

**GOVERNMENT OF ANDHRA PRADESH**

IRRIGATION AND CAD DEPARTMENT

(H.N.S.S. PHASE-2,PACKAGE NO.3)

**HYDRAULIC PARTICULARS HNSS MAIN CANAL(STAGE-II) FROM KM 245.000 TO 252.000 AND KM 252.850 TO 258.800**

SL. No	Reach No	Reach in KM			Hydraulic Particulars											Loss (m)			Bed Level		Full Supply Level		Remarks	
		From	To	Distance (In Mts)	Required Discharge (Cumecs)	Bed Width (In Mts)	F.S.D (In Mts)	Surface Fall	Side Slopes	A(m2)	P(m)	R(m)	R=2/3	Velocity M/Sec	Designed Discharge (Cumecs)	Due To Bed Fall	DueTo CM & CD Structures	Total	AT Start (M)	AT End (M)	AT Start (M)	AT End (M)		
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	1	245.000	245.800	800	71.300	15.00	3.70	1:13000	1.50:1	76.040	28.341	2.683	1.931	0.941	71.533	0.062	0.00	0.062	457.550	457.488	461.250	461.188	FSL AT KM 245.000 AS PER AGREEMENT BASIC PARAMETERS +461.250	PRTIAL CUTTING AND FILLING
4		245.800	245.850	50	Transition		3.70	1:11750								0.004	0.00	0.004	457.488	457.484	461.188	461.184		
5	2	245.850	246.300	450	71.300	15.00	3.70	1:10500	1.00:1	69.190	25.465	2.717	1.947	1.056	73.042	0.043	0.00	0.043	457.484	457.442	461.184	461.142	FULL CUTTING	H.R AND F&F
5	4	250.150	250.750	600	71.300	15.00	3.70	1:13000	1.50:1	76.040	28.341	2.683	1.931	0.941	71.533	0.046	0.00	0.046	456.990	456.944	460.690	460.644	PRTIAL CUTTING AND FILLING	H.R AND F&F
6		250.750	250.800	50	Transition		3.70	1:11750								0.004	0.00	0.004	456.944	456.940	460.644	460.640	-	
7	5	250.800	251.500	700	71.300	15.00	3.70	1:10500	1.00:1	69.190	25.465	2.717	1.947	1.056	73.042	0.067	0.00	0.067	456.940	456.873	460.640	460.573	FULL CUTTING	F.R AND H.D.R
8		251.500	251.550	50	Transition		3.70	1:11750								0.004	0.00	0.004	456.873	456.869	460.573	460.569	-	
9	6	251.550	252.000	450	71.300	15.00	3.70	1:13000	1.50:1	76.040	28.341	2.683	1.931	0.941	71.533	0.035	0.00	0.035	456.869	456.834	460.569	460.534	PRTIAL CUTTING AND FILLING	ALL SOILS,HDR & F.F
11	8	252.850	254.500	1650	71.300	15.00	3.70	1:10500	1.00:1	69.190	25.465	2.717	1.947	1.056	73.042	0.157	0.00	0.157	456.770	456.613	460.470	460.313	FULL CUTTING	F.R AND H.D.R
13	10	255.750	256.600	850	71.300	15.00	3.70	1:13000	1.50:1	76.040	28.341	2.683	1.931	0.941	71.533	0.065	0.00	0.065	456.468	456.403	460.168	460.103	PRTIAL CUTTING AND FILLING	ALL SOILS,HDR & F.F
15	12	257.400	258.250	850	71.300	15.00	3.70	1:13000	1.50:1	76.040	28.341	2.683	1.931	0.941	71.533	0.065	0.00	0.065	456.311	456.246	460.011	459.946	PRTIAL CUTTING AND FILLING	ALL SOILS,HDR & F.F
16		258.250	258.300	50	Transition		3.70	1:11750								0.004	0.00	0.004	456.246	456.242	459.946	459.942		
17	13	258.300	258.800	500	71.300	15.00	3.70	1:10500	1.00:1	69.190	25.465	2.717	1.947	1.056	73.042	0.048	0.00	0.048	456.242	456.194	459.942	459.894	FULL CUTTING	F.R AND H.D.R

SL. No	Reach No	Reach in KM			Hydraulic Particulars										Loss (m)			Bed Level		Full Supply Level		Remarks
		From	To	Distance (In Mts)	Required Discharge (Cumecs)	Bed Width (In Mts)	F.S.D (In Mts)	Surface Fall	Side Slopes	A(m2)	P(m)	R(m)	R=2/3	Velocity M/Sec	Designed Discharge (Cumecs)	Due To Bed Fall	DueTo CM & CD Structures	Total	AT Start (M)	AT End (M)	AT Start (M)	AT End (M)

1) Co-efficiet of Rugosity : 0.018

2) THE PROPOSED ALIGNMENT AND H.P.'S FURNISHED VIDE LR. NO. ENC/TGP/SKHT/HNSS/PHASE-II/PK-3/CAMP No.2 Dt:06-02-08 ARE VETTED AND APPROVED FROM 245.00 TO KM 252.00 AND KM.252.850 TO KM.258.800.

3) THE H.P'S IN H.R REACHES i.e.from km 246.300 to 250.150,FROM 254.500 TO 255.750 AND FROM KM 256.600 TO 257.400 ARE WITH HELD FOR WANT OF ACTUAL BORE HOLE DATA

4) THE LIST OF STRUCTURES SHALL BE FINALISED SEPARATELY ON RECEIPT OF PROPOSALS AS PER SITE CONDITIONS AND AGREEMENT FROM ENC.TGP.SRIKALAHASTI.

// t.c.f //  
Sd/-(dt.26.02.2008)  
Executive Engineer  
Canals-II  
Division

Sd/-(dt.22.02.2008)  
(I.S.N.RAJU)  
Chief Engineer  
Central Designs Organisation  
Hyderabad.

**GOVERNMENT OF ANDHRA PRADESH**

IRRIGATION AND CAD DEPARTMENT  
(H.N.S.S. PHASE-2,PACKAGE NO.3)

**HYDRAULIC PARTICULARS HNSS MAIN CANAL(STAGE-II) FROM 1) Km246.300 to Km250.150, 2) Km252.000 to Km252.850, 3) Km254.500 to Km 255.750 and 4) 256.600 to Km 257.400.**

SL. No	Reach No	Reach in KM			Hydraulic Particulars											Loss (m)			Bed Level		Full Supply Level		Remarks	
		From	To	Distance (In Mts)	Required Discharge (Cumecs)	Bed Width (In Mts)	F.S.D (In Mts)	Surface Fall	Side Slopes	A(m2)	P(m)	R(m)	R=2/3	Velocity M/Sec	Designed Discharge (Cumecs)	Due To Bed Fall	DueTo CM & CD Structures	Total	AT Start (M)	AT End (M)	AT Start (M)	AT End (M)		
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
2		246.300	246.350	50	Transition		3.70	1: 9500								0.005	0.00	0.005	457.442	457.437	461.142	461.137		
3	3	246.350	250.100	3750	71.300	15.00	3.70	1: 8500	0.50:1	62.35	23.273	2.679	1.929	1.162	72.463	0.441	0.00	0.441	457.437	456.995	461.137	460.695	FULL CUTTING VARIES FROM 13.0M TO 32.10 (H.R I WATER PRISM)	H.R. IN WATER PRISM
4		250.100	250.150	50	Transition		3.70	1: 10750								0.005	0.00	0.005	456.995	456.990	460.695	460.690		
12		252.000	252.050	50	Transition		3.70	1: 14000								0.004	0.00	0.004	456.834	456.830	460.534	460.530		
13	7	252.050	252.600	550	71.300	15.00	3.70	1: 15000	2.00:1	82.88	31.547	2.627	1.904	0.864	71.580	0.037	0.00	0.037	456.830	456.793	460.530	460.493	PRTIAL CUTTING AND FILLING ,BANKING	ALL SOILS,HDR & F.F
14		252.600	252.650	50	Transition		3.70	1: 12750								0.004	0.00	0.004	456.793	456.789	460.493	460.489	-	
15	8	252.650	252.850	200	71.300	15.00	3.70	1:10500	1.00:1	69.19	25.465	2.717	1.947	1.056	72.042	0.019	0.00	0.019	456.789	456.770	460.489	460.470	FULL CUTTING	F.R AND H.D.R
16		254.500	254.550	50	Transition		3.70	1: 9500								0.005	0.00	0.005	456.613	456.608	460.313	460.308		
17	9	254.550	255.700	1150	71.300	15.00	3.70	1: 8500	0.50:1	62.35	23.273	2.679	1.929	1.162	72.463	0.135	0.00	0.135	456.608	456.473	460.308	460.173	FULL CUTTING VARIES FROM 14.0M TO 21.10 (H.R I WATER PRISM)	H.R. IN WATER PRISM
18		255.700	255.750	50	Transition		3.70	1: 10750								0.005	0.00	0.005	456.473	456.468	460.173	460.168		
20		256.600	256.650	50	Transition		3.70	1: 10750								0.005	0.00	0.005	456.403	456.398	460.103	460.098		
21	11	256.650	257.350	700	71.300	15.00	3.70	1: 8500	0.50:1	62.35	23.273	2.679	1.929	1.162	72.463	0.082	0.00	0.082	456.398	456.316	460.098	460.016	FULL CUTTING VARIES FROM 10.0M TO 17.00 (H.R I WATER PRISM)	H.R. IN WATER PRISM
22		257.350	257.400	50	Transition		3.70	1: 10750								0.005	0.00	0.005	456.316	456.311	460.016	460.011		

1)Co-effiect of Rugosity : 0.018

2) THE PROPOSED ALIGNMENT AND H.P.'S FURNISHED VIDE LR. NO. ENC/TGP/SKHT/DW/DD-2/DEE-3/AEE-41AVRHNS/C2/ATP/Camp/1, DT. 66-4-08 ARE VETTED AND APPROVED SUBJECTED TO PROVIDING OF NECESSARY PROTECTION WORKS AS PER SITE CONDITIONS IN THE EMBANKMENT AND BED FILLING FROM KM 252.05 TO KM 252.600 WITH ENTIRE BED FILLING REACH LINED INSIDE OF THE CANAL WITH REVETMENT ON REAR SLOPES WITH PROTECTION WORKS SUCH AS KEY TRENCHES, TOE WALLS ETC.

3)THE LIST OF STRUCTURES SHALL BE FINALISED SEPARATELY ON RECEIPT OF PROPOSALS AS PER SITE CONDITIONS AND AGREEMENT FROM ENC. TGP, SRIKALAHASTI.

// t.c.f //  
Sd/-(dt.21.04.2008)  
Executive  
Engineer  
Canals-II Division

Sd/-(dt.19.04.2008)  
(I.S.N.RAJU)  
Chief Engineer  
Central Designs Organisation  
Hyderabad.

**GOVERNMENT OF ANDHRA PRADESH**  
 IRRIGATION AND CAD DEPARTMENT  
 (H.N.S.S. PHASE-2,PACKAGE NO.3)  
**HYDRAULIC PARTICULARS HNSS MAIN CANAL(STAGE-II) FROM KM 258.800 TO 260.000)**

SL. No	Reach No	Reach in KM			Hydraulic Particulars											Loss (m)			Bed Level (In m)		Full Supply Level		Remarks
		From	To	Distance (IN Mts)	Required Discharge (Cumecs)	Bed Width (In Mts)	F.S.D (In Mts)	Surface Fall	Side Slopes	A(m2)	P(m)	R(m)	R=2/3	Velocity M/Sec	Designed Discharge (Cumecs)	Due To Bed Fall	DueTo CM & CD Structures	Total	At Start (M)	At End (M)	At Start (M)	At End (M)	
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1		258.800	258.850	50	Transition		3.70	1:11750								0.004	0.00	0.003	456.194	456.190	459.894	459.890	
2	1	258.850	259.175	325	71.300	15.00	3.70	1:13000	1.50 : 1	76.04	28.341	2.683	1.931	0.941	71.533	0.023	0.00	0.023	456.190	456.167	459.890	459.867	
3		259.175	259.225/260.000	50	Transition	15.00 To 14.50	3.70	1:12650								0.004	0.00	0.004	456.167	456.163	459.867	459.863	FSL AT KM 260.000 AS PER PK-2 AGREEMENT BASIC PARAMETERS

**Co-efficient of Rugosity : 0.018**

1 The alignment and H Ps of the end reach Package 3 from Km. 258.800 to km. 259.225 / 260 000 are vetted and approved based on concurrence of common point furnished vide letter no. ENC/TGP/SKHTIDW/DD2/DEE3/HNSS-ATP/Pkg No.3/ Vol.9/905 Dt. 24-10-2009

2 The list of structures of the package 3 shall be finalised seperately on receipt of proposals as per site conditions and agreement from ENC, T.G.P SriKalahasti.

// t.c.f //  
 Sd/-(dt.26.10.2009)  
 Executive  
 Engineer  
 Canals-II Division,CDO,  
 Hyderabad

**APPROVED**  
 Sd/-(dt.26.10.2009)  
 (I.S.N.RAJU)  
 Chief Engineer,CDO  
 Hyderabad.

**GOVERNMENT OF ANDHRA PRADESH**

IRRIGATION AND CAD DEPARTMENT  
(H.N.S.S. PHASE-2,PACKAGE NO.3)

**HYDRAULIC PARTICULARS HNSS MAIN CANAL FROM KM 247.125 TO 250.250+0.700/ 250.250 (Kuderu R.F)**

SL. No	Reach No	Reach in KM			Hydraulic Particulars											Loss (m)			Bed Level (In m)		Full Supply Level		Remarks	
		From	To	Distance (IN Mts)	Required Discharge (Cumecs)	Bed Width (In Mts)	P.S.D (In Mts)	Surface Fall	Side Slopes	A(m2)	P(m)	R(m)	R=2/3	Velocity M/Sec	Designed Discharge (Cumecs)	Due To Bed Fall	DueTo CM & CD Structures	Total	At Start (M)	At End (M)	At Start (M)	At End (M)		
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1		258.800	258.850	50	Transition		3.70	1:11750								0.004	0.00	0.003	456.194	456.190	459.894	459.890		
2	1	258.850	259.175	325	71.300	15.00	3.70	1:13000	1.50 : 1	76.04	28.341	2.683	1.931	0.941	71.533	0.023	0.00	0.023	456.190	456.167	459.890	459.867		
3		259.175	259.225/260.000	50	Transition	15.00 To 14.50	3.70	1:12650								0.004	0.00	0.004	456.167	456.163	459.867	459.863	FSL AT KM 260.000 AS PER PK-2 AGREEMENT BASIC PARAMETERS	

**Co-efficiet of Rugosity : 0.018**

1 The alignment and H Ps of the end reach Package 3 from Km. 258.800 to km. 259.225 / 260 000 are vetted and approved based on concurrence of common point furnished vide letter no. ENC/TGP/SKHTIDW/DD2/DEE3/HNSS-ATP/Pkg No.3/ Vol.9/905 Dt. 24-10-2009

2 The list of structures of the package 3 shall be finalised seperately on receipt of proposals as per site conditions and agreement from ENC, T.G.P SriKalahasti.

// t.c.f //

**Sd/-(dt.26.10.2009)**

**Executive**

**Engineer  
Canals-II Division,CDO,**

**APPROVED**

**Sd/-(dt.26.10.2009)**

**(I.S.N.RAJU)**

**Chief Engineer,CDO**

**Hyderabad.**

**GOVERNMENT OF ANDHRA PRADESH**

IRRIGATION AND CAD DEPARTMENT

(H.N.S.S.Stage II -Package 3)

**HYDRAULIC PARTICULARS OF HNSS MAIN CANAL FROM KM 247.125 to 250.250+0.700/250.250 (Kuderu R.F)**

Sl.No	Reach in KM			Hydraulic Particulars											Loss (m)			Bed Level		Full Supply Level		Remarks	
	From	To	Distance (In Mts)	Required Discharge (Cumecs)	Bed Width (In Mts)	F.S.D (In Mts)	Surface Fall	Side Slopes	Area	Perimeter	R	R=2/3	Velocity M/Sec	Designed Discharge (Cumecs)	Due To Bed Fall	Due To CM & CD Structures	Total	At Start (M)	At End (M)	At Start (M)	At End (M)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	246.350	247.125	775	71.3	15.000	3.700	1 in 8500	0.5:1	6.25	23.273	2.679	1.929	1.162	72.463	0.091	0.000	0.091	+457.437	+457.346	+461.137	+461.046	Approved	
2	247.125	248.350	1225	71.3	15.000	3.700	1 in 8500	0.5:1	6.25	23.273	2.679	1.929	1.162	72.463	0.144	0.000	0.144	+457.346	+457.202	+461.046	+460.902	Full Cutting	H.R Reach
3	248.350	248.400	50	Transition		3.700	1 in 10750								0.005	0.000	0.005	+457.202	+457.197	+460.902	+460.897	Transition	
4	248.400	250.225	1825	71.3	15.000	3.700	1 in 13000	1.5:1	76.04	28.341	2.683	1.931	0.941	71.533	0.140	0.000	0.140	+457.197	+457.057	+460.897	+460.757	Cutting ,partial cutting & partial Banking Reach	
5	250.225	250.250+0.025	50	Transition		3.700	1 in 11150								0.004	0.000	0.004	+457.057	+457.053	+460.757	+460.753	Transition	
6	250.250+0.025	250.250+0.650	625	71.3	14.00	3.700	1 in 9300	1:1	65.49	24.465	2.677	1.928	1.111	72.735	0.067	0.000	0.067	+457.053	+456.986	+460.753	+460.686	Full Cutting	H.R Reach
7	250.250+0.650	250.250+0.700	50	Transition		3.700	1 in 11150								0.040	0.000	0.040	+456.986	+456.982	+460.686	+460.682	Transition	
8	250.250+0.700	250.750/250.250	500	71.3	15.000	3.700	1 in 13000	1.5:1	76.04	28.341	2.683	1.931	0.941	71.533	0.038	0.000	0.038	+456.982	+456.944	+460.682	+460.544	Approved	

Arithmetic Check :Total loss of head 0.493m

Frist FSL-Last FSL= 461.137-460.644=0.493

Total Loss of head 0.493 =

0.493=

0.493

**Note**

1) Rugosity Coefficient 'n' value is taken as 0.018

2) The proposed alternative alignment and H.p's furnished vide for Lr.No:-CE /TGP/ TPT /DW/DD2/DEE3/HNSS P-II /PKG.NO.3/1125 : Dt.04-11-2015. are vetted and approved from km 247.125 to km 250.25+0.700/250.250

3)The HP's are approved based on the data/recommendations furnished by the field authorities and field authorities are responsible for the particulars furnished .

4) In the above reaches, HR shall be ensured by actual bore hole data before execution,as the canal side slopes are proposed tentailvely based on the ERM data furnished.If there is any deviation ,the HP's shall be revised .

5) The above HP's from Km 247.125 to km 250.250+0.700 supersedes the earlier approved HP's form km 247.800 to km 248.825 communicated vide T.O Letter Dated :19-09-2015.

6) If any varitions found in field data ,the same shall be brought to the notice of this office for revision.

7) Proper super elevation shall be provided in the curve portions where the radius less than the radius given in IS : 5986-1987 i.e 450.0M

8) At the location where the GL are less than half FSD from bed ,equivalent hydraulic section shall be maintained by providing suitable bank connections .

9) The list of sturctures shall be furnished for approval after the detailed examination.

10)A free board of 0.90 m is recommended by the CE/TGP and the same is retained.

// t.c.f//

**Executive Engineer  
Division-7  
Central Designs  
Organisation**

Sd/-(dt.24-11-2015)

**Chief  
Engineer  
Central Designs Organisation  
Hyderabad.**