

**Subject: Minutes of Pre-Bid Meeting held at PMU Office on 10 September 2020**

**NCB-Works/PICIIP-11**

**Procurement of Works for Rehabilitation / Improvement of Water Supply & Sewerage System in North Zone, Sialkot**

**Lot 1: Sewerage Lines and Allied Works (Zone 3-A)**

**Lot 2: Pre-Cast RCC Conduits and Allied Works (Zone 3-B)**

**Lot 3: Influent Pumping station, Forcemain and Allied Works (Zone 3-C)**

**Lot 4: Water Supply System (Zone 3-D)**

As per the Bidding Documents issued on August 28, 2020 the date of pre-bid meeting was scheduled on September 10, 2020. The pre-bid meeting was convened by Program Management Unit (PMU), Punjab Intermediate Cities Improvement Investment Program (PICIIP), Local Government & Community Development Department, Punjab, Pakistan. Following officials from PMU and EPCM Consultant attended the meeting:

- i. Mr. Javed Iqbal (Chief Engineer), PMU, PICIIP.
- ii. Mr. Shuja Dar (Director Procurement & Contracts), PMU, PICIIP.
- iii. Mr. Ahmed Naveed Shahbaz (Project Manager/Deputy Team Lead) EPCM.
- iv. Mr. Muhammad Ayyub (Senior Resident Engineer) EPCM.
- v. Mr. Muhammad Nashad Khan (Procurement & Contract Specialist) EPCM.
- vi. Mr. Faisal Butt (Sr. Engineer) EPCM
- vii. Mr. Moiz Tariq Sr. Engineer) EPCM.
- viii. Mr. M. Imran Bilal (Quantity Survey) EPCM.
- ix. Mr. Mohsen Islam Khan (Independent Consultant, Procurement & Contract Specialist) PMU, PICIIP.

The meeting started with the recitation of Holy Quran. The Director Procurement & Contracts and Individual Consultant welcomed the participants (list attached as **Annex-A**) and start the meeting. The participants were briefed on the bidding documents, particularly the contents of Section-2 (Bid Data Sheet), Section-3 (Evaluation and Qualification Criteria), Section-4 (Bidding Forms) and Section-8 (Particular Conditions of the Contract).

The meeting was held in two parts. During the first part, it was explained in detail by reading the important Instructions to Bidders clauses on preparation of bids and application of evaluation criteria (financial and experience). It was also stressed on significance of a responsive bid submission.

During second part of the meeting, the participants were invited to raise queries. Director Procurement & Contracts advised them to submit their written queries to PMU for written replies / advice accordingly. The Bidders submitted their written queries from time to time before Friday the 18<sup>th</sup> September 2020 and the replies thereof, in writing, are attached as **Annex-B**.

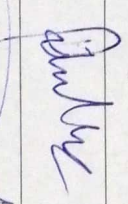
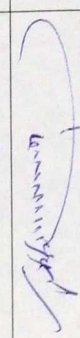
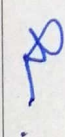
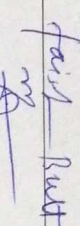
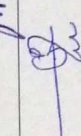
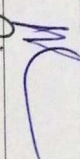

The meeting was concluded with a vote of thanks to and from all the participants.

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PRE-BID MEETING OF NCB-WORKS/PICLIP-11: PROCUREMENT OF WORKS FOR SIALKOT-WATER AND SANITATION

PROJECT:	Punjab Intermediate Cities Improvement Investment Program(PICLIP)
Place:	Office of Program Director, Program Management Unit (PMU),Punjab Intermediate Cities Improvement Investment Program (PICLIP), Local Government & Community Development Department, Punjab, Pakistan. Street address: 40/B-1 Gulberg III, Lahore, Pakistan.
Date&Venue:	10-September 2020, PMU-PICLIP

(Attendance Sheet)  
(PICLIP Staff & EPCM Consultant)

S/NO	Name	Designation	Contact/Email Address	Signature
1	Dr. Javid Syed	Chief Engineer (Piclip)	03005116146	
2	Muhammad Ayub	SRE Merpak	03216456385	
3	Muhammad Nadeem Khan	Procurement & Contract Mgt	03005145613	
4	Faisal Butt	Sr. Engr. NESPAK	0333-4368376	
5	Moiz Tariq	Sr Engr NESPAK	0303-4561618	
6	M. Imran Bilal	D.S	0300-8169922	
7	Shuja daw.	Director (Pac)	0323-4450560	
8				
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PRE-BID MEETING OF NCB-WORKS/PICIIP-11: PROCUREMENT OF WORKS FOR SIALKOT-WATER AND SANITATION

PROJECT:	Punjab Intermediate Cities Improvement Investment Program(PICIIP)
Place:	Office of Program Director, Program Management Unit (PMU), Punjab Intermediate Cities Improvement Investment Program (PICIIP). Local Government & Community Development Department, Punjab, Pakistan. Street address: 40/B-1 Gulberg III, Lahore, Pakistan.
Date&Venue:	10-September 2020, PMU-PICIIP

(Bidder's Attendance Sheet)

S/NO	Name	Designation	Contact/Email Address	Signature
1	M. Zeshan Akbar	Director contracts & Procurement	0322-4416549 prog_international@yahoo.com	Zeshan (Progressive Intl)
2	M. Khan	Admin Manager	zmPak-branch@jxzhongmei.com 0822-5551070	M. Khan
3	Aamir Akbar	Mgr. Coordination	0323 4237317 aamarakbar@habibrefiq.com	Aamir
4	M. Usman	Chief Coordination officer	0821-5313969 usmaniaz026@juaid.com	M. Usman
5	ZAHOR ECANI	Procurement Manager	majalconstruction@pccil.com	Zahor
6	M. Javaid Butt	sr. DT. Manager	muhammad.javaidd@ksrb.com.pk	M. Javaid
7	Mata Ullah Khan	Project Engineer	m.khan@ufasoletoir.com	Mata Ullah
8	Meggie Zhai	Commercial Manager	zhai_z @cnel.com	Meggie Zhai
9	Rohan Akbar	Commercial Manager	rehan@ gmail.com	Rohan
10	Khadin Hussain	CEEC Tangui Paur Const	khadinonkce@gmail.com	Khadin Hussain
11	Ghulam Abbas	Manager Admn & Finance M/S Muhammad Idrees	idrees744@gmail.com	Ghulam Abbas
12	SAMEER AHMAD	Managed Contracts anyco Engineers	Sam39000@gmail.com	Sameer Ahmad

Sr#	Bidder Queries	PMU Clarification																										
1.	No Water stopper item is available in BOQ as it is mention in DWG (3976/033/C/20G03).	<p>The following item shall stand included in BOQ (Bill No. 2.1, Non-MRS as item no. 8).</p> <table border="1" data-bbox="1126 435 2125 879"> <thead> <tr> <th data-bbox="1126 435 1205 507">Sr. No.</th> <th data-bbox="1205 435 1491 507">Description</th> <th data-bbox="1491 435 1601 507">Qty.</th> <th data-bbox="1601 435 1682 507">Unit</th> <th colspan="2" data-bbox="1682 435 1989 472">Unit Rate</th> <th data-bbox="1989 435 2125 507">Amount (Rs.)</th> </tr> <tr> <td colspan="4"></td> <th data-bbox="1682 472 1832 507">In figure</th> <th data-bbox="1832 472 1989 507">In Words</th> <td colspan="1"></td> </tr> </thead> <tbody> <tr> <td data-bbox="1126 507 1205 879">8</td> <td data-bbox="1205 507 1491 879">Providing embedding 9" (230 mm) wide (8 mm) thick PVC water stopper at construction joints, expansion joints of RCC walls RCC slab, etc complete in all respects as per drawing, specification and direction of The Engineer.</td> <td data-bbox="1491 507 1601 879">4,800</td> <td data-bbox="1601 507 1682 879">Rft</td> <td data-bbox="1682 507 1832 879"></td> <td data-bbox="1832 507 1989 879"></td> <td data-bbox="1989 507 2125 879"></td> </tr> </tbody> </table> <p>Specifications are attached as <b>Annexure-1</b>.</p> <p>The same has been included in Addendum No. 2</p>						Sr. No.	Description	Qty.	Unit	Unit Rate		Amount (Rs.)					In figure	In Words		8	Providing embedding 9" (230 mm) wide (8 mm) thick PVC water stopper at construction joints, expansion joints of RCC walls RCC slab, etc complete in all respects as per drawing, specification and direction of The Engineer.	4,800	Rft			
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2.	In lot 2 BOQ item no 21/6 Please Specify more details regarding dewatering methodology.	This is MRS item and will be executed as per specifications issued by Finance Department. This will include installation of tubewells along trench for lowering of water Table below the bed of conduit till completion of construction activity including backfilling.																										
3.	Please provide Material approved vendor list for Architectural work if any. (Aluminium, Paint Etc.)	The material will be approved by The Engineer according to the specification.																										
4.	Will the Employer provide any place for contractor camp, storage, and Plant facilities?	The Contractor would have to make his own appropriate arrangements.																										
5.	Will the Employer designate any disposal area for excess excavated material and debris?	Area for disposal of excess excavated material and debris is not designated. The Contractor will locate and inform Employer/RE for disposal area. He will get required permissions from MC/relevant authorities before disposal of excess material/debris. Payment will be made as per actual lead chart to be approved by the Engineer.																										

Sr#	Bidder Queries	PMU Clarification
6.	Will the employer designate any disposal area for Dewatering Water?	The pumped-out water will be discharged to nearby water body (Bhed Nullah). The rate for disposal of pumped out water will be included in Bill no. 2.1, MRS item no. 4.
7.	Does any Provincial Sales Tax applicable on this Project if yes, what is the Percentage of PST?	ITB 14.7 clearly states that all duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of bids, shall be included in the rates and prices and the total Bid Price submitted by the Bidder. For the purpose of clarity, it is elaborated that this section includes all applicable, provincial and federal, direct and indirect taxes at the prescribed tax rates in accordance with the relevant laws of Pakistan.
8.	In Bill, No 3.2 Non-MRS items, item No.7 the size of Sluice valve is not mentioned, please provide actual size of Sluice valve.	The size (1200 mm o/d) is already mentioned in the BOQ.
9.	In Bill, No 3.1 Non-MRS Mechanical work, item No.11 the number of wet well mentioned in the BOQ is not matching with the drawings for Odour Control System, please clarify?	Odour control system and all the associated components/accessories will be provided for two (02) wet wells and two (02) screening chambers. Quantity is already mentioned as four (04) units. In drawing odour control system on three wet wells is shown in which one system will be installed in future as clearly mentioned in the drawing. Furthermore, shop drawings will be provided by the contractor/manufacturer for approval of the engineer before execution of the system.
10.	In Bill, No 3.1 Non-MRS Electrical, item No.6.1 the size of Diesel Generator mentioned is 1100 KVA but in drawings the size of Generator shown is 1000KVA, Please Clarify.	1100 KVA generator is proposed for Pumping Station. Corrected drawing is attached herewith as <b>Annexure-2</b> . The same has been included in Addendum No. 2
11.	Under drawing "Trash rack cleaning arrangement" the electric chain pulley block is shown of 3-ton capacity but in BOQ 5-ton capacity is required. Kindly clarify the item. (Bill no 3.1 Non-MRS, BOQ Item no 9)	-There is no chain pulley in trash rack arrangement. Under drawing "Trash rack cleaning arrangement" the electric crane is shown of 3-ton capacity whereas at bill No. 3.1 Non-MRS item, BOQ item No.9, capacity of crane is not mentioned and for complete details, drawing is referred in BOQ. Trash rack will be provided in Screening chamber. -Chain pulley block of 5 ton capacity in Bill No. 3.1, Non-MRS item, BOQ item No. 8 is provided at dry well for installation/lifting the pumps. Item No. 8 is misunderstood to be the part of trash rack in the query. - The capacity of crane in trash rack and chain pulley block mentioned above shall also be considered in the specifications.
12.	For Odour Control System please confirm the CFM required with detail specification. (Bill no 3.1 Non-MRS, Item no 11)	The detail specification for Activated Carbon filter are as follows:  <b>Activated Carbon Filter Media</b>

Sr#	Bidder Queries	PMU Clarification
		<p>Activated Carbon Media is used to remove the odor, color and taste of raw water. Granular activated carbon (Coconut Shell) used as an adsorbent to remove the large molecular weight organic compounds, chlorinated by-products such as chloroform and other trihalomethanes (THMs). The media used in this filter, shall meet the following minimum requirements.</p> <ul style="list-style-type: none"> <li>- Raw material : Coconut shells</li> <li>- Bulk density : 0.65 gm/cm<sup>3</sup></li> <li>- Effective Size : 1-2 mm</li> <li>- Hardness No. : 98</li> <li>- Ash content : 4 % max</li> <li>- Surface area : 1000 m<sup>2</sup>/gm</li> </ul>
13.	Please elaborate the mechanism for the recovery of Advance Payment and whether this recovery shall start from the first Interim Payment?	<p>The same has been included in Addendum No. 2</p> <p>Sub-Clause 14.2 of the General Conditions of the Contract attached as Section 7 of the Bidding Documents details the mechanism as follows:</p> <p><i>“Unless stated otherwise in the Contract Data, the advance payment shall be repaid through percentage deductions from the interim payments determined by the Engineer in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates], as follows:</i></p> <p><i>(a) deductions shall commence in the next interim Payment Certificate following that in which the total of all certified interim payments (excluding the advance payment and deductions and repayments of retention) exceeds 30 percent (30%) of the Accepted Contract Amount less Provisional Sums; and</i></p> <p><i>(b) deductions shall be made at the amortisation rate stated in the Contract Data (i.e. 25% for this Project) of the amount of each Interim Payment Certificate (excluding the advance payment and deductions for its repayments as well as deductions for retention money) in the currencies and proportions of the advance payment until such time as the advance payment has been repaid; provided that the advance payment</i></p>

Sr#	Bidder Queries	PMU Clarification
		<p><i>shall be completely repaid prior to the time when 90 percent (90%) of the Accepted Contract Amount less Provisional Sums has been certified for payment.</i></p> <p><i>If the advance payment has not been repaid prior to the issue of the Taking-Over Certificate for the Works or prior to termination under Clause 15 [Termination by Employer], Clause 16 [Suspension and Termination by Contractor] or Clause 19 [Force Majeure] (as the case may be), the whole of the balance then outstanding shall immediately become due and in case of termination under Clause 15 [Termination by Employer], except for Sub-Clause 15.5 [Employer's Entitlement to Termination for Convenience], payable by the Contractor to the Employer"</i></p>
14.	Please clarify that whether a foreign company that is registered with Board of Investment (BOI) Pakistan and Pakistan Engineering Council (PEC) and already working as a main contractor for various Project in Pakistan can bid for all lots individually without forming any JV with local firm?	Any international company from any of the country mentioned under Section 5 of the Bidding Documents can bid as a single entity for any, all or combination of the lots provided that it fulfils the requirements of Section 4 of ITBs and eligibility criteria mentioned under Para 2.1 of Section 3 of the Bidding Documents.
15.	Missing drawing in Lot-4	Drawing No. 3976/11/C/1J110 inadvertently missed in Lot-4 which is attached here as <b>Annexure-3</b> . The same has been included in Addendum No. 2

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Loan No. and Title:	3562-PAK: Punjab Intermediate Cities Improvement Investment Program (PICIP)
Contract No. and Title:	NCB-Works/PICIP-11: Procurement of works for Sialkot-Water and Sanitation

## ADDENDUM No. 02

The addendum shall be read and construed as an integral part of the Bidding Documents and shall take precedence in case of any conflict / ambiguities in the Bidding Documents and other provisions within. The changes mentioned herein below are applicable for Contract No: NCB-Works/PICIP-11 (Lot-1, 2, 3 & 4), unless indicated otherwise.

### **i) Bill of Quantities for LOT-2**

#### **i) Bill No. 2.1, Pre Cast RCC Conduit**

#### **Non MRS Items**

The following item shall stand included as Sr. No. 8.

Sr. No.	Description	Unit	Qty.	Unit Rate		Amount (Rs.)
				In figure	In Words	
8	Providing embedding 9" (230 mm) wide (8 mm) thick PVC water stopper at construction joints, expansion joints of RCC walls RCC slab, etc complete in all respects as per drawing, specification and direction of The Engineer.	Rft	4,800			

Specifications are attached as Annexure-1.

### **ii) Bill of Quantities for LOT-3**

#### **i) Bill No. 3.1, Influent pumping Station**

#### **Non MRS Items**

Read Description of Sr. No. 11 as follows:

Sr. No.	Description	Unit	Qty.	Unit Rate		Amount (Rs.)
				In figure	In Words	
11	Designing, manufacturing, testing, supplying at site, installation, testing, commissioning and guarantee of each item of following equipment: Activated carbon filter type odor control system with necessary control and monitoring system with fabricated room (for two wetwells, one Collection Chamber and two screening chambers) as per design and specifications. Major components are:	Job	1			





<ul style="list-style-type: none"> <li>- Scrubber Vessel</li> <li>- Activated Carbon filter having life time of atleast 1 year. (Four (04) Nos.)</li> <li>- Centrifugal Fan, (One (01) No.)</li> <li>- Fiberglass covering system, dome type, for wet wells, diameter (50 ft) (Two (02) Nos.)</li> <li>- Fiberglass covering system, dome type, for Collection Chamber, diameter (30 ft) (One (01) No.)</li> <li>- Fiberglass covering system, dome type for Screening Chambers diameter (18 ft) (Two (02) Nos.) considering trash rack arrangement.</li>   <li>- Interconnected piping network (Stainless Steel 316) from Odor Control Unit to two wet wells, one Collection chamber and two screening chambers (as per site)</li> </ul> <p>The detail given above is a minimum requirement. The Contractor will submit its technical proposal containing design, drawings and specifications of odor control system before installation to get its approval from The Engineer.</p>					
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**ii) Drawings for LOT-3**

Electrical Items

1100 KVA generator is proposed for Pumping Station. Correct generator Capacity in drawing No. 3976/161/C/5E002 (Main Single Line Diagram) from 1000 KVA to 1100 KVA. Corrected drawing is attached herewith as Annexure-2.

**iii) Specification for LOT-3**

Page No. 71: Correct chain pully block of 10 ton capacity with “5 ton capacity” in first line.

Page No. 81 & 82: Correct lifting parameters of Crane from 2 ton to “3 ton”.

Page No. 86: Add 6.3.14 “**Activated Carbon Filter Media**”

Activated Carbon Media is used to remove the odor, color and taste of raw water. Granular activated carbon (Coconut Shell) used as an adsorbent to remove the large molecular weight organic compounds, chlorinated by-products such as chloroform and other tri-halomethanes (THMs). The media used in this filter, shall meet the following minimum requirements.

- Raw material : Coconut shells
- Bulk density : 0.65 gm/cm<sup>3</sup>
- Effective Size : 1-2 mm
- Hardness No. : 98
- Ash content : 4 % max



- Surface area : 1000 m<sup>2</sup>/gm



**iv) Drawings for LOT-4**

Drawing No. 3976/11/C/1J110 missed in Lot-4 which is attached here as Annexure-3.

This Addendum shall now serve as mandatory part of the bidding document for the relevant sections and shall be referred to while preparing the bid.

**Program Director  
Program Management Unit (PMU)  
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Website: <http://piciip.gop.pk>**

# 1. WATER STOPPER

## 1.1 SCOPE

The work covered by this section consists of providing and installing of PVC water stopper (waterbar) in strict accordance with this section of the specifications and the applicable drawings and as directed by Engineer-in-charge. In case of difference between this specification and the listed international standards then the most stringent requirements shall prevail.

## 1.2 GENERAL

The PVC water stopper shall be 9" (230 mm) wide 8 mm thick PVC water stopper at construction joints and expansion joints of RCC walls RCC slab, etc.

## 1.3 MATERIAL

Type	:	Polyvinyl chloride (PVC 7808)
Tensile Strength	:	>130 kg/cm <sup>2</sup> (ASTM D412-75)
Elongation at Break	:	>310% (ASTM D412-75)
Stiffness in Flexure	:	>600 (ASTM D412-75)
Chemical Resistance		
Permanent	:	Water, seawater, sewage
Temporary	:	Dilute organic alkalis and mineral acids, mineral oils
Ozone Resistance	:	Passed (ASTM D-1149)
Low Temperature	:	No cracking or splitting
Brittleness (-35°F)	:	CRD-C 570

## 1.4 INSTALLATION

PVC Water Stopper must be installed so that they are securely held in their correct position while the concrete is being poured. The concrete must be fully compacted around the water stopper to ensure that no air holes or porous areas remain. Where reinforcement is present, an adequate clearance must be left to permit correct compaction. Welding and installation of water stopper shall always be coordinated with mould setting and laying of reinforcing bars for the best results.

### 1.4.1 SPLICING WATER STOPPER

1. Water Stopper is spliced by cutting the two ends to be joined so that they will butt smoothly together. Use a miter box, or overlap and cut through both pieces at once.
2. Heat both ends to be joined, using an electric splicing iron, until the material melts. For best results, there should be about 1/8" of melted material at the end of each piece, but do not overheat to the point that the waterstop becomes a dark color.
3. Press the melted edges firmly together and hold for 15 to 30 seconds until the material cools. Stress should not be put on the spliced joint until the waterstop has completely cooled.

## **1.4.2 INTERSECTION PIECES**

Standard intersection pieces are available for each type of water stopper as provided by the vendor and duly verified by the Engineer.

## **1.4.3 HORIZONTAL CONCRETE JOINTS**

(Water Stopper is placed vertically)

1. Water Stoppers are always placed centrally in the concrete section.
2. Water Stopper clips are fixed on the end - ribs of the waterbar at intervals of 1 metre and tied to the reinforcing bars using steel wiring. The upper part of the Water Stopper should be protected from bending down during the concrete pour (when the first part of the construction is set).
3. Make sure that both sides of the water stopper will have the same pressure from the concrete when it is poured (pour equally on each side).

## **1.5 INSPECTION AND TESTING PLAN**

Prior to delivery, the manufacturer shall provide the Engineer with a comprehensive Inspection and Testing Plan (ITP) for their approval. The ITP shall detail all the certificates and documents that shall be provided by the manufacturer, together with details of the type testing and batch release testing that they have previously undertaken and shall undertake. Where the manufacturer cannot themselves undertake the required testing, they shall employ an independent third-party laboratory to undertake the testing on their behalf.

## **1.6 INSPECTION REQUIREMENTS**

The manufacturer shall ensure that all the applicable codes and standards are available at their facility for the Engineer's reference during any visit or inspection. The manufacturer shall provide full assistance and co-operation for any inspection, when required by the Engineer. When requested, the manufacturer shall provide access to and copies of all material certificates and inspection and test results obtained in the course of quality verification.

## **1.7 ACCEPTANCE CRITERIA**

The following criteria requirements shall be fulfilled by the manufacturer in order for the flow meters to be approved and accepted by the Engineer.

- Prior to delivery, the manufacturer shall provide the Engineer with copies of all the type test results and certification required by this specification.
- The Engineer may reject that does not successfully pass the required tests or fully comply with the requirements of this specification.

## **1.8 DOCUMENTATION**

The manufacturer shall furnish the following vendor data as a minimum:

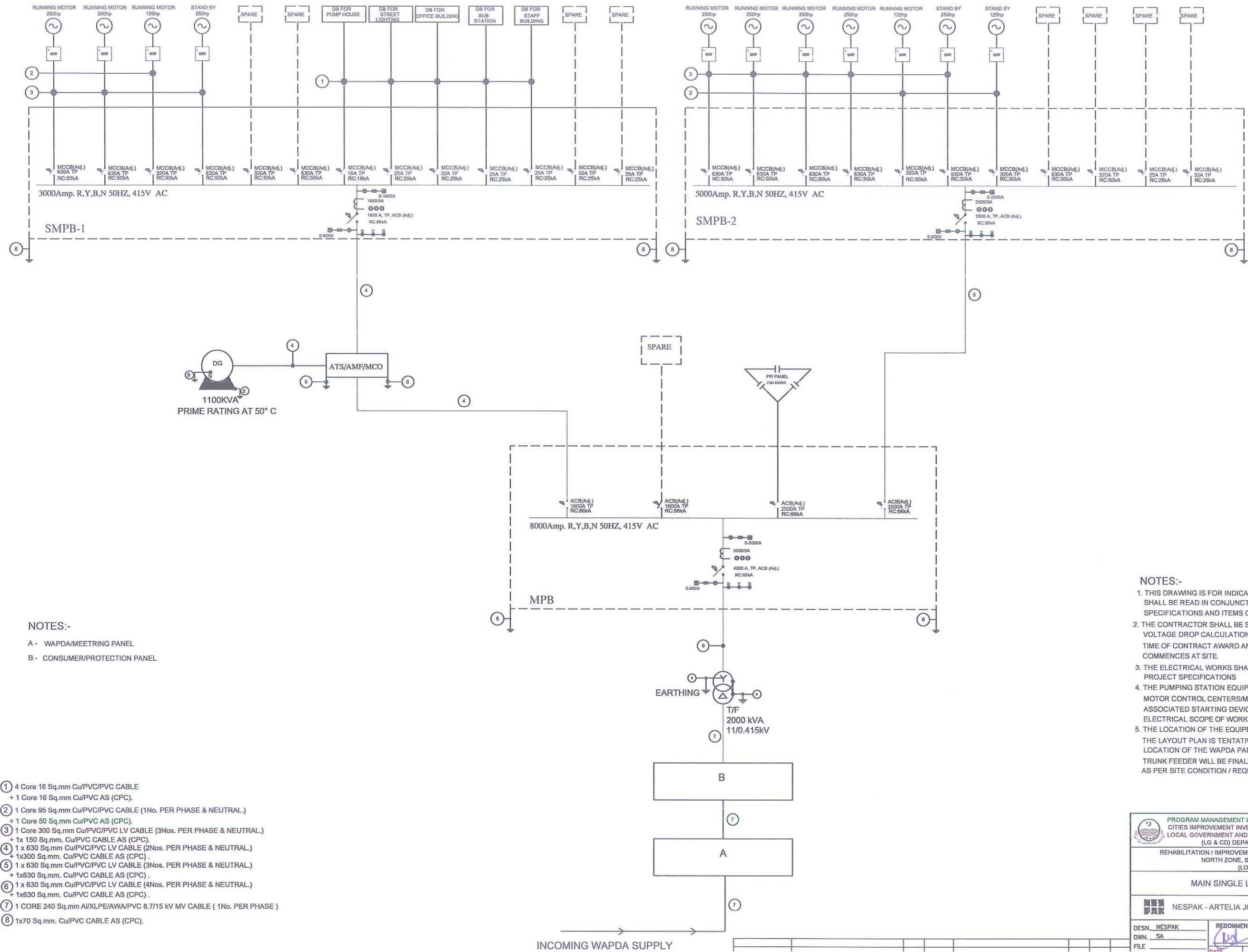
- Catalogues / brochures of the proposed product
- Dimensional details and profiles
- Detailed material specification
- Details of testing facilities at the manufacturer's plant
- Quality assurance certificates

## **1.9 SUBMITTAL**

The contractor shall submit manufacturer's product data including physical properties and installation instructions to the Engineer-in-charge before installation of PVC Stopper.

## **1.10 METHOD OF MEASUREMENT**

The quantities to be measured shall be in feet.



**NOTES:-**

- A - WAPDA/MEETING PANEL
- B - CONSUMER/PROTECTION PANEL

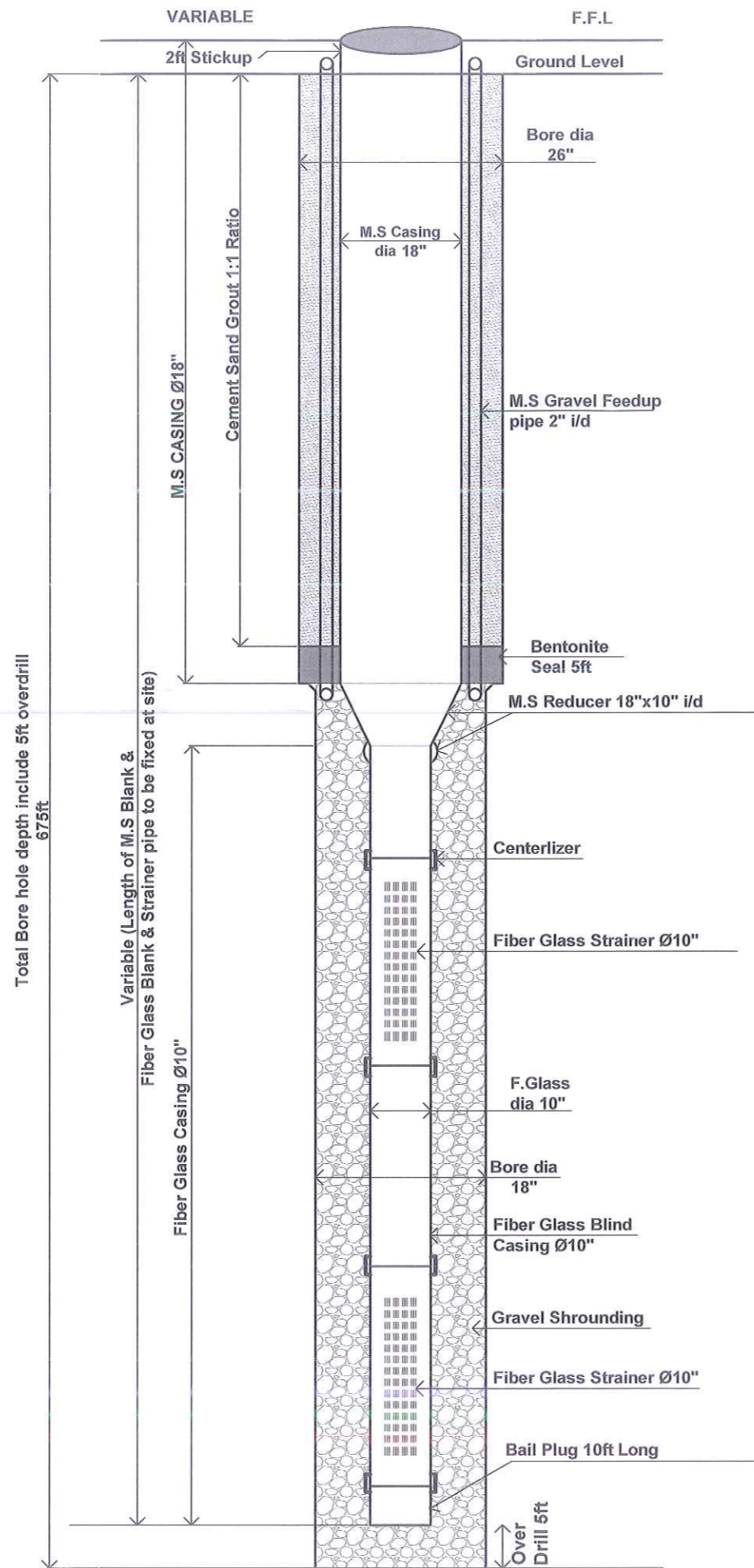
- ① 4 Core 16 Sq.mm Cu/PVC/PVC CABLE  
+ 1 Core 16 Sq.mm Cu/PVC AS (CPC).
- ② 1 Core 95 Sq.mm Cu/PVC/PVC CABLE (1No. PER PHASE & NEUTRAL.)  
+ 1 Core 50 Sq.mm Cu/PVC AS (CPC).
- ③ 1 Core 300 Sq.mm Cu/PVC/PVC LV CABLE (3Nos. PER PHASE & NEUTRAL.)  
+ 1x 150 Sq.mm. Cu/PVC CABLE AS (CPC).
- ④ 1 x 630 Sq.mm Cu/PVC/PVC LV CABLE (2Nos. PER PHASE & NEUTRAL.)  
+ 1x300 Sq.mm. Cu/PVC CABLE AS (CPC).
- ⑤ 1 x 630 Sq.mm Cu/PVC/PVC LV CABLE (3Nos. PER PHASE & NEUTRAL.)  
+ 1x630 Sq.mm. Cu/PVC CABLE AS (CPC).
- ⑥ 1 x 630 Sq.mm Cu/PVC/PVC LV CABLE (4Nos. PER PHASE & NEUTRAL.)  
+ 1x630 Sq.mm. Cu/PVC CABLE AS (CPC).
- ⑦ 1 CORE 240 Sq.mm Al/XLPE/AWA/PVC 8.7/15 kV MV CABLE ( 1No. PER PHASE )
- ⑧ 1x70 Sq.mm. Cu/PVC CABLE AS (CPC).

**NOTES:-**

1. THIS DRAWING IS FOR INDICATIVE DESIGN MODEL AND SHALL BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS, SPECIFICATIONS AND ITEMS OF BILL OF QUANTITIES.
2. THE CONTRACTOR SHALL BE SUBMITTED SHOP DRAWINGS, VOLTAGE DROP CALCULATION TO THE ENGINEER AT THE TIME OF CONTRACT AWARD AND BEFORE THE WORK COMMENCES AT SITE.
3. THE ELECTRICAL WORKS SHALL BE EXECUTED IN LINE WITH THE PROJECT SPECIFICATIONS
4. THE PUMPING STATION EQUIPMENT ALONG WITH MOTORS, MOTOR CONTROL CENTERS/MOTOR CONTROL UNITS AND ASSOCIATED STARTING DEVICES ARE NOT INCLUDED IN ELECTRICAL SCOPE OF WORK.
5. THE LOCATION OF THE EQUIPEMENTS SHOWN ON THE LAYOUT PLAN IS TENTATIVE LOCATION. LOCATION OF THE WAPDA PANEL ROOMS, D.G SETS & TRUNK FEEDER WILL BE FINALIZED AS PER SITE CONDITION / REQUIREMENTS .

REHABILITATION / IMPROVEMENT OF SEWERAGE SYSTEM IN NORTH ZONE, SIALKOT (PHASE-I) (LOT # 3)			
<b>MAIN SINGLE LINE DIAGRAM</b>			
		NESPAK - ARTELIA JOINT VENTURE (JV)	
DESN_ NESPAK DWN_ SA FILE_ SA CKD_ SA SUBM_ SA	RECOMMENDED  DATE APR 2020	VER./CKD. APPROVED  DRAWING NO. 3976/161/C/5E002	REV. 0

REFERENCE DRAWINGS	REV.NO.	DATE	DESCRIPTION	BY	CKD	APPR



Total Bore hole depth include 5ft overdrill  
675ft

**SCHEMATIC SECTION**

DETAIL OF PROPOSED 2 CFS TUBEWELL ASSEMBLY		
1	Mild Steel Pump Housing 18" i/d Including 0.60m Stickup	302ft
2	Mild Steel Reducer 18"x10" i/d	2ft
3	Fiber Glass Strainer Pipe 10" i/d	140ft
4	Fiber Glass Blank Pipe 10" i/d	220ft
5	Fiber Glass Bail Plug 10" i/d	10ft
6	Total Casing Depth	672ft
7	Total Bore Bore Hole (Including 5ft Overdrill)	675ft

**NOTES**

1. GEOPHYSICAL LOGGING OF BORE HOLE IS RECOMMENDED FOR DETERMINING THE POTENTIAL ZONES AND FINALIZING THE PLACEMENT OF STRAINER / BLIND PIPE ETC.
2. DIAMETER OF BOREHOLE AND CASING PIPE IS IN INCHES AND THE LENGTH IS IN FEET.
3. SUITABLE SCREENABLE AQUIFER & TOTAL DEPTH OF WELL TO BE DESIGNED AT SITE AFTER STRATA ANALYSIS AND GEOPHYSICAL LOGGING RECOMMENDATIONS.

PROGRAM MANAGEMENT UNIT, PUNJAB INTERMEDIATE CITIES IMPROVEMENT INVESTMENT PROGRAM (PICIP), LOCAL GOVERNMENT AND COMMUNITY DEVELOPMENT (LG & CD) DEPARTMENT, PUNJAB

REHABILITATION / IMPROVEMENT OF WATER SUPPLY SYSTEM, IN NORTH ZONE, SIALKOT (PHASE-I) (LOT #4)

**TYPICAL DRAWING OF 2 CUSEC CAPACITY TUBEWELL**

NESPAK - ARTELIA JOINT VENTURE (JV)

DESN. NESPAK	RECOMMENDED	VER./CKD.	APPROVED
DWN. Yesir Victor			
FILE	DATE	DRAWING NO.	REV.
CKD.	AUG. 2020	3976/11/C/1J110	0
SUBM.			

REFERENCE DRAWINGS	REV.NO.	DATE	DESCRIPTION	BY	CKD	APPR