

**BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE BENCH AT CHENNAI**

O.A.No. 84 of 2020

Between:

Shaik Nooman Basha, Advocate

S/o Shaik Abdul Jaleel,

Aged about 48years,

R/o. Flat No. 101, SMN Apartment, Sanjeevnagar,

Nandyal, Kurnool District.

... Applicant

A N D

1. The State of Andhra Pradesh,
Rep. by its Principal Secretary,
Revenue Department,
A.P. Secretariat, Velagapudi,
Guntur District.

Phone No.0863 2444558

Email id: ps_prlsecyendow@ap.gov.in

and 4 others

.... Respondents

INDEX

Sl.No.	Date	Description of the Document	Page No.
1.	01-08-2022	3 rd Respondent Addl Counter	1-3
2.	16-12-2015	Annexure 1 Inspection Report of the Expert committee	4-9
3.	15-07-2020	Annexure 2 G.O.RT No.388	10-15
4.	07-10-2021	Annexure 3 New approved Hydraulic Particulars	16-32

It is certified that all the documents contained in the above annexure are true copies

Date: 01.08.2022



M/S MADHURI DONTI REDDY

ADVOCATE

STANDING COUNCIL FOR GOVERNMENT OF

ANDHRA PRADESH

A.P. POLLUTION CONTROL BOARD

T.T.D. SUPREME COURT OF INDIA

#S2, Royal Castle, 26, Gill Nagar Extension, Choolaimedu,
Chennai – 600 094. Mobile: 98407 98460 / 6383121322

COUNSEL FOR 3rd Respondent

1
**BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE AT CHENNAI**

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Between:

Shaik Nooman Basha,
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1. The State of Andhra Pradesh,
Rep. by its Principal Secretary,
Revenue Department,
A.P. Secretariat, Velagapudi,
Guntur District.
Phone No.0863 2444558
Email id: ps_prlsecyendow@ap.gov.in
2. The District Collector,
Kurnool District,
Phone No.08518231877
Email id: collector_krnl@ap.gov.in
3. The Engineer-in-chief,
Irrigation Department,
Vijayawada,
Phone: 9440908000
Email id: encirrigationap@gmail.com
4. The Revenue Divisional Officer,
Nandyal Division, Kurnool District,
Phone No.8333989000
Email id: rdonandyal@gmail.com
5. The Tahsildar,
Nandyal Mandal (Urban),
Kurnool District,
Phone No.9849904176.
Email id: nandyaltahsildar@gmail.com

... Respondents.

ADDITIONAL COUNTER AFFIDAVIT FILED BY THE 3rd RESPONDENT

I, C.Narayana Reddy, Son of C.Chenna Krishna Reddy, Hindu, aged about 60 years, working as Engineer-in-Chief(Irrigation), Vijayawada do hereby solemnly affirm and sincerely state on oath as follows:-

1. I am the 3rd respondent herein and as such, I am well acquainted with the facts of the case. I am filing this additional counter affidavit on my behalf.

Attester


DEPONENT
Engineer-in-Chief(i)
Water Resources Department
VIJAYAWADA, A.P.

2. Due to the flood occurred in 2007 in Nandyal and its surrounding areas inundation occurred in low laying areas of Nandyal town.

3. In order to address the problem of flooding permanently in Nandyal Town it was proposed to widen and deepen the Kundu river and accordingly an extent of 209.05 Ac was acquired in Moolasagaram village in Nandyal mandal during the year 2013 considering 251.00 meters bed width and 280.00 meters of Top Width as per approved HPs on 10-08-2009 considering the short stretches adjacent to Nandyal Town i.e Kundu river in reach between km 5.00 to km 7.00.

4. In the year 2015 an expert committee consisting of 3 Retired Chief Engineers has visited the site and opined that fixing of Hydraulic Particulars with reference to a short stretch of the river in the town would serve no purpose. Further there were already existing Railway Bridge and High Level Road Bridge within the vicinity and in order to avoid damage to these structures, the committee made some recommendations. **Annexure-1**

5. Accordingly, the Government have decided to widen and train the entire reach of Kundu river for a length of 45.800 Km on the upstream and 131.00 Km on the downstream of the reach under consideration for a total length 183.015 Km and accorded Administrative approval to the work of widening and deepening of Kundu river vide G.O.Ms No.388 Dated:-15.07.2020. This work was entrusted to M/s MRKR-RITHWIK(JV), Hyderabad. **Annexure-2**

6. The Chief Engineer, CDO, Vijayawada approved revised HPs on 07-10-2021 proposing widening of total stretch of the river from km 0.00 to 183.05 with varying bed widths from 18 m to 300 m. **Annexure -3**

7. The comparison between New approved HPs in the reach between km 45.800 to km 47.800 (5.00 to 7.00) to old proposal are tabulated below.

Reach	Width of River	Existing Bed Width	Proposed Bed width as per old proposal	Proposed Bed Width as per New proposal
45.800 to 47.800 (5.00 to 7.00)	Bottom	40	251	107
	Top	50	283	125

Attester


 DEPARTMENT
 Engineer-in-Chief(I)
 Water Resources Department
 VIJAYAWADA, A.P.

During implementation of old proposal i.e, bed width of 251 m, an extent of about 209.05 Ac was acquired as per the requirement. But later on due to revised HPs with bed width of 107 mts as suggested by the Technical Expert Committee a part of land acquired is not required by the Water Resources Department.

8.Further In the New proposal the river in meandering is avoided and straitened there by reducing the length of the river by 1.00 Km resulting in free flow of water to avoid afflux of water on upstream side .The land available in the meandering portion of the river is proposed to be utilized for development of greenery and landscape etc.,

9.It is also proposed to construct protective retaining walls on both R/S and L/S sides of the river for a length of 1.15 Km in the above newly formed reach for protection of banks and further erosion and also to accommodate excess floods during Monsoon Season.

10.All precautionary measures are taken to minimize the adverse impacts if any, to avoid ecological hazards or disaster such as 1) the embankments/spoil banks of the river (both sides) at meandering areas will be strengthened in addition to providing protection walls on both sides 2) the river will be regularly de-silted and depth of the river, slope of river bed will be maintained before monsoon every year for free flow of flood. The scheme solves the hazards of inundation reoccurring year after year due to flash floods spilling over side plain lands resulting in untoward damages for the crops, properties, lives etc.

11.In the above said circumstances, it is humbly prayed that this Hon'ble Tribunal may be pleased to dismiss the above Original Application No.84 of 2020 and pass such further or other orders as this Hon'ble Tribunal may deem fit and proper in the facts and circumstances of the case and thus render justice.

Attester

Solemnly affirmed at Vijayawada,
on this the 28th day of July ,2022
and signed his name in my presence.

BEFORE ME
ADVOCATE,


DEPONENT
Engineer-in-Chief(I)
Water Resources Department
VIJAYAWADA,A.P.

Inspection Report of the Technical Expert Committee of Projects Works in Kurnool**District.****Date of inspection: 16th December 2015.****Expert Committee Members Present:**

1. Sri K. V. Subba Rao Chief Engineer, (Retd) and Member
2. Sri Routhu Satyanarayana, Chief Engineer, (Retd) and member
3. Sri M.K.Rahaman, Engineer-in-Chief, (Retd) and Member

24/12/15
CE/KNL

Officers present:

1. Sri M. Giridhara Reddy, Chief Engineer, Central Designs Organisation
2. Sri G. Chittibabu, Chief Engineer, Projects, Kurnool.
3. Sri V.Ramachandraiah, Superintending Engineer, TGP Circle, Nandyal.

1.00: introduction:

The Engineer in - chief, Irrigation has requested the Technical Expert Committee to inspect Pothireddypadu head regulator, Kundu river protection works in Nandyal town and also the GNSS canal package works in Package 28 reach and offer technical advice on some of the problems being encountered. Accordingly the above members of the Technical Expert Committee inspected the works on 16-12-2015 and furnish the following report.

2.00 Approach channel of the Pothireddypadu head regulator:

The Pothireddypadu head regulator is constructed in the foreshore of the Srisailam reservoir to draw waters through the Srisailam Right main canal which feeds drinking water to Chennai city, the ayacut under the Srisailam Right Branch canal, the Telugu Ganga Project, the Galeru Nagari Sujala Sravanti and also the supplemental needs of the K.C.canal ayacut. The draws through the regulator for these projects also facilitate to serve the drinking water needs of the areas being served by them. Initially the regulator was designed to draw a discharge of 425 cumecs (15,000 cusecs). As this capacity was found inadequate to draw flood flows in a reduced length of time another regulator is now constructed. The drawing capacity of this regulator is 1246 cumecs (44,000 cusecs). Both these regulators have approach channels of about 4 kms in length extending into the foreshore of the reservoir upstream of the regulators. The approach channels have been so designed and executed that the regulators will be able draw the design discharges at the MDDL of +266.300 m (854.00 ft). When the reservoir levels fall below +266.300 m (845.00 ft) the waters recede much beyond the reach of the approach channels now existing due to higher ground levels in the foreshore. For emergent drinking water needs of the areas being served by the regulators; it has become incumbent to draw waters from the reservoir up to the sill levels of the regulators namely +256.338 m (841.00 ft). As the present approach channels are not in a position to draw waters below the level of + 266.300 m (845.00 ft) these are proposed to be remodelled by extending the approach channels further into the foreshore.

The proposals put forth by the field officers are examined with reference to the site conditions and the following recommendations are made.

2.01: Recommendations:

- i. The approach channels may be extended further into the foreshore. It is informed that the extension will be in the order of 6 kms making the total length of the approach channels as 10 kms.
- ii. The drawls from the reservoir above +257.556 m (845.00 ft) will be drawn from a reservoir lake, but when the reservoir level falls below the berm levels of the approach channels there will be a surface slope within the approach channel water prism to generate flows. Therefore provision must be made to account for this fall in energy levels in the design considerations.
- iii. In order to minimise the silting in the approach channel a reverse bed slope of 1 in 15000 may be adopted in the bed levels. This is to be provided in the extended length only.
- iv. The section of the extended approach channel may be such that it will draw 70.7 cumecs (2500 cusecs) when the reservoir level is +257.556 m (845.00 ft) with the sill level of the regulator being +256.337 m (841.00 ft).
- v. The proposals with site survey particulars may be sent to the Central Designs Organization and the Chief Engineer, CDO may discuss the proposals with the Expert Committee if considered necessary.

3.00 Kundu River Protection works in Nandyal town:

Nandyal town is crisscrossed by rivulets and streams called Maddileru, Paleru, Chamakalva which all join Kundu river flowing through the town limits. The Nandyal town was affected by floods in these streams in the years 2007 and 2009. The areas abutting the banks of these streams were inundated due to high flood levels recorded. Loss of property and human lives was recorded. Therefore the Government of Andhra Pradesh sanctioned estimates for flood protection works to the town in the year 2008 for an amount of Rs.97.51 Crores. The protection works to be carried out included works on Galeru, Chamakalva and Kundu rivers in addition to improvements to Nandyal chinnacheru.

Tenders were called for three reaches relating to Kundu River in Nandyal town. Only works in one reach from km. 5.00 to km. 6.850 were grounded. Even these works could not proceed ahead due to delays in land acquisition and the agreement was closed. At present no works are in progress. The sanction by the government was only up to the km. 6.850. But subsequently sanction was sought for the reach from the km.6.850 to km. 8.800. This reach from Km. 6.850 to km. 8.800 has an existing railway bridge and proposed high way Road bridge. The hydraulic particulars approved by the Central Designs Organization include widening of the river bed as well as lowering of the bed levels at the railway line crossing. In view of the widening and lowering of the existing bed levels under the railway bridge the Railways suggested that a new bridge will have to be constructed to replace the old one. The government wanted a review be made as to the necessity of the protection works under execution and further works proposed

including the railway and the road bridges. The Technical Expert Committee was requested by the Chief Engineer, Projects Kurnool to inspect the area and make recommendations.

3.01: Observations:

The Expert Committee visited on 16.12.2015 six locations of the flood affected areas of the town. These are

- a. At 2.00 kms downstream of the confluence of the Galeru stream with the Kundu River. This is the start point for the protection works on the Kundu River.
- b. At the village locations of Nandamuru Nagar and YSR Nagar- right bank of Maddileru stream, behind the Nandyal bus station. The ground levels here are reported as +207.00 m and the villages were reportedly inundated with water up to one meter depth..
- c. Right bank of Maddileru stream where a wall was partly constructed (200 m in length) on the left bank and an earthen bund of 1200 meters on the right bank. This location is 600 m upstream of the confluence of Maddileru with Kundu River. The chainage here will be km.3.00 of the Kundu River. Here the ground levels are reported as +204.00 m and flood level of the year 2007 was marked on one residential building. The building must have been under at least 2.0 meters of water.
- d. The confluence point of Chamakalva with Kundu River in the town of Nandyal. The chainage is km. 6.850.
- e. At the km. 6.995 where a high way bridge was recently constructed- that is after the floods in the year 2009.
- f. At the railway bridge at km. 7.905. Upstream of the railway bridge, extensive ramps, roads at high levels were laid blocking the course of the river.

The following are the observations of the Committee during the inspections.

- i. There are encroachments all along the lengths of the streams on either side and there are many permanent constructions.
- ii. The two villages Nandamuru Nagar and YSR Nagar also lie within the high flood levels.
- iii. Between the highway bridge and the railway bridge are encroachments blocking the river course.
- iv. An agency prepared the DPRs for the proposed protection works but there is no contour plan available marking the villages' levels, ground levels and the features obstructing the flow. It is not clear on what basis the DPR was prepared.
- v. The flood levels obtaining in the town are influenced by the downstream flow conditions. Therefore it would be proper to assess the flood levels taking into account the downstream river cross sections. Fixing hydraulic particulars with reference to a short stretch of the river in the town would serve no purpose. Mere widening and lowering the bed of the river will offer only temporary relief that too to a diminutive extent as these works will not alter the status of the water levels downstream of the town. In no time the bed levels will again revert back to the pre rehabilitation stage.
- vi. It is necessary to plan protection works taking into account the ground situation- such as the impracticability of removing the encroachments, entry of effluents, debris into the stream course etc.,
- vii. It is not necessary to plan the protection works for a 100 year return flood. It is enough if they are planned for a 50 year return flood.

- viii. The protection works could be limited to the areas populated by the residents and at other places as the inundation is for a few hours precautionary measures would have to be followed to prevent human loss.
- ix. The floods in the year 2009 are due to the Srisailem reservoir water entering the Kundu basin at Pothireddipadu than due to rains in the catchment upstream of Nandyal town. As the occurrence of 2009 is not possible to be repeated it is enough if the protection works are planned with reference to the flood levels of 2007. It is observed that the flood levels recorded in 2007 were higher than those in the year 2009.
- x. It is possible to obtain some relief by way of lower flood levels upstream of the road bridge at km.6.995, if the obstructions and encroachments in the bed of the Kundu River upstream of the railway bridge are removed.

The Committee makes the following recommendations.

3.02: Recommendations:

- i. It is necessary that a contour plan covering the portions coming within the flooded zone of the town and its surrounding areas be prepared duly marking the areas of habitations, farming fields and other important landmarks. On the plan the area of inundation as per field verification has to be marked so that protection works could be planned appropriately and at places where damages to residential areas could be avoided.
- ii. The Central Designs Organization has to be furnished existing cross sections of the streams right up to a distance of 2 kilometers downstream of the railway bridge duly marking the 2007 flood levels observed. With the help of the cross sections the CDO should be able to arrive at the flood levels downstream of the bridge for different discharges. The 2007 flood levels have to be correlated and the flood levels for a return period of 50 years extrapolated.
- ✓ iii. The protection works then have to be planned and executed based on the study of the plans prepared and the field data of flood levels recorded in the year 2007. The Committee is of the opinion that the protection works are to be planned with reference to the existing ground realities rather than trying to plan widening the river bed at the railway bridge and lowering the bed levels. The status of the bed will be a quick changing scenario and any modification will yield only a passing relief.
- ✓ iv. As the above is likely to take time, meanwhile the bed of the Kundu River from the confluence of the Maddileru at km. 6.850 to the railway bridge at km. 7.900 may be cleared of all obstructions within the flow area so that increased areas will be available for flood flows. This measure is likely to provide relief on the upstream areas with lower flood levels because of the downstream free flow conditions.
- ✓ v. **There is no need at present to either widen the bed width or lower the bed levels at the railway bridge or in other areas.** All obstructions within the existing river margins on either side should be removed. A final decision on the need to either widen or lower the bed and the bed levels will be possible after the field surveys are made available and a study made.

4.00: GNSS Canal package 28 works:

At the request of the Chief engineer, Projects, Kurnool the following locations along the canal have been visited by the Committee and the observations of the Committee are as follows;

i) Reach from km.21.100 to km. 21.400:

This canal reach, it is seen, negotiates a lime Quarry area. Mining in this area has been going on in spite of cancellation of lease by obtaining a legal stay. The ground levels have gone below the designed canal bed levels. The lime deposit may in course of time be a source of leakage through solution channels that may be formed. Formation of solution channels in Kurnool district is very common and has been observed in the HNSS canal and the GNSS canal on the upstream near the village Ramathirtham. The issue before the Committee is whether any special treatment is necessary in this reach.

The canal runs in banking reach here and the banks are as high as 12 meters and the bank sections have been designed after a regular testing of soils and stability analysis. The side slopes of the designed banks are very flat with 2.5 h to 1 v and 3.5 h to 1 v. A central impervious core has also been provided. A berm of 1500 mm was provided on the upstream slope. The Committee suggests that the width of the berm be modified to 3000 mm as minimum roller width is necessary. Similarly it would be necessary to provide a central cut off extending into the impermeable strata.

There is also no need to resort to bed filling by borrowing the soils. The mined areas may be filled only with any excavated spoil obtained from the canal works. With regard to the possible solution channels the Committee is of the opinion that the GNSS canal is a flood flow canal and is operated for a short period. Therefore the behaviour could be observed over the years and only when it is found that there is substantial water loss then only lining could be considered. As per the approved hydraulic particulars the canal section is unlined and may remain so as of now.

ii) Proposed inlet at km. 26.619 in place of Super Passage:

As per the approved hydraulic particulars at this chainage a super passage is proposed to negotiate a stream crossing. The field staff suggested that the Super Passage could be replaced with an inlet. The maximum flood discharge of the stream is reported as 38.77 cumecs. The Chief Engineer, Central Designs Organization informed that an inlet could be provided if its discharge is less than 5% of the canal discharge. The design discharge of the GNSS canal is 566.337 cumecs (20000 cusecs). Therefore the discharge at 5% will be 28.3 cumecs and the stream's discharge is more than 5% of the canal discharge. It is also seen that there are three more inlets on the upstream of this location, at km.24.900 (16 cumecs), km. 27.640 (17 cumecs) and at km. 28.250 (29 cumecs). Thus the contribution from the four streams including the one at km. 26.619 now being proposed will add up to 100.77 cumecs which will be nearly 18% of the canal discharge. Therefore it is necessary that the issue is examined in detail.

The GNSS canal is a flood flow canal and most of its alignment is in cutting. It is unlikely that the maximum discharge in the flood flow canal will coincide with the maximum outflow from all the four streams. An outlet for these discharges is being provided in the shape of an escape at km.35.315 where a stream by name Jurreru is being negotiated. It is necessary that the carrying

capacity of the surplus course of this Jurreru is evaluated to find out whether it could accommodate all the inflows from the four streams. Alternatively another out let could be provided downstream of proposed inlet at km.26.619. Detailed field particulars of all the two alternatives may be sent to the Central Designs Organization for a detailed study. It could also be examined whether the additional 100.77 cumecs could be accommodated in the free board zone of the canal. The Central Designs Organization may discuss with the Expert Committee, if considered necessary after the receipt of filed particulars and study.

iii) Canal reach from km.33.300 to km. 33.600:

This canal reach runs in partial cut and partial embankment. The Central Designs Organization has suggested that the bank above the ground level has to be with a side wall in concrete construction citing agreement conditions. The field staff suggested that instead of the concrete wall an earth bund could be formed. Technically there need not be any objection to the forming of an earthen bank. The bank however should be formed with suitable soils and to the design requirements such as a berm at the ground level. The Chief Engineer, Kurnool and the Chief Engineer, CDO may decide the issue with reference to the contractual obligations and take decision. They are free to consult the Expert Committee further on the issue if they deem it necessary.



(K.V. Subba Rao)
Chief Engineer (Retired) and Member



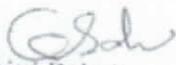
(Routhu Satyanarayana)
Chief Engineer (Retired) and Member



(M.K. Rahaman)
Engineer-in-Chief (Retired) and Member



(M. Giridhara Reddy)
Chief Engineer, Central Designs Organization



(G. Chitti Babu)
Chief Engineer (Projects), Kurnool

GOVERNMENT OF ANDHRA PRADESH
ABSTRACT

Water Resources Department – "Improvements to Escape Channel, Nippulavagu, Galeru River and Kundu River from Km 0.000 to Km 189.200 and Re-gradation of Vagu, flood Protection works and providing high level Bridges to en-route villages for improving the carrying capacity to 35000 cusecs" - Administrative Approval – Accorded – Orders – Issued.

WATER RESOURCES (PROJECTS.III) DEPARTMENT

G.O.RT.No. 388

Dated: 15-07-2020.

Read the following:-

- 1) From the Chief Engineer (P), Kurnool Letter No. CE/KNL/TWKCC(AA)/DEE4/AEE7/Rayalaseema Projects/1/2020, Dt:01/02/2020.
- 2) From the Chief Engineer (P), Kurnool Lr.No.CE/KNL/DEE3/AEE2/Rayalaseema Projects/2020, Dt: 28.04.2020

&&&&

ORDER:

In the letters 1st and 2nd read above, the Chief Engineer (P), Kurnool has requested the Government to accord administrative approval for the work "Improvements to Escape Channel, Nippulavagu, Galeru River and Kundu River from Km 0.000 to Km 189.200 and Re-gradation of Vagu, flood Protection works and providing high level Bridges to enroute villages for improving the carrying capacity to 35000 cusecs" for an amount of Rs.1501.00 Crores.

2. Government after careful examination of the proposal of Chief Engineer (P), Kurnool, hereby accorded administrative sanction for the work "Improvements to Escape Channel, Nippulavagu, Galeru River and Kundu River from Km 0.000 to Km 189.200 and Re-gradation of Vagu, flood Protection works and providing high level Bridges to en-route villages for improving the carrying capacity to 35000 cusecs" for an amount of Rs.1415.00.00.000/- (Rupees One Thousand Four Hundred and Fifteen Crores only) in relaxation of FRBM norms subject to condition that the CE has to ensure the following before according technical sanction:

i)	The correctness of provisions, quantities, rates proposed in the estimate.
ii)	The design/drawings has to be approved by the competent authority
iii)	As per the revised Sand Policy of the Govt. the Sand rate has to be adopted.
iv)	Detailed estimates/quotations has to be supported for the LS provisions.
v)	The Present proposal may not overlap under Up-gradation Pothireddypadu Head Regulator.

P.T.O.

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3. The above expenditure is debitable to the HOA: 4700-01-109 KCC -11 - 27C&D 530/531 O.E.
4. The Chief Engineer (Projects), Kurnool shall take further action accordingly.
5. This order issues with the concurrence of Finance (FMU.WR.II) Department vide their UO No. FIN01-FMU0MRAS(WR2)/ 136/2020-FMU-WR-II, dated:07-06-2020.
(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

ADITYA NATH DAS
SPECIAL CHIEF SECRETARY TO GOVERNMENT

To
The Chief Engineer (Projects), Kurnool.
Copy to:
The ENC (I), Vijayawada.
The Director of Works & Accounts, Vijayawada
The Finance (FMU.WR.II) Department
The PS to Minister (WRD)
The PS to Special Chief Secretary (WRD)
File No. ICD01/MJIR/136/2020-PRO-III (1091008)
SF/SC

//FORWARDED :: BY ORDER//

SECTION OFFICER

Office of the Chief Engineer & DWRO,
Water Resources Dept. :: Kurnool.

Proceedings No. CE/KNL/ICD32-TW0KCC(TS)/1/2020/DEE4/AEE7, Dt. 14/08/2020

Present: Sri. R. Muralinatha Reddy, M.Tech.,
Chief Engineer & DWRO,

Water Resources Department - "Estimate for the work of "Improvements to escape channel, Nippula vagu, Galeru River and Kundu River from Km 0.000 to Km 189.200 and Re-gradation of Vagu, flood Protection works and Providing High Level bridges at enroute villages for improving the carrying capacity to 35000 cusecs" -Technical Sanction - Accorded - Regarding.

- Ref: 1) G.O. Rt. No: 388 Dt: 15-07-2020
2) T.O. Proceedings No. CE/KNL/ICD32-TW0KCC(TS)/1/2020DEE4/AEE7,
Dt.7.08.2020
3) T.O. Proceedings No. CE/KNL/ICD32TW0KCC(TS)/1/2020DEE4/AEE7,
Dt.10.08.2020

In ref 1st cited above, the Government have accorded Administrative approval for the work "Improvements to escape channel, Nippula vagu, Galeru River and Kundu River from Km 0.000 to Km 189.200 and Re-gradation of Vagu, flood Protection works and Providing High Level bridges at enroute villages for improving the carrying capacity to 35000 cusecs" for Rs.1415.00 Crs.

As a part of Rayalaseema Drought Mitigation Scheme under K.C. Canal head to call for tenders and to ground the works, the Technical sanction to Combined Estimate was accorded for the works of Construction of 2 Reservoirs across Kundu River along with the subject work for Rs. 3083.81 Crores and later amended the Technical sanction for Rs.3065.80 Crores vide ref 2nd cited.

During discussions on 12.8.2020 in the judiciary review regarding technical sanction to Combined Estimate of works, the Honourable Judge has advised to accord separate technical sanctions for the works and accordingly prepare the tender document for review:

Under the circumstances explained above, afresh technical sanction is hereby accorded for the subject work duly cancelling the combined technical sanction accorded vide ref 2nd & 3rd cited and details are noted below:

CER No: 10/2020-21

Name of work	CE's Register No.	Technical sanction amount	Head of account
Improvements to Escape channel, Nippula vagu, Galeru River and Kundu River from Km 0.000 to Km 189.200 and Re-gradation of Vagu, flood Protection works and Providing High Level bridges at enroute villages for improving the carrying capacity	CER. No. 12/20-21 Dt. 14/08/2020	Rs.1402.50 Crores. (Rupees Fourteen Hundred and two Crores and Fifty lakhs only) with SSR 2019-20.	The amount is chargeable to Head of Account "4700-01-109-11-27-530/531-O.E"

I/337815/2020

to 35000 cusecs			
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The above technical sanction supersedes the combined estimate technical sanction and its amendment accorded vide ref 1st and 2nd cited. The individual technical sanctions accorded for 2 reservoir works across Kundu river vide CER Nos 3/2020-21 Dt: 17-5-2020 and CER No: 5/2020-21 Dt: 23-05-2020 remains in force as it is.

The Superintending Engineer is responsible for the correctness of quantities furnished in the Estimate and requested to get the approvals for HPs, Designs and Drawings for the structures from the competent authority prior to execution of the works.

The Superintending Engineer is requested to take further necessary action.

Encl: Approved copy of Report, General Abstract.

To
The Superintending Engineer,
TGP Circle, Nandyal.

R MURALINATHA REDDY
CHIEF ENGINEER

Copy of Report and Abstract to the APAO, Nandyal.

Signature Not Verified

Digitally signed by Muralinatha
Reddy Ramireddygar
Date: 2020.08.14 17:21:17 IST
Reason: Approved

**GOVERNMENT OF ANDHRA PRADESH
WATER RESOURCES DEPARTMENT**

From
Sri.R.Muralinatha Reddy, M.Tech,
Chief Engineer & DWRO,
Water Resources Department,
Kurnool - 518004.

To
M/s MRKR-RITHWIK(JV),
H.No.8-2-268/1/D/A, Plot No.7,
Aurora Colony, Road No.3,
Banjara Hills, Hyderabad-50003.

Letter No. CE/KNL/ICD32-TW/DEE3/AEE2/680/2020, Dt. 25/11/2020

Gentlemen,

Sub: Water Resources Department –“(i) Improvements to Escape Channel, Nippulavagu, Galeru River and Kundu River from Km 0.000 to Km 189.200 and Re-gradation of Vagu, flood Protection works and providing high level Bridges at enroute villages for improving the carrying capacity to 35000 cusecs”, (ii)“Construction of Joladarasi Reservoir with 0.8 TMC across Kundu River at Joladarasi (V), Koilkuntal (M), Kurnool District” and (iii) “Formation of Rajoli Reservoir across Kundu River on Upstream side of existing Rajoli Anicut for a total storage capacity of 2.95 TMC of Water” – Letter of Acceptance Issued - Reg.

Ref: 1) e-procurement Tender Notice No.02/2020-21, Dt:21-10-2020
2) The State Level Technical Committee Minutes on 23-11-2020.

Your tender for the above subject work was approved by the State Level Technical Committee on 23-11-2020 for an amount of RS. 1758,81,90,154/- (Rupees One thousand Seven hundred Fifty Eight crores Eighty One lakhs Ninety thousand One hundred and Fifty Four only) at (-) 0.584% over the ECV value of Rs. Rs.1769,15,97,566/-.

The agency is requested to make necessary arrangements to proceed with the work immediately and he should submit all the original copies of the uploaded bid documents. You are requested to attend to this office within 15 days from receipt of this letter of communication along with the following documents for concluding the agreement.

1. Earnest Money Deposit @ 2.5% of contract value i.e **Rs 43,97,04,754/- (Rupees Forty Three Crores Ninety Seven Lakhs Four Thousand Seven Hundred and Fifty Four only)** in the shape of unconditional and irrevocable Bank Guarantee towards performance security in the standard format from any Nationalized Bank in favour of “**Chief Engineer & DWRO, Water Resources Department, Kurnool**” valid for 63 months.
2. Non Judicial Stamp papers 2 Nos worth Rs. 100/- each, one for agreement and other for indemnity bond.
3. A Demand Draft for Rs. 25,000/- in favour of Managing Director, APTS, Vijayawada towards e-procurement Corpus Fund.
4. The methodology and programme of Construction and Quality Management Plan.

Please note that failure to sign the contract agreement within the stipulated time will entail cancellation of your tender duly forfeiting of EMD paid by you without issuing further notice as per clause 2 of Article 7 (Award of Contract) and other Bid document conditions applicable.

The receipt of the letter should be acknowledged in the first Instance.

For MRKR-RITHWIK (JV)



Authorised Signatory



Chief Engineer & DWRO
Water Resource Department
KURNOOL

Yours faithfully,
R Muralinatha Reddy,
Chief Engineer.

Copy to the Superintending Engineer, TGP Circle, Nandyal for information and taking necessary action.

For MRKR-RITHWIK (JV)



Authorised Signatory

Signed by R Muralinatha
Reddy

Date: 25-11-2020 18:29:24

Reason: Approved

Chief Engineer & DWRO
Water Resource Department
KURNOOL



16
GOVERNMENT OF ANDHRA PRADESH
WATER RESOURCES DEPARTMENT

From:
Sri.K.Srinivas, M.Tech, M.I.E., M.I.G.S
Chief Engineer,
Central Designs Organization,
Sai Balaji Complex, Near Iron Yard,
Bhavanipuram,
Vijayawada-520012.(A.P)

To:
The Chief Engineer & DWRO,
Water Resources Department,
Kurnool.

Lr.No.CE/CDO/EE/Div-1/DEE-2/AEE-5/ Escape Channel-Kundu River/HPs/141/2021/ Dt: 07.10.2021.

Sir,

Sub:- WRD – “ Improvements to Escape Channel, Nippulavagu, Galeru River and Kundu River from Km 0.000 to 189.200 and Re-gradation of Vagu, flood protection works and providing high level Bridges at enroute villages for improving the carrying capacity to 35000 cusecs”- Hydraulic Particulars of Escape Channel, Nippula Vagu, Galeru River & Kundu River from Km 0.000 to Km 183.050 - Hydraulic Particulars Approval requested –Tentative Approval of Hydraulic Particulars from Km 0.000 to Km 183.050 – Communication - Reg.

- Ref:-**
1. Agt.No.06 CE/2020-21,Dt: 31.03.2021.
 2. Lr.No.SE/TGP/NDL/DW/DEE/AE3/114CE, Dt: 06.08.2021
 3. Lr.No.CE/KNL/ICD32-TWOKCC/DEE/AEE2/30/2021(1477704),Dt:07.08.2021.
 4. T.O.Lr.No.CE/CDO/EE/Div-1/DEE-2/AEE-5/EscapeChannel-Kundu River/HP's/141/2021, Dt: 17.09.2021.
 5. Lr.No.CE/KNL/ICD32-TWOKCC/DEE/AEE2/31/2021(1517227),Dt: 24.09.2021.

With reference to the letter 3rd & 5th cited, wherein the Chief Engineer & DWRO, Water Resources Department, Kurnool has furnished the proposals of Hydraulic Particulars of “Improvements to Escape Channel, Nippulavagu, Galeru River and Kundu River from Km 0.000 to Km 183.050 and Re-gradation of Vagu, flood protection works and providing high level Bridges at enroute villages for improving the carrying capacity to 35000 cusecs” for according approval, it is to inform that the Hydraulic Particulars of Escape Channel, Nippulavagu, Galeru River and Kundu River from Km 0.000 to Km 183.050 are tentatively approved with the following details.

1. The velocities proposed by the Project authorities duly considering the sub soil strata as soft rock along the alignment are considered in the tentative approved HP's. During execution the sub soil strata must be ensured as the velocities in the reaches are designed considering the strata furnished by the project authorities. If any change in the soil classification is observed, the same shall be referred to the CDO for review and revision of Hydrulic particulars.

2. During execution if any addition/deletion of CM & CD works are found necessary, the same shall be included in the HPs statement and the proposals referred to the CDO for revision.
3. The location of joining the loop canal is @ Km 0.100 with FSL of + 265.752 as approved vide this office Lr.No.CE/CDO/EE-5/DEE-15/AEE43/Loop Canal/HP's/39/2021/168, Dt: 09.09.2021. If any change in the joining point, the same shall be referred to CDO for revision.
4. The loop canal is designed with side slopes of 1:1 and the Escape channel is designed with side slopes of 0.5:1. Proper transitions shall be provided while joining the loop canal in to Escape channel.
5. The Project Authorities may explore the possibility of avoiding structures in curve during detailed site survey of structures.
6. At the existing structures from Km 0.000 to Km 183.050, wherever no loss of head provided, the Project Authorities shall design the structures with afflux as zero.
7. The Discharges proposed by the Project Authorities in various reaches are considered for approval. If any deviation in the discharges in the sections of the HPs now approved, the same shall be referred to the CDO for revision.
8. The Project authorities shall ensure that the designed capacity of channel/river i.e 35000 C/s or existing carrying capacity of the section whichever is more, whenever the streams are merging in to the river along the alignment.
9. The Project Authorities have not considered the discharge let into the river from certain streams enroute the alignment. This may result in submersion of adjacent fields during the floods when the main river is flowing with designed discharge. This aspect need to be examined during execution.
10. The HP's are finalised considering the MFL (+132.796) proposed by the Project Authorities at the confluence point with Penna River at tail end i.e Km 183.050. Any change in MFL at confluence point will have effect in the HP's now tentatively approved.
11. The Existing Rajoli Anicut is located at Km 130.066 and is 75.00 m D/s of the proposed Reservoir. The D/s protection works of the proposed Reservoir and its Spillway may get overlapped with the existing anicut U/S Protection works. This shall be examined before finalization of the designs of Rajoli Reservoir.
12. The functioning of the existing CM/CD structures for the modified H.Ps shall be ensured by the Project Authorities before adopting the sections now approved.

B. 13.
incr
183.050

- 18
13. The Project Authorities shall ensure that minimum free board shall be available with the increased discharges for the CM/CD structures in the reach from Km 0.00 to Km 183.050.
 14. The functioning of the Existing Power Plants for the modified H.P's shall be ensured by the Project Authorities before adopting the sections now approved.
 15. The curve details along with alignment from Km 0.000 to Km 183.050 have not enclosed by the project authorities. During execution proper super elevation is to be provided as per IS: 5968-1987 wherever the minimum radius of curvature is not available along alignment.
 16. Proper transitions shall be provided wherever the canal section changes.
 17. The Project Authorities are requested to ascertain the suitability of the hydraulic parameters and particulars with respect to site conditions before execution.
 18. The Project authorities shall ensure the FRL of Reservoirs (Joladharsi & Rajoli) as the approach channel lengths (now approved) at Reservoirs are based on the FRL of the reservoirs i.e +187.500 & +164.000.
 19. Necessary protection works & proper transitions shall be provided at the confluence points of the streams/river along the alignment.

The receipt of this letter along with enclosures may please be acknowledged. The feedback form is also to be filled, duly countersigned and communicates to this office.

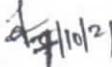
Encl:-1) HP Statement (Tentative Approval) – 1 No
2) Feed Back Form – 1No

Yours faithfully,
Sd/- (05.10.2021)
Chief Engineer,
Central Designs Organisation,
Vijayawada.

Copy to Superintending Engineer, TGP Circle, Nandyal for information and further necessary action.

// T.C.F//


Executive Engineer
Division No.I,
CDO, Vijayawada


27/10/21

HYDRAULIC PARTICULARS OF ESCAPE CHANNEL, NIPPULA VAGU, GALERU RIVER AND KUNDU RIVER FROM KM 0.000 TO KM 183.050

S.No	REACH in Km.		DISTANCE in (Km)	HYDRAULIC PARTICULARS								BED LEVEL IN M		FULL SUPPLY LEVEL IN M		T.B.L IN M		LOSS OF HEAD			COEFFICIENT OF RUCCOSITY (n)	PROPOSED STRUCTURE	REMARKS
	FROM	TO		REQUIRED DISCHARGE in (cumecs)	BED WIDTH in m	F.S.D in m	FREE BOARD in (m)	SURFACE FALL	SIDE SLOPES (Inner/Outer)	VELOCITY in m/sec	DESIGNED DISCHARGE in (cumecs)	AT START	AT END	AT START	AT END	AT START	AT END	AT START	AT END	DUE TO BEDFALL in (m)			
1	0.000	0.050	0.050	495.540	18.000	11.890	1.000	3560	0.5:1/2:1	1.618	507.995	253.890	253.876	265.780	265.766	266.780	266.766	0.014	0.000	0.014	0.035		
2	0.050	0.100	0.050				Transition					253.876	253.862	265.766	265.752	266.766	266.752	0.014	0.000	0.014	0.035		Confluence of Loop Canal @ Km0.100
3	0.100	0.480	0.380	991.080	37.000	11.890	1.000	3560	0.5:1/2:1	1.877	1013.497	253.862	253.755	265.752	265.645	266.752	266.645	0.107	0.000	0.107	0.035		
4	0.480	0.530	0.050				Transition					253.755	253.741	265.645	263.631	266.645	264.631	0.014	2.000	2.014	0.035		FSL Drop of 2.00 m in the transition from km 0.480 to km. 0.530 due to change of Bed width.
5	0.530	1.010	0.480	991.080	48.000	9.890	1.000	3560	0.5:1/2:1	1.802	1001.851	253.741	253.606	263.631	263.496	264.631	264.496	0.135	0.000	0.135	0.035		
6	1.010	1.064	0.054				Transition					253.606	253.591	263.496	261.481	264.496	262.481	0.015	2.100	2.115	0.035	DLB @ KM 1.064	Structure loss of 0.100 m & FSL Drop of 2.00 m in the transition from km 1.010 to km. 1.064 due to change of Bed width.
7	1.064	1.810	0.746	991.080	69.000	7.890	1.000	3560	0.5:1/2:1	1.668	1004.930	253.491	253.281	261.381	261.171	262.381	262.171	0.210	0.000	0.210	0.035		
8	1.810	1.860	0.050				Transition					253.281	253.267	261.171	259.157	262.171	260.157	0.014	2.000	2.014	0.035		FSL Drop of 2.00 m in the transition from km 1.810 to km. 1.860 due to change of Bed width
9	1.860	2.250	0.390	991.080	110.000	5.890	1.000	3560	0.5:1/2:1	1.457	998.899	253.267	253.157	259.157	259.047	260.157	260.047	0.110	0.000	0.110	0.035		

STATION NO.	FROM	TO	HYDRAULIC PARTICULARS							BED LEVEL IN M			FULL SUPPLY LEVEL IN M		T.B.L. IN M		LOSS OF HEAD			COEFFICIENT OF RUSSITY (n)	PROPOSED STRUCTURE	REMARKS	
			REQUIRED DISCHARGE in (cumecs)	BED WIDTH in m	F.S.D. in m	FREE BOARD in (m)	SURFACE FALL	SIDE SLOPES (Inner/Outer)	VELOCITY in m/sec	DESIGNED DISCHARGE in (cumecs)	AT START	AT END	AT START	AT END	AT START	AT END	DUE TO BEDFALL in (m)	DUE TO CM/CD STRUCTURE (m)	TOTAL in (m)				
22	10.250	10.300	0.050	Transition							236.560	236.540	241.460	241.440	242.460	242.440	0.020	2.005	2.025	0.030	WEIR @ KM 10.300	Abdulapuram Power House -II Crest Level +239.940 M	
23	10.300	10.350	0.050	991.080	108.000	4.700	1.000	2300	1.5:1/2:1	1.846	998.197	234.735	234.713	239.435	239.413	240.435	240.413	0.022	3.097	3.119	0.030	DROP @ KM 10.350	
24	10.350	13.244	2.894	991.080	108.000	4.700	1.000	2300	1.5:1/2:1	1.846	998.197	231.616	230.358	236.316	235.058	237.316	236.058	1.258	0.100	1.358	0.030	DLB @ KM 13.244	
25	13.244	13.539	0.295	991.080	108.000	4.700	1.000	2300	1.5:1/2:1	1.846	998.197	230.258	230.130	234.938	234.830	235.938	235.830	0.128	2.130	2.258	0.030	WEIR @ KM 13.539	Velpanur Power House -III Crest Level +233.330 M.
26	13.539	13.600	0.061	991.080	108.000	4.700	1.000	2300	1.5:1/2:1	1.846	998.197	228.000	227.973	232.700	232.673	233.700	233.673	0.027	3.000	3.027	0.030	DROP @ KM 13.600	
27	13.600	13.725	0.125	991.080	108.000	4.700	1.000	2300	1.5:1/2:1	1.846	998.197	224.973	224.919	229.673	229.619	230.673	230.619	0.054	2.400	2.454	0.030	DROP @ KM 13.725	
28	13.725	16.500	2.775	991.080	108.000	4.700	1.000	2300	1.5:1/2:1	1.846	998.197	222.519	221.312	227.219	226.012	228.219	227.012	1.207	0.100	1.307	0.030	DLB @ KM 16.500	
29	16.500	17.300	0.800	991.080	108.000	4.700	1.000	2300	1.5:1/2:1	1.846	998.197	221.212	220.864	225.912	225.564	226.912	226.564	0.348	0.000	0.348	0.030		
30	17.300	19.520	2.220	991.080	108.000	4.700	1.000	2300	1.5:1/2:1	1.846	998.197	220.864	219.899	225.564	224.599	226.564	225.599	0.965	0.100	1.065	0.030	DLB @ KM 19.520	Confluence Point of Galeru River @ Km 17.300
31	19.520	20.875	1.355	991.080	108.000	4.700	1.000	2300	1.5:1/2:1	1.846	998.197	219.799	219.210	224.499	223.910	225.499	224.910	0.589	0.000	0.589	0.030		
32	20.875	20.925	0.050	Transition							219.210	217.888	223.910	223.888	224.910	224.888	224.888	0.022	0.000	0.022	0.030	BED TRANSITION FROM KM 20.875 TO 20.925	Bed Difference of 1.30 m in transition due to decrease in Bed width with out change of FSL.
33	20.925	22.414	1.489	991.080	71.000	6.000	1.000	2300	1.5:1/2:1	2.082	999.360	217.888	217.241	223.888	223.241	224.888	224.241	0.647	0.100	0.747	0.030	DLB @ KM 22.414	
34	22.414	24.988	2.574	991.080	71.000	6.000	1.000	2300	1.5:1/2:1	2.082	999.360	217.141	216.022	223.141	222.022	224.141	223.022	1.119	0.000	1.119	0.030		

Nippala Vaidya from km.3.560 to km.17.300

S.No	REACH in Km.		DISTANCE in (km)	HYDRAULIC PARTICULARS										BED LEVEL IN M			FULL SUPPLY LEVEL IN M		T.B.L. IN M		LOSS OF HEAD			COEFFICIENT OF RUGOSITY (n)	PROPOSED STRUCTURE	REMARKS
	FROM	TO		REQUIRED DISCHARGE in (cumecs)	BED WIDTH in m	F.S.D in m	FREE BOARD in (m)	SURFACE FALL	SIDE SLOPES (Inner/Outer)	VELOCITY in m/sec	DESIGNED DISCHARGE in (cumecs)	AT START	AT END	AT START	AT END	AT START	AT END	AT START	AT END	AT START	AT END	AT START	AT END			
35	24.988	25.038	0.050	Transition										216.022	216.000	222.022	222.000	223.022	223.000	0.022	1.890	1.912	0.030	EXISTING SANTAJUTURU ANICUT @ KM 25.038 AND CREST LEVEL +219.380		
36	25.038	25.100	0.062	991.080	93.000	5.000	1.000	2100	1.5:1/2:1	1.992	1000.980	215.110	215.080	220.110	220.080	221.110	221.080	0.030	2.375	2.405	0.030	DROP @ KM 25.100				
37	25.100	25.250	0.150	991.080	93.000	5.000	1.000	2100	1.5:1/2:1	1.992	1000.980	212.705	212.634	217.705	217.634	218.705	218.634	0.071	0.100	0.171	0.030	DLB @ KM 25.250				
38	25.250	27.475	2.225	991.080	93.000	5.000	1.000	2100	1.5:1/2:1	1.992	1000.980	212.534	211.474	217.534	216.474	218.534	217.474	1.060	1.800	2.860	0.030	DROP @ KM 27.475				
39	27.475	27.594	0.119	991.080	93.000	5.000	1.000	2100	1.5:1/2:1	1.992	1000.980	209.674	209.617	214.674	214.617	215.674	215.617	0.057	0.000	0.057	0.030					
40	27.594	27.644	0.050	Transition										209.617	209.593	214.617	214.593	215.617	215.593	0.024	0.000	0.024	0.030			
41	27.644	30.863	3.219	991.080	93.000	5.000	1.000	2100	1.5:1/2:1	1.992	1000.980	209.593	208.060	214.593	213.060	215.593	214.060	1.533	0.100	1.633	0.030	DLB @ KM 30.863				
42	30.863	32.516	1.653	991.080	93.000	5.000	1.000	2100	1.5:1/2:1	1.992	1000.980	207.960	207.173	212.960	212.173	213.960	213.173	0.787	0.100	0.887	0.030	DLB @ KM 32.516				
43	32.516	35.625	3.109	991.080	93.000	5.000	1.000	2100	1.5:1/2:1	1.992	1000.980	207.073	205.593	212.073	210.593	213.073	211.593	1.480	1.700	3.180	0.030	DROP @ KM 35.625				
44	35.625	37.975	2.350	991.080	93.000	5.000	1.000	2100	1.5:1/2:1	1.992	1000.980	203.893	202.774	208.893	207.774	209.893	208.774	1.119	0.000	1.119	0.030					
45	37.975	38.025	0.050	Transition										202.774	202.750	207.774	207.750	208.774	208.750	0.024	0.000	0.024	0.030			
46	38.025	38.060	0.035	991.080	93.000	5.000	1.000	2100	1.5:1/2:1	1.992	1000.980	202.750	202.733	207.750	207.733	208.750	208.733	0.017	0.100	0.117	0.030	DLB @ KM 38.060				

Confluence Point of Major Vagu

Galeru River from Km.17.300 to Km.41.075

FROM

In (Km)

R

REACH in Km.	FROM TO	HYDRAULIC PARTICULARS										LOSS OF HEAD			T.R.I. IN M	REMARKS								
		DISTANCE in (Km)	REQUIRED DISCHARGE in (cumecs)	BED WIDTH in m	F.S.D in m	FREE BOARD in (m)	SURFACE FALL	SIDE SLOPES (Inner/Outer)	VELOCITY in m/sec	DESIGNED DISCHARGE in (cumecs)	BED LEVEL IN M	FULL SUPPLY LEVEL IN M	AT START	AT END			AT START	AT END	DUE TO BEDFALL in (m)	DUE TO C/WCD STRUCTURE (m)	TOTAL in (m)	COEFFICIENT OF RUGOSITY (n)	PROPOSED STRUCTURE	
50	50.550	54.175	3.625	1120.873	108.000	5.000	1.000	2200	1.5:1/2:1	1.961	1132.478	193.450	200.098	198.450	201.098	199.450	1.648	0.000	1.648	0.030				
61	54.175	54.225	0.050	Transition										193.450	198.450	198.427	199.450	199.427	0.023	0.000	0.023	0.030		Confluence Point of Kappala Vagu
62	54.225	54.361	0.136	1154.698	111.000	5.000	1.000	2200	1.5:1/2:1	1.964	1163.670	193.427	198.427	198.365	199.427	199.365	0.062	0.100	0.162	0.030		DLB @ KM 54.361		
63	54.361	55.950	1.589	1154.698	111.000	5.000	1.000	2200	1.5:1/2:1	1.964	1163.670	193.265	198.265	197.543	199.265	198.543	0.722	0.000	0.722	0.030				
64	55.950	56.000	0.050	Transition										192.543	197.543	197.520	198.543	198.520	0.023	0.000	0.023	0.030		
65	56.000	59.140	3.140	1154.698	111.000	5.000	1.000	2200	1.5:1/2:1	1.964	1163.670	192.520	197.520	196.093	198.520	197.093	1.427	0.000	1.427	0.030				
66	59.140	59.190	0.050	Transition										191.093	196.093	196.070	197.093	197.070	0.023	0.000	0.023	0.030		Confluence Point of Kannikala Vagu
67	59.190	60.028	0.838	1330.187	128.000	5.000	1.000	2200	1.5:1/2:1	1.977	1339.418	191.070	196.070	195.689	197.070	196.689	0.381	0.100	0.481	0.030		DLB @ KM 60.028		
68	60.028	60.950	0.922	1330.187	128.000	5.000	1.000	2200	1.5:1/2:1	1.977	1339.418	190.589	195.589	195.170	196.589	196.170	0.419	0.000	0.419	0.030				
69	60.950	61.000	0.050	Transition										190.170	195.170	195.147	196.170	196.147	0.023	0.000	0.023	0.030		
70	61.000	62.575	1.575	1330.187	136.000	5.000	1.000	2500	1.5:1/2:1	1.859	1333.833	190.147	195.147	194.517	196.147	195.517	0.630	0.000	0.630	0.030				
71	62.575	62.625	0.050	Transition										189.517	194.517	194.497	195.517	195.497	0.020	0.000	0.020	0.030		Confluence Point of Kurra Vagu
72	62.625	64.950	2.325	1376.866	141.000	5.000	1.000	2500	1.5:1/2:1	1.863	1383.278	189.497	194.497	193.567	195.497	194.567	0.930	0.000	0.930	0.030				

FROM TO
CE in (Km)
THARGE

Kundur River from Km.41.075 to km.183.050

S/S

FROM	TO	DISTANCE in (km)	HYDRAULIC PARTICULARS							BED LEVEL IN M		FULL SUPPLY LEVEL IN M		T.B.L IN M		LOSS OF HEAD			COEFFICIENT OF RU/COSITY (n)	PROPOSED STRUCTURE	REMARKS		
			REQUIRED DISCHARGE in (cumecs)	BED WIDTH in m	F.S.D in m	FREE BOARD in (m)	SURFACE FALL	SIDE SLOPES (Inner/Outer)	VELOCITY in m/sec	DESIGNED DISCHARGE in (cumecs)	AT START	AT END	AT START	AT END	AT START	AT END	DUE TO BEDFALL in (m)	DUE TO CM/CD STRUCTURE (E)				TOTAL in (m)	
73	64.950	65.000	0.050				Transition					188.567	188.547	193.567	193.547	194.567	194.547	0.020	0.000	0.020	0.030		Confluence Point of Pacharla Vagu
74	65.000	67.950	2.950	1399.297	144.000	5.000	1.000	2500	1.5:1/2:1	1.864	1411.980	188.547	187.367	193.547	192.367	194.547	193.367	1.180	0.000	1.180	0.030		
75	67.950	68.000	0.050				Transition					187.367	187.347	192.367	192.347	193.367	193.347	0.020	0.000	0.020	0.030		
76	68.000	69.160	1.160	1404.425	144.000	5.000	1.000	2500	1.5:1/2:1	1.864	1411.980	187.347	186.883	192.347	191.883	193.347	192.883	0.464	0.100	0.564	0.030	DLB @ KM 69.160	
77	69.160	75.515	6.355	1404.425	144.000	5.000	1.000	2500	1.5:1/2:1	1.864	1411.980	186.783	184.241	191.783	189.241	192.783	190.241	2.542	0.000	2.542	0.030		
78	75.515	75.565	0.050				Transition					184.241	184.221	189.241	189.221	190.241	190.221	0.020	0.000	0.020	0.030		Confluence Point of Alugu Vagu
79	75.565	76.225	0.660	1412.063	149.000	5.000	1.000	2650	1.5:1/2:1	1.815	1456.538	184.221	183.972	189.221	188.972	190.221	189.972	0.249	0.100	0.349	0.030	DLB @ KM 76.225	
80	76.225	78.486	2.261	1412.063	149.000	5.000	1.000	2650	1.5:1/2:1	1.815	1456.538	183.872	183.019	188.872	188.019	189.872	189.019	0.853	0.000	0.853	0.030		
81	78.486	78.536	0.050				Transition					183.019	183.000	188.019	188.000	189.019	189.000	0.019	0.000	0.019	0.030		Confluence Point of Paleru Vunha
82	78.536	79.875	1.339	1447.305	154.000	5.000	1.000	2680	1.5:1/2:1	1.805	1457.538	183.000	182.500	188.000	187.500	189.000	188.500	0.500	0.000	0.500	0.030		START POINT OF SUBMERGENCE @ KM 79.875 OF PROPOSED JOLADARSHI RESERVOIR - FRL 187.500 M
83	Approach Channel from km:79.875 to km: 83.000 (Length = 3.125 Kms)							2680	1.5:1/2:1	1.805	1457.538	182.500	181.334	187.500	186.334	188.500	187.334	1.166	0.000	1.166	0.030	PROPOSED APPROACH CHANNEL FROM KM. 79.875 TO KM 83.000 FOR JOLADARSHI RESERVOIR	

S.No	DISTANCE IN Km.		HYDRAULIC PARTICULARS										BED LEVEL IN M		FULL SUPPLY LEVEL IN M		T.B.L IN M		LOSS OF HEAD		COEFFICIENT OF RUGOSITY (n)	PROPOSED STRUCTURE	REMARKS	DISTANCE IN (Km) TO OUBREID DISCHARGE
	FROM	TO	REQUIRED DISCHARGE in cumecs	BED WIDTH in m	F.S.D in m	FREE BOARD in (m)	SURFACE FALL	SIDE SLOPES (Inner/Outer)	VELOCITY in m/sec	DESIGNED DISCHARGE in cumecs	AT START	AT END	AT START	AT END	AT START	AT END	AT START	AT END	DUE TO BEDFALL in (m)	DUE TO C/MCD STRUCTURE (m)				
84	SUBMERGENCE OF PROPOSED JOLADARSHI RESERVOIR (FROM KM.79.875 TO KM.85.750)																							
85	85.750	85.800	0.050	1466.400	141.000	5.000	1.000	2200	1.5:1/2:1	1.986	1474.605	179.000	178.977	184.000	183.977	185.000	184.977	0.023	0.500	0.523	0.030	PROPOSED JOLADARSHI RESERVOIR		
86	85.800	86.012	0.212	1466.400	141.000	5.000	1.000	2200	1.5:1/2:1	1.986	1474.605	178.477	178.381	183.477	183.381	184.477	184.381	0.096	0.000	0.096	0.030	DROP @ KM 85.800		
87	86.012	86.062	0.050									178.381	178.358	183.381	183.358	184.381	184.358	0.023	0.000	0.023	0.030		Confluence Point of Jumarra River	
88	86.062	87.585	1.523	1629.248	157.000	5.000	1.000	2200	1.5:1/2:1	1.993	1639.243	178.358	177.666	183.358	182.666	184.358	183.666	0.692	0.080	0.772	0.030	EXISTING BRIDGE @ KM 87.585		
89	87.585	87.632	0.047	1629.248	157.000	5.000	1.000	2200	1.5:1/2:1	1.993	1639.243	177.586	177.565	182.586	182.565	183.586	183.565	0.021	0.000	0.021	0.030	EXISTING BRIDGE @ KM 87.632		
90	87.632	87.750	0.118	1629.248	157.000	5.000	1.000	2200	1.5:1/2:1	1.993	1639.243	177.565	177.511	182.565	182.511	183.565	183.511	0.054	2.000	2.054	0.030	DROP @ KM 87.750		
91	87.750	90.775	3.025	1629.248	157.000	5.000	1.000	2200	1.5:1/2:1	1.993	1639.243	175.511	174.136	180.511	179.136	181.511	180.136	1.375	2.797	4.172	0.030	DROP @ KM 90.775		
92	90.775	91.768	0.993	1629.248	157.000	5.000	1.000	2200	1.5:1/2:1	1.993	1639.243	171.339	170.888	176.339	175.888	177.339	176.888	0.451	0.000	0.451	0.030			
93	91.768	91.818	0.050									170.888	170.865	175.888	175.865	176.888	176.865	0.023	0.000	0.023	0.030		Confluence Point of Kundarra Vagu	
94	91.818	92.588	0.770	1636.479	157.000	5.000	1.000	2200	1.5:1/2:1	1.993	1639.243	170.865	170.515	175.865	175.515	176.865	176.515	0.350	0.100	0.450	0.030	DLB @ KM 92.588		
95	92.588	96.675	4.087	1636.479	157.000	5.000	1.000	2200	1.5:1/2:1	1.993	1639.243	170.415	168.557	175.415	173.557	176.415	174.557	1.858	0.100	1.958	0.030	DLB @ KM 96.675		
96	96.675	99.925	3.250	1636.479	157.000	5.000	1.000	2200	1.5:1/2:1	1.993	1639.243	168.457	166.980	173.457	171.980	174.457	172.980	1.477	0.000	1.477	0.030			



FROM	TO	HYDRAULIC PARTICULARS								BED LEVEL IN M		FULL SUPPLY LEVEL IN M		T.B.L. IN M		LOSS OF HEAD			COEFFICIENT OF ROUGHNESS (n)	PROPOSED STRUCTURE	REMARKS		
		DISTANCE IN (Km)	REQUIRED DISCHARGE in (cumecs)	BED WIDTH in m	F.S.D in m	FREE BOARD in (m)	SURFACE FALL	SIDE SLOPES (Inner/Outer)	VELOCITY in m/sec	DESIGNED DISCHARGE in (cumecs)	AT START	AT END	AT START	AT END	AT START	AT END	AT START	AT END				DUE TO B.E.P.A.L. IN (m)	DUE TO C.M./CD STRUCTURE (m)
97	99.925	99.975	0.050	Transition								166.980	166.957	171.980	171.957	172.980	172.957	0.023	0.000	0.023	0.030		Confluence Point of Gondra Vagu
98	99.975	106.632	6.657	1710.833	165.000	5.000	1.000	2200	1.5:1/2:1	1.998	1723.275	166.957	163.931	171.957	168.931	172.957	169.931	3.026	0.100	3.126	0.030	DLB @ KM 106.632	
99	106.632	106.788	0.156	1710.833	165.000	5.000	1.000	2200	1.5:1/2:1	1.998	1723.275	163.831	163.760	168.831	168.760	169.831	169.760	0.071	0.000	0.071	0.030		
100	106.788	106.838	0.050	Transition								163.760	163.737	168.760	168.737	169.760	169.737	0.023	0.000	0.023	0.030		Confluence Point of Era Vagu
101	106.838	111.667	4.829	1717.217	176.000	5.000	1.000	2500	1.5:1/2:1	1.878	1723.065	163.737	161.805	168.737	166.805	169.737	167.805	1.932	0.100	2.032	0.030	DLB @ KM 111.667	
102	111.667	112.300	0.633	1717.217	176.000	5.000	1.000	2500	1.5:1/2:1	1.878	1723.065	161.705	161.452	166.705	166.452	167.705	167.452	0.253	0.000	0.253	0.030		
103	112.300	112.350	0.050	Transition								161.452	161.432	166.452	166.432	167.452	167.432	0.020	0.000	0.020	0.030		Confluence Point of Kundra Vagu
104	112.350	116.100	3.750	1753.117	181.000	5.000	1.000	2590	1.5:1/2:1	1.847	1740.798	161.432	159.984	166.432	164.984	167.432	165.984	1.448	0.000	1.448	0.030		
105	116.100	116.150	0.050	Transition								159.984	159.965	164.984	164.965	165.984	165.965	0.019	0.000	0.019	0.030		Confluence Point of Major Vagu
106	116.150	118.500	2.350	1753.117	183.000	5.000	1.000	2590	1.5:1/2:1	1.848	1760.220	159.965	159.058	164.965	164.058	165.965	165.058	0.907	0.000	0.907	0.030	EXISTING BRIDGE @ KM 118.500	
107	118.500	118.650	0.150	1753.117	183.000	5.000	1.000	2590	1.5:1/2:1	1.848	1760.220	159.058	159.000	164.058	164.000	165.058	165.000	0.058	0.000	0.058	0.030	START POINT OF SUBMERGENCE @ KM 118.650 OF PROPOSED RAJOLI RESERVOIR PRL 164.000M	
108	Approach Channel from km.118.650 to km.122.000 (Length = 3.350 Kms)			1753.117	183.000	5.000	1.000	2590	1.5:1/2:1	1.848	1760.220	159.000	157.707	164.000	162.707	165.000	163.707	1.293	0.000	1.293	0.030	PROPOSED APPROACH CHANNEL FROM KM 118.650 TO KM 122.000 FOR RAJOLI RESERVOIR	

No	REACH in Km.		DISTANCE in (km)	HYDRAULIC PARTICULARS							BED LEVEL IN M		FULL SUPPLY LEVEL IN M		T.B.L IN M		LOSS OF HEAD			COEFFICIENT OF RUICOSITY (n)	PROPOSED STRUCTURE	REMARKS		
	FROM	TO		REQUIRED DISCHARGE in (cumecs)	BED WIDTH in m	F.S.D in m	FREE BOARD in (m)	SURFACE FALL	SIDE SLOPES (Inner/Outer)	VELOCITY in m/sec	DESIGNED DISCHARGE in (cumecs)	AT START	AT END	AT START	AT END	AT START	AT END	DUE TO BEDFALL in (m)	DUE TO CM/CD STRUCTURE				TOTAL in (m)	
109	SUBMERGENCE OF PROPOSED RAJOLI RESERVOIR (FROM KM.118.650 TO KM.129.991)																							
110	129.991	130.066	0.075	2182.152	213.000	5.000	1.000	2250	1.5:1/2:1	1.992	2196.180	156.000	155.967	161.000	160.967	162.000	161.967	0.033	0.000	0.033	0.030	PROPOSED RAJOLI RESERVOIR	Crest level of Anicut + 158.840	
111	130.066	130.150	0.084	2182.152	213.000	5.000	1.000	2250	1.5:1/2:1	1.992	2196.180	155.967	155.929	160.967	160.929	161.967	161.929	0.038	3.000	3.038	0.030	DROP @ KM 130.150		
112	130.150	131.900	1.750	2182.152	213.000	5.000	1.000	2250	1.5:1/2:1	1.992	2196.180	152.929	152.151	157.929	157.151	158.929	158.151	0.778	1.400	2.178	0.030	DROP @ KM 131.900		
113	131.900	133.464	1.564	2182.152	213.000	5.000	1.000	2250	1.5:1/2:1	1.992	2196.180	150.751	150.056	155.751	155.056	156.751	156.056	0.695	0.000	0.695	0.030	EXISTING BRIDGE @ KM 133.464		
114	133.464	133.525	0.061	2182.152	213.000	5.000	1.000	2250	1.5:1/2:1	1.992	2196.180	150.056	150.029	155.056	155.029	156.056	156.029	0.027	1.000	1.027	0.030	DROP @ KM 133.525		
115	133.525	136.150	2.625	2182.152	213.000	5.000	1.000	2250	1.5:1/2:1	1.992	2196.180	149.029	147.862	154.029	152.862	155.029	153.862	1.167	0.000	1.167	0.030			
116	136.150	136.200	0.050	Transition									147.862	147.840	152.862	152.840	153.862	153.840	0.022	0.000	0.022	0.030		Confluence Point of Major Vagu
117	136.200	140.591	4.391	2183.667	213.000	5.000	1.000	2250	1.5:1/2:1	1.992	2196.180	147.840	145.888	152.840	150.888	153.840	151.888	1.952	0.100	2.052	0.030	EXISTING CAUSE WAY @ KM 140.591		
118	140.591	142.810	2.219	2183.667	213.000	5.000	1.000	2250	1.5:1/2:1	1.992	2196.180	145.788	144.802	150.788	149.802	151.788	150.802	0.986	0.000	0.986	0.030			
119	142.810	142.860	0.050	Transition									144.802	144.780	149.802	149.780	150.802	150.780	0.022	0.000	0.022	0.030		Confluence Point of Vakkileru River
120	142.860	146.825	3.965	2267.766	221.000	5.000	1.000	2250	1.5:1/2:1	1.994	2278.145	144.780	143.018	149.780	148.018	150.780	149.018	1.762	0.000	1.762	0.030			

FROM	TO	HYDRAULIC PARTICULARS										LOSS OF HEAD			REMARKS								
		DISTANCE IN (km)	REQUIRED DISCHARGE (cumecs)	BED WIDTH IN m	F.S.D IN m	FREE BOARD IN (m)	SURFACE FALL	SIDE SLOPES (Inner/Outer)	VELOCITY IN m/sec	DESIGNED DISCHARGE (cumecs)	BED LEVEL IN M	FULL SUPPLY LEVEL IN M	T.B.L IN M	DUE TO BEDFALL IN (m)		DUE TO CM/CD STRUCTURE (m)	TOTAL IN (m)	COEFFICIENT OF RIGIDITY (n)	PROPOSED STRUCTURE				
121	146.825	146.875	0.050	Transition										143.018	142.996	147.996	149.018	148.996	0.022	0.000	0.022	0.030	Confluence Point of Major Vagu
122	146.875	147.150	0.275	2302.000	224.000	5.000	1.000	2250	1.5:1/2:1	1.995	2309.213	142.996	142.874	147.996	148.874	148.874	148.874	0.122	0.000	0.122	0.030	EXISTING BRIDGE @ KM 147.150	
123	147.150	152.042	4.892	2302.000	224.000	5.000	1.000	2250	1.5:1/2:1	1.995	2309.213	142.874	140.700	147.874	145.700	146.700	146.700	2.174	0.000	2.174	0.030		
124	152.042	152.092	0.050	Transition										140.700	140.678	145.678	146.700	146.678	0.022	0.000	0.022	0.030	Confluence Point of Major Vagu
125	152.092	153.300	1.208	2482.440	250.000	5.000	1.000	2400	1.5:1/2:1	1.937	2493.888	140.678	140.175	145.678	145.175	146.678	146.175	5.003	0.100	6.003	0.030	EXISTING CAUSE WAY @ KM 153.300	
126	153.300	158.919	5.619	2482.440	250.000	5.000	1.000	2400	1.5:1/2:1	1.937	2493.888	140.075	137.734	145.075	142.734	146.075	143.734	2.341	0.100	2.441	0.030	EXISTING CAUSE WAY @ KM 158.919	
127	158.919	159.638	0.719	2482.440	250.000	5.000	1.000	2400	1.5:1/2:1	1.937	2493.888	137.634	137.334	142.634	142.334	143.634	143.334	3.000	0.000	3.000	0.030		
128	159.638	159.688	0.050	Transition										137.334	137.313	142.313	143.313	143.313	0.021	0.000	0.021	0.030	Confluence Point of Nalla Vagu
129	159.688	160.000	0.312	2501.510	244.000	5.000	1.000	2250	1.5:1/2:1	1.999	2513.743	137.313	137.174	142.313	142.174	143.313	143.174	0.139	0.000	0.139	0.030	EXISTING BRIDGE @ KM 160.000	
130	160.000	161.715	1.715	2501.510	244.000	5.000	1.000	2250	1.5:1/2:1	1.999	2513.743	137.174	136.412	142.174	141.412	143.174	142.412	0.762	0.000	0.762	0.030		
131	161.715	161.765	0.050	Transition										136.412	136.390	141.412	142.390	142.412	0.022	0.000	0.022	0.030	Confluence Point of Uppu Vagu
132	161.765	164.538	2.773	2509.666	263.000	5.000	1.000	2600	1.5:1/2:1	1.864	2521.060	136.390	135.323	141.390	140.323	142.390	141.323	1.067	0.100	1.167	0.030	EXISTING CAUSE WAY @ KM 164.538	
133	164.538	170.970	6.432	2509.666	263.000	5.000	1.000	2600	1.5:1/2:1	1.864	2521.060	135.223	132.749	140.223	137.749	141.223	138.749	2.474	0.120	2.594	0.030	EXISTING BRIDGE @ KM 170.970	

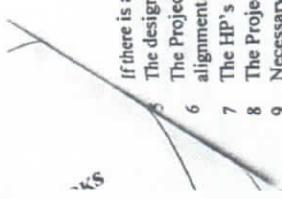
Kundu River from Km.41.075 to km.170.970

30

S.No	REACH in Km.		DISTANCE in (km)	HYDRAULIC PARTICULARS							BED LEVEL IN M			FULL SUPPLY LEVEL IN M			DUE TO BEDFALL in (m)	DUE TO CN/D STRUCTURE (m)	TOTAL in (m)	COEFFICIENT OF RIGOS	PROPOSED STRUCTURE	REMARKS	
	FROM	TO		REQUIRED DISCHARGE in (cumecs)	BED WIDTH in m	F.S.D in m	FREE BOARD in (m)	SPACE FALL	SIDE SLOPES (Inner/Outer)	VELOCITY in m/sec	DESIGNED DISCHARGE in (cumecs)	AT START	AT END	AT START	AT END	AT START							AT END
134	170.970	171.000	0.720	2509.666	263.000	5.000	1.000	2600	1.5:1/2.1	1.864	2521.060	132.629	132.352	137.629	137.352	138.629	138.352	0.277	0.000	0.277	0.030		Confluence Point of Moderu Vanka
135	171.690	171.740	0.050									132.352	132.333	137.352	137.333	138.352	138.333	0.019	0.000	0.019	0.030		
136	171.740	172.360	3.620	2549.369	267.000	5.000	1.000	2600	1.5:1/2.1	1.864	2558.340	130.941	130.631	135.781	135.631	136.781	136.631	0.150	0.000	0.150	0.030		
137	175.360	175.750	0.390	2549.369	267.000	5.000	1.000	2600	1.5:1/2.1	1.864	2558.340	130.781	130.631	135.781	135.631	136.781	136.631	0.150	0.000	0.150	0.030		
138	175.750	175.800	0.050									130.631	130.612	135.631	135.612	136.612	136.612	0.019	0.000	0.019	0.030		Confluence Point of Major vanga
139	175.800	179.700	3.900	2555.322	270.000	5.000	1.000	2650	1.5:1/2.1	1.848	2564.100	129.140	129.140	135.612	134.140	136.612	135.140	1.472	0.080	1.552	0.030		EXISTING BRIDGE @ KM 175.360
140	179.700	181.275	1.575	2555.322	270.000	5.000	1.000	2650	1.5:1/2.1	1.848	2564.100	128.466	128.466	134.060	133.466	135.060	134.466	0.594	0.000	0.594	0.030		EXISTING BRIDGE @ KM 179.700
141	181.275	181.325	0.050									128.466	128.447	133.466	133.447	134.466	134.447	0.019	0.000	0.019	0.030		
142	181.325	183.050	1.725	2838.649	300.000	5.000	1.000	2650	1.5:1/2.1	1.851	2845.913	128.447	127.796	133.447	132.796	134.447	133.796	0.651	0.000	0.651	0.030		CONFLUENCE POINT OF PENNA RIVER @ Km 183.050
												Check:	FSL @ Starting 265.780		FSL @ Ending 132.796	72.959	60.025	132.984	132.984				

Approved
sd/-4/30/09/2021
Chief Engineer
Central Designs Organisation
Vijayawada

Notes:
 1 The hydraulic particulars are approved tentatively based on the data furnished by the Project Authorities vide Lr No. CE/KNL/ICD32-TWOKCC/DDEE/AEE2/30/2021(1477704), Dt. 07.08.2021 & Lr No. CE/KNL/ICD32-TWOKCC/DDEE/AEE2/31/2021(1517227), Dt. 24.09.2021.
 2 The sections as furnished by the Project Authorities are considered for approval, keeping in view of the replies furnished by CE, Kurunool, vide Lr No. CE/KNL/ICD32-TWOKCC/DDEE/AEE2/31/2021(1517227), Dt. 24.09.2021.
 3 The Discharge, Side slopes and 'n' value are considered as proposed by CE, Kurunool.



- 6 If there is any deviation in the discharge, sections of the canal in the Hydraulic Particulars now approved (tentatively), the same may be referred to the CDO for review and revision.
- 7 The designed velocities in the sections from Km 0.000 to 183.050 are to be verified and satisfied by the Project Authorities as per site conditions keeping in view of the strata of soil encountered.
- 8 The Project authorities shall ensure that the designed capacity of channel/river i.e 35000 C/s or existing carrying capacity of the section whichever is more, whenever the streams are merging in to the river along the alignment.
- 9 The HP's are finalised considering the MFL (+132.796) proposed by the Project Authorities at the confluence point with Penna River at tail end i.e Km 183.050. Any char
- 10 The Project Authorities shall ensure the FRL of Reservoirs (Joladarshi & Rajoli) as the approach channel lengths now approved at Reservoirs based on the FRL of the Necessary protection arrangements at transitions shall be proposed.
- 10 The adoptability of HP's now approved tentatively (Bed width, Bed level, FSL etc) shall be ensured as per site condition before execution.

// T.C.F//

 Executive Engineer
 Division No.1,
 CDO, Vijayawada


ANNEXURE - 9
FEEDBACK FORM

Name of the work/ service:

	Low	Medium	High
1. How would you evaluate organization RESPONSE?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. How would you appraise QUALITY of service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. How would you assess PROMPTNESS of service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Any other remarks or suggestions

Name :

Designation :

Date:

Signature