTRIBUTION FRAME
IN.	INCHES, MEASUREMENT
ISOGND	ISOLATED GROUND
JB	JUNCTION BOX
LTG.	LIGHTING
MDF	MAIN DISTRIBUTION FRAME
MH	MOUNTING HEIGHT
MM	MULTIMODE
MTG.	MOUNTING
N	NORTH
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELEC. MANUFACTURERS' ASSOC.
NIC	NOT IN CONTRACT
N.C.	NORMALLY CLOSED, CONTACT
N.O.	NORMALLY OPEN, CONTACT
NO. OR #	NUMBER
N.T.S	NOT TO SCALE
O.F.C.I.	OWNER FURNISHED CONTRACTOR INSTALLED
O.F.O.I.	OWNER FURNISHED OWNER INSTALLED
OFE	OWNER FURNISHED EQUIPMENT
PH	PHASE
PNL	PANEL
PWR	POWER
P.O.C.	POINT OF CONNECTION
POE	POWER OVER ETHERNET
REC/RECEPT	RECEPTACLE
REQ'D	REQUIRED
RM	ROOM
SF	SQUARE FEET
SHT	SHEET
SM	SINGLE MODE
SPECS	SPECIFICATIONS
SW	SWITCH
TECHGND	TECHNICAL GROUND
TB	TERMINAL BLOCK
TYP	TYPICAL
TERM	TERMINATION
UG	UNDERGROUND
U.O.N.	UNLESS OTHERWISE NOTED
V	VOLTS
V-A	VOLT-AMPERES
W	WATTS
W/	WITH
W/O	WITHOUT

REFERENCE WILL BE MADE TO ANSI Y1.1, MILITARY STANDARD IN THE EVENT ABBREVIATIONS NOT MENTIONED HEREIN ARE USED, ABBREVIATIONS, AND OTHER STANDARD INDUSTRY CONVENTIONS.

GENERAL NOTES

1. ALL AUDIOVISUAL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE INFOCOMM AND TIA INFRASTRUCTURE STANDARDS AND ALL OTHER APPLICABLE FEDERAL, STATE AND LOCAL CODES. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS, THE DOCUMENTS SHALL GOVERN BUT THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE OR REGULATION.
2. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON THE PLANS AND/OR SPECIFICATIONS OR WITH CODE REQUIREMENTS, THE NOTE SPECIFICATION OR CODE WHICH PRESCRIBES AND ESTABLISHES THE MORE COMPLETE JOB OR THE HIGHER STANDARD SHALL PREVAIL.
3. OMISSIONS FROM THE DRAWINGS OR SPECIFICATIONS OR THE MIS-DESCRIPTION OF DETAILS OF WORK WHICH ARE CLEAR AND NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS AND SPECIFICATIONS, OR WHICH ARE CUSTOMARILY PERFORMED, SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMITTED OR MIS-DESCRIBED DETAILS OF THE WORK BUT THEY SHALL BE PERFORMED AS IF FULLY AND CORRECTLY SET FORTH AND DESCRIBED IN THE DRAWINGS AND SPECIFICATIONS.
4. THE CONTRACTOR SHALL CHECK ALL DRAWINGS FURNISHED IMMEDIATELY UPON THEIR RECEIPT AND SHALL PROMPTLY NOTIFY THE OWNER OF ANY DISCREPANCIES.
5. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BEAR THE UNDERWRITERS LABEL (UL) AND SHALL BE INSTALLED IN THE MANNER FOR WHICH THEY ARE DESIGNED AND APPROVED.
6. THE CONTRACTOR SHALL NOT BORE, NOTCH OR IN ANYWAY CUT INTO ANY STRUCTURAL MEMBER WITHOUT WRITTEN APPROVAL FROM THE ARCHITECT OR STRUCTURAL ENGINEER.
7. FOR PURPOSES OF CLEARNESS AND LEGIBILITY THE AUDIOVISUAL DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC. THE SIZE AND LOCATION OF EQUIPMENT IS SHOWN TO SCALE WHEREVER POSSIBLE. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS, DATA INFORMATION AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATION SECTIONS WHERE TELECOM WORK INTERFACES WITH OTHER TRADES.
8. CONTRACTOR TO SEE ELECTRIC DRAWINGS FOR STATION CABLE PATHWAYS.
9. USE "J" HOOKS FOR THE BULK OF THE AUDIOVISUAL CABLE DISTRIBUTION WHERE CONDUIT IS SUPPLIED WITHIN THE SAME ROOM. DO NOT USE CEILING TILE WIRE HANGERS, WATER OR ELECTRICAL PIPES, OR LIGHT FIXTURES TO HANG CABLE. CABLE MUST BE A MINIMUM OF SIX INCHES ABOVE THE CEILING TILE AND MUST NOT COME WITHIN TWELVE INCHES OF A LIGHT FIXTURE.
10. ALL AUDIOVISUAL CABLES SHALL BE NEATLY DRESSED AND SECURED EVERY FIVE FEET AT A MINIMUM. WITHIN AUDIOVISUAL EQUIPMENT RACKS, ALL CABLE SHALL BE DRESSED WITH VELCRO WRAPS ONLY NO PLASTIC CABLE TIES SHALL BE ALLOWED. EXCEPTIONS ONLY FOR AC & DC POWER CABLES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILING TILE INCLUDING REPLACEMENT OF BROKEN OR DAMAGED TILES.
12. ALL LOCATIONS PASSING THROUGH A FIRE OR A SMOKE BARRIER MUST BE FIRE STOPPED USING APPROVED (UL CLASSIFIED) FIRE STOP MATERIAL INSTALLED, PER THE MANUFACTURER'S INSTRUCTIONS.
13. ALL AUDIOVISUAL CABLE SHALL BE PLACED WITH A MINIMUM 1 METER MAINTENANCE LOOP ABOVE CEILING AT EACH LOCATION.
14. CONDUIT SHALL BE FILLED TO MAXIMUM 40% CAPACITY (PER STANDARD) BEFORE UTILIZING ANOTHER VACANT CONDUIT.
15. ALL AUDIOVISUAL PANELS, PLATES, AND TERMINALS INCLUDING EXISTING SHALL BE PROPERLY IDENTIFIED USING THE STANDARD OWNER INTERNAL DISTRIBUTION NUMBERING SCHEME. ALL LABELS BE PREPRINTED OR TYPED.
16. EACH OSP CABLE SHALL BE EQUIPPED WITH A PERMANENT LABEL INDICATING CABLE TYPE, PAIR OR OPTIC COUNTS, DISTANT END AND CABLE LENGTH. BOTH ENDS SHALL OF EACH CABLE SHALL BE SO LABELED.
17. FIBER CABLE SHALL BE PLACED WITH SIX FOOT (6) MAINTENANCE LOOP AT BOTH ENDS OF THE RUN. THE MAINTENANCE LOOP SHALL BE SECURED IN SUCH A MANNER TO PROVIDE PROTECTION DURING SUBSEQUENT CABLE PULLS.
18. ANY DEVIATIONS FROM PLANS OR SPECIFICATIONS MUST BE APPROVED IN WRITING BY THE ENGINEER AND DISTRICT REPRESENTATIVE.
19. ALL NEW DIGITAL MEDIA, XTP/DTP, HDBASE-T CABLES & SHIELDED CONNECTORS SHALL BE TESTED AND DOCUMENTED USING A PAIR SCANNER SPECIFICALLY DESIGNED TO TEST THE TYPE OF CABLE INSTALLED (CATEGORY 6A SHIELDED). TEST RESULTS SHALL BE ONE PAGE PER AND NOTED WITH THE CABLE/JACK NUMBERING SCHEME THAT IS STANDARDIZED FOR THE OWNER.
20. ALL WORK MUST BE COMPLETED IN A NEAT AND PROFESSIONAL MANNER. THE WORK SITE SHALL BE KEPT CLEAN AND ALL DAMAGE TO DISTRICT PROPERTY REPAIRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING A FINAL CLEANUP OF THE WORK SITE PRIOR TO FINAL SYSTEM ACCEPTANCE.
21. ALL AUDIO AND SPEAKER CABLE SHALL BE TESTED END-TO-END AND THE RESULTS (LOSS IN DB) NOTED ON A SEPARATE TYPED SHEET.
22. LADDER RACK SHALL BE PLACED IN MDF AS SHOWN ON DRAWINGS AND AS REQUIRED TO PROPERLY SECURE CABLES AND WIRE.
23. ALL FOOTAGES ON DRAWINGS ARE ESTIMATED AND MUST BE VERIFIED BY CONTRACTOR PRIOR TO ORDERING MATERIAL.
24. ALL CABLE TRAYS, LADDER RACKS, CONDUIT, EQUIPMENT RACKS, PROTECTOR PANELS, AND CABLE SHEATHS SHALL BE BONDED & GROUNDED TO EQUIPMENT GROUND WITH #6 WIRE.
25. CABLE SPLICING WILL NOT BE ALLOWED.
26. PULL ROPES SHALL BE PLACED IN ALL VACANT CONDUITS.
27. ALL CHANGES TO STRUCTURES (BUILDING, DRILLING, CORING, ETC.) NOT SHOWN ON THE DRAWINGS SHALL BE APPROVED IN WRITING BY STRUCTURAL ENGINEER.
28. ALL AUDIOVISUAL CABLE SHALL BE PLACED INTO CEILING AND WALL SPACES UNLESS SPECIFICALLY NOTED IN THE CONTRACT DOCUMENTS. NO CABLES SHALL BE PLACED EXPOSED BUT MUST BE INSTALLED WITHIN CONDUIT, WALL AND CEILING SPACES, OR SURFACE MOUNTED RACEWAY.
29. PULL BOXES MUST BE USED ON ANY INTRA-BUILDING CONDUIT RUN MORE THAN 100 FEET IN LENGTH OR WITH MORE THAN 180 DEGREES OF BEND. PULL BOXES SHALL BE A MINIMUM OF TWELVE (12) TIMES THE DIAMETER OF THE LARGEST CONDUIT. ALL COMMUNICATIONS CONDUIT SHALL ENTER AND LEAVE PULL BOXES IN THE SAME DIRECTION - NO RIGHT ANGLE BENDS WILL BE ALLOWED WITHIN PULL BOXES.
30. THE ARCHITECTURAL, FURNITURE AND FINISH CONFIGURATIONS ILLUSTRATED ON THE AUDIOVISUAL DRAWINGS ARE FOR REFERENCE ONLY. REFER TO THE ARCHITECTURAL DRAWINGS FOR SPECIFICATIONS AND REQUIREMENTS.

AV COMPONENT ANCHORAGE NOTE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CBC, SECTIONS 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7-10 CHAPTER 13, 26 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER.
3. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS OR HAS A CENTER OF MASS LOCATED 4 FEET OR MORE ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT THE ATTACHMENT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT:

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.

B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR THE STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

SHEET INDEX

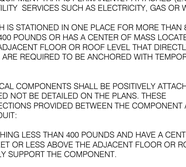
STATE:

ARCHITECT:

architecture
westbergwhite
14471 CHAMBERS RD, SUITE 210
TUSTIN, CA 92780
(714) 508-1780 508-1790 FAX

CONSULTANT:

P2S ENG
Long Beach | Los Angeles
San Diego | San Jose
p2sinc.com



PROJECT NAME:

LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
4901 EAST CARSON STREET
LONG BEACH, CA 90806

CLIENT:

LONG BEACH CITY COLLEGE
4901 EAST CARSON STREET
LONG BEACH, CA 90806

No.	Rev. Date	Description
2	12/03/19	Addendum 02

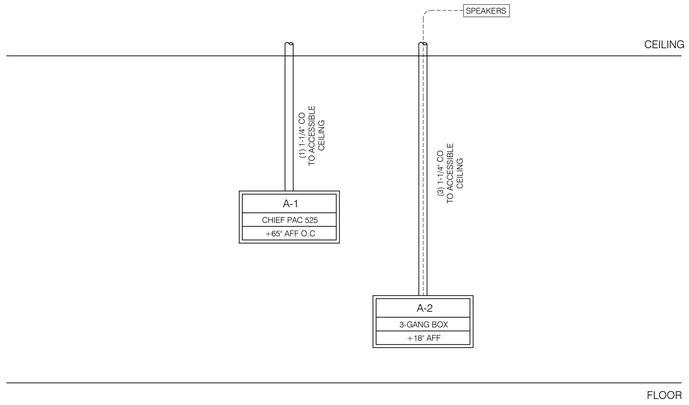
JOB NO: 16042.01
DATE: 09/18/19
DRAWN: CN
CHECK: ST
ARCHITECT: PDW
ENGINEER:

SHEET DESCRIPTION:
GENERAL NOTES, LEGEND, ABBREVIATIONS AND SHEET INDEX

SHEET NO:
TAV001

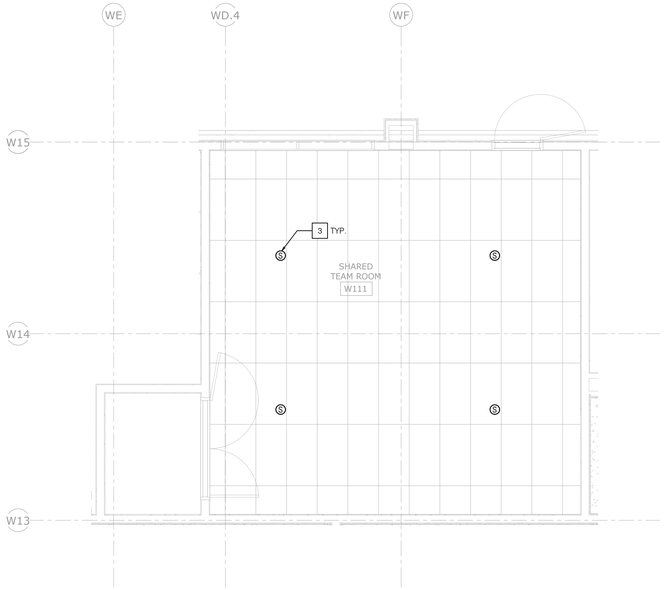
NOTES

1. 65" WALL MOUNTED LED VIDEO DISPLAY
2. AV WALL BOX
3. CEILING MOUNTED SPEAKER
4. AV EQUIPMENT RACK IN INSTRUCTOR'S STATION
5. LED DISPLAY BACK BOX, CHIEF PAC 525



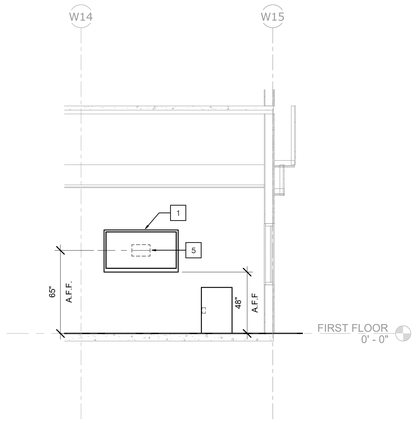
4 AV CONDUIT INFRASTRUCTURE

SCALE: NONE



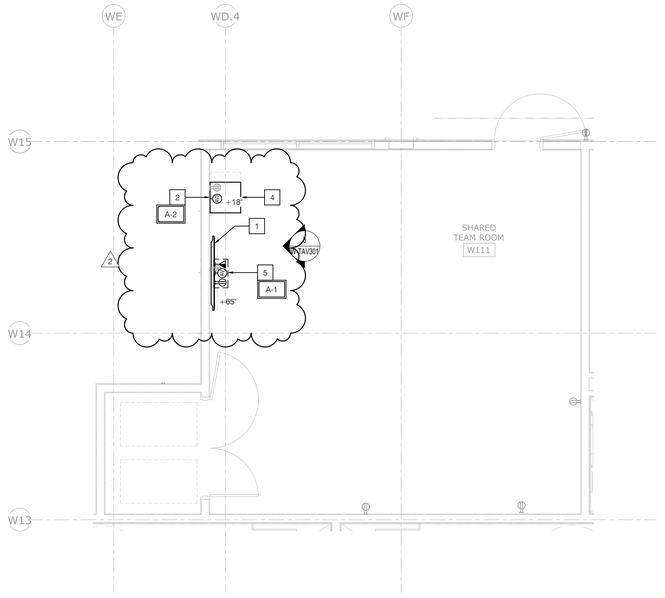
2 AUDIOVISUAL CEILING PLAN, SHARED TEAM ROOM W111

SCALE: 1/4" = 1'-0"



3 AUDIOVISUAL ELEVATION, SHARED TEAM ROOM W111

SCALE: 1/4" = 1'-0"



1 AUDIOVISUAL FLOOR PLAN, SHARED TEAM ROOM W111

SCALE: 1/4" = 1'-0"

STATE:

ARCHITECT:

architecture
westbergwhite
14471 CHAMBERS RD, SUITE 210
TUSTIN, CA 92780
(714) 508-1780 508-1790 FAX

CONSULTANT:

P2S ENG
Long Beach | Los Angeles
San Diego | San Jose
p2sinc.com

PROJECT NAME:

LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
4901 EAST CARSON STREET
LONG BEACH, CA 90806

CLIENT:

LONG BEACH CITY COLLEGE
4901 EAST CARSON STREET
LONG BEACH, CA 90806

No.	Rev. Date	Description
2	12/03/19	Addendum 02

JOB NO: 16042.01
DATE: 09/18/19
DRAWN: CN
CHECK: ST
ARCHITECT: PDW
ENGINEER:

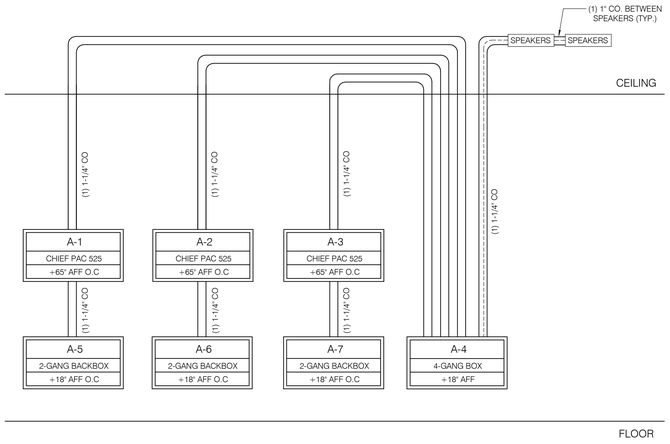
SHEET DESCRIPTION:
BLDG 'W1', SHARED TEAM ROOM W111, AV FLOOR AND RCP

SHEET NO:

W-TAV301

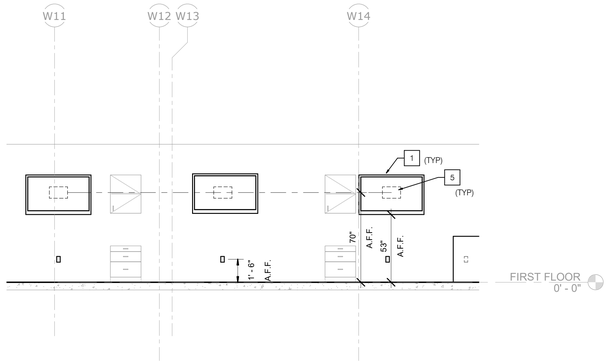
NOTES

1. 55" WALL MOUNTED LED VIDEO DISPLAY WITH SWING ARM
2. AV WALL BOX
3. PENDANT MOUNTED SPEAKER
4. AV EQUIPMENT RACK IN INSTRUCTOR'S STATION
5. LED DISPLAY BACK BOX, CHIEF PAC 525
6. MIP, MEDIA INPUT/OUTPUT PANEL WITH HDMI INPUT & OUTPUT, AUDIO INPUT & OUTPUT



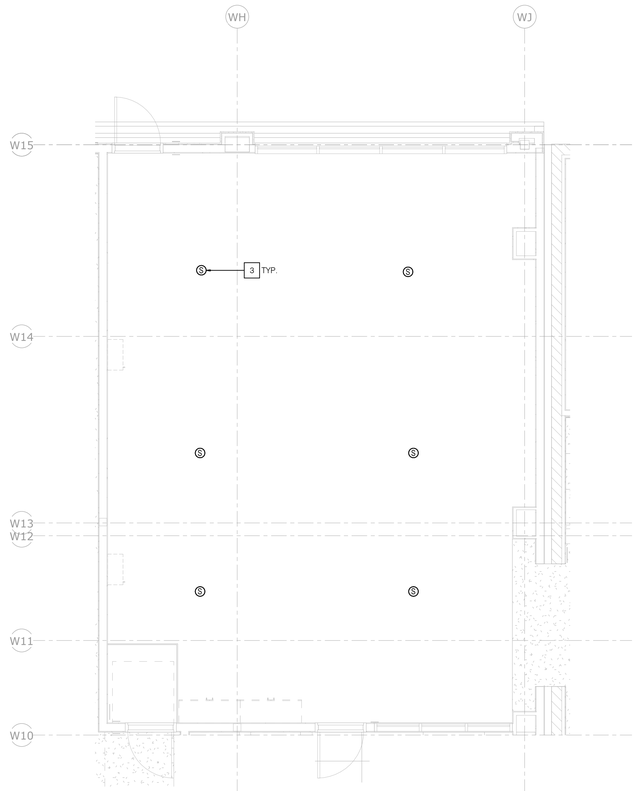
4 AV CONDUIT INFRASTRUCTURE

SCALE: NONE



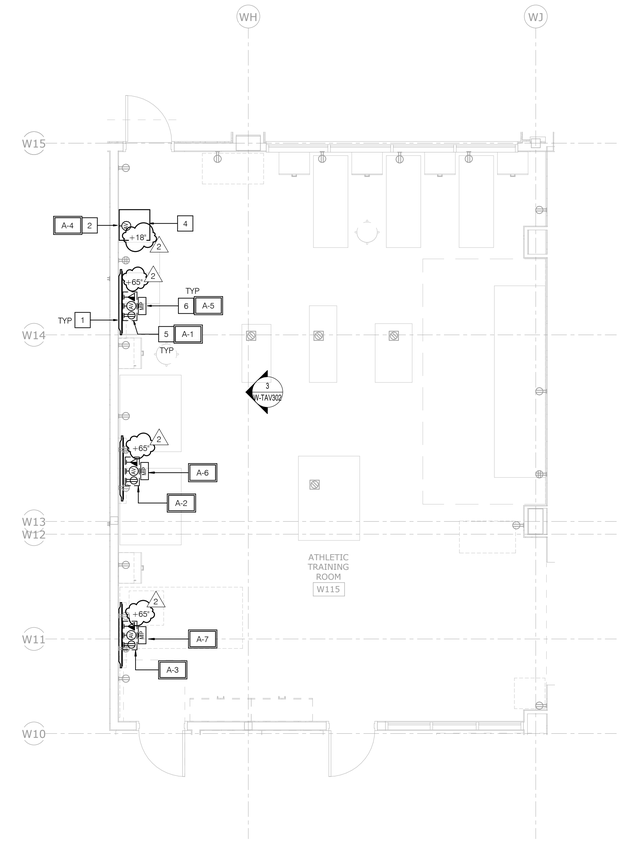
3 AUDIOVISUAL WEST ELEVATION, ATHLETIC TRAINING ROOM W115

SCALE: 1/4" = 1'-0"



2 AUDIOVISUAL CEILING PLAN, ATHLETIC TRAINING ROOM W115

SCALE: 1/4" = 1'-0"



1 AUDIOVISUAL FLOOR PLAN, ATHLETIC TRAINING ROOM W115

SCALE: 1/4" = 1'-0"

STATE:

ARCHITECT:

architecture
westbergwhite
14471 CHAMBERS RD, SUITE 210
TUSTIN, CA 92780
(714) 508-1780 508-1790 FAX

CONSULTANT:

P2S ENG
Long Beach | Los Angeles
San Diego | San Jose
p2sinc.com

PROJECT NAME:

LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
4901 EAST CARSON STREET
LONG BEACH, CA 90806

CLIENT:

LONG BEACH CITY COLLEGE
4901 EAST CARSON STREET
LONG BEACH, CA 90806

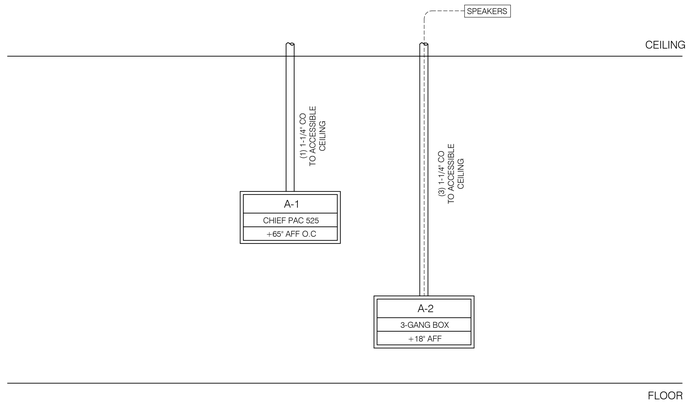
No.	Rev. Date	Description
2	12/03/19	Addendum 02

JOB NO: 16042.01
DATE: 09/18/19
DRAWN: CN
CHECK: ST
ARCHITECT: PDW
ENGINEER:

SHEET DESCRIPTION:
BLDG 'W1', ATHLETIC TRAINING ROOM W115, AV FLOOR AND RCP

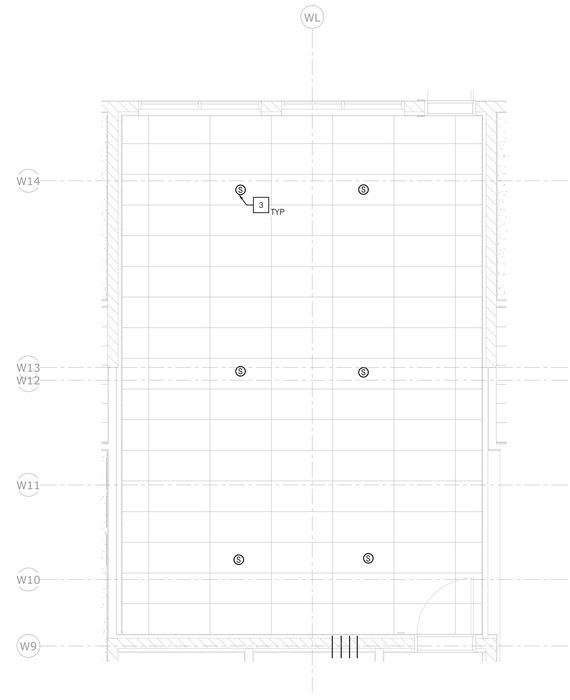
SHEET NO:

W-TAV302



4 AV CONDUIT INFRASTRUCTURE

SCALE: NONE

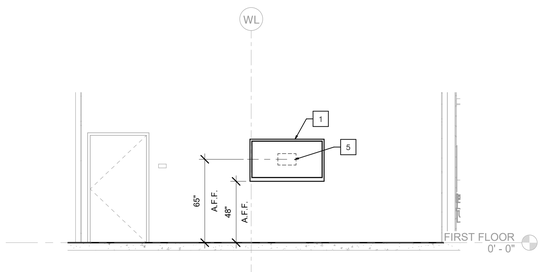


2 AUDIOVISUAL CEILING PLAN, TEAM ROOM W122

SCALE: 1/4" = 1'-0"

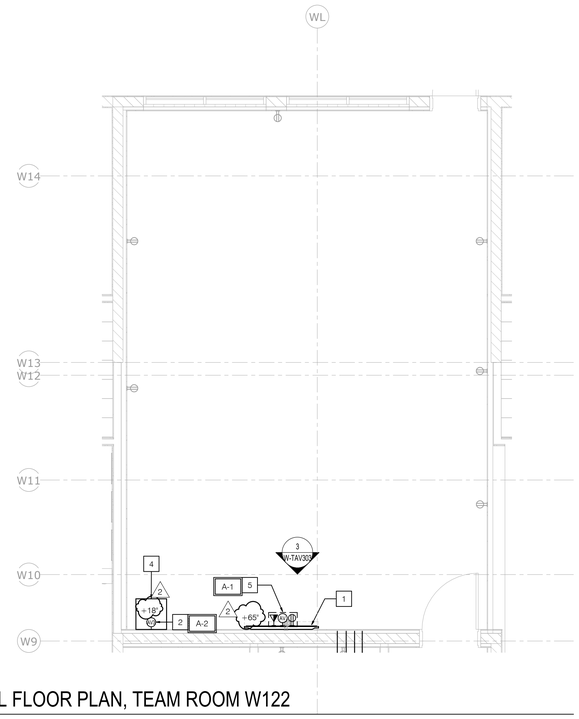
NOTES

1. 65" WALL MOUNTED LED VIDEO DISPLAY
2. AV WALL BOX
3. CEILING MOUNTED SPEAKER
4. AV EQUIPMENT RACK IN INSTRUCTOR'S STATION
5. LED DISPLAY BACK BOX, CHIEF PAC 525



3 AUDIOVISUAL ELEVATION, TEAM ROOM W122

SCALE: 1/4" = 1'-0"



1 AUDIOVISUAL FLOOR PLAN, TEAM ROOM W122

SCALE: 1/4" = 1'-0"

STATE:

ARCHITECT:

architecture
westbergwhite
14471 CHAMBERS RD, SUITE 210
TUSTIN, CA 92780
(714) 508-1780 508-1790 FAX

CONSULTANT:

P2S ENG
Long Beach | Los Angeles
San Diego | San Jose
p2sinc.com

PROJECT NAME:

LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
4901 EAST CARSON STREET
LONG BEACH, CA 90806

CLIENT:

LONG BEACH CITY COLLEGE
4901 EAST CARSON STREET
LONG BEACH, CA 90806

No.	Rev. Date	Description
2	12/03/19	Addendum 02

JOB NO: 16042.01
DATE: 09/18/19
DRAWN: CN
CHECK: ST
ARCHITECT: PDW
ENGINEER:

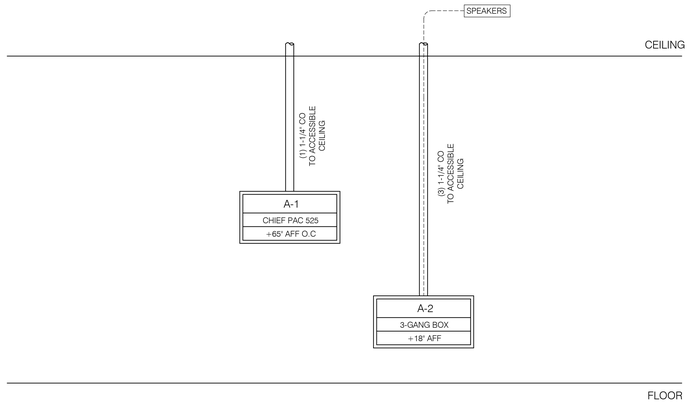
SHEET DESCRIPTION:
BLDG 'W1', TEAM ROOM W122, AV FLOOR AND RCP

SHEET NO:

W-TAV303

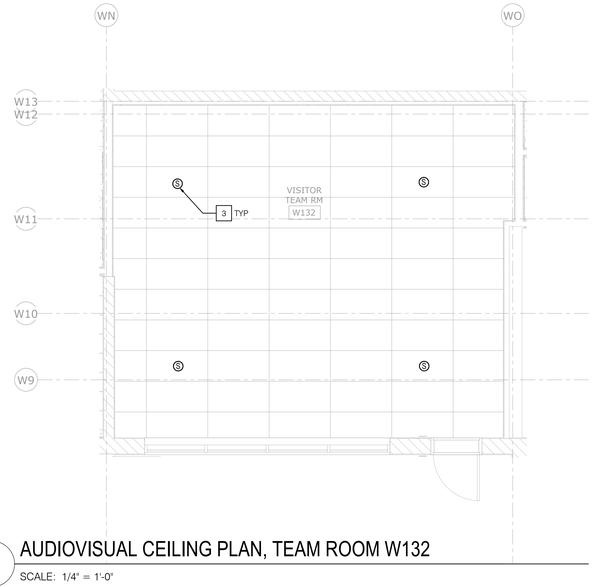
NOTES

1. 65" WALL MOUNTED LED VIDEO DISPLAY
2. AV WALL BOX
3. CEILING MOUNTED SPEAKER
4. AV EQUIPMENT RACK IN INSTRUCTOR'S STATION
5. LED DISPLAY BACK BOX, CHIEF PAC 525



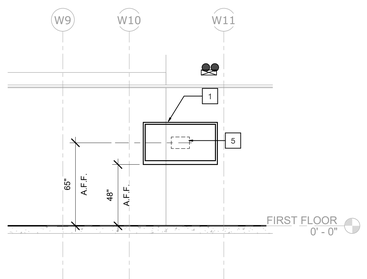
4 AV CONDUIT INFRASTRUCTURE

SCALE: NONE



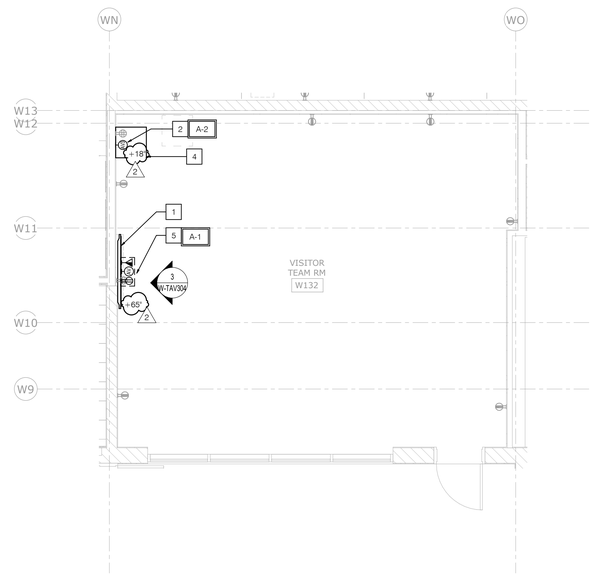
2 AUDIOVISUAL CEILING PLAN, TEAM ROOM W132

SCALE: 1/4" = 1'-0"



3 AUDIOVISUAL ELEVATION, TEAM ROOM W132

SCALE: 1/4" = 1'-0"



1 AUDIOVISUAL FLOOR PLAN, TEAM ROOM W132

SCALE: 1/4" = 1'-0"

STATE:

ARCHITECT:

architecture
westbergwhite
14471 CHAMBERS RD, SUITE 210
TUSTIN, CA 92780
(714) 508-1780 508-1790 FAX

CONSULTANT:

P2S ENG
Long Beach | Los Angeles
San Diego | San Jose
p2sinc.com

PROJECT NAME:

LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
4901 EAST CARSON STREET
LONG BEACH, CA 90806

CLIENT:

LONG BEACH CITY COLLEGE
4901 EAST CARSON STREET
LONG BEACH, CA 90806

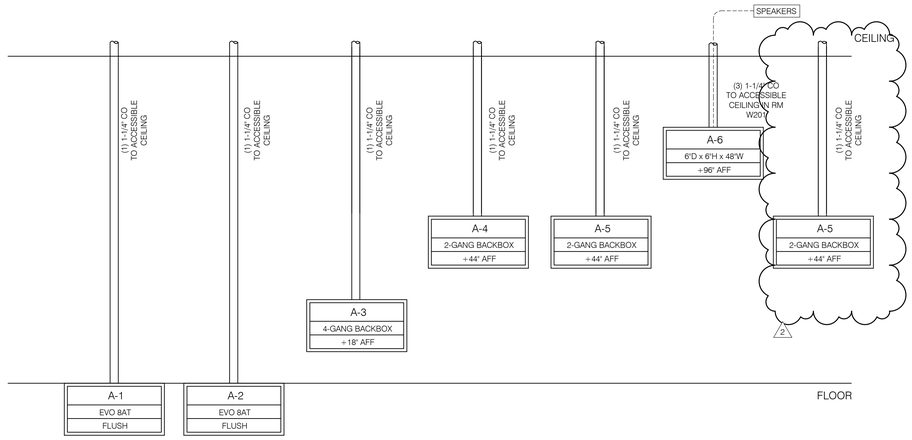
No.	Rev. Date	Description
2	12/03/19	Addendum 02

JOB NO: 16042.01
DATE: 09/18/19
DRAWN: CN
CHECK: ST
ARCHITECT: PDW
ENGINEER:

SHEET DESCRIPTION:
BLDG 'W1', TEAM ROOM W132, AV FLOOR AND RCP

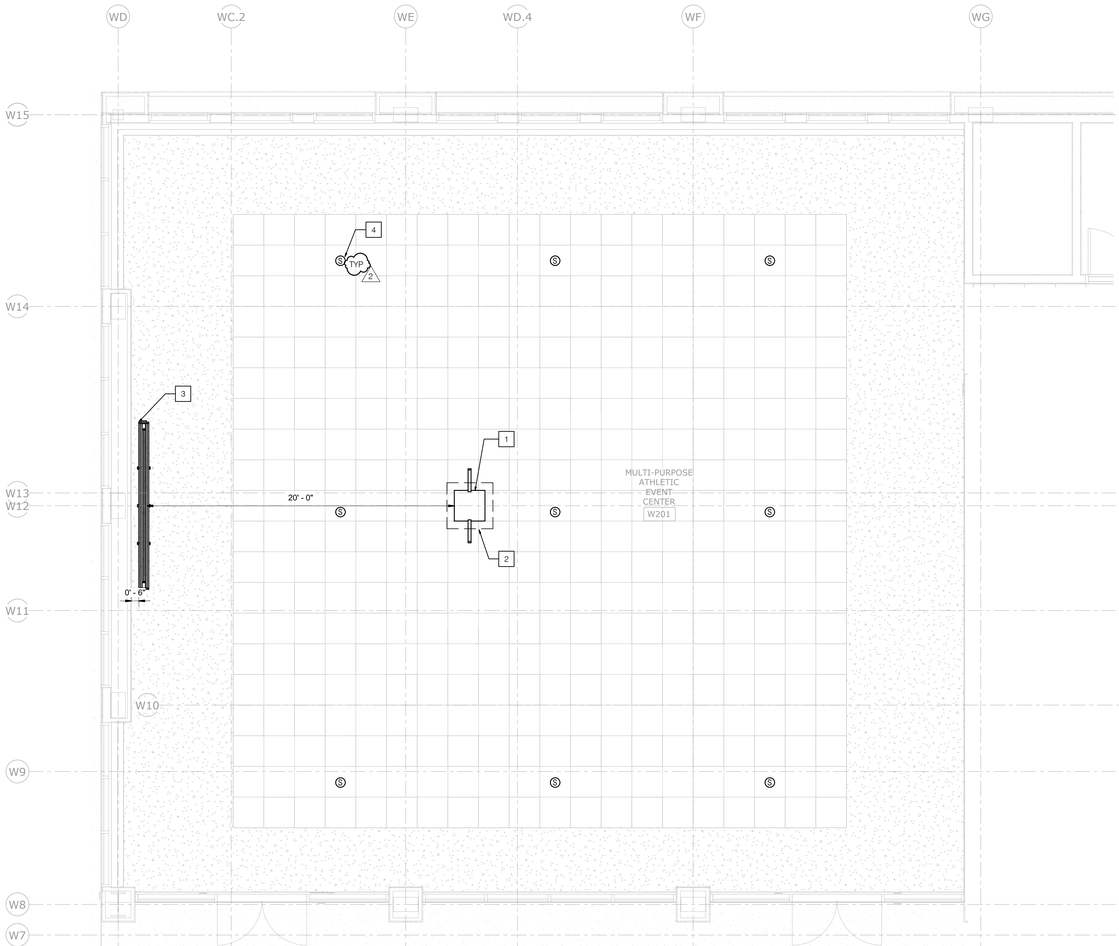
SHEET NO:

W-TAV304



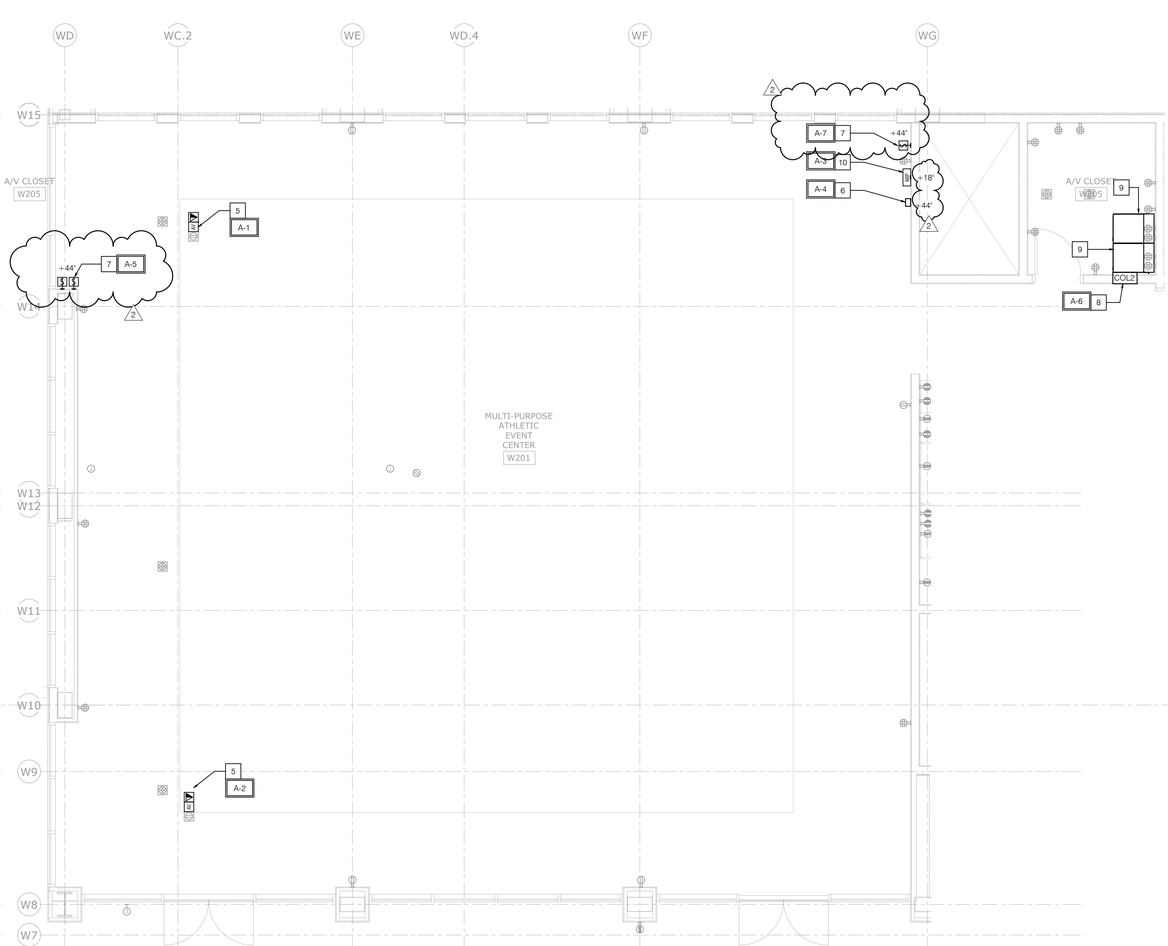
3 AV CONDUIT INFRASTRUCTURE

SCALE: NONE



2 AUDIOVISUAL CEILING PLAN, MULTI-PURPOSE ATHLETIC EVENT CENTER W201

SCALE: 1/4" = 1'-0"



1 AUDIOVISUAL FLOOR PLAN, MULTI-PURPOSE ATHLETIC EVENT CENTER W201

SCALE: 1/4" = 1'-0"

NOTES

1. PROJECTOR, CEILING MOUNTED WITH PROJECTOR LIFT
2. PROJECTION LIFT
3. PROJECTION SCREEN, MOTORIZED, CEILING RECESSED
4. SPEAKER, CEILING MOUNTED
5. AV FLOOR BOX
6. TOUCH PANEL CONTROL SYSTEM INTERFACE
7. PROJECTION SCREEN LIFT LOW VOLTAGE SWITCH AND PROJECTION LIFT LOW VOLTAGE SWITCH
8. 6"X6"X48" GUTTER WITH COVER MOUNTED ABOVE RACK.
9. AV EQUIPMENT RACKS FOR POOL/SOCCER FIELDS AND MULTI-PURPOSE ATHLETIC EVENT CENTER
10. MIP, MEDIA INPUT/OUTPUT PANEL WITH HDMI INPUT & OUTPUT, AUDIO INPUT & OUTPUT

STATE:

ARCHITECT:

architecture
westbergwhite
14471 CHAMBERS RD, SUITE 210
TUSTIN, CA 92780
(714) 508-1780 508-1790 FAX

CONSULTANT:

P2S ENG
Long Beach | Los Angeles
San Diego | San Jose
p2sinc.com

PROJECT NAME:

LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
4901 EAST CARSON STREET
LONG BEACH, CA 90806

CLIENT:

LONG BEACH CITY COLLEGE
4901 EAST CARSON STREET
LONG BEACH, CA 90806

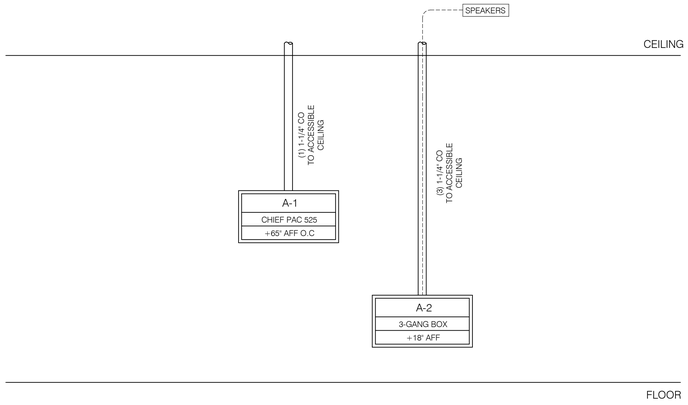
No.	Rev. Date	Description
2	12/03/19	Addendum 02

JOB NO: 16042.01
DATE: 09/18/19
DRAWN: CN
CHECK: ST
ARCHITECT: PDW
ENGINEER:

SHEET DESCRIPTION:
BLDG 'W1' MPR. ATHLETIC EVENT CENTER W201, AV FLOOR AND RCP

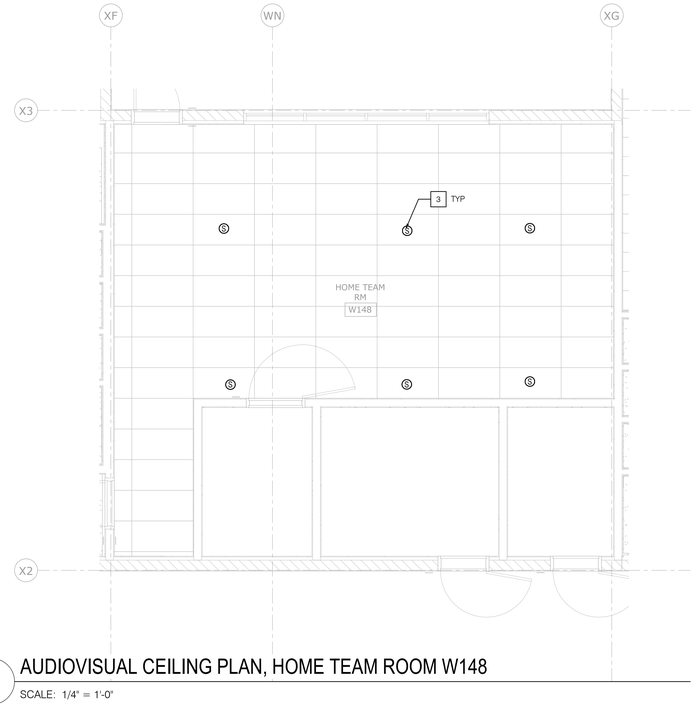
SHEET NO:

W-TAV305



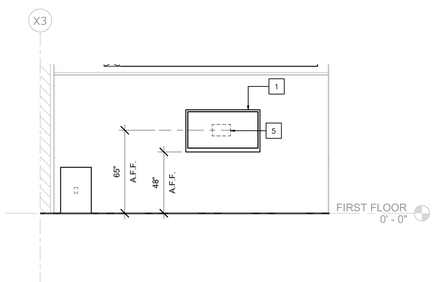
4 AV CONDUIT INFRASTRUCTURE

SCALE: NONE



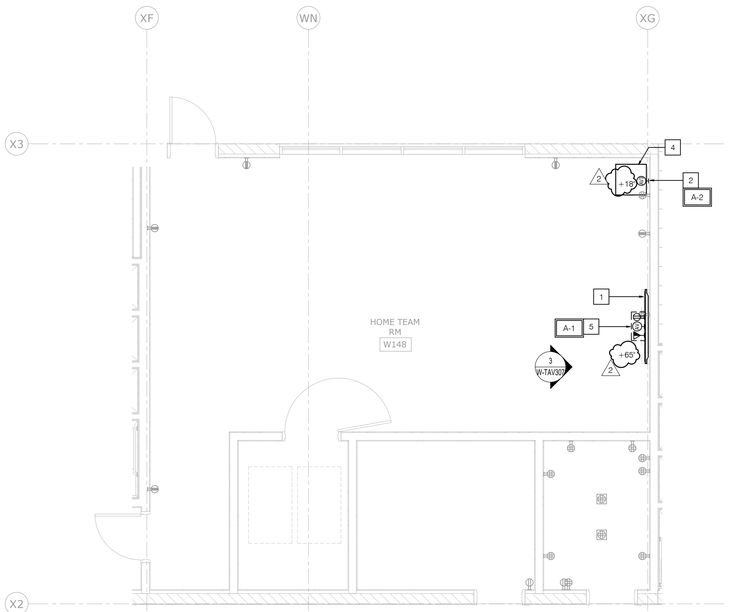
2 AUDIOVISUAL CEILING PLAN, HOME TEAM ROOM W148

SCALE: 1/4" = 1'-0"



3 AUDIOVISUAL ELEVATION, HOME TEAM ROOM W148

SCALE: 1/4" = 1'-0"



1 AUDIOVISUAL FLOOR PLAN, HOME TEAM ROOM W148

SCALE: 1/4" = 1'-0"

NOTES

1. 70" WALL MOUNTED LED VIDEO DISPLAY
2. AV WALL BOX
3. CEILING MOUNTED SPEAKER
4. AV EQUIPMENT RACK IN INSTRUCTORS STATION
5. LED DISPLAY BACK BOX, CHIEF PAC 525

STATE:

ARCHITECT:

architecture
westbergwhite
14471 CHAMBERS RD, SUITE 210
TUSTIN, CA 92780
(714) 508-1780 508-1790 FAX

CONSULTANT:

P2S ENG
Long Beach | Los Angeles
San Diego | San Jose
p2sinc.com

PROJECT NAME:

LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
4901 EAST CARSON STREET
LONG BEACH, CA 90806

CLIENT:

LONG BEACH CITY COLLEGE
4901 EAST CARSON STREET
LONG BEACH, CA 90806

No.	Rev. Date	Description
2	12/03/19	Addendum 02

JOB NO: 16042.01
DATE: 09/18/19
DRAWN: CN
CHECK: ST
ARCHITECT: PDW
ENGINEER:

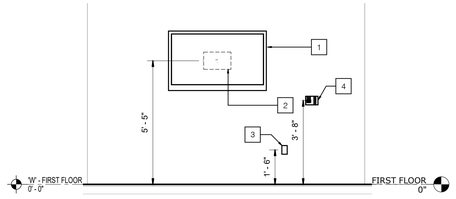
SHEET DESCRIPTION:
BLDG 'W2', HOME TEAM ROOM W148, AV FLOOR AND RCP

SHEET NO:

W-TAV307

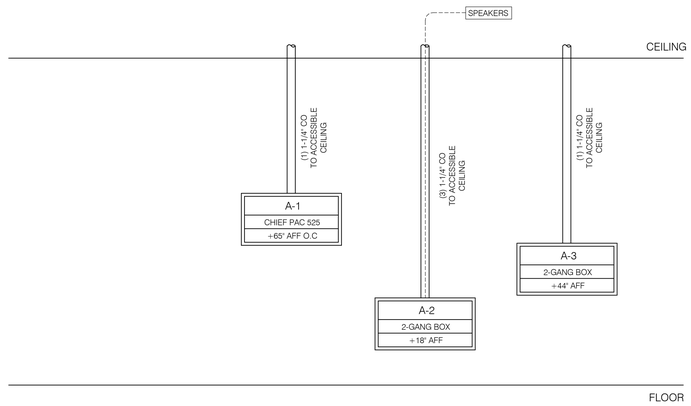
NOTES

1. 55" LED DISPLAY
2. DISPLAY BACK BOX
3. MIP, MEDIA INPUT PANEL
4. CONTROL PANEL



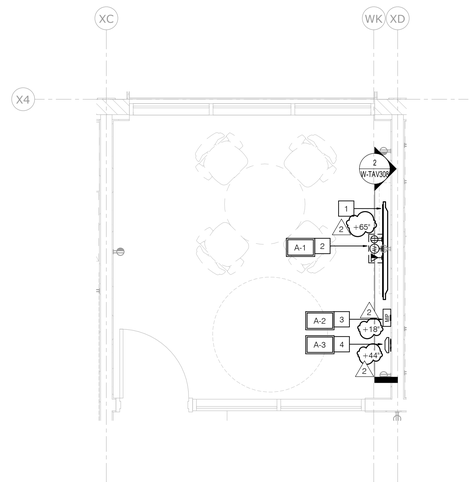
2 AUDIOVISUAL ELEVATION, AQUATICS COACH CONFERENCE ROOM W-164

SCALE: 3/8" = 1'-0"



3 AV CONDUIT INFRASTRUCTURE

SCALE: NONE



1 AUDIOVISUAL FLOOR PLAN, AQUATICS COACH CONFERENCE ROOM W-164

SCALE: 3/8" = 1'-0"

STATE:

ARCHITECT:

westbergwhite architecture
14471 CHAMBERS RD, SUITE 210
TUSTIN, CA 92780
(714) 508-1780 508-1790 FAX

CONSULTANT:

P2S ENG
Long Beach | Los Angeles
San Diego | San Jose
p2sinc.com

PROJECT NAME:

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KINESIOLOGY LABS and AQUATIC CENTER
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LONG BEACH, CA 90806

No.	Rev. Date	Description
2	12/03/19	Addendum 02

JOB NO: 16042.01
DATE: 09/18/19
DRAWN: Author
CHECK: Checker
ARCHITECT: PDW
ENGINEER:

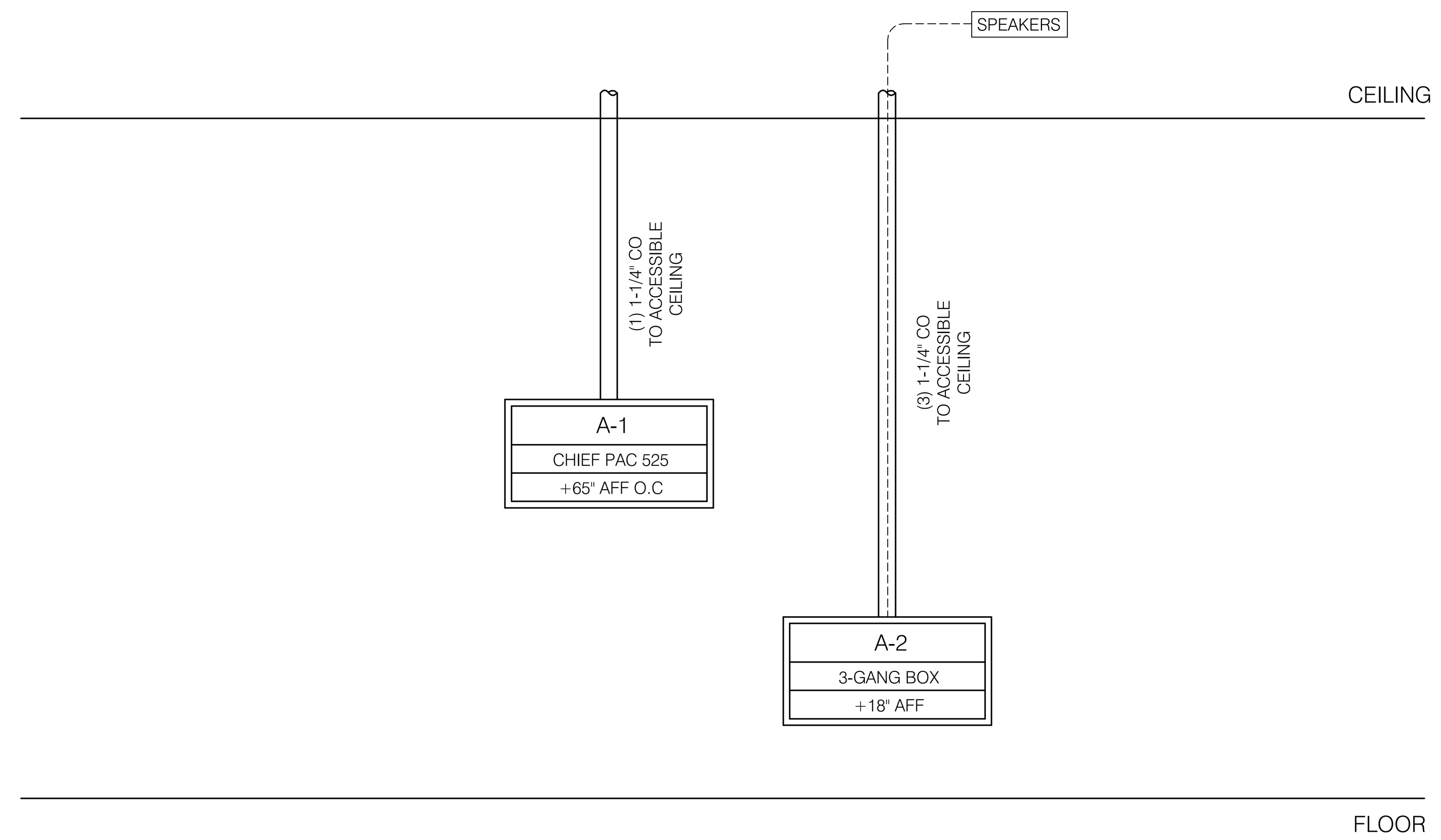
SHEET DESCRIPTION:
BLDG 'W2', AQUATICS COACH CONFERENCE ROOM W-164

SHEET NO:

W-TAV308

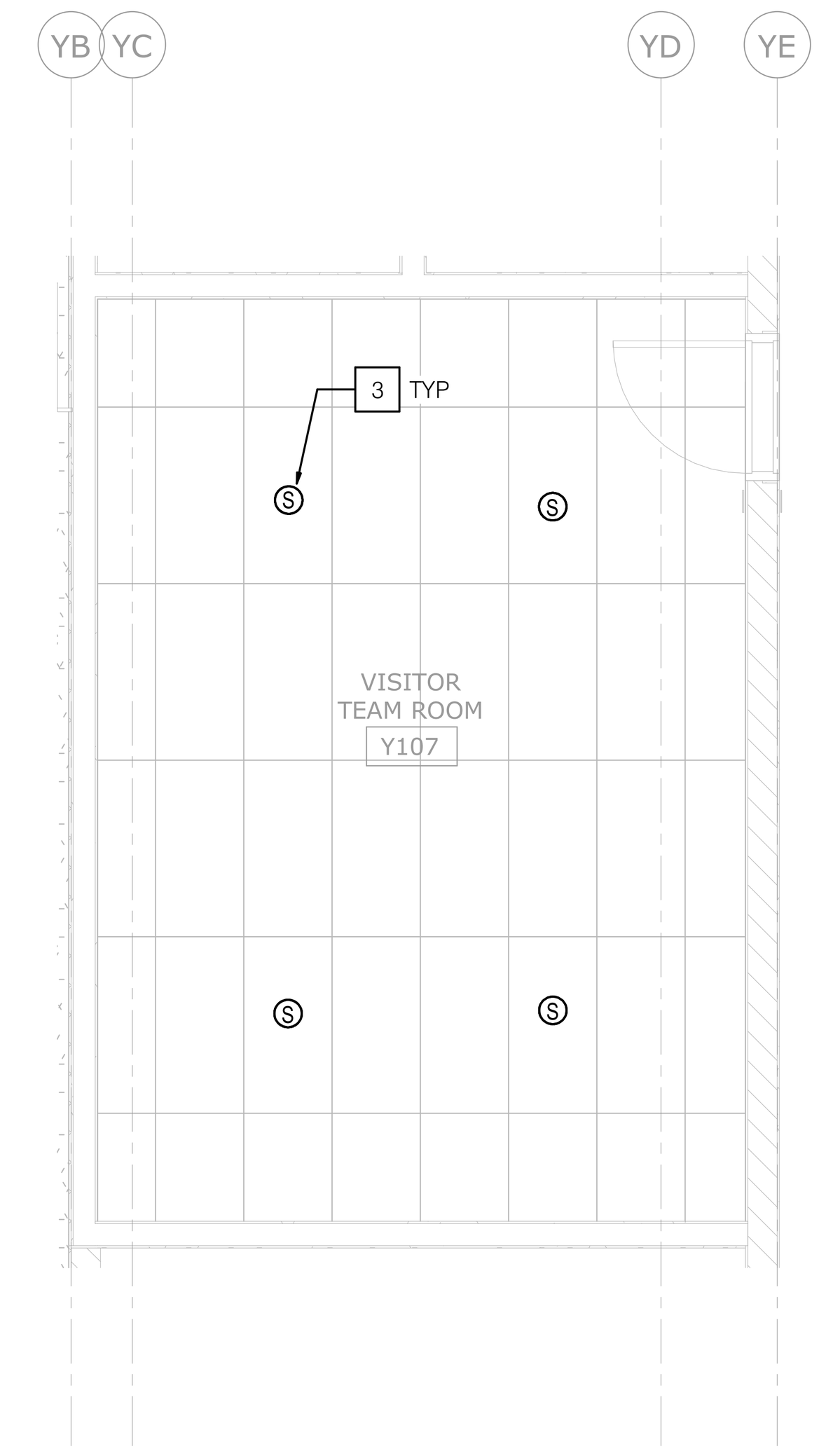
NOTES

1. 70" WALL MOUNTED LED VIDEO DISPLAY
2. AV WALL BOX
3. CEILING MOUNTED SPEAKER
4. AV EQUIPMENT RACK IN INSTRUCTORS STATION
5. LED DISPLAY BACK BOX, CHIEF PAC 525



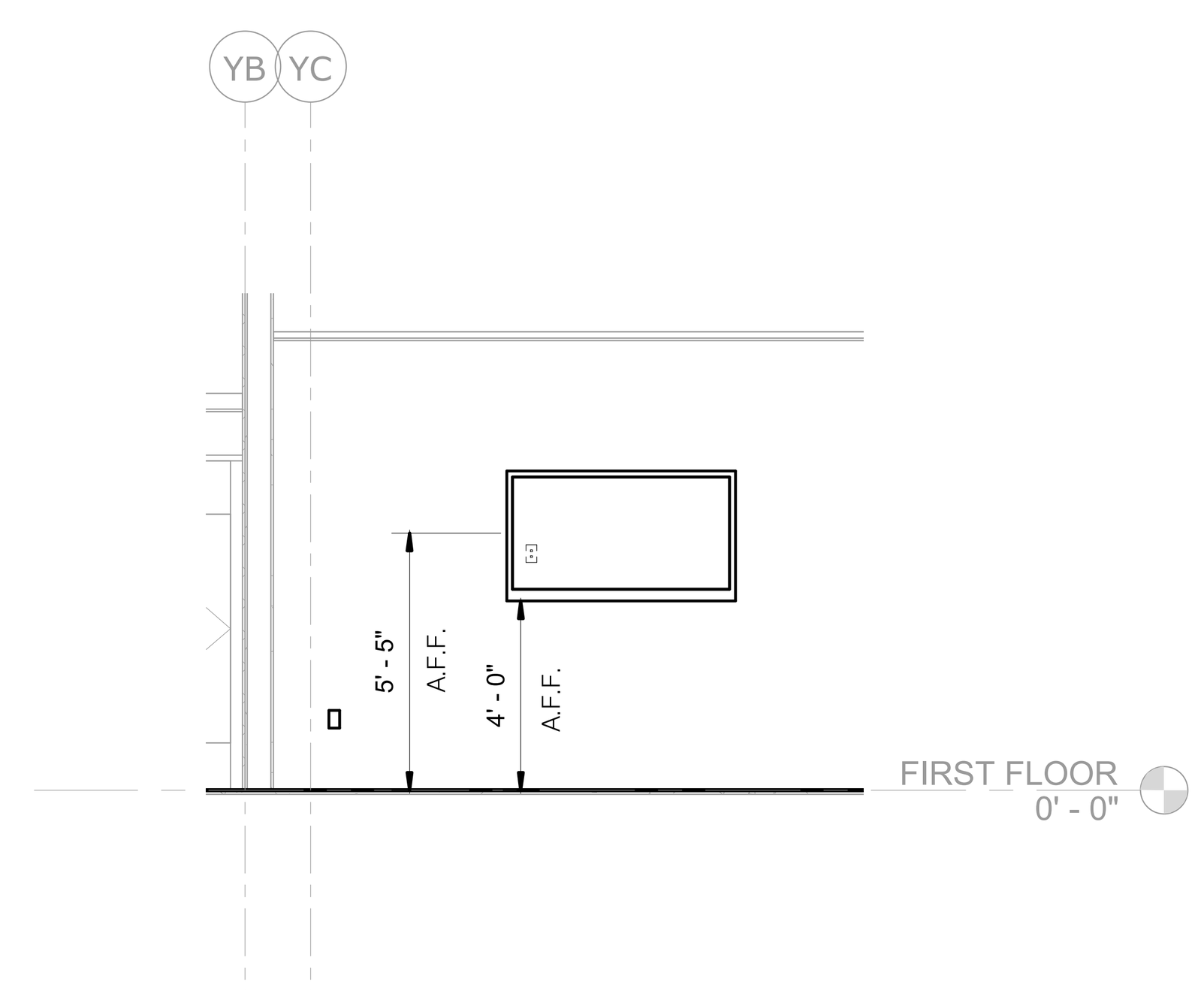
4 AV CONDUIT INFRASTRUCTURE

SCALE: NONE



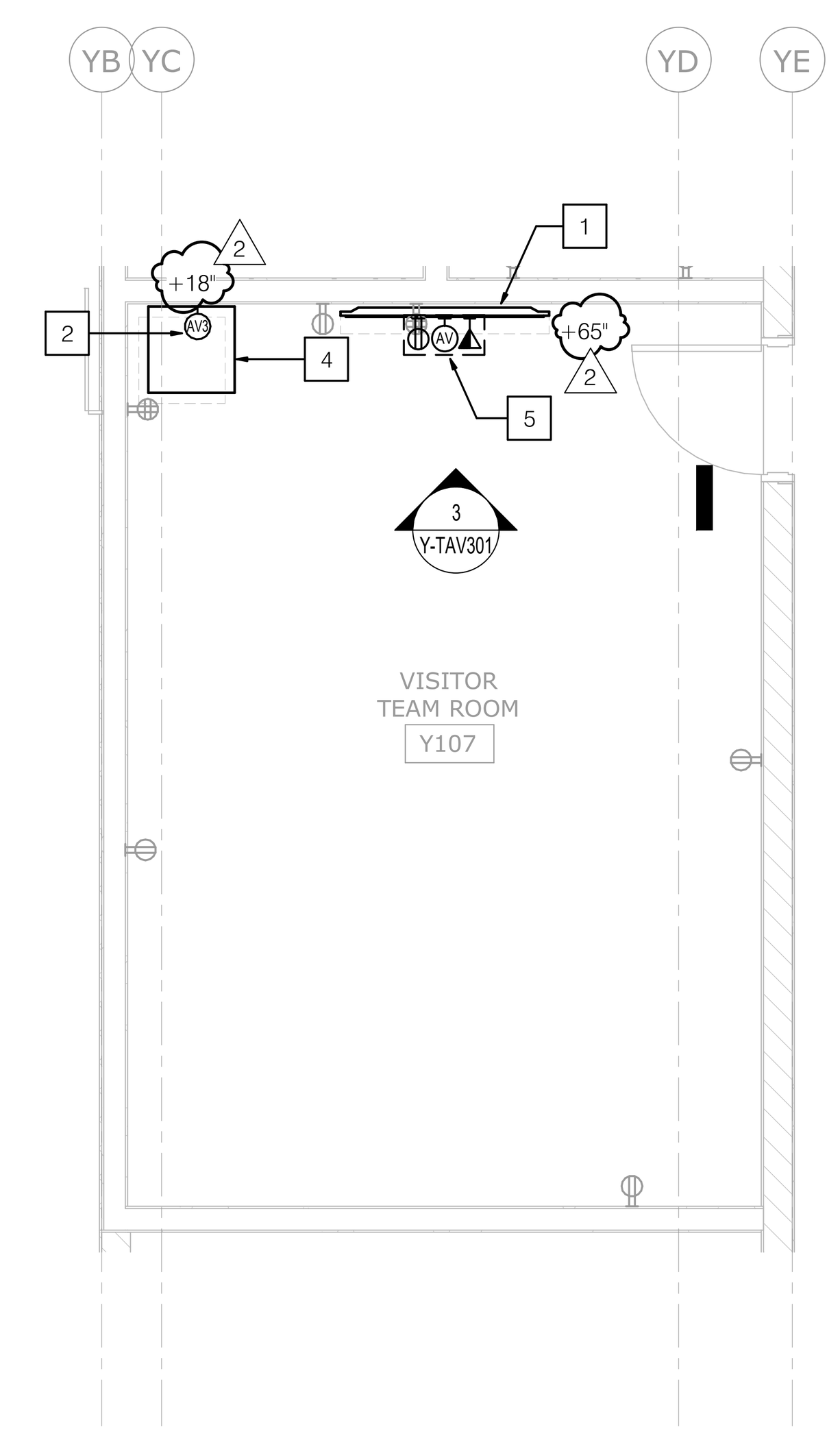
2 AUDIOVISUAL CEILING PLAN, VISITOR TEAM ROOM Y107

SCALE: 1/4" = 1'-0"



3 AUDIOVISUAL ELEVATION, VISITOR TEAM ROOM Y107

SCALE: 1/4" = 1'-0"



1 AUDIOVISUAL FLOOR PLAN, VISITOR TEAM ROOM Y107

SCALE: 1/4" = 1'-0"

STATE:

ARCHITECT:

westbergwhite architecture
14471 CHAMBERS RD, SUITE 210
TUSTIN, CA 92780
(714) 508-1780 508-1790 FAX

CONSULTANT:

P2S ENG
Long Beach | Los Angeles
San Diego | San Jose
p2sinc.com

PROJECT NAME:

LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
4901 EAST CARSON STREET
LONG BEACH, CA 90806

CLIENT:

LONG BEACH CITY COLLEGE

4901 EAST CARSON STREET
LONG BEACH, CA 90806

No.	Rev. Date	Description
2	12/03/19	Addendum 02

JOB NO: 16042.01
DATE: 09/18/19
DRAWN: CN
CHECK: ST
ARCHITECT: PDW
ENGINEER:

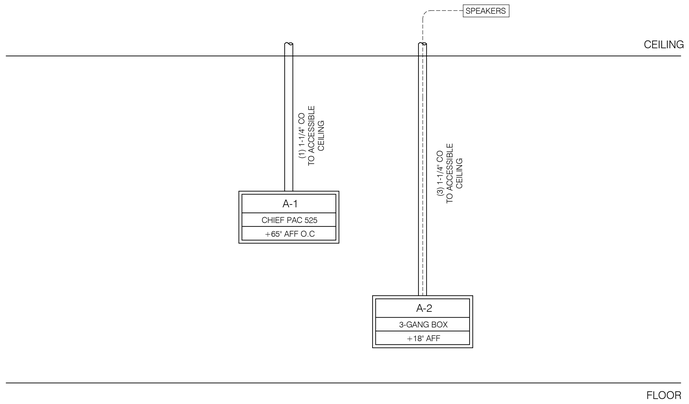
SHEET DESCRIPTION:
BLDG 'Y', VISITOR TEAM ROOM Y107, AV FLOOR AND RCP

SHEET NO:

Y-TAV301

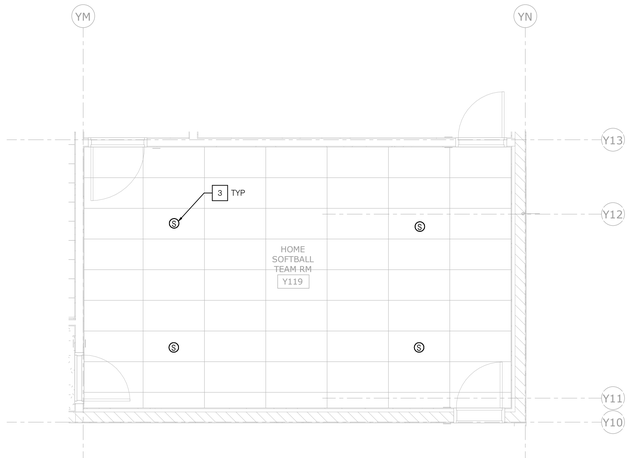
NOTES

1. 70" WALL MOUNTED LED VIDEO DISPLAY
2. AV WALL BOX
3. CEILING MOUNTED SPEAKER
4. AV EQUIPMENT RACK IN INSTRUCTORS STATION
5. LED DISPLAY BACK BOX, CHIEF PAC 525



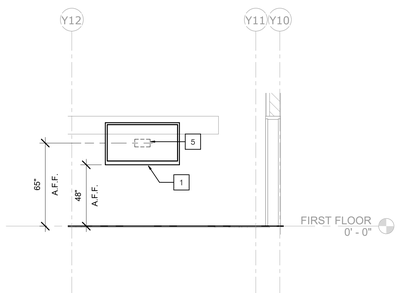
4 AV CONDUIT INFRASTRUCTURE

SCALE: NONE



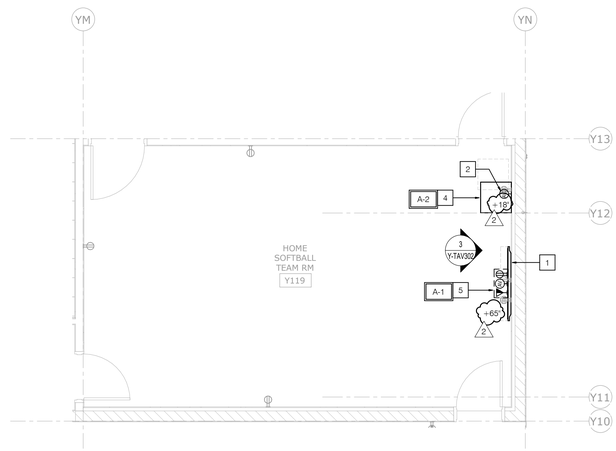
2 AUDIOVISUAL CEILING PLAN, HOME SOFTBALL TEAM ROOM Y119

SCALE: 1/4" = 1'-0"



3 AUDIOVISUAL ELEVATION, HOME SOFTBALL TEAM ROOM Y119

SCALE: 1/4" = 1'-0"



1 AUDIOVISUAL FLOOR PLAN, HOME SOFTBALL TEAM ROOM Y119

SCALE: 1/4" = 1'-0"

STATE:

ARCHITECT:

architecture
westbergwhite
14471 CHAMBERS RD, SUITE 210
TUSTIN, CA 92780
(714) 508-1780 508-1790 FAX

CONSULTANT:

P2S ENG
Long Beach | Los Angeles
San Diego | San Jose
p2sinc.com

PROJECT NAME:

LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
4901 EAST CARSON STREET
LONG BEACH, CA 90806

CLIENT:

LONG BEACH CITY COLLEGE
4901 EAST CARSON STREET
LONG BEACH, CA 90806

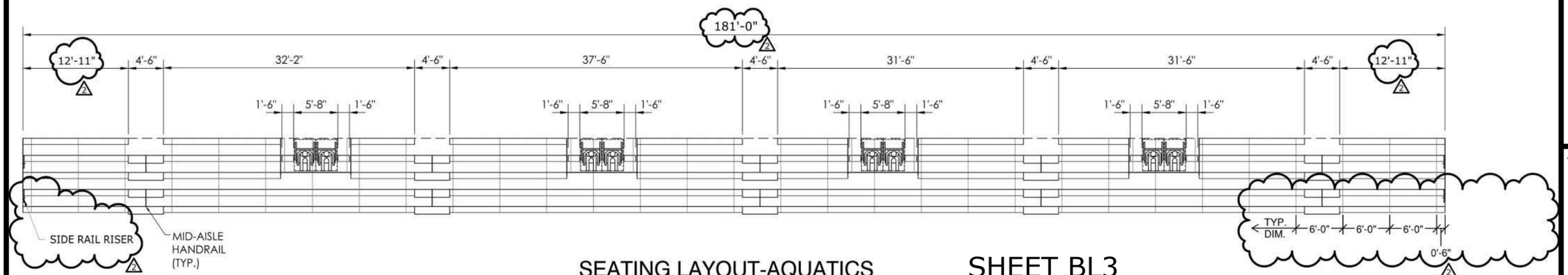
No.	Rev. Date	Description
2	12/03/19	Addendum 02

JOB NO: 16042.01
DATE: 09/18/19
DRAWN: CN
CHECK: ST
ARCHITECT: PDW
ENGINEER:

SHEET DESCRIPTION:
BLDG 'Y', VISITOR TEAM ROOM Y119, AV FLOOR AND RCP

SHEET NO:

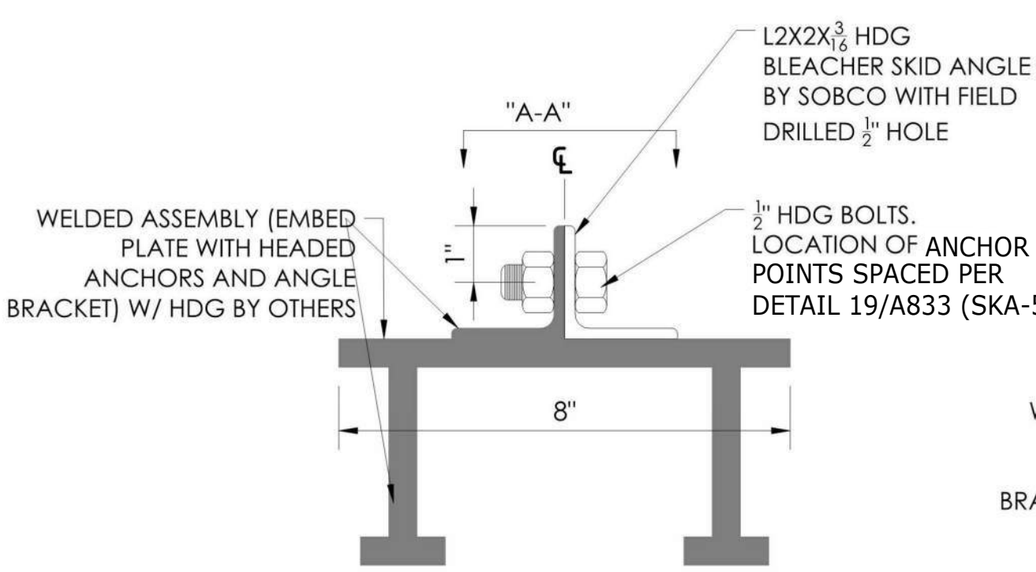
Y-TAV302



SEATING LAYOUT-AQUATICS

SCALE:1/8"=1'-0"

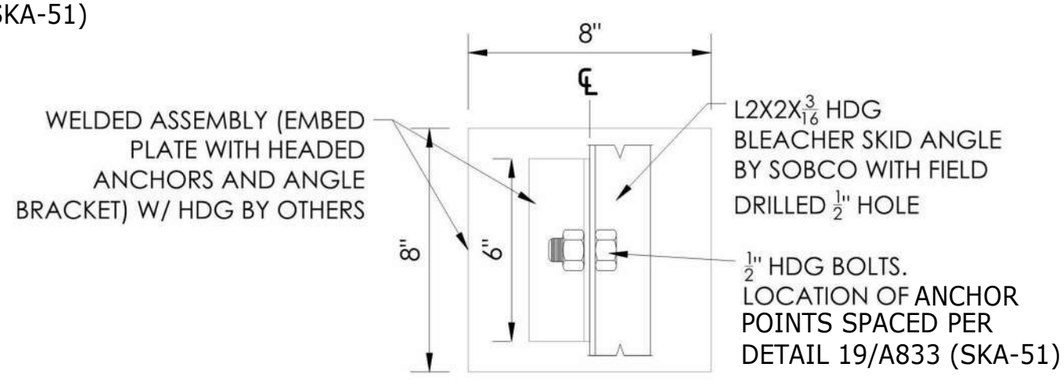
SHEET BL3



TYP. FOR ALL PLATES

1 / - ANCHOR DETAIL

SCALE:NONE



TYP. FOR ALL PLATES

"A-A"- ALL FRAME ANCHORS

SCALE:NONE

SHEET BL1

architecture
westbergwhite
14471 CHAMBERS RD, SUITE 210
TUSTIN, CA 92780
(714) 508-1780 508-1790 FAX

ARCHITECT:

LICENSED ARCHITECT PAUL E. WESTBERG STATE OF CALIFORNIA

2 WWP

PROJECT:
LIBERAL ARTS CAMPUS
KINESIOLOGY LABS and AQUATIC CENTER
LONG BEACH CITY COLLEGE

SHEET DESCRIPTION:
REVISED AQUATIC BLEACHER ANCHORAGE DETAIL 1/BL1 AND REVISED AQUATIC BLEACHER SEATING LAYOUT - BL3 (N.T.S.)

DATE:	12/03/19
JOB NO:	16042.01
DRAWN:	EM / JC
DSA FILE NO:	19-C3
DSA APP NO:	03-119628
ADDENDA #:	02
CCD #:	
BULLETIN #:	
RFI #:	

SHEET

SKBL-01