

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS

1.0 PREAMBLE:-

1.1 The Technical Specifications contained herein shall be read in conjunction with the other Bidding Documents as specified in this Volume.

1.2 Site Information:-

1.2.1 The information given here under provided elsewhere is given in good faith by the Employer but the Contractor shall satisfy himself regarding all aspects of site conditions and no claim will be entertained on the plea that the information supplied by the Employer is erroneous or insufficient.

2.0 GENERAL REQUIREMENTS:-

The technical specifications in accordance with which the entire work described herein after shall be constructed and completed by the Contractor shall comprise of the "SPECIFICATION"

2.1 Though "SPECIFICATION" for each item are attached with tender they are based on following.

(1) "SPECIFICATION FOR ROAD AND BRIDGE WORKS" (Fourth REVISION printed in year 2001) issued by the Ministry of Road Transport & Highways (MORT & H), Government of India and Published by the Indian Roads Congress, hereinafter to as MORT & H Specifications.

(2) The General Technical Specifications for Road works.

(3) The General Technical Specifications for Bridge works.

Note:- (2) To (3) are Conventional Specifications Booklets usually attached for (R&B) Works.

2.2 If, a particular clause (which is incorporated in "SPECIFICATION") of specification booklets (1) to (3) above is Amended / Modified/ Added upon then the Amendment/ Modification/Addition shall supersede the relevant clause incorporated in "SPECIFICATION"

2.3 In, so far as Amended / Modified / Added Clause may come in conflict or be inconsistent with any of the provisions of the MORT & H Specifications under reference, the Amended/Modified/ Added Clause and the additional specifications shall always prevail.

2.4 In the absence of any definite provisions on any particular issue in the aforesaid Specifications, reference may be made to the latest codes and specification, of IRC and BIS in that order. Where even these are silent, the construction and completion of the works shall conform to sound engineering practice as approved by the 'Engineer' and , in case of any dispute arising out of the interpretation of the above, the decision of the 'Engineer' shall be final and binding on the Contractor.

Name of Work: - CDP-5 (Gram panchayat) Year:- 2025-26 Construction of New Gram Panchayat Building at Ugat. Tal. Navsari. Dist. Navsari.

Technical Specification

Item No.32 Providing and laying Machine cut, Free edges, Machine polished Granite stone slab 18 mm thick Single Piece For doors and Windows Cill and Jambs Cladding as per design including Full moulded Round front edge and 1 cm nosing and laid on 20 mm thick cement mortar 1:6 (1 cement : 6 coarse sand) and jointed with gray cement slurry including rubbing and polishing etc. complete.

- Polished or honed Granite tiles are calibrated & gauged with a tolerance of +/- 0.5mm. The sides are sawn to perfect right angle and top edges are micro beveled
- Granite being natural stone, variation to shade & pigmentation with in a batch is a natural occurrence and accepted by the industry as normal. This variation adds unique beauty to the finished surface
- It is recommended to consider 5% to 10% additional material to the coverage area depending on the style of installation to allow for wastage due to cutting of tiles to fill corners and defects in natural stone tile
- Granite tiles can be but joined or grout joined to suit installation style. It is recommended to make a dry run to match flow of pattern to avoid cross setting.
- Please review typical installation photos to get a better understanding of the finished floor.
- Polished or Honed Granite tiles are not recommended for outdoor flooring. Moist/wet flooring can be highly slippery. Flamed or bush hammered finish is recommended for outdoor flooring.
- Water based penetrating sealer is recommended to protect from staining. Please follow manufacturer's instruction for application.
- Water based penetrating sealer/enhancer is recommended for deeper & vibrant coloration of the finished floor. It is recommended to do a test on a small hidden area or some waste tiles before applying to entire floor.

Mode of Payment :The measurement shall be in Sqmt of Marbo granite tiles supplied and fixed in position

Item No.35 Providing and fixing window having extruded aluminum Colour anodized section frame main outer size 63.50 x 38.10 x 1.95 mm,@ Wt 1.094 Kg / Rmt, horizontal two track member size 61.85 mm x 31.75 mm x 1.20mm @ wt.of 0.695 Kg/mt, vertical member of size 61.85 mm x 31.75mm x 1.30 mm @ wt.of 0.659 Kg/mt with sliding shutters of horizontal member size 40mm x 18mm x 1.29mm @ wt.of 0.456Kg/mt, vertical member of size

40mm x 18mm x 1.29mm @ wt.of 0.456Kg/mt, @ Wt. 0.457 Kg/mt with 5 mm thick transparent bronze colour tinted float glass with powder coated aluminum fittings and fixtures and transparent silicon sealant glass fixing to frame as per details etc complete for window.

1.0. Materials

Wood in frames shall conform to M-29.

2.0. Workmanship

2.1. The item covers the requirement of frames for doors, windows, clerestory windows, their supply and fixing.

2.2. Frames:

2.2.1. All members of frames shall be exactly at right angles. The right angle shall be checked from inside surfaces of the-frames of the respective members.

2.2.2. All members of frames shall be straight without any warp of bow and shall have smooth surfaces well planed on the three sides exposed at right angles to each other. The surfaces touching the wall may not be planed unless it is required in order to straighten up the member or to obtain the overall sizes within the tolerances as specified.

2.2.3. Frame shall have dovetail joints. When clerestory windows are included, it shall be provided by having full length one piece post for door or windows and clerestory window extending the frame on top at the head to the required extent. Horns shall not be provided in the head of the frame. When no sills are provided, the vertical posts of the frame in the ground floor shall be embedded in the sill masonry for 10 cm. on upper floors, the vertical posts shall be fixed in the floor or masonry by forming notches 10 mm. deep. Slight adjustment of spacing as necessary shall be done to have the hold fasts in the joints of masonry; course. The frame shall be erected in position and held plumb with strong support from north sides and built in masonry as it is being built. The transom shall be through tenoned into the mortises of the jamb post to the full width of the jamb post and the thickness of the tenon shall be not less than 15 mm.

2.3. Tolerance:

Unless specially mentioned otherwise tolerance of + 1.5. mm shall be allowed for each wrought face.

2.4. The tenons shall be closely fitting into the mortises and suitably pinned with wood dowels not less than 10 mm. dia. meter. The depth of rebates for housing the shutter shall be as shown in the detailed drawing or as directed.

2.5. The concrete surface of tenon and mortise shall be treated before putting together with an adhesive of approved make.

2.6. Minimum number of three hold-fasts shall be fixed on each side of door and windows frames, one at the center point and the other two at 30 mm. from the top and bottom of the frames. In case of windows and ventilators frames. The

size c. each hold-fast shall be 300 x 25 x 6 mm. and of mild-steel with split end. The hold fasts shall be fixed with screws to frames.

2.7. Mild steel hold fasts shall be protected with a coating of coal asphalt tar. The surface of frame abutting the masonry or concrete faces shall be properly treated by applying a coat of approved coating.

3.0. Mode of Measurements and payment

3.1. The linear dimensions shall be measured correct up to 1 cm. The quantity shall be worked out correct to places of decimals of cu. m.

3.2. The rate shall be for a unit of 10 cu. diameter.

Item No.36 Providing and fixing standard extruded of aluminium section of size 63mm x 38.10mm x 1.2mm (Jindal Section :2434, @ Wt. 0.643 Kg/mt) with colour Powder Coated aluminium frame for ventilation with 5 mm thick frosted glass as details etc complete for Ventilation.

1.0 Materials:-

1.1 Aluminum standard section:-

1.1.1 Main outer frame of rectangular tube

Aluminum extruded channel section shall be as per M-31/P.17 of relevant specifications of General Technical specifications for Building works Booklet as directed.

Aluminum alloy used in the manufacture of extruded Ventilation section shall confirm to IS designation HEA – WP – of IS 733 – 1975 and also Designation WVG – WP of IS 1285 – 1975 section shall be as specified in the drawing and design.

Size of Outer frame shall confirm 63mm x 38.10mm x 1.2mm (Jindal Section : 2434, @ Wt. 0.643 kg per mt With colour powder coated aluminium frame

All sections shall be free from any scratches or holes or any damages on surface. All section shall have finished luster surface on all sides.

1.1.2 Frame for ventilation portion

Aluminum alloy used in the manufacture of extruded ventilation section shall confirm to IS designation HEA – WP – of IS 733 – 1975 and also Designation WVG – WP of IS 1285 – 1975 section shall be as specified in the drawing and design.

All sections shall be free from any scratches or holes or any damages on surface. All section shall have finished luster surface on all sides.

1.1.4 PVC rubber top and bottom

Top and bottom channel of rubber shall be approved make and quality and shall be free from any scratches or holes or any damages on surface. All channels shall have finished luster surface on all sides.

1.3 Glass

The frosted glass shall be of approved make having thickness of 5 mm. The glass shall be clear and free from scratches and cracks. The glass shall be provided on top.

1.5 Rubber gasket

Rubber gasket shall be of approved make and shall be free from any scratches or holes or any damages on surface. And shall have finished luster surface on all sides.

1.1.4 Bolts

All bolts shall be of approved make and shall be free from any scratches or holes or any damages on surface. And shall have finished luster surface on all sides.

2.0 WORKMANSHIP

The work of aluminium ventilation shall be done with extreme finishing. The glass shall be fitted as directed by Engineer in charge using glazing clips and rubber gaskets as required. All the fixtures and fastenings shall be fitted at right place and as directed by Engineer in charge. Floor spring shall be fitted properly so as to align the ventilation properly and shall be given trial of opening and closing properly. The aluminum section shall be anodizing with 20 microns silver / colour anodizing or 55 microns powder coating shall be done as directed by the Engineer in charge.

3.0 Mode of measurement & Payment:

3.1 The unit rate of aluminum ventilation shall include the cost of all materials, cost of anodizing, cost of all necessary fixtures and fastenings, labour charges for fixing frames, ventilations and fixing the ventilation in wall at the place shown in drawing and as instructed by the Engineer in charge, all tools and plant required for assembling and fixing in position, finishing as per direction of the Engineer in charge, and all other incidental expenses for preparing ventilation frame and louvers of specified size to complete the ventilation structure or its components as shown on the drawings and according to these specifications. They shall also include the cost of making, fixing and making walls good by plaster patch colour etc as required.

3.2 The ventilation shall be measured for its improvising and fixing extruded aluminum ventilators having standard extruded aluminum outer frame size hollow section frame of size 63mm x 38.10mm x 1.2mm (Jindal Section : 2434, @ Wt. 0.643 kg per mt including providing 5 mm thick frosted glass with rubber gasket including all labour and equipments etc. complete with ventilator above and height, limiting dimensions to those specified on plan or as directed.

3.3 The rate shall be for unit of one square meter of completed item.

Item No.38 Providing and applying 15 mm thick cement plaster double coat of mala cement plaster for interior plastering having 12 mm th. base coat in C.M. 1:4 (1 cement 4 coarse sand) and 3 mm th. finishing coat in C.M. 1:2 [1 Cement : 2 Coarse Sand] with trowel finish including Scaffolding Curing etc. Complete. Including Applying two coats of Birla or Asian Acrylic Lappy [Putty] and two coats of primer of approved Brand and Manufactures on New wall surface to give an even shade including thoroughly brushing the surface free from mortar dropping and other foreign matter and sand papered smooth For Ground Floor.

This work shall consist of providing **15 mm thick cement plaster (Mala troweled finish) in single coat on brick/concrete wall for interior plastering** of the shape and dimensions shown on the drawings and conforming to these Specifications or as approved by the Engineer in charge

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.18.17. / P.No.127 except that using for two coats of Birla (White cement based) or Asian (acrylic lappy-putty) or equivalent & two coats of primer of approved brand and manufacture on new wall surface instead of color washing of undecorative wall .

Material

CEMENT

Cement shall confirm Specification No M-3,

SAND

Sand shall confirm specification no M-6,

WATER

Water shall confirm specification no M-1

WORKMANSHIP

specification no 17.61 (II) and 17.95 shall be applied for this item

The surface shall be Mala troweled finish

The plaster shall then be finished off with a trowel The straight edge shall be worked on screeds with a small upward and side way motion 50mm or 75mm at a time. Finally, the surface shall be finished off with a plaster's wooden float.

Mode of Measurement & Payment :

The Item shall be measured for its **breadth and height** limiting dimensions to those specified on plan or as directed. The rate shall be for a unit of one square meter.

The payment will be made on square Meter basis of the finished work.

The rate shall be for a unit of **one square meter**.

Item No 40 - P & L 24" x 24" vitrified 8 mm thick tile flooring over 20 mm (average) base of cement mortar 1:6 (1 cement: 6 coarse sand) on new surface or fixing on existing flooring by adhesive material including dismantling of existing flooring and jointed with color cement slurry including finished with flush pointing & cleaning the surface etc. complete for DARK shade

The Item shall be executed as per the relevant specifications of general technical specification for building work booklet Item No.14.43(A)/ page No. 98 except that **DARK shade and antiskit vitrified Tiles** finished vitrified tiles 24 x 24 cm size & 8 mm thick of required quality, colour, design and size as approved by the Engineer in charge shall be used instead of kotah stone and 12mm thick base of cement mortar shall be applied instead of 10mm thick. Including finished with flush pointing & cleaning the surface etc. complete for GVT as approved by engineer in charge.

For Dismantling of existing flooring use the Item shall be executed as per the relevant specifications of general technical specification for building work booklet Item No. **20.23.**/ page No. 148

The Item shall be measured as finished work in Sqm.

The rate shall be for a unit of one **Square meter**.

Item No 41 - P & L 24" x 24" vitrified 8 mm thick tile flooring over 20 mm (average) base of cement mortar 1:6 (1 cement: 6 coarse sand) on new surface or fixing on existing flooring by adhesive material including dismantling of existing flooring and jointed with color cement slurry including finished with flush pointing & cleaning the surface etc. complete for antiskit.

The Item shall be executed as per the relevant specifications of general technical specification for building work booklet Item No.14.43(A)/ page No. 98 except that **DARK shade and antiskit vitrified Tiles** finished vitrified tiles 24 x 24 cm size & 8 mm thick of required quality, colour, design and size as approved by the Engineer in charge shall be used instead of kotah stone and 12mm thick base of cement mortar shall be applied instead of 10mm thick. Including finished with flush pointing & cleaning the surface etc. complete for GVT as approved by engineer in charge.

For Dismantling of existing flooring use the Item shall be executed as per the relevant specifications of general technical specification for building work booklet Item No. **20.23.**/ page No. 148

The Item shall be measured as finished work in Sqm.

The rate shall be for a unit of one **Square meter**.

- Item No.44** Providing and laying water proofing treatment with broken china mosaic flooring by conventional method including cleaning the slab surface by wire brush as directed including providing first layer of C.M. 1 :4 of 40 mm thickness mixed with water proofing compound at rate prescribed by manufacturer, including putting of brick bats of average thickness 40 mm Well immersed in water laid uniformly on first layer of mortar including applying cement slurry @ rate of 0.08 bag/sqm. on fixed layer of brick bats including maintaining necessary slope, in second layer 40 mm thick C.M 1 :4 mixed with water proofing compound as directed, including finishing smooth with cement slurry as directed complete and using 12 mm to 20 mm broken pieces of Glazed tiles to be laid over cement mortar 1:3 to plain or slope and to be tempered to bring mortar cream out up to surface using white cement including rounding off junctions and extending them up to 15 cm along the wall, clearing with water and oxalic acid etc. as directed.

1.0 Material

Water Shall conform Material Specification no M- 1

Cement Shall conform Material Specification no M- 3

Sand Shall conform Material Specification no M- 6

Crushed stone aggregates Shall conform Material Specification no M- 12

Brick aggregates Shall conform Material Specification no M- 14

White Cement Shall conform Material Specification no M- 4

Water proofing compound shall be done as per Specification no 17.70 Page No. 121

Chemicals and compounds of approved shall be of approved quality and make . The proportion of the compound shall be of specified proportion as specified by the manufacturer

2.0 Workmanship

cleaning the slab surface by mechanical means or wire brush to remove old paint, dust, dirt and all loose material

(a) providing first layer of C.M. 1 :4 of 40 mm thickness mixed with water proofing compound at rate prescribed by manufacturer, including putting of brick bats of average thickness 40 mm Well immersed in water laid uniformly on first layer of mortar including applying cement slurry @ rate of 0.08 bag /sqm. on fixed layer of brick bats including maintaining necessary slope

(B) providing second layer 40 mm thick C.M 1 4 mixed with water proofing compound as directed, including finishing smooth with cement slurry as directed complete.

(C) using 12 mm to 20 mm broken pieces of Glazed tiles to be laid over cement mortar 1 3 to plain or slope and to be tempered to bring mortar creme out up to surface using white cement including rounding off junctions and extending them up to 15 cm along the wall, clearing with water and oxalic acid etc. as directed.

(D) after finishing the whole terrace shall be flooded with water for a period of two weeks as directed

The waterproofing material of approved quality shall be mixed with the cement slurry as per specified proportion as directed by the manufacturer of the compound and as directed by The engineer in charge the mixture shall be applied uniformly to the surface in required coats as directed by the engineer in charge

A guarantee bond on appropriately stamped paper shall be given by the contractor to the department in the manner and form prescribed below

FORM OF GUARANTEE BOND

I We (Contractor) hereby guarantee that water proofing work will remain leakage proof for period of 5 years after completion of the work of water proofing treatment as per the terms and conditions of the contract and leakage that might be caused in building where the water proofing treatment is done we hereby Guarantees to make good any loss of damages suffered by the Government of Gujarat and further gurantee to redo effective work without claiming any extra cost

2.1 This gurarantee shall remain in force for the period of 5 years from the completion of the work under the contract and it shall remain binding to the contractor for period of 5 Years.

2.2 The deposit at the rate of 50% of the cost of this item the running and final bills shall be recovered and retained for the first one years after completion of the guarantee period balance of gurantee period and shall be refunded only after the completion of the gurantee period.

3.0 MODE OF MEASUREMENT and PAYMENT

3.1 The unit rate of water proofing treatment shall include the cost of all materials, tools and plant chemicals and compounds required for water proofing, Applying the same to specified surface as per drawings, finishing, painting with three coats, etc, and all other incidental expenses for producing water proofing work to complete the structure or its components as shown on the drawings and according to these specifications. They shall also include the cost of making, fixing and removing of all scaffolding and forms required for the work.

The rate of water proofing shall include the cost of all labour, materials chemicals and compounds tools and plant scaffolding and all incidental expenses as described herein above.

3.2 The water proofing work shall be measured for its **length and width**, limiting dimensions to those specified on plan or as directed. The rate shall be for a unit of one sq.meter

3.3 The payment will be made on **sq. meter** basis of the finished work.

Item No 45 Providing & laying and jointing in true line and level 40 mm dia UPVC pipe (SCH-40) line including fitting make or equivalent as approved by engineer in charge the pipe shole be fixed on wall with the hel of clam at every two mtrcenter to center or shall be conseled as direct including necessesary fitting etc including testing of pipe and jointes and fixin the sam with adhesive solvent including cost of matarial (A) 40 mm OD pipe

The relevant specifications of Building Booklet It. No.23.8.(D) Page No.162 shall be followed expect use level 40mm dia. U.P.V.C. Pipe (SCH- 40) for cold water including fittings make PRINCE SUPREME ASTRAL FINOLEX or equivalent and Pipe shall be fixed on the wall with the help of clamp at every two metre C C or shall be concerned as directed as approved by Engineer In Charge and instead of 6 kgs sq.cm. working pressure polythene pipes of 40mm dia.

Item No 46 Providing & laying and jointing in true line and level 25 mm dia UPVC pipe (SCH-40) line including fitting make or equivalent as approved by engineer in charge the pipe shole be fixed on wall with the hel of clam at every two mtrcenter to center or shall be conseled as direct including necessesary fitting etc including testing of pipe and jointes and fixin the sam with adhesive solvent including cost of matarial (A) 25 mm OD pipe

The relevant specifications of Building Booklet It. No.23.8.(B) Page No.162 shall be followed expect use level 25mm dia. U.P.V.C. Pipe (SCH- 40) for cold water including fittings make PRINCE SUPREME ASTRAL FINOLEX or equivalent and Pipe shall be fixed on the wall with the help of clamp at every two metre C C or shall be concerned as directed as approved by Engineer In Charge and instead of 6 kgs sq.cm. working pressure polythene pipes of 25mm dia.

Item No 47 Providing & laying and jointing in true line and level 15 mm dia UPVC pipe (SCH-40) line including fitting make or equivalent as approved by engineer in charge the pipe shole be fixed on wall with the hel of clam at

every two mtr center to center or shall be concealed as directed including necessary fitting etc including testing of pipe and joints and fix in the same with adhesive solvent including cost of material (A) 15 mm OD pipe

The relevant specifications of Building Booklet It. No.23.8.(A) Page No.162 shall be followed expect use level 15mm dia. U.P.V.C. Pipe (SCH-40) for cold water including fittings make PRINCE SUPREME ASTRAL FINOLEX or equivalent and Pipe shall be fixed on the wall with the help of clamp at every two metre C C or shall be concealed as directed as approved by Engineer In Charge and instead of 6 kgs sq.cm. working pressure polythene pipes of 20mm dia.

Item No 57 Providing and fixing to wall ceiling and floor 10.0 Kg. F/Cm² working pressure polythene pipes of the following outside Dia. Low density, complete with special flange compression type fittings, wall clip etc. including making good the wall ceiling and floor.(B) 110mm

The relevant specifications of Building Booklet It. No.23.8./ Page No.162 shall be followed expect use 110 mm Rain water pipe 10.00Kg F/CM² and other end socketed with rubber ring, & fittings conforming to ISI 14735-1999 of approved make for drainage system pipe line, pipe shall be jointed with each other with rubber lubricant, pipe shall be fixed shall be concealed instead of 50mm dia&6 kgs/sq.cm. working pressure polythene pipes

Item No 58 Providing and fixing to wall ceiling and floor 10.0 Kg. F/Cm² working pressure polythene pipes of the following outside Dia. Low density, complete with special flange compression type fittings, wall clip etc. including making good the wall ceiling and floor.(A) 75mm

The relevant specifications of Building Booklet It. No.23.8./ Page No.162 shall be followed expect use 75 mm Rain water pipe 10.00Kg F/CM² and other end socketed with rubber ring, & fittings conforming to ISI 14735-1999 of approved make for drainage system pipe line, pipe shall be jointed with each other with rubber lubricant, pipe shall be fixed shall be concealed instead of 50mm dia&6 kgs/sq.cm. working pressure polythene pipes

Item No 60 providing and fixing in position cowl vent to pipe (II) 100mm

Item referred for providing and fixing pvccowl vent of 100mm dia. (above 4 inch) pvccowl ventilator for 100mm dia shall conform to IS & shall be of best quality pvccowl ventilator shall be fixed to pipe with joints. Item shall be measured and paid on number basis.

Item No 68 **Providing erecting and fixing double coated Syntex PVC. (ISI) water tank of required capacity each with all necessary fittings and connection etc. complete on terrace.**

General

This work shall consist of **Providing and fixing P V C water tank of specified capacity with necessary G I fittings including 25 mm dia G.I. over flow pipe, ball valve**, of the shape and dimensions shown on the drawings and conforming to these Specifications or as approved by the Engineer in charge.

PVC Water tank

PVC Water tank of specified capacity and of I.S.I. mark of approved in litters of approved make and quality equivalent to syntax product

Net capacity shall be net volume of water stored between the lowest level of overflow and lowest specified level.

Nipple

Galvanize pipe nipple shall be of approved make and of best quality Relevant specification given in Booklet of Building specification shall be applied for the execution of this item

Ball valve

Ball valve shall confirm specification no 23.00.5 (A) on page 172 of specification booklet for building works

Ball valve shall be of approved make and of best quality. Relevant specification given in Booklet of Building specification shall be applied for the execution of this item

Connections

Connections shall be of approved make and of best quality. Relevant specification given in Booklet of Building specification shall be applied for the execution of this item

WORKMAN SHIP

Tank shall be approved quality and as per IS standard make. Material used in manufacturing tank shall be confirmed to relevant IS code. The material of tank and lead and fittings which may come in contact of water should be such that it does not impart any taste, colour or odor. It does not have any toxic effect and it does not contaminate the water. Thereby making it unpotable.

The tank shall be fixed properly in a level position and making all required necessary correction like inlet outlet flushing overflow and air vent. Tank shall be satisfying the standards of public health.

Mode of Measurement & Payment:

The payment will be made on **capacity in litter's** basis of the finished work.

All necessary labour materials Equipment tools and plant, conveyance including loading and unloading etc shall be provided by the Contractor as directed by the Engineer in charge

The item shall be measured for its **capacity in liters** limiting dimensions to those specified on plan or as directed.

The rate shall be for a unit of **one Litter**.