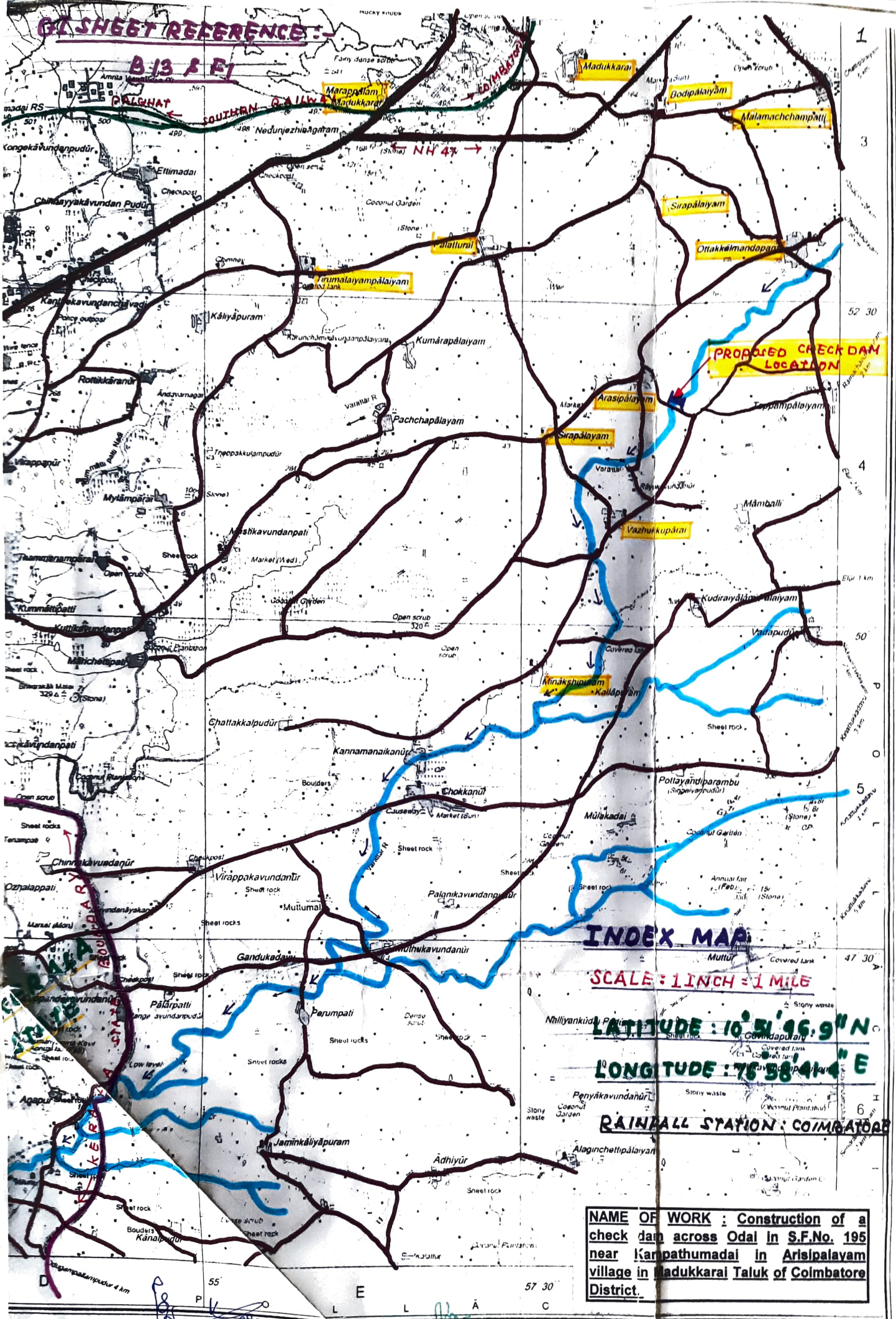

NAME OF WORK : Construction of a check dam across Odai in S.F.No. 195 near Kampathumadai in Arisipalayam village in Madukkarai Taluk of Coimbatore District.

Assistant Engineer, P.W.D/W.R.D.
Noyyal (West) Section,
Coimbatore - 1.

Assistant Executive Engineer P.W.D.,WRD.,
Irrigation Sub Division
Coimbatore - 641 001

Executive Engineer, WRD.,
Bhavanisagar Dam Division
Bhavanisagar

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வட்டம் : மதுக்கரை
கிராமம் : அரிசிபாளையம்

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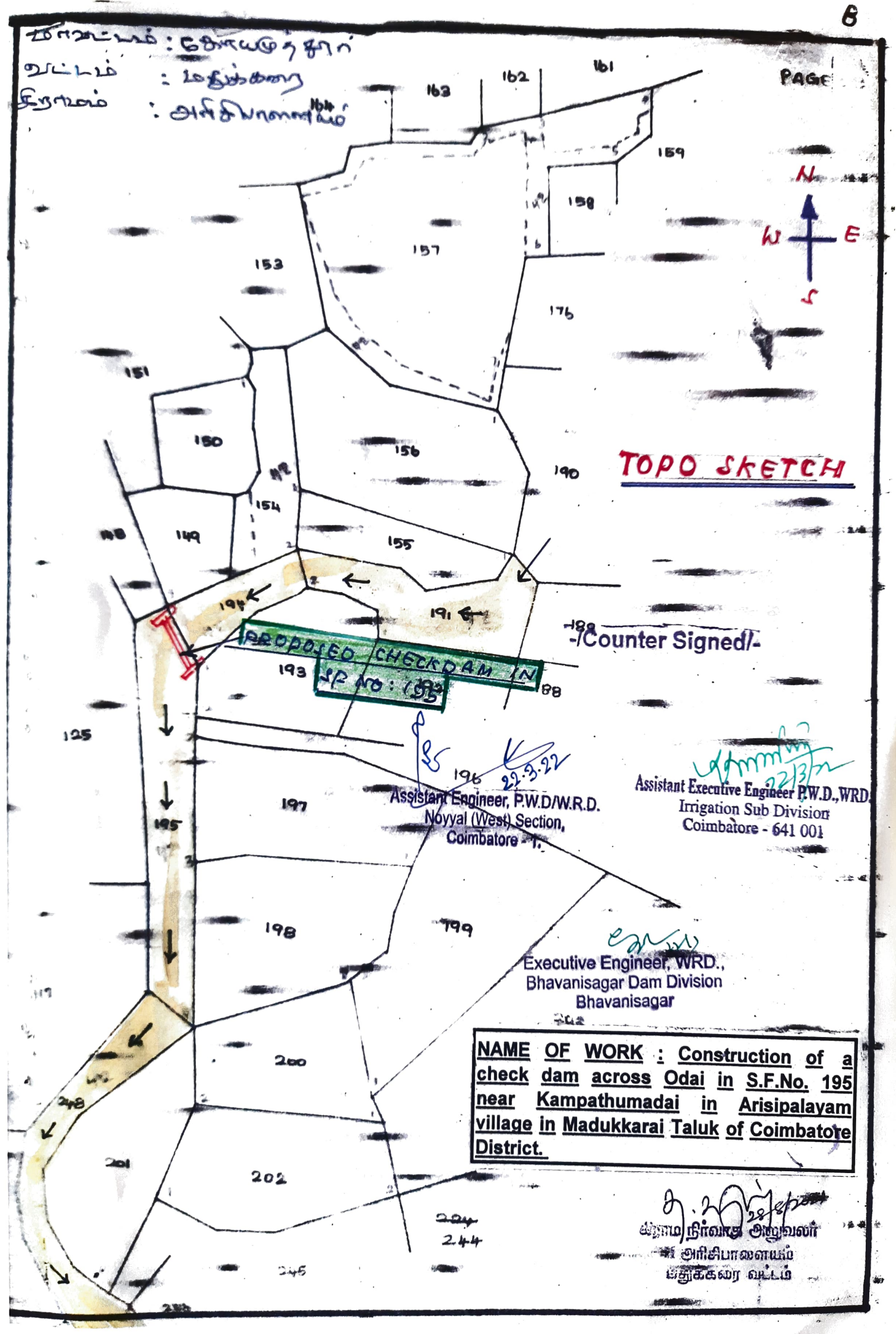


TOPO SKETCH

PROPOSED CHECKDAM IN SF NO : 195

-/Counter Signed/-

Assistant Engineer, P.W.D/W.R.D.
Noyyal (West) Section,
Coimbatore - 1.

22.3.22

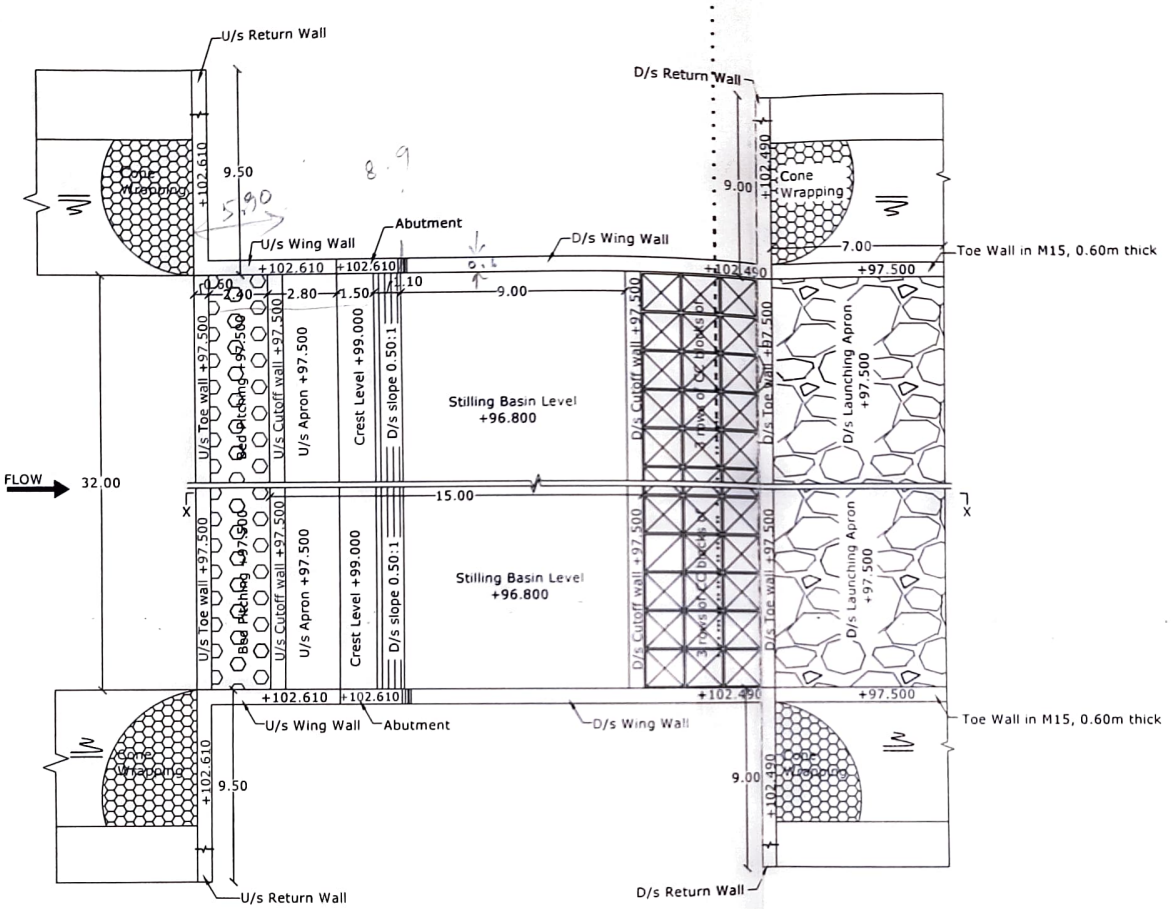
Assistant Executive Engineer P.W.D.,WRD.
Irrigation Sub Division
Coimbatore - 641 001

Executive Engineer, WRD.,
Bhavanisagar Dam Division
Bhavanisagar

NAME OF WORK : Construction of a check dam across Odai in S.F.No. 195 near Kampathumadai in Arisipalayam village in Madukkarai Taluk of Coimbatore District.

28.9.2021

கிராம நிர்வாக அலுவலர்
அரிசிபாளையம்
மதுக்கரை வட்டம்



LAYOUT PLAN

Hydraulic Particulars :		
Maximum Flood Discharge	:	..... or 3920 cusecs
Total Length of Check Dam	:	.....
Height of the Check Dam	:	1.50m
Front Maximum Flood Level	:	+100.610 m
Rear Water Level	:	+98.360 m
Crest Level of weir	:	+99.000 m
U/s Bed Level	:	+97.500 m
D/s Bed Level	:	+97.500 m
Stilling Basin Level	:	+96.800 m
Total Floor Length	:	15.00 m
Stilling Basin Length	:	9.00m
Depth of stilling basin	:	0.70m

Assistant Engineer, P.W.D/W.R.D.
Noyyal (West) Section,
Coimbatore - 1.

22.3.22

Assistant Executive Engineer P.W.D.,WRD.,
Irrigation Sub Division
Coimbatore - 641 001

Executive Engineer, WRD.,
Bhavanisagar Dam Division
Bhavanisagar

Note :

All dimensions are in metre unless otherwise specified.

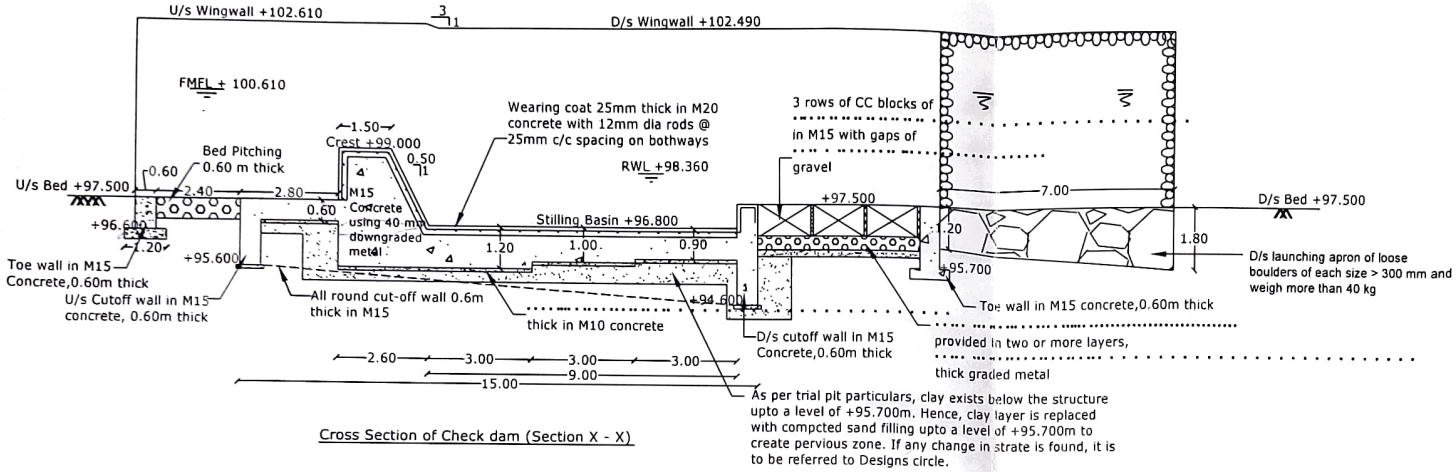
This drawing should be read along with the drg. no . / 2022

to drg. no. / 2022

Sheet No 1/4

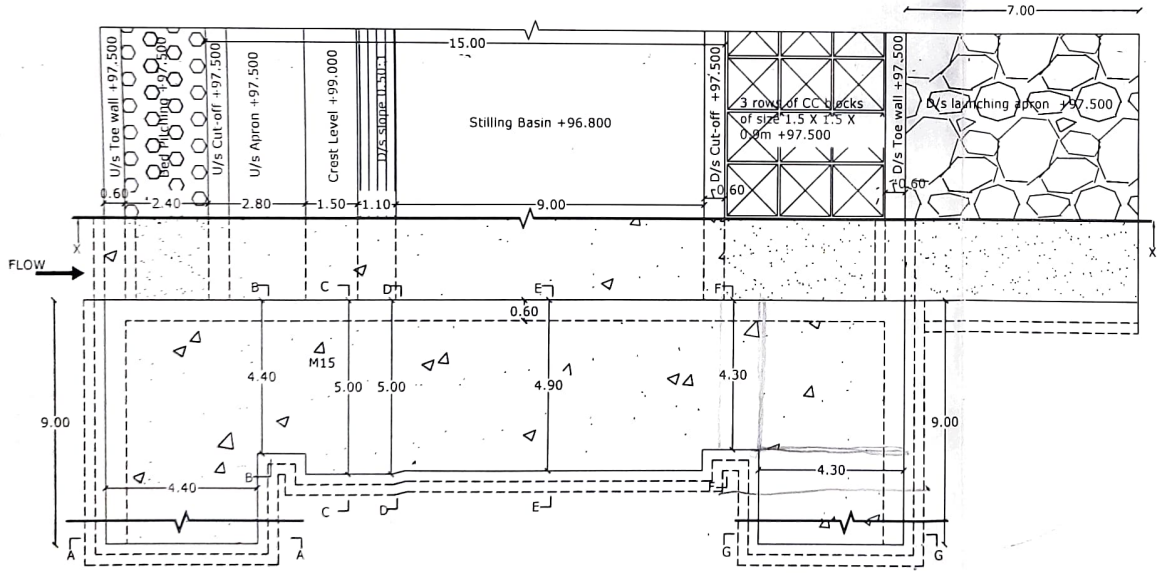
GOVERNMENT OF TAMILNADU
WATER RESOURCES DEPARTMENT
O/o Superintending Engineer, WRD.,
Designs Circle, Chepauk, Chennai-600 005.

Designed&drawn by Er.G.Jeyaprabha,AE(T7)		Name of work: Construction of Check Dam across an odai in S.F No.195 near Kampathumadai in Arisipalayam Village of Madukkarai Taluk in Coimbatore District.
Checked by Er.S.Meenu Renuka Devi, AEE(T7)		
Verified by Er.P.Sasikala,EE(DD)		
Recommended by Er.S.Shanthi,SE(D)		LAYOUT PLAN
Approved by Er.A.Dhanapal,CE(DRCS)	S/d (22.03.2022)	Region: Coimbatore Region Circle: Bavanai Basin Circle, Erode.
Drg No.	Scale:- 1:200	Communicated by SE(D) in Lr No. SE(D)/EE(DD)/F71 /2022,dt:



Cross Section of Check dam (Section X - X)

Hydraulic Particulars:		
Design Discharge	:	110.993Cumec or 3920 Cusec
Front Maximum Water Level	:	+100.610
Rear Water Level	:	+98.360
U/s Bed LeveL	:	+97.500
D/s Bed Level	:	+97.500
Crest Level	:	+99.000
Height of Weir	:	1.50m
Head over crest	:	1.61m
Length of check dam	:	32.00m
Stilling Basin Level	:	+96.800
Stilling Basin Length	:	9.00m
Depth of stilling basin:		0.70m
Total Floor Length	:	15.00m



Half Plan at Top and Half Plan at Bottom

Note :

All dimensions are in metre unless otherwise specified.

This drawing should be read along with the Drg.No / 2022 to Drg. no. / 2022

Sheet No 2/4

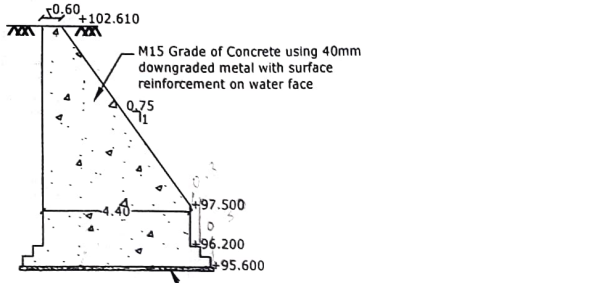
GOVERNMENT OF TAMILNADU
WATER RESOURCES DEPARTMENT
O/o Superintending Engineer, WRD.,
Designs Circle, Chepauk, Chennai-600 005.

Designed&drawn by Er.G.Jeyaprabha,AE(T7)		Name of work: Construction ofCheck Dam across an odai in S.F No.195 near Kampathumadai in Arisipalayam Village of Madukkarai Taluk in Coimbatore District.
Checked by Er.S.Meenu Renuka Devi, AEE(T7)		
Verified by Er.P.Sasikala,EE(DD)		
Recommended by Er.S.Shanthi,SE(D)		Cross section of Check dam and half plan at top and bottom
Approved by Er.A.Dhanapal,CE(DRCS)	S/d (22.03.2022)	Region: Coimbatore Region Circle: Bavanal Basin Circle, Erode.
Drg No.	Scale:- 1:150	Communicated by SE(D) in Lr No. SE(D)/EE(DD)/F 71 /2022,dt:

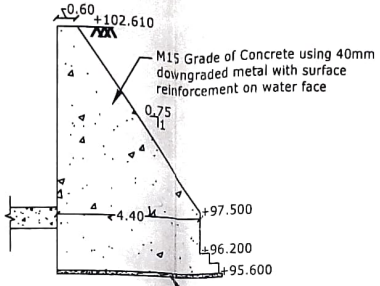
Assistant Engineer, P.W.D/W.R.D
Noyyal (West) Section,
Coimbatore - 1.

Assistant Executive Engineer P.W.D.,WRD.,
Irrigation Sub Division
Coimbatore - 641 001

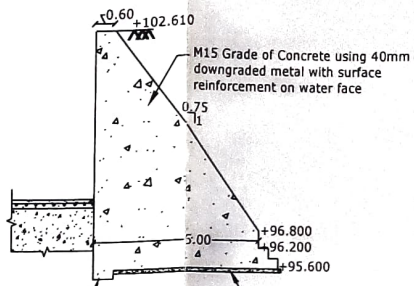
Executive Engineer, WRD.,
Bhavanisagar Dam Division
Bhavanisagar



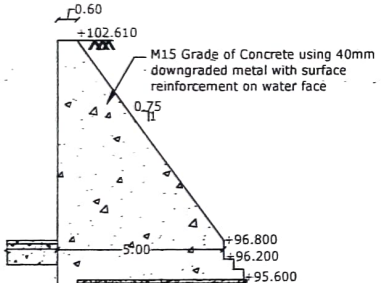
U/s Return Wall
(Section A-A)



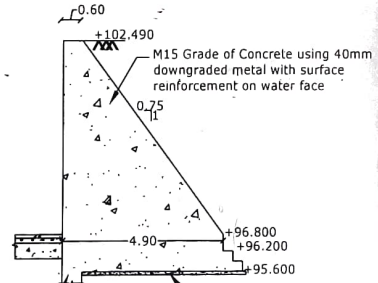
U/s Wing Wall
(Section B-B)



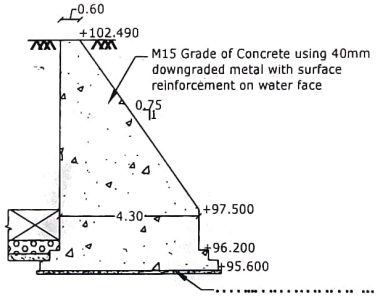
Abutment
(Section C-C)



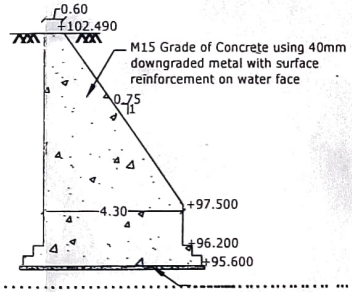
D/s Wing Wall at Start
(Section D-D)



D/s Wing Wall at basin
(Section E-E)



D/s Wing Wall
beyond basin
(Section F-F)



D/s Return Wall
(Section G-G)

Sheet No 3/4

Assistant Engineer, P.W.D/W.R.D.
Noyyal (West) Section,
Coimbatore - 1.
22.3.22

Assistant Executive Engineer P.W.D.,WRD.,
Irrigation Sub Division
Coimbatore - 641 001
22/3/22

Executive Engineer, WRD.,
Bhavanisagar Dam Division
Bhavanisagar

Note :

All dimensions are in metre unless otherwise specified.

This drawing should be read along with the drg. no . / 2022 to drg. no. / 2022

GOVERNMENT OF TAMILNADU
WATER RESOURCES DEPARTMENT
O/o Superintending Engineer, WRD.,
Designs Circle, Chepauk, Chennai-600 005.

Designed&drawn by Er.G.Jeyaprabha,AE(T7)		Name of work: Construction ofCheck Dam across an odai in S.F No.195 near Kampathumadai in Arisipalayam Village of Madukkarai Taluk in Coimbatore District.
Checked by Er.S.Meenu Renuka Devi, AEE(T7)		
Verified by Er.P.Sasikala,EE(DD)		
Recommended by Er.S.Shanthi,SE(D)		Cross section of Walls
Approved by Er.A.Dhanapal,CE(DRCS)	S/d (22.03.2022)	Region: Coimbatore Region Circle: Bavanai Basin Circle, Erode.
Drg No.	Scale:- 1:150	Communicated by SE(D) in Lr No. SE(D)/EE(DD)/F 71 /2022,dt:

GENERAL NOTES:

1. The design has been evolved based on IS 6512-1984, IS 6966-1989, IS 456-2000.
2. The design has been formulated based on the particulars furnished in the proposal sent by the Executive Engineer, WRD., Bhavanisagar Dam Division, Bhavani vide Lr No.DB/JDO2/F1B/AE4/2022 dated:27.01.2022,02.02.2022, 11.02.2022 and 10.03.2022.
3. The Check dam is designed for a maximum discharge of 3920 Cusec or 110.993 Cumecs. The check dam is designed without the scour vents as requested in the proposal.
4. The Executive Engineer, WRD, Bhavanisagar Dam Division, Bhavanisagar, in his letter dated:10.03.2022, stated that the causeway at 100m d/s of the proposed location will be constructed as high level bridge in future and requested to design the checkdam as if there is no causeway at d/s. Hence, the design is evolved as per the request and the condition without causeway is found to be the worst condition for designing the check dam for surface flow. However, the abutment, u/s wing and return wall, d/s wing and return wall are designed considering the afflux due to causeway, in order to avoid breaching of bund due to the presence of causeway. The head of water above the causeway is calculated as 1.490m and the corresponding FMFL is computed as +101.610. Accordingly, the top of u/s walls are adopted as +102.610 and that of d/s walls as +102.490m.
5. The width of the structure proposed between the face of the abutment is 32m. This shall be ensured before execution.
6. If any variation is noticed in the bed level or bed width of the proposed design during execution, the same shall be referred to this office for the revised design
7. In the trial pit particulars furnished in the proposal, the foundation strata has been classified as sand for a depth of 0.50m, followed by hard stiff clay for a depth of 0.80m, then followed by SDR for a depth of 0.70m. Hence, permeable foundation is proposed. Before execution sufficient sub surface exploration have to be carried and if there is change in substrata, it has to be referred to design circle for revision.
8. As per the trial pit particulars, hard stiff clay exists upto the level of +95.700m. Hence, the clay layer found below the bottom of the floor should be replaced by compacted sand filling.
9. It is proposed that the total length of the structure between the abutment as 32.00m, as requested in the proposal. As per the proposal, though the total available width at the proposed location is 62.00m, the bed width is 32m, remaining being high raised bund. Hence, the length of the check dam is proposed as 32m,i.e the river width as requested in the proposal. This shall be ensured before execution.
10. The parameters of backfill material such as saturated unit weight and angle of internal friction have been assumed as 2.0 t/cum and ····respectively. Hence materials conforming to the above properties shall be used as the backfill material for abutment, wings and returns.
11. The depth of footing for abutment and wing walls proposed below the sill levels are tentative and may be suitably modified according to the site conditions.
12. The proposed lengths of upstream and downstream returns are tentative and may be modified to form proper key with the banks.
13. The apron floor, upstream cut off wall, downstream cutoff wall, body wall, abutment, wing walls and returns are proposed in M15 concrete using 40mm down graded metal.
14. The wing walls, abutment and return walls have been designed for levelled back fill, the same may be ensured during execution.
15. Surface reinforcement at the rate of 2.5kg/m2 shall be provided in the abutment, wing wall, returns at water face in each direction i.e., both horizontally and vertically. Spacing of such bars shall not exceed 200mm.
16. The maximum stress developed at the bottom of the abutment is 22.726t/m2. The SBC of the foundation media should be checked and ensured to withstand the stress before taking up the work. If the existing substrata is found to be inadequate to withstand the stress, sand gravel mix (30:70) to a required depth below the foundation may be provided to withstand the stress. However, during execution if any change in substrata is noticed, it shall be referred to Designs Circle for revision.
17. The bottom of the D/s cutoff should not be keyed into the impervious layer as it will block the release of uplift pressure. If it exists, suitable filter arrangements should be provided around the cutoff wall.
18. Weep holes with necessary filter arrangements should be provided in the upstream and downstream wing walls.
19. Suitable flood banks should be formed allowing a minimum free board of 1.0m above the water surface elevation both in upstream and downstream side.
20. The proposed downstream protection works should be maintained periodically for effective functioning of the check dam and relaid after every flood, if necessary.
21. Necessary protection to the flood banks both on upstream and downstream sides shall be made by providing stone pitching for suitable length.
22. Construction shall be carried out as per IS specifications in IS 457:1957 and IS 11155:1994.
23. The abutment, wing walls and return walls shall be founded in firm soil. Any minor disturbances during excavation shall be well compacted to the required level before founding the structure.
24. Transverse contraction joints with PVC water stops shall be provided along the entire cross section of the check dam at the centre of the floor as per IS specifications and code of practice in IS 15028:2002 and IS 12200:2001.
25. A clear cover of 75mm shall be provided for the reinforcement provided in the stilling basin portion.
26. Necessary bank connections should be provided at the ends of the structure both at U/s and D/s as indicated in the drawing.
27. Abutment should be constructed monolithic with body wall and apron floor.
28. The downstream bed shall be regraded for a distance of atleast upto the location of causeway with the bed slope of 1 in 80 and for a bed width of 32.00m.

22.3.22
Assistant Engineer, P.W.D/W.R.D.
Noyyal (West) Section,
Coimbatore - 1.

22/3/22
Assistant Executive Engineer P.W.D.,WRD.,
Irrigation Sub Division
Coimbatore - 641 001

Executive Engineer, WRD.,
Bhavanisagar Dam Division
Bhavanisagar

Sheet No 4/4

GOVERNMENT OF TAMILNADU
WATER RESOURCES DEPARTMENT
O/o Superintending Engineer, WRD.,
Designs Circle, Chepauk, Chennai-600 005.

Designed&drawn by Er.G.Jeyaprabha,AE(T7)		Name of work: Construction of Check Dam across an odai in S.F No.195 near Kampathumadai in Arisipalayam Village of Madukkarai Taluk in Coimbatore District.
Checked by Er.S.Meenu Renuka Devi, AEE(T7)		
Verified by Er.P.Sasikala,EE(DD)		
Recommended by Er.S.Shanthi,SE(D)		GENERAL NOTES
Approved by Er.A.Dhanapal,CE(DRCS)	S/d (22.03.2022)	Region: Coimbatore Region Circle: Bavanai Basin Circle, Erode.
Drg No.		Communicated by SE(D) in Lr No. SE(D)/EE(DD)/F71 /2022,dt: