

5. Reinforcing Steel bars shall undergo material testing for strength verification.
6. The Contractor shall submit to the TPC and PMC a mill certificate of reinforcing steel bars for yield strength verification and its content.
7. Steel bars shall not be coated with form oil.
8. Standard hooks, Splicing, and Development length shall be observed on site.
9. All Hooks for stirrup/lateral ties and main reinforcement shall be seismic hooks.
10. This scope includes all reinforcing bars required for reinforced concrete works including other items where it is necessary as per plan and specifications.

#### XI. Structural Concrete

This item shall consist of furnishing, placing, and finishing concrete in all structures except pavements per this Specification and conforming to the lines, grades, and dimensions shown on the plans. Concrete shall consist of a mixture of Portland cement, fine aggregate, coarse aggregate, admixture when specified, and water mixed in the proportions specified or approved by the Engineer.

1. Structural concrete must attain a minimum compressive strength  $f_c' = 21.0$  MPa (3000 Psi) at 28 days and as per structural specification.
2. Use clean fine aggregates & crushed gravel (maximum 19mm $\emptyset$ ) as per plan and structural specification for Structural members. The use of uncrushed gravel is prohibited.
3. Concrete pouring of columns shall be terminated anywhere within the upper thirds of the column clear height.
4. Proper concrete sampling and testing shall be done on-site as per specifications.
5. Proper concrete curing must be observed on site.
6. Lean concrete must be provided for column footings with a minimum thickness of 50mm.
7. Proper concrete pouring methodology shall be observed on-site to avoid the segregation of aggregates.
8. Structural Concrete shall attain its acceptable strength before Stripping/Dismantling of bottom forms.
9. This scope also includes the construction of foundation, column footings, columns, reinforced concrete walls, and other items necessary as per plan and specifications.

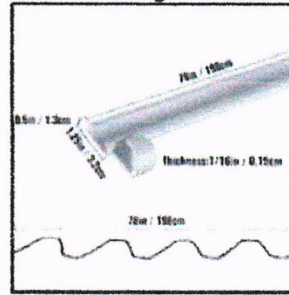
### PART C. ARCHITECTURAL FINISHES & OTHER CIVIL WORKS

#### XII. Greenhouse Framing (Incl. Nursery Cover)

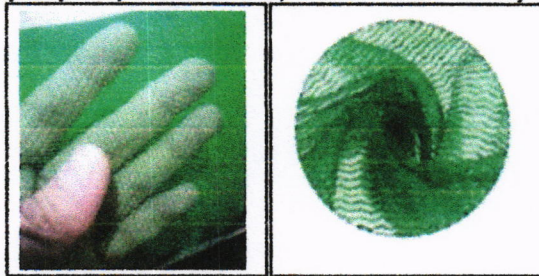
This Item shall consist provision of greenhouse framing including nursery cover, materials, labor tools, and equipment required in undertaking the proper installation as shown on the plans in accordance with this specification listed below.

1. Structural framing covered with green shade net
  - 100mm $\emptyset$  Sch.40 Steel Pipe
  - 75mm $\emptyset$  Sch.40 Steel Pipe
  - 50mm $\emptyset$  Sch.40 Steel Pipe
  - 12mm thk. Steel Plate

- 0.15cm thk - 3.2cmW x 1.3cmH Locking Channel with Wiggle Wire



- UV Resistant Premium Garden Shade/ Nursery Cover  
(Material: Polyethylene; Color: Green; Shade Factor: 80%)



2. For all assembly and fabrication works, the cut ends shall be true and accurately jointed, free of burrs and rough edges. Cut-out recesses, mortising, grinding operation for hardware shall be accurately made and properly reinforced when necessary.
3. Screws, nuts, washers, bolts, rivets and other miscellaneous fastening devices shall be made of non-corrosive materials such as aluminum, stainless steel, etc.
4. No welding works shall be done on areas coated with paint.
5. Shop drawings shall be submitted by the Contractor for PMO approval before fabrication and installation.
6. Submission of shop drawings for evaluation/approval shall be submitted seven (7) days before fabrication and installation.
7. All materials for metal works to be used shall be brand new. Usage of scrap and tarnishing metals is strictly prohibited. The Contractor shall promptly remove and replace any scrap, old, and used materials installed on site.
8. The steel bars and other metallic structural materials shall be coated with red oxide primer (two coats) before installation or after welding works.
9. Workmanship and finish shall be per the best general practice. Portions of the work exposed to view shall be finished neatly. Shearing, flame-cutting, and chipping shall be done carefully and accurately.
10. Only welder with training certificate such as TESDA or other training related in welding works are allowed to do the welding works.

### XIII. Painting Works (Metal Surface)

This Item shall consist of furnishing all paint materials, and other related products, labor, tools, equipment and plant required in undertaking the proper application of painting and related works indicated on the Plans and in accordance with this Specification.

- a. The Contractor prior to commencement of the painting, and related work shall examine the surfaces to be applied in order not to jeopardize the quality and appearances of the painting varnishing and related works.
- b. Voids, cracks, nick etc. will be repaired with proper patching material and finished flushed with surrounding surfaces.

- c. Marred or damaged shop coats on metal shall be spot primed with appropriate metal primer.
- d. Painting and varnishing works shall not be commenced when it is too hot or cold.
- e. Allow appropriate ventilation during application and drying period.
- f. All hardware will be fitted and removed or protected prior to painting and varnishing works.
- g. At the time of application paint shall show no sign of deterioration. Paint shall be thoroughly stirred, strained and kept at a uniform consistency during application. Paints of different manufacture shall not be mixed together. When thinning is necessary, this may be done immediately prior to application in accordance with the manufacturer's directions
- h. All material to be used under this Item shall be stored in a single place to be designated by the Engineer and such place shall be kept neat and clean at all time. Necessary precaution to avoid fire must be observed by removing oily rags, waste, etc. at the end of daily work.
- i. Upon completion of the work, all staging, scaffolding and paint containers shall be removed. Paint drips, oil, or stains on adjacent surfaces shall be removed and the entire job left clean and acceptable to the implementing agency.
- j. All paints shall be evenly applied. Coats shall be of proper consistency and well brushed out so as to show a minimum of brush marks.
- k. The paint when applied shall be so manipulated as to produce a uniform even coating in close contact with the surface being painted, and shall be worked into all corners and crevices.
- l. All coats shall be thoroughly dry before the succeeding coat is applied.
- m. Where surfaces are not fully covered or cannot be satisfactorily finished in the number of coats specified such preparatory coats and subsequent coats as may be required shall be applied to attain the desired evenness of surface without extra cost to the agency.
- n. Where surface is not in proper condition to receive the coat the monitoring committee shall be notified immediately. Work on the questioned portion(s) shall not start until clearance be proceed is ordered by the PMC.
- o. Hardware, lighting fixture and other similar items shall be removed or 'protected during the painting varnishing and related work operations and re-installed after completion of the work.
- p. If repainting, remove all loose, scaling, flaking and peeling off paint using wire brushing, scraping or water blasting.
- q. For chalking old paint, apply a water-based, low VOC paint for priming.
- r. In case of mildew infestation, treat with fungicidal wash solution or bleach solution (1:3, laundry bleach to water, respectively) by swabbing or brushing. To ensure proper treatment, allow to stand on surface for overnight before washing off residue.
- s. The steel bars and other metallic structural materials shall be coated with red oxide primer (two coats) before installation or after welding works.
- t. Paint colors shall be following as per plan
- u. Metal shall be clean, dry and free from mill scale and rust. Remove all grease and oil from surfaces.
- v. Wash unprimed galvanized metal with etching solution and allow it to dry.
- w. Where required to prime coat surface with Red Lead Primer same shall be approved by the Engineer.
- x. Use premium paint only for all painting works. The contractor shall also follow the painting schedule and paint finishes as specified below:
  - Primer (1st & 2nd Coat): Boysen Red Oxide Primer #4310 - two (2) coats
  - Top Coat: Boysen Quick Drying Enamel Gray - two (2) coats