

GENERAL STRUCTURE NOTES

SAFETY:

- All work shall be in accordance with generally accepted construction practices.
- Contractor shall be solely and completely responsible for conditions of job site, including safety of all persons and property during performance of the work at all times.

COORDINATION:

- Field verify existing dimensions and elevations that affect fabricating lengths of various members prior to submitting shop drawings or fabrication.
- Refer to Plan Drawings for embedded items, sleeves, floor pitches fills and depressions.

CONSTRUCTION:

- Verify exact size and location of all wall and floor openings prior to submission of shop drawings. Show openings on shop drawings.
- Structural member sizes called out are the minimum required sizes.
- Brace entire structure as required to maintain stability until complete and functioning as the designed unit.
- Do not backfill exterior walls until the structural steel beams are in place and connected to provide lateral support.

FOUNDATIONS:

- Prior to excavation the Contractor shall verify the exact locations of all underground utilities. Plan drawings are approximate and cannot be used to assure adequate clearance for adjacent utilities. Active utilities shall be protected, supported or relocated.
- Notify the Engineer if there are any conflicts with the new foundation.

CONCRETE:

- All concrete shall be Grade 4.0.
- All concrete shall be air-entrained to provide an air content of 6% (+/- 1%).
- Provide 3/4" chamfers at all exposed edges of any concrete structure.
- No joint not shown on the plan drawings will be permitted without the Engineer's written approval.
- All construction joints to be keyed unless otherwise shown.
- Flexible water stops shall be installed in all joints below ground water level.
- No concrete shall be placed until the design mix for the concrete has been developed with ACI requirements and submitted to the Engineer.
- Formed concrete surfaces shall be "rubbed" after form removal to create a smooth, consistent surface. Tops of concrete slabs shall receive a broom finish.
- All exterior walls to be coated with 1 (one) coat Mobilarma 633 Bituminous coating, or approved equal water protection.
- Concrete Flow Diverter structure to be filled with clean sand suitable for concrete aggregate.

STRUCTURES:

- Steel beams, including main support girders and transverse beams, and all beam connector clips shall be constructed of "Weathering" steel in accordance with the American Institute of Steel Construction.
- The location, number and size of all connector bolt holes in steel structural members shall be determined and pre-drilled by the beam fabricator. All connector clips shall be pre-sized and furnished with the beams.
- All connector bolts for beams and other fabricated steel members shall be high strength steel in accordance with ASTM A325.
- Unless called out otherwise, all fabricated steel structures shall have a heavy galvanized finish.
- All welds shall be made with E70-18 electrodes.
- All ladders shall be made of 6061-TC aluminum with a mill finish. Stringers shall be aluminum extrusions 1/2" x 2-3/4". Stand-off supports shall be bent flat aluminum bar 3/8" x 2-1/2". Rungs shall be 1-3/8" Dia. type "D" shape with non-slip surfaces. Ladders shall end just below the access doors. An extendable ladder safety post shall be provided that will attach to the top of the ladder to be raised up when the access doors are open for a handhold while accessing the ladder. Ladders and the safety post shall be as provided by Halliday Products, 6401 Edgewater Drive, Orlando, FL 32810, phone 1-800-298-1027, or approved equal. Upper ladders shall be Series L1B, lower ladders shall be Series L1D and ladder extension post shall be Series L1E. Install per manufacturer's specifications. Rungs shall be coated with "Grip Tight Rhino Lining" or approved equal for a non-slip grip.
- Top of structure shall have access doors for pump removal and personnel entry. Aluminum surface grate panels shall be sized or cut in the field to accommodate the door frames as shown on the plan drawings. Access doors shall be equipped with fall-through protection grates. Access doors and fall-through protection shall be as provided by Halliday Products, 6401 Edgewater Drive, Orlando, FL 32810, phone 1-800-298-1027 or approved equal. Access doors shall be Series S2S and fall-through protection shall be Series X "Retro Grate".
- All clips, support brackets, tubing and clamps shall be stainless steel or aluminum to be weather proof.
- Beam hanger clamps for catwalk support shall be of heavy steel construction with a minimum working load of 2,000 lbs. Clamps shall be adjustable to tightly fit the beam flange and have a baked enamel finish. Clamps to be as provided by Murphy Industrial Products, 600 N Sheperd #303, Houston, TX 77007, phone 1-866-849-1032, or approved equal.
- Hanger chain for catwalk support shall be welded stainless steel designed for a minimum working load of 2,000 lbs. Chain must meet the requirements of the National Association of Chain Manufacturers.
- Hanger chain clevises shall be stainless steel with a minimum working load of 2,000 lbs. with keeper pins. Hanger eyebolts shall be welded type made of stainless steel with a minimum working load of 2,000 lbs. Oversize stainless steel washers and nuts to be used below the support tubes.
- Connecting steel plates with wall embedment shall be anchored with stainless steel anchor bolts, either drilled and grouted or with expansion anchors or shall be coated reinforcing bar steel embedded at the time of concrete placement.
- All walk-way grating for the structure top and the catwalks shall be 1-1/2" thick aluminum panels with 3/8" thick longitudinal bars on 1-3/16" centers and transverse connector bars at 4" centers. Aluminum grates shall be item # 19SG4 as manufactured by Direct Metals, 3775 Cobb International Blvd., Kennesaw, GA 30152, phone 1-800-711-4939 or approved equal. Panels are to be no more than 3'-0" wide and no more than 8'-0" long, supported at 4'-0" centers.
- Structural steel channels, angles, tubes, plates and bars shall conform to ASTM A36.
- Structural steel design, fabrication and erection shall be in accordance with the American Institute of Steel Construction Specifications, ASO 9th Addition.
- Welding to conform to AWS D1.1 specifications, latest edition. All welding to be done by certified welders.
- High strength bolting shall be in accordance with the AISC specifications for Structural Joints using ASTM A325 or A490 bolts.

- All high strength bolts shall be installed with full pre-tensioning. Tighten bolts with turn-of-nut method by using direct tension indicator or by calibrated wrenches.
- All shop connections may be by high strength bolts or welded.
- All field connections may be high strength bolted except where drawing indicate welding.
- No penetrations are permitted through structural steel members unless indicated on plan drawings or with written approval of the Engineer.
- Structural members shall not be modified in the field by a cutting torch.
- During erection, structural steel members shall be adequately braced at all times.

MASONRY:

- All structural masonry shall be hollow bearing masonry units, Grade N, Type 1, 8"x16" having a minimum compressive strength of 2,800 PSI and a Prism strength (fm') of 2,000 PSI.
- Masonry mortar shall be Type S and have a minimum compressive strength of 2,000 PSI.
- Masonry grout shall conform to ASTM C476 and have a minimum compressive strength of 2,500 PSI in 28 days.
- Reinforcing shall consist of standard reinforcing bars placed in the unit hollows and surrounded with masonry grout.

REINFORCING STEEL:

- All bar reinforcing shall be Grade 60 steel.
- Lap welded wire fabric reinforcing one cross-wire space plus 2".
- Clearances between reinforcing bars and concrete surfaces per ACI minimum unless noted otherwise.
- All bar reinforcing, including tie wire, in the floor slab to be epoxy coated.

PLUMBING:

- A submersible pump shall be provided in a sump pit with wiring and piping to pump out standing water below the RCB flow line to the downstream RCB outlet.
- The pump shall be an impeller type resistant to wear from abrasive particles and able to pass solids. Pump shall have a minimum of 7.5 H.P. at 240 volts with single phase power and a minimum capacity of 1,050 GPM. Pump shall be Flygt Model CP-3127, Version LT or approved equal.
- Pump shall be provided with a supporting discharge elbow solidly bolted to the concrete pit floor and containing guide rail connections, stainless steel lifting guide rails, a stainless steel lifting cable and chain, low level shut-off control float and necessary wiring.
- Discharge piping shall be 8" Dia DICL epoxy coated pipe with flanged fittings. Pipe to be attached to the structure floor and walls with stainless steel straps and stainless steel anchor bolts.
- Pump controls shall consist of a simple on/off switch and a low water shut-off float controlled switch. All wiring to be in rigid galvanized conduit (RGC) and all controls to be enclosed in a post mounted galvanized control cabinet with a NEMA rating.
- See detailed plan drawings and Contract Supplemental Specifications for additional information on the pump and accessories.
- Corners of the structure shall have vertical 8" Dia. PVC C900 pipe from 2'-0" above the structure walkway surface to a 45 Degree bend ending at the floor slab for insertion of clean-out vacuum hoses. PVC pipe to be securely fastened to the walls with stainless steel straps and anchor bolts. Aluminum surface walkway grate panels to be field cut to closely clear the pipes.

Note: See electrical detail sheet for electrical notes.