

SECTION 02 4113  
DEMOLITION**PART 1 - GENERAL****1.1 SUMMARY**

- A. This Section is a part of the entire set of Contract Documents and shall be coordinated with the applicable provisions of the other parts.
- B. Related Sections:
  - 1. Section 31 1000 Site Preparation
- C. Work includes demolition of the following items:
  - 1. Chainlink fence, gates, and footings
  - 2. Windscreens around dugout (turn over to Owner)
  - 3. Existing benches, helmet cubby, bat racks
  - 4. Asphalt roof and sheating
  - 5. Hollow-metal doors and frame

**1.2 SCOPE**

- A. The work under this section of the specifications shall consist of the removal and disposal of all items as indicated on the drawings. Contractor shall furnish all labor, materials and equipment to complete the work according to the drawings and specifications.
- B. The work under this section of the specifications shall consist of the removal and disposal of all items as indicated on the drawings. Contractor shall furnish all labor, materials and equipment to complete the work according to the drawings and specifications.
- C. All other facilities and items that are indicated shall remain and be protected from construction damage. Areas damaged to known fault of the Contractor during construction shall be repaired or replaced at the expense of the Contractor. Lawn, paving, and concrete damaged during construction shall be restored to the condition which existed prior to commencement of Contractor's work.

**PART 2 - PRODUCTS**

N/A

**PART 3 - EXECUTION****3.1 EXECUTION**

- A. General
  - 1. Contractor shall not, for any reason, dump or leave any excavated materials on property.
  - 2. Contractor shall remove all items as indicated on drawings.
- B. Removal of Debris

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1. Promptly remove cleared debris from the site.
2. Burning of debris on site is not permitted, unless permission is obtained from applicable regulatory authority.
3. Obtain permission from applicable regulatory authority for disposal of debris to waste disposal site.
4. Upon the removal of fence posts and or footings, excavated areas shall be backfilled.
  - a. Backfill shall be excavated soil material, free of rock or gravel larger than 2" in any dimension, debris, waste, frozen materials, vegetable matter, and other deleterious matter. Existing materials may be used for backfill, provided no silt is mixed with material. Backfill consists of placement of acceptable soil material in compacted layers of 8" maximum depth, in excavations, using a "jumping jack or pogo stick" style compactor to required subgrade elevation, for each area.
  - b. Fill Material: Fill material shall be clean, hard, durable, uncoated particles of sand or sand gravel mixture, provided that there shall be a substantial excess of sand-screenings. Peastone is also acceptable backfill material.

**END OF SECTION 02 4113**

SECTION 03 3010  
PORTLAND CEMENT CONCRETE

**PART 1 - GENERAL****1.1 SUMMARY**

- A. This Section is a part of the entire set of Contract Documents and shall be coordinated with the applicable provisions of the other parts.
- B. Related Sections:
  - 1. Section 32 1124 Aggregate Base Course

**1.2 SCOPE**

- A. The work under this section of the specifications shall consist of furnishing all labor, materials and equipment necessary to construct Portland cement concrete, turf anchor, concrete slabs, and foundations.

**1.3 QUALITY ASSURANCE**

- A. Reference Standards:
  - 1. American Society for Testing and Materials (ASTM):
    - a. ASTM A185 – Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete
    - b. ASTM A615 – Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
    - c. ASTM A82 – Standard Specification for Steel Wire, Plain for Concrete Reinforcement
    - d. ASTM C172 – Standard Practice for Sampling Freshly Mixed Concrete
    - e. ASTM C192 – Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory
    - f. ASTM C260 – Standard Specification for Air-Entraining Admixtures for Concrete
    - g. ASTM C309 – Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
    - h. ASTM C31 – Standard Specification for Making and Curing Concrete Test Specimens in the Field
    - i. ASTM C39 – Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
    - j. ASTM C618 – Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
    - k. ASTM C94 – Standard Specification for Ready-Mixed Concrete
    - l. ASTM C171-69 (1975) – Standard Specification for Sheet Materials for Curing Concrete
    - m. ASTM C309-74 – Standard Specification for Liquid Membrane Forming Compound for Curing Concrete
    - n. ASTM D1751-73 – Standard Specification for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).

**1.4 SUBMITTALS**

- A. Test Reports: Reports of Portland cement concrete compression, yield and air content tests.

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- B. Product Data: Submit data for propriety materials and items, including reinforcement and forming accessories, admixtures, patching compounds, joint systems, curing compounds, and others to the Landscape Architect/Engineer.
- C. Shop Drawings
  - 1. Reinforcement: Submit shop drawings for fabrication, bending, and placement of concrete reinforcement. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, diagrams of bent bars, arrangement of concrete reinforcement. Include special reinforcement required and openings through concrete structures.
- D. Samples: Submit samples of materials as specified and as otherwise requested by Landscape Architect, including names, sources and descriptions.
- E. Material Certificates: Provide materials certificates in lieu of material laboratory test reports when permitted by Landscape Architect/Engineer. Material Certificates shall be signed by manufacturer and Contractor, certifying that each material item complies with, or exceeds, specified requirements.

### 1.5 ENVIRONMENTAL REQUIREMENTS

- A. Portland Cement Concrete
  - 1. Allowable concrete temperatures
    - a. Cold Weather: Maximum and minimum.
    - b. Hot Weather: Maximum concrete temperature: 90°F. (23°C.)
  - 2. Do not place concrete during rain, sleet or snow.

### 1.6 PROTECTION

- A. Protect concrete from traffic for minimum of seven (7) days.

## PART 2 - PRODUCTS

### 2.1 FORM MATERIALS

- A. Forms for Unexposed Finish Concrete: Form concrete surfaces which will be unexposed in finished structure with plywood, lumber, metal or other acceptable material. Provide lumber dressed on at least 2 edges and one side for tight fit. Minimum thickness for lumber form shall be 1" for boards and 5/8" for plywood.
- B. Form Coatings: Provide commercial formulation form-coating compounds that will not bond with, stain nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces.
- C. Forms for Slab-on-grade construction joints: Forms for slab-on-grade construction joints shall be prefabricated metal forms to produce tongue and groove joint. Form shall be approved by Architect/Engineer.
- D. Synthetic turf anchoring curb system: Forms shall be prefabricated metal forms to produce tongue and groove joint. Automated self propelled curb-and-gutter equipment shall not be allowed.

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**2.2 REINFORCING MATERIALS**

- A. Reinforcing Bars: Grade 60, deformed
- B. Steel Wire: Plain, cold drawn, steel
- C. Welded Wire Fabric: Welded steel wire fabric, supplied in flat sheets.
- D. Supports for Reinforcement: Provide supports for reinforcement including bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcing bars and welded wire fabric in place. Use wire bar type supports complying with CRSI specifications, unless otherwise acceptable. Wood, brick and other devices shall not be acceptable.
  - 1. For slabs-on-grade, use supports with sand plates or horizontal runners where base material will not support chair legs. Concrete block or brick for support of reinforcement for slabs on grade shall be at least 2" wide, 3" long and of proper heights.

**2.3 READY MIXED CONCRETE**

- A. Cement type: type "1, 3500 psi" (28 day compressive strength)
- B. Admixtures:
  - 1. Air-entrained - 6%
  - 2. Fly Ash – Class C or F, except as modified herein.
    - a. Loss of ignition shall not exceed 4%.
    - b. Fine amount retained shall not exceed 25%.
    - c. Furnish documentation from an independent testing agency that fly-ash proposed for this project conforms to this specification."
- C. Slump: two (2) to three (3) inches.
- D. Minimum 564 lbs. of cement per cubic yard.
- E. No admixtures other than air-entraining without approval of the Architect.
- F. Water: Clean, fresh, potable and free of deleterious amounts of acids, alkalis, organic materials and/or dissolved or suspended materials of any kind.

**2.4 CURING MATERIAL**

- A. ASTM C171 4 MIL white opaque polyethylene type, or ASTM C309, type 2, white pigmented curing compound.

**2.5 EXPANSION JOINT FILLERS**

- A. Preformed non-extruding, resilient bituminous type, width as indicated on plans.

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**PART 3 - EXECUTION****3.1 INSPECTION**

- A. Verify the earthwork is completed to correct line and grade. Notify the Owner/Architect of any incomplete work by previous contractors.
- B. Check that sub-grade is smooth, compacted and free of frost or excessive moisture.
- C. Do not commence work until conditions are satisfactory.

**3.2 WEATHER PROTECTION**

- A. Cold weather: When the mean daily air temperature is 40°F. or below, provide suitable protection for concrete work to maintain a minimum concrete temperature of 50°F. for five (5) days (or 70°F. for three (3) days). After the protection period, do not let concrete cool more than 20°F. in each successive day.
- B. Hot weather: Employ suitable means to prevent too rapid drying. Shade fresh concrete as soon as possible without marring surface.
- C. Wet weather: Unless adequate protection is provided, do not place concrete in rain, sleet or snow.

**3.3 INSTALLATION**

- A. Contractor shall install the first section of sidewalk/slab/foundation as a quality sample in place. Upon approval of sample by Architect, further installation can proceed.
- B. The sub-grade upon which concrete is to be placed shall be prepared by excavation or filling with suitable earth to such depth below the finished grade line, that when tamped or rolled until smooth, firm and hard, the sub-grade will be uniform and at the required depth below finished grade line.
- C. Unsuitable sub-grade soils shall be replaced as directed.
- D. Gravel backfill, when specified in the drawings, shall be constructed to the required depth and thoroughly compacted.
- E. Cast in Place Concrete:
  - 1. Set forms to line and grade
  - 2. Install forms over full length of walk and oil before use.
  - 3. Forms shall be set accurately to line and grade. If the forms are set more than 0.01 foot (3mm) above or below grade or more than 0.01 foot (6mm) from prescribed alignment, they shall be corrected before any concrete is placed.
  - 4. Flexible forms of proper radii shall be used on all curves having a radius of 100 feet or less.
  - 5. Form contraction joints by tooling.
  - 6. Install expansion joint material behind walks at abutment curbs and adjacent structures with expansion joints every 100 feet (30m) or as detailed. Retaining wall shall have expansion joints every 25 feet.
  - 7. Provide sawcuts in concrete turf anchor every 10 feet. Sawcut depth shall be no more 3/4" deep and 1/8" in width.
  - 8. Place top of expansion joint material flush with walk surface, unless noted otherwise on plans.

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9. Place reinforcing materials.
10. Place concrete with mechanical vibrators.
11. Consolidate concrete with mechanical vibrators.
12. Round edges of walks and turf anchor at top with finishing tool,  $\frac{1}{4}$ " to  $\frac{3}{8}$ " radius. 1" radius for retaining wall.
13. Finished exposed walk surfaces with wood float followed by brushing with broom, smooth band of 12", unless otherwise shown on drawings.
14. Apply plastic sheeting or curing material and cure for seven (7) days.
15. Replace sections that pocket water.
16. Do not allow free drop of more than five (5) feet. Use elephant trunk when necessary.

### 3.4 FIELD QUALITY CONTROL

- A. Slump Tests: Make slump tests whenever concrete is being poured at the direction of the Owner.
- B. Compression Tests: Prepare standard test cylinders during the placing of concrete in accordance with ASTM C31 and ASTM C172. One set (three (3) cylinders) is required for each day's pour.
- C. Maintain two (2) cylinders at 50 to 70°F. and protect from loss of moisture at the job site for a period of not over 48 hours, then deliver to the laboratory for curing and testing at seven (7) and twenty-eight (28) days, respectively. Place third cylinder near the in place concrete and cure completely at the job in the same manner as the in place concrete. Deliver this cylinder to the laboratory for testing at twenty-eight (28) days. Cure and test cylinders in accordance with ASTM C31, C39 and C192. Submit test reports to the Architect in duplicate.

### 3.5 PROTECTION OF FINISHED SURFACES

- A. All finished surfaces of concrete shall be protected so as to prevent damage. Marking temporary nailing or other damaging use of surfaces will be prohibited.

### 3.6 PATCHING

- A. Patch to match material, color and texture of surrounding area.
- B. Replace defective work if patching is not acceptable to the Landscape Architect.

### 3.7 REPAIR/REPLACE

- A. Within first year of placement, concrete will be replaced at no additional cost to the Owner, if horizontal and/or vertical cracks exceed  $\frac{1}{8}$ ".
- B. Hairline cracks do not qualify for concrete replacement.

### 3.8 CLEAN UP

- A. The Contractor shall remove excess excavated material from the site of the work. Spread and finish grade topsoil within five (5) feet of pad edge. Topsoiling is incidental to concrete installation. Contractor shall clean up and dispose of rubble and construction debris satisfactory of the Owner and the Landscape Architect.

**END OF SECTION 03 3010**

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**PART 1 - GENERAL****1.1 SUMMARY**

- A. This Section is a part of the entire set of Contract Documents and shall be coordinated with the applicable provisions of the other parts.

**PART 2 - PRODUCTS****2.1 MATERIALS:**

- A. General Requirements:
  - 1. Specific materials (brands, trade names, sources of supply, etc.) must be approved by Landscape Architect before any materials are ordered.
  - 2. Once approved, the same materials must be used throughout entire job.
- B. Portland Cement: ASTM C150, Type 1.
- C. Sand: ASTM C144. Must be washed.
- D. Lime: Hydrated lime for masonry purposes, ASTM C207, Type S.
- E. Pea Gravel: ASTM C33, size #8 (1/4" – 3/8")
- F. Water: Clean, fresh, potable and free of deleterious amounts of acids, alkalis, organic materials and/or dissolved or suspended materials of any kind.
- G. Mortar Coloring for Block: Mortar for block shall be natural mortar color.
- H. Other Admixtures: None, unless authorized by Landscape Architect prior to application.

**PART 3 - EXECUTION****3.1 PREPARATION**

- A. Mortar shall be Portland cement-lime mortar mix proportioned with 1 part cement, 1 part lime, 6 cu.ft. sand (Type S Mix). Prepared mortar shall not be used.
- B. Mortar shall comply with requirements of ASTM C270 for Type S (1500 PSI compressive strength) mortar.
- C. Mortar shall contain minimum of 12% and maximum of 12% entrained air.
- D. Use all mortar within 2-1/2 hours after mixing.
- E. Mortar may be retempered as required, but in no case, if retempering is due to loss of water by hydration.

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MORTAR**3.2 BOND PATTERN**

- A. Lay concrete block in bond pattern with uniform coursing and jointing. Maintain vertical joints in line, with bond patten carefully preserved. Joints shall be 3/8" ( $\pm 1/8$ ").
- B. Commence tooling joint when mortar is "thumb hard" and bonds to the course above without leaving hair cracks. Unless otherwise required, cut flush and concealed joints; tool interior and exterior exposed joints in block to a uniform compressed concave surface with an oversize jointing tool.
- C. Rake out mortar in preparation for application of caulking or sealants where shown.
- D. Joints that are not tight at time of tooling shall be raked out.
- E. Units disturbed after laying: Remove, clean, and relay in fresh mortar.

**END OF SECTION 04 0513**

SECTION 07 7100  
ROOF SPECIALTIES**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

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

**1.2 SUMMARY**

- A. This Section includes the following manufactured roof specialties:
  - 1. Copings - Parapets and Gravel Stops.
  - 2. Roof edge flashings and drainage system.
  - 3. Counter-flashings and reglets.
  - 4. Shop-fabricated custom-built copings.

**1.3 PERFORMANCE REQUIREMENTS**

- A. General: Manufacturer and install manufactured roof specialties to resist thermally induced movement and exposure to weather without failing, rattling, leaking, and fastener disengagement.
- B. FMG Listing: Manufacture and install copings and roof edge flashings that are listed in FMG's "Approval Guide" and approved for Windstorm Classification, Class 1-90. Identify materials with FMG markings.
- C. Thermal Movements: Provide manufactured roof specialties that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. 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 (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- D. Water Infiltration: Provide manufactured roof specialties that do not allow water infiltration to building interior.

**1.4 SUBMITTALS**

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

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- B. Shop Drawings: Show layouts of manufactured roof specialties, including plans and elevations. Identify factory- vs. field-assembled work. Include the following:
  - 1. Details for fastening, joining, supporting, and anchoring manufactured roof specialties including fasteners, clips, cleats, and attachments to adjoining work.
  - 2. Details for expansion and contraction.
- C. Fabrication Samples (per Architect's request): For copings, roof edge flashings, roof edge drainage systems, counter-flashings and reglets made from **12-inch (300-mm)** lengths of full-size components including fasteners, cover joints, accessories, and attachments.
- D. Warranty: Special warranty specified in this Section.

### 1.5 QUALITY ASSURANCE

- A. Product Options: Information on Drawings and in Specifications establishes requirements for system's aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one 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, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

### 1.6 COORDINATION

- A. Coordinate installation of manufactured roof specialties with interfacing and adjoining construction to provide a leak-proof, secure, and noncorrosive installation.

### 1.7 WARRANTY

- A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace manufactured roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.
  - 1. Finish Warranty Period: Twenty (20) years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include the following:

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1. Architectural Products Co.
2. ATAS International, Inc.
3. Cheney Flashing Company.
4. Hickman: W.P. Hickman Co.
5. Metal-Era, Inc.
6. MM Systems Corp.
7. Southern Aluminum Flashing Co.
8. Savannah.
9. Manufacturers/Fabricators of Custom-built Roof Parapet and Copings.

## 2.2 EXPOSED METALS

- A. Aluminum Sheet: **ASTM B 209 (ASTM B 209M)**, alloy and temper recommended by manufacturer for use and finish indicated, finished as follows:
1. Surface: **Smooth, flat** finish.
- B. Aluminum Extrusions: **ASTM B 221 (ASTM B 221M)**, alloy and temper recommended by manufacturer for type of use and finish indicated, finished as follows:
- C. Aluminum Finishes:
1. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations relative to applying and designating finishes.
  2. Appearance of Finished Work: 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.
  3. Finish designations prefixed by AA conform to the system established by the Aluminum Association for designating aluminum finishes.
  4. Aluminum Finish Types:
    - a. Aluminum Members: ASTM B 221 for extrusions, ASTM B 209 for sheet/plate; alloy and temper recommended by the manufacturer for the strength required, for corrosion resistance, and for the finish required.
      - 1) Type AL-1      Not Used
      - 2) Type AL-2      Color Anodized Aluminum Finish – Bronze  
Class-1; Color anodized finish: AA-M12C22A42/A44  
(Nonspecular, as-fabricated Mechanical finish; medium etched matte chemical finish; integral or electrolytically deposited color, Architectural Class-1 anodic coating minimum 0.7 mil thick). Comply with AAMA 611.
      - 3) Type AL-3      Fluorocarbon Coating  
Finish: AA-C12C42R1x  
(Chemical finish: Cleaned with inhibited chemicals.  
Chemical finish: Chemical conversion coating, acid chromate- fluoride-phosphate pretreatment; Organic

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Coating – as specified). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's instructions.

Fluorocarbon 2-coat as required: Coating system: Manufacturer's standard, thermo-cured system composed of specially formulated inhibited primer, fluorocarbon color coat, and clear fluorocarbon topcoat with both color coat and clear topcoat containing not less than 70 percent polyvinylidene resin by weight. Comply with AAMA 605.

Color and Finish: Architect selected from Manufacturer's full range.

- D. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304, No. 2B (bright, reflective) finish.
- E. Prepainted, Zinc-Coated Steel Sheet: ASTM A 653/A 653M, **G90 (Z275)** coating designation, structural quality, and prepainted by the coil-coating process to comply with ASTM A 755/A 755M.
1. Surface: **Smooth, flat** finish.
  2. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
    - a. Fluoropolymer 2-Coat System: Manufacturer's standard 2-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 physical properties and coating performance requirements of AAMA 2604 or AAMA 2605, except as modified below:
      - 1) Color and Finish: Match Architect's sample where indicated.
      - 2) Color and Gloss: Architect selected from manufacturer's full range.
- F. Baked-Enamel Finish: Immediately after cleaning and pretreating, apply manufacturer's standard 2-coat, baked-enamel finish consisting of prime coat and thermosetting topcoat, with a minimum dry film thickness of 1 mil (0.025 mm) for topcoat. Comply with paint manufacturer's written instructions for applying and baking to achieve a minimum dry film thickness of 2 mils (0.05 mm).
1. Color and Finish: Match Architect's sample where indicated.
  2. Color and Gloss: Architect selected from manufacturer's full range of colors and finishes.

### 2.3 CONCEALED METALS

- A. Aluminum Sheet: **ASTM B 209 (ASTM B 209M)**, alloy and temper recommended by manufacturer for use and structural performance indicated, mill finished.
- B. Aluminum Extrusions: **ASTM B 221 (ASTM B 221M)**, alloy and temper recommended by manufacturer for type of use and structural performance indicated, mill finished.

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- C. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304.
- D. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 (Z275) coating designation; structural quality.

**2.4 MISCELLANEOUS MATERIALS**

- A. General: Provide materials and types of fasteners, protective coatings, separators, sealants, and other miscellaneous items required by manufacturer for a complete installation.
- B. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to withstand design loads.
  - 1. Exposed Penetrating Fasteners: Gasketed screws with hex washer heads matching color of sheet metal.
- C. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape.
- D. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane or silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- E. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant, polyisobutylene plasticized, heavy bodied for hooked-type expansion joints with limited movement.
- F. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil (0.4-mm) dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.
- G. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.
- H. Polyethylene Sheet: 6-mil- (0.15-mm-) thick polyethylene sheet complying with ASTM D 4397.
- I. Felt: ASTM D 226, Type II (No. 30), asphalt-saturated organic felt, nonperforated.
  - 1. Slip Sheet: Rosin-sized paper, minimum 3 lb/100 sq. ft. (0.16 kg/sq. m).

**2.5 ROOF COPINGS - PARAPETS/GRAVEL STOPS**

- A. General Requirements: Provide copings in shapes and sizes indicated, with shop-fabricated corners. Include anchor plates formed from at least 0.028-inch- (0.7-mm-) thick, galvanized steel sheet; cleats or other attachment devices; concealed splice plates; and trim and other accessories indicated or required for complete installation, with no exposed fasteners.
  - 1. Custom-built Manufacturers/Fabricators of Roof Copings – Contractor's Option:

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- a. Manufacturers/Fabricators of Custom-built Shop-Fabricated copings and gravel stops shall have been in continuous business for at least three (3) years.
  - b. Provide and fabricate custom-built copings and gravel stops complying with details shall be a complete water-tight assembly without exposed fasteners.
  - c. Coordinate fabricated items to be compatible and sized to fit with adjacent construction materials.
  - d. Provide materials in colors and finishes for selection as directed by the Architect.
2. Provide exposed coping components fabricated from the following metal:
- a. Extruded aluminum in thickness indicated, but not less than 0.060 inch (1.5 mm).
  - b. Formed-aluminum sheet in thickness indicated, but not less than 0.050 inch (1.3 mm) thick.
  - c. Coil-coated galvanized steel sheet in thickness indicated, but not less than 0.034 inch (0.85 mm) thick.

**2.6 ROOF EDGE FLASHINGS**

- A. Canted Roof Edge Fascia: Manufactured, two-piece, roof edge fascia consisting of **snap-on or compression-clamped** metal fascia cover in section lengths not exceeding **12 feet (3.6 m)** and a continuous formed galvanized steel sheet cant dam, **0.028 inch (0.7 mm)** thick, minimum, with integral drip edge cleat. Provide matching mitered and welded corner units.
- B. Roof Edge Fascia: Manufactured, two-piece, roof edge fascia consisting of snap-on metal fascia cover in section lengths not exceeding **12 feet (3.6 m)** and a continuous formed- or extruded-aluminum anchor bar with integral drip edge cleat to engage fascia cover. Provide matching mitered and welded corner units.
- C. Gravel Stops: Manufactured, one-piece, formed-metal gravel stop in section lengths not exceeding **12 feet (3.6 m)**, with a horizontal flange and vertical leg fascia terminating in a drip edge, continuous hold-down cleat, and concealed splice plates of same material, finish, and shape as gravel stop. Provide mitered and welded or soldered corner units.

**2.7 COUNTERFLASHINGS AND REGLETS**

- A. Manufacturer's Product: Provide a product by one of the listed manufacturers or a comparable product by one of the following:
- B. Manufacturers:
1. Castle Metal Products.
  2. Cheney Flashing Company.
  3. Fry Reglet Corporation.
  4. Hickman, W. P. Company.
  5. Keystone Flashing Company.
  6. Merchant & Evans, Inc.
  7. Metal-Era, Inc.
  8. MM Systems Corporation.



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- C. Counter-flashings: Manufactured units in lengths not exceeding **12 feet (3.6 m)** designed to snap into reglets and compress against base flashings with joints lapped, from the following exposed metal in thickness indicated:
1. Aluminum: **0.032 inch (0.8 mm)** thick.
  2. Stainless Steel: **0.0250 inch (0.65 mm)** thick.
  3. Prepainted, Zinc-Coated Steel: **0.028 inch (0.7 mm)** thick.
- D. Reglets: Manufactured units formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashings indicated with factory-mitered and -welded corners and junctions, from the following exposed metal in thickness indicated:
1. Aluminum: **0.050 inch (1.2 mm)** thick.
  2. Stainless Steel: **0.0187 inch (0.5 mm)** thick.
  3. Prepainted, Zinc-Coated Steel: **0.028 inch (0.7 mm)** thick.
  4. Type: Surface-mounted with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
  5. Type: For stucco application, with upturned fastening flange and extension leg of length to match thickness of applied finish materials.
  6. Type: For concrete application with temporary closure tape to keep reglet free of concrete materials, special fasteners for attaching reglet to concrete forms, and guides to ensure alignment of reglet section ends.
  7. Type: For masonry application, with offset top flange for embedment in masonry mortar joint.
  8. Type: Multiuse, for embedment in cast-in-place concrete or masonry mortar joints.
- E. Accessories: Counter-flashing wind-restraint clips.

**2.8 FINISHES**

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. 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.

SECTION 07 7100  
ROOF SPECIALTIES**PART 3 - EXECUTION****3.1 EXAMINATION**

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of work.
1. Examine walls, roof edges, and parapets for suitable conditions for manufactured roof specialties.
  2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
  3. Proceed with installation only after unsatisfactory conditions have been corrected.

**3.2 INSTALLATION**

- A. General: Install manufactured roof specialties according to manufacturer's written instructions. Anchor manufactured roof specialties securely in place and capable of resisting forces specified in performance requirements. Use fasteners, separators, sealants, and other miscellaneous items as required to complete manufactured roof specialty systems.
1. Install manufactured roof specialties with provisions for thermal and structural movement.
  2. Torch cutting of manufactured roof specialties is not permitted.
- B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
1. Coat concealed side of uncoated aluminum or stainless-steel manufactured roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
  2. Under-layment: Where installing exposed-to-view components of manufactured roof specialties directly on cementitious or wood substrates, install a course of felt under-layment and cover with a slip sheet, or install a course of polyethylene under-layment.
  3. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.
- C. Install manufactured roof specialties level, plumb, true to line and elevation, and without warping, jogs in alignment, excessive oil-canning, buckling, or tool marks.
- D. Install manufactured roof specialties to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
- E. Expansion Provisions: Provide for thermal expansion of exposed manufactured roof specialties. Space movement joints at a maximum of **12 feet (3.6 m)** with no unplanned joints within **18 inches (450 mm)** of corners or intersections.

SECTION 07 7100  
ROOF SPECIALTIES

- F. Fasteners: Use fasteners of type and size recommended by manufacturer but of sizes that will penetrate substrate not less than **1-1/4 inches (32 mm)** for nails and not less than **3/4 inch (19 mm)** for wood screws.
- G. Seal joints with elastomeric or butyl sealant as required by manufacturer of roofing specialties.

**3.3 COPING INSTALLATION**

- A. Install cleats, anchor plates, and other anchoring and attachment accessories and devices with concealed fasteners.
- B. Anchor copings to resist uplift and outward forces according to performance requirements.
  - 1. Interlock face and back leg drip edges of snap-on coping cap into cleated anchor plates anchored to substrate at **30-inch (760-mm)** centers, manufacturer's recommended spacing.
  - 2. Interlock face leg drip edge into continuous cleat anchored to substrate at **24-inch (600-mm)** centers manufacturer's recommended spacing . Anchor back leg of coping with screw fasteners and elastomeric washers at **24-inch (600-mm)** centers, manufacturer's recommended spacing.

**3.4 ROOF EDGE FLASHING INSTALLATION**

- A. Install cleats, cant dams, and other anchoring and attachment accessories and devices with concealed fasteners.
- B. Anchor roof edgings to resist uplift and outward forces according to performance requirements.

**3.5 COUNTERFLASHING AND REGLET INSTALLATION**

- A. Counter-flashings: Coordinate installation of counter-flashings with installation of base flashings. Insert counterflashings in reglets or receivers and fit tightly to base flashings. Extend counter-flashings **4 inches (100 mm)** over base flashings. Lap counter-flashing joints a minimum of **4 inches (100 mm)** and bed with elastomeric, butyl sealant.
- B. Reglets: Installation of reglets is specified in Division 03 Section "Cast-in-Place Concrete or Division 04 Section" Unit Masonry."

**3.6 CLEANING AND PROTECTION**

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder and sealants.

SECTION 07 7100  
ROOF SPECIALTIES

- C. Remove temporary protective coverings and strippable films as manufactured roof specialties are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.
- D. Replace manufactured roof specialties that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

**END OF SECTION 07 7100**

**PART 1 - GENERAL****1.1 SUMMARY**

- A. This Section includes surface preparation and field painting of exposed exterior and interior items and surfaces.
1. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections of work.
  2. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.
  3. Paint walls/ceilings with primer where finished coverings are to be installed.
  4. Paint Types, Colors and Finishes – For information, refer to Schedules located on Drawings.
  5. Use color prime system per manufacturer's recommendation.
  6. Repair and repainting of metal lockers or other metal surfaces.
  7. Repair and painting of existing, hard, slick and glossy surface materials.
- B. Paint exposed surfaces, except where natural finish indicates that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, Architect will select from standard colors and finishes available.
1. Painting includes field painting of exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron supports, and surfaces of mechanical and electrical equipment that do not have a factory-applied final finish.
- C. Do not paint manufacturers prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.
1. Prefinished items may include the following factory-finished components, unless otherwise indicated:
    - a. Architectural woodwork.
    - b. Metal toilet enclosures.
    - c. Metal lockers.
    - d. Finished mechanical and electrical equipment.
    - e. Light fixtures.
  2. Concealed surfaces include walls or ceilings in the following generally inaccessible spaces:
    - a. Foundation spaces.
    - b. Furred areas.
    - c. Ceiling plenums.
    - d. Utility tunnels.
    - e. Pipe spaces.
    - f. Duct shafts.

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PAINTING

3. Finished metal surfaces include the following:
  - a. Anodized aluminum.
  - b. Stainless steel.
  - c. Chromium plate.
  - d. Copper and copper alloys.
  - e. Bronze and brass.
4. Operating parts include moving parts of operating equipment and the following:
  - a. Valve and damper operators.
  - b. Linkages.
  - c. Sensing devices.
  - d. Motor and fan shafts.
5. Labels: Do not paint over UL, FMG, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

**1.2 DEFINITIONS**

- A. General: Standard coating terms defined in ASTM D 16 apply to this Section.
  1. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.
  2. Eggshell refers to low-sheen finish with a gloss range between 20 and 35 when measured at a 60-degree meter.
  3. Semigloss refers to medium-sheen finish with a gloss range between 35 and 70 when measured at a 60-degree meter.
  4. Full gloss refers to high-sheen finish with a gloss range more than 70 when measured at a 60-degree meter.

**1.3 SUBMITTALS**

- A. Product Data: For each paint system indicated. Include block fillers and primers.
  1. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material.
- B. Samples for Verification: For each color and material to be applied, with texture to simulate actual conditions, on representative Samples of the actual substrate.
  1. Provide a list of materials and applications for each coat of each Sample. Label each Sample for location and application.
  2. Submit three (3) samples on substrates for Architect's review of color and texture only:
    - a. Size: 6" x 6" minimum on actual material proposed in the project.
    - b. Paint color chips and stain colors.

SECTION 09 9100  
PAINTING**1.4 QUALITY ASSURANCE**

- A. Applicator Qualifications: A firm or individual in continuous business at least five (5) years experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project. Use only thinners approved by the paint manufacturer.
- B. Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.
- C. Coordination of Work: Review other sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information or characteristics of finish materials provided for use, to ensure compatible prime coats are used.

**1.5 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:
  - 1. Product name or title of material.
  - 2. Product description (generic classification or binder type).
  - 3. Manufacturer's stock number and date of manufacture.
  - 4. Contents by volume, for pigment and vehicle constituents.
  - 5. Thinning instructions.
  - 6. Application instructions.
  - 7. Color name and number.
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F (7 deg C). Maintain storage containers in a clean condition, free of foreign materials and residue.
  - 1. Protect from freezing and excessive temperatures where necessary. Keep storage area neat, orderly and well ventilated. Remove oily rags and waste daily. Take all precautions to ensure that workmen and work areas are adequately protected from fire hazards and health hazards resulting from handling, mixing and application of paints.

**1.6 PROJECT CONDITIONS**

- A. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F (10 and 32 deg C) or per manufacturer's written instructions.
- B. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F (7 and 35 deg C).
- C. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

SECTION 09 9100  
PAINTING**1.7 EXTRA MATERIALS**

- A. Furnish extra paint materials from the same production run as the materials applied and in the quantities described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.
1. Quantity: Furnish Owner with extra paint materials in quantities indicated below:
    - a. Two (2) full unopened gallons of each type of color and finish of paint.

**PART 2 - PRODUCTS****2.1 MANUFACTURERS**

- A. Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.
- B. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:
1. Benjamin Moore & Co. (Moore).
  2. Devoe Paint.
  3. ICI Dulux Paint Centers (ICI Dulux Paints).
  4. Pratt and Lambert (P&L).
  5. PPG Industries, Inc. (PPG).
  6. Sherwin-Williams Co. (S-W).

**2.2 PAINT MATERIALS, GENERAL**

- A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application.
- B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
1. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions.
- C. Chemical Components of Interior Paints and Coatings: Provide products that comply with the following:
1. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
  2. Restricted Components: Paints and coatings shall not contain any of the following:



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- a. Acrolein.
- b. Acrylonitrile.
- c. Antimony.
- d. Benzene.
- e. Butyl benzyl phthalate.
- f. Cadmium.
- g. Di (2-ethylhexyl) phthalate.
- h. Di-n-butyl phthalate.
- i. Di-n-octyl phthalate.
- j. 1,2-dichlorobenzene.
- k. Diethyl phthalate.
- l. Dimethyl phthalate.
- m. Ethylbenzene.
- n. Formaldehyde.
- o. Hexavalent chromium.
- p. Isophorone.
- q. Lead.
- r. Mercury.
- s. Methyl ethyl ketone.
- t. Methyl isobutyl ketone.
- u. Methylene chloride.
- v. Naphthalene.
- w. Toluene (methylbenzene).
- x. 1,1,1-trichloroethane.
- y. Vinyl chloride.

D. Colors: Colors and Finishes are indicated on the Architect's drawings.

### 2.3 CONCRETE UNIT MASONRY BLOCK FILLERS

A. Concrete Unit Masonry Block Filler: Factory-formulated high-performance latex block fillers.

- 1. Benjamin Moore; Moorcraft Super Craft Latex Block Filler.
- 2. Benjamin Moore; Moore's IMC Latex Block Filler.
- 3. ICI Dulux Paints; Bloxfil 4000-1000 Interior/Exterior Heavy Duty Acrylic Block Filler.
- 4. PPG 6-15 SpeedHide Interior/Exterior Masonry Latex Block Filler.
- 5. Sherwin-Williams; PrepRite Interior/Exterior Block Filler. B25 W25  
Sherwin-Williams Loxon Block Surfacer (A24 W200) should be used for low temperature or high Ph (alkali resistant).

### 2.4 EXTERIOR CONCRETE AND MASONRY PRIMERS

A. Exterior Concrete and Masonry Primer: Factory-formulated alkali-resistant acrylic-latex primer for exterior application.

- 1. Benjamin Moore; Moore's Acrylic Masonry Sealer. (for alkali-resistant)
- 2. Benjamin Moore; Moore's Alkali Masonry Sealer. (for alkali-resistant)
- 3. ICI Dulux Paints; 2000-1200 Dulux Professional Exterior 100 Percent Acrylic Latex Primer. (for alkali resistant)
- 4. PPG Paints; 6-603 SpeedHide Interior/Exterior Acrylic Latex Alkali Resistant Primer.
- 5. Sherwin-Williams; Loxon Exterior Masonry Acrylic Primer.

SECTION 09 9100  
PAINTING**2.5 EXTERIOR PAINT SCHEDULE**

- A. Paint colors, finishes and paint types are indicated on Schedules in the Drawings.
- B. General: Provide the following paint systems for the various substrates, as indicated.
1. Flat (Lusterless) Polyvinyl Acetate Finish: 2 coats with total dry film thickness of at least 2.5 mils.
    - a. First and Second Coats: Polyvinyl Acetate Copolymer Emulsion (FS TT-P-55, Type II).
 

Moore:	Moorgard Latex House Paint.
PPG:	6-610 Speedhide Exterior Flat Latex Paint.
P & L:	Pro-Hide Plus Interior/Exterior Vinyl-Acrylic Flat Paint.
S-W:	Weather Perfect Acrylic Latex Flat Exterior Finish.
Devoe:	DR20XX Wonder Guard Flat.
Glidden:	Endurance Flat House Paint.
ICI:	2210 Ultra-Hide Durus Exterior Acrylic Flat Finish.
- C. Ferrous Metal
1. Full Gloss Alkyd Enamel: 2 Finish coats over primer.
    - a. Prime Coat: Pigmented Primer (FS TTP-86). Primer is not required on items delivered shop primed. Do not mix "lead" in paints.
 

Moore:	Ironclad Retardo Rust Inhibitive Paint.
S-W:	S-W Kem Kromik Metal Primer. Kem Kromik Metal Primer (B50Z Series).
Devoe:	DP13201 Mirrolac All-Purpose Metal Primer.
ICI:	4160 Devguard Alkyd Rust Inhibitive Metal Primer.
PPG:	7-852/858 Rust Inhibitive Primer (852=White, 858=Red)
    - b. First and Second Finish Coats: High Gloss Alkyd Enamel (FS TT-E-489).
 

Devoe:	DP70XX Mirrolac Alkyd Gloss Enamel.
Moore:	Impervo High Gloss Enamel Exterior/Interior
PPG:	7-282 Industrial Gloss Enamel.
P & L:	Effecto Enamel.
S-W:	S-W Industrial Enamel B54 Series.
ICI:	4308 Devguard Alkyd Gloss Industrial Enamel.
- D. Zinc-Coated Metal
1. High Gloss Alkyd Enamel: 2 Finish coats over primer.
    - a. Prime Coat: Zinc Dust-Zinc Oxide Primer (FS TT-P-641).
 

Devoe:	DP13201 Mirrolac All-Purpose Metal Primer.
Glidden:	All-Purpose Metal Primer.
PPG:	6-209 Speedhide Galvanized Steel Primer.
S-W:	S-W Galvite Primer (B50 W230).
ICI:	4160 Devguard Alkyd Rust Inhibitive Metal Primer.
    - b. First and Second Finish Coats: High Gloss Alkyd Enamel (FS TT-E-489).
 

Devoe:	DP70XX Mirrolac Interior/Exterior Alkyd Gloss Enamel.
Glidden:	Y-4500-Line – Glid-Guard Alkyd Industrial Enamel.

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PPG: 7-282 Industrial Enamel Gloss.  
 S-W: S-W Industrial Enamel (B54 Series).  
 ICI: 4308 Devguard Alkyd Gloss Industrial Enamel.

- E. Exterior/Interior stain on concrete or concrete masonry units (CMU)
1. Stain: Applied on horizontal and vertical surfaces (where indicated).  
 S-W H&C Shield Plus Concrete Stain.  
 Canyon Tone Concrete stain

**2.6 INTERIOR PAINT SCHEDULE**

- A. Paint color, finishes and paint types are indicated in schedules in the drawings.
- B. General: Provide the following paint systems for the various substrates, as indicated.
- C. Concrete Masonry Units
1. Semi-Gloss Alkyd Enamel Finish: 2 Coats over filled surface with total dry film thickness not less than 3.5 mils, excluding filler coat.
    - a. Filler Coat: Solvent-Thinned Block Filler (FS TT-F-1098). Apply filler coat at a rate to ensure complete coverage with pores filled.  
 Moore: Moore's Waterproofing Masonry Paint.  
 S-W: S-W Block Filler. Preprite Block Filler (B25 W25)  
 ICI: 3010-1200 Ultra-Hide Interior/Exterior Vinyl Acrylic Block Filler.  
 Devoe: DV52903 Devoe-Fill Block Filler.  
 Glidden: 5317 Acrylic Block Filler.  
 PPG: 6-15 Speedhide Block Filler. B25 W25
    - b. First Coat: Enamel Undercoater (FS TT-E-543).  
 Devoe: 8801 Velour Alkyd Enamel Undercoat.  
 Glidden: Y-5019 – PVA Primer.  
 Moore: Moore's Alkyd Enamel Underbody.  
 S-W: S-W Pro-Mar Alkyd Semi-Gloss Enamel. (B34-200 Series)  
 ICI: 1516 Ultra-Hide Interior Alkyd Semi-Gloss Wall and Trim Enamel.  
 PPG: 6-1110 Alkyd semi-gloss enamel.
    - c. Second Coat: Odorless Interior Alkyd Semi-Gloss Enamel (FS TT-E-509).  
 Devoe: 26XX Velour Alkyd Semi-Gloss Enamel.  
 Glidden: Y-4600-Line – Spred Lustre.  
 Moore: Moore's Satin Impervo Enamel.  
 S-W: S-W Pro-Mar Alkyd Semi-Gloss Enamel. (B34-200 Series)  
 ICI: 1516 Ultra-Hide Interior Alkyd Semi-Gloss Wall and Trim Enamel.  
 PPG: 6-1110 Alkyd semi-gloss enamel.
- D. Gypsum Drywall and Plaster Systems
1. Lusterless (Flat) Emulsion Finish: 2 Coats.
    - a. First Coat: Interior Latex Base Primer Coat (FS TT-P-650).  
 Devoe: 50801 Wonder-Tones Latex Flat Wall Paint.  
 Glidden: PC1000 Primer Sealer.

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Moore: Moore's Latex Quick-Dry Prime Seal.  
 PPG: 6-2 PPG Quick-Drying Interior Latex Primer Sealer.  
 P & L: Pro-Hide Plus Latex Primer.  
 S-W: S-W Latex Wall Primer. Preprite Primer B28 W200  
 ICI: 1030-1200 Ultra-Hide PVA Interior Wall Primer.

- b. Second Coat: Interior Flat Latex Base Paint (FS TT-P-29).  
 Devoe: 36XX Wonder-Tones Interior Latex Flat Wall Paint.  
 Glidden: Y-3400-Line – Spred Satin Latex Wall Paint.  
 Moore: Moore's Regal Wall Satin.  
 PPG: 6-70 Speedhide Latex Flat Wall Paint.  
 P & L: Pro-Hide Plus Latex Flat.  
 S-W: S-W Pro-Mar 400 Latex Flat Wall Paint.  
 ICI: 1210 Ultra-Hide Latex Flat Interior Wall Paint.

## E. Ferrous Metal

1. Semi-Gloss Enamel Finish: 2 Coats over primer, with total dry film thickness not less than 2.5 mils. Do not mix "lead" in paints.

- a. Prime Coat: Base Primer (FS TT-P-86). Prime coat is not required on items delivered shop primed.

Moore: Iron-Clad Retardo Rust Inhibitive Paint.  
 S-W: S-W Kromik Metal Primer. Kem Kromik Metal Primer (B50Z Series)  
 Devoe: DP13201 Mirrolac All-Purpose Metal Primer.  
 ICI: 4160 Devguard Alkyd Rust Inhibitive Metal Primer.  
 PPG: 7-852/858 Rust Inhibitive Primer (852=White; 858=Red)

- b. First Coat: Interior Enamel Undercoat (FS TT-E-543).  
 Devoe: 8801 Velour Alkyd Enamel Undercoat.  
 Glidden: Y-4600 Series Spred Lustre Semi-Gloss Enamel.  
 Moore: Moore's Alkyd Enamel Underbody.  
 PPG: 6-1110 Speedhide Alkyd Semi-Gloss Enamel.  
 P & L: Interior Trim Primer.  
 S-W: S-W Pro-Mar Alkyd Semi-Gloss. (B34 – 200 Series)  
 ICI: 1516 Ultra-Hide Interior Alkyd Semi-Gloss Wall and Trim Enamel.

- c. Second Coat: Odorless Interior Semi-Gloss Enamel (FS TT-E-509)  
 Devoe: 26XX Velour Alkyd Semi-Gloss Enamel.  
 Glidden: Y-4600-Line – Spred Lustre Semi-Gloss.  
 Moore: Moore's Satin Impervo Enamel.  
 PPG: 6-1110 Alkyd Semi-Gloss Enamel.  
 P & L: Pro-Hide Plus Alkyd Semi-Gloss Enamel.  
 S-W: S-W Pro-Mar Alkyd Semi-Gloss Enamel. (B34 – 200 Series)  
 ICI: 1516 Ultra-Hide Interior Alkyd Semi-Gloss Wall and Trim Enamel.

## F. Zinc-Coated Metal

1. Semi-Gloss Finish: 2 coats over primer, w/ total dry film thickness not less than 2.5 mils.

- a. Prime Coat: Zinc Dust – Zinc Oxide Primer Coating (FS TT-P-641).  
 Devoe: DP13201 Mirrolac All-Purpose Metal Primer.  
 Glidden: All-Purpose Metal Primer.  
 Moore: Iron-Clad Galvanized Metal Primer.

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PPG: 6-209 Speedhide Galvanized Steel Primer.  
 S-W: S-W Galvanized Iron Primer. Galvite (B50 W230)  
 ICI: 4160 Devguard Alkyd Rust-Inhibitive Metal Primer.

- b. Second Coat: Interior Enamel Undercoat (FS TT-E-543).  
 Devoe: 8801 Velour Alkyd Enamel Undercoat.  
 Glidden: Y-4600 Series Spred Lustre Semi-Gloss Enamel.  
 Moore: Moore's Alkyd Enamel Underbody.  
 PPG: 6-1110 Alkyd Semi-Gloss Enamel.  
 S-W: S-W Pro-Mar Alkyd Semi-Gloss. (B34 – 200 Series)  
 ICI: 1516 Ultra-Hide Interior Alkyd Semi-Gloss Wall and Trim Enamel.

- c. Third Coat: Odorless Interior Alkyd Semi-Gloss Enamel (FS TT-P-509).  
 Devoe: 26XX Velour Alkyd Semi-Gloss Enamel.  
 Glidden: Y-4600-Line – Spred Lustre Semi-Gloss.  
 Moore: Moore's Satin Impervo Enamel.  
 PPG: 6-1110 Alkyd Semi-Gloss Enamel.  
 S-W: S-W Pro-Mar Alkyd Semi-Gloss Enamel. B34 – 200 Series  
 ICI: 1516 Ultra-Hide Interior Alkyd Semi-Gloss Wall and Trim Enamel.

## G. Epoxy Paint

1. One coat appropriate primer (compatible filler on block).
2. Two coats TT-P-550 epoxide polyester to produce dry film thickness between 6 and 8 mils.  
 Sheen: Medium eggshell, unless directed.
3. Vitreous wall surfacing shall be "Liquid-Tile" as manufactured by Evershield Products, Inc., "Gardcote," as manufactured by Devoe, Inc.; "Poly-Tile" as manufactured by Ever-Glaze Wall Surfacing Co., or "Pitt-Glaze" as manufactured by PPG Industries Pittsburgh Paint. SW Epo-Plex Water Based Epoxy (B71 – 100 Series)
4. All vitreous wall surfacing shall be certified to the State Fire Marshal's office as having a Class "A" fire rating.
5. Surfacing work shall be applied by skilled work persons and shall be done in a first class manner in accordance with manufacturer's specifications.
6. Surfacing shall not be applied until after masonry control joints have been caulked.
7. Colors shall be as selected by Architect.
8. Work of other trades shall be properly protected by masking or other approved methods. Remove all masking, boxes and other debris and leave area in broom clean condition at completion of work.

## J. Electrostatic Painting on Existing Metal Surfaces.

1. Existing materials to be repainted:
  - a. Metal Lockers
2. Electrostatic Painting: Ransburg #2 electrostatic deposition system combined with two (2) component type epoxy material as manufactured and prepared by Spectrum. The final coat of paint must be a two (2) part polyamide catalyzed epoxy enamel that has a combination of adhesion toughness, wear and chemical resistance properties. The lockers shall be painted on the outside face of the door, the leading edge opposite the hinges, and all exposed sides.
3. Painting Operation on Existing Lockers: The painting operation shall consist of the following:

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- a. Remove all existing locks, number plates and handles and other attached items in order to have a clean, neat appearance at completion. Mask all items neatly including existing items that cannot be removed for painting.
  - b. Lockers and other equipment shall be sanded to remove all rust and surface irritations that could flaw the final coat. Any areas that cannot be totally sanded will be scuffed in order to stop any adhesion problems.
  - b. Degrease and clean lockers and other equipment with a solvent to remove any surface contamination which could cause paint adhesion problems. The solvent shall have a flash point above 100 degrees Fahrenheit to present minimal fire hazard.
  - c. Prime lockers with a heavy duty rust inhibitive primer. Apply an intermediate coat between old painted surfaces and the new coating that could lift the existing paint.
  - d. The lockers and other equipment surfaces shall be dust coated in order to prevent runs and stop lifting.
  - e. The lockers and other equipment shall be final coated with a film of uniform thickness and have a smooth and clean appearance.
  - f. Reinstall locks, number plates and handles and other items. Remove all masking and dispose of all waste properly leaving job site neat and clean.
4. Storage of Materials and Cleanup: At the end of each day's work the Painting Contractor shall do the following:
- a. Remove and dispose of all protective maskings from surfaces adjacent to new coatings.
  - b. Reinstall any items removed during preparation. The Painting Contractor shall replace any lost or damaged items that were removed.
  - c. Clean all adjacent surfaces, as required, to remove possible overspray or residue from masking.
  - d. Submit a written log of work completed.
- K. Repair and Painting Of Existing Glossy Surface Materials:
1. Surfaces Of Existing Materials: Painted surfaces may be removed from the following:
    - a. Ceramic Tile and Glazed Block.
    - b. Formica, PVC. And Fiberglass.
    - c. Vinyl and Plastic.
    - d. Masonry and Concrete.
  2. Remove existing surfaces of materials of contamination such as oil, grease, loose paint, mill scale dirt, rust, mold, mildew, mortar efflorescence, sealers and other foreign matter to assure sound bonding of the new paint.
    - a. Surface Removal: Thorough wash painted surfaces with abrasive cleanser to a dull finish. Lightly fine sand surfaces until the paint gloss is completely removed.
    - b. Surface removal methods compatible with the material may be used:
      1. Solvent Cleaning per SSPC-SP1.
      2. Hand Tool Cleaning per SSPC-SP2.
      3. Power Tool Cleaning per SSPC-SP3.
      4. White Metal Blast Cleaning per SSPC-SP5 or NACE 1.
      5. Commercial Blast Cleaning per SSPC-SP6 or NACE 3
      6. Brush-Off Blast Cleaning per SSPC-SP7 or NACE 4.

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3. Repainting Procedures:
  - a. Repair any damaged surfaces with material compatible with the existing material. Select a small area for trial testing adhesion.
  - b. Lightly fine sand the entire areas and let dry for at least 36 hours. Protect and cover the surfaces from water and humid conditions.
  - c. Provide and install a prime paint coat compatible to the material. Allow to dry for seven days before testing for adhesion per ASTM D3359.
  - d. If the coating system is incompatible, completely remove the paint and begin again to the sanding procedures.
  - e. When the prime paint adhesion is acceptable, complete the second and finished third paint coat.
  
4. Paint Types:
  - a. Primer Paint: S-W; PrepRite Bonding Primer, B51 W50.  
One (1) coat at 1.5 to 2 mil DFT.
  - b. Finish Paint: Two (2) surface coats; S-W; ProMar 200 Series at 1.5 mils DFT/CT.  
Interior Latex Semi-Gloss or Latex Eg-Shel.

**PART 3 - EXECUTION****3.1 EXAMINATION**

- A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application.
  1. Start of painting will be construed as Applicator's acceptance of surfaces and conditions within a particular area.
  
- B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

**3.2 PREPARATION**

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.
  1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
  
- B. Cleaning: Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning.
  1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

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- C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
1. Provide barrier coats over incompatible primers or remove and reprime.
  2. Cementitious Materials: Prepare concrete, concrete unit masonry, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
    - a. Use abrasive blast-cleaning methods if recommended by paint manufacturer.
    - b. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not paint surfaces if moisture content exceeds that permitted in manufacturer's written instructions.
    - c. Clean concrete floors to be painted with a 5 percent solution of muriatic acid or other etching cleaner. Flush the floor with clean water to remove acid, neutralize with ammonia, rinse, allow to dry, and vacuum before painting.
  3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
    - a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
    - b. Prime, stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and back sides of wood, including cabinets, counters, cases, and paneling.
    - c. If transparent finish is required, backprime with spar varnish.
    - d. Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on back side.
    - e. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately on delivery.
  4. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC's recommendations.
    - a. Blast steel surfaces clean as recommended by paint system manufacturer and according to SSPC-SP 6/NACE No. 3.
    - b. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.
    - c. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by paint manufacturer, and touch up with same primer as the shop coat.
  5. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.
- D. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions.



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1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
  2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
  3. Use only thinners approved by paint manufacturer and only within recommended limits.
- E. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

**3.3 APPLICATION**

- A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
1. Paint colors, surface treatments, and finishes are indicated in the paint schedules.
  2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
  3. Provide finish coats that are compatible with primers used.
  4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, grilles, convactor covers, covers for finned-tube radiation, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.
  5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
  6. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.
  7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
  8. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
  9. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
  10. Sand lightly between each succeeding enamel or varnish coat.
- B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. The number of coats and film thickness required are the same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
  2. Omit primer over metal surfaces that have been shop primed and touchup painted.
  3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure that edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
  4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, and does not deform or feel sticky

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under moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.

- C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
1. Brushes: Use brushes best suited for type of material applied. Use brush of appropriate size for surface or item being painted.
  2. Rollers: Use rollers of carpet, velvet-back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
  3. Spray Equipment: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.
- D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.
- E. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.
- F. Mechanical items to be painted include, but are not limited to, the following:
1. Uninsulated metal piping.
  2. Uninsulated plastic piping.
  3. Pipe hangers and supports.
  4. Tanks that do not have factory-applied final finishes.
  5. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
  6. Duct, equipment, and pipe insulation having "all-service jacket" or other paintable jacket material.
  7. Mechanical equipment that is indicated to have a factory-primed finish for field painting.
    - a. Refer to Mechanical Specifications.
- G. Electrical items to be painted include, but are not limited to, the following:
1. Switchgear.
  2. Panelboards.
  3. Electrical equipment that is indicated to have a factory-primed finish for field painting.
    - a. Refer to Electrical Specifications.
- H. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.
- I. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.
- J. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

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- K. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes, or other surface imperfections.
  - 1. Provide satin finish for final coats.
- L. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections.
- M. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

**3.4 FIELD QUALITY CONTROL**

- A. Owner reserves the right to invoke the following test procedure at any time and as often as Owner deems necessary during the period when paint is being applied:
  - 1. Owner will engage a qualified independent testing agency to sample paint material being used. Samples of material delivered to Project will be taken, identified, sealed, and certified in the presence of Contractor.
  - 2. Owner may direct Contractor to stop painting if test results show material being used does not comply with specified requirements. Contractor shall remove non-complying paint from Project site, pay for testing, and repaint surfaces previously coated with the non-complying paint. If necessary, Contractor may be required to remove non-complying paint from previously painted surfaces if, on repainting with specified paint, the two coatings are incompatible.

**3.5 CLEANING**

- A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.
  - 1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

**3.6 PROTECTION**

- A. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect.
- B. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.
  - 1. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

**END OF SECTION 09 9100**

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SECTION 11 6838  
BASEBALL EQUIPMENT

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. This Section is a part of the entire set of Contract Documents and shall be coordinated with the applicable provisions of the other parts.

**1.2 SCOPE**

- A. The work under this section of the specifications shall consist of furnishing all labor, materials and equipment necessary for the installation of the following:
  - 1. Dugout storage for helmets and bats

**1.3 QUALITY ASSURANCE**

- A. Warranty Guarantee: The Contractor and any Sub-Contractors hereunder guarantee their respective work against defective materials or workmanship for a period of two (2) years from the date of filing notice of completion and an acceptance by the Owner.
- B. Product Testing: All material installed under this specification shall be subject to testing by Owner at his expense. Any material so inspected and found to be not in strict conformance with this specification shall be promptly removed and replaced by the Contractor at his expense.

**1.4 SUBMITTALS**

- A. Submit manufacturer literature, identifying the particular item to be installed. Manufacturer information should include photographs, and applicable technical information.

**PART 2 - PRODUCTS**

**2.1 CHURCHILL DUGOUT STORAGE**

A. <u>.ITEM</u>	<u>MANUFACTURER</u>	<u>MODEL</u>	<u>No.</u>
Front Bat Bin & Storage	Sportsfield Specialties	SUABBSS	2 total
Helmet Cubby & Coat Rack	Sportsfield Specialties	SUAHCCRWM	(16) 4-bay

- B. Storage unit and helmet cubbies shall included powder coated finish. Color to be selected by Owner from manufacturer's standard color options.

**2.2 STEVENSON DUGOUT STORAGE**

A. <u>.ITEM</u>	<u>MANUFACTURER</u>	<u>MODEL</u>	<u>No.</u>
Front Bat Bin & Storage	Sportsfield Specialties	SUABBSS	1 total
Helmet Cubby & Coat Rack	Sportsfield Specialties	SUAHCCRWM	(5) 4-bay

- B. Storage unit and helmet cubbies shall included powder coated finish. Color to be selected by Owner from manufacturer's standard color options.

SECTION 11 6838  
BASEBALL EQUIPMENT

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. Do not install equipment until dugout construction is complete.

**3.2 INSTALLATION**

- A. Baseball Items shall be installed as indicated on the drawings. This installation shall be in conformance of the National Federation High School Association specifications.

**3.3 CLEAN UP AND DISPOSAL**

- A. Remove from the site all equipment, materials, and debris resulting from construction work including this section. Leave work area neat and clean and in a condition acceptable by the Landscape Architect and Owner. All work shall be complete, ready for use, at the time of final acceptance.

**END OF SECTION 11 6838**

SECTION 12 935  
ALUMINUM BENCH

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. This Section is a part of the entire set of Contract Documents and shall be coordinated with the applicable provisions of the other parts.
- B. Related Sections:
  - 1. Section 03 3010 Portland Cement Concrete

**1.2 SCOPE**

- A. The work under this section shall consist of furnishing all labor, materials and equipment to for the installation of aluminum team benches.

**1.3 QUALITY ASSURANCE**

- A. Warranty Guarantee: The Contractor and any Sub-Contractors hereunder guarantee their respective work against defective materials or workmanship for a period of two (2) years from date of filing notice of completion and acceptance by Owner. Standard manufacturer’s warranty shall apply to products installed.

**PART 2 – PRODUCT**

**1.1 BENCHES (or approved equal)**

A.

<u>QUANTITY</u>	<u>ITEM</u>	<u>SIZE</u>	<u>MANUFACTURERS</u>	<u>MODEL NO.</u>
8	Players Bench	12'	National Recreation Systems Fort Wayne, IN (219) 482-6023	BE-DD12
			Sportsfield Specialties Delhi, NY (888) 975-3343	LG-STAL- NBSP-12

**PART 3 - EXECUTION**

**3.1 INSTALLATION**

- A. Benches shall be installed as per details in plans and per manufacturer’s recommendations.

**END OF SECTION 12 9305**

SECTION 12 935  
ALUMINUM BENCH

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SECTION 31 2000  
EARTHWORK**PART 1 - GENERAL****1.1 SUMMARY**

- A. This Section is a part of the entire set of Contract Documents and shall be coordinated with the provisions of the other parts.

**1.2 SCOPE**

- A. The work under this section of the specifications shall consist of furnishing all labor, materials, equipment, transportation, and services required to complete all earthwork as indicated on the drawings and specified herein. Adjustment of grades may be permitted, subject to prior approval by the Landscape Architect, providing the overall grading concept is maintained.

**1.2 QUALITY ASSURANCE**

- A. Excavation team shall be established and experienced with a minimum of 5 years experience constructing athletic fields.

**1.3 ENVIRONMENTAL REQUIREMENTS**

- A. The contractor is expected to visit the site to determine all conditions to be encountered, protect improvements on adjoining properties, as well as those on the owner's property, and to restore any improvements damaged by his work to their original condition, as acceptable to the owner or other parties or authorities having jurisdiction.
- B. The contractor shall perform all work so as to permit the site to be free draining at all times and to prevent ponding. Contractor shall provide positive drainage for the entire site during the course of construction to eliminate standing water in excavated areas.

**1.4 SAFETY CODES AND STANDARDS**

- A. Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

**1.5 LINES AND GRADES**

- A. The plans indicate lines, grades and elevations of the finish work. In general, areas to be paved shall be excavated and/or filled, and graded to the bottom elevations of such pavements. Grass areas shall be finish graded prior to seeding. Sod/seed areas shall be rough graded to 2" below finish grade prior to placement of topsoil.

**1.8 PROTECTION OF EXISTING TREES & VEGETATION**

- A. Protect existing trees, and other vegetation indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning and bruising of bark, smothering of trees by stock piling construction materials or excavated materials within drip line, excess foot or vehicle traffic, or parking of vehicles within drip line. Provide temporary fences, barricades or guards as required to protect trees and vegetation to be left standing. Provide protection for roots over 1.5 inches in diameter that are cut during construction operations. Coat the cut faces with emulsified asphalt or other acceptable coating that is specially formulated for horticultural use on cut or damaged plant tissues. Temporarily cover all exposed roots with wet burlap to prevent roots from drying out, provide earth cover as soon

SECTION 31 2000  
EARTHWORK

as possible. Repair or replace trees and vegetation damaged by construction operations in a manner acceptable to the Landscape Architect. Tree damage repair shall be performed by a qualified tree surgeon.

## **PART 2 - PRODUCTS**

### **2.1 BACKFILL AND FILL MATERIALS**

- A. Backfill shall be excavated soil material, free of rock or gravel larger than 2" in any dimension, debris, waste, frozen materials, vegetable matter, and other deleterious matter. Existing materials may be used for backfill, provided no silt is mixed with material. Backfill consists of placement of acceptable soil material in layers, in excavations, to required subgrade elevation, for each area classification listed below.
- B. Fill Material: Fill material shall be clean, hard, durable, uncoated particles of sand or sand gravel mixture, provided that there shall be a substantial excess of sand-screenings.

### **2.2 TOPSOIL**

- A. Existing onsite topsoil shall be screened and free of rock or gravel larger than 1" in any dimension, debris, waste, frozen materials, vegetable matter and other deleterious matter.
- B. Topsoil to have 5% organic peat content.
- C. Blend sand with screened topsoil to create a loamy-sand product.

## **PART 3 - EXECUTION**

### **3.1 EXCAVATION**

- A. Excavation consists of removal of material encountered to obtain required subgrade elevations.
  - 1. Excavation for Ditches: Cut ditches to cross-sections and grades as shown. Deposit excavated materials a sufficient distance from the edge of ditches to prevent cave-ins or material from sliding into ditch. Keep ditches free of leaves, sticks, and other debris until final acceptance of work.
  - 2. Removal of Unsatisfactory Soil Materials: Excavate unsatisfactory soil materials encountered that extend below required elevations, to additional depth directed by the Geotechnical Engineer and reviewed with Landscape Architect; refer to geotechnical evaluation report.
  - 3. Material Storage: Place excavated materials classified as unsatisfactory fill materials where directed by Owner's geotechnical consultant.
  - 4. Stability: Slope sides of excavations over five feet (5') deep to angle of repose of material excavated; otherwise shore and brace where sloping is not possible either because of space restrictions or stability of material excavated. Maintain sides and slopes of excavations in a safe condition until completion of backfill by scaling, benching, shelving, or bracing. Take precautions to prevent slides or cave-ins when excavations are made in locations adjacent to backfill excavations, and when sides of excavations are subjected to vibrations from vehicular traffic or the operation of machinery or any other source. Stabilize earth subgrades under areas of paving and after excavating, but prior to filling, by discing four inches (4") deep and by compacting same as specified for fills. Remove soft or unstable soil below finish grade elevations and backfill such voids with compacted fill material.

SECTION 31 2000  
EARTHWORK

### 3.3 BACKFILL AND FILL MATERIALS

#### A. Surface Preparation

1. Remove vegetation, debris, unsatisfactory soil materials, obstruction and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break up sloped surfaces steeper than one (1) vertical to four (4) horizontal so that fill material will bond with existing surface. When the existing ground surface has a density less than that specified under "Compaction" (3.2 A 2) for the particular area classification, break up ground surface, pulverize, and compact to the required depth and percentage of maximum density.
2. Compaction: Perform compaction of soil materials for fills and backfills using suitable soil compaction equipment for materials to be compacted and work area locations. Control soil compaction during construction for compliance with percentages of maximum density specified for each classification. All compaction tests shall be in accordance with ASTM D1557 or AASHTO T180 C Modified Proctor Method.
3. Placement And Compaction: Place backfill materials in layers not more than eight inches (8") in loose depth. Before compaction, moisten or aerate each layer, as necessary, to provide the optimum moisture content. Compact each layer to required percentage of maximum density for each area classification. Do not place backfill or fill material on surfaces that are muddy, or frozen, or contain frost or ice. Thoroughly compact all fill and backfill by rolling each layer, following spreading, as closely as possible. Roll the areas in equal amounts in two directions. Provide compaction equipment or type best suited to achieve the desired results with the type of soil. In general, use sheeps foot and/or tamping type rollers on soils of a cohesive type; pneumatic wheeled or vibrating rollers on granular fill material, all as approved by the Landscape Architect. Operate compacting equipment on each layer until the entire area has been thoroughly and uniformly compacted to the required density.
4. Maximum Density Requirements: Provide not less than the following percentages of maximum density of the same soil material compacted at optimum moisture content, for the actual density of each layer of soil material in place. Any soils found unsuitable for specified compaction requirements shall be removed as directed by Owner.
5. Lawn or Unpaved Areas: Compact top six inches (6") of subgrade and each layer of backfill or fill material at eighty-five percent (85%) maximum density.
6. Grading: Preparation of subgrade: Rough grade all areas within the limits of site grading under this section, including adjacent transition areas. The rough grade shall be compacted as required. Shape the surface of future lawn areas to the line grade and cross-section with the surface not more than 0.10 feet above or below a subgrade elevation. Take extreme care in the grading of swale areas to insure free movement of surface runoff. Ponding shall be non-existent or at a minimum.

### 3.4 FINISH GRADING

#### A. Sub-Soil Preparation

1. Fine grade sub-soil systematically to eliminate uneven areas and low spots. Remove debris, roots, branches, stones, etc., in excess of two inches (2") in size. Remove sub-soil which has been contaminated with petroleum products.
2. Bring sub-soil to required levels, profiles and contours suitable for receiving the required finish surfaces. Make changes in grade gradual; blend slopes into level areas. Maximum slope 4:1 unless otherwise indicated.
3. Cultivate sub-grade to a depth of six inches (6") where topsoil is to be placed. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted sub-soil.

SECTION 31 2000  
EARTHWORK

4. Compact sub-soil at the following percentages to a depth of 12 inches:
  - a. 95% Modified Proctor where asphalt/concrete is to be placed.
  - b. 80% Modified Proctor where topsoil is to be placed.

B. Placing Topsoil

1. Place to the following depths, up to finished grade elevations:
  - a. Four inches (4") for sodded and seeded areas
  - b. Use topsoil in relatively dry state. Place during dry weather.
  - c. Fine grade topsoil eliminating rough and low areas to ensure positive drainage. Maintain levels, profiles, and contours of finish grades shown on the plans.
  - d. Topsoil shall be worked to a smooth, uniform surface and compacted firmly. Any lumps or depressions which occur shall be regraded and re-rolled until a satisfactory grade is obtained. Areas adjacent to existing lawn shall be notched so new sod will be at the same grade. Immediately before seeding or sodding, rework the surface until it is fine, pulverized smooth seed or sod bed, varying not more than 1/8" in 10'.
  - e. Remove all stones, roots, grass, weeds, debris, and other foreign material while spreading.
  - f. Manually spread topsoil around trees, plants and buildings to prevent damage which may be caused by grading equipment.
  - g. Compact placed topsoil to 85% Modified Proctor.

**END OF SECTION 31 2000**

SECTION 32 3100  
CHAINLINK FENCE - GALVANIZED**PART 1 - GENERAL****1.1 SUMMARY**

- A. This Section is a part of the entire set of Contract Documents and shall be coordinated with the applicable provisions of the other parts.
- B. Related Sections:
  - 1. Section 03 3010 Portland Cement Concrete

**1.2 SCOPE**

- A. The work under this section of the specifications shall consist of furnishing all labor, materials and equipment necessary for a new chainlink fence system as indicated herein and on Contract Documents. Work shall include but not limited to footings, posts, fabric, rails, gates, and all related hardware.

**1.3 QUALITY ASSURANCE**

- A. Reference Standards:
  - 1. American Society for Testing and Materials (ASTM):
    - a. ASTM C94 – Standard Specification for Ready-Mixed Concrete
    - b. ASTM A116 – Standard Specification for Metallic-Coated, Steel Woven Wire Fence Fabric
    - c. ASTM A120 – Standard Specification for Black and Hot-Dipped Zinc Coated (Galvanized) Welded Seamless Pipe
    - d. ASTM A491 – Standard Specification for Aluminum Coated Steel Chain Link Fence Fabric
    - e. ASTM F567 – Standard Practice for Installation of Chainlink Fence
    - f. ASTM F900 – Standard Specification for Industrial and Commercial Swing Gates
    - g. ASTM 1083 – Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures
    - h. ASTM F1184 – Standard Specification for Industrial and Commercial Horizontal Slide Gates
- B. Weights and tolerances to conform to Federal Specification RR-F-191/1D, dated May 14, 1990. Mill certificates shall be made available at the request of the Landscape Architect or Owner.
- C. All material installed under this specification shall be subject to testing by the Owner. Any material so inspected and found to be not in strict conformance with this specification shall be promptly removed and replaced by the Contractor at his expense.

**1.4 WARRANTY GUARANTEE**

- A. The Contractor and any Sub-contractors hereunder guarantee their respective work against defective materials or workmanship for a period of one (1) year from the date of filing Certificate of Substantial Completion and as accepted by the Owner.

**1.5 PROJECT CONDITIONS**

- A. Field Measurements: Verify layout information for chainlink fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

SECTION 32 3100  
CHAINLINK FENCE - GALVANIZED**1.6 QUALIFICATIONS**

- A. Manufacturer: Company specializing in the manufacturing of products specified in this section with a minimum of ten (10) years experience
- B. Installer: Company specializing in performing work of this section with a minimum of five (5) years experience of comparable projects. Must have a minimum of two in-house fence installation crews.

**1.7 DELIVERY, STORAGE AND HANDLING**

- A. Deliver fence fabric and accessories in packed cartons or firmly tied rolls.
- B. Identify each package with manufacturer's name.
- C. Store fence fabric and accessories in a secure and dry place.

**1.8 SUBMITTALS**

- A. Shop drawings showing plan layout, spacing of components, post foundation dimensions, hardware, gates and schedule of components.
- B. Product Data: Submit product data on fabric pattern, posts, accessories, fittings, and hardware.
- C. At the request of the Architect, provide Material Certificates confirming product provided is Domestic pipe.

**PART 2 - PRODUCTS****2.1 MATERIALS**

- A. Framing Steel: ASTM F1083 domestic Schedule 40 galvanized steel pipe weighing three and sixty-five one-hundredths (3.65) lbs. per lineal foot or domestic SS-40 galvanized steel pipe weighing three and sixty-five one-hundredths (3.65) lbs. per lineal foot with hot dip galvanized zinc exterior and interior. Pipe shall utilize flow coat or inline galvanization process.
- B. Fabric Wire: ASTM A392 Class 1 zinc coated steel wire or aluminized steel wire.
- C. Concrete: ASTM C94; Portland Cement 3,500 psi strength at 28 days.

**2.2 COMPONENTS**

- A. Chain Link Fabric: The chain link fabric shall be 2" mesh, 9 gauge. Top and bottom selvage shall have knuckle finish. Fabric shall be free from barbs, icicles or other projections resulting from the aluminizing process, and any fabric not free thereof will be rejected even though erected. Bottom of fence fabric shall be 3/4" plus or minus 1/4" above grade.
- B. Line Posts: Line posts shall not be splice welded in such a manner that the weld appears above the grade line. All line posts shall have an outside diameter of 2 1/2". The chain link fabric shall be tied to the line posts with No. 9 gauge annealed galvanized steel tie wire. Fence fabric shall be secured to line posts no more than 18"O.C., with excess wire cut off and turned down.
- C. Terminal and Gate Post: Terminal and gate posts shall not be splice welded in such a manner that the weld appears above the grade line. End, corner and gate posts shall have an outside diameter of

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3" and weight of not less than five and seventy-nine one-hundredths (5.79) lbs. per lineal foot. Post caps at terminal posts shall be securely fastened to prevent removal.

- D. Terminal and Gate Post Fittings: Terminal and gate post fittings including tension bands, brace connections and top rail connections shall be No. 11 gauge. Hot-dipped iron or pot metal fittings will be accepted as equals or substitutes. Top rail, brace and truss bands shall not be less than one inch (1") wide, secured by five-sixteenths inch (5/16") diameter carriage bolts and nuts.
- E. Top Rail: Top rail shall meet the same specifications of quality as line and terminal posts. The top rail shall have an outside diameter of one and five-eighths inches (1-5/8") and weigh two and twenty-seven one-hundredths (2.28) lbs. per lineal foot. An outside sleeve-type coupling measuring not less than 6" in length shall be provided at each interval of twenty feet (20'). The chain link fabric shall be tied to the top rail at intervals of twenty-four inches (24") with No. 9 gauge annealed galvanized steel tie wire. Rail(s) shall be securely fastened by means of suitable malleable iron or pressed steel connections. The terminal ends of all top, bottom, mid and bracing rails shall utilize boulevard hardware that prevents insects from gaining access into top rails.
- F. Braces and Terminal Gate and Gate Posts: Terminal and gate posts shall be strengthened and reinforced by braces meeting the same specifications of quality as line and terminal posts. Braces shall be installed midway between top rail and grade and extend from each terminal post to the first adjacent line posts. Braces shall be securely fastened to posts by heavy pressed steel connections and also be trussed from line posts back to terminal post with a three-eighths inch (3/8") round truss rod complete with tightened unit.
- G. Bottom Tension Wire: Bottom tension wire shall be No. 6 gauge galvanized steel coil tension wire, high carbon or hard drawn, Class II, Aluminum Coated, fastened to the chain link fabric at intervals of twenty-four inches (24") with No. 11 gauge galvanized steel hog rings.
- H. Post Spacings and Settings:
1. Gate, terminal and end posts shall be set in concrete foundation not less than twelve inches (12") in diameter and not less than forty-two inches (42") in depth. Concrete shall attain a compressive strength of not less than three thousand five hundred (3,500) lbs. per square inch at the twenty-eighth (28th) day after pouring. Spacing of posts in the line of fence shall be uniform. See plans for dimensions.
  2. Line posts can either be set in concrete foundations as noted above or pneumatically driven.
  3. Refer to Chart in Section 3.2, A.
- I. Gates:
1. Gates shall be not less than four feet (4') wide and constructed and hung as detailed on drawings.
  2. Frames shall be constructed of pipe, having an outside diameter of 1.9" or alternately, being two inches (2") square and weighing two and seventy-two one-hundredths (2.72) lbs. per lineal foot. Gate frames shall be welded, or alternately, shall utilize corner fittings of heavy malleable iron or pressed steel securely riveted to the frame.
  3. Fabric matching the system fence fabric shall be installed in the frame by means of tension bars and hook bolts.
  4. Frames having corner fittings shall be equipped with adjustable truss rods having a diameter of three-eighths inches (3/8").
  5. Hinges shall be of adequate strength to support the gate and have large bearing surfaces for clamping in position. Under no conditions of use or abuse shall the hinges twist or turn under action of the gate.
  6. Gates shall be capable of being opened and closed quickly and easily by one (1) person. Gates shall be equipped with a positive strong arm latching device that will accommodate padlocking.

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A plunger rod, catch and semi-automatic outer catch shall be installed on drive gates so as to secure gates in an open position. Hinges, latches and catches shall be approved by the Landscape Architect.

J. Driven Post Caulk

1. Contractor is responsible to caulk around all driven fence posts.
2. Caulk shall be supplied from the following manufacturer:
  - a. Sportmaster "Courtflex Crack Sealant"  
Phone: 800-395-7325
  - b. Color: Neutral

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A. Examine areas and conditions, with Installer present, for compliance with requirements for a verified survey of property lines and legal boundaries, site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.
  1. Do not begin installation before final grading is completed unless permitted by Architect.
  2. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. Stake locations of fence lines, gates and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks and property monuments.

**3.2 INSTALLATION**

- A. All posts shall be set plumb and in accordance with the following table (unless specified otherwise):

1. Corner/Terminal and Bracing Post - General Fence

Fabric Height	Post Depth	Diameter of Foundation	Foundation Depth	Maximum Spacing
0' - 6'-0"	36"	12" min	42"	10'-0"
6'-1" - 12'-0"	36"	12" min	42"	10'-0"

2. Line posts shall be pneumatically driven into the ground using the following chart\*:

Fabric Height	Pipe Below Grade	Total Length of Post
4'	4'	8'
6'	5'	11'
8'	6'	14'
10'	7'	17'
12'	8'	20'

- B. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.
- C. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.
  1. Verify that posts are set plumb, aligned and at correct height and spacing, and hold position during setting with concrete or mechanical devices.



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2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
- D. Fence posts shall be installed with maximum 6 inches clear opening from end posts to buildings, fences, property lines or other structures.
- E. Install gates level, plum and secure for full opening without interference. Attach hardware using tamper-resistant or concealed means. Adjust hardware for smooth operation and lubricate where necessary.
- F. The fabric shall be installed on the court/playing side of posts. Bottom of fence fabric shall be 3/4" (+/-1/4") above the finished court surface. Fabric shall be furnished with selvage knuckled on both ends.
- G. Top of concrete footing shall be left down and topped with surrounding pavings as detailed. Asphalt cold patch is not acceptable.

**3.3 CLEAN UP AND DISPOSAL**

- A. Remove from the site all equipment, materials, and debris resulting from construction work included in this section. Leave work area neat and clean and in a condition acceptable by the Landscape Architect and Owner. All work shall be complete, ready for use, at the time of final acceptance.

**END OF SECTION 32 3100**

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SECTION 32 9227  
GENERAL LAWN RESTORATION

**PART 1 - GENERAL****1.1 SUMMARY**

- A. This Section is a part of the entire set of Contract Documents and shall be coordinated with the applicable provisions of the other parts.
- B. Related Sections:
  - 1. Section 31 2010 Earthwork

**1.2 SCOPE**

- A. The work under this section of the specifications shall consist of furnishing all labor, materials and equipment necessary for restoring disturbed lawn areas and maintaining lawns until final acceptance.

**1.3 QUALITY ASSURANCE AND WARRANTY GUARANTEE**

- A. Grass seed shall meet the tolerance for germination and purity of the Official Seed Analysis of North America.
- B. Submit all seed tags after completion of seeding.
- C. The Contractor, and its Subcontractors, shall provide a staff adequate to coordinate and expedite the work properly and shall maintain competent supervision of its own work to insure compliance with contract requirements.
- D. Contractor responsible for seeding and fertilizing shall inspect the finish grade for acceptability prior to application. Areas of discrepancy shall be indentified and Landscape Architect or Owner's Representative shall be notified.
- E. It is the responsibility of the Contractor to establish a dense lawn of permanent grasses, free from lumps, depressions and settlement. Any part of the area that fails to show a uniform germination shall be re-seeded and such re-seeding shall continue until a dense lawn is established. Damage to seeded areas resulting from erosion and through no fault of the Owner shall be repaired by the Contractor, at his expense.
  - 1. Guarantee shall extend for one year from the date of acceptance.

**1.4 SUBMITTALS**

- A. Submit product data for seed and fertilizer to Landscape Architect for approval, prior to application.

**1.5 DELIVERY, STORAGE AND HANDLING**

- A. Deliver grass seed in original containers showing analysis of seed mixture, percentage of pure seed, year of production, net weight, date of packaging and location of packaging. Damaged packages are not acceptable.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

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GENERAL LAWN RESTORATION

**PART 2 - PRODUCTS**

**2.1 SEED**

A. Seed shall be provided from one of the following suppliers

- EcoGreen Supply- 616-877-5326
- John Deere Landscapes - (800) 347-4272 (now Site One Landscapes)
- TurfGrass, Inc. – (248) 437-1427 (now Residex)
- Commerce Corp. – (800) 243-4769- closed (now BFG)
- Rhino Seed & Supply - (800) 482-3130
- Michigan State Seed Solutions - (800) 647-8873 (now Lacrosse Seeds)
- Tri Turf – (800) 636-7039

B. Contractors shall seed all areas disturbed during construction and not otherwise developed or indicated to be sodded. Topsoiling, finish grading and fertilization is to remain the same. \*Seed shall be new crop, cleaned, and comprising of the following varieties:

1. Athletic Field Seed blend shall consist of a minimum of 3 of the listed bluegrass varieties and one of the listed ryegrass varieties. Blend shall be 80% Kentucky Bluegrass and 20% Perennial Ryegrass by weight. Only Elite bluegrasses (according to NTEP characteristics ratings) will be allowed on Athletic surfaces. No “named common” types will be accepted. Enhanced Elite varieties will be allowed at same seeding rates.
2. General Seeding Areas: “Varieties Named” blend shall be 50-60% Kentucky Bluegrass and 40-50% Perennial Ryegrass by weight for irrigated fields. A “Varieties Named” blend of 60-70% bluegrass, 30-40% perennial ryegrass for non-irrigated fields, and a blend of 20-40% bluegrass, 20-40% perennial rygrass and 20-30% creeping red fescue for general turf areas.(VNS-varieties not stated- blends will not be accepted)
3. Athletic Fields

<u>Seed Varieties</u>	<u>Purity</u>	<u>Germination</u>
• Shannon Kentucky Bluegrass	95%	85%
• Lunar Kentucky Bluegrass	95%	85%
• SPF 30 Kentucky Bluegrass	95%	85%
• Fullback Kentucky Bluegrass	95%	85%
• Midnight Kentucky Bluegrass	95%	85%
• Hampton Kentucky Bluegrass	95%	85%
• Gaelic Kentucky Bluegrass	95%	85%
• BlueBank Kentucky Bluegrass	95%	85%
• Noble Kentucky Bluegrass	95%	85%
• Touchdown Kentucky Bluegrass	95%	85%
• Salinas Perennial Ryegrass	95%	85%
• Gray Star Perennial Ryegrass	95%	85%
• Sox Fan Perennial Ryegrass	95%	85%

4. General Seeding Areas

<u>Seed Variety</u>	<u>Purity</u>	<u>Germination</u>
• Shannon or Bluestar Kentucky Bluegrass	98%	85%
• Gaelic or Corsair Kentucky Bluegrass	98%	85%
• Lunar or Avalanche Kentucky Bluegrass	98%	85%
• Gray Star or Salinas Perennial Ryegrass	98%	90%
• SoxFan or Showtime Perennial Ryegrass	98%	90%
• Charger 2 Perennial Ryegrass	98%	90%

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- Oracle Creeping Red Fescue
98%
85%

## 2.2 COMMERCIAL FERTILIZER

- A. Fertilizer shall be uniform in composition, free-flowing and suitable for application with approved spreader, granular or pelleted with 50 percent (50%) of total nitrogen derived from a synthetic or natural organic material, delivered in original unopened containers with the analysis, type and trade name attached to each container. The composition shall be:

Fertilizer "A": applied at the time of seeding at 50 lbs. per 8000 square feet.  
16-32-4 (14.3% Ammoniacal Nitrogen, 1.7% Urea Nitrogen, 32% Phosphorus, 4% Available Potassium (SOP))

Fertilizer "B": applied 3-4 weeks after seeding at 50 lbs. per 8,000-10,000 square feet.  
22-16-6 (6.3% Ammoniacal Nitrogen, 15.7% Urea Nitrogen, 16% Phosphorus, 6% Soluble Potassium.)

Fertilizer "C" for enhanced establishment program (seed in lieu of sod)  
5-5-5 with Mycorrhiza (1.7% Ammoniacal Nitrogen, 3.3% Water Insoluble Nitrogen, 5% Available Phosphorus, 5% Available Potassium, 4% Calcium, 2.5% Magnesium, .2% Copper, 5% Iron, .2% Manganese, .2% Zinc, complete Mycorrhiza and Bacterial Package.)

Fertilizer "D" for enhanced establishment program (seed in lieu of sod)  
15-0-7 with Broad Spectrum Inoculant (bacterial package (.75% Ammoniacal Nitrogen, 3.75% Urea Nitrogen, 3.50% other water soluble nitrogen, 7% water insoluble nitrogen, 7% soluble potash, 1% Calcium, .5% Magnesium, 1% Sulphur, .1% Copper, 1% Iron, .5% Manganese, .1% Zinc. 100% slow release nitrogen derived from Feather Meal and Methylated Urea.)

- B. Complete Soil testing for both fertility (including micronutrients, CEC, pH) and particle size is **required** on all new establishment sites
- C. A critical establishment fertilizer application comes at planting whereas fertilizer in a ratio of 2-4-1 is applied directly adjacent to the seed to compensate for the seeds inability to extract phosphorus and other nutrients out of the soil Usually approx. 1lb. of P205 is applied with ½ lb. of N and ¼-½ lb of K20 is applied. An analysis of 16-32-4 would be an example. Fertilizer ingredients with lower chloride index are preferred at seeding, such as Ammonium Sulfate and Sulfate of Potash.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Protect existing underground improvements from damage.
- B. Remove all foreign materials, plants, roots, stones, and debris larger than 1" in any dimension from site. Do not bury foreign material.
- C. Loosen soil to a depth of four inches (4") in lawn areas by approved method of scarification and grade to remove ridges and depressions. Remove all stones or foreign matter from top two inches (2") of soil.

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GENERAL LAWN RESTORATION

- D. If above steps have had rain in sufficient quantity to cause soil to recompact, entire steps are to be done prior to seeding.
- E. Where no grades are shown, areas shall have a smooth and continual grade between existing or fixed controls and elevations shown on plans. Roll, scarify, rake and level as necessary to obtain true, even lawn surfaces. All finish grades shall meet approval of the Owner.
- F. Grade lawn areas to finish grades, filling as needed or removing surplus dirt and floating areas to a smooth, uniform grade. All lawn areas shall slope to drain.

### 3.2 PREPLANT FERTILIZING

- A. Broadcast spread fertilizer "A" (or Alternates "C" and "D") after seeding at a rate of 2 lbs. of Phosphorus per 1000 square feet. (Apply Alternate "C" at 50 lbs. per 5000 square feet and Alternate "D" at 50 lbs. per 10,000 square feet.)

### 3.3 SEEDING

- A. Dates of Seeding:
  - 1. Grass seed shall be sown in the fall from August 15th until October 15th or in the spring between March 1st and May 15th or at such other times as approved by the Landscape Architect. All seeding is to be done in dry or moderately dry soil and at times when the wind does not exceed a velocity of five (5) miles per hour.
  - 2. If special conditions exist, which may warrant a variance in the above dates, submit a written request to the Landscape Architect stating the conditions and proposed variance. Permission for the variance will be given if, in the opinion of the Landscape Architect, the variance is warranted.
- B. Seed Application:
  - 1. Immediately before sowing the seed, the earth surface shall be re-worked until it is a fine, pulverized, smooth seedbed, showing not more than 1/4" variance from grade.
  - 2. Apply seed mixture, as specified, at a rate of two and one half to four (2.5-4) lbs./1000 sq. ft. Apply seed in two directions where possible at a rate of 1.25-2 lbs. /1000 sq. ft. in each direction with seeder, using a cultipacker type seeder such as Brillion (or equal) mounted on tractor. Seed shall be uniformly spread over the previously fine graded and fertilized topsoil. The surface shall be dry when seed is planted. Hand sew seed around each irrigation system head. **Hydro-seeding is not acceptable.**
  - 3. Mulching: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, 6 inches (150mm) long.
  - 4. Contractor shall return to site six (6) weeks after installation to remove mesh.
- C. Summer Seeding:
  - 1. If seeding is authorized between June 1 and August 15, annual rye shall be sown separately in addition to specified seed mix. Sow at the rate of (one) 1 lbs./1000 sq. ft.
  - 2. Cultipacker or approved similar equipment may be used to cover the seed and to firm the seed bed in one operation. In areas inaccessible to cultipacker, the seeded ground shall be lightly raked and rolled in two directions with a water ballast roller. Extreme care shall be taken during seeding and raking to insure that the seed is not raked from one spot to another.

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3. The seeded areas are to be protected, watered, mowed and otherwise maintained until Owner Acceptance.
- D. Post Seeding Fertilizer: Supply fertilizer "B" when grass reaches height of one (1) inch or 3 weeks after seeding at .75-1 lbs Phosphorus per 1000 square feet.
- E. Maintenance
1. Maintenance of all lawns consist of mowing, watering and repairing erosion. Maintenance of lawns shall commence when any portion of the seeding has been completed. Seeded lawns shall never reach a height of three (3) inches prior to a cutting and shall be cut to a height of two (2) inches.
  2. If, for reasons beyond the Sub-contractor's control, the height of the grass has exceeded three (3) inches, the mower blades shall be raised so that at no time will more than 1/3 of the grass leaf surface be removed.
  3. Contractor shall notify the Owner through the Landscape Architect in writing one (1) week in advance of the final lawn cutting to allow the Owner and the Landscape Architect to inspect the lawns and schedule his maintenance work. The Owner will accept the lawns after a minimum of three (3) cuttings if a uniform cover of grass is established and is acceptable to Owner and Landscape Architect.
  4. If an infestation of weeds or crab grass develops prior to acceptance of the lawn, the Contractor shall treat the infestation by hand weeding or chemical control. The chemical control shall be furnished and installed by the contractor as recommended by the manufacturer and approved by the Landscape Architect. At least two weeks shall elapse after chemical control is applied before a request or inspection for acceptance is made to the Landscape Architect.

**3.4 SATISFACTORY TURF**

- A. Turf installations shall meet the following criteria as determined by Architect:
- a. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over an 10 square foot and bare spots not exceeding 5 by 5 inches.
  - b. Use specified materials to reestablish turf that does not comply with the requirements and continue watering and maintenance until turf is satisfactory.

**3.5 CLEAN UP AND DISPOSAL**

- A. Remove from the site all equipment, materials, and debris resulting from construction work including this section. Leave work area neat and clean and in a condition acceptable by the Landscape Architect and School District. All work shall be complete, ready for use, at the time of final acceptance.

**END OF SECTION 32 9227**

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GENERAL LAWN RESTORATION

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