

SECTION 02222

EXCAVATING, BACKFILLING AND COMPACTING FOR UTILITIES

PART 1 - GENERAL

1.1 SUMMARY

A. Work Under this Sections Includes:

1. Excavation for - trenches for water, sanitary sewer, site drainage, and storm sewer lines to public utility.
2. Compacted bed and compacted fill over utilities to subgrade elevations.
3. Compaction.

1.2 SUBMITTALS

- A. Submit samples in accordance with General Conditions of contract and Division 1 specification sections. Comply with submittal requirements of Section 02316 and 02318.
- B. Submit 10 lb. sample of each type of fill to testing agency, in separate airtight containers.
- C. LEED Submittals:
1. LEED Credit MR 4.1 and Credit MR 4.2: Submit product data for products having recycled content, documentation indicating percentages by weight of post-consumer and pre-consumer recycled content.
 - a. Include statement indicating costs for each product having recycled content.
 2. LEED Credit MR 5.1 and Credit MR 5.2: Submit product data for products that have extracted, harvested, or recovered, as well as manufactured within 500 miles of the Project site.
 - a. Include a statement indicating the percentage by weight which is extracted, harvested, or recovered within 500 miles of the Project site.

1.3 TESTS

- A. Tests and analysis of fill materials will be performed in accord with ASTM D1557, and with General Conditions and testing required by Section 02318 for acceptability as fill material.

1.4 REFERENCES

- A. ASTM C136, - Sieve Analysis of Fine and Coarse Aggregates.
- B. ASTM D1556, - Density of Soil in place by Sand-Cone Method.
- C. ASTM D1557, - Tests for Moisture-Density Relationship of Soils and Soil-Aggregate Mixtures Using 10 lb. Rammer and 18 inch Drop.
- D. 35 ILL ADM CODE 740 Site Remediation Program (SRP) Appendix A Target Compound List (TCL) parameters and 35 ILL ADM CODE 742 Tiered Approach to Corrective Action Objectives (TACO) Appendix B Tables A and B residential and construction worker objectives. Illinois Department of Transportation (IDOT):
1. IDOT 2007 Specifications for Road and Bridge Construction including all addenda.

1.5 PROTECTION

- A. Protect excavations by shoring, bracing, sheet piling, underpinning or other methods or prevent cave-in or loose soil from falling into excavation.
- B. Underpin adjacent structures which may be damaged by excavation work, including service utilities and pipe chases.
- C. Notify Architect immediately of unexpected subsurface conditions. Confirm notification in writing. Discontinue work until Architect issues written notification to resume work.
- D. Protect bottom of excavations and soil adjacent to and beneath foundations from frost.
- E. Grade excavation tip perimeter to prevent surface water runoff into excavation.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. In accordance with the soil report the Owner's testing agency representative shall determine if the excavated material is suitable for backfill. The suitable trench excavated material shall be used for trench backfill. Backfill operations must be consistent with Sections 02316, 02317 and 02318 as applicable and the Owner's Managing Environmental consultant.
- B. **Granular Fill Type A:**
 - 1. **Bedding Material: Material for bedding shall be CA-11, CA-16 or CA-7 as defined in the project documents and shall be in compliance with IDOT 2007, Article 704.01 and 703.5 and with Section 02318. Recycled material is also permitted for use providing the above gradation and requirements are met.**
 - 2. **Backfill Material: Material for backfill shall be FA-6, CA-16 or CA-7 as defined in the project documents and shall be in compliance with IDOT 2007, Article 703.1 and 703.5 and with Section 02318. Recycled material is also permitted for use providing the above gradation and requirements are met.**
- C. Fill Material Type D: Fill material shall be cohesive soil obtained from on-site required excavations and approved by the Owner testing agency representative as suitable backfill material in accordance with ASTM D 2487, Uniform Soils Classification System 1 and 703.5 and with Section 02318 It shall be used to backfill excavations where the excavated material is unsuitable for backfill.
- D. Fill Material Type E: Fill under landscaped areas shall be free from alkali, salt shall not exceed Appendix B, Section 742, Table A; Tiered Approach to Corrective Action objectives (Taco); Ill Adm .Code 742 values for 35 ILL. ADM CODE 740 APPENDIX A Target Compound List (TCL) parameters and shall be obtained from on-site required excavations when conforming to the specifications. This fill shall be approved by the Owner's testing agency representative as suitable material.
- E. Fill Material Type X: Off-site borrow material shall comply to soil types GP, GW, SC and CL in accordance with ASTM D 2487, Uniform Soils Classification System and with Section 02318. It shall be used where needed under structural slabs, roads, pavement and landscaped areas.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify stockpiled fill to be reused as approved in writing by Architect.
- B. Verify foundation perimeter drainage installation has been inspected and approved in writing by Architect.
- C. Verify and confirm in writing that areas to be backfilled are free of debris, snow, ice or water, and surfaces are not frozen.

3.2 PREPARATION

- A. Identify specified lines, levels, contours and data.
- B. Compact subgrade surfaces to density specified for backfill materials.

3.3 EXCAVATION

- A. Cut trenches wide enough to enable utility installation and allow inspection.
- B. Hand trim excavation and leave free of loose matter. Hand trim for bell and spigot pipe joints.
- C. Excavation shall not interfere with normal 45 degree bearing splay of foundations.
- D. Sides, walls or faces of all trenches shall be sloped and maintained in a safe manner and in the required condition until completion of backfilling. Excavations shall be braced or sloped in compliance to the latest Occupational Safety and Health Administration (OSHA) requirements or as instructed by the testing agency on-site representative.
- E. Locate and retain reusable excavated materials away from the edge of excavation.

3.4 BACKFILLING

- A. Support pipes, and conduits during placement and compaction of bedding fill.
- B. Backfill trenches to contours and elevations shown. Backfill systematically, as early as possible to allow maximum time for natural settlement. Do not backfill over porous, wet or spongy subgrade surfaces.
- C. Place compact fill materials in continuous layers as specified in Section 02300.
- D. Use a placement method that will not disturb or damage utilities in trenches, perimeter drainage.
- E. Maintain optimum moisture content of backfill materials, determined by laboratory analysis, to obtain specified compaction density.
- F. Remove surplus backfill materials and materials unsuitable for backfill from the site to state and local permitted/licensed facilities.

3.5 FILL TYPES AND COMPACTION

- A. Compact all fill and backfill to specified values based on Modified Proctor Test in accordance with section 02300.

3.6 COLD WEATHER PROTECTION

- A. Quality Control Testing During Construction: An independent inspection and testing agency employed by the Owner shall inspect and approve each subgrade and fill layer before further backfill and fill work is performed.
 - 1. The inspection and testing agency shall perform field and laboratory density tests in accordance with either ASTM D 1556 (sand cone method) and ASTM D 1557 as applicable.
 - 2. Field density tests may also be performed by the nuclear method in accordance with ASTM D 2922. The calibration curves shall be periodically checked and adjusted to

correlate to tests performed using ASTM D 1556. In conjunction with each density calibration check, the calibration curves furnished with the moisture gauges shall be checked in accordance with ASTM D 3017.

3. If field tests are performed using nuclear methods, the inspection and testing agency shall make calibration checks on both density and moisture gauges at beginning of work, on each different type of material encountered, and at intervals as specified by the equipment manufacturer.
4. If, in the opinion on the Owner testing agency representative, based on the inspection and testing agency reports and inspections, subgrade or fills have been placed by specified density, the Contractor shall perform additional compaction and retesting until specified density contractor to pay for all retesting work.
5. The Contractor shall assist the inspection and testing agency by providing access to the excavation and fill areas, and by removing loose materials from compacted soil layers prior to testing.

3.7 STORAGE AND REMOVAL OF EXCAVATION MATERIALS

- A. Remove surplus backfill materials and materials unsuitable for backfill from the site to a permitted Subtitle D Landfill as per Section 02316.
- B. Locate and retain reusable excavated materials away from the edge of excavation.
- C. Remove excess and deleterious materials. The hauling of materials to designated areas shall be at the Contractor's expense.

END OF SECTION

SECTION 02940

VEGETATED ROOF ASSEMBLIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Providing equipment, materials, tools, and labor to install vegetated roofing modules.
2. Providing vegetated roof modules including growth media and plants.
3. Edge treatments, custom shaping of modules, and installing slip sheet/root barrier and irrigation system, if specified.

B. Roof ballast stone and roofing systems specified in Section 07561 – HOT FLUID-APPLIED ROOF SYSTEM.

1.2 SUBMITTALS

A. Submit list of sources for plant material to be provided.

B. Product data for vegetated roofing systems.

C. Planting mix design indicating species.

D. Samples:

1. Typical vegetated roofing module, unplanted.
2. Soil media, 1 gallon, in plastic ziploc bag
3. Edging material, 3 feet long with typical fasteners

E. Shop Drawings: Indicating layout of modules, pavers, irrigation, and square footage.

F. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

G. Special Vegetation Warranty: Submit two (2) signed copies of vegetation warranty of health plant growth for two (2) full growing seasons after final acceptance: 1 year – 50% minimum coverage; 2-years – 80 % minimum coverage.

H. Maintenance instructions for inclusion into owner's manuals.

I. LEED Submittals:

1. LEED Credit MR 5.1 and Credit MR 5.2: Submit product data for products that have extracted, harvested, or recovered, as well as manufactured within 500 miles of the Project site.
 - a. Include a statement indicating the percentage by weight which is extracted, harvested, or recovered within 500 miles of the Project site.

1.3 QUALITY ASSURANCE

A. No deviation shall be made from this specification. Contractor and installer assumes liability for any deviations from specification.

B. Only certified installer personnel shall complete all work.

- C. Prior to installing vegetated roof modules, the following procedures shall be conducted:
 - a. The building Architect shall verify that the roof is properly designed and constructed to adequately support the load of the vegetated roof system.
 - b. The roof shall be tested for water tightness prior to installation of vegetated roof system.
 - c. Slipsheet/root barrier shall be properly installed, seams overlapped and bonded, in accord with architect's and manufacturer's specifications.
 - d. The roof shall be inspected and determined ready to accept the vegetated roof modules by a Technical Representative of the Installer.
- D. Once the vegetated roof module installation is completed, an inspection shall be conducted by a Technical Representative of the installer to verify that the vegetated roof modules have been installed tight against each other, in straight rows, corners aligned, properly oriented, and tight against the edging.

1.4 PRE-INSTALLATION MEETING

- A. Convene one week before starting work of this section. Review vegetated roof standardized procedures with supervisory staff.

1.5 DELIVERY, STORAGE, HANDLING, PROTECTION

- A. Vegetated roof modules shall be:
 - 1. delivered in good condition free from shipping damage
 - 2. kept out of the sun if plastic wrapped to prevent overheating
 - 3. installed on the roof top within 4 hours of delivery
 - 4. handled on the job-site to prevent damage to the modules themselves and all roofing components
- B. Vegetated roof modules shall be conveyed to roof surface with equipment designed to carry the collective load of the vegetated roof modules and transport
- C. Never exceed the load capacity of the roof deck when placing vegetated roof modules on the roof.
- D. Roof Protection
 - 1. During installation, protect the roof deck and membranes with appropriate materials such as plywood sheeting.
 - 2. Never scrape or puncture slip sheet or membranes.
 - 3. Keep roof surfaces free of soil, grit, or debris at all times with broom. Vegetated roof modules shall not be set on top of soil, dirt or grit.
- E. Transport carts shall:
 - 1. have pneumatic tires
 - 2. be wheeled about only upon protective plywood sheeting
 - 3. be loaded so as not to exceed weight capacity of roof deck

PART 2 - PRODUCTS

2.1 VEGETATED ROOFING MODULE MANUFACTURER

- A. General: Provide vegetated roofing systems from one of the following manufacturers:
1. Weston GreenGrid
750 Bunker Court, Suite 500
Vernon Hills, IL 60061
(847) 918-4135
(847) 918-4055
 2. American Hydrotech – Garden Tray System
303 E. Ohio Street
Chicago, IL 60611
(800) 877-6125
(312) 661-0731 Fax
 3. LiveRoof, LLC (a subsidiary of Hortech, Inc.)
P.O. Box 533
Spring Lake, MI 49456
(800) 875-1392
(616) 842-3273 Fax
- B. Other manufacturer's may be considered provided they can meet the following criteria:
1. Vegetated roofing module shall consist of a modular unit filled with engineered soil materials.
 2. Modules shall be provided vegetated upon installation with the plant species indicated on the plans.
- C. Modules shall have the following specifications:
1. Sidewalls: 150 mil thick 100% recycled polyethylene with UV inhibitors and stabilizers.
 2. Dimensions: variable depending on manufacturer; ranging from 18" x 24" to 24" x 48".
 3. Depth of System upon installation: 4"
 4. Saturated weight with mature vegetation: approximately 18-22 lb. per square ft. (4" system)

2.2 GROWING MEDIUM

- A. Growing medium shall be an engineered blend of inorganic and organic components based upon German FLL granulometric guidelines modified so as to contain ecologically sustainable levels of organic content

2.3 PLANTS

- A. Vegetated roof module shall be filled with plants in mix as indicated on the plans and as supplied by the manufacturer.
- B. A minimum of 16 plugs shall be installed in each 2 x 4 foot module. An equivalent density shall be planted for alternate vegetated module sizes.
- C. Plants shall be grown to a minimum of 25% soil coverage prior to installation.

2.4 ACCESSORIES

- A. Pavers/Ballast: as specified in Section 07561 – HOT FLUID-APPLIED ROOF SYSTEM.
- B. Slip Sheet
 - 1. Non-woven geotextile sheeting made from 100% post consumer polyester material
 - 2. Weight: 6.0 ounces/square yard
 - 3. Thickness: 120 mils
 - 4. UV Resistance: 70 min.
- C. Edging:
 - 1. L-shaped extruded aluminum edging with perforations for drainage as specified by vegetated roof module manufacturer.
 - 2. Edging shall allow for adequate drainage via sufficient drain perforations.
 - 3. Edging is required between modules and stone ballast or pavers.
 - 4. Edging is required at edge of all cut modules.
 - 5. Edging shall be attached to modules, using 10-24 x 1” wafer head self-tapping screws in gray spex finish.
- D. Irrigation
 - 1. A hose bib connection is provided at the roof level for use during the installation and maintenance of the vegetated roof module system.
 - 2. Prior to reaching fall freezing temperatures, hose bib system shall be blown out with compressed air no greater than 60 psi.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Vegetated roof installation must be conducted by certified installer.

3.2 PREPARATION OF ROOF SURFACE

- A. Contractor shall install slip sheet/root barrier in accordance with manufacturer’s recommendations.
- B. All surfaces shall be smooth, free of debris, soil, and grit prior to placing modules. All materials shall be tested water tight and free draining prior to module placement.
- C. All surfaces shall be maintained clean and free of debris, soil, and grit during installation process.

3.3 INSTALLATION SEASON

- A. Vegetated roof module installation shall be conducted when plants are:
 - 1. Properly adapted and acclimatized to local weather conditions.
 - 2. When weather is above 35° F and there is no ice on the roof and planting soil is unfrozen.

3.4 INSTALLING VEGETATED ROOF MODULES

- A. Vegetated roof module installation shall follow behind installation of slip sheet/root barrier, irrigation system, pavers, ballast, and edging.

- B. Vegetated roof module installation to be conducted in strict accordance with manufacturer's installation guidelines. Rows shall be straight, modules to be tight against each other with edges overlapping and arranged in proper directional orientation.
- C. Vegetated roof module installation shall be conducted in accordance with green roof design indicated on the plans.
- D. Vegetated roof modules shall be placed directly on top of appropriate slip sheet.
- E. It is recommended that any custom cutting/fitting be oriented on the high side (top), or sides of the roof. It is recommended that the cut side of the module be set tight against the edging or toward the side of an intact module so as to prevent soil spillage. If custom cutting must be done on the low, draining, side of the roof, it is imperative that no filter cloth be inserted as it could impede drainage. It is best to orient the cut side against another module, facing upstream.
- F. After installation, modules shall be immediately watered so as to thoroughly moisten the media from top to bottom. Water shall be of suitable quality for plant growth and irrigation system or hoses and sprinklers may be used for such purpose.

3.5 MAINTENANCE

- A. Documentation: Record all green roof maintenance events. Include name of person, date and activity.
 - 1. If fertilizer, record type and amount applied per 1000sf
 - 2. If soil test, record lab
 - 3. If irrigation, record duration and quantity
- B. Annual Maintenance
 - 1. Soil Testing and Fertilization. During April 1 to 15 of each year, administer an annual soil test for PH and fertility levels.
 - a. Maintain pH in the range of 6.5 to 8.0. In the event that pH is outside of the 6.5 to 8.0 range, consult vegetated roof module supplier for the appropriate amendment.
 - b. Maintain fertility in the normal range using a typical field soil fertility test as provided by A&L labs. When indicated, apply a single springtime application of Nutricote 14 14 14, Type 180 (180 day release period), at 20lbs per 1000sf. Follow the Nutricote labeled directions for application rate, which take priority over any recommendations listed here. Runoff potential does exist and should be evaluated by the applicator in accord with the site specifics; the greater the runoff sensitivity, the lower the application rate. All applications of fertilizer are the sole responsibility of the applicator.
- C. Irrigation
 - 1. Contractor shall water the new vegetated roof modules to ensure proper growth through the maintenance and warranty period.
 - 2. Contractor shall monitor the moisture content of the vegetated roof modules throughout the roof to ensure that the moisture content is properly maintained.
- D. Inspections and Plant Care Protocol
 - 1. Conduct the following every 2 weeks (twice per month) During the entire spring through fall growing season:

- a. Conduct hand weeding during the twice monthly inspection. Pull all weeds, never allow any weed to flower, set seed and complete its life cycle. Weeding should be conducted spring through fall in areas where the roof becomes frozen and snow-covered in winter. In warmer climates, it should be continued year round.
 - b. The interval may be adjusted in accord with seasonal variations in weed growth, but the interval should never exceed 2 weeks or be long enough to allow for weeds to flower and set seed. Never allow woody plants to establish in a green roof system as their root systems are extensive and can damage roof membranes.
 - c. Herbicides, whether pre-emergent or post-emergent, are not recommended as they are not healthy for the environment and can contaminate runoff. A need for pre-emergent herbicides is a sign of weeding too infrequently.
2. Displaced Soil - Any displaced soil must be immediately replaced.
 3. Drainage Inspection - Roof drains must be cleared of any debris, pebbles, leaves, etc. during the twice monthly inspection to keep drains flowing freely.
 4. Debris / Trash Removal - Remove immediately debris or trash during twice monthly inspection. During fall and spring, rake vegetated roof planting clean of any matted tree leaves to prevent smothering.
 5. Pesticides - Pesticide use is discouraged and should always be considered secondary to cultural and biological control measures, as pesticides can get into runoff water and cause environmental damage. Pesticide use should only be conducted by qualified and licensed applicators, and on an "as needed" basis. All applications of pesticides are the sole responsibility of the applicator.
 6. Optional Mowing - If desired, around April 1, mow the green roof to a height of 2" or less. The clippings should stay on the roof. Do not bag and remove. Use protective equipment.
 7. Wintertime - Avoid applying salt and other deicing agents to vegetated roof module plantings. Avoid walking on frozen plants and roof surfaces.
- E. Apply slow release fertilizer as needed in accord with manufacturer's directions. Avoid runoff into sensitive areas.

3.6 ACCEPTANCE

- A. Conduct post installation inspection to determine acceptance of modules. Inspection to be made by General Contractor's Representative and Owner's Representative upon General Contractor's request; five working days notice required.
- B. Upon acceptance, Owner assumes responsibility for module/plant maintenance.

3.7 CLEAN UP

- A. Throughout installation, keep all work surfaces clean and free of grit, dirt, or debris. Use broom not blower, do not sweep soil under modules or slip sheet. Following installation, remove all excess materials and tools from job site. Ensure that any damage that occurs as a result of installation is appropriately and immediately repaired.

END OF SECTION

SECTION 07561

HOT FLUID-APPLIED ROOF SYSTEM

PART 1 -GENERAL

1.1 SUMMARY

- A. Section includes hot fluid-applied extensive vegetated roof system as indicated and specified.
- B. The materials in this Section are part of the overall USGBC "Leadership in Energy and Environmental Design" LEED prerequisites and credits needed for Project to obtain LEED Silver certification based on LEED for Schools 2007 requirements. See Section 01352 LEED Requirements and this section for more information.
- C. Related Section: 02940 Vegetated Roof Assemblies

1.2 DEFINITIONS

- A. Green Roof: An area of planting/landscaping, built up on a waterproofed substrate at any level that is separated from the natural ground by a man-made structure.
- B. Extensive Green Roof --Low to no maintenance landscaping consisting of shallow soil depths < 6 inches (200mm) with plant varieties restricted to primarily mosses, herbs and succulents capable of withstanding harsh growing conditions.

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's printed instructions for preparing, and treating substrate, and installation of all components of the system.
- B. Shop Drawings: Submit complete layout and detailed drawings. Show locations and extent. Include details for substrate joints and cracks, sheet flashings, penetrations, inside and outside corners, and other termination conditions.
 - 1. Include Drawings showing layout and cross sections through the entire assembly at each differing condition.
 - 2. Show locations, extent, and details of precast concrete curb units.
 - 3. Show extent of aggregate surfacing.
- C. LEED Submittal:
 - 1. Product Data as required to show compliance with the following credits:
 - a. LEED MR Credit 5.1 and 5.2-Regional Materials, Extracted, Processed and Manufactured Regionally.
 - 2. See Section 01352 LEED Requirements and this Section for more information. Submit Materials Credit Documentation Sheet attached to Section 01352 for products in this section, including back-up documentation.
- D. Samples: Submit two (2) samples for the following products:

- E. Sample Warranty: Submit a copy of special manufacturer's and Installer's warranties stating obligations, remedies, limitations, and exclusions proving compliance with warranty requirements.
 - 1. Submit two (2) fully executed copies of warranties dated from the date of preliminary acceptance at the completion of the Project in a form acceptable to the Architect in conformance with specified requirements.
- G. Maintenance Instructions: Submit three (3) bound copies of maintenance instructions at closeout.

1.4 QUALITY ASSURANCE

- A. Membrane Installer Qualifications: A qualified installer who is authorized, approved, or licensed to install the membrane manufacturer's products; and who is eligible to receive warranty specified.
- B. Plant Installer Qualification: Familiar with landscape planting procedures under supervision of a skilled foreman as a primary business.
- C. Mockups: Apply membrane to 100 sq. ft. of deck to demonstrate surface preparation, crack and joint treatment, corner treatment, thickness, texture, and execution quality from the deck through the water retainage/drainage structure. Install balance of system including growing media, vegetation, and aggregate surfacing on one-half the system.
- D. Preinstallation Conference: Conduct conference at Project site. Review requirements for installation, including surface preparation, substrate condition and pretreatment, minimum curing period, forecasted weather conditions, special details and sheet flashings, installation procedures, testing and inspection procedures, and protection and repairs.
- E. Inspection: Architect may inspect plant material at nursery. Such inspection shall be in addition to inspection at job site.
 - 1. If plants and materials required to be inspected are located outside radius of 25 miles from Project site, Architect's direct and indirect cost including normal profit shall be borne and paid by Contractor.
 - 2. Upon delivery and before planting, notify the Architect to inspect plants.
 - 3. Inspection and approval is for quality, size, and variety only, and in no way impairs right of rejection for failure to meet other requirements during progress of Work.
 - 4. Contractor shall be present during required inspection or as may be required by Architect.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver liquid materials to Project site in original containers with seals unbroken, labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by waterproofing manufacturer.
- C. Remove and replace liquid materials that cannot be applied within their stated shelf life.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Apply membrane within the range of ambient and substrate temperatures recommended by waterproofing manufacturer. Do not apply waterproofing to a damp or wet substrate, or when temperature is below 32 deg F (minus 0 deg C).
 - 1. Do not apply membrane in snow, rain, fog, or mist.
- B. Maintain adequate ventilation during application and curing.

1.7 WARRANTY

- A. Special Membrane Manufacturer's Warranty: Submit two (2) signed copies of single-source written warranty, of U.S. origin, signed by membrane manufacturer, agreeing to repair or replace membrane and sheet flashings that do not comply with requirements or that do not remain watertight within specified warranty period.
 - 1. Warranty does not include failure of the system due to failure of substrate prepared and treated according to requirements or formation of new joints and cracks in substrate that exceed 1/8 inch (3 mm) in width.
 - 2. Warranty insulation will retain 80 percent of original published thermal value.
 - 3. Warranty Period: Twenty years from date of final acceptance of the Project.
 - 4. Warrant that system will resist the attack of water fertilizers normally used and the growing media.

PART 2 –PRODUCT

2.1 MEMBRANE MANUFACTURERS

- A. Subject to compliance with requirements, provide hot-applied roof system by one of the following:
 - 1. American Hydrotech, Inc.
 - 2. The Barrett Company
 - 3. Carlisle Corporation
 - 4. Henry.

2.2 MEMBRANE

- A. Single-component; 100 percent solids; hot fluid-applied, rubberized asphalt with the following properties measured per applicable test methods in ASTM or CAN/CGSB-37.50-M89, as indicated:
 - 1. Flash point, ASTM D-92: <500°F.
 - 2. Penetration, ASTM D-5329: 98 mm @77°F.
 - 3. Flow, ASTM D-5329: 1.0 mm @ 140°F.
 - 4. Toughness, CGSB-37.50-M89: 16.0 Joules.
 - 5. Ratio of Toughness to Peak Load, CGSB-37.50-M89: 0.069.
 - 6. Water Vapor Permeability, ASTM E-96, PROCEDURE E: 0.3 ng/Pa(s) M2.
 - 7. Water Absorption, CGSB-37.50-M89: .11 gram weight gain.
 - 8. Low Temperature Flexibility (-25°C), CGSB-37.50-M89: No delamination, adhesion loss, or cracking.
 - 9. Low Temperature Crack Bridging Capability, CGSB-37.50-M89: No cracking, adhesion loss, or

- splitting.
- 10. Heat Stability, CGSB-37.50-M89: No change in viscosity, penetration, flow or low temperature flexibility.
- 11. Viscosity, GSB-37.50-M89: 11.0 seconds.
- 12. Water Resistance (5 days/50°C), CGSB-37.50-M89: No delamination, blistering, emulsification, or deterioration.
- 13. Softening Point, ASTM D-36: 180°F.
- 14. Elongation, ASTM D-5329: 1000% minimum.
- 15. Resiliency, ASTM D-3407: 40% minimum.
- 16. Bond to Concrete, ASTM D-3407: Pass 0°F.
- 17. Acid Resistance, ASTM D-896 Procedure 7.1 (N-8): Pass-50% Nitric Acid and -50% Sulfuric Acid.
- 18. Resistance to Hydrostatic Pressure, ASTM D-08.22 (Draft 2): 100 psi (equals 231 foot of head water).
- 19. Resistance to Salt Water, ASTM D-896 similar 20% sodium chloride sodium carbonate calcium chloride: No delamination, blistering, emulsification or deterioration.
- 20. Resistance to Fertilizer, ASTM D-896 similar undiluted, 15/5/5, nitrogen/phosphorus potash: No delamination, blistering, emulsification or deterioration.
- 21. Resistance to Animal Waste, 3-year exposure: No deterioration.
- 22. Solids Content, 100%-no solvents.
- 23. Shelf Life: 10 years (sealed).
- 24. Specific Gravity: 1.23 + .02.

2.3 AUXILIARY MEMBRANE MATERIALS

- A. Primer: ASTM D 41, asphaltic primer or as recommended by system producer.
- B. Elastomeric Flashing Sheet: 50-mil-(1.3-mm-) minimum, nonstaining, uncured sheet neoprene with manufacturer's recommended contact adhesives and predrilled metal termination bars and anchors, with the following physical properties as measured per standard test methods referenced:
 - 1. Tensile Strength: 1200 psi (9.6 MPa) minimum; ASTM D 412, Die C.
 - 2. Elongation: 200 percent minimum; ASTM D 412.
 - 3. Tear Resistance: 125 psi (860 kPa) minimum; ASTM D 624, Die C.
 - 4. Brittleness: Does not break at minus 30 deg F (34 deg C); ASTM D 2137.
- C. Modified-Bituminous Flashing Sheet: SBS-modified bituminous sheet, 157 minimum mil-thick, woven or non-woven polyester or glass-fiber reinforced; suitable for application method specified; granular surfaced.
- D. Sealants and Accessories: System manufacturer's recommended sealants and accessories.
- E. Reinforcing Fabric: Manufacturer's recommended spun-bonded polyester fabric.

2.4 INSULATION

- A. Board Insulation: Extruded-polystyrene board insulation complying with ASTM C 578, square edged; of type, density, and compressive strength indicated below:
 - 1. Type VII, 2.2-lb/cu. ft. minimum density and 60-psi minimum compressive strength.
 - 2. Product shall be free of CFC's

2.5 APPURTENANCES

- A. Inspection Chamber: Formed of aluminum with perforated sides and removable insulated top.

2.6 AGGREGATE SURFACING

- A. Aggregate Surfacing: Washed, crushed stone or smooth stone that will withstand weather exposure without significant deterioration and will not contribute to membrane degradation; of the following size:

- 1. Size: ASTM D 448, Size 4, ranging in size from 1-1/2 inches to 2 inches

2.7 PRECAST CONCRETE PAVERS

- A. Pavers on Canopy Roof: Heavyweight, hydraulically pressed, concrete units, square edged, manufactured for use as plaza deck pavers; minimum compressive strength 6500 psi, ASTM C 140; absorption not greater than 5 percent, ASTM C 140; no breakage and maximum 1 percent mass loss when tested for freeze-thaw resistance according to ASTM C 67.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. Hanover Architectural Products.
 - b. Hastings Pavement Co., Inc.
 - c. Roofblok Limited.
 - d. Sunny Brook Pressed Concrete Co.
 - e. Wausau Tile, Inc.; Terra-Paving Div.
 - f. Westile Roofing Products.
2. Thickness: 2 inches.
3. Face Size: 24 inches square.
4. Color: As selected by Architect from manufacturer's full range.

- B. Paver Pedestals: Paver manufacturer's standard SBR rubber, HDPE, or polyurethane paver support assembly, including adjustable or stackable pedestals, shims, concrete fill, and spacer tabs for joint spacing of 1/8 to 3/16 inch.

1. Products: Subject to compliance with requirements, provide one of the following:

- a. United Construction Products; Bison Versadjust Deck Supports.
- b. Envirospec Inc.; PAVE-EL, Paver Pedestals
- c. Hanover; EPDM Pedestal and EPDM Spacers.
- d. Wausau Tile; Terra-System One

- C. Concrete Fill: If part of manufacturer's system, ACI 301, compressive strength of 5000 psi at 28 days and air content of 6 percent.

PART 3 -EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance.

1. Verify that concrete has cured and aged for minimum time period recommended by waterproofing manufacturer.
2. Verify that substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean and prepare substrate according to manufacturer's written instructions. Provide clean, dust-free, and dry substrate for waterproofing application.
- B. Mask off adjoining surfaces not receiving waterproofing to prevent spillage and overspray affecting other construction.
- C. Close off deck drains and other deck penetrations to prevent spillage and migration of waterproofing fluids.
- D. Remove grease, oil, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.
 1. Abrasive blast clean concrete surfaces uniformly to expose top surface of fine aggregate according to ASTM D 4259 with a self-contained, re-circulating, blast-cleaning apparatus. Remove material to provide a sound surface free of laitance, glaze, efflorescence, curing compounds, concrete hardeners, or form-release agents. Remove remaining loose material and clean surfaces according to ASTM D 4258.
- E. Remove fins, ridges, and other projections and fill honeycomb, aggregate pockets, and other voids.

3.3 JOINTS, CRACKS, AND TERMINATIONS

- A. Prepare and treat substrates to receive membrane, including joints and cracks, deck drains, corners, and penetrations according to CAN/CGSB-37.51, "Application of Rubberized Asphalt, Hot-Applied, for Roofing and Waterproofing," and waterproofing system manufacturer's written instructions.
 1. Rout and fill joints and cracks in substrate. Before filling, remove dust and dirt according to ASTM D 4258.
 2. Adhere elastomeric flashing sheet to substrate in a layer of hot, rubberized asphalt. Extend elastomeric flashing sheet a minimum of 6 inches (150 mm) on each side of joints and cracks and beyond deck drains, corners, and penetrations.
 3. Embed reinforcing fabric into a layer of hot, rubberized asphalt. Extend reinforcing fabric a minimum of 6 inches (150 mm) on each side of joints and cracks and beyond deck drains, corners, and penetrations.
- B. At expansion joints and discontinuous deck-to-wall or deck-to-deck joints, bridge joints with elastomeric flashing sheet extended a minimum of 6 inches (150 mm) on each side of joints and adhere to substrates in a layer of hot, rubberized asphalt.

3.4 FLASHING INSTALLATION

- A. Install flashing sheets at terminations of membrane according to CAN/CGSB-37.51, "Application of Rubberized Asphalt, Hot-Applied, for Roofing and Waterproofing," and waterproofing system manufacturer's written instructions.
- B. Prime substrate with asphalt primer.
- C. Install elastomeric flashing sheet and adhere to deck and wall substrates in a layer of hot, rubberized

asphalt.

- D. Install modified-bituminous flashing sheet and adhere to substrate in a layer of hot, rubberized asphalt.
- E. Extend flashing sheet up walls or parapets a minimum of 8 inches (200 mm) above plaza deck pavers and 6 inches (150 mm) onto deck to be waterproofed.
- F. Install termination bars and mechanically fasten to top of flashing sheet at terminations and perimeter of roofing.

3.5 MEMBRANE APPLICATION

- A. Apply rubberized asphalt according to CAN/CGSB-37.51, "Application of Rubberized Asphalt, Hot-Applied, for Roofing and Waterproofing," and manufacturer's written instructions.
- B. Heat rubberized asphalt in an oil-or air-jacketed melter with mechanical agitator specifically designed for heating rubberized-asphalt waterproofing.
- C. Start application with manufacturer's technical representative present.
- D. Apply primer, at manufacturer's recommended rate, over prepared substrate and allow to dry.
- E. Reinforced Membrane: Apply membrane to substrates and adjoining surfaces indicated. Spread hot fluid-applied, rubberized asphalt to a thickness of 90 mils (2.3 mm); embed reinforcing fabric, overlapping sheets 2 inches (50 mm); and spread another 125 mil-(3.2-mm-) thick layer to provide a uniform, reinforced, seamless membrane 215 mils (5.5 mm) thick.
- F. Apply membrane over prepared joints and up wall terminations and vertical surfaces to heights indicated or required by manufacturer.
- G. Cover with protection course with overlapped joints while rubberized asphalt is still hot and before membrane is subject to traffic.
 - 1. Install root barrier with overlapped joints over separator sheet.

3.6 INSULATION INSTALLATION

- A. Install one or more layers of board insulation to achieve required thickness over waterproofed surfaces. Cut and fit to within $\frac{3}{4}$ inch (19 mm) of projections and penetrations.
- B. Loosely lay insulation units according to manufacturer's instructions. Stagger end joints and tightly abut insulation units.

3.7 AGGREGATE INSTALLATION

- A. Apply aggregate surfacing uniformly over geotextile fabric as follows, carefully spreading aggregate to not damage roofing membrane and base flashings. Apply ballast as insulation is installed, leaving roofing membrane insulated and ballasted at end of workday.
 - 1. Ballast: 12 lb/sq. ft., Size 4 aggregate.

3.8 FIELD QUALITY CONTROL

A. Flood Testing: Flood test each deck area for leaks, according to recommendations in ASTM D 5957, after completing membrane but before overlying construction is placed. Install temporary containment assemblies, plug or dam drains, and flood with potable water.

1. Flood to an average depth of 2-1/2 inches (65 mm) with a minimum depth of 1 inch (25 mm) and

not exceeding a depth of 4 inches (100 mm). Maintain 2 inches (50 mm) of clearance from top of sheet flashings.

2. Flood each area for 48 hours.

3. After flood testing, repair leaks, repeat flood tests, and make further repairs until waterproofing installation is watertight.

END OF SECTION

SECTION 08570

ACCESSIBLE AWNING WINDOWS

PART 1 - GENERAL

1.1 SUMMARY

- A. Furnish and install accessible awning windows complete with push out hardware, glazing, weather stripping, insect screens, simulated divided lites, jamb extensions, specified anchors, trim, attachments and related components as shown on Drawings and specified in this Section.

1.2 REFERENCES

- A. AAMA - American Architectural Manufacturers Association – www.aamanet.org
1. AAMA/WDMA/CSA 101/I.S.2/A440-05 “Standard/Specification for Windows, Doors, and Unit Skylights”
 2. AAMA 502-08 "Voluntary Specification for Field Testing of Newly Installed Fenestration Products"
 3. AAMA 611-98 "Voluntary Specification for Anodized Architectural Aluminum"
 4. AAMA 701/702-04 "Voluntary Specification for Pile Weatherstripping and Replaceable Fenestration Weatherseals"
 5. AAMA 800-07 "Voluntary Specifications and Test Methods for Sealants"
 6. AAMA 904-01 “Voluntary Specification for Multi-Bar Hinges in Window Applications”
 7. AAMA 910-93 “Voluntary ‘Life Cycle’ Specifications and Test Methods for Architectural Grade Windows and Sliding Glass Doors”
 8. AAMA 1503-98 "Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections"
 9. AAMA 2603-02 “Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels”
 10. AAMA 2604-05 “Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels”
 11. AAMA 2605-05 “Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels”
 12. AAMA CW-10-04 "Care and Handling of Architectural Aluminum from Shop to Site"
- B. ANSI – American National Standards Institute – www.ansi.org
1. ANSI A117.1-03 ” Accessible and Usable Buildings and Facilities Standards”
 2. ANSI Z97.1-04 “American National Standard for Safety Glazing Materials used in Buildings – Safety Performance Specifications and Methods of Test”
- C. ASTM - American Society for Testing and Materials – www.astm.org
1. ASTM E 90-04 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements

2. ASTM E 283-04 "Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen"
 3. ASTM E 330-02 "Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference"
 4. ASTM E 331-00 "Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference"
 5. ASTM E 413-04 Classification for Rating Sound Insulation
 6. ASTM E 547-00 "Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference"
 7. ASTM E 2190-02 "Standard Specification for Insulating Glass Unit Performance and Evaluation"
- D. CCMC – City of Chicago Municipal Code - www.amlegal.com/library/il/chicago.shtml
1. CCMC – Chapter 18-11-1109.13.1 - Operable windows.
 2. CCMC – Chapter 18-13 Energy Conservation Code
- E. CPSC - Product Safety Commission - www.cpsc.gov
1. CPSC 16 CFR 1201 "Consumer Product Safety Commission Safety Standard for Architectural Glazing Materials – codified at Title 16, Part 1201 of the Code of Federal Regulations"
- F. GANA – Glass Association of North America – www.glasswebsite.com
1. GANA - "Glazing Manual" 2008
- G. IGCC – Insulating Glass Certification Council – www.igcc.org
- H. NAAMM - National Association of Architectural Metal Manufacturers - www.naamm.org
1. AMP-500-06 "Metal Finishes Manual"
- I. NFRC - National Fenestration Rating Council - www.nfrc.org
1. NFRC -100-04 "Procedures for Determining Fenestration Product U-factors"
 2. NFRC- 300- 04 "Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems"
- J. PEI – Porcelain Enamel Institute - www.porcelainenamel.com
1. PEI - "Porcelain Enamel for Architects, Designers & Construction Specifiers," 2008
- K. SGCC – Safety Glazing Certification Council – www.sgcc.org
- L. WDMA – Window and Door Manufacturer’s Association - www.wdma.com
1. WDMA I.S.4-07A "Water-Repellent Preservative Non-Pressure Treatment for Millwork"
- 1.3 SYSTEM DESCRIPTION
- A. AAMA product designation: AW-PG65-AP

- B. Windows: manufacturer's standard awning windows with a minimum frame depth of 2-1/4 inches with operable sash installed by the manufacturer into frame; equal leg frame; interior and exterior finishes applied by the window manufacturer; frames and vents assembled by the window manufacturer.
- C. Configuration: Match size, shape, proportions and patterns of adjacent windows.
 - a. Project out/awning; overlap vent sash in window configurations indicated on drawings.
 - b. In projects where adjacent windows configuration consists of single hung or double hung sashes: provide a single vent in lower lite and fixed lite in upper frame. Meeting rail dimensions between upper and lower sections to match adjacent window dimensions.
 - c. In projects where adjacent window configuration consists of individual fixed and operable projecting vents: provide single project out awning vent with dimensions matching adjacent operable vents.
- D. Vent glazing: exterior aluminum glazing bead; with thermal glazing bead on interior and exterior perimeter; 1" insulating glass; glazed by the window manufacturer.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Provide accessible awning windows units that meet or exceed performance requirements specified as confirmed by testing manufacturer's windows that are representative of those specified, and that are of tested to size indicated below.
- B. Performance Class & Grade: All window units installed in project are to conform to AW-PG65-AP specifications of AAMA/WDMA/CSA 101/I.S.2/A440 when tests are performed on a 60" x 36" minimum frame size with the test results as specified below.
 - 1. In cases where window units required exceed test size stated above, test largest sized unit required for project for compliance with specified performance requirements below.
- C. Design Requirements: Provide windows that comply with AAMA 910 life cycle test requirements and meet AAMA/WDMA/CSA 101/I.S.2/A440 standards when tests are performed on a window size matching or exceeding size specified above. Window tests are to be by a recognized Independent Testing Laboratory or Agency, in accordance with ASTM E 283 for air infiltration, and with ASTM E 331 and ASTM E 547 for water penetration.
 - 1. Air Infiltration: of maximum .1 cfm/square foot at a static air pressure difference of 6.24 psf.
 - 2. Water Penetration: no water penetration shall be permitted at a static air pressure difference of 10 psf.
- D. Structural Performance: Provide windows capable of withstanding the effects of the following loads, based on testing units representative of those indicated for Project that pass AAMA/WDMA/CSA 101/I.S.2/A440 requirements for Uniform Load Structural Test:
 - 1. Design Wind Loads: Provide windows identical to windows that have been successfully tested to resist design pressure, but not less than the following:
 - a. Pressure: 30 psf in any direction.
 - 2. Uniform Deflection: no more than L/175 when tested per ASTM E 330 at a static air pressure difference of 65 psf.

3. Uniform Structural: Unit is to be tested at 1.5 x design wind pressure, both positive and negative at 97.5 psf in accordance with ASTM E 330. There shall be no glass breakage, permanent damage to fasteners, hardware parts or any other damage to make the window inoperable. There shall be no permanent deformation of any main frame or vent member in excess of 2% of its span.
- E. Installation Performance Requirements:
1. Design the attachment of the windows at jambs, head, and sill and reinforce mullions to resist 30 psf load applied in any direction.
- F. Thermal Movement: Provide windows, including anchorage, that allow for thermal movement resulting from the following maximum range in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change Range: 120 deg F, ambient; 180 deg F material surfaces.
- G. Thermal Performance: Provide windows that comply with energy conservation requirements of CCMC as demonstrated by testing per AAMA 1503.
1. U-Factor: Provide window units having maximum U-factor of 0.29 Btu for winter night time conditions and .26 Btu for summer daytime conditions. Units shall be in accordance with NFRC 100 by a laboratory accredited by a nationally recognized accreditation organization such as the NRFC and labeled and certified by the manufacturer
 2. Condensation Resistance Factor (CRF): Minimum CRF to be 50 or better for frame and 60 or better for glass.
 3. Solar Heat Gain Coefficient: Provide window units assembly maximum solar heat gain coefficient (SHGC) for overall glazed area of 0.38 or better as determined in accordance with NFRC 200 by a laboratory accredited by a nationally recognized accreditation organization such as the National Fenestration Rating Council and shall be labeled and certified by the manufacturer.
 - a. Shading coefficient of the center of glass multiplied by 0.86 shall be an acceptable alternate for determining compliance with the SHGC required for the overall glazed area. Shading coefficient shall be determined using special data file determined in accordance with NFRC 300. Shading coefficient shall be verified and certified by the glass unit manufacturer.
- H. Sound Transmission Class (STC): Provide glazed windows rated for not less than 35 STC when tested for laboratory sound transmission loss according to ASTM E 90 and determined by ASTM E 413.
- I. Accessible Windows: Where accessible glazed openings in accessible rooms or spaces are shown on the Drawings for operation by occupants, provide windows that comply with CCMC accessibility requirements for operable windows .
1. Window Hardware: Comply with ANSI A117.1 section 309.4 Operation, that need to be pushed, pulled, or lifted to open, provide hardware that requires that no more than 5 lbf of force be used to open or close the operable vent.
 2. Operation. Provide controls and operating mechanisms for Accessible Windows, in compliance with ANSI A117.1-2003 section 309.4 Operation, that are operable with one hand with a force of no more than 5 lbf and do not require tight grasping, pinching, or twisting of the wrist.

3. Confirm compliance with specified operating force requirements by having operable vent of accessible window tested by a recognized Independent Testing Laboratory or Agency and so labeled and certified by the manufacturer.

1.5 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, fabrication methods, product performance test certifications, dimensions of individual components and profiles, hardware, finishes, and operating instructions for each type of accessible awning window indicated.
- B. LEED Submittals
 1. Product Data for Credit MR 4.1 and Credit MR 4.2: Indicating percentages by weight of postconsumer and pre-consumer recycled content for products having recycled content. Include statement indicating costs for each product having recycled content.
 2. Credit MR5.1: Submit a statement from the product manufacturer stating the distance between the place of manufacturer and the project location.
- C. Shop Drawings: Shop drawings shall be the responsibility of the window manufacturer and prepared by the manufacturer's authorized agent bearing the manufacturer's name. Drawings prepared by others are not acceptable. Include building plans and elevations drawn at a minimum 1/8" scale; window unit elevations at minimum 3/8" scale; details of all components, including required reinforcement, to be drawn full size. Include floor plans, elevations, sections, details, hardware, attachments to other work, operational clearances, installation details, and the following:
 1. Mullion details, including reinforcement and stiffeners.
 2. Joinery details.
 3. Expansion provisions.
 4. Flashing and drainage details.
 5. Weather-stripping details.
 6. Thermal-break details.
 7. Glazing details.
 8. Window cleaning provisions.
- D. Samples for Verification: For the windows and components required, submit samples of size indicated below:
 1. Main Framing Member: 12-inch- long, full-size sections of extrusions with factory applied color finish.
 2. Window Corner Fabrication: 12-by-12-inch- long, full-size window corner including full-size sections of extrusions with factory-applied color finish, weather stripping, and glazing.
 3. Operable Window: Full-size unit with factory-applied finish.
 4. Hardware: Full-size units with factory-applied finishes.
 5. Weather Stripping: 12-inch- long sections.
- E. Product Schedule: For new windows using same designations indicated on Drawings.
- F. Qualification Data: For Installer, manufacturer, and testing agency.
- G. Field quality-control test reports.

- H. Product Test Reports: Based on AAMA criteria, submit for evaluation of most recent comprehensive tests performed, but in no case older than four years from date of submittal, by a qualified testing agency for each type, class, grade, and size of window. Test results based on use of downsized test units will not be accepted.
- I. Maintenance Data: For operable window sash, operating hardware, weather stripping and finishes to include in maintenance manuals.
- J. Thermal Performance Certifications: Submit certifications as required under "Performance Requirements" of this section.
- K. Operating Force: provide test results and compliance certification.
- L. Warranty: Special warranty as specified in this Section.

1.6 QUALITY ASSURANCE

- A. The Drawings and Specifications herein indicate types, sizes, profiles, connections, dimensional and operational requirements for accessible awning windows of the specific manufacturer's products as specified.
- B. Accessible awning windows having equal performance characteristics by other manufacturers may be considered, provided that deviations do not change the design concept or intended performance as determined by the Architect.
- C. Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of required windows. Aesthetic effects, such as simulated divided lites, are shown on Drawings by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to each another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance.
 - 1. Do not modify intended aesthetic effects without Board approval. If modifications are proposed, submit comprehensive explanatory data to the Board for review.
 - 2. For replacement window projects use CPS archive information provided by the Board as basis for applied muntin and mullion design of simulated divided lites for shop drawings.
- D. Manufacturer Qualifications: A manufacturer capable of fabricating windows that meet or exceed performance requirements indicated and of documenting this performance by inclusion in lists and by labels, test reports, calculations and verifiable history of manufacturing specified windows for a minimum of ten (10) years.
- E. Installer Qualifications: Installer to be certified by window manufacturer for installation of window units required.
 - 1. Engineering Responsibility: Preparation of data for windows, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project by a state of Illinois licensed engineer.
 - 2. Provide skilled craftspeople who have demonstrated a verifiable successful history of installing specified windows for a minimum of five (5) years.
- F. In addition to above comply with the following:

1. The Manufacturer shall visit the site before fabrication and examine existing window openings and frames into which the new replacement windows are to be installed. If any discrepancies, or conditions, are discovered that are detrimental to the proper and timely completion of the work, the Manufacturer is to notify the Architect in writing.
 2. Check actual window openings by accurate field measurement before fabrication. The replacement window tolerance of 1/2" less than the actual window opening dimensions will apply for all manufactured units. Units supplied plus or minus 1/4" in excess of the tolerance standards will be deemed out of compliance and will be replaced by the Manufacturer. Show recorded measurements on final shop drawings.
- G. Source Limitations: Obtain windows through one source from a single manufacturer.
- H. Mockups: Build mockups as directed by the Board to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Build mockup for type(s) of window(s) indicated, in location(s) shown on Drawings.
 2. Mock up a minimum of three (3) accessible awning windows of each type, or three (3%) percent of each type of accessible awning window product; whichever is greater.
- I. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to windows including, but not limited to, the following:
1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 2. Review and discuss the finishes of windows that are required to be coordinated with the finishing of other adjacent work for color and finish matching.
 3. Review, discuss, and coordinate the interrelationship of windows with other exterior wall components. Include provisions for structural anchorage, glazing, flashing, weeping, sealants, and protection of finishes.
 4. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
 5. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.
- J. Fenestration Standard: For minimum standards of performance, definitions, materials, components, accessories, and fabrication requirements conform to AAMA/WDMA/CSA 101/I.S.2/A440. In case of conflicts, comply with more stringent requirements.
- K. Furnish a valid AAMA "Authorization for Product Certification" indicating that the windows for the project conform to AAMA/WDMA/CSA 101/I.S.2/A440.
- L. Furnish visible, permanent IGCC certification labels indicating conformance to ASTM E 2190 on insulating glass units.
- M. Furnish visible, permanent SGCC certification labels indicating conformance to ANSI Z97.1 and/or 16 CFR 1201 on tempered glass lites, if included on the project, and laminated glass lites, if included on the project.
- N. Glazing Standard: Comply with published recommendations of glass manufacturers and with GANA's "Glazing Manual" unless more stringent requirements are indicated on Drawings.

1.7 PROJECT CONDITIONS

- A. Field Measurements: Verify window openings by field measurements before fabrication and indicate measurements on Shop Drawings.
 - 1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish opening dimensions and proceed with fabricating without field measurements. Coordinate wall construction to ensure that actual opening dimensions correspond to established dimensions.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Protect windows from damage during handling and construction operations before, during and after installation.
- B. Store windows under cover, setting upright.
- C. Do not stack windows flat.
- D. Do not lay building materials and/or equipment on windows

1.9 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace windows that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Failure to meet performance requirements.
 - b. Structural failures including excessive deflection, water leakage, air infiltration, or condensation.
 - c. Deterioration of metals, other materials, and metal finishes beyond normal weathering.
 - d. Faulty operation of operable vents and hardware.
 - e. Failure of insulating glass.
 - 2. Warranty Period:
 - a. Windows: Ten (10) years from date of Substantial Completion of the Project, as applicable.
 - b. Metal Finish: Ten (10) years from date of Substantial Completion of window installation.
 - c. Hardware: Ten (10) years from date of Substantial Completion of window installation.
 - d. Glazing: Ten (10) years from date of Substantial Completion of window installation.

PART 2 - PRODUCTS

2.1 MANUFACTURED UNITS

- A. Description: Subject to compliance with the requirements, provide factory assembled accessible awning windows from:
 - 1. Series 204 Composite Aluminum and Wood Awning Window as manufactured by:
 - a. H Window Company, LLC.
401 17th Avenue West
Ashland, WI 54806
 - 2. Series NX- 3500 Thermal Aluminum Awning Window as manufactured by:
 - a. TRACO Architectural Systems, Inc.
71 Progress Avenue
Cranberry Township, PA 16066
- B. Accessible awning windows having equal performance characteristics by other manufacturers may be considered, provided that deviations do not change the design concept or intended performance as determined by the Architect. The burden of proof for equality of other awning windows is on the proposer.

2.2 MATERIALS

- A. Aluminum Extrusions: extruded by the window manufacturer from commercial quality 6063-T5 alloy; free from defects impairing strength and durability.
- B. Wood: Clear Poplar for painted finishes; all wood to be free of finger joints.
 - 1. Kiln dried to moisture content no greater than twelve (12) percent at the time of fabrication.
 - 2. Water repellent preservative treated in accordance with WDMA I.S.4.
- C. Weather-stripping: Provide full-perimeter weather stripping for each operable ventilator. Installed weather stripping to be UV stable, flexible in low temperatures, and resistant to compression set; conforming to AAMA 701/702.
- D. Hardware: Provide ANSI A117.1 compliant operator and hinge hardware in manufacturer's standard finish complete with stainless steel limit stop for 6" opening restriction and release key for custodial access to clean and maintain operable vent.
- E. Screens General: Design windows and hardware to accommodate screens in a tight-fitting, removable arrangement, with a minimum of exposed fasteners and latches.
 - 1. Security Screens: Where indicated on Drawings, provide reinforcement to aluminum framing to accommodate loads and fasteners for attachment of metal window guard framing on exterior face of window. For requirements see Section 08661 Exterior Metal Window Guards.
 - 2. Insect Screens: Fabricate insect screens to fully integrate with window frame. Locate screens on inside of window and provide for each operable ventilator where shown on Drawings.
 - a. Provide insect screens on operating sash and ventilators in administrative offices, teachers' lounges, food preparation areas, and lunchrooms and where indicated on Drawings.
 - b. Aluminum Insect Screen Frames: Manufacturer's standard aluminum alloy complying with SMA 1004. Fabricate frames with mitered or coped joints, concealed fasteners and removable PVC spline/anchor concealing edge of frame.

- 1) Extruded-Aluminum or Aluminum Tubular Framing Sections and Cross Braces: Not less than 0.040-inch wall thickness.
- 2) Finish: Match aluminum window members.
- c. Aluminum Wire Fabric: 18-by-16 mesh of 0.011-inch- diameter, coated aluminum wire.
 - 1) Wire-Fabric Finish: Charcoal gray.

2.3 FABRICATION

A. Window Unit Fabrication:

1. Aluminum Fabrication:
 - a. Vent and Frame: all members to be tubular; 45 degree reinforced mitered corners; crimped to extruded aluminum corner keys.
 - b. Frame and vent joints: factory sealed by window manufacturer with sealant conforming to AAMA 800.
2. Wood Fabrication: Vent and Frame:
 - a. Wood Surfaces: Wood shall be smooth and free of surface defects.
 - b. Corner Joinery: Vent and Frame connected with mortise and tenon joints; glued and stapled.
3. Composite Vent and Frame Construction: Fabricate window units with a continuous butyl tape or closed cell foam thermal/moisture barrier, located between exterior aluminum and interior wood. Fasten aluminum to wood with stainless steel ring-shanked nails at 6 inch on center spacing around perimeter of frame and sash.
4. Water control: pressure equalization compression gasket on vent interior to resist wind driven rain.
5. Weep holes: Provide exterior weep slots/holes in each sill of sufficient size to allow water drainage to exterior by gravity, but prevent ingress by insects
6. Emboss universal symbol of accessibility (1" diameter) on all operable window frames that comply with ADAAG with a contrasting color.
7. Provide 1-1/2" x 1-1/2" universal symbol of accessibility interior sign on bottom rail of operable window frames that comply with ADAAG. See section 10433 "Interior Signage".

B. Insulating Glass Units:

1. Preglaze window units at the factory using glazing method tested with unit as required and in conformance to ASTM E 2190; with visible, permanent IGCC certification label for window grade and performance requirements specified.
2. Provide 1" insulating glass units composed of two (2) sheets of minimum 1/4" (1/8" where indicated in the glazing schedule) thick glass (ASTM C 1048, Type I, Quality 3) permanently and hermetically sealed together at edges with with manufacturer's spacer system and sealant to provide a dehydrated air space with -80 degree. F dew point, passing IGCC Test CBA.
 - a. Provide tempered glass both sides.
 - b. Provide soft coat low E coating on #2 surface of exterior lite (or #3 where indicated in the glazing schedule) of units meeting "performance requirements" of this Specification and Drawing notes.
 - c. Airspace fill: Argon gas.
 - d. Glazing Spacer color: black

C. Finish on Aluminum Extrusions:

1. Comply with NAAMM's "Metal Finishes Manual" for recommendations for applying and designating finishes. Apply on clean extrusions free from serious surface blemishes; on exposed surfaces visible when installed product's operating vents are closed.
 2. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering or shrink wrapping before shipping.
 3. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
 4. High-Performance Organic Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - a. Fluoropolymer Two-Coat System: Manufacturer's standard two-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent Polyvinylidene fluoride resin by weight; complying with AAMA 2605.
 - b. Dry film thickness: minimum 1.2 mils on exposed surfaces, except inside corners and channels.
 - c. Color: chosen from manufacturer's standards.
- D. Finish on Interior Wood: Factory Pre-finished. See Section 09900 for paint finish requirements. All visible wood surfaces shall be factory finished utilizing a primer coat and a two (2) coat finish coat system prior to window assembly. Color to match exterior aluminum framing color.
- E. Miscellaneous Metal Finishes:
1. Concealed Steel Items: Galvanized in accordance with ANSI/ASTM A386 to 2.0 oz/sq. ft. or primed with iron oxide paint.
 2. Apply one coat of bituminous paint to concealed aluminum and steel surfaces in contact with cementitious or dissimilar materials.
- F. Muntins for Simulated Divided Lites
1. Removable Muntins: Muntins to be made of extruded aluminum; with exposed surfaces finished to match window frame color; use concealed fastening clips for removal and cleaning; detailed for unrestricted expansion and contraction.
 2. Design: muntin bar cross-section profiles to match project requirements with material chosen from manufacturer's standards.
 3. Patterns: grid patterns to be designated by Architect.
 4. Location: exterior face of window
- G. Installation Accessories
1. Material: extruded aluminum; nominal .078" wall for panning and .062" wall for trim; with exposed surfaces finished to match window color and finish performance; install with concealed fasteners and required weatherseals. Detail installation for unrestricted expansion and contraction.
 2. Exterior: preset panning; two-piece mullion cover; (two-piece head and jamb receptor with thermal break); (subsill with thermal break and end dams sealed by the window manufacturer); (sill cover); (slip-on expanders).
 3. Interior: continuous clip two-piece snap trim.

4. Mullions: with thermal break; integral: mounted between frame members); (stack); (offset stack); (three-piece); (transition mullions between product types).

2.4 FIELD TESTING

- A. Field Tests: Contractor shall perform and pay for onsite tests of selected newly installed windows or window system components. Test newly installed accessible awning window products as directed by the Board's Authorized Representative for air leakage and water penetration resistance.
 1. All new accessible awning window products shall be field tested in accordance with AAMA 502 by an AAMA accredited laboratory as selected by the Board's Authorized Representative and engaged by the responsible Contractor. Independent testing laboratory engaged to perform tests will meet all requirements of AAMA 204.
 2. Costs for all tests, both original and retests shall be paid for by the responsible Contractor. All unsuccessful tests, both original and retest, shall be paid for by the responsible Contractor.
 3. All testing work in accordance to AAMA 502 of newly installed accessible awning window products shall commence at initial window installation and shall be completed prior to issuance of a certificate of Preliminary Acceptance for accessible awning window work; and in no case more than six months after the date of Substantial Completion of the installation. Any field testing required six months beyond the date of Final Acceptance of the accessible awning window installation, will be done in accordance with AAMA 511.
 4. Testing Quantity: Erect test chambers for each window product type identified on plans. Test three (3) accessible awning window products of each type, or three (3%) percent of each type of accessible awning window products installations; whichever is greater, for air infiltration and water penetration as specified in accordance to AAMA 502 after the accessible awning window products have been completely installed.
 5. Test Parameters:
 - a. Air infiltration field tests shall be conducted at the same uniform static test pressure as the laboratory test unit. The Maximum allowable rate of air leakage shall not exceed 1.5 times the laboratory test unit for hardware and glazing types consistent with the laboratory test unit. The field test air leakage rate shall not exceed 1.5 times the maximum allowable laboratory performance specified in the testing criteria listed in Section 1.04 above for any configuration.
 - b. Water penetration field tests shall be conducted at a static test pressure of 4/5 of the laboratory test performance values for hardware and glazing types consistent with the laboratory test unit. The field test water test pressure shall not be less than 4/5 of the minimum allowable laboratory performance specified in the testing criteria listed in Section 1.04. above for any configuration.
 6. All work on accessible awning window products that fail the field tests shall be re-executed until the installation passes the field testing. Modify methods of installation of subsequent work to incorporate required corrections identified by the testing process.

2.5 ADJUSTING AND CLEANING

- B. Adjust operating vent and hardware to provide tight fit at contact points and at weatherstripping, for smooth operation and weathertight closure.

- C. Clean aluminum surfaces promptly after installation of windows, exercising care to avoid damage to protective coatings and finishes. Remove excess glazing and sealant compounds, dirt, and other substances. Lubricate hardware and moving parts.
- D. Clean glass promptly after installation of windows. Remove glazing and sealant compound, dirt and other substances.
- E. Remove from site all removed materials, debris, packaging, banding and all other surplus materials and equipment. All materials removed from site become property of the Contractor who shall promptly remove same and legally dispose of at no additional cost to the Board.

2.6 PROTECTION

- F. Initiate all protection and other precautions required to ensure that window units will be without damage or deterioration (other than normal weathering) at time of acceptance.
- G. Submit to Architect written recommendations for maintenance and protection of windows following Substantial Completion of window installation work.

PART 3 – EXECUTION – NEW CONSTRUCTION

3.1 PREPARATION – GENERAL

- A. Comply with all applicable laws, rules and regulations.
- B. Inspect openings before beginning installation work. Verify that rough or masonry opening is correct and the sill is level.
- C. Assure that each window opening conforms to dimensions and tolerances taken at the time of site visit.
- D. Perform operations as necessary to prepare openings for proper installation and operation of new construction units. Verify openings are in accordance with shop drawings and Architects Drawings. Prepared openings to be in tolerance, plumb, level, and provided with secure anchoring. Window installation shall not begin until all conditions are satisfactory. Failure to do so does not relieve the Contractor from the need to furnish any and all materials, which may be required, in accordance with the specifications, without any additional costs to the Board.

3.2 PREPARATION- NEW CONSTRUCTION

- A. Perform operations as necessary to prepare openings for proper installation and operation of new construction units. Verify openings are in accordance with shop drawings and Architects Drawings. Prepared openings to be in tolerance, plumb, level, and provided with secure anchoring.

- B. New Construction: Verify wall openings and adjoining air and vapor seal materials are clean, dry and ready to receive work of this Section. Verify that rough opening and masonry openings are correct and the sill plate is level.
- C. Provide and apply sealant compound, meeting AAMA 808.3, at all joints and intersections and at all other opening perimeters. Wipe off excess material and leave all exposed surfaces and joints clean and smooth. Coordinate installation with wall flashings and other components of the work.

3.3 INSTALLATION – NEW CONSTRUCTION

- A. Remove new windows and accessories from crating and packaging material. Verify that all parts and accessories are included.
- B. Install in accordance with manufacturer's approved shop drawings, specifications and recommendations for installation of window units, hardware, operators and other components of work.
- C. Provide required support and securely fasten and set windows plumb, square, and level without twist or bow of frames or sash. Maintain dimensional tolerances, aligning with adjacent work. Anchor securely in place. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action. In no case shall attachment to structure or to components of the window system be through or affect the thermal barriers of the window units.
- D. Coordinate attachment and seal of air and vapor barrier materials. Install under sill and sill brake metal flashing.
- E. Pack fibrous insulation in shim spaces at perimeter to maintain continuity of thermal barrier. Wedge fiberglass insulation between frames of new windows and construction to remain, or between frames and new receptor as applicable. Compress fiberglass to no less than 50 percent of original thickness.
- F. Set sill members and other members in bed of compound, joint fillers, or gaskets per manufacturer recommendations to provide weatertight construction. Seal units per sealant manufacturer's recommendations at all other opening perimeters. Wipe off excess material and leave all exposed surfaces and joints clean and smooth.
- G. Anchor windows on all four sides with anchor clips
 1. Do not allow anchor clips to bridge thermal breaks
 2. Use separate clips for each side of thermal breaks.
 3. Make connections to allow for thermal and other movements.
 4. Do not allow building load to bear on windows.
 5. Use manufacturer's standard clips at all corners and at intermediate points not over 16" on center.
 6. Anchor clips are to be fully covered by panning or trim.
- H. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials by complying with the requirements specified in the window reference standard. Where incompatible metals join together, coat the abutting surfaces with asphaltic paint and use epoxy coated connectors.

- I. Pre-fit, pre-punch, etc., all materials so that the unit when assembled shall fit the openings and will not require any cutting, ripping or fitting on the job site other than trimming of the exterior panning to fit into the masonry opening and cutting interior trim to length by the installing crews.
- J. All voids between new window frames and adjoining construction shall be packed solid with fiberglass batt insulation before installation of interior trim or panning.
- K. Interior and exterior surfaces shall have proper contact for caulking back up. The caulking shall be in full contact with window members and exterior and interior walls providing a continuous air and water tight bead around perimeter of windows as shown on Drawings.
- L. It shall be the responsibility of the installation Contractor to repair any exterior and interior surfaces to the satisfaction of the Board approved representative damaged as a result of the installation procedures involved with the materials and products of this section.

3.4 FIELD TESTING

- A. Field Tests: Contractor shall perform and pay for onsite tests of selected newly installed windows or window system components. Test newly installed accessible awning window products as directed by the Board's Authorized Representative for air leakage and water penetration resistance.
 - 1. All new accessible awning window products shall be field tested in accordance with AAMA 502 by an AAMA accredited laboratory as selected by the Board's Authorized Representative and engaged by the responsible Contractor. Independent testing laboratory engaged to perform tests will meet all requirements of AAMA 204.
 - 2. Costs for all tests, both original and retests shall be paid for by the responsible Contractor. All unsuccessful tests, both original and retest, shall be paid for by the responsible Contractor.
 - 3. All testing work in accordance to AAMA 502 of newly installed accessible awning window products shall commence at initial window installation and shall be completed prior to issuance of a certificate of Substantial Completion for accessible awning window work; and in no case more than six months after the date of Substantial Completion of the installation. Any field testing required six months beyond the date of Final Acceptance of the accessible awning window installation, will be done in accordance with AAMA 511.
 - 4. Testing Quantity: Erect test chambers for each window product type identified on plans. Test three (3) accessible awning window products of each type, or three (3%) percent of each type of accessible awning window products installations; whichever is greater, for air infiltration and water penetration as specified in accordance to AAMA 502 after the accessible awning window products have been completely installed.
 - 5. Test Parameters:
 - a. Air infiltration field tests shall be conducted at the same uniform static test pressure as the laboratory test unit. The Maximum allowable rate of air leakage shall not exceed 1.5 times the laboratory test unit for hardware and glazing types consistent with the laboratory test unit. The field test air leakage rate shall not exceed 1.5 times the maximum allowable laboratory performance specified in the testing criteria listed in Section 1.4.D & E above for any configuration.
 - b. Water penetration field tests shall be conducted at a static test pressure of 4/5 of the laboratory test performance values for hardware and glazing types consistent

with the laboratory test unit. The field test water test pressure shall not be less than 4/5 of the minimum allowable laboratory performance specified in the testing criteria listed in Section 1.4.F above for any configuration.

6. All work on accessible window products that fail the field tests shall be re-executed until the installation passes the field testing. Modify methods of installation of subsequent work to incorporate required corrections identified by the testing process.

3.5 ADJUSTING AND CLEANING

- A. Adjust operating vent and hardware to provide tight fit at contact points and at weatherstripping, for smooth operation and weathertight closure.
- B. Clean aluminum surfaces promptly after installation of windows, exercising care to avoid damage to protective coatings and finishes. Remove excess glazing and sealant compounds, dirt, and other substances. Lubricate hardware and moving parts.
- C. Clean glass promptly after installation of windows. Remove glazing and sealant compound, dirt and other substances.
- D. Remove from site all removed materials, debris, packaging, banding and all other surplus materials and equipment. All materials removed from site become property of the Contractor who shall promptly remove same and legally dispose of at no additional cost to the Board.

3.6 PROTECTION

- A. Initiate all protection and other precautions required to ensure that window units will be without damage or deterioration (other than normal weathering) at time of acceptance.
- B. Submit to Architect written recommendations for maintenance and protection of windows following Substantial Completion of window installation work.

END OF SECTION

SECTION 10101
VISUAL DISPLAY UNITS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Marker Boards.
 - 2. Tackboards.
 - 3. Display Cases.

1.2 SUBMITTALS

- A. Product Data: Submit complete printed data and installation details indicating products to be provided as specified.
 - 1. Submit color charts for selections by the Architect.
- B. Shop Drawings: Submit complete installation details. Include dimensioned elevations. Show location of joints between individual panels where unit dimensions exceed maximum panel length.
- C. Samples: Submit minimum one-foot square fabricated unit of each type required, complete with factory-applied trim, chalk rail and head rail with accessories as specified for each type of unit demonstrating fabrication.

1.3 PROJECT CONDITIONS

- A. Field Measurements: Verify field measurements before preparation of Shop Drawings and before fabrication to ensure proper fitting where required. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.4 WARRANTY

- A. Porcelain Enamel Chalkboard Warranty: Submit a written warranty executed by manufacturer agreeing to replace porcelain enamel chalkboards that do not retain their original writing and erasing qualities, become slick and shiny, or exhibit crazing, cracking, or flaking within the specified warranty period, provided the manufacturer's written instructions for handling, installation, protection, and maintenance have been followed.
 - 1. Warranty Period: 50 years from date of Preliminary Acceptance.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: Subject to compliance with requirements and availability, provide products by one of the following:

1. AARCO
2. A-1
3. Best-Rite
4. Claridge
5. Ghent
6. General Binding
7. Marsh
8. ProSteel
9. polyvision

2.2 MATERIALS

- A. Porcelain Enamel Units: Balanced, high-pressure-laminated, porcelain enamel chalkboards of 3-ply construction consisting of face sheet, core material, and backing.
1. Face Sheet: Minimum 24 gauge - 0.024-inch (0.61-mm) enameling grade steel especially processed for temperatures used in coating porcelain on steel. Coat exposed face and edges with a 3-coat process consisting of primer, ground coat, and color cover coat. Coat concealed face with a 2-coat process consisting of primer and ground coat. Fuse cover and ground coats to steel at manufacturer's standard firing temperatures, but not less than 1200 deg F (649 deg C) or 0.024-inch- (0.61-mm-), "Vitracite," porcelain enamel clad, Type 1, stretcher-leveled aluminized-steel face sheet, as manufactured by Claridge Products and Equipment. Fuse porcelain enamel coating to steel at approximately 1000 deg F (540 deg C).
 - a. Marker Board Cover Coat: Provide manufacturer's standard, light-colored, special writing surface with matte finish intended for use with erasable dry markers.
 2. Core: 3/8-inch- (9.5-mm-) thick, particleboard core material complying with requirements of ANSI A208.1, Grade 1-M-1 and completely free of urea-formaldehyde.
 3. Laminating Adhesive: Manufacturer's standard, moisture-resistant, thermoplastic-type adhesive complying with LEED credit 4.1 for VOC content.
- B. Vinyl-Fabric-Faced Tackboards: Mildew-resistant, washable vinyl fabric complying with FS CCC-W-408, Type II, weighing not less than 13 oz./sq. yd. (440 g/sq. m), laminated to 1/4-inch- (6.4-mm-) thick cork sheet. Provide fabric with a flame-spread rating of 25 or less when tested according to ASTM E 84. Provide color and texture as scheduled or as selected from manufacturer's standards.
1. Backing: Factory laminate cork face sheet under pressure to 1/4-inch- (6.4-mm-) thick hardboard backing.

2.3 ACCESSORIES

- A. Metal Trim and Accessories: Fabricate frames and trim of not less than 0.062-inch- (1.57-mm-) thick, extruded-aluminum alloy, size and shape as indicated or if not indicated, manufacturer's standard narrow edge profile, to suit type of installation. Provide straight, narrow style, single-length units. Keep joints to a minimum. Miter corners to a neat, hairline closure.

1. Where size of unit or other conditions require support in addition to normal trim, provide structural supports or modify trim as indicated or as selected by Architect from manufacturer's standard structural support accessories to suit conditions indicated.
2. Chalktray: Manufacturer's standard, continuous, solid, extrusion-type, aluminum chalktray with ribbed section and smoothly curved exposed ends for each chalkboard.
3. Map Rail: Furnish map rail at top of each unit, complete with the following accessories:
 - a. Display Rail: Provide continuous cork display rail approximately 2 inches (50 mm) wide, as indicated, integral with map rail.
 - b. End Stops: Provide one end stop at each end of map rail.
 - c. Map Hooks: Provide 2 map hooks with flexible metal clips for every 48 inches (1220 mm) of map rail or fraction thereof.
 - d. Flag Holder: Provide one flag holder for each room.

2.4 FABRICATION

- A. Porcelain Enamel Chalkboards: Laminate facing sheet and backing sheet to core material under pressure with manufacturer's recommended flexible, waterproof adhesive.
- B. Assembly: Provide factory-assembled units.
 1. Make joints only where total length exceeds maximum manufactured length. Fabricate with minimum number of joints, balanced around center of board, as acceptable to Architect.
 2. Provide manufacturer's standard vertical joint system between abutting sections of chalkboards.
 3. Provide manufacturer's standard mullion trim at joints between chalkboards and tackboards.

2.5 FINISHES

- A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations relative to applying and designating finishes.
- B. Finish designations prefixed by AA conform to the system established by the Aluminum Association for designating aluminum finishes.
- C. Class II Clear Anodic Finish: AA-M12C22A31 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.010 mm or thicker) complying with AAMA 607.1.

2.6 DISPLAY CASES

- A. Materials
 1. Aluminum Extrusions: Provide manufacturer's standard extruded aluminum sections with not less than the strength and durability properties specified in ASTM B 221 for 6063-T5 alloy.
 2. Clear Tempered Glass: Provide clear float glass, thickness as indicated, complying with the requirements of ASTM C-1048, Kind FT, Condition A, Type I, Class 1 - transparent.
 3. Case Box: Birch veneer.
 4. Shelf Standards: Adjustable aluminum shelf standards and brackets.

5. Rear Wall: Cork.
 6. Doors: Aluminum-framed sliding glass doors, complete with operating hardware and keyed lock, keyed to building system.
- B. Fabrication: Provide illuminated display case with adjustable glass shelves spaced 12" o.c., 48" high x 96" long x 12" deep, designed for recessed installation, with fluorescent light housed at top of birch veneer case with louvered aluminum access door with keyed lock and lay-in diffuser.
1. Aluminum Finish: Exposed aluminum shall be finished with the manufacturer's standard satin anodized finish with clear anodic coating complying with AA requirements for Class II Architectural Coating (AA-A31).
- C. Acceptable Products: Subject to compliance with requirements, provide Series S-12-0648 by Greensteel, or approved equal.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine wall surfaces, with Installer present, for compliance with requirements and other conditions affecting installation of visual display boards.
1. Surfaces to receive markerboards shall be free of dirt, scaling paint, and projections or depressions that would affect smooth, finished surfaces of chalkboards or markerboards.
 2. Surfaces to receive tackboards shall be dry and free of substances that would impair the bond between tackboards and substrate.
 3. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Deliver factory-built units completely assembled in one piece without joints, where possible. If dimensions exceed panel size, provide 2 or more pieces of equal length as acceptable to Architect. When overall dimensions require delivery in separate units, prefit components at the factory, disassemble for delivery, and make final joints at the site. Use splines at joints to maintain surface alignment.
- B. Install units in locations and at mounting heights indicated tight to surface, secure, and according to manufacturer's written instructions. Keep perimeter lines straight, plumb, and level. Provide grounds, clips, backing materials, adhesives, brackets, anchors, trim, and accessories necessary for complete installation.

3.3 ADJUSTING AND CLEANING

- A. Verify that accessories required for each unit have been properly installed and that operating units function properly.
- B. Clean units according to manufacturer's written instructions.

END OF SECTION

SECTION 10500
METAL LOCKERS (Elementary School)

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Lockers indicated and as specified.
- B. The materials in this Section are part of the overall USGBC "Leadership in Energy and Environmental Design" LEED prerequisites and credits needed for Project to obtain LEED Silver certification based on LEED for Schools 2007 requirements. See Section 01352 LEED requirements and this section for more information.

SUBMITTALS

- C. Product Data: Submit manufacturer's printed data including materials, accessories, construction, finishes, assembly, and installation instructions.
- D. Shop Drawings: Submit layout and dimensions of metal lockers. Indicate relationship to adjoining surfaces. Show locker elevations and details, fillers, trim, base, sloping tops, and accessories. Include locker numbering sequence. Indicate installation and anchorage requirements.
- E. Samples: Submit manufacturer's color charts showing a full range of custom colors.
- F. LEED Submittals:
 - 1. Credit MR 4.1[and Credit MR 4.2]: Submit product data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content. Include statement indicating costs for each product having recycled content.
 - 2. Credit MR 5.1[and Credit MR 5.2]: Submit product data for regional materials indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.
 - 3. See Section 01352 LEED Requirements and this Section for more information. Submit Materials Credit Documentation Sheet attached to Section 01352 for products in this section, including back-up documentation.

1.2 QUALITY ASSURANCE

- G. Single-Source Responsibility: Obtain locker units and accessories from one manufacturer.

DELIVERY, STORAGE, AND HANDLING

- H. Do not deliver lockers until spaces to receive them are clean, dry, and ready for locker installation.
- I. Protect lockers from damage during delivery, handling, storage, and installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: Subject to compliance with requirements, provide products by one of the following:
 - 1. Art Metal Products, Div. of Fort Knox Storage Co.
 - 2. De Bourgh Manufacturing Co.
 - 3. Lyon Metal Products Inc.
 - 4. Penco Products.
 - 5. Republic Storage Systems Co., Inc.

2.2 MATERIALS

- A. LEED Requirements: Maximize the percentage of recycled content of the steel sheet, but not less than 25%.
- B. Steel Sheet: ASTM A 1008, commercial steel (CS) type B.
- C. Electrolytic Zinc-Coated Steel Sheet: ASTM A 591/A 591M, with full zinc coating, mill phosphatized.
- D. Fasteners: Zinc- or nickel-plated steel; slotless-type exposed bolt heads; self-locking nuts or lock washers for nuts on moving parts.
- E. Equipment: Manufacturer's standard plated steel hooks or coat rods.

WARDROBE LOCKERS

- F. Body: Form backs, tops, bottoms, sides, and intermediate partitions of flanged 0.0598-inch (1.5 mm) (16 gauge) minimum steel sheet.
 - 1. End Panels: .0598-inch (1.5-mm) (16 gauge) minimum steel sheet.
- G. Frames: Form channel frames of 0.0598-inch (1.5-mm) minimum steel sheet. Form continuous integral strike on vertical frame members or weld 0.0897-inch (2.3-mm) minimum latch hooks to latch strike frame.
 - 1. Cross Frames: Form intermediate channel cross frames to double- or triple-tier lockers of 0.0598-inch (1.5-mm) (16 gauge) minimum steel sheet.
- H. Shelf: Form 0.0598-inch (1.5 mm) (16 gauge) minimum steel sheet hat shelf in single-tier units.
- I. Door: One-piece steel sheet, flanged at all edges, constructed to prevent springing when opening or closing. Fabricate to swing 180 degrees.
 - 1. Thickness: 0.0747 inch (1.9 mm) (14 gauge) minimum.
- J. Reinforcing Panels: Brace or reinforce inner face of doors with manufacturer's standard reinforcing stiffener panels.
- K. Acoustical Treatment: Fabricate lockers for quiet operation with manufacturer's standard rattle-free latching mechanism and moving components isolated to prevent metal-to-metal contact.
- L. Louvered Vents: Stamped, louvered vents in door face, as follows:

1. Single-Tier Lockers: No fewer than 6 louver openings top and bottom.
- M. Continuous Hinges: Manufacturer's standard steel continuous hinge mounted to door and frame.
- N. Recessed Handle and Latch: Manufacturers' standard housing to form recess for latch lifter and locking devices; nonprotruding latch lifter containing strike and eye for padlock; and automatic, prelocking, pry-resistant latch mechanism with latching action as follows:
 1. Single-Tier Lockers: Not less than 3-point latching.

2.3 ACCESSIBLE LOCKERS

- A. Provide single tier accessible lockers in quantity of 5% of total lockers to be installed. Accessible lockers shall have top and bottom shelves and coat hooks within the following reach ranges.
 1. CPC, Pre-K, K:
 2. Low shelf reach: 20 inches
 - a. High shelf reach: 36 inches
 3. Grades 1 through 2:
 - a. Low shelf reach: 18 inches
 - b. High shelf reach: 40 inches
 4. Grades 3 through 8:
 - a. Low shelf reach: 16 inches
 - b. High shelf reach: 44 inches
- B. Hardware for accessible lockers shall comply with ADA Accessibility Guidelines 4.27.4 Operation. Controls and operating mechanisms shall be operable with one hand and shall not require tight grasping, pinching or twisting of the wrist. The force required to activate controls shall be no greater than 5 lbs. The hardware shall be designed to provide resistance to overcome the closing device and not exceed 5 lbs. Touch latches, flush pulls, lever handles and U-shaped pulls are acceptable.

2.4 LOCKS

- A. Fabricate lockers to receive the following locking devices:
 1. Pad lock provided by Board.

2.5 LOCKER ACCESSORIES

- A. Equipment: Furnish each locker with the following items, unless otherwise shown:
 1. Single- and Double- Tier Units: 1 double-prong ceiling hook, and not fewer than 2 single-prong wall hooks.
- B. Number Plates: Manufacturer's standard etched, embossed, or stamped, nonferrous-metal number plates with numerals not less than 3/8 inch (9 mm) high. Number lockers in sequence indicated. Attach plates to each locker door, near top, centered, with at least 2 fasteners of same finish as number plate.

2.6 FABRICATION

- A. Fabricate lockers square, rigid, and without warp, with metal faces flat and free of dents or distortion. Make exposed metal edges free of sharp edges and burrs, and safe to touch. Weld frame members together to form a rigid, 1-piece structure.
 - 1. Form locker body panels, doors, shelves and accessories from 1-piece steel sheet unless otherwise indicated.
 - 2. Preassemble lockers by welding all joints, seams, and connections. Grind exposed welds flush.

2.7 FINISHES, GENERAL

- A. Comply with NAAMM "Metal Finishes Manual" for recommendations relative to applying and designating finishes.
- B. Finish all steel surfaces and accessories, except prefinished stainless-steel and chrome-plated surfaces.
- C. Protect mechanical finishes on exposed surfaces from damage by applying strippable, temporary protective covering prior to shipment.
- D. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within 1/2 of the range of approved samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved samples and they are assembled or installed to minimize contrast.

2.8 STEEL SHEET FINISHES

- A. Surface Preparation: Solvent-clean surfaces complying with SSPC-SP 1 to remove dirt, oil, grease, and other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel complying with SSPC-SP 5 (White Metal Blast Cleaning) or SSPC-SP 8 (Pickling), and phosphatize surfaces.
- B. Baked-Enamel Finish: Immediately after cleaning and pretreating, apply manufacturer's standard baked-enamel finish consisting of a thermosetting topcoat. Comply with paint manufacturer's instructions for application and baking to achieve a minimum dry film thickness of 1.3 to 1.5 mils.
 - 1. Color and Gloss: As selected by Architect from manufacturer's full range of choices for color and gloss.
- C. TGIC Polyester Powder Coating System: Immediately after cleaning and pretreating, apply manufacturer's standard TGIC polyester powder coating. Comply with paint manufacturer's instructions for application and baking to achieve a minimum dry film thickness of 2 to 3 mils.
- D. Provide baked-enamel finish or powder coating system at manufacturer's option.
- E. Color and Gloss: 3 custom colors and gloss as selected by Architect.

PART 3 - EXECUTION

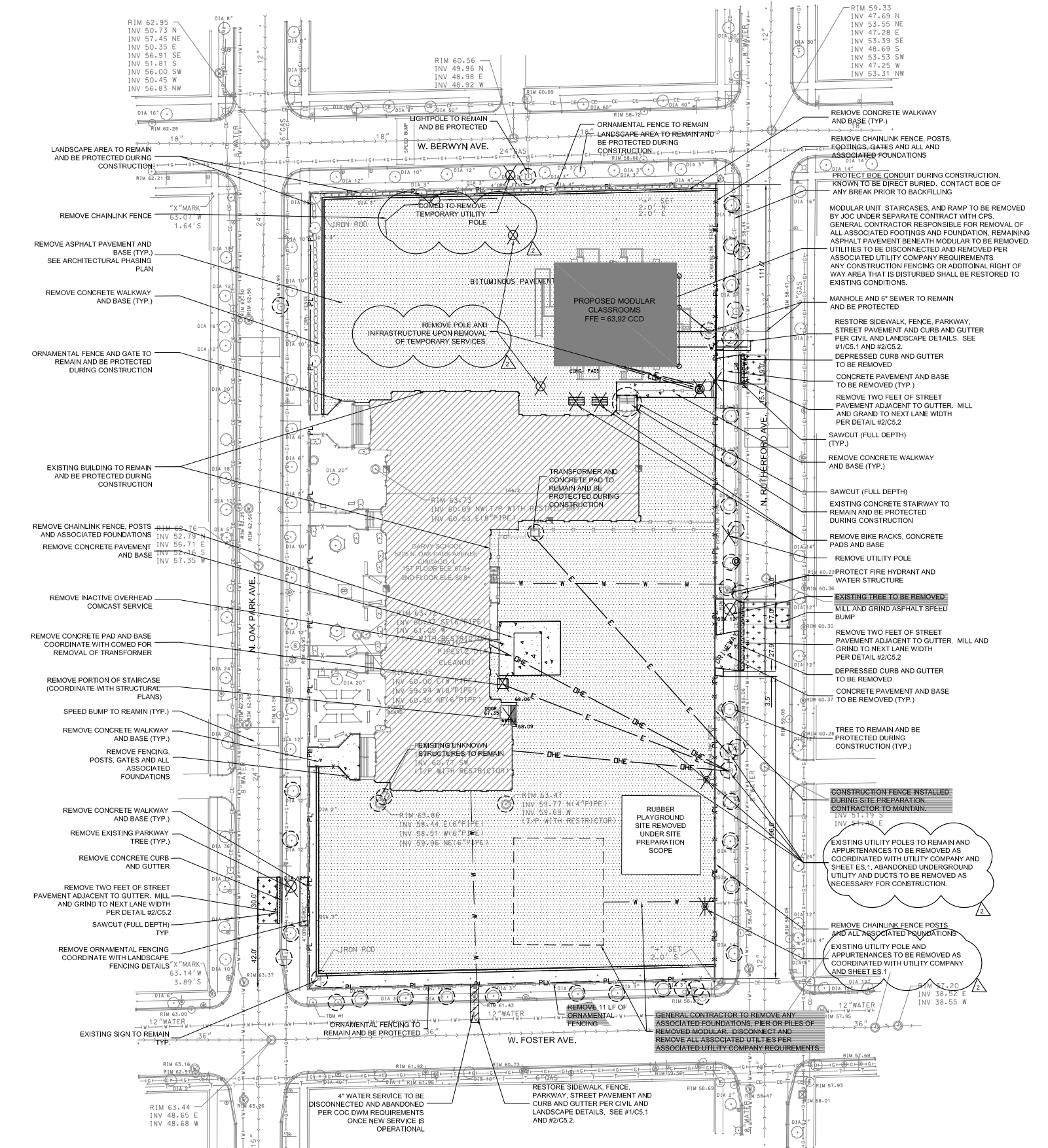
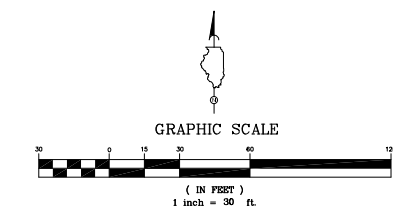
3.1 INSTALLATION

- A. Install metal lockers complete with accessories according to manufacturer's recommendations. Install plumb, level, rigid, and flush.
- B. Connect together welded locker groups with standard fasteners according to manufacturer's recommendations, with no exposed fasteners on face frames.
- C. Anchor lockers to floors and walls at intervals recommended by manufacturer but no greater than 36 inches (910 mm). Install anchors through back-up reinforcing plates where necessary to avoid metal distortion, using concealed fasteners.
- D. Install recess trim to recessed lockers using concealed fasteners. Provide hairline joints and concealed splice plates
- E. Install end panels to conceal exposed ends of nonrecessed lockers.

3.2 ADJUSTING, CLEANING, AND PROTECTION

- F. Adjust doors and latches to operate easily without binding. Verify that integral locking devices are operating properly.
- G. Clean interior and exposed exterior surfaces and polish stainless-steel and nonferrous metal surfaces.
- H. Protect lockers from damage, abuse, dust, dirt, stain, or paint. Do not permit locker use during construction.
- I. Touch up marred finishes, or replace locker units that cannot be restored to factory-finished appearance to satisfaction of Architect. Use only materials and procedures recommended or furnished by locker manufacturer.

END OF SECTION



LEGEND AND ABBREVIATIONS:

- PL — PROPERTY LINE
- ▭ MODULAR UNIT TO BE REMOVED BY OWNER
- ▨ REMOVE CONCRETE PAVEMENT AND BASE
- ▩ REMOVE CONCRETE WALK AND BASE
- ▧ REMOVE ASPHALT PAVEMENT AND BASE
- ▦ REMOVE STREET PAVEMENT AND BASE
- ▥ MILL AND GRIND ASPHALT PAVEMENT
- ▤ RESTORE PAVEMENT PER CITY REQUIREMENTS. AREA SHOWN SCHEMATIC ONLY (TYP)
- ▣ CONSTRUCTION FENCE INHERITED FROM JOC SITE PREPARATION WORK
- ⊗ REMOVE FENCE, GATES AND FOUNDATIONS
- ⊘ STRUCTURE TO REMAIN AND BE PROTECTED
- ⊙ REMOVE STRUCTURE / TREE
- ⊖ REMOVE WATER LINE. CAP AS REQUIRED BY CITY OF CHICAGO DEPARTMENT OF WATER MANAGEMENT
- ⊣ REMOVE PRIVATE STORM LINE
- ⊢ REMOVE PRIVATE SANITARY LINE
- E — REMOVE ELECTRIC LINE. COORDINATE WITH COMED
- DHE — REMOVE OVERHEAD LINE. COORDINATE WITH ASSOCIATED UTILITY COMPANY
- — — REMOVE CONCRETE CURB AND GUTTER SAWCUT (FULL DEPTH)
- — — REMOVE DEPRESSED CURB

NOTE:

1. DEMOLITION WORK TO BE DONE IN COORDINATION WITH SITE PREPARATION DEMOLITION PLAN. PLEASE REFER TO SP2.0 FOR FURTHER DETAILS AND CLARIFICATIONS.
2. DEMOLITION AND CONSTRUCTION TO BE DONE IN ACCORDANCE WITH SITE PHASING PLAN. SEE ARCHITECTURAL PLAN AS.1
3. EXISTING MODULAR ON-SITE ASSUMED TO BE REMOVED UNDER SEPARATE OPS CONTRACT PRIOR TO BUILDING CONSTRUCTION. CONTRACTOR TO INHERIT CONSTRUCTION FENCE INSTALLED DURING SITE PREPARATION WORK AT SUBSTANTIAL COMPLETION OF SITE PREPARATION WORK. CONTRACTOR TO MAINTAIN FENCE THROUGH OUT CONSTRUCTION PHASING.
- 4.

**GARYV
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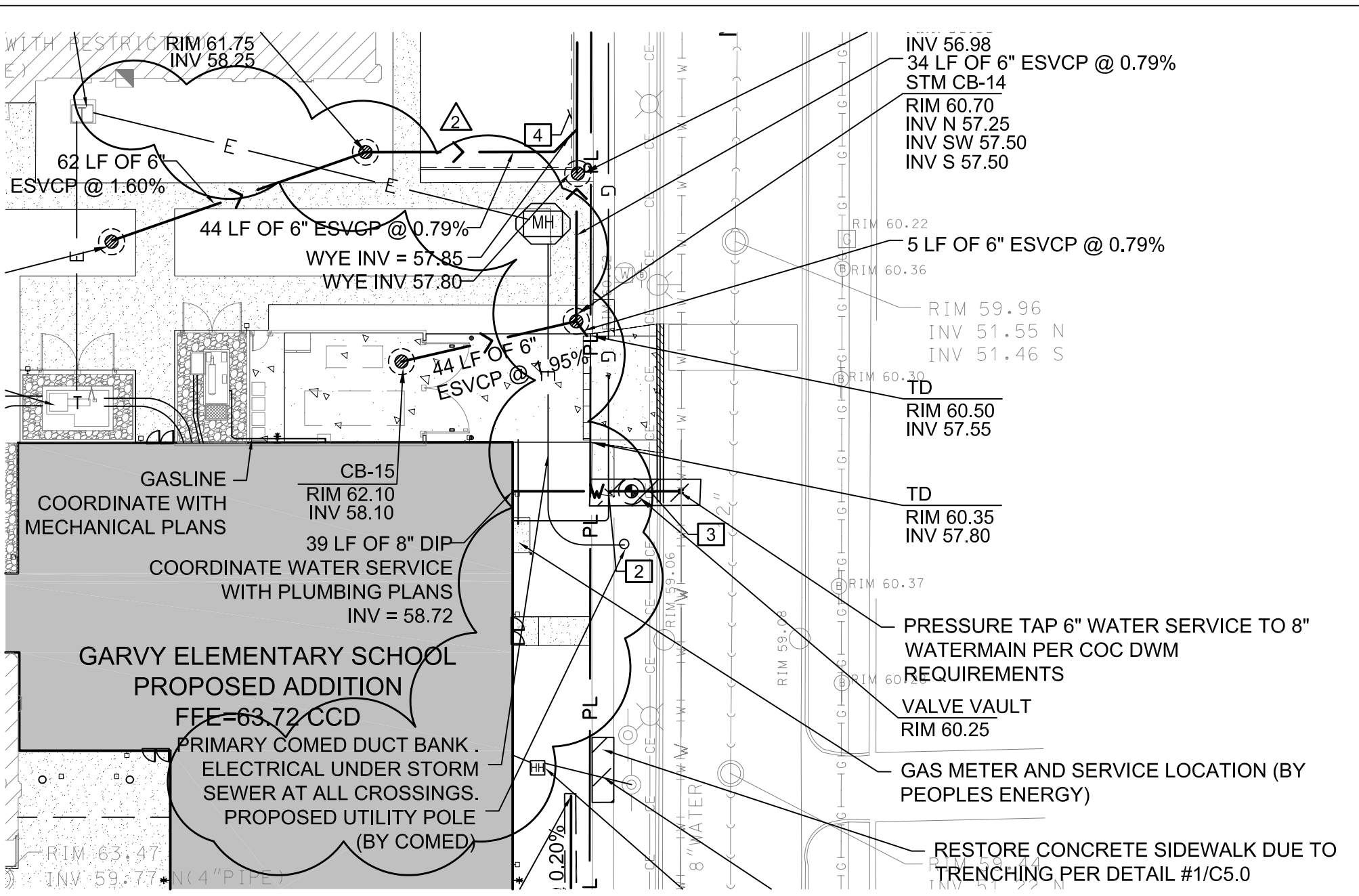
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	90% CDs	02.18.10
	100% CDs	03.24.10
	OUT TO BID	04.20.10
▲	ADDENDUM #2	05.13.10

PBC Project Name: Garyv Elementary School Addition
PBC Contract No.: 06360
SMNG-A Project No.: 0902 / UW Project No.: P0903

SITE DEMOLITION PLAN

Sheet

1 SITE DEMOLITION PLAN
SCALE 1" = 30'



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GASLINE
 COORDINATE WITH
 MECHANICAL PLANS

CB-15
 RIM 62.10
 INV 58.10

39 LF OF 8" DIP
 COORDINATE WATER SERVICE
 WITH PLUMBING PLANS
 INV = 58.72

**GARVY ELEMENTARY SCHOOL
 PROPOSED ADDITION**
 FFE=63.72 CCD
 PRIMARY COMED DUCT BANK .
 ELECTRICAL UNDER STORM
 SEWER AT ALL CROSSINGS.
 PROPOSED UTILITY POLE
 (BY COMED)

**GARVY
 ELEMENTARY SCHOOL ADDITION**

5225 N OAK PARK AVE CHICAGO, IL 60656
 CHICAGO PUBLIC SCHOOLS
 CITY OF CHICAGO, MAYOR RICHARD M. DALEY

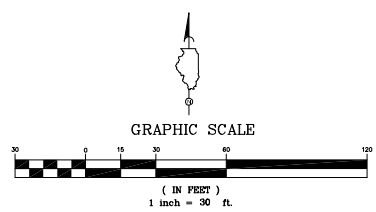
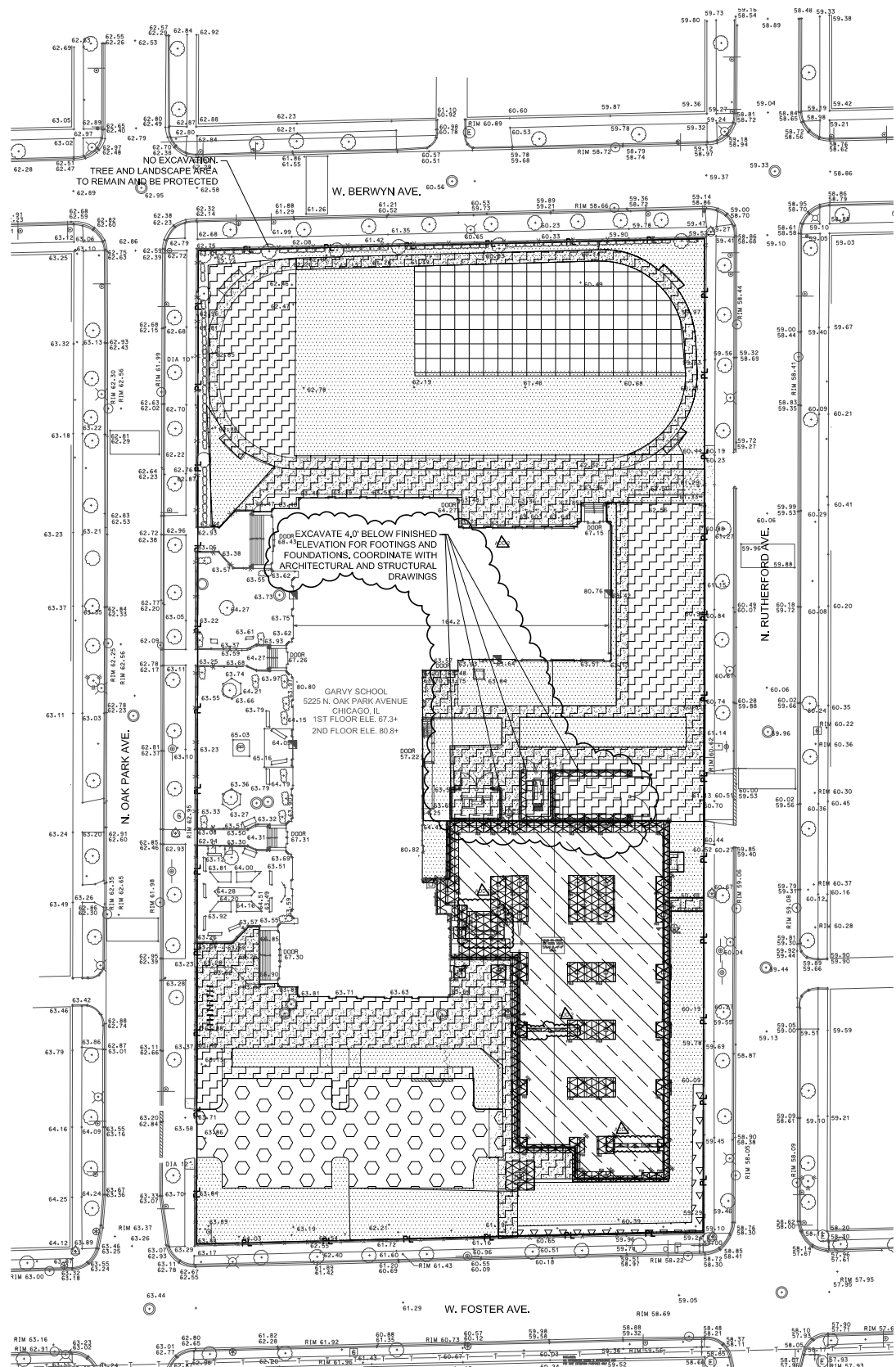
PBC Contract No.: 0511
 PBC Project No.: 05360
 SMNG-A Project No.: 0902 / UW Project No.: P0903

Issuance		
Mark	Description	Date
2	ADDENDUM #2	05.13.10

SCALE: 1"=30'-0"
 Reference Sheet
C4.0

Title **ELECTRICAL
 SERVICE ROUTING**

Sheet **CSK-3**



LEGEND AND ABBREVIATIONS:

- PROPERTY LINE
- EXCAVATE TO 16.22' CCD; PROOFROLL PER G.R., REMOVE ADDITIONAL FILL, AND ALL BURIED TOPSOIL, AS REQUIRED TO MEET GEOTECHNICAL RECOMMENDATION. BACKFILL PER STRUCTURAL REQUIREMENTS AND DETAILS.
- EXCAVATE TO 59.22' CCD, OR 4.0' BELOW FINISHED GRADE, WHICHEVER IS GREATER AT FOOTING; PROOFROLL PER G.R., REMOVE ANY ADDITIONAL FILL AND BURIED TOPSOIL AS REQUIRED TO MEET GEOTECHNICAL RECOMMENDATIONS. BACKFILL PER STRUCTURAL REQUIREMENTS AND DETAILS.
- EXCAVATE PER LANDSCAPE SPECIFICATIONS. BACKFILL AS REQUIRED BY LANDSCAPE AND C3.0 FINISHED ELEVATIONS
- EXCAVATE TO BOTTOM OF SUBBASE. PROOFROLL PER G.R. REMOVE ADDITIONAL FILL AND BURIED TOPSOIL PER GEOTECHNICAL RECOMMENDATIONS AND PER SPECIFICATION 02300. BACKFILL ACCORDING TO PAVEMENT DETAILS #1/C5.0, #2/C5.0, #5/C5.0 AND #6/C5.0 AND C3.0 GRADING ELEVATIONS
- EXCAVATE TO ELEVATIONS PER SUB-BASE GRADING PLAN. SEE #1/C4.0. BACKFILL WITH MATERIALS AS DEFINED ON #4/C5.0
- EXCAVATE TO ELEVATIONS PER SUB-BASE GRADING PLAN. SEE #2/C4.0. BACKFILL WITH MATERIALS AS DEFINED ON #3/C5.0
- EXCAVATE TO ELEVATIONS PER SUB-BASE GRADING PLAN. SEE #2/C4.0. BACKFILL WITH MATERIALS AS DEFINED ON #4/C4.0
- G.R. GEOTECHNICAL REPORT
- FUTURE FOOTING, SHOWN FOR INFORMATION ONLY

NOTE:
EXCAVATION AND BACKFILL ASSUMES NO ENVIRONMENTAL IMPACTS TO THE SITE.



**GARVY
ELEMENTARY SCHOOL ADDITION**
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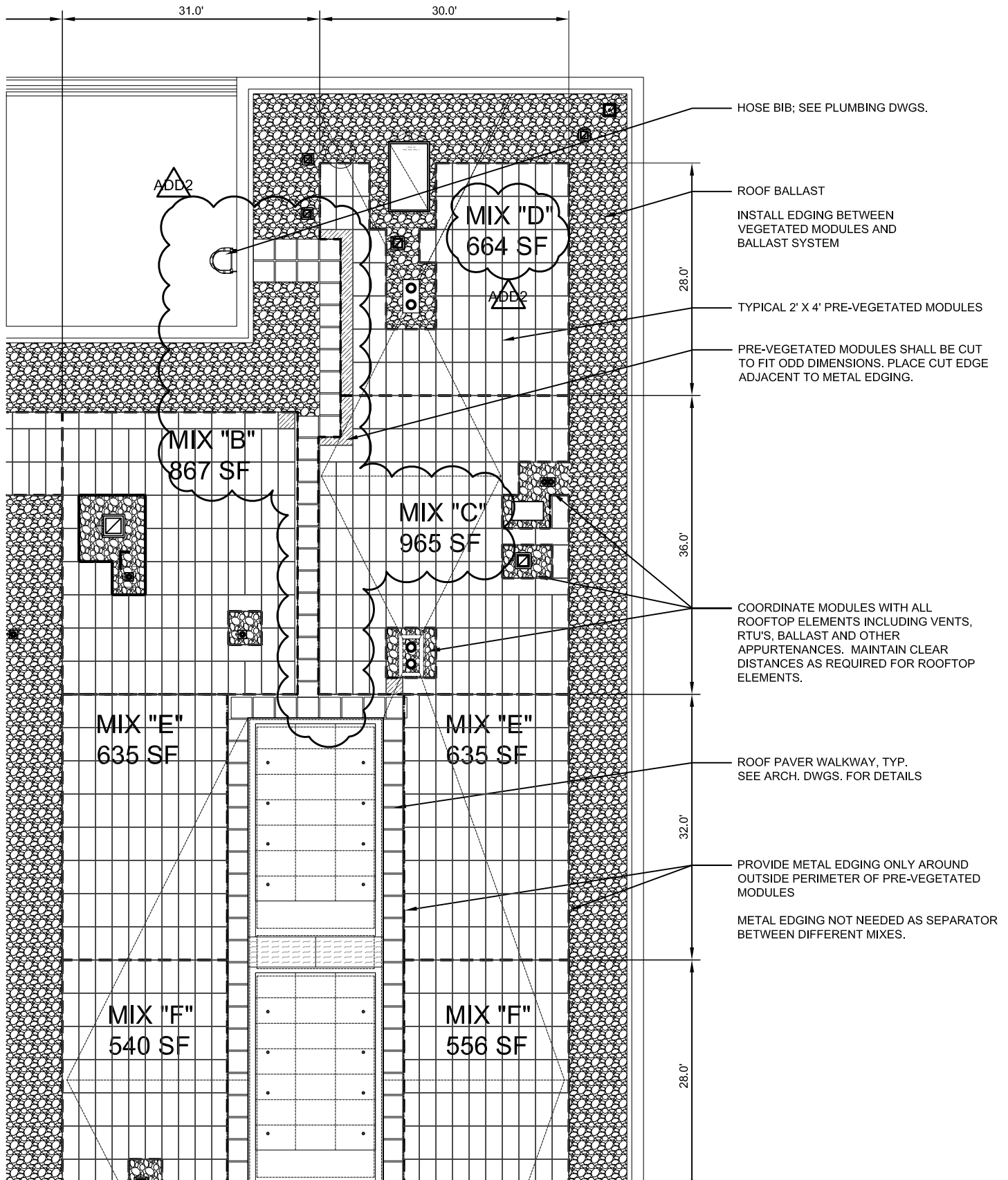
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	90% CDs	02.16.10
	100% CDs	03.24.10
	OUT TO BID	04.20.10
▲	ADDENDUM #2	05.13.10

PBC Project Name: Garvy Elementary School Addition
PBC Contract No.: 05360
SMNG-A Project No.: 0002 / UW Project No.: P0903

Title: **EXCAVATION AND BACKFILL PLAN**

Sheet: **C6.0**



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GARY
ELEMENTARY SCHOOL ADDITION
 5225 N OAK PARK AVE CHICAGO, IL 60630
 CHICAGO PUBLIC SCHOOLS
 400 W. JACKSON STREET CHICAGO, IL 60604

PBC Contract No.: 0511
 PBC Project No.: 05900
 SMNG-A Project No.: 0902 / UW Project No.: P0903

Issuance		
Mark	Description	Date
ADD2	ADDENDUM 2	05.13.2010

SCALE: 1/16" = 1'-0"

Reference Sheet **L1.3**

Title **GREEN ROOF PLAN**

Sheet **LSK-1**

Garvy School Landscape Sign Schedule

Qty.	Sign Key	Botanical name	Common name	Size	Body text
SHADE TREES					
1	ACM	Acer freemanii 'Marmo'	Marmo Freeman Maple	8" x 10" x 1/2"	Marmo Freeman Maple was selected from Morton Arboretum in Lisle, Illinois. Leaves turn red with green patches in early fall.
2	QUM	Quercus macrocarpa	Bur Oak	8" x 10" x 1/2"	Native to prairies and oak savannahs. Bur Oak trees are more tolerant of city conditions than other oak trees.
1	QUR	Quercus rubrum	Red Oak	8" x 10" x 1/2"	Native to northern Illinois. Red Oak trees have a brick-red fall color and produce acorns that attract wildlife.
1	TIC	Tilia cordata 'Greenspire'	Greenspire Littleleaf Linden	8" x 10" x 1/2"	Shade tree that is tolerant of difficult sites. Linden trees have heart shaped leaves and a dense pyramidal habit.
ORNAMENTAL TREES					
2	AMC	Amelanchier canadensis 'Prince William'	Prince William Shadblow Serviceberry	8" x 10" x 1/2"	Native to Illinois. A multi-stemmed ornamental tree with white flowers in spring and red/black berries in fall.
1	MAS	Malus sargentii	Sargent Crabapple	8" x 10" x 1/2"	Fragrant flowers are red in bud and white when fully bloomed. Edible dark red berries are eaten by wildlife.
1	VIP	Viburnum prunifolium	Blackhaw Viburnum (tree form)	8" x 10" x 1/2"	Commonly found in native planting areas. The dense, twiggy canopy provides a protective refuge for birds and wildlife.
DECIDUOUS SHRUBS					
1	COS	Cornus sericea	Redosier Dogwood	8" x 10" x 1/2"	Redosier Dogwood is a native shrub. It has bright red stems that provide winter interest.
1	COL	Cotoneaster lucidus	Hedge Cotoneaster	8" x 10" x 1/2"	Hedge Cotoneaster has small pink flowers in the spring. In the fall, birds are attracted to small red fruit that turns black.
1	HAM	Hamamelis vernalis	Vernal Witchhazel	8" x 10" x 1/2"	Vernal Witchhazel shrubs bloom fragrant yellow/red flowers in early spring. Native Americans used extract from the leaves, stems, and bark for medicinal purposes.
3	PHO	Physocarpus opulifolius	Common Ninebark	8" x 10" x 1/2"	A native shrub with peeling, orange bark. White spring flowers are followed by red fruit in the fall.
2	VIO	Viburnum opulus 'Compactum'	Compact European Cranberrybush Viburnum	8" x 10" x 1/2"	Viburnum shrubs have pink/white flowers in spring. Birds feed on clusters of bright red berries that appear in summer.
EVERGREEN SHRUBS					
2	JUH	Juniperus horizontalis 'Blue Chip'	Blue Chip Creeping Juniper	8" x 10" x 1/2"	Creeping juniper is an evergreen groundcover shrub that attracts birds.
2	TAD	Taxus media 'Densiformis'	Densiform Yew	8" x 10" x 1/2"	Densiform Yews are an evergreen shrub. There are male and female yew plants. Male plants produce pollen. Female plants produce red fruit if pollinated by male plants.
PERENNIALS					
2	HFA	Hosta 'Francee'	Francee Hosta	8" x 10" x 1/2"	Francee Hosta has dark green, heart shaped leaves with white edges. In midsummer, lavender flowers bloom 30" above the leaves.
1	HHA	Hosta 'Halcyon'	Halcyon Hosta	8" x 10" x 1/2"	Halcyon Hosta has deep blue, spear shaped leaves. During summer, lavender flowers bloom slightly above the leaves.
2	HSE	Hosta sieboldiana 'Elegans'	Blue Giant Hosta	8" x 10" x 1/2"	Blue Giant Hosta has blue-green leaves. During summer, pale white flowers bloom and attract hummingbirds.
GROUNDCOVER AND VINES					
1	EUF	Euonymus fortunei 'Coloratus'	Purpleleaf Wintercreeper	8" x 10" x 1/2"	Purpleleaf Wintercreeper is an evergreen groundcover. Dark green leaves turn reddish-purple in the fall.
1	VIM	Vinca minor 'Darts Blue'	Dart's Blue Common Periwinkle	8" x 10" x 1/2"	Periwinkle is an evergreen groundcover. Blue flowers bloom in the spring, and sometimes again in early fall.
4	NPW	Native Plants and Weeds	Native Plants and Weeds	8" x 10" x 1/2"	See Detail 2, Typical Laminate Sign.

Notes:

- A. Final sign locations to be determined by landscape architect in field.

ADD2

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ACROSS CHICAGO

PUBLIC BUILDING COMMISSION

CHICAGO PUBLIC SCHOOLS
CPS

GARVY
ELEMENTARY SCHOOL ADDITION

5225 N OAK PARK AVE CHICAGO, IL 60656

CHICAGO PUBLIC SCHOOLS
 CITY OF CHICAGO, MAYOR RICHARD M. DALEY

PBC Contract No.: 0511
 PBC Project No.: 05360
 SMNG-A Project No.: 0902 / UW Project No.: P0903

Issuance		
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	ADDENDUM 2	05.13.2010

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



Reference Sheet **L2.3**





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



REVISED
LANDSCAPE SIGN
SCHEDULE







Sheet

LSK-2

 FLOOR FINISH		
SYMBOL	MATERIAL	DESCRIPTION
	CARPET TILE	ATLAS (ARNHEM) AH60 ETCHING ADD2
	CARPET TILE	NOT USED
	CARPET TILE	NOT USED

 LOCKERS		
	CORRIDOR	(PENCO) BURGUNDY 736 (CONFIRM COLOR - MATCHES EXISTING SCHOOL LOCKERS) ADD2
	CORRIDOR	(PENCO) GRAY 028
	CORRIDOR	(PENCO) JANUARY WHITE 848

 WALL FINISH		
SYMBOL	MATERIAL	DESCRIPTION
	PAINT	MONTERREY WHITE HC-27, BENJAMIN MOORE GENERAL PAINT, SEMI-GLOSS SHEEN LEVEL (NON-CORRIDOR DOORS, FRAMES AND A.E.S.S. AS NOTED)
	GYP SUM BOARD / PAINT	MONTERREY WHITE HC-27, BENJAMIN MOORE GENERAL PAINT, SEMI-GLOSS SHEEN LEVEL ON GYP SOFFIT ABOVE LOCKERS. ADD2
	GYP SUM BOARD / PAINT	MONTERREY WHITE HC-27, BENJAMIN MOORE GENERAL PAINT, SEMI-GLOSS SHEEN LEVEL ON STAIR GYP UNDERSIDE AND EXTERIOR PLASTER SOFFIT. ADD2

 BASE/SILL FINISH		
SYMBOL	MATERIAL	DESCRIPTION
	STRUCTURAL GLAZED TILE	NOT USED
	STRUCTURAL GLAZED TILE	NOT USED
	STRUCTURAL GLAZED TILE	NOT USED
	STRUCTURAL GLAZED TILE	NOT USED
	STRUCTURAL GLAZED TILE	NOT USED

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	ADDENDUM #2	05.13.10

Title

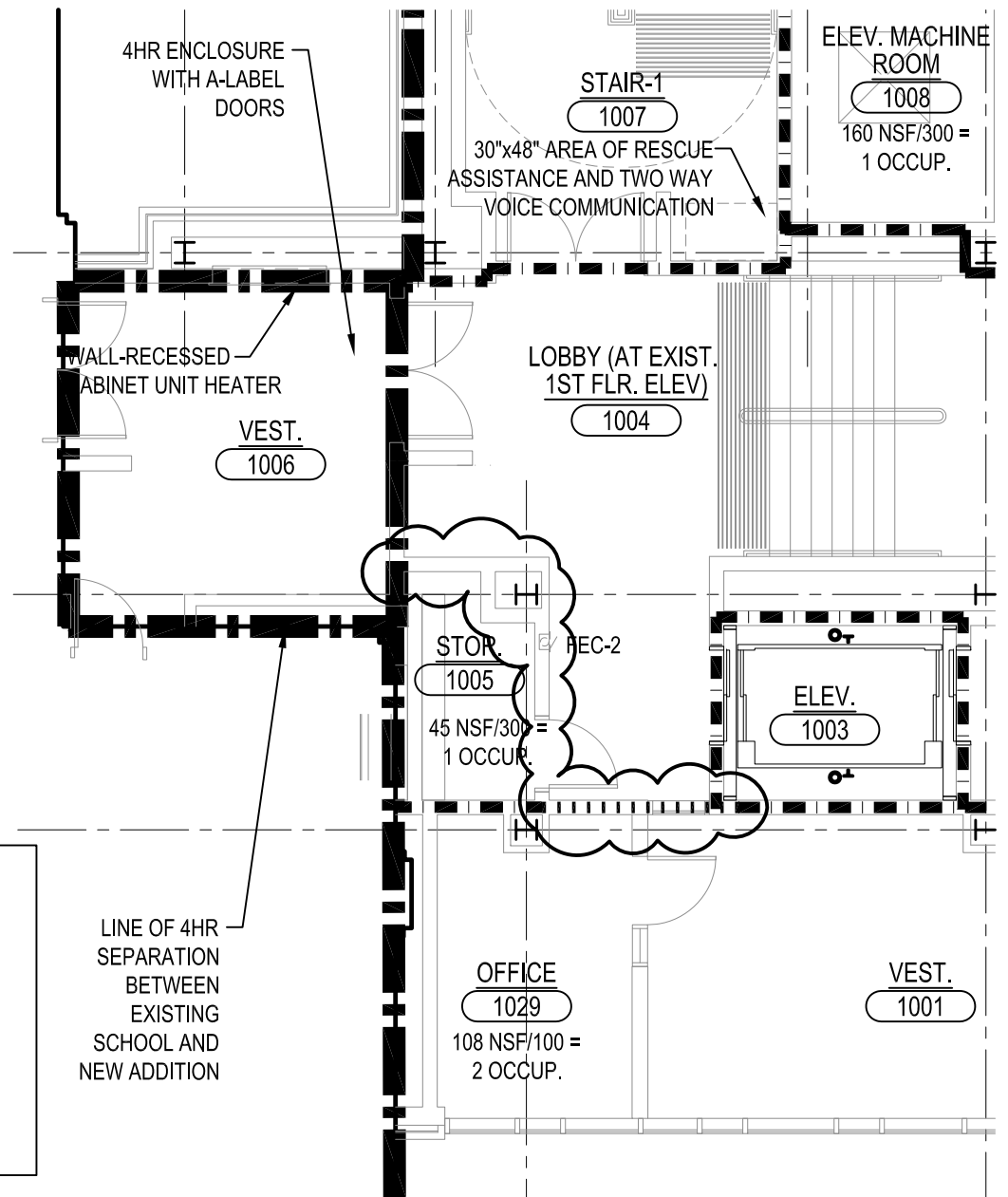
**PARTIAL FINISH
LEGEND**

SCALE: NO SCALE

Reference Sheet **A13.0**

Sheet

ASK-8



SYMBOLS: LIFE SAFETY

- 1 HOUR FIRE RESISTANCE RATED SEPARATION
- 2 HOUR FIRE RESISTANCE RATED SEPARATION
- 3 HOUR FIRE RESISTANCE RATED SEPARATION
- 4 HOUR FIRE RESISTANCE RATED SEPARATION
- MAXIMUM TRAVEL DISTANCE ←→

LINE OF 4HR SEPARATION BETWEEN EXISTING SCHOOL AND NEW ADDITION

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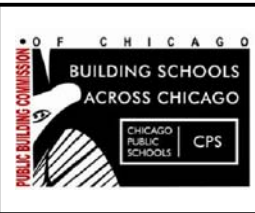
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GARVY
ELEMENTARY SCHOOL ADDITION

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 CITY OF CHICAGO, MAYOR RICHARD M. DALEY

PBC Contract No.: 0511
 PBC Project No.: 05360
 SMNG-A Project No.: 0902 / UW Project No.: P0903

Issuance		
Mark	Description	Date
A	ADDENDUM #2	05.13.10

SCALE: 1/16" = 1'-0"
 Reference Sheet **G2.1**

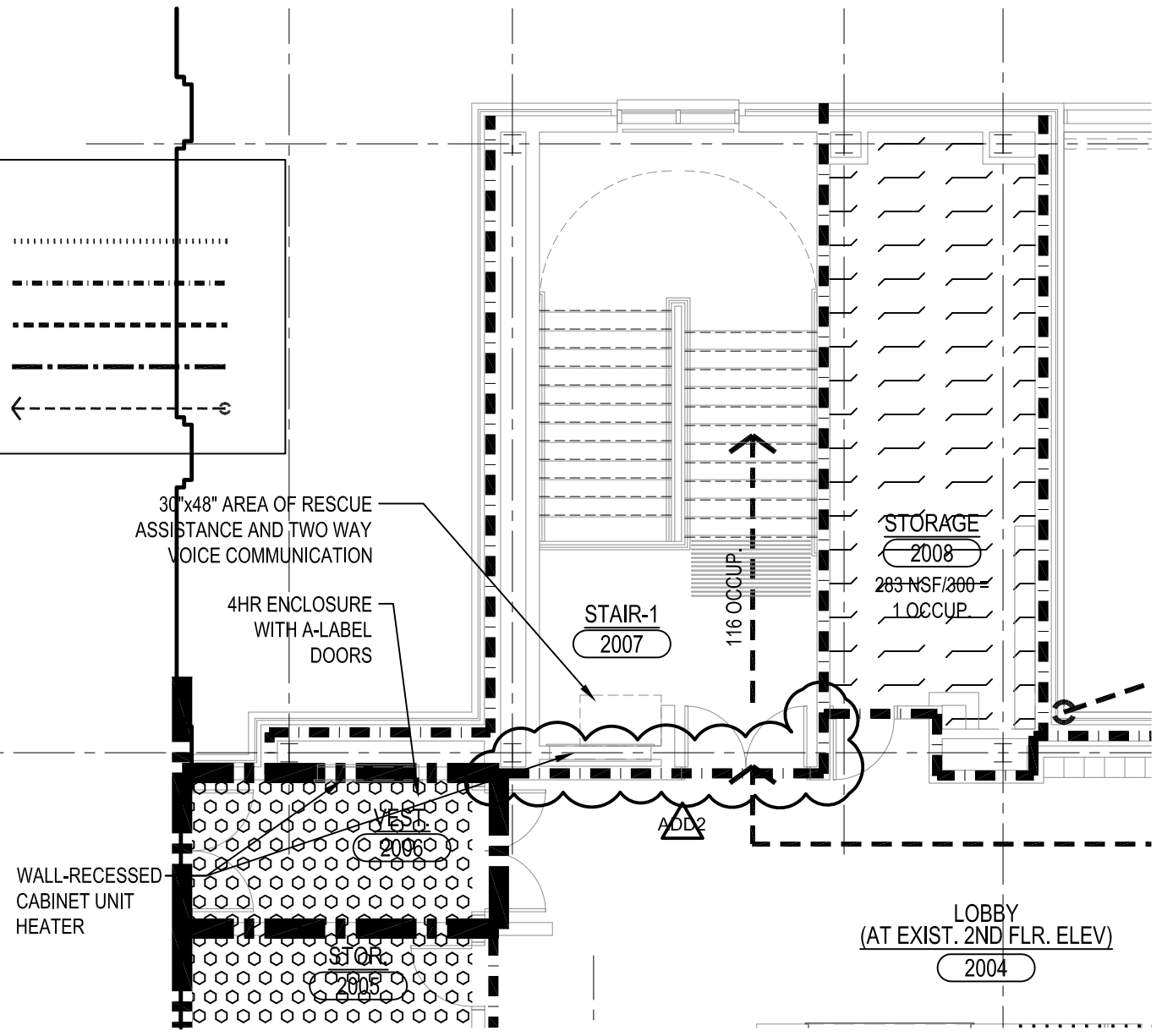
Title **PARTIAL FIRE PARTITION PLAN FIRST FLOOR**

Sheet **ASK-9**

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SYMBOLS: LIFE SAFETY

- 1 HOUR FIRE RESISTANCE RATED SEPARATION
- 2 HOUR FIRE RESISTANCE RATED SEPARATION
- 3 HOUR FIRE RESISTANCE RATED SEPARATION
- 4 HOUR FIRE RESISTANCE RATED SEPARATION
- MAXIMUM TRAVEL DISTANCE ←



30"x48" AREA OF RESCUE ASSISTANCE AND TWO WAY VOICE COMMUNICATION

4HR ENCLOSURE WITH A-LABEL DOORS

WALL-RECESSED CABINET UNIT HEATER

STORAGE
2008
283 NSF/200
1 OCCUP

STAIR-1
2007

STAIR
2006

STAIR
2005

LOBBY
(AT EXIST. 2ND FLR. ELEV)
2004

SMNG-A
Schroeder Murchie Nieniec Gazda-Auskalnis Architects Ltd.
PBC Elementary School Design Architect

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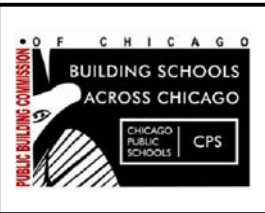
Matrix Engineering Corp
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Erwin Consulting Services
1000 West Superior St. Suite 1000
ESTIMATING CONSULTANT



GARVY
ELEMENTARY SCHOOL ADDITION

5225 N OAK PARK AVE CHICAGO, IL 60656
CHICAGO PUBLIC SCHOOLS
CITY OF CHICAGO, MAYOR RICHARD M. DALEY

PBC Contract No.: 0511
PBC Project No.: 05360
SMNG-A Project No.: 0902 / UW Project No.: P0903

Issuance		
Mark	Description	Date
▲	ADDENDUM #2	05.13.10

SCALE: 1/16" = 1'-0"

Reference Sheet
G2.2

Title
PARTIAL FIRE PARTITION PLAN SECOND FLOOR

Sheet
ASK-10

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OPENING SCHEDULE

FLOOR	OPNG NO	OPENING						HDW SET	FRAME					GLAZING	LABEL	STC RATING	KEY NOTE
		TYPE	SIZE				MAT		TYPE	MAT	DETAILS						
			WIDTH	HT	THK	TRANS					HEAD	JAMB	SILL				
FIRST FLOOR	D101A	C	3'-0"	7'-2"	1 3/4"	Y	AL	49	AE	AL	-	-	N/A	G2	NR	-	N6, N17, N18, N20
	D101B	C	3'-0"	7'-2"	1 3/4"	Y	AL	48	AE	AL	-	-	N/A	G2	NR	-	N17, N18, N20
	D101C	C	3'-0"	7'-2"	2 1/4"	Y	AL	45	WW	AL	-	-	10/A12.0 SIM.	G5-L	NR	-	N1, N3, N5, N6, N17, N18, N19, N20
	D101D	C	3'-0"	7'-2"	2 1/4"	Y	AL	46	WW	AL	-	-	10/A12.0 SIM.	G5-L	NR	-	N1, N3, N5, N17, N18, N19, N20
	L1004	LITE	2'-8"	5'-5"	5/8"	NA	HM	NA	3	HM	-	8/A12.0	-	G3	NR	-	
	D105	A	3'-0"	7'-2"	1 3/4"	N	WD	2	1	HM	1/A12.0	1/A12.0	N/A	NA	NR	-	
	D106A	A1	2@3'-0"	7'-2"	1 3/4"	N	HM	50	5	HM	1/A12.0	1/A12.0	N/A	NA	A	-	N7, N17
	D106B	A1	2@3'-0"	7'-2"	1 3/4"	N	HM	50	5	HM	1/A12.0	1/A12.0	N/A	NA	A	-	N7, N17
	D106C	A	3'-0"	7'-2"	1 3/4"	N	HM	9	1	HM	1/A12.0	1/A12.0	N/A	NA	A	-	
	D107A	B1	2@3'-0"	7'-2"	1 3/4"	N	HM	23	1	HM	1/A12.0	1/A12.0	N/A	G3	B	-	N7, N17, N18
	D107B	B1	2@3'-0"	7'-2"	1 3/4"	N	HM	23	1	HM	1/A12.0	1/A12.0	N/A	G3	B	-	N7, N17, N18, N20
	D108	A	3'-0"	7'-2"	1 3/4"	N	HM	3	1	HM	1/A12.0	1/A12.0	2/A13.0	NA	B	-	N9
	D109A	C	3'-0"	7'-2"	1 3/4"	Y	AL	49	AE	AL	-	-	N/A	G2	NR	-	N6, N17, N18, N20
	D109B	C	3'-0"	7'-2"	1 3/4"	Y	AL	48	AE	AL	-	-	N/A	G2	NR	-	N17, N18, N20
	D109C	C	3'-0"	7'-2"	2 1/4"	Y	AL	45	WW	AL	-	-	10/A12.0	G5-L	NR	-	N1, N3, N5, N6, N17, N18, N19, N20
	D109D	C	3'-0"	7'-2"	2 1/4"	Y	AL	46	WW	AL	-	-	10/A12.0	G5-L	NR	-	N1, N3, N5, N17, N18, N19, N20
	D110	A	3'-0"	7'-2"	1 3/4"	N	HM	7	1	HM	1/A12.0	1/A12.0	2/A13.0	NA	B	-	N18
	D111	A1	2@3'-0"	7'-2"	1 3/4"	N	HM	29	5	HM	-	-	-	NA	B	30	N4, N19
	D112	A1	2@3'-0"	7'-2"	1 3/4"	N	HM	36	1	HM	1/A12.0	1/A12.0	2/A13.0	NA	B	30	N4, N8, N9, N17
	D113	A	4'-0"	7'-2"	1 3/4"	N	HM	5	1	HM	-	-	-	NA	B	30	
	D114A	C	3'-0"	7'-2"	1 3/4"	Y	AL	48	AE	AL	-	-	N/A	G2	NR	-	N6, N17, N18, N20
	D114B	C	3'-0"	7'-2"	1 3/4"	Y	AL	49	AE	AL	-	-	N/A	G2	NR	-	N17, N18, N20
	D114C	C	3'-0"	7'-2"	2 1/4"	Y	AL	45	WW	AL	-	-	10/A12.0 SIM.	G5-L	NR	-	N1, N3, N5, N6, N17, N18, N19, N20
	D114D	C	3'-0"	7'-2"	2 1/4"	Y	AL	46	WW	AL	-	-	10/A12.0 SIM.	G5-L	NR	-	N1, N3, N5, N17, N18, N19, N20
	D116	A	3'-0"	7'-2"	1 3/4"	N	WD	1	2	HM	1,2/A12.0	1,2,4/A12.0	1/A13.0	G3	C	30	N4, N20
	D117	A	3'-0"	7'-2"	1 3/4"	N	WD	1	2	HM	1,2/A12.0	1,2,4/A12.0	1/A13.0	G3	C	30	N4, N20
	D118	A	3'-0"	7'-2"	1 3/4"	N	WD	1	2	HM	1,2/A12.0	1,2,4/A12.0	1/A13.0	G3	C	30	N4, N20
	D119	A	3'-0"	7'-2"	1 3/4"	N	WD	1	2	HM	1,2/A12.0	1,2,4/A12.0	1/A13.0	G3	C	30	N4, N20
	D120A	C	3'-0"	7'-2"	1 3/4"	Y	AL	48	AE	AL	-	-	N/A	G2	NR	-	N6, N17, N18, N20
	D120B	C	3'-0"	7'-2"	1 3/4"	Y	AL	48	AE	AL	-	-	N/A	G2	NR	-	N17, N18, N20
	D120C	C	3'-0"	7'-2"	1 3/4"	Y	AL	49	AE	AL	-	-	N/A	G2	NR	-	N17, N18, N20
	D120D	C	3'-0"	7'-2"	2 1/4"	Y	AL	45	WW	AL	-	-	10/A12.0 SIM.	G5-L	NR	-	N1, N3, N5, N6, N17, N18, N19, N20
	D120E	C	3'-0"	7'-2"	2 1/4"	Y	AL	46	WW	AL	-	-	10/A12.0 SIM.	G5-L	NR	-	N1, N3, N5, N17, N18, N19, N20
D120F	C	3'-0"	7'-2"	2 1/4"	Y	AL	47	WW	AL	-	-	10/A12.0 SIM.	G5-L	NR	-	N1, N3, N5, N17, N18, N19, N20	
D121	B1	2@3'-0"	7'-2"	1 3/4"	N	HM	23	1	HM	1/A12.0	1/A12.0	N/A	G3	B	-	N7, N17, N18, N20	
D122	A	3'-0"	7'-2"	1 3/4"	N	WD	1	2	HM	1,2/A12.0	1,2,4/A12.0	1/A13.0	G3	C	30	N4, N20	
D123	A	3'-0"	7'-2"	1 3/4"	N	WD	1	2	HM	1,2/A12.0	1,2,4/A12.0	1/A13.0	G3	C	30	N4, N20	
D124	A	3'-0"	7'-2"	1 3/4"	N	WD	1	2	HM	1,2/A12.0	1,2,4/A12.0	1/A13.0	G3	C	30	N4, N20	
D126	A	3'-0"	7'-2"	1 3/4"	N	HM	10	1	HM	1/A12.0	1/A12.0	12/A13.0	NA	C	-	N23	
D128	A	3'-0"	7'-2"	1 3/4"	N	HM	3	1	HM	1/A12.0	1/A12.0	2/A13.0	NA	C	-		
D129	A	3'-0"	7'-2"	1 3/4"	N	WD	9	2	AL	1,2/A12.0	1,2,4/A12.0	N/A	G3	C	-		
D130	A	3'-0"	7'-2"	1 3/4"	N	HM	3	1	HM	1/A12.0	1/A12.0	2/A13.0	NA	B	-	N8, N9	

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GARVY ELEMENTARY SCHOOL ADDITION
5225 N OAK PARK AVE CHICAGO, IL 60630
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4877 W 95th STREET HOMERIDGE, IL 60631

PBC Contract No.: 0511
PBC Project No.: 05300
SMNG-A Project No.: 0902 / UW Project No.: P0903

Issuance		
Mark	Description	Date
A102	ADDENDUM #2	05.13.10

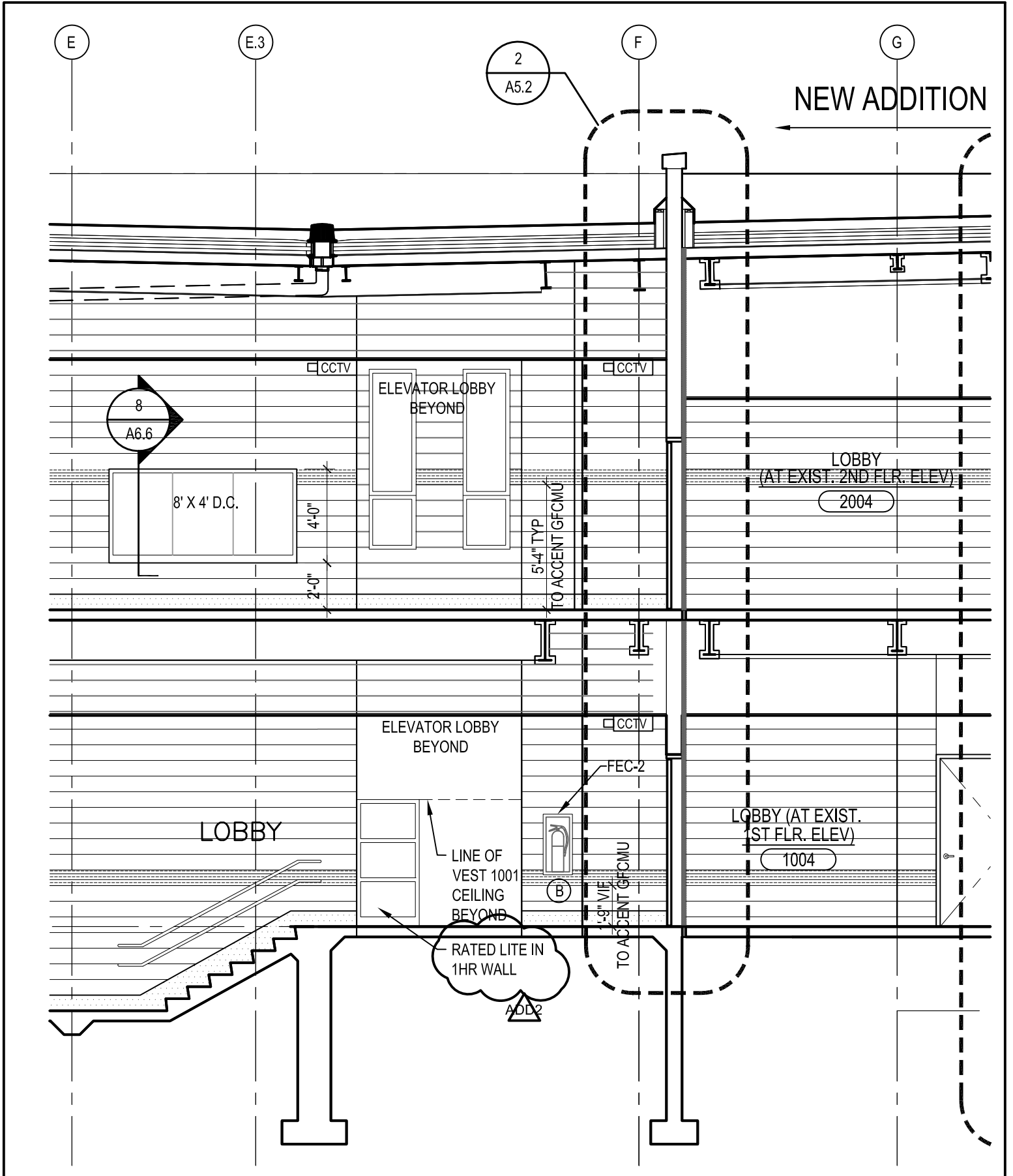
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Reference Sheet **A12.0**

Title **REVISED OPENING SCHEDULE**

Sheet **ASK-11**

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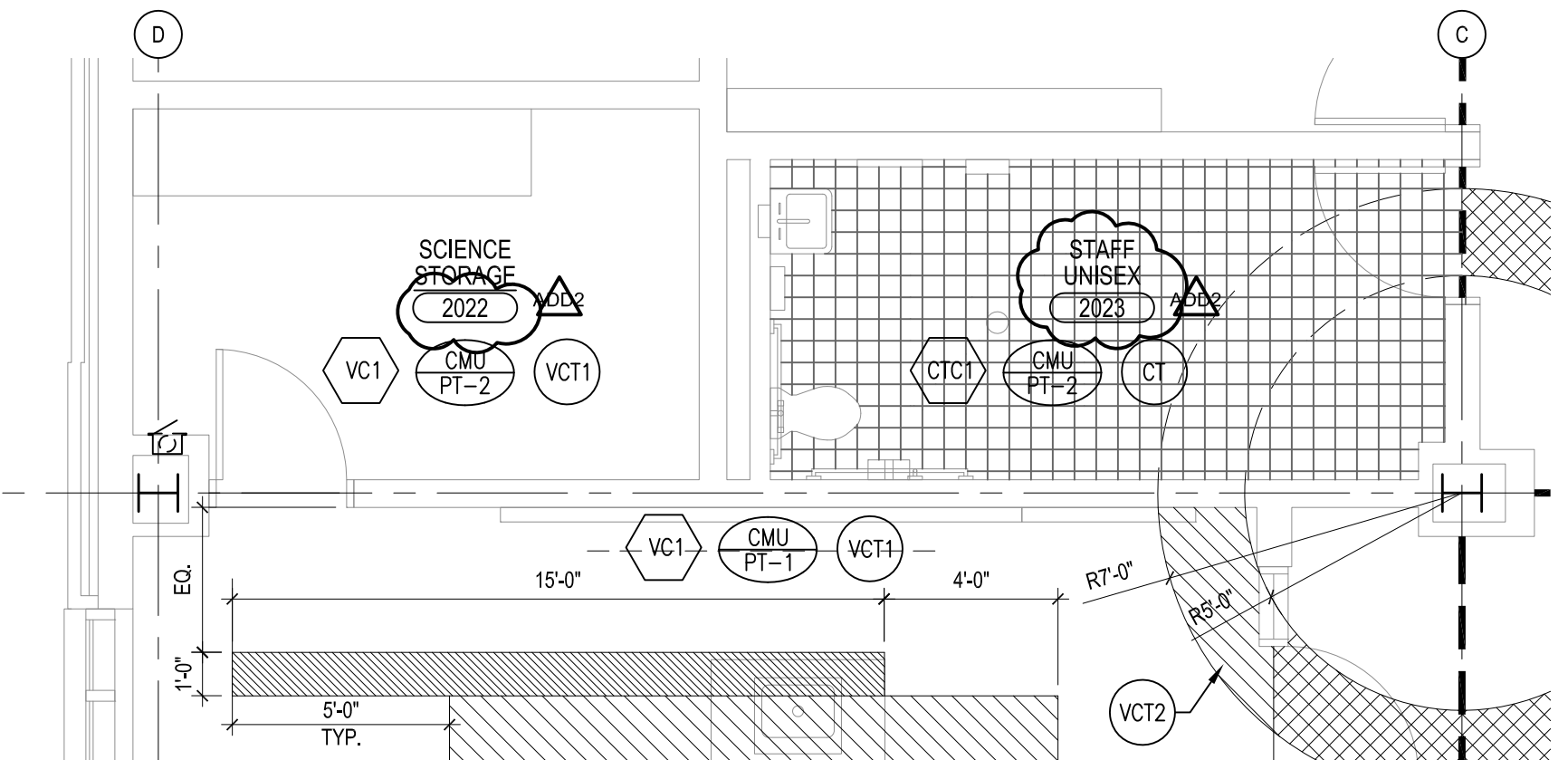
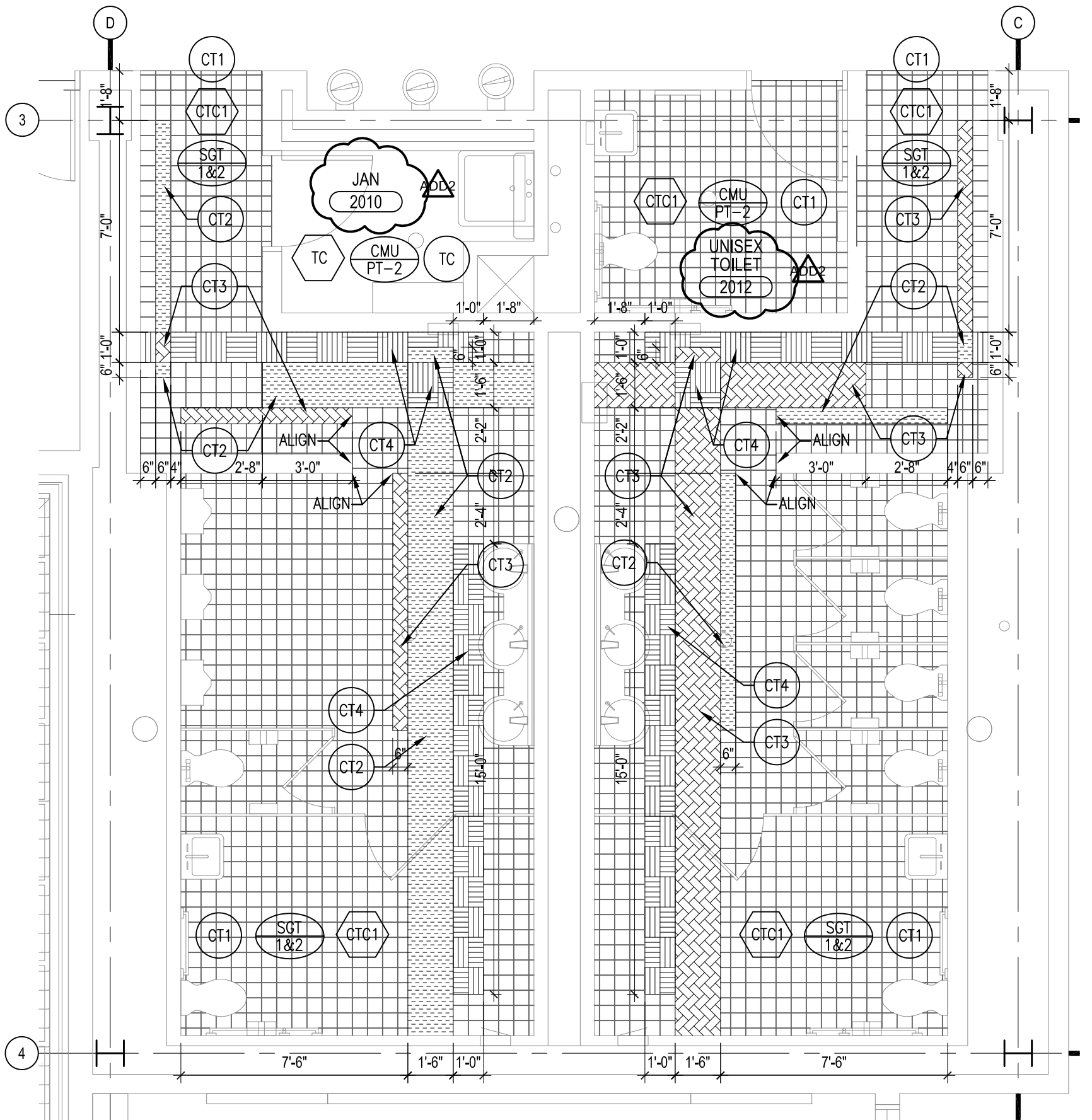
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 1 Devon Drive Schaumburg, IL 60196
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**GARY
 ELEMENTARY SCHOOL ADDITION**
 5225 N OAK PARK AVE CHICAGO, IL 60630
 CHICAGO PUBLIC SCHOOLS
 400 W JACKSON STREET CHICAGO, IL 60604
 PBC Contract No.: 0511
 PBC Project No.: 05300
 SMNG-A Project No.: 0902 / UW Project No.: P0903

Issuance		
Mark	Description	Date
▲ ADD2	ADDENDUM #2	05.13.10

SCALE: NO SCALE
 Reference Sheet **1/A4.3**

Title
PARTIAL ENLARGED BUILDING SECTION
 Sheet
ASK-12



SMNG-A
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**GARVY
 ELEMENTARY SCHOOL ADDITION**
 5225 N OAK PARK AVE CHICAGO, IL 60656
 CHICAGO PUBLIC SCHOOLS
 CITY OF CHICAGO, MAYOR RICHARD M. DALEY

PBC Contract No.: 0511
 PBC Project No.: 05360
 SMNG-A Project No.: 0902 / UW Project No.: P0903

Mark	Description	Date
	ADDENDUM #2	05.13.10

Issuance

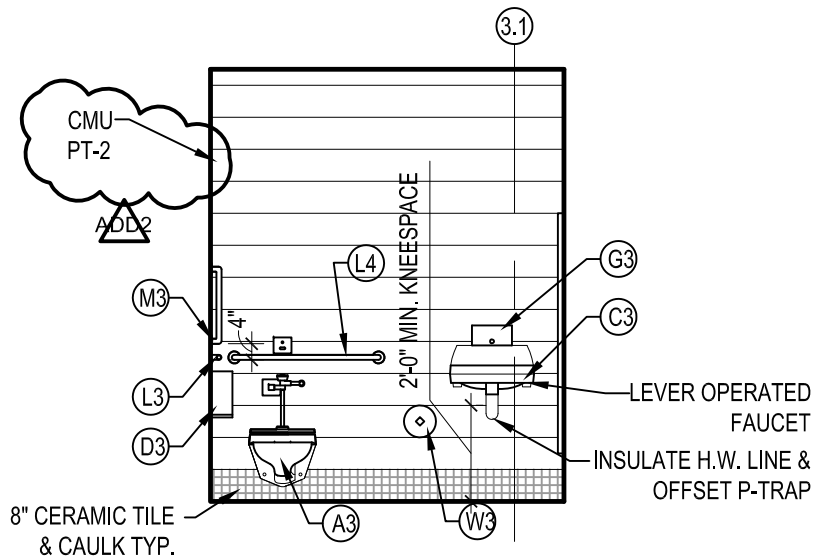
SCALE: 1/4" = 1'-0"

Reference Sheet
2 & 3/A13.3

Title
**PARTIAL ENLARGED
 FINISH PLAN**

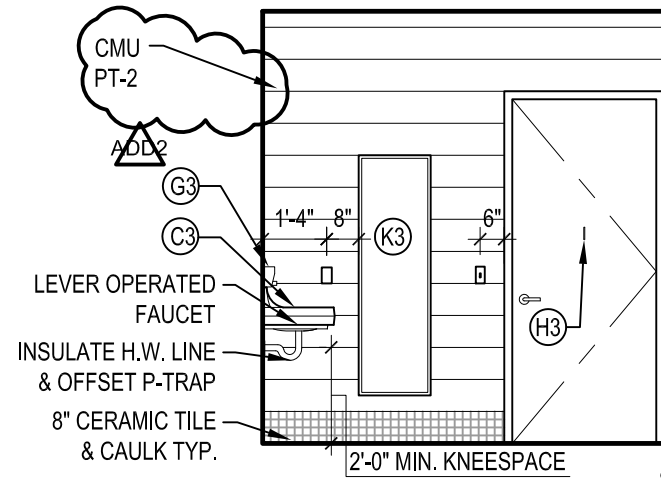
Sheet
ASK-13

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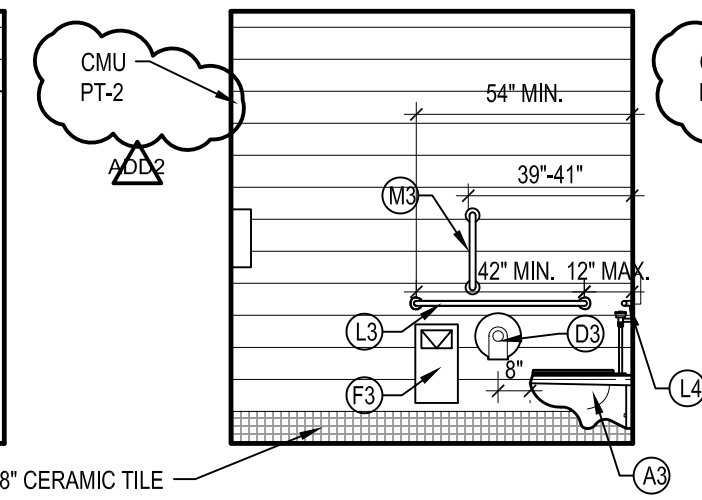
**INT. ELEV.-
UNISEX TOILET**

7
A15.1 SCALE: 1/4" = 1'-0"



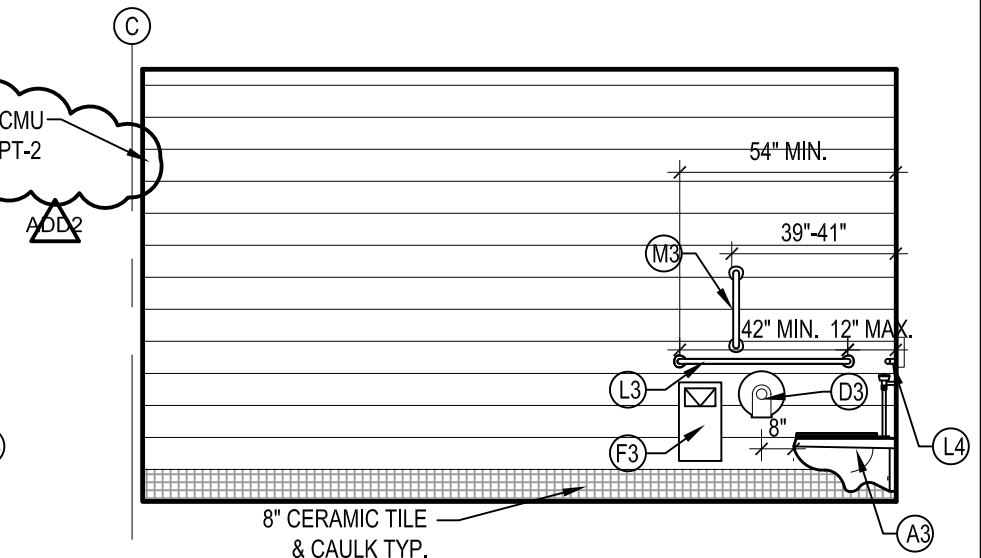
**INT. ELEV.-
UNISEX TOILET**

8
A15.1 SCALE: 1/4" = 1'-0"



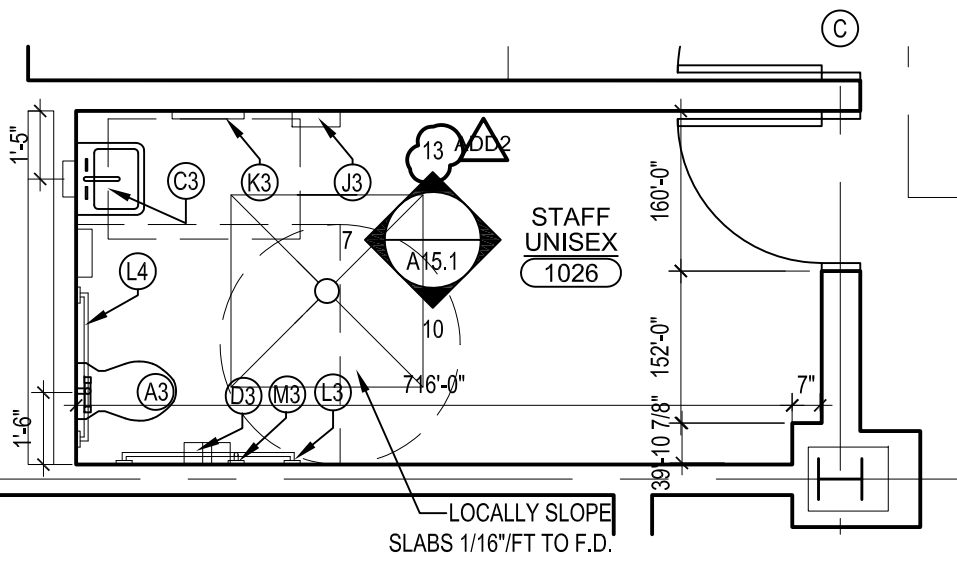
**INT. ELEV.-
UNISEX TOILET**

9
A15.1 SCALE: 1/4" = 1'-0"



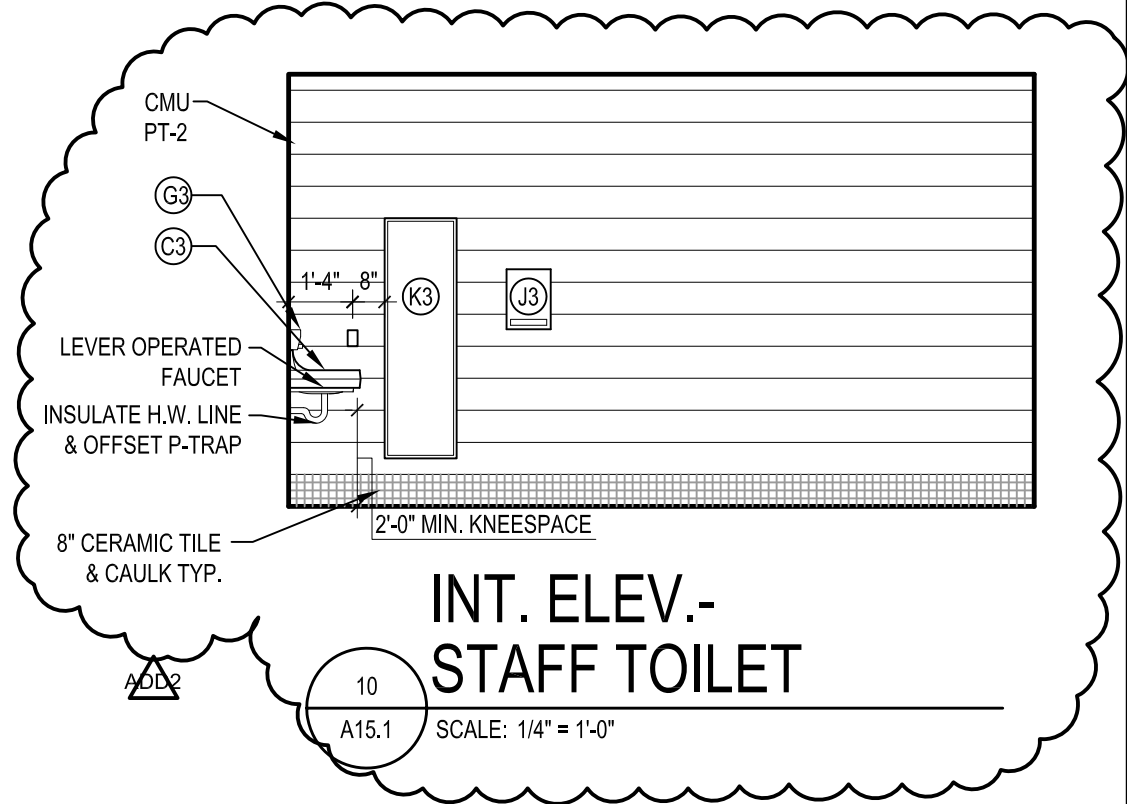
**INT. ELEV.-
STAFF TOILET**

10
A15.1 SCALE: 1/4" = 1'-0"



STAFF UNISEX TOILETS

12
A15.1 SCALE: 1/4" = 1'-0"



**INT. ELEV.-
STAFF TOILET**

10
A15.1 SCALE: 1/4" = 1'-0"

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**GARVY
ELEMENTARY SCHOOL ADDITION**
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CITY OF CHICAGO, MAYOR RICHARD M. DALEY

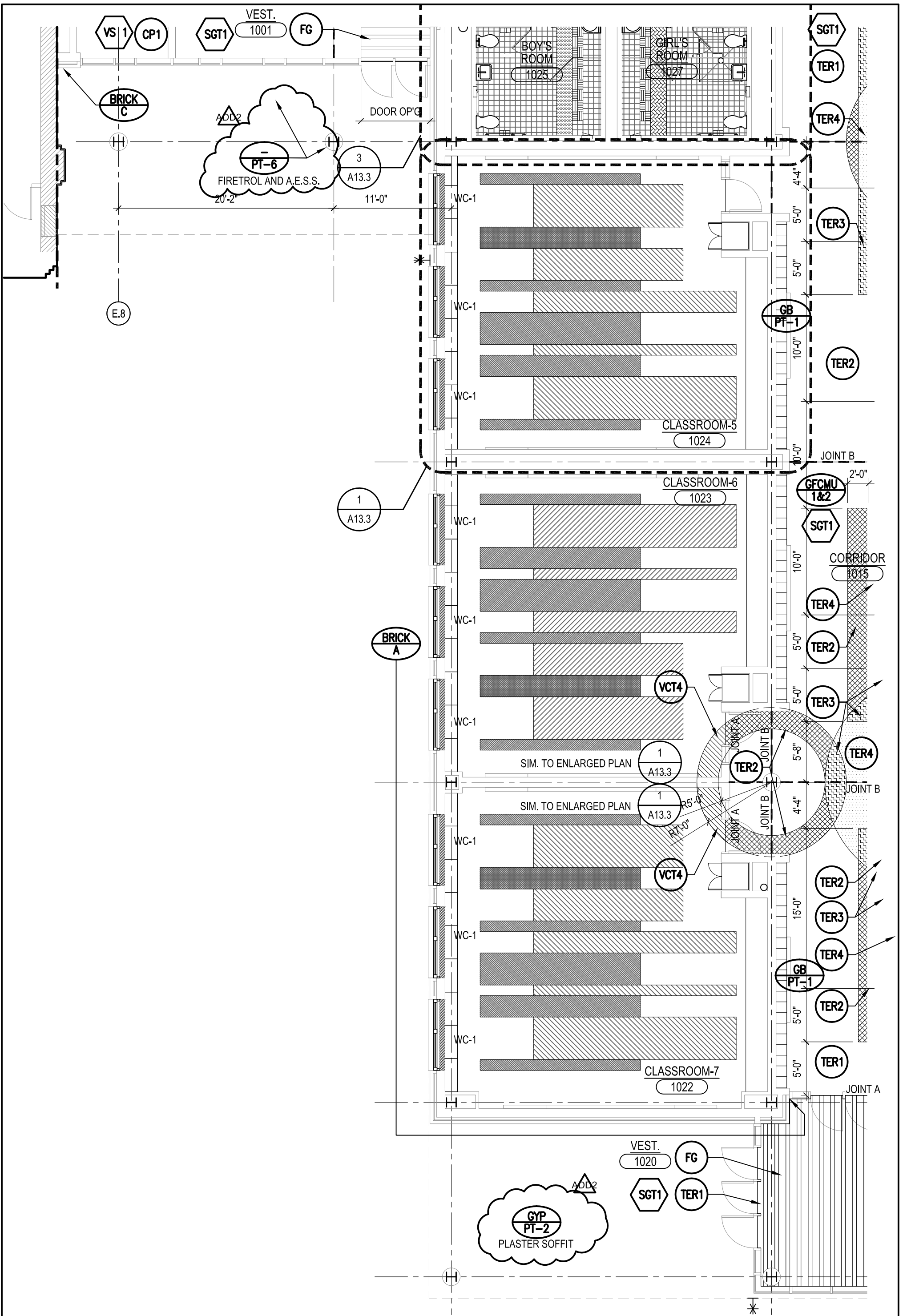
PBC Contract No.: 0511
PBC Project No.: 05360
SMNG-A Project No.: 0902 / UW Project No.: P0903

Mark	Description	Date
ADD2	ADDENDUM #2	05.13.10

SCALE: 1/4"=1'-0"
Reference Sheet
7,8,9,10,12,13/A15.1

Title **TOILET PLANS +
ELEVATION +
DETAILS**

Sheet **ASK-14**



SMNG-A
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CITY OF CHICAGO
BUILDING SCHOOLS
ACROSS CHICAGO

CHICAGO PUBLIC SCHOOLS | **CPS**

GARVY
ELEMENTARY SCHOOL ADDITION
 5225 N OAK PARK AVE CHICAGO, IL 60656
 CHICAGO PUBLIC SCHOOLS
 CITY OF CHICAGO, MAYOR RICHARD M. DALEY

PBC Contract No.: 0511
 PBC Project No.: 05360
 SMNG-A Project No.: 0902 / UW Project No.: P0903

Issuance		
Mark	Description	Date
ADD2	ADDENDUM #2	05.13.10

SCALE: 1/8" = 1'-0"

Reference Sheet
1/A13.1

Title
PARTIAL FIRST FLOOR FINISH PLAN

Sheet
ASK-15

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INTERIOR SIGNAGE SCHEDULE
(REF. PLAN AND SCHEDULE FOR SIGN TYPE)

FIRST FLOOR

QUANTITY	ARCH. RM. NO.	ARCH. RM. NAME	CPS RM. NAME	CPS RM. NO.
1	NA	TOILETS AT EXISTING BUILDING		
0	1001	VESTIBULE		
0	1002	LOBBY		
4	1003	ELEVATOR		
0	1004	LOBBY		
1	1005	STORAGE		
0	1006	VESTIBULE		
4	1007	STAIR-1		
1	1008	ELEV MACHINE ROOM		
0	1009	VESTIBULE		
1	1010	RECYCLING		
1	1011	MECHANICAL ROOM		
1	1012	ELECTRICAL ROOM		
1	1013	PUMP ROOM		
0	1014	VESTIBULE		
0	1015	CORRIDOR		
1	1016	CLASSROOM-1		
1	1017	CLASSROOM-2		
1	1018	CLASSROOM-3		
1	1019	CLASSROOM-4		
0	1020	VESTIBULE		
3	1021	STAIR-2		
1	1022	CLASSROOM-7		
1	1023	CLASSROOM-6		
1	1024	CLASSROOM-5		
1	1025	BOYS' TOILET		
1	1026	UNISEX TOILET		
1	1027	GIRLS' TOILET		
1	1028	JANITOR'S CLOSET		
1	1029	OFFICE		
2	1030	A.T.S. ROOM		
0	1031	ADJUST ROOM		
0	1033	STORAGE		
0	1034	CORRIDOR		
0	1035	CORRIDOR		

INTERIOR SIGNAGE SCHEDULE
(REF. PLAN AND SCHEDULE FOR SIGN TYPE)

SECOND FLOOR

QUANTITY	ARCH. RM. NO.	ARCH. RM. NAME	CPS RM. NAME	CPS RM. NO.
1	NA	TOILETS AT EXISTING BUILDING		
2	2003	ELEVATOR		
0	2004	LOBBY		
1	2005	STORAGE		
0	2006	VESTIBULE		
3	2007	STAIR-1		
1	2008	STORAGE		
1	2009	GIRLS' TOILET		
1	2010	JANITOR'S CLOSET		
1	2011	BOYS' TOILET		
1	2012	UNISEX TOILET		
1	2013	CHILLER WELL		
2	2014	MECHANICAL ROOM		
1	2015	MDF		
2	2016	ELECTRICAL ROOM		
1	2017	CLASSROOM-8		
1	2018	CLASSROOM-9		
1	2019	CLASSROOM-10		
3	2020	STAIR-2		
1	2021	SCIENCE LAB		
1	2022	SCIENCE STORAGE		
1	2023	STAFF UNISEX		
1	2024	STORAGE		
1	2025	OFFICE		
1	2025A	OFFICE STORAGE		
0	2026	CORRIDOR		
1	2027	CLASSROOM-11		
1	2028	OFFICE		
0	2029	CORRIDOR		
0	2030	CORRIDOR		
1	2031	STORAGE		
1	2032	OFFICE		
1	2033	ENGINEER'S OFFICE		

EXTERIOR SIGNAGE SCHEDULE
(REF. DETAIL FOR ADDITIONAL INFORMATION)

QUANTITY	ARCH. RM. NO.	ARCH. RM. NAME	SHEET LOCATION
1	ENTRY	GARVY ELEMENTARY (SEE NOTE 6)	A3.1
-	-	NOT USED	
1	PKG LOT	SCHOOL PARKING (SIGN TYPE S19)	A14.1

INTERIOR CUSTOM SIGNAGE
(REF. DETAIL FOR ADDITIONAL INFORMATION)

QUANTITY	ARCH. RM. NO.	ARCH. RM. NAME	SHEET LOCATION
1	-	NOT USED	

EXTERIOR FIRE DEPT. EXIT NUMBERS
(REF. DETAIL FOR ADDITIONAL INFORMATION)

QUANTITY	FIRE DEPT. NO.	ARCH. RM. NAME	SHEET LOCATION
1	1	VESTIBULE 1001	A3.1, A14.1
1	2	VESTIBULE 1009	A3.1, A14.1
1	3	VESTIBULE 1014	A3.1, A14.1
1	4	VESTIBULE 1020	A3.1, A14.1

NOTE:
6. CAST ANODIZED ALUMINUM LETTERS. REF. SPEC SECTION 10425. CONTRACTOR / MANUFACTURER TO DESIGN, AND SUBMIT STRUCTURAL ATTACHMENT DETAILS FOR CONFORMANCE WITH DESIGN INTENT. HELVETICA FONT, 24"H (FINAL SCHOOL NAME TO BE DETERMINED BY CPS - ASSUME AS SHOWN FOR BID).

<p>SMNG-A Schneider Murchie Niemiec Gazzola-Auskalnis Architects Ltd. PBC Elementary School Design Architect</p> <p>UrbanWorks ARCHITECTURE INTERIORS PLANNING ARCHITECT OF RECORD 213 W Institute Place Suite 710 Chicago, IL 60610 P: 312 202 1200 F: 312 202 1202</p>	<p>Terra Engineering 2250 E Devon Av Suite 218 Des Plaines, IL 60018 MECHANICAL, PLUMBING & CIVIL ENGINEER</p> <p>Matrix Engineering Corp 33 W Jackson Blvd 4th Floor Chicago, IL 60604 STRUCTURAL ENGINEER</p>	<p>Dynacept, Inc 2250 E Devon Av Suite 218 Des Plaines, IL 60018 MECHANICAL, PLUMBING, FIRE PROTECTION</p> <p>Hennehan Engineering Inc 200 S. Wacker Drive Suite 850 Chicago, IL 60606 ELECTRICAL, IT AND LEED ENGINEER</p>	<p>Shiner + Associates 225 W Washington St No 1625 Chicago, IL 60606 ACOUSTICAL CONSULTANT</p> <p>Erwin Consulting Services 1 Omni Drive Schaumburg IL 60193 ESTIMATING CONSULTANT</p>
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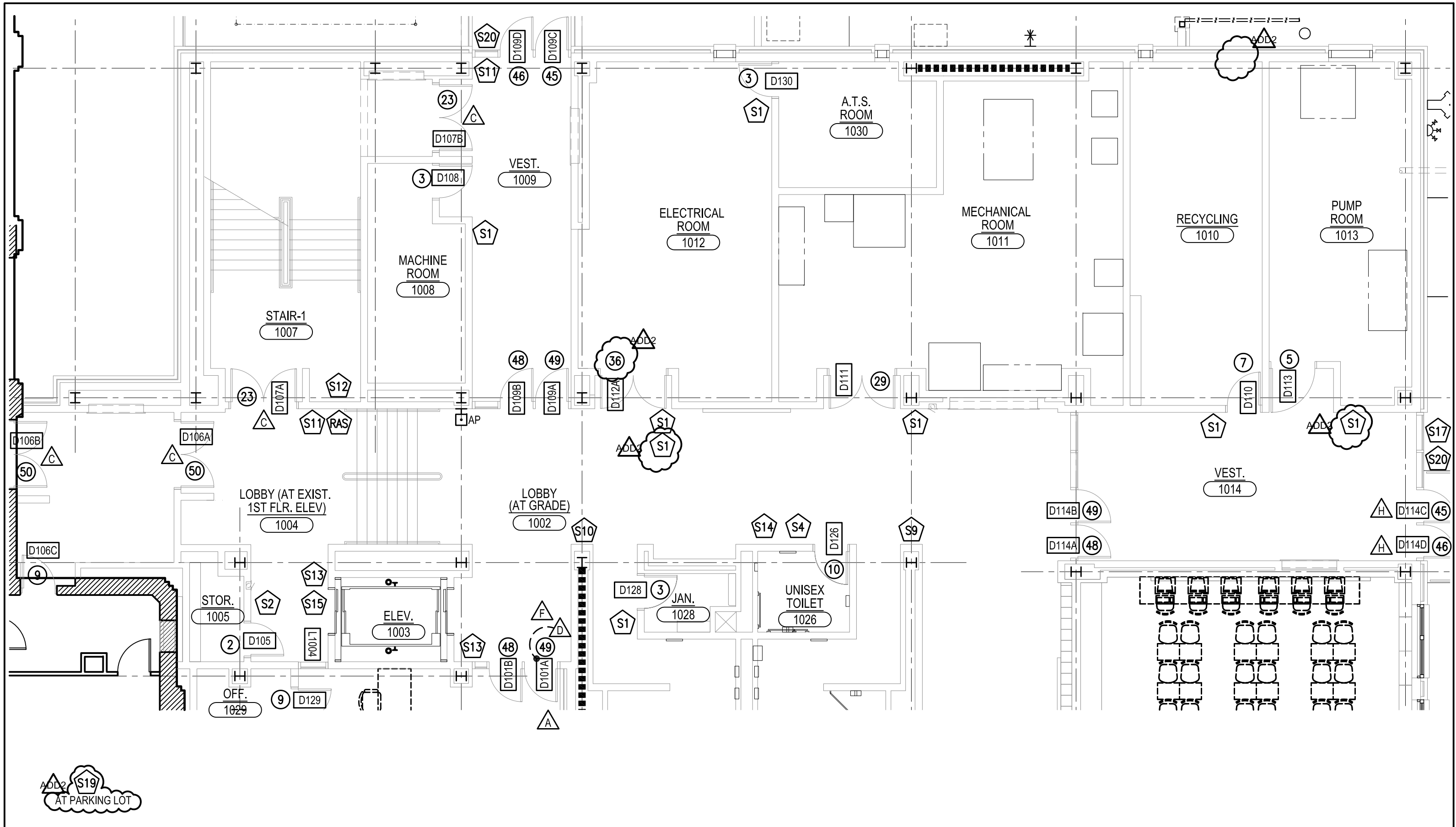
**GARVY
ELEMENTARY SCHOOL ADDITION**

5225 N OAK PARK AVE CHICAGO, IL 60656
CHICAGO PUBLIC SCHOOLS
CITY OF CHICAGO, MAYOR RICHARD M. DALEY

PBC Contract No.: 0511
PBC Project No.: 05360
SMNG-A Project No.: 0902 / UW Project No.: P0903

Mark	Description	Date
ADD	ADDENDUM #2	05.13.10

Issuance	Title
SCALE: NO SCALE	SIGNAGE SCHEDULE
Reference Sheet	Sheet
1/A14.0	ASK-16A



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Dynacept, Inc
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 MECHANICAL, PLUMBING, FIRE PROTECTION

Shiner + Associates
 225 W Washington St No 1625 Chicago, IL 60606
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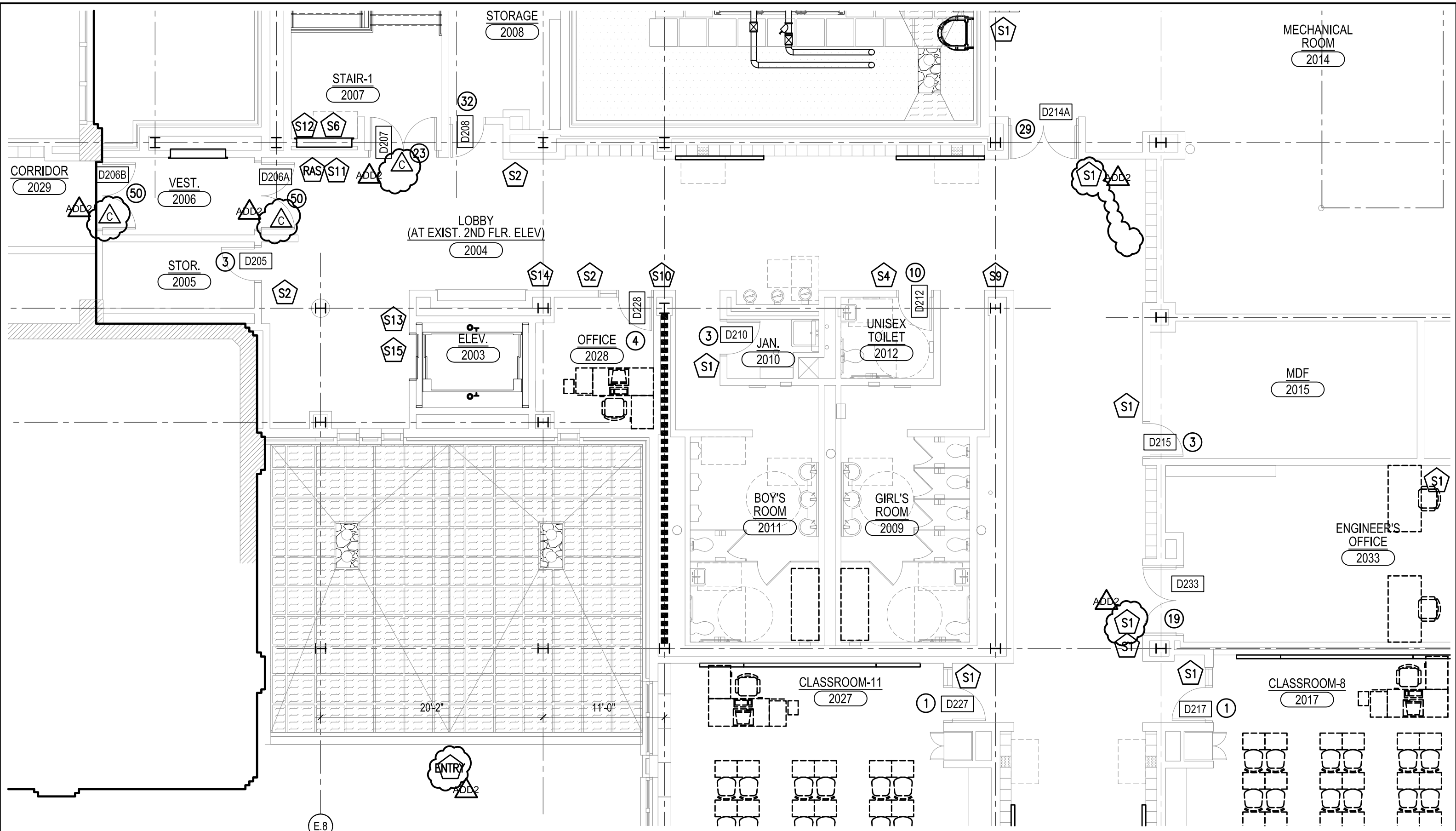
GARVY ELEMENTARY SCHOOL ADDITION
 5225 N OAK PARK AVE CHICAGO, IL 60656
 CHICAGO PUBLIC SCHOOLS
 CITY OF CHICAGO, MAYOR RICHARD M. DALEY

PBC Contract No.: 0511
 PBC Project No.: 05360
 SMNG-A Project No.: 0902 / UW Project No.: P0903

Issuance		
Mark	Description	Date
ADD2	ADDENDUM #2	05.13.10

SCALE: 1/8"=1'-0"
 Reference Sheet
1/A14.1

Title **PARTIAL FIRST FLOOR SIGNAGE PLAN**
 Sheet **ASK-16B**
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Henneman Engineering Inc
 200 S. Wacker Drive Suite 850 Chicago, IL 60606
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Shiner + Associates
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Erwin Consulting Services
 1 Omni Drive Schaumburg IL 60193
 ESTIMATING CONSULTANT



GARVY ELEMENTARY SCHOOL ADDITION
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 CHICAGO PUBLIC SCHOOLS
 CITY OF CHICAGO, MAYOR RICHARD M. DALEY
 PBC Contract No.: 0511
 PBC Project No.: 05360
 SMNG-A Project No.: 0902 / UW Project No.: P0903

Issuance		
Mark	Description	Date
▲	ADDENDUM #2	05.13.10

SCALE: 1/8"=1'-0"
 Reference Sheet
1/A14.2

Title **PARTIAL SECOND FLOOR SIGNAGE PLAN**
 Sheet **ASK-16C**
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**REFER TO SHEET A6.1
FOR KEYNOTE LEGEND**

2-PC. FLASHING/
COUNTER-FLASHING @ WALL
INTERSECTION, TYP. @ ALL
INTERSECTIONS; REGLECT,
WEDGE + SEAL INTO MASONRY

CONTINUE ROOFING
MEMBRANE UP WALL BEYOND
@ WALL INTERSECTIONS +
REGLET INTO MAS.

FILL ALL PERIMETER WALL
BOX-HEADERS W/MIN. R-14
SPRAY INSULATION PRIOR TO
INSTALLATION, TYP.

12
A6.5

112-E
104-N
104-J
104-F
104-D
104-C
104-A
104-B
102-K

110-B
110-C
110-D
110-E
110-A
113-R (6" PROFILE)
113-A
113-N
113-B
113-M

1/4" GALVINIZED STEEL PLATE @
HEAD OF WINDOW WALL, SECURE TO
COLD FORMED FRAMING, STAGGER
FASTENERS, REF. STRUCT.

OMIT MORTAR AND INSTALL
SILICONE SEALANT AT TOP OF MAS.
COPING, MIN 3/8" THICK

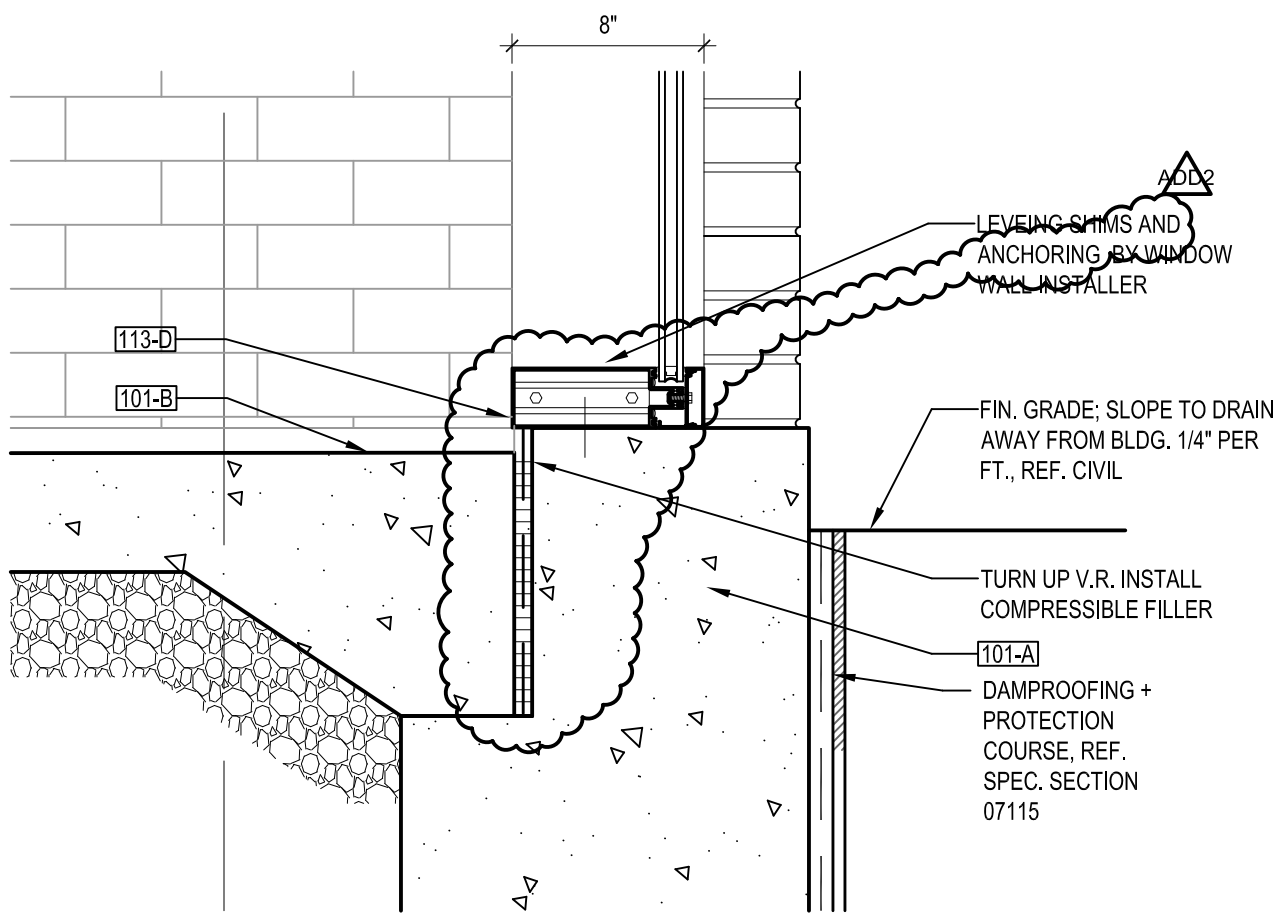
SPRAY POLYURETHANE FOAM
INSULATION IN ALL CAVITIES;
REFERENCE SPECIFICATION
SECTION 07210

HSS POST NOT SHOWN FOR
CLARITY; REFER TO
STRUCTURAL DRAWING
(12/S3.2) FOR HSS POST @ 48"
O.C.

FILL VOID WITH UL APPROVED
ELASTOMERIC SPRAY
FIRESTOPPING AT SLAB

NOTE:
REFER TO ENLARGED
PERSPECTIVE DETAIL 12/A6.5;
COORD. WDW WALL COPING
FLASHING REQUIREMENTS; ALL
GAPS SHALL BE CLOSED AND
SEALED WEATHER TIGHT;
RETURN PARAPET WALL
FLASHING WHERE REQUIRED

7 ENLARGED DETAIL
A6.4 SCALE: 1 1/2" = 1'-0"



4 ENLARGED DETAIL
A6.4 SCALE: 1 1/2" = 1'-0"

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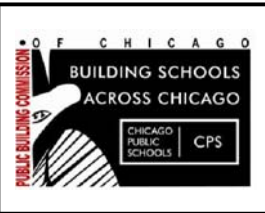
Matrix Engineering Corp
211 W. Jackson Street 4th Floor Chicago, IL 60604
STRUCTURAL ENGINEERS

Dynacept, Inc
2201 E. Devon Pl. Suite 210 Oak Park, IL 60452
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**GARVY
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5225 N OAK PARK AVE CHICAGO, IL 60656
CHICAGO PUBLIC SCHOOLS
CITY OF CHICAGO, MAYOR RICHARD M. DALEY

PBC Contract No.: 0511
PBC Project No.: 05360
SMNG-A Project No.: 0902 / UW Project No.: P0903

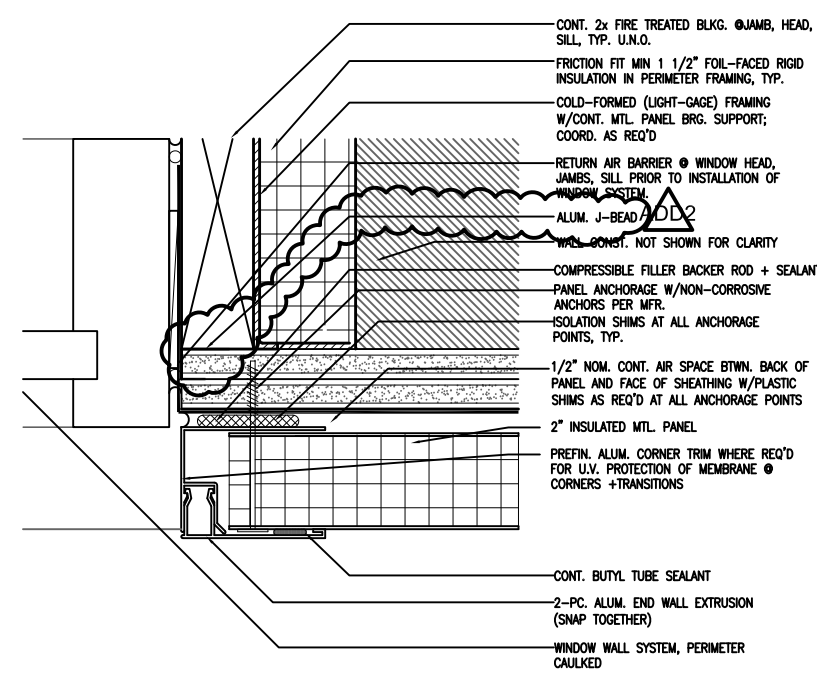
Issuance		
Mark	Description	Date
ADD2	ADDENDUM #2	05.13.10

SCALE: 1 1/2" = 1'-0"
Reference Sheet
4 & 7/A6.4

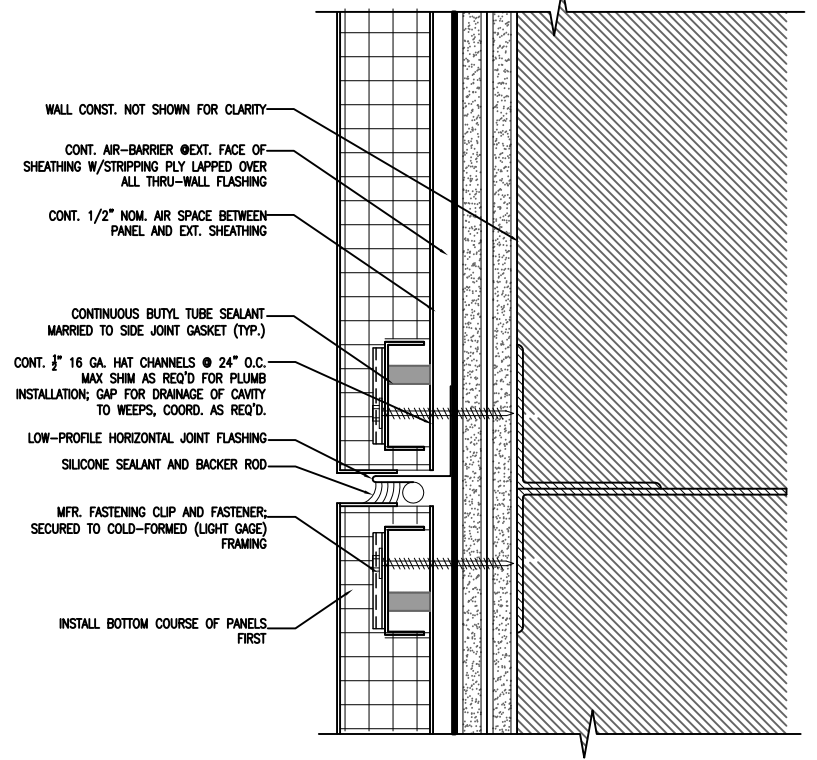
Title
ENLARGED DETAILS

Sheet
ASK-17

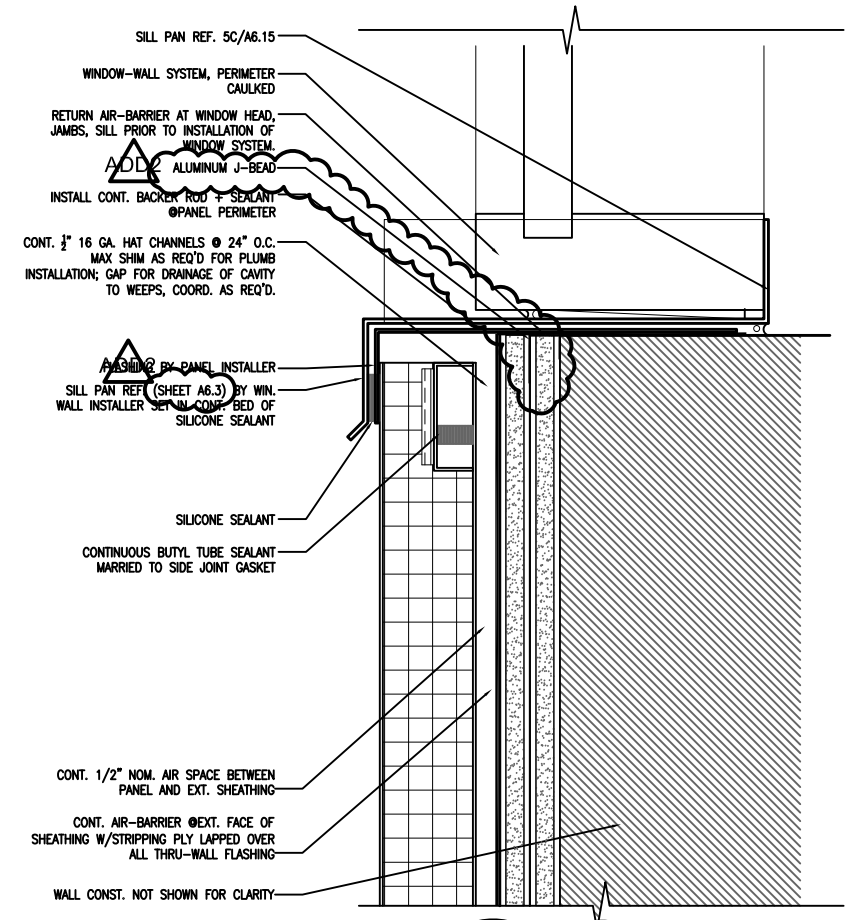
- GENERAL NOTES RE: ALUMINUM PANELS:**
1. EXTERIOR METAL FACING FOR ALL INSULATED MTL PANELS SHALL BE ZINC-COATED (GALVANIZED) STEEL SHEET. 22-GUAGE, SMOOTH.
 2. INTERIOR METAL FACING FOR ALL INSULATED MTL PANELS SHALL BE ZINC-COATED (GALVANIZED) STEEL SHEET. 24-GUAGE
 3. INSULATED PANEL CORE IS COMPOSED OF CLOSED CELL MODIFIED POLYISOCYANURATE FOAM INSULATION USING A NON-CFC BLOWING AGENT (BOARD TYPE) WITH MAXIMUM FLAME SPREAD INDEX OF 25 AND SMOKE DEVELOPED INDEX OF 450.



5 TYP. VERT. PANEL JAMB
A6.10 SCALE: 3"=1'-0"



3 TYP. VERT. PANEL STACK JOINT
A6.10 SCALE: 3"=1'-0"



1 TYP. VERT. PANEL SILL
A6.10 SCALE: 3"=1'-0"

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GARVY
ELEMENTARY SCHOOL ADDITION
5225 N OAK PARK AVE CHICAGO, IL 60656
CHICAGO PUBLIC SCHOOLS
CITY OF CHICAGO, MAYOR RICHARD M. DALEY

PBC Contract No.: 0511
PBC Project No.: 05360
SMNG-A Project No.: 0902 / UW Project No.: P0903

Issuance		
Mark	Description	Date
ADD	ADDENDUM #2	05.13.10

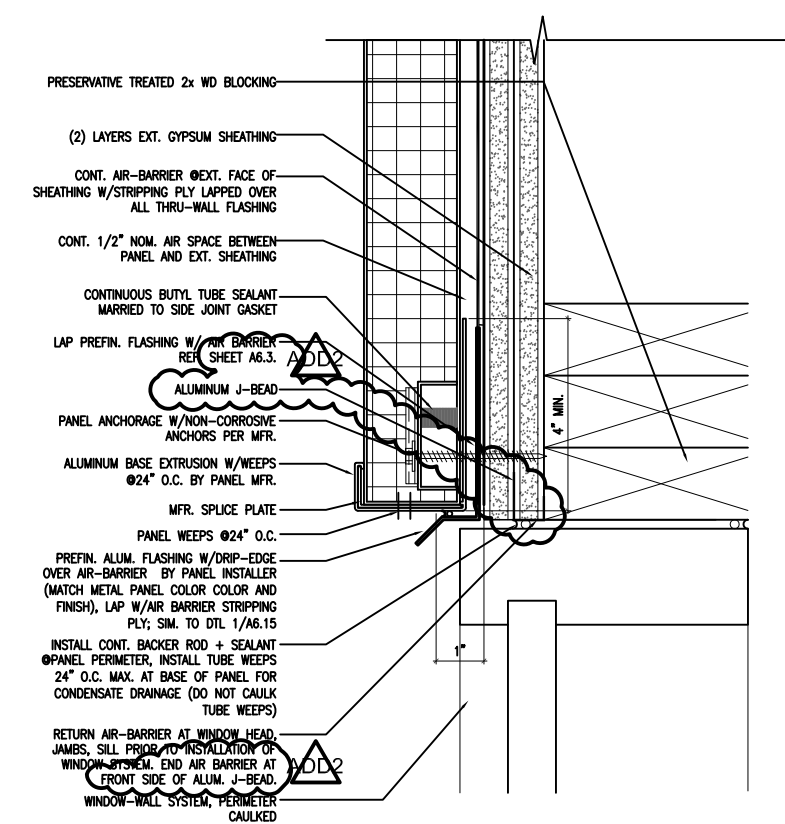
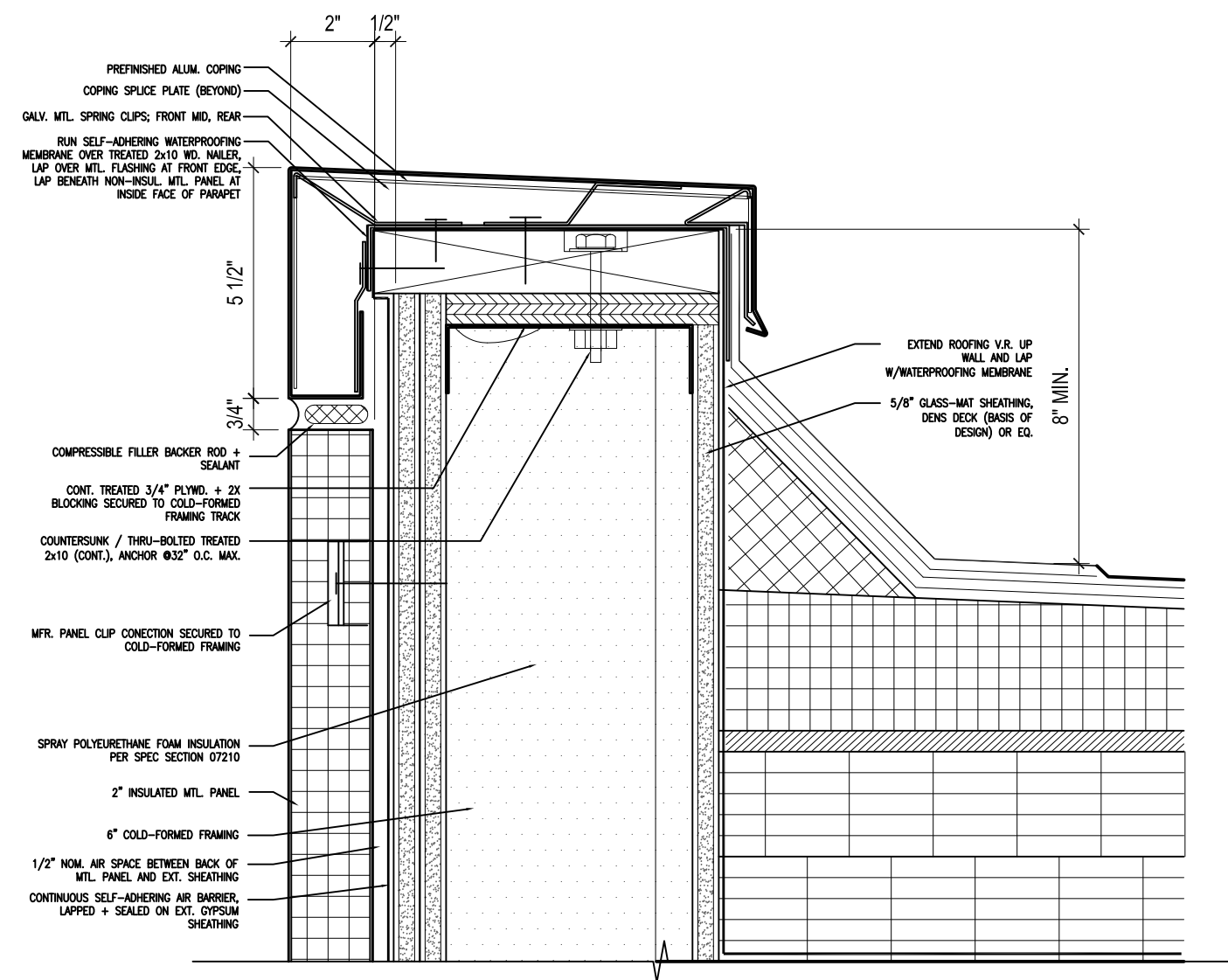
Scale: 3"=1'-0"

Reference Sheet
1, 3 AND 5/A6.10

Title
LIGHT MONITOR ENLARGED DETAILS

Sheet
ASK-18A

- GENERAL NOTES RE: ALUMINUM PANELS:**
1. EXTERIOR METAL FACING FOR ALL INSULATED MTL PANELS SHALL BE ZINC-COATED (GALVANIZED) STEEL SHEET. 22-GUAGE, SMOOTH.
 2. INTERIOR METAL FACING FOR ALL INSULATED MTL PANELS SHALL BE ZINC-COATED (GALVANIZED) STEEL SHEET. 24-GUAGE
 3. INSULATED PANEL CORE IS COMPOSED OF CLOSED CELL MODIFIED POLYISOCYANURATE FOAM INSULATION USING A NON-CFC BLOWING AGENT (BOARD TYPE) WITH MAXIMUM FLAME SPREAD INDEX OF 25 AND SMOKE DEVELOPED INDEX OF 450.

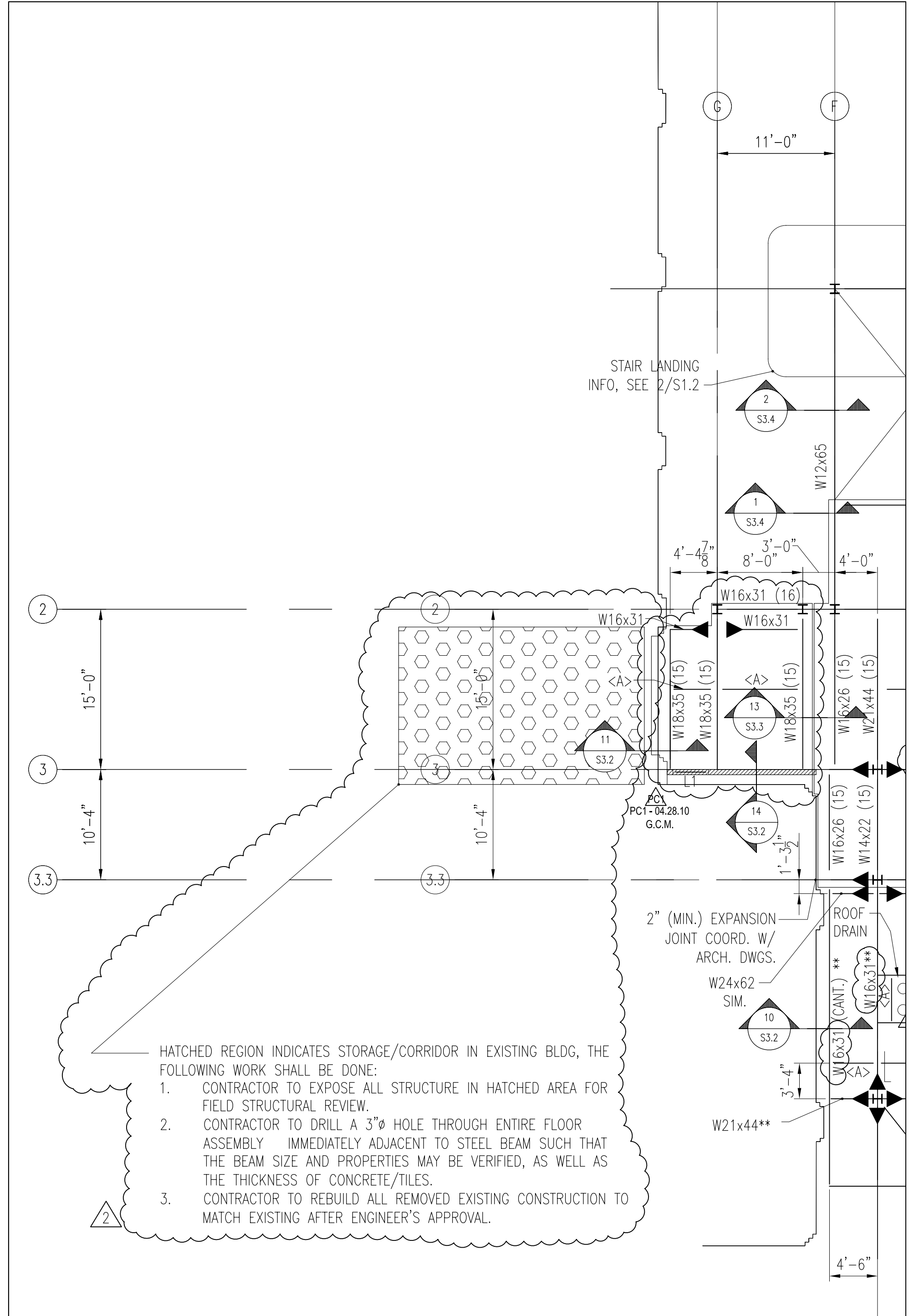


4 PANEL COPING DETAIL
 A6.10 SCALE: 3" = 1'-0"

2 TYP. VERT. PANEL HEAD
 A6.10 SCALE: 3" = 1'-0"

SMNG-A Schneider Murchie Niemiec Gazda-Auskaitis Architects Ltd. PBC Elementary School Design Architect UrbanWorks ARCHITECTURE INTERIORS PLANNING ARCHITECT OF RECORD 213 W Institute Plaza Suite 710 Chicago, IL 60610 P: 312 202 1200 F: 312 202 1202	Terra Engineering 225 W Ohio Street 4th Floor Chicago, IL 60654 LANDSCAPE & CIVIL ENGINEER Matrix Engineering Corp 33 W Jackson Blvd 4th Floor Chicago, IL 60604 STRUCTURAL ENGINEER	Dynacept, Inc 2250 E Devon Av Suite 218 Des Plaines, IL 60018 MECHANICAL, PLUMBING, FIRE PROTECTION Henneman Engineering Inc 200 S. Wacker Drive Suite 850 Chicago, IL 60606 ELECTRICAL, IT AND LEED ENGINEER	Shiner + Associates 225 W Washington St No 1625 Chicago, IL 60606 ACOUSTICAL CONSULTANT Erwin Consulting Services 1 Omni Drive Schaumburg IL 60193 ESTIMATING CONSULTANT	OF CHICAGO BUILDING SCHOOLS ACROSS CHICAGO CHICAGO PUBLIC SCHOOLS CPS	GARVY ELEMENTARY SCHOOL ADDITION 5225 N OAK PARK AVE CHICAGO, IL 60656 CHICAGO PUBLIC SCHOOLS CITY OF CHICAGO, MAYOR RICHARD M. DALEY PBC Contract No.: 0511 PBC Project No.: 05360 SMNG-A Project No.: 0902 / UW Project No.: P0903	Issuance Mark Description Date ADDENDUM #2 05.13.10	Title LIGHT MONITOR ENLARGED DETAILS
						Reference Sheet 2 AND 4/A6.10	Sheet ASK-18B

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HATCHED REGION INDICATES STORAGE/CORRIDOR IN EXISTING BLDG, THE FOLLOWING WORK SHALL BE DONE:

1. CONTRACTOR TO EXPOSE ALL STRUCTURE IN HATCHED AREA FOR FIELD STRUCTURAL REVIEW.
2. CONTRACTOR TO DRILL A 3"Ø HOLE THROUGH ENTIRE FLOOR ASSEMBLY IMMEDIATELY ADJACENT TO STEEL BEAM SUCH THAT THE BEAM SIZE AND PROPERTIES MAY BE VERIFIED, AS WELL AS THE THICKNESS OF CONCRETE/TILES.
3. CONTRACTOR TO REBUILD ALL REMOVED EXISTING CONSTRUCTION TO MATCH EXISTING AFTER ENGINEER'S APPROVAL.

SMNG-A
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Erwin Consulting Services
1700 West Superior Street 800
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**GARVY
ELEMENTARY SCHOOL ADDITION**
5225 N OAK PARK AVE CHICAGO, IL 60656
CHICAGO PUBLIC SCHOOLS
CITY OF CHICAGO, MAYOR RICHARD M. DALEY

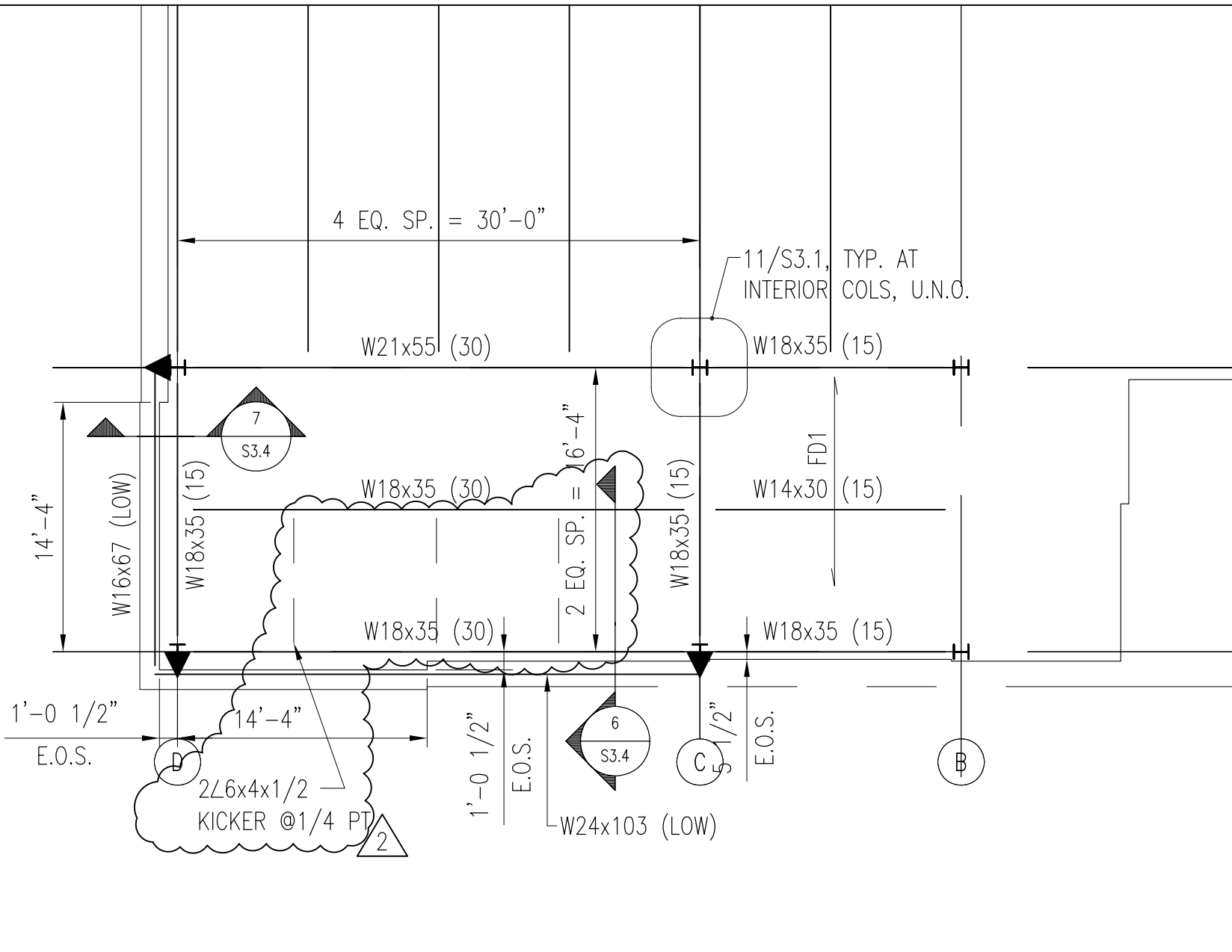
PBC Contract No.: 0511
PBC Project No.: 05360
SMNG-A Project No.: 0902 / UW Project No.: P0903

Issuance		
Mark	Description	Date
2	ISSUED FOR ADDENDUM #2	05/17/10

SCALE:
Reference Sheet
S1.2

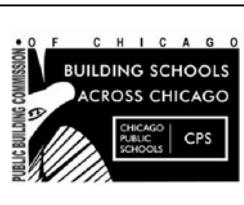
Title
**SECOND FLOOR
FRAMING PLAN**

Sheet
SSK-01



SMNG-A
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Erwin Consulting Services
 1 Central Office Schaumburg, IL 60193
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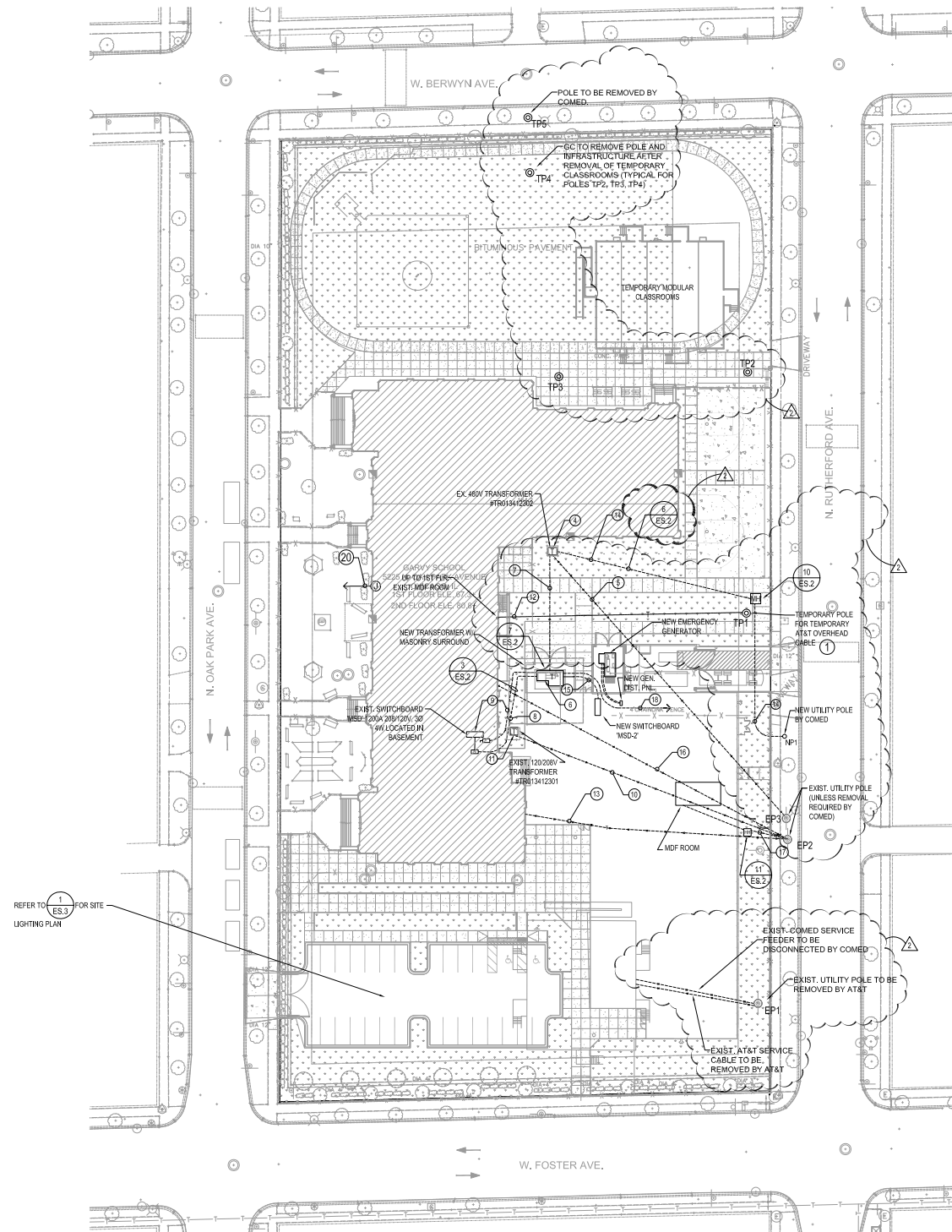
GARVY
ELEMENTARY SCHOOL ADDITION
 5225 N OAK PARK AVE CHICAGO, IL 60656
 CHICAGO PUBLIC SCHOOLS
 CITY OF CHICAGO, MAYOR RICHARD M. DALEY
 PBC Contract No.: 0511
 PBC Project No.: 05360
 SMNG-A Project No.: 0902 / UW Project No.: P0903

Issuance		
Mark	Description	Date
2	ISSUED FOR ADDENDUM #2	

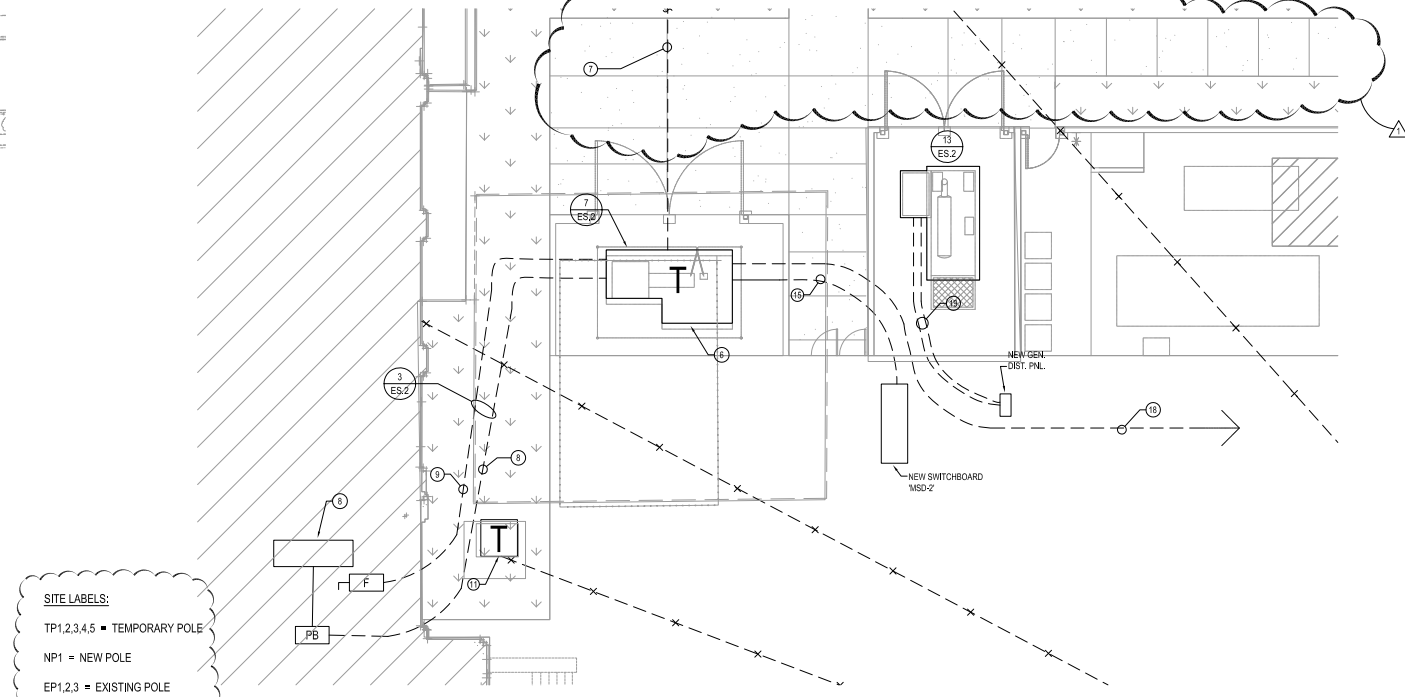
SCALE: 1/8" = 1'-0"
 Reference Sheet
S1.2

Title
**SECOND FLOOR
 FRAMING PLAN**
 Sheet
SSK-02

Mark	Description	Date
	ISSUE FOR SD	09.01.09
	ISSUE FOR DD	10.27.09
	80% CDs	01.05.10
	90% CDs	02.16.10
	100% CDs	03.24.10
	FOR BID	04.20.10
	ISSUE FOR ADDENDUM #2	05.13.10



1
ES.1 SITE PLAN - ELECTRICAL WORK
 1/32" = 1'



2
ES.1 ENLARGED GENERATOR AND UTILITY TRANSFORMER YARD AREA
 SCALE: 1/8" = 1'-0"
 12' 0" 1' 5' 10' 20'

SITE LABELS:
 TP1,2,3,4,5 = TEMPORARY POLE
 NP1 = NEW POLE
 EP1,2,3 = EXISTING POLE

ELECTRICAL KEYNOTES
PHASE I A
 1 INSTALLED DURING SITE PREP PROJECT.
 2 NOT USED.
 3 NOT USED.

- NOTES:**
- CONTRACTOR SHALL PROVIDE EXCAVATION, CONDUIT AND CONCRETE ENCASEMENT FOR TELEPHONE, CABLE TV, AND POWER UTILITY SERVICE DUCTS. COORDINATE WITH CIVIL DRAWINGS.
 - NOT USED.
 - PRIOR TO EXCAVATING FOR UNDERGROUND CONDUIT RUNS CALL DIGGER (312) 744-7000 48 HOURS (2 WORKING DAYS) BEFORE DIGGING. WHEN CROSSING ALLEYS OR SIDEWALKS. COORDINATE WORK WITH THE CITY OF CHICAGO DEPARTMENT OF STREETS AND COMPLY WITH THEIR REQUIREMENTS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO CONTACT AND LOCATE ALL UTILITIES PRIOR TO STARTING ANY WORK. RESTORE SURFACES.
 - ALL STUB-UPS SHALL BE RGS - HEAVY WALL. PROVIDE REDUCERS AS NEEDED.
 - NOT USED.
 - UNDERGROUND CONDUITS FOR THE ELECTRICAL SERVICE SHALL BE 36" BELOW GRADE AND AS REQUIRED BY COMED.
 - COORDINATE WITH COMED POWER COMPANY ALL REQUIREMENTS FOR TRANSFORMER PAD.
 - USE WIDE SWIPE ELBOWS FOR ALL UNDERGROUND CONDUITS.
 - REFER TO STRUCTURAL DRAWING S0.1 FOR CONDUIT PLACEMENT IN AND/OR THROUGH COMPOSITE SLABS REQUIREMENTS.
 - ELECTRICAL CONTRACTOR IS REQUIRED TO COORDINATE COMED, AT&T AND COMCAST INSTALLATION.
 - COORDINATE NEW HAND HOLE WITH OTHER TRADES FOR INSTALLATION FLUSH WITH FINISHED GRADE. LOCATE WITHIN 5'-0" OF BUILDING PERIMETER.
 - CONTRACTOR SHALL PROVIDE EXCAVATION, CONDUIT AND CONCRETE ENCASEMENT FOR TELEPHONE, CABLE TV, AND POWER UTILITY SERVICE DUCTS.
 - PROVIDE WATERTIGHT SEALS AROUND ALL CONDUIT PENETRATIONS THROUGH EXTERIOR WALLS.
 - ALL EMPTY CONDUIT PROVIDED FOR FUTURE USE SHALL BE PROVIDED WITH PULL LINES AND WATERTIGHT CAPS. MARK LOCATION OF CAPS.

- PHASE I B**
- CABINET BY COMED.
 - EXISTING PRIMARY FEEDER TO BE DISCONNECTED AND REMOVED BY COMED AFTER NEW SERVICE INSTALLATION IS COMPLETED AND ENERGIZED.
 - COMED TO INSTALL NEW SERVICE TRANSFORMER TO REPLACE EXISTING TRANSFORMER #TR013412301. SEE TRANSFORMER PAD DETAIL.
 - INSTALL NEW PRIMARY COMED DUCT BANK (BY GC). NEW PRIMARY CABLE TO BE CONNECTED TO NEW TRANSFORMER BY COMED.
 - INSTALL SECONDARY SERVICE FEEDER DUCT (BY GC) REFER TO SINGLE LINE DIAGRAM ON DWG. E7.1.
 - UTILIZE EMERGENCY SERVICE DUCT REFER TO SINGLE LINE DIAGRAM ON DWG. E7.1. TERMINATE NEW FEEDER AT EXISTING EMERGENCY SERVICE DISCONNECT SWITCH.
 - EXISTING PRIMARY FEEDER TO BE DISCONNECTED AND REMOVED BY COMED AFTER NEW SERVICE INSTALLATION IS COMPLETED AND ENERGIZED.
 - EXISTING TRANSFORMER TR #013412301 TO BE REMOVED BY COMED. REMAINING INFRASTRUCTURE TO BE DEMOLISHED BY GC.
 - INSTALL TEMPORARY OVERHEAD AT&T CABLES & TERMINATE THEM IN EXISTING MDF ROOM.
 - EXISTING AT&T OVERHEAD SERVICE CABLES TO BE REROUTED BY AT&T.
 - INSTALL PRIMARY COMED DUCT BANK (BY GC). NEW PRIMARY CABLE TO BE CONNECTED TO NEW TRANSFORMER BY COMED.
 - INSTALL SECONDARY SERVICE FEEDER DUCT REFER TO SINGLE LINE DIAGRAM ON DWG. E7.1. TERMINATE FEEDER AT NEW SWITCHBOARD 'MSD-2'.
 - REMOVE INACTIVE OVERHEAD COMCAST CABLE (BY COMCAST).
 - INSTALL NEW AT&T UNDERGROUND CABLES. TERMINATE CABLES IN NEW MDF ROOM. PROVIDE CONDUIT FOR COMCAST CABLE CONNECTION.
 - INSTALL SECONDARY SERVICE FEEDER DUCT FOR NEW FIRE PUMP.
 - INSTALL GENERATOR FEEDER DUCT. PULL 4#500 KCMIL (CU). TERMINATE FEEDER AT NEW GENERATOR DISTRIBUTION PNL.
 - 2" CONDUIT TO PROPERTY LINE FOR CITY FIRE ALARM TIE BOX. REFER TO DWG. E2.0 FOR CONDUIT LOCATION.

REFER TO 1 FOR SITE LIGHTING PLAN

PLUMBING FIXTURE SCHEDULE

		APPROVED MANUFACTURERS													
(A) AMERICAN STANDARD (AC) ACRYLINE (E) ELJER INDUSTRIES (K) KOHLER INDUSTRIES		(B) BEMIS (L) OLSONITE (S) SLOAN VALVE CO.		(Z) ZURN INDUSTRIES (D) COYNE & DELANY (C) CHICAGO FAUCET CO.		(CR) CREATIVE INDUSTRIES TERRAZO PRODS. (H) HAWS (G) GUY GRAY MFG. CO.		(M) MUSTEE (CH) CHURCH (BR) BRADLEY (SY) SYMMONS		(O) OASIS (EK) ELKAY MANUFACTURING INC. (P) POWERS (GR) GUARDIAN		(W) WOODFORD MANUFACTURING CO. (WS) WOODFORD MANUFACTURING CO. (J) J.R. SMITH MANUFACTURING CO. (T) T&S BRASS & BRONZE WORKS, INC.			
FIXTURE TYPE	FIXTURE MATERIAL	FIXTURE SYMBOL	FIXTURE	VALVE	SEAT	FAUCET	FAUCET AERATOR	FLOW RATE (GPM)	FIXTURE QUANTITY	TRAP	WASTE	VENT	C.W.	H.W.	REMARKS
WATER CLOSET	VITREOUS CHINA	WC-1	(A) 2257.103 (B) 111-1505 (K) K-4450-C	(S) 111ES-S (2) (Z) EQUAL	(L) 95 (CH) 9500C	-	-	1.28GPF	11	INTEGRAL	CI 4"	2"	1 1/2" TOP SPUD	-	SEE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS.
WATER CLOSET	VITREOUS CHINA	WC-2	(A) 2257.103 (B) 111-1505 (K) K-4450-C	(S) 111ES-S (2) (Z) EQUAL	(L) 95 (CH) 9500C	-	-	1.28GPF	4	INTEGRAL	CI 4"	2"	1 1/2" TOP SPUD	-	SEE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS AT ADA HEIGHT
WATER CLOSET	VITREOUS CHINA	WC-3	(A) 2257.103 (B) 111-1505 (K) K-4450-C	(S) 111ES-S (2) (Z) EQUAL	(L) 95 (CH) 9500C	-	-	1.28GPF	3	INTEGRAL	CI 4"	2"	1 1/2" TOP SPUD	-	SEE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS AT ADA HEIGHT
LAVATORY	VITREOUS CHINA	LAV-1	(BR) SS-3N/IR (3 USER)	-	-	INTEGRAL WITH LAV-1	-	0.5	4	1 1/2" "P" TRAP	1 1/2"	1 1/2"	COPPER 1/2"	COPPER 1/2"	PROVIDE INSULATION JACKET SUPPLY AND WASTE PIPES UNDER LAVATORY (SEE ARCHIT. DWGS. FOR MOUNTING HEIGHTS)
LAVATORY	VITREOUS CHINA	LAV-2	(A) 0355.012 (K) EQUAL	-	-	(S) ETF-600-A (Z) EQUAL	-	0.5	4	1 1/2" "P" TRAP	1 1/2"	1 1/2"	COPPER 1/2"	COPPER 1/2"	PROVIDE INSULATION JACKET SUPPLY AND WASTE PIPES UNDER LAVATORY (SEE ARCHIT. DWGS. FOR MOUNTING HEIGHTS)
URINAL	VITREOUS CHINA	UR-1	(Z) Z5758.206.00 ECO-VANTAGE (K) EQUAL	(Z) ZEG6003EV-HW (S) EQUAL	-	-	-	0.125 GPF	6	INTEGRAL	2"	1 1/2"	3/4" TOP STUD	-	HIGH EFFICIENCY. SEE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS.
SINK	STAINLESS STEEL	SK-1	(EK) LRAD 2521 WITH 6" DEPTH, OFF CENTERED REAR	-	-	(C) 201-AGN8AE3-317	(C) 52605-5JKCP	0.5	2	1 1/2" "P" TRAP	1 1/2"	1 1/2"	COPPER 1/2"	COPPER 1/2"	DECK MOUNTED FAUCET WITHOUT VACUUM BREAKER
SINK	EPOXY RESIN	SK-2	INTEGRAL WITH COUNTER TOP	-	-	(C) 929-369	(C) E7FC-JKCP	0.7	1	1 1/2" "P" TRAP	1 1/2"	1 1/2"	COPPER 1/2"	COPPER 1/2"	DECK MOUNTED FAUCET PROVIDE REMOTE VACUUM BREAKER @ 7'-6" A.F.F.
DRINKING FOUNTAIN	STAINLESS STEEL	DF-1	(EK) EDFPBM114C	-	-	INTEGRAL PUSH BUTTON	-	-	6	1 1/4"	1 1/2"	1 1/2"	COPPER 1/2"	-	BARRIER-FREE. SEE ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS.
MOP BASIN	PRECAST TERRAZZO	JC-1	(CR) MC2424-612	-	-	(C) 911-ISCIP	-	-	2	CI 3"	CI 3"	2"	COPPER 1/2"	COPPER 1/2"	INSTALL VACUUM BREAKER 7'-6" AFF (C) 892-G.
WALL HYDRANT	NICKEL BRONZE	WH-1	-	-	-	(Z) Z-1305	-	-	6	-	-	-	COPPER 3/4"	-	PROVIDE TESTABLE DOUBLE CHECK VALVE ADJACENT TO EACH WALL HYDRANT. WITH ACCESS PANEL.
ROOF HYDRANT	GALVANIZED STEEL	RH-1	-	-	-	(Z) Z1388	-	-	3	-	-	-	COPPER 3/4"	-	PROVIDE TESTABLE DOUBLE CHECK VALVE WITH ACCESS PANEL.
HOSE BIB	CHROME PLATED	HB-1	-	-	-	(Z) 293 (C) EQUAL	-	-	8	-	-	-	COPPER 3/4"	-	PROVIDE TESTABLE DOUBLE CHECK VALVE FOR EACH HOSE BIBB WITH ACCESS PANEL.
THERMOSTATIC MIXING VALVE	BRONZE	TMV-1	-	LEONARD TM-186 15020-PRV	-	-	NA	NA	1	-	-	-	1 1/2"	1 1/2"	SET TEMPERATURE TO MAXIMUM 115°F
THERMOSTATIC MIXING VALVE	BRONZE	TMV-2	-	WATTS SERIES USG-B	-	-	NA	NA	11	-	-	-	3/4"	3/4"	SET TEMPERATURE TO MAXIMUM 115°F WITH VACUUM BREAKER (INSTALL ONE TMV-2 FOR EACH LAVATORY AND SINGLE COMPARTMENT SINK)
THERMOSTATIC MIXING VALVE	BRONZE	TMV-3	-	WATERSAVER AP 3807	-	-	NA	NA	1	-	-	-	1"	1"	SET TEMPERATURE TO BETWEEN 60°F AND 90°F
EYE WASH	-	EW-1	-	-	-	(C) 9004-RHNF (GR) 618045C	NA	NA	2	-	-	-	1/2"	-	DECK MOUNTED

NOTE:

(1) PLUMBING CONTRACTOR SHALL FURNISH ALL ACCESSORIES REQUIRED FOR THE ELECTRONIC OPERATION OF WC-1, WC-2, WC-3, LAV-1, LAV-2, LAV-3, AND UR-1. ACCESSORIES SHALL INCLUDE, BUT NOT LIMITED TO: LOW VOLTAGE TRANSFORMER, CONTROL MODULES, MIXING VALVES, ECT. WIRING AND INSTALLATION SHALL BE BY THE ELECTRICAL CONTRACTOR.

(2) HIGH EFFICIENCY FLUSH VALVE

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GARVY
ELEMENTARY SCHOOL ADDITION

5225 N OAK PARK AVE CHICAGO, IL 60656
CHICAGO PUBLIC SCHOOLS
CITY OF CHICAGO, MAYOR RICHARD M. DALEY

PBC Contract No.: 0511
PBC Project No.: 05360
SMNG-A Project No.: 0902 / UW Project No.: P0903

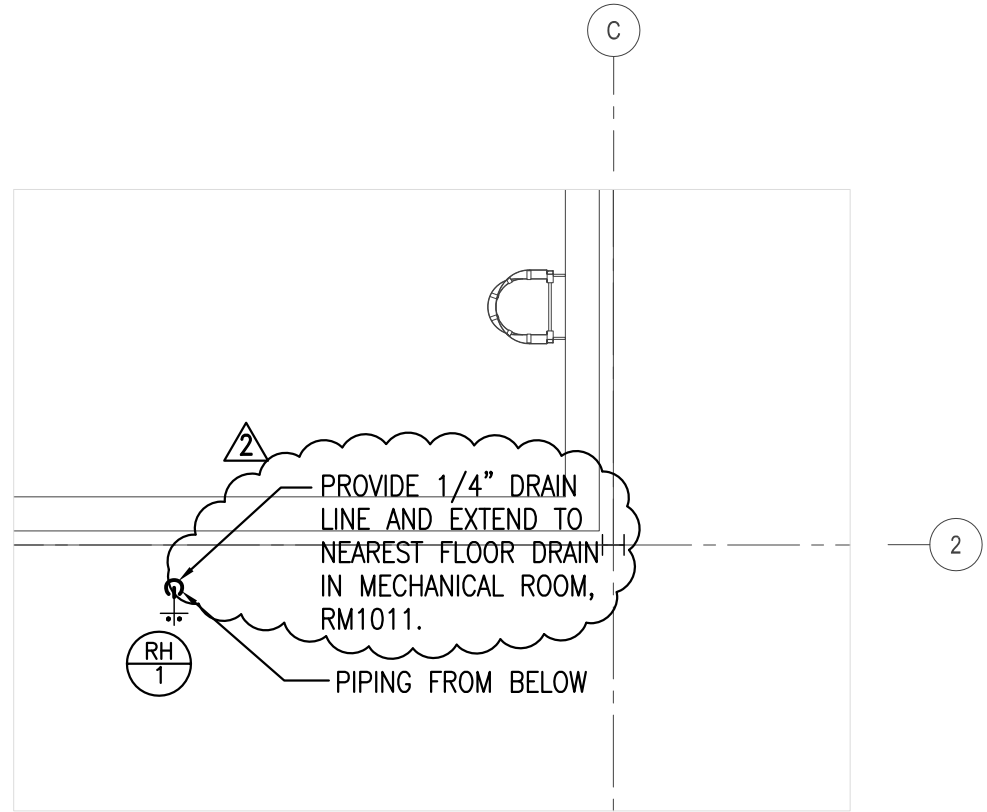
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2	ADDENDUM #2	5-13-10

SCALE: NONE

Reference Sheet
P3.5

Title
PLUMBING SCHEDULES

Sheet
PSK-2



1
PARTIAL ROOF PLAN
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PSK-3
1/8" = 1'-0"

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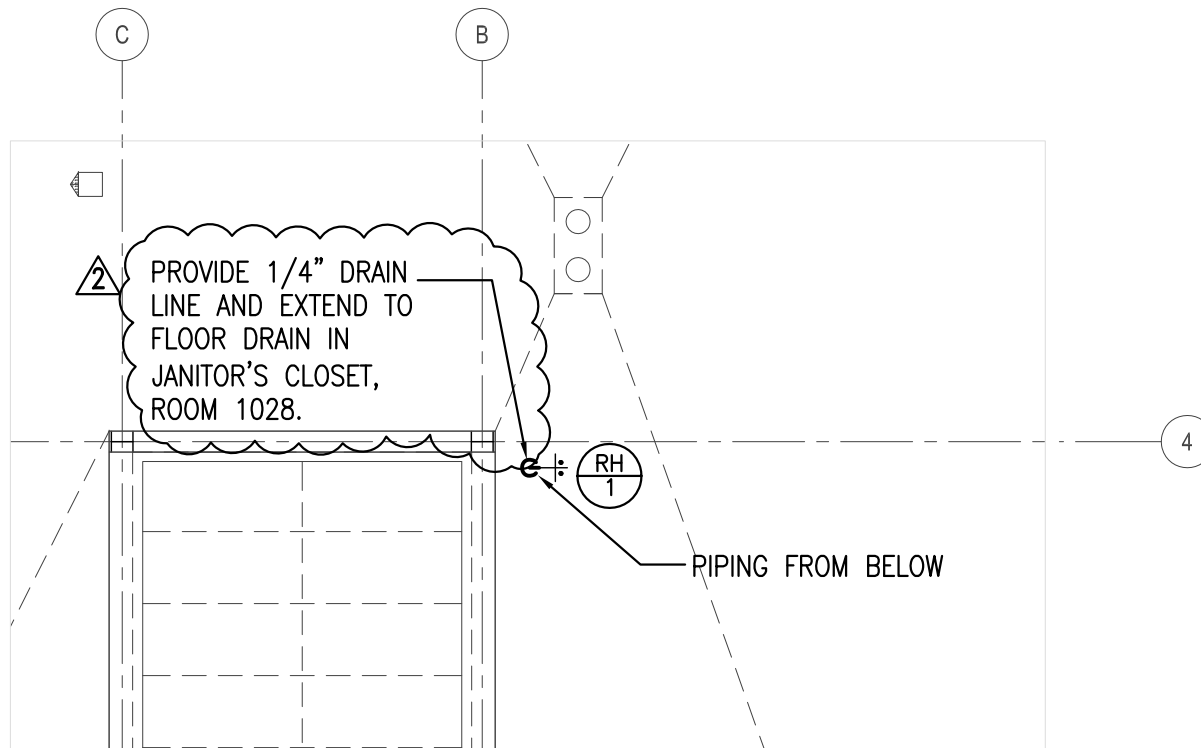
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SCALE: NONE

Reference Sheet
P2.4

Title
PARTIAL ROOF PLAN

Sheet
PSK-3



1
PARTIAL ROOF PLAN

PSK-4
1/8" = 1'-0"

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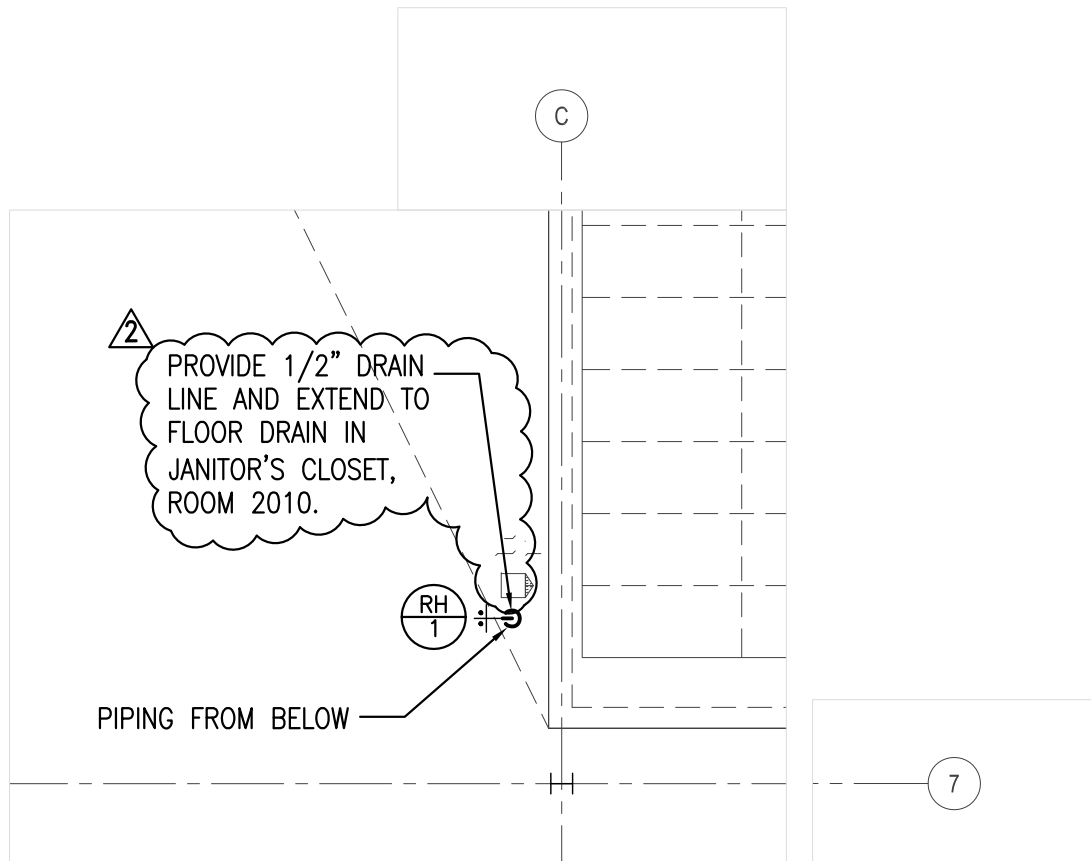
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SCALE: NONE

Reference Sheet
P2.4

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PARTIAL ROOF PLAN

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PSK-4



1
PARTIAL ROOF PLAN

PSK-5
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PSK-5