Technical Specifications

LOCAL PARK AND RECREATION FUND
THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION

RESTROOM / EQUIPMENT BUILDING
PEAY PARK SPLASH PAD
GOODLETTSVILLE, TENNESSEE

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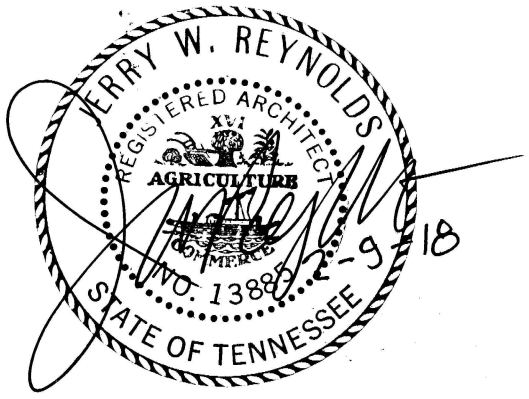

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SECTION 03100

CONCRETE FORMWORK

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. All formwork for cast-in-place concrete, complete with shoring, bracing and anchorage.

B. Form openings for mechanical and electrical work.

C. Coordinate installation of items supplied by other sections of work.

D. Pre-formed construction joints.

1.02 RELATED REQUIREMENTS

A. Section 03200: Concrete Reinforcing.

B. Section 03300: Cast-In-Place Concrete.

C. Section 04200: Masonry.

D. Section 05500: Metal Fabrications

E. Division 15: Mechanical items to be imbedded in concrete.

F. Division 16: Electrical items to be imbedded in concrete.

1.03 QUALITY ASSURANCE

A. Construct and erect concrete framework in accordance with ACI 347 and applicable construction safety regulations for place of work.

1.04 REFERENCES

A. The following references shall be obtained by the General Contractor and maintained at the job site:
   1. ACI 301 - Specifications for Structural Concrete for Buildings.
   2. ACI 347 - Recommended Practice for Concrete Formwork.

1.05 ALLOWABLE TOLERANCES

A. In accordance with ACI 301 as listed in table 4.3.1 - Tolerances for Formed Surfaces.

1.06 SUBMITTALS

A. Submit shop drawings and product data in accordance with Section 01340.

PART 2 PRODUCTS

2.01 FORM MATERIALS

A. Plywood: B-B Plyform, class I or II, Ext-APA; sound undamaged sheets with clean true edges.

B. Lumber: No. 2 common southern pine, S4S, or better, with grade stamp clearly visible.

C. Nails, spikes, lag bolts, anchorages: Size as required; of sufficient strength and character to maintain formwork in place while pouring concrete.

D. Metal or fiberglass forms may be used when approved in writing by the Architect.

E. Where earth is firm enough to permit cutting true sizes, or where rock is cut to true size, concrete for footings or unexposed walls may be placed without forms.

2.02 FORMWORK ACCESSORIES

A. Form ties: Snap-off metal type of fixed length; minimum working strength of 3000 psi when assembled; free of defects that will leave holes larger than 1" in concrete surface and that will break off at least 1/2" below the surface of concrete.

B. Water sealing form ties: All liquid retaining concrete structures shall have water sealing form ties such as Burke Inner Rod With Water Seal Washer, Richmond Waterseal Snap Ty, or equal.

C. Form release agent: Colorless mineral oil which will not stain concrete.

D. Filets for chamfered corners: Rigid foam plastic type; 3/4" x 3/4" size of maximum possible lengths.

2.03 CONCRETE ACCESSORIES

A. Expansion joint filler: Asphalt impregnated, premolded fiberboard by full thickness of slab or joint meeting requirements of ASTM D994. Allow for caulk seal of joints.

PART 3 EXECUTION

3.01 FORMWORK ERECTION

A. Verify lines, levels and centers before proceeding with formwork. Verify that dimensions agree with the Drawings.

B. Construct formwork, shoring, and bracing to meet design and code requirements, so that resultant finished concrete conforms to required shapes, lines and dimensions.

C. Arrange and assemble formwork to permit dismantling and stripping, so that concrete is not damaged during its removal.

D. Align joints. Keep form joints to a minimum.

E. Obtain Architect's review for use of earth forms. When using earth forms, hand-trim sides and bottoms, and remove loose dirt prior to placing concrete.

F. Arrange forms to allow stripping without removal of principal shores, where and when these are required to remain in place.

G. Obtain Architect's review before framing openings in structural members, which are not indicated on the Drawings.

H. Provide bracing to ensure stability of formwork. Prop or strengthen previously constructed formwork likely to be overstressed by construction loads.

I. Provide chamfer strips on exposed corners.

J. Construct formwork to maintain the following maximum tolerances:

1. Deviation from horizontal and vertical lines:
   a. 1/4" in 10'.
   b. 3/8" in 20'.
   c. 3/4" in 40'.

2. Deviation of building dimensions indicated on the Drawings and position of columns, walls and partitions: 1/4".

3. Deviation in cross sectional dimensions of columns or beams or in thickness of slabs and walls: + or - 1/4".

K. Provide construction joint forms where concrete placement terminates at the end of a day or because of other reasons.

L. Provide bulkheads, with reinforcing steel penetrating bulkheads, where concrete placement terminates at the end of a day or because of other reasons.

M. Apply form release agent on formwork in accordance with manufacturer's recommendations. Apply prior to placing reinforcing steel, anchoring devices and embedded items.

N. Design and erection of framework shall be the sole responsibility of the Contractor.

O. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings which are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces wet prior to placing concrete.

3.02 INSERTS, EMBEDDED PARTS AND OPENINGS

A. Provide formed openings where required for pipes, conduits, sleeves and other work to be embedded in and passing through concrete members.

B. Locate and set in place items which will be cast directly into concrete.

C. Coordinate work of other Sections and cooperate with trades involved in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors and other inserts. Do not perform work unless specifically indicated on the Drawings or reviewed prior to installation.

D. Install concrete accessories in accordance with manufacturer's recommendations; straight, level and plumb. Ensure items are not disturbed during concrete placement.

E. Place formed construction joints in floor slab-on-grade in a square or rectangular pattern pouring sequence. Set top screed to required elevations. Secure to resist movement of wet concrete.

F. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.

G. Close temporary ports or openings with tight fitting panels, flush with inside face of forms, neatly fitted so that joints will not be apparent in exposed concrete surfaces.

3.03 FIELD QUALITY CONTROL

A. Inspect and check complete formwork, shoring and bracing to ensure that work is in accordance with formwork design, and that supports, fastenings, wedges, ties and parts are secure.

B. Inform Architect when formwork is complete and has been cleaned, to allow for inspection. Obtain review prior to placing concrete.

C. For exposed concrete surfaces, do not reuse wood type formwork more than 3 times without prior inspection and approval of the Architect. Do not patch formwork.

D. Allow Architect to inspect each section of formwork prior to reuse.

3.04 CLEANING

A. Clean forms as erection proceeds to remove foreign matter. Remove cuttings, shavings and debris from within forms. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.

B. During cold weather, remove ice and snow from within forms. Do not use de-icing salts. Do not use water to clean out completed forms, unless formwork and concrete construction proceed within heated enclosure. Use compressed air or other means to remove foreign matter.

3.05 FORM REMOVAL

A. Do not remove forms, shores and bracing until concrete has gained sufficient strength to carry its own weight, and construction and design load which are likely to be imposed. Verify strength of concrete by compressive test results.

B. Remove formwork progressively and in accordance with code requirements and so that no shock loads or unbalanced loads are imposed on structure.

C. Loosen forms carefully. Do not wedge pry bars, hammers or tools against concrete surfaces.

D. Reshore structural members where required due to design requirements or construction conditions and as required to permit progressive construction. Remove load supporting forms only when concrete has attained 80% of required 28 day compressive strength, provided construction is reshored.

E. Remove forms not directly supporting weight of concrete as soon as stripping operations will not damage concrete.

F. Removal of formwork at anytime shall be the sole responsibility of the Contractor.

END OF SECTION

SECTION 03200

CONCRETE REINFORCING

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Reinforcing steel bars and welded steel wire fabric for cast-in-place concrete complete with tie wire.

B. Support chairs, bolsters, bar supports and spacers for reinforcing.

1.02 RELATED REQUIREMENTS

A. Section 03100: Concrete Formwork.

B. Section 03300: Cast-In-Place Concrete.

C. Section 04200: Masonry.

1.03 QUALITY ASSURANCE

A. Perform concrete reinforcing work in accordance with CRSI 63 and 65 unless specified otherwise.

1.04 SOURCE QUALITY CONTROL

A. Submit certified copies of mill test report of supplied concrete reinforcing, indicating physical and chemical analysis in accordance with Section 01340.

1.05 REFERENCES

A. ACI 318 - Building Code Requirements for Reinforced Concrete.

B. CRSI - Recommended Practice for Placing Reinforcing Bars.

C. CRSI 65 - Recommended Practice for Placing Bar Supports, Specifications and Nomenclature.

D. ASTM A185 - Welded Steel Wire Fabric for Concrete Reinforcing.

E. ASTM A615 - Deformed and Plain Billet Steel Bars for Concrete Reinforcement.

F. AWS D1.4 - Reinforcing Steel Welding Code.

G. ACI 315 - American Concrete Institute Manual of Standard Practice.

1.06 SHOP DRAWINGS

A. Submit Shop Drawings in accordance with Section 01340.

B. All reinforcing steel shall be detailed in accordance with ACI 315, Details and Detailing of Concrete Reinforcement.

C. Indicate bar sizes, spacings, locations and quantities of reinforcing steel and wire fabric, bending and cutting schedules and supporting and spacing devices.

PART 2 PRODUCTS

2.01 REINFORCING MATERIALS

A. Reinforcing steel: 60 KSI yield grade billet steel bars, ASTM A615, plain finish, conforming to supplemental requirements S1.

B. Welded steel wire fabric: Plain type, ASTM A185, in mats.

2.02 ACCESSORY MATERIALS

A. Tie wire: Minimum 16 gage annealed type.

B. Bar supports: All surfaces exposed to weather or liquid or which can be seen in service condition shall have plastic tipped bar supports conforming to Class C, D or E as defined in Chapter 9 of CRSI, Placing Reinforcing Bars, 1976 Edition. Where no protection in required, Class A supports may be used.

C. Other supports: Concrete brick may be used to support reinforcement to obtain proper clearance from earth and rigidity of reinforcement under concreting operations. Place bricks at adequate spacing to maintain specified concrete cover.

2.03 FABRICATION

A. Fabricate concrete reinforcing in accordance with CRSI Manual of Standard Practice, 1980 Edition.

B. Locate reinforcing splices, not indicated on the Drawings, at points of minimum stress. Location of splices to be indicated on Shop Drawings. Unless otherwise indicated, all splices shall be class C.

C. Weld reinforcing bars in accordance with AWS D1.4.

PART 3 EXECUTION

3.01 PLACEMENT OF REINFORCING STEEL

A. Maintain reinforcement surfaces free of rust scale and other coatings which might impair concrete bond as described in Section 7.4 of ACI 318, 1989 edition.

B. Handle, place and tie reinforcement steel in accordance with Building Code Requirements for Reinforcing Concrete, ACI 318 and CRSI Placing Reinforcing Bars, 1976 Edition.

C. All reinforcement bars shall be supported and secured as directed in ACI 315 and CRSI Manual of Standard Practice, 1990 edition.

D. Provide class B tension splices unless indicated otherwise. Do no splicing of reinforcement steel except as authorized by the Architect.

E. Accomplish welding in accordance with AWS D1.4 Recommended Practices for Welding Reinforcing Steel, Metal Inserts and Connections in Reinforced Concrete Construction.

F. Bend bars cold. Do not field bend bars partially embedded in concrete except as specifically approved by the Architect. Do not heat or cut bars with a torch.

3.02 INSTALLING WELDED WIRE FABRIC

A. After vapor barrier or underfloor waterproofing has been placed, install welded wire fabric. No hooking or pulling of welded wire fabric will be permitted.

B. Locate welded wire fabric in center third of slab.

C. Lap side one full mesh plus 2". Lap ends 2 full meshes. Offset end laps in adjacent width to prevent continuous laps.

3.03 CONCRETE PROTECTION FOR REINFORCEMENT

A. Protect reinforcing by thickness of concrete indicated.

B. Where not indicated, thickness of concrete over reinforcing shall be as follows:

1. Where concrete is deposited against the ground without the use of forms - 3".
2. Where concrete is exposed to weather or to ground but placed in forms - 2"

for bars larger than no. 5 and 1-1/2" for no. 5 bars and smaller.

3. In slabs and walls not exposed to the ground or to weather - 3/4".
4. In beams, girders and columns not exposed to the ground or to the weather - 1-1/2".

C. Variation from clear cover shall conform to Section 7.5 of ACI 318, 1989 edition.

END OF SECTION

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Cast-in-place concrete as detailed on the Drawings.

B. Floor slabs on grade, footings, grout fill, lintel beams and pads.

C. Vapor barrier under slabs on grade.

D. Poured-in-place equipment pads.

E. Surface finish on exposed slabs.

F. Preparation of slabs to receive toppings.

1.02 RELATED REQUIREMENTS

A. Section 01410: Testing Laboratory Services.

B. Division 2: Structure Excavation and Backfill.

C. Division 2: Trenching, Backfilling and Compaction for Utilities.

D. Section 03100: Concrete Formwork.

E. Section 03200: Concrete Reinforcement.

F. Section 04200: Masonry.

G. Section 05500: Metal Fabrications.

H. Division 15 and 16: Items to be cast in concrete.

1.03 QUALITY ASSURANCE

A. Perform cast-in-place concrete work in accordance with ACI 318, unless specified otherwise.

1.04 REFERENCES

A. ACI 318 - Building Code Requirements for Reinforced Concrete.

B. ACI 304 - Recommended Practice For Measuring, Mixing, Transporting and Placing Concrete.

C. ACI 305R - Recommended Practice for Hot Weather Concreting.

D. ACI 306R - Recommended Practice for Cold Weather Concreting.

E. ACI 301 - Specifications for Structural Concrete for Buildings.

F. ACI 315 - Details and Detailing of Concrete Reinforcement.

G. ASTM C33 - Concrete Aggregates.

H. ASTM C150 - Portland Cement.

I. ASTM C260 - Air Entrainment Admixtures for Concrete.

J. ASTM C494 - Chemical Admixtures for Concrete.

K. ASTM C94 - Ready-Mix Concrete.

1.05 SHOP DRAWINGS AND SUBMITTALS

A. Submit Shop Drawings in accordance with Section 01340. Indicate reinforcing, lifting/erection inserts, dimensions, finishes, strengths, etc. to indicate compliance.

B. Submit copies of the concrete mix designs with supporting data to show compliance with ACI 318, Chapter 4 and 5. Indicate types and quantities of materials used, the fresh unit weight, compressive strength, slump, air content and aggregate analysis in mix design.

C. Submit certification showing that the aggregate, cement and all admixtures conform to these specifications.

D. Submit copies of each laboratory test report indicating type of concrete furnished, compressive strength, slump, air content and water added to concrete after batching.

E. Retain ready-mix delivery tickets at the job site for inspection.

1.06 TESTING LABORATORY SERVICES

A. The Contractor shall employ a Testing Laboratory approved by the Architect to perform concrete tests including taking, handling, protecting and storing of test specimens, and the accurate reporting of compressive strength, weight of cylinders, contents of concrete, slump, air contents, and location of concrete. If concrete fails to meet any part of the specifications, immediately notify the Architect for instructions. Additional testing will be at Contractor's expense.

B. Testing Laboratory shall perform test as follows:

1. Obtain samples: ASTM C31.
2. Compression: ASTM C91.
3. Air content: ASTM C138 (gravimetric method) or ASTM C231 (pressure method).
4. Slump: ASTM C143.
5. Cylinders: One set (6 specimens) for each 150 cubic yards, or fraction thereof, for each 5000 square foot of surface area for slabs, whichever is smaller, of each class of concrete placed each day; test 2 cylinders at 7 days for information and 2 at 28 days for acceptance. If 28 day cylinders do not indicate proper strength, the third set will be tested as directed by the Architect.

C. The strength level shall be considered satisfactory so long as the averages of all sets of 3 consecutive strength test results equal or exceed the specified strength and no individual test result falls below the specified strength by more than 500 PSI.

D. Additional tests may be required if evidence of faulty workmanship, failure of test or questionable concrete exists. These tests shall be at Contractor's expense.

1.07 EVALUATION AND ACCEPTANCE OF CONCRETE

A. Concrete strength will be evaluated in accordance with ACI 318, section 5.6. Should evidence of low-strength concrete exist, or if test results indicate non-conformance with these specifications, additional testing, as outlined in section 5.6.4 may be directed with the Contractor bearing all costs.

B. If, after additional testing, evidence of low-strength concrete still exists, load tests in accordance with ACI 318, chapter 20, may be ordered. In the event the concrete is determined to be inadequate, the Contractor will be required to remove it from the project and replace it with concrete conforming to these specifications. All such remedial work shall be at the Contractor's expense.

C. The Contractor shall be fully responsible for insuring that all concrete and placement

meets project requirements. Failure of Architect or Testing Laboratory to detect defective work, workmanship or materials shall in no way prevent rejection and the Contractor being required to take corrective action when such defects are discovered.

D. Contractor shall provide assistance to Testing Laboratory necessary to gather and store sample cylinders. On site storage and protection shall be provided as required.

1.08 CONCRETE QUALITY DESIGN

A. All concrete mix designs shall be proportioned in accordance with ACI 318, section 5.3 (Field Experience and/or Trial Mixtures). Submit mix design for each class of class of concrete based on a standard deviation analysis or trial mixtures. If a standard deviation analysis is used, the concrete shall achieve an average strength in accordance ACI 318, table 5.3.2.2. Refer to figure 5.3 of ACI 318 Commentary on Building Code Requirements for Reinforced Concrete for outlining this procedure. Submittals made that do not conform to ACI 318, section 5.3 will be rejected.

PART 2 PRODUCTS

2.01 CONCRETE MATERIALS

A. Cement: Normal-type I Portland, ASTM C150. Use only one brand through out job.

B. Fine and course aggregates: ASTM C33. Size coarse aggregate in accordance with ACI 318, chapter 3, paragraph 3.3.2.

C. Water: Clean and free from injurious amounts of oil, alkali, organic matter or other deleterious material.

2.02 ADMIXTURES

A. Water reducing admixtures: Euclid Eucon WR-75, Master Builders Pozzolith 200N, Sika Plastocrete 161, or equal conforming to ASTM C494, type A, and not containing more chloride ions than municipal drinking water.

B. Water reducing, retarding admixtures: Euclid Eucon Retarder-75, Master Builders Pozzolith 100XR, Sika Plastiment, or equal conforming to ASTM C494, type D, and not containing more chloride ions than municipal drinking water.

C. High range water reducing admixture(Superplasticizer):Euclid Eucon 37, Silka Silkament 300, Master Builders Pozzilth 440N, or equal conforming to ASTM C494, type F or G and not containing more chloride ions than municipal drinking water.

D. Non-chloride accelerator: Euclid Accelguard 80, W. R. Grace Darex Set Accelerator,

Master Builders Pozzutec 20 or equal conforming to ASTM C494, type C or E and not containing more chloride ions than municipal drinking water.

E. Air entraining admixture: Master Builders AE 90, or equal conforming to ASTM C260.

F. Calcium chloride: No more than 0.05 percent chloride ions are not permitted.

G. Certification: From manufacturer certifying to stated requirements.

2.03 FLY ASH

A. Conforming to ASTM C618, class F.

2.04 READY-MIX CONCRETE

A. In Accordance with ASTM C94, alternate no. 2.

B. Strength (f'c): 4000 psii

C. Air contents: In accordance with ACI 302.1R, table 5.2.7a within specified tolerances. All interior slabs subject to abrasion shall have a maximum air content of 3%. All exterior concrete to have a average content of 4.5%.

D. Water-cement ratio: All concrete exposed to freezing and thawing shall have a maximum water-cement ratio of 0.50. All concrete subjected to deicers and/or required to be watertight shall have a maximum water-cement ratio of 0.45.

E. Slump: All concrete containing the high range water reducing admixture (superplasticizer) shall have a maximum slump of 8" unless otherwise approved by the Architect. The concrete shall arrive at the job site at a slump of 2" to 3", be verified, then the high range water reducing admixture added to increase the slump to the appropriate level.

F. All other concrete shall have a maximum slump of 3" for slabs and 4" for other members.

G. Admixtures: All concrete shall contain the specified water reducing admixture or high range water reducing admixture (superplasticizer). At the Contractors option, both water reducing admixtures may be included in the concrete mix. All concrete slabs placed at air temperatures below 50 degrees F shall contain the specified non-chloride accelerator. All concrete required to be air entrained shall contain the approved air entraining admixture. All pumped concrete, architectural concrete, concrete for industrial slabs and parking decks and concrete with a water-cement

ratio below 0.50 shall contain the specified high range water reducing admixture (superplasticizer).

H. Water soluble chloride ion concentrations: Maximum concentrations in hardened concrete at an age of 28 days contributed from the ingredients including water, aggregates, cementitious materials and admixtures shall not exceed the limits established in ACI 318, table 4.4.1, unless noted elsewhere in this specification.

2.05 VAPOR BARRIER

A. 12 mil polyethylene sheeting conforming to ASTM E154.

2.06 BOND BREAKER

A. 30 and 90 pound asphalt saturated roofing felt.

2.07 CURING AND SEALING COMPOUND

A. L and M Dress and Seal 30, Euclid Super Floor Coat or Super Pliocure, Master Builders Masterseal Dayton J-23 Acrylic Cure or equal conforming to ASTM C309 with minimum 30 percent solids and test data from an independent laboratory indicating a maximum moisture loss of 0.055 grams per sq. cm. in 72 hours when applied at a coverage rate in conformance with the manufacturer's recommendations. Manufacturer's certification required.

2.08 SHEET MATERIAL FOR CURING CONCRETE

A. Waterproof paper or polyethylene film meeting requirements of ASTM C171.

2.09 BONDING COMPOUND

A. Euclid Euco Weld, Larsen Weldcrete, L and M Everbond or approved equal.

2.010 EPOXY ADHESIVE

A. Euclid Euco Epoxy 463 or 615, L and M Epobond, Sika Sikadur Hi-Mod, Adhesive Engineering Concresive 1001-LPL or approved equal. The compound shall be 2 component, 100% solids, 100% reactive suitable for user on dry or damp surfaces.

2.011 PENETRATING EPOXY SEALER

A. L & M Pentox applied to all concrete surfaces exposed to vehicular traffic. The compound shall be a 2 component, 100% reactive, non-staining, penetrating epoxy with 30% solids minimum and applied in accordance with manufacturer's

recommendations. The compound shall provide protection to a minimum of 200 freeze/thaw cycles in accordance with ASTM C672.

2.012 NON-SHRINK GROUT

A. Euclid Firmix (metallic) and Euco NS (non-metallic), Master Builders Embeco 636 (metallic) and Masterflow 713 (non-metallic), L & M Crystex or approved equal. The grout shall conform to CRD-C-612, "Corps of Engineers Specification for Non-Shrink Grout".

PART 3 EXECUTION

3.01 CONDITION OF SURFACES

A. Notify Testing Laboratory at least 48 hours before starting concrete placement. Do not start concrete placing until Testing Laboratory has approved surfaces, reinforcement placement and embedded items.

B. Place no concrete until reinforcement and embedded items are positioned and secured.

C. Forms, surfaces and trenches shall be free from water, mud, ice, frost and debris when concrete is placed.

D. Wet surfaces before placing concrete.

3.02 VAPOR BARRIER

A. Place vapor barrier over all crushed stone below slabs-on-grade. Place smoothly, without wrinkles and trapped air. Lap sides and end joints at least 6" and weight down. Turn up 4" at vertical surfaces. Keep unnecessary traffic off vapor barrier.

3.03 BOND BREAKER

A. Where separation from a vertical surface is desired, place 12" wide strips of 30 pound felt, creased at right angle in the long direction, at all vertical surfaces, except where fiber board is to be installed. Turn up on vertical surfaces for full thickness of concrete.

B. Where floor slabs bear on tops of foundations, place a 90 pound strip of felt, full width of bearing surfaces.

3.04 PRODUCTION OF CONCRETE

A. Produce all ready-mix concrete in accordance with ACI 301, chapter 7.

3.05 PLACING CONCRETE

A. Prepare place of deposit and equipment. Convey and place concrete in accordance with ACI 301, paragraphs 8.1-8.3. Modifications that follow shall take precedence.

B. Deposit concrete within 1 hour after water is added to dry batching or use retarding admixture.

C. Convey concrete promptly to point of use in a manner to prevent separation of ingredients and loss of water. Deposit concrete near its final position to avoid rehandling.

D. Consolidate concrete, including floor slabs, in accordance with ACI 309 - Guide for Consolidation of Concrete. All concrete shall be vibrated. Maintain at least 1 vibrator on stand-by. Lower frequency vibrators may be used with flowing concrete.

E. Do not use vibrators to cause concrete to flow.

F. Concrete column pours shall not extend more than 3/4" into the concrete slab. Chip off any concrete that exceeds this dimension.

3.06 CONSTRUCTION JOINTS AND EMBEDDED ITEMS

A. Construction joints and embedded items shall conform to ACI 301, chapter 6. Locations of all construction joints shall be as shown on the Drawings or approved by the Architect.

3.07 FINISHING

A. After placing concrete, screed to levels and slopes indicated. Do not use tamping tools to force aggregate away from the surface.

B. When the water sheen has disappeared, use a wood float to bring concrete to a true level or slope as indicated. Depressions between high spots shall not exceed 5/16" under a 10' straightedge after floating, but before toweling.

C. When trowel finish is required, after concrete has hardened sufficiently to bear a man's weight without imprint, trowel with power and hand tools. Remove small imperfections left by troweling machine and bring to a smooth, dense, polished finish by hand toweling. Continue troweling until a ringing sound is produced as the trowel

is moved over the surface.

D. Do not use dry materials, such as sand and cement, on surfaces during finishing.

E. Do not use any procedures, such as the addition of water to the concrete surface, that produces a layer of weak material with an increased water-cement ratio at the slab surface.

F. Maximum allowable variation in troweled surfaces shall be such that depressions between high spots shall not exceed 3/16" under a 10' straightedge.

G. Where floors are to be covered with a thin set tile, trowel as specified above and then broom surfaces to form a "tooth".

3.08 CURING

A. As finished work is completed, begin curing. Curing may be accomplished by either of the methods described below, except for items specifically designated for a particular method.

B. For waterproof paper or plastic film curing, cover damp surfaces and lap edges at 4". Apply weights to prevent displacement. Repair tears and punctures as they occur.

C. All interior slabs with resilient tile, carpet or left exposed and all exterior slabs, sidewalks, curbs, etc. shall be cured with the specified clear curing and sealing compound. The compound shall be applied immediately after final finishing operations are completed. Apply uniformly in continuous operation by power sprayer or roller in accordance with manufacturer's directions. Recoat areas which are subjected to heavy rainfall within 3 hours after initial application.

D. Do not use curing and sealing compound on surfaces receiving applied finish other than resilient tile or carpet.

E. Where forms are left in place, keep forms damp by spraying at frequent intervals for 8 days. Do not allow forms to dry out.

3.09 PROTECTION

A. Protect concrete against traffic for at least 48 hours. Erect barriers as necessary to protect uncured areas. Provide wood covers to protect concrete step-ups.

B. Protect concrete from paint, stains and abrasive traffic.

3.010 PATCHING

A. After forms are removed, do not patch or repair, except that fins may be removed back to formed surface, until examined by the Architect. Patch as directed.

B. Cut out honeycombs, rock pockets, voids over 1/4" in any dimension and holes left by tie rods and bolts, down to the concrete, but in no case to a depth of 1". Make edges of cuts perpendicular to the concrete surface. Before placing cement mortar, thoroughly clean, dampen with water and apply the specified bonding compound. The cement mortar shall be placed after the bonding compound has dried.

C. Rub exposed interior finished concrete as specified above. Where form marks and fins detract from appearance or are otherwise objectionable, remove by rubbing.

D. All structural repair shall be made only with approval of Architect, as to method and procedure, using the specified epoxy adhesive and/or epoxy mortar.

3.011 GROUTING

A. All column base plates, equipment bases and other locations noted, shall be grouted with the specified non-shrink grout. All exposed grout shall be non-metallic.

B. After steel columns have been erected and shimmed to proper height, grout under column base plates with specified non-shrink grout.

3.012 CLEAN-UP

A. Clean and leave concrete work free from any loose material. Remove any mortar spills from floors or other materials. Leave areas free from any debris.

B. Remove excess material and equipment from site when work is completed.

END OF SECTION

SECTION 04200

MASONRY

PART 1 GENERAL

1.01 WORK INCLUDED

A. Unit masonry complete with reinforcement and anchorages.

B. Face brick and unit masonry veneer, complete with required flashings and angle lintels over openings.

C. Common brick for utility or below grade.

D. Mortar for masonry.

E. Built-in items supplied by other sections.

F. Cut and fit for work of other sections.

1.02 RELATED REQUIREMENTS

A. Section 03100: Concrete Formwork.

B. Section 03200: Concrete Reinforcement.

C. Section 03300: Cast-In-Place Concrete.

D. Section 05500: Metal Fabrications.

E. Section 07214: Foamed-In-Place Insulation.

F. Section 07150: Dampproofing.

G. Section 07600: Flashing and Sheet Metal.

H. Section 07900: Sealants.

1.03 QUALITY ASSURANCE

A. Perform masonry work in accordance with requirements of ACI 530 Building Code Requirements for Masonry Structures.

B. Perform mortar work in accordance with requirements ASTM C476 unless indicated otherwise.

C. All masonry work shall comply with local codes and ordinances.

D. Coordinate and schedule in a timely manner with the Testing and Inspection Agency. The following quality control items will be required:

1. Verify reinforcing steel for quantity, size and location.
2. Verify placement of coarse grout as indicated in high or low lift procedure.
3. Verify compressive strength of concrete masonry units, mortar, coarse grout, and/or masonry prisms for each 10,000 square feet of surface area as outlined below:

a. 3 concrete masonry units shall be tested per ASTM C140.
b. 6 mortar cubes shall be tested, 3 at 7 days and 3 at 28 days, per ASTM C109.
c. 4 course grout molds shall be tested, 2 at 7 days and 2 at 28 days, per ASTM C39.
d. In lieu of individual tests of masonry units, mortar, and grout, as directed by the Architect, perform 1 prism per ASTM E447.

1.04 ENVIRONMENTAL REQUIREMENTS

A. Maintain materials and surrounding air temperature to minimum 40 degrees F prior to, during and 48 hours after completion of masonry work.

B. During freezing or near freezing weather, provide adequate equipment or cover to maintain a minimum temperature of 40 degrees F and to protect masonry work completed or in progress.

1.05 PROTECTION

A. Maintain protective boards at exposed external corners which may be damaged by construction activities. Provide such protection without damaging completed work.

B. Keep expansion joints, control joints and air space voids clear of mortar.

C. Provide temporary bracing during masonry erection. Maintain in place until building structure provides permanent bracing.

PART 2 PRODUCTS

2.01 MASONRY UNITS

A. Hollow load bearing concrete block: ASTM C90, grade N, type I, modular size complete with corners, bases, lintels and fillers to match and complement block units; standard weight. Provide units with an average strength of 2,250 psi based on net area. No unit shall have a compressive strength of less than 2,000 psi based on net area.

B. Aggregate for concrete block: ASTM C331.

C. Face brick: ASTM C216, type FBS, grade SW, match existing size, finish and coursing so new and existing brick specified painting finish will match. See Sample Panel 3.01-A below.

D. Common brick: ASTM C62.

2.02 MORTAR MATERIALS

A. Only one mortar mix shall be used throughout the project. The mortar mix may consist of one of the following combinations, upon approval of the Architect:

1. Portland cement, lime and fine aggregate.
2. Masonry cement and fine aggregate.
3. Commercially prepared premix mortar and fine aggregate.

B. Portland cement: ASTM C150, type I.

C. Masonry cement: ASTM C91, for general use.

D. Aggregates (sand): Standard masonry, Type ASTM C144.

E. Hydrated lime: ASTM C207 type S or N.

F. Quicklime: Non-hydraulic, type ASTM C5.

G. Premix mortar: Commercially prepared type, ASTM C387.

H. Water: Clean and free from injurious amounts of oil, alkali, organic matter or other deleterious material.

I. Mortar finish: Natural raked to match existing brick.

2.03 REINFORCEMENT AND ANCHORAGES

A. Reinforcing steel for bond beams: Type as specified in Section 03200.

B. Wall ties (for masonry back-up): Dur-o-wal hot dip galvanized No. D/A 902, 16 gage masonry channel slot and 1/4" diameter No. 918-921.

C. Horizontal wall reinforcing: ASTM A82, ladur type, trirod if used as tie,(see paragraph B above), plain steel construction: No. 9 gage side rods and cross ties.

D. Hardware cloth: 1/2" mesh, 19 gage wire, galvanized.

2.04 CONCRETE

A. Concrete for bond beams: As specified in Section 03300.

2.05 MORTAR MIX

A. Provide Type M in contact with earth, Type M or S for exterior and load bearing.

B. Thoroughly mix mortar ingredients, in quantities needed for immediate use, according to ASTM C270.

C. Do not use anti-freeze compounds to lower the freezing point of the mortar.

D. Use mortar within 2 hours of mixing at temperatures over 78 degrees F and 2-1/2 hours at temperatures under 50 degrees F.

E. If necessary, retemper mortar within 2 hours of mixing to replace water lost by evaporation. Do not retemper mortar after 2 hours of mixing.

2.06 ACCESSORIES

A. Joint filler: Closed cell polyvinyl chloride oversized 50%, self expanding as detailed on the Drawings.

B. Weep holes: Cotton sash chord.

2.07 MASONRY GROUT

A. Provide masonry grout per ASTM C476.

2.08 MASONRY PRISM STRENGTH

A. Provide concrete masonry units and mortar when erected, obtain a minimum prism compressive strength of 1,350 psi based on net area.

PART 3 EXECUTION

3.01 SAMPLE PANEL

A. Prior to the start of brick work, provide a sample panel with new and existing brick painted with specified paint color/finish for match approval. Brick work started prior to approval of sample will be at the Contractor's own risk. The sample panels shall be of adequate size to indicate the materials, workmanship and appearance for the project.

3.02 PREPARATION

A. Ensure items built-in by other trades for this work are properly located and sized.

B. Establish lines, levels and coursing. Protect from disturbances.

3.03 INSTALLATION

A. Place masonry units in accordance with lines and levels indicated on the Drawings.

B. Fully bond external and internal corners and intersections of load bearing walls.

C. Buttering corners of joints, deep or excessive furrowing of mortar joints is not permitted.

D. Do not shift or tap masonry after mortar has taken initial set. Where adjustment must be made, remove mortar and replace.

E. Perform job site cutting of masonry units with proper power tools to provide straight and true, unchipped edges.

F. Ensure masonry unit courses are of uniform height. Make vertical and horizontal joints equal and of uniform thickness. Lay in full bed of mortar, properly joined with other work. Mortar head joints prior to placing block.

G. Remove excess mortar and projections. Take care to prevent breaking masonry corners.

H. Lay masonry unit courses in running bond matching existing. Form mortar joints to

match existing.

I. Lay brick in patterns to match existing. Form mortar joints to match existing.

J. Where non-bearing partitions extend to underside of floor, roof deck or structural system, stop short 3/8" to 1/2" to allow for live load deflection. Fill gap with joint filler. Provide structural anchorage using wall top anchors.

K. For toilet partitions, leave a 3/8" joint at intersections without mortar. Tie walls with strips of hardware cloth 1" narrower than masonry units and at least 14" long, spaced 16" on centers. Seal joints both sides in accordance with Section 07900 Sealants.

L. Coordinate placement of veneer with foam-in-place insulation to ensure foam insulation is placed at the required intervals.

3.04 TOLERANCES

A. Maximum variation from masonry unit to adjacent masonry unit is 1/16".

B. Maximum variation from vertical and horizontal building lines is 1/8" in 10'.

3.05 REINFORCEMENT AND ANCHORAGES

A. Place masonry unit reinforcing and anchorages as follows:

1. Provide walls with horizontal reinforcing in every other mortar joint.
2. Place horizontal reinforcing in first and second joints above and below openings, extend 36" past opening. Place continuous in first and second joint below top of walls.
3. Fully reinforce corners and intersections.
4. Lap masonry reinforcing splices minimum 6".
5. Embed wall ties for veneer with masonry unit back-up at maximum 16" on center vertically and 32" horizontally. Place at maximum 12" on center each way around perimeter of openings.
6. Ensure that anchorages embedded in concrete are properly placed. Embed free end of anchorages in every second masonry unit joint.

3.06 BOND BEAMS

A. Reinforce as detailed on the Drawings.

B. Place and consolidate concrete without disturbing reinforcing.

3.07 MASONRY GROUT

A. Fill all block cores solid with masonry grout where reinforcing is indicated on the Drawings.

3.08 BUILT-IN WORK

A. As work progresses, build-in door and window frames, nailing strips, anchor bolts, plates and other items supplied by other trades.

B. Build-in items plum and true.

C. Do not build-in organic material which will be subject to rot or deterioration.

D. Fill door frames in masonry or concrete walls solid with mortar as work progresses.

3.09 LINTELS

A. Provide reinforced masonry unit lintels over openings where concrete or steel lintels are not scheduled and as detailed on the Drawings.

B. Construct lintels using concrete and reinforcing specified. Maintain minimum 8 inch bearing on each side of openings, unless noted otherwise on the Drawings.

3.010 CUTTING AND FITTING

A. Cut and fit masonry for chases, pipes, conduit, sleeves and ground. Cooperate fully with other Sections of work to ensure correct size, shape and location.

B. Architect's review prior to cutting or fitting any areas which are not indicated on the Drawings, or which may impair appearance or strength of masonry work.

3.011 CLEANING

A. Remove excessive mortar and smears upon completion of masonry work.

B. Point or replace defective mortar. Match adjacent work.

C. Clean soiled surfaces using a non-acidic solution which will not harm masonry or adjacent materials. Consult masonry manufacturer for acceptable cleaners. Use non-metallic tools in cleaning operations.

END OF SECTION

SECTION 04201

MANUFACTURED STONE

PART 1 GENERAL

1.01 WORK INCLUDED

A. Portland Cement based manufactured stone veneer and accessory trim items.

1.02 RELATED REQUIREMENTS

A. Section 04200: Masonry.

1.03 INSTALLER QUALIFICATIONS

A. A qualified installer who employs experienced stonemasons and stone fitters with manufactured stone veneer experience.

B. Minimum of 1 year experience in manufactured stone veneer installation.

1.04 REFERENCES

A. Building code applicable to project site.

B. AMERICAN NATIONAL STANDARDS INSTITUTE ANSI A118.4 Specifications for latex-portland cement mortar.

C. AMERICAN SOCIETY FOR TESTING AND MATERIALS.

1. ASTM C144 Specification for aggregate for masonry mortar.
2. ASTM C207 Specification for hydrated lime for masonry purposes.
3. ASTM C39 Testing for compressive strength.
4. ASTM C248 Flexural strength.
5. ASTM C847 Specification for metal lath.
6. ASTM C226 Specification for asphalt-saturated organic felt.
7. ASTM 979 Specifications for pigments for integrally colored concrete.
8. ASTM C91 & C150 Standard for Portland and Masonry Concrete.
9. ASTM C482 Bond Strength.

1.05 DELIVERY STORAGE AND HANDLING

A. A. Store cementitious materials on elevated platforms, under cover and in a dry location. Avoid exposure to moisture.

B. Store aggregates so they can be maintained and contamination avoided.

C. Store masonry accessories including metal items, to prevent corrosion and accumulation of dirt and oil.

D. Ordering comply with manufacturers ordering instructions and lead time requirements to avoid construction delays.

1.06 DELIVERY

A. Deliver materials in manufacturers original, undamaged containers with identification labels in tact.

B. Follow manufacturers recommendations on handling and unloading of trucks and stone storage.

C. The contractor shall check the materials upon delivery to site to assure that proper material has been received.

D. The contractor shall prevent excessive mud, wet cement, and like material, which may affix themselves, from coming in contact with the material.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Consult local building codes for cold weather construction requirements when air temperature is 40 degrees F or below (AC1530.1/ASCE6/TMS602).

B. Protect material from rain, moisture and freezing temperatures, prior to and for 48 hours after completion of work.

C. Consult local building codes for hot weather construction requirements, stone materials and wall surface may be dampen to reduce wall temperature before applying stone veneer. (ACT 530.1/ASCE6/TMS602).

D. Allow no construction activity on opposite side of wall during installation and for 48 hours after completion of work.

E. Protect surfaces of windows and door frames and similiar products with painted and integral finishes, from mortar droppings.

F. Turn scaffold boards near the wall on edge at end of each day to prevent rain from splashing mortar and dirt on completed stone masonry.

1.08 WARRANTY

A. Manufactures warranty: Submit for owners acceptance manufactures warranty.

B. Products shall be covered under a 50 year Warranty from date of purchase when installed in accordance with manufactures instructions.

1.09 COORDINATION

A. Advise installers of other work specific requirements for placement of flashing and similiar items to be built into stone masonry.

PART 2 PRODUCTS

2.01 MANUFACTURED STONE VENEER

A. Stone: Plantation - Oxford as manufactured by Centurion Stone Products, 50 Van Buren Street, Nashville, TN 37208, or approved equal.

B. Compressive strength: 7849 psi.

C. Shear bond (adhesion strength): 160.

D. Water absorption: 11%.

E. Freeze-thaw test: .13.

F. Thermal resistance: r-.44 – k4.d33.

G. Density: 93 pcf.

H. Shipping weights: 7 ½ to 12 lbs sq ft.

2.02 MORTAR

A. Portland cement: ASTM C150 Type I or masonry cement Type S, ASTM C91.

B. Sand: ASTM C144 natural or manufactured sand.

C. Hydrated lime: ASTM C207, Type S.

D. Pigment: ASTM C979 mineral oxide pigments (use only pigments with a record of satisfactory performance in stone masonry mortar).

E. Cold weather admixture: Nonchloride, noncorrosive, accelerating admixture with ASTM C494/C494M, Type C.

F. Loader: potable.

G. Sealer: If required (not necessary with centurion stone) water based Silane or Siloxane masonry sealer.

2.03 FLASHING

A. Metal flashing: Provide metal flashing complying with (SMACNA'S Architectural sheet metal manual and sheet metal flashing and trim.

B. Tapes/Rubber flashing.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of site conditions: Examine surfaces indicated to receive stone veneer with installer present, for compliance with requirements for installation tolerance and other conditions affecting performance.

B. Examine substrate to verify that brick wall are installed correctly and installation will result in a weatherproof covering.

C. Notify contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Protection: Protect adjacent work from contact with mortar.

B. Surface preparation: Prepare substrate in accordance with manufacturers instructions for the type of substrate being covered.

C. Clean dirty or stained stone surface by removing soil stains and foreign materials before setting. Use only mild cleaning compounds that contain no caustic or harsh materials or abrasives.

3.03 INSTALLATION

A. When applying stone in hot or dry weather the wall and back of each piece should

be moistened with a fine spray of water to preven excessive obsorption of moisture from the mortar.

B. Applications should be protected from freezing since frozen mortar will not set up properly under freezing conditions.

3.04 SETTING OF STONE VENEER

A. Perform necessary field cutting and trimming as stone is set, use power saws to field cut stones.

B. Sort stone before they are set for size, width and heights, colors relating to asthetic effects and discard unsuitable pieces.

C. Work out of several boxes to ensure color variations are uniformly blended throughout job.

D. Alternate long and short corner pieces.

E. Maintain uniform mortar joints in grouped patterns ½" to ¾" in width.

3.05 MORTAR JOINTS

A. Grout all joints uniformly and fill with grouting bag.

B. Allow grout to set up to crumbly consistency.

C. Rake and brush joints to a smooth and consistant finish acceptable to Architect.

D. Excess mortar: Clean exessive mortar form stones face as work procedes.

E. Do not allow mortar to set up on face of units.

F. Clean and finish joints per manufacturers instructions.

3.06 ADJUSTING AND CLEANING

A. Damaged units should be replaced with new units during construction.

B. Broken chipped stained or otherwise damaged stone may be repaired if methods and results are approved by Architect.

C. Remove and replace defective joints.

D. Replace stone in a manner that results in stone masonry matching approved samples and mockups.

3.07 CLEANING

A. Reference section 14 under Manufacturer's Installation Instructions.

B. Remove any protective covering from adjacent work.

C. If cleaning is required clean work with a soluton of granulated household detergent and water solution using soft bristle brush.

D. Rinse with clean water.

E. Allow 24 hours for work to set up before cleaning.

F. Do not use a wire bruch for cleaning.

G. Do not clean using acid or acid based products.

H. Do not clean with high pressured washer.

I. Do not use de-icing chemicals in areas next to veneer.

3.08 SCUFFING

A. Scuffing may occur in shipping or handling of stone veneer.

B. Scuffing occurs in natural stone and some may occur in manufactured stone veneer

C. Most scuff marks can be eliminated by the above cleaning process.

3.09 EFFORESCENCE

A. Clean area with water and stiff bristle brush, and rinse.

B. On difficult areas, clean by using 1 part household vinegar to 5 parts water.

C. Rinse thoroughly.

3.010 EXCESS MATERIALS AND WASTE

A. Excess stone: Stack excess stone where directed by Owner.

B. Excess masonry waste: Remove from job site waste that connot be used as fill and legally disposed of off owner’s property

END OF SECTION

SECTION 05500

METAL FABRICATIONS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Supply and install metal fabrications complete with anchorage and attachments necessary for attachment.

1.02 RELATED REQUIREMENTS

A. Section 03300: Cast-In-Place Concrete.

1.03 SUBMITTALS

A. Submit shop drawings and product data in accordance with Section 01340.

B. Indicate profiles, sizes, connection attachments, reinforcing, anchorage, sizes and types of fasteners and accessories.

C. Include erection drawings, elevations and details where applicable.

D. Indicate welded connections using standard AWS welding symbols. Indicate net weld lengths.

PART 2 PRODUCTS

2.01 MATERIALS

A. Steel: ASTM A36.

B. Bolts, nuts and washers: High strength type recommended for structural steel joints; ASTM A325.

C. Welding materials: Applicable AWS D1.1, type required for materials being welded.

D. Primer: TNEMEC 37H-77 Chemprime.

2.02 SIGN/SCREEN

A. Pipe: 6" Schedule 40, welded construction.

B. Mounting clips and top material: 1/4" minimum bent steel as detailed on the Drawings.

C. Top closure and mounting clips: Welded construction as detailed on the Drawings.

D. Finish: Shop primed and field painted.

2.03 FABRICATIONS

A. Verify field dimensions at site prior to fabrication.

B. Fabricate items with joints neatly fitted and properly secured.

C. Fit and shop assemble in largest practical sections, for delivery to the site.

D. Grind exposed welds smooth and flush with adjacent finishes surfaces.

E. Supply components required for proper anchorage of metal fabrications. Fabricate anchorage and related components of same material and finish as metal fabrications, unless specified otherwise.

F. Thoroughly clean surfaces of rust, scale, grease and foreign matter prior to prime painting and galvanizing.

G. Galvanize and prime paint items specified. Do not shop prime surfaces in contact with concrete or requiring field welding. Shop prime in 1 coat.

PART 3 EXECUTION

3.01 ERECTION

A. Install all items square and level, accurately fitted and free from distortion or defects.

B. Make provisions for erection stressed by temporary bracing. Keep work in alignment.

C. Replace items damaged in the course of installation.

D. Perform field welding in accordance with AWS D1.1.

E. After installation, touch-up field welds, scratched and damaged prime painted and galvanized surfaces. Use a primer consistent with shop coat. Use a primer recommended for galvanized surfaces.

F. Supply to appropriate Sections, items requiring to be cast into concrete or embedded into masonry, complete with necessary setting templates.

END OF SECTION

SECTION 06110

FRAMING AND SHEATHING

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Structural roof framing.

B. Fabricate, supply and erect wood trusses.

C. Roof sheathing.

D. Roof moisture barrier.

E. Preservative treatment of wood members where required.

F. Miscellaneous furring and blocking.

1.02 RELATED REQUIREMENTS

A. Section 06200: Finish Carpentry.

1.03 QUALITY ASSURANCE

A. Lumber to have visible grade stamp, of an agency certified by NFPA.

B. Submit certification of moisture content and for treated wood; certificate of preservative treatment.

1.04 REFERENCES

A. SPIB - Southern Pine Inspection Bureau.

B. AWPA - American Wood Preserver's Association.

C. WWPA - Western Wood Products Association.

D. NFPA - National Forest Products Association National Design Specification for Stress Grade Lumber and Its Fastenings.

E. APA - American Plywood Association.

F. AITC - American Institute of Timber Construction.

G. FS TT-W-550 - Wood Preservative, Chromated Copper Arsenate Mixture.

H. FS TT-W-571 - Wood Preservation: Treating Practices.

PART 2 PRODUCTS

2.01 LUMBER AND SHEET MATERIALS

A. Lumber: PS 20, and graded in accordance with NFPA Grading Rules; kiln-dried with maximum moisture content of 15%; Douglas Fir or Southern Pine species of the following grades:

USE	GRADE
Plates	Utility
Joists/Rafters	No. 2
Trusses	No. 2 Southern Pine for top and bottom chords
Trusses	No. 3 Southern Pine for webs

B. Plywood Sheathing-Roof: ⅝" C-D 32/16-APA plywood with exterior glue, complete with H ply clips.

2.02 ACCESSORIES

A. Nails, Spikes and Staples: Galvanized for exterior locations, high humidity locations, and treated wood; plain finish for other interior locations; size and type to suite application.

B. Bolts, Nuts, Washers, Lags, Pins and Screws: Medium carbon steel; sized to suite application; galvanized for exterior locations, high humidity locations, and treated wood; plain finish for other interior locations.

C. Fasteners: Expansion shield and lag bolt type for anchorage to solid masonry or concrete.

D. Roof moisture barrier: One layer of 30 lb. felt.

2.03 WOOD PRESERVATIVE

A. Wolman salt treatment meeting the requirements of FS TT-W-550 and the treating process and the results thereof meeting FS TT-W-571.

2.04 WOOD TRUSSES

A. Submit shop drawings and design calculations in accordance with Section 01340. Trusses are to be manufactured by a supplier who is a member of The Truss Plate Institute or who uses the metal plates from a manufacturer who is a member.

B. Shop drawings and stress diagrams shall contain the following:

1. Truss layout plans including truss types, spans and spacing of trusses.
2. Species, grades and lumber used.
3. Design loading and allowable stress increase.
4. Force analysis of each member.
5. Pitch and gage thickness.
6. Nominal sizes and locations of connectors at joints.
7. Bearing and anchorage details.
8. Framed openings.
9. Permanent bracing and bridging requirements.
10. Truss details and connections.

C. Trusses are to be designed for the following loads:

1.	Live load top chord	20 PSF
2.	Dead load top chord	10 PSF
3.	Dead load bottom chord	10 PSF

D. Trusses are to be designed by a Registered Engineer in the State of Tennessee and shop drawings must bear seal.

E. All recommendations for bracing, quality control and design of trusses shall be in accordance with The Truss Plate Institute Specifications.

F. Provide special designed trusses for corners, girders, headers, etc.

G. All lumber to be a minimum size of 2"x4".

H. Trusses are to be connected to nailers with Simpson Strong Tie A35 framing anchors or equivalent.

PART 3 EXECUTION

3.01 WOOD TREATMENT

A. Shop treat and deliver to site ready for installation, wood materials requiring Decay and Insect pressure impregnated preservatives. All lumber coming in contact with

cementitious materials, roofing, steel and related metal flashings shall be pressure treated.

B. Brush on 2 coats of preservative treatment on site sawn ends.

3.02 FRAMING

A. Cut framing square on bearings, closely fitted; accurately set to required lines and levels and plumb; secure rigidly in place at bearings and connections.

B. Nail or spike members in accordance with NFPA "Manual for House Framing".

C. Install strap bracing with 8d nails as indicated on the Drawings and according to manufacturer's recommendations.

3.03 SHEATHING

A. Roof Sheathing:

1. Place roof sheathing with end joints staggered. Secure sheets over firm bearing. Maintain minimum 1/16" and maximum 1/8" spacing between joints. Install H ply clips.
2. Apply with face grain perpendicular to supports.
3. Nail with 8d nails at 6" on centers along plywood edges, 12" on centers along intermediate supports.

3.04 TRUSSES

A. Set and secure wood trusses level, plumb and in correct locations. Secure trusses to top plate with metal framing anchors.

B. Provide temporary bracing and anchorage to hold trusses in place until permanently secured.

C. Ensure truss ends have sufficient bearing area.

D. Install permanent bracing and bridging prior to application of loads.

E. Cutting and altering of members is not permitted.

END OF SECTION

SECTION 06200

FINISH CARPENTRY

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Finish carpentry items, cabinet work, complete with required hardware and attachments accessories.

B. Schedule of Finish Carpentry items:

1. Eave shingles.
2. Soffits and fasciae.
3. Casings, moldings, standing and running trim.
4. Door screens.
5. Plywood ceiling.
6. Installation of finish hardware.

1.02 RELATED REQUIREMENTS

A. Section 06110: Framing and Sheathing.

B. Section 08110: Metal Doors.

C. Section 08305: Attic Access Doors.

D. Section 08700: Finish Hardware.

E. Section 09900: Painting.

1.03 QUALITY ASSURANCE

A. Perform finish carpentry work in accordance with the recommendations of the Millwork Standards of the Architectural Woodwork Institute (AWI).

1.04 REFERENCES

A. FS MMM-A-130A - Adhesive, contact.

B. AWI - Architectural Woodwork Institute.

C. APA - American Plywood Association.

D. PS20 - American Softwood Lumber Standard.

E. PS 1 - Construction and Industrial Plywood.

1.05 SAMPLES

A. Submit samples of each type of wood to receive field applied stain or paint, in accordance with Section 01340.

B. Submit samples of colors and patterns of plastic laminate and paneling.

1.06 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 01340.

B. Indicate materials, component profiles, fastening, jointing details, finishes, accessories, etc.

1.07 DELIVERY AND STORAGE

A. Do not deliver finish carpentry items until site conditions are adequate to receive the work of this section. Protect materials from weather while in transit.

B. Store indoors, in ventilated areas with a constant but minimum temperature of 60 degrees F and maximum relative humidity of 25% to 55%.

PART 2 PRODUCTS

2.01 LUMBER PRODUCTS

A. Softwood lumber: PS 20; graded in accordance with requirements of AWI; maximum moisture of 10% for exterior work; of Southern Pine species and grade No. 2.

2.01 SHEET MATERIALS

A. Softwood plywood: PS 1; graded in accordance with AWI; core material of veneer of thickness and grade mark indicated on the Drawings; Fir species.

2.02 FINISH MATERIALS

A. Door Screens / Signs: Redwood, clear all heart, vertical grain, as detailed on the Drawings.

2.03 ACCESSORIES

A. Nails: Size and type to suit application.

B. Bolts, nuts, washers, lags, pins and screws: Size and type to suit application.

PART 3 EXECUTION

3.01 FABRICATION

A. Fabricate the work of this section in strict accordance with the original design and the approved Shop Drawings.

B. Make joints and corners hairline.

3.02 INSTALLATION

A. Perform finish carpentry work to extent indicated. Construction joining and prefinishing of assemblies and items: Custom grade as established by AWI.

B. Set and secure materials and components in place rigid, plum, and square.

C. Ensure all mechanical and electrical items affecting this section of work are properly placed, complete, and have been inspected by Architect prior to commencement of installation.

D. Install hardware in accordance with manufacturer's recommendations.

3.03 CLEANING AND ADJUSTMENT

A. Upon completion of the installation, visually inspect each installed item, thoroughly clean all surfaces by using the cleaning material recommended by the manufacturer of the finish being cleaned, and carefully adjust all operating components for optimum operation.

END OF SECTION

SECTION 07210

THERMAL INSULATION

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Batt insulation and vapor retarder for attic spaces (over ceilings).

B. Rigid board-type insulation for perimeter foundation.

1.02 RELATED REQUIREMENTS

A. Section 04200: Masonry.

B. Section 06110: Framing and Sheathing.

1.03 REFERENCES

A. FS L-P-375C - Plastic Film, Flexible, Vinyl-Chloride.

B. FS HH-I-521E - Insulation Blankets, Thermal Fiber, for Ambient Temperatures.

C. ASTM C578 - Preformed, Cellular Polystyrene Thermal Insulation.

1.04 DELIVERY OF MATERIALS

A. Furnish material in manufacturers packaging, complete with installation instructions.

1.05 PRODUCT DATA

A. Submit manufacturers data and installation instructions in accordance with Section 01340.

PART 2 PRODUCTS

2.01 MATERIALS

A. Batt insulation, attic: Unfaced, formaldehyde-free fiberglass conforming to ASTM C665, Type I. Kraft faced. Insulation shall have R-value of R-38 as indicated on the Drawings.

B. Insulation baffel: As detailed on the Drawings.

C. Foundation wall insulation: 1" Styrofoam Square Edge, or equal, extruded polystyrene insulation board, with R-5.0/1" value and meeting ASTM C578. Provide complete with adhesive recommended by manufacturer of insulation.

D. Nails and staples: Of electroplated, galvanized steel wire; type and size recommended for application.

E. Tape: 2" wide self adhering type; bright aluminum faced.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install batt insulation without visible gaps or separations.

B. Cut and trim insulation neatly, to fit spaces. Use batts free of ripped backs or edges.

C. Install perimeter insulation in accordance with manufacturer's specifications to detail shown on the Drawings. Sheets shall be tightly butted at all edges; no gaps permitted.

D. Install batt insulation and vapor retarder in accordance with manufacturer's recommendations. Install after mechanical and electrical services within walls have been installed.

E. Install prefabricated insulation baffel to provide a minimum of 3" clear air circulation.

F. Fit insulation tight within spaces and tight to and behind mechanical and electrical services within the plane of insulation. Leave no gaps or voids.

G. Place vapor retarder adjacent to interior face of ceiling by nailing or stapling in place at maximum 6" on center and tape seal to framing members. Tape seal areas where, nails or staples penetrate vapor barrier.

3.02 CLEAN-UP

1. Remove and dispose of excess insulation, wrappings and other waste materials.

END OF SECTION

SECTION 07214

FOAMED-IN-PLACE INSULATION

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Complete filling of all concrete masonry unit cores unless specified to receive concrete.

1.02 RELATED REQUIREMENTS

A. Section 04200: Masonry.

1.03 SUBMITTALS

A. Submit manufacturers data and installation instructions in accordance with Section 01340.

B. REFERENCES

C. ASTM E84 - Flamespread and Smoke Development.

D. ASTM D2015 - Moisture Absorption.

E. ASTM C117 - Thermal Conductivity.

1.04 DELIVERY OF MATERIALS

A. Furnish material in manufacturers packaging, complete with installation instructions.

PART 2 PRODUCTS

2.01 MATERIALS

A. Thermco by Thermal Corporation of America, Cor-Fill-500 by Tailored Chemical Products, Inc., or approved equal.

B. Minimum physical properties:

1. ASTM E84 - Fuel contributed: 0.
2. ASTM E84 - Flamespread: 5.
3. ASTM E84 - Smoke Development: 75.

4. ASTM C117 - Thermal Conductivity: 1" thickness at 75 degrees 4.5R.
5. ASTM E119 - Fire wall rating: 3 hour and 30 minutes.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install insulation in a timely, coordinated manner as the work progresses. Fill all voids of all concrete masonry units, both exterior and interior walls.

B. Installation shall be by a manufacturer approved installer in strict accordance with manufacturer's requirements.

C. Protect walls after installation from moisture for 24 hours.

3.02 EQUIPMENT

A. Equipment for mixing and installing the insulation shall be of a type approved and certified by the manufacturer.

END OF SECTION

SECTION 07460

FIBER-CEMENT SIDING

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Furnish and install plank fiber-cement siding, soffit, trim, fascia and accessories where shown on drawings or as specified herein.

1.02 RELATED REQUIREMENTS

A. Section 06110: Framing and Sheathing.

B. Section 05400: Lightgage Metal Framing.

C. Section 06200: Finish Carpentry.

D. Section 07210: Thermal Insulation.

1.03 SUBMITTALS

A. Submit shop drawings and product data in accordance with Section 01340.

B. Submit three 6" x 6" pieces of claddings in texture and widths shown and specified herein.

C. Submit specifications, installation data and other pertinent manufacturer's literature.

1.04 PRODUCT HANDLING

A. Stack claddings on edge or lay flat on a smooth, level surface.

B. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.

1.05 JOB CONDITIONS

A. Nominal 2" wood framing selected for minimal shrinkage and complying with local building codes, including the use of weather-resistive barriers and/or vapor barriers where required shall be in place.

B. Install weather-resistive barriers and claddings to dry surfaces.

C. Repair any punctures or tears in the weather-resistive barrier prior to the installation of the siding.

D. Protect siding from other trades.

E. Coordinate this section with interfacing and adjoining work for proper sequence of installation.

1.06 WARRANTY

A. Limited product warranty against manufacturing defects for 50 years and 15 years for ColorPlus finish.

B. Workmanship: Application limited warranty for one year.

PART 2 PRODUCTS

2.01 MATERIALS

A. Fascia plank: 1" x 12" 4/4 Rustic HardieTrim Boards as manufactured by James Hardie Building Products with ColorPlus, or approved equal, non-asbestos fiber-cement siding to comply with ASTM Standard Specification C1186 Grade II, Type A.

B. Gable siding: HardieShingle Staggered Edge Panel as manufactured by James Hardie Building Products with ColorPlus, or approved equal, non-asbestos fiber-cement siding to comply with ASTM Standard Specification C1186 Grade II, Type A.

C. Soffit: HardieSoffit Vented and Non-Vented Cedarmill 0.25" panels as manufactured by James Hardie Building Products with ColorPlus, or approved equal, non-asbestos fiber-cement siding to comply with ASTM Standard Specification C1186 Grade II, Type A.

1. Provide one row of venting adjacent to the fascia.
2. Provide solid blocking at each joint.

D. Colors: To be selected from manufacturer’s full ColorPlus chart. Closely match sealant color.

E. Fasteners: Corrosion resistant siding nails as recommended by the manufacturer.

PART 3 EXECUTION

3.01 EXECUTION

A. Surface Conditions: Correct conditions detrimental to timely and proper completion of work.

3.02 INSTALLATION

A. Install in accordance with manufacturer’s requirements.

B. Install flashing around all wall openings.

C. Fasten through trim into structural framing or code complying sheathing. Fasteners must penetrate minimum ¾” or full thickness of sheathing. Additional fasteners may be required to ensure adequate security.

D. Place fasteners no closer than ¾” and no further than 2" from side edge of trim board and no closer than 1" from end. Fasten maximum 16" on center.

E. Allow 1/8" gap between soffit, trim and siding.

F. Seal gaps with high quality, sealant, color selected from full range.

3.03 FINISHING

A. Fascia, soffit and siding shall be factory finished with the ColorPlus System.

END OF SECTION

SECTION 07600

FLASHING AND SHEET METAL

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Prefinished metal roofing and trim.

B. Drip edge, gutters and downspouts.

C. Counter flashings over base flashings.

D. Through-wall membrane flashing.

1.02 RELATED REQUIREMENTS

A. Section 04200: Masonry.

B. Section 06110: Framing and Sheathing.

C. Division 15: Mechanical.

1.03 REFERENCES

A. ASTM A526 - Sheet Steel, Zinc Coated (galvanized) by the Hot Dip Process, Commercial Quality.

B. ASTM B209 - Aluminum and Aluminum Alloy Sheet and Plate.

C. FS TT-S-00230C - Sealing Compound: Elastomeric Type, Single Component.

D. FS TT-C-00153 - Cement, Bituminous, Plastic - Type 1.

1.04 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 01340.

B. Clearly detail shaping, jointing, length of sections, fastenings and installation details.

1.05 PROTECTION

A. Exercise care when working on or about roof surfaces to avoid damaging or puncturing skin, membrane or flexible flashings.

B. Place plywood panels on roof surfaces adjacent to work of this Section and on access routes. Keep in place until work is complete.

1.06 WARRANTY

A. Provide Owner with a Maintenance Bond, stating that flashings will properly shed water and protect roofing from physical damage for a period of 1 year Substantial Completion.

PART 2 PRODUCTS

2.01 PREFINISHED METAL ROOFING AND TRIM.

A. Prefinished metal roofing: Shop fabricated from 24 gage hot-dipped galvanized steel sheets, ASTM A446, with manufacturer's standard fluorocarbon finish, color selected. Ribs to be a minimum of 1-1/2" high. Acceptable manufacturers and systems are as follows:

1. AEP-SPAN Design Span Panels HP, 16" on centers.

2. Berridge Manufacturing Co. CEE-LOCK Standing Seam Roof, 16-1/2" on centers.

3. Pererson Aluminum Corporation High Snap-On Standing Seam, 17" on centers.

B. Prefinished metal drip edge, gutters and downspouts, flashing: Shop fabricated from 24 gage hot-dipped galvanized steel sheets, ASTM A446, with manufacturer's standard fluorocarbon finish, color selected.

2.02 FLASHINGS AND FABRICATIONS

A. Wall and sill flashings: Nervastral HD, 20 Mil thickness, as manufactured by Rubber and Plastics Compound Company.

B. Through-wall flashing: Advanced Building Products, Inc., AFCO Products, Inc., Sandell Flashings Mfg. Co. Inc. or York Mfg. Co. copper fabric flashing, 5 oz./sq. ft., copper bonded to fabric.

2.03 ACCESSORY MATERIALS

A. Fasteners: Continuous concealed hook strips or cleat type, of same material as flashings, sized to suite application.

B. Solder and flux: Type recommended for materials being used.

C. Plastic cement: Cutback asphalt type, FS SS-C-00153.

D. Bituminous paint: Acid and alkali resistant type, color, black.

E. Sealant: 1 component polysulfide conforming to FS TT-S-00230, non-staining, non-bleeding, non-sagging, color selected.

F. Adhesive: As recommended by manufacturer of through-wall membrane flashing.

2.04 FABRICATION

A. Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance in accordance with SMACNA Manual.

B. Form gravel stops, gutters and downspouts of profiles and sized required to properly collect and remove water. Fabricate complete with connection pieces.

C. Use maximum possible lengths. Double back exposed edges of sheet metal 1/2".

PART 3 EXECUTION

3.01 SHEET METAL INSTALLATION

A. Install sheet metal work in strict compliance with SMACNA Manual and manufacturer's written requirements.

B. Wall and sill flashings shall be pre-cut in widths to comply with the profiles detailed on the Drawings without side laps. Flashings shall be installed in as long lengths as possible. All end laps shall be a minimum of 6" in length and shall be sealed to weld overlaps, watertight. All sealants and adhesives shall be as recommended by the manufacturer of the specific product.

C. Install drip edge, gutters and downspouts in accordance with SMACNA Manual. Join lengths with formed seams sealed watertight. Flash and seal telescope joint to gutter and extend 1" into downspout. Apply bituminous paint on surfaces to be in contact with dissimilar materials.

D. Screw gutter hangers to wood blocking, through back of gutter with round head, rust-resistant screws with compressible neoprene washers. Bolt or rivet hangers to front top lip of gutter. Slope gutters minimum 1/8" per foot.

E. Install downspouts with wrap-around hangers securely attached to wall. Locate hangers at top and bottom of downspout with intermediate hangers at 6' o.c. maximum. Attach to sides of downspout with sheet metal screws.

END OF SECTION

SECTION 07900

SEALANTS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Clean and prepare joint surfaces.

B. Sealant, caulk and backing materials required for following:

1. Windows.
2. Exterior doors.
3. Where wood abuts masonry.
4. Other locations detailed on the Drawings.
5. Roofing.

1.02 RELATED REQUIREMENTS

A. Section 04200: Masonry

B. Section 06200: Finish Carpentry.

C. Section 07415: Siding and Sheet Metal.

D. Section 08111: Metal Frames.

E. Section 08305: Attic Access Doors.

F. Section 08800: Glass and Glazing.

G. Section: 09900 Painting.

1.03 REFERENCES

A. FS TT-S-1543 - Sealing compound, silicone rubber base.

B. ASTM C920 - Specifications for Non-Sag, Class 25 Sealants, without primer.

C. ASTM C834 - Acrylic latex, one part.

1.04 SUBMITTALS

A. Submit manufacturer's product data for surface preparation and installation in accordance with Section 01340.
B. Submit color chart for selection.

1.05 WARRANTY

A. Provide 1 year warranty in accordance with the Contract.

B. Warranty: Replace sealants which fail because of loss of cohesion or adhesion, or do not cure.

PART 2 PRODUCTS

2.01 SEALANT MATERIALS

A. Exterior sealant: Morton Thiokol 1P, single component, liquid polysulfide polymer, or equal conforming to requirements of ASTM C920, color as selected by the Architect.

B. Interior caulk: Acrylic latex, one part, conforming to requirements of ASTM C834.

2.02 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint filler: ASTM D1056, round open cell foam rod; oversized 30% to 50%.

D. Bond breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.01 INSPECTION

A. Verify joint dimensions, physical and environmental conditions are acceptable to receive work of this Section.

B. Beginning of installation means acceptance.

3.02 PREPARATION

A. Clean, prepare and size joints in accordance with manufacturer's instructions. Remove any loose materials and other foreign matter which might impair adhesion of sealant.

B. Verify that joint shaping materials and release tapes are compatible with sealant.

C. Examine joint dimensions and size materials to achieve required width/depth ratios.

D. Use joint filler to achieve required joint depths, to allow sealants to perform properly.

E. Use bond breaker where required.

3.03 INSTALLATION

A. Install sealant in accordance with manufacturer's instructions.

B. Apply sealant within recommended temperature ranges. Consult manufacturer when sealant cannot be applied within recommended temperature ranges.

C. Tool joints concave.

D. Joints shall be free of air pockets, foreign embedded matter, ridges and sags.

END OF SECTION

SECTION 08110

METAL DOORS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Standard and fire rated type pressed steel hollow metal doors with flush faces.

B. Install Hardware.

1.02 RELATED REQUIREMENTS

A. Section 08111: Metal Frames.

B. Section 08700: Hardware.

C. Section 08800: Glass and Glazing.

1.03 REFERENCES

A. SDI-100 - Recommended Specifications - Standard Steel Doors and Frames of Steel Door Institute.

B. Underwriters' Laboratories Inc. (UL) as applicable to fire rated hollow metal doors.

C. ASTM A525 - Steel Sheet, Zinc Coated (galvanized) by the Hot Dip Process, General Requirements.

D. ASTM A569 - Steel, Carbon, Hot-Rolled Sheet and Strip, Commercial Quality.

E. ASTM A 366 - Steel, Carbon, Cold-Rolled Sheet, Commercial Quality.

1.04 SHOP DRAWING AND PRODUCT DATA

A. Submit shop drawings and product data in accordance with Section 01340.

B. Indicate general construction, configurations, jointing methods, reinforcements and locations of cut-outs for glass and louvers.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Acceptable manufacturers follow:

1. Steelcraft.
2. Bymoco Metal Fabricators, Inc.
3. Amweld Building Products, Inc.
4. CECO Door Products.

B. Manufacturers of products with equal function and performance are acceptable.

2.02 HOLLOW METAL DOORS

A. Materials and Fabrication: SDI-100 except as amended in this Section.

B. 1-3/4" Thick Doors: Flush Type, seamless, 18 gage ASTM A366 steel. Vertical stiffeners of channel-shaped steel 6" on centers, welded to both faces and core filled with Polystyrene Foam.

2.03 FABRICATION

A. Mechanically interlock longitudinal seams of stiffners. Leave seams invisible, or weld, fill and grind smooth.

B. All doors to have G-60 zinc coating conforming to A525 and ASTM A526.

C. Reinforce and prepare doors to receive specified hardware. Refer to Section 08700 for hardware requirements.

D. Provide astragals for double doors.

E. Fill surface depressions with metallic paste filler and grind to a smooth uniform finish.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install hollow metal doors in accordance with SDI-100 except as amended in this Section.

B. Install hollow metal doors plum and square, and with maximum diagonal distortion

of 1/16". Install hardware in accordance with requirements of Section 08700.

C. After installation, touch-up scratched or damaged surfaces. Use type of primer identical to that used for shop coat.

END OF SECTION

SECTION 08111

METAL FRAMES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Standard pressed steel hollow metal door frames.

B. View window frames.

1.02 RELATED REQUIREMENTS

A. Section 08110: Metal Doors.

B. Section 08700: Hardware.

1.03 REFERENCES

A. SDI-100 - Recommended Specifications - Standard Steel Doors and Frames.

B. SDI-105 - Recommended Erection Instructions for Steel Frames.

C. ASTM A 366 - Steel, Carbon, Cold-Rolled Sheet, Commercial Quality.

1.04 SHOP DRAWING AND PRODUCT DATA

A. Submit shop drawings and product data in accordance with Section 01340.

B. Indicate general construction, configurations, jointing methods, reinforcements, anchorage methods, hardware locations and installation details.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Acceptable manufacturers follow:

1. Steelcraft.
2. Bymoco Metal Fabricators, Inc.
3. CECO Door Products.
4. Amweld Building Products, Inc.

B. Manufacturers of products with equal function and performance are acceptable.

2.02 HOLLOW METAL FRAMES

A. Materials and Fabrication: SDI-100 except as amended in this Section.

B. Types: Welded construction of cold-rolled steel conforming to ASTM A366 for metal and wood doors. Exterior frames to have G-60 zinc coating conforming to A525 and ASTM A526.

C. Gage: Exterior 16, Interior 18.

D. Mortar Guard Boxes: Minimum 22 gage thick welded in place.

2.03 FIRE RATED FRAMES

A. Fabricate fire rated hollow metal assemblies that comply with NFPA 80 which have been tested in accordance with ASTM 152. Refer to Drawings for label requirements.

B. Each assembly shall bear a permanent UL label.

2.04 FABRICATION

A. Accurately form and cut mitered corners of welded type frames. Weld on inside surfaces. Grind welded joints to smooth uniform finish.

B. Reinforce frames wider than 4' with 12 gage formed steel channels welded in place, flush with top of frames.

C. Reinforce and prepare frames to receive hardware. Refer to Section 08700 for hardware requirements.

D. Frames to have G-60 zinc coating conforming to A525 and ASTM A526.

E. Place minimum of 3 single silencers on single door frames. Space equally along strike.

F. Place minimum of 2 single silencers on double door frames. Place on frame heads.

G. Jamb Anchors: Galvanized clip angles welded to jamb bottoms. For masonry walls, use 3-18 gage galvanized anchors at each jamb up to 7'-6". Add 1 jamb for each additional 18" height.

H. Fill surface depressions of hollow metal frames with metallic paste filler and grind to smooth finish.

I. Chemically treat surfaces and apply 1 coat of bonderized zinc-chromate rust-inhibitive primer.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install hollow metal frames in accordance with SDI-105 except as amended in this Section.

B. Install hollow metal frames plum and square, in correct locations shown on the Drawings and with maximum diagonal distortion of 1/16".

C. Ensure frames are securely and Rigidly anchored to adjacent construction.

D. Install hardware in accordance with requirements of Section 08700.

E. After installation, touch-up scratched or damaged surfaces. Use type of primer identical to that used for shop coat.

END OF SECTION

SECTION 08305

ATTIC ACCESS DOORS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Furnish and install attic access doors.

1.02 RELATED REQUIREMENTS

A. Section 06200: Finish Carpentry.

B. Section 09900: Painting.

1.03 SUBMITTALS

A. Submit shop drawings and product data in accordance with Section 01340.

PART 2 PRODUCTS

2.01 ATTIC ACCESS DOORS

A. Frame constructed of 16 gage steel with 14 gage door.

B. Galvanized drywall bead.

C. Double acting concealed spring hinge allowing door to swing 175 degrees.

D. Lock to be cylinder type with 2 keys.

E. Size to be 22" x 36".

F. Entire assembly to be factory phosphate dipped and primed.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's printed instructions.

END OF SECTION

SECTION 08700

HARDWARE

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Hardware for interior and exterior doors.

B. Threshold and weatherstripping for exterior doors.

1.02 RELATED REQUIREMENTS

A. Section 06200: Finish Carpentry.

B. Section 08110: Metal Doors.

C. Section 08111: Metal Frames.

1.03 REFERENCES

A. ANSI A115.2 - Door and Frame Preparation for Bored or Cylindrical Locks for 1-3/4" Doors.

B. ANSI A156.1 - Butts and Hinges.

1.04 KEYING

A. Door locks: Keyed differently, keyed alike and master keyed, as directed. Stamp all keyed alike keys with group number and stamp keyed differently keys with door numbers.

B. Supply 2 keys for each lock and 4 master keys.

1.05 SHOP DRAWINGS

A. Submit in accordance with Section 01340.

PART 2 PRODUCTS

2.01 HARDWARE

A. Provide items as listed in the hardware schedule complete to function as intended.

B. Similar items of same function and performance by other manufacturers will be acceptable.

C. Promptly furnish templates to avoid delays.

D. Hardware Group A: Doors 100A, 101A

1. Exterior ball bearing hinges: Hagar BB1193SH, Stanley FBB193 or McKinney TB3313-NRP - 4½" × 4½", 3/door (satin stainless steel US32D)
2. Classroom lock -lever: Sargent 8200-LNL, Schlage L9000-OLY or Yale 8800-AU (satin stainless steel US32D)
3. H/C Closer: LCN 4010 Series Smoothee, Norton Series 7500BF or Yale 4400BF (aluminum paint)
4. Floor stop: Baldwin 4006, Ives 438 or Hagar 243F (satin stainless steel US32D)
5. Threshold: Zero 566A or approved equal
6. Silencer: Hagar 307D, Ives 20 or Glynn-Johnson GJ64 - 3/door

E. Hardware Group B: Door 102A

1. Exterior ball bearing hinges: Hagar BB1193SH, Stanley FBB193 or McKinney TB3313-NRP - 4½" × 4½", 3/door (satin stainless steel US32D)
2. Entrance exit device-lever: Narrow rim type mortised exit device: Sargent 8300 Series with 700-4 series ET lever control (satin stainless steel US32D)
3. Flush bolts: Ives 258, Hagar 282D/283D or Glynn-Johnson FB6 (satin chrome US26D)
4. Crash stop: Hagar 300D or Ives 115 1/door
5. Threshold: Zero 566A or approved equal
6. Silencer: Hagar 307D, Ives 20 or Glynn-Johnson GJ64 - 1/door

F. Hardware Group C: Door 103A

1. Interior standard hinges: Hagar 1279, Stanley F179 or McKinney T2714 - 4½" × 4½", 3/door (satin chrome US26D)
2. Deadlock: Sargent 460 or Yale 3300 (satin chrome 26D)
3. Deadlock pull: ADI 590-1 or approved equal.
4. Wall stop: Baldwin 4275, Ives 407½ or Hagar 236W (satin stainless steel US32D)

PART 3 EXECUTION

2.02 INSTALLATION

A. Install hardware in accordance with manufacturer's recommendations, using proper

templates. Install in standard locations unless detailed otherwise.

B. Cut thresholds to suite jambs. Attach with stainless steel machine bolts into expansion shields in bed of caulk.

C. Adjust hardware so that hinges do not bind, doors latch without special effort and there is no play between the latch and strike when doors are closed.

D. Coordinate with painters for a timely installation. Insure door paint is dry before installing silencers.

END OF SECTION

SECTION 08800

GLASS AND GLAZING

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Glass and glazing for hollow metal window frames.

1.02 RELATED REQUIREMENTS

A. Section 08111: Metal Frames.

B. Section 07900: Sealants.

1.03 REFERENCES

A. FS DD-G-1403b - Glass, Plate (Float), Sheet, Figured and Spandrel (Heat Strengthened and Fully Tempered).

B. FS TT-G-410E - Glazing Compound, Sash (Metal) for Back Bedding and Face Glazing (Not for Channel or Stop Glazing).

C. FS TT-S-001543 - Sealing Compound, Silicone Base (for Caulking and Glazing in Buildings and Other Structures).

D. NAAMM SS-1B-68 - Nonskinning Resilient Preformed Compounds - Tapes, Ribbons, Beads with Release Paper.

1.04 SHOP DRAWINGS

A. Submit in accordance with Section 01340.

1.05 WARRANTY

A. Provide written warranty which will provide for replacing, at no cost to the Owner, hermetically sealed glass units which exhibit interpane dusting or misting within a minimum period of 5 years from the date of Substantial Completion.

PART 2 PRODUCTS

2.01 GLASS

A. 1" insulating tempered glass: PPG Solarcool (2) Solarbronze reflective + Sungate 500 Low-E (3), or approved equal, with a maximum U-Value of .35 and maximum of SHGC of .29. Units hermetically sealed and manufactured to meet established quality standards.

2.02 GLAZING COMPOUNDS

A. Glazing compound: Modified oil type; FS TT-G-410E; non-hardening, knife grade for wood or metal frames, white color.

B. Sealant: 1 component sulfide; FS TT-S-230; color selected by Architect; Shore "A" hardness of 15-25.

2.03 GLAZING MATERIALS

A. Glazing tape: Preformed butyl type; NAAMM SS-1B-68, with integral spacing device; 10-15 durometer hardness; paper release; white color.

B. Setting blocks: Neoprene; 70-90 durometer hardness; 4" long x ⅜" thick x ¼" high.

C. Spacer shims: Neoprene; 50 durometer hardness; 3" long by 3/32" thick by¼" high.

PART 3 EXECUTION

3.01 EXTERIOR DRY METHOD (PREFORMED GLAZING CHANNEL)

A. Clean contact surfaces with solvent and wipe dry.

B. Cut glazing channel to proper length and install on glass pane. Weld joints by butting channel and dabbing with sealant.

C. Place setting blocks at ¼ points.

D. Rest glass on setting blocks and push against stop with sufficient pressure to ensure full contact and adhesion at perimeter.

E. Install removable stops, avoid displacement of glazing channel, exert pressure for full continuous contact.

3.02 CLEANING

A. After installation, mark glass with "x" by using tape or removable paste.

B. Immediately remove droppings from finished surfaces. Remove labels after work is complete and inspected.

END OF SECTION

SECTION 09900

PAINTING

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Prepare surfaces which are to receive finish

B. Finish surfaces as indicated in the Schedule.

1.02 RELATED REQUIREMENTS

A. Section 04200: Masonry.

B. Section 06200: Finish Carpentry.

C. Section 08110: Metal Doors.

D. Section 08111: Metal Frames.

E. Section 08305: Attic Access Doors.

1.03 SAMPLES

A. Submit product data and color samples in accordance with Section 01340.

1.04 EXTRA STOCK

A. Provide leftover paint of each type and color used for stock.

B. Containers to be tightly sealed and clearly labeled.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver paint materials in sealed original labeled containers, bearing manufacturer's name, type of paint, brand name, color designation and instructions for mixing and/or reducing.

B. Provide adequate storage facilities. Store paint materials at minimum ambient temperature of 45 degrees F in well ventilated areas.

1.06 ENVIRONMENTAL REQUIREMENTS

A. Measure moisture content of surfaces using electronic moisture meter. Do not apply finishes unless moisture contents of surfaces are below the following maximums:

1.	Masonry, concrete and concrete block	12%
2.	Interior Wood	15%

B. Ensure surface temperatures or the surrounding air temperatures above 40 degrees F before applying finishes. Minimum application temperature for latex paints for interior work is 45 degrees F and 50 degrees F for exterior. Minimum application temperature for varnish is 65 degrees F.

C. Provide adequate continuous ventilation and sufficient heating facilities to maintain temperatures above 45 degrees F for 24 hours before, during and 48 hours after application of finishes.

1.07 PROTECTION

A. Adequately protect other surfaces from paint and damages. Repair damage as a result of inadequate or unsuitable protection.

B. Furnish sufficient drop cloths, shields and protective equipment to prevent spray or droppings from surfaces not being painted and in particular, surfaces within storage and preparation area.

C. Place cotton waste cloths and material which may constitute a fire hazard in closed metal containers and remove daily from site.

D. Remove electrical plates, surface hardware, fittings and fastenings, prior to painting operations. These items are to be carefully stored and replaced on completion of work in each area. Do not use solvent to clean hardware that may remove lacquer finish.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Tnemec.

B. Glidden

C. Sherwin-Williams.

2.02 MATERIALS

A. Paint accessory materials: Linseed oil, shellac, turpentine and other materials not specifically indicated herein but required to achieve the finishes specified of high quality and approved manufacturer.

B. Paints: Ready-mixed except field catalyzed coatings. Pigments fully ground maintaining a soft paste consistency, capable of being readily and uniformly dispersed to a complete homogeneous mixture.

C. Paints to have good flowing and brushing properties and be capable of drying or curing free of streaks or sags.

2.03 PAINTING SCHEDULE - EXTERIOR

A. Ferrous metals (Finish: paint - semi-gloss):

1. 1st. coat: Sherwin Williams DTM Primer/Finish at 3.0 mils DFT, B66W1.
2. 2nd. coat: Sherwin Williams METALATEX Semi-Gloss Enamel at 1.5 mils DFT, B42 Series.
3. 3rd. coat: Sherwin Williams METALATEX Semi-Gloss Enamel at 1.5 mils DFT, B42 Series.

B. Galvanized metals (Finish: latex - semi-gloss):

1. 1st. coat: Sherwin Williams GALVITE at 2.0 mils DFT.
2. 2nd. coat: Sherwin Williams A-100 Gloss Latex House & Trim at 1.5 mils DFT, A8 Series.
3. 3rd. coat: Sherwin Williams A-100 Gloss Latex House & Trim at 1.5 mils DFT, A8 Series.

C. Brick (Finish: latex elastomeric waterproofing system - flat):

1. Primer: Loxon Exterior Acrylic Masonry Primer, A24 Series (3.1 mils).
2. 2nd Coat: Elastomeric Waterproofing Coating, A5 Series (4.8 mils).
3. 3rd Coat: Elastomeric Waterproofing Coating, A5 Series (4.8 mils).

2.04 PAINTING SCHEDULE - INTERIOR

A. Wood ceiling (Finish: paint - semi-gloss):

1. 1st. coat: Sherwin Williams Wall & Wood Primer at 2.0 mils DFT, B49WZ2.

2. 2nd. coat: Sherwin Williams ProMar 200 Latex Semi-Gloss Enamel at 1.5 mils DFT, B31W200
3. 3nd. coat: Sherwin Williams ProMar 200 Latex Semi-Gloss Enamel at 1.5 mils DFT, B31W200.

B. Masonry walls (Finish: epoxy - semi-gloss, water base):

1. 1st. coat: Sherwin Williams Heavy Duty Block Filler at 8.0 - 10.0 mils DFT (87-108 sq. ft./gal), B42W46.
2. 2nd. coat: Sherwin Williams Water Based Catalyzed Epoxy at 3.0 mils DFT, B70/B60V25.
3. 3rd. coat: Sherwin Williams Water Based Catalyzed Epoxy at 3.0 mils DFT, B70/B60V25.

C. Concrete floor (Finish: catalyzed polymide epoxy):

1. 1st. coat: Sherwin Williams Armorseal 1000HS, at 5-8 mils DFT, Series B67-2000/B67V2002.
2. 2nd. coat: Sherwin Williams Armorseal 1000HS, at 5-8 mils DFT, Series B67-2000/B67V2002 with slip resistant additive.

D. Ferrous metals (Finish: paint - semi-gloss):

1. 1st. coat: Sherwin Williams DTM Acrylic Primer/Finish at 3.0 mils DFT, B66W1.
2. 2nd. coat: Sherwin Williams Metalatex Semi-Gloss Enamel at 1.5 mils DFT, B42 Series.
3. 3rd. coat: Sherwin Williams Metalatex Semi-Gloss Enamel at 1.5 mils DFT, B42 Series.

E. Galvanized metals (Finish: latex - semi-gloss):

1. 1st. coat: Sherwin Williams GALVITE at 2.0 mils DFT.
2. 2nd. coat: Sherwin Williams ProMar 200 Latex Semi-Gloss Enamel at 1.3 mils DFT, B31W200.
3. 3rd. coat: Sherwin Williams ProMar 200 Latex Semi-Gloss Enamel at 1.3 mils DFT, B31W200.

PART 3 EXECUTION

3.01 INSPECTION

A. Thoroughly examine surfaces scheduled to be painted prior to commencement of work. Report in writing to Architect, any condition that may potentially affect

proper application. Do not commence until such defects have been corrected.

B. Correct defects and deficiencies in surfaces which may adversely affect work of this section.

3.02 PREPARATION

A. Remove mildew, by scrubbing with solution of Tri-Sodium Phosphate and bleach. Rinse with clean water and allow surface to dry completely.

B. Remove surface contamination from aluminum surfaces requiring a paint finish by steam, high pressure water or solvent washing. Apply etching primer or acid etch. Apply paint immediately if acid etching.

C. Remove dirt, powder residue and foreign matter and paint immediately.

D. Remove contamination from gypsum wallboard surfaces and prime to show defects, if any. Paint after defects have been remedied.

E. Remove surface contamination and oils from galvanized surfaces and wash with solvent. Apply coat of etching type primer.

F. Remove surface contamination and oils from zinc coated surfaces and prepare for painting in accordance with metal manufacturer's recommendations.

G. Remove dirt, loose mortar, scale, powder and other foreign matter from concrete and concrete block surfaces which are to be painted or to receive a clear sealer. Remove oil and grease with a solution of Tri-Sodium Phosphate, rinse well and allow to thoroughly dry.

H. Remove stains from concrete and concrete block surfaces caused by weathering or corroding metals with a solution of Sodium Metasilicate after being thoroughly wetted with water. Allow to thoroughly dry.

I. Fill hairline cracks, small holes and imperfections on plaster surfaces with patching plaster. Smooth off to match adjacent surfaces. Wash and neutralize high alkali surfaces where they occur.

J. Remove grease, rust, scale, dirt and dust from steel and iron surfaces. Where heavy coatings of scale are evident, remove by wire brushing, sandblasting or any other necessary method. Ensure steel surfaces are satisfactory before painting.

K. Clean unprimed steel surfaces by washing with solvent. Apply a treatment of Phosphoric Acid solution, ensuring weld joints, bolts and nuts are similarly cleaned.

Prime surfaces to indicate defects, if any. Paint after defects have been remedied.

L. Sand and scrape shop primed steel surfaces to remove loose primer and rust. Feather out edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.

3.03 APPLICATION

A. Apply each coat at proper consistency.

B. Sand lightly between coats to achieve required finish.

C. Do not apply finishes on surfaces that are not sufficiently dry.

3.04 CLEANING

A. As work proceeds and upon completion, promptly remove paint where spilled, splashed or spattered.

B. During progress of work and upon completion, promptly remove paint where spilled, splashed or spattered.

C. Upon completion of work, leave premises neat and clean, to the satisfaction of the Architect.

END OF SECTION

SECTION 10156

PHENOLIC TOILET PARTITIONS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Phenolic toilet partition doors.

B. Attachment hardware.

1.02 RELATED REQUIREMENTS

A. Section 04200: Masonry.

B. Section 10800: Toilet and Bath Accessories.

1.03 SHOP DRAWINGS AND PRODUCT DATA

A. Submit shop drawings and product data in accordance with Section 01340.

B. Indicate partition layouts, swing of doors, elevations, anchorage and mounting details, components, hardware, finishes, available colors and relevant dimensions.

C. Provide color chart indicating manufacturer’s standard colors.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Boberick Washroom Equipment, Inc., DuraLine Series 1180

B. Metpar Corinthian FP-500 Solid Phenolic.

C. The Mills Company Designer Option Series 3000.

D. Substitutions: Items of same function and performance are acceptable.

2.02 MATERIALS

A. Doors shall be furnished with manufacturer's standard accessories required for a complete installation. Colors will be selected from manufacturer's standard color chart.

B. All door hardware shall be tamperproof stainless steel or non-ferrous chrome plated.

C. Mounting shall be with continuous hinges type.

D. Latch and mounting shall meet ADA requirements.

PART 3 EXECUTION

3.01 INSTALLATION

A. Examine site conditions.

B. Provide 1/2" space between wall and doors.

C. Attach hinges and latch securely to walls using appropriate anchor devices.

END OF SECTION

SECTION 10442

ALUMINUM DOOR SIGNAGE

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Wall mounted signage meeting requirements of ADA.

B. One-way theft-proof screws for CMU mounting.

1.02 RELATED REQUIREMENTS

A. Section 04200: Masonry.

1.03 SAMPLES

A. Submit samples in accordance with Section 01340.

B. Provide 1 full size sample sign of type, style and color specified including method of attachment, if requested.

1.04 SHOP DRAWINGS

A. Submit shop drawings in accordance with Section 01340.

B. Provide listing of sign types, lettering and locations, to be to be attached, along with overall dimensions.

1.05 DELIVERY

A. Package separately or in like groups of names, labeled with names enclosed. Include installation template, hardware or adhesive specified and installation instructions.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Acceptable manufacturers: The Supersine Company, or approved equal.

B. Substitutions: Items of same function and performance are acceptable.

2.02 TYPE

A. Signs: Dimensional type complete with drilled holes and oval head one-way theft-proof screws and inserts for CMU wall mounting. Size to be 10" x 7".

2.03 MATERIALS

A. Signs: .102" aluminum 3003-H14 per ASTM B209, copy die raised.

B. Finish/colors: Two part catalyzed acrylic polyurethane, 1.5 - 2.0 mils thick, color selected from manufacturers standard range.

2.04 LETTERING

A. Character Proportion: Letters and numbers shall be upper case, have a width-to-height ratio where the width of the upper case letter “O” is 55% minimum and 110% maximum of the height if the uppercase letter “I”.

B. Height: Characters shall be sized according to the viewing distance from which they are to be read. Pictograms shall have a border dimension of 4" minimum.

C. Type: Letters and numbers shall be raised 1/32" sans serif type and accompanied with Grade 2 Braille. Characters shall be 5/8" high minimum to 2" maximum with 1/8" minimum between letters. Stroke thickness of uppercase letter “I”shall be 15% maximum height of the character. Line spacing shall be 135% minimum and 170% maximum of the character height. Pictograms shall be accompanied by the equivalent verbal description placed directly below.

D. Finish and Contrast: Matte, non-glare contrasting with their background.

E. Colors: Selected from manufacturers standard range.

F. Schedule: 1-MEN, 1-WOMEN.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install signs after surfaces are painted and finished, on the wall, 48" minimum to the lowest tactile characters and 60"maximum to the highest tactile characters, from the floor, on the latch side of the door.

B. Install centered, level, in line and in accordance with manufacturer's recommendations.

C. Clean and polish, remove excess adhesive.

END OF SECTION

SECTION 10800

TOILET AND BATH ACCESSORIES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Toilet and bath accessories listed herein.

B. Rough-in frames applied for other sections.

C. Attachment hardware.

1.02 RELATED REQUIREMENTS

A. Section 04200: Masonry.

B. Section 06100: Rough Carpentry.

C. Section 10156: Phenolic Toilet Partitions.

1.03 REFERENCES

A. ASTM A167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.

B. ASTM A366 - Cold-Rolled Carbon Steel Sheets, Commercial Quality.

1.04 SUBMITTALS

A. Submit 1 sample of each substituted accessory for Architect's approval, if requested.

B. Submit shop drawings in accordance with Section 01340.

1.05 DELIVERY, STORAGE AND HANDLING

A. Do not deliver accessories to site until rooms in which they are to be installed are ready to receive them.

B. Pack accessories individually in a manner to protect accessory and its finish.

1.06 PROTECTION

A. Protect adjacent or adjoining finished surfaces and work from damage during installation.

PART 2 PRODUCTS

2.01 MATERIALS

A. Sheet steel: ASTM A366, cold rolled stretcher leveled; 1.25 oz./sq. ft. galvanized coating.

B. Stainless steel sheet: ASTM A167, commercial grade, 22 gage.

C. Stainless Steel Tubing: ASTM A269, commercial grade, seamless welded.

D. Adhesive: Epoxy type contact cement.

E. Fasteners, Screws and Bolts: Hot dip galvanized.

F. Expansion shields: Fiber, lead or rubber as recommended by accessory manufacturer for component substrate.

2.02 FINISHES

A. Chrome/nickel plating: Satin finish.

B. Stainless steel: Polished finish.

C. Shop primed ferrous metals: Pretreat and clean, spray apply 1 coat primer and bake.

D. Enamel: Pretreat to clean condition, apply 1 coat primer and minimum 2 coats epoxy, electrostatic baked enamel.

2.03 FABRICATION

A. Weld and grind smooth joints of fabricated components.

B. Form exposed surfaces from 1 sheet of stock, free of joints.

C. Provide steel anchor plates and anchor components for installation on building finishes.

D. Form surfaces flat without distortion. Maintain flat surfaces without scratches or

dents.

E. Back paint components where contact is made with building finishes to prevent electrolysis.

F. Hot dip galvanize ferrous metal anchors and fastening devices.

G. Shop assemble components and package complete with anchors and fittings.

2.04 SCHEDULE OF ACCESSORIES

A. Accessories shall be as manufactured by Bobrick or American Specialties. The following numbers are Bobrick:

ITEM		DESCRIPTION
1. Mirror: B-165		Channel frame, 18"x36"
2. Grab bars:		
a.	B-6206.99	1 ½" dia., peened grip, concealed mtd., 36" long
b.	B-6206.99	1 ½" dia., peened grip, concealed mtd., 42" long
3. Hook: B-222		Surface mounted.

4. Thin Air Hand Dryer: Excel Dryer, Inc. Model TA-ABS, surface mounted.

PART 3 EXECUTION

3.01 PREPARATION

A. Deliver inserts and rough-in frames to job site at appropriate time for building-in. Provide templates and rough-in measurements as required.

B. Before starting work, notify Architect in writing of any conflicts detrimental to installation or operation of units.

3.02 INSTALLATION

A. Install fixtures, accessories and items in accordance with manufacturer's printed instructions.

B. Install true, plumb and level, securely and rigidly anchored to substrate.

C. Grab bars shall be mounted to withstand a downward force of 250 pounds.

D. See Drawings for locations of all items.

END OF SECTION