

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work included: Provide cast-in-place concrete where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

1.02 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts with the specified requirements and the needed for proper performance of the work of this Section.

PART 2 - PRODUCTS

2.01 FORMS

- A. Design, erect, support, brace, and maintain formwork so it will safely support vertical lateral loads which might be applied until such loads can be supported safely by the concrete structure.
- B. Construct forms to the exact sizes, lines, and dimensions shown, and as required to obtain accurate alignment, location, grades, and level and plumb work in the finished structure.

2.02 MOISTURE BARRIER

- A. Where so indicated on the Drawings, provide a moisture barrier consisting of:
 - 1. Four inches of clean dry sand or compacted gravel evenly spread as a cushion.
 - 2. "Visqueen" or equal 10 mil thick plastic sheeting, with all joints taped and sealed.

2.03 INSULATION

- A. XPS Type polystyrene insulation at perimeter of turned down concrete slab with an R- value of 4.2/inch thickness. Install at locations shown on drawings.

2.04 REINFORCEMENT

- A. Comply with the following as minimums:
 - 1. Bars: ASTM A615, grade 60 unless otherwise shown on the Drawings, using deformed bars for number 3 and larger.

CAST-IN-PLACE CONCRETE

03 30 00 - 1

- B. Fabricate reinforcement to the required shapes and dimensions, within fabrication tolerances stated in the CRSI "Manual of Standard Practices".
- C. Do not use reinforcement having any of the following defects:
 - 1. Bar lengths, depths, or bends exceeding the specified fabricating tolerances;
 - 2. Bends or kinks not indicated on the Drawings or required for this Work;
 - 3. Bars with cross-section reduced due to excessive rust or other causes.

2.04 CONCRETE

- A. Comply with the following as minimums:
 - 1. Portland cement: ASTI C150, type I or II, low alkali.
 - 2. Aggregate, general:
 - a. ASTI C33-84, uniformly graded and clean;
 - b. Do not use aggregate known to cause excessive shrinkage.
 - 3. Aggregate, coarse: Crushed rock or washed gravel No. 57.
 - 4. Aggregate fine: Natural washed sand of hard and durable particles varying from fine to particles passing a 3/8" screen, of which at least 12% shall pass a 50-mesh screen.
 - 5. Water: Clean and potable.
- B. Provide concrete with the compressive strengths shown on the Drawings. When such strengths are not shown on the Drawings, provide the following as minimums:
 - 1. Slabs on Grade: 4000 psi
- C. Surface treatment:
 - 1. Provide "Ashford Formula" manufactured by Curecrete Chemical Company of Orem, Utah and provide the manufacturer's standard written 20 year/10 year warranty at interior floor slab.
 - 2. On all other concrete slabs, and walkway surfaces provide "Hunt TLF" curing agent manufactured by Hunt Process Co., Inc.
- D. Admixtures: Coarse aggregate shall consist of crushed stone of solid composition, free from dirt and debris, and conforming to ASTI C33.

2.05 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be
CAST-IN-PLACE CONCRETE

performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02

REINFORCING

A.

Comply with the following, as well as the specified standards, for details and methods of reinforcing placement and supports.

1. Clean reinforcement and remove loose dust and mill scale, earth, and other materials which reduce bond or destroy bond with concrete.
2. Position, support, and secure reinforcement against displacement by forms, construction, and the concrete placement operations.
3. Place reinforcement to obtain the required coverages for concrete protection.

3.03

EMBEDDED ITEMS

B.

Set bolts, inserts, and other required items in the concrete, accurately secured so they will not be displaced, and in the precise locations needed.

3.04

MIXING CONCRETE

A.

Transit mix the concrete in accordance with provisions of ASTI C94.

B.

Mixing water:

1. At the batch plant, withhold 2-1/2 gal of water per cu yd of concrete.
2. Upon arrival at the job site, add all or part of the withheld water (as required for proper slump) before the concrete is discharged from the mixer.
3. Mix not less than five minutes after the withheld water has been added, and not less than one minute of that time immediately prior to discharge of the batch.
4. Unless otherwise directed, provide 15 minutes total mixing time per batch after first addition of water.

3.05

JOINTS

A.

Contraction control joints:

1. Provide sawn control joints in floor slab as shown on the drawings within 12 hours of the initial pour. Depth of joints to be 1/4 the total thickness of the floor slab.

3.06

CONCRETE FINISHING

A.

Except as may be show otherwise on the Drawings, provide the following finishes at the indicated locations.

1. Float finish:
 - a. Apply to monolithic slab surfaces that are to receive trowel finish.

CAST-IN-PLACE CONCRETE

2. Trowel finish:
 - a. Apply to monolithic slab surfaces that are to be exposed to view, unless otherwise shown, and to slab surfaces that are to be covered with resilient flooring, carpeting, paint, or other thin-film finish coating system.
3. Non-slip broom finish:
 - a. Apply to walks, stairs, drives, ramps, and similar pedestrian and vehicular areas.

3.07

REMEDIAL WORK

- A. Repair or replace deficient work as directed by the Architect and at no additional cost to the Owner.

END OF SECTION 03 30 00

CAST-IN-PLACE CONCRETE
03 30 00-4

SECTION 13 34 18
PRE-ENGINEERED POST & LADDER FRAME SYSTEM

PART 1 – GENERAL

1.01 BUILDING DESCRIPTION

- A. Pre-engineered factory and field fabricated Wood Post & Ladder Type Structure 50' x 80' x 16' high side walls with gable type roof with 4/12 roof slope. 2-ply wood posts and ladders at 4 feet on center. Roof trusses at 4'-0" on center directly positioned over wood ladder posts with 2x4 roof purlins at 2'-0" on center.
- B. Prefinished metal roofing, siding panels trim items minimum 29 gauge galvalume.
- C. Foundation system to be reinforced cast-in place concrete floor slab with turned down thickened slab at perimeter. Structural design to meet load requirements for an exposure "C" classification and a ground snow load of 40 lbs per square foot.
- D. Soffits shall be metal perforated pre-finished, gutters and downspouts shall be pre-finished.
- E. Finish of exterior walls on the interior face shall be 29 gauge galvalume pre-finished with pre-finished metal trim
- F. Finish of ceilings shall be 29 gauge galvalume pre-finish metal panels.

1.02 REFERENCE STANDARDS

- A. 2015 International Building Code

1.03 SUBMITTALS

- A. Submit shop drawings sealed by a licensed structural engineer in the State of South Dakota for the structural building components and the concrete foundation design.
- B. Submit shop drawings for the pre-engineered wood roof trusses sealed by a licensed structural engineer in the State of South Dakota.

1.04 QUALIFICATIONS

- A. Contractor shall have previous experience in the erection of building type and employ skilled workmen trained and experienced in the methods needed for proper and safe performance of the work.

1.05 REGULATORY REQUIREMENTS

- A. Contractor shall be responsible for compliance with all applicable building codes, obtaining permits and inspections as required by local ordinances.

PRE-ENGINEERED POST & LADDER FRAME SYSTEM

1.06 DELIVERY, STORAGE AND HANDLING

A. Contractor shall deliver and store materials on platforms or pallets covered with tarpaulins to protect materials from corrosion, discoloring or staining. Materials shall not be store directly in contact with the ground.

1.07 WARRANTY

A. The building manufacturer agrees to repair, restore, or replace material that fails within the specified warranty period. Warranty Period: 20 years from date of Substantial Completion. Metal Panels Warranty: 40 years on chalking, 30 years on color change.

B. Manufacturer shall repair painted metal roofing and siding panels if the paint peels, cracks, checks, flakes, or blisters to an extent that is apparent by ordinary outdoor visual observation when exposed to normal weather and atmospheric conditions. If the manufacturer is unable to repair metal panels to the satisfaction of the Owner, Manufacturer shall replace damaged panels.

PART – 2 PRODUCTS

2.01 MANUFACTURERS – BUILDING SYSTEM

A. Energy Panel Structures, Inc. 102 East Industrial Park, Graettinger, IA 51342 or equivalent.

2.02 MATERIALS - FRAMING

A. Building shall be anchored to a reinforced concrete slab with a reinforced turned down edge as required by building manufacturer.

B. Columns to be structurally connected to concrete slab as required by building manufacturer to comply with code.

C. Wood columns and wood roof trusses to be 4'-0" on center maximum spacing. Columns shall be 2-2x8's laminated No.1 Southern Yellow Pine and securely anchored to the concrete floor slab.

D. All wood members in contact with the soil or concrete shall be treated wood. Wood preservative shall penetrate sap wood in compliance with AWPAs standards and specifications.

E. Wall ladders shall be No. 2 spruce, pine, fir 2x8 at 2'-0" o.c. maximum.

F. Roof purlins shall be No. 2 spruce, pine, fir 2x4 at 2'-0" o.c. maximum.

G. Incidental framing shall be 2x4 or 2x6 No.2 spruce, pine, fir.

H. Roof trusses shall be designed to include an energy heel and overhang at eaves shall be 2'-0".

2.03 MATERIALS – PRE-FINISHED METALS

A. Roofing, siding, interior surface of exterior walls shall be minimum 29 gauge galvalume pre-finished metal. Trim required shall be similar material.

PRE-ENGINEERED POST & LADDER FRAME SYSTEM

- B. Interior ceilings and the inside face of the exterior walls shall be finished with 29 gauge galvalume metal panels.
- C. Interior metal trim shall be similar material to wall panels.
- D. Colors of all metal panels shall be selected by Owner from manufacturer's standard colors.
- E. Gutters and downspouts shall be .030 pre-finished aluminum K style gutters with a minimum of 5" widths.

2.04 INSULATION

- A. Insulation in walls shall be a minimum of R-19 fiberglass or mineral wool type insulation. Insulation in attic space shall be a minimum of 15" deep blown in mineral fiber or rock wool insulation.

2.04 MISCELLANEOUS MATERIALS

- A. Corner bracing at outside exterior corners shall be 1 ¼" tensile steel strapping in an "X" configuration or 2x6 No. 2 or better spruce-pine-fir.
- B. Roofing/Siding/fasteners
 - 1. Center –drive stainless steel screws with EPDM- gasketed washers for ribbed steel panels.
 - 2. All fasteners painted to match metal panels, interior and exterior panels.
- C. Closure strips shall be made from closed cell foam.
- D. Sealant shall be silicone 100% neutral curing and applied at all dissimilar material joints at exterior surfaces.

PART – 3 EXECUTION

3.01 ERECTION

- A. Erect framing in accordance to the manufacturer's established construction procedures. Install components plumb, square, straight and level.
- B. Provide adequate temporary bracing during construction to assure installed components remain square and plumb.
- C. Install metal roofing and siding panels securely anchored to roof purlins and wall ladders with screw fasteners. Caulk joints where required to prevent moisture from entering the framed cavities.
- D. Install gutters with supporting hangers at 24" on center.
- E. Provide filler strips at all roof panels along ridge line at metal ridge cap and along the eave line at the bottom of the roof panels.

3.02 CLEAN-UP

- A. Clean all metal panels as per manufactures recommendations, remove dirt, oil, grease, touch –up minor scratches or chips with matching touch-up paint. Large dents, scratches or discolored panels shall be removed a replaced. Notify Owner of completion of final clean-up prior to Owner accepting the work.

END OF SECTION 13 34 18

PRE-ENGINEERED POST & LADDER FRAME SYSTEM

SECTION 08 12 13

HOLLOW METAL FRAMES AND STEEL DOORS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Exterior steel doors and steel frames as shown and scheduled on drawings. Interior steel frames with wood doors.
- B. Door hardware is specified in SECTION 08 71 00.

1.03 QUALITY ASSURANCE

- A. Provide doors and frames complying with Steel Door Institute "Recommended Specifications: Standard Steel Door and Frames" (SDI-100) and as herein specified.
- B. Manufacturer: Provide standard steel frames and doors by a single firm specializing in production of this type of work.
 - 1. Provide frames by STEELCRAFT, DW Series 18 Gauge, Double Rabbet for 1 3/4" thick doors.
 - 2. Provide full flush insulated steel doors "L Series" by Steelcraft.

PART 2 - PRODUCTS

2.01 MATERIALS, DOORS

- A. Cold-Rolled Steel Sheets: 16 gage.
- B. Supports and Anchors: Fabricate of not less than 18 gage galvanized sheet steel.

2.02 SHOP APPLIED PAINT

- A. Primer: Rust-inhibitive enamel or paint, either air-drying or baking, suitable as a base for specified finish paints.

2.03 FABRICATION, GENERAL

- A. Fabricated steel frame units to be rigid, neat in appearance and free from defects, warp or buckle. Clearly identify work that cannot be permanently factory-assembled before shipment, to assure proper assembly at project site.
- B. Fabricate frames, concealed stiffeners, reinforcement, edge channels, and moldings from cold-rolled, 16 gage steel
- C. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat Phillips heads for exposed screws and bolts.

2.04 FINISH HARDWARE PREPARATION

- A. Prepare doors and frames to receive mortised and concealed finish hardware in accordance with final Finish Hardware Schedule and provided by hardware supplier. Comply with applicable requirements of ANSI A 115 series specifications for door and frame preparation for hardware.
- B. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied finish hardware may be done at project site.
- C. Locate finish hardware as shown on final shop drawings or, if not shown, in accordance with "Recommended Locations for Builder's Hardware", published by Door and Hardware Institute.

2.05 SHOP PAINTING

- A. Clean, treat, and paint exposed surfaces of steel door and frame units, including galvanized surfaces.
- B. Clean steel surfaces of mill scale, rust, oil, grease, dirt, and other foreign materials before application of paint.
- C. Apply shop coat of prime paint of even consistency to provide a uniformly finished surface ready to receive finish paint.

2.06 STANDARD STEEL FRAMES

- A. Provide metal frames for doors, of types and styles as shown on drawings and schedules. Conceal fastenings, unless otherwise indicated.
 - 1. Welded frames at exterior applications.
 - 2. Knock down frames at interior applications.
- B. Door Silencers: Except on weatherstripped frames, drill stops to receive 2 silencers on strike jambs of single-swing frames and 2 silencers on heads of double-swing frames.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. General: Install standard steel doors, frames, and accessories in accordance with final shop drawings and manufacturer's data, and as herein specified.

3.02 DOOR INSTALLATION

- A. Fit steel doors accurately in frames, within clearances specified in SDI-100.

3.03 ADJUST AND CLEAN

- A. Prime Coat Touch-Up: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.
- B. Final Adjustment: Check and readjust operating finish hardware items, leaving steel doors and frames undamaged and in complete and proper operating condition.

END OF SECTION 08 12 13

SECTION 08 36 13

SECTIONAL OVERHEAD DOORS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Provide all materials related to the installation of overhead doors as shown on drawings and specified herein.
- B. Operation to be electrically operated, mounting of door to be interior face mounted.
- C. Door shall be insulated steel sectional overhead type. Each door shall include sections, operators, controls, brackets, tracks, counter balance mechanisms, hardware and accessories.

PART 2 - PRODUCTS

2.01 OVERHEAD SECTIONAL DOOR

- A. Basis of specification shall be Raynor Doors TC300 or equivalent..

2.02 DOOR OPERATOR

- A. Manufacturer Product Designation: Raynor Control Hoist 2.0 Optima with Solid State motor controller .
- B. Provide doors for trolley operation with manual chain hoist.
- C. Motor Horsepower rating: Intermittent 1/2 HP.
- D. Electrical Requirements: 115 volt single phase.
- E. Duty Cycle: 30 cycles/hour.
- F. Control Wiring: Contactor Style Motor starter 24 volt with provisions for connection of safety edge to reverse and external radio control hook-up.
Solid State motor Controller 24 volt control with provisions to select up to 4 standard wiring types plus maximum run timer and provisions for connection of a separate delayed light.

2.03 DOOR SECTIONS

- A. Material: Steel sandwich construction shall be a minimum 2" thick, 25 GA interior and exterior steel skins, stucco embossed and ribbed for added strength. Sections to be mechanically interlocked and pressure bonded to 1 7/8" thick expanded styrene core encased at each end with wrap around type 18 gauge end stiles. Hinge reinforcement plates shall be 16 gauge galvanized steel, located within section interior at every hinge location.
- B. Door sections shall have tongue and groove joint system with dual contact weatherstrip between section joints. Insulation shall be expanded polystyrene, R-value 12.
- C. Interior skin shall be reinforced with two continuous strips, 20 gauge steel, 1 1/4" wide at top and bottom.
- D. Doors shall withstand a wind load of 12 psf. Deflection of door in horizontal position to be maximum 1/12 of door width.
- E. Color and paint Type: Door panel color to be white. Paint shall be Kynar.
- G. Door shall be primed with .2 mil thickness of baked on primer coat. Paint finish coat shall be .8 mil baked on polyester top-coat.
- F. Windows shall be as shown on drawings, 24"x8" oval window encased in a one piece vulcanized rubber frame. Windows shall be insulated glass of two 1/8" thick DSB glass, 3 windows per door.

2.04 WEATHERSTRIPPING

- A. Bottom seal shall be 3 1/2" N shaped vinyl bottom seal in a full length PVC retainer attached to the bottom section of the door.
- B. Perimeter seal at header and jambs shall be provided.

2.05 TRACK

- A. Track shall be galvanized steel 2" with a continuous jamb. Track shall be minimum 19 gauge steel for vertical sections and 16 gauge steel for horizontal sections reinforced with 13 gauge galvanized steel angles. Track shall be fully adjustable.
- B. Configuration type shall be for Normal Headroom.
- C. Mounting of track shall be bracket mount using 2" adjustable track.

2.06 HARDWARE

- A. Hinges - 14 GA galvanized steel hinges.
- B. Track brackets - 13 GA galvanized steel.
- C. Rollers - 10 ball bearings with case hardened inner and outer rails. Rollers shall fit track.
- D. Lock - Furnish door with a five pin tumbler cylinder exterior lock, night latch and steel bar engaging track.

SECTIONAL OVERHEAD DOORS

2.07 COUNTER BALANCE

- A. Torsion spring counter balance shall be mounted on a continuous cross header shaft. Springs shall be oil tempered, helical wound and custom computed for each door. Cable drums shall be die cast aluminum. Galvanized lift cable shall provide safety factor of five to one.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install doors true and plumb for proper operation, as per manufacturer's written instructions.
- B. Adjust doors as required for proper weatherstrip seal at door bottom.
- C. Doors shall be installed at time of acceptance without scratched, marred or dented panels. Damaged panels shall be replaced where directed by Architect at no cost to the Owner.
- D. Remove temporary coverings and protection of adjacent work areas. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance. Remove all construction waste and debris.

END OF SECTION 08 36 13

SECTION 08 51 13

ALUMINUM EXTERIOR WINDOWS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK:

- A. Provide all materials, labor and accessories for the complete installation of sliding type windows as shown on drawings.

PART 2 - PRODUCTS

2.01

- A. ACCEPTABLE MANUFACTURERS: Desco, Manko or equivalent

2.02 WINDOW TYPE

- A. Windows shall be the following type Sliding windows, Manko 2135xpt series 3 1/2" with 1" thick insulated, low E glass

2.03 ALUMINUM WINDOW FINISHES

- A. Anodized Mill Finish Aluminum

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Comply with manufacturer's instructions and recommendations for installation of window units, hardware, operators and other components of work.
- B. Set units plumb, level, and true without warp or rack of frames or sash. Anchor securely in place. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action.
- C. Set sill members and other members in bed of compound as shown or with joint fillers or gaskets to provide weather tight construction.

3.02 ADJUST AND CLEAN

- A. Adjust operating sash and hardware to provide tight fit at contact points and weatherstripping for smooth operation and weathertight closure.
- B. Clean finished surfaces promptly after installation of window, avoid damage to protective coatings and finishes. Window components with damaged, scratched, marred finishes shall be replaced not repaired.
- C. Remove excess glazing and sealant compounds, dirt and foreign substances. Lubricate hardware and moving parts.

END OF SECTION 08 51 13

ALUMINUM EXTERIOR WINDOWS

08 51 13 - 1

SECTION 08 71 00

DOOR HARDWARE

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Provide items required for swinging doors, as scheduled on drawings and herein specified for complete and proper operation of doors.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Hinges: Hager – full mortise, ball bearing, steel 630 finish, 4 ½" x 4 ½".
- B. Closer: Hager- 5300 Series Grade 1 Aluminum body with full plastic cover.
- C. Weather strip: Hager: 736S press on weatherstrip.
- D. Door Bottom Sweep – Zero International 678A.
- E. Saddle Threshold – Hager 426S , mill finish aluminum.
- F. Locksets: Schlage: Series 4000 Grade 1.
- G. Door Stop: Hager #208 kick down door stop. Aluminum

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware for Standard Doors and Frames" by the Door and Hardware Institute.
- B. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Do not install surface-mounted items until finishes have been completed on the substrate.
- C. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- D. Drill and countersink units which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

3.02 ADJUST AND CLEAN

- A. Adjust and check each operating item of hardware and each door, to ensure proper operation or function of every unit. Replace units which cannot be adjusted to operate freely and smoothly as intended for the application made.
- B. Final Adjustment: Clean and adjust all hardware items. Instruct Owner on operation and maintenance of locksets.

DOOR HARDWARE

Hardware Set No. 1

Door Nos. 1,2,3

1 ½ pr - Hinges

1 – Closer

1 – Threshold saddle

1 – Door bottom sweep

1 – Exterior lockset

1 - Weatherstripping

1 – Door stop

END OF SECTION 08 71 00

SECTION 10 14 00

INTERIOR SIGNAGE

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work Included: Provide the following interior signs:
1. 1 ea. - Men/Women (with handicap symbol)
 2. 4 ea. - Warehouse Storage Height Limit 12'-0"
No Storage Above This Sign

PART 2 - PRODUCTS

2.01 MATERIALS: Restroom Sign - U-Line Catalog No. S- 15599 or equivalent.

- A. Restroom Signs shall be 9"x 6", 1/8" injection molded plastic, signs shall comply with ADA guidelines and provide raised Braille text, signs shall have international symbol of accessibility, mount with double sided tape.
- B. Warehouse Signs shall be 18"x 30", printed vinyl sheets or equivalent, with Storage Height Limit 12'-0" graphics printed on sign with red background and black lettering. Provide 3 signs for each warehouse space.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Restroom signs shall be mounted on the strike side of doors. Mounting heights shall be 55 inches above finish floor to center of sign.
- B. Letter signs shall be mounted as shown on drawings.
- C. Signs shall be installed straight and level and mounted with a minimum of two strips of 1/16" adhesive foam tape.
- D. Top of Warehouse signs shall be mounted 12 feet above finish floor, mounted in center of three warehouse space walls.

END OF SECTION 10 14 00

INTERIOR SIGNAGE

10 14 00 - 1

SECTION 10 28 13

TOILET ROOM ACCESSORIES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work included: Provide toilet room accessories where indicated on the Drawings, as specified herein, and as needed for a complete and proper installation.

PART 2 - PRODUCTS

2.01 TOILET ROOM ACCESSORIES

- A. Toilet Room Accessories as manufactured by Bobrick or equivalent.
1. Grab bars - B5507.99 1 1/4" diameter with 2561 Series anchor plate. See drawings for grab bar locations.
 2. Toilet Paper Dispensers – B-6677
 3. Soap Dispensers – B-4112
 4. Framed mirrors - B-293 Series, provide one mirror at each lavatory.
 5. Paper Towel Dispensers – 262-130 surface mounted, 10³/₄"Wx14"Hx4"D.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 INSTALLATION

- B. Install each item in its proper location, firmly anchored into position, level and plumb, and in accordance with the manufacturer's recommendations and ADA compliance requirements.. Coordinate new wood blocking in stud wall for secure anchoring of all accessories.

END OF SECTION 10 28 13

TOILET ROOM ACCESSORIES

10 28 13 - 1

SECTION 10 51 20

FIRE EXTINGUISHER AND CABINET

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Provide fire extinguisher and cabinet as shown on drawings and specified herein for complete and proper installation.

PART 2 - PRODUCTS

2.01 CABINET

- A. Provide cabinet and extinguisher, location as shown on drawings. Provide Model No. 102-R-1 full glass door with silk screen red letters recessed cabinet, 24" h x 9 1/2" w x 5" d.
- B. Acceptable Manufacturer: Modern Metal Products by Muckle, a division of Technico.

2.02 EXTINGUISHER

- A. At each fire extinguisher cabinet, provide one fire extinguisher, Type Center 6HK, 4 1/2" diameter cylinder x 19 3/4" high. Class 40ABC, aluminum cylinder.
- B. Acceptable Manufacturer: Modern Metal Products.
- C. Service, Charge, and tag each fire extinguisher not more than five calendar days prior to the Date of Substantial Completion of the Work.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 INSTALLATION

- A. Install cabinet plumb and level, clean all components from dirt, debris and smudges, mount top of cabinet 54" above finish floor.

END OF SECTION 10 51 20

FIRE EXTINGUISHER AND CABINET

10 51 20 - 1

SECTION 31 22 13

ROUGH GRADING

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Furnish all labor, materials, tools, equipment, and services for earthwork outside the perimeter of the building, in accord with provisions of Contract Documents.
- B. Completely coordinate with work of all other trades.
- C. Although such work is not specifically indicated, furnish and install supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
- D. See Division 1 for General Requirements.

1.02 RELATED SECTIONS

- A. Section 31 23 16 - Building Excavation, Filling and Backfilling.
- B. Section 31 22 19 - Topsoiling and Finished Grading.

1.03 QUALITY ASSURANCE

- A. Compaction density test: Standard Proctor ASTM D698.
- B. Tolerances of sub-grade:
 - 1. Unsurfaced areas: 0.20 FT plus/minus from required elevations.
 - 2. Paved areas: 0.10 FT plus/minus from required elections.

1.04 JOB CONDITIONS

- A. Protect existing facilities, utilities (overhead and underground), sidewalks, pavement.
 - 1. Repair damaged items.
 - 2. Cost of repair to items not indicated paid by Owner.
 - 3. Notify Owner and make emergency repair as directed.
- B. Protect graded areas against wind and water erosion.
 - 1. Re-establish grade where settlement or washing occurs at no extra cost.

PART 2 - PRODUCTS

2.01 MATERIALS

ROUGH GRADING

- A. Fill materials:
1. Reasonably free of roots, organic material, trash, frozen matter, and stones larger than 3/4" as directed by Architect/Engineer.
 2. Add water to dry material, as required.
 3. Allow wet material to dry, as required.
 4. Provide additional borrow or fill as required, at no extra cost.
 5. No borrow or fill can be obtained on site, except as none exists on site or is removed from excavating and grading or as permitted by Architect.
- B. Surplus material:
1. Lawfully remove from site.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Layout all units, structures, piping, roads, parking areas and walks and establish their elevations.
- B. Perform all other layout work required.
- C. Replace property corner markers to original location if disturbed or destroyed.

3.02 GENERAL

- A. Excavate and grade site to subgrades of paved and unpaved areas as indicated.
- B. Do not excavate for miscellaneous footings, slabs, walks and other structures.
- C. Fill as required to bring existing grades to rough grades.
- D. Furnish and place all additional approved material required to bring subgrade to proper line and grade.
- E. During construction, shape and drain embankments and excavation.
- F. Maintain ditches and drains to provide drainage at all times.
- G. Remove materials which cannot be compacted as specified and replace with suitable material.
- H. Remove materials unsuitable to receive fill.
1. Replace with suitable material.

3.03 CONSTRUCTION OF EMBANKMENTS AND FILLS

- A. Construct to lines and grades.

ROUGH GRADING

- B. Make completed fill correspond to shape of typical cross section or contour indicated regardless of method used to show shape, size, and extent of line and grade of work.
- C. Insure that cobbles larger than 3/4" are not placed in upper 6 IN of grading.
- D. Place material in lifts, maximum 8 IN loose thickness.
- E. Place layers horizontally and compact each layer prior to placing additional fill.
- F. Compact using suitable equipment.
 - 1. Control moisture to meet requirements of compaction.
 - 2. Do not place in embankments of fills which exceed 3 percent above or below optimum moisture content.
- G. Under roadways and parking areas and extending 2 FT beyond proposed curb line measured perpendicular from centerline, compact to 95 percent maximum dry density.
- H. Under walk paving, compact to 95 percent maximum dry density.
- I. For site grading, compact to 90 percent of maximum dry density.

END OF SECTION 31 22 13

SECTION 31 22 19

TOPSOILING AND FINISHED GRADING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Furnish all labor, materials, tools, equipment, and services for all topsoiling and finished grading, as indicated, in accord with provisions of Contract Documents.
- B. Completely coordinate with work of all trades.
- C. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
- D. See Division 1 for General Requirements.

1.02 RELATED SECTIONS

- A. Section 31 22 13 - Rough Grading.
- B. Section 31 23 16 - Building Excavation, Filling and Backfilling.

1.03 LIMITS OF WORK

- A. Location of work: All areas within limits of grading and all areas outside limits of grading which are disturbed in the course of the work.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Topsoil: Provide topsoil that is fertile, friable, natural loam, usually dark in color (often black), free of subsoil, clay lumps, brush, weeds, and other debris - and free from roots, stumps, stones larger than 1-1/2 IN in any dimension; and free from other extraneous of toxic matter harmful to plant growth. Topsoil has been stockpiled on the site.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Correct, adjust and/or repair rough graded areas.
 - 1. Bring all sub-grades to specified contours, even and properly compacted to 85 percent of Standard Density ASTM D698.

TOPSOILING AND FINISHED GRADING

B. Loosen surface to depth of 4 IN minimum.

C. Remove all stones and debris over 2 IN in any dimension.

3.02 PLACING TOPSOIL AND FILL SOIL

A. Do not place topsoil or fill soil when subgrade is either wet or frozen enough to cause clodding.

B. Place on-site topsoil to a minimum depth of 2" in all seeded areas.

C. Make finished surface free of stones, sticks, or other material 1 IN or more in any dimension.

D. Make finished surface smooth and true to required grades.

3.03 ACCEPTANCE

A. Upon completion of topsoiling, obtain Architect's acceptance of grade and surface.

END OF SECTION 31 22 19

SECTION 31 23 16

BUILDING EXCAVATION, FILLING, AND BACKFILLING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Furnish all labor, materials, tools, equipment, and services for all excavating, filling, and backfilling for building construction, as indicated, in accord with provisions of Contract Documents.
- B. Completely coordinate with work of all other trades.
- C. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
- D. See Division 1 for General Requirements.

1.02 RELATED SECTIONS

- A. Section 31 22 13 - Rough Grading.
- B. Section 31 22 19 - Topsoiling and Finish Grading.

1.03 DEFINITIONS

- A. Engineer used in this Section shall mean a Soils Engineer employed by Owner, empowered to conduct inspections and make approvals.

1.04 QUALITY ASSURANCE

- A. Subsurface soils investigations have been made at project site.
 - 1. Soils information was obtained for use in preparing foundation design.
 - 2. Soils report locations is included in specifications.
 - 3. Examine site and soils report and determine character of materials to be encountered.
- B. Owner may hire an independent soils laboratory to conduct in-place compaction moisture-density tests.
 - 1. Initial test at each location will be paid for by Owner.
 - 2. If initial test fails, further re-testing shall be paid for by Contractor.

BUILDING EXCAVATION, FILLING, AND BACKFILLING

C. Footings were designed for a net soil bearing pressure of 2000 PSF. All footings are intended to rest on approved structural granular fill or on approved underlying natural soil approved by the Soils Engineer.

D. Compaction density test: ASTM D698, for clay or sand with sufficient fines. ASTM D4253 and 4254 for clean sand or gravel.

1.05 SUBMITTALS (See Section 01 33 23)

A. Certifications for materials.

1.06 JOB CONDITIONS

A. Carefully maintain all bench marks, monuments and other reference points and replace if disturbed or destroyed.

B. Comply with rules and regulations governing respective utilities. Protect active utilities from damage; remove and relocate only as indicated.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Fill material: Clean selected materials free of organic matter and debris, and approved by Engineer, from site excavation or from off-site borrow areas. Fill placed beneath slab on grade shall be low-plasticity cohesive soil or granular soil. Low plasticity cohesive soil shall have a liquid limit less than 45 percent and a plasticity index less than 20 percent.

B. Granular fill: Free draining washed sand and gravel material having a maximum size of 3/4" and containing less than 10% fine material passing a #200 sieve by weight.

PART 3 - EXECUTION

3.01 SITE PREPARATION

A. The site shall be excavated to remove existing fill and topsoil.

B. The excavated material is stockpiled on the site.

C. Prior to beginning any work the Soils Engineer will inspect the site to determine that it is ready to receive fill, when requested by Owner.

3.02 EXCAVATION - GENERAL

A. Excavate to dimensions and elevations indicated, allowing additional space as required for construction operations and inspections of foundations.

BUILDING EXCAVATION, FILLING, AND BACKFILLING

- B. If undesirable material is encountered during excavation, remove and replace material as directed by Engineer.
- C. Properly level off bottoms of all excavations.
- D. Shore, sheet pile, and brace excavations as required to maintain them secure. Remove shoring as backfilling progresses, but only when excavations are safe.
- E. Control grading around building.
 - 1. Pitch earth to prevent water from running into excavated areas or damaging structure.
 - 2. Maintain all pits and trenches, where footings will be placed, free of water at all times.
 - 3. Provide all pumping required to keep excavated spaces clear of water during construction.
 - 4. When springs or running water are encountered, notify Engineer, provide free discharge of water by trenches or pumps, and drain to appropriate point of disposal as directed.

3.03 FOOTINGS

- A. Provide undisturbed, dry, unfrozen surfaces for placement of footings.
- B. Remove all loose material.
 - 1. Do not carry excavations lower than indicated, except when directed by Engineer or Architect.
 - 2. Excavations carried below indicated level shall be filled with concrete of same strength as construction, at no extra cost.
- C. When excavations become soft and wet, remove all soft material and replace with extra concrete, at no extra cost.
- D. When freezing temperatures are expected, do not excavate to full depth unless footings or pile caps can be placed immediately.
 - 1. Protect bottoms of excavations from freezing if placement is delayed.
 - 2. Do not place when temperature is below 40 degF (4 degC) unless approved by Engineer.

3.04 FILLING AND BACKFILLING - INSIDE BUILDING

- A. Remove all rocks, lumps, frozen ground, soft or wet material, vegetation, and other foreign material upon which fill is to be placed.
- B. Place fill material in 9 IN loose lifts and compact each lift to 95 percent (ASTM D698). If clean sand or gravel compact to 70% (ASTM D4253) and (4254). Any fill below footing level shall be compacted to 98 percent (ASTM D698).

BUILDING EXCAVATION, FILLING, AND BACKFILLING

- C. Maintain between 3 percent below and 4 percent above optimum moisture content during compaction.
 - D. Compact fill and backfill using suitable mechanical tamping equipment to obtain specified density.
 - 1. Use mechanical hand tampers for filling and backfilling next to walls.
 - 2. Compact granular fill using vibratory methods.
 - E. Before placing fills on subgrade, obtain approval of Engineer.
 - F. In areas where existing ground surface is steeper than one vertical to four horizontal, step surface with steps not exceeding 12IN (300 mm) or slope surface not exceeding 2 percent.
 - G. Correct and/or recompact any compacted material not meeting specified compaction requirements. Continue corrective measures until required compaction has been attained.
- 3.05 FILLING AND BACKFILLING - OUTSIDE BUILDING
- A. Requirements for filling and backfilling inside building apply to all filling and backfilling outside building.
 - B. Do not backfill against any part of walls, piers, or columns until each part has reached design strength and has been inspected by Engineer who must authorize backfilling.
 - 1. Do not place fills against walls until floor slabs at top and bottom of walls are in place.
 - 2. Bring backfill up uniformly around building and individual wall units.
 - C. Do not backfill against foundations, walls, curbs, footings, and area ways until concrete forms have been removed, masonry work has been pointed, and concrete finishing, dampproofing, and waterproofing have been completed.
- 3.06 GRADING NEXT TO BUILDING
- A. Evenly slope finished grade away from building walls at slopes not less than 1 in 100 to provide drainage.
- 3.07 GRANULAR FILL UNDER SLABS ON GRADE
- A. Place minimum of 6 IN of granular fill under all slabs on grade.
- 3.08 ACCEPTANCE OF WORK

- A. Obtain approval of excavations from Engineer before starting any construction.
- B. Notify Engineer when excavations are ready for inspection.

END OF SECTION 31 23 16