

**BUILDING ADDITION TO
JL NEWBERN MIDDLE SCHOOL
VALDOSTA, GEORGIA 31602**

**ADDENDUM NO. 2
March 1, 2021**

GENERAL:

1. **ATTENTION:** When an addendum approves a manufacturer as “acceptable” or approved”, that manufacturer is approved to submit product(s) that 100% meets or exceed the Contract Documents. No specific product has been approved by said manufacturer(s) unless specifically indicated. It is the Contractor’s and product manufacturer’s responsibility to bid and supply products that completely meet or exceed the Contract Documents. After the bidding process is completed, if a product is submitted for review and is not approved as an equal to the specifications, the Contractor shall provide an approved product at no additional cost to the Owner.
2. The lay-down area for the construction will be in the grassed area south of the building addition and north of the kitchen parking area. Contractor shall verify exact location with owner prior to setting up construction trailer. Contractor should also be conscious of school staff parking and traffic circulation throughout the site.

REVISIONS TO THE SPECIFICATIONS:

1. SECTION 074215 – METAL WALL PANELS
 - a. Include the attached Section 074215 – Metal Wall Panels – Revised March 01, 2021.
2. SECTION 074293 – SOFFIT PANELS
 - a. Include “MBCI” as an approved manufacturer, subject to completely adhering to the specification.
3. SECTION 076200 – SHEET METAL FLASHING AND TRIM
 - a. Replace this section in its entirety with the attached Section 076200 – Sheet Metal Flashing and Trim – Revised March 01, 2021.
4. SECTION 087100 – FINISH HARDWARE:
 - a. Add the following hardware set for the specified teacher cabinets:

SET #TC

Doors: TC

3	Hinges	F179 3 1/2 X 3 1/2	US26D	ST
1	Lockset	7KC2-7R15D STD STK	626	BE
3	Door Silencers	609	GREY	RO

REVISIONS TO THE DRAWINGS:

1. SHEET C1000:
 - a. Replace this Sheet with the attached revised sheets as part of "Addendum 2".
2. SHEET C5000:
 - a. Replace this Sheet with the attached revised sheets as part of "Addendum 2".
3. SHEET A3000:
 - a. Window Detail: Revise the window section to show a 6" center plane storefront system.
4. SHEET A4000:
 - a. Revise Sections 3/A4000 and 4/A4000 to include the term "FLUID APPLIED AIR BARRIER PER SPEC." as shown on attached Sheet A4000.
 - b. Revise Section 5/A4000 as shown on attached Sheet A4000.
5. SHEET M1100:
 - a. Replace this Sheet with the attached revised sheets as part of "Addendum 2"

END

SECTION 074215

CONCEALED FASTENER METAL WALL PANEL SYSTEM

Revised March 01, 2021

PART 1 – GENERAL

1.01 DESCRIPTION

A. General:

1. Furnish all labor, material, tools, equipment and services for all preformed fascia, walls, equipment screens as indicated, in accord with provisions of Contract Documents.
2. Completely coordinate with work of all other trades.
3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
4. See Division 1 for General Requirements.

B. Related work specified elsewhere:

1. Structural steel: Section 05100.
2. Steel joists: Section 05200 or 05400.
3. Flashing and sheet metal: Section 07600.

1.02 QUALITY ASSURANCE

A. Applicable standards:

1. SMACNA: "Architectural Sheet Metal Manual" Sheet Metal and Air Conditioning Contractors National Association, Inc.
2. AISC: "Steel Construction Manual" American Institute of Steel Construction.
3. AISI: "Cold Form Steel Design Manual," American Iron and Steel Institute.
4. ASTM A792-83-AZ50: Specifications for steel sheet, aluminum-zinc alloy coated (galvanized) by the hot dip process, general requirements (Galvalume®).

B. Manufacturer's qualifications:

1. Manufacturer has a minimum of three years experience in manufacturing metal wall systems of this nature. Panels specified in this section shall be produced in a factory environment (not job site roll formed) with fixed-base roll forming equipment assuring the highest level of quality control. A letter from the manufacturer certifying compliance will accompany the product material submittals.

C. Installation contractor's qualifications:

1. Maintain \$250,000 minimum general liability insurance coverage.
2. Maintain statutory limits of worker's compensation coverage as mandated by law.
3. Has no viable claims pending regarding negligent acts or defective workmanship on previously performed or current projects.
4. Has not filed for protection from creditors under any state or federal insolvency or debtor relief statutes or codes.
5. Project foreman is the person having received specific training in the proper installation of the specified metal wall system and will be present to supervise whenever material is being installed.
6. Provide five references from five different architects or building owners for projects that have been in service for a minimum of two years, stating satisfactory performance by the installation contractor.
7. Provide certification letter that installation contractor has a minimum of three years' of metal product installation experience immediately preceding the date upon which work is to commence.

1.03 SUBMITTALS

- A. Shop drawings:
 - 1. Submit complete shop drawings and erection details to the architect for review. Do not proceed with manufacture prior to review of shop drawings. Do not use drawings prepared by the architect for shop or erection drawings.
 - 2. Shop drawings show methods of erection, elevations and plans of roof and wall panels, sections and details, anticipated loads, flashings, sealants, interfaces with all materials not supplied and proposed identification of component parts and their finishes.
- B. Samples:
 - 1. Submit samples and color chips for all proposed finishes.
 - a) Submit one 8 inch long sample of panel, including clips.
 - b) Submit two 3 inch x 5 inch color chip samples in color selected by the architect (owner).
- C. Warranty(s):
 - 1. Metal wall system manufacturer, upon final acceptance for project, furnish a warranty covering Galvalume Plus® against rupture, structural failure and perforation due to normal atmospheric corrosion exposure for a period of 20 years.
 - 2. Covering paint finish against cracking, checking, blistering, peeling, flaking, chipping, chalking and fading for a period of twenty (20) years for wall panels premium fluorocarbon coating produced with Kynar 500 or Hylar 5000 resin.
- D. Metal wall system fabrication certification:
 - 1. Submit a letter from the metal wall system manufacturer certifying the ShadowRib™ wall panels have been produced in a factory environment (not job site roll formed) with fixed-base roll forming equipment.
- E. Installation contractor's qualifications:
 - 1. Submit five references from five different architects or building owners for projects that have been in service for a minimum of two years, stating satisfactory performance by the installation contractor.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Delivery:
 - 1. Deliver metal wall system to job site properly packaged to provide protection against transportation damage.
- B. Handling:
 - 1. Exercise extreme care in unloading, storing and erecting metal wall system to prevent bending, warping, twisting and surface damage.
- C. Storage:
 - 1. Store all material and accessories above ground on well skidded platforms. Store under waterproof covering. Provide proper ventilation of metal wall system to prevent condensation build-up between each panel or trim/flushing component.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Metal wall system profile:
 - 1. 3 inch deep x 16 inch width with 1½ inch deep x 5¼ inch wide fluting.
- B. Metal wall system style:
 - 1. Fluted face.
 - 2. Concealed fasteners.
- C. Gauge:
 - 1. 2. 24 gauge.

- D. Substrate:
 - 1. Galvalume® steel sheet, minimum yield of 50,000 PSI.
- E. Texture:
 - 1. Embossed.
- F. Finish:
 - 1. Premium fluorocarbon coating produced with Kynar 500 or Hylar 5000 resin (20 year warranty).
- G. Color:
 - 1. Selected from metal wall system manufacturer's standard offering.
- H. Acceptable manufacturer:
 - 1. MBCI - Houston, TX - (281) 445-8555.
 - 2. Butler Mfg. - Laurinburg, NC- (910) 276-7676
 - 3. Architectural Metal Systems, Inc.
- I. Other manufacturers desiring approval comply with Section 01630.

2.02 FABRICATION

- A. Material shall be in-line tension leveled prior to roll forming finished panel profile.
- B. Roll form panels in continuous lengths, full length of detailed runs.
- C. Standard panel length shall be no more than 45 feet long (for longer length availability, contact manufacturer).
- D. Fabricate trim/flashing and accessories to detailed profiles.
- E. Fabricate trim/flashing from same material as panel.

PART 3 – EXECUTION

3.01 SURFACE CONDITIONS

- A. Examination:
 - 1. Inspect installed work of other trades and verify that such work is complete to a point where this work may continue.
 - 2. Verify that installation may be made in accordance with approved shop drawings and manufacturer's instructions.
- B. Discrepancies:
 - 1. In event of discrepancy, notify the architect.
 - 2. Do not proceed with installation until discrepancies have been resolved.

3.02 INSTALLATION

- A. Install metal wall system so that it is weathertight, without waves, warps, buckles, fastening stresses or distortion.
- B. Install metal wall system in accordance with manufacturer's instructions and shop drawings.
- C. Provide concealed anchors at all panel attachment locations.
- D. Install panels plumb, level and straight with seams parallel, conforming to design as indicated.

3.03 CLEANING, PROTECTION

- A. Dispose of excess materials and remove debris from site.
- B. Clean work in accordance with manufacturer's recommendations.
- C. Protect work against damage until final acceptance. Replace or repair to the satisfaction of the architect (owner), any work that becomes damaged prior to final acceptance.
- D. Touch up minor scratches and abrasions.

END.

SECTION 076200

SHEET METAL FLASHING AND TRIM

Revised March 01, 2021

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section Includes:
 - 1. Manufactured reglets with counterflashing.
 - 2. Formed roof-drainage sheet metal fabrications.
 - 3. Formed wall sheet metal fabrications.
 - 4. Formed equipment support flashing.
- B. Related Requirements:
 - 1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking.
 - 2. Section 077200 "Roof Accessories" for set-on-type curbs, equipment supports, roof hatches, vents, and other manufactured roof accessory units.

1.03 COORDINATION

- A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
- B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

1.04 ACTION SUBMITTALS

- A. Product Data: For each of the following
 - 1. Underlayment materials.
 - 2. Elastomeric sealant.
 - 3. Butyl sealant.
 - 4. Epoxy seam sealer.
- B. Shop Drawings: For sheet metal flashing and trim.
 - 1. Include plans, elevations, sections, and attachment details.
 - 2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled Work.
 - 3. Include identification of material, thickness, weight, and finish for each item and location in Project.
 - 4. Include details for forming, including profiles, shapes, seams, and dimensions.
 - 5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
 - 6. Include details of termination points and assemblies.
 - 7. Include details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction from fixed points.
 - 8. Include details of roof-penetration flashing.
 - 9. Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, flashings, and counterflashings.
 - 10. Include details of special conditions.
 - 11. Include details of connections to adjoining work.

- C. Samples for Verification: For each type of exposed finish.
 - 1. Sheet Metal Flashing: 12 inches long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
 - 2. Trim, Metal Closures, Expansion Joints, Joint Intersections, and Miscellaneous Fabrications: 12 inches long and in required profile. Include fasteners and other exposed accessories.
 - 3. Unit-Type Accessories and Miscellaneous Materials: Full-size Sample.
 - 4. Anodized Aluminum Samples: Samples to show full range to be expected for each color required.
- 1.05 INFORMATIONAL SUBMITTALS
 - A. Qualification Data: For fabricator.
 - B. Sample Warranty: For special warranty.
- 1.06 CLOSEOUT SUBMITTALS
 - A. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.
 - B. Special warranty.
- 1.07 QUALITY ASSURANCE
 - A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
 - 1. For copings and roof edge flashings that are ANSI/SPRI/FM 4435/ES-1 tested and FM Approvals approved, shop shall be listed as able to fabricate required details as tested and approved.
- 1.08 DELIVERY, STORAGE, AND HANDLING
 - A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.
 - 1. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
 - 2. Protect stored sheet metal flashing and trim from contact with water.
 - B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.
- 1.09 WARRANTY
 - A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a) Color fading more than 5 Delta units when tested in accordance with ASTM D2244.
 - b) Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
 - c) Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 - 2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing and trim assemblies, including cleats, anchors, and fasteners, shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual: Architectural Metal Flashing, Condensation and Air Leakage Control, and Reroofing" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
- C. FM Approvals Listing: Manufacture and install roof edge flashings that are listed in FM Approvals' "RoofNav" and approved for windstorm classification as listed within FM Loss Prevention Data Sheet 1-49. Identify materials with name of fabricator and design approved by FM Approvals.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.02 SHEET METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Aluminum Sheet: ASTM B209, alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required; with smooth surface.
 - 1. Exposed Coil-Coated Finish:
 - a) Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - 2. Color: As selected by Architect from manufacturer's full range.
 - 3. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish.

2.03 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal.
 - 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a) Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.

- b) Blind Fasteners: High-strength aluminum or stainless steel rivets suitable for metal being fastened.
 - c) Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
 - 2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
- C. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.
- D. Elastomeric Sealant: ASTM C920, elastomeric polyurethane polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- E. Bituminous Coating: Cold-applied asphalt emulsion in accordance with ASTM D1187/D1187M.
- F. Asphalt Roofing Cement: ASTM D4586, asbestos free, of consistency required for application.
- G. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated [with factory-mitered and -welded corners and junctions] [and] [with interlocking counterflashing on exterior face, of same metal as reglet].
 - 1. Acceptable Manufacturers:
 - a) Fry Reglet Corporation
 - b) W.P. Hickman Co.
 - c) Keystone Flashing Company
 - 2. Source Limitations: Obtain reglets from single source from single manufacturer.
 - 3. Material: Aluminum, 0.024 inch thick or Galvanized steel, 0.022 inch thick.
 - 4. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
 - 5. Stucco Type: Provide with upturned fastening flange and extension leg of length to match thickness of applied finish materials.
 - 6. Concrete Type: Provide temporary closure tape to keep reglet free of concrete materials, special fasteners for attaching reglet to concrete forms, and guides to ensure alignment of reglet section ends.
 - 7. Masonry Type: Provide with offset top flange for embedment in masonry mortar joint.
 - 8. Accessories:
 - a) Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where Drawings show reglet without metal counterflashing.
 - b) Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing's lower edge.
 - 9. Finish: With manufacturer's standard color coating.

2.04 FABRICATION, GENERAL

- A. Custom fabricate sheet metal flashing and trim to comply with details indicated and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required.
 - 1. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
 - 2. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.

3. Verify shapes and dimensions of surfaces to be covered and obtain field measurements for accurate fit before shop fabrication.
4. Form sheet metal flashing and trim to fit substrates without excessive oil-canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
5. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. Fabrication Tolerances:
 1. Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
 1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
 2. Use lapped expansion joints only where indicated on Drawings.
- D. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal in accordance with cited sheet metal standard to provide for proper installation of elastomeric sealant.
- E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- F. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard and by FM Global Property Loss Prevention Data Sheet 1-49 for application, but not less than thickness of metal being secured.
- G. Seams:
 1. Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.
- H. Do not use graphite pencils to mark metal surfaces.

2.05 ROOF-DRAINAGE SHEET METAL FABRICATIONS

- A. Hanging Gutters:
 1. Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required. Style A in accordance with SMACNA's Architectural Sheet Metal Manual.
 2. Fabricate in minimum 96-inch long sections.
 3. Furnish flat-stock gutter brackets and flat-stock gutter spacers and straps fabricated from same metal as gutters, of size recommended by cited sheet metal standard, but with thickness not less than twice the gutter thickness.
 4. Fabricate expansion joints, expansion-joint covers, and gutter accessories from same metal as gutters.
 5. Expansion Joints: Lap type.
 6. Gutters with Girth up to 15 Inches: Fabricate from the following materials:
 - a) Galvanized Steel: 0.022 inch thick.
 7. Gutters with Girth 16 to 20 Inches: Fabricate from the following materials:
 - a) Galvanized Steel: 0.028 inch thick.
 8. Gutters with Girth 21 to 25 Inches: Fabricate from the following materials:
 - a) Galvanized Steel: 0.034 inch thick.
 9. Gutters with Girth 26 to 30 Inches: Fabricate from the following materials:
 - a) Copper: 24 oz./sq. ft. thick.
 - b) Galvanized Steel: 0.040 inch thick.
 10. Gutters with Girth 31 to 35 Inches: Fabricate from the following materials:
 - a) Galvanized Steel: 0.052 inch thick.

- B. Downspouts: Fabricate rectangular downspouts to dimensions indicated on Drawings, complete with mitered elbows. Furnish with metal hangers from same material as downspouts and anchors.
 - 1. Fabricated Hanger Style: Fig. 1-35B in accordance with SMACNA's "Architectural Sheet Metal Manual."
 - 2. Fabricate from the following materials:
 - Galvanized Steel: 0.022 inch thick.

2.06 MISCELLANEOUS SHEET METAL FABRICATIONS

- A. Equipment Support Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.028 inch thick.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
 - 1. Verify compliance with requirements for installation tolerances of substrates.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
 - 3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION, GENERAL

- A. Install sheet metal flashing and trim to comply with details indicated and recommendations of cited sheet metal standard that apply to installation characteristics required unless otherwise indicated on Drawings.
 - 1. Install fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 - 2. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder.
 - 3. Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement.
 - 4. Install sheet metal flashing and trim to fit substrates and to result in watertight performance.
 - 5. Install continuous cleats with fasteners spaced not more than 12 inches o.c.
 - 6. Space individual cleats not more than 12 inches apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
 - 7. Install exposed sheet metal flashing and trim with limited oil-canning, and free of buckling and tool marks.
 - 8. Do not field cut sheet metal flashing and trim by torch.
 - 9. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.

1. Coat concealed side of uncoated-aluminum sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.
 1. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.
 2. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.
 3. Use lapped expansion joints only where indicated on Drawings.
- D. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.
- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- F. Seal joints as required for watertight construction.
 1. Use sealant-filled joints unless otherwise indicated.
 - a) Embed hooked flanges of joint members not less than 1 inch into sealant.
 - b) Form joints to completely conceal sealant.
 - c) When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way.
 - d) Adjust setting proportionately for installation at higher ambient temperatures.
 - 1) Do not install sealant-type joints at temperatures below 40 deg F.

3.03 INSTALLATION OF ROOF-DRAINAGE SYSTEM

- A. Install sheet metal roof-drainage items to produce complete roof-drainage system in accordance with cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.
- B. Hanging Gutters:
 1. Join sections with riveted joints sealed with sealant].
 2. Provide for thermal expansion.
 3. Attach gutters at eave or fascia to firmly anchor them in position.
 4. Provide end closures and seal watertight with sealant.
 5. Slope to downspouts.
 6. Anchor gutter with gutter brackets spaced not more than 30 inches apart to roof deck unless otherwise indicated, and loosely lock to front gutter bead.
 7. Install gutter with expansion joints not exceeding 50 feet apart. Install expansion-joint caps.
- C. Downspouts:
 1. Join sections with 1-1/2-inch telescoping joints.
 2. Provide hangers with fasteners designed to hold downspouts securely to walls.
 3. Locate hangers at top and bottom and at approximately 60 inches o.c.
 4. Provide elbows at base of downspout to direct water away from building. Refer to Drawings.
 5. Connect downspouts to underground drainage system. Refer to Drawings.

- D. Expansion-Joint Covers: Install expansion-joint covers at locations and of configuration indicated on Drawings. Lap joints minimum of 4 inches in direction of water flow.

3.04 INSTALLATION OF ROOF FLASHINGS

- A. Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard.
 - 1. Provide concealed fasteners where possible, and set units true to line, levels, and slopes.
 - 2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Roof Edge Flashing:
 - 1. Anchor to resist uplift and outward forces in accordance with recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered 3-inch centers.
 - 2. Anchor to resist uplift and outward forces in accordance with recommendations in FM Global Property Loss Prevention Data Sheet 1-49 for FM Approvals' listing for required windstorm classification.
- C. Copings:
 - 1. Anchor to resist uplift and outward forces in accordance with recommendations in cited sheet metal standard unless otherwise indicated.
 - a) Interlock exterior bottom edge of coping with continuous cleat anchored to substrate at 16-inch centers.
 - b) Anchor interior leg of coping with washers and screw fasteners through slotted holes at 24-inch centers.
 - 2. Anchor to resist uplift and outward forces in accordance with recommendations in FM Global Property Loss Prevention Data Sheet 1-49 for specified FM Approvals' listing for required windstorm classification.
- D. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of 4 inches (100 mm) over base flashing. Install stainless steel draw band and tighten.
- E. Counterflashing: Coordinate installation of counterflashing with installation of base flashing.
 - 1. Insert counterflashing in reglets or receivers and fit tightly to base flashing.
 - 2. Extend counterflashing 4 inches over base flashing.
 - 3. Lap counterflashing joints minimum of 4 inches.
- F. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

3.05 INSTALLATION OF WALL FLASHINGS

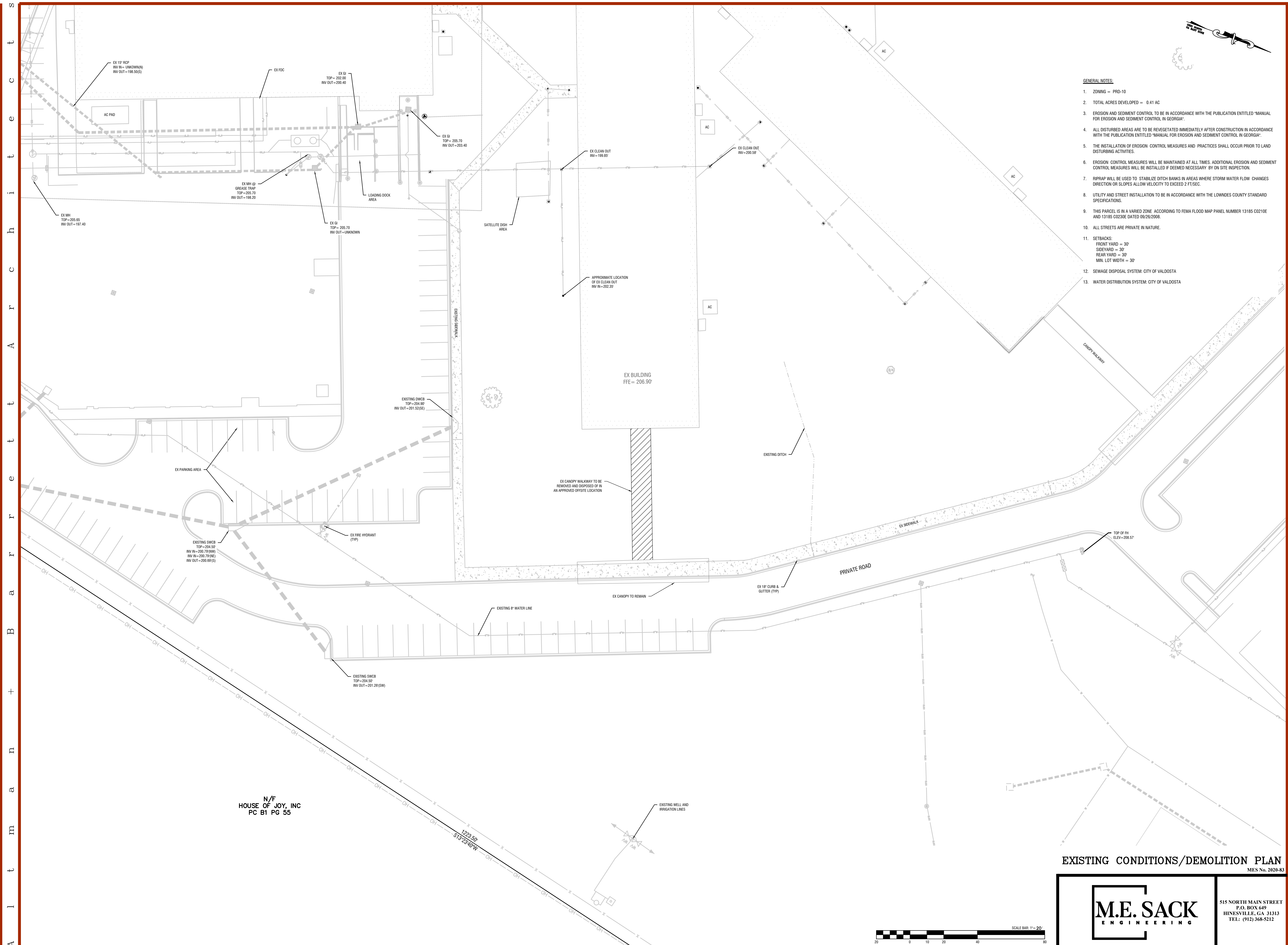
- A. Install sheet metal wall flashing to intercept and exclude penetrating moisture in accordance with cited sheet metal standard unless otherwise indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.
- B. Opening Flashings in Frame Construction: Install continuous head, sill, and similar flashings to extend 4 inches beyond wall openings.

3.06 INSTALLATION OF MISCELLANEOUS FLASHING

- A. Equipment Support Flashing:

1. Coordinate installation of equipment support flashing with installation of roofing and equipment.
 2. Weld or seal flashing with elastomeric sealant to equipment support member.
 - B. Overhead-Piping Safety Pans:
 1. Suspend pans from structure above, independent of other overhead items such as equipment, piping, and conduit, unless otherwise indicated on Drawings.
 2. Pipe and install drain line to plumbing waste or drainage system.
- 3.07 INSTALLATION TOLERANCES
- A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- 3.08 CLEANING
- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
 - B. Clean off excess sealants.
- 3.09 PROTECTION
- A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.
 - B. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended in writing by sheet metal flashing and trim manufacturer.
 - C. Maintain sheet metal flashing and trim in clean condition during construction.
 - D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures, as determined by Architect.

END OF SECTION 076200



GENERAL NOTES:

1. ZONING = PRD-10
2. TOTAL ACRES DEVELOPED = 0.41 AC
3. EROSION AND SEDIMENT CONTROL TO BE IN ACCORDANCE WITH THE PUBLICATION ENTITLED "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".
4. ALL DISTURBED AREAS ARE TO BE REVEGETATED IMMEDIATELY AFTER CONSTRUCTION IN ACCORDANCE WITH THE PUBLICATION ENTITLED "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".
5. THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES SHALL OCCUR PRIOR TO LAND DISTURBING ACTIVITIES.
6. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DETERMINED NECESSARY BY ON SITE INSPECTION.
7. RIPRAP WILL BE USED TO STABILIZE DITCH BANKS IN AREAS WHERE STORM WATER FLOW CHANGES DIRECTION OR SLOPES ALLOW VELOCITY TO EXCEED 2 FT/SEC.
8. UTILITY AND STREET INSTALLATION TO BE IN ACCORDANCE WITH THE LOWNDES COUNTY STANDARD SPECIFICATIONS.
9. THIS PARCEL IS IN A VARIED ZONE ACCORDING TO FEMA FLOOD MAP PANEL NUMBER 13185 C0210E AND 13185 C0230E DATED 09/25/2006.
10. ALL STREETS ARE PRIVATE IN NATURE.
11. SETBACKS:
FRONT YARD = 30'
SIDEYARD = 30'
REAR YARD = 30'
MIN. LOT WIDTH = 30'
12. SEWAGE DISPOSAL SYSTEM: CITY OF VALDOSTA
13. WATER DISTRIBUTION SYSTEM: CITY OF VALDOSTA

Altman + Barrett



DATE: 2/23/2021

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CHECKED: M. SACK
REVISIONS: 02/23/2021
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Building Addition to
JL Newbern Middle School
Valdosta City School System
2015 East Park Ave. Valdosta, GA 31602

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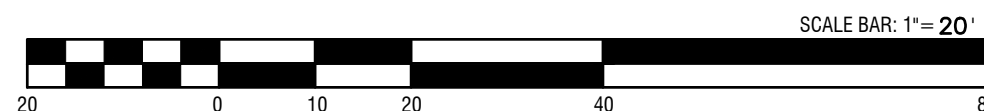
Issued, February 23, 2021

EXISTING CONDITIONS/DEMOLITION PLAN

MES No. 2020-83

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DRAWING LEGEND		
DESCRIPTION	PROPOSED	EXISTING
SANITARY SEWER	—W—	—SS—
UNDERGROUND WATER LINE	—FM—	—FM—
FORCE MAIN	—FM—	—FM—
STORM DRAINAGE PIPE	—T—	—T—
UNDERGROUND TELEPHONE LINE	—TC—	—TC—
UNDERGROUND TELEPHONE CONDUIT	—TC—	—TC—
UNDERGROUND GAS LINE	—12" G—	—12" G—
DITCH CENTERLINE	—X—90.00—	—X—90.00—
SPOT ELEVATION	—X—90.00—	—X—90.00—
TOP OF CURB ELEVATION	—X—90.00—	—X—90.00—
FIRE HYDRANT	—X—90.00—	—X—90.00—
SEWER MANHOLE	—X—90.00—	—X—90.00—
WATER VALVE	—X—90.00—	—X—90.00—
TELEPHONE MANHOLE	—X—90.00—	—X—90.00—
LIGHT POLE	—X—90.00—	—X—90.00—
SIGN	—X—90.00—	—X—90.00—
WATER METER	—X—90.00—	—X—90.00—
BENCHMARK	—X—90.00—	—X—90.00—
CONCRETE MONUMENT FOUND	—X—90.00—	—X—90.00—
GUY POLE	—X—90.00—	—X—90.00—
IRON PIN FOUND	—X—90.00—	—X—90.00—
IRON PIN SET	—X—90.00—	—X—90.00—
TELEPHONE PEDESTAL	—X—90.00—	—X—90.00—
POWER POLE	—X—90.00—	—X—90.00—
HANDICAP SPACE	—X—90.00—	—X—90.00—
SEDIMENT BASIN MARKER W/NOTCH	—X—90.00—	—X—90.00—

Ds1 DISTURBED AREA STABILIZATION (W/MULCHING ONLY)

SPECIFICATIONS

A. For temporary protection of critical areas without seeding. This standard applies to grades or cleared areas which may be subjected to erosion for 6 months or less, where seeding may not have a suitable growing season to produce an erosion retardant cover, but which can be stabilized with a mulch cover.

Site Preparation

- Grade, as needed and feasible, to permit the use of equipment for applying and anchoring mulch.
- Install needed erosion control measures as required such as dikes, diversions, berms, terraces and sediment barriers.
- As needed and feasible, loosen compact soil to a minimum depth of 3 inches.

Mulching Materials

- Dry straw or hay — spread at a rate of 2 1/2 tons per acre.
- Wood waste, chips, sawdust or bark — spread 2 to 3 inches deep (about 6 to 9 tons per acre).
- Erosion control matting or netting — applied in accordance with manufacturers recommendations.
- Outback asphalt; slow curing — applied at 1200 gallons per acre (or 1/4 gallon per sq. yd.).
- Polyethylene film — secured over banks or stockpiled soil material for temporary protection.

Applying and Anchoring Mulch

- Apply straw or hay mulch uniformly by hand or mechanically. Anchor as appropriate and feasible. It may be pressed into the soil with a disk harrow with the disk set straight or with a special "spoker disk." The disk may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disk should be dull enough not to cut the mulch but press it into the soil leaving much of it in an erect position.
- Straw hay mulch spread with special blower-type equipment may be anchored with emulsified asphalt (Grade AE-5 or SS-1). The asphalt emulsion must be sprayed onto the mulch as it is ejected from the machine. Use 100 gallons of water per acre.
- Spread wood waste uniformly on slopes that are 3:1 and flatter. No anchoring is needed.
- Commercial matting and netting. Follow manufacturer's specification included with the material.
- Apply asphalt so area has uniform appearance. (Note: Use in areas of pedestrian traffic could cause problems or "tracking in" or damage to shoes, clothing, etc.)

B. To conserve moisture and control weeds in nurseries, ornamental beds, around shrubs, and on bar areas on lawns.

Mulching Materials

Use one of the materials given below and apply at thickness indicated.

Material	Depth
1. Grain straw or grass hay	6" to 10"
2. Pine needles	4" to 6"
3. Wood waste (sawdust, bark, chips)	4" to 6"
4. Shredded residues (grass, leaves, etc.)	4" to 8"

5. Completely cover area with black polyethylene film and hold in place by placing soil on the outer edge.
When using organic mulches, apply 20-30 pounds of nitrogen in addition to the normal amount needed for plant growth to offset the tie up of N by decomposition of mulch.

Dv DUST CONTROL ON DISTURBED AREAS

PURPOSE

- To prevent surface and air movement of dust from exposed surfaces.
- To reduce the presence of airborne substances which may be harmful or injurious to human health, welfare, or safety, or to animals or plant life.

Temporary Methods

- Irrigation. This is generally done as an emergency treatment. Site is sprinkled with water until the surface is wet.
- Mulching — See Ds1 - Disturbed Area Stabilization (with Mulching only)
- Vegetative Cover — See Ds2 - Disturbed Area Stabilization (with Temporary Seeding)

Permanent Methods

- Permanent Vegetation — See Ds3 - Disturbed Area Stabilization (with Permanent Vegetation)

Ds2 SPECIES AND PLANTING SCHEDULE

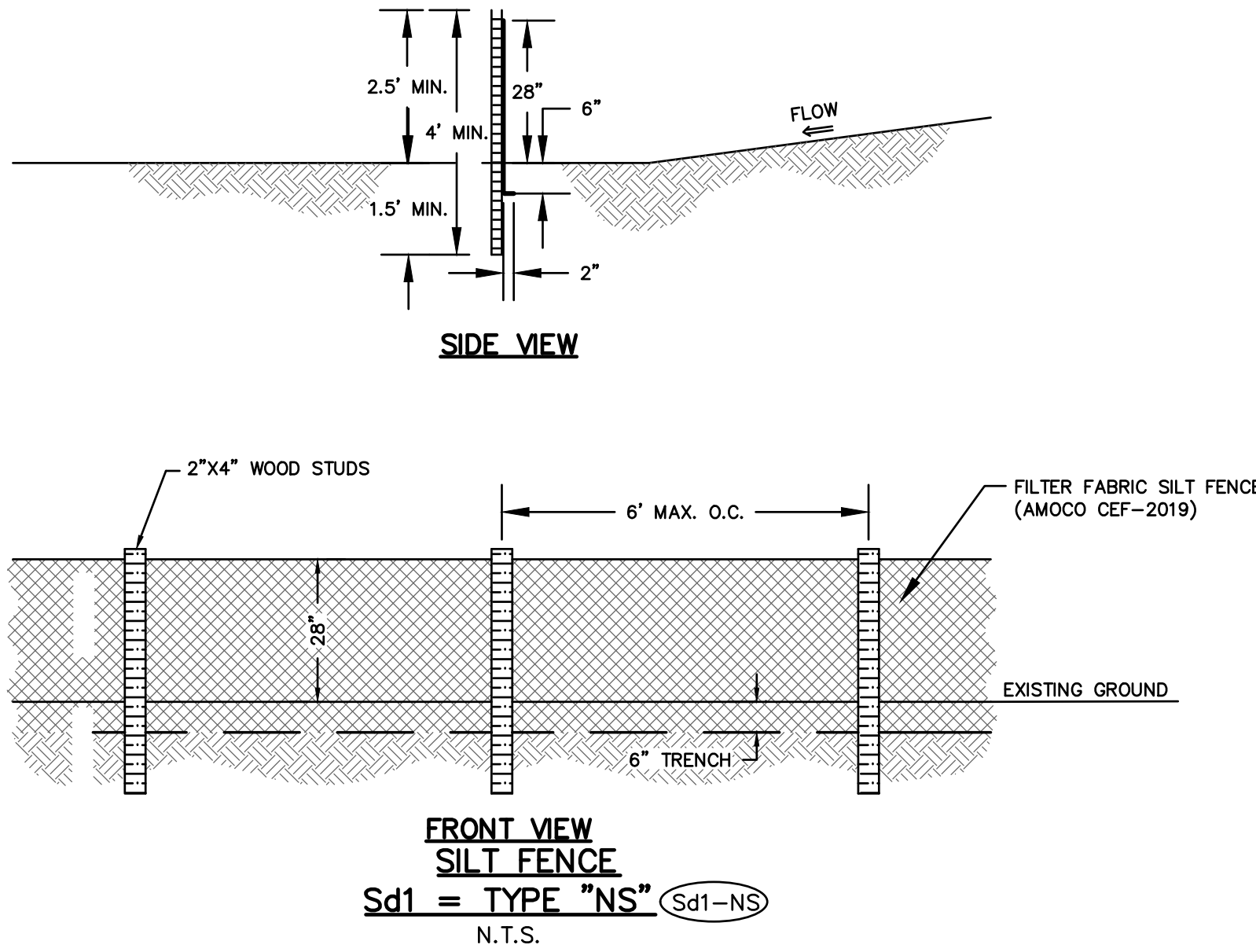
SPECIES	BROADCAST RATES 1/ = PLS. 2/ PER ACRE		PLANTING DATES BY RESOURCE		REMARKS
	1/	2/	RESOURCE AREA 3/	AREAS *	
RYEGRASS, ANNUAL ALONE	40 lbs.	0.9 lb.	M-L C	J F M A M J J A S O N D	227,000 SEED PER POUND. DENSE COVER. VERY COMPETITIVE. AND IS NOT TO BE USED IN MIXTURES.

* (DARK LINES REPRESENT OPTIMUM DATES, GRAY LINES INDICATE PERMISSIBLE BUT MARGINAL DATES.)

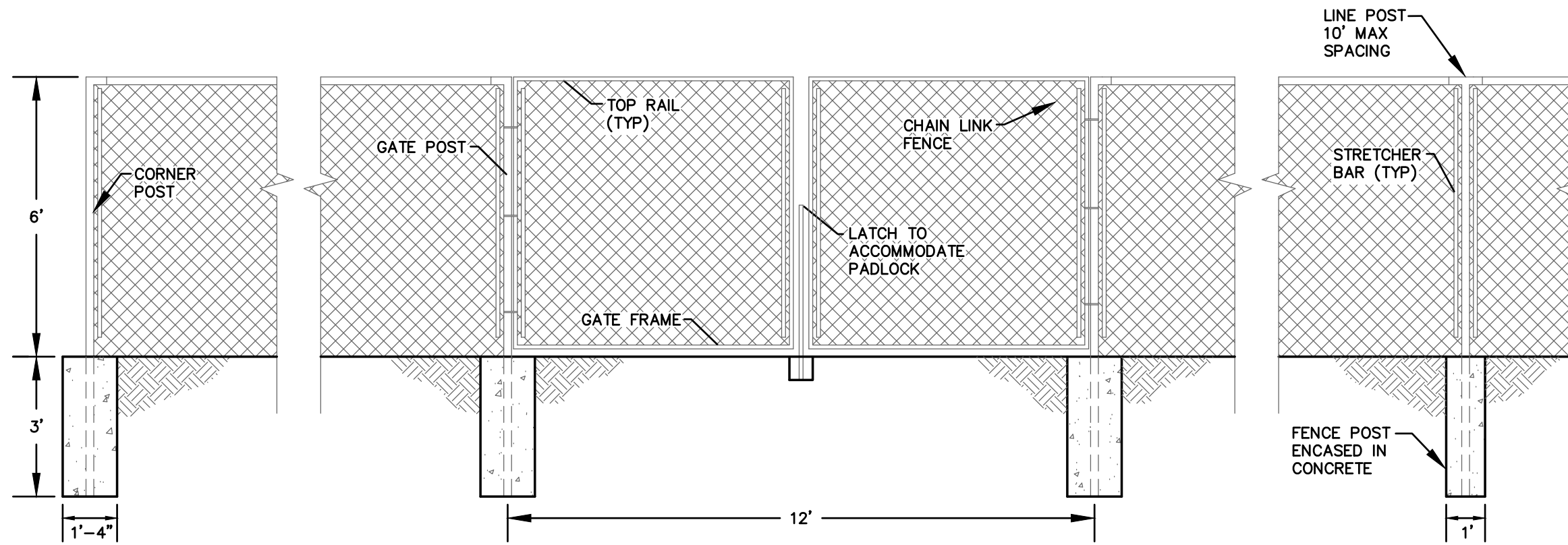
Ds3 SPECIES AND PLANTING SCHEDULE

SPECIES	BROADCAST RATES 1/ = PLS. 2/ PER ACRE		PLANTING DATES BY RESOURCE		SPECIFICATIONS
	1/	2/	RESOURCE AREA 3/	AREAS *	
BERMUDA, COMMON HULLED SEED ALONE	10 LBS.	0.2 LB.	P C	J F M A M J J A S O N D	1,787,000 SEED PER POUND. QUICK COVER. LOW GROWING AND SOO FORMING. FULL SUN. GOOD FOR ATHLETIC FIELDS.
WITH OTHER PERENNIALS	6 LBS.	0.1 LB.	P C	J F M A M J J A S O N D	
BERMUDA, COMMON UNHULLED SEED WITH TEMPORARY COVER WITH OTHER PERENNIALS	10 LBS.	0.2 LB.	P C	J F M A M J J A S O N D	PLANT WITH WINTER ANNUALS. PLANT WITH TALL FESCUE.
6 LBS.	0.1 LB.	P C	J F M A M J J A S O N D		
BERMUDA SPRIGS COASTAL, COMMON, MIDLAND, OR TIFT 44 COASTAL, COMMON, TIFT 44	40 CU. FT. 0.9 CU.FT. SPRIGS. A BUSHEL CONTAINS 1.25 C.F. OR APPROXIMATELY 800 SPRIGS. SAME AS ABOVE.		M-L C	J F M A M J J A S O N D	SOUTHERN COASTAL PLAIN ONLY

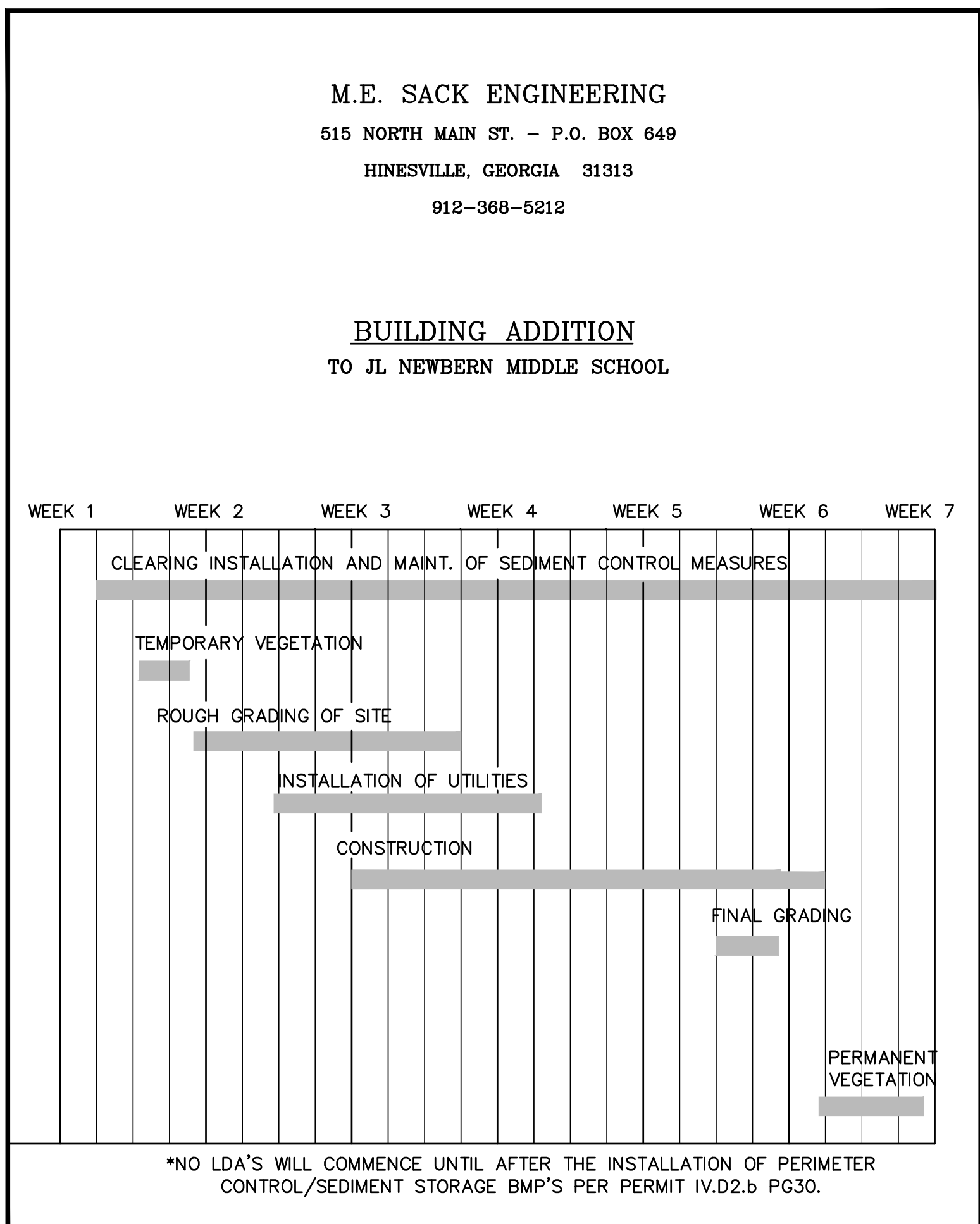
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Sd1 = TYPE "NS" (Sd1-NS) N.T.S.

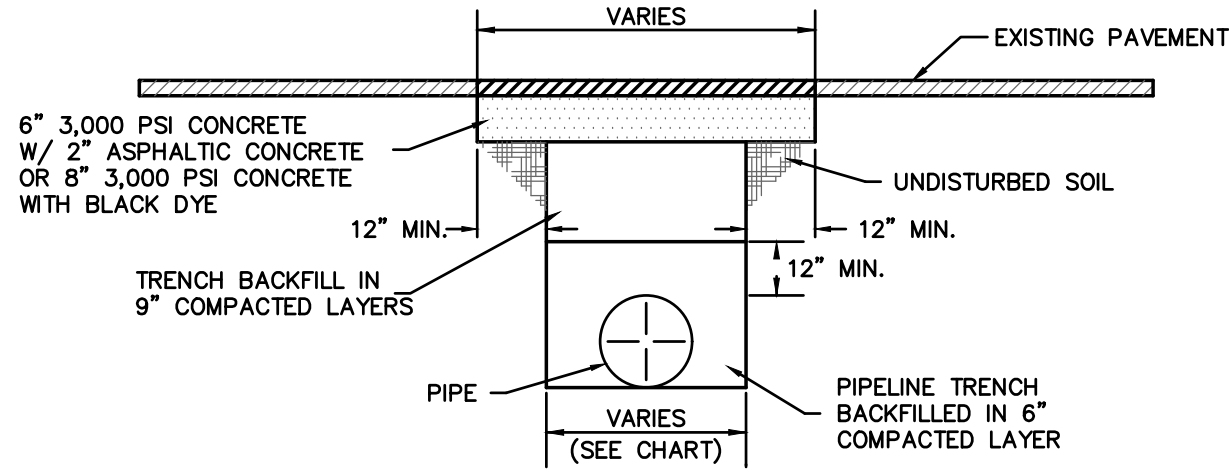


N.T.S.



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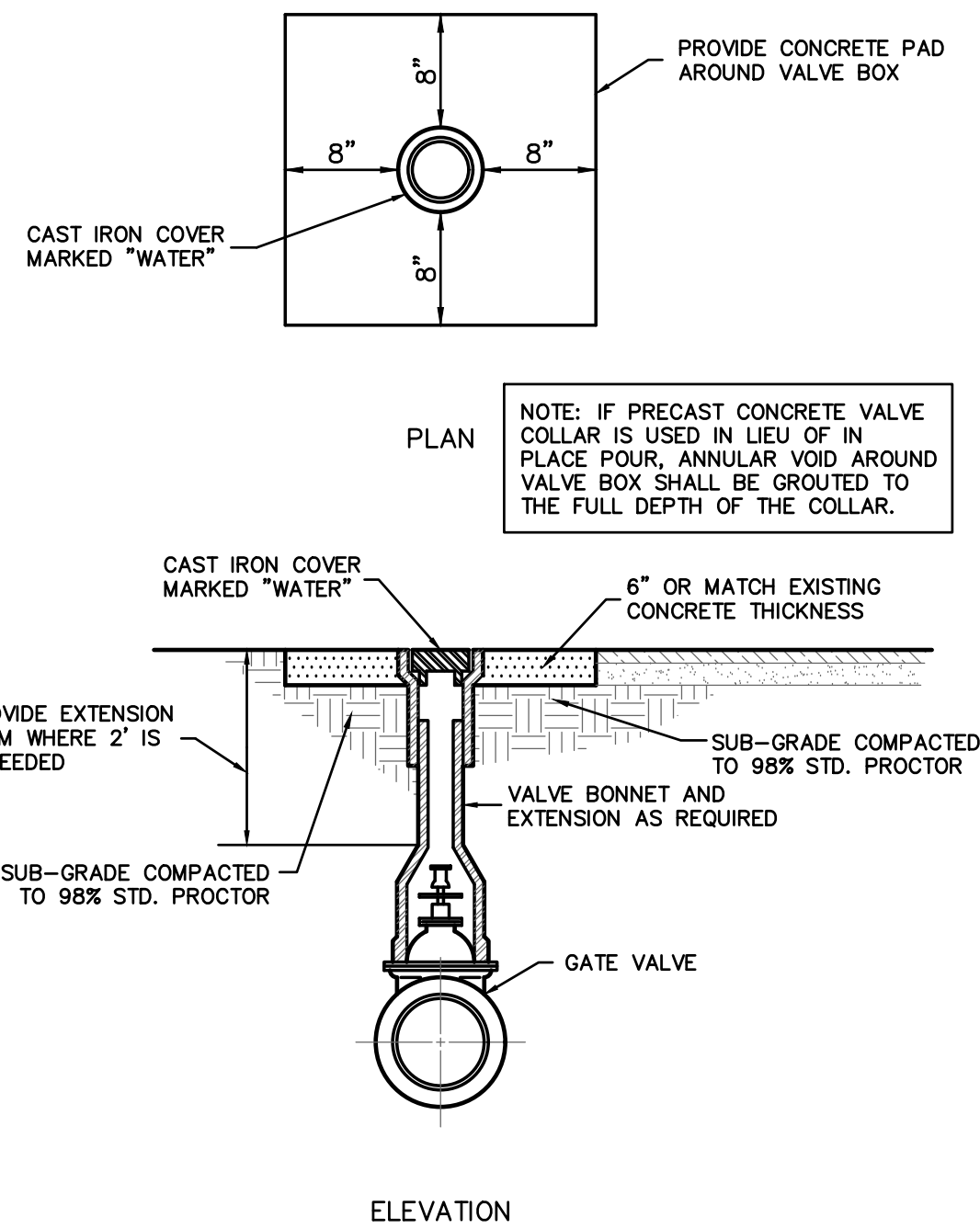
BUILDING ADDITION
TO JL NEWBERN MIDDLE SCHOOL



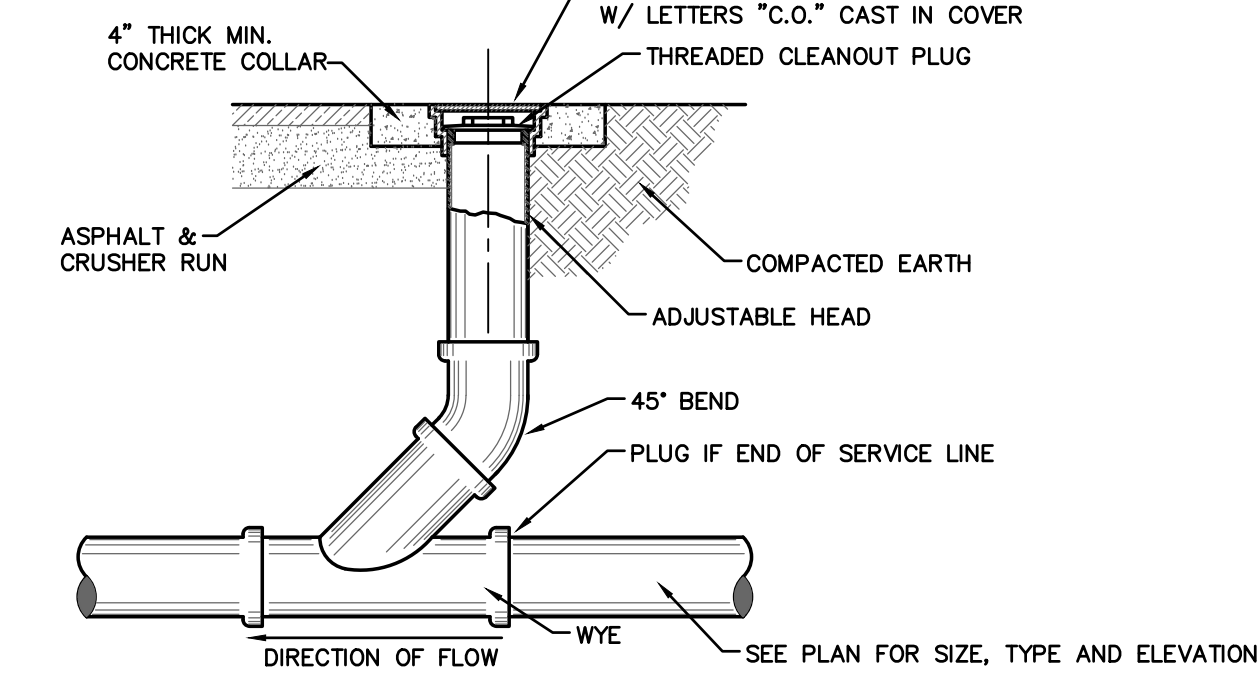
PIPE DIAMETER	MAXIMUM TRENCH WIDTH 0' - 6' CUT DEPTH	MAXIMUM PAVEMENT WIDTH 0' - 6' CUT DEPTH
6" TO 15"	16" + DIA.	40" + DIA.
18" TO 21"	20" + DIA.	44" + DIA.
24" TO 30"	24" + DIA.	48" + DIA.
33" TO 42"	36" + DIA.	60" + DIA.
48"+	36" + DIA.	60" + DIA.

NOTE: MAXIMUM PAVEMENT WIDTH FOR CUT DEPTH OVER 6 FEET SHALL BE 6 FEET UNLESS NOTED OTHERWISE ON PLANS.

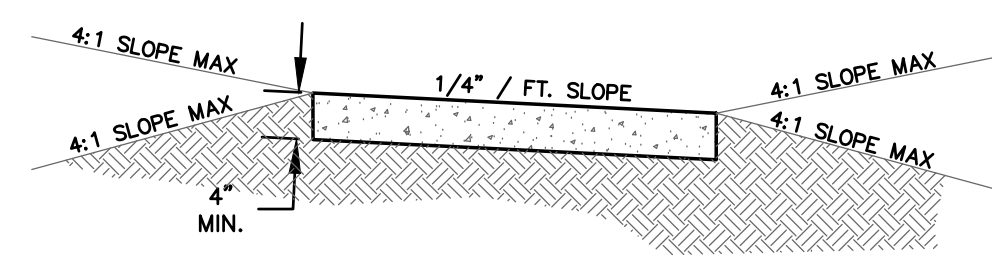
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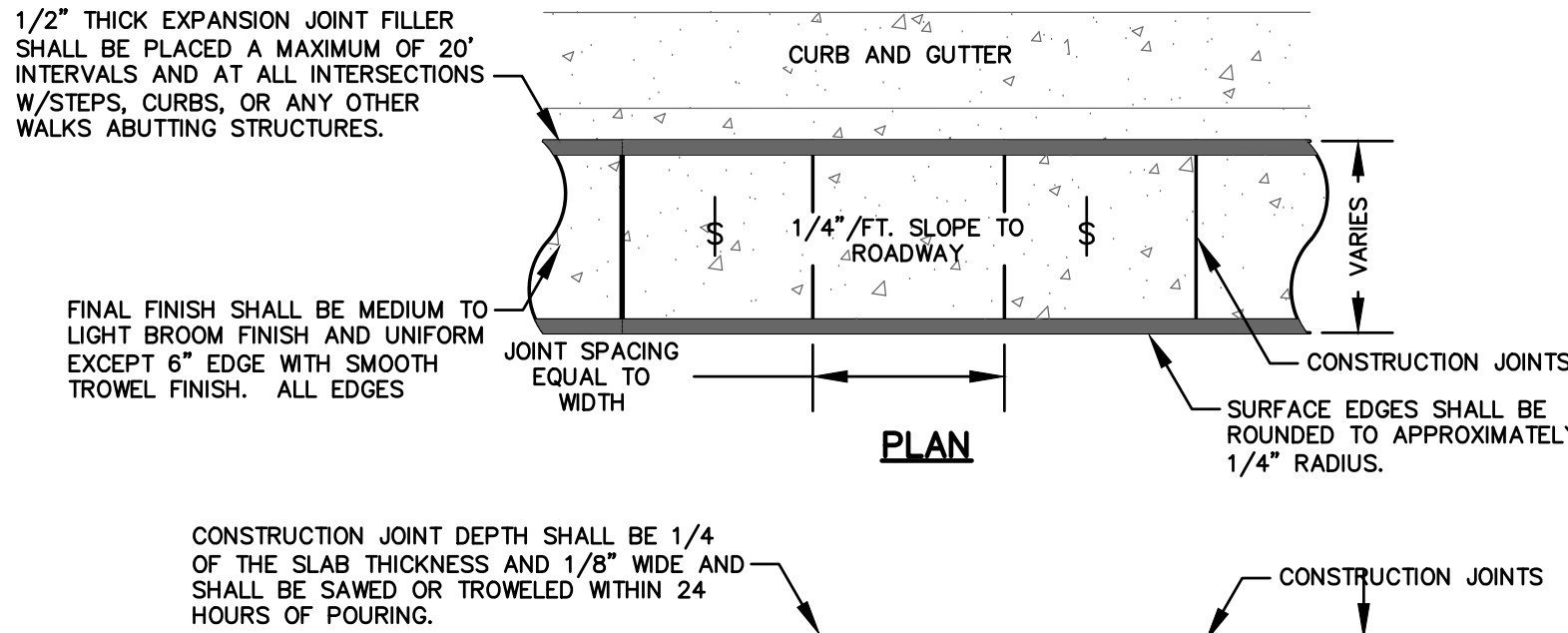


N.T.S.



SECTION

NOTE: CONTRACTOR TO REFERENCE SPECIFICATIONS FOR JOINT FILLER DETAILS.



N.T.S.

LEGEND FOR EROSION AND SEDIMENT CONTROL PRACTICES		
CODE	PRACTICE	DESCRIPTION
CO	CONSTRUCTION EXIT	A STONE PAD LOCATED AT THE JOB SITE EXIT TO REMOVE MUD AND DEBRIS FROM TIRES AND PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC ROADS.
Cr	CONSTRUCTION ROAD STABILIZATION	A TEMPORARY TRAVELWAY CONSTRUCTED AS PART OF A CONSTRUCTION PLAN TO PROVIDE A FIXED ROUTE FOR CONSTRUCTION TRAFFIC AND REDUCE EROSION AND SUBSEQUENT REGRADING OPERATIONS BETWEEN INITIAL AND FINAL STABILIZATION.
Ch	CHANNEL STABILIZATION	LOOSE ROCK OR SIMILAR DURABLE MATERIAL, INSTALL ON SLOPES FOR PROTECTION FROM EROSION CAUSED BY WATER TURBULENCE OR HIGH VELOCITIES.
Sd1-C	SILT FENCE 36" WIDE	A TEMPORARY SEDIMENT BARRIER CONSISTING OF A FILTER FABRIC STRETCHED ACROSS AND ATTACHED TO SUPPORTING POSTS AND ENTRENCHED. 6 MO. OR LONGER PROJECT LIFE.
Sd1-B	SILT FENCE 36" WIRE BACKED	Sd1-C HAS 6 MO. OR LONGER PROJECT LIFE. WIRE BACKING IS NECESSARY BECAUSE FABRIC ALLOWS 3 TIMES THE FLOW RATE OF TYPE A SILT FENCE.
INLET SEDIMENT TRAP	"PIGS IN BLANKET"	TEMPORARY DEVICE TO PREVENT SILT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA.
Sd2a	"SILT SAVER"	CURB INLET PROTECTION "PIGS IN BLANKET" SHOULD BE USED ONCE PAVEMENT IS ALREADY IN PLACE.
Sd2b	"SILT SAVER"	SILT SAVER IS A MANUFACTURED INLET SEDIMENT TRAP THAT INSTALLED OVER THE GRATE INLET TO PREVENT SILT FROM ENTERING THE SYSTEM WHILE THE SITE IS UNDER CONSTRUCTION.
Sd2c	FILTER FABRIC AND FRAME	FILTER FABRIC WRAPPED AROUND A FRAME FOR USE IN AN AREA WHERE SITE IS RELATIVELY FLAT(<5%) FOR INLETS RECEIVING HIGHER VOLUME OR VELOCITY. SLATS OR PLYWOOD WITH HOLES DRILLED INTO AND GRAVEL PLACED AROUND THE BOX.
Sd2d	BAFFLE BOX	
ST	STORM DRAIN OUTLET PROTECTION	PAVED OR ROCK SECTION BELOW A STORM DRAIN OUTLET FOR PROTECTION FROM EROSION CAUSED BY WATER TURBULENCE OR HIGH VELOCITIES.
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)	APPLYING PLANT RESIDUES OR OTHER SUITABLE MATERIALS NOT PRODUCED ON THE SITE TO THE SOIL SURFACE SUCH AS GRAIN STRAW, HAY, PINE NEEDLES, WOOD WASTE AND SHREDDED RESIDUES.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDINGS)	ESTABLISHING TEMPORARY VEGETATIVE COVER SUCH AS RYE, SUDANGRASS, WHEAT, OR RYEGRASS ON DISTURBED AREAS.
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)	ESTABLISHING PERMANENT VEGETATIVE COVER SUCH AS TREES, SHRUBS, VINES, GRASSES, SOO, OR LEGUMES ON DISTURBED AREAS.
CD-1	CHECK DAM - HAYBALE TYPE	WALL, TEMPORARY BARRIER, GRADE CONTROL STRUCTURE, OR DAM CONSTRUCTED ACROSS A SMALL DRAINAGE DITCH, OR AREA OF CONCENTRATED FLOW.
CD-2	CHECK DAM - STONE TYPE	STACKED EMBEDDED HAYBALES MAY BE USED AS TEMPORARY CHECK DAMS. IN DRAINAGE AREAS LESS THAN 1 ACRE.
RD	ROCK FILTER DAM	STONE CHECK DAM CONSTRUCTED OF GRADED SIZE 2-10 INCH STONE. CENTER IS LOWER THAN SIDES.
D	DIVERSION	A RIDGE OF COMPACTED SOIL, CONSTRUCTED ABOVE, ACROSS OR BELOW A SLOPE.
Tm	TURBIDITY MONITORING POINT	LOCATION FOR MONITORING TURBIDITY IN STORM WATER RUNOFF.

DETAILS

MES No. 2020-83

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DATE: JANUARY 14, 2021
DRAWN: L. GESTAL
CHECKED: M. SACK
REVISIONS: 02/23/2021
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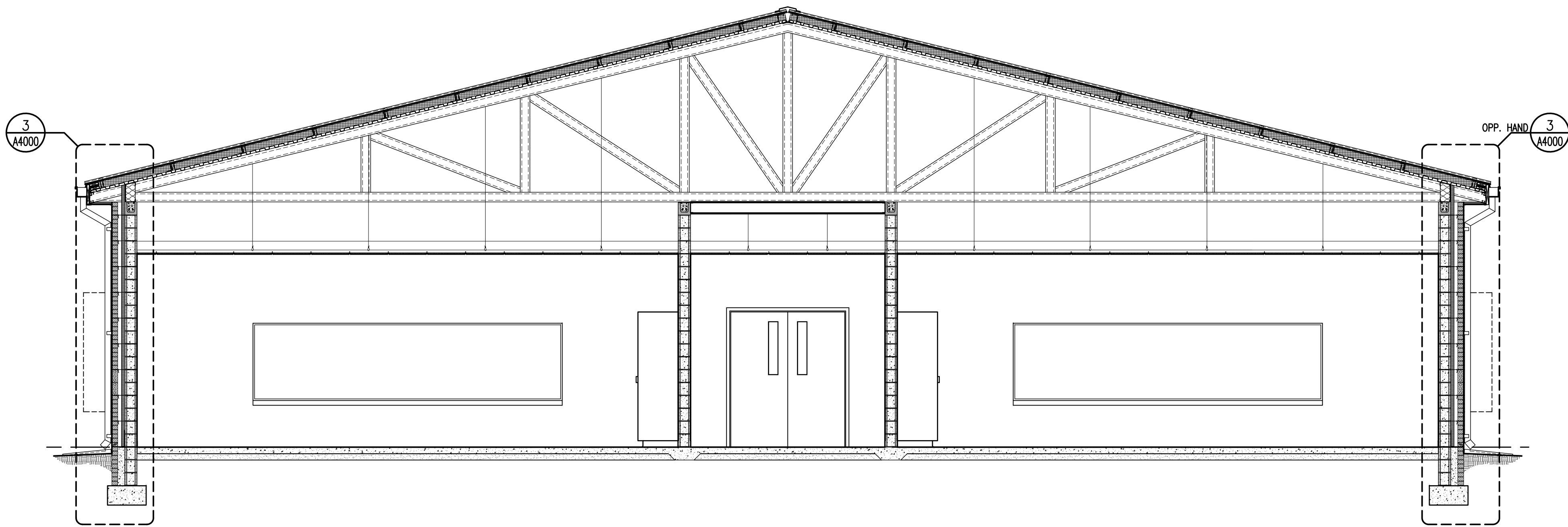
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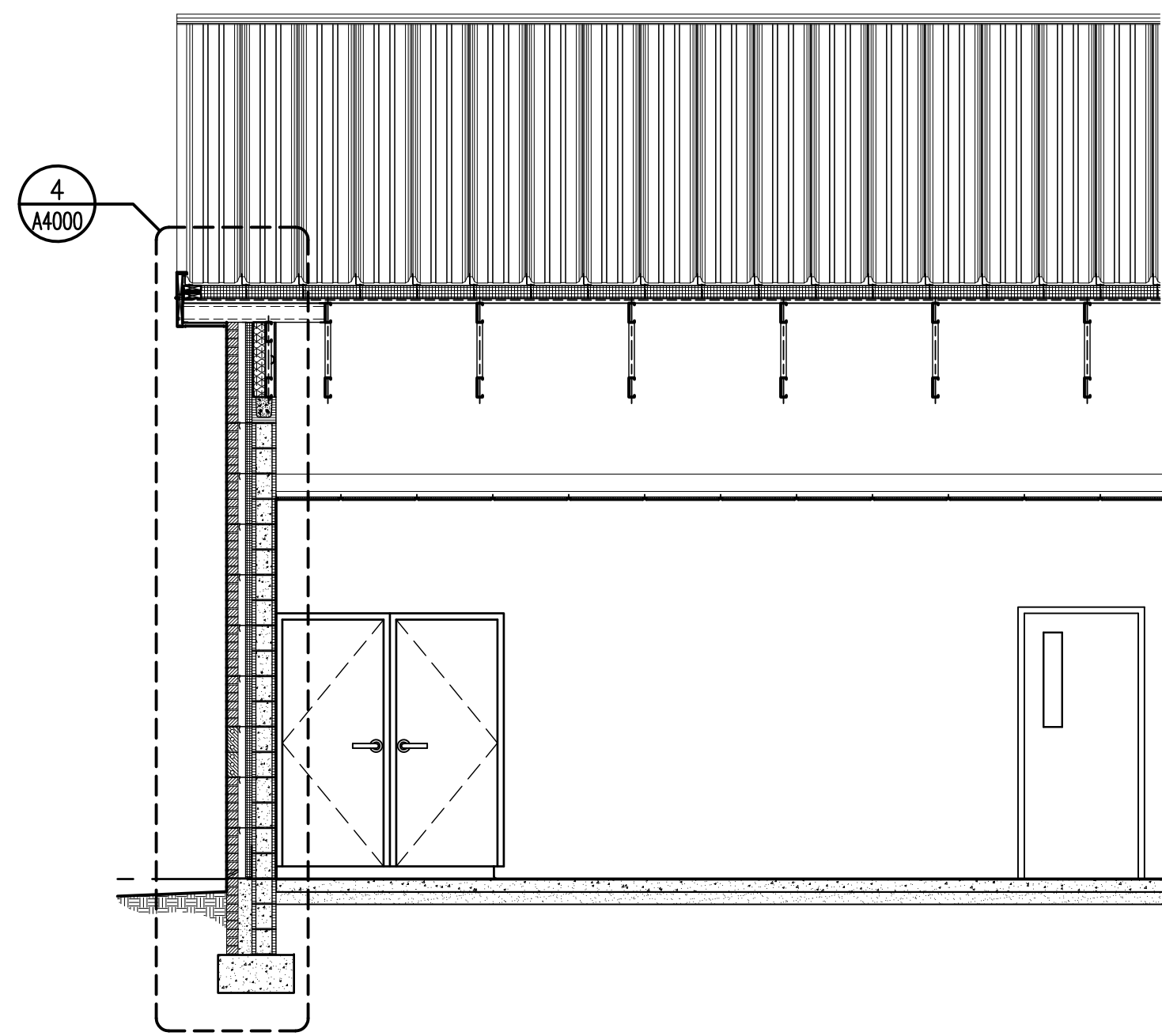
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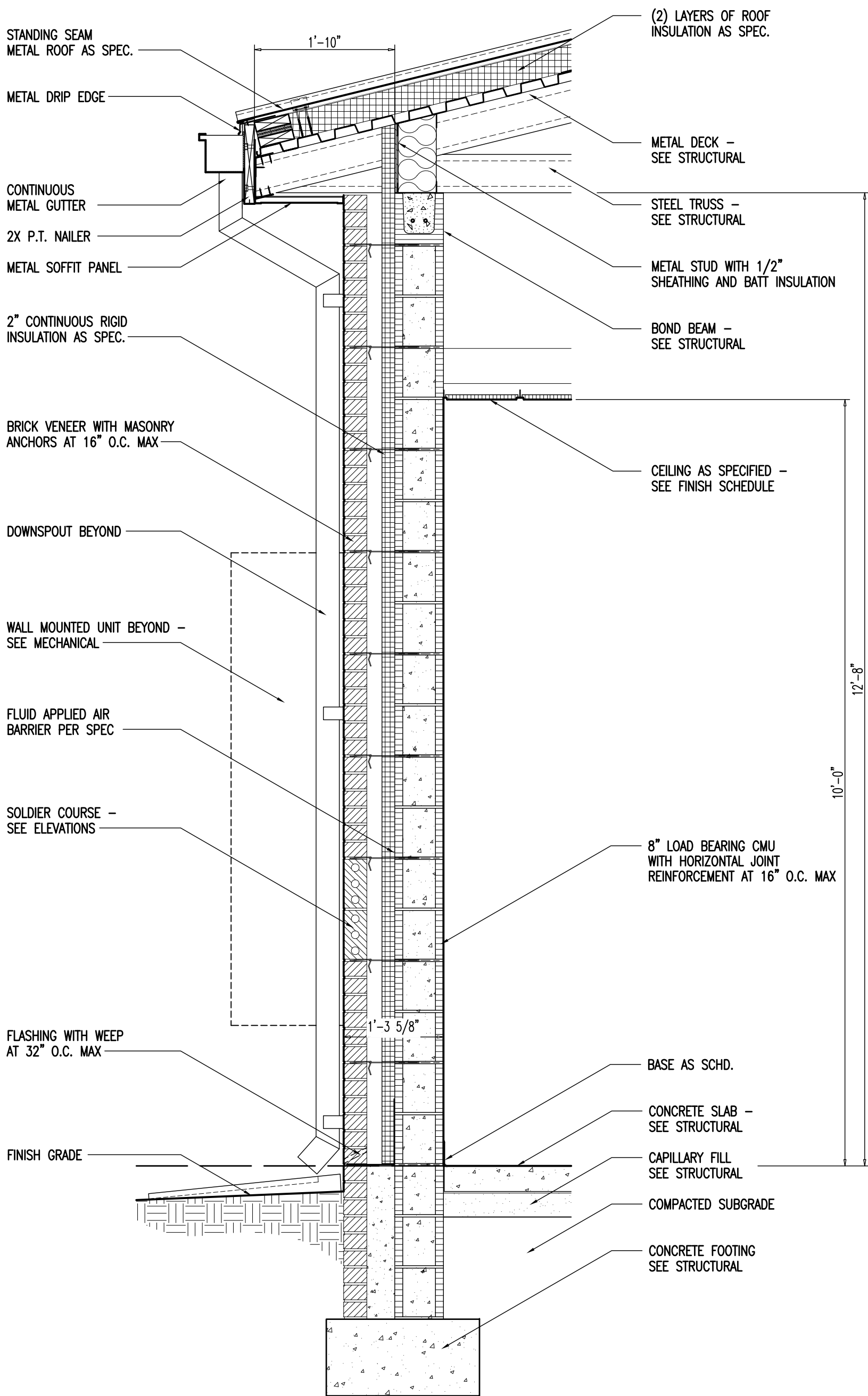
BUILDING SECTION
SCALE: 1/4"=1'-0"

1
A4000



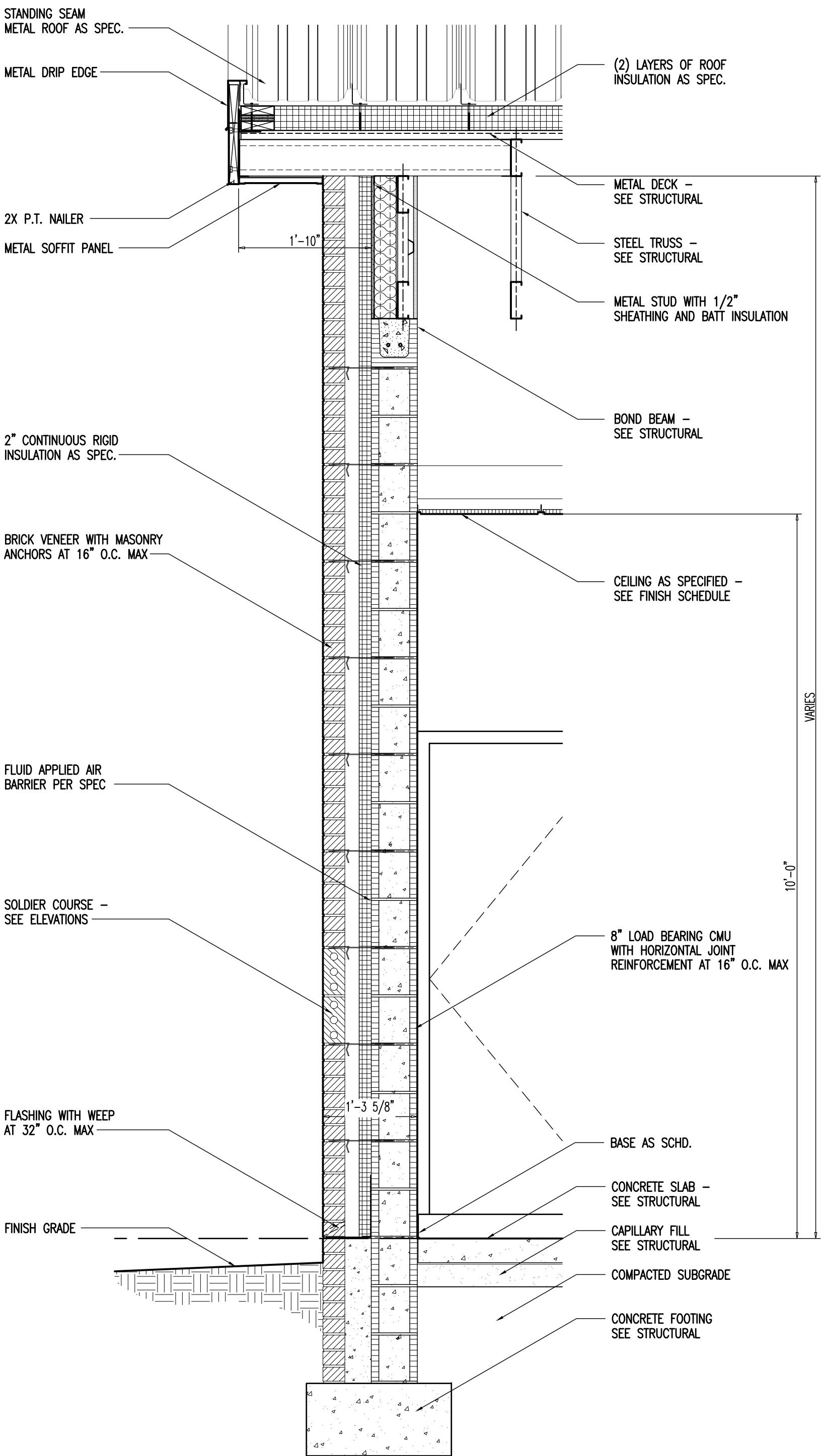
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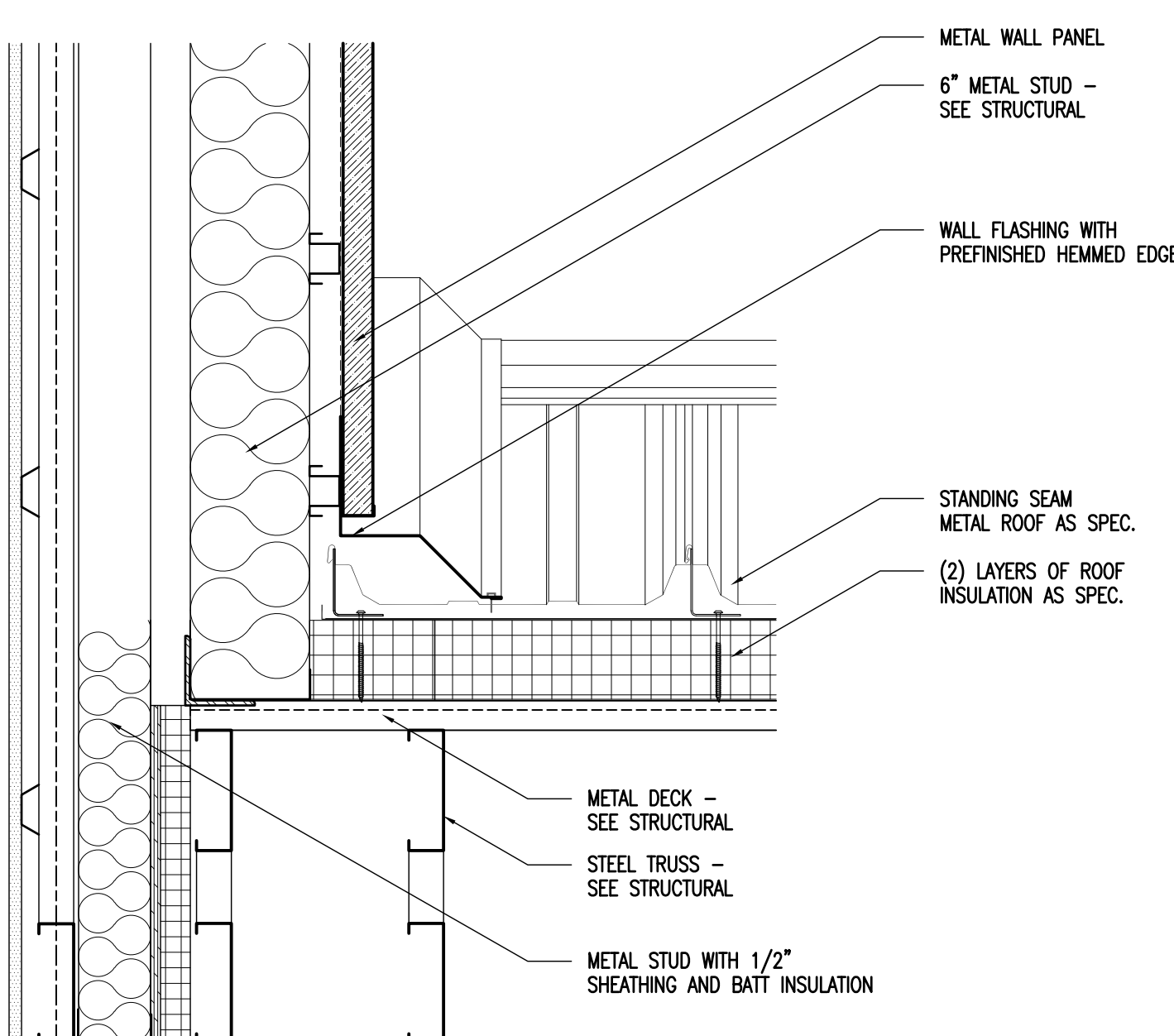
WALL SECTION
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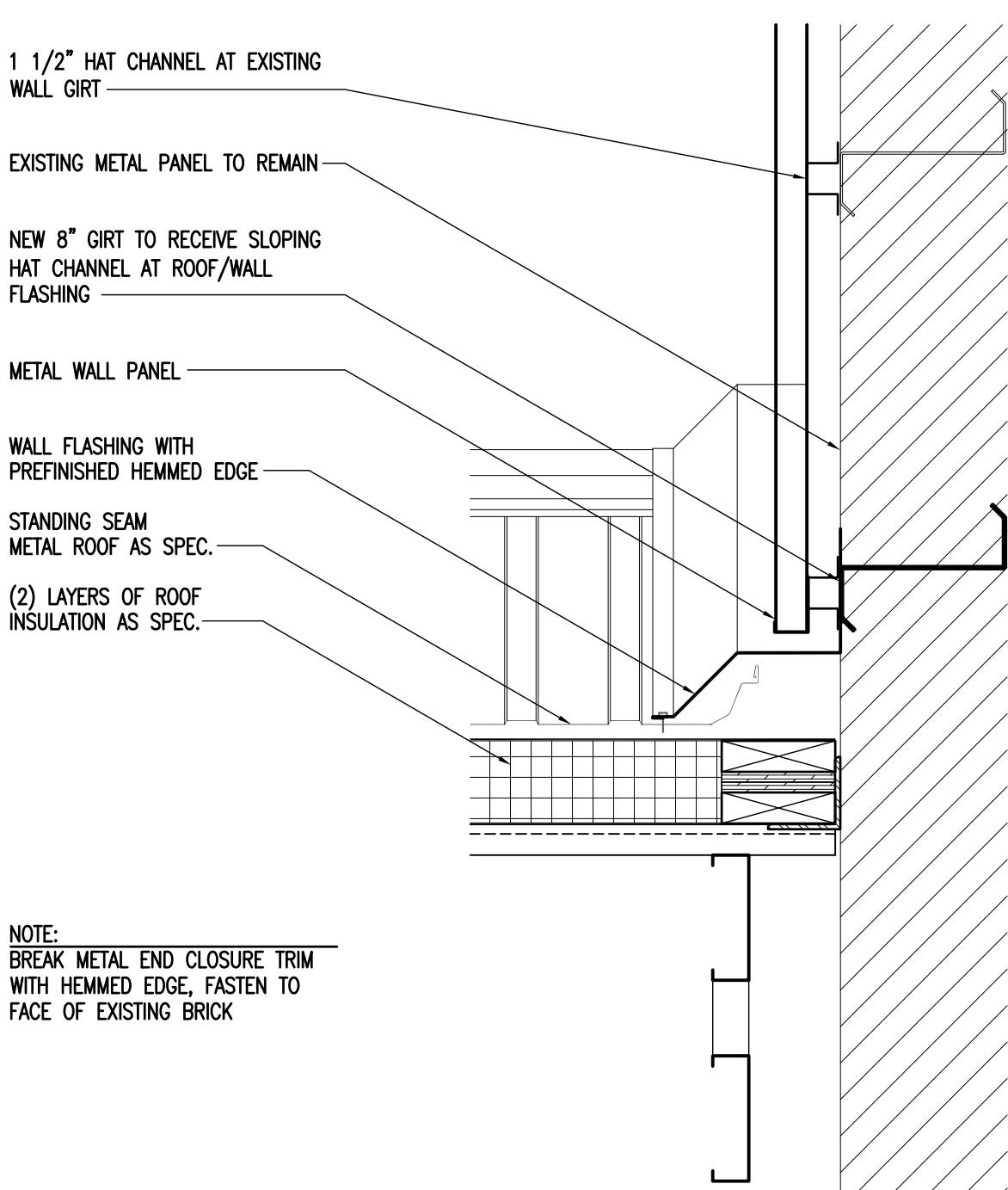
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BUILDING SECTION
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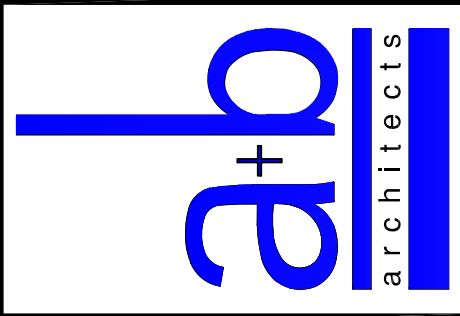
5
A4000



BUILDING SECTION
SCALE: 1/4"=1'-0"

6
A4000

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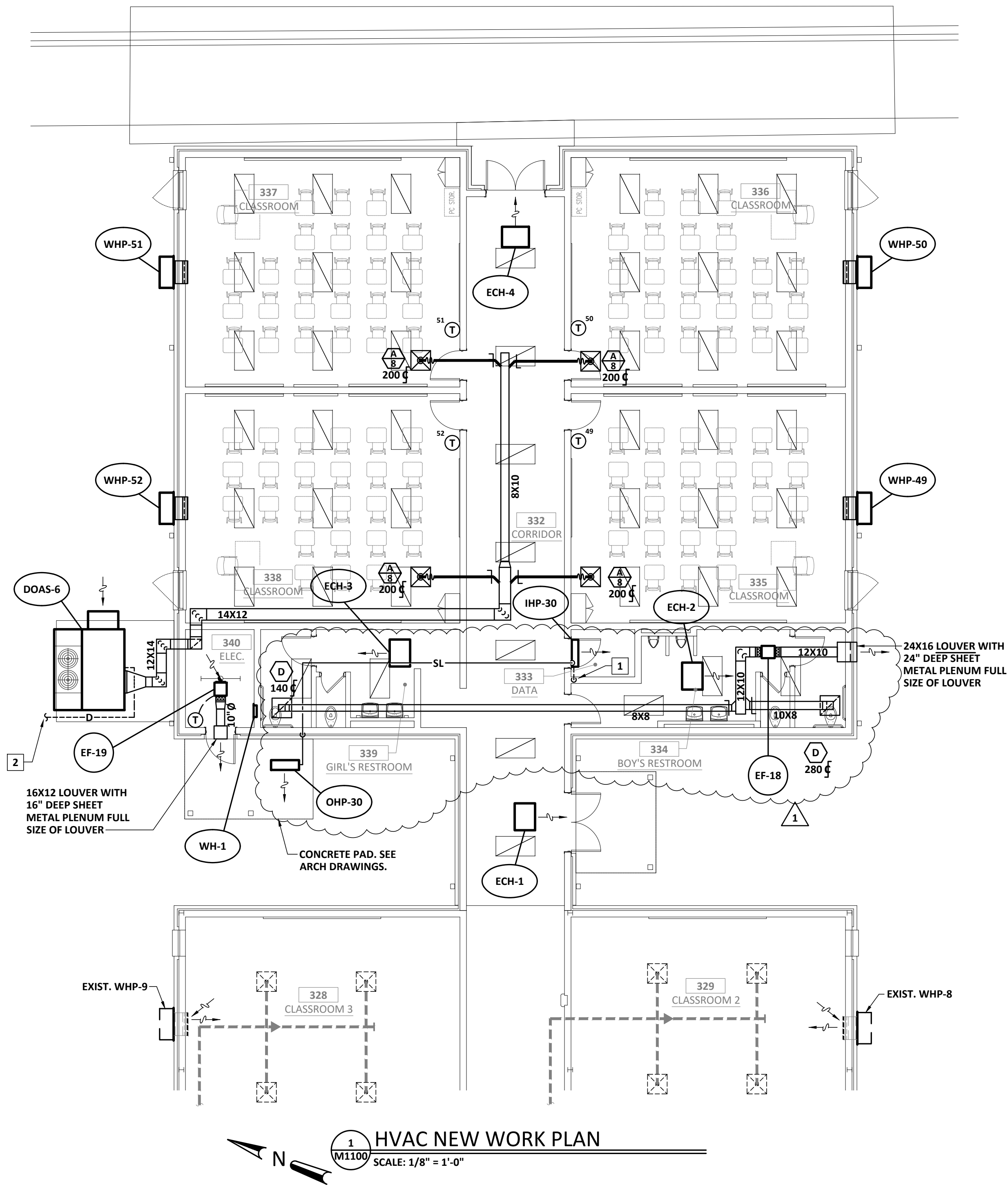
DATE: JANUARY 14, 2021
DRAWN: K. WILKERSON
CHECKED: K. WILKERSON
REVISIONS: 03/01/2021
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Valdosta City School System
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- KEY NOTES** (THIS SHEET ONLY):
- ROUTE CONDENSATE FULL SIZE OF UNIT CONNECTION ALONG WALL HIGH BELOW UNIT, DOWN THROUGH WALL, AND DISCHARGE INTO DRAIN BOX, SEE PLUMBING DWGS.
 - ROUTE CONDENSATE FULL SIZE OF UNIT CONNECTION AND DISCHARGE INTO DRY WELL, SEE PLUMBING DRAWINGS.
 - INSTALL HVAC EMERGENCY SHUTDOWN SWITCH IN ADMINISTRATION AREA. COORDINATE EXACT LOCATION WITH OWNER. SWITCH SHALL SHUT DOWN ALL HVAC SYSTEMS CONNECTED TO THE FACILITY MANAGEMENT SYSTEM. SEE SPECIFICATION 230993 FOR SPECIFIC SEQUENCE OF OPERATION.

KEY PLAN

-- WALL MOUNT HEAT PUMP SCHEDULE --												
ITEM	SUPPLY CFM	ESP (IN. WG)	OA CFM	COOLING CAP. TOTAL MBH (1)	EER MIN.	HEATING CAP. MBH (1)		COP (1)		AUX. HEAT (2)		REMARKS
						HI	LO	HI	LO	KW	STAGES	
WHP-49	950	0.30	0	29.0	11.0	26.6	16.4	3.4	2.3	9	1	W30HB --
WHP-50	950	0.30	0	29.0	11.0	26.6	16.4	3.4	2.3	9	1	W30HB --
WHP-51	950	0.30	0	29.0	11.0	26.6	16.4	3.4	2.3	9	1	W30HB --
WHP-52	950	0.30	0	29.0	11.0	26.6	16.4	3.4	2.3	9	1	W30HB --

- (1) RATINGS IN ACCORDANCE WITH A.R.I. STANDARD 240.
(2) UNITS SHALL HAVE INTEGRAL DISCONNECTS AND BIPOLAR IONIZATION UNIT AS SCHEDULED.

-- AIR DISTRIBUTION SCHEDULE --						
MARK	TYPE	NECK CONNECTION (1)	FINISH	OBD	PRICE NO. UNLESS NOTED	REMARKS (2)
A 6	CEILING DIFFUSER	6"Ø	MANUFACTURER'S STANDARD FINISH	NO	SCD-4C	24 X 24 PANEL (3)
A 8	CEILING DIFFUSER	8"Ø	MANUFACTURER'S STANDARD FINISH	NO	SCD-4C	24 X 24 PANEL (3)
A 10	CEILING DIFFUSER	10"Ø	MANUFACTURER'S STANDARD FINISH	NO	SCD-4C	24 X 24 PANEL (3)
D	CEILING RETURN/EXHAUST	22" X 22"	MANUFACTURER'S STANDARD FINISH	NO	80	24 X 24 PANEL WITH BORDER FRAME
E	SUPPLY REGISTER	SEE PLANS	MANUFACTURER'S STANDARD FINISH	YES	520D	DOUBLE DEFLECTION 3/4" BLADE SPACING
F	RETURN GRILLE	SEE PLANS	MANUFACTURER'S STANDARD FINISH	NO	535	45° DEFLECTION 1/2" BLADE SPACING
LOUVER	STATIONARY LOUVER	SEE PLANS	(4)	NO	GREENHECK ESD-635	FLANGE FRAME BIRDSCREEN

- (1) DUCT RUNOUT SIZE SAME AS NECK CONNECTION SIZE, UNLESS NOTED OTHERWISE.
(2) PROVIDE LAY-IN TYPE FOR T-BAR CEILINGS AND SURFACE TYPE FOR ALL OTHER CEILINGS. REFER TO ARCHITECTURAL FINISH SCHEDULE FOR CEILING TYPES.
(3) PROVIDE WITH REMOVABLE CORE (RC) AND MOLDED, INSULATED BACKPAN WITH FOIL SKRIM VAPOR BARRIER.
(4) BAKED ENAMEL FINISH, CUSTOM COLOR, COLOR AS SELECTED BY ARCHITECT.

-- INDOOR HEAT PUMP SCHEDULE --						
ITEM	SUPPLY CFM	FAN MCA	DRIVE	COOLING CAP. MBH (1)		REMARKS
				SENSIBLE	TOTAL	
IHP-30	380	0.3	DIRECT	9.6	12.0	40MAQ-12 --

- (1) RATINGS IN ACCORDANCE WITH A.R.I. STANDARD 240.

-- OUTDOOR HEAT PUMP SCHEDULE --						
ITEM	COOLING CAP. MBH (1)	EER MIN.	HEATING CAP. MBH (1)		COP (1)	
			HI	LO	HI	LO
OHP-30	12.0	13.0	12.0	7.8	3.5	2.6

- (1) RATINGS IN ACCORDANCE WITH A.R.I. STANDARD 240.

-- ELECTRIC HEATER SCHEDULE --				
ITEM	LOCATION	WATTS	Q-MARK MODEL NO.	REMARKS
ECH-1	CORRIDOR	3000	CUH 900 SERIES	(1)
ECH-2	BOYS	3000	CUH 900 SERIES	(1)
ECH-3	GIRLS	3000	CUH 900 SERIES	(1)
ECH-4	CORRIDOR	3000	CUH 900 SERIES	(1)
WH-1	ELECTRICAL	1800	AWH SERIES	(2)

- (1) 35" CABINET UNIT HEATER COMPLETE WITH 2-STAGE, BUILT-IN THERMOSTAT, NIGHT SETBACK RELAY, AND DISCONNECT MEANS.
(2) WALL HEATER COMPLETE WITH RECESSED MOUNTING FRAME AND INTEGRAL THERMOSTAT.

-- ION GENERATORS --					
MAX. TREATED AIRFLOW (CFM)	DRY CONTACTS	POWER (W)	VARIABLE OUTPUT WITH AIRFLOW	GLOBAL PLASMA SYSTEMS MODEL NO.	REMARKS
2400	INCLUDED	8	INTEGRAL	GPS-FC24-AC	(1)(2)(3)

- (1) INSTALL ION GENERATORS IN SUPPLY AIR DUCT OF EACH UNIT WHERE INDICATED.
(2) ION GENERATORS SHALL BE POWERED FROM THE 24V AC FAN CONTROL CIRCUIT. LOOSE TRANSFORMERS ARE NOT ACCEPTABLE.
(3) FAULT RESET SHALL BE AUTOMATIC. MANUAL FUSE REPLACEMENT IS NOT ACCEPTABLE.

HVAC NOTES:

- NOT ALL EXISTING WORK IS SHOWN, AND THAT SHOWN IS IN ITS APPROXIMATE LOCATION AND ARRANGEMENT. EXACT LOCATION, ARRANGEMENT, AND SIZES SHALL BE VERIFIED ON THE JOB BEFORE STARTING ANY NEW WORK.
- INSTALL PIPING AND DUCTWORK IN EQUIPMENT ROOMS ADJACENT TO WALLS AND CEILINGS WHERE POSSIBLE TO PROVIDE MAXIMUM ROOM CLEARANCE.
- COORDINATE THE INSTALLATION OF WORK UNDER THIS DIVISION WITH THAT OF OTHER TRADES TO PROVIDE THE BEST ARRANGEMENT OF PIPING, DUCTWORK, AND EQUIPMENT.
- PIPING, DUCTWORK, AND EQUIPMENT IS SHOWN IN ITS GENERAL LOCATION UNLESS DIMENSIONED.
- ARRANGE PIPING AND DUCTWORK TO CLEAR STRUCTURAL MEMBERS, PIPING AND LIGHT FIXTURES.
- EXACT LOCATION OF GRILLES AND CEILING OUTLETS SHALL BE DETERMINED ON THE JOBSITE. COORDINATE WITH LIGHTS, SPRINKLER HEADS, AND OTHER CEILING APPURTENANCES TO PROVIDE A UNIFORM AND SYMMETRICAL APPEARANCE. REFER TO ARCHITECTURAL AND ELECTRICAL DRAWINGS AND DETAILS.
- ALL PIPING SHALL BE CONCEALED, UNLESS NOTED OTHERWISE.
- PROVIDE FLEXIBLE DUCT CONNECTIONS TO ALL AIR HANDLING EQUIPMENT.
- SLOPE DRAIN LINES TOWARD DRAIN WITH A MINIMUM SLOPE OF 1/4" PER FOOT.
- THRU-WALL UNITS SHALL BE LOCATED SO AS TO BE SYMMETRICAL WITH ROOM, WINDOWS, WALL SECTIONS, AND OTHER ARCHITECTURAL REQUIREMENTS.
- PROVIDE ACCESS DOORS IN DUCTWORK FOR ALL FIRE AND SMOKE DAMPERS, DUCT-MOUNTED COILS, AND CONTROL DEVICES.

-- DEDICATED OUTDOOR AIR UNIT SCHEDULE --									
ITEM	SUPPLY			COOLING COIL LAT (°F) DB/WB	HOT GAS REHEAT CAP. (MBH)	ISMRE	ELECTRIC HEAT		REMARKS
	CFM	ESP (IN. WG)	FAN HP				TOTAL KW	STAGES	
DOAS-1	800	0.50	1	52.0/52.0	40.0	6.0	15.0	SCR	(1)(2)

- (1) PACKAGED DEDICATED OUTDOOR AIR UNIT COMPLETE WITH DIRECT DRIVE PLENUM SUPPLY FAN WITH FACTORY-MOUNTED VARIABLE FREQUENCY DRIVE, INDIRECT GAS HEAT EXCHANGER, INVERTER SCROLL COMPRESSOR(S), MODULATING HOT GAS REHEAT, E.C. LEAD CONDENSER FAN, AND 2" PLEATED MERV 8 FILTERS.
(2) OUTDOOR AIR ENTERING UNIT
- SUMMER DB / WB (°F) 96.1/76.5
WINTER DB (°F) 29.1

-- FAN SCHEDULE --									
ITEM	LOCATION	CFM	ESP (IN. WG)	HP	RPM	MAX. RPM	MAX. SONES	GREENHECK MODEL NO.	REMARKS
EF-18	TOILETS	420	0.35	1/6	1390	1725	7.0	SQ-95-VG	(1)(3)
EF-19	ELECTRICAL	200	0.25	1/10	1110	1725	4.5	SQ-90-VG	(1)(2)(4)

- (1) COMPLETE WITH BACKDRAFT DAMPER, ISOLATION HANGERS AND DISCONNECT MEANS.
(2) CONTROL WITH THERMOSTAT SET AT 85° (ADJ.).
(3) CONTROL WITH FACILITY MANAGEMENT SYSTEM.
(4) PROVIDE WITH INTAKE GUARD.

-- REFRIGERANT PIPE SCHEDULE --				
INDOOR UNIT	OUTDOOR UNIT	SUCTION LINE OD (IN.)	LIQUID LINE OD (IN.)	REMARKS
IHP-30	OHP-30	1/2	1/4	(1)

- (1) REFRIGERANT PIPE SIZES INDICATED ARE FOR ESTIMATING PURPOSES ONLY. EXACT SIZES AND ACCESSORIES REQUIRED SHALL BE DETERMINED BY EQUIPMENT MANUFACTURER FROM FIELD-OBTAINED DIMENSIONS.

HVAC LEGEND	
SYMBOL	DESCRIPTION
SL	REFRIGERANT SUCTION / LIQUID
D	CONDENSATE DRAIN
T	THERMOSTAT 4'-6" A.F.
CFM	CUBIC FEET PER MINUTE
1/M-1	DETAIL NO. 1. SHEET NO. 1/M-1
⊠	SUPPLY DIFFUSER
⊠	RETURN OR EXHAUST GRILLE
or MVD	MANUAL VOLUME DAMPER
⊠	FLEXIBLE DUCT CONNECTION
⊠	LINED DUCT (SIZE SHOWN IS METAL SIZE)
⊠	SQUARE ELL WITH SINGLE THICK TURNING VANES
A 8	AIR DEVICE NECK CONNECTION SIZE
A.F.	ABOVE FLOOR
RET.	RETURN (AIR - DUCT)
CONN.	CONNECTION
EXH.	EXHAUST
TYP.	TYPICAL
D.D.C.	DIRECT DIGITAL CONTROLLER
PD	PRESSURE DROP
NOM.	NOMINAL
EAT	ENTERING AIR TEMPERATURE
LAT	LEAVING AIR TEMPERATURE
ESP	EXTERNAL STATIC PRESSURE
APD	AIR PRESSURE DROP
DB	DRY BULB
WB	WET BULB
HP	HORSEPOWER
MBH	THOUSAND BTU'S PER HOUR
REFRIG.	REFRIGERANT
EER	ENERGY EFFICIENCY RATIO
SEER	SEASONAL ENERGY EFFICIENCY RATIO
COP	COEFFICIENT OF PERFORMANCE
OA	OUTSIDE AIR
OD	OUTSIDE DIAMETER