THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

MINISTRY OF AGRICULTURE, LIVESTOCK, LAND AND IRRIGATION

PROJECT MANAGEMENT UNIT

Integrated Watershed & Water Resources Management Project

PROCUREMENT OF WORKS UNDER OPEN COMPETITIVE BIDDING - NATIONALLY

Bidding Documents

for

Improvement of Pathinipuram Anicut in Trincomalee District

Contract No: LK-MOMDE-539144-CW-RFB

Issued: April / 2026

Bidder Number	
Name	
Address	

MINISTRY OF AGRICULTURE, LIVESTOCK, LANDS AND IRRIGATION

IWWRMP

INVITATION FOR BIDS

Integrated Watershed and Water Resources Management Project (IWWRMP)

Project No: P166865, Loan No: IDA-6619-LK

1. The Government of the Democratic Socialist Republic of Sri Lanka has applied for financing from the International Development Association (World Bank) towards the cost of **Integrated Watershed and Water Resources Management Project (IWWRM Project)** and it intends to apply part of the proceeds of this credit to payment under the contracts mentioned in the schedule below.

2. Project Director of IWWRM Project, invites sealed bids from eligible and qualified bidders for the following **works** as given in the Table 01, on behalf of the Chairman, Project Procurement Committee of Integrated Watershed and Water Resources Management Project.

Table 01

No.	Contract No.	Description of Work	Experience / CIDA Registration	Bid Security and Validity Period	Non-Refundable Bidding Document Fee (Rs.)	Average annual volume of construction work & The minimum amount of liquid assets and/or credit facilities (Rs.)
4	LK-MoMDE-539144-CW-RFB	Improvements to Pathinipuram Anicut in Thampalagamam D.S Division InTrincomalee District. (Contract Period: 300days)	Grade: C5 or above Specialty: Irrigation & Drainage Canals	Bid security value: Rs. 818,218.00 Validity: Up to 01.05.2026	16,000.00	Rs 90.00 Mn & Rs18.50 Mn

3. To be eligible for a contract award, the successful bidder shall not have been blacklisted and shall meet the requirements in the Bidding Document. Further the successful bidder shall have valid registration Grade in Construction Industry Development Authority (CIDA) as mentioned in above Table.

4. The Bidding documents may be available for inspection in the **https://www.iwwrmp.lk/web/procurement/section/procurement-notices** website for references.

5. Interested bidders may obtain further information from **Senior Project Specialist (Procurement & Contracts),** IWWRM Project, 2nd Floor, Mahaweli Centre Building, No. 96, Ananda Coomaraswamy Mawatha, Colombo 07 and inspect the bidding documents at the same address given above during 9.00 a.m. to 3.00 p.m. from **17.04.2026 to 29.04.2026** (on working Days) by prior notification. (**Contact No: 0112691163**).

6. Prospective Bidders can obtain the Bidding Documents by a written request on a company/firm letter head, addressed to the Project Director, IWWRM Project, 2nd Floor, Mahaweli Centre Building, No. 96, Ananda Coomaraswamy Mawatha, Colombo 07. from **17.04.2026** up to **29.04.2026** from **9.30 hrs. to 15.00 hrs.** only on working days by **prior notification** (Contact No. 011-2691163), on payment of a non-refundable bid document fee as given above per set of Bidding Documents (Please refer Table: 01 for the amount) on Cash or sending the written request by email to iwwrmp@sltnet.lk with the scan copy of Bank Payment Slip paid the non-refundable bidding documents fee to the Integrated Watershed and Water Resources Management Project Bank Account no. of **7042633** at Bank of Ceylon, Hyde Park Branch.

7. The pre-bid meeting and site visit will be conducted as mentioned in table 02. Bidders are requested to inspect the sites with the assistance of the relevant officer.

Table 02

No.	Contract No.	Site visit	Pre-bid meeting	Bid Closing and Opening (Date &Time)
4	LK-MoMDE-539144-CW-RFB	Date: 21/04/2026 Time: 10.00 a.m. Location: Deputy Director of Irrigation , Central road Trincomalee.	Date: 22/04/2026 Time: 2.00 p.m. Conference Room, IWWRMP 2nd Floor, Mahaweli Centre Building, No. 96, Ananda Coomaraswamy Mawatha, Colombo 07.	Date: 30/04/2026 Time: 2.00 p.m.

8. All pages of the Bidding Documents shall be signed by the bidder and affixed to his seal.

9. Completed Sealed Bid with **duplicate,** clearly marked the contract name and the number on the top left corner of the envelope may be dispatched either by Registered Post or hand delivered or courier to the **Project Director, IWWRM Project, 2nd Floor, Mahaweli Centre Building, No. 96, Ananda Coomaraswamy Mawatha, Colombo 07** as specified in the **Table 02.** Bids will be opened immediately thereafter. Bidders or their authorized representatives, not exceeding two (2) in numbers, are permitted to be present at the opening of bids.

Project Director,
Integrated Watershed and Water Resources Management Project
2nd Floor, Mahaweli Centre Building,
No.96, Ananda Coomaraswamy Mawatha,
Colombo 07.
16.04.2025

Section - 1

Instructions to Bidders (ITB)

Available in ICTAD Publication Number ICTAD/SBD/02
Second Edition January 2007

Instruction to Bidders shall be read in conjunction with Bidding Data under Section 2

Section - 2

Bidding Data

Available in ICTAD Publication Number ICTAD/SBD/02
Second Edition January 2007

This section shall be read in conjunction with Section 1 – Instructions to Bidders, and is intended to provide specific information in relation to corresponding clauses in Section 1. Whenever there is a discrepancy, the provisions in Section 2- Bidding Data shall supersede these provided in the Section 1 – Instruction to Bidders

Section 2 - Bidding Data

Instructions to Bidders Clause Reference	Entry
1.1	**Employer's Name and Address** Name : ***Project Director,*** ***Integrated Watershed & Water Resources Management Project*** Address: ***2nd Floor, No.96, Ananda Coomaraswamy Mawatha, Colombo 07.***
1.1	**Scope of Works** **The works consists of Improvement to Pathinipuram Anicut in Thampalagamam D.S Division** which including i. Improvements to Anicut ii. Improvements to Feeder Channel iii. Improvements to Farm road Located at ***Pathinipuram Anicut*** *in Trincomalee District*
1.2	**Time for Completion** The Time for Completion for the whole of works **shall be** ***300 Calendar Days***
2.1	**Source of funds** The source of funds is ***International Development Association (IDA)*** **– World Bank**
3	Substitute by the following: 3.1 The World Bank requires that the Government of Sri Lanka (including beneficiaries of World Bank financing); bidders (applicants/proposers), consultants, contractors and suppliers; any sub-contractors, sub-consultants, service providers or suppliers; any agents (whether declared or not); and any of their personnel, observe the highest standard of ethics during the procurement process, selection and contract execution of World Bank-financed contracts, and refrain from Fraud and Corruption. 3.2 The World Bank requires compliance with its policy in regard to corrupt and fraudulent practices as set forth below. 3.3 In pursuance to this policy, The World Bank: a. Defines, for the purposes of this provision, the terms set forth below as follows: i. "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

ii. "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;

iii. "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

iv. "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

v. "obstructive practice" is:

a. deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a World Bank investigation into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

b. acts intended to materially impede the exercise of the World Bank's inspection and audit rights provided for under paragraph 3.4 below.

b. rejects a proposal for award if the World Bank determines that the firm or individual recommended for award, any of its personnel, or its agents, or its subconsultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;

c. In addition to the legal remedies set out in the relevant Legal Agreement, may take other appropriate actions, including declaring mis-procurement, if the World Bank determines at any time that representatives of the Government of Sri Lanka or of a recipient of any part of the proceeds of the loan engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices during the procurement process, selection and/or execution of the contract in question, without taking timely and appropriate action satisfactory to the World Bank to address such practices when they occur, including by failing to inform the World Bank in a timely manner at the time they knew of the practices;

d. Sanctions, pursuant to the World Bank's Anti-Corruption Guidelines and in accordance with its prevailing sanctions policies and procedures as set forth in the WBG's Sanctions Framework any firm or individual – determined at any time by the World Bank to have engaged in Fraud and Corruption in connection with the procurement process, selection and/or execution of a World Bank-financed contract;

e. Requires that, for World Bank-financed operations to be implemented utilizing national procurement arrangements, as well as PPPs, agreed by the World Bank, bidders (applicants/proposers) and consultants submitting bids/proposals will be required to accept the application of, and agree to comply with, the Anti-Corruption Guidelines during the procurement process, selection and/or contract execution, including the World Bank's right to sanction as set forth in paragraph 2.2 d., and the World Bank's inspection and audit rights as

	set forth in paragraph 3.4. The Employer shall consult and apply the World Bank Group's lists of firms and individuals suspended or debarred. In the event the Employer signs a contract with a firm or an individual suspended or debarred by the World Bank Group, the World Bank does not finance the related expenditures and may apply other remedies as appropriate; and g. Requires that, when a United Nations (UN) agency is selected to provide goods, works, non-consulting services and technical assistance, the above provisions regarding sanctions on Fraud and Corruption shall apply in their entirety to all contractors, consultants, sub-contractors, sub-consultants, service providers, suppliers, and their employees, that signed contracts with the UN agency. 3.4 In further pursuance of this policy, Bidders shall permit and shall cause its agents (whether declared or not), sub-contractors, sub-consultants, service providers, or suppliers and any personnel thereof, to permit the World Bank to inspect all accounts, records and other documents relating to any prequalification process, bid submission, and contract performance (in the case of award), and to have them audited by auditors appointed by the World Bank.
4.1	**Qualification Information** The following information shall be provided in Section 9 - Schedules: • ICTAD registration Registration number …… Grade …… Specialty …… Expiry date …… • VAT registration number ...…….. • Attach construction program • Attach legal status (Sole proprietor, Partnership, Company etc.) • Attach authentication for signatory • Total monetary value of construction work performed for each of the last Ten years • Experience in works of a similar nature and complexity for each of the last Ten years • Construction equipment • Staffing • Attach Work plan and methods;
4.2 (a)	**CIDA registration required** **The registration required;** **Specialty:** ***Irrigation and Drainage Canals*** **Grade:** ***C 5 or above***
4.2 (b)	**Average annual volume of construction work performed in last 10 years** Average annual volume of construction work performed in last Ten years shall be at least **Rs. 90.00 Million**

4.2 (c)

Experience in works of a similar nature and complexity site for each of the last Ten years shall be at least **Rs. 31 Million** (Excluding VAT)

4.2 (d)

Essential equipment

Proposals for the timely acquisition (own, lease, hire, etc.) of the following essential equipment **shall be;**

No.	Equipment Type and Characteristics	Min. Number Required
1	Crawler excavator - 120 HP, Bucket capacity 1.0 m^3	1
2	Crawler excavator - 200 HP, Bucket capacity 1.0 m^3	1
3	Dozer D4D,	1
4	Concrete mixers 1 m^3	3
5	Tractor with trailers	2
6	Porker vibrators	2
7	Transport equipment / Tipper	5
8	Water Bowser with sprinkler 5000 L Capacity	1
9	Mobile Generator	1
10	Plate Compactor	1
11	Rammer	1
12	Vibrating Sheep foot roller not less than 10 Ton	1
13	Water pump 4 inch Dia	2

4.2 (e) **Qualifications and experience of the Contract Manager and other Key personnel**

Key personnel	Qualifications	No. of Position	Experience	Similar work Experience
1. Project Manager	Engineering Degree or equivalent qualification in Relevant field	1	07 yrs	03 yrs
2. Site Engineer	B.Sc. (Civil Engineering) degree or equivalent	1	05yrs	03yrs
3. Environmental and Social Officer	Degree or equivalent qualification in Relevant field	1	01 yrs	-
4. Health and Safety Officer	Degree or equivalent qualification in Relevant field	1	01 yrs	-
5.Engineering Assistant (Civil)	NDT or equivalent	1	03 yrs	01 yrs
6. Work Supervisor (Civil)	NCT	1	03 yrs	01 yrs

The Bidder must demonstrate that it will have suitably qualified Project Manager and suitably qualified other key personnel in adequate numbers, as described in the table above.

4.2 (f) **Liquid assets and/or credit facilities required**

The minimum amount of liquid assets and/or credit facilities, net of other contractual commitments and exclusive of any advance payments which may be made under the Contract**, shall be not less than Rs. 18.5 Million**

8.3 The employer may conduct a site visit concurrently with the pre-bid meeting referred to in Clause 19.

The site visit will be conduct as follow.

Date & Time: **21/04/2026 at 10.00 am**
Commencing Venue: **Deputy Director's office, Trincomalee Range, Provincial Irrigation Department, Central Road, Orr's hill, Trincomalee**

10.1 **Clarification of Bidding Documents**

Employer's address for clarification of bidding documents is:

Name of Officer: **Project Director, IWWRMP**
Address: **2nd Floor, Mahaweli Centre Building,**
No. 96, Ananda Coomaraswamy Mawatha, Colombo 07.
Phone: **0112691163**
Facsimile: **0112691163**
E-mail: iwwrmp@sltnet.lk

13.1(A) (j) **13.1(B) (d)**	The Bidder shall submit the following additional documents in its Bid: **Code of Conduct (ESHS)** The Bidder shall submit its Code of Conduct that will apply to Contractor's Personnel (as defined in Sub-clause 1.1.2.7 of the GC), to ensure compliance with its Environmental, Social, Health and Safety (ESHS) obligations under the contract. *[Note: Complete and include the risks to be addressed by the Code in accordance with Schedule 10, e.g. risks associated with: labor influx, spread of communicable diseases, sexual harassment, gender-based violence, sexual exploitation and abuse, illicit behavior and crime, and maintaining a safe environment etc.]* In addition, the Bidder shall detail how this Code of Conduct will be implemented. This will include: how it will be introduced into conditions of employment/engagement, what training will be provided, how it will be monitored and how the Contractor proposes to deal with any breaches. The Contractor shall be required to implement the agreed Code of Conduct. **Management Strategies and Implementation Plans (MSIP) to manage the (ESHS) risks** The Bidder shall submit Management Strategies and Implementation Plans (MSIP) to manage the following key Environmental, Social, Health and Safety (ESHS) risks. The Contractor shall be required to submit for approval, and subsequently implement, the Contractor's Environment and Social Management Plan (C-ESMP), in accordance with the Particular Conditions of Contract Sub-Clause 4.1, that includes the agreed Management Strategies and Implementation Plans described here. *[**Note:** The extent and scope of these requirements should reflect the significant ESHS risks or requirements set out in Schedule 10 as advised by Environmental/Social specialist/s. The key risks to be addressed by the Bidder should be identified by Environmental/Social specialist/s, for example, from the Environmental and Social Impact Assessment (ESIA), Environmental and Social Management Plan (ESMP), Resettlement Action Plan (RAP), and/or Consent Conditions (regulatory authority conditions attached to any permits or approvals for the project), up to a maximum of four. The risks may arise during mobilization or construction phases, and may include construction traffic impacts on the community, pollution of drinking water, depositing on private land and impacts on rare species etc. The management strategies and/or implementation plans to address these could include, as appropriate: mobilization strategy, strategy for obtaining consents/permits, traffic management plan, water resource protection plan, bio-diversity protection plan and a strategy for marking and respecting work site boundaries etc.]*
14.4	**Adjustments for change in cost** The Contract **is subjected** to price adjustment
15.1	**Currency of Bid** Rates and prices shall be quoted by the bidders entirely in ***Sri Lankan rupees***.
16.1	**Period of Bid validity:** **The Bid shall be valid up to 119 days** from the bid submission deadline date **27/08/2026**

17.1	**Amount of Bid security:** The amount of Bid Security is Sri Lanka Rupees: **Eight hundred eighteen thousand two hundred eighteen rupees only (LKR 818,218.00).** The Bid security shall, be in the form of an unconditional bank guarantee issued from a reputed **bank recognized by the Central Bank of Sri Lanka** bank located in Sri Lanka. The format of the bid security should be in accordance with the specimen form of bid security included in the bidding document (Section 11).
17.2	**Validity of Bid Security** The Bid Security shall be valid up to **147 days** from the date of closing of the bids **(excluding closing date) 24/09/2026.**
17.5	The bid security of the successful bidder will be returned when the bidder has signed the Agreement and furnished the required Performance Securities including the Environmental, Social, Health and Safety (ESHS) Performance Security pursuant to ITB 35.1.
17.6 (c) (ii)	Furnish the required Performance Securities including the Environmental, Social, Health and Safety (ESHS) Performance Security pursuant to ITB 35.1.
19.1	**Pre-Bid meeting** Pre-Bid meeting ***will be held*** at the below mentioned Venue, time, and date of the pre-bid meeting. **Date: 22/04/2026** **Time: 2.00 P.M** **Venue:** PMU Conference room, *Integrated Watershed & Water Resources Management Project* *2nd Floor, Mahaweli Centre Building,* *No.96, Ananda Coomaraswamy Mawatha, Colombo 07.*
21.2 (a)	**Employer's Address for Bid Submission** Employer's Address for the purpose of bid submission is: ***Project Director*** ***Integrated Watershed & Water Resources Management Project*** ***2nd Floor, Mahaweli Centre Building,*** ***No.96, Ananda Coomaraswamy Mawatha,*** ***Colombo 07.***
21.2 (b)	**Identification number of Contract** Identification Number of the Contract is: **LK-MOMDE-539144-CW-RFB**

22.1	**Deadline for submission of Bids** Deadline for submission of Bids**: 30/04/2026** Time: **2.00 PM**
25.1	**Bid opening** **Venue, time, and date of bid opening.** ***Venue:*** *PMU Conference Room, IWWRM Project,* *2nd Floor, Mahaweli Centre Building,* *No.96, Ananda Coomaraswamy Mawatha, Colombo 07.* **Time:** 2.00 P.M. **Date:** 30/04/2026
31.1	**Preference for Domestic Bidders: Not Applicable**
32	**If the Procurement is within the authority limit of a MPC:** After evaluation of Bids in accordance with the procedures described under Clauses 28, 29, 30 and 31, the Employer will inform to all the bidders in writing the selection of the successful bidder and the intention of contract award to such bidder. The unsuccessful bidders if they so wish, within one week of such notice may make representation to the Secretary to the Line Ministry at the address given below. Such representation shall be self-contained to enable the Secretary to arrive at a conclusion and a cash deposit to amount given below shall be made. The Employer may request the bidder who had made representation to submit further evidence during the investigation of such representation. The cash deposit will be forfeited unless the Employer has changed the original contract award decision in favour of the bidder who has made such representation. **Address: ……...** **Cash Deposit: Rupees 25,000/=** **If the Procurement is within the authority limit of PPC:** After evaluation of Bids in accordance with the procedures described under Clauses 28, 29, 30 and 31, the Employer will inform to all the bidders in writing the selection of the successful bidder and the intention of contract award to such bidder. The unsuccessful bidders if they so wish, within one week of such notice may make representation to the Secretary to the Line Ministry at the address given below. Such representation shall be self-contained to enable the Secretary to arrive at a conclusion and a cash deposit to amount given below shall be made. The Employer may request

	the bidder who had made representation to submit further evidence during the investigation of such representation. The cash deposit will be forfeited unless the Employer has changed the original contract award decision in favour of the bidder who has made such representation. **Address: …….** **Cash Deposit: Rupees 10,000/=**
35.1	**Amount of Performance Security** The Standard Form of Performance Security acceptable to the Employer shall be a Guarantee from an Agency accepted and stated in the Procurement Guidelines. The amount of the Performance Security is ***7%*** of the Initial Contract Price. The Performance Security shall be valid until 28 Days beyond the Time for Completion …… ***(date)***. In addition, the successful Bidder ***shall*** submit an Environmental, Social, Health and Safety (ESHS) Performance Security within 14 Days of receipt of the Letter of Acceptance. The amount of the Environmental, Social, Health and Safety (ESHS) Performance Security is ***3%*** of the initial Contract Price. The Environmental, Social, Health and Safety (ESHS) Performance Security shall be valid until 28 days beyond the defects liability period …… ***(date).*** Bid security shall only be an unconditional guarantee issued by a bank recognized by the Central Bank of Sri Lanka or Construction Guarantee Fund (CGF) in accordance with the format given. Additionally Performance Guarantees will be added up to 10% on the situation where the evaluated price having considerable gap, which would be decided by PE.
37	Fees and types of reimbursable expenses to be paid to the Adjudicator shall be on a case to case basis and shall be shared equally by the Contractor and the Employer.

Section - 3

Conditions of Contract

Available in ICTAD Publication Number ICTAD/SBD/02
Second Edition January 2007

Condition of Contract shall be read in conjunction with the
Section 4 – Contract Data

Section - 4

Contract Data

This section shall be read in conjunction with Section 3 – Condition of Contract, and is intended to provide specific information in relation to corresponding clauses in Section 3. Whenever there is a discrepancy, the provisions in Section 4- Contract Data shall supersede these provided in the Section 3 – Condition of Contract

Section 4 – Contract Data

Conditions of Contract Clause Number/s		
(*) 1.1.2.2 & 1.3	Employer's name and address	Name: Project Director, Integrated Watershed & Water Resources Management Project Address: 2nd Floor, Mahaweli Centre Building, No.96, Ananda Coomaraswamy Mawatha, Colombo 07.
1.3	Contractor's name and address	Name: ……. Address: …….
(*) 1.1.2.4 & 1.3	Engineer's name and address	Name: Deputy Director of Irrigation, Trincomalee Range Address: Deputy Director's office, Trincomalee Range, Provincial Irrigation Department, Central Road, Orr's hill Trincomalee
	Engineer's Representative name and address	Name: Divisional Irrigation Engineer, Trincomalee Division. Address: Divisional Irrigation Engineer's Office, Trincomalee Division, Viharai Road Trincomalee
1.1.2.5 **Contractor's Personnel**	**Key Personnel** The following is added at the end of the sub-clause: "Contractor's Personnel includes Key Personnel as named in the Contract."	
1.1.2.5 Contractor's Representative	Name……. Address……	
1.1.2.9	**Replace existing Clause 1.1.2.9 with following:** "Dispute Adjudication Board" (DAB) means three persons appointed under Sub-Clause 19.2 [Appointment of the Dispute Adjudication Board] or Sub-Clause 19.3 [Failure to Agree on the Composition of the Dispute Adjudication Board] of the Conditions of Contract.	
(*) 1.1. 3.3	Time for Completion of the Works	Time for Completion is **300** ***calendar Days from the commencement date.***
(*) 1.1.3.7	Defects Notification Period	Defects Notification Period is 365 Days

1.1.6.8	The following is added after Sub-Clause 1.1.6.7 "ESHS" means environmental, social (including sexual exploitation and abuse (SEA) and gender-based violence (GBV)), health and safety.	
(*) 2. 1	Right to access to the Site	14 Days after Letter of Acceptance
(*) 3.1	Engineer's Duties and Authority	The Engineer shall obtain the specific approval of the Employer before acting under the following Sub-Clauses of these Conditions: (a) Clause 13, where the final effect of the Variations aggregate exceed 5% of the Contract Price
4.1 Contractor's General Obligations	Insert in the fifth paragraph after the words "*The Contractor shall, whenever required by the Engineer, submit details of the arrangements and methods which the Contractor proposes to adopt for the execution of the Works.*" "Notwithstanding Sub-Clause 8.1, the Contractor shall not carry out any Works, including mobilization and/or pre-construction activities (e.g. limited clearance for haul roads, site accesses and work site establishment, geotechnical investigations or investigations to select ancillary features such as quarries and borrow pits), unless the Engineer is satisfied that appropriate measures are in place to address environmental, social, health and safety risks and impacts. At a minimum, the Contractor shall apply the Management Strategies and Implementation Plans and Code of Conduct, submitted as part of the Bid and agreed as part of the Contract. The Contractor shall submit, on a continuing basis, for the Engineer's prior approval, such supplementary Management Strategies and Implementation Plans as are necessary to manage the ESHS risks and impacts of ongoing works. These Management Strategies and Implementation Plans collectively comprise the Contractor's Environmental and Social Management Plan (C-ESMP). The C-ESMP shall be approved prior to the commencement of construction activities (e.g. excavation, earth works, bridge and structure works, stream and road diversions, quarrying or extraction of materials, concrete batching and asphalt manufacture). The approved C-ESMP shall be reviewed, periodically (but not less than every six (6) months), and updated in a timely manner, as required, by the Contractor to ensure that it contains measures appropriate to the Works activities to be undertaken. The updated C-ESMP shall be subject to prior approval by the Engineer.	
(*) 4.2	Amount of Performance Security	7 % of the Initial Contract Price, in the currencies and proportions in which the Contract Price is payable. The acceptable form is Unconditional Guarantee. **Performance Security shall only be an unconditional guarantee issued by a bank recognized by the Central Bank of Sri Lanka in accordance with the format given** 3 % of the Initial Contract Price The ESHS Performance Security will be in the form of a "*demand guarantee"* in the amount(s) of 3% percent of the Accepted Contract Amount and in the same currency (ies) of the Accepted Contract Amount.

4.2 Performance Security	Add the following The Contractor shall obtain (at his cost) an Environmental, Social, Safety and Health (ESHS) Performance Security for compliance with the Contractor's ESHS obligations, for 3% of Initial Contract Price. The Contractor shall deliver ESHS Performance Security to the Employer within 14 days after receiving the Letter of Acceptance, and shall send a copy to the Engineer. The ESHS Performance Security shall be issued by a reputable bank selected by the Contractor, and shall be in the form annexed to the Particular Conditions, as stipulated by the Employer in the Contract Data, or in another form approved by the Employer. The Contractor shall ensure that the ESHS Performance Security is valid and enforceable until the Contractor has executed and completed the Works and remedied any defects. If the terms of the ESHS Performance Security specify its expiry date, and the Contractor has not become entitled to receive the Performance Certificate (which, if applicable, includes satisfactory performance of the ESHS obligations), by the date 28 days prior to the expiry date, the Contractor shall extend the validity of the ESHS Performance Security until the Works have been completed and any defects have been remedied. The Employer shall return the ESHS Performance Security to the Contractor within 21 days after receiving a copy of the Performance Certificate.
4.14 Progress Reports	Sub-Clause 4.21 (g) is replaced by the following: **"4.14 (g)** the Environmental, Social, Health and Safety (ESHS) metrics set out in Appendix B" At the end of, and as part of Sub-Clause 4.14 add a new paragraph as follows: "The Contractor shall provide immediate notification to the Engineer of incidents in the following categories. Full details of such incidents shall be provided to the Engineer within the timeframe agreed with the Engineer. (a) confirmed or likely violation of any law or international agreement; (b) any fatality or serious (lost time) injury; (c) significant adverse effects or damage to private property (e.g. vehicle accident, damage from fly rock, working beyond the boundary) (d) major pollution of drinking water aquifer or damage or destruction of rare or endangered habitat (including protected areas) or species; or (e) any allegation of gender-based violence (GBV), sexual exploitation or abuse, sexual harassment or sexual misbehavior, rape, sexual assault, child abuse, or defilement, or other violations involving children.

6.8 Contractor's Personnel

Key Personnel

Key personnel	Qualifications	No. of Position	Experience	Similar work Experience
1. Project Manager	Engineering Degree or equivalent qualification in Relevant field	1	07 yrs	03 yrs
2. Site Engineer	B.Sc. (Civil Engineering) degree or equivalent	1	05yrs	03yrs
3. Environmental and Social Officer	Degree or equivalent qualification in Relevant field	1	01 yrs	-
4. Health and Safety Officer	Degree or equivalent qualification in Relevant field	1	01 yrs	-
5.Engineering Assistant (Civil)	NDT or equivalent	1	03 yrs	01 yrs
6. Work Supervisor (Civil)	NCT	1	03 yrs	01 yrs

Sub-Clauses 6.8 (d) is amended by inserting "or" at the end:

"6.9 (d)……; or"

Sub-Clauses 6.8 (e) is inserted as follows:

"6.9 (e) undertakes behavior which breaches the Code of Conduct (ESHS) (e.g. spreading communicable diseases, sexual harassment, gender-based violence, (GBV), sexual exploitation or abuse, illicit activity or crime)."

After the sentence: "*If appropriate, the Contractor shall then appoint (or cause to be appointed) a suitable replacement person.*" the following is added as a new paragraph:

"The Contractor's Personnel includes Key Personnel. If the Contractor intends to replace a Key Personnel, the Contractor shall, not less than 30 days before the intended date of replacement, give notice to the Engineer, the name, address, academic qualifications and relevant experience of the intended replacement Key Personnel. The Contractor shall not, without the prior consent of the Engineer, revoke the appointment of the Key Personnel or appoint a replacement."

(*) 8.7	Liquidated damages for the Works	0.05 % of the Initial Contract Price per Day
(*) 8.7	Maximum amount of liquidated damages	5 % of the Initial Contract Price
12.2 (b)	Method of Measurement	The Method of Measurement shall be joint measurement and annexed in Section 8
13.3 Variation procedure	Sub-Clause 13.3. (a) is replaced with the following: "(a) a description of the proposed work to be performed, a programme for its execution and sufficient ESHS information to enable an evaluation of ESHS risks and impacts;"	
(*) 13.4(b)	Percentage for adjustment of Provisional Sums	10 %
(*) 13.4(b) II	Overhead and profit factor percentage	17%

<table>
<tr><td>13.7
Adjustment for changes in Cost</td><td colspan="2">Last paragraph “The weightings for each of the inputs of cost ……” shall be substituted by the following:

“The weightings for each of the inputs of cost given in this Clause shall be adjusted only if they have been rendered unreasonable, unbalanced or inapplicable, as a result of Variations.”</td></tr>
<tr><td>13.7</td><td>Weightings of Inputs</td><td>
<table>
<tr><th>Indices No</th><th>Input Name</th><th>Input Percentage</th></tr>
<tr><td>M13</td><td>R/F Steel</td><td>18.79%</td></tr>
<tr><td>L3</td><td>Unskilled Labour</td><td>12.33%</td></tr>
<tr><td>M1</td><td>Cement (50kg)</td><td>11.35%</td></tr>
<tr><td>P3</td><td>Fuel</td><td>7.99%</td></tr>
<tr><td>L1</td><td>Skilled Labour</td><td>6.84%</td></tr>
<tr><td>M45</td><td>Gravel</td><td>6.42%</td></tr>
<tr><td>P2</td><td>Heavy equipment</td><td>5.97%</td></tr>
<tr><td>M14</td><td>Angle iron,M.S Plate,”H” Iron & Channel Iron</td><td>5.61%</td></tr>
<tr><td>M21A</td><td>Plywood</td><td>3.23%</td></tr>
<tr><td>M7</td><td>Metal 20mm</td><td>3.07%</td></tr>
<tr><td>M8</td><td>Sand</td><td>2.98%</td></tr>
<tr><td>M6</td><td>300-450mm Rubble</td><td>2.89%</td></tr>
<tr><td>P1</td><td>Small Equipment</td><td>2.53%</td></tr>
<tr><td colspan="2">Total</td><td>90%</td></tr>
</table>
Nonadjustable element shall be:
All P Sum & L Sum items
</td></tr>
<tr><td>(*) 14.2</td><td>Total Advance Payment</td><td>40 % of the Initial Contract Price excluding provisional sums and contingencies.

The Payment will be made with the recommendation of Engineer to the Contract.</td></tr>
</table>

(*) 14.3(c)	Percentage of retention	10 % of Each Interim Payment Certificate
(*) 14.3(c)	Limit of Retention Money	5 % of the Initial Contract Price
14.5	Minimum amount of Interim Payment Certificates.	10 % of the Initial Contract Price

(*) 14.5 Issue of Interim Payment Certificate	The following is added to the third paragraph as (c): i. if the Contractor was, or is, failing to perform any ESHS obligations or work under the Contract, the value of this work or obligation, as determined by the Engineer, may be withheld until the work or obligation has been performed, and/or the cost of rectification or replacement, as determined by the Engineer, may be withheld until rectification or replacement has been completed. Failure to perform includes, but is not limited to the following: a) failure to comply with any ESHS obligations or work described in the Works' Requirements which may include: working outside site boundaries, excessive dust, failure to keep public roads in a safe usable condition, damage to offsite vegetation, pollution of water courses from oils or sedimentation, contamination of land e.g. from oils, human waste, damage to archeology or cultural heritage features, air pollution as a result of unauthorized and/or inefficient combustion; b) failure to regularly review C-ESMP and/or update it in a timely manner to address emerging ESHS issues, or anticipated risks or impacts; c) failure to implement the C-ESMP e.g. failure to provide required training or sensitization; d) failing to have appropriate consents/permits prior to undertaking Works or related activities; e) failure to submit ESHS report/s (as described in Appendix B), or failure to submit such reports in a timely manner; f) Failure to implement remediation as instructed by the Engineer within the specified timeframe (e.g. remediation addressing non-compliance/s).	
(*)14.8	Alternative method for Payment of Retention	On reaching the limit of retention, stated in the Contract Data under Sub-Clause 14.3, the Contractor may substitute full retention money with an unconditional guarantee acceptable to the Employer to a value equal to the full retention money, and valid up to 28 Days beyond the end of Defect Notification Period. On receipt of such guarantee the Employer shall repay the full retention money. The guarantee will be released to the Contractor upon the certification of the Engineer that all Defects notified by the Engineer to the Contractor before the end of this period have been corrected.

<table>
<tr>
<td>(*) 18.2</td>
<td>Third Party Insurance</td>
<td>This Amount of insurance per occurrence is:
<table>
<tr><td></td><td>Minimum Insurance Amount</td><td>Maximum Deductible</td></tr>
<tr><td>(a) for the works, Plant and materials:</td><td>110% of the contract Price</td><td>Rs 50,000/-</td></tr>
<tr><td>(b) For loss or damage to equipment</td><td>Replacement value of the Equipments</td><td>Rs 50,000/-</td></tr>
<tr><td>(c) for losses or damage to property (except the works, plant, Materials, and Equipment) in connection with Contract</td><td>Rs 1.0 million</td><td>Rs 50,000/-</td></tr>
<tr><td>(d) for personal injury or death: (i) of the Contractor's employees per event</td><td>Rs 1,000,000 per employee</td><td>No Deductible</td></tr>
<tr><td>(ii) of other people per event</td><td>Rs 1,000,000 per person</td><td>No Deductible</td></tr>
</table>
</td>
</tr>
<tr>
<td></td>
<td colspan="2"><u>Clause 19.0 Claims, Disputes and Arbitration</u>
Delete existing sub-clause 19.2 (Dispute Resolution),
Delete existing sub-clause 19.3 (Procedure for Adjudication),
Delete existing sub-clause 19.4 (Replacement of Adjudicator),
Delete existing sub-clause 19.5 (Arbitration), and insert the following new sub-clauses;

19.2 Appointment of the Dispute Adjudication Board
19.3 Failure to Agree on the Composition of the Dispute Adjudication Board
19.4 Obtaining Dispute Adjudication Board's Decision
19.5 Failure to Comply with Dispute Adjudication Board's Decision
19.6 Expiry of Dispute Adjudication Board's Appointment
19.7 Arbitration</td>
</tr>
</table>

19.2	Appointment of the Dispute Adjudication Board	Any dispute of whatever nature arising out of or in relation to this agreement shall in the first instance be referred to a Dispute Adjudication Board (DAB) for decision in accordance with Sub-Clause 19.4 [Obtaining Dispute Adjudication Board's Decision]. The Parties shall appoint a DAB within 28 Days from the Commencement Date. The DAB shall comprise, three suitably qualified persons ("the members"), who shall be professionals experienced in the type of construction involved in the Works and with the interpretation of contractual documents, one of whom shall serve as chairman. Within 28 Days from the Commencement Date each of the Parties shall appoint one member to serve on the Dispute Adjudication Board (DAB). The Parties shall consult both these members and shall agree upon the third member, who shall be appointed to act as the chairman. The agreement between the Parties and each of the three members shall incorporate by reference the General Conditions of Dispute Adjudication Agreement contained in the Appendix to these Contract Data, with such amendments as are agreed between them. The terms of the remuneration of the three members, including the remuneration of any expert whom the DAB consults, shall be mutually agreed upon by the Parties when agreeing the terms of appointment of the member or such expert (as the case may be). Each Party shall be responsible for paying one-half of this remuneration If a member declines to act or is unable to act as a result of death, disability, resignation or termination of appointment, a replacement shall be appointed in the same manner as the replaced person was required to have been nominated or agreed upon, as described in this Sub-Clause. The appointment of any member may be terminated by mutual agreement of both Parties, but not by the Employer or the Contractor acting alone. Unless otherwise agreed by both Parties, the appointment of the DAB (including each member) shall expire when the discharge referred to in Sub-Clause 14.11 [Discharge] shall have become effective.

19.3	Failure to Agree on the Composition of the Dispute Adjudication Board	If any of the following conditions apply, namely: (a) either Party fails to nominate a member of a DAB by such date, (b) the Parties fail to agree upon the appointment of the third member (to act as chairman) of the DAB by such date, or (c) the Parties fail to agree upon the appointment of a replacement person within 42 Days after the date on which the one of the three members declines to act or is unable to act as a result of death, disability, resignation or termination of appointment, Then Institute for Construction Training and Development (ICTAD) shall, upon the request of either or both of the Parties and after due consultation with both Parties, appoint this member of the DAB. This appointment shall be final and conclusive. Each Party shall be responsible for paying one-half of the expenses / disbursements incurred by ICTAD.
19.4	Obtaining Dispute Adjudication Board's Decision	If a dispute (of any kind whatsoever) arises between the Parties in connection with, or arising out of, the Contract or the execution of the Works, including any dispute as to any certificate, determination, instruction, opinion or valuation of the Engineer, either Party may refer the dispute in writing to the DAB for its decision, with copies to the other Party and the Engineer. Such reference shall state that it is given under this Sub-Clause. The DAB shall be deemed to have received such reference on the date when it is received by the chairman of the DAB. Both Parties shall promptly make available to the DAB all such additional information, further access to the Site, and appropriate facilities, as the DAB may require for the purposes of making a decision on such dispute. The DAB shall be deemed to be not acting as arbitrator(s).

		Within 84 Days after receiving such reference, or within such other period as may be proposed by the DAB and approved by both Parties, the DAB shall give its decision, which shall be reasoned and shall state that it is given under this Sub-Clause. The decision shall be binding on both Parties, who shall promptly give effect to it unless and until it shall be revised in an amicable settlement or an arbitral award as described below. Unless the Contract has already been abandoned, repudiated or terminated, the Contractor shall continue to proceed with the Works in accordance with the Contract. If either Party is dissatisfied with the DAB's decision, then either Party may, within 28 Days after receiving the decision, give notice to the other Party of its dissatisfaction and intention to commence arbitration. If the DAB fails to give its decision within the period of 84 Days (or as otherwise approved) after receiving such reference, then either Party may, within 28 Days after this period has expired, give notice to the other Party of its dissatisfaction and intention to commence arbitration. In either event, this notice of dissatisfaction shall state that it is given under this Sub-Clause, and shall set out the matter in dispute and the reason(s) for dissatisfaction. Except as stated in Sub-Clause 19.5 [Failure to Comply with Dispute Adjudication Board's Decision] and Sub-Clause 19.6 [Expiry of Dispute Adjudication Board's Appointment], neither Party shall be entitled to commence arbitration of a dispute unless a notice of dissatisfaction has been given in accordance with this Sub-Clause. If the DAB has given its decision as to a matter in dispute to both Parties, and no notice of dissatisfaction has been given by either Party within 28 Days after it received the DAB's decision, then the decision shall become final and binding upon both Parties.
19.5	Failure to Comply with Dispute Adjudication Board's Decision	In the event that a Party fails to comply with a DAB decision which has become final and binding, then the other Party may, without prejudice to any other rights it may have, refer the failure itself to arbitration under Sub-Clause 19.7 [Arbitration]. Sub-Clause 19.4 [Obtaining Dispute Adjudication Board's Decision] shall not apply to this reference.

19.6	Expiry of Dispute Adjudication Board's Appointment	If a dispute arises between the Parties in connection with, or arising out of, the Contract or the execution of the Works and there is no DAB in place, whether by reason of the expiry of the DAB's appointment or otherwise: (a) Sub-Clause 19.4 [Obtaining Dispute Adjudication Board's Decision] shall not apply, and (b) the dispute may be referred directly to arbitration under Sub-Clause 19.7 [Arbitration].
19.7	Arbitration	(a) Any dispute of whatever nature arising from, out of or in connection with this agreement, on the interpretation thereof, or the rights, duties, obligations or liabilities of any Party, or the operation, breach, termination, abandonment, foreclosure or invalidity thereof, shall be referred to by either Party to arbitration for final settlement, in accordance with the Arbitration Act No. 11 of 1995, or any amendment thereof, (b) Pending the award in any arbitration proceedings hereunder, (i) this Contract and the rights and obligations of the Parties shall remain in full force and effect and (ii) each of the Parties shall continue to perform their respective obligations under this Contract. The termination of this Contract shall not result in the termination of any arbitration proceedings pending at the time of such termination nor otherwise affect the rights and obligations of the Parties under or with respect to such pending arbitration. (c) Any award rendered by the arbitral tribunal shall determine the extent to which the cost of arbitration is to be borne by each Party. The arbitration centre charges and the compensation to the arbitrator shall be equally shared by the Parties initially.

		Composition of the Arbitral Tribunal : The arbitral tribunal shall consist of a sole arbitrator who shall be appointed in the manner provided in the Selection Procedure as given below. **Selection Procedure :** The Party desiring arbitration shall nominate three arbitrators out of which one to be selected by the other Party within 21 Days of the receipt of such nomination. If the other Party does not select one to serve as Arbitrator within the stipulated period then the Arbitrator shall be appointed in accordance with the Arbitration Act No. 11 of 1995, or any amendments thereof. **Venue & Language :** The venue of arbitration shall be in Sri Lanka. Unless otherwise agreed to by the Parties the proceedings shall be conducted and the award shall be rendered in the English language.
	In the following sub-clauses the term "Performance Security" is replaced with: "Performance Security and, if applicable, an Environmental, Social, Health and Safety (ESHS) Performance Security": 2.1- Right of Access to the Site 14.2- Advance Payment 14.5- Issue of Interim Payment Certificate 14.11- Discharge 15.5- Employer's Entitlement to Termination for Convenience 16.4(a)- Payment on termination"	

APPENDIX TO CONTRACT DATA

APPENDIX A

A General Conditions of Dispute Adjudication Agreement

1. Definitions

Each "Dispute Adjudication Agreement" is a tripartite agreement by and between:

(a) the "Employer";

(b) the "Contractor"; and

(c) the "Member" who is defined in the Dispute Adjudication Agreement as being one of the three persons who are jointly called the "DAB" (or "Dispute Adjudication Board") and, where this is the case, the other two persons are called the "Other Members."

The Employer and the Contractor have entered (or intend to enter) into a contract, which is called the "Contract" and is defined in the Dispute Adjudication Agreement, which incorporates this Appendix. In the Dispute Adjudication Agreement, words and expressions which are not otherwise defined shall have the meanings assigned to them in the Contract.

2. General Provisions

Unless otherwise stated in the Dispute Adjudication Agreement, it shall take effect on the latest of the following dates:

(a) the Commencement Date defined in the Contract,

(b) when the Employer, the Contractor and the Member have each signed the Dispute Adjudication Agreement, or

(c) when the Employer, the Contractor and each of the Other Members have respectively each signed a Dispute Adjudication Agreement.

This employment of the Member is a personal appointment. At any time, the Member may give not less than 70 Days notice of resignation to the Employer and to the Contractor, and the Dispute Agreement shall terminate upon the expiry of this period.

3. Warranties

The Member warrants and agrees that he/she is and shall be impartial and independent of the Employer, the Contractor and the Engineer. The Member shall promptly disclose, to each of them and to the Other Members, any fact or circumstance which might appear inconsistent with his/her warranty and agreement of impartiality and independence.

When appointing the Member, the Employer and the Contractor relied upon the Member's representations that he/she is:

(a) experienced in the work which the Contractor is to carry out under the Contract,

(b) experienced in the interpretation of contract documentation, and

(c) fluent in the language for communications defined in the Contract.

4. General Obligations of the Member

The Member shall:

(a) have no interest financial or otherwise in the Employer, the Contractor or Engineer, nor any financial interest in the Contract except for payment under the Dispute Adjudication Agreement;

(b) not previously have been employed as a consultant or otherwise by the Employer, the Contractor or the Engineer, except in such circumstances as were disclosed in writing to the Employer and the Contractor before they signed the Dispute Adjudication Agreement;

(c) have disclosed in writing to the Employer, the Contractor and the Other Members, before entering into the Dispute Adjudication Agreement and to his/her best knowledge and recollection, any professional or personal relationships with any director, officer or employee of the Employer, the Contractor or the Engineer, and any previous involvement in the overall project of which the Contract forms part;

(d) not, for the duration of the Dispute Adjudication Agreement, be employed as a consultant or otherwise by the Employer, the Contractor or the Engineer, except as may be agreed in writing by the Employer, the Contractor and the Other Members;

(e) comply with the annexed procedural rules and with Sub-Clause 19.4 (Obtaining Dispute Adjudication Board's Decision) of the Conditions of Contract;

(f) not give advice to the Employer, the Contractor, the Employer's Personnel or the Contractor's Personnel concerning the conduct of the Contract, other than in accordance with the annexed procedural rules;

(g) not while a Member enter into discussions or make any agreement with the Employer, the Contractor or the Engineer regarding employment by any of them, whether as a consultant or otherwise, after ceasing to act under the Dispute Adjudication Agreement;

(h) ensure his/her availability for all site visits and hearings as are necessary;

(i) become conversant with the Contract and with the progress of the Works (and of any other parts of the project of which the Contract forms part) by studying all documents received which shall be maintained in a current working file;

(j) treat the details of the Contract and all the DAB's activities and hearings as private and confidential, and not publish or disclose them without the prior written consent of the Employer, the Contractor and the Other Members; and

(k) be available to give advice and opinions, on any matter relevant to the Contract when requested by both the Employer and the Contractor, subject to the agreement of the Other Members.

5. General Obligations of the Employer and the Contractor

The Employer, the Contractor, the Employer's Personnel and the Contractor's Personnel shall not request advice from or consultation with the Member regarding the Contract, otherwise than in the normal course of the DAB's activities under the Contract and the Dispute Adjudication Agreement. The Employer and the Contractor shall be responsible for compliance with this provision, by the Employer's Personnel and the

Contractor's Personnel respectively.
The Employer and the Contractor undertake to each other and to the Member that the Member shall not, except as otherwise agreed in writing by the Employer, the Contractor, the Member and the Other Members:

(a) be appointed as an arbitrator in any arbitration under the Contract;

(b) be called as a witness to give evidence concerning any dispute before arbitrator(s) appointed for any arbitration under the Contract; or

(c) be liable for any claims for anything done or omitted in the discharge or purported discharge of the Member's functions, unless the act or omission is shown to have been in bad faith.

The Employer and the Contractor hereby jointly and severally indemnify and hold the Member harmless against and from claims from which he is relieved from liability under the preceding paragraph.

Whenever the Employer or the Contractor refers a dispute to the DAB under Sub-Clause 19.4 (Obtaining Dispute Adjudication Board's Decision) of the Conditions of Contract, which will require the Member to make a site visit and attend a hearing, the Employer or the Contractor shall provide appropriate security for a sum equivalent to the reasonable expenses to be incurred by the Member. No account shall be taken of any other payments due or paid to the Member.

6. Payment

The Member shall be paid as follows:

(a) a retainer fee per calendar month, which shall be considered as payment in full for:

(i) being available on 28 Days' notice for all site visits and hearings;

(ii) becoming and remaining conversant with all project developments and maintaining relevant files;

(iii) all office and overhead expenses including secretarial services, photocopying and office supplies incurred in connection with his duties; and

(iv) all services performed hereunder except those referred to in sub-paragraphs (b) and (c) of this Clause.

The retainer fee shall be paid with effect from the last day of the calendar month in which the Dispute Adjudication Agreement becomes effective; until the last day of the calendar month in which the Taking-Over Certificate is issued for the whole of the Works.

With effect from the first day of the calendar month following the month in which the Taking-Over Certificate is issued for the whole of the Works, the retainer fee shall be reduced by 50%. This reduced fee shall be paid until the first day of the calendar month in which the Member resigns or the Dispute Adjudication Agreement is otherwise terminated.

(b) a daily fee which shall be considered as payment in full for:

(i) each day or part of a day up to a maximum of two Days travel time in each direction for the journey between the Member's home and the site, or another location of a meeting with the Other Members;

(ii) each working day on Site visits, hearings or preparing decisions; and

(iii) each day spent reading submissions in preparation for a hearing.

(c) all reasonable expenses including necessary travel expenses (hotel and subsistence and other direct travel expenses) incurred in connection with the Member's duties, as well as the cost of telephone calls, courier charges, and faxes: a receipt shall be required for each item in excess of five percent of the daily fee referred to in sub-paragraph (b) of this Clause.

The retainer and daily fees shall be as specified in the Dispute Adjudication Agreement. Unless it specifies otherwise, these fees shall remain fixed for the entire duration of the Contract.

The Member shall submit invoices for payment of the monthly retainer quarterly in advance. Invoices for other expenses and for daily fees shall be submitted following the conclusion of a site visit or hearing. All invoices shall be accompanied by a brief description of activities performed during the relevant period and shall be addressed to the Contractor.

The Contractor shall pay each of the Member's invoices in full within 56 calendar days after receiving each invoice and shall apply to the Employer (in the Statements under the Contract) for reimbursement of one-half of the amounts of these invoices. The Employer shall then pay the Contractor in accordance with the Contract.

If the Contractor fails to pay to the Member the amount to which he/she is entitled under the Dispute Adjudication Agreement, the Employer shall pay the amount due to the Member and any other amount which may be required to maintain the operation of the DAB; and without prejudice to the Employer's rights or remedies. In addition to all other rights arising from this default, the Employer shall be entitled to reimbursement of all sums paid in excess of one-half of these payments, plus all costs of recovering these sums and financing charges calculated at the rate specified in Sub-Clause 14.7 of the Conditions of Contract.

If the Member does not receive payment of the amount due within 70 days after submitting a valid invoice, the Member may (i) suspend his/her services (without notice) until the payment is received, and/or (ii) resign his/her appointment by giving notice under Clause 7.

7. Termination

At any time: (i) the Employer and the Contractor may jointly terminate the Dispute Adjudication Agreement by giving 42 Days notice to the Member; or (ii) the Member may resign as provided for in Clause 2.

If the Member fails to comply with the Dispute Adjudication Agreement, the Employer and the Contractor may, without prejudice to their other rights, terminate it by notice to the Member. The notice shall take effect when received by the Member.

If the Employer or the Contractor fails to comply with the Dispute Adjudication Agreement, the Member may, without prejudice to his other rights, terminate it by notice to the Employer and the Contractor. The notice shall take effect when received by them both.

Any such notice, resignation and termination shall be final and binding on the Employer, the Contractor and the Member. However, a notice by the Employer or the Contractor, but not by both, shall be of no effect.

8. Default of the Member

If the Member fails to comply with any of his obligations under Clause 4 (a) - (d) above, he shall not be entitled to any fees or expenses hereunder and shall, without prejudice to their other rights, reimburse each of the Employer and the Contractor for any fees and expenses received by the Member and the Other Members, for proceedings or decisions of the DAB which are rendered void or ineffective by the said failure to comply.

If the Member fails to comply with any of his obligations under Clause 4 (e) - (k) above, he shall not be entitled to any fees or expenses hereunder from the date and to the extent of the non-compliance and shall, without prejudice to their other rights, reimburse each of the Employer and the Contractor for any fees and expenses already received by the Member, for proceedings or decisions of the DAB which are rendered void or ineffective by the said failure to comply.

9. Disputes

Any dispute or claim arising out of or in connection with this Dispute Adjudication Agreement, or the breach, termination or invalidity thereof, shall be finally settled in accordance with Arbitration Act No 11, 1995 of Sri Lanka with a sole Arbitrator..

PROCEDURAL RULES

1. Unless otherwise agreed by the Employer and the Contractor, the DAB shall visit the site at intervals of not more than 70 days, including times of critical construction events, at the request of either the Employer or the Contractor. Unless otherwise agreed by the Employer, the Contractor and the DAB, the period between consecutive visits shall not be less than 35 days, except as required to convene a hearing as described below.

2. The timing of and agenda for each site visit shall be as agreed jointly by the DAB, the Employer and the Contractor, or in the absence of agreement, shall be decided by the DAB. The purpose of site visits is to enable the DAB to become and remain acquainted with the progress of the Works and of any actual or potential problems or claims, and, as far as reasonable, to endeavor to prevent potential problems or claims from becoming disputes.

3. Site visits shall be attended by the Employer, the Contractor and the Engineer and shall be co-ordinated by the Employer in co-operation with the Contractor. The Employer shall ensure the provision of appropriate conference facilities and secretarial and copying services. At the conclusion of each site visit and before leaving the site, the DAB shall prepare a report on its activities during the visit and shall send copies to the Employer and the Contractor.

4. The Employer and the Contractor shall furnish copy each to the members of the DAB all documents which the DAB may request, including Contract documents, progress reports, variation instructions, certificates and other documents pertinent to the performance of the Contract. All communications between the DAB and the Employer or the Contractor shall be copied to the other Party.

5. If any dispute is referred to the DAB in accordance with Sub-Clause 19.4 (Obtaining Dispute Adjudication Board's Decision) of the Conditions of Contract, the DAB shall proceed in accordance with Sub-Clause 19.4 (Obtaining Dispute Adjudication Board's Decision) and these Rules. Subject to the time allowed to give notice of a decision and other relevant factors, the DAB shall:

   (a) act fairly and impartially as between the Employer and the Contractor, giving each of them a reasonable opportunity of putting his case and responding to the other's case, and

   (b) adopt procedures suitable to the dispute, avoiding unnecessary delay or expense.

6. The DAB may conduct a hearing on the dispute, in which event it will decide on the date and place for the hearing and may request that written documentation and arguments from the Employer and the Contractor be presented to it prior to or at the hearing.

7. Except as otherwise agreed in writing by the Employer and the Contractor, the DAB shall have power to adopt an inquisitorial procedure, to refuse admission to hearings or audience at hearings to any persons other than representatives of the Employer, the Contractor and the Engineer, and to proceed in the absence of any party who the DAB is satisfied received notice of the hearing; but shall have discretion to decide whether and to what extent this power may be exercised.

8. The Employer and the Contractor empower the DAB, among other things, to:

   (a) establish the procedure to be applied in deciding a dispute,

   (b) decide upon the DAB's own jurisdiction, and as to the scope of any dispute referred to it,

   (c) conduct any hearing as it thinks fit, not being bound by any rules or procedures other than those contained in the Contract and these Guidelines,

(d) take the initiative in ascertaining the facts and matters required for a decision,

(e) make use of its own specialist knowledge, if any,

(f) decide upon the payment of financing charges in accordance with the Contract,

(g) decide upon any provisional relief such as interim or conservatory measures, and

(h) open up, review and revise any certificate, decision, determination, instruction, opinion or valuation of the Engineer, relevant to the dispute.

9. The DAB shall not express any opinions during any hearing concerning the merits of any arguments advanced by the Parties. Thereafter, the DAB shall make and give its decision in accordance with Sub-Clause 19.4 (Obtaining Dispute Adjudication Board's Decision), or as otherwise agreed by the Employer and the Contractor in writing. The DAB:

(a) shall convene in private after a hearing, in order to have discussions and prepare its decision;

(b) shall endeavor to reach a unanimous decision: if this proves impossible the applicable decision shall be made by a majority of the Members, who may require the minority Member to prepare a written report for submission to the Employer and the Contractor; and

(c) Member fails to attend a meeting or hearing, or to fulfill any required function, the other two Members may nevertheless proceed to make a decision, unless:

(i) either the Employer or the Contractor does not agree that they do so, or

(ii) the absent Member is the chairman and he/she instructs the other Members to not make a decision.

DISPUTE ADJUDICATION AGREEMENT

[for each member of a three - person DAB]

Name and details of Contract
Name and address of Employer
Name and address of Contractor
Name and address of Member

Whereas the Employer and the Contractor have entered into the Contract and desire jointly to appoint the Member to act as one of the three persons who are jointly called the Dispute Adjudication Board (DAB) *[and desire the Member to act as chairman of the* DAB*]*

The Employer, Contractor and Member jointly agree as follows:

1. The conditions of this Dispute Adjudication Agreement comprise the "General Conditions of Dispute Adjudication Agreement" which is appended to the General Conditions of the "Standard Bidding Document, Procurement of Works, Major Contracts - Second Edition, January 2007" and the following provision. In these provisions, which include amendments and additions to the General Conditions of Dispute Adjudication Agreement, words and expressions shall have the same meanings as are assigned to them in the General Conditions of Dispute Adjudication Agreement.

2. *[Details of amendments to the General Conditions of Dispute Adjudication Agreement, if any*

   For example:

   In the procedural rules annexed to the General Conditions of Dispute Adjudication Agreement, Rule_____ is deleted and replaced by: "……."*]*

3 In accordance with Clause 6 of the General Conditions of Dispute Adjudication Agreement the Member shall be paid as follows:

   A retainer fee of _____ per calendar month,

   plus a daily fee of _____ per day.

4 In consideration of these fees and other payments to be made by the Employer and the Contractor in accordance with Clause 6 of the General Conditions of Dispute Adjudication Agreement, the Member undertakes to serve, as described in this Dispute Adjudication Agreement, as one of the three persons who are jointly to act as the DAB.

5 The Employer and the Contractor jointly and severally undertake to pay the Member, in consideration of the carrying out of these services, in accordance with Clause 6 of the General Conditions of Dispute Adjudication Agreement.

6 This Dispute Adjudication Agreement shall be governed by the law of _____

SIGNED by:_____	SIGNED by:_____	SIGNED by:_____
for and on behalf of the employer in the presence of	for and on behalf of the Contractor in the presence of	the Member in the presence of
Witness:_____	Witness: _____	Witness : _____
Name: _____	Name: _____	Name : _____
Address:_____	Address: _____	Address : _____
Date: _____	Date: _____	Date: _____

APPENDIX B

Environmental, Social, Health and Safety (ESHS)

Metrics for Progress Reports

Metrics for regular reporting:

a. *environmental incidents or non-compliances with contract requirements, including contamination, pollution or damage to ground or water supplies;*

b. *health and safety incidents, accidents, injuries and all fatalities that require treatment;*

c. *interactions with regulators: identify agency, dates, subjects, outcomes (report the negative if none);*

d. *status of all permits and agreements:*

   i. work permits: number required, number received, actions taken for those not received;

   ii. status of permits and consents:

   - *List areas/facilities with permits required (quarries, asphalt & batch plants), dates of application, dates issued (actions to follow up if not issued), dates submitted to resident engineer (or equivalent), status of area (waiting for permits, working, abandoned without reclamation, decommissioning plan being implemented, etc.);*
   - *list areas with landowner agreements required (borrow and spoil areas, camp sites), dates of agreements, dates submitted to resident engineer (or equivalent);*
   - *identify major activities undertaken in each area in the reporting period and highlights of environmental and social protection (land clearing, boundary marking, topsoil salvage, traffic management, decommissioning planning, decommissioning implementation);*
   - *for quarries: status of relocation and compensation (completed, or details of activities and current status in the reporting period).*

e. *health and safety supervision:*

   i. safety officer: number days worked, number of full inspections & partial inspections, reports to construction/project management;

   ii. number of workers, work hours, metric of PPE use (percentage of workers with full personal protection equipment (PPE), partial, etc.), worker violations observed (by type of violation, PPE or otherwise), warnings given, repeat warnings given, follow-up actions taken (if any);

f. *worker accommodations:*

   i. number of expats housed in accommodations, number of locals;

ii. date of last inspection, and highlights of inspection including status of accommodations' compliance with national and local law and good practice, including sanitation, space, etc.;

iii. actions taken to recommend/require improved conditions, or to improve conditions.

g. HIV/AIDS: provider of health services, information and/or training, location of clinic, number of non-safety disease or illness treatments and diagnoses (no names to be provided);

h. gender (for expats and locals separately): number of female workers, percentage of workforce, gender issues raised and dealt with (cross-reference grievances or other sections as needed);

i. training:

i. number of new workers, number receiving induction training, dates of induction training;

ii. number and dates of toolbox talks, number of workers receiving Occupational Health and Safety (OHS), environmental and social training;

iii. number and dates of HIV/AIDS sensitization and/or training, no. workers receiving training (in the reporting period and in the past); same questions for gender sensitization, flag person training.

iv. number and date of GBV /SEA sensitization and/or training, number of workers receiving training on code of conduct (in the reporting period and in the past), etc.

j. environmental and social supervision:

i. environmentalist: days worked, areas inspected and numbers of inspections of each (road section, work camp, accommodations, quarries, borrow areas, spoil areas, swamps, forest crossings, etc.), highlights of activities/findings (including violations of environmental and/or social best practices, actions taken), reports to environmental and/or social specialist/construction/site management;

ii. sociologist: days worked, number of partial and full site inspections (by area: road section, work camp, accommodations, quarries, borrow areas, spoil areas, clinic, HIV/AIDS center, community centers, etc.), highlights of activities (including violations of environmental and/or social requirements observed, actions taken), reports to environmental and/or social specialist/construction/site management; and

iii. Community liaison person(s): days worked (hours community center open), number of people met, highlights of activities (issues raised, etc.), reports to environmental and/or social specialist /construction/site management.

k. Grievances: list new grievances (e.g. allegations of GBV / SEA) received in the reporting period and unresolved past grievances by date received, complainant, how received, to whom referred to for action, resolution and date (if completed), data resolution reported to complainant, any required follow-up (Cross-reference other sections as needed):

i. Worker grievances;

ii. Community grievances

l. Traffic and vehicles/equipment:

i. traffic accidents involving project vehicles & equipment: provide date, location, damage, cause, follow-up;

ii. accidents involving non-project vehicles or property (also reported under immediate metrics): provide date, location, damage, cause, follow-up;

iii. overall condition of vehicles/equipment (subjective judgment by environmentalist); non-routine repairs and maintenance needed to improve safety and/or environmental performance (to control smoke, etc.).

m. Environmental mitigations and issues (what has been done):

i. dust: number of working bowsers, number of waterings/day, number of complaints, warnings given by environmentalist, actions taken to resolve; highlights of quarry dust control (covers, sprays, operational status); % of rock/spoil lorries with covers, actions taken for uncovered vehicles;

ii. erosion control: controls implemented by location, status of water crossings, environmentalist inspections and results, actions taken to resolve issues, emergency repairs needed to control erosion/sedimentation;

iii. quarries, borrow areas, spoil areas, asphalt plants, batch plants: identify major activities undertaken in the reporting period at each, and highlights of environmental and social protection: land clearing, boundary marking, topsoil salvage, traffic management, decommissioning planning, decommissioning implementation;

iv. blasting: number of blasts (and locations), status of implementation of blasting plan (including notices, evacuations, etc.), incidents of off-site damage or complaints (cross-reference other sections as needed);

v. spill cleanups, if any: material spilled, location, amount, actions taken, material disposal (report all spills that result in water or soil contamination;

vi. waste management: types and quantities generated and managed, including amount taken offsite (and by whom) or reused/recycled/disposed on-site;

vii. details of tree plantings and other mitigations required undertaken in the reporting period;

viii. details of water and swamp protection mitigations required undertaken in the reporting period.

n. compliance:

i. compliance status for conditions of all relevant consents/permits, for the Work, including quarries, etc.): statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance;

ii. compliance status of C-ESMP/ESIP requirements: statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance

iii. compliance status of GBV/SEA prevention and response action plan: statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance

iv. compliance status of Health and Safety Management Plan re: statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance

v. other unresolved issues from previous reporting periods related to environmental and social: continued violations, continued failure of equipment, continued lack of vehicle covers, spills not dealt with, continued compensation or blasting issues, etc. Cross-reference other sections as needed.

Section - 5

Standard Forms (Contract)

- Letter of Acceptance
- Agreement
- Performance Security
- ESHS Performance Security
- Advance Payment Security
- Retention Money Guarantee
- ESHS Declaration

Notes on Form of Letter of Acceptance

The Letter of Acceptance will be the basis for formation of the Contract as described in Clause 34 of the Instructions to Bidders. This Form of Letter of Acceptance should be filled in and sent to the successful bidder only after evaluation of Bids and after obtaining approval from the relevant authority.

FORM OF LETTER OF ACCEPTANCE

[Letter heading paper of the procuring entity]

……. *[date]*

To: ---------- *[name and address of the Contractor]* ---------

This is to notify you that your bid dated ---------- *[insert date]* for the construction and remedying defects of the ***Improvements to Pathinipuram Anicut in Trincomalee District LK*-MOMDE-539144-CW-RFB** for the Contract price of ----------[*name of currency]*----------[*amount in figures and words]* as corrected in accordance with Instructions to Bidders and/ or modified by a Memorandum of Understanding , is hereby accepted.

You are hereby instructed to proceed with the execution of the said Works in accordance with the Contract documents.

The Commencement Date shall be: …… *(fill the date as per Clause 8.1 of Conditions of Contract).*

The amount of Performance Security is *:* …… *(fill the amount as per Clause 4.2 of Conditions of Contract).*

The Performance Security shall be submitted on or before ……... *(fill the date as per Clause 4.2 of Conditions of Contract).*

Authorized Signature : ……

Name and title of Signatory : …….

FORM OF AGREEMENT

This Agreement made the ……. *[day]* of …… *[month]* 200….. *[year]*, between …….. *[name and address of Employer]* (hereinafter called and referred to as "the Employer"), of the one part, and …….. *[name and address of Contractor*] (hereinafter called and referred to as "the Contractor"), of the other part:

Whereas the Employer desires that the Contractor execute ***Improvements Pathinipuram Anicut in Trincomalee , LK-MOMDE-539144-CW-RFB*** *(hereinafter called and referred to as "the Works")* and the Employer has accepted the Bid by the Contractor for the execution and completion of such Works and remedying of any defects therein.

The Employer and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract.

2. In consideration of the payments to be made by the Employer to the Contractor as indicated in this Agreement, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.

3. The Employer hereby covenants to pay the Contractor in consideration of the execute and complete the Works and remedy any defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

In Witness whereof the parties hereto have caused this Agreement to be executed the day and year aforementioned in accordance with laws of Sri Lanka.

……..	……..
Authorized signature of Contractor	**Authorized signature of Employer**
COMMON SEAL	COMMON SEAL

In the presence of
Witnesses :

1. Name and NIC No. …….
   Signature …….
   Address ……

2. Name and NIC No. ……..
   Signature ……..
   Address …….

FORM OF PERFORMANCE SECURITY
(Unconditional)

---------- *[Issuing Agency's Name, and Address of Issuing Branch or Office]* ----------

Beneficiary: ---------- *[Name and Address of* Employer*]*

Date: ----------

PERFORMANCE GUARANTEE No.: ----------

We have been informed that ---------- *[name of Contractor]* (hereinafter called "the Contractor") has entered into Contract No. **LK-MOMDE-539144-CW-RFB** dated ---------- with you, for the ---------- *[insert "construction"]* of ***Improvements to Pathinipuram Anicut in Trincomalee.*** (hereinafter called "the Contract").

Furthermore, we understand that, according to the Conditions of the Contract, a performance guarantee is required.

At the request of the Contractor, we ---------- *[name of Agency]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ---------- *[amount in figures]* (----------) *[amount in words]*, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the …. day of ……, 20.. *[insert date, 28 days beyond the Time for Completion]* and any demand for payment under it must be received by us at this office on or before that date.

_____
[signature(s)]

Form of Environmental, Social, Health and safety (ESHS) Performance Security

ESHS Demand Guarantee

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: *[insert name and Address of* Employer*]*

Date: _ *[Insert date of issue]*

ESHS PERFORMANCE GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that _____ (hereinafter called "the Applicant") has entered into Contract No. _____ dated _____ with the Beneficiary, for the execution of _____ (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (_____),[1] such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its Environmental and/or Social and/or Health and/or Safety (ESHS) obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the …. Day of ……, 2… [2], and any demand for payment under it must be received by us at this office indicated above on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

[1] *The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, less provisional sums, if any, and denominated either in the currency (cies) of the Contract or a freely convertible currency acceptable to the Beneficiary.*

[2] *Insert the date twenty-eight days after the expected completion date as described in GC Clause 11.9. The Employer should note that in the event of an extension of this date for completion of the Contract, the Employer would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee. In preparing this guarantee, the Employer might consider adding the following text to the form, at the end of the penultimate paragraph: "The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."*

_____

[signature(s)]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

FORM OF ADVANCE PAYMENT SECURITY

---------- *[Name and address of Agency, and Address of Issuing Branch or Office]* ------

Beneficiary: ---------- *[Name and Address of* Employer*]*

Date: ----------

ADVANCE PAYMENT GUARANTEE No.: ----------

We have been informed that ---------- *[name of Contractor]* (hereinafter called "the Contractor") has entered into Contract No. **LK-MOMDE-539144-CW-RFB** dated ---------- with you, for the ---------- construction of ***Improvement to Pathinipuram Anicut in Trincomalee*** (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum ---------- *[amount in figures]* (----------) *[amount in words]* is to be made against an advance payment guarantee.

At the request of the Contractor, we ---------- *[name of issuing agency]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ---------- *[amount in figures]* (----------) *[amount in words]* upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation in repayment of the Advance Payment under the Contract.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor.

This guarantee shall expire on …… [*Insert the date, 28 days beyond the Time of Completion]*

Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

_____

[signature(s)]

FORM OF RETENTION MONEY GUARANTEE

---------- *[Issuing Agency's Name, and Address of Issuing Branch or Office]* ----------

Beneficiary: ---------- *[Name and Address of* Employer*]* ----------

Date: ----------

RETENTION MONEY GUARANTEE No.: ----------

We have been informed that ---------- [*name of Contractor]* (hereinafter called "the Contractor") has entered into Contract No. **LK-MOMDE-539144-CW-RFB** *[reference number of the contract]* dated ---------- with you, for the execution of **Improvements to Pathinipuram Anicut in Trincomalee** (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, when the works have being taken over and the first half of the Retention Money has been certified for payment, payment of the second half of the Retention Money may be made against a Retention Money guarantee.

At the request of the Contractor, we ---------- *[name of agency]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ----------*[amount in figures]* (----------) *[amount in words]* upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract because the Contractor has not attended to the defects in accordance with the Contract.

This guarantee shall expire, at the latest, ---------- [*insert 28 Days after the end of the Defects Liability Period*]. Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

_____

[signature(s)]

Form of ESHS Declaration

Date: _____
Bid No.: _____

To: _____
We, the undersigned, declare that civil work contracts *have/ have not been* suspended or terminated and/or performance security called by an employer for reasons related to the non-compliance of any environmental, or social, (including sexual exploitation and abuse (SEA) and gender-based violence (GBV)), or health or safety requirements or safeguard in the past five years.

(Note: If suspended, terminated or Performance Security is called give details)

Year	**Suspended or terminated portion of contract**	**Contract Identification**	**Total Contract Amount (current value, currency, exchange rate and US$ equivalent)**
[insert year]	*[insert amount and percentage]*	Contract Identification: *[indicate complete contract name/ number, and any other identification]* Name of Employer: *[insert full name]* Address of Employer: *[insert street/city/country]* Reason(s) for suspension or termination: *[indicate main reason(s) e.g. for GBV/ SEA breaches]*	*[insert amount]*
…	…	*[list all applicable contracts]*	…
Performance Security called by an employer(s) for reasons related to ESHS performance			
Year		Contract Identification	Total Contract Amount (current value, currency, exchange rate and US$ equivalent)
[insert year]		Contract Identification: *[indicate complete contract name/ number, and any other identification]* Name of Employer: *[insert full name]* Address of Employer: *[insert street/city/country]* Reason(s) for calling of performance security: *[indicate main reason(s) e.g. for GBV/ SEA breaches]*	*[insert amount]*

Signed: _____
In the capacity of _____
Name: _____
Duly authorized to sign the bid for and on behalf of: _____
Dated on _____ day of _____, _____ _____

Corporate Seal (where appropriate)

Section - 6

Specifications

Specifications

Technical Specifications relevant to this contract consist of two parts.

Part 1 - General Technical Specifications

CIDA/SP/102 [1st Edition – January 2017] – 'Specifications for Irrigation and Drainage Works', are applicable as the general specifications for the Civil Works of this Contract.
These publications are not issued with the Bidding Document package and the Bidder/Contractor should obtain them from a suitable source.

Part 2 - Particular Technical Specifications

Particular Technical Specifications includes project specific specifications and conditions of particular specification which includes modifications and amplifications to the Standard Specifications given in General Technical Specifications.

1. Introduction

The following Particular Technical Specifications are part of the requirements for the work related to the Civil Works which are to be provided according to the stipulation of the Contract. Hence, the instructions given herein form an integral part of the, and are applicable to, all technical and Contract documents issued for Works. Addenda to these specifications may be issued as required during construction phase with both party agreements.

These Particular Technical Specifications shall be read in conjunction with the General Technical Specifications (ICTAD), the Conditions of Contract and the Bidding Drawings. The Contractor shall comply with all provisions contained within Contract documents.

The General Technical specifications and the Particular Technical Specifications in conjunction with the Bidding drawings define the technical standard and quality to be achieved during construction.

The Particular Technical Specifications relevant to this contract are given in the following Sub Sections.

Sub-Sections	Page No
Contractor's submittals and Engineer's approval	4
Contractor's Quality Assurance System	4
Site installation, Services, and environmental obligations	5
Safety and health precautions	10
Design documents, Construction and As Built Drawings	12
Preparation of As-built drawings	13
Site supervision, Construction Schedule, and reporting	14
Dealing with Water	16
Care of water	17
Setting Out Works	20
Surface excavation	21
Environmental and Social Management Plan	52

It is the intent of these Specifications, together with other relevant documents issued as part of the Contract Documents or to follow later on, to provide the Contractor with complete and detailed information and subsequent instructions necessary to enable him to carry out the design, where and when required, and to execute properly the work prescribed.

It is the intent of these Particular Specifications to establish acceptable standards of quality. On the other hand, they shall also allow the construction of the Works in an efficient and economical way. Minor deviations in details due to selected work procedures and due to the manufacturer's standard shop process will be considered for acceptance provided that, in the opinion of the Engineer, the proposed substitutions are equal in quality to those specified.

The Drawings available shall serve as a basis for detail design drawings to be produced by the Contractor. All work shall be executed according to the Drawings and requirements released for construction, in a professional and diligent manner, and all supplies and work shall comply with the quality requirements defined in the relevant Sections of these Specifications and other Contract Documents. The Contractor shall provide all necessary efforts to comply with the intent of the General and Particular Specifications to the satisfaction of the Engineer.

CONTRACTOR'S SUBMITTALS AND ENGINEER'S APPROVAL

The Contractor shall provide the Engineer with all submittals as requested in these Specifications and other Contract Documents. Although their extent shall be to the discretion of the Contractor, they shall be complete enough to illustrate adequately their intent and facilitate full for the understanding of the Engineer.

At any time, the Engineer may call for additional information, completion of the submittals. The Contractor shall submit these documents to the Engineer so that, even if not specifically expressed, reasonable time will be given to the Engineer to comment or approve the submittals.

The approval of the Engineer shall always be given in written form prior to the commencement of any work under this Contract and the Contractor shall not be paid for any work that is performed without the express written approval or instruction by the Engineer.

CONTRACTOR'S QUALITY ASSURANCE SYSTEM

As per Clause 4.17 General Conditions of Contract, the Contractor shall institute a quality assurance system to demonstrate that the Works are being carried out in compliance with the requirements of the Contract. The Contractor shall, within 28 days from the receipt of Letter of Acceptance, submit the quality assurance system he is proposing to adopt in the Contract.

The Contractor shall build the quality assurance system for all his activities from the commencement to completion of the Contract. The system shall include but not limited to the following.

- Contractors site management
- Topographic surveys and setting out
- Construction Drawings
- Safety measures adopted
- Environmental Management
- Traffic Management
- Maintenance of Roads
- Construction Methods adopted
- Quality Control
- Progress monitoring
- Monthly Bills

The quality assurance system instituted by the Contractor is a requirement under the Contract and no payment will be made to the Contractor for this work.

SITE INSTALLATION, SERVICES AND ENVIRONMENTAL OBLIGATIONS

Scope of work

The Contractor shall be responsible for providing plant, equipment, materials and labour for the provision of all necessary site installations, temporary works and services adequate for the realization of the works under this Contract.
The Contractor shall design, furnish, install, maintain and operate all site installations, temporary works and Contractor's equipment for his own use and for the use of the Engineer and Subcontractors, and as required for third parties, including workshops, warehouses, storage and assembly areas, all machinery, vehicles, scaffolding, equipment, water and power supply, etc.
Site installations, temporary works and services provided by the Contractor for his own use as well as for that of the Engineer or for third parties shall conform to the applicable standards, codes and sanitary requirements set down by the Sri Lankan authorities for such purpose.
The construction, operation and maintenance of the Contractor's site installations, temporary works and services shall be subject to inspection and written consent by the Engineer.

The scope of the works includes but is not limited to following site installation parts:

a) All temporary structures required for the performance of the works such as access roads, temporary construction roads or temporary working platforms.
b) Stores, Warehouses, Materials Yards.
c) Materials testing laboratory.
d) Construction equipment.
e) Power supply and illumination.
f) Water supply.
g) Sanitation, sewerage and waste disposal.
h) Communication System.
i) Site security

All installations of any Subcontractors shall comply with these Specifications.

Submittals

Within 30 days from the date of contract award the Contractor shall submit to the Engineer updated layout plans showing, at adequate scale, the locations and arrangement of all site installations. These plans shall be consistent with the plan submitted by the Contractor with his Bid as well as with any amendments and additions.

Within 14 days from the date of contract award the Contractor shall submit to the Engineer an updated project schedule showing all the activities he intends to perform to meet his obligations in is contract and to complete the works within its stipulated time for completion. This baseline schedule will be used for monitoring progress each month and for evaluating the impacts of any departures from the baseline schedule.

Prior to construction works

The Contractor shall carry out all necessary surveying work required for the approved performance of the works and shall ensure that the position and elevation of all works thus constructed are correct. The measuring methods and devices used must meet the standard of accuracy required for this purpose.

ACCESS WORKS

The construction and maintenance of permanent and temporary access roads or access ramps from public roads to the sites, including crossings, shall be the Contractor's responsibility to the approval of the Engineer.
In general, all roads within the site area shall be the Contractor responsibility, construction and maintenance, during the works until final handover to the Engineer.
Proper maintenance of all roads being used by the Contractors during the entire construction period, both permanent existing ones as well as temporary roads, shall be the Contractor's responsibility.
Additional roads and ramps which have to be built to transport equipment and materials shall be constructed by the Contractor at his own expense and with the Engineer's prior approval, and the maintenance of such roads during the construction period shall also be at the Contractor's expense. The same applies for existing public roads and bridges used by the Contractor in the vicinity of the site for the execution of the works.
Any work, improvement or modification at the existing access roads made by the Contractor, for his own convenience, and without being ordered by the Engineer, shall be at the Contractor's own risk and expense.
If any damage or pollution occurs during the execution of the works, the Contractor must restore and clean the roads immediately at his own cost.
After completion of the Contract and before delivering the work to the Engineer (final takeover), all temporary structures shall be removed to the satisfaction of the Engineer.

ROAD ACCESS TO THE SITE

Transport of Materials

Prior to moving any heavy construction traffic onto highways, roads and bridges, the Contractor shall make suitable arrangements with the appropriate Government Authorities and obtain their approval for the passage of such traffic.

Special Protection

Where Government Authorities require and specify any special protection or strengthening of highways, roads and bridges. The Contractor shall submit to the Engineer his proposals for such work after their approval by the authority concerned and shall carry-out this work as directed.

Tracked Vehicles

The Contractor shall not travel tracked vehicles or plant on any bituminous sealed road surface. Rubber-tyred vehicles conforming to applicable load restrictions will be permitted to use bituminous sealed roads.

CONSTRUCTION OF ADDITIONAL ROADS

The Contractor shall design, construct, and maintain all temporary access and haul roads to, in, and around his camp area, the various working sites and designated borrow and disposal areas, required for the Works. These roads shall include all associated drainage and stream crossing facilities. The location of these roads shall be in accordance with the Contractor's proposals submitted with his Tender.
During the period of the Contract, the Contractor shall allow the Employer and such other parties free and unrestricted use of all access and haul roads and shall not restrict the access of authorized persons to these roads, look-outs or viewing points as may be instructed.

CONTRACTOR'S OFFICES, CAMP AND FACILITIES

General

The Contractor shall provide a main office and site offices for his staff. The main office shall be located in the vicinity of the dam site. Site offices may be mobile field offices so that, when work at one site is complete, the office may be moved to another site. The Engineer will allocate a portion of the Works area at the dam site where the Contractor shall provide and maintain such offices, stores, workshops, housing and adequately fenced store and delivery compounds as are necessary for the execution of the Works,

including all necessary services for water supply, drainage, lighting, roads, paths, parking places, sewerage and garbage disposal.

Construction Camp

The Contractor shall set up his camp as proposed in his Tender for housing, camps and for other required facilities and amenities for his employees and for the employees of his sub-contractors.
The Contractor shall be deemed to have inspected these sites and made his own evaluation as to their adequacy and suitability for the development of the required camp facilities.
The Contractor shall appoint a Camp Manager who shall be responsible for the administration ad maintenance, and for all matters relating to the allocation of space, discipline and use of buildings and facilities.

All buildings shall always be open to inspection by the Engineer. Any instruction given by the Engineer for the proper cleaning, disinfection and general maintenance of any building in the sanitary and hygienic condition of any building must be forthwith carried-out by the Contractor. Before any buildings are occupied the Contractor shall draw up a code of rules and regulations for their control which shall be approved by the Engineer.

Stores, warehouse, workshops, and material yards

The Contractor shall provide and equip, for his own and his Subcontractors' use, warehouses, materials storage areas and fuel storage areas, all of which shall be maintained in good condition until the completion of works.

Listed hereunder are the buildings, workshops and warehouses expected to be constructed and equipped by the Contractor for use in the performance of the work under this Contract, in addition to facilities explicitly specified elsewhere in these specifications:

a) Workshop and service facilities for vehicles and construction equipment
b) Main warehouse and parts store
c) Storage facilities for all materials applied within the conduction of the rehabilitation works

TEMPORARY WORKS

General

The Contractor shall execute, erect, maintain and remove upon completion of the Works, all Temporary Works in accordance with the proposals submitted with the Tender or with such modifications as approved by the Engineer from time to time.

Approval of Temporary Works

The Contractor shall submit to the Engineer for approval drawings and full particulars of all Temporary Works which he intends to construct at least 30 days before he desire to commence constructing such works.

The submission to, or approval by, the Engineer of any such proposals by the Contractor shall not relieve the Contractor of any of his responsibility for the sufficiency of the Temporary Works for their intended purpose.

The Contractor shall also obtain any necessary approval from local statutory or other Government authorities before commencing construction. Such work shall not be started without prior approval.

CONTRACTOR'S EQUIPMENT

The Contractor shall supply, install, operate, maintain, and subsequently remove all the Contractor's equipment required for the execution of the Works. In particular, the Contractor shall supply all those items listed on the Technical Proposal in the Contract at the time stated therein or at such other time as may be deemed necessary in the opinion of the Engineer.

The Contractor's equipment shall not be removed from the Site without the written approval of the Engineer. If during the execution of the Works any item of the Contractor's equipment in the opinion of the Engineer, is unsuitable so as to fail to perform the services required in the execution of the Works, the Contractor shall replace such construction equipment with another suitable one at his own cost.

The Engineer may, if he considers it necessary for the execution of the Works in accordance with the Contract, order the Contractor to supply additional items of Contractor's equipment or extend the period for which the Contractor's equipment is required. The Contractor shall supply and stock all essential spare parts for his equipment to ensure the efficient execution of the Works.

The Contractor shall submit a Monthly Equipment Report, which lists the following information about the Contractor's equipment.

a. List of all equipment located at the Site.
b. Daily working and operation record of each item of equipment.
c. Inspection, repair and maintenance records.
d. Quality of work.
e. Quantities of fuel, lubricant, oil and tires consumed.
f. Overhauling record.
g. Accident report.
h. List of unserviceable equipment and action being taken to put back in operation

UTILITIES

Power supply and illumination

The Contractor shall supply, install, operate and maintain an adequate power supply system and illumination for running the site and other site installation facilities during the whole construction period. The concept shall be approved by the Engineer.

Water supply

The Contractor shall provide, install, operate and maintain adequate and suitable water supplies for the works within the contract including storage for drinking purposes, sanitation, construction, cleaning, testing and commissioning of the various equipment items and plant components of the construction lot.

The water supplies shall be continuously available during working hours and rated to meet the maximum demand required during construction on the basis of 'firm supply' and shall supply all temporary installations.

The drinking water provided shall at all times meet the criteria of the local health authority.

Sanitation, sewerage, and waste disposal

The installations shall meet the requirements of the local health authorities and environmental regulations.
The Contractor shall collect waste material and garbage from the site on a daily basis and transport it to an approved area where it shall be treated and disposed of in accordance with local environmental requirements.

The Site shall be always kept clean and free of refuse. No waste shall be dumped in areas other than those approved by the Engineer for waste disposal. No waste of any kind shall be deposited in any water courses.

DEMOBILIZATION/ REMOVAL OF TEMPORARY WORKS

On completion of the Works, all Temporary Works constructed by the Contractor or handed-over to the Contractor by the Engineer, unless otherwise specified or instructed by the Engineer, shall be removed from the Site, as approved by the Engineer.

The Contractor shall make safe all areas affected by Temporary Works and reinstate natural drainage. The Contractor shall finish, reinstate, clean up and relinquish parts of the Site at the end of the Defects Liability Period or such earlier times as instructed by the Engineer.

Buildings and facilities removed from the Site will become the Contractor's property. Foundations of buildings and structures shall be broken up and removed from the Site.

ENVIRONMENTAL OBLIGATIONS

The Contractor shall, during the whole period of the works comply fully with all national Sri Lankan laws and regulations relating to environmental protection, mitigating measures for reducing environmental impacts and remedial works on completion of the works. This obligation shall extend to the construction sites themselves and all of the Contractor's site installations.

Notwithstanding any specific obligations as these may be specified in prevailing Sri Lankan laws and regulations, the Contractor shall at all times comply with the following particular requirements for the protection of the environment, the local population and the workers at the construction site:

Collect, treat, remove from site and dispose of in accordance with the regulations and to the satisfaction of the Engineer all domestic and industrial waste and excess construction materials (both solid and liquid), fuel, chemicals and other matter.

All excavated areas shall be filled, graded, and dressed in a clean and orderly condition acceptable to the Engineer. As far as possible such areas should conform to the natural appearance of the landscape.

- Make every effort to minimize the harmful effects of transport to and from the site, in particular vehicle emissions and noise and the control of dust on roads.
  The Contractor shall maintain close contact with local representatives and government institutions in addressing issues arising from the construction activities. Such issues needing particular attention are the following.
- Pollution caused by construction work.
- Disruption to the local community
- Disputes related to the use of land for construction activities and/or site installations etc.
- Disputes arising from traffic congestion and restrictions on the use of the main project access road and roads in the project area.
- All matters relating to road safety and the reduction to a minimum of the risk of traffic accidents.

SOCIAL OBLIGATIONS

As far as may be reasonably practicable, the Contractor shall recruit his unskilled labour from those persons from the local community who may apply for work. Suitably skilled workers in the local community should also be recruited wherever practicable.

SAFETY AND HEALTH PRECAUTIONS

General

This section covers the precautions that have to be taken for the health and safety of all personnel on Site that the Contractor and his Sub-Contractors shall apply in all civil construction and equipment erection works during the construction time.

Safety precautions

SAFETY PROGRAMME AND ITS IMPLEMENTATION

A safety program shall detail policies, procedures, and plans which the Contractor intends to implement to ensure the safety and health of his employees. It shall comply with the standards and regulations in force in the country of the works applicable to construction safety.

The Contractor shall designate a competent employee specially trained and experienced to act as Safety Officer, who will administer and be responsible for the implementation of the safety program. He shall carry out frequent and regular safety inspections of the working areas, materials, and equipment. The name and qualifications of the Safety Officer shall be submitted for approval to the Engineer prior to his appointment.

The Contractor shall be responsible for the implementation of health and safety provisions for his subcontractors employed at Site.

All serious and fatal injuries and diseases caused by the progress of work shall be immediately investigated by the Contractor and a comprehensive report shall be submitted to the Engineer.

In case of a fatal accident, only rescue and emergency teams and operations shall be permitted at the place of the occurrence until the Engineer gives permission to resume normal operations.

SAFETY STANDARDS

In addition to the requirements of the following specified herein, the Contractor shall comply with all currently applicable safety documents and/or organizations:

SAFETY OF PERSONNEL

The Contractor shall be responsible for the safety of all personnel on the Site and shall provide his employees and his sub-contractors employees working on the Site, the Engineer's staff and all visitors to the Site with safety equipment appropriate to the tasks upon which they are engaged, including helmets, high visibility vests or jackets, safety footwear and, where required, gloves, lamps, waterproof clothing, dust masks and/or safety belts. The use of such safety equipment shall be compulsory, as deemed necessary by the Engineer.

During drilling works and in areas where the personnel are exposed to harmful noise levels and dust, ear protectors and masks shall be furnished and required to wear.

Employees engaged in work having an inherent danger of eye or face injury shall be furnished and required to wear protective glasses, goggles or masks. Where irritant or toxic substances may come in contact with the skin or clothing, employees shall be wearing protective clothing or shall be required to apply a protective ointment by a competent physician.

Personnel working on steep slopes or otherwise subject to possible falls from levels not protected by fixed guardrails or safety nets, shall be secured by safety belts and lifelines.

Portable ladders shall be wooden or steel ladders sufficiently strong and of suitable size for the use intended. Wooden ladders shall have the steps fixed to the longitudinal posts by assembly. The use of ladders with steps nailed or wired along the longitudinal posts is not permitted.

SECURITY OF PERSONNEL AND WORKING AREAS

The Contractor shall always take the necessary measures to ensure the safety and security of all persons, work, and property. This shall include but not be limited to the following:

- Access control to all areas related to the works
- Installation of fences
- Security patrols

MAINTENANCE OF TRAFFIC AND SAFETY ON ROADS AND SITE

The Contractor shall be responsible for the safety on the roads related to the Site. He shall take all necessary precautions for the protection of the work and the safety of the public on the roads affected by his activities. Where the work will be carried out at the site of, or close to an existing road, the Contractor shall maintain the vehicular and pedestrian traffic safe at all times. If his operations can cause traffic hazards, he shall repair or fence or take other measures for ensuring safety which are satisfactory to the Engineer.

Roads subjected to interference with the work shall be kept open or suitable detours shall be provided and maintained by the Contractor, who shall provide, erect, and maintain all necessary barricades, suitable and sufficient flashlights, flagmen, danger signals, and signs.

Roads which will be closed to traffic shall be protected by effective barricades on which acceptable warning and detour signs shall be placed. All barricades and all lights shall be kept burning from sunset to sunrise.

The Contractor shall provide all necessary signs for the Works. These shall include, but not be limited to;

- Standard road signs
- Warning signs
- Danger signs
- Safety signs
- Control signs; and
- Direction signs

Wording on all signs shall be in the English, Tamil and Sinhalese languages. The size, colour, lettering and location of all signs will be subject to approval of the Engineer and the international sign convention shall, where applicable, be followed.

The Contractor shall maintain all signs placed by himself as well as those placed by the Employer.

The Contractor shall submit his weekly activities schedule and the locations of his work along the existing public roads to the authorities concerned and obtain all necessary approvals prior to commencement of the respective work.

The Contractor shall provide temporary passes and bridges to give an access to the existing villages, houses, etc., to the satisfaction of the Engineer and the authorities concerned whenever he disturbs such existing ways during the execution of the works.

WEATHER PRECAUTIONS

In order that the works may proceed according to the programme, the Contractor is to undertake at his expense all necessary precautions for protection against inclement weather, which shall be subject to the approval of the Engineer.

Health precautions

FIRST AID

Prior to the commencement of construction, the Contractor shall organize and train a first aid team composed of his employees. This team shall be capable of rendering help after accidents.

The first aid team shall be organized in such a way that sufficient number of members will be ready for action at any time until the completion of the work.

The team members shall be instructed and trained for their task by a qualified and experienced person. Each team member shall be skilled in giving first aid, dealing with appliances for artificial respiration, and firefighting equipment.

and shall possess a good local knowledge. Adequate equipment for reaching even the remotest working area shall be at their disposal.

The Contractor shall submit the details of the proposed first aid team organization to the Engineer for approval.

NOISE CONTROL

The Contractor shall take the provisions required to assure that noise from his construction activities and from the operations of any plants are within the limits established by the WHO for the health of his personnel or shall provide his personnel with ear protectors. Ear protectors shall be provided to all personnel subject to noise levels above 85 dB on a continuous basis during work shifts.

DESIGN DOCUMENTS AND CONSTRUCTION DRAWINGS

Contract Documents

The Contractor will be provided with one set of the Contract Documents for his own use. A complete set of Contract Documents supplied by the Employer and all further instructions issued by him shall be always kept by the Contractor on the Site and made available to the Engineer and his staff.

Construction Drawings

Based on the Bidding drawings assigned design engineers shall develop designs and prepare associated design documents and construction drawings to be approved by the Engineer. The Contractor shall ensure that design work is only allocated to personnel with adequate qualifications and relevant experience to perform the required tasks whereby drawings and calculations shall be signed by qualified personnel responsible for the design. All drawings and calculations submitted for approval shall be signed, checked, and signed by the Contractor prior to submission.

All Contractor's working drawings and shop drawings required to be submitted for approval in accordance with the Specification, shall be provided in electronic format (AutoCAD computer software) and 03 printed copies, plus copies of design calculations where required, specification and parts catalogues in duplicate. Within 30 days after receiving such designs, design calculations, parts

catalogues, specifications and detailed drawings, the Engineer shall give his approval or request modifications. The Contractor shall modify the design and drawings as may be required by the Engineer. The Contractor will be responsible for the control of the design activities performed as well as their verification. The Contractor shall control and document any revised information in the same manner as drawings and specifications, to assure correct communication through the design interfaces.

The work shall be constructed in accordance with the approved drawings, and a copy of such drawings shall be kept on the Site at all times until the completion of the Contract. All drawings on which changes are made shall have the revisions clearly marked.

Construction, fabrication or manufacture of any portion of the Works shall not commence until the design and drawings have been approved in writing by the Engineer and thereafter no change shall be made to any drawings so approved without the permission of the Engineer. Permission to make such changes shall be requested by sending 01 electronic copy and 01 print of each revised drawing to the Engineer for approval.

As-built Drawings

The Contractor shall submit the 4 copies of "As-built Drawings" on a format agreed between the Contractor and Engineer.

During the construction and commissioning period any variations between the "Construction Drawings" and the "As-built Drawings" shall be agreed between the Contractor and Engineer at site. These As-built drawings shall be prepared from the Construction drawings incorporating any authorized changes carried out during construction. Once completed these drawings shall become the property of the Employer and shall be submitted before issue of the Taking -over certificate.

All agreed modifications will be marked up by the Contractor's draughtsman and included on the originals at site. A complete set of these mark ups shall remain at site. The Contractor shall allow for the provision of a draughtsman as required at site to co-ordinate and include all modifications on the drawings. The originals shall then be returned to the Contractor's head office, and these shall form the basis of the “As-built Drawings”.

The Contractor shall submit to the Engineer all final revisions of all original drawings depicting the “As-built” situation for the works. All drawings and documents prepared exclusively for the project shall become the property of the Engineer.

Final drawing prints shall be size A1 or smaller. Reproducible of the final drawings shall be supplied as follows:

- 2 prints of each drawing to the Engineer.
- 2 CDs with original AutoCAD drawing files to the Engineer.

Where drawings are reduced, an appropriate scale shall be included on the reduced print. To accompany the drawings, the Contractor shall provide a Master Schedule of “As Built” drawings.

SITE SUPERVISION, CONSTRUCTION PROGRAMME AND REPORTS

Site supervision

The Contractor is responsible for providing proper supervision of his site activities by employing suitably qualified and experienced site management and supervisory personnel so that he can carry out his obligations under the Contract.

For the Contractor's information, the Engineer has issued a Construction Supervision Manual, which is intended for use by the Engineer and his staff for the supervision of the works. This manual includes standard forms which will be used during construction for control of the work. It is available to view in the office of the Engineer.

Construction and Contractual Program

a. Within 01 month of the award of Contract, the Contractor shall submit a revision of the construction program attached to the Tender, for approval.

   - ✓ The construction program shall be prepared using the latest computer software such as MS Project or other similar software approved by the Engineer. This program in Gantt chart form shall outline the Contractor's activities necessary to complete the Works within the stipulated time period. The program shall show the following minimum details:
   - ✓ The duration, sequence and logic links between major activities and any other activities or group of activities which comprise the Works, necessary to define the critical path and logic of the program required for completion and to achieve the Time for Completion. For the purpose of this clause, major activities are those which are greater than one percent of the Contract Price;
   - ✓ The planned dates for start and completion of the Works and each Section of the Works;
   - ✓ The critical path(s) for the Works and each Section of the Works;
   - ✓ Information on shutdown periods, vacation days and other non-working time periods;
   - ✓ The estimated value of work to be done each month;
   - ✓ Reasons for any changes to timing, work order, method, or resources from the program submitted at the time of tender, or if submitting an updated construction program, reasons for such changes from the previously submitted program.

   The construction program submitted in accordance with the provisions of this clause shall in the opinion of the Engineer be reasonable in all respects. The Contractor's program, when approved, shall be known as the Contractual Program.

b. Whenever the Contractor proposes to change the Contractual Program, he shall immediately advise the Engineer in writing and if the Engineer considers the change is a major one, the Contractor shall submit a revised program for approval. If such a change in the program affects the Engineer's design and the drawing approval program, the Employer will not be responsible for the consequences of the late issue of any drawings, which are attributable to that change.

c. If the Contractor falls behind the revised Contractual Program be shall, within 14 days of the date of such default, submit for approval a revision of the program showing the proposed measures, including additional plant, labour and material resources, to complete the Permanent Works on time.

d. When instructed, the Contractor shall promptly furnish a detailed sub-program of the Contractual Program for particular sections of the Permanent Works.

e. The Contractor shall also attend weekly meetings with the Engineer and provide, not less than 2 days prior to each meeting as required by the Engineer, detailed programs showing separately the various activities of the Contractor anticipated over the forthcoming two-week period as well as the progress achieved over the preceding week relative to the program applicable to that period.

Monthly Progress Report

Before the tenth day of each month, the Contractor shall submit three copies of a monthly progress report in a form acceptable to the Engineer detailing the progress during the preceding month. The monthly progress report shall show the amount of work completed, materials actually used, materials in storage and the cumulative results of all operations completed or in progress and shall be summarized in terms of percentage of completion referenced to the approved programme for the works.

The monthly progress report shall include at least the following:

- ✓ Total percentage of work completed, and total percentage programmed to be completed by the end of the reporting period.
- ✓ Actual percentage of each main work items completed including temporary works, as well as their scheduled percentage, both total and for the reporting period together with the estimated quantities.
- ✓ List of manpower by trade and by position for the reporting period.
- ✓ List of equipment and operational days for the reporting period and materials on site at the end of the period.
- ✓ Description of weather conditions for the period including records of each rainfall duration and recorded water levels of the Tank.
- ✓ List of any accident except of minor nature and any damage that occurred.
- ✓ Any matter which affected or may affect the progress of the work, problems encountered and proposed remedial measures.
- ✓ Colour photographs with imprinted date, not smaller than 100 mm by 150 mm of the work progress during the period for all major components of the Works. The Contractor shall also provide digital versions as well as 5 sets of hard copies of these photographs in albums with titles.

Further the Contractor shall submit financial statements, purchasing and expediting reports, shipping reports, and any other data which the Engineer may reasonably ask for. Additional to the photographs included in the progress reports, the Contractor shall arrange for the taking of progress colour photographs every month, covering all aspects of the work. Two copies of such photographs, suitably dated and captioned, shall be submitted to the Engineer, plus a CD with all relevant files.

The Contractor shall submit the final report not later than one month after completion of the work. This report shall include all relevant information related to the works in a format approved by the Engineer. The Contractor shall submit to the Engineer one copy of the draft report. The final report shall be submitted in triplicate. The final report shall also be made available electronically in pdf format or alternative approved format. The submission of the final report shall follow within one week of acceptance of the draft report.

Dealing with Water

General

Where it is required that construction shall proceed with flow of water in streams and/or issue of irrigation water to canals, it shall be necessary to isolate the site of the structure to be constructed from the flow of water by the construction of suitable cofferdams, canals, flumes, drains, swamps and/or other temporary diversion and protective works without interruption or interference with the flow of water in the streams and/or issue in the canal. The contractor shall construct sufficient temporary works as described above to deal adequately with surface and ground water sources to enable the construction of the permanent works to the satisfaction of the Engineer.

The Contractor shall submit for the approval of the Engineer the location, size and other relevant details including the materials proposed for the construction of the temporary works described above. The contractor shall protect the works during the entire construction period from damage due to rains, surface run-off, floods, etc. and from failure of the temporary protective works constructed by him. Any damage to the works or delay to his operations from such events, whether due to his failure to adequately take such factors into consideration or not shall be corrected by the contractor and will not constitute a basis for claims for additional payment or extension of time. The Contractor shall furnish, maintain, and operate all necessary pumps and other equipment for removal of water from the various parts of the works free from water as required for construction. After having served their purpose, all temporary protective works, unless otherwise directed, shall be removed, or levelled to give a sightly appearance, so as not to interfere with the operation of the other related works.

Unless specifically provided for in the Bill of Quantities, no separate payment will be made for dealing with water. The cost of all operations required for dealing with water shall be included in the respective items of work for which dealing with water is required.

APPROVAL OF PROPOSALS FOR DEALING WITH WATER

Prior to commencement of any works, the Contractor shall submit a Plan for Dealing with Water with full details of the construction, operation, maintenance, and removal of the temporary protective works.

Right of Use water in the reservoir for cultivation

The farmers will cultivate both Maha and Yala during construction period without foregoing any season. The contractor shall prepare the construction program based on the cultivation pattern and the instruction given by the engineer to Contract. Irrigators and farmers shall have the right to use, without charge, the reservoir water for cultivation as per the cultivation meeting decisions and the access facilities of which the Engineer has given possession to the Contractor or which have been constructed or acquired by the Contractor for use in constructing the Works.

Reducing water level in Reservoir for the work

The water level in the reservoir shall not be reduced before completion of Yala cultivation for the upstream work of the embankment. Once the Yala cultivation is completed water level can be reduced with the approval of the Engineer until the commencement of next monsoonal rain or next Maha cultivation which comes early.

REMOVAL OF WATER FROM FOUNDATIONS

The Contractor's method of removal of water from foundation excavations shall be subject to the approval of the Engineer. Where the excavation for foundations extends below the water table in common material, the portion below the water table shall be de-watered in advance of excavation. The de-watering shall be accomplished in a manner that will maintain the stability of the excavated slopes and the bottom of the excavation and will result in all construction operations being performed in the dry.

The Contractor shall be required to ensure that the bottom of the excavation is free of water prior to placement of concrete or filling material. Such control may require supplementing approved de-watering methods by the use of perforated pipe under-drains leading to sums from which the water shall be pumped. The pipe drains shall be of uniform diameter for each run and provided with grout connections and returns at about 15-meter intervals and shall be embedded in reasonable well graded gravel or similar filter material.

During the placing and compacting of fill material in an excavated cut off trench, the water level at every point in the cut off trench shall be maintained below the bottom of the cut off trench until the compacted fill in the cut off trench at the point has reached a height of 3 meters. Therefore, the water level shall be maintained at 1.5 meters below the top of the compaction fill. When the fill has reached an elevation which will permit the de-watering systems to maintain the water level at or below the designated elevations as determined to the Engineer, the pipe drains, if any, and surrounding filer material shall be filled with approved grout composed of water and cement or clay.

CARE OF WATER

Scope of work

The Contractor shall provide all methods, procedures, labour and materials necessary to protect all existing works under construction and all personnel and equipment. Further he shall design, build, install, operate, maintain, and dismantle any temporary dewatering facilities required to remove service water and natural surface flow or groundwater seepage from the working areas.

Submittals

After the date of issue of the Notice to Commence, the Contractor shall present the Engineer with conceptual details, designs, method statements, procedures and emergency plans for all required protection and dewatering systems.

Extent of the works

The work under "Care of Water" to be performed under this Contract shall include but not be limited to:

- Construction and maintenance of temporary cofferdams, drains and other protective works;
- Supply and installation, operation and maintenance of pumping systems for dewatering;
- Control and drainage of the water inflows on surfaces against which concrete shall be poured; and
- Handling of the water supply to areas downstream of the dam during construction.

Care of water during construction comprises all necessary measures to protect the works from the effects of water from any source during the construction period. The Contractor shall be fully responsible for the care of water during the construction of the works, including the construction of the upstream and downstream cofferdams, the sealing of their foundation and the handling of the water supply during construction.

The Contractor shall submit with his Tender his proposal and method statement for taking care of water during construction including quantity, type, capacity, arrangement, location, etc., of all required equipment.

The Contractor shall also submit with his Tender his proposal and method statement for the design and construction of the cofferdams and the handling of the water supply for the downstream users during construction.

All works shall be executed in accordance with the specifications of this Contract and in agreement with the Engineer. The approval given by the Engineer shall not relieve the Contractor from being fully responsible for the protection of the works.

Execution

DRAINAGE AND DEWATERING SYSTEMS

The Contractor shall design, furnish, construct and install, operate and maintain all care of water facilities, including cofferdams, drainage systems etc. necessary to maintain all work areas as free as possible form water during construction. This shall include all necessary labour, materials, equipment, power supplies and auxiliary works as required for a safe and dry construction of the works.

The water inflow existing on surfaces or against which concrete shall be poured shall be collected through steel and/or plastic pipes or other approved methods and conveyed to drainage ditches and pits. These water collectors shall be sufficient to drain all concentrated water inflows and also possible scattered water inflow that can affect the quality of concrete at the moment of pouring.

The Engineer's approval of any care of water facility under the Contractor's responsibility shall not relieve the Contractor of the full responsibility for any adverse event which may result from the inadequacy of failure of the protective structures.

DEWATERING

General

The Contractor shall furnish, operate and maintain all necessary pumps, pipes and other dewatering devices as necessary for keeping all work areas free from water. The Contractor shall be held liable for any damage caused by the failure of the drainage and dewatering systems.

The Contractor shall prepare and submit to the Engineer the design of all temporary drainage and dewatering systems and all auxiliary works required for safe and continuous operation of the drainage and dewatering system throughout the period of the works.

The design and installation shall be such that alterations and extensions of the system during operation are possible.

Diverted or pumped water shall be discharged at locations from which it cannot re-enter the work areas and in a manner which does not cause erosion, pollution, or nuisance to other persons within or adjacent to the site.

Duration of drainage and dewatering

Drainage and dewatering shall continue until construction works are completed to a stage where drainage and dewatering are no longer necessary to prevent damage to the works or neighboring works whether from flooding, hydrostatic pressures, flotation or by any other means to prevent hindrances of any kind.
The ceasing of drainage and dewatering measures requires the approval of the Engineer. The removal of dewatering systems and the abandoning, removal or closing of drainage systems requires the express permission of the Engineer.

Pumping systems and power supply

To remove water from various sections of the work and to handle the water supply to areas downstream of the site, pumping systems of sufficient capacity shall be provided. This shall include the supply, installation, operation and maintenance of all items comprising the pumping system.

The Contractor shall seize his power supply and distribution system to have sufficient standby capacity to continue necessary dewatering work in case of failure of his main generating system.

Ready for service condition

The Contractor shall maintain ready for service and regularly clean all dewatering equipment and accessories and shall keep all accesses clear so that they can safely be used without the risk of accidents.

COFFERDAMS

All cofferdams shall be designed, constructed, and maintained by the Contractor. The complete design of the cofferdams including all calculations, specifications of materials, proposed construction procedures, provisions for protection of existing or already completed works, provisions for protection against erosion, any necessary support work shall be submitted for the approval of the Engineer prior to the commencement of the work. No work shall be started without the written approval of the Engineer.

The Contractor shall be entirely responsible for the water tightness and maintenance of the cofferdams, care of water as well as safety of the works including sole liability for damages due to erosion and/or piping inside the cofferdam.

Where required by the different phases of the work, the Contractor shall modify, remove, or dismantle and reconstruct the cofferdams as approved or directed by the Engineer.

On completion of the works, the Contractor shall remove or dismantle all cofferdams as approved or directed by the Engineer. The materials shall be brought to the approved location and according to the requirements of paragraph 3 of this specification.

Setting out Works

Existing Survey Date

The Tender drawings included in the bidding document are prepared based on the surveys carried-out by the Engineer during the design stage.

Responsibility for Setting Out

The Contractor shall be solely responsible for the correct setting-out of the Works and shall employ experienced qualified surveyors acceptable to the Engineer for this purpose.

The Contractor shall furnish all materials, labor and equipment including stakes, templates, patterns, platforms and special labor that may be required by the Contractor in setting out any part of the Works.

The Contractor shall give the Engineer not less than 24 hours' notice of his intention to set out, survey or give levels for any part of the Works in order that arrangements can be made for checking the accuracy of the setting out, survey or levels. In order that the Engineer can expedite such checking the Contractor shall as soon as practical supply the Engineer with records in an approved form relating to all reference pegs and benchmarks in connection to the set out, survey or levels for any part of the Works which are required to be checked.

Contractor's Site Staff

The Contractor shall provide competent qualified survey technicians and the necessary support teams to carry-out all survey necessary to set out the Works in a neat and workmanlike manner.

Survey Operatives for the Engineer

The Contractor shall supply chainmen and laborers as required by the Engineer who are well experienced in such work. Chainmen shall be experienced in assisting Engineer in survey work.

It shall be the discretion of the Engineer to select chainmen and laborers whom he considers reliable and suitable and the Contractor shall maintain the continuity of this staff.

Permanent Survey Pillars

Using the existing temporary benchmarks shown on the Drawings the Contractor shall establish permanent survey pillars sufficient to define the control survey and as directed. The permanent survey pillars shall be linked to the national map grid and their coordinates shall be shown on the As-Built Drawings.

Establishment of these permanent survey pillars shall be undertaken before any of the existing survey point markers are destroyed by the Contractor's operations.

Detailed Survey

The Contractor shall perform all calculations, surveying and setting out necessary to establish the accurate location of the structures to be constructed.

The Contractor shall submit for the review of the Engineer the methods he intends to employ and the precision he will attain for the setting-out of the Works.

The Contractor shall, under guidance and in the presence of the Engineer, carry-out surveys and measurements for record and payment purposes in accordance with the Conditions of Contract.

In the Engineer's own surveying for checking the Contractor's survey results, the Contractor shall render the Engineer all necessary assistance and services for such check surveys.

SURFACE EXCAVATION

Scope of work

This section covers all surface excavation work to be performed under this Contract, which shall consist of removing all existing material of whatever nature to the lines and grades shown on the drawings or as otherwise directed by the Engineer in writing. This work shall include excavating, ripping, loading, hauling, double handling and disposal of materials in designated spoil or stockpile areas, according to these Specifications.

Submittals

Prior to the commencement of any surface excavation, the Contractor shall submit in writing to the Engineer details of the proposed excavation methods and sequences, including necessary safety precautions. Prior to dumping or stockpiling any material, the Contractor shall submit in writing the layout of spoil or stockpile areas to the Engineer and wait the approval in writing. All pertinent data of working methods and provisions for the security, stability and temporary and permanent drainage of the areas shall be included by the Contractor. Details of volumes, material types, heights and grades shall be provided.

Lines and grades

The final excavation grades shall in general be rock of specified quality. However, where the final excavation grades are defined by line and grade, the Contractor shall take every precaution and use the most appropriate method of excavation, to avoid the loosening of material or the breaking of rock beyond the lines and grades shown on the drawings. Loose weathered rock shall be removed.

The bottoms of all excavations shall be trimmed to line and grade to the satisfaction of the Engineer.

If, for any reason, excavation is carried out beyond the lines and grades shown on the drawings, the Contractor shall remove the excess material and take the necessary measures to restore the required lines and grades with approved backfill or concrete, at his own expense.

Should the Contractor wish to excavate beyond the limits given on the drawings for his own convenience, he may do so, at his own expense but only with the prior written approval of the Engineer.

Slopes, slides, geological overbreak and unsuitable foundations

If geological conditions during the performance of the work do not permit excavation of slopes as shown on the drawings, or where the material is unsuited to forming a firm foundation for the structures, the Contractor shall modify the drawings accordingly or issue a direct request to the Engineer to change the grades. The prior written approval of the Engineer is mandatory.

If, in the Contractor's opinion the slopes as shown on the drawings are objectionable, and in his opinion should be changed, he shall obtain the written agreement of the Engineer prior to starting the work on such modified excavation.

If overbreak, slides or rock falls occur, which are due to improper working methods or negligence by the Contractor, and the effective excavated surfaces are beyond the excavation lines shown on the drawings, the Contractor shall remove all excessive material and place suitable and approved backfill material in the excavated voids. This work and material shall not be paid.

Execution

The surface excavation shall be performed by any approved method using any excavating and hauling equipment suitable for the work in accordance with the submitted detailed plans and time schedule or approved modifications thereof. The work areas shall be kept dry and drained.

The work areas shall be kept dry and drained at all times during construction.

All final or remaining surfaces shall be protected against damage by erosion and travel of the construction equipment with methods proposed by the Contractor and approved by the Engineer in writing. Any damage caused shall be repaired by the Contractor.

The Contractor shall exercise particular care when excavating in the vicinity of existing structures or those under construction. He shall reinstate any damage to structures or equipment caused by his operations, at his own cost.

The Contractor shall protect the subsoil and particularly the ground water from contamination by fuel or oil from his equipment.

CLEARING AND GRUBBING.

Clearing means the removal, transport and appropriate disposal of all trees, brush, stumps, fences, existing structures, spoil, debris and other obstructions in the areas to be occupied by the Permanent works, surfaces of borrow and quarry areas, spoil and stockpile areas, and where interfering with the procedure or functioning of the work.

Grubbing means the removal, transport and disposal of all roots, buried logs, foundations of structures (except concrete or masonry in mortar) and other materials foreign to the natural topsoil in the areas to be occupied by Permanent works and surfaces of borrow and quarry areas.

Clearing and grubbing work shall be performed either manually or with mechanical equipment. The Contractor shall make every reasonable effort to salvage such material which may be put to beneficial use.

All materials from clearing and grubbing work shall remain the Employer’s property but the Contractor may, subject to written approval from the Engineer, retain any material for his use. Materials which the Contractor does not wish to use shall be disposed of in an approved manner.

Materials to be burnt shall be piled neatly in such a manner and in such locations as to not cause any fire risk and shall be burnt completely so that all material is reduced to ashes.

The Contractor shall have suitable equipment and supplies for fighting fire during the burning of material and shall take all necessary precautions to prevent fire from spreading. Toxic materials such as tyres etc. shall not be burnt but disposed of in the approved manner.

STRIPPING AND LOOSE EXCAVATION

Stripping consists of removing all rubbish, humus, vegetable material and all or part of the organic topsoil in the areas and to the depth as indicated on the drawings or as otherwise directed by the Engineer.

Loose Excavation means general excavation of material such as organic topsoil, clay, silt, sand, gravel, and boulders of up to 75mm thickness and soft or disintegrated rock, which can be removed by common earth moving equipment without ripping or blasting.

Stripping and loose excavation shall be accomplished by proper excavation and hauling equipment suitable for the work which allows for an efficient work progress adopted to the soil conditions encountered.

ROCK EXCAVATION BY RIPPING.

Rippable material is defined as rock which can be loosened or broken down by a bulldozer capable of developing 220 kW (300 PS) of continuous power equipped with a single shank rear-mounted, heavy-duty rock ripper, operating in low gear.

Material which in the opinion of the Contractor should be removed by ripping shall be exposed, and the Engineer notified before proceeding further.

The top of the rock surface shall be surveyed by the Contractor. The survey and classification is subject to the written approval of the Engineer.

Contractor's failure to follow the procedure outlined above will forfeit his right to claim any classification other than that allowed by the Engineer, who, in such case, will classify the excavated quantities.

Ripping shall be performed in such manner that the ripper tooth does not damage the material lying beyond the final excavation lines. Any material remaining to the final excavation lines shall be removed by wedging, barring, broaching or other suitable methods approved by the Engineer.

Excavated materials

All suitable materials from the excavations shall be utilized to the fullest extent practicable as construction materials in permanent and temporary works, subject to the written approval of the Engineer.

The Contractor's excavating techniques shall be such, that as much as practicable, construction materials will be yielded.

The suitable material shall be stockpiled. If the moisture content of excavated materials suitable for embankments or backfill is too high after excavation, the material shall be drained and dried in the stockpile until the moisture content is sufficiently reduced to allow placement, or vice versa moistened if too dry.

Disposal of excavated materials

Excavated material, which is not suitable for, or are in excess of the construction requirements shall be disposed of in the spoil area as directed or approved by the Engineer.

The spoil tips shall be located where they will not interfere with the natural flow of streams or rivers or other works. No rock material may be dumped into the river bed.

The Contractor shall shape and trim the stockpiles to the lines and grades as directed. Adequate diversion of water courses in such areas and proper drainage shall be provided as proposed by the Contractor and approved by the Engineer. The Contractor shall be liable for any damage to the works or to the property of third parties caused by poor drainage in the spoil or stockpile areas.

Particular excavation applications

EXCAVATION OF PARTS OF AN EXISTING EMBANKMENT

The excavation of part of an existing embankment such as the removal of a distinct part of the crest requires special care to be taken by the Contractor. In this respect the Contractor has to take all precautions to avoid the following:

- To destroy the existing structure to a larger extent than required;
- To demolish the function of any detail of the structure; and
- To be able to re-construct the particular part.

Prior to the start of any work the Contractor shall submit to the Engineer for written approval a method statement describing the procedure required to carry out the specific excavation. The method statement shall include but not be limited to the following:

- Excavation method (including the applied equipment, materials etc.).
- Storage procedure for the excavated materials and details regarding the protection of these.
- Description of all temporary support measures to ensure that the remaining embankment is kept unchanged, if applicable.
- Preparatory works (such as shaping of the slope) required for the reconstruction of the excavated part of the embankment.
- Reconstruction procedure in respect to the different material to be backfilled.

EXCAVATION OF TRENCHES IN EXISTING EMBANKMENTS

The excavation of trenches such as for the removal and/or reconstruction of sluices barrels require special consideration and attention.

The excavation shall be wide enough to allow for backfill compaction parallel to the structure using heavy rolling compaction equipment. The inclination of the embankment slopes shall be as flat as possible to reduce differential strain. The final slope inclinations shall be determined by the Contractor. He shall provide evidence to the Engineer that the inclination he intends to use is sufficiently stable. No work shall start before the Contractor receives the written approval of the Engineer.

The embankment material of the previously excavated slopes shall be cut back to well-compacted material that has not been affected by wetting or drying.

Excavation shall extend to rock foundation, where line, grade and density are uniform. Rocks and/or irregularities at the foundation contact that might create stress concentration should be removed. Cleaning and backfilling should treat existing defects such as soft or pervious soil filling in the rock, fault gouges, fractures, erosion channels or solution cavities that cannot be removed. These defects require removal to an adequate depth and replacement with lean concrete slush grout, dental concrete or specially compacted earth fill as specified or directed by the Engineer.

MISCELLANEOUS EARTH FILL WORKS AND RIP-RAP FOR EMBANKMENTS

General

The following paragraph deals with general requirements governing the execution of miscellaneous fill works and rehabilitation measures for embankment structures. The rehabilitation works for the embankment structure shall include but not be limited to the following:

- Reconstruction of existing layers of an embankment (particularly after the performance of other remedial measures).

- Backfilling of construction trenches

- Filling of existing cracks.

- Other remedial measures within this context as directed by the Engineer.

Standards and codes

Except as otherwise specified in this Specification, all materials and workmanship shall comply in all respects with the requirements of the appropriate standard of code issued by the British Standards Institution, American Society of Testing and Materials, US Corps of Engineers, Technical Methods for Highways, or such other standard as the Engineer may approve, current at the date of Invitation to Tender. If, after the date of Invitation to Tender, there is an amendment to a standard relevant to the Contract, the Engineer will direct whether the amendment is to apply.

The Contractor shall have available in his site office at all times at least one copy of every standard or code referred to in this Specification, and any additional standard or code which may be referred to therein and shall make these available for reference by the Engineer upon request.

The work included in this section shall comply with the requirements of the following standards and codes, except where this specification differs from these standards and codes, in which case the requirements of the Specification shall take precedence:

- ❖ Earth Manual of “Bureau of Reclamation” – US Department of the Interior.
- ❖ All standards of the American Society for Testing and Materials (ASTM)
- ❖ British Standards (BS)

- US Corps of Engineers
- Technical methods for highways

Submittals

Prior to the start of any works described herein, the Contractor shall submit to the Engineer details of the proposed excavation methods, placement procedures and main equipment for all fill materials. Daily report forms in agreed format detailing the activities shall be submitted to the Engineer for signature.

Sources Of Fill Material, Stockpiling and Disposal To Spoil

BORROW AREAS AND QUARRIES

The Contractor shall explore, locate, investigate, and develop such borrow areas and quarries that he may require to meet the requirements under the Contract. Such development shall include, where applicable, construction, operation and maintenance of the required access roads and haulage arrangements, removal and stockpiling of unsuitable material, processing, stockpiling and transport of suitable material and all related material handling operations including testing.

The Contractor shall be fully responsible for the provision of the fill materials as specified and required for the Works in accordance with the Contract, as well as for the selection of all borrow areas and quarries which may be necessary to satisfy that requirement. The location and extent of the selected borrow areas and quarries for the provision of selected fill material in accordance with the requirements of this Section shall be subject to the approval of the Engineer. The Contractor may develop and/or use the borrow areas and quarries or, subject to the prior approval of the Engineer, develop and/or use other borrow areas and quarries or other sources of excavation materials to meet the requirement of this Specification. Not later than 14 days prior to the commencement of any work for the development of a borrow area or quarry and the provision of fill material from that location the Contractor shall submit details to the Engineer for his approval including the results of field investigations and laboratory tests, if relevant, on the proposed material together with a detailed method statement of all activities required for achieving access to and developing and excavating from the borrow area or quarry. The Contractor shall not commence any work necessary for the development of the area or obtaining the material prior to receiving this approval. Together with his approval of the Contractor's proposed details of any borrow area the Engineer shall notify the Contractor whether that borrow area will have to be backfilled after use for construction. Borrow areas which are not required to be backfilled and which are no longer required, or else within which the supply of suitable fill material has become exhausted, shall be immediately cleared of all debris, and graded and finished, and if required grassed. Unless otherwise agreed by the Engineer, final profiles within each borrow area and associated spoil tips shall be such that in the finished borrow area ponding of water cannot occur, no vertical faces remain, and all slopes are shaped to a finished angle to the horizontal of not greater than 25°.
The cost of all requirements and work specified herein for borrow areas and quarries is deemed to be included in the rates and prices in the Bill of Quantities.

TESTS FOR BORROW AREAS AND QUARRIES

General

All borrow areas and quarries where materials are to be used for permanent construction works shall be subjected to approval of the Engineer. The Engineer may cause any or all of the under-mentioned tests to be done in the Contractor's Laboratory with the supervision of Engineer and/or in the Engineer's Laboratory of the Irrigation Department-Eastern Province.

Tests on Soils

From areas approved out for exploitation the following tests (ASTM or BS) shall be conducted on a sample from the quantum that would be required for exploitation from such areas for placement in different parts of the embankment regularly as determined by the Engineer.

(i) In-situ Moisture Content

(ii) Atterberg Limits

(iii) Sieve Analysis, and

(iv) Standard Proctor Compaction

The particle size grading for the fill materials is generally specified by limiting the range of the grading results obtained for each sieve. Material outside the limits will be accepted or rejected at the Engineer's discretion according to the location on the embankment where the material is to be placed, volume required and the nature of the circumstances for the use of such material.

Tests on Gravel

Materials from approved gravel quarries shall be tested periodically for the following characteristics:

(i) In-situ Moisture Content
(ii) Atterberg Limits
(iii) Sieve Analysis, and
(iv) Standard Proctor Compaction
(v) Field Compaction (Required degree of compaction more than 90)

Tests on Sand

Materials from approved sand quarries shall be tested periodically for the following characteristics:

(i) Sieve Analysis
(ii) Specific Gravity, and
(iii) Organic Content

Tests on Rock/Boulders

Rock samples from approved quarries shall be tested periodically for the following characteristics:

(i) Sieve Analysis
(ii) Specific Gravity
(iii) Los Angeles Abrasion Test, and
(iv) Sodium or Magnesium Sulphate Soundness Test

Material

Before the final selection of the appropriate borrow areas and quarried the Contractor shall make any tests required to demonstrate to the Engineer the suitability of the material.

Prior to the placement of any embankment material at least 2 series of material tests as determined by the Engineer shall be performed.

Testing shall be performed in continuous intervals to reflect the rate of the various materials placed. The schedule of material testing presented by the Contractor shall be approved by the Engineer.

Material for the rehabilitation of embankments shall be equivalent to the existing surrounding material, unless agreed otherwise by the Engineer.

Material to be double handed shall be investigated carefully in regard to possible contamination during the time of storage. If the material is considered to be inappropriate for further use, the Contractor shall propose to the Engineer details of the material he intends to use. In both cases, either the reinstatement or use of new material, the Contractor shall not be allowed to carry out any works prior to the written approval of the Engineer.

All applied materials shall be well graded. Material re-excavated for placement in the embankment will be subject to the same inspection as materials obtained directly from the quarry or excavation.

Preparation required to produce the materials shall include but not be limited to the combination of sieving, crushing, washing, separation and remixing of materials.

Materials shall be obtained, prepared, processed and stockpiled in such a manner that the rehabilitation works shall proceed without delay. The Contractor shall organize his operations taking into account all factors that may delay the work so that the approved schedule of the works is kept.

All applied material shall be well graded and shall be processed to be within the limits of the existing materials, unless otherwise approved by the Engineer.
The tabulation below is a guide for the selection of materials for an embankment.

Grading and Plasticity Limits for Earth Embankments

Zone	Characteristics	Absolute Minimum (%)	Absolute Maximum (%)
Low Permeability	Passing 75 micron sieve	30	70
	Liquid Limit	20	50
	Plasticity Index	8	30
Medium or High Permeability	Passing 75 micron sieve	-	70
	0.355 mm sieve	8	-
	2.36 mm sieve	50	-
	25.0 mm sieve	100	100
	Liquid Limit	0	50
	Plasticity Index	0	30

Stockpiling of Materials

Materials obtained from excavations for the Works and from borrow areas intended for subsequent use as fill in the Works, and which cannot be used immediately, shall be placed in temporary stockpiles nearby. The manner of stockpiling shall be such as to avoid segregation and damage to the materials, and the areas on which the material is stockpiled shall be cleaned and levelled in order to avoid contamination of stockpiled materials as well as any mixing of different materials which are to be stockpiled separately. Excavated materials with similar characteristics shall be stored, wherever practical, in the same place and separately from those with different characteristics, except where different materials are being specifically placed together to obtain a required mix of different materials. The temporary stockpiles shall be clearly signed to indicate the type of material, its source and designated use.

The material shall not be placed in the stockpiles at a density greater than that required subsequently as fill in the Permanent Works.

Placing Fill

GENERAL

The Contractor shall not commence or perform any fill work using equipment or working methods which deviate in any way from the equipment and methods of execution which have already been approved in writing by the Engineer.

All vegetation, topsoil and any other unsuitable overburden shall be removed from areas on which fill is to be placed. Following the preparation of the commencing surface as specified the surface levels shall be surveyed and the results of the survey including drawings submitted to the Engineer for agreement. The Contractor shall not begin to place fill material until the Engineer has approved the preparation of the commencing surface and the survey results.

If filled areas contain material which is susceptible to deterioration due to the excessive absorption or loss of water, it may be necessary to protect such areas by covering with further Permanent Works construction or else with a temporary layer of fill of sufficient thickness to prevent penetration of water into or loss from the permanent fill. Alternatively, a suitable impermeable membrane may be used to protect the permanent fill. Where fill is to be placed in trenches, pits and other places the sides of which are supported, those supports which are to be removed shall as far as practicable be withdrawn ahead of the layer of fill to be compacted and all voids left by the supports shall be filled with fully compacted material.

PLACING, MOISTURE CONTROL AND COMPACTION

The fill shall be placed in uniform layers across the full width and length of the area to be filled so that the area is built up evenly and shall be compacted as soon as practicable after deposition. The width of an embankment layer shall not be extended by means of the deposition of loose materials from the top of the embankment. Materials of differing characteristics shall not be mixed in any one layer and each layer shall be free from lenses and pockets of such material.

Fill material shall be deposited in such a manner that does not cause segregation.

The fill shall be placed so that the surface is sufficiently even, and the surface shall be graded generally level before compaction operations commence while still having sufficient camber to shed surface water and to avoid ponding. The surface on which fill is to be placed shall be scarified if it is too smooth for proper bonding with the layer of fill to be placed. The moisture content of embankment fill material shall be adjusted by suitable conditioning to be within a range of the optimum moisture content required by this Specification or determined by the Engineer, depending on the characteristics of the material, and then compacted.

Compaction equipment shall be capable of achieving the required compaction without having any detrimental effects on the fill material. The equipment shall be carefully controlled to ensure that all areas are uniformly compacted for their full width and depth.

BACKFILLING

Unless otherwise shown on the Drawings or specified or instructed by the Engineer, excavations which are to be backfilled shall be filled with suitable material, as defined obtained from the excavations or from approved borrow areas.

When placing fill as backfill the Contractor shall make due allowance for settlement and shall ensure that the final lines and levels are as shown in the Drawings. Any areas which subside shall be made good without delay up to the end of the Defects Notification Period. Suitable measures shall be taken to minimize erosion of the refilled excavations during wet weather, including sufficient specific measures to shed runoff water to the downslope side of trenches and avoid the formation of waterways along or parallel to the trenches. No payment will be made for

making good any deficiency in refilling or banking material due to the negligence of the Contractor.

REFILLING OR BANKING AGAINST STRUCTURES

The Contractor shall, before the work of backfilling to structures commences, obtain the approval of the Engineer for the material to be used and the methods of the work execution. Prior to the commencement of placing backfilling materials adjacent to structures the location shall be cleared of all remaining concrete forms and other temporary works and shall be subject to the approval of the Engineer. Unless otherwise instructed by the Engineer, backfilling to structures shall not commence until at least 14 days have elapsed after concrete work has been completed. Refilling or banking against water retaining structures will only be permitted after completing testing of the water tightness of the structure to the satisfaction of the Engineer. Wherever practicable backfill shall be placed and compacted evenly on all sides of Permanent Works structures to minimize unbalanced loads on the structures. Such fill shall not contain boulders or any other hard material of a size which in the opinion of the Engineer may result in damage to the structures or incomplete compaction of the fill. The suitable depth of each layer of backfill shall be subject to agreement by the Engineer and shall be dependent on the material source, the placement location and the type of compaction equipment to be used. The moisture content shall be adjusted by suitable conditioning to be within the range + 2% to - 2% of the optimum moisture content, or else within some other range determined by the Engineer depending on the characteristics of the material and compacted to not less than 98% of the maximum dry density "Standard Proctor" (using Method 3.3 or Method 3.4 of Part 4 of BS 1377). Compaction of backfilling materials above structures shall not be permitted with vibrating rollers within 500 mm vertically of the surface of the concrete except with the prior approval of the Engineer. Backfilling materials shall be placed in such a manner that ensures that they can be satisfactorily compacted without damage to the structures.

REFILLING OF TRENCHES

Refilling around pipes is to be carried out as pipe laying proceeds, however no material shall be filled in over the joints or around specials until these have been inspected, tested and approved by the Engineer and permission has been given by him for this refilling to commence. Specially selected soft material without stones shall be used for filling in around the pipework and to a height of at least 150 mm above the top of the pipe, and this material shall be thoroughly and evenly compacted to 98% of the maximum dry density "standard Proctor" (using Method 3.3 or Method 3.4 of Part 4 of BS 1377) unless otherwise required in the Technical Specification or instructed by the Engineer. Unless otherwise specified, in open country away from roads, accesses or built-up areas or where approved by the Engineer the Contractor may then refill the remainder of an excavation from 150 mm above the top of the pipe to the surface of the ground with light compaction. On completion of backfilling the excavation shall be banked to a height of up to 500 mm above the general ground level to allow for settlement, and the Contractor shall be responsible for making good in any area where the back filling subsides below ground level when called upon to do so at any time up to the expiry of the Defects Notification Period without

additional payment. Where selected fill is to be placed below the required grade of the underside of the pipe, the amount of selected suitable fill must be sufficient for a layer slightly thicker than that specified to remain after compaction so that after trimming the pipe can be laid true to line and level.

Compaction of Fill

DEFINITIONS

The specified thickness of a layer of fill is the thickness after compaction has been completed. Unless otherwise instructed by the Engineer:

(i) the maximum dry density (MDD) "standard Proctor" and the optimum moisture content at which this density is achieved are the values obtained by BS 1377: Part 4 – Methods 3.3 or 3.4; and
The field density tests called for in the Specification are those described under BS 1377: Part 9 – Methods 2.1, 2.2, or 2.4.

GENERAL REQUIREMENTS

Suitable fill shall be compacted to a dry density not less than 98% maximum dry density "modified Proctor", or else as indicated on the Drawings or directed by the Engineer, expressed as a fraction of the maximum dry density and measured by field density tests. If fill has a moisture content too low to permit the specified dry density to be achieved, the Contractor shall incorporate sufficient water by a method acceptable to the Engineer to permit compliance with the Specification. Such operations shall be included in the Contractor's rates. If fill becomes sufficiently wet to cause serious rutting by construction traffic or heaving under compaction plant and to an extent that the required dry density cannot be obtained, placing and compaction shall forthwith cease and shall not be resumed until the Contractor has taken whatever action may be necessary in accordance with Sub-Clause 1.5.4.3 to restore the fill to a proper condition for compaction.

COMPACTIVE EFFORT

Fill shall be compacted using the approved type of equipment (Such as Sheet foot Roller), the depth of layer and the number of passes determined in accordance with this Technical Specification provided that the required dry density is obtained. If the dry density is not obtained, the depth of layer shall be decreased or the number of passes shall be increased, or the type of equipment shall be changed until the required dry density is achieved.

COMPACTING EQUIPMENT

The type of compact equipment used for embankments, fills and backfills shall be proposed by the Contractor and approved in writing by the Engineer. Only after compaction tests have demonstrated the effectiveness of the equipment, it will be approved by the Engineer.

Compaction of material in areas where it is impracticable to use large equipment shall be performed by approved suitably sized small rollers, vibrating plates or hand power tampers. Vibrating plate mechanical tampers weighing 600 – 800 kg will be required for compacting fills not accessible to the larger equipment. The tampers shall be capable of compacting layer thicknesses up to 50 cm.

Spreading and grading equipment

The Contractor shall provide and maintain in perfect working condition adequate equipment for spreading and grading of all fill materials in accordance with the specifications.

The number and capacity of the equipment shall be sufficient to fulfill the construction schedule requirements.

Water supply and sprinkling equipment

The Contractor shall provide and maintain in perfect working condition suitable equipment such as pumps, tanks, hoses, etc. to provide water for dust prevention, for adjusting the water content of the materials and to wash in any material into cracks amounting up to 200 l per m3 of fill placed or as directed by the Engineer.

Testing of Materials and Field Control of Compaction

Testing of embankment and backfill material before it is used in construction, and control tests during construction, shall be carried out by the Contractor using his own Site laboratory or an independent laboratory approved by the Engineer. The Contractor shall ensure that the Engineer is informed sufficiently in advance of any tests to be carried out on embankment and backfill material such that the Engineer has the opportunity to witness the test. If so directed by the Engineer, the Contractor shall, in the presence of the Engineer, carry out field density tests at the bottom of excavations for structures in order to investigate the suitability of the foundation material before any concrete works commence. The hole left by the excavation of the sample shall be backfilled with suitable material and compacted to a density no less than the surrounding material, or else shall be backfilled with soil-cement. Laboratory test results of any material that the Contractor proposes to use in the Works shall be submitted to the Engineer for his review and approval before such material is used in the Works. The tests to be carried out by the Contractor, the standard test methods to be used and the testing frequency for materials used during construction and upon completion shall be as detailed in the table below unless an abnormal variability of the results requires a higher frequency. Tests for the maximum dry density and optimum moisture content, the Atterberg limits and particle size analysis shall be made when the placing of fill commences and subsequently in accordance with the minimum test frequencies stipulated in the table below. As a general requirement in addition to the minimum test

frequencies given in the table below, not less than three tests of each type shall be performed at each separate fill area.

Test	Test Standard	Minimum Test Frequency
Moisture content	ASTM D 2216	1. Before filling material from any source is used. 2. Thereafter, whichever of the following occurs first: (i) for every 1000 m³ placed, or (ii) for every 100 m compacted length (iii) at each change of borrow pit source, or (iv) at each change of material, or (v) 21 days after the last test conducted (where the fill location is still active).
Grain size distribution	ASTM D 422	
Specific gravity & absorption	ASTM C 127	
Specific gravity of soils	ASTM D 854	
Atterberg's limits	ASTM D 4318	
Standard Proctor Compaction Test	BS 1377-4 ASTM D 698	
Field density test	USBR Earth Manual E-24/ BS 1377-9 Method 2.1, 2.2 or 2.4	Twice each day (morning and afternoon) at each work location, but at least once for every 100 m³ placed or in each layer, whichever is more frequent. If directed by the Engineer, at the bottom of excavations for structures.
California Bearing Ratio (CBR)	BS 1377-4	Road subgrade: once for every 1 km of road alignment constructed, or at least once for each section of road. Granular subbase/ base/ wearing courses: (i) for every new source of material, and (ii) (ii) at least once a month.

COSTS

The tests required by the Technical Specifications or by the Engineer will be carried out by the Contractor in the either Material Testing Laboratory or in other Laboratories proposed by the Contractor and approved by the Engineer. The cost of such tests, including the preparation and transportation of the samples shall be borne by the contractor if not stated otherwise.

FACILITIES FOR ENGINEER TO TAKE SAMPLES

The Contractor shall provide facilities for the Engineer to take samples for testing of any of the fill, concrete or other materials to be incorporated in the Works. Such samples may be taken before or after incorporation into the Works or at any stage during construction at the discretion of the Engineer.

Rehabilitation of cracks in the existing embankment

The Contractor shall with the Engineer investigate all existing cracks in the embankment. He shall document the findings of this investigation and submit them to the Engineer. During a site investigation the Contractor shall present all observed deficiencies to the Engineer and explain the rehabilitation methods to be applied. These measures shall be subject to the written approval of the Engineer.

The method statement proposed by the Contractor shall include but not be limited to the following:

- **Removal of any loose or foreign material**. With respect to the location and the extent of the affected area, "removal" of material will refer to any measures starting from cleaning of the crack surface up to the excavation of parts of the embankment (e.g. in case the deficiency is caused by an instability of the slope).

- **Re-profiling of the temporary slope**: In the case that parts of the embankment must be removed, the Contractor shall prepare the temporary construction slope by appropriate methods such as cut steps in the remaining embankment material to improve proper compaction.

- **Re-grading of the affected embankment area** with approved methods independent of the extent of the relevant area.

- **Re-construction of the slope protection layer**.

The material to be applied shall conform to the materials used during initial construction. The filter criteria must be maintained for all materials to be applied. It is the Contractor's responsibility to carry out the required measurements and calculations and present these to the Engineer for approval.

No material shall be placed in any section until the foundation of this section has been dewatered (if required) and the temporary construction slope has been adequately prepared and approved by the Engineer.

Methods for re-profiling of the embankment shall be presented by the Contractor for the approval of the Engineer. Various methods may apply. For smaller cracks or openings, "washing-in" of approved

material carried out under controlled conditions might apply. In that respect, the Contractor shall take all precautions not to cause any harm to the existing dam structure. Any destruction caused by the works must be repaired at the expense of the Contractor.

Reconstruction of embankment layers after performance of remedial measures

GENERAL

The Contractor shall propose methods and procedures how he intends to carry out the required remedial measures prior to the commencement of any work. The work shall not be started without the written approval of the Engineer.

Any works to be carried out for the reconstruction of the embankment shall be conducted also under the provisions presented in the relevant technical specification. The Contractor shall consider all methods and requirements described herein.

MATERIAL

All materials the Contractor intends to use shall conform to the specification presented in this section. Any material to be applied throughout the works shall be approved in writing by the Engineer.

The material used to reconstruct the embankment shall be well graded, have a maximum particle size not larger than 5 cm including earth clods and a minimum of 40 percent by weight passing a no. 200 sieve. The Engineer may change the range of acceptable gradation without any extra compensation to the Contractor to suit the material found at site.

Throughout the works the Contractor shall take strict precautions to avoid any contamination of any material to be used. The material shall be free from injurious amounts of brush, sod, roots or any other unsuitable material. Material which is unsuitable in the opinion of the Engineer shall be removed.

If the natural moisture content deviates more than ±3 % of the optimum moisture content, moisture correction measures shall be performed on the stockpiles.
Execution

No embankment shall be reconstructed until that portion has been inspected and approved in writing by the Engineer.

The thickness of the layers to be placed and the compaction required shall be determined by the Contractor and approved by the Engineer.

The placing of embankment material shall be such as to guarantee a homogeneous fill. The material shall be placed in layers having a thickness of about 30 cm and compacted with adequate equipment.

Careful control shall be exercised over the water content of the material by means of regular testing by the Contractor to ensure that adequate compaction is attainable. Water content limits shall be established as part of the field and laboratory testing both prior to and during construction.

100% of all densities of the material in place after compaction shall have a dry density equal or above 98% of the maximum Proctor Standard dry density value (ASTM D698). The maximum water content of

the material in place after compaction shall be within a range of ± 3% of the optimum Proctor Standard moisture content.

The placed layers may have to be scarified to guarantee a good bond with the next layer.

Particular attention shall be given to spreading and compacting of material in the vicinity of concrete structures, instrumentation or other equipment. Spreading and compaction shall be performed with adequate equipment and in such a manner that no damage occurs to concrete, instrumentation or other structures. Any damage shall be repaired by the Contractor at his own expense.

When directed by the Engineer, the Contractor shall remove and dispose of unsuitable material placed in the reconstruction area and material rendered unsuitable after being placed.

Rip Rap Protection for Dam Embankments

GENERAL

Rip-rap required for protection of embankment shall consist of selected hard, durable rock fragments from quarried rock obtained from approved quarries ad excavations, and individual stone having any one dimension not less than as specified on the drawings and/or as directed by the Engineer. Rip-rap shall consist of individual rock fragments, dense, sound, unweathered (only materials not susceptible to weathering shall be accepted), resistant to abrasion and free of cracks, seams and other defects that would tend to increase unduly their susceptibility to destruction by water action. Angular rock fragments shall preferably be used. Well-rounded cobbles and boulders will not be accepted except on very flat slopes. The minimum dimension of any single rock shall not be less than one-third to one-fourth of its maximum dimension.

PARTICLE SIZE DISTRIBUTION

Rip-rap shall be roughly graded to the specified thickness in such a way to ensure that larger rock fragments are uniformly distributed with the smaller rocks filling the remaining spaces. Pockets of small stones shall be removed and replaced with larger material. Riprap shall be reasonably graded. Sand and rock dust may not exceed 5% of the total weight of the rip-rap material. The maximum size of the boulder shall be limited to the nominal thickness of the riprap. The size of Rubbles in the specified thickness (450 mm) of rip-rap shall be reasonably well grades with passing d15 – 175mm to 250 mm, d50 – 275mm – 350 mm & d85 – 375 mm – 450mm.

QUALITY OF BOULDERS/ RUBBLES

The Rip-rap material shall have specific gravity (saturated surface dry) greater than 2.60. Soundness (sodium sulphate method) less than 5% loss by weight after 5 cycles and Abrasion (Los Angeles Abrasion using grading A) less than 60% loss by weight after 500 revolutions.

TESTING OF MATERIALS

The particle size distribution of rockfill and rip rap material shall be tested in a manner agreed by the Engineer.

The determination of the bulk density of rockfill material after placement and compaction shall be by re-excavating a sample of not less than 3 m^3 as directed by the Engineer, determining the volume of the hole, and then weighing the excavated material.

FREQUENCY OF TESTING

The testing specified below shall be performed by the Contractor for his routine quality assurance for the slope protection works prior to placing. The volume of material to be sampled for testing shall be appropriate and sufficient for the respective type of test to be performed. The minimum number of samples which are to be tested shall be one representative sample for each volume of material as stipulated below for each type of test:

Test	Standard	Test frequency
Particle size distribution immediately prior to placement	Visual Inspection	Continuously
Bulk density after placement and compaction	As proposed above	For each 500 m3
Particle mass distribution	ASTM D 422	For each 500 m3 or at every location where the material quality is considered doubtful by the engineer
Sodium Sulphate Soundness	ASTM C88	
Los Angels Abrasion Value	ASTM C535	
Porosity, Water absorption, Specific Gravity	ASTM C 127	

Rip Rap shall be placed to the full layer thickness in one operation starting from the bottom of the slope and progressing to the top. Rip-Rap shall be placed in a such manner as to minimize segregation and avoid displacing the underlying filter or transition/bedding material. The finished layer shall be free from pockets of small stones, clusters of large stones, and excessive voids.

Rip-rap shall be well keyed uniform, and dense and stable mass with adjacent stones in close contact but without alignment of longer faces so that open joints are formed. Stones shall have their greatest dimension across the slope and the smaller spaces between stones shall be left open. End tipping from lorries or dumpers is not permitted.

Prior to the following filling works, the contractor shall close all existing voids on the horizontal surface of the upper boulder layer by hand placing smaller rocks with a maximum diameter of 100mm.

PLACEMENT OF BOULDERS BELOW MINIMUM WATER LEVEL

If placement of material below the minimum water level is required, the Contractor shall place boulders with a diameter of 500 to 700 mm by carefully dumping the material into the water. Placement of boulders shall continue up to 50 cm above the minimum water level. Prior to the following filling works, the Contractor shall close all existing voids on the horizontal surface of the upper boulder layer by hand placing smaller rocks with a maximum diameter of 100 mm.

Dam Instrumentation

General

The Contractor shall be responsible for the procurement of all the instrumentation components in due time. Before placing the purchase order the Contractor shall seek for the Engineer's approval of the instruments.

The equipment to be supplied and installed comprises the following:

(a) Levelling monuments and fix points;
(b) Standpipe piezoneters.
(c) V notches incorporated to culvert outlets

The Contractor shall be prepared to accept changes in the instrumentation layout or additional installations of instruments, if required by the Engineer, and shall also be prepared to receive installation instructions for changed site conditions. The Contractor shall provide access to any instrumentation location at any time during the construction.

Levelling Monuments and Fix points

A network of leveling points and fix points shall be installed on the embankment as indicated in the drawings or as directed by the Engineer.

If not already existent, a minimum of 2 permanent fix points shall be established on each abutment at location shown by the Engineer. The location of each fix point shall be marked in detail on drawings supplied by the Contractor. The leveling monuments shall be built along the dam crest at intervals of 100 m close to the upstream dam shoulder.

The Contractor shall supply, install and survey all monuments including survey pins, pipes and caps, concrete and backfill as shown on the drawings or as directed by the Engineer. Levelling pins shall be of stainless steel, cast iron or steel bolts embedded in concrete of suitable size. A stainless steel plate fixed to the monument shall mark the chainage of the dam.

Immediately after installation of any point, its position and level shall be precisely surveyed. The level and coordinates shall be computed and shall be indicated in the "As-built drawings" to be submitted by the Engineer.

Installation of Standpipe Piezometers

Standpipe piezometer tips shall be of porous ceramic not less than 150 mm long and at least 40 mm diameter ad shall be protected at each end by un-plasticized polyvinyl chloride (uPVC) fittings. The ceramic shall be high air-entry type.

Standpipe tubing shall consist of uPVC tubing to BS 3506 Class 6. Tubing to extend existing standpipes shall be of the same size as the existing tubes and have an appropriate jointing detail to provide a flush internal joint.

During earthwork filling operations standpipes shall be extended in 1.5 m lengths. Fill material shall then be placed and compacted around the tube by hand in a mound shape, the tube being maintained vertical with the top of the mound 750 mm higher than the surrounding fill at all times.

Installation of standpipe piezometers in boreholes shall be as follows:

(i) Each piezometer shall be installed in a separate borehole 100 mm minimum diameter. The installation shall be completed as soon as practicable after drilling so as to minimize the amount of deterioration or alteration that occurs in the ground around the location of the piezometer tip. Holes shall be cased through unstable ground.

(ii) After drilling to the required depth, using percussive or rotary methods, but without the use of air flush or drilling mud in the vicinity of the tip position, the hole shall be flushed clean.

(iii) Sand falling wholly between the limits of grading 1200 and 2000 microns will be placed to a minimum depth of 150 mm at the base of the hole by flushing using clean water and a tremie pipe. The piezometer tip, saturated in water prior to the installation , shall then be coupled to the appropriate standpipe tube ad lowered onto the sand, and more sand added by flushing through the tremie pipe to surround and cover the tip ad to fill the hole to the level shown on the drawings.

(iv) A plug of bentonite formed of either stiff hand rolled balls or pellets shall then be tamped over the sand approximately 500 mm thick. The hole shall then be backfilled with a 3:1 by weight bentonite/cement grout mix prepared by thorough mixing using equipment approved by the Project Manager with just sufficient water to allow it to be tremied to the bottom of the hole.

(v) Casing if used to maintain the hole open shall be withdrawn concurrently with the progress of the backfilling.

(vi) An accurate record of the depths of the piezometers sand surround and seals shall be kept.

At final ground level the standpipes shall be protected by a lockable vandal proof cover set in a concrete surround. The exact location of all piezometers shall be indicated in the "As-built drawings" to be submitted by the Contractor.

ENVIRONMENT AND SOCIAL MANAGEMENT PLAN (ESMP)

The Contractor shall comply with the provisions in the **Environment and Social Management Plan (ESMP)** annexed in this section without any cost to Employer. Provisions on BOQ Sub Item 1.4.1 and ESMP will be provided in Signing of contract.

Environmental Control

The Contractor shall: -

- Comply with the provisions of this Section and other environmental protection provisions in the Contract and with the requirements of any statute, by-law, standard and the like related to environmental protection.
- Arrange all work to cause the least possible disturbance to the environment.
- Submit proposals for traffic movement, temporary structures, cleaning up, storage of materials, demolition and the like. Observe the agreed proposals.
- Dispose of all spoil and unsuitable material in accordance with the provisions given in EMP.

Monitoring

The Contractor shall monitor the environmental aspects of the construction and the control measures implemented to minimize any adverse environmental impact. Should the control measures put in place be found to be unsatisfactory as a result of the monitoring then the Contractor shall amend the control measures to provide a satisfactory result.

Environmental Complaints

The Contractor shall maintain a register of all environmental complaints received and shall notify the Engineer of each complaint. Complaints received by the Engineer and referred to the Contractor shall also be recorded in the register.

The Contractor shall investigate all environmental complaints received and where necessary, undertake measures to address the complaint. All measures undertaken to address complaints shall be detailed in the register.

ENVIRONMENTAL INCIDENTS

Should an environmental incident (being environmental nuisance, medium environmental harm, or serious environmental harm) occur during any construction phase, the Contractor shall immediately take the appropriate action to minimize any impact and inform the Engineer. The Contractor shall carry out any instructions received from the Engineer.

The Contractor shall be responsible for the cleanup of any contamination caused by the construction works and no additional payment will be made in this regard.

ENVIRONMENTAL TRAINING

The Contractor shall be responsible for ensuring that all employees (including subcontractors) have received training in relation to the Contractor’s environmental operating guidelines.

The Contractor shall ensure that any machinery on site is operated within the appropriate guidelines so as to minimize environmental impact in relation to noise, air and water quality, waste control and contamination. All construction materials used on site shall be utilised in a manner to similarly limit environmental impact.

No additional payment shall be paid to the Contractor and the cost of environmental control measures shall be deemed to have been included in the rates tendered for the Works.

Standard Procedure for Ensuring Occupational Health and Safety When working in Wildlife Area

The Contractor shall comply with the provisions in the Standard Procedure for Ensuring **Occupational Health and Safety When working in Wildlife Area** annexed in this section without any cost to Employer. (Annexure II)

Standard Procedure for Assessing the Requirement of Tree Removals

The Contractor shall comply with the provisions in the **Standard Procedure for Assessing the Requirement of Tree Removals** annexed in this section without any cost to Employer. (Annexure III)

LABOR MANAGEMENT PLAN (INCLUDING SITE MANAGEMENT AND CAMP MANAGEMENT MEASURES)

The Contractor shall comply with the provisions in the **Labor Management Plan (Including site management and camp management measures)** annexed in this section without any cost to Employer. (Annexure V)

Integrated Watershed and Water Resources Management Project (IWWRMP)

Standard Procedure for Ensuring Occupational Health and Safety When working in Wildlife Area

2026

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1. Purpose

Workers who are working in wildlife or forest areas can be exposed to wildlife threats. Therefore, persons working in these areas need to strictly follow the guidelines and regulations given by the relevant authority. To fulfill this requirement, contractors and workers will have to follow the occupational health and safety guideline covered in this document during their working period in the wildlife/ forest areas.

2. Common hazards that may occur when working in Wildlife areas

1. Infectious diseases transmission from mosquito or small animal bites.
2. Swelling, mild or severe allergic reactions from stinging insects.
3. Swelling, mild or severe allergic reactions or death from snake bites.
4. Serious injury or death from contact with large mammals or reptiles.

3. Planning for Occupational Health and Safety (OHS).

1. Review identified area, its nature, jurisdiction, conservation status and relevant authority.
2. Plan to get relevant authorization and get clear idea about given conditions and required OHS measures.
3. Purchasing of relevant safety equipment. (Example – Personal Protective Equipment)
4. Provide necessary trainings to staff. (Example – First Aid, emergency protocols)
5. Appoint a person to supervise OHS.

4. Safe Operating Procedure

4.1 General procedures

4.1.1 Obtain conditional approval from authorized agency (Example – Department of Wildlife Conservation / Forest Department).

4.1.2 Understand the given conditions and take action to aware all workers (including drivers and supporting staff) on the given conditions.

4.1.3 Obtain the service of 01 or 02 officers from relevant authorized agency and always accompany them to relevant sites and work under their supervision and guidance.

4.1.4 If any risks or danger is anticipated, felt or identified in the area of work, immediately take action to inform authorized persons and get their direction.

4.2 Common preparedness

4.2.1 Be aware of working area and current conditions and history. (Example –elephant attacks / crocodile attacks)

4.2.2 Always carry a mobile phone or some communication system. (In some protected areas of Sri Lanka, there is no mobile phone coverage).

4.2.3 Select suitable vehicles, at least two vehicles should be mobilized (good condition,4-wheel, toolbox, tore ropes and winch, etc.). Persons will not engage in any activities alone.

4.2.4 Always bring a first aid box/ stretcher.

4.2.5 Be aware of nearest hospital and nearest route.

4.2.6 Be equipped with enough clean drinking water for workers.

5. Common protocol to follow

1. Be aware of your surroundings, and note any wild or suspicious acting animals in your working area.
2. Identify and be aware about wild animal active times and try to avoid those times.
3. Avoid reaching or stepping into or over hidden areas that may contain wildlife.
4. Be aware of signs that indicate above or below ground animal nests. Also take appropriate action to prevent contaminations of these areas.
5. Avoid direct contact with birds, bats, or other animal droppings.
6. Avoid direct contact with animal blood. If contact cannot be prevented, wear rubber gloves and dispose properly.
7. Do not feed any wild animal.
8. Do not capture / harm wild life or plant species and do not collect anything from protected area. (Example fallen animal horns, bones, tusks (ivory), etc).
9. Set fire under (if necessary) should do under supervision of wildlife officers and after use take action to completely extinguish it.

10 Allocate one person to be on guard/vigilance while other workers are at work

6. Precautional actions

6.1 Precautions against bees/wasp stings/bites

6.1.1 Awareness about working areas and presence of bee hives or wasp nests.

6.1.2 Do not wear perfumes, colognes, scented soaps or powders.

6.1.3 Tuck pants into your socks or working boots.

6.1.4 Wear safety hats with face protecting net.

6.1.5 Do not make more noise than necessary when working.

6.1.6 Establish safety cage with enough space. (If possible)

6.1.7 Provide safety kit for workers

6.1.8 If you decided to remove bee/ wasp nest from working site, the authorized agency (example Department of Wildlife Conservation -DWLC) should be informed and their concurrence and assistance should be sought prior to implementation.

6.1.9 Always consult and take a service from qualified pest-removal expert. (Example – Bee conservation Society of Sri Lanka)

6.2 Precautions against large mammal attacks

6.2.1 Be aware of working site, access routes etc.

6.2.2 Be aware on animal movement routes, times, nature of the animals etc.

6.2.3 Try to avoid contact with wild animals. (Example – use an alternative route)

6.2.4 Request wildlife officers to bring/provide safety equipment (Example - Thunder-flashes).

6.3 Precautions for prevention of snake bites

6.3.1 Be vigilant and aware of working area.

6.3.2 Always wear safety boots.

6.3.3 Do not put hands or legs into hidden holes, anthills or any hidden spots.

6.3.4 Do not touch dead or live snakes.

6.4 Precautions for prevention of crocodile attacks

6.4.1 Be vigilant and aware of working area on crocodile signs (Example – foot prints, scats, hiding holes etc) and if those signs are available immediately inform to authorized officials and get their advises.

6.4.2 Do not put your hands or legs in to crocodile hiding holes / do not enter into crocodile hiding holes.

6.4.3 Do not enter into unsafe water.

6.4.4 If you need to work in open waters, establish protective cages.

6.4.5 Observe the working area thoroughly before entering in to open waters or protective cages.

7. General Conditions of workers

1. Workers should be in good health condition.
2. Should agree to follow given conditions and safety measures given from time to time and unexpected conditions.
3. Do not consume alcohol while working.
4. Always pay attention to surroundings.
5. Always stay as a group.
6. Do not litter.
7. Aware of all Do's and Don'ts. (contractor and supervision officers are responsible for this).
8. Establish temporary signboards on Do's and Don'ts at working sites.

8. Personal Protective Equipment need to used

1. Insect repellant
2. Long-sleeved shirts and pants (Jungle green/ dark color)
3. Safety boots
4. Insect spray designed for bees/wasps/hornets
5. Safety hats with face protector (specially protect from bees and wasps)
6. Life jackets/ raincoats.
7. Life-saving equipment for working in water.
8. Re-chargeable torches / lighting equipment.

Integrated Watershed and Water Resources Management Project (IWWRMP)

Ministry of Irrigation

Labor Management Plan

(Including site management and camp management measures)

2026

Abbreviations

IA	-	Implementing Agency
IWWRMP	-	Integrated Watershed and Water Resources Management Project
LMP	-	Labor Management Plan
PMU	-	Project Management Unit
PHI	-	Public Health Inspector

Introduction

Labor management plan of the Integrated Watershed and Water Resources Management Project (IWWRMP) provides basic guidance to contractors to smoothly function of project activities without basic issues. Selected contractors shall follow this plan simultaneously with other relevant lows and regulations. The prepared labor management plan consists with site management measures and camp management measures with outlining a range of mitigation measures designing to avoid or reduce undesired labor management, site management and camp management impacts during construction.

The plan has been prepared by structuring relevant major subject areas that need to pay attention and provides identified mitigation measures with responsibility and frequency of monitoring.

Objectives of the plan

The objectives of the labor management Plan are:

- Avoid or reduce negative impacts on environment due to establishment of project sites.
- Establish standards on worker welfare and living conditions at the camps that provide a healthy, safe and comfortable environment.
- Avoid or reduce negative impact on community and maintain constructive relationships between local communities and workers' camps.

Roles and responsibilities

- Contractor shall ensure sufficient resources are allocated on an ongoing basis to meet the requirements of this Plan.
- Contractor shall strictly adhere to other necessary acts, rules and regulations related to the labor management and obtain necessary approvals.
- The Contractor shall pay attention to implement labor management plan monitor the progress.
- Contractor shall facilitate to PMU or IA to monitor the progress of LMP.
- Contractor shall comply to make necessary amendments to the LMP after the site inspections of PMU, IA or authorized entity.
- Contractor shall comply to provide necessary awareness and trainings to labors about rules and regulations, guidelines and general information time to time.

No	Major field	Sub field	Mitigation and management measures	Responsibility	Monitoring frequency
1	Plan basic arrangements of worksite management	Site identification and demarcation	Contractor should identify the exact area of work site before start project activities.	Site engineer & Contractor	-
			Contractor should plan the work site to identify appropriate places for site office, labor camps, yards, stores, parking areas etc.	Site engineer & Contractor	-
			Contractor should obtain relevant approvals form IA and site engineer.	Contactor	-
			Fence or protective measure should be placed around the work site.	Contactor	-
		Control public access to work site	All public access to the work site should be prohibited or controlled to avoid risk to the public.	Contactor	Monthly
			Signboards should be displayed at all entry points which indicating “Authorized entries only” or “prohibited to public entrance”.	Contactor	Monthly
			Contractor shall take action to establish a temporary security point at the entrance and assigned a person to duty for 24 hrs. for security of the site and monitor vehicle and monitoring transfer of goods into and out of camps.	Contactor	Weekly
			A register shall be maintained at the security point to register all labors/ officers/vehicles which enter / departure to/from the work site.	Contactor	Weekly
		Disclose of basic information to workers and interest groups	Contractor should established signboards at the main entry point to display detailed information of the proposed project.	Contactor	Monthly
			Safety signs should be displayed at the entrance and other necessary places at the work site.	Contactor	Monthly
			Contractor should established a notice boards at the work site and necessary information should be displayed in time to time.	Contactor	Monthly
			Contractor should establish a notice board on COVID 19 health guideline at the entrance.	Contactor	Monthly

No	Major field	Sub field	Mitigation and management measures	Responsibility	Monitoring frequency
		Establishment of site office	Contractor should established a site office according to the site plan and should maintain appropriate working condition.	Contractor/ Site engineer	-
			Necessary documents (guidelines, ESMP, copy of approvals etc.) should be placed at the site office.	Contactor	Monthly
			First aid box with essential drugs should be placed at the site office.	Contactor	weekly
			Fire protection equipment should be placed at the site office.	Contactor	Monthly
			Contractor should maintain an extra stock of safety equipment at site office to issue when necessary.	Contactor	Monthly
			Hazards, explosives or any harmful chemicals should not stock in the site office .	Contactor	weekly
2	Plan work site arrangement	Readiness for emergency response	Contractor shall develop an emergency response plan that meets requirements of emergency situation.	Contractor	-
		Ensure the safety of workers	Contractor should be placed temporary fences/ barricade tapes or protective measures to identify working areas, heavy machinery operating areas and areas where having deep excavations and activities of hazardous nature for the workers.	Contractor	Every 2 weeks
			Specific area in the site should be reserved to store construction materials.	Contractor	Monthly
			Specific area /place/ rooms should be reserved for store Hazards, explosives or harmful materials or chemicals.	Contractor	Weekly
			Materials should stock pilled without exceeding approved height.	Contractor	Monthly
			Areas should be demarcated to park vehicles/ heavy machines or vehicle repairing and relevant sign boards should be displaced.	Contractor	Monthly
			Fire protection equipment should be established in the work site at most essential places.	Contractor	Every 2 weeks
			The contactor shall take action to strictly follow the COVID 19 operational guideline declared by the Ministry of Health at work site.	Contractor	Once a week

No	Major field	Sub field	Mitigation and management measures	Responsibility	Monitoring frequency
			Workshops, Stores, should establish according to the approved site plan.	Contactor	-
			Equipment (including power tools) should store properly, listed and assigned a person to issuing and receiving.	Contractor	Weekly
3	Establishment of Pollution Control measures	Control of Dust and emission,	Stock pilled materials should be covered with appropriate cover or sprinkling water to control dust emission.	Contractor / Site engineer	Daily
			Dust emission form earth works (when operating) should controlled by sprinkling water.	Contractor / Site engineer	Daily
			Contractor should take action to transport excavated debris to approved dumping sites and should not store at work site.	Contractor / Site engineer	Daily
		Control of noise and vibration	Contractor shall adhere to strictly follow given condition for noise limits and vibration limits. (far day and night)	Contractor / Site engineer	Daily
		Control of water pollution	Silt traps should be established in relevant places.	Contractor / Site engineer	Monthly
			Proper solid waste management mechanism should be established in the work site.	Contractor / Site engineer	Daily
			Precautions should be established to avoid oil, fuel or lubricant contamination.	Contractor / Site engineer	Daily
		Final clearance and restoration of worksite	After the completion of project activities contractor shall carefully remove all temporary buildings, huts, stocked pilled materials, temporary blocks of streams etc. form the work site and follow up the approved site restoration actions.	Contractor / Site engineer/PMU	-
4	Labor management measures	Adhere to lows and regulations	No labor under the age of 18 will be hired for work under this contract.	Contractor	Daily
			Contractor shall strictly follow relevance lows and acts related to labor management.	Contractor	-
			Contractor shall obtain necessary approval when increased the number of workers in labor camps	Contractor	-
			Contractor shall maintain a log of any grievances/complains and actions taken to resolve them.	Contractor	Weekly

No	Major field	Sub field	Mitigation and management measures	Responsibility	Monitoring frequency
			Workers shall abide by camp rules which includes a disciplinary process.	Contractor	Daily
			Contractor shall limit workers interaction with community when outside the camp.	Contractor	Daily
			Contractor's personnel shall not engage in any discrimination or harassing behavior.	Contractor	Daily
		Arrangement for conduct basic awareness for workers	Contractor shall take action to develop a labor code of conduct and translated it in to local languages upon clearance from the Engineer. The code of conduct must be made available to all staff and displayed in the work site in local languages.	Contactor	Monthly
			Contractor shall give necessary advices and instructions to all labors and drivers of the site to follow code of conducts.	Contractor/Site engineer/IA/PMU	When necessary
			Contractor shall take action to conduct labor awareness programs to educate the laborers about the code of conduct, general conduct, the Environmental and Social Management Plan, Occupational Health and Safety etc.	Contractor/Site engineer/IA/PMU	When necessary
		Labor safety and welfare facilities	Contractor shall provide sufficient safety gears to labors and need to monitor the utilization.	Contractor/ Site engineer	Daily
			Contractor shall take action to follow safety measures specially in handling of explosives, hazard chemicals, electricity etc.	Contractor/ Site engineer	Daily
			Contractor shall provide equal facilities / standards for all labor camps in the site and do not make any differences on worker's race, gender or nationality.	Contractor/ Site engineer	Daily
			Contractor, as appropriate, shall provide adequate recreation facilities for workers to reduce incentive for leaving camps during leisure time.	Contractor/ Site engineer	Monthly
			Contractor shall pay more attention and provide better quality safety equipment to the workers who are engaging with danger/ risk activities.	Contractor	Daily
		Recognition of cultural, nationality, religion rights.	Contractor may provide prayer rooms and other facilities, as necessary and to the extent practicable, to satisfy the religious needs and customs of its workforce. (if necessary)	Contractor	Monthly

No	Major field	Sub field	Mitigation and management measures	Responsibility	Monitoring frequency
5	Labor Camp management	Planning of Labor camps	Labor camps shall be established according to the approved site plan.	Contractor/ Site engineer	-
		Address community grievances	PMU or IA may request that camp related activities/operations be amended to address community grievances. Contractor shall comply with these requests.	Contractor	-
			Establishment of labor camps shall be commenced only upon the written approval of the Engineer.	contractor	-
			IA/ PMU may request that camp related activities/operations be amended to address community grievances. Contractor shall comply with these requests.	Contractor	-
		Maintain health condition	Contractor shall comply with the minimum health requirements for project execution and the community Health and Safety Management Plan which set out requirements and management measures on controlling communicable diseases within camps and to outside communities.	Contractor	Daily
			Contractor shall routinely monitor the quality and supply of water and other health related facilities.	contractor	Monthly
		Maintain Living and hygienic conditions	Contractor shall be maintained necessary living accommodation and ancillary facilities in functional and hygienic manner and as approved by the Engineer.	Contractor	Monthly
			Contractor should provide separate resting and sanitary facilities for both men and women laborers.	Contractor	Monthly
			All temporary accommodation should be established and maintained in such a fashion that uncontaminated water is available for drinking, cooking and washing.	Contractor	Monthly
			Washrooms should have sufficient and proper water supply.	Contractor	Weekly
			Drinking water facility should be provided to labor camps.	Contractor	Daily
			COVID-19 health guideline shall be applied at the labor camps and throughout the work site.	Contractor	Daily

No	Major field	Sub field	Mitigation and management measures	Responsibility	Monitoring frequency
		Application of Waste management measures	The sewage system for the camp, if not available, shall be planned & implemented with concurrence from the Local Public Health Officer (PHI).	Contractor/ Site engineer	-
			Proper solid waste management system (waste collection method/ separation method and final disposal method) should be established at labor camps.	Contractor	Weekly
			Waste water (from kitchen, washrooms, canteen etc.) should not released into open water bodies or streams.	Contractor	Weekly
		Final clearance and camp demolishing	After the completion of project activities contractor shall carefully remove all temporary buildings, huts, labor camps, toilets form the work site. Temporary toilet pits should treat and demolish accordance to approved health guidelines. Approved site restoration actions should implement.	Contractor/IA/ PMU	-

Integrated Watershed and Water Resources Management Project (IWWRMP)

Standard Procedure for Assessing the Requirement of Tree Removals

2026

Standard Procedure for Assessing the Requirement of Tree Removals

1. Planning Stage

1.1 Consultancy teams should be appraised by the PMU to pay attention and document the requirement of tree removals at each site.

1.2 Consultancy team should discuss with officials of relevant implementing agency on proposed tree removals to identify exact requirement and alternatives explored.

1.3 Ground verification on tree removals should be done by team of IA and PMU. Officials from implementing agency and representatives from community organizations shall also participate and records with attendance list be taken. All trees identified for removal should be measured for their Diameter at Breast Height (DBH).

1.4 Special attention shall be given if any of the selected trees are considered rare, endemic, religiously, historically or culturally important, or are in roosting/ nesting sites etc. The removal of these trees should be avoided and alternatives sought. Unavoidable removals shall be supported with sufficient justification.

1.5 Proposed unavoidable tree removal identified and confirmed at ground verification should be declared and requirement explained to the public at community consultative meetings. The removal should be comprehensive justified with scientific/ engineering support. Sufficient time for community public feedback shall be provided. All suggestions provided shall be given due consideration.

1.6 If public raise key concerns/questions/ protests/ alternatives, the proposed list of tree removal shall be revisited with the relevant implement agency.

1.7 Include finalized tree list in to draft ESMP (scientific justification need for each tree which has identified to be removed). All mitigations and compensatory tree planting activities shall be presented explicitly in the ESMP.

1.8 Submit draft ESMP to PMU with all required information and photos on proposed tree removals.

2. Reviewing Stage

2.1 ESMPs shall be reviewed by PMU and further discussion with consultancy team will be conducted if necessary.

2.2 Field visit will be conducted by the PMU further verify of the requirement of proposed tree removals with officials of relevant implementing agency and representatives of community organizations.

2.3 The proposed tree removal list in the ESMP will be revisited post field visit and any necessary amendments will be made if necessary in concurrence with the implementing agency.

2.4 The final stage shall be to obtain the recommendations of DSRP (SPELL OUT) on tree removals and further amend list according to the recommendations of DSRP

3. Obtaining Clearance / approvals (responsibility of Implement Agency)

3.1 The finalized tree removal list shall be shared with relevant approving officers/ agencies like Grama Niladhari, Divisional Secretariat, District Secretariat, Forest Department, State Timber Corporation, Central Environment Authority/ Provincial Environmental Authority etc. The obtaining of the clearances, where required, will be the responsibility of the implementing agency will be done prior to any removal of trees.

3.2 All clearances shall be shared with the PMU and endorsed before the tree removal activities are commenced. If any conflicts arise, the PMU will bring it to the notice of the World Bank E&S team immediately.

4. Awareness program (Implementation Agency / PMU)

4.1 Awareness programs for selected contractors shall be conducted on environmental and social impact mitigation measures with special attention on tree protection/removal guidelines.

4.2 Contractors shall be strictly adviced not to remove trees unless essential. They shall be instructed to follow the ESMP strictly and any deviations shall be notified to the implementing agency and the PMU in advance for necessary action.

4.3 The removal of trees will be presented at the project introductory meeting and any other community level meetings.

4.4 Continuous field inspection and monitoring shall be conducted with a more concerted focus during land preparation and tree removal period.

4.5 Public complaints shall be attended to without delay adopting the protocols in place for GRM

5. Ecosystem restoration (Contractor)

5.1 Contractor shall carry out recommendations provided in the ESMP on remedial mitigation involving planting and maintenance of suitable tree species (as identified in the ESMP).

6. Monitoring and Evaluation (PMU/ Implementing agency)

6.1 Field inspection and monitoring will be carried out at regular intervals by the implementing agency and the PMU. Photographic evidence will be recorded for al tree removal activities.

6.2 Upon completion of required tree removal activities, site shall be evaluated to ensure that no further destruction has occurred. If satisfied, final clearance to proceed will be granted by the PMU.

6.2 If not satisfied, the contractor will be directed to utilize retention fund to carry out ecosystem restoration to the satisfaction of the implementing agency and the PMU. The WB E&S team shall also be notified under such circumstances.

Integrated Watershed and Water Resources Management Project (IWWRMP)

Checklist for Tree Removals.

Name of the Site ……

Date ……

No	Item/ Activity	YES	NO	Remarks
1	Tree removal has been identified in ESMP			
2	List of tree removals with justification has been included in to ESMP (approved by WB			
3	Ground verification done by PMU			
4	Ground verification done by DSRP			
5	According to no 3 &4, Amendments included in to final tree removal list			
6	Conduct final community consultancy and briefing on tree removals by IA/PMU			
7	According to no 6, Any disagree / not at			
8	If disagree, did any change in the list			
9	Obtained necessary clearance			
	GN ☐ Di.S ☐ DS ☐ FD ☐ CEA ☐ P.EA ☐ A.Dep. ☐			
10	Written inform to authorized officers/institutes			
	GN ☐ Di.S ☐ DS ☐ FD ☐ CEA ☐ P.EA ☐ A.Dep. ☐			
11	IA agreed to closely monitor of tree removals (in written)			
12	Awareness on tree removals carried out for contractor to the satisfaction of PMU.			

GN- Grama Niladhari, Di.S – Divisional Secretary, DS – District Secretary, FD – Forest Department, CEA- Central Environment Authority, P.EA- Provincial Environment Authority, A.Dep. – Archelogy Department, IA- Implementing Agency, PMU – Project management Unit. (Use "√" mark in relevant box)

……
Signature / Date
Environment Specialist (IWWRMP)

According to the checklist, proposed tree removal is in order.

……..
Signature /Date
Project Director (IWWRMP)

Declaration of Implementing Agency

I hereby certify that, proposed tree removal will be done under my direct supervision and responsible to maintain and follow required condition given by authorized / approving agencies.

……

Signature /Date

Officer In-charge/ IA

Section - 7

Form of Bid

Section 7 - FORM OF BID

Name of Contract: ***Improvement of Pathinipuram Anicut in Trincomalee***
Contract No.: ***LK-MOMDE-539144-CW-RFB***

To: Project Director, Integrated Watershed & Water Resources Management Project

Gentlemen:

1. Having examined the Standard Bidding Document - Procurement of Works – Major Contracts [ICTAD/SBD/02 - Second Edition, January 2007], Specifications, Drawings and Bills of Quantities and Addenda for the execution of the above-named Works, we the undersigned, offer to execute and complete such Works and remedy any defect therein in conformity with the aforesaid Conditions of Contract, Specifications, Drawings, Bills of Quantities and addenda for the sum of Sri Lankan Rupees ..... (LKR .....) or such other sums as may be ascertained in accordance with the said Conditions.

2. We acknowledge that the Contract Data forms part of our Bid.

3. We undertake, if our Bid is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Engineer's notice to commence, and to complete the whole of the Works comprised in the Contract within the time stated in the Contract Data.

4. We agree to abide by this Bid until the date specified in ITB Clause 16 …… *[insert date]*, and it shall remain binding upon us and may be accepted at any time before that date.

5. Unless and until a formal Agreement is prepared and executed this Bid, together with your written acceptance thereof, shall constitute a binding Contract between us.

6. We understand that you are not bound to accept the lowest or any bid you may receive.

7. We declare that civil work contracts *have/ have not been* suspended or terminated and/or performance security called by an employer for reasons related to the non-compliance of any environmental, or social, (including sexual exploitation and abuse (SEA) and gender based violence (GBV)), or health or safety requirements or safeguard in the past five years.
(Note: If suspended, terminated or Performance Security is called give details)

Year	**Suspended or terminated portion of contract**	**Contract Identification**	**Total Contract Amount (current value, currency, exchange rate and US$ equivalent)**
[insert year]	*[insert amount and percentage]*	Contract Identification: *[indicate complete contract name/ number, and any other identification]* Name of Employer: *[insert full name]* Address of Employer: *[insert street/city/country]* Reason(s) for suspension or termination: *[indicate main reason(s) e.g. for GBV/ SEA breaches]*	*[insert amount]*
…	…	*[list all applicable contracts]*	…

Performance Security called by an employer(s) for reasons related to ESHS performance		
Year	**Contract Identification**	**Total Contract Amount (current value, currency, exchange rate and US$ equivalent)**
[insert year]	Contract Identification: *[indicate complete contract name/ number, and any other identification]* Name of Employer: *[insert full name]* Address of Employer: *[insert street/city/country]* Reason(s) for calling of performance security: *[indicate main reason(s) e.g. for GBV/ SEA breaches]*	*[insert amount]*

8. We certify/confirm that we comply with the eligibility requirements as per ITB Clause 3 of the bidding documents.

Dated this …….. day of……..20……...…

Signature …….. in the capacity of ……...…….….

duly authorized to sign bids for and on behalf of ……..
[in block capitals or typed]

Address: ……..…

Witness: ……..…….

Section – 8

Bill of Quantities

Preamble to the Bill of Quantities

Bill of Quantities

Day works Schedule

Preamble to the Bill of Quantities

1.1 The Bill of Quantities shall be read in conjunction with all parts of this entire Bidding Document; the Instructions to Bidders, General and Particular Conditions of Contract, Technical Specifications, Drawings, and supplementary information.

1.2 The Bill of Quantities includes lump sum items, unit price items and provisional sum items. The lump sum price quoted will be deemed to be full compensation for completion of work items and paid in full when the work is completed. The quantities given in the Bill of Quantities for the unit price items are estimated and provisional, and are given to provide a common basis for bidding. They are not intended to be the maximum or minimum quantities for payment. The unit prices will be considered full compensation for those work items. The basis of payment will be the actual quantities of work carried out under the provisions of the Contract, measured and valued at the applicable rates and prices in the priced Bill of Quantities.

1.3 The rates and prices bid in the priced Bill of Quantities shall, except as otherwise provided under the Contract, include all construction plant, equipment, labour, supervision, materials, transport, erection, maintenance, testing, insurance, overheads, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.

1.4 A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.

1.5 The rates and prices entered in the Bill of Quantities shall be full compensation for completed work and shall have taken full account of all requirements and obligations, covered by all parts of the contract, including but not limited to, the following, unless expressly stated otherwise:

a. All setting out and survey works including Pre and Post Construction Surveys.

b. All additional site surveys and investigations, preparation of field amendment drawings, shop drawings and As-Built drawings.

c. Mobilization and Demobilization of labour, all construction plant and equipment.

d. Establishment, Maintenance and Removal of all temporary facilities (Contractor's and Engineer's) including offices, workshops, houses, labour camps construction and storage yards, Laboratory facilities and Equipment, Transport for staff and labour etc.

e. Labour and all costs in connection therewith, including but not limited to social charges or fringe benefits.

f. The supply of material and goods, storage and costs in connection therewith including delivery to site and handling material within the site/sites.

g. Taking delivery of materials and goods supplied by others, unloading, storage, handling materials within site, and costs in connection therewith.

h. Construction Plant & Equipment and all costs in connection therewith.

i. Fixing, erecting and installing or placing of materials and goods in position, including usual auxiliary material etc.

j. Temporary Works.

k. Complying with any limitations and constraints on the use of the site/sites including coordinating with other Contractor's, with regard to site access, security etc., maintenance of access to households and other users, maintenance of existing roads, waterways etc.

l. Dealing with the existing flow of water from any source including irrigation flow requirement, rainfall and surface runoff, groundwater, wave action and the like. This includes all and any dewatering operations necessary for the execution of the Works as well as coffer damming if required.

m. General obligations, liabilities and risks involved in the execution of the Works set forth or reasonably implied in the documents on which the tender is based.

n. Overheads and profit.

o. Waste of material.

p. Attendance and transport for surveys including provision of boats and survey instruments, sampling and testing carried out by the Engineer.

q. Performing all sampling and testing which are required to be carried out by the Contractor, and supplying results of such tests.

r. Providing required material delivery certificates.

s. Coordination with Regulatory Institutes & all stake holders.

t. Disposal of all waste material.

u. Complying with all requirements in Specifications and Conditions of Contract where separate items have not been provided.

1.6 Where Bill of Quantities items describe the replacement of existing equipment or components, including mechanical and electrical equipment, the equipment removed remains the property of the Employer, unless stated otherwise in the contract documents. The rates entered shall include for delivery of such equipment to the Employer or for disposal if so, directed by the Employer.

1.7 The whole cost of complying with the provisions of the Contract (excluding VAT) shall be included in the Items provided in the priced Bill of Quantities, and where no Items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.

1.8 General directions and descriptions of work and materials are not necessarily repeated nor summarized in the Bill of Quantities. References to the relevant sections of the Contract

documentation shall be made before entering prices against each item in the priced Bill of Quantities.

1.9 Provisional Sums included and so designated in the Bill of Quantities shall be expended in whole or in part or not at all at the direction and discretion of the Engineer and in accordance with the Conditions of Contract. Where the expenditure against a Provisional Sum is made in the form of a Variation, the payment for the work will be made in accordance with Clause 13 of the Conditions of Contract.

The method and unit of measurement of completed work for payment shall be in accordance with the method described in the specifications for each item or in the Bill of Quantities. For Lump Sum items, measurements for Interim Payment Certificates shall be based on percentage completion of such item of work or milestone as per the Contractor's proposed schedule of monthly payments, as approved by the Engineer.

Description of Items and Measurement Methods

1. INTRODUCTION

The descriptions of the different items in the Bills of Quantities and the method adopted for measurements are indicated in the following paragraphs.

The quantities shall be computed using dimensions from the drawings based on the pre-construction surveys or as varied by the Engineer, except where clearly stated otherwise under the following individual items. No allowance shall be made for settlement, bulking, shrinkage, or waste.

01 Preliminaries

1.1 Securities, insurances etc.

Sub Item 1.1.1– Performance Security

The item provides for the provision of Performance Security as specified in Clause 4.2 of the Conditions of Contract.

Payments for the item will be certified when the Performance Security in the specified format has been provided and accepted by the Employer.

Sub Item 1.1.2– Providing Security bond, Advance bond and guarantees etc.

The item provides for the provision of Security bond, Advance payment Security as required in the Contract as a Provisional Sum item.

Payments for each item will be certified when the respective Advance payment security in the specified format has been provided and accepted by the Employer.

Sub Item Sub Item 1.1.3, 1.1.4 & 1.1.5 - Insurances of property materials and works at site, third party insurance and Insurance against accidents, and injury to workmen

The sub items provide for the provision of the different types of insurances as specified in Clause 18 of the Conditions of Contract.

Payment for each type of insurance will be certified when the respective insurance policies from acceptable insurance companies together with full payment of the premium has been submitted to and accepted by the Employer.

1.2 Engineer's facilities for Implementing Agency

Sub Item 1.2.1 – Provide and maintain Engineer's office with necessary facilities and provide assistance to the Engineers on Instruction

The sub item provides for the provision for maintain of Engineer's 's site office, sanitary facilities, installation and supplying of electricity & water facilities of Engineer's offices for the duration of the Contract as a Provisional sum item. The Project Manager shall order the supply of items or the work items to be carried out under this lump sum item. All items procured or established under this sub item shall remain the property of the Employer and shall be handed over to the Employer at the end of the Contract.

50 % of this item will be certified on establishment of all planned facilities balance of 25% for maintenance and the balance of 25% for when they have completed of the work.

Sub Item 1.2.2 – Hiring of Double cab with fuel and driver for inspection works of Trincomalee scheme and attend meeting in other Districts. (Engine Capacity 2500cc ,4WD, mileage less than 250,000 km, should be Brand new or registered after 01.01.2018) running shall be 3000km per month usage shall be 25 days per month, 06 days per week and 12 hours per day. air conditioner with rear A/C vent minimum seating including driver shall be five. (Wet Lease basis with driver)

The sub item provides for the provision for Provision of transport vehicle for quality control staff of Employer and carrying out quality assurance tests (Double Cap with dual AC, including cost of driver, fuel, maintenance, monthly mileage 3,000 km usage shall be 25 days and 6 days per week.) to Employer's offices of the Contract as a Lump sum item.

Requirement for Vehicle is only for 9 months and the payment will be based on the actual progress. Required period will be Demand by Engineer.

1.3 Contractor's Requirements

Sub item 1.3.1 – Sub item 1.3.1 – Allow Lump sum for constructing, maintaining, dismantling and removal on completion of the works, a temporary site office(4m X 4m, Cement floor rendering, Tin sheet roof) of adequate size including staff rest room (4m X 4m) and toilets (1.5m X 1.5m) and other facilities including 5kv Generator and drinking water for the contractor's site management staff in accordance with the plans prepared by the contractor and concurred by the Engineer.

The sub item provides for the establishment, maintenance and removal on completion of all the facilities required by the Contractor for execution of the works under the

contract offices etc (details with layout to be supplied with the Tender). The Contractor shall submit with the Tender a breakdown of this lump sum item.

50 % of the lump sum under this item will be certified on establishment of all planned facilities balance of 25% for maintenance and the balance of 25% for when they have been removed and site cleaned on completion of the work. All items established under this item will remain the property of the Contractor.

Payments for maintenance under this item shall be included in the monthly payment certificates from the time the facilities have been established until completion.

Sub item 1.3.2 – Maintenance of all contractor's site facilities including offices, stores,workshops, housing etc. (detail with lay out to be supplied with tender)

The sub item provides for the establishment, maintenance and removal on completion of all the facilities required by the Contractor for execution of the works under the contract including offices, stores, workshops, housing etc (details with layout to be supplied with the Tender). The Contractor shall submit with the Tender a breakdown of this Provisional sum item.

50 % of the lump sum under this item will be certified on establishment of all planned facilities balance of 25% for maintenance and the balance of 25% for when they have been removed and site cleaned on completion of the work. All items established under this item will remain the property of the Contractor.

Payments for maintenance under this item shall be included in the monthly payment certificates from the time the facilities have been established until completion.

1.4 Other requirements

Sub Item 1.4.1- Implementation of specific ESMP recommendation identified under ESMP/ESSR as directed by Engineer. Rate shall not include the general Environment, Social, Health and safety provision, where it shall be included in the respective rates

Item will be paid on actual basis as per the expenses incurred on submission of original invoice.

Sub Item 1.4.2 - Provisional sum for all cost in connection with preparing samples for testing, making arrangements for testing of materials, goods etc., as stipulated in the specification, obtaining test reports and submitting the same to the Engineer

The sub item is provided as a lump sum item for the reimbursement of preparing samples for testing, making arrangements for testing of materials, goods etc.

Payments under this item will be certified on production of the relevant documents of proof of payment.

Sub Item 1.4.3 - Allow lump sum for providing and maintaining a name board to the specifications and / or as directed by engineer

The sub item provides for the supply, erection, maintenance on completion of a Name Board of size not less than1500X1200mm mounted on GI pipe (50mm) giving details of the Project, Employer, Contractor and other details to be specified by the Engineer.

Payment for this item will be certified as on the submission of required documents accepted by the Engineer when erected.

Sub Item 1.4.4– Allow lump sum for demobilization, removal of all rubbish & debris and clearing up site on completion, leaving all in good order and handing over

The sub item is provided as a lump sum for removal of all rubbish and debris and disposal as approved and clearing site on completion.

Payment for this item will be certified on completion and leaving all in good order before handing over.

Sub Item 1.4.5– Submission of monthly progress report on compliance with regulation of "ESMP", " Tree removal guideline", "OH & S guideline, Labor Management Plan Safety manual

The sub item is provided as a lump sum for the submission of Monthly Progress Reports on compliance with the regulation of "ESMP", "Tree removal guidelines", "OH&S guidelines, labour management plan.

Payments will be certified on percentage of actual progress basis on submission of the required documentation, accepted by the Engineer.

Sub Item 1.4.6– Allow lump sum for provision of progress report including photo graphics records and other schedule included in the ICTAD publication guideline for effective construction management (ICTAD / CM/01) relevant to contract administration as directed by the Engineer.

The sub item is provided as a lump sum for the submission of Monthly Progress Reports and photographs, schedules etc.

Payments will be certified on a monthly basis on submission of the required documentation, accepted by the Engineer.

Sub Item 1.4.7– Allow lump sum for provision of 4 sets of (hard copies and soft copies) As-built drawing of all services, for Engineer's approval.

The sub item is provided on a Lump sum basis for the submission of As-Built Drawings, Quality Assurance reports and O & M Manual etc. as specified in the Contract and requested by the Engineer.

Payments will be certified on submission and acceptance of the required drawings and documents.

Sub Item 1.4.8– Employees share of adjudicator's fees and expenses

This sub item is provided as a lump sum for the reimbursement of the Employer's part of fees and expenses, paid by the Contractor to the Adjudicator.

Payments will be certified on submission of the required documentation, accepted by the Engineer.

Sub Item 1.4.9– Conducting Social awareness programme. The programme will be coordinated by the Implementing Agency.

The sub item is provided on a provisional sum basis for the conducting social awareness programme. The contractor has to take all arrangement for this programme based on the instruction given by the implementing agency

Payments will be certified on submission of the required documentation, accepted by the Engineer.

Sub Item 1.4.10- Provisional Sum for providing and fixing automatic real-time water level meter as directed by Engineer

Payments will be certified on submission of the required documentation, accepted by the Engineer.

Sub Item 1.4.11- Providing two number grass cutter for maintenance of tank bund as directed by Engineer

Payments will be certified on submission of the required documentation, accepted by the Engineer

Sub Item 1.4.12- Providing two number chainsaw for maintenance of tank bund as directed by Engineer

Payments will be certified on submission of the required documentation, accepted by the Engineer

Sub Item 1.4.12- Providing two number 3 ton, 5m hoisting chain block as directed by Engineer

Payments will be certified on submission of the required documentation, accepted by the Engineer.

02 – Construction of Anicut

Sub Item 2.1– Demolishing existing damaged crest wall remove from site by manual (Av. Haul -30m)

The sub item provides for Demolishing existing Anicut by manual & remove from site, the rate including the disposal of old concrete parts at a nearest place around 30 m as directed by the Engineer

The payment measurement shall be the concrete volume measured from the existing structure approved by the Engineer.

Sub Item 2.2– Removing silt in top of cushion and clearing concrete surface by manual

The sub item provides for removing silt on top of cushion & clearing surface by manual

The measurement for payment shall be the number of labour days approved by the engineer

Sub Item 2.3– Removing existing steel gate with Rod and housing by manual

The sub item provides for removing existing steel gate with rod & housing by manual

The measurement for payment shall be the number of gates approved by the engineer

Sub Item 2.4– Providing 16 mm dia X 500 mm long dowels at 2000 mm interval bottom & Side surface as directed

The sub item provides for 16mm dia x 500mm long dowels at 2000mm intervals bottom & side

The measurement for payment shall be the number of dowels approved by the engineer

Sub Item 2.5– Common earth excavation in foundation and part refill by machinery

The sub-item provides for Earth excavation in anicut section and spoils to waste or fill Material. The rate includes the cost for excavation in any material except hard and soft rock areas, and the excavated material off site or stockpiling for reuse as directed by the Engineer.

The measurement for payment shall be the volume of excavation measured from the levels established by the pre-construction surveys and construction drawings. The working space will not consider for payment.

Sub Item 2.6– Grade 20 ct. concrete in structure including placing, compacting by porker and curing for minimum 14 days. Form work paid for separately. (as directed by Engineer)

The sub-item provides for 1:2:4 (20mm) concrete (Grade 20) in structure including placing, compacting with a porker vibrator and necessary curing arrangement as directed (mixing by machinery) Formwork paid separately.

The payment measurement shall be the concrete volume measured from the construction drawings approved by the Engineer.

Sub Item 2.7– Furnishing and making of formwork using 15mm thick plywood sheet (Film Coated) for each of 03 use including, fixing and removing with transport.

The sub-item provides for Furnishing and making formwork with steel formwork or 15mm thick in plywood or using class 11 timber and necessary props for each of six uses including fixing and removing same once. supplying all necessary formwork, erecting, framing, cutting angles, cleaning wetting and treatment before placing concrete and removal.

The measurement for payment shall be the formwork area of concrete measured from the construction drawings.

Sub Item 2.8– Furnishing cutting bending and placing tor steel reinforcement in position.

The sub-item provides for Furnishing Cutting, bending, fabricating, placing and binding by winding wire of tor steel reinforcement in passion as per drawings including cover blocks. (rate should include the lap lengths)

The measurement for payment shall be the weight of QT rib bars measured from the construction drawings.

Sub Item 2.9– Supplying and Fixing 200mm X 100mm X 6mm Channel Iron for gate lifting arrangement.

The sub item is provided supplying and fixing Channel Iron for gate lifting arrangement by using heavy duty 200mm x 100mm x 6mm channel iron approved by the engineer and measurements and sizes shown in the drawings

Payment for this item will be certified on the completed length of Channel iron shown in the drawing

Sub Item 2.10– Supplying and Fixing 16mm Dia X 200mm Long rag bolt for fitting Channel Iron

The sub item is provided Supplying and Fixing 16mm Dia X 200mm Long rag bolt for fitting Channel Iron approved by the engineer and measurements and sizes shown in the drawings

The measurement for payment shall be numbers of bolt fixed based on the position marked in the construction drawing or as directed.

Sub Item 2.11– Supplying and fixing 1.50m x1.65m steel gate complete with lifting 3.0m long rod and all necessary accessories to anicut bays as per detail drawings

The sub-item includes supply and installation of a steel gate to the anicut with complete set with 3.0m long rod, as per the details provided in the drawing.

Payment measurements will be based on the Nos of the gate installed. Additionally, the proper operation of the gate within the groove of the anicut pier must be ensured and approved by the engineer

Sub Item 2.12– Supplying of pinion wheel type hoister gearbox with 50mm Dia x 3.0m long spindle with accessories

The sub item provides for Supplying and Fixing Hoisting Gear arrangement (Gear ratio 5:1) with 50mm dia spindle Rod for a length of 3.00m including thread cutting to steel gate as per detail drawings as directed by Engineer.

The measurement for payment shall be the number of hoisting Gear fixed and approved by the Engineer.

Sub Item 2.13– Supplying of fixing 50mm Dia x 3.0m long fully threaded spindle with necessary accessories

The sub item provides for Supplying of fixing 50mm Dia x 3.0m long fully threaded spindle with necessary accessories

Payment for this item will be certified on the completed length of spindle shown in the drawing

Sub Item 2.14– Supplying and fixing 75mm x 75mm x 5mm angle iron including anchor welded Y10 ,225mm long tor steel at 600mm interval for gate lifting arrangement

The sub-item provides for supplying and fixing 75mm x75mm x5mm ' L' iron to the grove of the pier of the Anicut and the rate including for the anchor of L iron in to the pier concrete by welding of 225 mm long L iron at 600 mm intervals.

The measurement for payment shall be length of the “L” iron fixed on pier measured from the construction drawings.

Sub Item 2.15– Supplying, Cutting, welding and Fixing Handrails useing 75mm x75mm x5mm angle iron including two coats anticorrosive paint and transport

The sub item is provided fabricating and fixing hand rail for passaral by using heavy duty 75mm x 75mm x 6mm “L” iron approved by the engineer and measurements and sizes shown in the drawings

Payment for this item will be certified on the completed length of hand rails shown in the drawing

Sub Item 2.16– Earth excavation and forming coffer dam including watering and compaction by machinery & removal of completion haul-1.20m

The sub item provides for earth fill in coffer dam slopes and top, using earth from selected borrow areas, including excavation from borrow areas, transporting, spreading, watering, compacting. The rate includes stripping and removing top soil from borrow areas and reinstatement of the same as directed by the Engineer. Rate shall also include for all charges, levies license fees etc. involved in borrow and transport of fill material and also removal of roots and other unwanted materials in borrowed soil.

The measurement for payment shall be the total compacted volume of earth fill in place, based on the preconstruction levels surveyed after clearing of slopes and the final design slope profile as directed by Engineer.

Sub Item 2.17– Dewatering during construction with 100mm Dia water pump

The sub-item provides for Allow for dealing with water during the construction using 100mm dia sub merge pumps as directed by the Engineer. The rate includes all costs related to this operation.

The payment shall be the operating hours of sub-merge Pumps approved by the Engineer

Sub Item 2.18– Cutting & Removing 1.20m girth trees with roots and dump outside the reservation including back filling as directed

The sub item provides for Cutting & removing 1.2m girth trees including uprooting along the tank bund and reservations. The measurement for payment shall be the actual number of trees on the slope of the tank bund at upstream side.

The measurement for payment shall be the actual Number of trees of 1.2m girth removed and approved by the Engineer.

Sub Item 2.19– Cutting & Removing 0.80m girth trees with roots and dump outside the reservation including back filling as directed

The sub item provides for Cutting & removing 1.2m girth trees including uprooting along the tank bund and reservations. The measurement for payment shall be the actual number of trees on the slope of the tank bund at upstream side.

The measurement for payment shall be the actual Number of trees of 1.2m girth removed and approved by the Engineer.

Sub Item 2.20- Silt and sand removing in Channel bed and spoil to waste by machinery.

The sub-item provides for Earth excavation in river bed section and spoils to waste. The rate includes the cost for excavation in any material except hard and soft rock areas, and the excavated material off site or stockpiling for reuse as directed by the Engineer.

Sub Item 2.21- Filling earth from approved burrow areas by machinery and forming back filling, watering and compacting by machinery is not less than 98% of the standard "A" proctor dry unit weight.(Average haul -1.20km)

The measurement for payment shall be the total compacted volume of earth fill in place, based on the preconstruction levels surveyed after clearing of slopes and the final design slope profile.

Sub Item 2.22– Furnishing. placing and packing of 300-450 mm rubble for slope of anicut way by manually

The sub item provides for Supplying, piling and placing of 300-450mm sized rubble for rip-rap. Rate also includes cost of obtaining rubble from approved sources, transport, loading, unloading, manual piling with minimum of voids including internal transport and placing of rubble as Rip-Rap to a thickness of 450mm on U/S slope of bund as Directed by Engineer. Rip-rap has to be placed manually in position, in compact, dense and uniform layer on the upstream slope of the dam.

The measurement for payment shall be the volume of rip-rap placed in position up to a thickness of 450 mm. The quantity under this item shall be obtained by deducting the quantity under sub item 3.9 from the total quantity measured from the construction drawings.

Sub Item 2.23– Stripping of top soil to a thickness of 3" and deposit as directed by machinery.

The sub item provides for Stripping top soil along the upstream slope, downstream slope and top of the bund to a thickness of 150 mm in order to receive new earth and spoils to be disposed outside the reservation as directed.

The measurement for payment shall be the actual volume of striping soil measured from the level approved by the Engineer

Sub Item 2.24– Earth from approved burrow areas and forming bund including watering and compacting by machinery is not less than 98% of the standard "A" proctor dry unit weight.(Average haul -1.20km)

The sub item provides for earth fill in improvement of bund slopes and top, using earth from selected borrow areas, including excavation from borrow areas, transporting, spreading, watering, compacting (98 % Proctor Density) and specified or directed material testing. The rate includes stripping and removing top soil from

borrow areas and reinstatement of the same as directed by the Engineer. Rate shall also include for all charges, levies license fees etc. involved in borrow and transport of fill material and also removal of roots and other unwanted materials in borrowed soil.

The measurement for payment shall be the total compacted volume of earth fill in place, based on the preconstruction levels surveyed after clearing of slopes and the final design slope profile.

Sub Item 2.25– Full turfing to newly filled earth in Flank bund including watering till the turf takes root.

The sub item provides for Supplying and Placing of full turf to the slopes of bund including transporting and watering till turf takes root.

The measurement for payment shall be the actual area of turf approved by the Engineer

Sub Item 2.26– Grading and forming platform along the road including cutting both side of side drain by motor grader

The sub item provides for Grading and forming platform along the road including cutting both side of side drain by motor grader

The payment shall be the operating hours of motor grader approved by the Engineer

Sub Item 2.27– Supplying, placing, spreading, watering & compaction Type 1 soil (CBR>20) by machinery to compacted 150mm thick of blanket is not less than 98% of the standard "A" proctor dry unit weight

The sub item provides for furnishing, placing, spreading, watering and compaction of type 1 soil (CBR >=20). The rate includes cost for obtaining Gravel from approved sources, transport to site.

The measurement for payment shall be the volume of compacted type 1 soil placed in position measured from the construction drawings

Sub Item 3.1 - Clearing & grubbing shrub & thorny jungle on both side of Channel including removing outside of reservation by manual and burning as directed by engineer

This sub-item covers the clearing of shrubs and thorny jungle along the tank bund, including the upstream slope, downstream slope, and top of the bund. The cleared material (spoils) shall be disposed of outside the designated reservation area, as directed by the Engineer.

Payment will be based on the actual area cleared, measured from the levels approved by the Engineer.

Sub Item 3.2– Earth excavation in Channel bed and spoil to waste by machinery.

The sub-item provides for Earth excavation in channel bed section and spoils to waste . The rate includes the cost for excavation in any material except hard and soft rock areas, and the excavated material off site or stockpiling for reuse as directed by the Engineer.

The measurement for payment shall be the volume of excavation measured from the levels established by the pre-construction surveys and construction drawings. The working space will not consider for payment.

Sub Item 3.3– Supplying of fixing 30mm Dia x 2.50m long spindle with accessories

The sub item provides for Supplying of fixing 30mm Dia x 2.50m long fully threaded spindle with necessary accessories

Payment for this item will be certified on the completed length of spindle shown in the drawing

Sub Item 3.4– Common earth excavation in foundation and part refill by manual.

The sub-item provides for common earth excavation in lined channel and spoils to waste or fill Material. The rate includes the cost for excavation in any material except hard and soft rock areas, and the excavated material off site or stockpiling for reuse as directed by the Engineer.

The measurement for payment shall be the volume of excavation measured from the levels established by the pre-construction surveys and construction drawings. The working space will not consider for payment

Sub Item 3.5– Grade 20 ct. concrete in structure including placing, compacting by porker and curing for minimum 14 days. Form work paid for separately. (as directed by Engineer)

The sub-item provides for 1:2:4 (20mm) concrete (Grade 20) in structure including placing, compacting with a porker vibrator and necessary curing arrangement as directed (mixing by machinery) Formwork paid separately.

The payment measurement shall be the concrete volume measured from the construction drawings approved by the Engineer.

Sub Item 3.6– Furnishing and making of formwork using 15mm thick plywood sheet (Film Coated) for each of 03 use including, fixing and removing with transport.

The sub-item provides for Furnishing and making formwork with steel formwork or 15mm thick in plywood or using class 11 timber and necessary props for each of six

uses including fixing and removing same once. supplying all necessary formwork, erecting, framing, cutting angles, cleaning wetting and treatment before placing concrete and removal.

The measurement for payment shall be the formwork area of concrete measured from the construction drawings.

Sub Item 3.7– Furnishing cutting bending and placing tor steel reinforcement in position as directed by Engineer.

The sub-item provides for Furnishing Cutting, bending, fabricating, placing and binding by winding wire of tor steel reinforcement in passion as per drawings including cover blocks. (rate should include the lap lengths)

The measurement for payment shall be the weight of QT rib bars measured from the construction drawings.

Sub Item 3.8– Furnishing, cutting, placing 150mm width rubber water stop in between every 6m interval.

The sub-item provides for Furnishing Cutting, placing 150mm width rubber water stop in between every 6m interval.

Payment for this item will be certified on the completed length of water stop shown in the drawing

Sub Item 3.9– Providing 50mm Dia weep holes in lined channel every 3m intervel with filter arrangement (as directed by Engineer)

The sub-item provides for Supplying and Placing of 50mm Dia and maximum 1200mm long (1000type) PVC pipe weep holes to drain out water.

The measurement for payment shall be the number of weep holes approved by the engineer

Sub Item 3.10– Filling earth from approved burrow areas by machinery and forming back filling, watering and compacting by manual is not less than 98% of the standard "A" proctor dry unit weight. (Average haul -1.20km)

The sub item provides for earth fill in improvement of bund slopes and top, using earth from selected borrow areas, including excavation from borrow areas, transporting, spreading, watering, compacting (98 % Proctor Density) and specified or directed material testing. The rate includes stripping and removing top soil from borrow areas and reinstatement of the same as directed by the Engineer. Rate shall also include for all charges, levies license fees etc. involved in borrow and transport of fill material and also removal of roots and other unwanted materials in borrowed soil.

The measurement for payment shall be the total compacted volume of earth fill in place, based on the preconstruction levels surveyed after clearing of slopes and the final design slope profile.

Sub Item 4.1– Grading and forming platform along the road including cutting both side of side drain by motor grader

The sub item provides for Grading and forming platform along the road including cutting both side of side drain by motor grader

The payment shall be the operating hours of motor grader approved by the Engineer

Sub Item 4.2– Filling earth from approved burrow areas by machinery and forming back filling, watering and compacting by manual is not less than 98% of the standard "A" proctor dry unit weight. (Average haul -1.20km)

The sub item provides for earth fill in improvement of bund slopes and top, using earth from selected borrow areas, including excavation from borrow areas, transporting, spreading, watering, compacting (98 % Proctor Density) and specified or directed material testing. The rate includes stripping and removing top soil from borrow areas and reinstatement of the same as directed by the Engineer. Rate shall also include for all charges, levies license fees etc. involved in borrow and transport of fill material and also removal of roots and other unwanted materials in borrowed soil.

The measurement for payment shall be the total compacted volume of earth fill in place, based on the preconstruction levels surveyed after clearing of slopes and the final design slope profile.

Sub Item 4.3– Supplying, placing, spreading, watering & compaction Type 1 soil (CBR>20)by machinery to compacted 150mm thick of blanket is not less than 98% of the standard "A" proctor dry unit weight

The sub item provides for furnishing, placing, spreading, watering and compaction of type 1 soil (CBR >=20). The rate includes cost for obtaining Gravel from approved sources, transport to site.

The measurement for payment shall be the volume of compacted type 1 soil placed in position measured from the construction drawings

Sub Item 4.4– Common earth excavation in foundation and part refill by manual.

The sub-item provides for common earth excavation in lined channel and spoils to waste or fill Material. The rate includes the cost for excavation in any material except hard and soft rock areas, and the excavated material off site or stockpiling for reuse as directed by the Engineer.

The measurement for payment shall be the volume of excavation measured from the levels established by the pre-construction surveys and construction drawings. The working space will not consider for payment

Sub Item 4.5– Grade 20 ct. concrete in structure including placing, compacting by porker and curing for minimum 14 days. Form work paid for separately. (as directed by Engineer)

The sub-item provides for 1:2:4 (20mm) concrete (Grade 20) in structure including placing, compacting with a porker vibrator and necessary curing arrangement as directed (mixing by machinery) Formwork paid separately.

The payment measurement shall be the concrete volume measured from the construction drawings approved by the Engineer.

Sub Item 4.6– Furnishing and making of formwork using 15mm thick plywood sheet (Film Coated) for each of 03 use including, fixing and removing with transport.

The sub-item provides for Furnishing and making formwork with steel formwork or 15mm thick in plywood or using class 11 timber and necessary props for each of six uses including fixing and removing same once. supplying all necessary formwork, erecting, framing, cutting angles, cleaning wetting and treatment before placing concrete and removal.

The measurement for payment shall be the formwork area of concrete measured from the construction drawings.

Sub Item 4.7– Furnishing cutting bending and placing tor steel reinforcement in position as directed by Engineer..

The sub-item provides for Furnishing Cutting, bending, fabricating, placing and binding by winding wire of tor steel reinforcement in passion as per drawings including cover blocks. (rate should include the lap lengths)

The measurement for payment shall be the weight of QT rib bars measured from the construction drawings

Sub Item 4.8– Supplying, laying and fixing 600mm dia R.C.C Hume pipe with collar in position including transport.

The sub item is provided for Supplying, laying and fixing 600mm dia R.C.C Hume pipe with collar in position including transport.

The measurement for payment shall be the length of the 600mm dia R.C.C Hume pipe measured from the construction construction drawings.

Sub Item 4.9– Providing guard stones as per type plan

The sub item is provided for guard stones

The measurement for payment shall be the number of guard stones approved by the engineer

Sub Item 4.10– Common earth excavation in foundation and part refill by manual.

The sub-item provides for common earth excavation in lined channel and spoils to waste or fill Material. The rate includes the cost for excavation in any material except hard and soft rock areas, and the excavated material off site or stockpiling for reuse as directed by the Engineer.

The measurement for payment shall be the volume of excavation measured from the levels established by the pre-construction surveys and construction drawings. The working space will not consider for payment

Sub Item 4.11– Grade 20 ct. concrete in structure including placing, compacting by porker and curing for minimum 14 days. Form work paid for separately. (as directed by Engineer)

The sub-item provides for 1:2:4 (20mm) concrete (Grade 20) in structure including placing, compacting with a porker vibrator and necessary curing arrangement as directed (mixing by machinery) Formwork paid separately.

The payment measurement shall be the concrete volume measured from the construction drawings approved by the Engineer.

Sub Item 4.12– Furnishing and making of formwork using 15mm thick plywood sheet (Film Coated) for each of 03 use including, fixing and removing with transport.

The sub-item provides for Furnishing and making formwork with steel formwork or 15mm thick in plywood or using class 11 timber and necessary props for each of six uses including fixing and removing same once. supplying all necessary formwork, erecting, framing, cutting angles, cleaning wetting and treatment before placing concrete and removal.

The measurement for payment shall be the formwork area of concrete measured from the construction drawings.

Sub Item 4.13– Furnishing cutting bending and placing tor steel reinforcement in position as directed by Engineer..

The sub-item provides for Furnishing Cutting, bending, fabricating, placing and binding by winding wire of tor steel reinforcement in passion as per drawings including cover blocks. (rate should include the lap lengths)

The measurement for payment shall be the weight of QT rib bars measured from the construction drawings

Sub Item 4.14– Supplying, laying and fixing 450mm dia R.C.C Hume pipe with collar in position including transport.

The sub item is provided for Supplying, laying and fixing 450mm dia R.C.C Hume pipe with collar in position including transport.

The measurement for payment shall be the length of the 450mm dia R.C.C Hume pipe measured from the construction construction drawings.

Sub Item 4.15– Furnishing and Fixing 450mm Dia C.I Gate with Compiled set Including transport.

The sub item is provided for Furnishing and Fixing 450mm Dia C.I Gate with Compiled set Including transport.

The measurement for payment shall be the number of gate approved by the engineer

Sub Item 4.16– Providing guard stones as per type plan

The sub item is provided for guard stones

The measurement for payment shall be the number of guard stones approved by the engineer

Sub Item 4.17– Common earth excavation in foundation and part refill by manual.

The sub-item provides for common earth excavation in lined channel and spoils to waste or fill Material. The rate includes the cost for excavation in any material except hard and soft rock areas, and the excavated material off site or stockpiling for reuse as directed by the Engineer.

The measurement for payment shall be the volume of excavation measured from the levels established by the pre-construction surveys and construction drawings. The working space will not consider for payment

Sub Item 4.18– Grade 20 ct. concrete in structure including placing, compacting by porker and curing for minimum 14 days. Form work paid for separately. (as directed by Engineer)

The sub-item provides for 1:2:4 (20mm) concrete (Grade 20) in structure including placing, compacting with a porker vibrator and necessary curing arrangement as directed (mixing by machinery) Formwork paid separately.

The payment measurement shall be the concrete volume measured from the construction drawings approved by the Engineer.

Sub Item 4.19– Furnishing and making of formwork using 15mm thick plywood sheet (Film Coated) for each of 03 use including, fixing and removing with transport.

The sub-item provides for Furnishing and making formwork with steel formwork or 15mm thick in plywood or using class 11 timber and necessary props for each of six uses including fixing and removing same once. supplying all necessary formwork, erecting, framing, cutting angles, cleaning wetting and treatment before placing concrete and removal.

The measurement for payment shall be the formwork area of concrete measured from the construction drawings.

Sub Item 4.20– Furnishing cutting bending and placing tor steel reinforcement in position as directed by Engineer..

The sub-item provides for Furnishing Cutting, bending, fabricating, placing and binding by winding wire of tor steel reinforcement in passion as per drawings including cover blocks. (rate should include the lap lengths)

The measurement for payment shall be the weight of QT rib bars measured from the construction drawings

Sub Item 4.21– Supplying, laying and fixing 600mm dia R.C.C Hume pipe with collar in position including transport.

The sub item is provided for Supplying, laying and fixing 600mm dia R.C.C Hume pipe with collar in position including transport.

The measurement for payment shall be the length of the 600mm dia R.C.C Hume Pipe measured from the construction construction drawings.

Sub Item 4.22– Providing guard stones as per type plan

The sub item is provided for guard stones

The measurement for payment shall be the number of guard stones approved by the engineer

DAYWORKS PAYMENTS

Labour

Payment in respect of labour employed on a day work basis shall be made at the average daily wage rates (inclusive of contractor's overheads and profits) in construction as entered by the Bidder in the relevant BOQ. Payment shall be made on the basis of the actual time worked excluding travelling time.

The rates shall be deemed to include the costs of the Contractor's Site Supervisory and Administrative Staff (including supervising Foremen) and all other costs in respect to the employment of labour on a day work basis. Rates for types of labour not listed will be determined by the Engineer by reference to the listed rates.

Materials

Payment in respect of materials used in the execution of work on day work basis shall be the cost of the materials delivered to store or stockpile on the site, including all overheads and profit. Rates should be entered by the Bidder in the relevant BOQ.

Rates shall be deemed to cover the costs of taking delivery and putting into store or stockpile, storage, overheads, profit and all other charges and costs in respect of the procurement and handing of such materials. Rates for other materials will be determined by the Engineer with reference to the listed rates entered in the BOQ.

Construction Plant and Equipment

Payment in respect of constructional plant deployed on a day work basis shall be made at the rates entered by the Bidder in the relevant BOQ. These rates shall be deemed to include all cost in respect of fuel and consumable stores, maintenance, operators and attendants, contractor's site supervisory and administrative staff, overheads, profit and all other charges and costs in respect of the deployment of constructional plant and equipment on a day work basis.

Payment shall be made on the basis of the actual time worked including such reasonable travelling time as the Engineer may allow, but excluding idle time (except under the orders of the Engineer.) and time during which such constructional plant/equipment is broken down or undergoing maintenance. Rates for other plant/equipment will be determined by the Engineer with reference to the listed rates entered in the BOQ.

Bill of Quantities

SUMMARY

Item No.	Description	Amount (LKR)
Bill No 01	Preliminaries	
Bill No 02	Construction of Anicut	
Bill No 03	Improvements to Feeder channel	
Bill No 04	Improvements to Farm road	
A	**Sub Total 1 - Summary of Bills 1 to 4**	
B	Ddt: Provisional Sums	1,200,000.00
C	**Sub Total 2 (A-B)**	
D	Discount (if Any)	
E	**Sub Total 3 (C-D+B)**	
F	Physical Contingencies - 10% of E (10% x E)	
G	**Sub Total 4 (E+F)**	
H	Price Contingencies - 5% of E (5% x E)	
I	**TOTAL BID PRICE, CARRIED TO LETTER OF BID (G+H)**	
Total Bid Price (Amount in words)		
J	VAT- 18% of Bid Price (I×0.18)	
GRAND TOTAL INCLUDING VAT (D+E)		
K	Provisional Sum – Total for Day works	
Sub Total 5 (Bid Price with Day Works) (I+K) *[Will be considered only for Evaluation Purpose]*		

Signature of Bidder :-……..

Bill of Quantities

Item No	Description	Unit	Qty	Rate (LKR)	Amount (LKR)	Amount in Words
1.0	**Preliminaries**					
	The attention of the bidder is drawn to the use of Bill of Quantities, Drawings. Conditions of Contract, Specifications and any other particulars related to this bid. It is the bidder's responsibility to see that his price includes for complying with all the requirements of the conditions of contract and other documents specifically required.		Note			
	The bidder is advised to visit the site of the proposed work, as it is his responsibility to ascertain the Conditions, governing access to the site, the external working space, storage area, etc.,		Note			
	Existing roads & culverts cannot take the passage of heavy vehicle or such in adequate areas to be strengthen by the successful bidder, before make use		Note			
	Any existing services, roads, culverts and approaches damaged during the construction to be reinstated without any charge to the employer.		Note			
	All temporary works shall be dismantled and cleared away from the site on completion of the work.		Note			
	Any other preliminary items not listed below but deemed to be included in the bid rates, as no extras would be made.		Note			
	No work in any trade shall be carried out in such a manner as to cause any nuisance to adjacent owners or		Note			

Item No	Description	Unit	Qty	Rate (LKR)	Amount (LKR)	Amount in Words
	the public					
	Mechanical plant and equipment which emits obnoxious liquids, gases etc., will not be allowed to be used on the site, without the prior approval from the Employer and the Engineer.		Note			
	The Engineer has the final decision as and when he deems it necessary for the Contractor to take precautions, maintain or repair such plant and equipment or order their removal from the site.		Note			
	The contractor shall be responsible for any loss or damage to the works, existing structures, adjoining structures and unfixed materials.		Note			
	The Contractor shall be responsible for necessary lighting, watchman and other suitable measures during construction until handing over.		Note			
	Contractor shall be responsible for erection, shifting and maintaining of necessary protective netting, fencing, hording, screens at site and other precautions to the required standard and satisfaction of the Engineer.		Note			

Item No	Description	Unit	Qty	Rate (LKR)	Amount (LKR)	Amount in Words
01	**Preliminaries**					
1.1	**Insurance and Securities**					
1.1.1	Provisional Sum for providing a Performance Security	Item	Allow	P. Sum	250,000.00	
1.1.2	Provisional Sum for providing an Advance Payment Security	Item	Allow	P. Sum	200,000.00	
1.1.3	Provisional Sum for insurance of works, Machinery & Equipment, Plant, Materials, Third party persons & property and employer's personnel & property at site as per the contract	Item	Allow	P. Sum	200,000.00	
1.1.4	Provisional Sum for insurance against accidents and injury to contractor's personnel as per the contract	Item	Allow	P. Sum	100,000.00	
1.1.5	Provisional Sum for insurance against accidents and injury to contractor's personnel as per the contract	Item	Allow	P. Sum	100,000.00	
1.2	**Engineer's Facilities**					
1.2.1	Provide and maintain Engineer’s office with necessary facilities and provide assistance to the Engineers on Instruction	Item	Allow	L. Sum		
1.2.2	Hiring of Double cab with fuel and driver for inspection works of Trincomalee scheme and attend meeting in other Districts. (Engine Capacity 2500cc ,4WD, mileage less than 300,000 km, should be Brand new or registered after 01.01.2017) running shall be	Item	Allow	L. Sum		

Item No	Description	Unit	Qty	Rate (LKR)	Amount (LKR)	Amount in Words
	3000km per month usage shall be 25 days per month, 06 days per week and 12 hours per day. air conditioner with rear A/C vent minimum seating including driver shall be five. (Wet Lease basis with driver) Only for 9 months, period will be as instructed by Engineer.					
1.3	**Contractor's Facilities**					
1.3.1	Allow Lump sum for constructing, maintaining, dismantling and removal on completion of the works, a temporary site office(4m X 4m, Cement floor rendering, Tin sheet roof) of adequate size including staff rest room (4m X 4m) and toilets (1.5m X 1.5m) and other facilities for the contractor's site management staff in accordance with the plans prepared by the contractor and concurred by the Engineer.	Item	Allow	L. Sum		
1.3.2	Maintenance of all contractor's site facilities including offices, stores, workshops, housing etc.(detail with lay out to be supplied with tender)	Months	8.00			
1.4	**Other requirements**					
1.4.1	Implementation of specific ESMP recommendation identified under ESMP/ESSR as directed by Engineer. Rate shall not include the general Environment, Social, Health and safety provision, where it shall be included in the respective rates	Item	Allow	P. Sum	150,000.00	

Item No	Description	Unit	Qty	Rate (LKR)	Amount (LKR)	Amount in Words
1.4.2	Provisional Sum for all cost in connection with preparing samples for testing, making arrangements for testing of materials, goods etc., as stipulated in the specification, obtaining test reports and submitting the same to the Engineer	Item	Allow	P. Sum	100,000.00	
1.4.3	Allow lump sum for providing and maintaining a name board to the specifications and / or as directed by	Item	Allow	L.Sum		
1.4.4	Allow lump sum for demobilization, removal of all rubbish & debris and clearing up site on completion, leaving all in good order and handing over	Item	Allow	L.Sum		
1.4.5	Submission of monthly progress report on compliance with regulation of "ESMP", " Tree removal guideline", "OH & S guideline, Labor Management Plan and Safety manual	Item	Allow	L.Sum		
1.4.6	Allow lump sum for provision of progress report including photographic records and other schedule included in the ICTAD publication guideline for effective construction management (ICTAD / CM/01) relevant to contract administration as directed by the Engineer.	Item	Allow	L.Sum		
1.4.7	Allow lump sum for provision of 4 sets of (hard copies and soft copies) As-built drawing of all services, for Engineer's approval.	Item	Allow	L.Sum		
1.4.8	Employees share of adjudicator's fees and expenses	Item	Allow	L.Sum		

Item No	Description	Unit	Qty	Rate (LKR)	Amount (LKR)	Amount in Words
1.4.9	Conducting Social awareness programme. The programme will be coordinated by the Implementing Agency.	Item	Allow	P. Sum	100,000.00	
1.4.10	Provisional Sum for providing and fixing automatic real time water level meter as directed by Engineer	Item	Allow	L.Sum		
1.4.11	Providing two number grass cutter for maintenance of tank bund as directed by Engineer	Item	Allow	L.Sum		
1.4.12	Providing two number chainsaw for maintenance of tank bund as directed by Engineer	Item	Allow	L.Sum		
1.4.13	Providing two number 3 ton, 5m hoisting chain block as directed by Engineer	Item	Allow	L.Sum		
	Sub Total of Bill No 1:					
02	**Improvements to Pathinipuram Anicut (Dwg No-IWWRMP/TRI/PATH/CN/001/2-1C)**					
2.1	Demolishing existing damaged crest wall remove from site by manual (Av. Haul -30m)	m^3	4.50			
2.2	Removing silt in top of cushion and clearing concrete surface by manual	L.day	20.00			
2.3	Removing existing steel gate with Rod and Housing by manual	Nos	20.00			
2.4	Providing 16 mm dia X 500 mm long dowels at 2000 mm interval bottom & Side surface as directed	Nos	400.00			
2.5	Common earth excavation in foundation and part refill by machinery	m^3	404.70			
2.6	Grade 20 ct. concrete in structure including placing, compacting by porker and curing for minimum 14 days.	m^3	176.70			

Item No	Description	Unit	Qty	Rate (LKR)	Amount (LKR)	Amount in Words
	Form work paid for separately. (as directed by Engineer)					
2.7	Furnishing and making of formwork using 15mm thick plywood sheet (Film Coated) for each of 03 use including, fixing and removing with transport.	m^2	500.00			
2.8	Furnishing cutting bending and placing tor steel reinforcement in position as directed by Engineer..	kg	10544.40			
2.9	Supplying and Fixing 200mm X 100mm X 6mm Channel Iron for gate lifting arrangement.	L.m	45.00			
2.10	Supplying and Fixing 16mm Dia X 200mm Long rag bolt for fitting Channel Iron	L.m	40.00			
2.11	Supplying and fixing 1.50m x1.65m steel gate complete with all necessary accessories to anicut bays as per detail drawings	nos	16.00			
2.12	Supplying of pinion wheel type hoister gearbox with 50mm Dia x 3.0m long fully threaded spindle with accessories	nos	15.00			
2.13	Supplying of fixing 50mm Dia x 3.0m long fully threaded spindle with necessary accessories	L.m	15.00			
2.14	Supplying and fixing 75mm x 75mm x 5mm angle iron including anchor welded Y10 ,225mm long tor steel at 600mm interval for edge of the crest wall	L.m	30.00			
2.15	Supplying, Cutting, welding and Fixing handrails using 75mm x75mm x5mm angle iron including two coats anticorrosive paint with transport	L.m	46.30			

Item No	Description	Unit	Qty	Rate (LKR)	Amount (LKR)	Amount in Words
	Construction of Coffer dam					
2.16	Earth excavation from Approved burrow area and forming coffer dam including watering and compaction by machinery & removal of completion(225mm layer by layer) haul-1.20km	m^3	225.00			
2.17	Dewatering during construction with 100mm dia water pump	hrs	300.00			
	Widening of Channel (U/S of Anicut) (Dwg No- IWWRMP/TRI/CN/002/1-1C)					
2.18	Cutting & Removing 1.20m girth falling trees with roots and dump out side the reservation including back filling as directed	nos	1.00			
2.19	Cutting & Removing 0.80m girth falling trees with roots and dump out side the reservation including back filling as directed	nos	2.00			
2.20	Silt and sand removing in Channel bed and spoil to waste by machinery.	m^3	1108.30			
2.21	Filling earth from approved burrow areas by machinery and forming back filling, watering and compacting by machinery is not less than 98% of the standard "A" proctor dry unit weight(225mm layer by layer).(Average haul -1.20km)	m^3	3355.80			
2.22	Furnishing .placing and packing of 300-450 mm rubble for slope of anicut way by manually	m^3	300.00			
	L.B Flank Bund from 0+000m to 0+100m					

Item No	Description	Unit	Qty	Rate (LKR)	Amount (LKR)	Amount in Words
2.23	Stripping of top soil to a thickness of 3" and deposit as directed by machinery.	m^3	30.00			
2.24	Earth from approved burrow areas and forming bund including watering and compacting by machinery is not less than 98% of the standard "A" proctor dry unit weight (225mm layer by layer).	m^3	300.00			
2.25	Full turfing to newly filled earth in Flank bund including watering till the turf takes root.	m^2	280.00			
	R.B Flank Bund with Access Road from 0+000m to 0+360m					
2.26	Grading and forming platform along the road including cutting both side of side drain by motor grader	hrs	6.00			
2.27	Supplying, placing, spreading, watering & compaction Type 1 gravel (CBR>20) by machinery to compacted 150mm thick of blanket is not less than 98% of the standard "A" proctor dry unit weight	m^3	162.00			
	Improvements to Feeder Channel (Dwg No- IWWRMP/TRI/CN/003/2-1C)					
3.1	Clearing & grubbing shrub & thorny jungle on both side of Channel including removing outside of reservation by manual and burning as directed by engineer	ha	0.20			
3.2	Earth excavation in Channel bed and spoil to waste by machinery.	m^3	430.80			

Item No	Description	Unit	Qty	Rate (LKR)	Amount (LKR)	Amount in Words
3.3	Supplying and fixing 30mm Dia x 2.5m long spindle with accessories	Nos	2.00			
	Lined Channel from 0+000m to 0+150m (Dwg No- IWWRMP/TRI/CN/004/2-1C)					
3.4	Common earth excavation in foundation and part refill by manual	m^3	52.50			
3.5	Grade 20 ct. concrete in structure including placing, compacting by porker and curing for minimum 14 days. Form work paid for separately. (as directed by Engineer)	m^3	85.00			
3.6	Furnishing and making of formwork using 15mm thick plywood sheet (Film Coated) for each of 03 use including ,fixing and removing with transport.	m^2	648.40			
3.7	Furnishing cutting bending and placing tor steel reinforcement in position as directed by Engineer..	kg	3597.10			
3.8	Furnishing ,cutting ,placing 150mm width rubber water stop in between every 6m interval.	L.m	91.20			
3.9	Providing 50mm Dia weep holes in lined channel every 3m interval with filter arrangement (as directed by Engineer)	Nos	100.00			
3.10	Filling earth from approved burrow areas by machinery and forming back filling , watering and compacting by manual is not less than 98% of the standard "A" proctor dry unit weight(225mm layer by layer).(Average haul - 1.20km)	m^3	193.50			

Item No	Description	Unit	Qty	Rate (LKR)	Amount (LKR)	Amount in Words
	Sub Total of Bill No 2					
	Farm Road from 0+000m to 0+850m (Dwg No- IWWRMP/TRI/CN/005/2-1C)					
4.1	Grading and forming platform along the road including cutting both side of side drain by motor grader	hrs	13.00			
4.2	Earth from approved burrow areas and forming bund including watering and compacting by machinery is not less than 98% of the standard "A" proctor dry unit weight(225mm layer by layer).(Average haul -1.20km)	m^3	2588.50			
4.3	Supplying, placing, spreading, watering & compaction Type 1 gravel (CBR>20) by machinery to compacted 150mm thick of blanket is not less than 98% of the standard "A" proctor dry unit weight	m^3	481.30			
	Construction of 2/600mm Dia X 6.0m Long RCC Pipe Culvert at 0+339m (Dwg No- IWWRMP/TRI/CN/006/2-1C)					
4.4	Common earth excavation in foundation and part refill by manual	m^3	6.80			
4.5	Grade 20 ct. concrete in structure including placing, compacting by porker and curing for minimum 14 days. Form work paid for separately.(as directed by Engineer)	m^3	14.10			
4.6	Furnishing and making of formwork using 15mm thick plywood sheet (Film Coated) for each of 03 use including ,fixing and removing with transport.	m^2	49.20			

Item No	Description	Unit	Qty	Rate (LKR)	Amount (LKR)	Amount in Words
4.7	Furnishing cutting bending and placing tor steel reinforcement in position as directed by Engineer..	kg	440.30			
4.8	Supplying, laying and fixing 600mm dia R.CC Hume pipe with collar in position including transport.	L.m	12.00			
4.9	Providing guard stones as per type plan	nos	10.00			
	Construction of 1/450mm Dia X 6.0m Long Sluice at 0+422m (Dwg No- IWWRMP/TRI/CN/007/2-1C)					
4.10	Common earth excavation in foundation and part refill by manual	m^3	5.00			
4.11	Grade 20 ct. concrete in structure including placing, compacting by porker and curing for minimum 14 days. Form work paid for separately.(as directed by Engineer)	m^3	8.50			
4.12	Furnishing and making of formwork using 15mm thick plywood sheet (Film Coated) for each of 03 use including, fixing and removing with transport.	m^2	43.00			
4.13	Furnishing cutting bending and placing tor steel reinforcement in position as directed by Engineer..	kg	317.80			
4.14	Supplying, laying and fixing 450mm Dia R.CC Hume pipe with collar in position including transport.	L.m	6.00			
4.15	Furnishing and Fixing 450mm Dia C.I Gate with Compiled set Including transport.	Nos	1.00			
4.16	Providing guard stones as per type plan	Nos	5.00			

Item No	Description	Unit	Qty	Rate (LKR)	Amount (LKR)	Amount in Words
	Construction of 1/600mm Dia X 6.0m Long R.C.C Culvert at 0+683m (Dwg No- IWWRMP/TRI/CN/008/2-1C)					
4.17	Common earth excavation in foundation and part refill by manual	m^3	5.10			
4.18	Grade 20 ct. concrete in structure including placing, compacting by porker and curing for minimum 14 days. Form work paid for separately.(as directed by Engineer)	m^3	9.70			
4.19	Furnishing and making of formwork using 15mm thick plywood sheet (Film Coated) for each of 03 use including, fixing and removing with transport.	m^2	42.40			
4.20	Furnishing cutting bending and placing tor steel reinforcement in position as directed by Engineer..	m^3	3.00			
4.21	Supplying, laying and fixing 600mm Dia R.CC Hume pipe with collar in position including transport.	L.m	6.00			
4.22	Providing guard stones as per type plan	Nos	6.00			
	Sub Total of Bill No 4:					
	Civil Cost					

6.0 DAYWORKS SCHEDULE

	Description	Unit	Qty	Rate (LKR)	Amount (LKR)	Amount in Words
	Labour					
1	Skilled labour	hr	75.00			
2	Unskilled labour	hr	80.00			
3	Mason	hr	25.00			
4	Carpenter	hr	20.00			
5	Plumber, Electrician	hr	15.00			
6	Mechanic	hr	15.00			
7	Welder, Fitter	hr	15.00			
8	Steel fixer	hr	15.00			
9	Driver	hr	50.00			
	Total for Labour					
	Material					
1	Cement (50 Kg bags)	Nos	50.00			
2	Sand	m^3	20.00			
3	Mild steel reinforcement	t	0.30			
4	Tor steel reinforcement	t	0.30			
5	Mild Steel Plate	t	0.15			
6	Stainless Steel Plate	t	0.15			
7	Fabricated Steelwork	t	0.15			
8	Timber Ply Sheet 12mm	m^2	15.00			
9	Gravel	m^3	20.00			
	Total for Material					
	Equipment					
1	Backhoe/Loader 100 HP	hr	20.00			
2	Mobile crane 30T	hr	10.00			
3	Dump truck / Tipper 20T	hr	10.00			
4	Tractor/Trailer 100HP	hr	10.00			
5	Concrete Mixer 1 m^3	hr	10.00			
6	Air Compressor 3-Tool	hr	5.00			
7	Welding Set 10KVA	hr	10.00			
8	Sandblasting Equipment	hr	15.00			
9	Diesel Generator 20KVA	hr	15.00			
10	Water Pumps 50mm	hr	25.00			
11	Excavator	hr	25.00			
	Total for Equipment					

Technical Proposal

Forms for personnel
Forms for equipment
Site organisation
Method statements
Mobilisation and construction schedule

Forms for Personnel

Form PER – 1: Proposed Personnel

Bidders should provide the names of suitably qualified personnel to meet the specified requirements for each of the positions listed in Section III (Evaluation and Qualification Criteria). The data on their experience should be supplied using the form below for each candidate.

1.	**Title of position** **Name**
2.	**Title of position** **Name**
3.	**Title of position** **Name**
4.	**Title of position** **Name**
5.	**Title of position** **Name**
6.	**Title of position** **Name**
etc.	**Title of position** **Name**

Form PER – 2: Resume of Proposed Personnel

The Bidder shall provide all the information requested below. Fields with Asterix (*) shall be used for evaluation.

Position*		
Personnel information	**Name**	**Date of birth**
	Professional qualifications	
Present employment	**Name of Employer**	
	Address of Employer	
	Telephone	**Contact (manager / personnel officer)**
	Fax	**E-mail**
	Job title	**Years with present Employer**

Summarize professional experience over the last five years, in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

From*	To*	Company, project, position, and relevant technical and management experience*

Forms for Equipment

The Bidder shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Section III (Evaluation and Qualification Criteria). A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder. The Bidder shall provide all the information requested below, to the extent possible. Fields with asterisk (*) shall be used for evaluation.

Type of Equipment*		
Equipment Information	**Name of manufacturer**	**Model and power rating**
	Capacity*	**Year of manufacture***
Current Status	**Current location**	
	Details of current commitments	
Source	**Indicate source of the equipment** ☐ **Owned** ☐ **Rented** ☐ **Leased** ☐ **Specially manufactured**	

The following information shall be provided only for equipment not owned by the Bidder.

Owner	**Name of owner**	
	Address of owner	
	Telephone	**Contact name and title**
	Fax	**Telex**
Agreements	**Details of rental / lease / manufacture agreements specific to the project**	

Site Organisation

The Bidder shall provide a personnel chart for the proposed site organization, indicating the key positions as given in Section III (Evaluation and Qualification Criteria) and other positions, with names of personnel proposed and a description of the tasks assigned for such positions.

Method Statements

The Bidder shall provide a method statement describing the methodology proposed to be adopted in the execution of the contract.

Mobilisation and Construction Schedule

The Bidder shall provide a detailed mobilization and construction schedule indicating the sequence of all main operations and identifying critical activities.

Section 9 - Schedules

Schedule 1 – General Information

(i) If pre-qualification is done the bidders are required to include information subsequent to that submitted with the pre-qualification application.
(ii) For joint ventures, each joint venture partner shall furnish information separately.

ITB Clause reference	Description	Information *(to be filled by the Bidder)*	Remarks
4.1 (a)	**Legal Status**		*Provide certified copies of Registration*
	Written power of attorney of the signatory to the Bid	*Provide original or certified copy of the power of Attorney attested by a Notary and label as attachment to Clause 4.1(a)*	
	If a Joint Venture, names and addresses of Joint Venture Partners	1. …… 2. ……... 3. ……	*Provide a draft copy of the Joint Venture Agreement or alternatively the memorandum of understanding*
	If a Joint Venture, name of Lead Partner		
	For joint ventures, each joint venture partner shall furnish Legal Status separately		
	Name (Lead partner)		*Provide certified copies and label as attachment to Clause 4.1(a)*
	Legal status		
	Place of registration		
	Principle place of business		
	Written power of attorney of the signatory to the Bid	*Provide original or certified copy of the power of attorney attested by a Notary and label as attachment to Clause 5.1*	
	VAT Registration Number		
	Name (Partner 2)		*Provide certified copies and label as attachment to Clause 4.1 (a)*
	Legal status		
	Place of registration		
	Principle place of business		

	Written power of attorney of the signatory to the Bid	*Provide original or certified copy of the power of attorney attested by a Notary and label as attachment to Clause 4.1 (a)*	
	VAT Registration Number		
	Name (Partner 3)		*Provide certified copies and label as attachment to Clause 4.1 (a)*
	Legal status		
	Place of registration		
	Principle place of business		
	Written power of attorney of the signatory to the Bid	*Provide original or certified copy of the power of attorney attested by a Notary and label as attachment to Clause 4.1 (a)*	
	VAT Registration Number		
4.2 (a)	**ICTAD Registration**		*Provide certified copies and label as attachment to Clause 4.2(a)*
	Registration number		
	Grade		
	Specialty		
	Expiry Date		

Schedule 2 – Annual Turn-over Information (Construction only – Last five years)

(i) If pre-qualification is done the bidders are required to include information subsequent to that submitted with the pre-qualification application.

(ii) For joint ventures, each joint venture partner shall furnish information separately.

Year	Turn-over	Remarks
1		*Attach audited reports and label as attachment to Clause 4.2*
2		
3		
4		
5		

Schedule 3 – Adequacy of Working Capital

If pre-qualification is done the bidders are required to include information subsequent to that submitted with the pre-qualification application

Source of credit line	Amount	Remarks
		Provide documentary evidence and label as attachment to Clause 4.2
Total		

Schedule 4 – Construction Experience in last five years

(i) If pre-qualification is done the bidders are required to include information subsequent to that submitted with the pre-qualification application.

(ii) For joint ventures, each joint venture partner shall furnish information separately.

Year	Employer	Description of Works	Amount	Contractor's Responsibility (%)
		Total		

- *Provide documentary evidence and label as attachment to Clause 4.2*

Schedule 5 – Major Items of Construction Equipment Proposed	
Type	**Capacity**

Schedule 6 – Construction Management Staff		
A. Key Professionals		
Name	**Position**	**Task**
B. Support Staff		
Name	**Position**	**Task**

Schedule 7 – Time Schedule for Key Staff														
			Months (in the form of a Bar Chart)											
Name	**Position**	**Activities**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Number of Months**

Full-time: _____ Part-time: .....

Schedule 8 – Work Programme

Sheet 1 of ……

	[1st, 2nd, etc. are months from the Start Date.]											
Construction Activity	**1st**	**2nd**	**3rd**	**4th**	**5th**	**6th**	**7th**	**8th**	**9th**	**10th**	**11th**	**12th**

Schedule 9 – Input percentages for Price Adjustment Formula		
Input Name *(Include major materials below the list, together with percentages for all inputs)*	**ICTAD Reference for Indices**	**Percentage** *(percentages listed should added to 90.0)*
Total		

Nonadjustable element shall be:
All Psum & Lsum items

Schedule 10: ESHS Management Strategies and Implementation Plans

(ESHS-MSIP)

The Bidder shall submit comprehensive and concise Environmental, Social, Health and Safety Management Strategies and Implementation Plans (ESHS-MSIP) as required by ITB 13.1 A (j) and 13.1 B (d). These strategies and plans shall describe in detail the actions, materials, equipment, management processes etc. that will be implemented by the Contractor, and its subcontractors.

Code of Conduct: Environmental, Social, Health and Safety (ESHS)

The Bidder shall submit the Code of Conduct that will apply to the Contract Manger and other key personnel as required by ITB 13.1 A (j) and 13.1 B (d) and subcontractors. The Code of Conduct shall ensure compliance with the ESHS provisions of the Contract.

In addition, the Bidder shall submit an outline of how this Code of Conduct will be implemented. This will include: how it will be introduced into conditions of employment/engagement, what training will be provided, how it will be monitored and how the Contractor proposes to deal with any breaches**.**

Environmental, social, health and safety requirements

The Employer should use the services of a suitably qualified environmental, social, health and safety specialist/s to prepare the specifications for ESHS working with a procurement specialist/s.

The Employer should attach or refer to the Employer's environmental, social, health and safety policies that will apply to the project. If these are not available, the Employer should use the following guidance in drafting an appropriate policy for the Works.

SUGGESTED CONTENT FOR AN ENVIRONMENTAL AND SOCIAL POLICY (STATEMENT)

The Works' policy goal, as a minimum, should be stated to integrate environmental protection, occupational and community health and safety, gender, equality, child protection, vulnerable people (including those with disabilities), sexual harassment, gender-based violence (GBV), sexual exploitation and abuse (SEA), HIV/AIDS awareness and prevention and wide stakeholder engagement in the planning processes, programs, and activities of the parties involved in the execution of the Works. The Employer is advised to consult with the World Bank to agree the issues to be included which may also address: climate adaptation, land acquisition and resettlement, indigenous people, etc. *The policy should set the frame for monitoring, continuously improving processes and activities and for reporting on the compliance with the policy.*

The policy shall include a statement that, for the purpose of the policy and/or code of conduct, the term "child" / "children" means any person(s) under the age of 18 years.

The policy should, as far as possible, be brief but specific and explicit, and measurable, to enable reporting of compliance with the policy in accordance with the Particular Conditions of the Contract Sub-Clause 4.21 and Appendix C to the General Conditions of Contract.

As a minimum, the policy is set out to the commitments to:

1. *apply good international industry practice to protect and conserve the natural environment and to minimize unavoidable impacts;*
2. *provide and maintain a healthy and safe work environment and safe systems of work;*
3. *protect the health and safety of local communities and users, with particular concern for those who are disabled, elderly, or otherwise vulnerable;*
4. *ensure that terms of employment and working conditions of all workers engaged in the Works meet the requirements of the ILO labour conventions to which the host country is a signatory;*
5. *be intolerant of, and enforce disciplinary measures for illegal activities. To be intolerant of, and enforce disciplinary measures for GBV, inhumane treatment, sexual activity with children, and sexual harassment;*
6. *incorporate a gender perspective and provide an enabling environment where women and men have equal opportunity to participate in, and benefit from, planning and development of the Works;*
7. *work co-operatively, including with end users of the Works, relevant authorities, contractors and local communities;*
8. *engage with and listen to affected persons and organizations and be responsive to their concerns, with special regard for vulnerable, disabled, and elderly people;*
9. *provide an environment that fosters the exchange of information, views, and ideas that is free of any fear of retaliation, and protects whistleblowers;*
10. *minimize the risk of HIV transmission and to mitigate the effects of HIV/AIDS associated with the execution of the Works;*

The policy should be signed by the senior manager of the Employer. This is to signal the intent that it will be applied rigorously.

MINIMUM CONTENT OF ESHS REQUIREMENTS

In preparing detailed specifications for ESHS requirements, the specialists should refer to and consider:

- *project reports e.g. ESIA/ESMP*
- *consent/permit conditions*
- *required standards including World Bank Group EHS Guidelines*

- *relevant international conventions or treaties etc., national legal and/or regulatory requirements and standards (where these represent higher standards than the WBG EHS Guidelines)*
- *relevant international standards e.g. WHO Guidelines for Safe Use of Pesticides*
- *relevant sector standards e.g. EU Council Directive 91/271/EEC Concerning Urban Waste Water Treatment*
- *Grievance redress mechanism including types of grievances to be recorded and how to protect confidentiality e.g. of those reporting allegations of GBV/SEA.*
- *GBV/SEA prevention and management.*
- *The detail specification for ESHS should, to the extent possible, describe the intended outcome rather than the method of working*

The ESHS requirements should be prepared in manner that does not conflict with the relevant General Conditions of Contract and Particular Conditions of Contract, and in particular:

General Conditions of Contract	
Sub-clause 1.13	*Compliance with Laws*
Sub-clause 2.2	*Permits, Licenses and Approvals*
Sub-clause 4.1	*Contractor's General Obligations*
Sub-clause 4.4	*Subcontractors*
Sub-clause 4.8	*Safety Procedures*
Sub-clause 4.19	*Avoidance of Interference*
Sub-clause 4.13	*Protection of the Environment*
Sub-clause 4.15	*Contractor's Operations on the Site*
Sub-clause 4.16	*Fossils*
Section 6	*Staff and Labour (includes health and safety)*
Sub-clause 7.1	*Manner of Execution*
Sub-clause 10	*Clearance of Site*
Sub-clause 12.3	*Evaluation (reference ITB 14.2 "Items against which no rate or price is entered by the Bidder shall be deemed to be covered by the rates for other items in the Bill of Quantities and will not be paid separately by the Employer.")*

MINIMUM REQUIREMENTS FOR THE BIDDER'S CODE OF CONDUCT

[A minimum requirement for the Code of Conduct should be set out by the Employer, taking into consideration the issues, impacts, and mitigation measures identified, for example, in:

- *project reports e.g. ESIA/ESMP*
- *any particular GBV/SEA requirements*
- *consent/permit conditions (regulatory authority conditions attached to any permits or approvals for the project)*

- *required standards including World Bank Group EHS Guidelines*
- *relevant international conventions, standards or treaties, etc., national legal and/or regulatory requirements and standards (where these represent higher standards than the WBG EHS Guidelines)*
- *relevant standards e.g. Workers' Accommodation: Process and Standards (IFC and EBRD)*
- *relevant sector standards e.g. workers' accommodation*
- *Grievance redress mechanisms.*

The types of issues identified could include. Risks associated with: labor influx, spread of communicable diseases, sexual harassment, gender based violence, illicit behavior and crime, and maintaining *a safe environment etc.*

[Amend the following instructions to the Bidder taking into account the above considerations.]

A satisfactory code of conduct will contain obligations on all Contractor's Personnel project staff (including sub-contractors and day workers) that are suitable to address the following issues, as a minimum. Additional obligations may be added to respond to particular concerns of the region, the location and the project sector or to specific project requirements. The code of conduct shall contain a statement that the term "child" / "children" means any person(s) under the age of 18 years.

The issues to be addressed include:

1. Compliance with applicable laws, rules, and regulations
2. Compliance with applicable health and safety requirements to protect the local community (including vulnerable and disadvantaged groups), the Employer's Personnel, and the Contractor's Personnel (including wearing prescribed personal protective equipment, preventing avoidable accidents and a duty to report conditions or practices that pose a safety hazard or threaten the environment)
3. The use of illegal substances
4. Non-Discrimination in dealing with the local community (including vulnerable and disadvantaged groups), the Employer's Personnel, and the Contractor's Personnel (for example on the basis of family status, ethnicity, race, gender, religion, language, marital status, age, disability (physical and mental), sexual orientation, gender identity, political conviction or social, civic, or health status)
5. Interactions with the local community(ies), members of the local community (ies), and any affected person(s) (for example to convey an attitude of respect, including to their culture and traditions)
6. Sexual harassment (for example to prohibit use of language or behavior, in particular towards women and/or children, that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate)
7. Violence, including sexual and/or gender based violence (for example acts that inflict physical, mental or sexual harm or suffering, threats of such acts, coercion, and deprivation of liberty
8. Exploitation including sexual exploitation and abuse (for example the prohibition of the exchange of money, employment, goods, or services for sex, including sexual favors or other forms of humiliating, degrading behavior, exploitative behavior or abuse of power)

9. Protection of children (including prohibitions against sexual activity or abuse, or otherwise unacceptable behavior towards children, limiting interactions with children, and ensuring their safety in project areas)
10. Sanitation requirements (for example, to ensure workers use specified sanitary facilities provided by their employer and not open areas)
11. Avoidance of conflicts of interest (such that benefits, contracts, or employment, or any sort of preferential treatment or favors, are not provided to any person with whom there is a financial, family, or personal connection)
12. Respecting reasonable work instructions (including regarding environmental and social norms)
13. Protection and proper use of property (for example, to prohibit theft, carelessness or waste)
14. Duty to report violations of this Code
15. Non retaliation against workers who report violations of the Code, if that report is made in good faith.

The Code of Conduct should be written in plain language and signed by each worker to indicate that they have:

- received a copy of the code;
- had the code explained to them;
- acknowledged that adherence to this Code of Conduct is a condition of employment; and
- Understood that violations of the Code can result in serious consequences, up to and including dismissal, or referral to legal authorities.

A copy of the code shall be displayed in a location easily accessible to the community and project affected people. It shall be provided in languages comprehensible to the local community, Contractor's Personnel, Employer's Personnel, and affected persons.

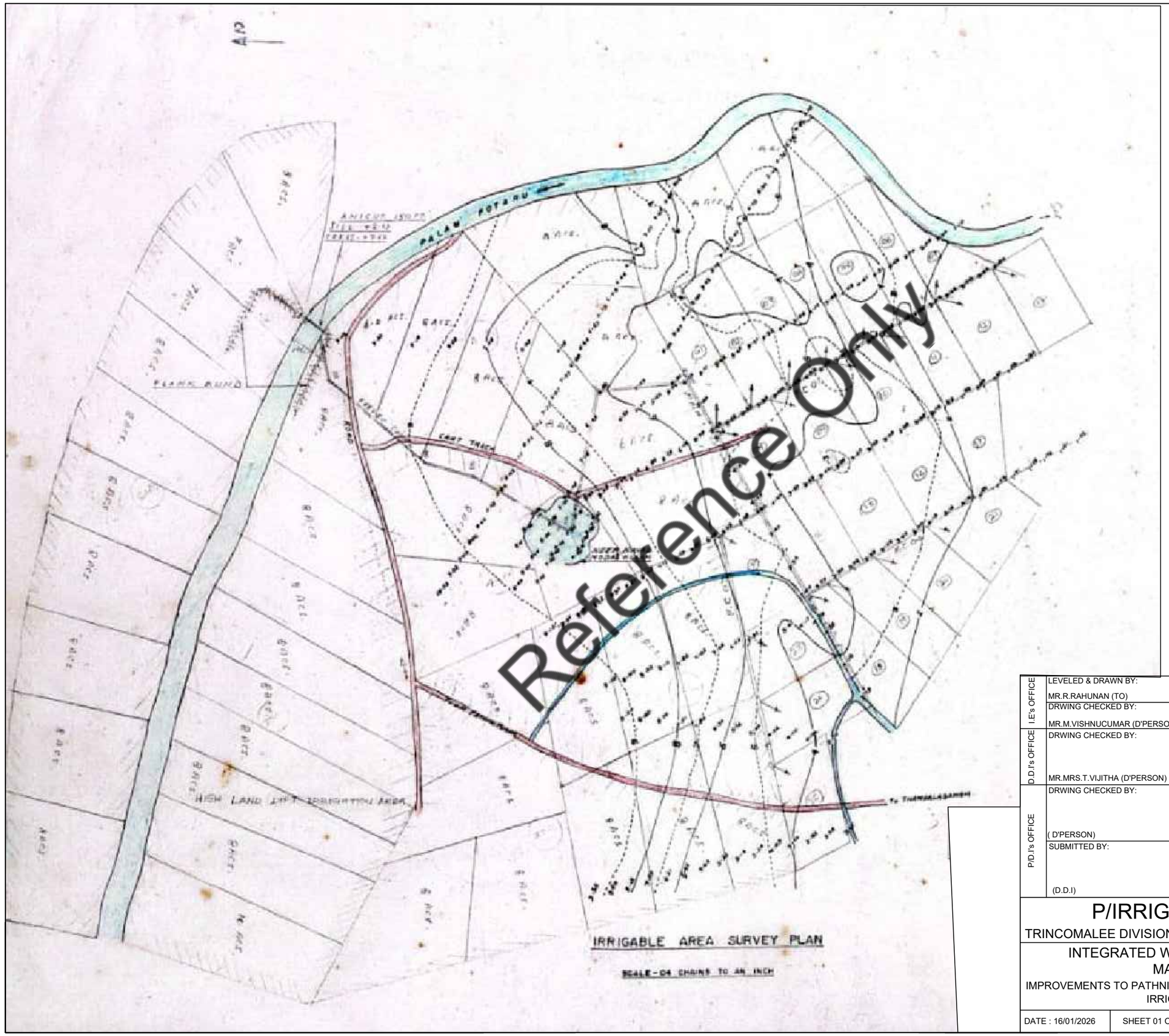
PAYMENT FOR ESHS REQUIREMENTS

The Employer's ESHS and procurement specialists should consider how the Contractor will cost the delivery of the ESHS requirements. In the majority of cases, the payment for the delivery of ESHS requirements shall be a subsidiary obligation of the Contractor covered under the prices quoted for other Bill of Quantity items. For example, normally the cost of implementing work place safe systems of work, including the majors necessary for ensuring traffic safety, shall be covered by the Bidder's rates for the relevant works. Alternatively, provisional sums could be set aside for discrete activities for example for HIV counselling service, and, GBV/SEA awareness and sensitization or to encourage the contractor to deliver additional ESHS outcomes beyond the requirement of the Contract.

Section - 10

Drawings

S.NO.	DESCRIPTION	DRAWING NO	NO OF SHEETS
01.	Improvements to Pathinipuram Anicut	IWWRMP/TRI/PATH/CN/001/2-1C	07
02.	Up Stream of Anicut from 0+-005m to 0+-050m	IWWRMP/TRI/PATH/CN/002/2-1C	01
03.	L.S of Feeder canal from 0+000m to 0+525m	IWWRMP/TRI/PATH/CN/003/2-1C	01
04.	Lined canal from 0+000m to 0+150m	IWWRMP/TRI/PATH/CN/004/2-1C	01
05.	L.S & C.S.S of farm road from 0+000m to 0+500m	IWWRMP/TRI/PATH/CN/005/2-1C	07
06.	Construction of 2/600mm Dia x 6.0m long RCC Culvert at 0+339m	IWWRMP/TRI/PATH/CN/006/2-1C	01
07.	Construction of 1/450mm Dia x 6.0m long RCC Culvert cum Sluice at 0+422m	IWWRMP/TRI/PATH/CN/007/2-1C	01
08.	Construction of 1/600mm Dia x 6.0m long RCC Culvert cum Sluice at 0+683m	IWWRMP/TRI/PATH/CN/008/2-1C	01



I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO)	DESIGNED BY:	SUBMITTED BY:
	DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)	ENG.S.HARIPRASHATH (I.E)	ENG.S.HARIPRASHATH (I.E)
D.D.I's OFFICE	DRWING CHECKED BY: MR.MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

P/IRRIGATION DEPARTMENT

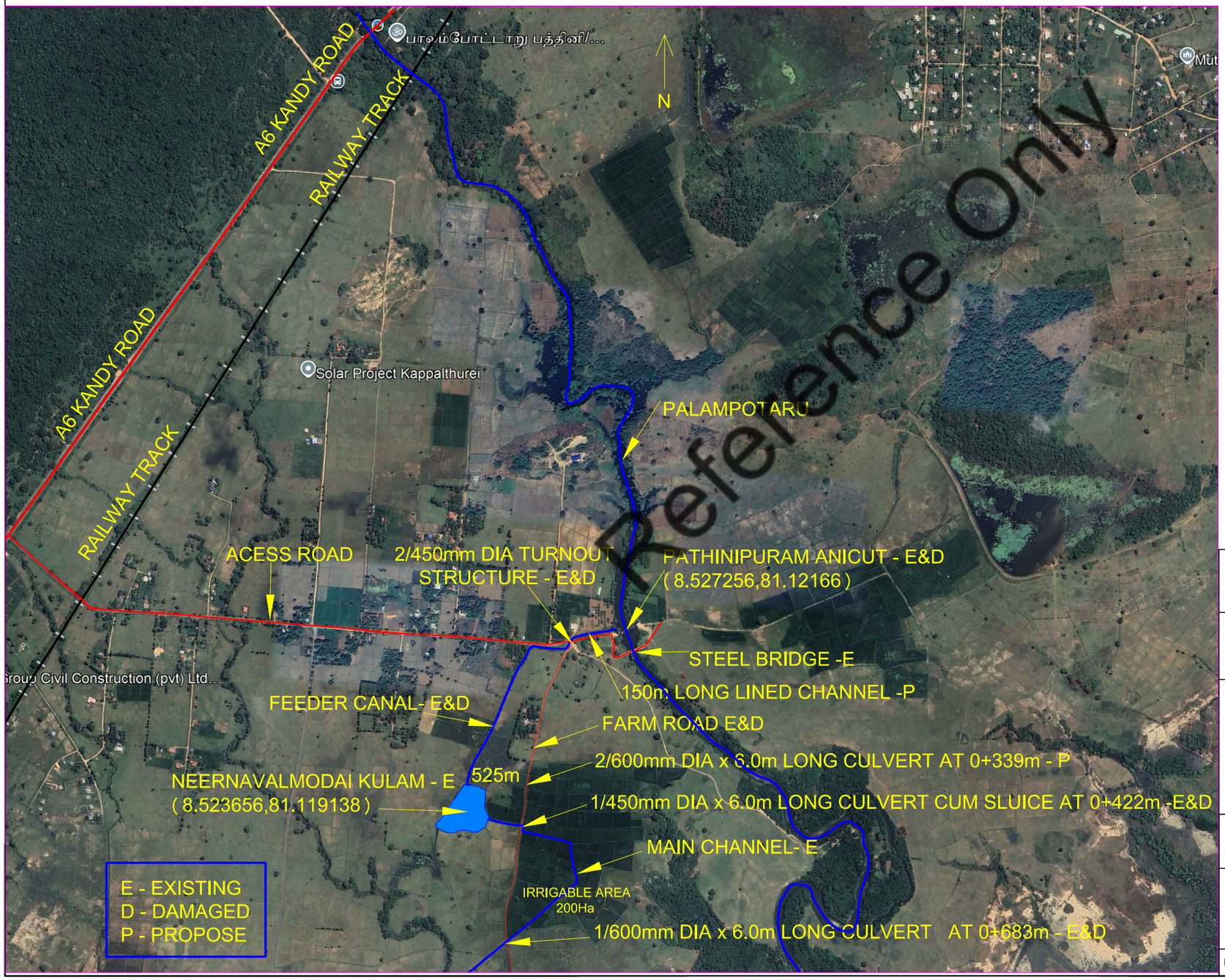
TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

IRRIGABLE AREA SURVEY PLAN

DATE : 16/01/2026	SHEET 01 OF 01	DWG. NO :- IWWRMP / TRI /PATH/ CN / 001 / 2 -1C



I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO)	DESIGNED BY: ENG.S.HARIPRASHATH (I.E)	SUBMITTED BY: ENG.S.HARIPRASHATH (I.E)
	DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)		
D.D.I's OFFICE	DRWING CHECKED BY: MR.MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

P/IRRIGATION DEPARTMENT

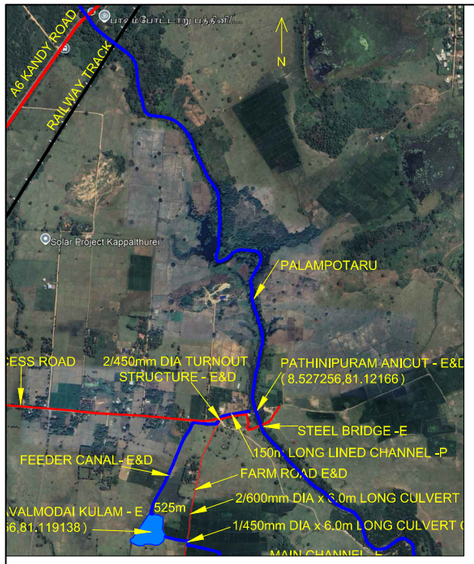
TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

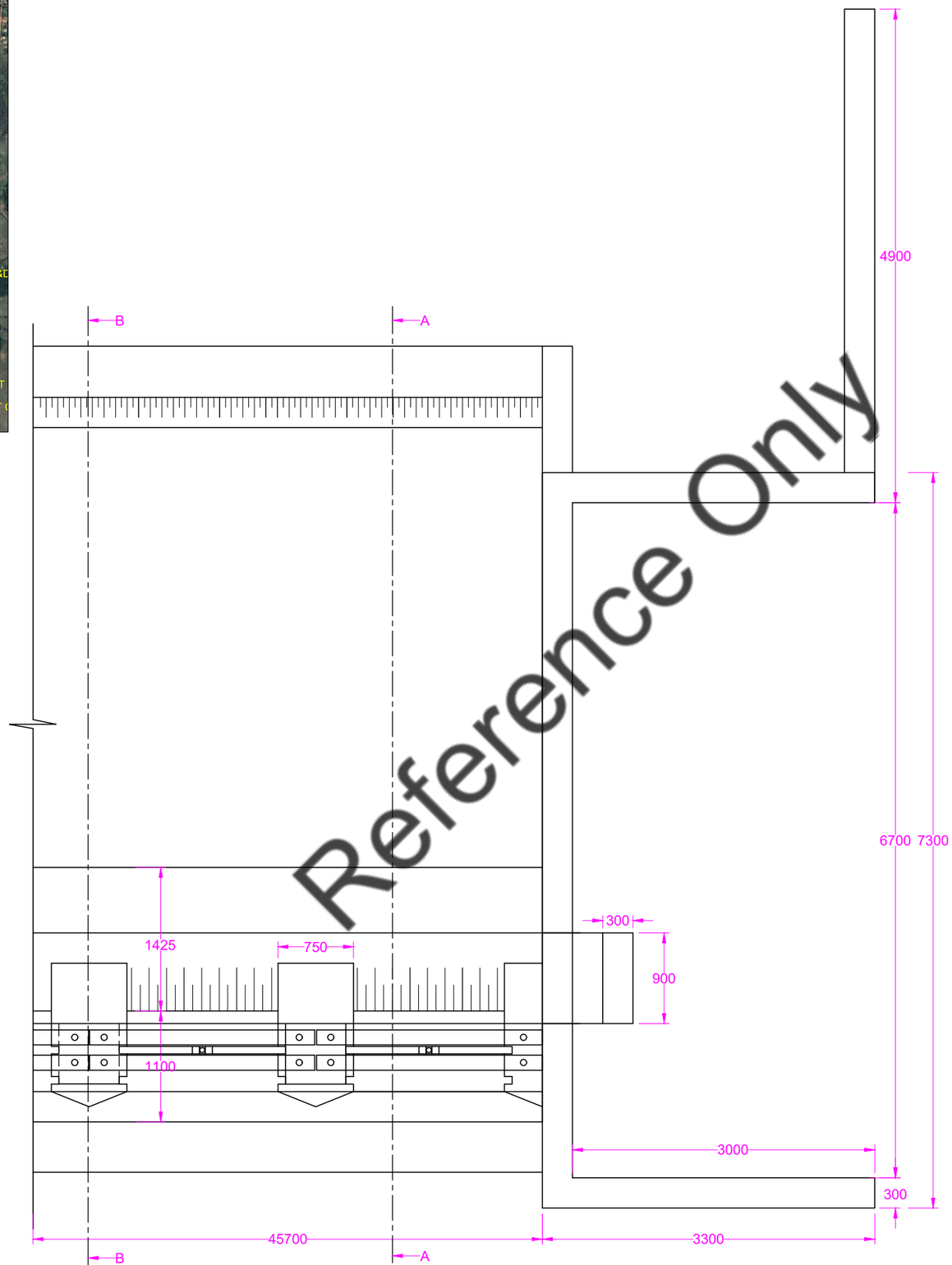
LAYOUT PLAN

DATE : 16/01/2026	SHEET 01 OF 01	DWG. NO :- IWWRMP / TRI /PATH/ CN / 001 / 2 -1C



LAYOUT PLAN

SCALE :- 1:20000



PLAN

SCALE - 1:50

DATA

CO-ORDINATE	-	Lat - 8.527256,Lon - 81.12166	
COMMAND AREA	-	200Ha	
ANICUT		EXISTING	ROPOSAL
LENGTH	-	45.73m	45.73m
NO OF GATES	-	20 Nos	20Nos
SIZE OF GATE	-	1.70m X 1.50m	1.70m X 1.50m
CREST LEVEL	-	0.60m M.S.L	0.90m M.S.L
F.S.L	-	2.10m M.S.L	2.40m M.S.L
SLUICE AT ANICUT			
LOCATION	-	0+100m	0+100m
TYPE	-	Head Wall	Head Wall
SIZE OPENING	-	2/450mm Dia	2/450mm Dia
SILL LEVEL	-	1.47m M.S.L	1.47m M.S.L
FEDER CANAL			
LENGTH	-	525m	525m

I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO) DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)	DESIGNED BY: ENG.S.HARIPRASHATH (I.E)	SUBMITTED BY: ENG.S.HARIPRASHATH (I.E)
D.D.I's OFFICE	DRWING CHECKED BY: MR.MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

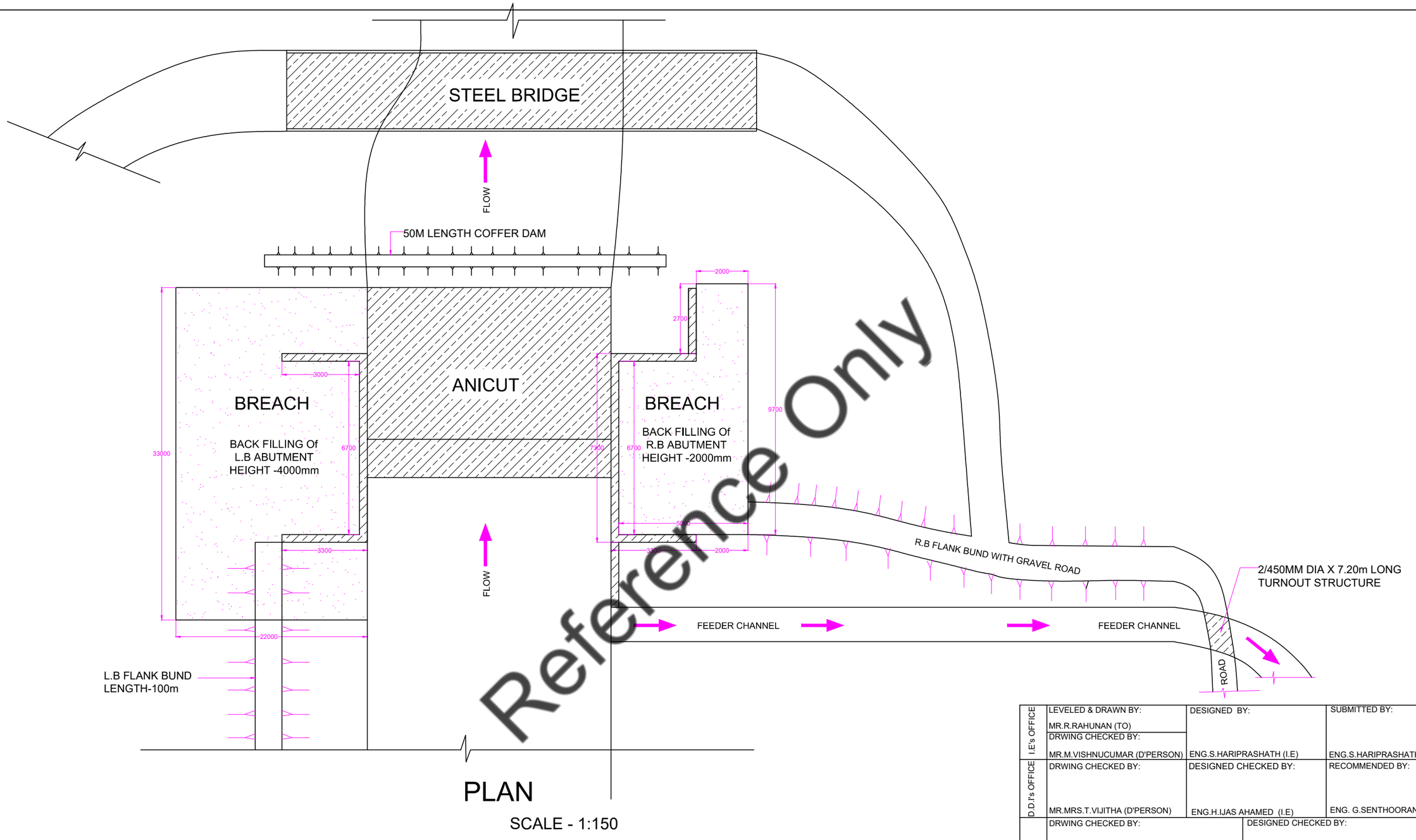
P/IRRIGATION DEPARTMENT

TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

DATE : 16/01/2026	SHEET 01 OF 07	DWG. NO :- IWWRMP / TRI /PATH/ CN / 001 / 2 -1C



PLAN

SCALE - 1:150

I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO)	DESIGNED BY:	SUBMITTED BY:
	DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)	ENG.S.HARIPRASHATH (I.E)	ENG.S.HARIPRASHATH (I.E)
D.D.I's OFFICE	DRWING CHECKED BY: MR.MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASIGAM (P/D.I,EASTERN PROVINCE)	

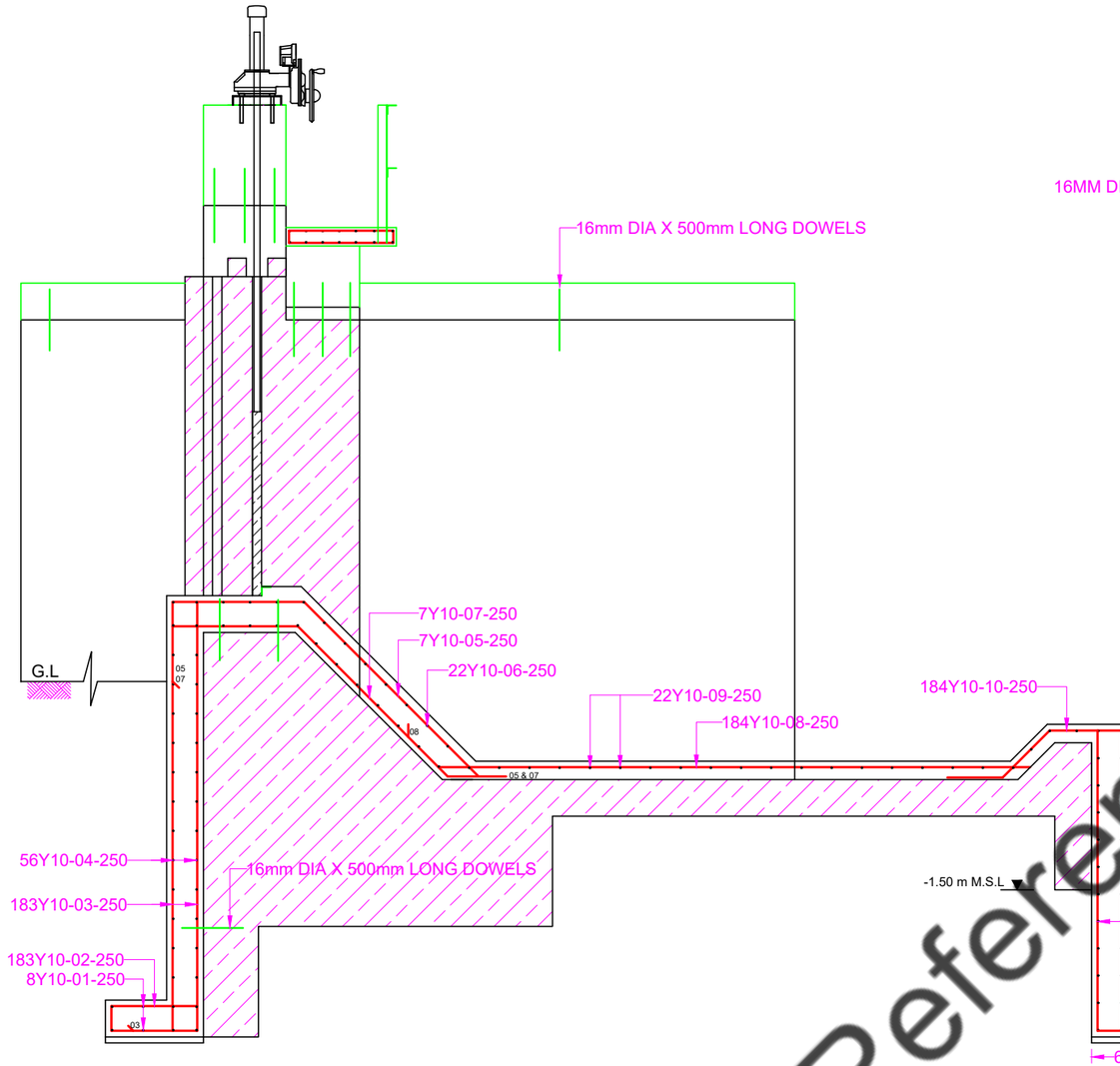
P/IRRIGATION DEPARTMENT

TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION
LAYOUT PLAN

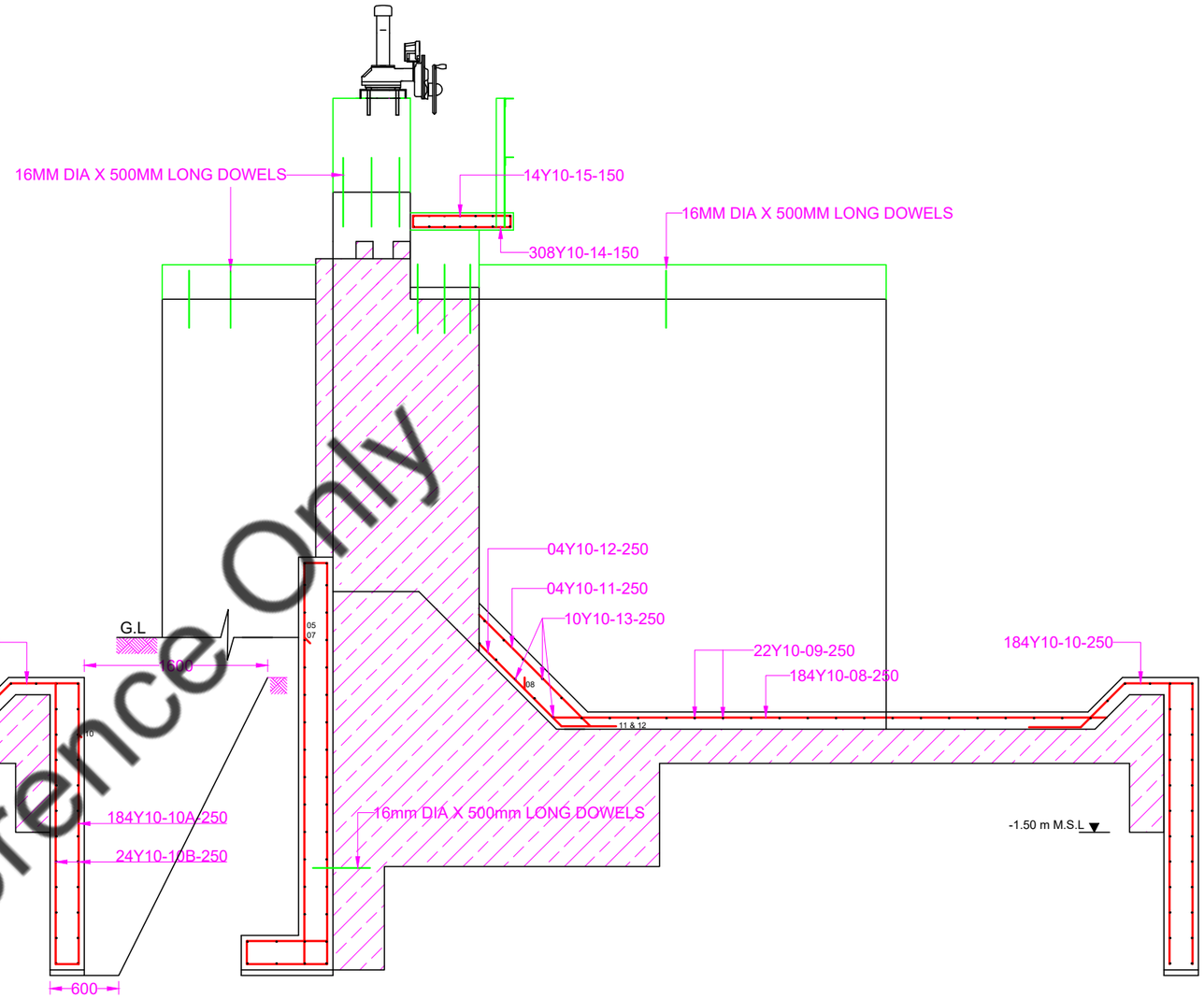
DATE : 16/01/2026	SHEET 04 OF 07	DWG. NO :- IWWRMP / TRI /PATH/ CN / 001 / 2 -1C



SECTION - A.A

DETAILS OF REINFORCEMENTS

SCALE - 1:50



SECTION - B.B

DETAILS OF REINFORCEMENTS

SCALE - 1:50

I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO)	DESIGNED BY:	SUBMITTED BY:
	DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)	ENG.S.HARIPRASHATH (I.E)	ENG.S.HARIPRASHATH (I.E)
D.D.I's OFFICE	DRWING CHECKED BY: MR.MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

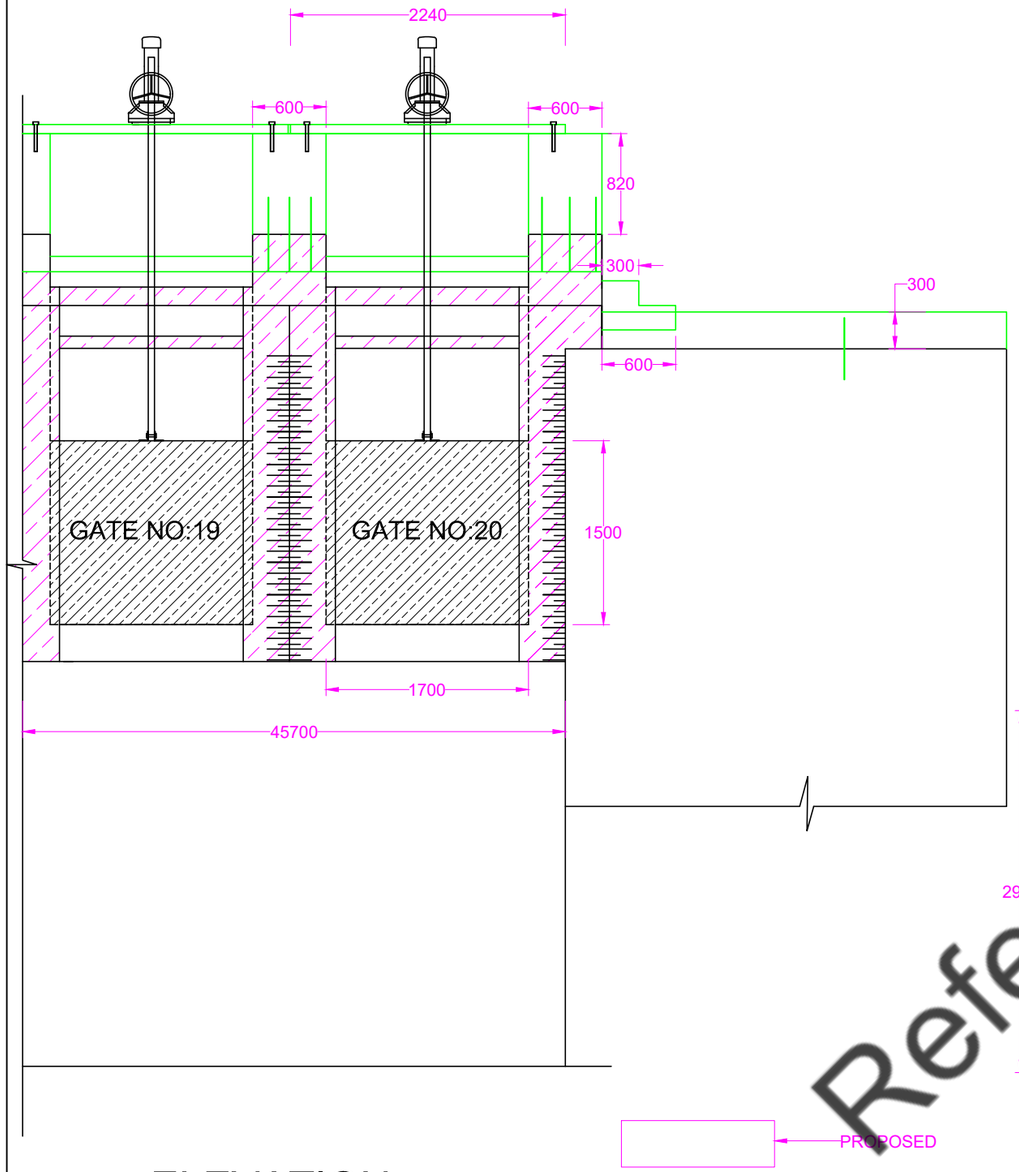
P/IRRIGATION DEPARTMENT

TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

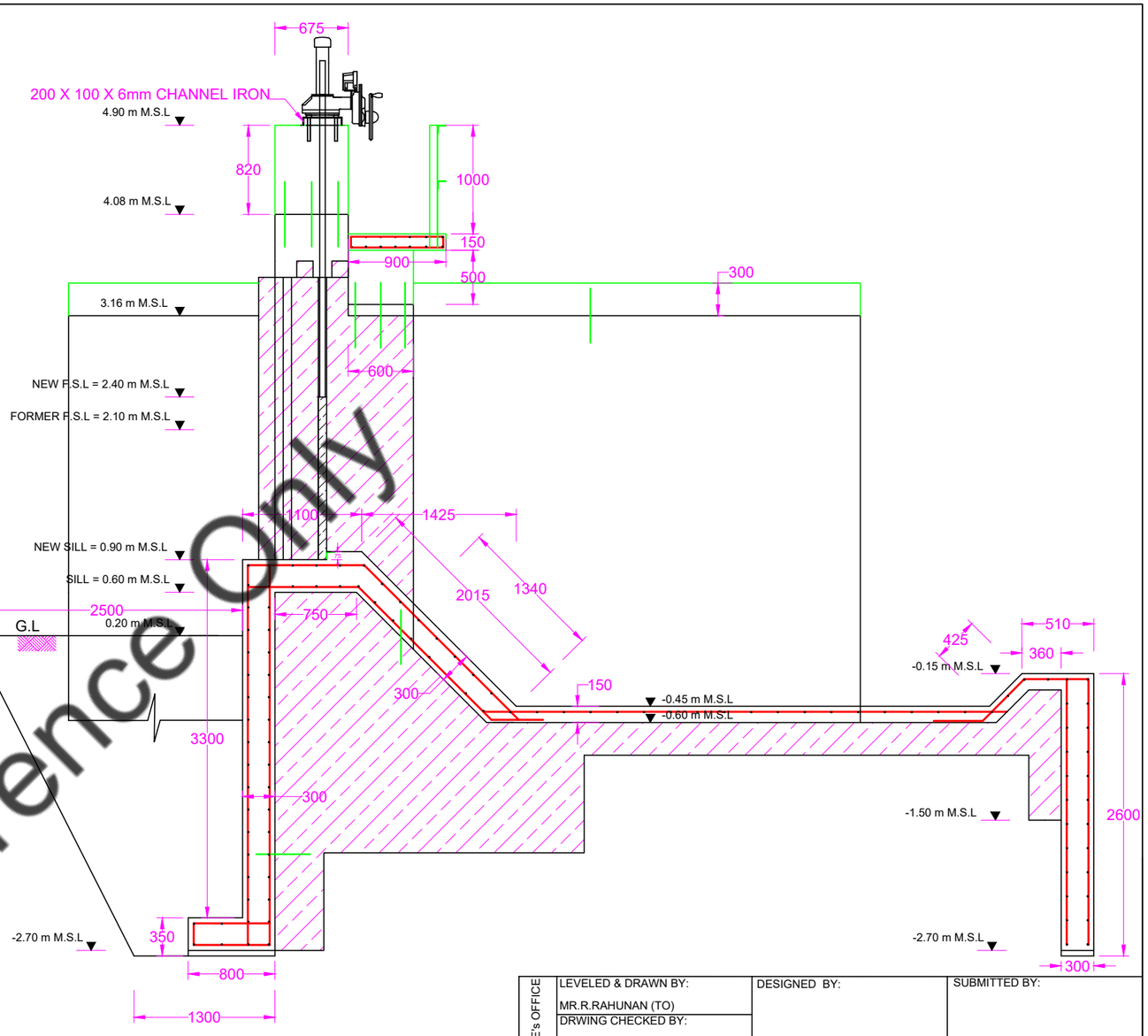
IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

DATE : 16/01/2026	SHEET 03 OF 07	DWG. NO :- IWWRMP / TRI /PATH/ CN / 001 / 2 -1C



ELEVATION

SCALE - 1:50



SECTION - A.A

PROPOSED

EXISTING STRUCTURE

I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO)	DESIGNED BY:	SUBMITTED BY:
	DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)	ENG.S.HARIPRASHATH (I.E)	ENG.S.HARIPRASHATH (I.E)
D.D.I's OFFICE	DRWING CHECKED BY: MR.MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

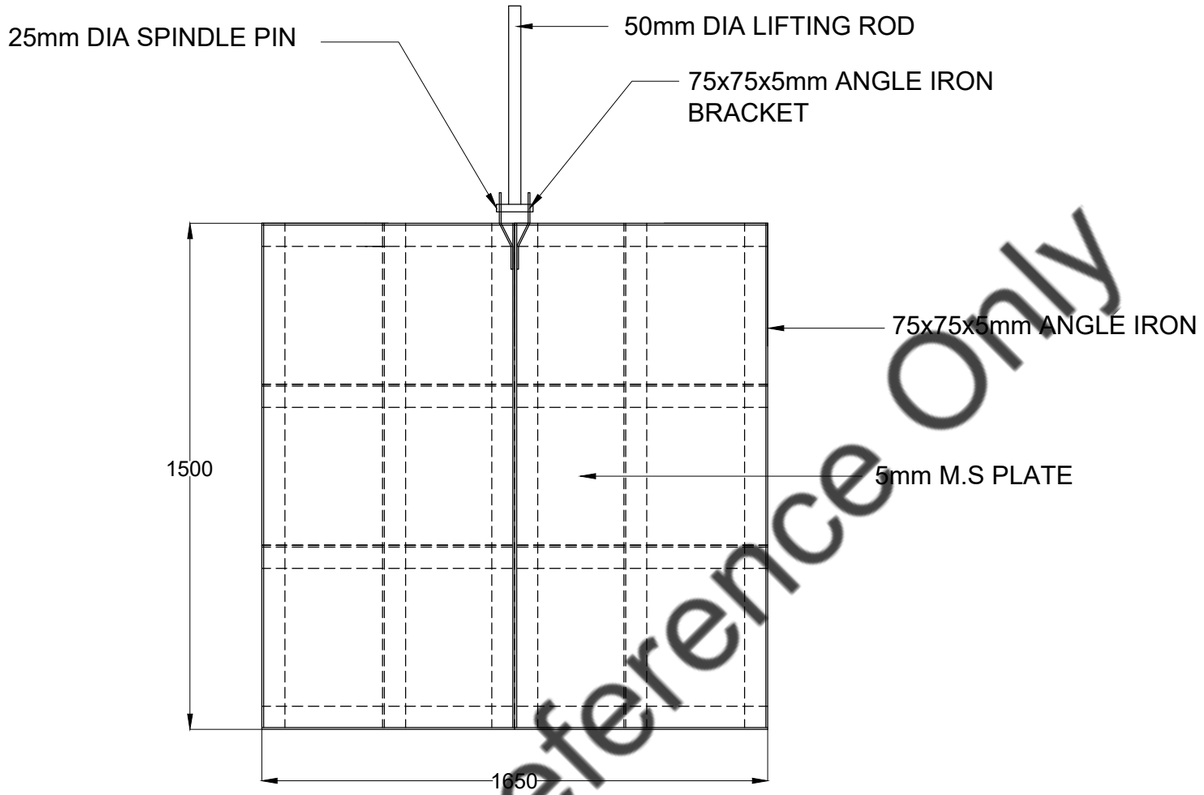
P/IRRIGATION DEPARTMENT

TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

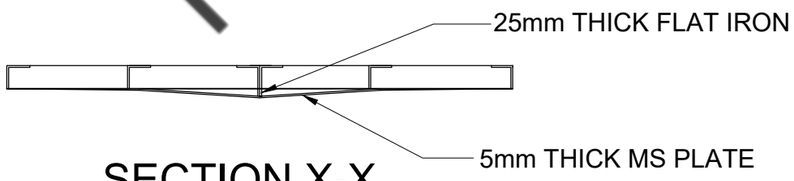
INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

DATE : 16/01/2026	SHEET 02 OF 07	DWG. NO :- IWWRMP / TRI /PATH/ CN / 001 / 2 -1C



ELEVATION



SECTION X-X

STEEL GATE FOR ANICUT

SCALE - 1:20

I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO)	DESIGNED BY:	SUBMITTED BY:
	DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)	ENG.S.HARIPRASHATH (I.E)	ENG.S.HARIPRASHATH (I.E)
D.D.I's OFFICE	DRWING CHECKED BY: MR.MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

P/IRRIGATION DEPARTMENT

TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

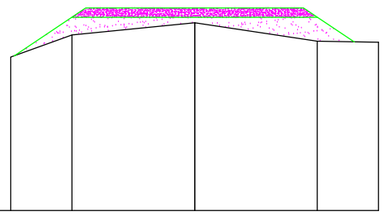
INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

1650MM X 1500MM STEEL GATE

DATE : 16/01/2026	SHEET 05 OF 07	DWG. NO :- IWWRMP / TRI /PATH/ CN / 001 / 2 -1C

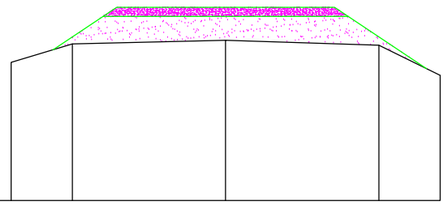
FILLING - 1.11 m^2



Datum 0.00 MSL						
Design Levels			3.15			
Existing Levels	2.50	2.86	3.06	2.76	2.74	
Distance in m	-3.00	-2.00	0.00	2.00	3.00	

CS at 250.00 m

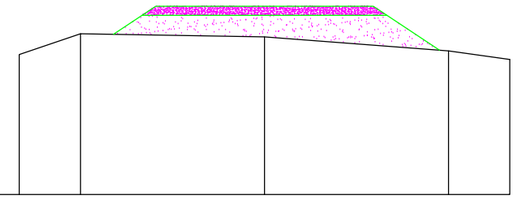
FILLING - 2.03 m^2



Datum 0.00 MSL						
Design Levels			3.00			
Existing Levels	2.25	2.55	2.61	2.53	2.04	
Distance in m	-3.50	-2.50	0.00	2.50	3.50	

CS at 325.00 m

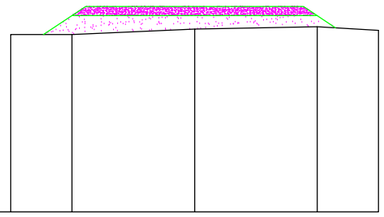
FILLING - 1.80 m^2



Datum 0.00 MSL						
Design Levels			2.92			
Existing Levels	2.28	2.62	2.57	2.34	2.20	
Distance in m	-4.00	-3.00	0.00	3.00	4.00	

CS at 375.00 m

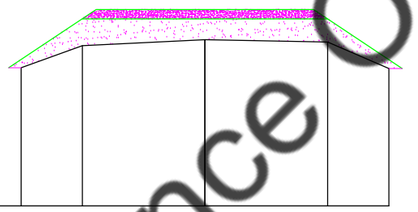
FILLING - 1.03 m^2



Datum 0.00 MSL						
Design Levels			3.20			
Existing Levels	2.89	2.89	2.98	3.02	2.96	
Distance in m	-3.00	-2.00	0.00	2.00	3.00	

CS at 225.00 m

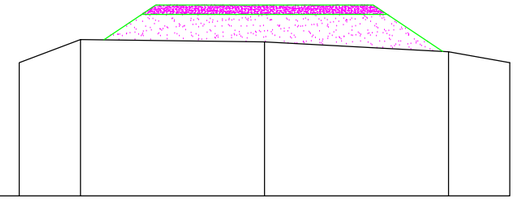
FILLING - 2.08 m^2



Datum 0.00 MSL						
Design Levels			3.05			
Existing Levels	2.25	2.61	2.71	2.67	2.24	
Distance in m	-3.00	-2.00	0.00	2.00	3.00	

CS at 300.00 m

FILLING - 2.26 m^2



Datum 0.00 MSL						
Design Levels			2.96			
Existing Levels	2.17	2.55	2.51	2.35	2.17	
Distance in m	-4.00	-3.00	0.00	3.00	4.00	

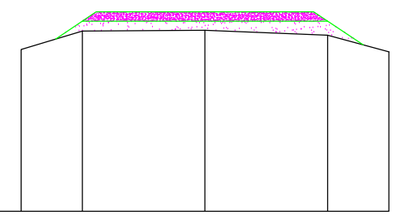
CS at 350.00 m

FILLING - 2.40 m^2

Datum 0.00 MSL						
Design Levels			3.24			
Existing Levels	2.82	2.76	2.74	2.70	2.70	
Distance in m	-3.00	-2.00	0.00	2.00	3.00	

CS at 200.00 m

FILLING - 0.79 m^2



Datum 0.00 MSL						
Design Levels			3.10			
Existing Levels	2.64	2.94	2.95	2.87	2.60	
Distance in m	-3.00	-2.00	0.00	2.00	3.00	

CS at 275.00 m

I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO)	DESIGNED BY:	SUBMITTED BY:
	DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)	ENG.S.HARIPRASHATH (I.E)	ENG.S.HARIPRASHATH (I.E)
D.D.I's OFFICE	DRWING CHECKED BY: MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

P/IRRIGATION DEPARTMENT

TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

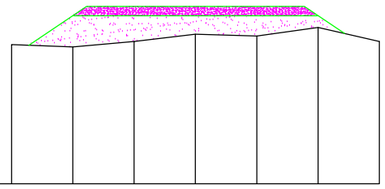
INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

CSS OF FARM ROAD FROM 0+200m TO 0+375m

DATE : 16/01/2026	SHEET 04 OF 07	DWG. NO :- IWWRMP / TRI /PATH/ CN / 005 / 2 -1C

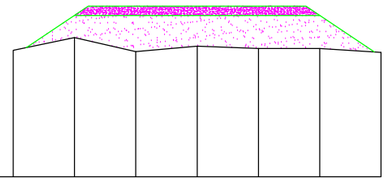
FILLING - 1.62 m^2



Datum 0.00 MSL							
Design Levels			2.77				
Existing Levels	2.27	2.23	2.32	2.44	2.41	2.55	2.32
Distance in m	-3.00	-2.00	-1.00	0.00	1.00	2.00	3.00

CS at 450.00 m

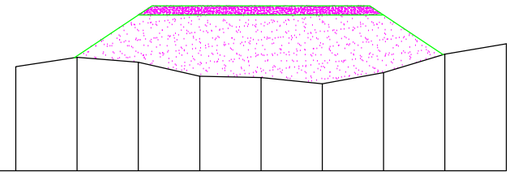
FILLING - 2.46 m^2



Datum 0.00 MSL							
Design Levels			2.63				
Existing Levels	2.06	2.27	2.04	2.13	2.09	2.09	2.03
Distance in m	-3.00	-2.00	-1.00	0.00	1.00	2.00	3.00

CS at 525.00 m

FILLING - 4.85 m^2



Datum 0.00 MSL									
Design Levels				2.54					
Existing Levels	1.70	1.85	1.77	1.54	1.52	1.42	1.60	1.90	2.07
Distance in m	-4.00	-3.00	-2.00	-1.00	0.00	1.00	2.00	3.00	4.00

CS at 575.00 m

FILLING - 1.94 m^2

Datum 0.00 MSL							
Design Levels			2.82				
Existing Levels	2.11	2.44	2.41			2.34	2.24
Distance in m	-4.00	-3.00	0.00			3.00	4.00

CS at 425.00 m

FILLING - 1.91 m^2

Datum 0.00 MSL										
Design Levels						2.68				
Existing Levels	2.14	2.57	2.48	2.14	2.09	2.20	2.38	2.48	2.50	2.27
Distance in m	-5.00	-4.00	-3.00	-2.00	-1.00	0.00	1.00	2.00	3.00	4.00

CS at 500.00 m

FILLING - 3.91 m^2

Datum 0.00 MSL								
Design Levels				2.59				
Existing Levels	1.79	1.89	1.77	1.76	1.68	1.93	2.15	1.87
Distance in m	-3.00	-2.00	-1.00	0.00	1.00	2.00	3.00	4.00

CS at 550.00 m

FILLING - 2.12 m^2

Datum 0.00 MSL						
Design Levels			2.87			
Existing Levels	2.08	2.36	2.44		2.45	2.15
Distance in m	-3.50	-2.50	0.00		2.50	3.50

CS at 400.00 m

FILLING - 1.73 m^2

Datum 0.00 MSL								
Design Levels				2.73				
Existing Levels	2.13	2.56	2.36	2.32	2.22	2.34	2.43	2.34
Distance in m	-3.00	-2.00	-1.00	0.00	1.00	2.00	3.00	4.00

CS at 475.00 m

I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO)	DESIGNED BY:	SUBMITTED BY:
	DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)	ENG.S.HARIPRASHATH (I.E)	ENG.S.HARIPRASHATH (I.E)
D.D.I's OFFICE	DRWING CHECKED BY: MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

P/IRRIGATION DEPARTMENT

TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

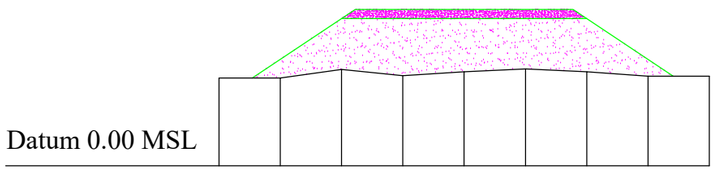
INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

CSS OF FARM ROAD FROM 0+400m TO 0+575m

DATE : 16/01/2026	SHEET 05 OF 07	DWG. NO :- IWWRMP / TRI /PATH/ CN / 005 / 2 -1C

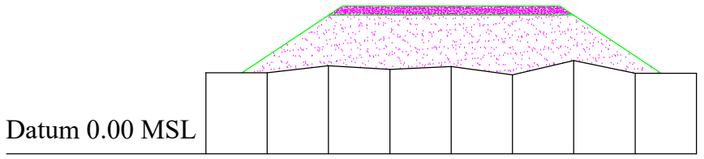
FILLING - 4.73 m^2



Datum 0.00 MSL									
Design Levels					2.40				
Existing Levels	1.43	1.43	1.57	1.47	1.53	1.58	1.53	1.46	1.46
Distance in m	-4.00	-3.00	-2.00	-1.00	0.00	1.00	2.00	3.00	4.00

CS at 650.00 m

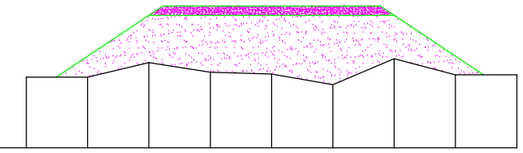
FILLING - 4.65 m^2



Datum 0.00 MSL									
Design Levels					2.26				
Existing Levels	1.32	1.44	1.38	1.42	1.29	1.52	1.31	1.31	
Distance in m	-3.00	-2.00	-1.00	0.00	1.00	2.00	3.00	4.00	

CS at 725.00 m

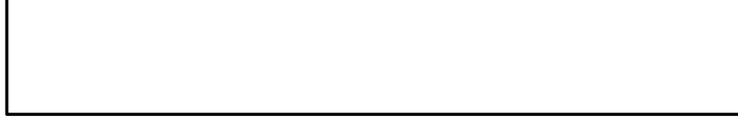
FILLING - 4.98 m^2



Datum 0.00 MSL									
Design Levels					2.16				
Existing Levels	1.15	1.15	1.39	1.23	1.20	1.03	1.45	1.19	1.19
Distance in m	-4.00	-3.00	-2.00	-1.00	0.00	1.00	2.00	3.00	4.00

CS at 775.00 m

FILLING - 4.86 m^2



Datum 0.00 MSL									
Design Levels					2.44				
Existing Levels	1.43	1.43	1.48	1.50	1.60	1.66	1.52	1.53	1.53
Distance in m	-4.00	-3.00	-2.00	-1.00	0.00	1.00	2.00	3.00	4.00

CS at 625.00 m

FILLING - 4.48 m^2

Datum 0.00 MSL									
Design Levels					2.30				
Existing Levels	1.36	1.56	1.75	1.43	1.22	1.21	1.56	1.46	1.46
Distance in m	-4.00	-3.00	-2.00	-1.00	0.00	1.00	2.00	3.00	4.00

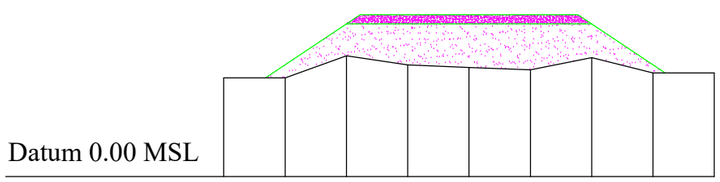
CS at 700.00 m

FILLING - 5.37 m^2

Datum 0.00 MSL									
Design Levels					2.21				
Existing Levels	1.17	1.17	1.37	1.15	1.23	1.17	1.43	1.09	1.09
Distance in m	-4.00	-3.00	-2.00	-1.00	0.00	1.00	2.00	3.00	4.00

CS at 750.00 m

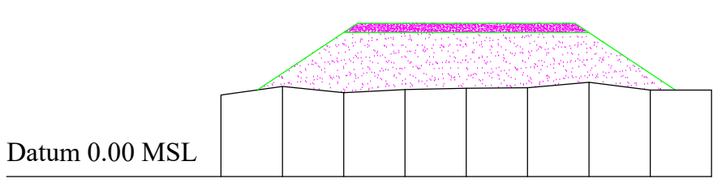
FILLING - 3.42 m^2



Datum 0.00 MSL									
Design Levels					2.49				
Existing Levels	1.61	1.61	1.97	1.82	1.78	1.74	1.94	1.69	1.69
Distance in m	-4.00	-3.00	-2.00	-1.00	0.00	1.00	2.00	3.00	4.00

CS at 600.00 m

FILLING - 4.87 m^2



Datum 0.00 MSL									
Design Levels					2.35				
Existing Levels	1.33	1.47	1.37	1.42	1.44	1.45	1.54	1.41	1.41
Distance in m	-4.00	-3.00	-2.00	-1.00	0.00	1.00	2.00	3.00	4.00

CS at 675.00 m

I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO)	DESIGNED BY:	SUBMITTED BY:
	DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)	ENG.S.HARIPRASHATH (I.E)	ENG.S.HARIPRASHATH (I.E)
D.D.I's OFFICE	DRWING CHECKED BY: MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

P/IRRIGATION DEPARTMENT

TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

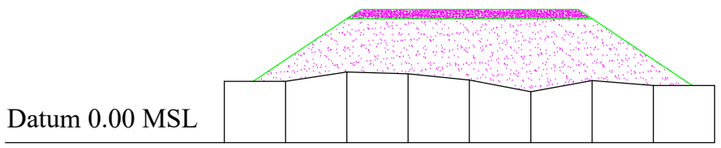
INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

CSS OF FARM ROAD FROM 0+600m TO 0+775m

DATE : 16/01/2026	SHEET 06 OF 07	DWG. NO :- IWWRMP / TRI /PATH/ CN / 005 / 2 -1C

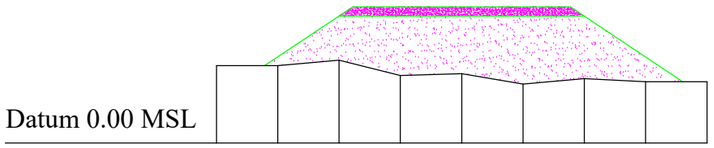
FILLING - 5.58 m^2



Design Levels					2.02				
Existing Levels	1.00	1.00	1.15	1.12	1.02	0.83	1.01	0.93	0.93
Distance in m	-4.00	-3.00	-2.00	-1.00	0.00	1.00	2.00	3.00	4.00

CS at 850.00 m

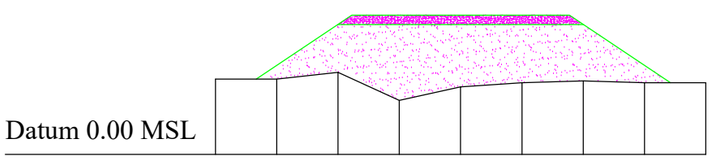
FILLING - 5.17 m^2



Design Levels					2.07				
Existing Levels	1.26	1.26	1.35	1.10	1.13	0.96	1.05	1.00	1.00
Distance in m	-4.00	-3.00	-2.00	-1.00	0.00	1.00	2.00	3.00	4.00

CS at 825.00 m

FILLING - 5.26 m^2



Design Levels					2.12				
Existing Levels	1.23	1.23	1.34	0.88	1.10	1.17	1.20	1.17	1.17
Distance in m	-4.00	-3.00	-2.00	-1.00	0.00	1.00	2.00	3.00	4.00

CS at 800.00 m

I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO)	DESIGNED BY:	SUBMITTED BY:
	DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)	ENG.S.HARIPRASHATH (I.E)	ENG.S.HARIPRASHATH (I.E)
D.D.I's OFFICE	DRWING CHECKED BY: MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

P/IRRIGATION DEPARTMENT

TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

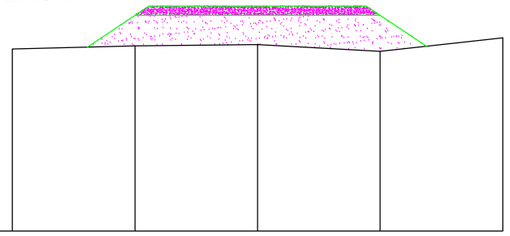
INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

CSS OF FARM ROAD FROM 0+800m TO 0+850m

DATE : 16/01/2026	SHEET 07 OF 07	DWG. NO :- IWWRMP / TRI /PATH/ CN / 005 / 2 -1C

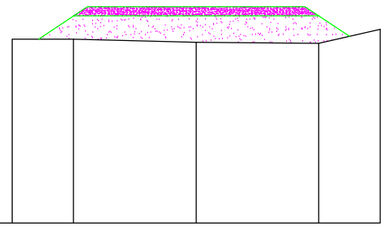
FILLING - 2.46 m^2



Datum 0.00 MSL					
Design Levels		3.52			
Existing Levels	2.97	3.02	3.04	2.93	3.15
Distance in m	-4.00	-2.00	0.00	2.00	4.00

CS at 50.00 m

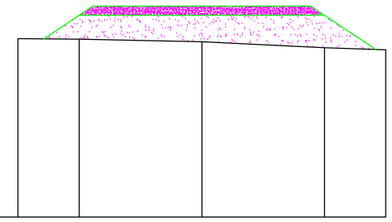
FILLING - 1.91 m^2



Datum 0.00 MSL					
Design Levels		3.38			
Existing Levels	3.00	3.00	2.95	2.93	3.16
Distance in m	-3.00	-2.00	0.00	2.00	3.00

CS at 125.00 m

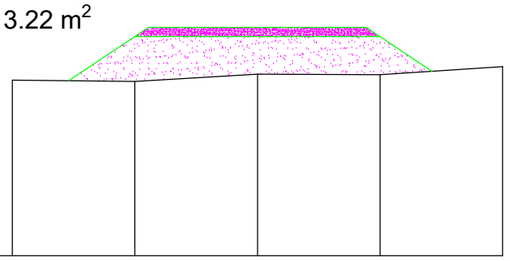
FILLING - 2.11 m^2



Datum 0.00 MSL					
Design Levels		3.29			
Existing Levels	2.91	2.90	2.86	2.76	2.73
Distance in m	-3.00	-2.00	0.00	2.00	3.00

CS at 175.00 m

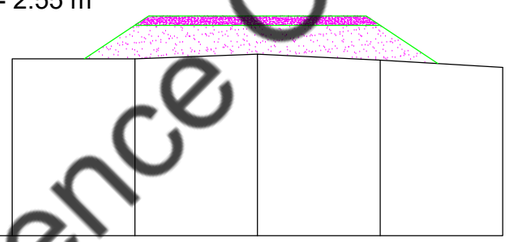
FILLING - 3.22 m^2



Datum 0.00 MSL					
Design Levels		3.57			
Existing Levels	2.86	2.84	2.96	2.95	3.08
Distance in m	-4.00	-2.00	0.00	2.00	4.00

CS at 25.00 m

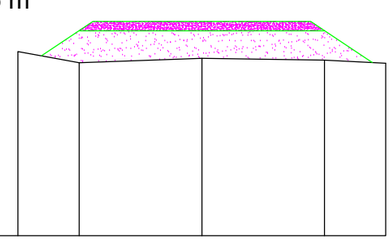
FILLING - 2.55 m^2



Datum 0.00 MSL					
Design Levels		3.43			
Existing Levels	2.88	2.88	2.96	2.86	2.74
Distance in m	-4.00	-2.00	0.00	2.00	4.00

CS at 100.00 m

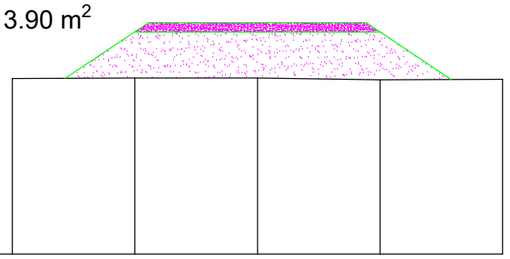
FILLING - 2.25 m^2



Datum 0.00 MSL					
Design Levels		3.34			
Existing Levels	3.00	2.82	2.89	2.86	2.81
Distance in m	-3.00	-2.00	0.00	2.00	3.00

CS at 150.00 m

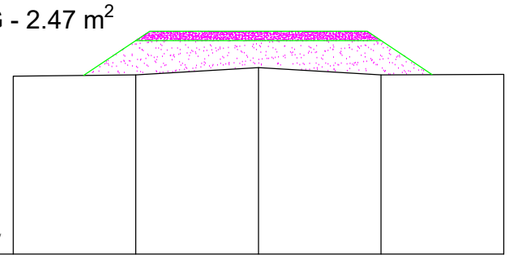
FILLING - 3.90 m^2



Datum 0.00 MSL					
Design Levels		3.62			
Existing Levels	2.86	2.87	2.87	2.84	2.85
Distance in m	-4.00	-2.00	0.00	2.00	4.00

CS at 0.00 m

FILLING - 2.47 m^2



Datum 0.00 MSL					
Design Levels		3.48			
Existing Levels	2.90	2.92	3.04	2.92	2.93
Distance in m	-4.00	-2.00	0.00	2.00	4.00

CS at 75.00 m

I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO)	DESIGNED BY:	SUBMITTED BY:
	DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)	ENG.S.HARIPRASHATH (I.E)	ENG.S.HARIPRASHATH (I.E)
D.D.I's OFFICE	DRWING CHECKED BY: MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

P/IRRIGATION DEPARTMENT

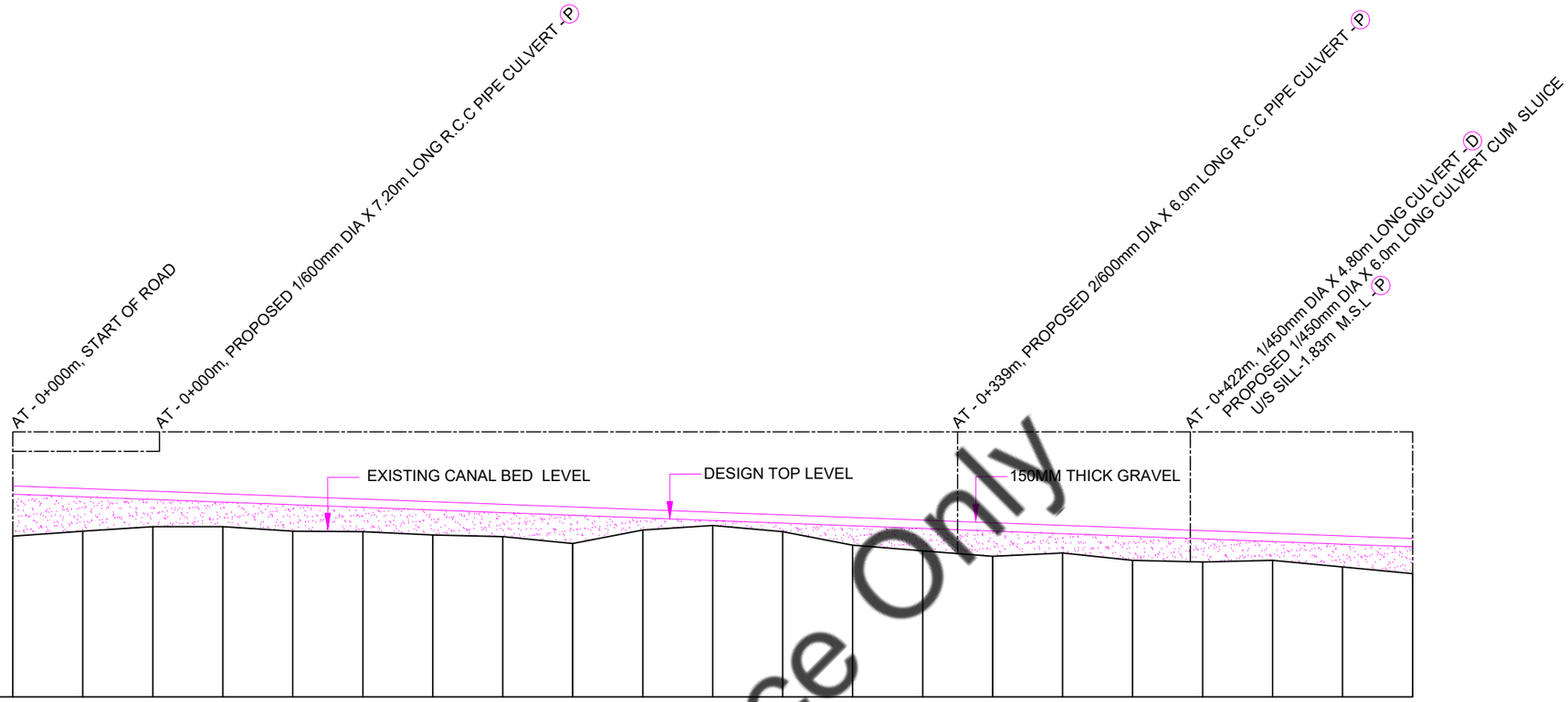
TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

CSS OF FARM ROAD FROM 0+000m TO 0+175m

DATE : 16/01/2026	SHEET 03 OF 07	DWG. NO :- IWWRMP / TRI /PATH/ CN / 005 / 2 -1C

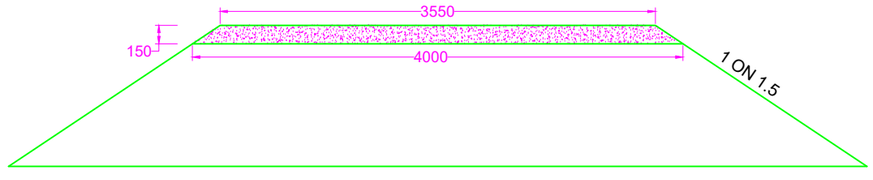


Datum 0.00 MSL																					
Height of Filling	0.75	0.61	0.48	0.44	0.47	0.43	0.45	0.43	0.50	0.22	0.09	0.15	0.34	0.39	0.45	0.35	0.43	0.41	0.33	0.41	0.48
Design Top Levels	3.62	3.57	3.52	3.48	3.43	3.38	3.34	3.29	3.24	3.20	3.15	3.10	3.05	3.00	2.96	2.92	2.87	2.82	2.77	2.73	2.68
Existing Levels	2.87	2.96	3.04	3.04	2.96	2.95	2.89	2.86	2.74	2.98	3.06	2.95	2.71	2.61	2.51	2.57	2.44	2.41	2.44	2.32	2.20
Distance in m	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500

L.S OF FARM ROAD FROM 0+000M TO 0+500M

SCALE :- HORIZONTAL -1:2000
VERTICAL -1:100

Ⓔ - EXISTING STRUCTURE
Ⓓ - DAMAGED STRUCTURE
Ⓟ - PROPOSED



TYPICAL SECTION FROM 0+000m TO 0+850m

I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO)	DESIGNED BY: ENG.S.HARIPRASHATH (I.E)	SUBMITTED BY: ENG.S.HARIPRASHATH (I.E)
	DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)		
D.D.I's OFFICE	DRWING CHECKED BY: MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

P/IRRIGATION DEPARTMENT

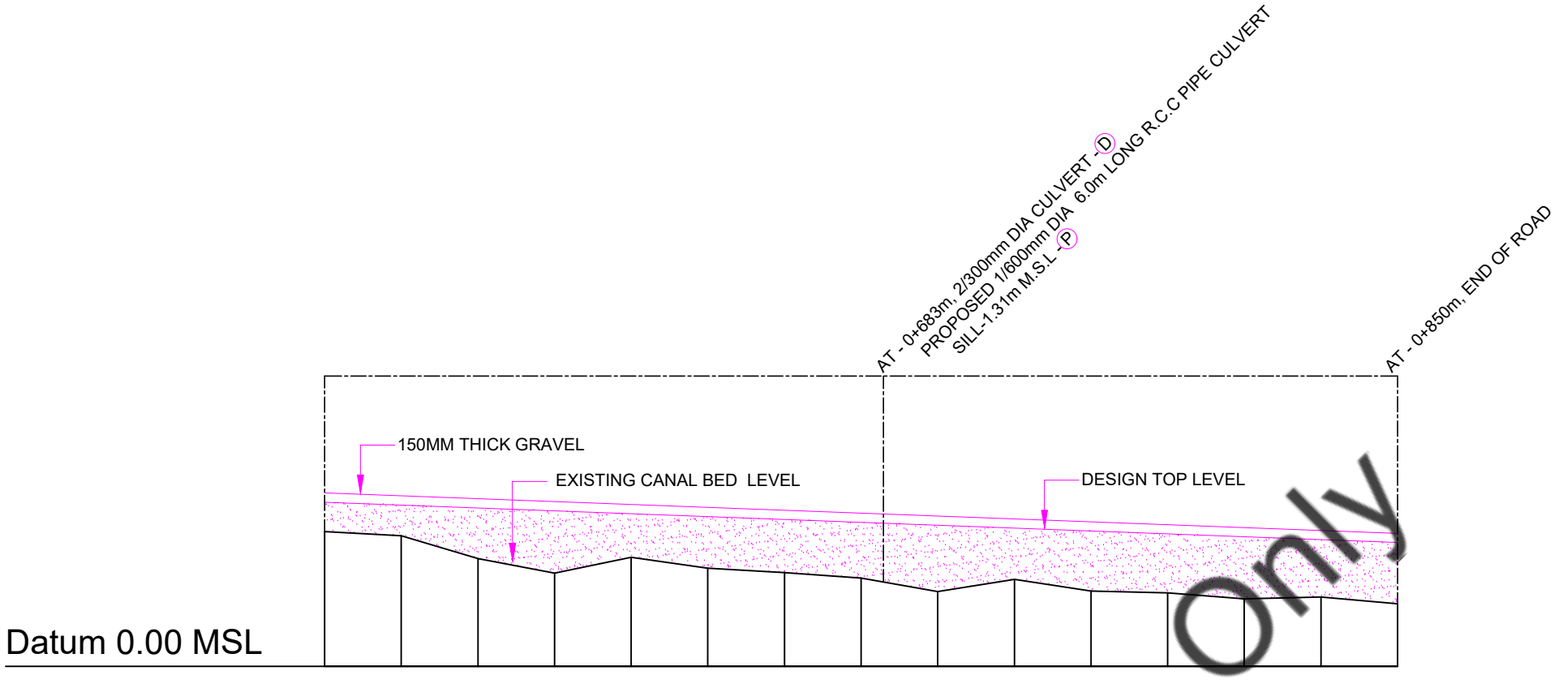
TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

L.S OF FARM ROAD FROM 0+ 000m TO 0+500m

DATE : 16/01/2026	SHEET 01 OF 07	DWG. NO :- IWWRMP / TRI /PATH/ CN / 005 / 2 -1C

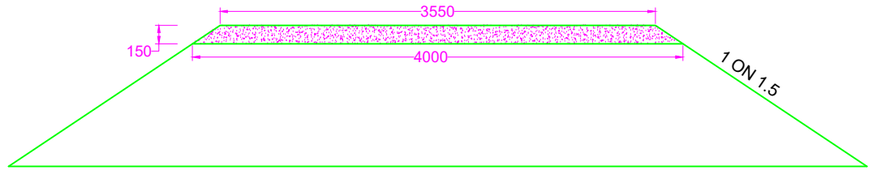


Height of Filling	0.48	0.50	0.83	1.02	0.71	0.84	0.87	0.91	1.08	0.84	0.98	0.96	1.02	0.94	1.00
Design Top Levels	2.68	2.63	2.59	2.54	2.49	2.44	2.40	2.35	2.30	2.26	2.21	2.16	2.12	2.07	2.02
Existing Levels	2.20	2.13	1.76	1.52	1.78	1.60	1.53	1.44	1.22	1.42	1.23	1.20	1.10	1.13	1.02
Distance in m	500	525	550	575	600	625	650	675	700	725	750	775	800	825	850

L.S OF FEEDER CANAL FROM 0+500M TO 0+850M

SCALE :- HORIZONTAL -1:2000
VERTICAL -1:100

Ⓔ - EXISTING STRUCTURE
Ⓓ - DAMAGED STRUCTURE
Ⓟ - PROPOSED



TYPICAL SECTION FROM 0+000m TO 0+850m

I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO)	DESIGNED BY:	SUBMITTED BY:
	DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)	ENG.S.HARIPRASHATH (I.E)	ENG.S.HARIPRASHATH (I.E)
D.D.I's OFFICE	DRWING CHECKED BY: MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

P/IRRIGATION DEPARTMENT

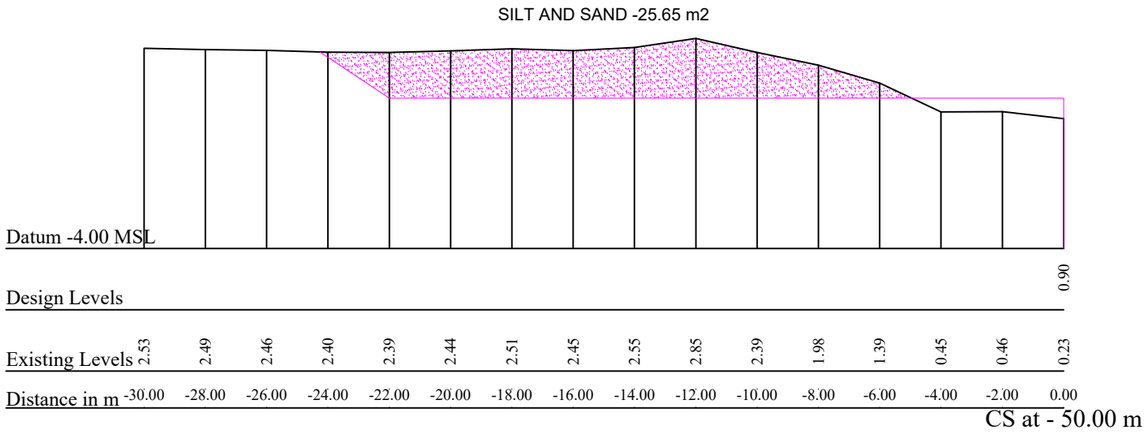
TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

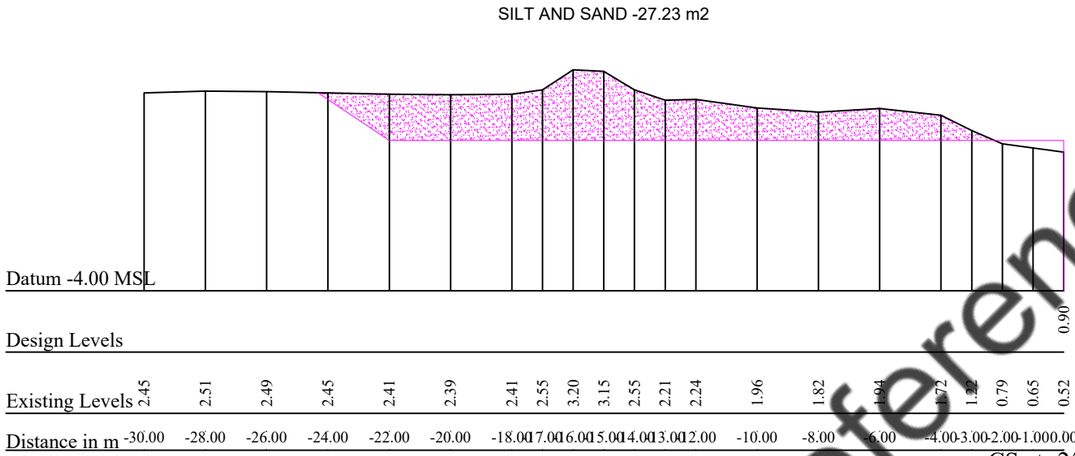
IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

L.S OF FARM ROAD FROM 0+ 500m TO 0+850m

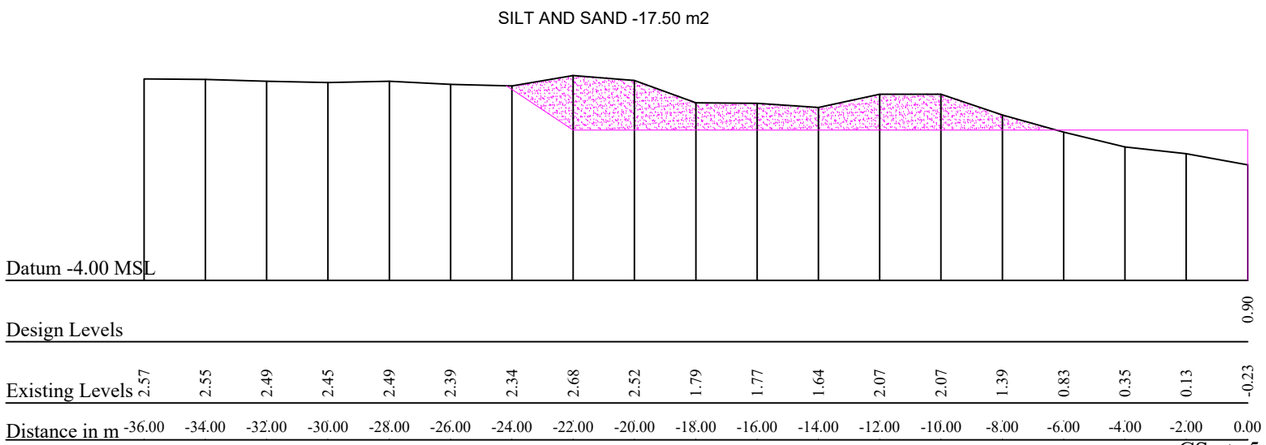
DATE : 16/01/2026	SHEET 02 OF 07	DWG. NO :- IWWRMP / TRI /PATH/ CN / 005 / 2 -1C



CS at - 50.00 m



CS at -25.00 m



CS at -5.00 m

SCALE - 1:100

I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO)	DESIGNED BY:	SUBMITTED BY:
	DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)	ENG.S.HARIPRASHATH (I.E)	ENG.S.HARIPRASHATH (I.E)
D.D.I's OFFICE	DRWING CHECKED BY: MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

P/IRRIGATION DEPARTMENT

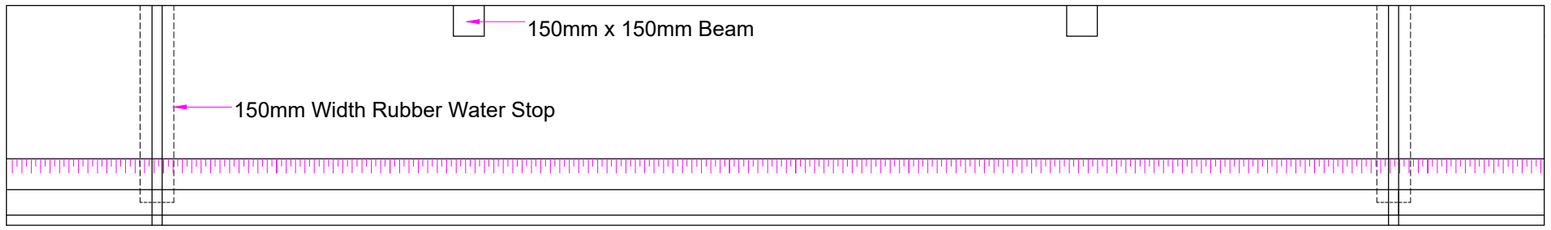
TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

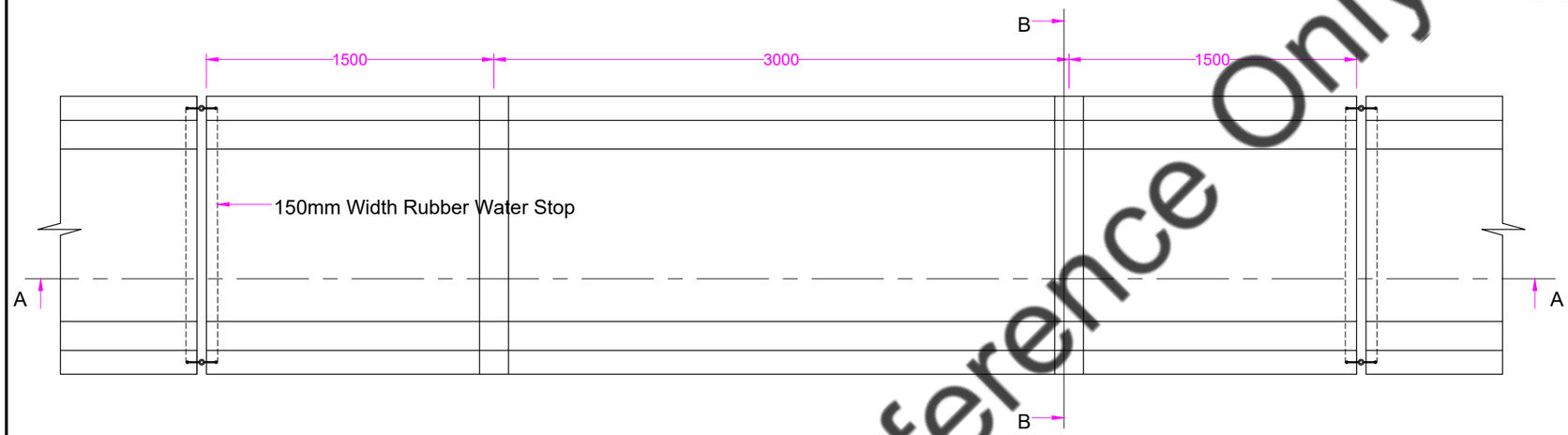
IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

UP STREAM OF ANICUT FROM 0+ -005m TO 0+ -050m

DATE : 16/01/2026	SHEET 06 OF 06	DWG. NO :- IWWRMP / TRI /PATH/ CN / 002 / 2 -1C

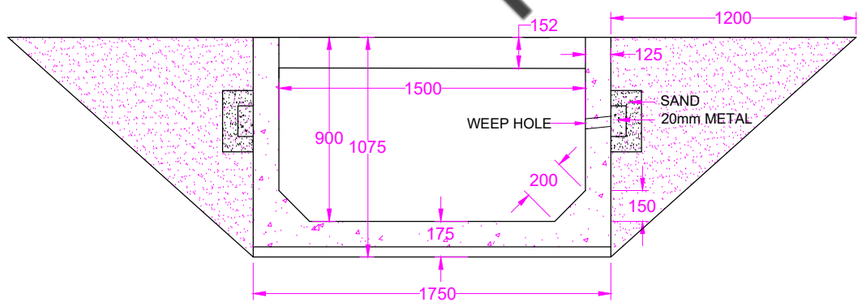


SECTION A-A

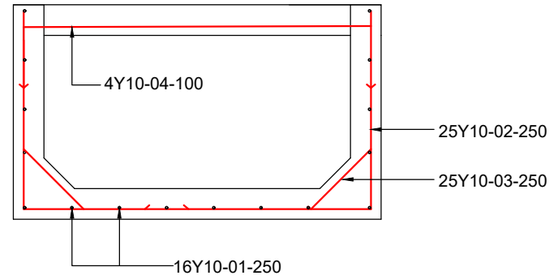


PLAN

SCALE - 1:30



SECTION B.B



DETAILS OF REINFORCEMENTS

I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO) DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)	DESIGNED BY: ENG.S.HARIPRASHATH (I.E)	SUBMITTED BY: ENG.S.HARIPRASHATH (I.E)
D.D.I's OFFICE	DRWING CHECKED BY: MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

P/IRRIGATION DEPARTMENT

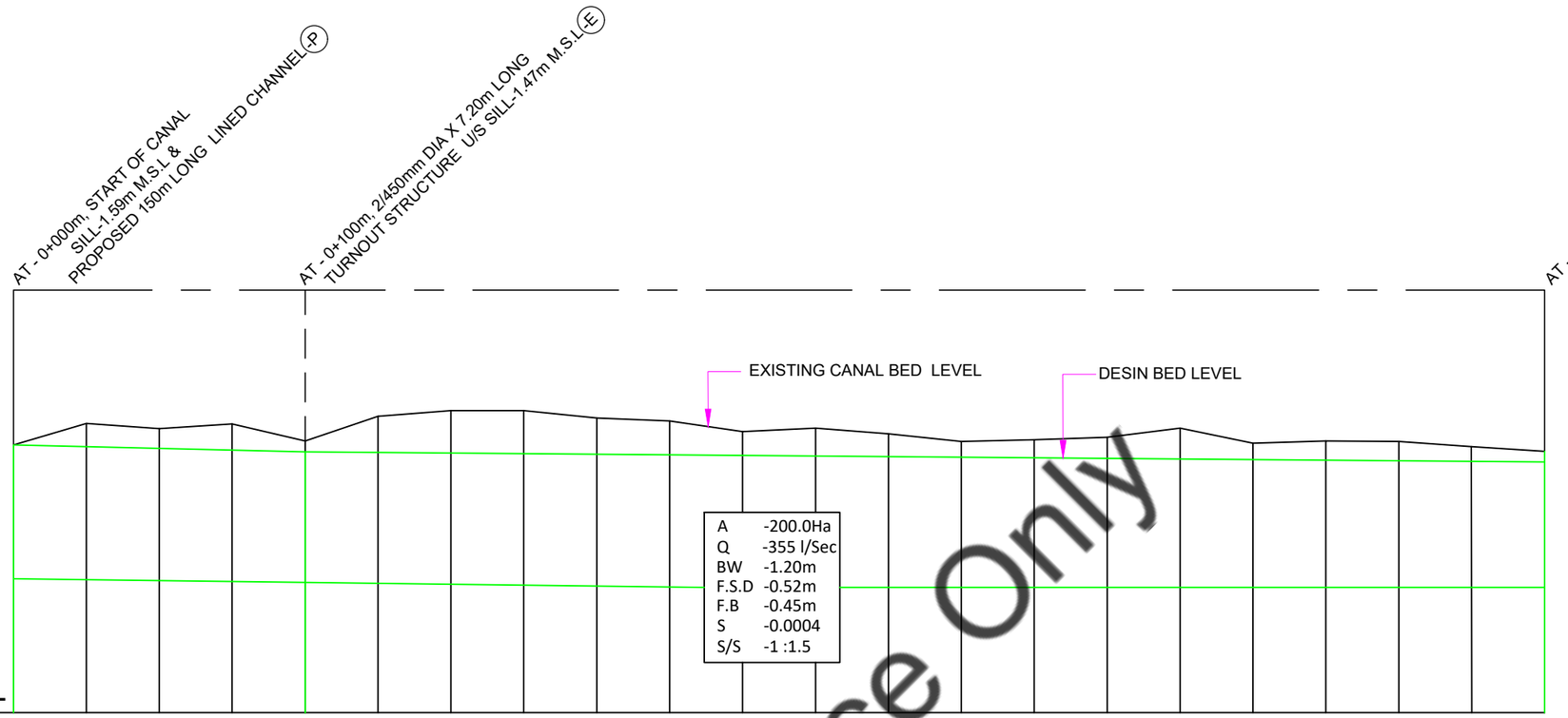
TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

LINED CANAL FROM 0+ 000m TO 0+150m

DATE : 16/01/2026	SHEET 02 OF 02	DWG. NO :- IWWRMP / TRI /PATH/ CN / 004 / 2 -1C



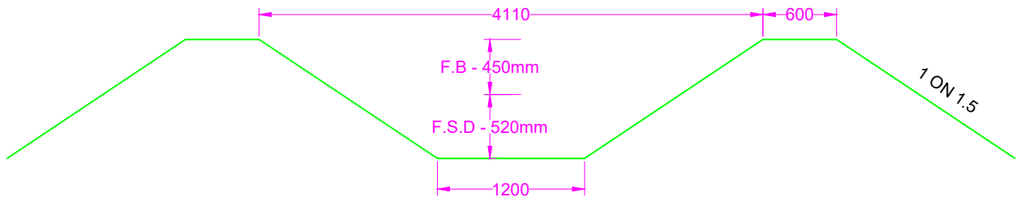
Datum -3.00 MSL

Distance in m	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500	525
Existing Levels	1.59	1.96	1.87	1.95	1.66	2.08	2.18	2.18	2.05	2.00	1.82	1.88	1.78	1.65	1.68	1.72	1.88	1.62	1.66	1.65	1.56	1.48
Design Levels	1.59	1.56	1.53	1.50	1.47	1.46	1.45	1.44	1.43	1.42	1.41	1.40	1.39	1.38	1.37	1.36	1.35	1.34	1.33	1.32	1.31	1.30
Depth of Cutting	0.00	0.40	0.34	0.45	0.19	0.62	0.73	0.74	0.62	0.58	0.41	0.48	0.39	0.27	0.31	0.36	0.53	0.28	0.33	0.33	0.25	0.15

L.S OF FEEDER CANAL FROM 0+000M TO 0+525M

SCALE :- HORIZONTAL -1:2000
VERTICAL -1:100

Ⓔ - EXISTING STRUCTURE
Ⓓ - DAMAGED STRUCTURE
Ⓡ - REPAIR
Ⓟ - PROPOSE



TYPICAL SECTION FROM 0+150m TO 0+525m

I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO)	DESIGNED BY: ENG.S.HARIPRASHATH (I.E)	SUBMITTED BY: ENG.S.HARIPRASHATH (I.E)
	DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)		
D.D.I's OFFICE	DRWING CHECKED BY: MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

P/IRRIGATION DEPARTMENT

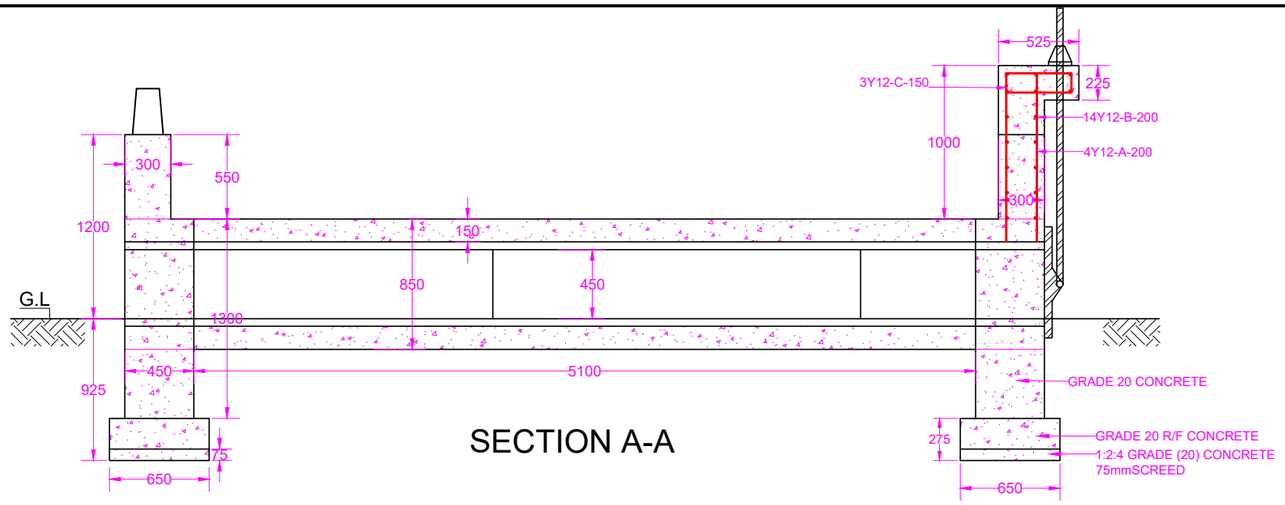
TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

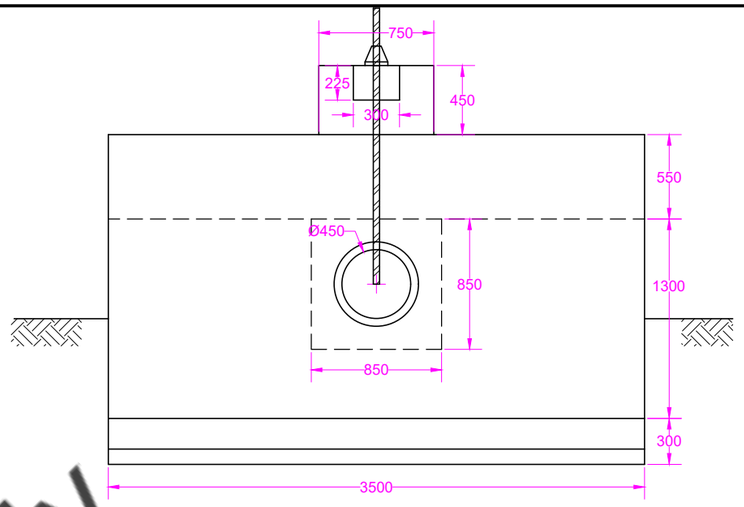
IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

L.S OF FEEDER CANAL FROM 0+ 000m TO 0+525m

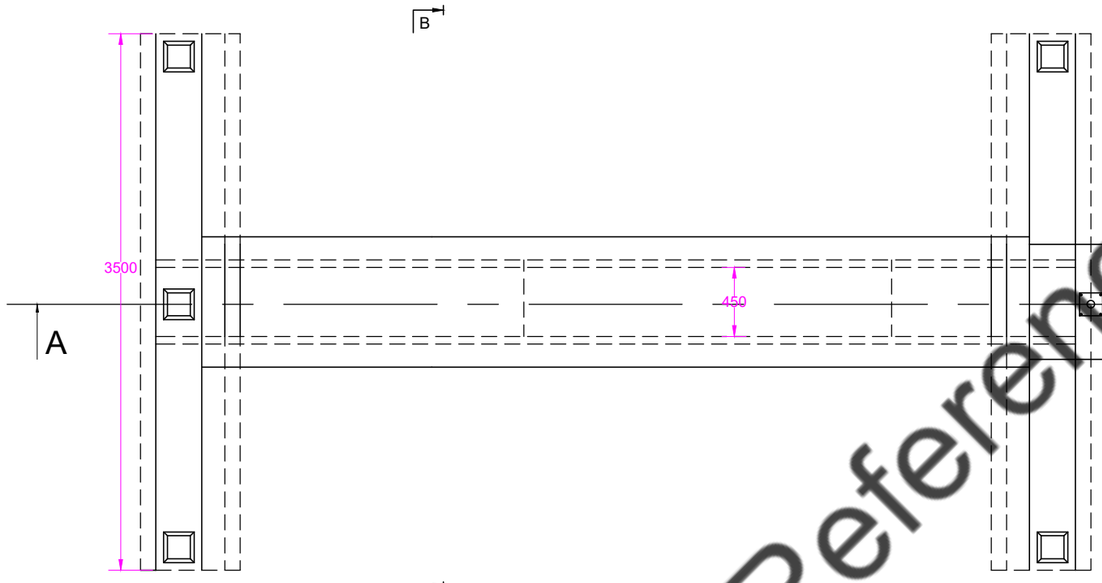
DATE : 16/01/2026	SHEET 01 OF 02	DWG. NO :- IWWRMP / TRI /PATH/ CN / 003 / 2 -1C



SECTION A-A

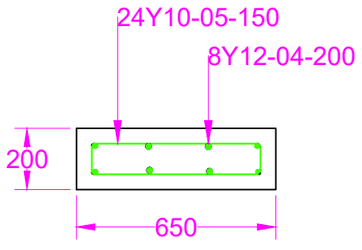


U/S SECTIONAL ELEVATION

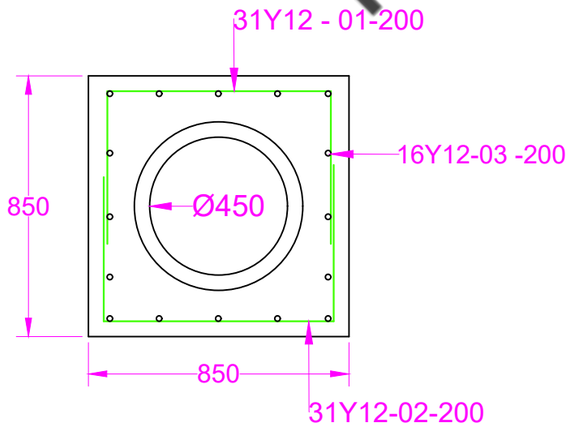


PLAN

SCALE :- 1:30

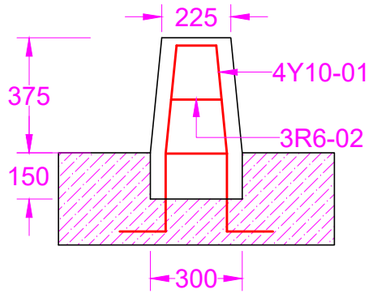


DETAILS 'A'
(R/F DETAILS OF FOOTING)



R/F DETAILS OF SECTION B

SCALE :- 1:20



ELEVATION

PRECAST GUARD STONE DETAILS

I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO)	DESIGNED BY:	SUBMITTED BY:
	DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)	ENG.S.HARIPRASHATH (I.E)	ENG.S.HARIPRASHATH (I.E)
D.D.I's OFFICE	DRWING CHECKED BY: MR.MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

P/IRRIGATION DEPARTMENT

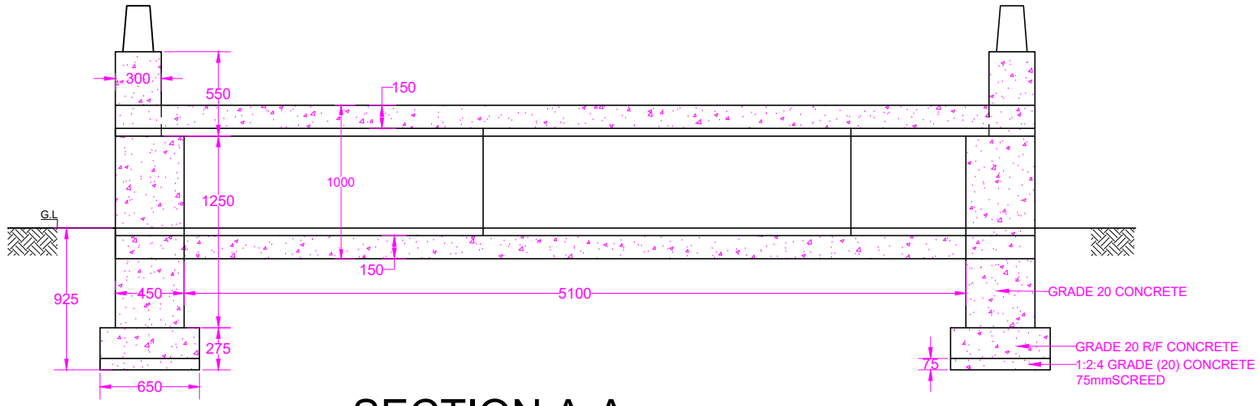
TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

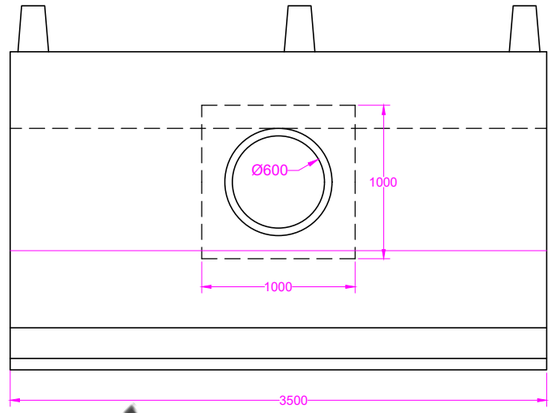
IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

CONSTRUCTION 1/450MM DIA X6.0M LONG CULVERT CUM SLUICE AT 0+422M

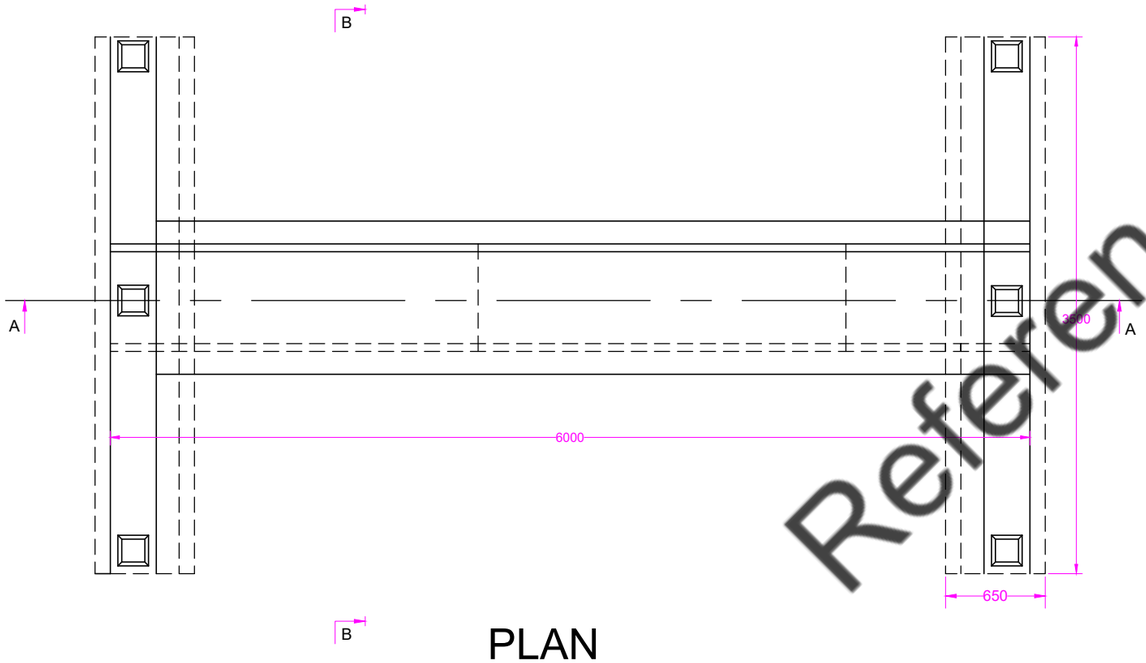
DATE : 16/01/2026	SHEET 01 OF 01	DWG. NO :- IWWRMP / TRI /PATH/ CN / 007 / 2 -1C



SECTION A-A

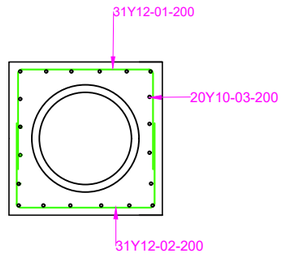


U/S SECTIONAL ELEVATION

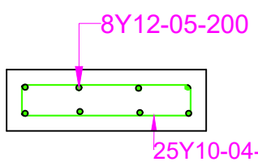


PLAN

SCALE - 1:40

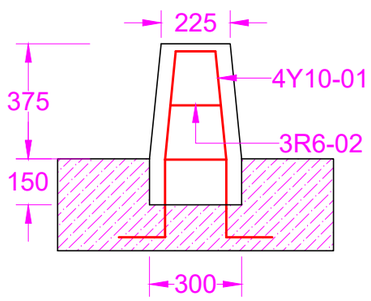


R/F DETAILS OF SECTION B



DETAILS 'A' (R/F DETAILS OF FOOTING)

SCALE - 1:20



ELEVATION

PRECAST GUARD STONE DETAILS

I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO)	DESIGNED BY:	SUBMITTED BY:
	DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)	ENG.S.HARIPRASHATH (I.E)	ENG.S.HARIPRASHATH (I.E)
D.D.I's OFFICE	DRWING CHECKED BY: MR.MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

P/IRRIGATION DEPARTMENT

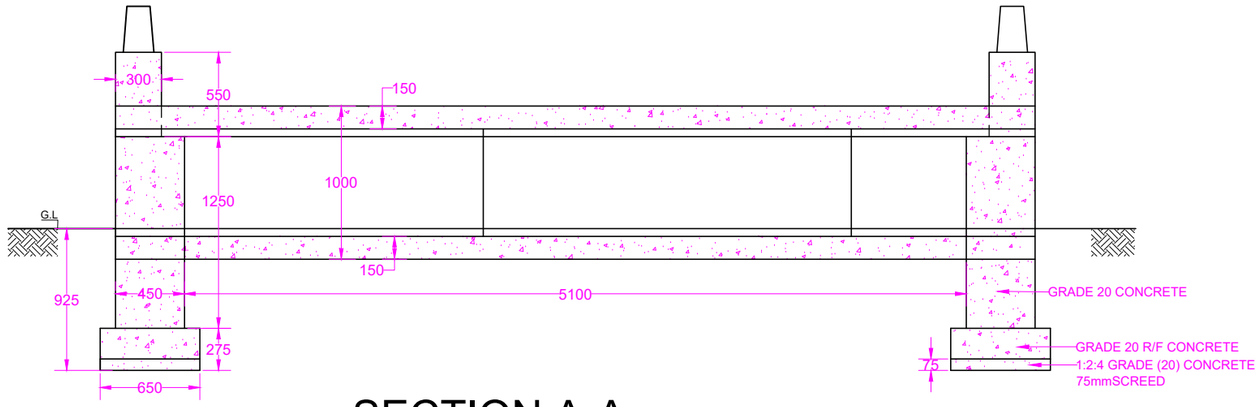
TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

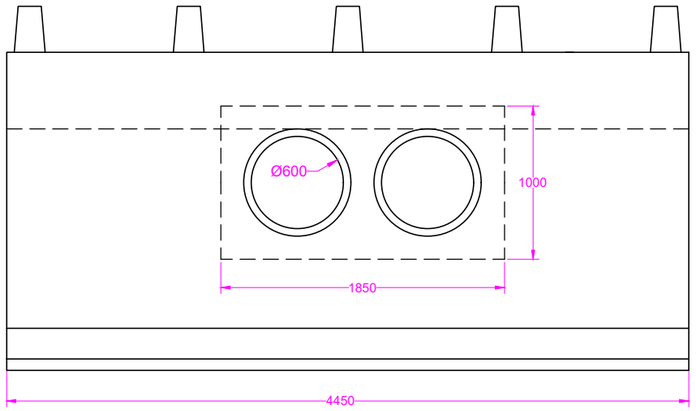
IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

CONSTRUCTION 1/600MM DIA X 6.0M LONG R.C.C PIPE CULVERT AT 0+683m

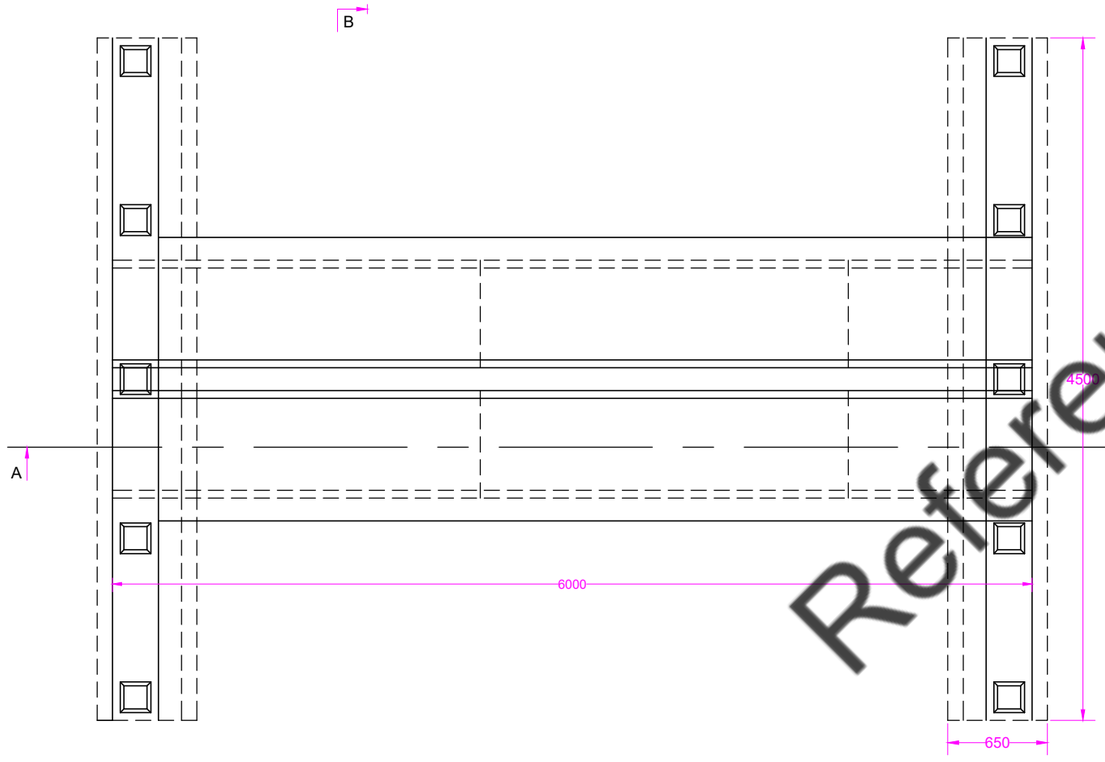
DATE : 16/01/2026	SHEET 01 OF 01	DWG. NO :- IWWRMP / TRI /PATH/ CN / 008 / 2 -1C



SECTION A-A

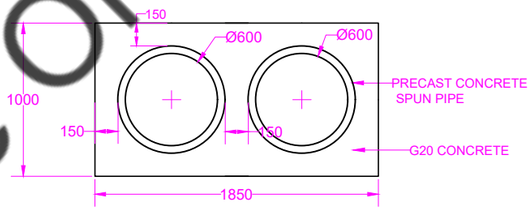


U/S SECTIONAL ELEVATION

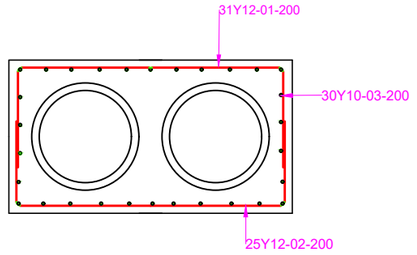


PLAN

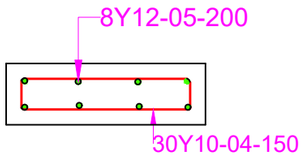
SCALE - 1:40



SECTION B-B

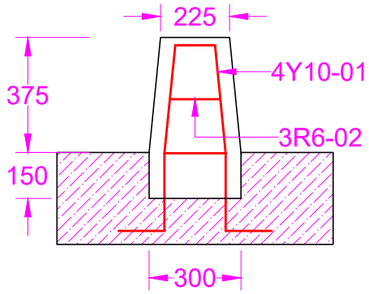


R/F DETAILS OF SECTION B



DETAILS 'A' (R/F DETAILS OF FOOTING)

SCALE - 1:20



ELEVATION

PRECAST GUARD STONE DETAILS

I.E's OFFICE	LEVELED & DRAWN BY: MR.R.RAHUNAN (TO)	DESIGNED BY:	SUBMITTED BY:
	DRWING CHECKED BY: MR.M.VISHNUCUMAR (D'PERSON)	ENG.S.HARIPRASHATH (I.E)	ENG.S.HARIPRASHATH (I.E)
D.D.I's OFFICE	DRWING CHECKED BY: MR.MRS.T.VIJITHA (D'PERSON)	DESIGNED CHECKED BY: ENG.H.IJAS AHAMED (I.E)	RECOMMENDED BY: ENG. G.SENTHOORAN (D.D.I)
P/D.I's OFFICE	DRWING CHECKED BY: (D'PERSON)	DESIGNED CHECKED BY: (C.I.E / I.E)	
	SUBMITTED BY: (D.D.I)	RECOMMENDED BY: ENG.V.RAJAGOPALASINGAM (P/D.I,EASTERN PROVINCE)	

P/IRRIGATION DEPARTMENT

TRINCOMALEE DIVISION,TRINCOMALEE RANGE,EASTERN PROVINCE

INTEGRATED WATERSHED & WATER RESOURCES MANAGEMENT PROJECT

IMPROVEMENTS TO PATHNIPURAM ANICUT IN THAMPALAGAMAM D.S DIVISION

CONSTRUCTION 2/600MM DIA X6.0M LONG R.C.C PIPE CULVERT AT 0+339M

DATE : 16/01/2026	SHEET 01 OF 01	DWG. NO :- IWWRMP / TRI /PATH/ CN / 006 / 2 -1C

Section - 11

STANDARD FORMS (BID)

FORM OF BID SECURITY

[this Guarantee form shall be filled in accordance with the instructions indicated in brackets]

---------- [insert issuing agency's name, and address of issuing branch or office]

Beneficiary: ***Project Director***
Integrated Watershed & Water resources Management Project,
2nd Floor, Mahaweli Centre Building,
No. 96, Ananda Coomaraswamy Mawatha
Colombo 07.

Date: ---------- *[insert (by issuing agency) date]*

BID GUARANTEE No.: ---------- *[insert (by issuing agency) number]*
We have been informed that ---------- *[insert (by issuing agency) name of the Bidder]* (hereinafter called "the Bidder") has submitted to you its bid dated ---------- *[insert (by issuing agency) date]*(hereinafter called "the Bid") for the execution of "**Improvement to Pathinipuram Anicut in Trincomalee** under Invitation for Bids No. **LK-MOMDE-539144-CW-RFB** ("the IFB").

Furthermore, we understand that, according to your conditions, Bids must be supported by a Bid Guarantee.

At the request of the Bidder, we ---------- *[insert name of issuing agency]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ---------- *[insert amount in figures]* ---------- *[insert amount in words]*) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

(a) has withdrawn its Bid during the period of bid validity specified; or

(b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB") of the IFB; or

(c) having been notified of the acceptance of its Bid by the Employer/Purchaser during the period of bid validity, (i) fails or refuses to execute the Contract Form, if required, or (ii) fails or refuses to furnish the Performance Security, in accordance with the ITB.

This Guarantee shall expire: (a) if the Bidder is the successful bidder, upon our receipt of copies of the Contract signed by the Bidder and of the Performance Security issued to you by the Bidder; or (b) if the Bidder is not the successful bidder, upon the earlier of (i) the successful bidder furnishing the performance security, otherwise it will remain in force up to ---------- *(insert date)*

Consequently, any demand for payment under this Guarantee must be received by us at the office on or before that date ----------