312 Plum Street, Suite 700
Cincinnati, OH 45202
(513) 381-2112

June 12, 2025

ADDENDUM 3

TO THE DRAWINGS, SPECIFICATIONS AND CONTRACT DOCUMENTS FOR:

Falmouth Head Start Center

67 KLEE WAY,
FALMOUTH, KY 41040

Comm. No. 2023108.01

TO ALL BIDDERS:

This Addendum supplements, amends and takes precedence over the original Drawings and Specifications, and shall be taken into account when preparing proposals, and shall become part of the Contract Documents. Receipt of this Addendum must be entered on the bidder's Bid Form. Bidder is cautioned to read the entire addendum and to check that all pages of the Addendum have been included in the Bidder's copy of the Addendum.

GENERAL

ITEM 1 – Prebid Meeting Notes and Sign-In Sheet:
Prebid meeting notes and sign-in sheet is attached.

QUESTIONS & ANSWERS

QUESTION 1 *C-200 Site Plan shows the 6' Black Chain link fence as the only fence on the project. If you look at C-201 Landscape Plan it also calls out Vinyl Privacy Fence. Can I get some clarification on what is wanted on site? Also is there also going to be fencing around the Retention Pond?*

Answer: C-201 Landscape Plan as shown is correct for fencing designations. No fencing required at for the Rentention Pond.

QUESTION 2 *Window spec says they are stained prefinished interior – if not stained are they factory primed? Is this correct because all other trims appear to be painted – is window trim prefinish stain or field painted/factory primed? Is exterior PVC trim, etc, Hardie Plank 1 color (siding, window trim, fascia, battens, etc.)*

Answer: Windows are prefinished stained per specs. Interior window casings are pine and field-finished clear satin stain to match window prefinish. All door casings are painted (refer to door schedule and drawings.) All exterior PVC trim, battens, fascia, cement fiber siding is to be 1 color field-painted.

SPECIFICATION ITEM

ITEM 1 – Specification Section 03 30 00 – Cast-in-Place Concrete:
Replace Document 03 30 00 Cast-in-Place Concrete with attached. Revise 2.6 B to include 'SINAK VC-5' as a Contractor Option Spray-Applied Colloidal Silica Concrete Treatment.

DRAWINGS

ITEM 1 – A011:
Revised Frame Type '4'. Added Jamb Detail – J3. Revised jamb detail references at doors 1B, 2B, 3B, 4B, 5C, 10, 11, 12B, and 14. Revised 'INTERIOR DOORS' text note to include casing finishing. Added text note "INTERIOR CASING AT WINDOWS: PINE, FIELD-FINISHED CLEAR SATIN (TO MATCH WINDOW."

ITEM 2 – A511:
Added Detail 24 – MASONRY BENCH DETAIL. Added Detail 24 section callout to Detail 19. Revised note to '6" CMU' at Detail 18.

ITEM 3 – S301:
Section 6/S301 has been modified for (2) 6" x 8" CMU construction.

ITEM 4 – E101:
Relocated (1) manual pull station to entry 7. Relocated (2) smoke detectors in corridor 15A. Added (1) smoke detector to corridor 15A.

End of Addendum 3 items – See attachments.

PRE-BID MEETING MINUTES

Falmouth Head Start BP2 General Contractor

May 29,2025 @ 2:00 PM, @ 437 W 9th.

A. WELCOME

B. INTRODUCTIONS

1. Owner – NKCAC: Laurie Wolsing, *Vice President for Children's Services*
2. Construction Manager– Browne: Nate Clayton, Tyler Powers
3. Architect – SHP: - Rochelle Heis
4. Civil Engineer – Abbie Jones Consulting: Joyce Followell

C. OWNER MESSAGE

D. PROJECT DESCRIPTION & SCOPE OF WORK

Bid Package 1 Public and Preliminary Site Work

- Public concrete Road construction.
- ROW Shoulder and sidewalks construction.
- Sanitary, water piping and structures in the public right away to owner's property line
  - Sewer from Existing SSMH 319 to SSMH1
    - Sheet C401
  - Water from Existing to Blowoff Hydrant and service lateral under road to meter crock
    - Sheet C404
    - Sheet C404 50' under road to meter
- Restoration of public right away
- Demo, Cut and Grade owner's site
  - Demo shed and outhouse, some trees to remain. Shrubs/invasive brush to be demo
  - Pole to be excluded.
- Installation of SWPP, Maintenance until BP2 Takes over
- Construction detention pond and structures.
  - Storm Line C entirely
  - Strom Line D HW3 – Install temp DBI 6
  - Strom Line A HW1-CO1
- Stockpiling Topsoil for final site grade
- Seed and straw

Bid Package 2 Building Construction

- Building site utilities from ROW
- Sewer service from Existing SSMH 319 to building Sheet C402
- Water Service from meter crock to building _ sheet C494
- Storm Service
  - Storm Line A CO1- DBI 3
  - Storm Line B entirely
  - Storm Line D DBI 6 - DBI7
- 4" conduit for gas service
- Building sidewalks and Parking lot
- General Construction, including MEP

- Maintenance of detention pond and SWPP
- Fence
- Final grade, Landscaping Seed and straw

E. ALTERNATES, ALLOWANCES AND UNIT PRICES

1. A $20,000 Allowance will be provided in contract for unforseen conditions to be used at owner discretion

F. BIDS DUE

1. June 17, 2025, at 2:00pm.
   a. Bids to be emailed to Tyler Powers (tyler@brownee.com)
   b. I would suggest sending bid with a read receipt, so you know we received it.
   c. Private Bid Opening, Lowest and Best bid will be accepted
   d. Post Bid Review following with intended NTP date Monday June 30, 2025
   e. Questions and RFI to be directed to Tyler@Brownee.com by June 10, 2025

G. OBTAINING PLANS AND SPECIFICATIONS

1. Eastern Engineering Supply (Phipps Reprographics): 434 Scott Blvd, Covington, KY 41011, (859)261-1851

H. DELIVERY METHOD

1. BP 1 Public and Preliminary Site Work
2. BP 2 General Contractor
3. Work or Services by Others to be coordinated with
   a. Technology Equipment
   b. Security System, Cameras and Access Control
   c. Playground FFE
   d. Third Party Inspections

I. MWBE PARTICIPATION

1. This project has a 20.00% MBE Participation goal and a 5.00% WBE goal.
2. Contractors are to show a good faith effort in pursuit of MWBE Participation.
3. MBE and WBE Certifications are required with Bid.
4. If you are having trouble finding MWBE Participation, there is a list of state certified contractors on Ky website.
5. Ohio MBE are acceptable, Cincinnati has a good list

J. INSURANCE

1. Contractors are to provide and maintain liability insurance. The contractor shall provide and maintain Employer's liability, Commercial General Liability Insurance at limits of the following:

a.	Aggregate (except Products – Completed Operations Limit)	$2,000,000
b.	Products-completed operations Aggregate limit	$2,000,000
c.	Personal and Advertising Injury Limit	$1,000,000
d.	Each Occurrence Limit	$1,000,000

K. DAVIS BACON ACT

1. This project has a federal interest; Davis Bacon rules apply.

2. WWW.SAM.GOV. click on wage determinations and search on public buildings in Pendelton County.

3. Prevailing wage is required, certified payroll reports to be submitted.

L. REQUIRED POST BID SUBMITTALS

1. Certificate of Insurance
2. Certificate of Workers Compensation:
3. Performance and Payment bonds:

M. SPECIAL CONSIDERATIONS

1. Tax Program
    a. The owner may direct purchase material for tax savings.
    b. A deduct change order will be issued for owner purchases.
    c. Flow chart in addendum.

N. STAGING, ACCESS, PARKING, USE OF FACILITIES

1. Parking should be contained to our site; the city has confirmed that we can park in the adjacent field.

***O.* SAFETY**

1. Safety Plan: every company should have a safety plan to be reviewed with the Owners Rep and ABJ. and review with your contractors at Weekly Tool Box Meeting
2. PPE: Hard Hats, Safety Glasses, & Proper Attire are required

P. COMPLETION TIME & PROJECT SCHEDULE

1. Anticipated start June 30, 2025
2. Anticipated completion of BP1 building site grading and pad July 6, 2025
3. Anticipated completion of BP1 Public ROW work September 30, 2025
4. Anticipated BP2 Substantial Completion February 28, 2026

Q. SITE TOUR

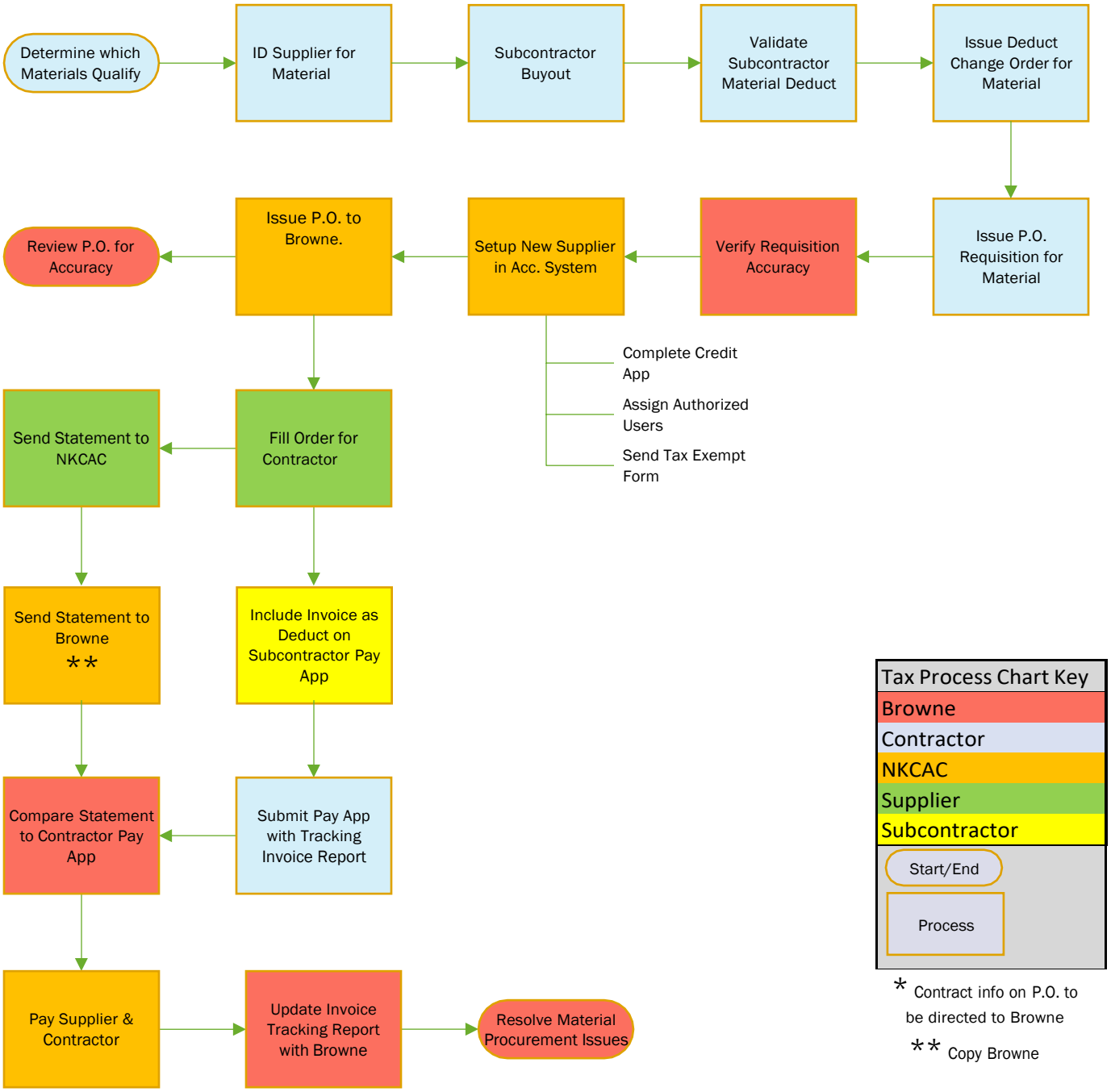
1. Site is located at 67 Klee Way, Falmouth KY, adjacent to the pharmacy, near Dollar Market store.

R. QUESTIONS and CLARRIFICATIONS

1. A CAD file will be available to the awarded contractor
2. Bluegrass will be providing electric service to the site.
3. Duke is designing the gas extension down Klee Way.
4. The existing water service stops at the end of Klee Way. BP1 will extend along kle way and under road for our service connection.
5. Sewer service will tie into an existing manhole.
6. 3rd party inspections provided by UES.
7. Furniture is by owner.
8. Access control: Electronic hardware, back boxes and pathways are provided by GC. Card reader installation by owner.
9. A generator will not be required for this project.
10. Permitting
    a. Site disturbance permit has been awarded.
    b. The building permit is submitted and is anticipated to be approved by the middle of June.
11. A list of BP1 interested contractors will be made available as potential sitework subcontractors for BP2:
    a. Bray
    b. Allender
    c. Hale

Northern Kentucky Community Action Commission

Material Tax Exempt Process



* Contract info on P.O. to be directed to Browne

** Copy Browne

October 15, 2021

Northern Kentucky Community Action Commission Head Start
Attendance Form

Name of Training: NKCAC Falmouth BP 2 Pre-Bid Location 437 W 9th

Date of Meeting: 2 PM (Time) Thursday (Day) 5/29/25 (Date)

	Name	Phone	Representing	E-mail	Home County
1.	NATE CLAYTON	513.771.6668	BROWNE ERC	NATE@BROWNE.CO	[ ]Boone [ ]Campbell [ ]Kenton [ ]Pendleton
2.	Tyler Powers	413-306-9066	Browne Erc	tyler@Brownee.com	[ ]Boone [ ]Campbell [ ]Kenton [ ]Pendleton
3.	Laurie Wolsing		NKCAC		[ ]Boone [X]Campbell [ ]Kenton [ ]Pendleton
4.	DAVID BODEN		BODEN BUILDERS	bodenbuildersatyc.com	[ ]Boone [X]Campbell [ ]Kenton [ ]Pendleton
5.	Matt Soesz		Mark Spaulding	matt@markspaulding.com	[ ]Boone [ ]Campbell [ ]Kenton [ ]Pendleton
6.	JAKE CHERRY	513.248.4800	PERKINS/CARMACK	terryperkins@perkinscarmack.com	[ ]Boone [ ]Campbell [ ]Kenton [ ]Pendleton
7.					[ ]Boone [ ]Campbell [ ]Kenton [ ]Pendleton
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NKCAC Northern Kentucky Community Action Commission | Head Start

SECTION 03 30 00 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Cast-in-place concrete, including concrete materials, mixture design, placement procedures, and finishes.

B. Applicable requirements of this section apply to concrete work of ALL Trades including slab-on-grade cutting and patching requirements of MEPT contracts.

C. Related Requirements:
1. Section 03 10 00 "Concrete Forming and Accessories" for form-facing materials.
2. Section 03 20 00 "Concrete Reinforcing" for steel reinforcing bars and welded-wire reinforcement.
3. Section 32 13 13 "Concrete Paving" for concrete pavement and walks.

1.2 DEFINITIONS

A. Cementitious Materials: Portland cement or blended hydraulic cement alone or in combination with one or more of the following:
1. Fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.

B. Water/Cement Ratio (w/cm): The ratio by weight of water to cementitious materials.

C. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.
1. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
a. Contractor's superintendent.
b. Concrete subcontractor.
c. Spray-applied colloidal silica concrete treatment manufacturer’s authorized representative.
2. Review the following:
a. Special inspection and testing and inspecting agency procedures for field quality control.
b. Construction joints, control joints, isolation joints, and joint-filler strips.
c. Semirigid joint fillers.
d. Vapor-retarder installation.
e. Anchor rod and anchorage device installation tolerances.
f. Cold and hot weather concreting procedures.
g. Concrete finishes and finishing.
h. Curing procedures.
i. Forms and form-removal limitations.
j. Methods for achieving specified floor and slab flatness and levelness.
k. Floor and slab flatness and levelness measurements.
l. Concrete repair procedures.
m. Concrete protection.
n. Initial curing and field curing of field test cylinders (ASTM C31/C31M.)
o. Protection of field cured field test cylinders.

1.4 ACTION SUBMITTALS

A. Product Data: For each of the following.
1. Admixtures:
a. Include limitations of use, including restrictions on cementitious materials, supplementary cementitious materials, air entrainment, aggregates, temperature at time of concrete

placement, relative humidity at time of concrete placement, curing conditions, and use of other admixtures.
2. Vapor retarders.
3. Curing Materials.
4. Joint fillers.
5. Repair materials.

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

C. Shop Drawings:
1. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.
a. Location of construction joints is subject to approval of the Architect.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For the following:
1. Installer: Include copies of applicable ACI certificates.

B. Material Certificates: For each of the following, signed by manufacturers:
1. Cementitious materials.

C. Material Test Reports: For the following, from a qualified testing agency:
1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.

D. Floor surface flatness and levelness measurements report indicating compliance with specified tolerances in accordance with ACI 117 and in compliance with ASTM E1155.

E. Preconstruction Test Reports: For each mix design.

F. Field quality-control reports.

G. Minutes of preinstallation conference.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A qualified Installer who employs Project personnel qualified as an ACI-certified Concrete Flatwork Associate and Concrete Flatwork Finisher and a supervisor who is a certified ACI Advanced Concrete Flatwork Finisher/Technician or an ACI Concrete Flatwork Finisher with experience installing and finishing concrete.

B. Ready-Mixed Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.
a. Manufacturer's production facilities and delivery vehicles certified in accordance with NRMCA's certification requirements or equivalent approval by a State DOT.

C. Laboratory Testing Agency Qualifications: A testing agency qualified in accordance with ASTM C1077 and ASTM E329 for testing that performs duties on behalf of the Architect/Engineer.
1. Personnel performing laboratory tests to be an ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Level 1. Testing agency laboratory supervisor tests to be an ACI-certified Concrete Laboratory Testing Technician, Level 2.

1.7 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on each concrete mixture.
1. Include the following information in each test report:
a. Admixture dosage rates.
b. Slump.

c. Air content.
d. Seven-day compressive strength.
e. 28-day compressive strength.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Comply with ASTM C94/C94M and ACI 301.

1.9 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with ACI 301 and ACI 306.1, and as follows.
1. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
2. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
3. Do not use frozen materials or materials containing ice or snow.
4. Do not place concrete in contact with surfaces less than 35 deg F, other than reinforcing steel.
5. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

B. Hot-Weather Placement: Comply with ACI 301 and ACI 305.1, and as follows.
1. Maintain concrete temperature below 95 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 CONCRETE STANDARDS

A. ACI Publications: Provide reference copies on site and comply with the following unless modified by requirements in the Contract Documents:
1. ACI 301, "Specification for Structural Concrete”, Sections 1 thru 5.
2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
a. Provide slab-on-grade thickness indicated on the Drawings as a minimum and delete the allowable slab thickness “minus tolerance” permitted in ACI 117.
3. ACI 304, “Guide for Measuring, Mixing, Transporting and Placing Concrete.”
4. ACI 318, “Building Code Requirements for Structural Concrete.”

2.2 CONCRETE MATERIALS

A. Source Limitations:
1. Obtain all concrete mixtures from a single ready-mixed concrete manufacturer for entire Project.
2. Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant.
3. Obtain aggregate from single source.

B. Cementitious Material:
1. Portland Cement: ASTM C150/C150M, Type I or II.
2. Blended Hydraulic Cement: ASTM C595/C595M, Type IL, portland-limestone cement.
3. Fly Ash: ASTM C618, Class C or F.

C. Normal-Weight Aggregates:
1. Coarse Aggregate: ASTM C33/C33M, Class 3S or better, graded.
2. Maximum Coarse-Aggregate Size: 3/4 inch nominal.
3. Fine Aggregate: ASTM C33/C33M. Free of deleterious reactivity to alkali in cement.

D. Controlled Low-Strength Material: Self-compacting, flowable concrete material produced from the following:
1. Portland Cement: ASTM C150/C150M, Type I or blended hydraulic cement ASTM C595/C595M, Type IL, Portland-limestone cement.
2. Fly Ash: ASTM C618, Class C or F.
3. Normal-Weight Aggregate: ASTM C33/C33M.
a. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
4. Water: ASTM C94/C94M.
5. Air-Entraining Admixture: ASTM C260/C260M.
6. Produce conventional-weight, controlled low-strength material with 1,500-psi compressive strength for backfill below foundations, when tested according to ASTM D4832/D4832M.

E. Controlled Density Fill: Backfilling material where required or allowed by other Specification Sections, proportioned per yard as follows:
1. 50 lbs Portland Cement.
2. 250 lbs. Fly Ash.
3. 2910 lbs. Fine Aggregate.
4. 500 lbs. Water producing 7-9 inch slump.
5. 0% Entrained Air.

2.3 ADMIXTURES

A. Source Limitations: Obtain each type of admixture from single source from single manufacturer.

B. Air-Entraining Admixture: ASTM C260/C260M.

C. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
1. Water-Reducing Admixture: ASTM C494/C494M, Type A.
2. Retarding Admixture: ASTM C494/C494M, Type B.
3. Water-Reducing and -Retarding Admixture: ASTM C494/C494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C494/C494M, Type F.
5. High-Range, Water-Reducing and -Retarding Admixture: ASTM C494/C494M, Type G.
6. Admixtures with special properties, with documentation of claimed performance enhancement, ASTM C494/C494M, Type S.

D. Mixing Water for Concrete Mixtures and Water Used to Make Ice: ASTM C1602/C1602M. Include documentation of compliance with limits for alkalis, sulfates, chlorides, or solids content of mixing water from Table 2 in ASTM C1602/C1602M.

2.4 VAPOR RETARDERS

A. Sheet Vapor Retarder, Class A: ASTM E1745, Class A, except with maximum water-vapor permeance of 0.01 after in-service condition testing per ASTM E154 Sections 8, 11, 12, and 13; not less than 15 mils thick. Include manufacturer's recommended adhesive or pressure-sensitive tape. Sheet vapor retarder is required under all interior slabs-on-grade except for spaces indicated to receive wood flooring.
1. Products: Subject to compliance with requirements, provide one of the following:
a. Interplast Group, Ltd.; VB-350 (16 mil).
b. ISI Building Products; Viper II, 15 mils.
c. Poly-America, L.P.; Yellow Guard, 15 mils.
d. Reef Industries, Inc.; Griffolyn Vaporguard.
e. Stego Industries, LLC; Stego Wrap, 15 mils.
f. W. R. Meadows, Inc.; Perminator 15 mil.
g. Viraflex; Vapor Block VB15.

2.5 LIQUID FLOOR TREATMENTS

A. Penetrating Liquid Floor Treatment: Clear, chemically reactive, waterborne solution of lithium silicate materials and proprietary components; odorless; that penetrates, hardens, and densifies concrete surfaces.
1. Use Locations: All cured interior concrete slabs to be exposed as a finish and indicated on drawing Floor Finish Plans as **SCONC**.

2. Products: Subject to compliance with requirements, provide one of the following:
   a. Dayton Superior Corporation; Pentra-Hard Densifier.
   b. Euclid Chemical Company (The); UltraSil Li+.
   c. Laticrete International, Inc.; L&M LiON Hard.
   d. Nox-Crete Products Group; Duro-Nox LS.
   e. Prosoco, Inc.; Consolideck LS.

2.6 CURING MATERIALS

A. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.
1. Color:
   a. Ambient Temperature Below 50 deg F: Black.
   b. Ambient Temperature between 50 deg F and 85 deg F: Any color.
   c. Ambient Temperature Above 85 deg F: White.

B. Contractor Option Spray-Applied Colloidal Silica Concrete Treatment: SCP 327 by Spray-Lock Concrete Protection, LLC or SINAK VC-5, may be used in lieu of moisture-retaining cover.

2.7 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D1751, asphalt-saturated cellulosic fiber or ASTM D1752, cork or self-expanding cork.

B. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, epoxy resin with a Type A shore durometer hardness of 80 in accordance with ASTM D2240.

C. Bonding Agent: ASTM C1059/C1059M, Type II, nonredispersible, acrylic emulsion or styrene butadiene.

D. Epoxy Bonding Adhesive: ASTM C881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade and class to suit requirements, and as follows:
1. Types I and II, non-load bearing and Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

E. Drainage Course (below cast-in-place concrete slabs): Dense grade aggregate, KTC 303 gradation.

2.8 REPAIR MATERIALS

A. Repair Underlayment allowed where repaired concrete will be covered by a finish material: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
1. Cement Binder: ASTM C150/C150M, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8–inch maximum size or coarse sand as recommended by underlayment manufacturer.
4. Compressive Strength: Not less than 4100 psi at 28 days when tested according to ASTM C109/C109M.

B. Repair Overlayment for use where concrete surface will remain exposed to view without a concealing finish: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch and that can be filled in over a scarified surface to match adjacent floor elevations.
1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8-inch to 1/4 inch or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi at 28 days when tested in accordance with ASTM C109/C109M.

2.9 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301and ACI 318.
1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
1. Fly Ash: When used, fly ash-to-total cementitious ratio shall be 15 percent minimum by mass. When used in interior slabs, fly ash-to-total cementitious ratio shall be 25 percent maximum by mass.

C. Limit water-soluble, chloride-ion content in hardened concrete to the limit in Table 4.2.2.6 of ACI 301.

D. Admixtures: Use admixtures according to manufacturer's written instructions.
1. Use water-reducing; high-range water-reducing; or plasticizing admixture in concrete, as required, for placement and workability.
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use water-reducing admixture in pumped concrete and concrete with a water-cementitious materials ratio below 0.50.

E. Air Content: Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content as follows:
1. Air Content: 4.5 percent, plus or minus 1.5 percent at point of delivery for 3/4-inch nominal maximum aggregate size.

F. Slump Limits:
1. Proportion and design mixes to result in concrete slump at point of placement as follows:
   a. Ramps, slabs, and sloping surfaces: Not more than 3 inches.
   b. Reinforced foundation systems: Not less than 1 inch and not more than 3 inches.
   c. Concrete containing high-range water-reducing admixture (superplasticizer): Not more than 8 inches after adding admixture to site verified 2-to-3-inch slump concrete.
   d. Other concrete: Not more than 4 inches.
2. Slump at point of placement must comply with specified requirements. Concrete arriving at point of delivery not able to attain point-of-placement requirements may be adjusted one time on site only as follows:
   a. Concrete delivery equipment must be designed and intended to provide capability of thorough mixing of the concrete.
   b. Controlled addition of superplasticizers.
      1) After plasticizing or water reducing admixtures are added to the concrete at the site to achieve flowable concrete, do not add water to the concrete.
3. Measure and document slump (and air content of air entrained concrete) prior to the addition of admixtures and again after the addition of admixtures.
4. Do not use concrete that is outside the allowable limits.

2.10 CONCRETE MIXTURES FOR BUILDING ELEMENTS

A. Concrete Schedule:

ITEM OR STRUCTURE	SURFACE FINISH	COMPRESSIVE STRENGTH & OTHER REQUIREMENTS
1. Concrete not otherwise indicated	SF-1.0	3500 psi at 28 days Normal Weight Concrete: Minimum Cementitious Material Content: ACI minimum requirements

2. Trench footings and footings	Cast against earth excavations or SF-1.0 if formed	3000 psi at 28 days Max w/cm = 0.50
3. Foundation and retaining walls exposed to exterior	SF-1.0 SF-3.0	4500 psi at 28 days 4.5%-7.0% air entrainment Max w/cm = 0.45 Mid-Range Water Reducer required
4. CLSM fill at soft soils or over excavations		1500 psi at 28 days
5. Controlled density fill		50 -100 psi at 28 days Unconfined compressive strength per ASTM D4832
6. Exposed interior floor slabs and interior slabs scheduled to receive flooring finishes	Tr-Fn1	3500 psi at 28 days Max w/cm = 0.45 Mid-Range Water Reducer required

2.11 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C94/C94M, and furnish batch ticket information.
   1. Delete the references for allowing additional water to be added to the batch for material with insufficient slump.
   2. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions:
   1. Before placing concrete, verify that installation of concrete forms, accessories, and reinforcement, and embedded items is complete and that required inspections have been performed.
   2. Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Provide reasonable auxiliary services to accommodate field testing and inspections, acceptable to testing agency, including the following:
   1. Daily access to the Work.
   2. Incidental labor and facilities necessary to facilitate tests and inspections.
   3. Secure space for storage, initial curing, and field curing of test samples, including source of water and continuous electrical power at Project site during site curing period for test samples.
   4. Security and protection for test samples and for testing and inspection equipment at Project site.

B. Verify drainage course thickness and conditions before placing vapor retarders.
   1. Verify correct drainage gravel is installed and is complete and tested before concreting.
   2. If necessary, remove sub-base as required to install full 6 inches of drainage fill beneath all slabs including in particular those areas to have a recessed concrete slab.
      a. Provide thicker drainage gravel course if indicated.
   3. Remove and replace drainage gravel that has been contaminated by unsuitable soils and materials.
   4. Restore surface to proper uniform grade compacted per requirements.
   5. Verify locations and provide sharply trimmed recesses for thickened slabs.

C. Verify precise locations and provision by the appropriate trade of all slab-penetrating pipes, conduits, in-slab boxes, and the like.

D. REQUEST DIMENSIONED FLOOR OUTLET PLAN AT LEAST ONE FULL WEEK IN ADVANCE OF SCHEDULED FLOOR SLAB POUR.
1. Locate in-slab electrical and data-technology boxes from NEW **dimensioned plans furnished by the Architect during construction**; do not rely on dimensioned or scaled locations shown in the bid documents. Final locations may have changed due to Owner request or furnishing changes. Actual locations based on actual furnishings, and materials to be provided are necessary.
2. Same obligation applies for conduits to be stubbed up into casework. Precise access points are usually required and the accessible portion may differ from what it appears in plan; consult with architect / interior designer before proceeding.
3. Any corrective measures necessary to adjust for the Contractor's failure to coordinate and verify floor slab penetration locations and in-floor devices, require the Architect's direct review and acceptance and shall be performed at the Contractor's sole expense; including compensation to the Architect for the time required to evaluate alternatives and accept a solution.
   a. Architect's standard hourly rates apply and shall be paid direct to the Architect prior to submission of contractor's next partial payment request.

E. Locate and prepare for floor drains as indicated in 'Slab Finishing' article below.

3.3 INSTALLATION OF EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining Work that is attached to or supported by cast-in-place concrete.
1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of ANSI/AISC 303.

3.4 INSTALLATION OF VAPOR RETARDER

A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder in accordance with ASTM E1643 and manufacturer's written instructions.
1. Install vapor retarder with longest dimension parallel with direction of concrete pour.
2. Face laps away from exposed direction of concrete pour.
3. Lap vapor retarder over footings and grade beams not less than 6 inches, sealing vapor retarder to concrete.
4. Lap joints 6 inches and seal with manufacturer's recommended tape.
5. Terminate vapor retarder at the top of floor slabs sealing entire perimeter to foundation walls.
6. Seal penetrations in accordance with vapor retarder manufacturer's instructions.
7. Protect vapor retarder during placement of reinforcement and concrete.
   a. Repair damaged areas by patching with vapor retarder material, overlapping damages area by 6 inches on all sides, and sealing to vapor retarder.

3.5 INSTALLATION OF CAST-IN-PLACE CONCRETE

A. Before placing concrete, verify that installation of formwork, reinforcement, embedded items, and vapor retarder is complete and that required inspections are completed.
1. Immediately prior to concrete placement, inspect vapor retarder for damage and deficient installation, and repair defective areas.
2. Provide continuous inspection of vapor retarder during concrete placement and make necessary repairs to damaged areas as Work progresses.

B. Notify Architect and testing and inspection agencies 24 hours prior to commencement of concrete placement.

C. Do not add water to concrete during delivery, at Project site, or during placement.

D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness.
1. If a section cannot be placed continuously, provide construction joints as indicated.
2. Deposit concrete to avoid segregation.
3. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
4. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.

a. Do not use vibrators to transport concrete inside forms.
b. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer.
c. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity.
d. At each insertion, limit duration of vibration to time necessary to consolidate concrete, and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
1. Do not place concrete floors and slabs in a checkerboard sequence.
2. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
3. Maintain reinforcement in position on chairs during concrete placement.
4. Screed slab surfaces with a straightedge and strike off to correct elevations.
5. Level concrete, cut high areas, and fill low areas.
6. Slope surfaces uniformly to drains where required.
7. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface.
8. Do not further disturb slab surfaces before starting finishing operations.

3.6 INSTALLATION OF JOINTS

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

B. Construction Joints: Coordinate with floor slab pattern and concrete placement sequence.
1. Install so strength and appearance of concrete are not impaired, at locations indicated on Drawings or as approved by Architect.
2. Place joints perpendicular to main reinforcement.
a. Continue reinforcement across construction joints unless otherwise indicated.
3. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
4. Space vertical joints in walls as indicated on Drawings. Unless otherwise indicated on Drawings, locate vertical joints beside piers integral with walls, near corners, and in concealed locations where possible.
5. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Control Joints in Slabs-on-Ground: Form weakened-plane control joints, sectioning concrete into areas as indicated. Construct control joints for a depth equal to at least one-fourth of concrete thickness as follows:
1. Grooved Joints for exterior walks and pavements, coordinate with Section 32 13 13 “Concrete Paving”.
2. Sawed Joints for Interior Slabs: Form control joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random cracks.
a. Unless otherwise noted on plans, space contraction joints at 10’-0” maximum spacing in both directions.
1) For rooms scheduled to have exposed concrete floor finish, obtain joint pattern and layout from Architect at least 7-days in advance of pouring such slab. Seal exposed joints with semi-rigid joint filler.
3. Locate control joints as shown on the Drawings. In the absence of information on Drawings, locate at openings, walls, columns, grid lines, and inside corners.

D. Isolation Joints in Slabs-on-Ground: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated on Drawings.
2. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface where joint sealants are indicated.
3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

E. Doweled Joints:
1. Install dowel bars and support assemblies at joints where indicated on Drawings.
2. Lubricate or asphalt coat one-half of dowel bar length to prevent concrete bonding to one side of joint. Install expansion cap after lubrication.

3.7 APPLICATION OF FINISHING FORMED SURFACES

A. As-Cast Surface Finishes:
1. ACI 301 Surface Finish SF-1.0: As-cast concrete texture imparted by form-facing material.
   a. Patch voids larger than 1-1/2 inches wide or 1/2 inch deep.
   b. Remove projections larger than 1 inch.
   c. Tie holes do not require patching.
   d. Surface Tolerance: ACI 117 Class D.
   e. Apply to concrete surfaces not exposed to public view.
2. ACI 301 Surface Finish 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.
   d. Surface Tolerance: ACI 117 Class A.
   e. Locations: Apply to concrete surfaces exposed to public view.

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

3.8 APPLICATION OF FINISHING FLOORS AND SLABS

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

B. Float and trowel finishes shall be completed using **combination blades**. Finish blades are not acceptable.

C. Floor Drains:
1. Verify elevations of floor drain rough-in work in advance of concreting operations and initiate any corrections necessary.
2. Unless otherwise indicated, ensure that floor drains are placed 3/4-inch below finish floor line. Uniformly slope slab surfaces to drains including drains. Start slope to drains 3- to 5-feet away from drain in all directions.
3. For rooms and spaces with floor drains take extra precautions to ensure against ponding water in any location. Test surfaces before floor finishes are applied and grind as necessary to provide complete drainage throughout the room or space.

D. Float Finish:
1. When bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operation of specific float apparatus, consolidate concrete surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats.
2. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture and complies with ACI 117 tolerances for conventional concrete.
3. Apply float finish to surfaces to receive trowel finish.

E. Trowel Finish:
1. After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel.
2. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance.
3. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
4. Do not add water to concrete surface.
5. Finish surfaces to the following tolerances, in accordance with ASTM E1155, for a randomly trafficked floor surface:
   a. Trowel Finish 1 (Tr-Fn1) Slabs on Ground:

1) Specified overall values of flatness, F_F 35; and of levelness, F_L 25.
2) Minimum local values of flatness, F_F 24; and of levelness, F_L 17.
3) Apply trowel finish to monolithic slab surfaces that are scheduled to receive flooring finishes or remain exposed to view.

3.9 INSTALLATION OF MISCELLANEOUS CONCRETE ITEMS

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

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

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

3.10 APPLICATION OF CONCRETE CURING

A. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
1. Comply with ACI 301 and ACI 306.1 for cold weather protection during curing.
2. Comply with ACI 301 and ACI 305.1 for hot-weather protection during curing.
3. Maintain moisture loss no more than 0.2 lb/sq. ft. x h, calculated in accordance with ACI 305R, before and during finishing operations.

B. Curing Formed Surfaces: Comply with ACI 308.1 as follows:
1. Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces.
2. If forms remain during curing period, moist cure after loosening forms.
3. If removing forms before end of curing period, continue curing for the remainder of the curing period, as follows:
a. Water-Retention Sheeting Materials: Cover exposed concrete surfaces with sheeting material, taping, or lapping seams.

C. Curing Unformed Surfaces: Comply with ACI 308.1 as follows:
1. Begin curing immediately after finishing concrete.
2. Interior Concrete Floors: Contractor has the option of the following:
a. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive.
1) Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
2) Cure for not less than seven days.
3) Contractor shall be responsible for means and methods necessary to meet the concrete moisture testing requirements per Division 09 flooring specifications. This shall include, but is not limited to, mechanical grinding, shot-blasting, commercial dehumidification, fluid applied membrane, etc. Coordinate and comply with all flooring manufacturer’s recommendations and requirements
b. Spray-applied colloidal silica concrete treatment. Installation shall be in compliance with manufacturer’s requirements using manufacturer’s recommended tools and equipment.

3.11 APPLICATION OF LIQUID FLOOR TREATMENTS

A. Penetrating Liquid Floor Treatment: Prepare, apply, and finish penetrating liquid floor treatment according to manufacturer's written instructions.
1. Remove sealers, oil, dirt, laitance, and other contaminants and complete surface repairs.
2. Do not apply to concrete that is less than seven days' old.

3. Apply liquid until surface is saturated, scrubbing into surface until a gel forms; rewet; and repeat brooming or scrubbing.
4. Rinse with water; remove excess material until surface is dry.
5. Apply a second coat in a similar manner if surface is rough or porous.

3.12 INSTALLATION OF JOINT FILLING

A. At concrete floor slabs to remain exposed as a finish, prepare, clean, and install joint filler in accordance with manufacturer's written instructions.
1. Defer joint filling until concrete has aged at least six month(s).
2. Do not fill joints until construction traffic has permanently ceased.

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

C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints.

D. Overfill joint and trim joint filler flush with top of joint after hardening.

3.13 INSTALLATION OF CONCRETE SURFACE REPAIRS

A. Defective Concrete:
1. Repair and patch defective areas when approved by Architect.
2. Remove and replace concrete that cannot be repaired and patched to Architect's approval.
3. Comply with floor-drain slope and anti-ponding requirements specified above in floor finishing article. Slabs that cannot be made free of ponding water in rooms containing floor drains will be considered defective.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete.
a. Limit cut depth to 3/4 inch.
b. Make edges of cuts perpendicular to concrete surface.
c. Clean, dampen with water, and brush-coat holes and voids with bonding agent.
d. Fill and compact with patching mortar before bonding agent has dried.
e. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement, so that, when dry, patching mortar matches surrounding color.
a. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching.
b. Compact mortar in place and strike off slightly higher than surrounding surface.
3. Repair defects on concealed formed surfaces that will affect concrete's durability and structural performance as determined by Architect.

D. Repairing Unformed Surfaces:
1. Test unformed surfaces, such as floors and slabs, for finish, and verify surface tolerances specified for each surface.
a. Correct low and high areas which fail to achieve the specified minimum local values of flatness and levelness.
b. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
2. Repair finished surfaces containing surface defects, including spalls, popouts, honeycombs, rock pockets, crazing, and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
3. After concrete has cured at least 14 days, correct high areas by grinding.
4. Correct localized low areas during, or immediately after, completing surface-finishing operations by cutting out low areas and replacing with patching mortar.
a. Finish repaired areas to blend into adjacent concrete.
5. Correct other low areas scheduled to receive floor coverings with a repair underlayment.

a. Prepare, mix, and apply repair underlayment and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
b. Feather edges to match adjacent floor elevations.

6. Correct other low areas scheduled to remain exposed with repair topping.
   a. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations.
   b. Prepare, mix, and apply repair topping and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
7. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete.
   a. Remove defective areas with clean, square cuts, and expose steel reinforcement with at least a 3/4-inch clearance all around.
   b. Dampen concrete surfaces in contact with patching concrete and apply bonding agent.
   c. Mix patching concrete of same materials and mixture as original concrete, except without coarse aggregate.
   d. Place, compact, and finish to blend with adjacent finished concrete.
   e. Cure in same manner as adjacent concrete.
8. Repair random cracks and single holes 1 inch or less in diameter with patching mortar.
   a. Groove top of cracks and cut out holes to sound concrete, and clean off dust, dirt, and loose particles.
   b. Dampen cleaned concrete surfaces and apply bonding agent.
   c. Place patching mortar before bonding agent has dried.
   d. Compact patching mortar and finish to match adjacent concrete.
   e. Keep patched area continuously moist for at least 72 hours.

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

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

3.14 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a special inspector to perform field tests and inspections and prepare testing and inspection reports.

B. Testing and Inspecting other than listed as special inspections: Contractor shall engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained in accordance with ASTM C172/C172M shall be performed in accordance with the following requirements:
1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
   a. When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
2. Slump: ASTM C143/C143M:
   a. One test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.
   b. Perform additional tests when concrete consistency appears to change.
3. Slump Flow: ASTM C1611/C1611M:
   a. One test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.
   b. Perform additional tests when concrete consistency appears to change.
4. Air Content: ASTM C231/C231M pressure method, for normal-weight concrete.
   a. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
5. Concrete Temperature: ASTM C1064/C1064M:
   a. One test hourly when air temperature is 40 deg F and below or 80 deg F and above, and one test for each composite sample.
6. Compression Test Specimens: ASTM C31/C31M.
   a. Cast and laboratory cure two sets of two 6”x12” or three 4”x8” cylinder specimens for each composite sample.

7. Compressive-Strength Tests: ASTM C39/C39M.
   a. Test one laboratory-cured specimen at 7 days, test two 6”x12” or three 4”x8” specimens at 28 days, and retain one 6”x12” or two 4”x8” specimen in reserve for later testing if required.
   b. A compressive-strength test shall be the average compressive strength from a set of two 6”x12” or three 4”x8” specimens obtained from same composite sample and tested at age indicated.
8. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
9. Test results shall be reported in writing to Architect, Structural Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
10. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
11. Additional Tests:
    a. Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.
    b. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42/C42M or by other methods as directed by Architect.
12. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
13. Correct deficiencies in the Work that test reports and inspections indicate does not comply with the Contract Documents.

D. Measure floor and slab flatness and levelness according to ASTM E1155 within 24 hours of finishing and promptly report test results to Architect.

3.15 PROTECTION

A. No satisfactory chemical or cleaning procedure is available to remove petroleum stains from exposed concrete surface. Prevention is therefore essential.

B. Comply with the following requirements wherever concrete is indicated to remain exposed or is to have a thin-coat finish such as painting or stain, or is to be polished:
1. Protect from petroleum stains.
2. Diaper hydraulic equipment used over concrete surfaces.
3. Prohibit vehicles from interior concrete slabs.
4. Prohibit use of pipe-cutting machinery over concrete surfaces.
5. Prohibit placement of steel items on concrete surfaces.
6. Prohibit use of acids or acidic detergents over concrete surfaces.
7. Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer.

END OF SECTION 03 30 00

OPENING SCHEDULE ABBREVIATIONS

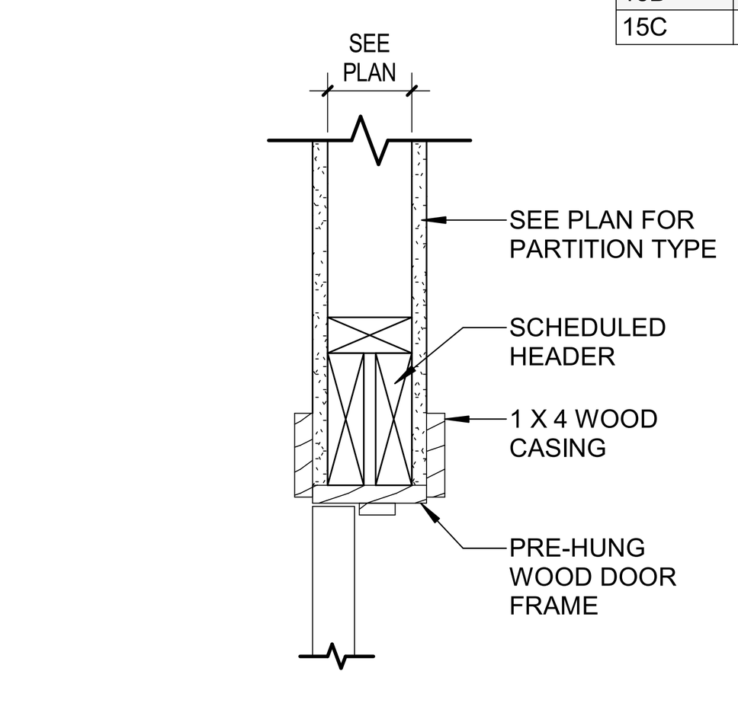
HM HOLLOW METAL
PF PREFINISHED
PT PAINT
WD WOOD

FINISH LISTING - PAINT

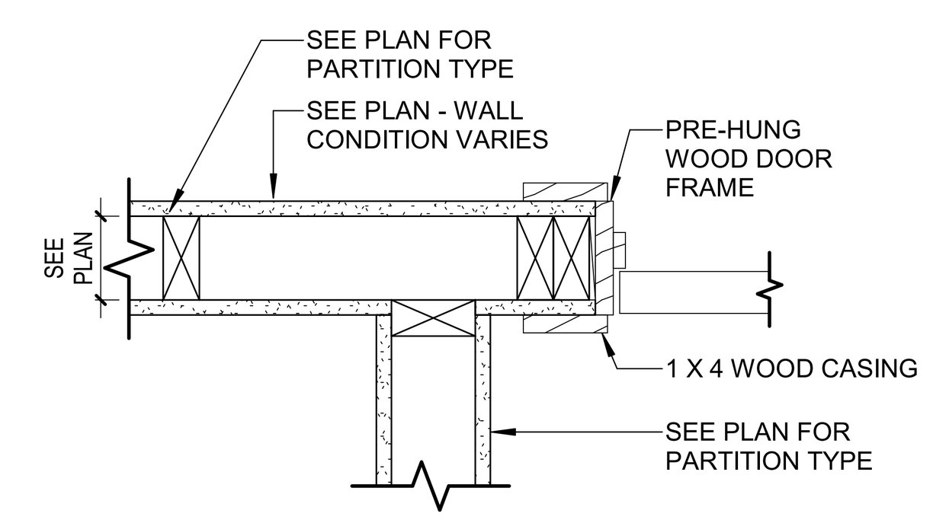
PT-1	TO MATCH SHERWIN WILLIAMS ALABASTER (SW7008)
PT-2	TO MATCH SHERWIN WILLIAMS COLOR STAY IN LIME (SW9032)
PT-3	TO MATCH SHERWIN WILLIAMS COLOR ROBUST ORANGE (SW6628)
PT-4	TO MATCH SHERWIN WILLIAMS COLOR FORGET-ME-NOT (SW6824)
PT-5	TO MATCH SHERWIN WILLIAMS COLOR DANUBE (SW6803)
PT-6	TO MATCH SHERWIN WILLIAMS COLOR RAYO DE SOL (SW9020)
PT-7	TO MATCH SHERWIN WILLIAMS ARGOS (SW7065)

DOOR AND FRAME SCHEDULE

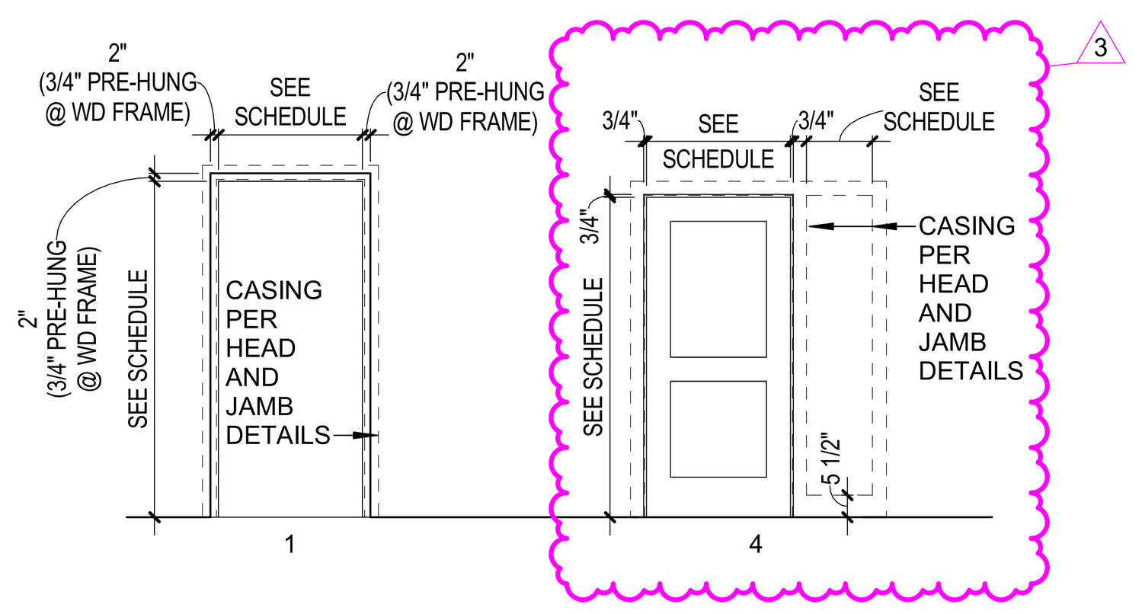
	DOOR								FRAME													
#	# OF LEAFS	WIDTH	HEIGHT	THK	TYPE	MATL	FINISH	GLASS	DEPTH	TYPE	E-FRAME	MATL	FINISH	HEAD	JAMB	SILL	SIDELITE WIDTH	RATING (MINUTES)	ACCESS CONTROL	HDWR SET	NOTES	DOOR #
1A	1	3'-0"	6'-8"	1 3/4"	D	WD	PT-4		6 3/4"	1	-	WD	PT-4	H1	J1			-	-	01	DUTCH DOOR, FIELD FINISHED	1A
1B	1	3'-0"	6'-8"	1 3/4"	FG	WD	PF	G-1	6 3/4"	4	EFR	WD	PT-4	H1	J1/J3		1'-2"	-	●	AC-01		1B
1C	1	3'-0"	6'-8"	1 3/4"	FG	HM	PT-4		7"		EFR	HM	PT-4	H2	J2	23/A511		-	●	AC-02		1C
2A	1	3'-0"	6'-8"	1 3/4"	D	WD	PT-3		6 3/4"	1	-	WD	PT-3	H1	J1			-	-	01	DUTCH DOOR, FIELD FINISHED	2A
2B	1	3'-0"	6'-8"	1 3/4"	FG	WD	PF	G-1	6 3/4"	4	EFR	WD	PT-3	H1	J1/J3		1'-2"	-	●	AC-01		2B
2C	1	3'-0"	6'-8"	1 3/4"	FG	HM	PT-3		7"		EFR	HM	PT-3	H2	J2	23/A511		-	●	AC-02		2C
3A	1	3'-0"	6'-8"	1 3/4"	D	WD	PT-2		6 3/4"	1	-	WD	PT-2	H1	J1			-	-	01	DUTCH DOOR, FIELD FINISHED	3A
3B	1	3'-0"	6'-8"	1 3/4"	FG	WD	PF	G-1	6 3/4"	4	EFR	WD	PT-2	H1	J1/J3		1'-2"	-	●	AC-01		3B
3C	1	3'-0"	6'-8"	1 3/4"	FG	HM	PT-2		7"		EFR	HM	PT-2	H2	J2	23/A511		-	●	AC-02		3C
4A	1	3'-0"	6'-8"	1 3/4"	D	WD	PT-6		6 3/4"	1	-	WD	PT-6	H1	J1			-	-	01	DUTCH DOOR, FIELD FINISHED	4A
4B	1	3'-0"	6'-8"	1 3/4"	FG	WD	PF	G-1	6 3/4"	4	EFR	WD	PT-6	H1	J1/J3		1'-2"	-	●	AC-01		4B
4C	1	3'-0"	6'-8"	1 3/4"	FG	HM	PT-6		7"		EFR	HM	PT-6	H2	J2	23/A511		-	●	AC-02		4C
5A	2	3'-0"	6'-8"	1 3/4"	F	WD	PF		4 3/4"	1	-	WD	PT-7	H1	J1			-	-	02		5A
5B	1	3'-0"	6'-8"	1 3/4"	FG	HM	PT-5		7"		EFR	HM	PT-5	H2	J2	23/A511		-	●	AC-02		5B
5C	1	3'-0"	6'-8"	1 3/4"	FG	WD	PF	G-1	4 3/4"	4	EFR	WD	PT-5	H1	J1/J3		1'-2"	-	●	AC-01		5C
6A	1	3'-0"	6'-8"	1 3/4"	F	WD	PF		4 3/4"	1	-	WD	PT-7	H1	J1			-	-	03		6A
6B	1	3'-0"	6'-8"	1 3/4"	F	WD	PF		4 3/4"	1	-	WD	PT-7	H1	J1			-	-	03		6B
7A	1	3'-8"	6'-8"	1 3/4"	F	HM	PT-5		7"	1	EFR	HM	PT-5	H2	J2	23/A511		-	●	AC-03		7A
7B	1	3'-6"	6'-8"	1 3/4"	F	WD	PF		4 3/4"	1	EFR	WD	PT-7	H1	J1			-	●	04		7B
8	1	3'-0"	6'-8"	1 3/4"	FG	WD	PF		6 3/4"	1	EFR	WD	PT-7	H1	J1			-	●	AC-04		8
8A	1	3'-0"	6'-8"	1 3/4"	F	WD	PF		6 3/4"	1	-	WD	PT-7	H1	J1			-	-	05		8A
9	2	3'-0"	6'-8"	1 3/4"	F	WD	PF		4 3/4"	1	EFR	WD	PT-7	H1	J1			-	●	AC-05		9
10	1	3'-0"	6'-8"	1 3/4"	FG	WD	PF	G-1	4 3/4"	4	EFR	WD	PT-7	H1	J1/J3		1'-2"	-	●	AC-01		10
11	1	3'-0"	6'-8"	1 3/4"	FG	WD	PF	G-1	4 3/4"	4	EFR	WD	PT-7	H1	J1/J3		1'-2"	-	●	AC-01		11
12A	1	3'-0"	6'-8"	1 3/4"	FG	HM	PT-5		7"		EFR	HM	PT-5	H2	J2	23/A511		-	●	AC-06		12A
12B	1	3'-0"	6'-8"	1 3/4"	FG	WD	PF	G-1	4 3/4"	4	EFR	WD	PT-7	H1	J1/J3		1'-2"	-	●	AC-07		12B
13A	1	3'-0"	6'-8"	1 3/4"	F	WD	PF		6 3/4"	1	-	WD	PT-7	H1	J1			-	-	06		13A
13B	1	3'-0"	6'-8"	1 3/4"	F	WD	PF		4 3/4"	1	-	WD	PT-7	H1	J1			-	-	07		13B
14	1	3'-0"	6'-8"	1 3/4"	FG	WD	PF	G-1	4 3/4"	4	EFR	WD	PT-7	H1	J1/J3		1'-2"	-	●	AC-01		14
15B	1	3'-0"	6'-8"	1 3/4"	F	WD	PT-1		6 3/4"	1	-	WD	PT-1	H1	J1			-	-	06	FIELD FINISHED	15B
15C	1	3'-0"	6'-8"	1 3/4"	F	WD	PT-1		6 3/4"	1	-	WD	PT-1	H1	J1			-	-	06	FIELD FINISHED	15C



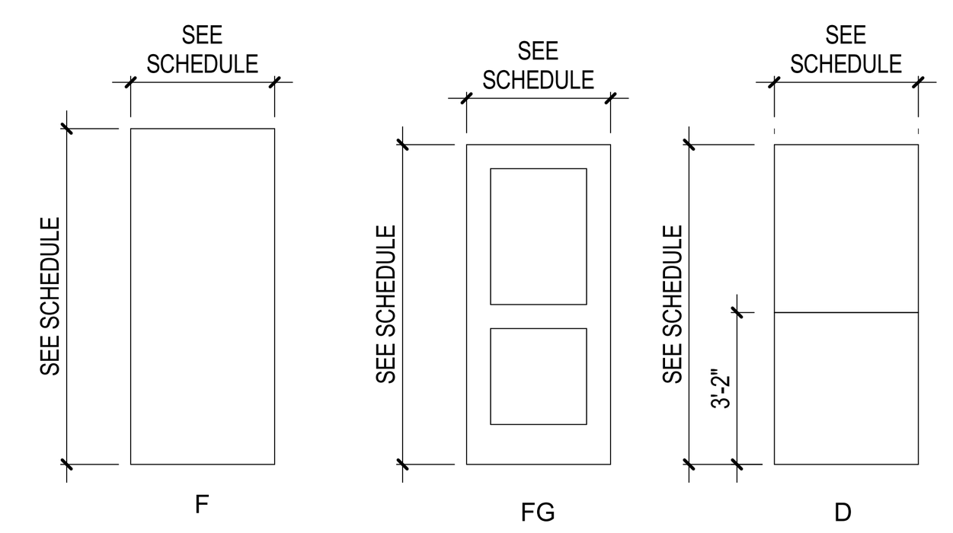
H1 A011 HEAD DETAIL
1 1/2" = 1'-0"



J1 A011 JAMB DETAIL
1 1/2" = 1'-0"

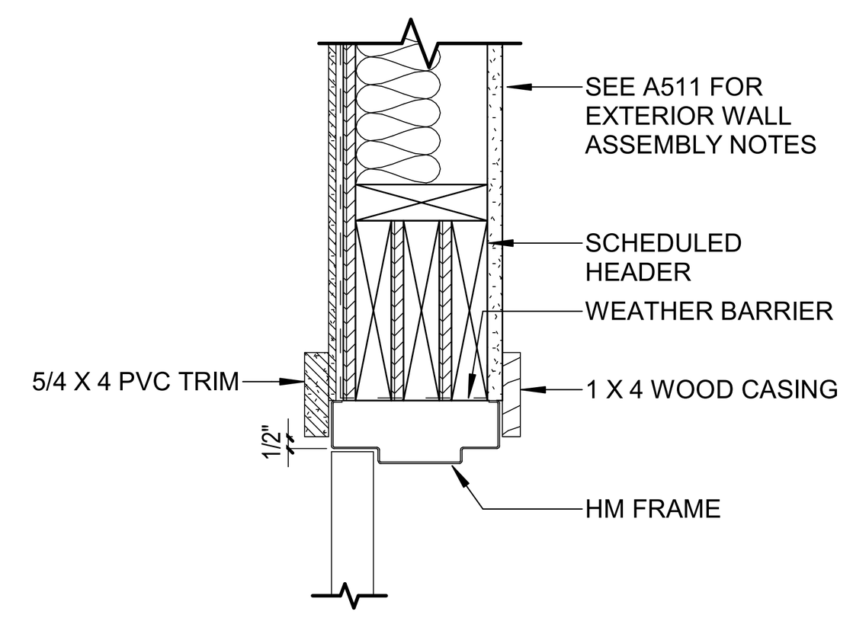


FRAME TYPES
NTS

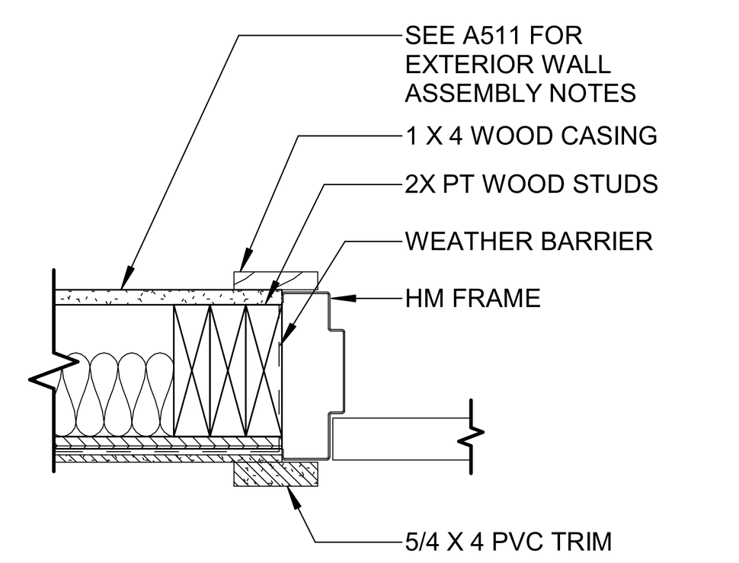


DOOR TYPES
NTS

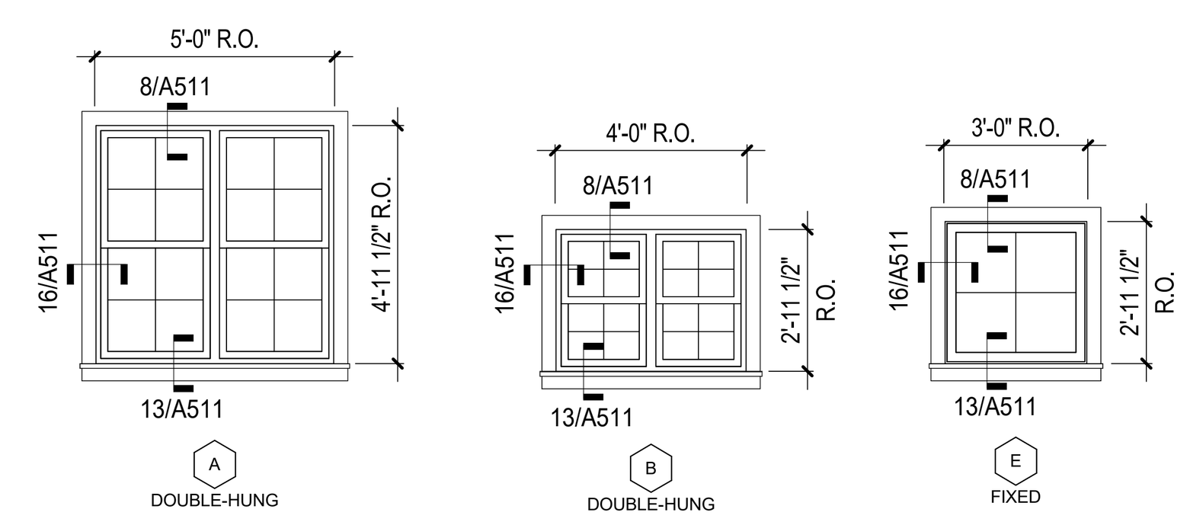
INTERIOR DOORS
F AND FG TYPES: PINE, PREFINISHED CLEAR SATIN STAIN; REFER TO SCHEDULE FOR CASING PAINT COLOR
D TYPE AND F DOORS 15B AND 15C: PAINT GRADE, FIELD FINISHED; REFER TO SCHEDULE FOR CASING FINISH



H2 A011 HEAD DETAIL
1 1/2" = 1'-0"

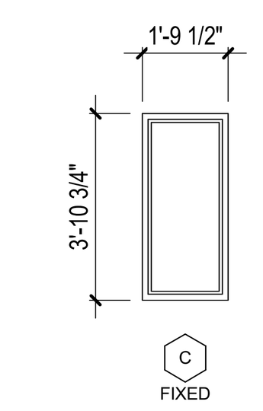


J2 A011 JAMB DETAIL
1 1/2" = 1'-0"

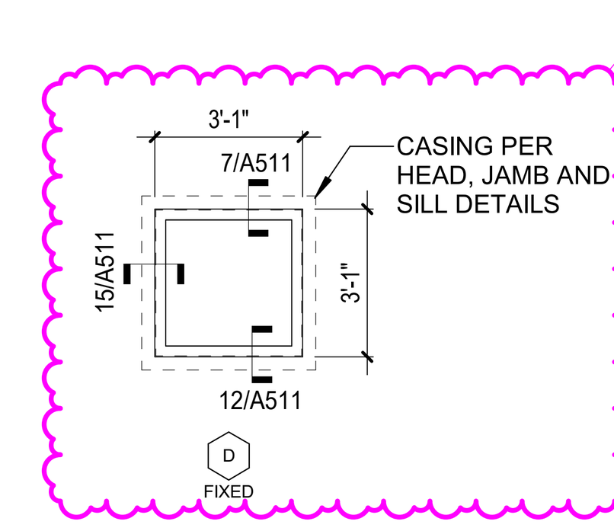


WOOD WINDOWS
1/4" = 1'-0"

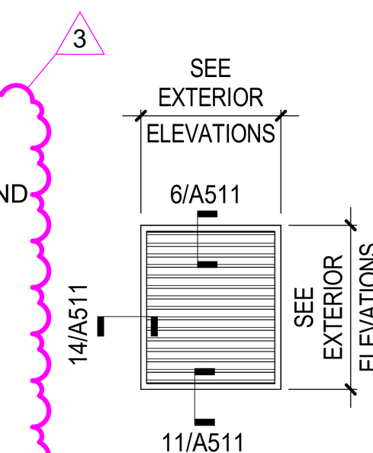
INTERIOR CASING AT WINDOWS:
PINE, FIELD-FINISHED CLEAR SATIN (TO MATCH WINDOW)



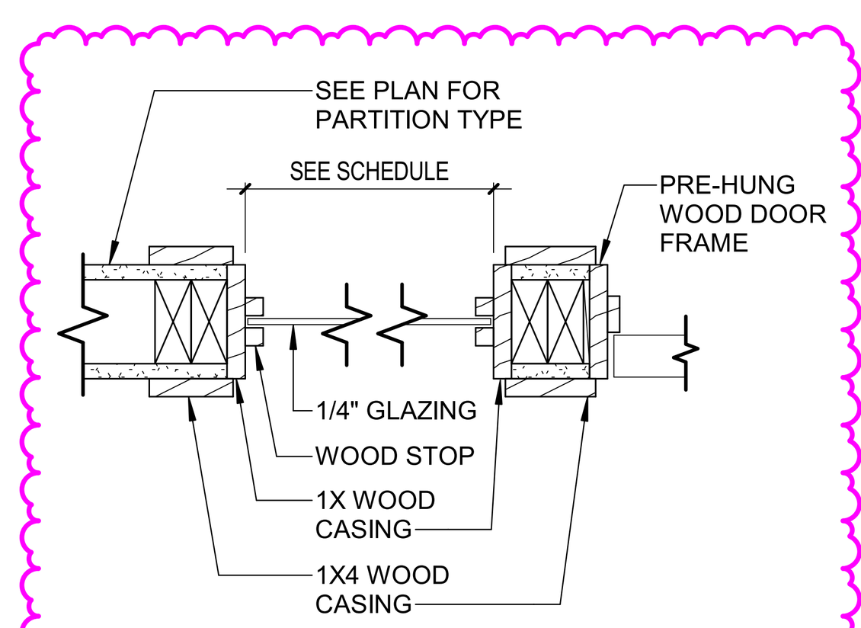
SKYLIGHT
1/4" = 1'-0"



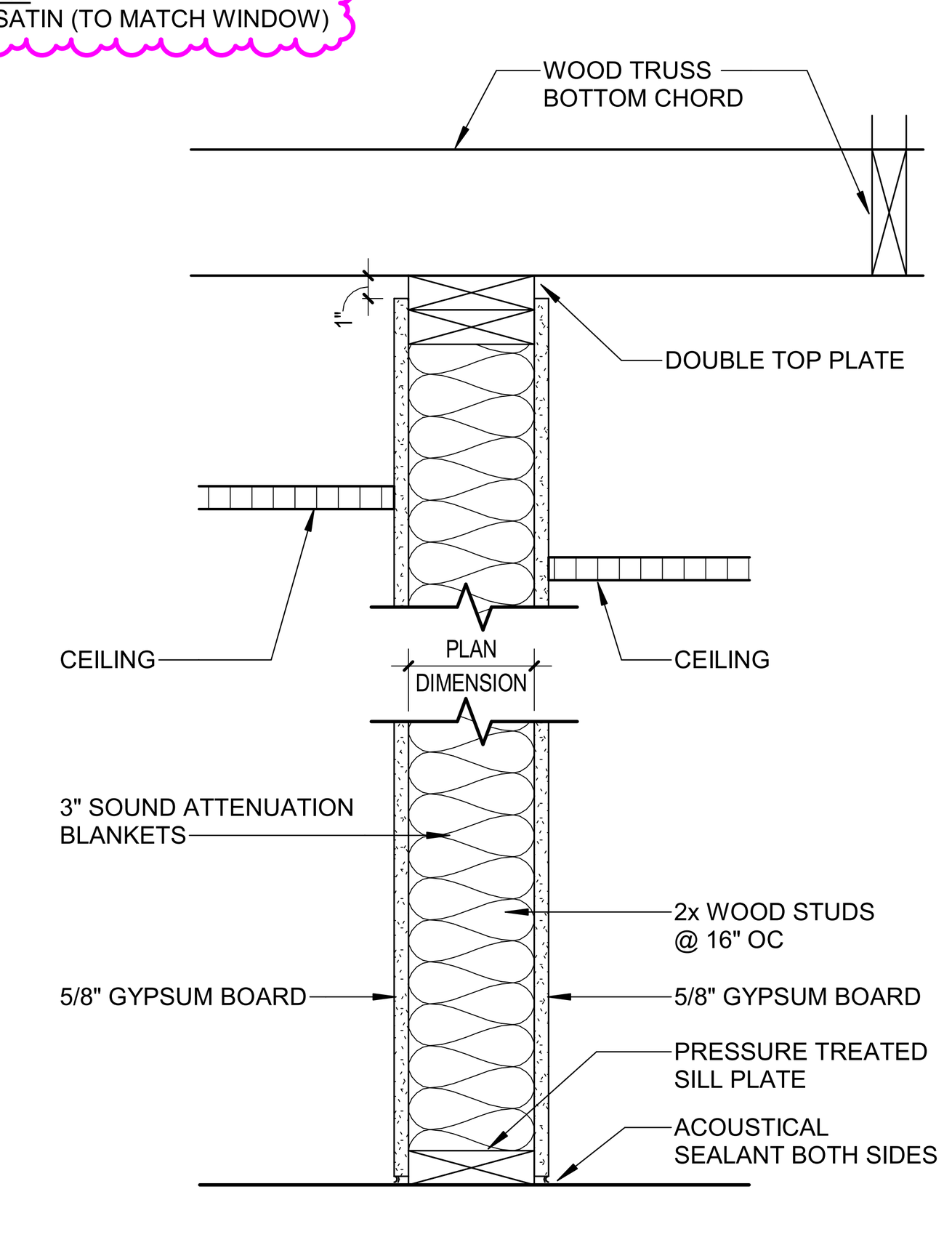
WOOD WINDOW
1/4" = 1'-0"



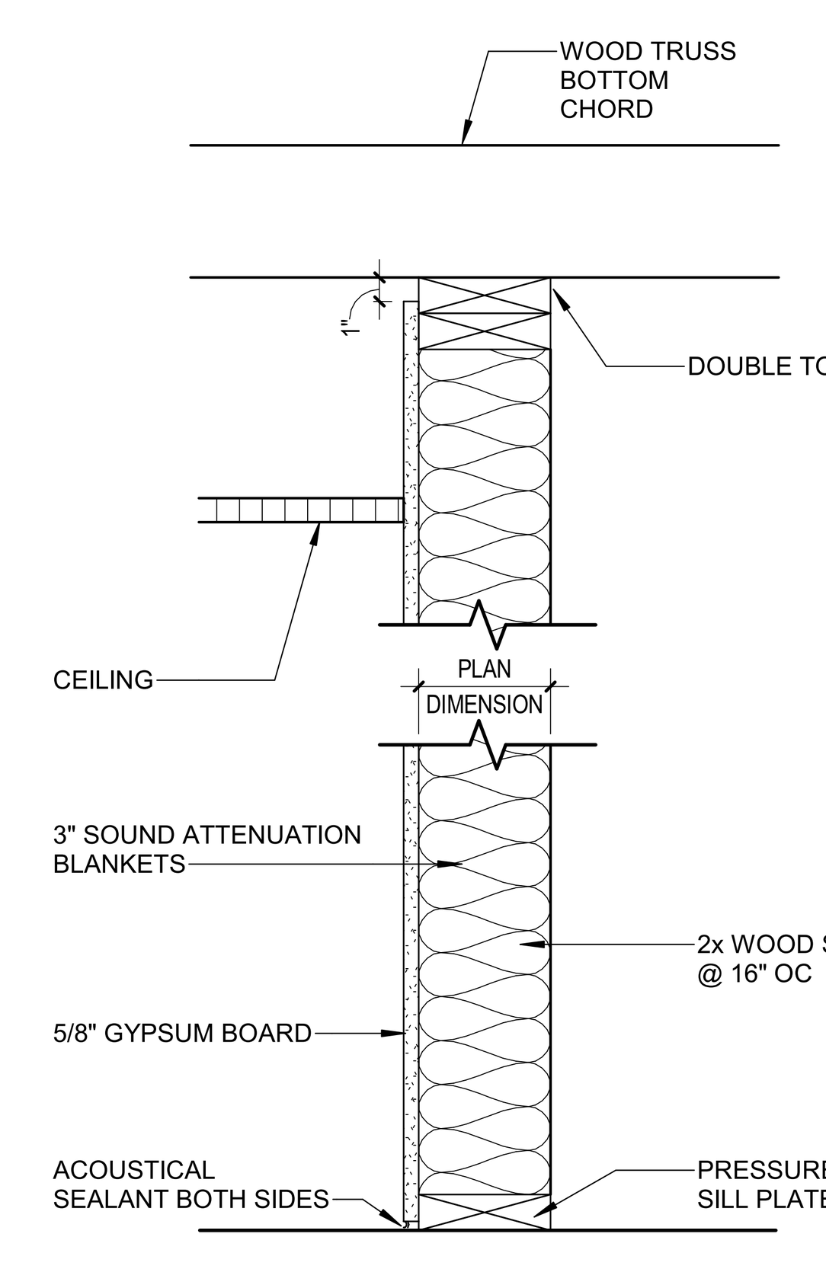
LOUVER
1/4" = 1'-0"



J3 A011 JAMB DETAIL
1 1/2" = 1'-0"



S1 2x WOOD STUD



S2 2x WOOD STUD

PARTITION TYPES

SYMBOLS & LEGENDS

WORK POINT ELEVATION
DETAIL NUMBER
SHEET NUMBER WHERE SHOWN
INTERIOR ELEVATION NUMBER
SHEET NUMBER WHERE SHOWN
EXTERIOR ELEVATION NUMBER
SHEET NUMBER WHERE SHOWN
SECTION NUMBER
SHEET NUMBER WHERE SHOWN
WINDOW TYPE (A, B, C, ETC.) OR LOUVER TYPE (L1, L2, L3, ETC.)
STOREFRONT TYPE (S1, S2, S3, ETC.) OR CURTAINWALL TYPE (C1, C2, C3, ETC.)
1M7a PARTITION TYPE
CONTROL JOINT (MASONRY)
CONTROL JOINT (GYPSUM BOARD)
EXPANSION JOINT
COLUMN CENTERLINE
KEYNOTE
M8b VISUAL DISPLAY BOARD
TV54 TV MOUNTING HEIGHT
1101 DOOR NUMBER
C* CORNER GUARD
P PENCIL SHARPENER
D* SIGN

BD	BOARD
BN	BULLNOSE
CL	CENTERLINE
CJ	CONTROL JOINT
CLG	CEILING
CFMF	COLD-FORMED METAL FRAMING
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONT	CONTINUOUS
DIA	DIAMETER
DIM	DIMENSION
DEFS	DIRECT-APPLIED EXTERIOR FINISH SYSTEM
DN	DOWN
DS	DOWNSPOUT
EA	EACH
EIFS	EXTERIOR INSULATION FINISH SYSTEM
EL	ELEVATION
EQ	EQUAL
EJ	EXPANSION JOINT
FE	FIRE EXTINGUISHER MOUNTED W/ WALL BRACKET
FEC	FIRE EXTINGUISHER IN CABINET
FT	FOOT OR FEET
GA	GAUGE
GYP BD	GYPSUM BOARD
HR	HOUR
HT	HEIGHT
LGMF	LIGHT GAUGE METAL FRAMING
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
MO	MASONRY OPENING
OC	ON CENTER
OPP	OPPOSITE HAND
R	RADIUS
RD	ROOF DRAIN
RO	ROUGH OPENING
SIM	SIMILAR
SRD	SECONDARY ROOF DRAIN
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
WD	WOOD

CORNER GUARD LEGEND:

C=CORNER GUARD — C* — C4
* = FULL HEIGHT OF WALL
# = PARTIAL HEIGHT IN FEET

SIGN TYPE KEY

B* — * INDICATES THAT A SIGN IS INSTALLED ON GLASS - INCLUDE A VINYL BACKER CUT TO THE SAME SIZE AS THE ADJACENT SIGN TO CONCEAL MOUNTING TAPE AND SILICONE.
SIGN TYPE

SIGN TYPES

A — ROOM NUMBER & NAME INSERT SIGN
RAISED, 1" HIGH ROOM NUMBER WITH BRAILLE
1" NAME INSERT WINDOW

B — ROOM NUMBER & NAME SIGN
RAISED, 1" HIGH ROOM NUMBER WITH BRAILLE
RAISED, 5/8" HIGH ROOM NAME

C — ROOM NAME SIGN
RAISED, 5/8" HIGH ROOM NAME WITH BRAILLE

D — EVACUATION PLAN SIGN HORIZ.
5/8" HIGH TEXT
8 1/2" X 11" PLAIN INSERT WINDOW

E — EXIT SIGN
RAISED, 1" HIGH TEXT WITH BRAILLE

F — WOMEN'S RESTROOM SIGN
RAISED GRAPHICS
RAISED, 5/8" HIGH ROOM NAME WITH BRAILLE

G — MEN'S RESTROOM SIGN
RAISED GRAPHICS
RAISED, 5/8" HIGH ROOM NAME WITH BRAILLE

H — UNISEX RESTROOM SIGN
RAISED GRAPHICS
RAISED, 5/8" HIGH ROOM NAME WITH BRAILLE

SIGNAGE SCHEDULE

NUMBER	NAME	SIGN NUMBER	SIGN NAME
1	EARLY HEAD START ROOM	TBD	NAME INSERT
1A	STORAGE	-	RESTROOM
2	HEAD START ROOM	TBD	NAME INSERT
2A	TOILET ROOM	-	RESTROOM
3	HEAD START ROOM	TBD	NAME INSERT
3A	TOILET ROOM	-	RESTROOM
4	HEAD START ROOM	TBD	NAME INSERT
4A	TOILET ROOM	-	RESTROOM
5	MUSCLE ROOM	TBD	MUSCLE ROOM
5A	MR STOR.	-	STORAGE
6A	MEN TOILET ROOM	-	MEN
6B	WOMEN TOILET ROOM	-	WOMEN
7	ENTRY	-	-
8	WARMING KITCHEN	TBD	KITCHEN
8A	PANTRY	-	PANTRY
9	LAUNDRY	TBD	LAUNDRY
10	OFFICE	TBD	NAME INSERT
11	DIRECTOR'S OFFICE	TBD	NAME INSERT
12	WAITING	-	-
13A	MECHANICAL ROOM	-	MECHANICAL ROOM
13B	ELECTRICAL & TECH	-	ELECTRICAL ROOM
14	CONFERENCE/ WORKROOM	TBD	TEACHER WORKROOM
15A	CORRIDOR	-	-
15B	MECHANICAL ROOM	-	MECHANICAL ROOM
15C	MECHANICAL ROOM	-	MECHANICAL ROOM

NOTE: FINAL ROOM NUMBERS AND NAMES TO BE CONFIRMED BY OWNER AND ARCHITECT DURING CONSTRUCTION.

ROCHELLE HEIS REGISTERED NO. 8185 COMMONWEALTH OF KENTUCKY ARCHITECT

SHP
223 FAIRFIELD AVENUE, SUITE 100
BELLEVUE, KY 41073 · 859.360.1234

NKCAC
FALMOUTH HEAD START CENTER
KLEE WAY, FALMOUTH, KY 41040
NORTHERN KENTUCKY COMMUNITY ACTION COMMISSION
717 MADISON AVENUE, COVINGTON, KY 41011

ISSUANCES

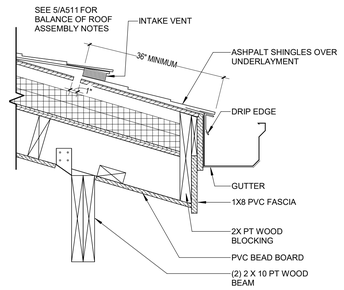
	12-15-23	SCHEMATIC DESIGN
	05-03-24	DESIGN DEVELOPMENT
	05-14-25	PERMIT AND BID SET
3	06-12-25	ADDENDUM 3

SIGNAGE, PARTITION TYPES, AND OPENING SCHEDULES, ELEVATIONS, AND DETAILS

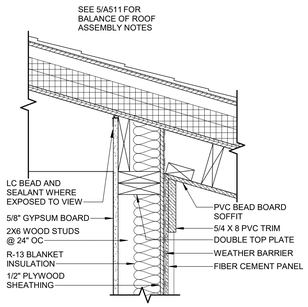
COMM NO. 2023108.01

A011

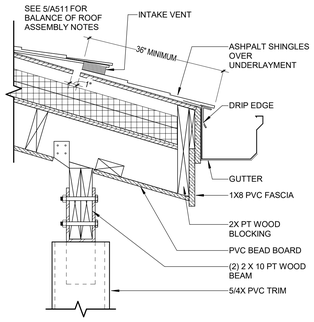
0-1" REFERENCE LINE



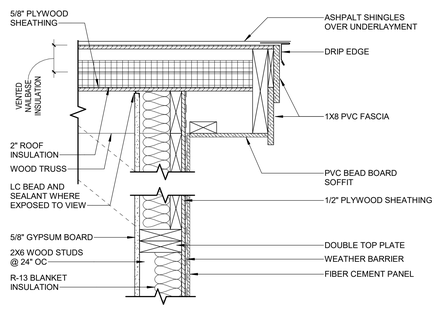
1 A511 DETAIL - BEAM @ UPPER ROOF
1 1/2" = 1'-0"



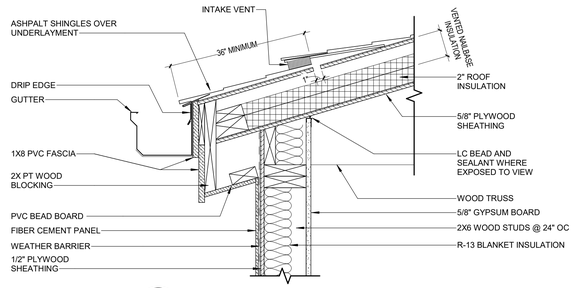
2 A511 DETAIL - TOP PLATE
1 1/2" = 1'-0"



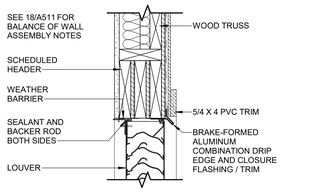
3 A511 DETAIL - BEAM
1 1/2" = 1'-0"



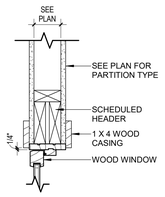
4 A511 DETAIL - RAKE
1 1/2" = 1'-0"



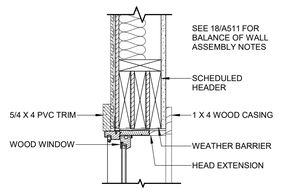
5 A511 DETAIL - EAVE
1 1/2" = 1'-0"



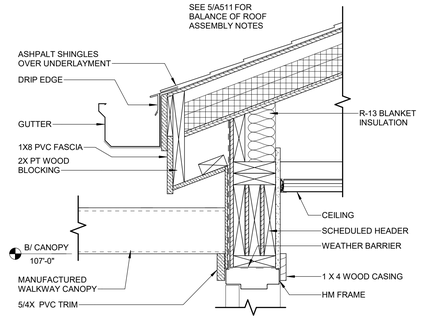
6 A511 LOUVER HEAD
1 1/2" = 1'-0"



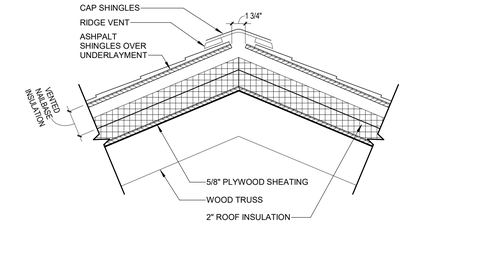
7 A511 DETAIL - INT. WINDOW HEAD
1 1/2" = 1'-0"



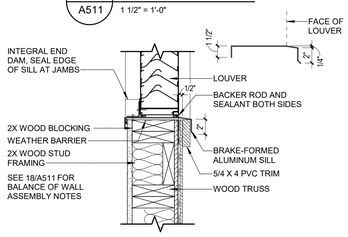
8 A511 DETAIL - EXT. WINDOW HEAD
1 1/2" = 1'-0"



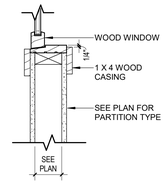
9 A511 DETAIL - WALKWAY CANOPY
1 1/2" = 1'-0"



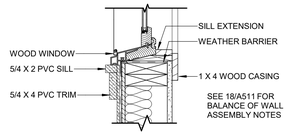
10 A511 DETAIL - RIDGE
1 1/2" = 1'-0"



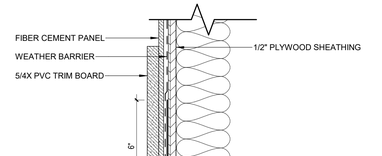
11 A511 LOUVER SILL
1 1/2" = 1'-0"



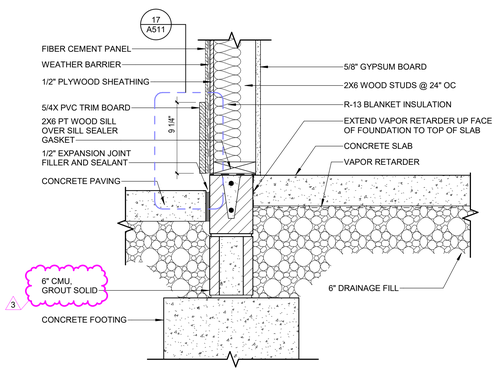
12 A511 DETAIL - INT. WINDOW SILL
1 1/2" = 1'-0"



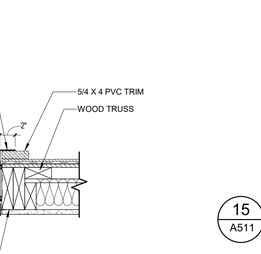
13 A511 DETAIL - EXT. WINDOW SILL
1 1/2" = 1'-0"



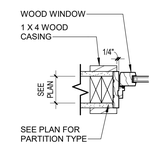
17 A511 FLASHING DETAIL @ FOUNDATION
3" = 1'-0"



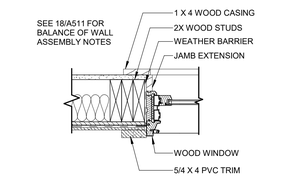
18 A511 FOUNDATION DETAIL
1 1/2" = 1'-0"



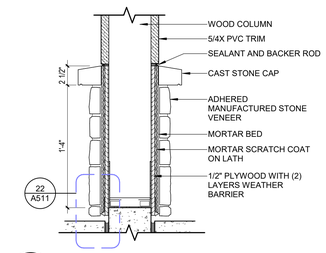
14 A511 LOUVER JAMB
1 1/2" = 1'-0"



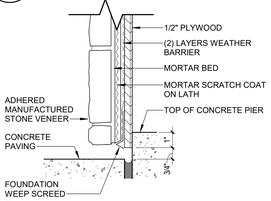
15 A511 DETAIL - INT. WINDOW JAMB
1 1/2" = 1'-0"



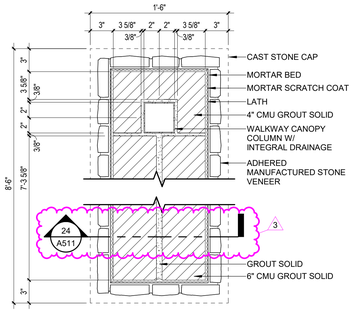
16 A511 DETAIL - EXT. WINDOW JAMB
1 1/2" = 1'-0"



20 A511 COLUMN BASE DETAIL
1 1/2" = 1'-0"



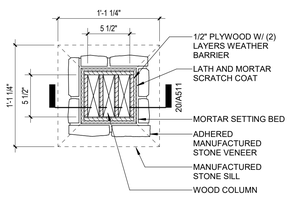
22 A511 COLUMN BASE DETAIL
3" = 1'-0"



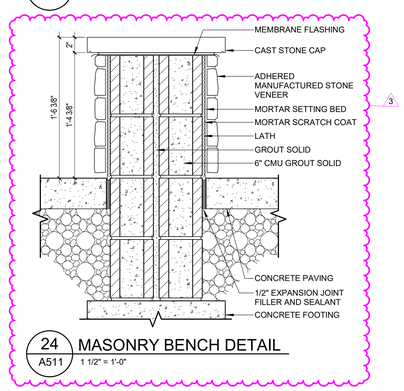
NOTE: APPLY BITUMINOUS COATING TO CANOPY COLUMNS WHERE IN CONTACT W/ MORTAR

PROVIDE A HORIZONTAL LAYER OF MEMBRANE FLASHING BELOW THE CAST STONE WALL CAP

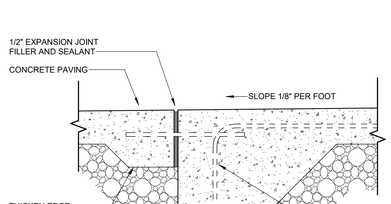
19 A511 PLAN DETAIL - MASONRY BENCH
1 1/2" = 1'-0"

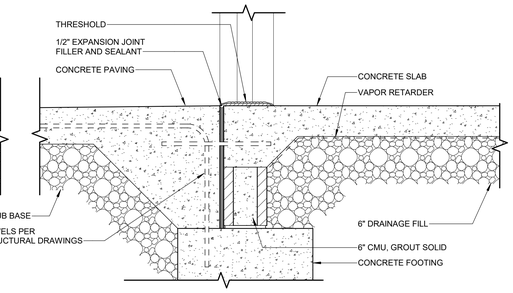


21 A511 PLAN DETAIL - COLUMN
1 1/2" = 1'-0"



24 A511 MASONRY BENCH DETAIL
1 1/2" = 1'-0"





23 A511 FOUNDATION DETAIL - FROST SLAB
1 1/2" = 1'-0"

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717 MADISON AVENUE, COVINGTON, KY 41011

ISSUANCES

	12-15-23	SCHEMATIC DESIGN
	05-03-24	DESIGN DEVELOPMENT
	05-14-25	PERMIT AND BID SET
3	06-12-25	ADDENDUM 3

ROOF, FOUNDATION, WINDOW, AND PLAN DETAILS

COMM NO. 2023108.01

A511

0'-1" REFERENCE LINE

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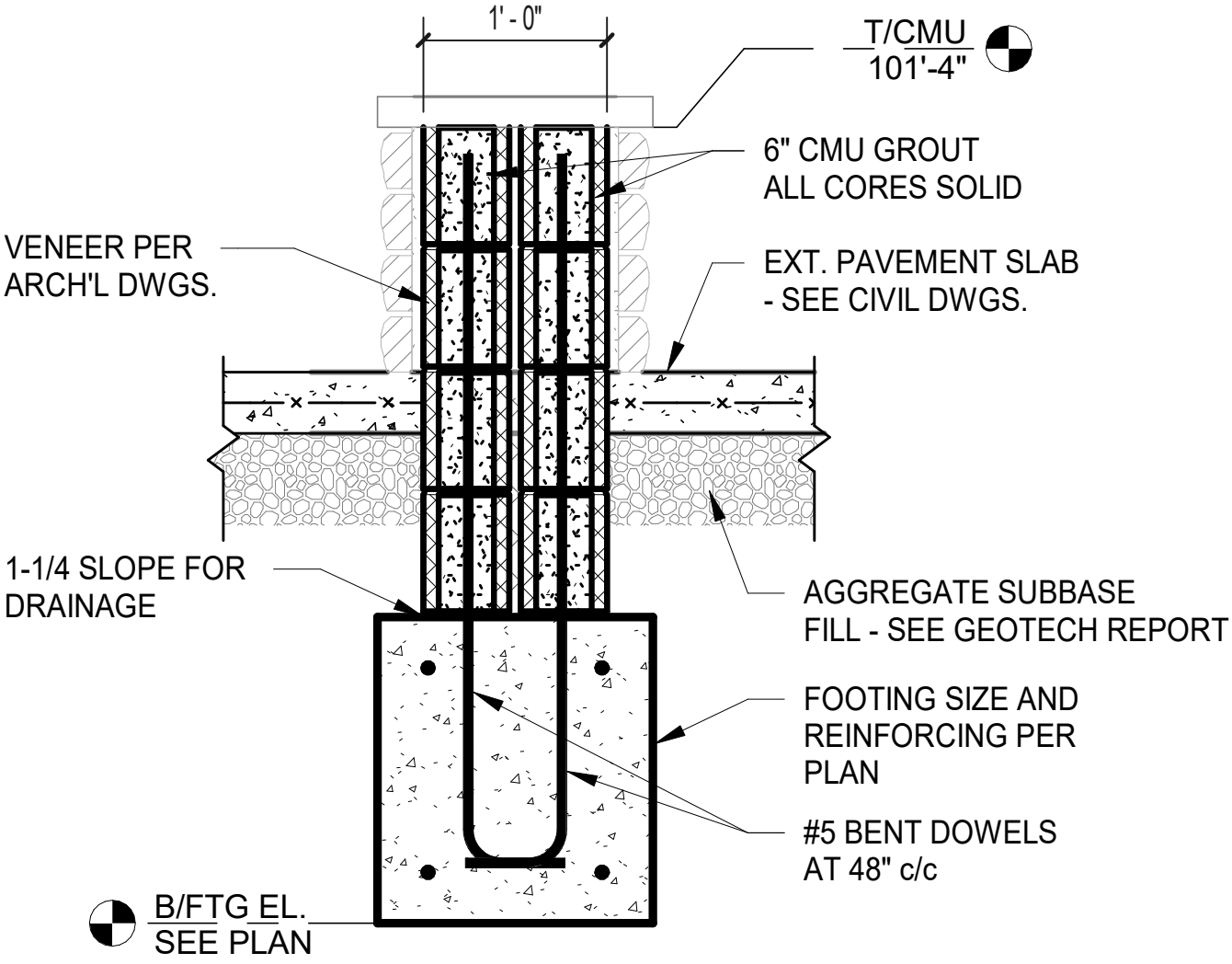

1' - 0"
T/CMU
101'-4"
6" CMU GROUT
ALL CORES SOLID
VENEER PER
ARCH'L DWGS.
EXT. PAVEMENT SLAB
- SEE CIVIL DWGS.
1-1/4 SLOPE FOR
DRAINAGE
AGGREGATE SUBBASE
FILL - SEE GEOTECH REPORT
FOOTING SIZE AND
REINFORCING PER
PLAN
#5 BENT DOWELS
AT 48" c/c
B/FTG EL.
SEE PLAN

GENERAL DAYLIGHTING NOTES

A. ALL FIXTURES LOCATED WITHIN THE DAYLIGHT ZONES INDICATED BY THE DASHED REGIONS SHALL BE AUTOMATICALLY AND PROPORTIONALLY DIMMED IN RESPONSE TO THE LIGHT LEVELS DETECTED BY THE DAYLIGHT SENSOR. PROVIDE ADDITIONAL WIRING AND/OR CONTROL DEVICES AS REQUIRED BASED ON MANUFACTURER REQUIREMENTS TO PROVIDE A COMPLETE OPERATING SYSTEM.

B. THE LIGHTS WITHIN DAYLIGHT ZONES SHALL BE TIED WITH ADJACENT LIGHT FIXTURES TO OPERATE AS SINGLE ZONE, BUT SHALL INDEPENDENTLY RESPOND TO THE DAYLIGHT SENSOR.

GENERAL LIGHTING NOTES:

A. EXIT SIGNS, EMERGENCY LIGHTING, AND NIGHT LIGHTING (NL) SHALL BE CONNECTED AHEAD OF ALL SWITCHING. REFER TO E500 SERIES DRAWINGS FOR DETAILS.

B. LIGHT FIXTURES WITH A RELAY NUMBER (IE r1.1) SHALL BE WIRED THROUGH THE ASTRONOMICAL TIME CLOCK. REFER TO E500 SERIES SHEETS FOR ADDITIONAL LIGHTING CONTROL INFORMATION.

GENERAL FIRE ALARM NOTES:

A. FIRE ALARM DRAWINGS INDICATE A BASIS OF DESIGN FOR LOCATIONS AND QUANTITIES OF DEVICES, APPLIANCES, CONTROL PANELS, ETC. FIRE ALARM SYSTEM DESIGNER SHALL REVISE THE PLANS AS REQUIRED TO MEET ALL CODE AND PROJECT REQUIREMENTS. FIRE ALARM SYSTEM SHALL BE DESIGNED BY A LICENSED FIRE ALARM SYSTEM DESIGNER.

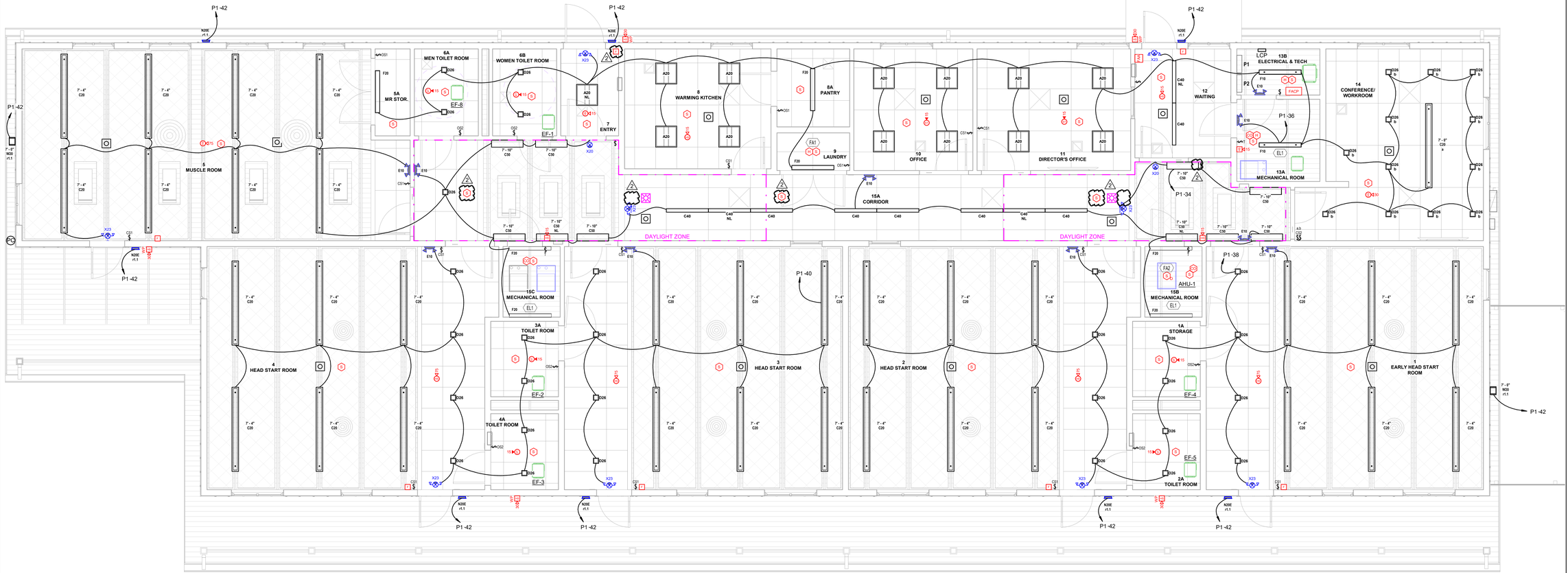
B. CEILING MOUNTED VISUAL ALARM NOTIFICATION DEVICES SHALL BE MOUNTED BELOW THE LOWEST OBSTRUCTION. PROVIDE HARDWARE AS REQUIRED FOR PENDANT TYPE INSTALLATION.

KEYNOTES

EL1 MOUNT LIGHTING IN MECHANICAL SPACES AFTER ALL PIPING AND DUCTWORK HAVE BEEN INSTALLED.

FA1 DETECTORS IN LAUNDRY ROOM SHALL BE PROVIDED AND SET TO AVOID FALSE ALARMS DUE TO CONDITIONS ARISING FROM NORMAL OPERATION OF LAUNDRY EQUIPMENT (E.G. EXCESSIVE HEAT AND MOISTURE WITHIN ROOM).

FA2 PROVIDE SMOKE DETECTOR(S) AS REQUIRED TO MONITOR ALL RETURN AIR (BOTH DUCTED AND PLENUM RETURNS). PROVIDE RELAY(S) AS REQUIRED TO SHUT DOWN EACH HVAC EQUIPMENT WITHIN THE ROOM. COORDINATE LOCATION WITH DIV. 23 PROVIDE REMOTE TEST STATION NEAR SERVING EQUIPMENT.



1 E101 FIRST FLOOR LIGHTING AND FIRE ALARM PLAN

1/4" = 1'-0"

STATE OF KENTUCKY
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ISSUANCES

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ELECTRICAL LIGHTING AND FIRE ALARM PLAN

COMM NO. 2023108.01

E101