9. OFFTAKE SLUICES

S.No.	ITEM / COMPONENT	REFERENCE
I	**GENERAL:**	
	1.The proposals, be scrutinised and verified by the Unit Officers before communicating to CDO for vetting.	
	2.Location of OT, ayacut & Discharge details be ascertained & confirmed by the Unit Officers.	
II	**SITE SURVEY:**	
1	Site survey to be furnished as per check slip	Check slip enclosed
a	Report accompanying the site survey	
b	Site plan along with flow direction of canal, location & alignment of O.T.	
c	Bore hole data / T.P.s upto hard strata or for a min depth of 2 m.	
III	**DESIGN:**	
a	Note on Principles of Design, the assumptions made & the general features of the structure	
b	**HYDRAULIC DESIGN :**	
a	HPs of parent canal and Distributory: Ayacut,Discharge and Heighest Field Level to be irrigated be furnished.	
b	Discharge: Method of calculation of Discharge By modified penman method	
c	Distributory section: Fixation of distributory section adopting b/d ratio and satisfying critical velocity ratio	Technical Report no.7 of C.B.I.P, C.W.C Recomendations, & IS:7112-1973.
d	Sill level of OT Sluice: i) Sill level be fixed based on 3/4 F.S.L.condition at head reach and half F.S.L condition at the tail reach where the Q of parent canal is less than 20 % with a min. driving head of 0.15 m above heighest field level. ii) Sill level shall be invariably 300 mm above the Parent canal Bed Level.	Text book of Irrigation manual by W.M. Ellis, Civil Engg Hand Book by Association of Engineers
e	Ventway of sluice: i) Ventway calculations using orifice formula and vent may be proposed by Pipe / R.C.C.Box $Q = C_d A\sqrt{2gh}$ ii) The minimum size of pipe / box shall be 300 mm dia / 1200 mm (to be restricted with suitable diaphram)	
f	Scour depth calculations: $R = 1.34 (q^2 / f)^{1/3}$ using relevant factor of safety.	IS:7784(Part I):1993

S.No.	ITEM / COMPONENT	REFERENCE
h	Proposal sketch indicating the ventway proposed and other components:	
g	U/S and D/S Transitions.	IS:7784(Part2 / Sec I)
c	**STRUCTURAL DESIGN:**	
a	Design of Head walls,wings and returns (u/s and d/s) adopting TVA / Coulomb's / Rankine's Theory with minimum top width of 500 mm	TVA Handbook
b	Protection works on D/S.	Text book of Irrigation manual by W.M. Ellis,
c	Miscellaneous Details:	
	1) PIPE :-	
	i Calculation of required class of Hume pipe.	IS:783-1985
	ii Pipe, collar and related dimensions.	IS:458-1988
	2) RCC BOX :-	
	RCC box under Earth bank and Head wall.	IS:7784 part I - 1993
d	**MECHANICAL PARTS :**	
	i Shutters / Gates, embedded metal parts etc ii Hoist / working platform arrangements	Separate Guidelines issued by C.D.O.
IV	**DRAWINGS :**	
a	General Layout on net level plan duly showing contours.	
b	General Plan, Sectional elevation and End View	Scale 1:200 or 1:100
c	Sections and RCC details.	i) Scale 1:50 or 1:100 for sections ii) Scale 1:25 or 1:20 or 1:10 for RCC details
d	The Drawings shall contain assumptions made, TPs,Specifications, HPs of parent canal& distributory, Bar bending schedule, stress table etc.	