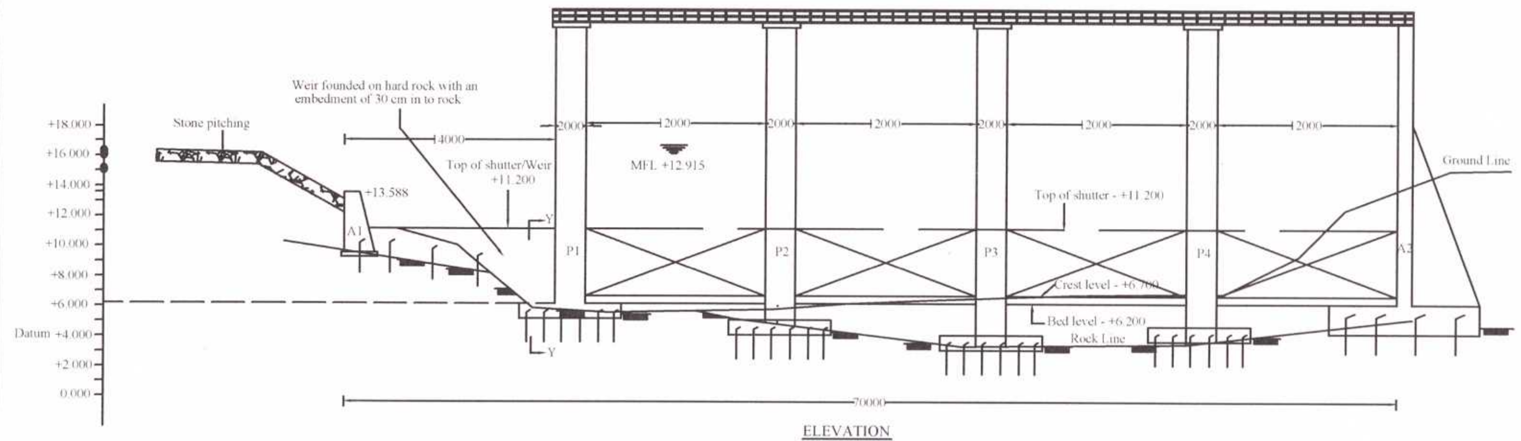
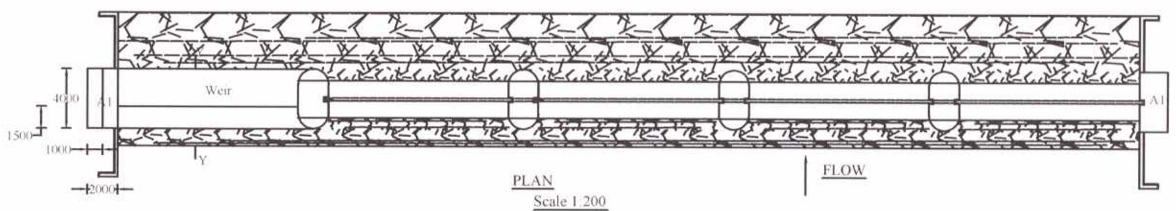
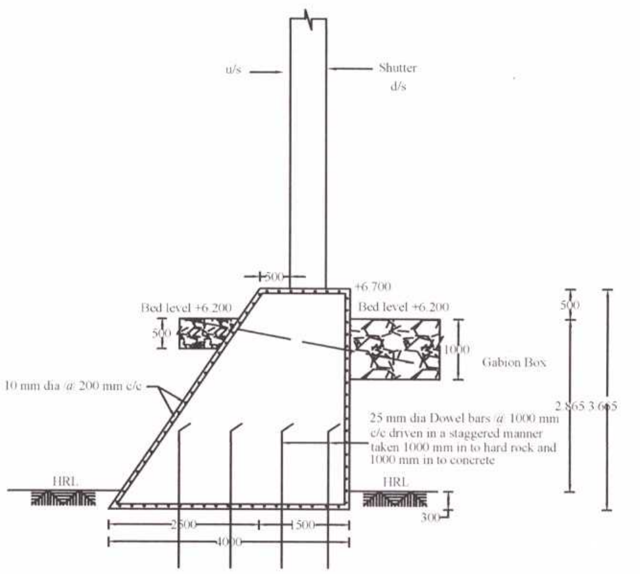


ELEVATION

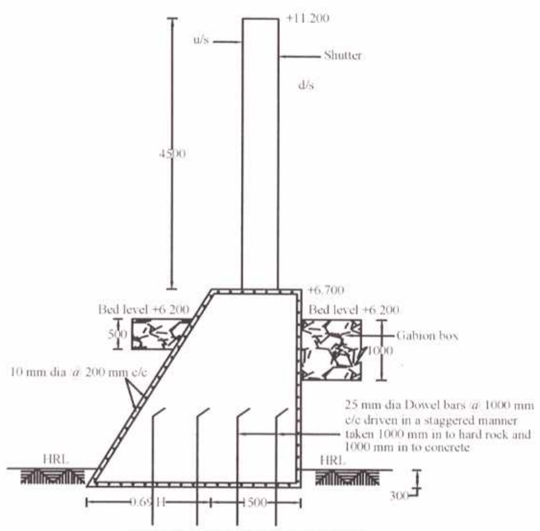
Reduced Level	+16.375	+16.210	+15.880	+10.295	+10.105	+8.010	+5.910	+5.590	+5.745	+5.795	+6.200	+6.385	+6.485	+6.765	+6.840	+6.865	+9.385	+12.430	+14.159	+15.120
Rock Level			+10.330			+8.010			+5.195				+3.335		+3.490				+5.209	
Bore hole Chainage		BH 2	37.500 33.500			BH 4 22.500			BH 5 7.500				BH 8 7.500		BH 9 22.500				36.500 37.500	BH10
Chainage	45.00	38.00		29.00	25.00		20.00	15.00	10.00	5.00	0.00	5.00		15.00		25.00	30.00	33.00		40.00



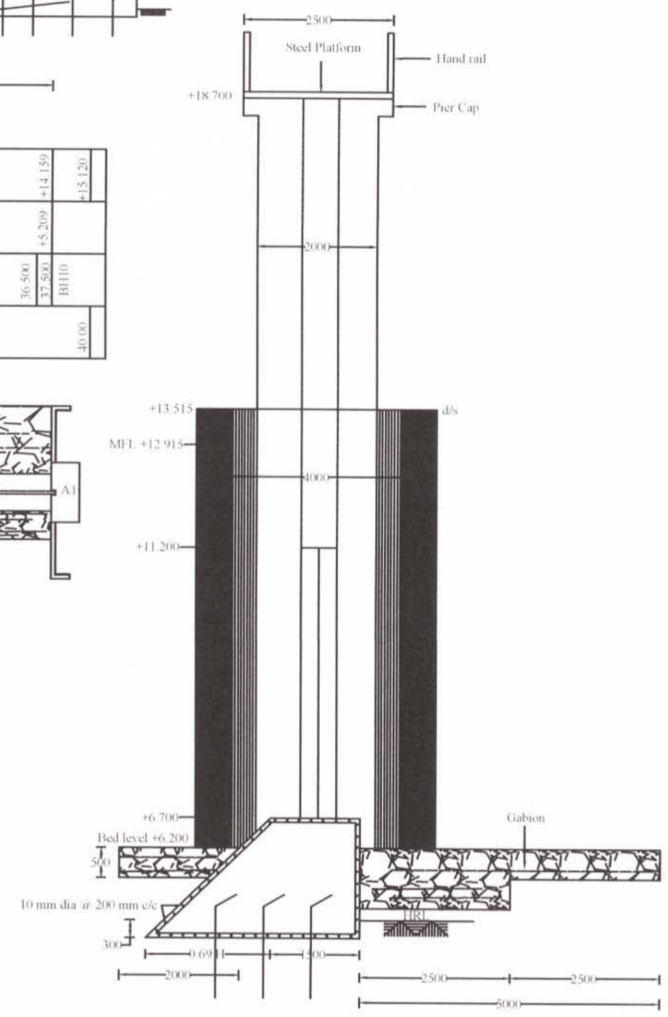
PLAN
Scale 1:200



DETAILS OF SUBSURFACE WEIR
MAXIMUM HEIGHT H= 3.665 M)
Scale 1:50



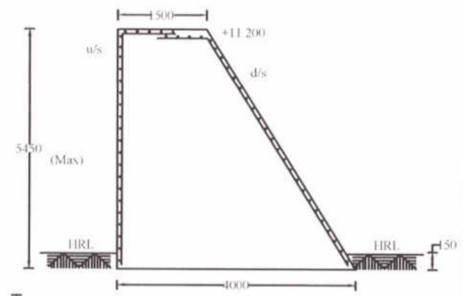
DETAILS OF SUBSURFACE WEIR
(HEIGHT < 3.665 M)
Scale 1:50



SECTION THROUGH WEIR
Scale 1:50

NOTES

1. This drawing is prepared based on the proposal, levels and soil report vide letter No-W5/39680/2013dt 03/01/2014 of Chief E ngineer, Irrigation and Administration, Thiruvananthapuram and letter no D6-3676/2013 dt02/07/2014 of Superintending Engineer,Irrigation North circle ,Kozhikode.
2. All dimensions are in millimetres and levels are in metres.
3. No dimension shall be scaled off.Only written dimensions are to be followed.
4. Hydraulic Particulars
   a) Maximum flood discharge - 892.13/sec
   - 1100 m3/sec (Surface water year book,1994)
   b) Maximum flood level - +12.915
   c) Bed level (Mean) - + 6.200
   d) Height of storage - 5.00 m
   e) Height of shutter - 4.50 m
   d) Crest level - + 6.700
   e) Width of river - 70 m
5. Concrete mix
   a) Piers and footings,Pier Cap,Counterfort Abutment - M25
   b) Subsurface Weir, Abutment A1 - M20
6. 4 Spans of 12 m each and one span of 14 m are provided for the structure. Since rock is available above bed level in the span of 14 m,steel shutter is not necessary in this span. (Between A1 and P1)
7. Operating platform shall be provided suitably in consultation with the Mechanical Wing.
8. The groove size provided is 600 x 600 mm.
9. Bank connection shall be provided as per site condition.
10. The piers, abutments and subsurface weir shall be founded on rock with an embedment of 30 cm Blasting is not allowed at site.Only chiselling of rock shall be done.
11. Weir and footings of piers and abutments shall be anchored to the rock with dowel bars.If hard rock is not available at the levels marked in the drawing, the fact shall be intimated to this office and revised design may be obtained.
12. Subsurface weir is designed for a maximum height of 3.665 m At other portion depending upon the rock level, the section of the weir shall be suitably reduced.
13. Weep holes shall be provided in the downstream side of the abutments.
14. All specifications shall be strictly in accordance with latest editions of relevant IS Codes.
15. All the embedded parts required for the regulator shutters shall be fixed simultaneously with concreting of piers and abutments.
16. Surface reinforcement 10 mm dia @ 200 mm c/c shall be provided for the weir.
17. The gabion boxes of size 1m x 1m x 1m / 1m x 1m x 0.50m shall be made of mechanically woven double twisted wire mesh of PVC coated galvanised steel of diameter 2.7mm / 3.7mm (ID / OD) as per IS 16019 - 2012.Each box shall be tied up to form a mat.
18. The gabion boxes shall be filled before placing in the required location and the stones shall be larger than the mesh openings and of more or less uniform size.The basket shall be full and not bulging.
19. The adequacy of various provisions made in the drawing and the feasibility of this proposal as a whole shall be examined at site by the Chief Engineer, I & A and satisfied by herself to ensure the overall and long term safety of the structure before taking up the work.
20. Blasting is not allowed at site.Only chiselling of rock shall be done.



SECTION OF WEIR AT YY
Scale 1:50

(Height and bottom width of weir shall be reduced according to hard rock level)

GOOD FOR CONSTRUCTION

CHIEF ENGINEER

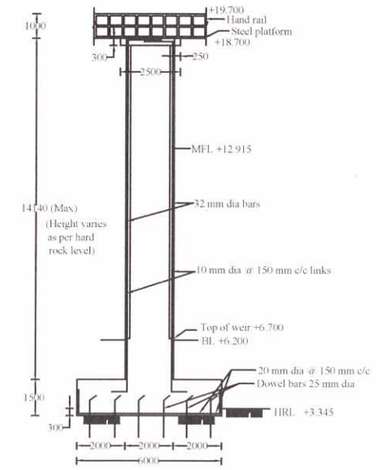
TRUE COPY

JOINT DIRECTOR

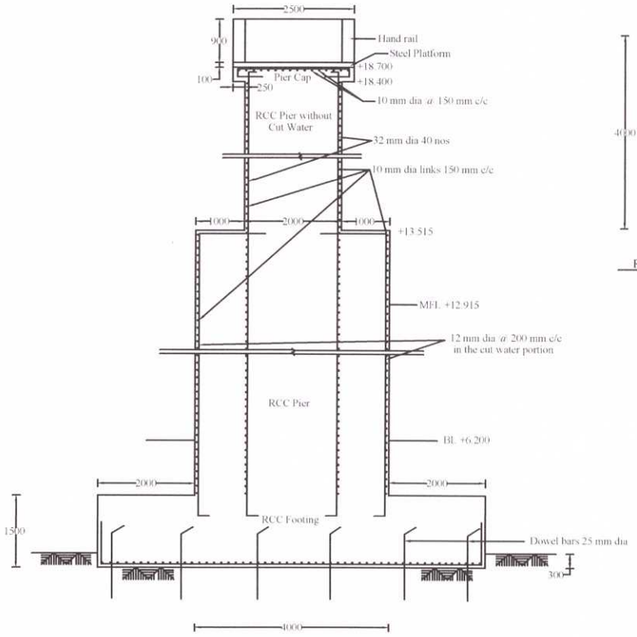
FILE NO.	WATER RESOURCES DEPARTMENT, KERALA IRRIGATION DESIGN AND RESEARCH BOARD				
	CONSTRUCTION OF A REGULATOR ACROSS KADALUNDI RIVER AT PUZHANKAVU IN MANJERI MUNICIPALITY, MALAPPURAM DISTRICT				
REV.NO.	DSGN	Sd/- ASSISTANT DIRECTOR	CHD	Sd/- DEPUTY DIRECTOR	RECM Sd/- DIRECTOR
	DRN	JAYA. K.G. D'MAN	REWD	Sd/- JOINT DIRECTOR	APPD Sd/- CHIEF ENGINEER
	FILE NO. 52/2014/IDRB CS		THIRUVANANTHAPURAM DATE : 18/04/2015		DRG.NO. 11/2015 SHEET NO. 1/2

Kerala Irrigation Infrastructure Development Corporation Ltd. Government of Kerala Undertaking Chackai Tvpm-695024

Chief Engineer
Kerala Irrigation Infrastructure
Development Corporation Ltd.
Thiruvananthapuram - 695024

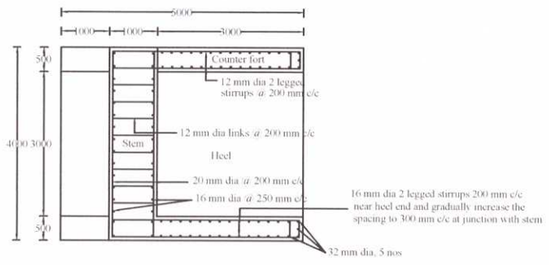


Scale 1:100



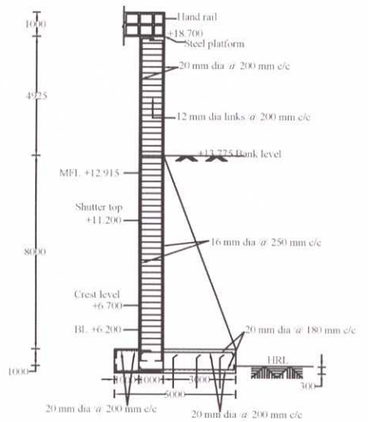
SECTIONAL ELEVATION

Scale 1:50



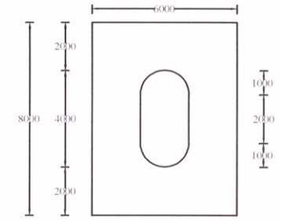
REINFORCEMENT DETAILS OF COUNTER FORT ABUTMENT (PLAN)

Scale 1:50



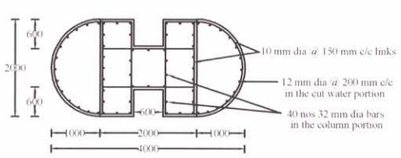
REINFORCEMENT DETAILS OF STEM AND BASE SLAB
OF COUNTER FORT ABUTMENT

Scale 1:200



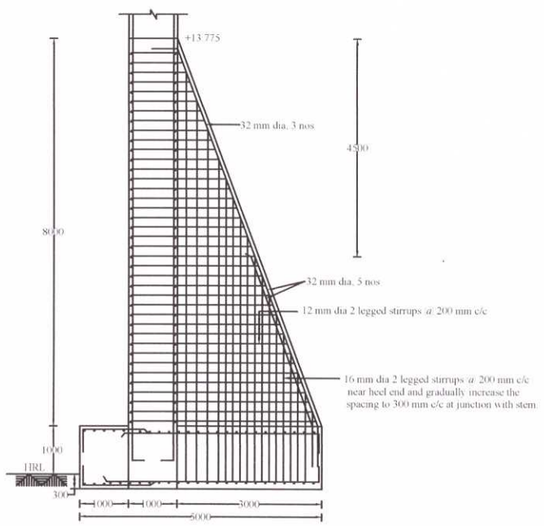
DETAILS OF RCC PIER AND FOOTING - AT,P3

Scale 1:100



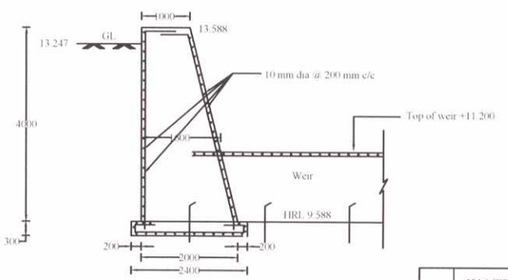
REINFORCEMENT DETAILS OF PIER

PLAN Scale 1:50



REINFORCEMENT DETAILS OF COUNTER FORT

Scale 1:50



CROSS SECTION OF ABUTMENT A1 AND WEIR

Scale 1:50

NOTES

1. This drawing is to be read in conjunction with sheet no 1/2 of drawing number
2. All dimensions are in millimetres and levels are in metres
3. No dimension shall be scaled off. Only written dimensions are to be followed
4. Mix

   a) Piers and footings, Pier Cap, Counterfort Abutment - M25
   b) Subsurface wear, Abutment A1 - M20
5. TMT (Thermo Mechanically Treated) bars conforming to IS 1786 grade Fe 415 shall be used.
6. The cement used shall conform to relevant IS standards
7. Bending, tying and placing in position of reinforcement shall be as per standards
8. Shuttering and scaffolding used shall conform to relevant IS Codes
9. Cover, anchorage length and lap length shall be provided as per IS 456 - 2000

GOOD FOR CONSTRUCTION

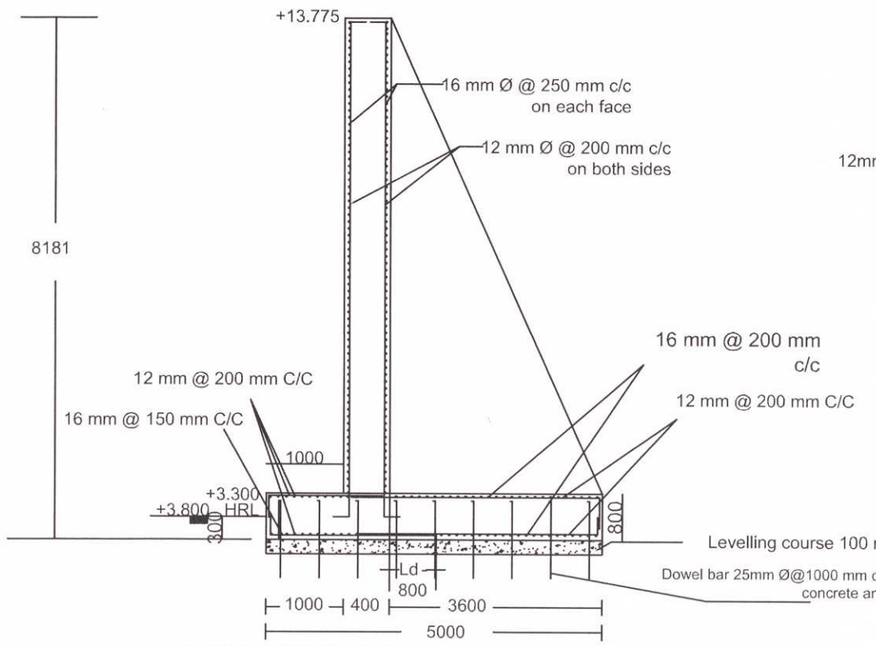
CHIEF ENGINEER

Chief Engineer
Kerala Irrigation Infrastructure
Development Corporation Ltd.
Thiruvananthapuram - 695024

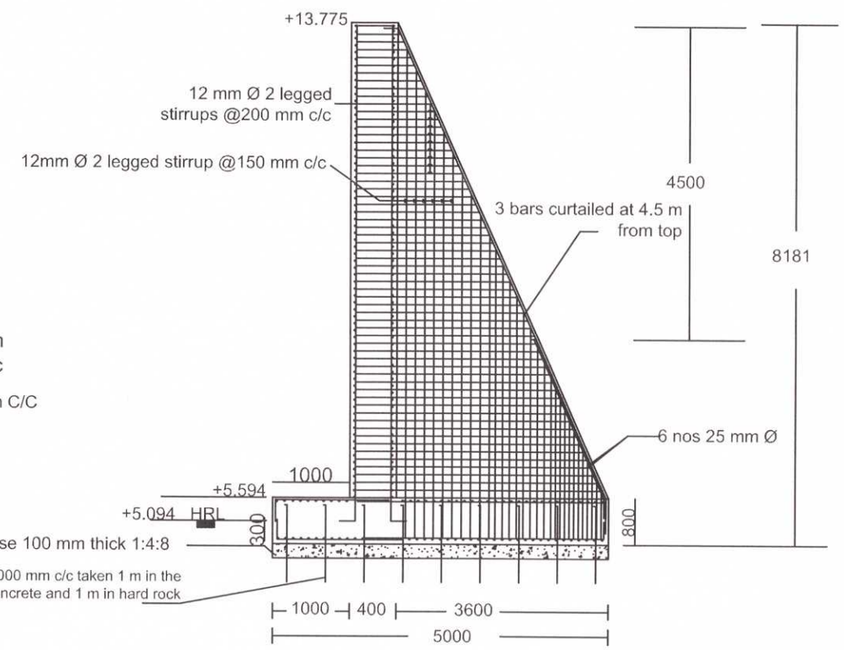
TRUE COPY

JOINT DIRECTOR

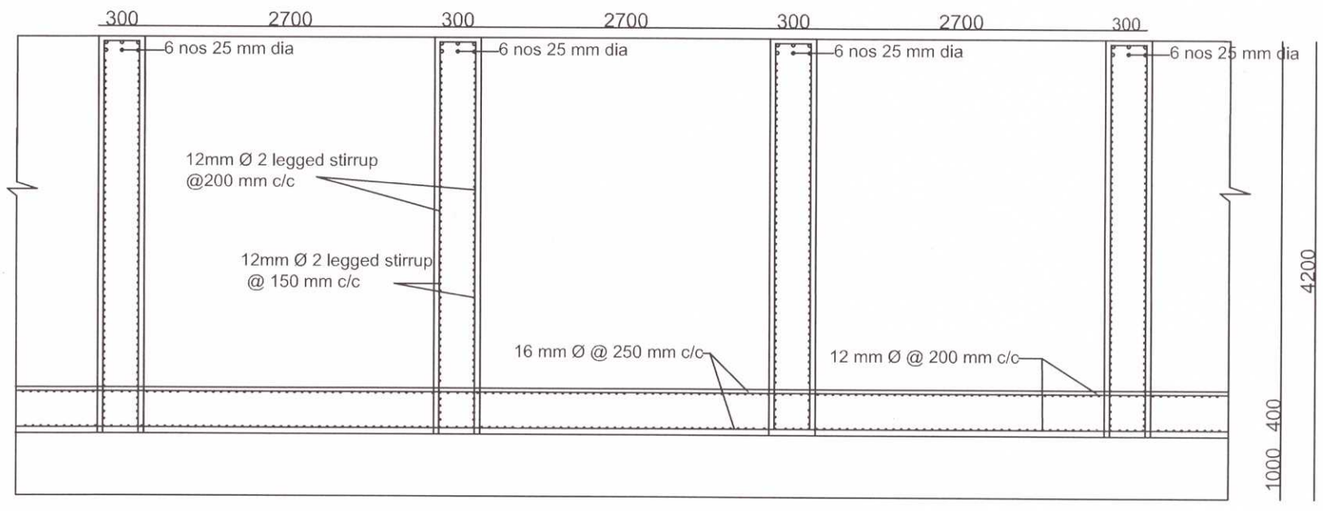
FILE NO	WATER RESOURCES DEPARTMENT, KERALA IRRIGATION DESIGN AND RESEARCH BOARD				
	CONSTRUCTION OF A REGULATOR ACROSS KADALUNDI RIVER AT PUZHANKAVU IN MANJERI MUNICIPALITY, MALAPPURAM DISTRICT				
REV NO	DSGN: Sd /- ASSISTANT DIRECTOR	CHD: Sd /- DEPUTY DIRECTOR	RECM: Sd /- DIRECTOR		
	DRN: JAYA. K.G. D.MAN	REWD: Sd /- JOINT DIRECTOR	APPD: Sd /- CHIEF ENGINEER		
	FILE NO: 52/2014/IDRB/CS	THIRUVANANTHAPURAM DATE: 18/04/2015	DRG NO: 11/2015 SHEET NO: 2/2		



REINFORCEMENT DETAILS OF STEM ,TOE,AND HEEL SLAB



REINFORCEMENT DETAILS OF COUNTERFORT



PLAN

NOTES

1. All dimensions are in millimeters and levels in meters .
2. No dimension shall be scaled off, only written dimension to be followed.
3. All specifications shall be in accordance with the latest edition of IS codes.
4. Following parameters have been assumed for the design of retaining wall :
   (a) Angle of internal friction - 30 °
   (b) Dry density of backfill - 2.00t/m³
   (c) Saturated density of backfill - 2.10 t/m³
   (d) Surcharge height - 0.60m
5. Mix used: M25
6. Proper drainage facilities (weep holes) along with filter materials shall be provided to prevent any accumulation of water in the backfill.
7. A levelling course of 100 mm thickness of grade 1:4:8 shall be provided below the retaining wall
8. High yield strength deformed bars confirming to IS 1786-2009 grade Fe 415 shall be used for reinforcement. Cover shall be as per IS standards.
9. Lap, anchorage, bending,typing and placing in position of reinforcement shall be done as per relevant IS codes.
10. Construction joints as well as expansion joints shall be provided suitably.
11. Materials and quality specifications should be in conform with IS standards.
12. Shuttering and scaffolding used shall conform to relevant IS standards.
13. Continuous moist curing shall be done for finishing concrete for a minimum period of 15 days.
14. Alteration if any shall be made with the concurrence of this office.
15. The retaining wall shall be founded in hard rock with an embedment of 30 cm into hard rock.
16. The structure shall be anchored in hard rock with 25 mm dia bars taken 1 m into hard rock and concrete.

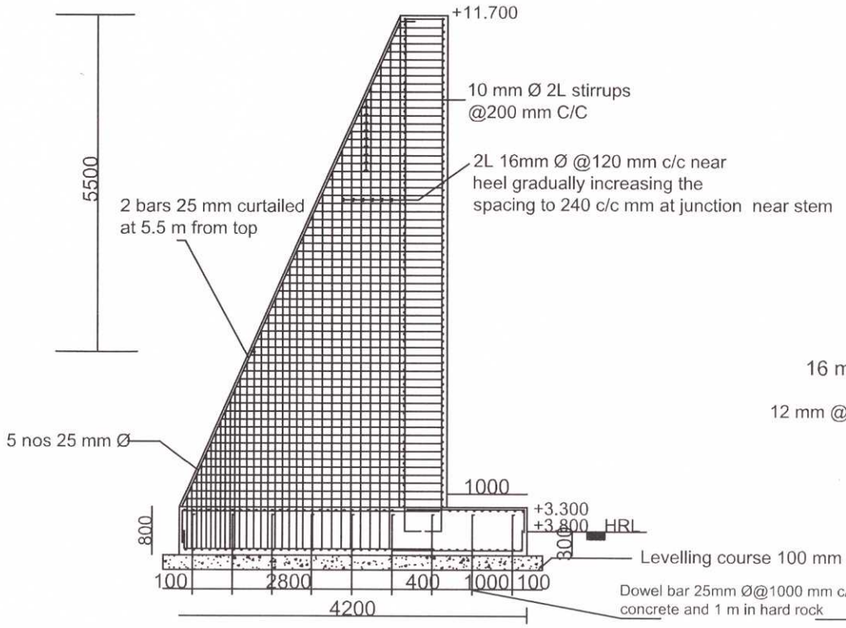
GOOD FOR CONSTRUCTION

CHIEF ENGINEER
Chief Engineer
Kerala Irrigation Infrastructure
Development Corporation Ltd.
Thiruvananthapuram - 695024

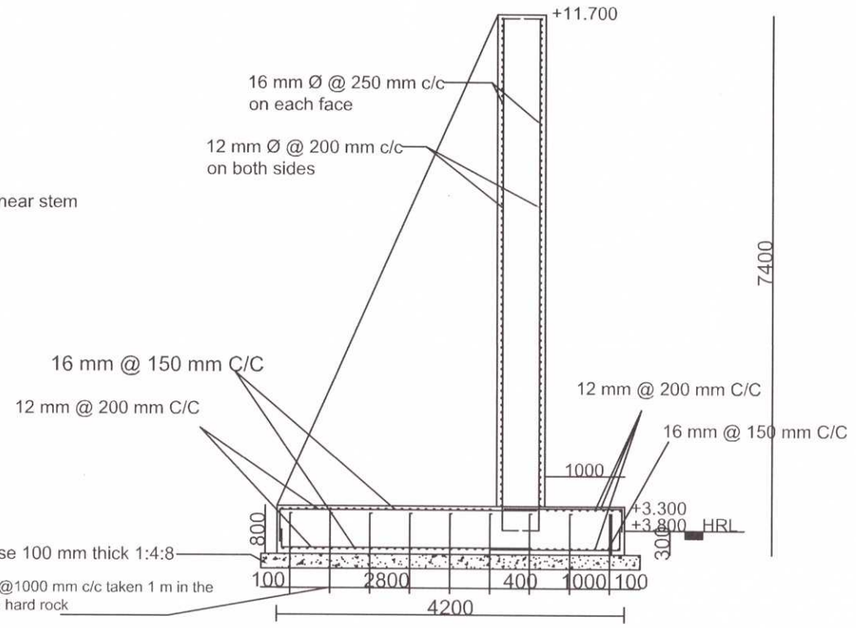
Kerala Irrigation Infrastructure Development Corporation Ltd. A Government of Kerala undertaking Thiruvananthapuram (Thalai)

IRRIGATION DEPARTMENT, KERALA IRRIGATION DESIGN AND RESEARCH BOARD

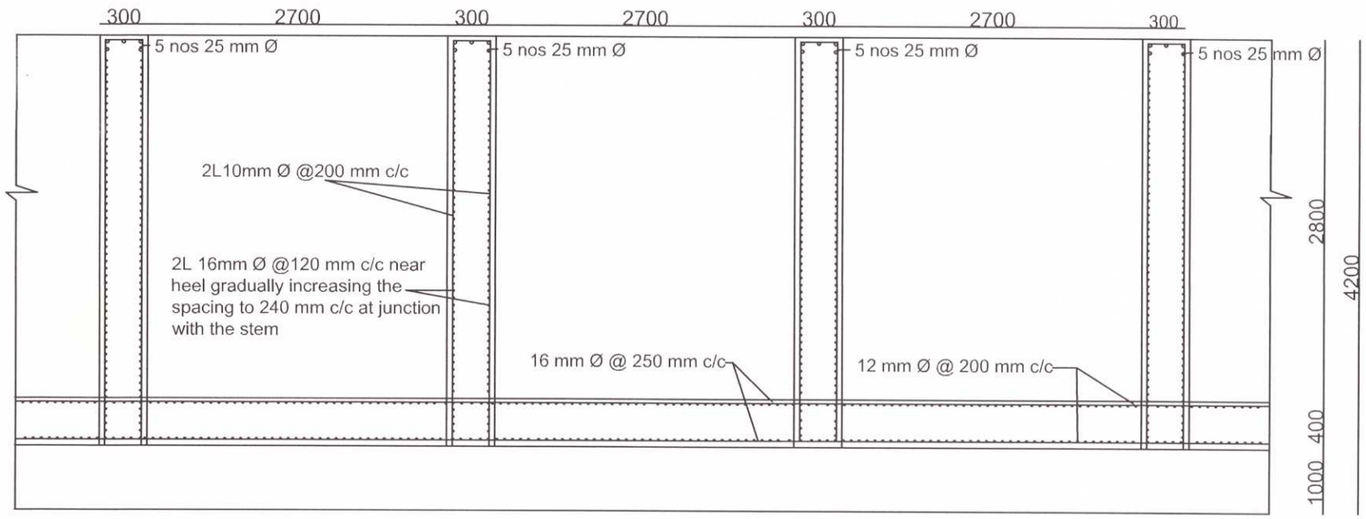
CONSTRUCTION OF COUNTER FORT RETAINING WALL AT RIGHT BANK OF REGULATOR ACROSS KADALUNDI RIVER - PUZHANKAVU IN MANJERI MUNICIPALITY	DRWG NO : 4/2019	APPROVED BY : CHIEF ENGINEER, IDRB	
	SHEET NO; 1/1	DATE : 14/01/2019	
FILE NO: 52/2014/IDRB/CS	THIRUVANANTHAPURAM		



REINFORCEMENT DETAILS OF COUNTERFORT



REINFORCEMENT DETAILS OF STEM ,TOE,AND HEEL SLAB



PLAN

NOTES

1. All dimensions are in millimeters and levels in meters .
2. No dimension shall be scaled off ,only written dimension to be followed.
3. Following parameters have been assumed for the design of retaining wall :
   (a) Angle of internal friction - 30 degrees
   (b) Dry density of backfill - 2.00 t/m3
   (c) Saturated density of backfill - 2.10 t/m3
   (d) Surcharge height - 0.60 m
4. Mix used: M25
5. The retaining wall shall be founded in hard rock with an embedment of 30 cm into haed rock.
6. The counter fort retaining wall shall be anchored in hard rock with 25 mm dia bars taken 1 m into hard rock and concrete.

THIS DRAWING CANCELS ADD DWG 2 ISSUED FROM THIS OFFICE

GOOD FOR CONSTRUCTION

CHIEF ENGINEER

Chief Engineer
Kerala Irrigation Infrastructure
Development Corporation Ltd.
Thiruvananthapuram - 695024

A Government of Kerala Undertaking
Chankal
Tvpm-695024
Kerala Irrigation Infrastructure Development Corporation Ltd.

CONSTRUCTION OF REGULATOR ACROSS KADALUNDI RIVER PUZHAMKAVU MANJERI MUNICIPALITY

KIIDC KERALA IRRIGATION INFRASTRUCTURE DEVELOPMENT CORPORATION	DRWG NO : KIIDC/277/KIIFB-RCB/PUZHAMKAVU/2018	CHECKED BY : Shaheer	
	DESIGN & DRAWN BY :	DATE : 11/02/2021	ADD DWG 2
KERALA IRRIGATION INFRASTRUCTURE DEVELOPMENT CORPORATION	DETAILS OF LEFT SIDE COUNTERFORT RETAINING WALL		R1