Integrated Watershed Management Programme

Detail Project Report

Name of Watershed	Udaipur – V – Mokarwara (Kherwara)
Macro/Micro No.	7/1,7/3,7/4,7/6,7/7, 7/8,8/2
Geographical Area	6636 Ha.
Treatable Area	5538 Ha.
Cost	664.56 Lac
Project Period	2010-11 to 2014-15

Submitted by :

Assistant Engineer P.I.A.

Watershed Development & Soil Conservation

Panchayat Samiti Kherwara, Udaipur (Raj.)

Project Manager

District Watershed Development Unit,

Zila Parishad, Udaipur (Raj.)

Detailed Project Report

1	Name of Watershed	Udaipur V-Mokarwada (Kherwara)
2	Sanction Year	2010 - 11
3	Sanctioned Amount	664.56 lacs
4	Area	5538 hac
5	Macro/Micro	7/1,7/3,7/4,7/6,7/7,7/8,8/2
6	Date of Commencement of Project	Nov - 2011
7	Gram Panchayat	Kanpur,Katarwas,Barothi Bhilan,Deri,Barothi.Brahaman, Sulai, Jawas
8	Panchayat Samiti	Kherwara
9	Distt.	Udaipur
10	Project Implimentation Agency	Assistant Engineer, P.I.A., P.S. Kherwara
11	Name of Zila Parishad	Zila parishad(RD) Udaipur (Raj)

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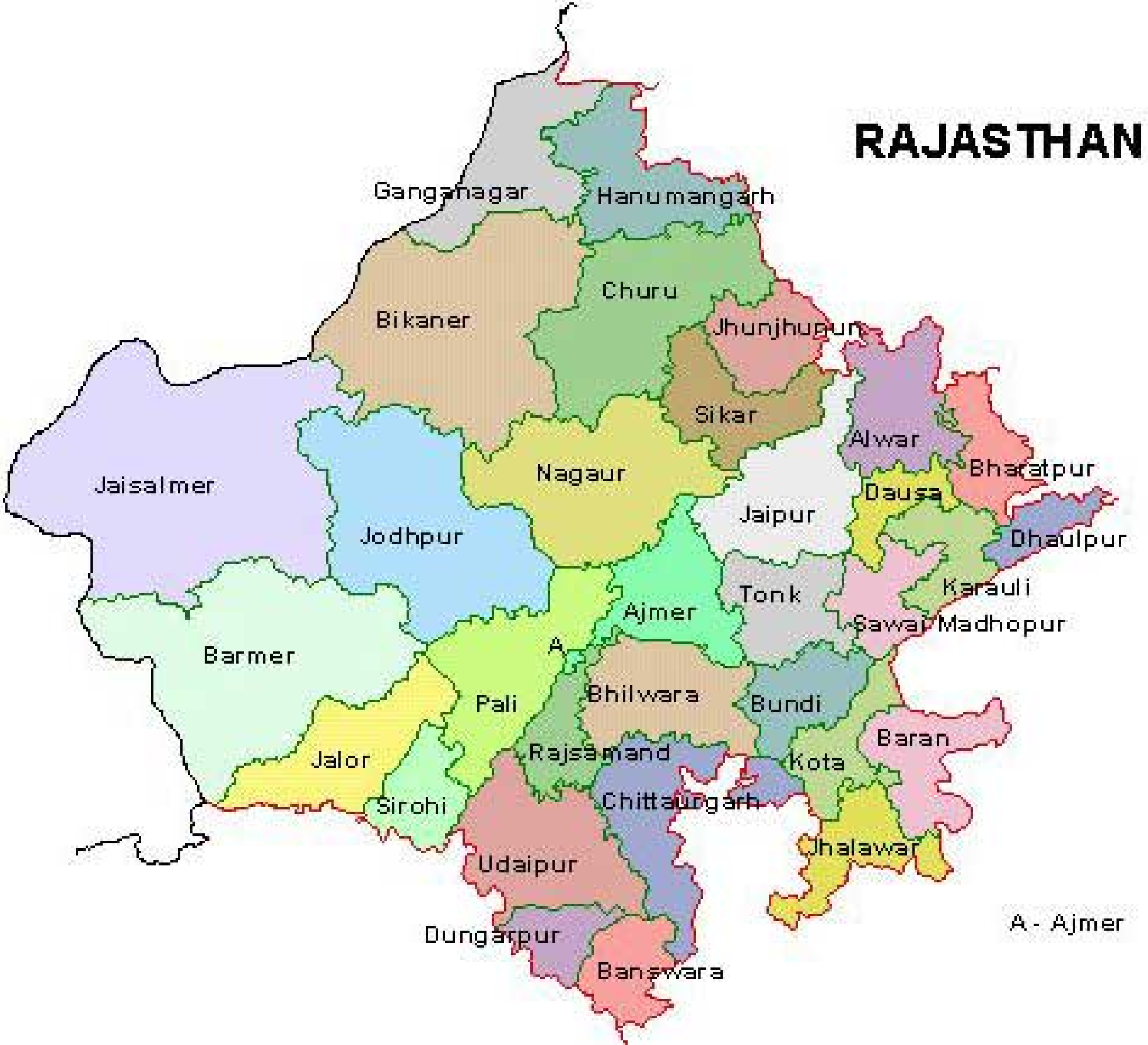
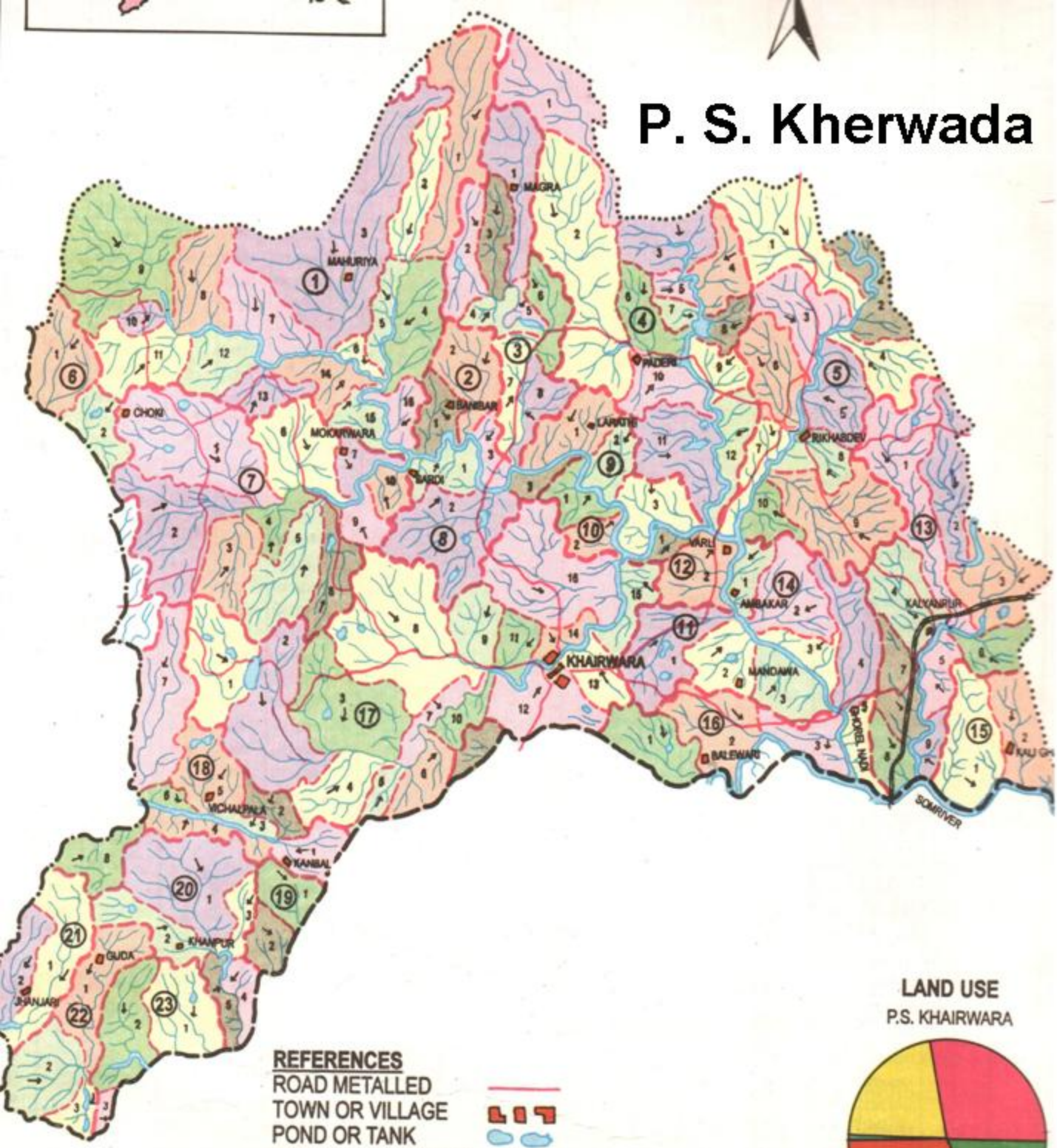

RAJASTHAN
Ganganagar
Hanumangarh
Bikaner
Churu
Jhunjhunun
Sikar
Alwar
Bharatpur
Nagaur
Jaisalmer
Dausa
Jaipur
Dhaulpur
Jodhpur
Tonk
Karauli
Ajmer
Sawai Madhopur
A
Barmer
Bhilwara
Bundi
Pali
Baran
Rajsamand
Kota
Jalor
Chittaurgarh
Sirohi
Jhalawar
Udaipur
Dungarpur
Banswara
A - Ajmer

जिला – उदयपुर

● पंचायत समिति मुख्यालय

P. S. Kherwada



REFERENCES

- ROAD METALLED
- TOWN OR VILLAGE
- POND OR TANK
- STREAMS BIG, SMALL
- RAILWAY LINE

LEGEND

- STATE BOUNDARY
- DISTRICT BOUNDARY
- PANCHAYAT SAMITI BOUNDARY
- MACRO WATERSHED RIDGE LINE
- MICRO WATERSHED RIDGE LINE
- MACRO WATERSHED NO. (5)
- MICRO WATERSHED NO. 15
- TOTAL GEOGRAPHICAL AREA 1088 Sq. Km.

LAND USE

P.S. KHAIRWARA

CATEGORIES	PER
CULTIVATED LAND	28
FOREST LAND	21
PASTURE LAND	(
NON ARABLE LAND	31
OTHERS	17

73° 20′ | 25′ | 30′ | 35′ | 40′ | 45′

एकीकृत जलग्रहण प्रबन्धन परियोजना

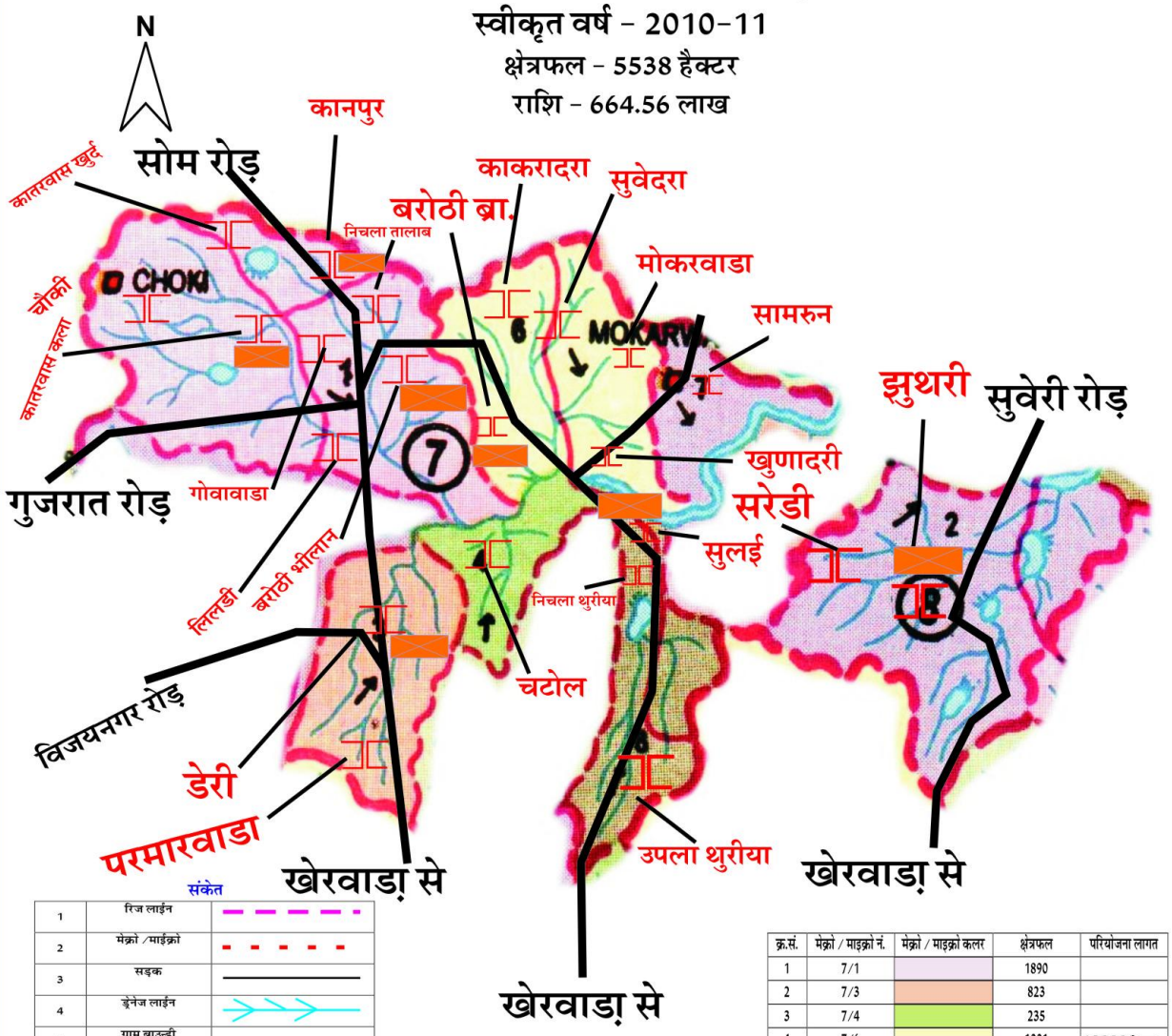
अर्न्तगत जलग्रहण क्षैत्र मोकरवाड़ा

पंचायत समिति खैरवाड़ा, उदयपुर

स्वीकृत वर्ष - 2010-11

क्षेत्रफल - 5538 हैक्टर

राशि - 664.56 लाख



संकेत

1	रिज लाईन	
2	मेक्रो /माईक्रो	
3	सड़क	
4	ड्रेनेज लाईन	
5	ग्राम बाउन्ड्री	
6	पंचायत मु.	
7	आबादी	
8	जलाशय	

क्र.सं.	मेक्रो / माइक्रो नं.	मेक्रो / माइक्रो कलर	क्षेत्रफल	परियोजना लागत
1	7/1		1890	
2	7/3		823	
3	7/4		235	
4	7/6		1001	12000/हैक्टर
5	7/7		371	
6	7/8		375	
7	8/2		843	
			5538	

क्र.सं.	ग्राम पंचायत	ग्राम
1	कानपुर	कातरवास खुर्द, कानपुर
2	कातरवास	कातरवास कला, चौकी
3	बरोटीमीलान	बरोटीमीलान, नीचला तालाब, गोटावाड़ा, लीमड़ी
4	डेरी	डेरी, चटोल, परमारवाड़ा
5	बरोठी ब्राहमणान	बरोठी ब्राहमणान, सुवदेरा, काकरादर्रा, नीचला थूरिया
6	सुलई	सुलई, उपला थूरिया, खुणादरी, मोकरवाड़ा, सामरुन
7	जवास	झूथरी, सरेडी

परियोजना क्रियानवयन एजेन्सी	सहायक अभियन्ता P.I.A जलग्रहण विकास प.स. खैरवाड़ा

मार्गदर्शक -

परियोजना प्रबन्धक,

जिला जलग्रहण विकास ईकाई, उदयपुर

CHAPTER – I INTRODUCTION

Location.

UDAIPUR-V Mokarwara (Kherwara) Project is located in Kherwara Block, of UDAIPUR district. The project area is between the latitudes $73^0$20' to $73^0$40' & $24^0$08' to $24^0$0' longitudes. It is at a distance of 30 km from its Block head quarters and 106 Kms from the district head quarters. There are 22 no. of habitations in the Project area and other details are given below.

General features of watershed

S.No.	Name of Project(as per GOI)	UDAIPUR-V Mokarwara (Kherwara)
(a)	Name of Catchment	Kadana
(b)	Name of watershed area(local name)	UDAIPUR-V Mokarwara (Kherwara)
©	Geographical Area	6636
(d)	Net treatable Area	5538
e)	Cost of Project	664.56 lcs
f)	Cost/hectare	12000.00
g)	Year of Sanction	2010-11
h)	Watershed Code	7/1-13020701 7/3-13020703 7/4- 13020704 7/6-13020706 7/7-13020707 7/8-13020708 8/2-13020802
i)	No. of Gram Panchayats in project area	07
j)	No. of villages in project area	22
k)	Type of Project	Other
l)	Elevation (metres)	696
m)	Major streams	01
n)	Slope range (%)	7-8 %

Macro/micro	Name of Gram Panchayat	Name of Villages Covered	Census code of villages	Net Area
7/1	Kanpur	Kanpur	03267600	50
7/1	Kanpur	Katarwas Khurd	03267700	133
7/1	Kartarwas	Katarwas Kala	03268000	358
7/1	Katarwas	Choki	03267800	323
7/1	Barothi Bhilan	Barothi Bhilan	03268400	370
7/1	Barothi Bhilan	Gohawada	03268100	265
7/1	Barothi Bhilan	Liladi	03268300	123
7/1	Barothi Bhilan	Nichala Talab	03267500	268
7/3	Deri	Deri	03276200	649
7/4	Deri	Chatol	03276100	235
7/3	Deri	Parmarwara	03276600	174
7/6	Barothi Brahaman	Barothi Brahaman	03268600	185
7/6	Barothi Brahaman	Sureda	03268700	337
7/6	Barothi Brahaman	Kakardara	03268800	118
7/8	Barothi Brahaman	Nichala Thuriya	03275400	117
7/6	Sulai	Sulai	03275300	311
7/8	Sulai	Upla Thuriya	03275300	258
7/6	Sulai	Khunadari	03268900	177
7/7	Sulai	Samroon	03265700	265
7/7	Sulai	Mokarwada	03265700	106
8/2	Jawas	Saredi	03275100	173
8/2	Jawas	Jhuthari	03275000	543
	total			**5538**

The watershed falls in Agroclimatic Zone-IV B(Sub humid Tropic) .The soil texture is sandy Loam The average rainfall is 607 mm . The temperatures in the area are in the range between 19 – 48 degree centigrade during summer and 3.2 to 28.90 degree centigrade during winter. The major crops in the area are Maize, Blackgram (urd), Cluster beam (gawer),Green gram (moong),chick pea (channa), Wheat ,Barley ,Rape seed (Mustred),Lin seed(Alsi) 21.53 % land is under cultivation 21.66% land fallow 30.30 % land is wasteland. 7.01 % land is irrigated through 4 %.

2876 No of households are BPL (88 % households) 85 are landless households (2.6% households) and 3165 household are small and marginal farmers (97%household) .Average land holding in the area is 0.48 ha. 17.29% area is single cropped area and 4.25% is double cropped. The main source of irrigation is open well. The average annual rainfall (12 years) in the area is 607.60 mm. The Major streams in the Watershed are Gargal, The major festivals in the village are Holi ,Deewali ,Bhawari, Dashamata & Chotmata. At present these village is having 13670 population with Communities like Meena , Patel , Bramin ,Mahajan, Meghwal and others.

Climatic and Hydrological information

1	**Average Annual Rainfall(mm)**			
	Year	Average Annual Rainfall(mm)		
1	2000	294		
2	2001	585		
3	2002	413		
4	2003	650		
5	2004	645		
6	2005	601		
7	2006	1332		
8	2007	500		
9	2008	354		
10	2009	543		
11	2010	693		
12	2011	667		
2	**Average Monthly rainfall (last ten years)**			
	Month	Rainfall(mm)		
i)	June	63		
ii)	July	190		
iii)	August	285		
iv)	September	95		
3	**Maximum rainfall intensity (mm)**			
	Duration	rainfall intensity(mm)		
	i) 15 minute duration	32		
	ii) 30 minute duration	50		
	iii) 60 minute duration	90		
4	**Temperature (Degree C)**			
	Season		Max	Min
	i) Summer Season		48	19
	ii) Winter Season		28.9	3.20
	iii) Rainy Season		31.3	15.0
5	**Potential Evaporation Transpiration (PET) (mm/day)**			
	Season		PET	
	i) Summer		10	
	ii) Winter		2.20	
	iii) Rainy		4.40	
6	Runoff			
	i) Peak Rate (cum/hr)		773295	
	ii) Total run off volume of rainy season (ha.m.)		1933	
	iii) Time of return of maximum flood	....	....	....
	iv)Periodicity of Drought in village area	1996	1995	.....

Other Development Schemes in the project area

S. No	Scheme	Name of the department	Key interventions under the Scheme	Targeted Beneficiaries	Provisions under the Scheme
1	Atma	Ag. department	To up date culivators through latest technology.	2827	Total amount sanction by the gov.
2	NREGS	Panchyat samiti	Construction of W.H.S,Gravel road,Individual beneficierys work.	1660	Total amount sanction by the gov.
3	MP LAD	Panchyat samiti	Construction of community hall,c.c road, H.P, Pipe line for water supply.	1660	Total amount sanction by the gov.
4	MLA LAD	Panchyat samiti	Construction of community hall,c.c road, H.P, Pipe line for water supply.	1660	Total amount sanction by the gov.
5	TSC	Panchyat samiti	Con. of low cost toilet.	3200	1200 Rs./Toilet subsidy given by the gov.
6	BRGF	Panchyat samiti	Construction of community hall,c.c road, H.P, Pipe line for water supply	3200	Total amount sanction by the gov.
7	SGSY	Panchyat samiti	To streanthen S.H.G by providing loan from banks & subsidy from gov.	3200	Total amount sanction by the gov.

Details of infrastructure in the project areas

Parameters		Status			
(i)	No. of villages connected to the main road by an all-weather road	22			
(ii)	No. of villages provided with electricity	22			
(iii)	No. of households without access to drinking water	NIL			
(iv)	No. of educational institutions : Primary(P)/ Secondary(S)/ Higher Secondary(HS)/ vocational institution(VI)	(P) 35	(S) 6	(HS) -	UPS 7
(v)	No. of villages with access to Primary Health Centre (Sub Centr)	7			
(vi)	No. of villages with access to Veterinary Dispensary	2			
(vii)	No. of villages with access to Post Office	5			
(viii)	No. of villages with access to Banks	Nil			
(ix)	No. of villages with access to Markets/ mandis	0			
(x)	No. of villages with access to Agro-industries	0			
(xi)	Total quantity of surplus milk	1200 Lit/day			
(xii)	No. of milk collection centres (e.g. Union(U)/ Society(S)/ Private agency(PA)/ others (O))	(U) 0	(S) 0	(PA) 4	(O) 0

(xiii)	No. of villages with access to Anganwadi Centre	22
(xiv)	Any other facilities with no. of villages (please specify)	0
(xv)	Nearest KVK	106 KM
(xvi)	cooperative society	02
(xvii)	NGOs	01(Seva Mandir)
(xviii)	Credit institutions	
	(i) Bank	-
	(ii) Cooperative Society	02
(xix)	Agro Service Centre's	-

Institutional arrangements (SLNA,DWDU,PIA,WDT,WC, Secretary)

DWDU Details

1	**2**	**3**
S.No	**Particulars**	**Details of DWDU**
1.	PM ,DWDU	Sh. Madan Chhajed, Project Manager,
2.	Address with contact no., website	District Watershed Development Unit, Opp. Vishal Filling Station, Pratapnagar Udaipur Mob. 9829494709
3.	Telephone	0294-2492622
4.	Fax	0294-2492622, 2492759
5.	E-mail	dwdu.udaipur@gmail.com, pm_dwdu_udr@yahoo.com

PIA particulars

1	**2**	**3**
S.No	**Particulars**	**Details of PIA**
6.	Name of PIA	Mangilal Meghwal
7.	Designation	Assistant Engineer
8.	Address with contact no., website	Panchayat Samiti Kherwara Disstt.Udaipur
9.	Telephone	9414353167
10	Fax	02907-260023
11	E-mail	mlmeghal@gmail.com

WDT Particulars:

1	2	3	4	5	6	7	8
S. No	Name of WDT member	M/F	Age	Qualification	Experience in watershed(Yrs)	Description of professional training	Role/ Function
1	Ravi Katara	M	23	B.E.(Ag)	1 Yrs	C.T.A.E .UDAIPUR	Engg.
2	Suriya Jabala	F	26	M.SW	5 Yrs	Vidhaya Peeth Pratap Nagar Udaipur	Social Scientist
3	Naresh Nagar	M	39	B.Sc.(Ag.)	12 yrs	D.A.V. Collg. Ajmer	Agriculture Scientist
4	Durgashanker	M	23	2 Yr Diploma In Vetenary Science	1 yrs	G.A.H.D Udaipur	Vaternary

1. Problems and scope of improvement in the project area

The socio economic conditions of the area can be improved through increased production which can be achieved through expansion in cultivated area and productivity enhancement. **2231** ha land is arable wasteland and 392 ha is fallow can be brought under cultivation.

201 ha is only irrigated and with efforts this can be increased to 213 Ha . The productivity gap of major crops in the area as compared with district and with areas in the same agro climatic zones indicate potential to increase the productivity. The demonstration of improved package of practices, improved varieties, increased irrigation facilities and soil conservation measures under the project can bridge this gap. Due to small land holdings in the area focus of the project would be on diversification in agriculture (horticulture, vegetables, green houses, Agro forestry, fodder crops)and diversification in Livelihoods(Agriculture, Animal husbandry, self employment)

5609 MTfodder scarcity can be met out through Pasture development .Improved animal Husbandry practices can increase the productivity of livestock. 360 no of persons migrate due to Unemployment this migration can be checked through creation of employment opportunities in the project area through increase in production and diversification in agriculture and Livelihoods as mentioned above.

Specific problem of the area in land degradation, water , Agriculture and in Animal Husbandry

Due to heavy slope,1258 Ha Area is tend to high soil erosion & Lack of water availability in surface &sub surface zone.Most of farmers are depend on rain for crop & taking single crop. Animal having Khupaka,moukpaka,deworming .

S. No.	Development Indicators	State	Project Area
1	Per capita income (Rs.)	16260	13250
2	Poverty ratio	0.22	0.53
3	Literacy (%)	0.604	0.577
4	Sex Ratio	921	977
5	infant mortality rate(Per year)		185
6	maternal mortality ratio(Per year)		10

CHAPTER – II
Socio economic Features, Problems and Scope

Table 2.1 Population & Household Details:

Total Population					
Male	**Female**	**Total**	**SC**	**ST**	**Others**
6694	6976	13670	336	8393	4941

BPL household	L. Less	Small Farmer	M. Farmer	Total household	SC household	ST household
2876	85	926	2239	3250	84	1956

Table 2.2 Development indicators

The table indicates poor socio economic conditions.

Table 2.3 Land Use

Land Use	Total area in Ha.				
	Private	Panchayat	Government	Community	Total
Agriculture Land	1592	-	-	-	1592
Temporary fallow	57	-	-	-	57
Permanent Fallow	335	-	-	-	335
Cultivated Rainfed	1200	-	-	-	1200
Cultivated irrigated	201	-	-	-	201
Net Sown Area	1401	-	-	-	1401
Net Area sown more than once	1401	-	-	-	1401
Forest Land	-	-	-	-	-
Waste Land	2231	-	1078	-	3309
Pastures	-	457		-	457
Others	-	-	180	-	180
TOTAL	3823	457	1258		5538

The project area has 392 ha of cultivable wasteland . 392 ha of fallow land can be brought under cultivation if some irrigation source can be provided through Construction of WHS like Khadin, Tanka, Farm ponds etc. and also through demonstration of rainfed varieties of crops. Construction of WHS can also increase in area under irrigation which is only 3%at present.is under wastelands and can be brought under vegetative cover, with reasonable effort . Activities like Earthen check dams, Vegetative filter strip, V-ditches, staggered trenches ,WHS Afforestation of wastelands and Pasture development will be taken up on these lands

Pasture development the land use table shows that there is 457 hectare pasture land (8.25%)This emphasizes the need for taking up pastureland development works through sowing of promising species of grasses and plantation

Table 2.4 .a Agriculture and Horticulture status and fuel availability.

1	2	3		4			5			6	
S.No	**Season**	**Crop sown**	**Variety**	**Rain fed**			**Irrigated**			**Total**	
				Area(ha)	Production (Ton)	Productivity (kg/ha)	Area (ha)	Production (Ton)	Productivity (kg/ha)	Area (ha)	Production (Ton)
1	Kharif	Maize	GANGA 2	756	1375	1820	62	124	2000	818	1499
		JAWAR	CSH 18	60	54	900	2	2	1100	62	56
		Urd	PU 19	65	26	400	8	2.6	450	73	28.5
		Til	RT 46	35	18	514	7	3.9	560	42	21.9
		MOONG	K 851	100	950	95	15	15.75	1050	115	110.75
		GAWAR	RCG 986	184	110	600	0	0		184	110
2	Rabi	Wheat	Lok 1				87	191.4	2200	87	191.4
		Barely	RD 2552				5	10.5	2100	5	10.5
		Gram	DAHOD YELLOW				6	3	500	6	3
		Mustred	Pusha bold				9	10.8	1200	9	10.5
3	Zaid	moong									
	Total			1200			201			1401	

Table 2.4.b Abstract of cropped Area(ha)	
Area under Single crop	1200ha
Area under Double crop	201ha
Area under Multiple crop	0 ha

S. No	Name of crop	Present variety	Rec. variety	Reason of Rec. variety.
1	Maize	GANGA 2	Mahi Dhaval	Maturity peroid 75-80 Days(early maturity),Production 35-40 q/Ha,Less water reruired but tolrent to excess water,market value is good due to high strach &appreance,tolrent to logging. This variety is most sutaible for this W/S Area.
2	Urd	PU 19	RBU-338	Maturity peroid 90 Days(early maturity),Production 10-12 q/Ha,Less water reruired,market value is good due to high strach &appreance,tolrent to logging,resistance to bacterial diseases . This variety is most sutaible for this W/S Area.
3	Til	RT 46	TC -25	White seed variety,Maturity peroid 95 Days(early maturity),Production 6-7 q/Ha,Less water reruired,market value is good &appreance,tolrent to logging,resistance to bacterial diseases This variety is most sutaible for this W/S Area.
4	MOONG	K 851	SML 668	Maturity period 85 days plants are erect determinate and medium statured 85 cm possesses bolder green grain s with good yellow mosaic varius cercospora leaf spot and bacterial leaf spot diseases its yield potential 15 -18 quintal/hac..This variety is most sutaible for this W/S Area.
5	GAWAR	RCG 986	RCG 936	Maturity period 100-105 days,Seeds medium bolt with buff colour,suitable for growing in dry land agriculture,used for fodder and grain purpose, yield porential is 14-15 q/Ha. This variety is most sutaible for this W/S Area & good market value.
6	Wheat	Lok 1	RAJ 3765	Maturity period 110-120 days and plant height is 89-95 cm,Heat tolerant and susceptible to dust , moderately resistant tokarnal bunt , yield porential is40-50q/Ha. This variety is most sutaible for this W/S Area & good market value.
7	Barely	RD 2552	RD 2508	Maturity period 118-120 days , grain is yellow & medium bold , Sutiable for rainfed area, variety is 6 row barley,medium tall(92-100 cm),resistance to yellow rust,light, yield porential is 40-45 q/Ha. This variety is most sutaible for this W/S Area .
8	Gram	DAHOD YELLOW	GNG 469	Maturity period 90-95 days, Sutiable for rainfed area, resistance to wild disease , yield porential is 20-24 q/Ha.
9	Mustred	Pusha bold	PUSA JAI KISHAN	Maturity period 100-115 days and plant height is Medium tall. Low logging problem ,Resistant to white rust, yield porential is 25-30 q/Ha. This variety is most sutaible for this W/S Area .

Crop Rotation**will vary from project to project

Maize	-	Mustred
Urd	-	Wheat
Moong	-	Wheat
Gawar	-	Wheat
Fallow	-	Gram
Fallow	-	Mustred
Fallow	-	Tarameera
Til	-	Fallow

The table shows that only 201 ha is (3.62%) is double cropped area. Also the crop rotation shows that fallow lands are there. This indicates that there is scope for change in crop rotation in fields where there are fallow lands through Soil and Water conservation measures, crop demonstration and diversification in agriculture.

Soil and Water conservation measures besides putting fallow lands under cultivation can change the area under single cropping to double and multiple cropping.

Table 2.4.c Productivity Gap Analysis (**The table can also be given in bar chart form)**

Name of the crop	Productivity kg/ha				
	India	Highest Average in Rajasthan	Highest Average of Agro climatic zone	District	Project Area
Maize	2335	1976	2228	1273	1500
JAWAR	730	1634	1056	526	510
Urd	650	620	282	222	350
Til	585	663	292	263	250
MOONG	710	699	455	422	500
GAWAR	680	1400	1103	692	900
Wheat	2802	3422	2614	2107	2700
Barely	1985	2838	3061	1722	2200
Gram	762	1190	931	931	900
Mustred	1001	1619	1271	818	950

Analysis of the above table indicate that besides national gap there is wide gap in productivity within state and even within same agro climatic zones.

The reasons for this variation are

- The farmers are using varieties **Ganga 2** of **Maize** . whereas the recommended varieties like **Mahi dhaval 35-40 q/Ha** yield .
- The farmers are using varieties **PU19** of **Urd** .whereas the recommended varieties like RBU338 provide **10-12 q/Ha** yield
- The farmers are using varieties **K851** of **Moong** .whereas the recommended varieties like **SML 668** provide **15-18 Q/Ha**.yield .

- The farmers are using varieties **RT 46** of **TIL** . whereas the recommended varieties like TC 25 provide **6-7 q/Ha** yield .
- The farmers are using varieties **RCG 986** of **GAWAR.** whereas the recommended varieties like **RCG 936** provide **14-15 q/Ha** yield .
- The farmers are using varieties **LOK 1** of **WHEAT** . whereas the recommended varieties like **RAJ 3765** provide **35-40q/Ha** yield .
- The farmers are using varieties **RD 2552** of **BARELY** . whereas the recommended varieties like **RD 2508** provide **40-45 q/Ha** yield .
- The farmers are using varieties **DAHOD YELLOW** of **GRAM** . whereas the recommended varieties like **GNG 469** provide **25-30 q/Ha**. yield .
- The farmers are using varieties PUSHA BOLD of MUSTRED . whereas the recommended varieties like **PUSA JAI KISHAN** provide **20-25 q/Ha**. yield .
- Lack of Availability of good quality seeds of desired crop and variety in adequate quantities and time to the farmers.
- Availability of water for cultivation(3.62 % is irrigated)

The productivity gap and reasons of it indicate potential to increase the productivity through crop demonstration .Crop demonstrations would be carried out on improved crops/ varieties, improved agronomic practices. INM, IPM, Mixed cropping, distribution of fodder seed mini kit. Demonstration of improved methods and economics of fodder crops cultivation and also distribution foundation seeds of Forage Crops for further multiplication, introduction of fodder crops in the existing crop rotations.

Table 2.5 Existing area under horticulture/Vegetables/Floriculture (ha)

Activity	Area	Species	Varieties	Recommended varieties	Production(Kg/ha)
Horticulture	0	0	0	0	0
Vegetables					
Kharif	32	Tomato	Pusha rubi	Pussa Sankar 1	1500-1800
		Ladyfinger	Pusha sawani	Sankar ganga	1200-1600
		Bottle gourd	Desi	Sankar shramgivi	1400-1500
		Gawar	M43	Pussa navkhar	1500-1700
Rabi	8	Bringal	Desi	Pussa sankar	1200-1300
		Tomato	Pusha rubi	Pussa Sankar 1	1300-1500
		Cabbage	Desi	Sankar green express	1400-1600
Floricuture	0	0	0	0	0
Medicinal plants	0	0	0	0	0

Table 2.6 Land holding Pattern in project area

Type of Farmer	Total House holds	Land holding (ha) irrigation source wise			Land holding (ha)Social group wise				
		Irrigated (source)	Rainfed	Total	General	SC	ST	OBC	BPL
(i)Large farmer	0								
(ii) Small farmer	926	50	255	305	0	20	495	0	0
(iii) Marginal farmer	2239	120	765	885	0	60	1055	0	0
(iv) Landless person	85	0	0	0	0	0	0	0	0
(V)No. of BPL households	2846	0	0	0	0	80	2766	0	0

80% land holdings belong to small and marginal farmers who own 85% of total cultivated area. Horticulture/vegetables could be more economical to Small and marginal farmers with irrigation source. For large farmers with no irrigation facility Horticulture/vegetables will be promoted in a part of land with farm pond/Tanka construction.

The following activities will be more beneficial for small land holdings and for diversification and income for large farmers

Horticulture plantation, Medicinal and Aromatic Crops, floriculture: As discussed earlier . Horticulture/vegetables could be more economical to Small and marginal farmers with irrigation source. Also the project area has good potential for medicinal & aromatic crops like Sonamukhi, Isabgol, Ashwagandha, Khus, Mehandi etc.

Agro forestry plantation: To increase the income of farmers and also for shelter belt plantation as wind velocity is high in the project area.

Setting of Vermi Compost Units - Keeping in view the side effect of residues of chemicals and fertilizers on human health the emphasis would be on cultivation of organic produce through motivating farmers and providing assistance for production of organic input, vermi compost.

Production and distribution of quality seed – There is need to ensure that good quality seed is available for cultivators for which adequate seed production would be initiated in watershed areas with the assistance of private sector and agriculture department technologies

Sprinklers and pipelines for efficient water management practices emphasis on demonstration of sprinklers with adequate financial support and convergence/private partnership.

Establishment of Green House - For growing off season vegetables seedlings and other horticultural crops under controlled atmospheric conditions of green house.

Establishment of nurseries: Most of the planting material is procured from other parts of the State/ country. The procurement of planting material from distant places causes damage to the planting material and often results in untimely supply. Hence nursery development activity in area.

Innovative hi-tech/ export oriented activities: innovative hi-tech/ export oriented projects like mushroom cultivation, floriculture, etc which are in negligible existence at present, can be implemented by individual farmers / private companies.

Drip irrigation Drip irrigation will be promoted in all horticulture plantations, vegetables, green houses and in nurseries for rational use of irrigation higher yields and quality produce.

Table 2.7 Livestock Status - animals/milk production / average yield.

S.No.	Description of animals (Breed)	Population in No.	Yield						Fodder Requirement (7 kg per animal
			Milk in Lit		Mutton (Kg)		Wool (Kg/Year)		
			Prod.	Qty.	Prod.	Qty.	Prod.	Qty.	
1 a	Cow Indigenous	690	1.5	1035					1763
1 b	Cow Hybrid	12	4	48					31
2	Buffaloes	890	3	2670					2274
3	Goat	3040	3040/2* 0.5	760	3040/2* 12	72960			3884
4	Sheep	150					5	750	191
5	Other	315							
	Total	5097		4513		72960		750	8143

In spite of the large number of livestock, production is less hence increase in productivity across all species, is a major challenge. To reduce production of unproductive cattle and improve the productivity by improving the breeds by breeding management following activities will be taken up

Castration

- Artificial insemination
- Distribution of superior Breeding bulls for use in Cattle and Buffalo
- Breeding distribution crossbred rams

Besides breed improvement other animal husbandry practices like better health, hygiene and feeding practices can increase productivity of livestock. Hence Activities like Animal health camps ,Urea-Molasses treatment demonstration ,demonstration of improved methods of conservation and utilization of Forage crops are proposed.

Table 2.8 Existing area under fodder (ha)

S.No	Item	Unit	Area/Quantity
1	Existing Cultivable area under Fodder	Ha	214 Ha
2	Production of Green fodder	Tonns/year	10T/Ha
3	Production of Dry fodder	Tonns/ Year	800 T/Year
4	Area under Pastures	Ha	415 Ha
5	Production of fodder	Tonns/year	880 T/Year
6	Existing area under Fuel wood	Ha	218 Ha
7	Supplementary feed	Kgs/ day	1 k g/Day
8	Silage Pits	No	-
9	Availability of fodder	quintals	2534 MT
10	Deficiency/excess of fodder	quintals	5580.80 MT

The table above shows there is fodder deficiency (Requirement is 8114.80 MT and availability 2534 MT)

To minimize the large and expanding gap between feed and fodder resource availability and demand there is need for

- Increase in area under fodder crops
- Increase in productivity of fodder crops
- Development of pastures
- And reduction in large number of livestock production through replacement by few but productive animals

Table 2.9 Agriculture implements

1	2	3
S. No	**Implements**	**Nos.**
1	Tractor	25
2	Sprayers-manual/ power	76
3	Cultivators/Harrows	9
4	Seed drill	13
5	Any Other / Bus	3
6	JCB	2

Farm mechanization and seed banks: As discussed earlier 75.25 % land holdings belong to small and marginal farmers who own only 13% of total cultivated area so owning of big farm implements by individual farmers is not economical so SHG would be promoted to buy farm implements and rent to farmer

Table 2.10 MGNREGA Status - No. of Card Holder, activities taken so far, employment status.

S. no.	Name of village	Total No .of job cards	Employment Status	Activity taken up so far
1	Katarwas khurd	192	185	Gravel Road , Nadi, Cheek Dam, Land Leviling
2	Kanpur	233	204	Gravel Road , Nadi, Cheek Dam, Land Leviling
3	Katarwas	415	380	Gravel Road , Nadi, Cheek Dam, Land Leviling
4	Choki	385	365	Gravel Road , Nadi, Cheek Dam, Land Leviling
5	Jhuthri	644	590	Gravel Road , Nadi, Cheek Dam, Land Leviling
6	Saredi	101	87	Gravel Road , Nadi, Cheek Dam, Land Leviling
7	Sulai	186	175	Gravel Road , Nadi, Cheek Dam, Land Leviling
8	Samrun	166	142	Gravel Road , Nadi, Cheek Dam, Land Leviling
9	Uplathuriya	104	88	Gravel Road , Nadi, Cheek Dam, Land Leviling
10	Khunadari	109	82	Gravel Road , Nadi, Cheek Dam, Land Leviling
11	Mokarwara	61	45	Gravel Road , Nadi, Cheek Dam, Land Leviling
12	Lildi	87	68	Gravel Road , Nadi, Cheek Dam, Land Leviling
13	Nichala Talab	287	249	Gravel Road , Nadi, Cheek Dam, Land Leviling
14	Gohawara	135	117	Gravel Road , Nadi, Cheek Dam, Land Leviling
15	Barothi Bhilan	274	249	Gravel Road , Nadi, Cheek Dam, Land Leviling
16	Barothi Brahman	400	358	Gravel Road , Nadi, Cheek Dam, Land Leviling
17	Kakdara	74	62	Gravel Road , Nadi, Cheek Dam, Land Leviling
18	Suvedara	160	140	Gravel Road , Nadi, Cheek Dam, Land Leviling
19	Nichala Thuriya	146	132	Gravel Road , Nadi, Cheek Dam, Land Leviling
20	Deri	254	222	Gravel Road , Nadi, Cheek Dam, Land Leviling
21	Parmarwara	198	162	Gravel Road , Nadi, Cheek Dam, Land Leviling
22	Chatol	83	68	Gravel Road , Nadi, Cheek Dam, Land Leviling

Table 2.11 Migration Details

Name of village	No. of persons migrating	No. of days per year of migration	Major reason(s) for migrating	Distance of destination of migration from the village (km)	Occupation during migration	Income from such occupation (Rs. in lakh)
Katarwas khurd	132	21 0	Unemployment	200	Labour work	
Kanpur	184	21 0	Unemployment	200	Labour work	
Katarwas	214	21 0	Unemployment	200	Labour work	
Choki	245	21 0	Unemployment	200	Labour work	
Jhuthri	312	21 0	Unemployment	200	Labour work	
Saredi	35	21 0	Unemployment	200	Labour work	
Sulai	81	21 0	Unemployment	200	Labour work	
Samrun	70	21 0	Unemployment	200	Labour work	
Uplathuriya	60	21 0	Unemployment	200	Labour work	
Khunadari	90	21 0	Unemployment	200	Labour work	
Mokarwara	20	21 0	Unemployment	200	Labour work	
Lildi	45	21 0	Unemployment	200	Labour work	
Nichala Talab	132	21 0	Unemployment	200	Labour work	
Gohawara	77	21 0	Unemployment	200	Labour work	
Barothi Bhilan	182	21 0	Unemployment	200	Labour work	
Barothi Brahman	232	21 0	Unemployment	200	Labour work	
Kakdara	35	21 0	Unemployment	200	Labour work	
Suvedara	145	21 0	Unemployment	200	Labour work	
Nichala Thuriya	84	21 0	Unemployment	200	Labour work	
Deri	165	21 0	Unemployment	200	Labour work	
Parmarwara	132	21 0	Unemployment	200	Labour work	
Chatol	48	21 0	Unemployment	200	Labour work	

The migration can be check by creation of employment opportunities, enhancing farm level economy, increases the income of the people engaged in animal husbandry by dairy, poultry and marketing and value addition. (As discussed earlier) and diversification in livelihoods .

The existing livelihoods Village are given below

Table 2.12 (a) Major activities (On Farm)		
Name of activity	No of House holds	Average annual income from the activity(Rs.)
cultivators	2990	35000
Dairying	20	25000
Poultry	2	32000
Piggery	0	0
Landless Agri. Labourers	27	15000

Table 2.12(b) Major activities (Off Farm)		
Name of activity	Households/individuals	Average annual income from the activity (Rs.)
Artisans	2	35000
Carpenter	14	48000
Blacksmith	00	00
Leather Craft	7	20000
Porter	0	0
Mason	180	37000
Others(Cycle repair,STD,Craftsmen etc.)	150	42000

The efforts for increase in income through off farm activities will be made under livelihood component through assistance to SHG or individuals

Table 2.13(a) Status of Existing SHG

S. No	Name of SHG	Members	Activity involved	Monthly income	Fund available	Assistance available	Source of assistance	Training received
1	ज्योति	10	Saving	500	4000	....	....	0
2	लक्ष्मी	12	Saving	600	3000	....	....	0
3	गायत्री	12	Saving	600	3000	....	....	0
4	चेतना	12	Saving	600	1800	....	....	0
5	पदमावती	10	Saving	500	2500	....	....	0
6	जयअम्बे	10	Saving	500	2000	....	....	0
7	भारती	10	Saving	500	2000	....	....	0
8	महावीर	11	Saving	550	1650	....	....	0
9	भोलेनाथ	10	Saving	500	2000	....	....	0

The table indicates existence of number of groups in the area also these need to be strengthened through trainings and financial assistance

II. Technical Features

Table 2.14 Ground Water

S.No	Source	No.	Functional depth	Dry	Area irrigated	Water availability (days)
i)	Dug wells	314	70-80	112	160	290
ii)	Shallow tube wells	125	210-270	0	86	365
iii)	Pumping sets	18		0	116	255
iv)	Deep Tube Wells			0	0	0
	Total	457		112	362	910

Table 2.15 Availability of drinking water

S.No	Name of the village	Drinking water requirement Ltrs/day	Present availability of drinking water Ltrs/day	No. of drinking water sources available	No. functional	No. requires repairs	No. defunct
1	Katarwas khurd	6080	3040	27	23	2	2
2	Kanpuri	3740	1870	14	12	2	0
3	Katarwas	14800	7400	42	38	2	2
4	Choki	12040	6020	35	30	4	1
5	Jhuthri	16240	8120	40	32	5	3
6	Saredi	4840	2420	16	12	2	2
7	Samrun	6560	3280	12	9	1	2
8	Upla thuriya	8120	4060	8	6	1	1
9	Khunadari	5100	2550	14	10	2	2
10	Mokarwara	3620	1810	6	4	1	1
11	Lildi	3500	1750	10	7	2	1
12	Nichala Talab	14200	7100	28	24	3	1
13	Gohawara	10800	5400	28	14	3	1
14	Barothi Bhilan	8070	4035	26	22	2	2
15	Barothi Brahmanan	12220	6110	26	22	3	1
16	Kakdara	9100	4550	26	22	1	3
17	Suvedara	6100	3050	22	18	1	3
18	Nichala Thuria	7200	3600	13	10	1	2
19	Sulai	10050	5025	17	15	2	0
20	Deri	13800	6900	20	16	2	2
21	Parmawara	4800	2400	14	12	2	1
22	Chotal	6800	3400	16	12	3	2

Table 2.16 Water Use efficiency

Name of major crop	Area (Hectare)			
	through water saving devices(Drip/Sprinklers)	through water conserving agronomic practices#	Any other (pl. specify)	Total
Rabi	5	780	300	1080

- The tables above indicate need for judicious use of available Water.
- Encouraging optimum use of water through installation of sprinklers on every operational wells

Table 2.17 Slope details.

Slope of Watershed		
S.No.	Slope percentage	Area in hectares
1	0 to 4%	890
2	4 to 8%	4648
3	8 to 25%	-
4	> 25%	-

As most of the area has slope less than 3% construction of contour bunds can solve the problem of water erosion in agriculture fields and protect washing of top soil and manures/fertilisers

Table 2.18Water Budgeting

Table 2.18 a)Total available runoff(cum) use Stranges table

Area	Type of Catchment	Yield of runoff from catchment per ha.(cum.) use Stranges table	Total Runoff
2105	Good	1183	2490215
2273	Average	886	2013878
1160	Bad	588	682080
5538	Total		5186173

Table 2.18 b) Details of already stored runoff(Surface Water structures

S.No.	Name	No.	Storage Capacity (cum)	Area irrigated (ha)
i)	Major Irrigation Project	1	212800	
ii)	Medium Irrigation Project	1	53200	201Ha
iii)	Form Ponds/Tanks	12	34500	
iv)	Anicuts	30	51900	
	Total		352400	201 Ha

Table 2.19 Soil details

	Soil Profile	
S.No.	Major Soil Classes	Area in hectares
1	Sandy Loam	5332
2	Black Cotton	216
Soil Depth		
B	Depth (Cms.)	Area in hectares
1	0.00 to 7.50	3777
2	7.50 to 45.00	1237
3	> 45.00	5014

	Soil fertility Status	Kg/ha	Recommended
1	N	15-20	60-75
2	P	10-15	30
3	K	30	30
4	Micronutrients	PPM	
A	Zinc	0.4 PPM	0.8 PPM
B	Fe	0.4 PPM	0.5 PPM
C	Cu	0.2 PPM	0.25 PPM
D	Mg	0.2 PPM	0.22 PPM

The analysis of table shows need to improve and maintain soil fertility. Soil health card to every farmer every crop season will be provided, which will include the recommendation for Application micro nutrient and fertilizers

Table 2.20 Erosion details

Erosion status in project Area				
Cause	Type of erosion	Area affected (ha)	Run off(mm/ year)	Average soil loss (Tonnes/ ha/ year)
Water erosion				
a	Sheet	3816		4-10
b	Rill	454		10-15
c	Gully	1668		15-25
Sub-Total		5538		
Wind erosion				NIL
Total for project		5538		

The need is:

- To check land degradation
- To reduce excessive biotic pressure by containing the number and increase of livestock
- To check cultivation on sloping lands without adequate precautions of soil and water conservation measures
- To discourage cultivation along susceptible nallah beds
- To check Faulty agriculture techniques
- To check Uncontrolled grazing and developed cattle tracks
- To check Deforestation of steep slopes
- To check erosive velocity of runoff, store Runoff, to arrest silt carried by runoff and to recharge Ground Water structures life Earthen check dams, gully plugs, Bank Stabilisation, Loose stone check Dams, Gabions, Earthen embankment (Nadi) and Anicuts would be taken up.

CHAPTER - III Proposed Development Plan: The Activities are indicative addition /deletion in activities will be as per local conditions

A) Preparatory phase activities Capacity Building Trainings and EPA

The IEC activities like Kalajathas, Group meetings, door to door campaign, slogans and wall writings etc. were carried out in all the habitations of 7/1,7/3,7/4,7/6,7/7,7/8 to 8/2 Micro Watershed. A series of meetings were conducted with GP members, community and discussed about the implementation of IWMP programme. User groups were also formed.

Grama Sabhas were conducted for approval of EPA (Village), for selecting the watershed committee and approval of DPR.

S.no	Name of the Gram Panchayat	Date on which Grama Sabha approved EPA
1	KANPUR	20/06/2011
2	KATARWAS KALA	20/06/2011
3	DERI	20/06/2011
4	SULAI	20/06/2011
5	BAROTHI BRAHMAN	20/06/2011
6	BAROTHI BHILAN	20/06/2011
7	JAWAS	20/07/2011

E.P.A. WORK DETAILS

1	2	3	4	5
S. No.	Names of village	Amount earmarked for EPA	Entry Point Activities planned	Estimated cost
1	KANPUR		चबुतरा निर्माण	1.01
2	KATARWAS KHURD		शमशान रोड निर्माण	1.99
3	Katarwas(panuda)		शमशान रोड निर्माण	1.99
4	Katarwas kala		शमशान रोड निर्माण	1.99
5	Barothi Bhilan		शमशान रोड निर्माण	1.98
6	Barothi Bhilan		बसस्टेण्ड बसोटीया	0.87
7	Barothi Brahman		शमशान शेंड निर्माण	1.99
8	Nichala Thuriya		शमशान शेंड निर्माण	1.99
9	Deri		बसस्टेण्ड हर्षावाडा	0.87
10	Chatol		बसस्टेण्ड चटोल	0.87
11	Parmarwara		बसस्टेण्ड परमारवाडा	1.09
12	Khunadari		शमशान घाट खुणादरी	1.98
13	Sulai		शमशान घाट भगोरवाडा	1.98
14	Jhuthari		शमशान शेड झुथरी	1.97
15	Jhuthari		चबुतरा निर्माण	1.01

The PRA exercise was carried out in all the villages on the dates shown below:

S.no	Name of the village/Habitation	Date on which PRA conducted
1	KANPUR	16/09/2011
2	KATARWAS KALA	18/08/2011
3	DERI	15/07/2011
4	SULAI	21/08/2011
5	BAROTHI BRAHMAN	08/09/2011
6	BAROTHI BHILAN	10/07/2011
7	JAWAS	28/08/2011

Transact walk were carried out involving the community for Social mapping, Resource mapping. Detailed discussions and deliberations with all the primary stakeholders were carried out.

Socio-economic survey was carried out during 1.4.10 to 31.12.10 (dates) period covering all the households and primary data on demography, Land holdings, Employment status, Community activities etc. was collected as mentioned in chapter 2.

State remote sensing department was assigned the work of preparing various thematic layers **using** Cartosat-1 and LISS-3 imageries for **Creation**, development and management of geo-spatial database depicting present conditions of land (terrain), water and vegetation with respect to watershed under different ownerships at village level

Various thematic layers provided by SRSAC are :

- Delineation of Macro/Micro watershed boundaries.
- Digitised Khasara maps of the villages falling in project area.
- Network of Drainage lines, existing water bodies, falling in the project area.
- Base maps (transport network, village/boundaries, and settlements).
- Land Use / Land cover map.
- Contours at 1 meter interval, slope map

Based on GIS thematic layers, Field visits , PRA and analysis of benchmark data (as discussed in chapter 2) final Treatment plan on revenue map for implementation has been framed. Thus each intervention identified has been marked on revenue map (map enclosed in DPR as annexure------).The GIS based intervention map, PRA based intervention map are annexed as ------.

VI. D. Village Level Institutions:

Table-M(IS)8: Details of Watershed Committees (WC) in the country: State-wise*

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Sr. No.	Name of the Districts	Name of Projects	Name of Up Samiti	Designation	M/F	SC	ST	SF	MF	LF	Land-less	UG	SHG	GP	Any other	Functions assigned
	Udaipur	IWMP- V-Mokarwara(Kherwara)	Kanpur	**President**	Ram Singh Garasiya		√		√		-	√	-	-	-	
				Secretary	Bheru Lal Garasiya											
				Member	Joravar Singh		√				-	√	-	-	-	
				Member	Hira Lal Kalal (OBC)						-	√	-	-	-	
				Member	Amar Ji		√		√		-	√	-	-	-	
				Member	Pratap Singh Rajput (Gen)						-	√	-	-	-	
				Member	Kanta Devi		√				-	√	-	-	-	
				Member	Babu Lal		√				-	-	√	-	-	
				Member	Shanti Lal		√				-	-	√	-	-	
				Member	Manju Devi (Sarpanch)		√	√			-	-	√	-	-	
				Member	Narendra Kumar Kharadi (Jen)		√		√		-	-	-	√		
	Udaipur	IWMP- V-Mokarwara(Kherwara)	Katarwas	**President**	Anil Kumar	√		√		-	-	√		-	-	
				Secretary	Ashok Jabala	√		√							√	
				Member	Bhim Singh		-			√	-	√		-	-	
				Member	Shanti Devi		-	√		-	-	√	-	-	-	
				Member	Ashok Kumar	√				-	-	√	-	-	-	
				Member	Mangan Lala				√	-	-	√	-	-	-	
				Member	Bahu Dev	√		√		-	-	-	√	-	-	
				Member	Rekha Devi			√		-	-	-	√	-	-	
				Member	Kanti Lal				√	-	-	-	√	-	-	
				Member	Monika Devi			√		-	-	-	√	-	-	
				Member	Balali Devi			√						√		
				Member	Basu Devi (Sarpanch)		√	√								
				Member	Narendra Kumar Kharadi (Jen)		√		√							

	Udaipur	IWMP- V-Mokarwara(Kherwara)	Barothi Bhilan	**President**	Bhagat Singh		√		√	√	-	√	-	-	-	
				Secretary	Mohan Lal Meghawal	√			√	√	-		-	-	√	
				Member	Nathu Singh		√				-	√	-	-	-	
				Member	Naval Singh					√		√				
				Member	Kavji			√			-	√	-	-	-	
				Member	Bhagat Singh				√		-	√	-	-	-	
				Member	Parwat Singh		√		√		-		√	-	-	
				Member	Lalita		√	√			-		√	-	-	
				Member	Ramila		√	√			-		√	-	-	
				Member	Anu Devi (Sarpanch)		√	√			-	-	√	-	-	
				Member	Naredra Kharadi (J.en)		√		√		-	-	-	√		
	Udaipur	IWMP- V-Mokarwara(Kherwara)	Sulai	**President**	Dayalchand	√		√			-	√	-	-	-	
				Secretary	Banesh Kumar	√		√			-	-	-	-	√	
				Member	Geeta Devi		√	√			-	√	-	-	-	
				Member	Sharda Devi		√	√			-	√	-	-	-	
				Member	Salami Devi		√	√			-	√	-	-	-	
				Member	Rameshchandra Patel						-	√	-	-	-	
				Member	Shanti Lal				√		-	-	√	-	-	
				Member	Dilip Kumar		√		√		-	-	√	-	-	
				Member	Vradhi Lal Meghawal	√					-	-	√	-	-	
				Member	Keshav Lal Meghawal	√					-	-	√	-	-	
				Member	Jawan Singh (Sarpanch)		√		√		-	-	√	-	-	
				Member	Naredra Kharadi (J.en)		√		√					√		
	Udaipur	IWMP II	Jawas	**President**	Vakhat Singh Chouhan					√	-	√	-	-	-	
				Secretary	Rameshchandra				√		-	-	-	-	√	
				Member	Gautam Lal				√		-	√	-	-	-	
				Member	Nana Lal				√		-	√	-	-	-	
				Member	Sita			√			-	√	-	-	-	
				Member	Prakash			√			-	√	-	-	-	
				Member	Suresh				√		-	-	√	-	-	
				Member	Shushila Devi					√	-	-	√	-	-	
				Member	Babu Lal				√		-	-	√	-	-	
				Member	Mani Devi (Sarpanch)		√	√	√		-	-	√	-	-	
				Member	Naredra Kharadi (J.en)		√		√		-	-	-	-	√	

	Udaipur	IWMP- V-Mokarwara(Kherwara)	Barothi Brahaman	**President**	Ranchhod Modiya		√	√		√	-	√	-	-	-	
				Secretary	Ashok Kumar Kharadi		√		√		-	-	-	-	√	
				Member	Laluram				√		-	√	-	-	-	
				Member	Baxsi ji		√		√		-	√	-	-	-	
				Member	Shambhu		√		√		-	√	-	-	-	
				Member	Rajendra						-	√	-	-	-	
				Member	Ramesh				√		-	-	√	-	-	
				Member	Thavri		√	√		√	-	-	√	-	-	
				Member	Meera		√	√	√		-	-	√	-	-	
				Member	Alakhi		√	√	√		-	-	√	-	-	
				Member	Lalita		√	√								
				Member	Roopa Devi (Sarpanch)		√	√								
				Member	Naredra Kharadi (J.en)		√		√		-	-	-	-	√	
	Udaipur	IWMP- V-Mokarwara(Kherwara)	Deri	**President**	Shanti Lal Kalal					√	-	√	-	-	-	
				Secretary	Seema Devi		√	√			-	-	-	-	√	
				Member	Suresh		√		√		-	√	-	-	-	
				Member	Suresh Singh		√		√		-	√	-	-	-	
				Member	Ram Singh Garasiya		√		√		-	√	-	-	-	
				Member	Jaynti Lal Parmar		√		√		-	√	-	-	-	
				Member	Mani Patel						-	-	√	-	-	
				Member	Nana					√	-	-	√	-	-	
				Member	Ramesh Parmar		√		√		-	-	√	-	-	
				Member	Lalita Parmar		√	√			-	-	√	-	-	
				Member	Sharda Parmar (Sarpanch)		√	√								
				Member	Naredra Kharadi (J.en)		√		√		-	-	-	-	√	

A.en & PIA
P.S Kherwara

WATER BUDGETING

Macro/Micro No. **7/1,7/3,7/4,7/6,7/7,7/8,8/2** **5538 Ha.**

Run off contributed from

(A) Area (Calculated from revenue record)

1. Good Catchment where runoff is maximum & infiltration is minimum like hillocks, plateanu etc
2. Average catchment-cultivated land, forest land with vegetation.
3. Bad catchment where runoff is minimum & infiltration is maximum e.g. Sandy soil

(B) AVERAGE ANNUAL RAINFAL DATA (AVAILABLE AT TEHSIL)) **607 mm.**

Propotion of Estimated Runoff of rainfall : To be worked out from strange's Table for kherwara tehsil

(a) Percentage of runoff to rainfall from strange's table.

In Good Catchment -	19.50%	607/19.5/10=1183
In average catchment -	14.60%	607X14.6/10=886
In Bad Catchment-	9.70%	607X9.7/10=588

Type of W/S	Area of W/S	Factor Cum/ha	Expected Yeild Cum	
Good	2105	1183	2490215	
Average	2273	886	2013878	
Bad	1160	588	682080	
Total	**5538**		**5186173**	cum **"A"**

PRESENT STORAGE BY EXISTING RUN OFF MANAGEMENT STRUCTURE

S.No.	Name of Structure	No./Area	Storage Capacity (Cum)	
1	Tank/Talab/Nadi	28	266000	
2	Anicut/WHS/ Khadin	18	86400	
	Total		**352400**	**"B"**

Storage by proposed structure

S.No.	Name of Structure	No./Area	Storage Capacity (Cum)	
1	Nadi / Talab	54	152000	
2	Anicut(MMS)	28	140000	
	Total		**292000**	**"C"**

Total runoff harvested = (292000+352400)/5186173*100 =12.42%

Detailed Project Report

1	Name of Watershed	Udaipur V-Mokarwada (Kherwara)
2	Sanction Year	2010 - 11
3	Sanctioned Amount	664.56 lacs
4	Area	5538 hac
5	Macro/Micro	7/1,7/3,7/4,7/6,7/7,7/8,8/2
6	Date of Commencement of Project	Nov - 2011
7	Gram Panchayat	Kanpur,Katarwas,Barothi Bhilan,Deri,Barothi.Brahaman, Sulai, Jawas
8	Panchayat Samiti	Kherwara
9	Distt.	Udaipur
10	Project Implimentation Agency	Assistant Engineer, P.I.A., P.S. Kherwara
11	Name of Zila Parishad	Zila parishad(RD) Udaipur (Raj)

INDEX

Land use detail

Sr. No.	Type of land		Area (ha)	Total area
1	Arable	Irrigated	201	1592
		Non Irrigated	1391	
2	Non Arable	Private	2231	2231
		Govt.	1258	1258
		Pasture	457	457
Total				5538

ABSTRACT SHEET (IWMP- KHERWARA)

Activity	Model estimate no.	Unit	Unit Cost	Qty.	Amount	Qty.	Amount
(A) Preparatory phase activities capacity building trainings & EPA (22%)				**Through Project Fund**		**Through Convergence Fund**	
Admn. (10%)			66.46		66.46		
Monitoring (1%)			6.65		6.65		
Evaluation (1%)			6.65		6.65		
EPA (4%)			26.58		26.58		
I & CB (5%)			33.23		33.23		
DPR (1%)			6.65		6.65		
Total (A)			**146.20**		**146.20**		
(B) Natural resource management (56%)							
Conservation measures for arable land							
PRT	2	Ha.	0.09934	380	37.75	160	15.89
VCB	3	Ha.	0.06682	654	43.70	240	16.04
Gully Control	1	No.	0.03952	773	30.55		
Conservation measures for non arable land							
Run off management structure nadi	11	No.	0.43111	7	3.02	2	0.86
SCT	4	Ha.	0.06014	73	4.39	25	1.50
Contour Stone Bund	12	Ha.	0.21065	105	22.12	40	8.43
Gully Control non arable	10	No.	0.03952	550	21.74	220	8.69
Pasture Development	14	Ha.	1.55908	72	112.25	26	37.42
Drainage line treatment							
LSCD							
Upper Ridge	6	No.	0.01085	530	5.75		
Middle Ridge	7	No.	0.03712	276	10.25		
Lower Ridge	8	No.	0.18586	72	13.38		
Nadi	13	No.	0.74877	21	15.72	8	5.99
Anicut(MMS)	16,17,18,19	No.	2/2.5/3/5	11	51.50		
Total (B)					**372.12**		**94.83**
(C) Livelihoods (9%)							
Local Artisans / Crafts/Dairy & Poultry/Nursery establishment SHG		No.	0.25	111	27.75	30	7.50
Animal Husbandry Management health camps		No.	0.24	125	30.00	30	7.20
AI and castration		No.	0.002	1047	2.09	200	0.40
Total (C)					**59.84**		**15.10**
(D) Production System and micro enterprise(10%)							
Dryland Horticulture	15	Ha.	0.294	5	1.54	12	3.53
Agro Forestry	24	Ha.	0.03	16	0.49	12	0.36
Crop Demonstration/ Hybrid minikits	20	No.	0.01	2759	27.59	1595	15.95
Vermi compost unit	21	No.	0.12	137	16.44	80	9.60
Compost pit unit	22	No.	0.01	773	7.73	300	3.00
Manger unit	23	No.	0.017	745	12.67	350	5.95
Total (D)					**66.46**		**38.39**
(E) Consolidation (3%)					19.94		
Grand Total (A+B+C+D+E)					**664.56**		**148.32**

ABSTRACT SHEET (IWMP- KHERWARA)

Activity	Area(Ha.)	Area(Ha.)
	Proposed Treatment Through Project Fund	Proposed Treatment Through Convergence Fund
Arable land		
PRT	380	160
VCB	654	240
Gully Control	85	
Dryland Horticulture	17	12
Agro Forestry	20	12
Crop Demonstration/ Hybrid minikits	436	
Total	**1592**	**424**
Non arable land		
Run off management structure nadi	246	2
SCT	457	25
Contour Stone Bund	105	40
Gully Control non arable	2231	220
Pasture Development	48	26
LSCD Upper Ridge	224	
LSCD Middle Ridge	229	
LSCD Lower Ridge	158	
Nadi	108	8
Anicut(MMS)	140	
Total	**3946**	**321**
Grand Total	**5538**	**745**

Proposed Development Plan **Chapter IV**

Activity	Unit	Unit Cost	COST (LACS) 21.96 183 Kanpur				COST (LACS) 123.12 1026 Brothi Bhilan				COST (LACS) 81.72 681 Katarwas			
			Quantity	Total Cost	Cost from Project Fund	Beneficiary Contribution	Quantity	Total Cost	Cost from Project Fund	Beneficiary Contribution	Quantity	Total Cost	Cost from Project Fund	Beneficiary Contribution
(A) Preparatory phase activities (22%)														
Admn. (10%)		66.46		2.20	2.20	0.00		12.31	12.31	0.00		8.17	8.17	0.00
Monitoring (1%)		6.65		0.22	0.22	0.00		1.23	1.23	0.00		0.82	0.82	0.00
Evaluation (1%)		6.65		0.22	0.22	0.00		1.23	1.23	0.00		0.82	0.82	0.00
EPA (4%)		26.58		0.88	0.88	0.00		4.92	4.92	0.00		3.27	3.27	0.00
I & CB (5%)		33.23		1.10	1.10	0.00		6.16	6.16	0.00		4.09	4.09	0.00
DPR (1%)		6.65		0.22	0.22	0.00		1.23	1.23	0.00		0.82	0.82	0.00
Total (A)		**146.20**		**4.83**	**4.83**	**0.00**	**0.00**	**27.09**	**27.09**	**0.00**	**0.00**	**17.98**	**17.98**	**0.00**
(B) Natural resource management (56%)														
Conservation measures for arable land														
PRT	Ha.	0.09934	18	1.79	1.79	0.09	68	6.76	6.76	0.34	48	4.77	4.77	0.24
VCB	Ha.	0.06682	38	2.54	2.54	0.13	102	6.82	6.82	0.34	68	4.54	4.54	0.23
Gully Control	No.	0.03952	55	2.17	2.17	0.11	104	4.11	4.11	0.21	104	4.11	4.11	0.21
Conservation measures for non arable land														
Run off management structure nadi	No.	0.43111	1	0.43	0.43	0.02	1	0.43	0.43	0.02	1	0.43	0.43	0.02
SCT	Ha.	0.06014	0	0.00	0.00	0.00	20	1.20	1.20	0.06	10	0.60	0.60	0.03
Contour Stone Bund	Ha.	0.21065	0	0.00	0.00	0.00	18	3.79	3.79	0.19	10	2.11	2.11	0.11
Gully Control non arable	No.	0.03952	30	1.19	1.19	0.06	108	4.27	4.27	0.21	60	2.37	2.37	0.12
Pasture Development	Ha.	1.55908	0	0.00	0.00	0.00	15	23.39	23.39	0.70	10	15.59	15.59	0.78
Drainage line tretment														
LSCD														
Upper Ridge	No.	0.01085	27	0.29	0.29	0.00	109	1.18	1.18	0.00	60	0.65	0.65	0.00
Middle Ridge	No.	0.03712	14	0.52	0.52	0.00	38	1.41	1.41	0.00	27	1.00	1.00	0.00
Lower Ridge	No.	0.18586	6	1.12	1.12	0.00	14	2.60	2.60	0.00	7	1.30	1.30	0.00
Nadi	No.	0.74877	3	2.25	2.25	0.00	4	3.00	3.00	0.00	3	2.25	2.25	0.00
Anicut(MMS)	No.	2/2.5/3/5	0	0.00	0.00	0.00	2	10.00	10.00	0.15	1	6.00	6.00	0.00
Total (B)				**12.29**	**12.29**	**0.41**		**68.95**	**68.95**	**2.22**		**45.72**	**45.72**	**1.73**
(C) Livelihoods (9%)														
Local Artisans / Crafts/Dairy & Poultry/Nursery establishment SHG	No.	0.25	3	0.75	0.75	0.00	10	2.50	2.50		13	3.25	3.25	
Animal Husbandry Management health camps	No.	0.24	4	0.96	0.96	0.00	35	8.40	8.40		16	3.84	3.84	
AI and castration	No.	0.002	135	0.27	0.27	0.00	90	0.18	0.18		150	0.30	0.30	
Total (C)				**1.98**	**1.98**	**0.00**		**11.08**	**11.08**			**7.39**	**7.39**	
(D) Production System and micro enterprise(10%)														
Dryland Horticulture	Ha.	0.294	0.25	0.07	0.07	0.01	0.5	0.15	0.15	0.01	1.0	0.29	0.29	0.03
Agro Forestry	Ha.	0.03	0.25	0.01	0.01	0.00	2	0.06	0.06	0.01	4	0.12	0.12	0.01
Crop Demonstration/ Hybrid minikits	No.	0.01	50	0.50	0.50	0.05	475	4.75	4.75	0.48	400	4.00	4.00	0.40
Vermi compost unit	No.	0.12	2	0.24	0.24	0.02	50	6.00	6.00	0.60	5	0.60	0.60	0.06
Compost pit unit	No.	0.01	53	0.53	0.53	0.05	50	0.50	0.50	0.05	129	1.29	1.29	0.13
Manger unit	No.	0.017	50	0.85	0.85	0.09	50	0.85	0.85	0.09	110	1.87	1.87	0.19
Total (D)				**2.20**	**2.20**	**0.22**		**12.31**	**12.31**	**1.23**		**8.17**	**8.17**	**0.82**
(E) Consolidation (3%)				0.66	0.66			3.69	3.69			2.45	2.45	
Grand Total (A+B+C+D+E)				**21.96**	**21.96**	**0.63**		**123.12**	**123.12**	**3.45**		**81.72**	**81.72**	**2.54**

Note - The dimensions of the structures proposed in DPR are tentative & likely to be varied as per the site condition & rates will be applicable as per GKN of the executing year.

Proposed Development Plan **Chapter IV**

Activity	Unit	Unit Cost	COST (LACS) 90.84 757 Brothi Brahamanan				COST (LACS) 126.96 1058 Deri				COST (LACS) 134.04 1117 Sulai			
			Quantity	Total Cost	Cost from Project Fund	Beneficiary Contribution	Quantity	Total Cost	Cost from Project Fund	Beneficiary Contribution	Quantity	Total Cost	Cost from Project Fund	Beneficiary Contribution
(A) Preparatory phase activities (22%)														
Admn. (10%)		66.46		9.08	9.08	0.00		12.70	12.70	0.00		13.40	13.40	0.00
Monitoring (1%)		6.65		0.91	0.91	0.00		1.27	1.27	0.00		1.34	1.34	0.00
Evaluation (1%)		6.65		0.91	0.91	0.00		1.27	1.27	0.00		1.34	1.34	0.00
EPA (4%)		26.58		3.63	3.63	0.00		5.08	5.08	0.00		5.36	5.36	0.00
I & CB (5%)		33.23		4.54	4.54	0.00		6.35	6.35	0.00		6.70	6.70	0.00
DPR (1%)		6.65		0.91	0.91	0.00		1.27	1.27	0.00		1.34	1.34	0.00
Total (A)		**146.20**	**0.00**	**19.98**	**19.98**	**0.00**	**0.00**	**27.93**	**27.93**	**0.00**	**0.00**	**29.49**	**29.49**	**0.00**
(B) Natural resource management (56%)														
Conservation measures for arable land														
PRT	Ha.	0.09934	52	5.17	5.17	0.26	75	7.45	7.45	0.37	79	7.85	7.85	0.39
VCB	Ha.	0.06682	96	6.41	6.41	0.32	172	11.49	11.49	0.57	130	8.69	8.69	0.43
Gully Control	No.	0.03952	100	3.95	3.95	0.20	240	9.48	9.48	0.47	108	4.27	4.27	0.21
Conservation measures for non arable land														
Run off management structure nadi	No.	0.43111	1	0.43	0.43	0.02	1	0.43	0.43	0.02	1	0.43	0.43	0.02
SCT	Ha.	0.06014	8	0.48	0.48	0.02	10	0.60	0.60	0.03	14	0.84	0.84	0.04
Contour Stone Bund	Ha.	0.21065	20	4.21	4.21	0.21	10	2.11	2.11	0.11	32	6.74	6.74	0.34
Gully Control non arable	No.	0.03952	101	3.99	3.99	0.20	50	1.98	1.98	0.10	130	5.14	5.14	0.26
Pasture Development	Ha.	1.55908	10	15.59	15.59	0.78	13	20.27	20.27	1.01	13	20.27	20.27	1.01
Drainage line tretment														
LSCD														
Upper Ridge	No.	0.01085	40	0.43	0.43	0.00	130	1.41	1.41	0.00	110	1.19	1.19	0.00
Middle Ridge	No.	0.03712	26	0.97	0.97	0.00	73	2.71	2.71	0.00	74	2.75	2.75	0.00
Lower Ridge	No.	0.18586	12	2.23	2.23	0.00	9	1.67	1.67	0.00	17	3.16	3.16	0.00
Nadi	No.	0.74877	2	1.50	1.50	0.00	2	1.50	1.50	0.00	5	3.74	3.74	0.00
Anicut(MMS)	No.	2/2.5/3/5	2	5.50	5.50	0.00	2	10.00	10.00	0.00	2	10.00	10.00	0.00
Total (B)				**50.87**	**50.87**	**2.01**		**71.10**	**71.10**	**2.69**		**75.07**	**75.07**	**2.71**
(C) Livelihoods (9%)														
Local Artisans / Crafts/Dairy & Poultry/Nursery establishment SHG	No.	0.25	21	5.25	5.25		26	6.50	6.50		28	7.00	7.00	
Animal Husbandry Management health camps	No.	0.24	10	2.40	2.40		20	4.80	4.80		20	4.80	4.80	
AI and castration	No.	0.002	260	0.52	0.52		60	0.12	0.12		132	0.26	0.26	
Total (C)				**8.17**	**8.17**			**11.42**	**11.42**			**12.06**	**12.06**	
(D) Production System and micro enterprise(10%)														
Dryland Horticulture	Ha.	0.294	1.0	0.29	0.29	0.03	1	0.29	0.29	0.03	1	0.15	0.15	0.01
Agro Forestry	Ha.	0.03	2	0.06	0.06	0.01	2	0.06	0.06	0.01	3	0.09	0.09	0.01
Crop Demonstration/ Hybrid minikits	No.	0.01	214	2.14	2.14	0.21	500	5.00	5.00	0.50	670	6.70	6.70	0.67
Vermi compost unit	No.	0.12	10	1.20	1.20	0.12	30	3.60	3.60	0.36	20	2.40	2.40	0.24
Compost pit unit	No.	0.01	200	2.00	2.00	0.20	136	1.36	1.36	0.14	151	1.51	1.51	0.15
Manger unit	No.	0.017	200	3.40	3.40	0.34	140	2.38	2.38	0.24	150	2.55	2.55	0.26
Total (D)				**9.09**	**9.09**	**0.91**		**12.69**	**12.69**	**1.27**		**13.40**	**13.40**	**1.34**
(E) Consolidation (3%)				2.73	2.73			3.81	3.81			4.02	4.02	
Grand Total (A+B+C+D+E)				**90.84**	**90.84**	**2.92**		**126.96**	**126.96**	**3.96**		**134.04**	**134.04**	**4.05**

Note - The dimensions of the structures proposed in DPR are tent

Proposed Development Plan **Chapter IV** COST (LACS) 85.92 716 COST (LACS) 664.56 5538

Activity	Unit	Unit Cost	Jawas				Total			
			Quantity	Total Cost	Cost from Project Fund	Beneficiary Contribution	Quantity	Total Cost	Cost from Project Fund	Beneficiary Contribution
(A) Preparatory phase activities (22%)										
Admn. (10%)		66.46		8.59	8.59	0.00	0.00	66.46	66.46	
Monitoring (1%)		6.65		0.86	0.86	0.00	0.00	6.65	6.65	
Evaluation (1%)		6.65		0.86	0.86	0.00	0.00	6.65	6.65	
EPA (4%)		26.58		3.44	3.44	0.00	0.00	26.58	26.58	
I & CB (5%)		33.23		4.30	4.30	0.00	0.00	33.23	33.23	
DPR (1%)		6.65		0.86	0.86	0.00	0.00	6.65	6.65	
Total (A)		**146.20**	**0.00**	**18.90**	**18.90**	**0.00**	**0.00**	**146.20**	**146.20**	
(B) Natural resource management (56%)										
Conservation measures for arable land										
PRT	Ha.	0.09934	40	3.97	3.97	0.20	380	37.75	37.75	1.89
VCB	Ha.	0.06682	48	3.21	3.21	0.16	654	43.70	43.70	2.19
Gully Control	No.	0.03952	62	2.45	2.45	0.12	773	30.55	30.55	1.53
Conservation measures for non arable land										
Run off management structure nadi	No.	0.43111	1	0.43	0.43	0.02	7	3.02	3.02	0.15
SCT	Ha.	0.06014	11	0.66	0.66	0.03	73	4.39	4.39	0.22
Contour Stone Bund	Ha.	0.21065	15	3.16	3.16	0.16	105	22.12	22.12	1.11
Gully Control non arable	No.	0.03952	71	2.81	2.81	0.14	550	21.74	21.74	1.09
Pasture Development	Ha.	1.55908	11	17.15	17.15	0.86	72	112.25	112.25	5.14
Drainage line tretment										
LSCD										
Upper Ridge	No.	0.01085	54	0.59	0.59	0.00	530	5.75	5.75	
Middle Ridge	No.	0.03712	24	0.89	0.89	0.00	276	10.25	10.25	
Lower Ridge	No.	0.18586	7	1.30	1.30	0.00	72	13.38	13.38	
Nadi	No.	0.74877	2	1.50	1.50	0.00	21	15.72	15.72	
Anicut(MMS)	No.	2/2.5/3/5	2	10.00	10.00	0.00	11	51.50	51.50	
Total (B)				**48.11**	**48.11**	**1.69**		**372.12**	**372.12**	**13.31**
(C) Livelihoods (9%)										
Local Artisans / Crafts/Dairy & Poultry/Nursery establishment SHG	No.	0.25	10	2.50	2.50		111	27.75	27.75	
Animal Husbandry Management health camps	No.	0.24	20	4.80	4.80		125	30.00	30.00	
AI and castration	No.	0.002	220	0.44	0.44		1047	2.09	2.09	
Total (C)				**7.74**	**7.74**			**59.84**	**59.84**	
(D) Production System and micro enterprise(10%)										
Dryland Horticulture	Ha.	0.294	1	0.29	0.29	0.03	5.3	1.54	1.54	0.15
Agro Forestry	Ha.	0.03	3	0.09	0.09	0.01	16.3	0.49	0.49	0.05
Crop Demonstration/ Hybrid minikits	No.	0.01	450	4.50	4.50	0.45	2759.0	27.59	27.59	2.76
Vermi compost unit	No.	0.12	20	2.40	2.40	0.24	137.0	16.44	16.44	1.64
Compost pit unit	No.	0.01	54	0.54	0.54	0.05	773.0	7.73	7.73	0.77
Manger unit	No.	0.017	45	0.77	0.77	0.08	745	12.67	12.67	1.27
Total (D)				**8.59**	**8.59**	**0.86**		**66.46**	**66.46**	**6.65**
(E) Consolidation (3%)				2.58	2.58			19.94	19.94	
Grand Total (A+B+C+D+E)				**85.92**	**85.92**	**2.55**		**664.56**	**664.56**	**19.95**

Note - The dimensions of the structures proposed in DPR are tent

CHAPTER – V

Annual Action Plan

Through Convergence

Yearwise Total

Activity	Scheme	Unit	Quantity	Unit Cost	Total cost	1st year		2nd year		3rd year		4th year		5th year		Total	
						Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
(A) Natural resource management																	
Conservation measures for arable land																	
PRT	MGNREGA	Ha.	160	0.09934	15.89					53	5.30	53	5.30	53	5.30	160	15.89
VCB	MGNREGA	Ha.	240	0.06682	16.04					80	5.35	80	5.35	80	5.35	240	16.04
Conservation measures for non arable land																	
Run off management structure nadi	MGNREGA	No.	2	0.43111	0.86					1	0.29	1	0.29	1	0.29	2	0.86
SCT	MGNREGA	Ha.	25	0.06014	1.50					8	0.50	8	0.50	8	0.50	25	1.50
Contour Stone Bund	MGNREGA	Ha.	40	0.21065	8.43					13	2.81	13	2.81	13	2.81	40	8.43
Gully Control non arable	MGNREGA	No.	220	0.03952	8.69					73	2.90	73	2.90	73	2.90	220	8.69
Pasture Development	MGNREGA	Ha.	26	1.55908	40.54					9	13.51	9	13.51	9	13.51	26	40.54
Drainage line treatment																	
Nadi	MGNREGA	No.	8	0.74877	5.99					3	2.00	3	2.00	3	2.00	8	5.99
Total(A)					**97.94**						**32.65**		**32.65**		**32.65**		**97.94**
(B) Livelihoods																	
Local Artisans / Crafts/Dairy & Poultry/Nursery establishment SHG	SGSY	No.	30	1.25	37.50					10	12.50	10	12.50	10	12.50	30	37.50
Animal Husbandry Management health camps	AH DEPTT.	No.	30	0.24	7.20					10	2.40	10	2.40	10	2.40	30	7.20
AI and castration	AH DEPTT.	No.	200	0.002	0.40					67	0.13	67	0.13	67	0.13	200	0.40
Total (B)					**45.10**						**15.03**		**15.03**		**15.03**		**45.10**
(C) Production System and micro enterprise																	
Dryland Horticulture	HORT.DEPTT.	Ha.	12	0.294	3.53					4	1.18	4	1.18	4	1.18	12	3.53
Agro Forestry	AG. DEPTT.	Ha.	12	0.03	0.36					4	0.12	4	0.12	4	0.12	12	0.36
Crop Demonstration/ Hybrid minikits	AG. DEPTT.	No.	1595	0.01	15.95					532	5.32	532	5.32	532	5.32	1595	15.95
Vermi compost unit	AG. DEPTT.	No.	80	0.12	9.60					27	3.20	27	3.20	27	3.20	80	9.60
Compost pit unit	AG. DEPTT.	No.	300	0.01	3.00					100	1.00	100	1.00	100	1.00	300	3.00
Manger unit	AH DEPTT.	No.	350	0.017	5.95					117	1.98	117	1.98	117	1.98	350	5.95
Total (C)					**38.39**						**12.80**		**12.80**		**12.80**		**38.39**
Grand Total (A+B+C)					**181.43**						**60.48**		**60.48**		**60.48**	**0.00**	**181.43**

Note- The project activities are proposed to treat the entire area. However the convergence funds will be utilised to strengthen the measures taken in the project area.

CHAPTER – V

Annual Action Plan

Through Project Fund **Yearwise Total**

Activity	Unit	Quantity	Unit Cost	Total cost	1st year		2nd year		3rd year		4th year		5th year		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
(A) Preparatory phase activities capacity building trainings & EPA (22%)																
Admn. (10%)				66.46		13.29		13.29		13.29		13.29		13.29		66.46
Monitoring (1%)				6.65		1.33		1.33		1.33		1.33		1.33		6.65
Evaluation (1%)				6.65		0.00		0.00		3.34		0.00		3.31		6.65
EPA (4%)				26.58		0.00		26.58		0.00		0.00		0.00		26.58
I & CB (5%)				33.23		6.65		13.29		6.65		3.32		3.32		33.23
DPR (1%)				6.65		5.32		1.33		0.00		0.00		0.00		6.65
Total (A)				**146.20**		**26.58**		**55.82**		**24.60**		**17.94**		**21.25**		**146.20**
(B) Natural resource management (56%)																
Conservation measures for arable land																
PRT	Ha.	380	0.09934	37.75					75	7.45	82	8.15	223	22.15	380	37.75
VCB	Ha.	654	0.06682	43.70					79	5.28	94	6.28	481	32.14	654	43.70
Gully Control	No.	773	0.03952	30.55					170	6.72	279	11.03	324	12.80	773	30.55
Conservation measures for non arable land														0.00		
Run off management structure nadi	**No.**	7	0.43111	3.02					7	3.02	4	1.72	-4	-1.72	7	3.02
SCT	Ha.	73	0.06014	4.39					130	7.82	77	4.63	-134	-8.06	73	4.39
Contour Stone Bund	Ha.	105	0.21065	22.12					46	9.69	44	9.27	15	3.16	105	22.12
Gully Control non arable	No.	550	0.03952	21.74					99	3.91	48	1.90	403	15.93	550	21.74
Pasture Development	Ha.	72	1.55908	112.25					14	21.83	7	10.91	51	79.51	72	112.25
Drainage line treatment																
LSCD																
Upper Ridge	No.	530	0.01085	5.75					405	4.39	268	2.91	-143	-1.55	530	5.75
Middle Ridge	No.	276	0.03712	10.25					154	5.72	88	3.27	34	1.26	276	10.25
Lower Ridge	No.	72	0.18586	13.38					29	5.39	23	4.27	20	3.72	72	13.38
Nadi	No.	21	0.74877	15.72					12	8.99	12	8.99	-3	-2.25	21	15.72
Anicut(MMS)	No.	11	2/2.5/3/5	51.50					5	12.00	10	24.00	-4	15.50	11	41.50
Total (B)				**372.12**						**102.20**		**97.32**		**172.60**		**372.12**
(C) Livelihoods (9%)																
Local Artisans / Crafts/Dairy & Poultry/Nursery establishment SHG	No.	111	0.25	27.75					37	9.24	37	9.27	37	9.24	111	27.75
Animal Husbandry Management health camps	No.	125	0.24	30.00					31	7.49	63	15.00	31	7.52	125	30.00
AI and castration	No.	1047	0.002	2.09					838	1.68	209	0.42	0	0.00	1047	2.09
Total (C)				**59.84**						**18.40**		**24.68**		**16.76**		**59.84**
(D) Production System and micro enterprise(10%)																
Dryland Horticulture	Ha.	5	0.294	1.54					2	0.51	2	0.51	2	0.52	5	1.54
Agro Forestry	Ha.	16	0.03	0.49					5	0.16	5	0.16	5	0.16	16	0.49
Crop Demonstration/ Hybrid minikits	No.	2759	0.01	27.59					919	9.19	919	9.19	922	9.22	2759	27.59
Vermi compost unit	No.	137	0.12	16.44					46	5.47	46	5.47	46	5.49	137	16.44
Compost pit unit	No.	773	0.01	7.73					257	2.57	257	2.57	258	2.58	773	7.73
Manger unit	No.	745	0.017	12.67					248	4.22	248	4.22	249	4.23	745	12.67
Total (D)				**66.46**						**22.13**		**22.13**		**22.20**		**66.46**
(E) Consolidation (3%)				19.94					0	0.00	0	0.00	0	19.94	0	19.94
Grand Total (A+B+C+D+E)				**664.56**		**26.58**		**55.82**		**167.33**		**162.08**		**252.74**		**664.56**

Note - The dimensions of the structures proposed in DPR are tentative & likely to be varied as per the site condition & rates will be applicable as per GKN of the executing year.

CHAPTER – V

Annual Action Plan

Through Project Fund **G.P.- Kanpur** AREA(HA) 183 COST (LACS) 21.96

Activity	Unit	Quantity	Unit Cost	Total cost	1st year		2nd year		3rd year		4th year		5th year		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
(A) Preparatory phase activities capacity building trainings & EPA (22%)																
Admn. (10%)				2.20		0.44		0.44		0.44		0.44		0.44		2.20
Monitoring (1%)				0.22		0.04		0.04		0.04		0.04		0.04		0.22
Evaluation (1%)				0.22		0.00		0.00		0.11		0.00		0.11		0.22
EPA (4%)				0.88		0.00		0.88		0.00		0.00		0.00		0.88
I & CB (5%)				1.10		0.22		0.44		0.22		0.11		0.11		1.10
DPR (1%)				0.22		0.18		0.04						0.00		0.22
Total (A)				**4.83**		**0.88**		**1.84**		**0.81**		**0.59**		**0.70**		**4.83**
(B) Natural resource management (56%)																
Conservation measures for arable land																
PRT	Ha.	18	0.09934	1.79					9	0.89	10	0.99	-1	-0.10	18	1.79
VCB	Ha.	38	0.06682	2.54					13	0.87	45	3.01	-20	-1.34	38	2.54
Gully Control	No.	55	0.03952	2.17					28	1.11	18	0.71	9	0.36	55	2.17
Conservation measures for non arable land																
Run off management structure nadi	**No.**	1	0.43111	0.43					1	0.43	1	0.43	-1	-0.43	1	0.43
SCT	Ha.	0	0.06014	0.00					56	3.37	0	0.00	-56	-3.37	0	0.00
Contour Stone Bund	Ha.	0	0.21065	0.00					20	4.21	22	4.63	-42	-8.85	0	0.00
Gully Control non arable	No.	30	0.03952	1.19					60	2.37	13	0.51	-43	-1.70	30	1.19
Pasture Development	Ha.	0	1.55908	0.00					8	12.47	1	1.56	-9	-14.03	0	0.00
Drainage line treatment																
LSCD																
Upper Ridge	No.	27	0.01085	0.29					213	2.31	100	1.09	-286	-3.10	27	0.29
Middle Ridge	No.	14	0.03712	0.52					95	3.53	35	1.30	-116	-4.31	14	0.52
Lower Ridge	No.	6	0.18586	1.12					10	1.86	10	1.86	-14	-2.60	6	1.12
Nadi	No.	3	0.74877	2.25					5	3.74	5	3.74	-7	-5.24	3	2.25
Anicut(MMS)	No.	0	2/2.5/3/5	0.00					2	5.50	4	9.50	-6	-15.00	0	0.00
Total (B)				**12.29**		**0.00**		**0.00**		**42.66**		**29.34**		**-59.71**		**12.29**
(C) Livelihoods (9%)																
Local Artisans / Crafts/Dairy & Poultry/Nursery establishment SHG	No.	3	0.25	0.75					1	0.25	1	0.25	1	0.25	3	0.75
Animal Husbandry Management health camps	No.	4	0.24	0.96					1	0.24	2	0.48	1	0.24	4	0.96
AI and castration	No.	135	0.002	0.27					108	0.22	27	0.05	0	0.00	135	0.27
Total (C)				**1.98**						0.71		0.78		0.49		**1.98**
(D) Production System and micro enterprise(10%)																
Dryland Horticulture	Ha.	0.3	0.294	0.07					0	0.02	0	0.02	0	0.02	0.25	0.07
Agro Forestry	Ha.	0.3	0.03	0.01					0	0.00	0	0.00	0	0.00	0.25	0.01
Crop Demonstration/ Hybrid minikits	No.	50	0.01	0.50					17	0.17	17	0.17	17	0.17	50	0.50
Vermi compost unit	No.	2	0.12	0.24					1	0.08	1	0.08	1	0.08	2	0.24
Compost pit unit	No.	53	0.01	0.53					18	0.18	18	0.18	18	0.18	53	0.53
Manger unit	No.	50	0.017	0.85					17	0.28	17	0.28	17	0.28	50	0.85
Total (D)				**2.20**						**0.73**		**0.73**		**0.74**		**2.20**
(E) Consolidation (3%)				0.66						0.00		0.00		0.66		0.66
Grand Total (A+B+C+D+E)				**21.96**		**0.88**		**1.84**		**44.92**		**31.45**		**-57.12**		**21.96**

Note - The dimensions of the structures proposed in DPR are tentative & likely to be varied as per the site condition & rates will be applicable as per GKN of the executing year.

CHAPTER – V

Annual Action Plan

Through Project Fund **G.P.- Brothi Bhilan** AREA(HA) 1026 COST (LACS) 123.12

Activity	Unit	Quantity	Unit Cost	Total cost	1st year		2nd year		3rd year		4th year		5th year		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
(A) Preparatory phase activities capacity building trainings & EPA (22%)																
Admn. (10%)				12.31		2.46		2.46		2.46		2.46	0	2.46	0	12.31
Monitoring (1%)				1.23		0.25		0.25		0.25		0.25	0	0.25	0	1.23
Evaluation (1%)				1.23		0.00		0.00		0.63		0.00	0	0.60	0	1.23
EPA (4%)				4.92		0.00		4.92		0.00		0.00	0	0.00	0	4.92
I & CB (5%)				6.16		1.23		2.46		1.23		0.62	0	0.62	0	6.16
DPR (1%)				1.23		0.98		0.25		0.00		0.00	0	0.00	0	1.23
Total (A)		**0**		**27.09**		**4.92**		**10.34**		**4.57**		**3.32**		**3.93**		**27.09**
(B) Natural resource management (56%)																
Conservation measures for arable land																
PRT	Ha.	68	0.09934	6.76					4	0.40	34	3.38	30	2.98	68	6.76
VCB	Ha.	102	0.06682	6.82					7	0.47	7	0.47	88	5.88	102	6.82
Gully Control	No.	104	0.03952	4.11					52	2.06	52	2.06	0	0.00	104	4.11
Conservation measures for non arable land																
Run off management structure nadi	**No.**	1	0.43111	0.43					1	0.43	0	0.00	0	0.00	1	0.43
SCT	Ha.	20	0.06014	1.20					7	0.42	8	0.48	5	0.30	20	1.20
Contour Stone Bund	Ha.	18	0.21065	3.79					3	0.63	1	0.21	14	2.95	18	3.79
Gully Control non arable	No.	108	0.03952	4.27					15	0.59	10	0.40	83	3.28	108	4.27
Pasture Development	Ha.	15	1.55908	23.39					0	0.00	0	0.00	15	23.39	15	23.39
Drainage line treatment																
LSCD																
Upper Ridge	No.	109	0.01085	1.18					12	0.13	12	0.13	85	0.92	109	1.18
Middle Ridge	No.	38	0.03712	1.41					7	0.26	6	0.22	25	0.93	38	1.41
Lower Ridge	No.	14	0.18586	2.60					3	0.56	1	0.19	10	1.86	14	2.60
Nadi	No.	4	0.74877	3.00					1	0.75	1	0.75	2	1.50	4	3.00
Anicut(MMS)	No.	2	2/2.5/3/5	10.00					0	0.00	0	0.00	2	10.00	2	10.00
Total (B)				**68.95**		**0.00**		**0.00**		**6.69**		**8.27**		**53.98**		**68.95**
(C) Livelihoods (9%)																
Local Artisans / Crafts/Dairy & Poultry/Nursery establishment SHG	No.	10	0.25	2.50					3	0.83	3	0.83	3	0.83	10	2.50
Animal Husbandry Management health camps	No.	35	0.24	8.40					9	2.10	18	4.20	9	2.10	35	8.40
AI and castration	No.	90	0.002	0.18					72	0.14	18	0.04	0	0.00	90	0.18
Total (C)				**11.08**						**3.07**		**5.07**		**2.94**		**11.08**
(D) Production System and micro enterprise(10%)																
Dryland Horticulture	Ha.	1	0.294	0.15					0	0.05	0	0.05	0	0.05	0.5	0.15
Agro Forestry	Ha.	2	0.03	0.06					1	0.02	1	0.02	1	0.02	2	0.06
Crop Demonstration/ Hybrid minikits	No.	475	0.01	4.75					158	1.58	158	1.58	159	1.59	475	4.75
Vermi compost unit	No.	50	0.12	6.00					17	2.00	17	2.00	17	2.00	50	6.00
Compost pit unit	No.	50	0.01	0.50					17	0.17	17	0.17	17	0.17	50	0.50
Manger unit	No.	50	0.017	0.85					17	0.28	17	0.28	17	0.28	50	0.85
Total (D)				**12.31**						**4.10**		**4.10**		**4.11**		**12.31**
(E) Consolidation (3%)				3.69						0.00		0.00		3.69		3.69
Grand Total (A+B+C+D+E)				**123.12**		**4.92**		**10.34**		**18.43**		**20.77**		**68.65**		**123.12**

Note - The dimensions of the structures proposed in DPR are tentative & likely to be varied as per the site condition & rates will be applicable as per GKN of the executing year.

CHAPTER – V

Annual Action Plan

Through Project Fund **G.P.- Katarwas** AREA(HA) 681 COST (LACS) 81.72

Activity	Unit	Quantity	Unit Cost	Total cost	1st year		2nd year		3rd year		4th year		5th year		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
(A) Preparatory phase activities capacity building trainings & EPA (22%)																
Admn. (10%)				8.17		1.63		1.63		1.63		1.63		1.63		8.17
Monitoring (1%)				0.82		0.16		0.16		0.16		0.16		0.16		0.82
Evaluation (1%)				0.82		0.00		0.00		0.41		0.00		0.41		0.82
EPA (4%)				3.27		0.00		3.27		0.00		0.00		0.00		3.27
I & CB (5%)				4.09		0.82		1.63		0.82		0.41		0.41		4.09
DPR (1%)				0.82		0.65		0.16		0.00		0.00		0.00		0.82
Total (A)				**17.98**		**3.27**		**6.86**		**3.02**		**2.21**		**2.62**		**17.98**
(B) Natural resource management (56%)																
Conservation measures for arable land																
PRT	Ha.	48	0.09934	4.77					24	2.38	24	2.38	0	0.000	48	4.77
VCB	Ha.	68	0.06682	4.54					30	2.00	0	0.00	38	2.539	68	4.54
Gully Control	No.	104	0.03952	4.11					2	0.08	2	0.08	100	3.952	104	4.11
Conservation measures for non arable land																
Run off management structure nadi	**No.**	1	0.43111	0.43					1	0.43	0	0.00	0	0.000	1	0.43
SCT	Ha.	10	0.06014	0.60					12	0.72	8	0.48	-10	-0.601	10	0.60
Contour Stone Bund	Ha.	10	0.21065	2.11					7	1.47	3	0.63	0	0.000	10	2.11
Gully Control non arable	No.	60	0.03952	2.37					2	0.08	2	0.08	56	2.213	60	2.37
Pasture Development	Ha.	10	1.55908	15.59					0	0.00	0	0.00	10	15.591	10	15.59
Drainage line treatment																
LSCD																
Upper Ridge	No.	60	0.01085	0.65					60	0.65	58	0.63	-58	-0.629	60	0.65
Middle Ridge	No.	27	0.03712	1.00					10	0.37	10	0.37	7	0.260	27	1.00
Lower Ridge	No.	7	0.18586	1.30					5	0.93	1	0.19	1	0.186	7	1.30
Nadi	No.	3	0.74877	2.25					1	0.75	1	0.75	1	0.749	3	2.25
Anicut(MMS)	No.	1	2/2.5/3/5	6.00					0	0.00	1	3.50	0	2.500	1	6.00
Total (B)				**45.72**		**0.00**		**0.00**		**9.87**		**9.09**		26.759		**45.72**
(C) Livelihoods (9%)																
Local Artisans / Crafts/Dairy & Poultry/Nursery establishment SHG	No.	13	0.25	3.25					4	1.08	4	1.09	4	1.08	13	3.25
Animal Husbandry Management health camps	No.	16	0.24	3.84					4	0.96	8	1.92	4	0.96	16	3.84
AI and castration	No.	150	0.002	0.30					120	0.24	30	0.06	0	0.00	150	0.30
Total (C)				**7.39**						**2.28**		**3.07**		**2.04**		**7.39**
(D) Production System and micro enterprise(10%)																
Dryland Horticulture	Ha.	1	0.294	0.29					0	0.10	0	0.10	0	0.10	1	0.29
Agro Forestry	Ha.	4	0.03	0.12					1	0.04	1	0.04	1	0.04	4	0.12
Crop Demonstration/ Hybrid minikits	No.	400	0.01	4.00					133	1.33	133	1.33	134	1.34	400	4.00
Vermi compost unit	No.	5	0.12	0.60					2	0.20	2	0.20	2	0.20	5	0.60
Compost pit unit	No.	129	0.01	1.29					43	0.43	43	0.43	43	0.43	129	1.29
Manger unit	No.	110	0.017	1.87					37	0.62	37	0.62	37	0.62	110	1.87
Total (D)				**8.17**						**2.72**		**2.72**		**2.73**		**8.17**
(E) Consolidation (3%)				2.45						0.00		0.00		2.45		2.45
Grand Total (A+B+C+D+E)				**81.72**		**3.27**		**6.86**		**17.90**		**17.08**		**36.60**		**81.72**

Note - The dimensions of the structures proposed in DPR are tentative & likely to be varied as per the site condition & rates will be applicable as per GKN of the executing year.

CHAPTER – V

Annual Action Plan

Through Project Fund **G.P.- Brothi Brahamnan** AREA(HA) 757 COST (LACS) 90.84

Activity	Unit	Quantity	Unit Cost	Total cost	1st year		2nd year		3rd year		4th year		5th year		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
(A) Preparatory phase activities capacity building trainings & EPA (22%)																
Admn. (10%)				9.08		1.82		1.82		1.82		1.82		1.82		9.08
Monitoring (1%)				0.91		0.18		0.18		0.18		0.18		0.18		0.91
Evaluation (1%)				0.91		0.00		0.00		0.45		0.00		0.45		0.91
EPA (4%)				3.63		0.00		3.63		0.00		0.00		0.00		3.63
I & CB (5%)				4.54		0.91		1.82		0.91		0.45		0.45		4.54
DPR (1%)				0.91		0.73		0.18						0.00		0.91
Total (A)				**19.98**		**3.63**		**7.63**		**3.36**		**2.45**		**2.91**		**19.98**
(B) Natural resource management (56%)																
Conservation measures for arable land																
PRT	Ha.	52	0.09934	5.17					30	2.98	0	0.00	22	2.19	52	5.17
VCB	Ha.	96	0.06682	6.41					18	1.20	25	1.67	53	3.54	96	6.41
Gully Control	No.	100	0.03952	3.95					2	0.08	2	0.08	96	3.79	100	3.95
Conservation measures for non arable land																
Run off management structure nadi	**No.**	1	0.43111	0.43					2	0.86	2	0.86	-3	-1.29	1	0.43
SCT	Ha.	8	0.06014	0.48					45	2.71	47	2.83	-84	-5.05	8	0.48
Contour Stone Bund	Ha.	20	0.21065	4.21					13	2.74	12	2.53	-5	-1.05	20	4.21
Gully Control non arable	No.	101	0.03952	3.99					5	0.20	5	0.20	91	3.60	101	3.99
Pasture Development	Ha.	10	1.55908	15.59					5	7.80	5	7.80	0	0.00	10	15.59
Drainage line treatment																
LSCD																
Upper Ridge	No.	40	0.01085	0.43					65	0.71	38	0.41	-63	-0.68	40	0.43
Middle Ridge	No.	26	0.03712	0.97					20	0.74	10	0.37	-4	-0.15	26	0.97
Lower Ridge	No.	12	0.18586	2.23					5	0.93	5	0.93	2	0.37	12	2.23
Nadi	No.	2	0.74877	1.50					2	1.50	3	2.25	-3	-2.25	2	1.50
Anicut(MMS)	No.	2	2/2.5/3/5	5.50					1	2.50	1	3.00	0	0.00	2	5.50
Total (B)				**50.87**		**0.00**		**0.00**		**24.94**		**22.92**		**3.01**		**50.87**
(C) Livelihoods (9%)																
Local Artisans / Crafts/Dairy & Poultry/Nursery establishment SHG	No.	21	0.25	5.25					7	1.75	7	1.75	7	1.75	21	5.25
Animal Husbandry Management health camps	No.	10	0.24	2.40					2	0.60	5	1.20	3	0.60	10	2.40
AI and castration	No.	260	0.002	0.52					208	0.42	52	0.10	0	0.00	260	0.52
Total (C)				**8.17**						**2.76**		**3.06**		**2.35**		**8.17**
(D) Production System and micro enterprise(10%)																
Dryland Horticulture	Ha.	1	0.294	0.29					0	0.10	0	0.10	0	0.10	1	0.29
Agro Forestry	Ha.	2	0.03	0.06					1	0.02	1	0.02	1	0.02	2	0.06
Crop Demonstration/ Hybrid minikits	No.	214	0.01	2.14					71	0.71	71	0.71	71	0.71	214	2.14
Vermi compost unit	No.	10	0.12	1.20					3	0.40	3	0.40	3	0.40	10	1.20
Compost pit unit	No.	200	0.01	2.00					67	0.67	67	0.67	67	0.67	200	2.00
Manger unit	No.	200	0.017	3.40					67	1.13	67	1.13	67	1.14	200	3.40
Total (D)				**9.09**						**3.03**		**3.03**		**3.04**		**9.09**
(E) Consolidation (3%)				2.73						0.00		0.00		2.73		2.73
Grand Total (A+B+C+D+E)				**90.84**		**3.63**		**7.63**		**34.09**		**31.46**		**14.03**		**90.84**

Note - The dimensions of the structures proposed in DPR are tentative & likely to be varied as per the site condition & rates will be applicable as per GKN of the executing year.

CHAPTER – V

Annual Action Plan

Through Project Fund **G.P.- Deri** AREA(HA) 1058 COST (LACS) 126.96

Activity	Unit	Quantity	Unit Cost	Total cost	1st year		2nd year		3rd year		4th year		5th year		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
(A) Preparatory phase activities capacity building trainings & EPA (22%)																
Admn. (10%)				12.70		2.54		2.54		2.54		2.54		2.54		12.70
Monitoring (1%)				1.27		0.25		0.25		0.25		0.25		0.25		1.27
Evaluation (1%)				1.27		0.00		0.00		0.63		0.00		0.63		1.27
EPA (4%)				5.08		0.00		5.08		0.00		0.00		0.00		5.08
I & CB (5%)				6.35		1.27		2.54		1.27		0.63		0.63		6.35
DPR (1%)				1.27		1.02		0.25						0.00		1.27
Total (A)		**0**		**27.93**		**5.08**		**10.66**		**4.70**		**3.43**		**4.06**		**27.93**
(B) Natural resource management (56%)																
Conservation measures for arable land																
PRT	Ha.	75	0.09934	7.45					3	0.30	0	0.00	72	7.15	75	7.45
VCB	Ha.	172	0.06682	11.49					3	0.20	0	0.00	169	11.29	172	11.49
Gully Control	No.	240	0.03952	9.48					1	0.04	120	4.74	119	4.70	240	9.48
Conservation measures for non arable land																
Run off management structure nadi	**No.**	1	0.43111	0.43					0	0.00	0	0.00	1	0.43	1	0.43
SCT	Ha.	10	0.06014	0.60					6	0.36	5	0.30	-1	-0.06	10	0.60
Contour Stone Bund	Ha.	10	0.21065	2.11					0	0.00	2	0.42	8	1.69	10	2.11
Gully Control non arable	No.	50	0.03952	1.98					5	0.20	5	0.20	40	1.58	50	1.98
Pasture Development	Ha.	13	1.55908	20.27					0	0.00	0	0.00	13	20.27	13	20.27
Drainage line treatment																
LSCD																
Upper Ridge	No.	130	0.01085	1.41					10	0.11	15	0.16	105	1.14	130	1.41
Middle Ridge	No.	73	0.03712	2.71					4	0.15	3	0.11	66	2.45	73	2.71
Lower Ridge	No.	9	0.18586	1.67					2	0.37	2	0.37	5	0.93	9	1.67
Nadi	No.	2	0.74877	1.50					1	0.75		0.00	1	0.75	2	1.50
Anicut(MMS)	No.	2	2/2.5/3/5	10.00					2	4.00	3	6.00	-3	0.00	2	10.00
Total (B)				**71.10**		**0.00**		**0.00**		**6.47**		**12.31**		**52.32**		**71.10**
(C) Livelihoods (9%)																
Local Artisans / Crafts/Dairy & Poultry/Nursery establishment SHG	No.	26	0.25	6.50					9	2.16	9	2.17	9	2.17	26	6.50
Animal Husbandry Management health camps	No.	20	0.24	4.80					5	1.20	10	2.40	5	1.20	20	4.80
AI and castration	No.	60	0.002	0.12					48	0.10	12	0.02	0	0.00	60	0.12
Total (C)				**11.42**						**3.46**		**4.59**		**3.37**		**11.42**
(D) Production System and micro enterprise(10%)																
Dryland Horticulture	Ha.	1	0.294	0.29					0	0.10	0	0.10	0	0.10	1	0.29
Agro Forestry	Ha.	2	0.03	0.06					1	0.02	1	0.02	1	0.02	2	0.06
Crop Demonstration/ Hybrid minikits	No.	500	0.01	5.00					167	1.67	167	1.67	167	1.67	500	5.00
Vermi compost unit	No.	30	0.12	3.60					10	1.20	10	1.20	10	1.20	30	3.60
Compost pit unit	No.	136	0.01	1.36					45	0.45	45	0.45	45	0.45	136	1.36
Manger unit	No.	140	0.017	2.38					47	0.79	47	0.79	47	0.79	140	2.38
Total (D)				**12.69**						**4.23**		**4.23**		**4.24**		**12.69**
(E) Consolidation (3%)				3.81						0.00		0.00		3.81		3.81
Grand Total (A+B+C+D+E)				**126.96**		**5.08**		**10.66**		**18.86**		**24.56**		**67.80**		**126.96**

Note - The dimensions of the structures proposed in DPR are tentative & likely to be varied as per the site condition & rates will be applicable as per GKN of the executing year.

CHAPTER – V

Annual Action Plan

Through Project Fund **G.P.- Sulai** AREA(HA) 1117 COST (LACS) 134.04

Activity	Unit	Quantity	Unit Cost	Total cost	1st year		2nd year		3rd year		4th year		5th year		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
(A) Preparatory phase activities capacity building trainings & EPA (22%)																
Admn. (10%)				13.40		2.68		2.68		2.68		2.68		2.68		13.40
Monitoring (1%)				1.34		0.27		0.27		0.27		0.27		0.27		1.34
Evaluation (1%)				1.34		0.00		0.00		0.67		0.00		0.67		1.34
EPA (4%)				5.36		0.00		5.36		0.00		0.00		0.00		5.36
I & CB (5%)				6.70		1.34		2.68		1.34		0.67		0.67		6.70
DPR (1%)				1.34		1.07		0.27						0.00		1.34
Total (A)		**0**	**0**	**29.49**		**5.36**		**11.26**		**4.96**		**3.62**		**4.29**		**29.49**
(B) Natural resource management (56%)																
Conservation measures for arable land																
PRT	Ha.	79	0.09934	7.85					2	0.20	6	0.60	71	7.05	79	7.85
VCB	Ha.	130	0.06682	8.69					3	0.20	7	0.47	120	8.02	130	8.69
Gully Control	No.	108	0.03952	4.27					54	2.13	54	2.13	0	0.00	108	4.27
Conservation measures for non arable land																
Run off management structure nadi	**No.**	1	0.43111	0.43					1	0.43		0.00	0	0.00	1	0.43
SCT	Ha.	14	0.06014	0.84					1	0.06	1	0.06	12	0.72	14	0.84
Contour Stone Bund	Ha.	32	0.21065	6.74					1	0.21	1	0.21	30	6.32	32	6.74
Gully Control non arable	No.	130	0.03952	5.14					5	0.20	5	0.20	120	4.74	130	5.14
Pasture Development	Ha.	13	1.55908	20.27					0	0.00	0	0.00	13	20.27	13	20.27
Drainage line treatment																
LSCD																
Upper Ridge	No.	110	0.01085	1.19					15	0.16	15	0.16	80	0.87	110	1.19
Middle Ridge	No.	74	0.03712	2.75					8	0.30	10	0.37	56	2.08	74	2.75
Lower Ridge	No.	17	0.18586	3.16					2	0.37	2	0.37	13	2.42	17	3.16
Nadi	No.	5	0.74877	3.74					1	0.75	1	0.75	3	2.25	5	3.74
Anicut(MMS)	No.	2	2/2.5/3/5	10.00					0	0.00	0	0.00	2	10.00	2	0.00
Total (B)				**75.07**						**5.01**		**5.32**		**64.73**		**75.07**
(C) Livelihoods (9%)																
Local Artisans / Crafts/Dairy & Poultry/Nursery establishment SHG	No.	28	0.25	7.00					9	2.33	9	2.34	9	2.33	28	7.00
Animal Husbandry Management health camps	No.	20	0.24	4.80					5	1.20	10	2.40	5	1.20	20	4.80
AI and castration	No.	132	0.002	0.26					106	0.21	26	0.05	0	0.00	132	0.26
Total (C)				**12.06**						**3.74**		**4.79**		**3.53**		**12.06**
(D) Production System and micro enterprise(10%)																
Dryland Horticulture	Ha.	1	0.294	0.15					0	0.05	0	0.05	0	0.05	0.5	0.15
Agro Forestry	Ha.	3	0.03	0.09					1	0.03	1	0.03	1	0.03	3	0.09
Crop Demonstration/ Hybrid minikits	No.	670	0.01	6.70					223	2.23	223	2.23	224	2.24	670	6.70
Vermi compost unit	No.	20	0.12	2.40					7	0.80	7	0.80	7	0.80	20	2.40
Compost pit unit	No.	151	0.01	1.51					50	0.50	50	0.50	50	0.50	151	1.51
Manger unit	No.	150	0.017	2.55					50	0.85	50	0.85	50	0.85	150	2.55
Total (D)				**13.40**						**4.46**		**4.46**		**4.47**		**13.40**
(E) Consolidation (3%)				4.02						0.00		0.00		4.02		4.02
Grand Total (A+B+C+D+E)				**134.04**		**5.36**		**11.26**		**18.17**		**18.19**		**81.05**		**134.04**

Note - The dimensions of the structures proposed in DPR are tentative & likely to be varied as per the site condition & rates will be applicable as per GKN of the executing year.

CHAPTER – V

Annual Action Plan

Through Project Fund **G.P.- Jawas** AREA(HA) 746 COST (LACS) 89.52

Activity	Unit	Quantity	Unit Cost	Total cost	1st year		2nd year		3rd year		4th year		5th year		Total	
					Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
(A) Preparatory phase activities capacity building trainings & EPA (22%)																
Admn. (10%)				8.59		1.72		1.72		1.72		1.72		1.72	0	8.59
Monitoring (1%)				0.86		0.17		0.17		0.17		0.17		0.17	0	0.86
Evaluation (1%)				0.86		0.00		0.00		0.43		0.00		0.43	0	0.86
EPA (4%)				3.44		0.00		3.44		0.00		0.00		0.00	0	3.44
I & CB (5%)				4.30		0.86		1.72		0.86		0.43		0.43	0	4.30
DPR (1%)				0.86		0.69		0.17						0.00	0	0.86
Total (A)		**0**	**0**	**18.90**	**0**	**3.44**	**0**	**7.22**	**0**	**3.18**	**0**	**2.32**	**0**	**2.75**	**0**	**18.90**
(B) Natural resource management (56%)																
Conservation measures for arable land																
PRT	Ha.	40	0.09934	3.97					3	0.30	8	0.79	29	2.88	40	3.97
VCB	Ha.	48	0.06682	3.21					5	0.33	10	0.67	33	2.21	48	3.21
Gully Control	No.	62	0.03952	2.45					31	1.23	31	1.23	0	0.00	62	2.45
Conservation measures for non arable land																
Run off management structure nadi	**No.**	1	0.43111	0.43					1	0.43	1	0.43	-1	-0.43	1	0.43
SCT	Ha.	11	0.06014	0.66					3	0.18	8	0.48	0	0.00	11	0.66
Contour Stone Bund	Ha.	15	0.21065	3.16					2	0.42	3	0.63	10	2.11	15	3.16
Gully Control non arable	No.	71	0.03952	2.81					7	0.28	8	0.32	56	2.21	71	2.81
Pasture Development	Ha.	11	1.55908	17.15					1	1.56	1	1.56	9	14.03	11	17.15
Drainage line treatment																
LSCD																
Upper Ridge	No.	54	0.01085	0.59					30	0.33	30	0.33	-6	-0.07	54	0.59
Middle Ridge	No.	24	0.03712	0.89					10	0.37	14	0.52	0	0.00	24	0.89
Lower Ridge	No.	7	0.18586	1.30					2	0.37	2	0.37	3	0.56	7	1.30
Nadi	No.	2	0.74877	1.50					1	0.75	1	0.75	0	0.00	2	1.50
Anicut(MMS)	No.	2	2/2.5/3/5	10.00					0	0.00	1	2.00	1	8.00	2	10.00
Total (B)				**48.11**	**0**	**0.00**	**0**	**0.00**		**6.54**		**10.07**		**31.50**		**48.11**
(C) Livelihoods (9%)																
Local Artisans / Crafts/Dairy & Poultry/Nursery establishment SHG	No.	10	0.25	2.50					3	0.83	3	0.83	3	0.83	10	2.50
Animal Husbandry Management health camps	No.	20	0.24	4.80					5	1.20	10	2.40	5	1.20	20	4.80
AI and castration	No.	220	0.002	0.44					176	0.35	44	0.09	0	0.00	220	0.44
Total (C)				**7.74**						**2.38**		**3.32**		**2.04**		**7.74**
(D) Production System and micro enterprise(10%)																
Dryland Horticulture	Ha.	1	0.294	0.29					0	0.10	0	0.10	0	0.10	1	0.29
Agro Forestry	Ha.	3	0.03	0.09					1	0.03	1	0.03	1	0.03	3	0.09
Crop Demonstration/ Hybrid minikits	No.	450	0.01	4.50					150	1.50	150	1.50	150	1.50	450	4.50
Vermi compost unit	No.	20	0.12	2.40					7	0.80	7	0.80	7	0.80	20	2.40
Compost pit unit	No.	54	0.01	0.54					18	0.18	18	0.18	18	0.18	54	0.54
Manger unit	No.	45	0.017	0.77					15	0.25	15	0.25	15	0.26	45	0.77
Total (D)				**8.59**						**2.86**		**2.86**		**2.87**		**8.59**
(E) Consolidation (3%)				2.58						0.00		0.00		2.58		2.58
Grand Total (A+B+C+D+E)				**85.92**		**3.44**		**7.22**		**14.96**		**18.58**		**41.73**		**85.92**

Note - The dimensions of the structures proposed in DPR are tentative & likely to be varied as per the site condition & rates will be applicable as per GKN of the executing year.

MODEL ESTIMATE No. 1

Name of work :- **Construction of Gully control structures in Arable Land**

Type of Str.	Dimension	Qty./ Str.		No. of str.	Lth./St	Total Lth.	Vol. Of Work	Vol. For Foundation
Type -A	2/3X 5x1.1+0.45/2x0.6	1.55	Cum.	1	5	5	1.55	0.825
Type -B	2/3X 8x1.4+0.50/2x0.9	4.56	Cum.	1	8	8	4.56	1.68
Type -C	2/3x15x1.8+0.6/2x1.2	14.4	Cum.	1	15	15	14.4	4.05
	Total			3		28	20.51	6.555

S.No.	ITEM	No.	L	B	H	QTY.	RATE	Unit	Amount
1	Dag belling 2.5 to 5.00 cm. deep (GKN-07Cp.Gen. soil work Item No. 3-A P,No. 38+ Labour escalation)	2	28			56	0.402	Rm	22.51
2	Excavation in hard soil dry or moist including dressing & disposal of excavated materialwith initial leadof 30 mt. & lift of 1.50mt.m.(GKN-11 Item N0.-2-B page No.1)					6.555	92	Cum	603.06
3	Dry stone Masonary upto 3m height (GKN-11 Item N0.-111-c page No.17)								
	(a) For Foundation (as per -2)					6.555	357.4	Cum	2342.76
	(b) For Super structure					20.51	357.4	Cum	7330.27
4	Rehandling of stones by head load lead upto 200 m. beyond the initial lead (50% of total Stone) (GKN-11 Item N0.-111-d page No.17)								
			27.065	0.5		13.53	89.5	Cum	1211.16
									11509.76
						Contingency 3%			345.29
									11855.05
							Total		11855

Labour Component =	11510
Material Component =	0
Contingency 3%	345
Estimated Amount =	11855
Cost per structure =	3952

Prepared by

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Checked & submitted by

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MODEL ESTIMATE No. 2

Name of work :- **Construction of pureto rico Terrace (P . R . T .) on sloping arable land**

	Area	1
	Length per Ha	110
Considerations		
	(I) Length of PRTs	110 RM
	(ii) Cross section of PRT = 0.45x0.45 m.	0.2025

S.No.	ITEM	No.	L	B	H	QTY.	RATE	AMOUNT
1	Dag belling 2.5 to 5.00 cm. deep (GKN-07Cp.Gen. soil work Item No. 3-A P,No. 38+ Labour escalation)	2	110			220	0.402	88.44
2	Dry stone masonary upto 3m height .(GKN-11 Item N0.-111-c page No.17)	1	110	0.2025		22.275	357.4	7961.09
3	Rehandling of stones by head load lead upto 200 m. beyond the initial lead (for 80% of Stone).(GKN-10 Item N0.-111C page No.16)	0.8	22.275			17.82	89.5	1594.89
	Total							**9644.42**
						Contingency 3%		**289.33**
								9933.75
								9934

Labour =	9644
Material =	0
Contingency 3%	289.33
Total	9934

Total =	9934
Cost / RM	**90.31**
Cost /Ha	9934

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MODEL ESTIMATE No. 3

Name of Work :- Construction of Vegetative Contour Bund on Arable Land

Considerations

Proposed Area :- 1 Ha.
Length of V. C. B per Ha 190 mt.
1.Total Length of V. C. B. 190 mt.

2. Cross section of the bund 1.13x0.30=0.34 Sqm.

3. Stylo Hemata / Dhaman is used as vegetative barrier

S. No.	ITEM	No.	L	B	H	Quantity	Unit	Rate/unit	Amount
	(A) ADVANCE WORK								
1	Dag belling 2.5 to 5.00 cm. deep (GKN-07Cp.Gen. soil work Item No. 3-A P,No. 38+ Labour escalation)	2	190			380	mt	0.402	152.76
2	Excavation in hard soil dry or moist including dressing & disposal of excavated materialwith initial leadof 30 mt. & lift of 1.50mt.(GKN-11 Item N0.-2-B page No.1)	1	190	0.34		64.6	cum	92	5943.2
	(B)VEGETATIVE WORK								
3	Supply of Stylo/ Dhaman seed								
	Dhaman					1.9	Kg	40	76
	Stylo					1.9	Kg	48	91.2
4	Sowing of Stylo / Dhaman seed on bunds in two rows (GKN,10 item no.114, page no. 17)	2	190			380	mt	0.59	224.2
	Total								**6487.36**
						Contingency 3%			**194.62**
									6681.98
									6682

Labour Component = 6320
Material Component = 167
Contingency 3% 195
Estimated Amount 6682
Cost per Ha. = 6682

Prepared by Checked & submitted by

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W . D . & S . C .

MODEL ESTIMATE No. 4

Name of Work :**-Construction of Staggered Trenches in Non arable area(Pasture)**

Consideration :-

1. Area - 1 ha.
2. Cross section of trench- 0.30X0.30 = 0.09 sq.m
3. No. of Trenches 125 Nos.
4. Length of Trenches 4 M

S. No.	ITEM	No.	L	B	H	Quantity	Rate/ Unit	Amount
	(A) ADVANCE WORK							
1	Layout of contour lines	1	4	125		500	0.1005	50.25
2	Dag belling 2.5 to 5.00 cm. deep (GKN-07Cp.Gen. soil work Item No. 3-A P,No. 38+ Labour escalation)	2	4	125		1000	0.402	402.00
3	E/W in excavation (GKN-11 Item N0.-2-B page No.1)							
	Hard Soil	0.10	500	0.3	0.3	4.5	75	337.50
	ordinary murrum	0.60	500	0.3	0.3	27	92	2484.00
	Compacted murrum	0.30	500	0.3	0.3	13.5	134	1809.00
	(B) VEGETATIVE WORK							
4	Supply of Seed		Dhaman			5	40	200.00
		Stylohemata				5	48	240.00
1	Overseeding of grasses in between two furrows including seed treatment & pallet making etc. complete @ 8 Kg./ha. For 0.20ha.(GKN 07,Vanaspatic karya(vaniki va udyaniki) a. Seedling and plantation,item no. 4(a)+Labour escalation	0.2	1	8		1.6	13.07	20.91
2	Sowing of seed stylo hameta on ridge of staggared trenches length-125 x 4=500 m/Hac.(GKN-11 Item No.114 P.No.17	1	125	4		500	0.59	295.00
						Total		**5838.7**
						Contingency 3%		**175.2**
								6013.8
								6014

Labour Component =	5399
Material Component =	440
Contingency 3%	**175.2**
Estimated Amount = Rs.	6014
Cost per Ha. =.	6014

Prepared by

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MODEL ESTIMATE No. 5

Name of work :- Construction of stone wall fencing in Mud Mortar

Area 1 Hac
Length 110 mt.
Cross- section 0.45 x 1.5
0.675 Sqm.
Foundation 0.6x0.3 = 0.18 Sqm

S. No.	ITEM	No.	L	B	H	Quantity	Rate/Unit Labour	Rate/Unit Total	Amount Labour	Amount Total
1	Dag belling 2.5 to 5.00 cm. deep	**2**	110			**220**	0.402	0.402	88.44	**88.44**
2	Excavation in hard soil dry or moist including dressing & disposal of excavated materialwith initial lead of 30 mt. & lift of 1.50mt.for foundation (GKN-11 Item N0.-2-B page No.1)	1	110	0.6	0.3	19.8	92	92	1821.6	**1821.6**
3	Mud mortar stone massonary (GKN-11 (building Cons.)Item N0.-21 page No.3)									
	(a) Foundation	1	110	0.6	0.3	19.8				
	(b) Super structure	1	110	0.45	1.5	74.25				
				Total		94.05	384.3	970	36143.42	**91228.50**
4	c:c (1:2:4) top of the surface BSR-2011 Chap.E(irrigation) item-123 P.N. 18	1	110	0.45	0.05	2.475	308.3	2552	763.04	**6316.20**
5	Raising pointing in cement sand mortar 1:3 with curing BSR-2011 Chap.E(building const.) item-70-A P.N. 10	2	110		1.5	330	35.8	45.5	11814.00	**15015.00**
								Total	**48720.46**	**112559.70**
						Contingency 3%				**3376.791**
								Total		**115936.49**
								Say		**115936**

Labour Component = 48720.46
Material Component = 63839.24
Contingency 3% **3376.79**
Estimated Amount = Rs. 115936
Cost per RM = 1054
Cost per Ha = 115936

Prepared by

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MODEL ESTIMATE No. 6

Name of work :- **Construction of loose stone check dams** **TYPE-A**

Considerations

Dimension of structure		2/3x5x1.0+0..40/2x0.60
No. of str.	**1**	No.
Lth./Str	5	mt
Vol. Of Work	1.40	Cum / Str.

S.No.	ITEM	No.	L	B	H	QTY.	RATE	AMOUNT
1	Dag belling 2.5 to 5.00 cm. deep	2	5			10	0.402	4.02
2	Excavation in hard soil dry or moist including dressing & disposal of excavated materialwith initial lead of 30 mt. & lift of 1.50mt.for foundation (GKN-11 Item N0.-2-B page No.1)	1	5	1.2	0.15	0.9	92	82.80
3	Dry stone Masonary upto 3m height (GKN-11 Item N0.-111-c page No.17)							
	(a) For Foundation (as per -2)	1	5	1.2	0.15	0.9		
	(b) For Super structure	1	2/3x5x1.0+0.40/2x0.60			1.4		
					TOTAL	2.3	357.4	822.02
4	Rehandling of stones by head load lead upto 200m. beyond the initial lead(70% of stone) (GKN-11 Item N0.-111C page No.17)	70.0%	2.3			1.61	89.5	144.10
	Total							**1052.94**
							Contingency 3%	31.59
								1084.52
								1085

Labour Component = Rs.	1053
Material Component =Rs.	0
Contingency 3%	32
Estimated Amount = Rs.	1085
Cost per Structure	1085

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MODEL ESTIMATE No. 7

Name of work :- **Construction of loose stone check dams TYPE-B**

Considerations

Dimension of structure		2/3x10x(1.4+0.40)/2x1
No. of str.	**1**	No.
Lth./Str	10	mt
Vol. Of Work	6.00	Cum

S.No	ITEM	No.	L	B	H	QTY.	RATE	AMOUNT
1	Dag belling 2.5 to 5.00 cm. deep	2	10			20	0.402	8.04
2	Excavation in hard soil dry or moist including dressing & disposal of excavated materialwith initial lead of 30 mt. & lift of 1.50mt.for foundation (GKN-11 Item N0.-2-B page No.1)	1	10	1.4	0.15	2.1	92	193.20
3	Dry stone Masonary upto 3m height (GKN-11 Item N0.-111-c page No.17)							
	(a) For Foundation (as per -2)	1	10	1.4	0.15	2.1		
	(b) For Super structure	1	2/3x10x1.4+0.40/2x1.00			6		
					TOTAL	8.1	357.4	2894.94
4	Rehandling of stones by head load lead upto 200m. beyond the initial lead(70% of stone) (GKN-11 Item N0.-111C page No.17)	70.0%	8.1			5.67	89.5	507.47
	Total							**3603.65**
							Contingency 3%	108.11
								3711.75

Labour Component = Rs.	3604
Material Component =Rs.	0
Contingency 3%	108
Estimated Amount = Rs.	3712
Cost of Structure	3712

Prepared by

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Checked & submitted by

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MODEL ESTIMATE No. 8

Name of work :- **Construction of Mud Mortar check dams** **TYPE-C**

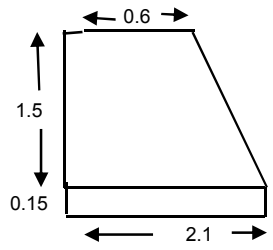
Considerations

Dimension of structure 2/3x15x2.1+0.60/2x1.5
No. of str. **1**
Lth./Str 15
Vol. Of Work 13.50 Cum

S.No.	ITEM	No.	L	B	H	QTY.	Rate/Unit Labour	Rate/ Unit Total	Amount Labour	Amount Total
1	Dag belling 2.5 to 5.00 cm. deep	2	15			30	0.402	0.402	12.06	12.06
2	Excavation in hard soil dry or moist including dressing & disposal of excavated materialwith initial lead of 30 mt. & lift of 1.50mt.for foundation (GKN-11 Item N0.-2-B page No.1)	1	15	2.1	0.15	4.725	75	92	354.375	354.375
3	Mud mortar stone massonary (GKN-11 (building Cons.)Item N0.-21 page No.3)									
	(a) For Foundation (as per -2)	1	15	2.1	0.15	4.725				
	(b) For Super structure	1	2/3x15x2.1+0.60/2x1.5			13.5				
					TOTAL	18.225	384.3	970	7003.87	17678.25
4	Raising pointing in cement sand mortar 1:3 with curing BSR-2011 Chap.E(building const.) item-70-A P N. 10	1	15		2.12	31.8				
		1	15		1.5	22.5				
						54.3	35.8	45.5	1943.94	2470.65
5	c:c (1:2:4) top of the surface BSR-2011 Chap.E(irrigation) item-123 P.N. 18	1	15	0.6	0.05	0.45	308.3	2552	138.735	1148.40
							Total		**7370.30**	**18044.69**

Contingency 3% **541.34**
Total **18586.03**
SAY 18586.00

Labour Component = Rs. 7370
Material Component =Rs. 10674
Contingency 3% 541
Estimated Amount = Rs. 18586
Cost per Structure 18586



Prepared by

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MODEL ESTIMATE No.9

Name of work :- **Plantation on Govt. Land / Pasture land**

Consideration :-

1. Area of Pasture land 1 Ha
1.Cross section of the pit, 0.45X0.45X0.45 = 0.09 cum
2. Average lead (from Nursery to Planting site). 5 Km
3. No. of Plants : - 1000 no.
4.Gap filling :- 20 %

S.No.	ITEM	No.	L	B	H	Quantity	Rate/Unit	Amount
1	Digging of pits for plants in Ordinary murrum	1000	0.45	0.45	0.45	91.13	99.00	9021.38
2	Plants saplings for plantation in Govt. pasture area,sapling not less than 30 cm. height GKN-11 Annexure-2,supply of veg. material, Item No.(K)4a	1000				1000	3.00	3000.00
3	Transportation of plants from nursery to camp site upto 5 Km (GKN,07 vanaspatik samagri parivahan item No. 11(A) -d)	1000				1000	0.194	194.00
4	loading and unloading of plants (GKN,10 Cons. Of Forest-W Annex.-4,Plantation work Item No.-2,4 P.N. 9)	1000				1000	0.31	310.00
5	Rehandling of plants from camp site to actual planting site up to 1Km. (GKN,10 Cons. Of Forest-W Annex.-4,Plantation work Item No.-2,1 P.N. 9)	1000				1000	0.52	520.00
6	Cost of fertiliser & insecticides Incl. application (GKN,10 Cons. Of Forest-W Annex.-4,Plantation work Item No.-8&9, P.N. 10)	1000				1000	0.71	710.00
7	Making of thawala 15 cm depth, 45 cm radius(patharili)(GKN,11 samajik, vaniki Item no.117(a) P.N. 17	1000				1000	2.40	2400.00
8	Planting of forest sapling including soaking in water, cutting & removal of polythene bags, mixing and treatment of soil , backfilling, planting and compaction of soil around the plants (GKN,11 samajik, vaniki Item no.113(a) P.N. 17	1000				1000	3.60	3600.00
9	Weeding and Hoeing two times (Twice in a year) (GKN,11, Chapter -samajik vaniki 116) P.N.17	1	1000			1000	1.20	1200.00
10	Watering for plantation twice a year for two years (GKN,11, Chapter -samajik vaniki 115) P.N. 17	1	1000			1000	1.80	1800.00
								22755.38
11	Gapfilling 20% over ItemNo.1 to 10					22755.38	0.2	4551.08
	Total							27306.45
					Contingency 3%			819.19
								28125.64

Labour Component = 23402
Material Component = 3904
819
Estimated Amount = Rs. 28126
Cost per Plant. = 28
Cost per Ha. = **28126**

Prepared by

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MODEL ESTIMATE No. 10

Name of work :- **Construction of Gully control structures in Non- Arable Land**

Type of Str.	Dimension	Qty./ Str.		No. of str.	Lth./St	Total Lth.	Vol. Of Work	Vol. For Foundation
Type -A	2/3X 5x1.1+0.45/2x0.6	1.55	Cum.	1	5	5	1.55	0.825
Type -B	2/3X 8x1.4+0.50/2x0.9	4.56	Cum.	1	8	8	4.56	1.68
Type -C	2/3x15x1.8+0.6/2x1.2	14.4	Cum.	1	15	15	14.4	4.05
	Total			3		28	20.51	6.555

S.No.	ITEM	No.	L	B	H	QTY.	RATE	Unit	Amount
1	Dag belling 2.5 to 5.00 cm. deep (GKN-07Cp.Gen. soil work Item No. 3-A P,No. 38+ Labour escalation)	2	28			56	0.402	Rm	22.51
2	E/W in excavation (GKN-11 Item N0.-2-B page No.1)					6.555	92	Cum	603.06
3	Dry stone Masonary upto 3m height (GKN-10 Item N0.-111-c page No.17)P.N. 17								
	(a) For Foundation (as per -2)					6.555	357.4	Cum	2342.76
	(b) For Super structure					20.51	357.4	Cum	7330.27
4	Rehandling of stones by head load lead upto 200m. beyond the initial lead(50% of stone) (GKN-10 Item N0.-111C page No.17) P.N. 17								
			27.07	0.5		13.53	89.5	Cum	1211.16
							Total		11509.76
						Contingency 3%			345.29
						Total			**11855.05**
								Say	**11855**

Labour Component =	11510
Material Component =	0
Contingency 3%	345
Estimated Amount =	11855
Cost per structure =	3952

Prepared by

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MODEL ESTIMATE No. 11

Name of work :- **Construction of Runoff management dugout structure**

Name of watershed :- micro watershed

No. of structure 1

Dimension of Structure

Length of structure 14.00 mt

LSCD		**Earthen Bund**		**Pond**	Length	Breadth
top width	0.60 mt	top width	0.60 mt	Top Suface	10.00	10.00
bottom width	2.60 mt	bot. width	4.60 mt	bot. width	7.00	7.00
height	2.00 mt	height	2.00 mt	Height	1	
foundation	0.30		0.30			

S. No.	ITEM	No.	L	B	H	QTY.	RATE	Unit	Amount
1	Dag belling 2.5 to 5.00 cm. deep (GKN-07Cp.Gen. soil work Item No. 3-A P,No. 38+ Labour escalation)								
	For Lscd & Earthen Structure	2	14.00			28			
	For Dugout pond	4	10.00			40			
					Total	68	0.402	mt	27.34
2	Excavation in Ordinary murrum dry or moist including dressing & disposal of excavated materialwith initial lead of 30 mt. & lift of 1.50mt.(GKN-11 Item N0.-2-B page No.1)								
	for foundation	1	14.00	7.20	0.30	30.24			
			Top sur.Area	Bottom sur.Area					
	For DOP	1	100	49	1	74.5			
					Total	104.74	92	Cum	9636.08
3	Dry stone Masonary upto 3m height (GKN-11 Item N0.-111-c page No.17) P.N.17								
	(a) For Foundation (as per -2)	1	14.00	7.20	0.30	30.24			
	(b) For Super structure	1	14.00	1.6	2.00	44.8			
					Total	75.04	357.4	Cum	26819.30
5	Rehandling of stones by head load lead upto 200m. beyond the initial lead(80% of stone) (GKN-11 Item N0.-111C page No.17)	0.8	75.04			60.032	89.5	Cum	5372.86
						Total Amt			41855.58
							Contingency 3%		1255.67
							Total		**43111.24**
								Say	43111

Labour Component	43111
Material Component	0
Contingency 3%	1255.67
Estimated Amount	43111
Cost per structure =	43111
No. of Structure	1
Total cost	43111

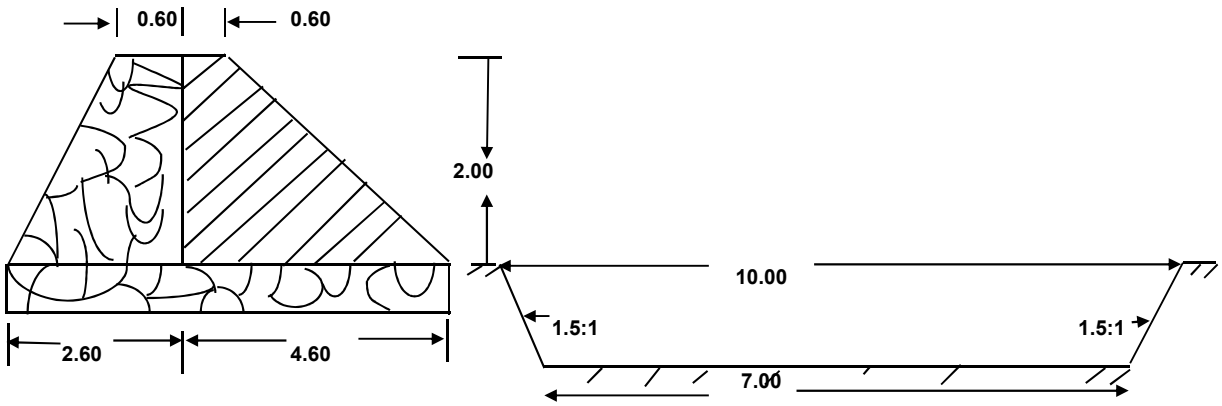
Prepared by

J.En.

Checked & submitted by

A . En
W . D . & S . C .

Name of work :- **Construction of Runoff management dugout structure**



MODEL ESTIMATE No. 12

Name of work :- **Construction of Contour Stone Bund (CSB) on sloping Non arable land land**

	Area	1
	Length per Ha	200
Considerations		
	(I) Length of CSBs	200 RM
	(ii) Cross section of PRT =(0.3+0.75)/2x0.45	0.2363

S.No.	ITEM	No.	L	B	H	QTY.	RATE	AMOUNT
1	Dag belling 2.5 to 5.00 cm. deep (GKN-07Cp.Gen. soil work Item No. 3-A P,No. 38+ Labour escalation)	2	200			400	0.402	160.80
2	Layout of contour lines	1	200			200	0.1005	20.10
3	Dry stone masonary upto 3m height .(GKN-11 Item N0.-111-c page No.17)	1	200	0.2363		47.25	357.4	16887.15
4	Rehandling of stones by head load lead upto 200 m. beyond the initial lead (for 80% of Stone).(GKN-11 Item N0.-111C page No.17)	0.8	47.25			37.8	89.5	3383.10
	Total							**20451.15**
						Contingency 3%		**613.53**
								21064.68

Labour =	20451
Material =	0
Contingency 3%	613.53
Total	21065

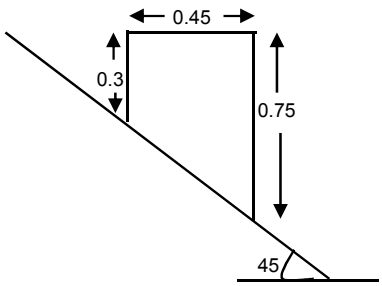
Total = 21065
Cost / RM 105.32
Cost / Ha 21065

Prepared by

J. En .

Checked & submitted by

A . En . .
W . D . & S . C .


0.45
0.3
0.75
45

MODEL ESTIMATE No. 13

NADI - TYPE-I

Leangth of Structure :- 10

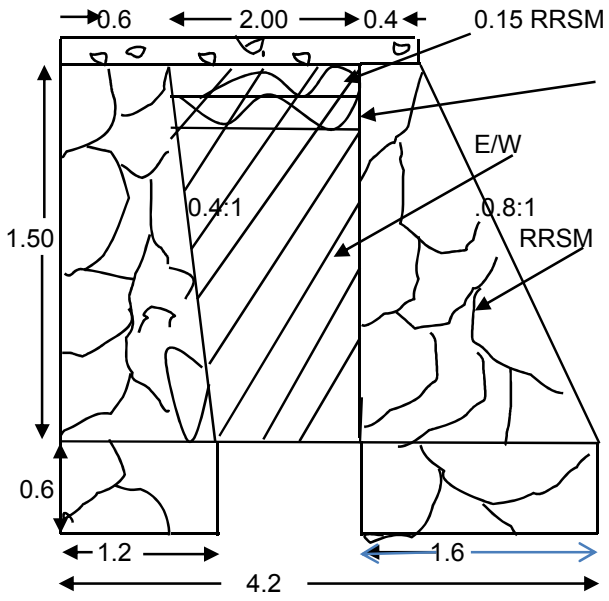
Detailes of Estimate & Abstract of Cost

S.No.	Particulars	No.	L	B	H	Qty.	Rate/Unit Labour	Rate/ Unit Total	Amount Labour	Amount Total
1	Dag belling 2.5 to 5 cm deep	4	10			40	0.402	0.40	16.08	16.08
2	E/W Excavation in hard soil or moist including dressing and disposal of excavated material within initial lead of 30m and lift of 1.5m(BSR-2011 Chap.E(Building) item-2-A P.N. 1)	1	10	1.2	0.6	7.2				
		1	10	1.6	0.6	9.6				
				Total		16.8	92.00	92	1545.6	1545.6
3	R.R stone masonary in cement sand mortar(1:6)with curing(BSR-2011 Chap.E(irrigation) item-123 P.N. 18)									
	a) For Fondation	1	10	1.2	0.6	7.20				
	For Fondation	1	10	1.6	0.6	9.60				
	b) For Super Structure	1	10	1	1.5	15.00				
	For Super Structure	1	10	0.9	1.5	13.50				
					total	45.30	327.00	1403	14813.1	63555.90
4	Providind and layingof dry stone kharanja(BSR-2011 Chap.E(Building) item-54 P.N. 7)	1	10	2	0.2	4.00	123.00	510.50	492	1968
5	Providind and laying of cement concrete well mixed in cement mortar (1:5:10)with curing(BSR-2011 Chap.E(Building) item-11-A P.N. 2)	1	10	2	0.15	3.00	315.10	1561	945.3	2835.90
6	c:c (1:2:4) top of the surface(BSR-2011 Chap.E(irrigation) item-123 P.N. 18)	1	10	3	0.1	3.00	308.30	2552	924.9	2774.70
7	20 m.m thick plastering on new surface in cement mortar (1:4)									
		1	10		1.5	15				
		1	10		1.92	19.2				
					total	34.2	38.10	82	1303.02	44563.28
	Total								18736.98	72696.18
	3% Contingency & Supervision					Contingency				2180.89
										74877.07
									Say Rs	**74877**

Labour	18737
Material	53959
Contingency	2181
Total	74877

Prepared by
J.En

Submmitted by
A.En.


0.6
2.00
0.4
0.15 RRSM
0.2 DRY stone Kharan
E/W
0.4:1
0.8:1
RRSM
1.50
0.6
1.2
1.6
4.2

1`

MODEL ESTIMATE No. 14

Name of work :- **Pasture Development**

Consideration :-

1. Broadcasting of grass seeds like Stylo hemata & Dhaman is proposed in between the two furrows and on ridge of trenches @ 8 Kg./ ha.

S. No.	ITEM	Unit	Rate / Ha	Amount
1	Construction of Staggered Trenches in Non arable area(Pasture) Model Estimate No. 4	1	6014.00	6014.00
2	Construction of stone wall fencing Model Estimate No. 5	1	115936.00	115936.00
4	Plantation on Govt. Land / Pasture land Model Estimate No 9	1	28126	28126.00
5	Watch & ward for three year one chowkidar for at least 25 ha Area (135X30X36/25)	1	5832	5832.00
	Total			155908.00

Estimated Amount
Cost per Ha. . **155908.00**

Prepared by

J.En.

Checked & submitted by

A . En
W . D . & S . C .

MODEL ESTIMATE No. 24

Name of work :- **Plantation of Agroforestry Plants**

Consideration :-

1. Area of land 1 Ha
1.Cross section of the pit, .45mX.45mX.45m = 0.09 cum
2. Average lead (from Nursery to Planting site). 5 Km
3.Plant spacing 8mX5m
3. No. of Plants : - 100 no.
4.Gap filling :- 20 %

S.No.	ITEM	No.	L	B	H	Quantity	Rate/Unit	Amount
1	Digging of pits for plants in Ordinary murrum	100	0.45	0.45	0.45	9.11	92.00	838.35
2	Plants saplings for plantation in Govt. pasture area,sapling not less than 30 cm. height As per average market rate	100				100	10.00	1000.00
5	Rehandling of plants from camp site to actual planting site up to 1Km. (GKN,10 Cons. Of Forest-W Annex.-4,Plantation work Item No.-2,1 P.N. 9)	100				100	0.52	52.00
6	Application of fertiliser & insecticides (GKN,10 Cons. Of Forest-W Annex.-4,Plantation work Item No.-8&9, P.N. 10)	100				100	0.71	71.00
	Cost of fertiliser & insecticides as per market rate	100				100	3.50	350.00
7	Making of thawala 15 cm depth, 45 cm radius(patharili)(GKN,11 samajik, vaniki Item no.117(a) P.N. 17	100				100	2.40	240.00
8	Planting of forest sapling including soaking in water, cutting & removal of polythene bags, mixing and treatment of soil , backfilling, planting and compaction of soil around the plants (GKN,11 samajik, vaniki Item no.113(a) P.N. 17	100				100	3.60	360.00
	Total							2911.35
						Contingency 3%		87.34
						Say	Total	2999

Labour Component =	1561
Material Component =	1350
	87
Estimated Amount = Rs.	2999
Cost per Plant. =	30

Prepared by

J.En.

Checked & submitted by

A . En
W . D . & S . C .

MODEL ESTIMATE No. 15

Name of work :- **Plantation of Horticulture Plants**

Consideration :-

1. Area of Pasture land 1 Ha
1.Cross section of the pit, 1mX1mX1m = 1.00 cum
2. Average lead (from Nursery to Planting site). 5 Km
3.Plant spacing 8mX5m
3. No. of Plants : - 200 no.
4.Gap filling :- 20 %

S.No.	ITEM	No.	L	B	H	Quantity	Rate/Unit	Amount
1	Digging of pits for plants in Ordinary murrum	200	1	1	1	200.00	92.00	18400.00
2	Plants saplings for plantation in Govt. pasture area,sapling not less than 30 cm. height As per average market rate	200				200	40.00	8000.00
5	Rehandling of plants from camp site to actual planting site up to 1Km. (GKN,10 Cons. Of Forest-W Annex.-4,Plantation work Item No.-2,1 P.N. 9)	200				200	0.52	104.00
6	Application of fertiliser & insecticides (GKN,10 Cons. Of Forest-W Annex.-4,Plantation work Item No.-8&9, P.N. 10)	200				200	0.71	142.00
	Cost of fertiliser & insecticides as per market rate	200				200	3.50	700.00
7	Making of thawala 15 cm depth, 45 cm radius(patharili)(GKN,11 samajik, vaniki Item no.117(a) P.N. 17	200				200	2.40	480.00
8	Planting of forest sapling including soaking in water, cutting & removal of polythene bags, mixing and treatment of soil , backfilling, planting and compaction of soil around the plants (GKN,11 samajik, vaniki Item no.113(a) P.N. 17	200				200	3.60	720.00
	Total							28546.00
						Contingency 3%		856.38
						Say	Total	29402

Labour Component =	19846
Material Component =	8700
	856
Estimated Amount = Rs.	29402
Cost per Plant. =	147
Cost per Ha. =	**29402**

Prepared by

J.En.

Checked & submitted by

A . En
W . D . & S . C .

Model estimate no 16
TECHNICAL REPORT

NAME OF WORK Construction of M.M.S
District Udaipur
Name of Scheme I.W.M.P
Panchayat Samiti Kherwada

This project is taken in I.W.M.P Scheme.The proposed anicut will not only reduce velocity of the runoff but also prevent the gullies from furthure soil erosion at the same time it will be very much fruitful in recharging of downstream wells as well as it will increase the moisture content of the soil . So an it improve its productivity the retain water behind the structure can also be used for irrigation , and driniking water for anmimals . The cross section and L-section have been surveyed by dumpy level and catchment area has been taken from G.T. sheet / Revenue map.

Basic Data of Project

		=		
1	Catch ment Area	=	80	Ha.
2	Maxmium Rain fall intencity	=	3	Cm./hr.
3	General nature of catchment Area			
a.	Agricultural land	=	20	Ha.
b.	Pasture Land	=	60	Ha.
4	Height of crest above G.L.	=	1.5	M.
5	Flood lift	=	0.6	M.
6	Free board	=	0.2	M.
7	Top width of Head wall	=	0.8	M.
8	Bottom width of Head wall	=	2.40	M.
9	Width of concrete Bed	=	2.70	M.
10	Length of crest	=	10	M.
11	Percentage slope of land	=	5.71	
12	No. of well benifited	=		
13	No of farmer benifited	=		
a.	S.C.	=		
b.	S.T.	=		
c.	Others	=		
	Total	=		

14	Area to be benifited	=	
a.	S.C.	=	
b.	S.T.	=	
c.	Others	=	
	Total	=	
15		=	
a.	a)Raito of concrete at bed	=	
	(Cement : Sand :Aggregate)(1:4:8)	=	
b.	b) Raito of Masonary fondation & Super structure	=	
	Cement Mortar(1:6)	=	
c.	c) Raito of plastering and flush pointing of 25 mm.	=	
	Cement Mortar(1:6)	=	
d	Raito of Kharanja in cement mortar	=	
16	Cost of Project	=	200000.00
a.	Labour component	=	52541
b.	Material component	=	141644
c.	Contingency	=	5815

Rates are as per GKN 2011 Udaipur wef 1.4.2011

The Estimate are here with submitted for technical approvel an necessary action

Preapared By Recommended By

J.En. A.En.

Name of work Construction of M.M.S

Catch ment Area	80	Ha.
Maxmium Rain fall intencity	3	Cm/hr
General nature of catchment Area		
Agricultural land	20	
Pasture Land	60	
Height of crest above G.L.	1.5	
Length of crest	10	
Percentage slope of land	5.71	
No. of well benifited	12	
No of farmer benifited	70	
S.C.	25	
S.T.		
Others	45	
Total	70	
Area to be benifited		
S.C.	25	
S.T.	0	
Others	125	
Total	150	

GKN 200 SIROHI

Desgin calculation of M.M.S

A

Name of work-: Construction of M.M.S

I Available crest length 10 M

ii Total catchment Area 80 Ha. As per G.T.Sheet

iii Peak Runoff Rate

a) By Rational Method Use when catchment is <1300Ha.

$Q_p = 0.0276\ CIA$ Q=Run off in m3/sec.

C= Coefficient of runoff 0.5

$K = L^{3/2}/H^{1/2}$ I= Intensity of rain fall in cm/hr. 3

K = 8784.9 A= Catchment Area in Ha. 80

$Tc = 0.0195K^{0.77}$ L=Maxmium length of travel by runoff water in m. 2100

Tc = 21.22 H= Difference in elevation between most remote point and and outlet point in meter 120

Q_p= 0.0276 0.50 X 3 X 80

Q_p = 3.31

b) By weir formula

$Q = 1.71Lh^{3/2}$

$3.31 = 1.71\ 10\ h^{3/2}$

h 0.33

Say h= 0.6

3 Free Board hw= Wave height in meter

$F_b = 1.5h_w$ Df= Fetch length in meter 120 Meter.

$1.5X0.014(D_f)^{1/2}$

F_b= 0.23

Say Fb= 0.2

(B) STRUCTURAL DESGIN

1 Head wall

a) Height of Head wall H= 1.5

b) Top width(Tw) = $\frac{h}{(P-1)^{1/2}}$ P= Sp.ht. Of masonary 2.3

Tw= 0.53

Top width= 0.8

© Bottom width Bw Tw+0.8H

Bw= 2.00

So Bottom Width= 2.40 Meter

2 Head wall extension

a) Length= H+h+1+Fb

1.5 + 0.6 + 1 + = 3.10 Meter

say Length of Right side wall = 4 Meter

say Length of left side wall = 6.0 Meter

b) Height of Head Extensionwall = H+h+Fb

1.5 + 0.6 + 0.2 = 2.3 Meter

c) Top width 0.6 Meter

d) Bottom Width= 0.5(H+h) = 0.5(1.5 + 0.6)= 1.05 Meter

3 Side wall

a) Length= 1.75H+0.75h+0.45 = 3.53

But as per site condition= 2.7 Meter

b) Height:

At H.W.End= H+h+Fb 1.5 + 0.6 + 0.2 = 2.3 Meter

At W.W.End= h+fb = 0.6 + 0.2 = 0.8 Meter

c) Top width= 0.6 Meter

d) Bottom width=

At H.W.End= 0.6+0.4(H+h) 1.4 Meter

At W.W.End= 0.6+0.4(1.5h) 1.0 Meter

But taken as= 1.0 Meter

4 Wing wall

a) Height h+Fb 0.6 + 0.2 = 0.8 Meter

b) Length= 2.25h 2.25 X 0.6 = 1.35 Meter Say 2.00 M

c) Top width 0.6 Meter

Bottom width of wing wall 0.6 Meter

5 Apron

a) Length= 10 Meter

b) Width= H+h+Fb 1.5 + 0.6 + 0.2 2.3 Meter

c) Thickness 0.6 Meter

6 Toe wall

a) Length= 10 Meter

b) Width= 0.3 Meter

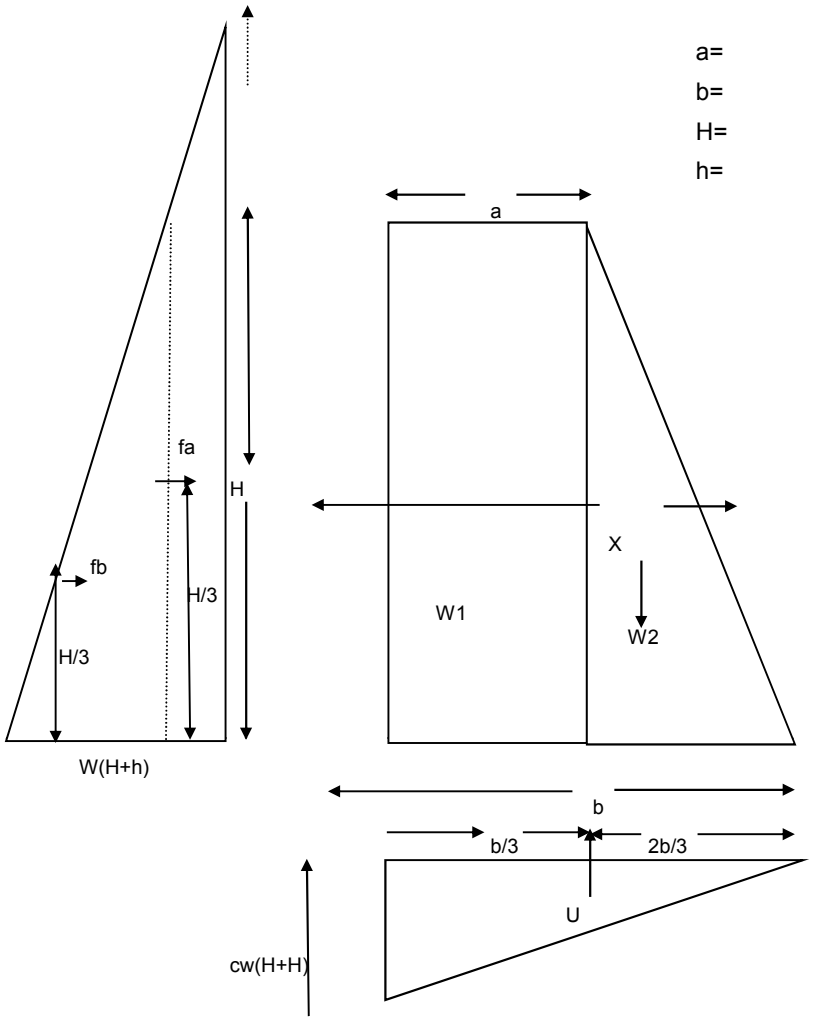
c) Height= 0.3 Meter

Preapared By Recommended By

J.En. A.En.

C= Coefficient of runoff		0.5
I= Intensity of rain fall in cm/hr.		3
A= Catchment Area in Ha.		80
L=Maxmium length of travel by runoff water in m.		2100
H= Difference in elevation between most remote point and and outlet point in meter		120
h= Head over the crest in mtr.	0.33	0.6
Df= Fetch length in meter		120
Fb =Free board	0.23	0.2
Top width Tw=	0.80	0.8
Height of cerst	1.5	1.5
Bottom Width of Head wall Bw	2.00	2.40
Lenth of Head wall extension Left=	3.10	5
Lenth of Head wall extension Right=		8.0
Length of side wall=	3.53	2.65
Bottom Width of Side wall	1.44	1
	1.0	
Length of wing wall	1.35	2

FREE BODY DIAGRAM



a=	0.8
b=	2.40
H=	1.5
h=	0.6

Specific Wt. Of masonary P= 2.3 T/m^3

Specific Wt. of water w= 1 T/m^3

Cofficient of uplift pressure c= 0.6

cofficient of friction atbed surface and creep length = 0.75

Weight of Dam-:

Weight of Dam-:

W_1= aHP

W_1= T 2.76 T

W_2= $\frac{b-a}{2}$ HP= 2.76 T

W= W_1+W_2= 2.76 + 2.76 = 5.52 T

Water pressure

At Depth h= P_1 = wh = 1 X 0.6 = 0.6 T/m^2

At Depth H+h= P2 = w(H+h) =

1(1.50 + 0.6) = 2.1 T/m^2

Force aching due to water pressure I.e. Net horizontal

Water force $P=\frac{P1+P2}{2}H=$ = 2.025 T/m^2

Horizontal water pressure at depth h =Fa= wHh= = 0.9 T

At depth H+h = Fb= $\frac{P2-P1}{2}H$ = 1.125 T

Force due to water column at crest F3 = wha= = 0.48 T

Up lift pressure U = 1/2 cwb (H+h) = 1.512 T

Preapared By

Recommended By

J.En.

A.En.

STABILITY CHECKS

1 Safety against over turning

Over turning moment Mo = $Fa \frac{H}{2} + Fb \frac{H}{3} + u \frac{2}{3} b$

$0.90 \frac{1.5}{2} + 1.125 \frac{1.5}{3} + 1.51 \frac{2}{3} 2.40$

Mo= 3.657

Restoring Moment Mr = W1 (b-a/2) + W2 (b-a)2/3 + F3 (b-a/2)

Mr=

Mr= 5.52 + 2.944 + 0.960 = 9.42

Factor of safety $\frac{Mr}{Mo} = \frac{9.424}{3.657} = 2.577$ >1.5 Hence

Structure is safe against over turning

2 Safety against Rupture from tension

Net Vertical Pressure V = W1+W2+F3-U

2.76 + 2.76 + 0.48 - 1.512 = 4.488

Position of resultant where it cut the base

X= $\frac{\text{Excess moment(Mr-Mo)}}{\text{Net vertical force}} = \frac{9.424 - 3.657}{4.488} = 1.29$

TRUE

3 Safety against crusing

Eccentricity e = b/2-X

-0.085

Crusting stress at the toe of theHead wall

Pc= $\frac{V}{b}$ (1+_6e/b)

Pc= 1.47

Pc<<20 Hence it is safe

4 Safety against sliding

Net vertical Force V= 4.488 T

Restorin force = uV = 0.70 X 4.488 (u=0.65 to 0.75)

3.14 T

Sliding force Net horizontal force= Fa+Fb

0.9 + 1.125 = 2.025 T

Factor of safety = Restoring force / Sliding force = 3.142 / 2.025 = 1.55 >1.3 Hence

Hence it is safe

Preapared By

J.En.

Recommended By

A.En.

DETAILED ESTIMATE OF M.M.S

NAME OF WORK **Construction of M.M.S**

Name of Scheme **I.W.M.P**

General features of anicut-:

Height of crest above G.L.	1.5 M.		
Length of Crest	10 M.		
Depth of foundation for H.W. =	1.2 M.	Length of wing wall=	0.0 M.
Bottom width of H.W. =	2.4 M.	Height of Wing wall=	0.8 M.
Top of H.W =	0.8 M.	Bopttom width of Wing wall=	0.6 M.
Length of H.W.Ext =	4.0 M.	Depth of foundation for Wing wall =	0.9 M.
Height of H.W.Ext. at H.W. =	2.3 M.	Height of Toewall=	0.30 M.
Top Width of H.W.Ext.=	0.6 M.	Top & Bopttom width of Toe wall=	0.30 M.
Bottom width for H.W.Ext.	1.1 M.	Depth of foundation for Toe wall =	0.9 M.
Depth of foundation for H.W.Ext.=	1.0 M.	Thickness of Apron=	0.6 M.
Length of side wall=	2.7 M.	Width of Apron =	2.3 M.
Bottom Width of S.W.	1.00 M.	Berm for H.W Ext.	2.0 M.
Height of side wall at W.W.End=	0.80 M.		
Depth of foundation for side wall =	1.0 M.		

S.No.	Item		No	L		B		H	Quantity
1	Dag belling 5cm. To 7.5cm deep(As per item no. page of W.D.& S.C. BSR of Jodhpur circle							Total	
2	Cutting and clearing of ordinary jungle includling bushes shrubs and disposal as per instructrion of engineer incharge			0	X	0.0		=	0 Sqm.

S.No.	Item		No		L		B		H		Quantity	
3	Benching of the base and depositing the execavated material for bund for bund canal dressing etc. all components									Total		Cum.
4	Earth work excavation for bund in hard dry or moist soil including laying in layer of 15cm. Breaking of clods dressing to require profile with manual compaction including intial lift up to 1.5 m and lead up to 30M.									Total		Cum
5	Earth work excavation for foundation in dry or moist soil including ramming of bottom scrapping of sides dipodal of soil intial lift up to 1.5 m and lead up to 30M.											
		H.W.	1	X	10	X	2.7	X	1.2	=	32.40	Cum.
		H.W.Ext Left	1	X	4.0	X	1.1	X	3.0	=	12.60	Cum.
		H.W.Ext Right	1	X	6.0	X	1.1	X	1.0	=	6.30	Cum.
		S.W.	2	X	2.7	X	1.00	X	3.0	=	15.90	Cum.
		W.W.	2	X	0.0	X	0.6	X	0.90	=	0.00	Cum.
		Apron	1	X	10	X	2.3	X	0.60	=	13.80	Cum.
		T.W.	1	X	10	X	0.30	X	0.9	=	2.70	Cum.
										Total	83.70	Cum.
1	Execavation in Hard soil								30%		25.11	Cum.
2	Execavation in ordinary murram								40%		25.11	Cum.
3	Execavation in compacted murram								30%		33.48	Cum.
	Extra Lift of execavcated soil from foundation abiove 1.5 M.						70% of total soil				58.59	Cum

S.No.	Item		No		L		B		H		Quantity	
6	Providing and laying of cement concrete well mixed in cement mortar 1:4:8 laying in position complete excluding curing with maxmium size of aggregate up to 50 mm.											
		H.W.	1	X	10.0	X	2.7	X	0.3	=	8.10	Cum.
		H.W.Ext	1	X	4	X	1.1	X	0.3	=	1.26	Cum.
			1	X	6	X	1.1	X	0.3	=	1.89	Cum.
		S.W.	2	X	2.65	X	1.05	X	0.3	=	1.67	Cum.
		W.W.	2	X	0	X	0.6	X	0.3	=	0.00	Cum.
		Apron	1	X	10.0	X	2.3	X	0.3	=	6.90	Cum.
		T.W.	1	X	10.0	X	0.30	X	0.3	=	0.90	Cum.
										Total	20.72	Cum.
7	I n Foundation Stone masonary cement sand mortar(1:6) for above 30 cm. Thick wall											
		H.W.	1	X	10.0	X	2.4	X	0.9	=	21.60	Cum.
		H.W.Ext	1	X	4.0	X	1.1	X	0.7	=	2.94	Cum.
		H.W.Ext	1	X	6.0	X	1.1	X	0.7	=	4.41	Cum.
		S.W.	2	X	2.7	X	1.05	X	0.7	=	3.90	Cum.
		W.W.	4	X	0.0	X	0.6	X	0.6	=	0.00	Cum.
		T.W.	1	X	10.0	X	0.15	X	0.6	=	0.90	Cum.
										Total	33.75	Cum.
8	In super structure Stone masonary above 30 cm. Thick in cement sand mortar(1:6)											
		H.W.	1	X	10.0	X	1.6	X	1.5	=	24.00	Cum.
		H.W.Ext	1	X	4.0	X	0.83	X	2.3	=	7.59	Cum.
		H.W.Ext	1	X	6.0	X	0.83	X	2.3	=	11.39	Cum.
		S.W.	2	X	2.7	X	0.8	X	1.55	=	6.57	Cum.
		W.W.	2	X	0.0	X	0.6	X	0.8	=	0.00	Cum.
		T.W.	1	X	10.0	X	0.30	X	0.30	=	0.90	Cum.
										Total	50.45	Cum.

S.No.	Item		No		L		B		H		Quantity	
9	Stone Kharanja in cement mortar 1:6 for bed and floor including cpaction etc. complete apron											
		Apron	1	X	10.0	X	2.3	X	0.30		6.90	Cum.
										Total	6.90	Cum.
10	Providing and laying of cement concrete well mixed in cement mortar 1:2:4 laying in position complete excluding curing with maxmium size of aggregate up to 20 mm.											
		H.W.	1	X	10.0	X	0.8	X	0.05	=	0.40	Cum.
		H.W.Ext	1	X	4.0	X	0.6	X	0.05	=	0.12	Cum.
			1	X	6.0	X	0.6	X	0.05	=	0.18	Cum.
		S.W.	2	X	2.7	X	0.6	X	0.05	=	0.16	Cum.
		W.W.	2	X	0.0	X	0.6	X	0.05	=	0.00	Cum.
		T.W.	1	X	10.0	X	0.30	X	0.05	=	0.15	Cum.
		Apron	1	X	10.0	X	2.30	X	0.1	=	2.30	Cum.
										Total	3.31	Cum.
11	Flush pointing in cement motar (1:3)											
		H.W.	1	X	10.0	X	2.19			=	21.93	Sqm.
										Total	21.93	Sqm.
12	20 m.m thick plastering on new surface in cement mortar (1:4)											
		H.W.	1	X	10.0	X	1.5			=	15.00	Sqm.
		H.W.Ext.	1	X	4.0	X	2.3			=	9.20	Sqm.
		H.W.Ext.	1	X	6.0	X	2.3			=	13.80	Sqm.
		S.S	2	X	2.7	X	2.3			=	12.19	Sqm.
		W.W.	2	X	0.0	X	0.8			=	0.00	Sqm.
		T.W.	2	X	10.0	X	0.3			=	6.00	Sqm.
									Total	=	56.19	Sqm.
13	Dry stone pitching of Hammer dressed witch packing of voids of small stone including all lifts in require profile (23 cm depth)		10.0	X	0.00	X	0.23				0.00	Cum

Thickness of C.C. in (1:4:8)	0.3	M.
Length of Crest	10	M.
Depth of foundation for H.W. =	2.0	M
Bottom width of H.W. =	2.4	M
Top of H.W =	0.8	M
Length of H.W.Ext =	4.0	M
Height of H.W.Ext. at H.W. =	2.3	M
Top Width of H.W.Ext.=	0.6	M
Bottom width for H.W.Ext.	1.1	M
Depth of foundation for H.W.Ext.=	1.2	M
Length of side wall=	2.7	M
Bottom Width of S.W.	1.0	M
Height of side wall at W.W.End=	0.8	M
Depth of foundation for side wall =	1.2	M
Length of wing wall=	2.0	M
Height of Wing wall=	0.8	M
Bopttom width of Wing wall=	0.6	M
Depth of foundation for Wing wall =	0.9	M
Height of Toewall=	0.30	M
Top & Bopttom width of Toe wall=	0.3	M
Depth of foundation for Toe wall =	0.9	M
Thickness of Apron=	0.6	M
Width of Apron =	2.3	M

Abstract of Cost of M.M.S

NAME OF WORK **Construction of M.M.S**
Name of Scheme **I.W.M.P**

S.No.	Item	Quatity	Unit	Lab.rate	L.Amount	Rate	Amount
1	Dag belling 5cm. To 7.5cm deep(As per item no. page of W.D.&	0.00	Cum.			0.38	0
2	Cutting and clearing of ordinary jungle includling bushes shrubs and disposal as per instructrion of	0	Sqm.			0.40	0
3	Benching of the base and depositing the execavated material for bund for bund canal	0	Cum.				0
4	Earth work excavation for bund in hard dry or moist soil including laying in layer of 15cm. Breaking	0	Cum.			46.00	0
5	Earth work excavation for foundation in dry or moist soil including ramming of bottom	83.70	Cum.				0
	Execavation in Hard soil	25.11	Cum.	92.00	2310.12	92.00	2310.12
	Execavation in ordinary murram	25.11	Cum.	134.0	3364.74	134.00	3364.74
	Execavation in compacted murram	33.48	Cum.	178.0	5959.44	178.00	5959.44
6	Extra Lift of execavcated soil from foundation abiove 1.5 M.	58.59	Cum.	11.00	644.49	11.00	644.49
7	Providing and laying of cement concrete well mixed in cement mortar 1:4:8 laying in position complete excluding curing with	20.72	Cum.	315.1	6528.71	1881.0	38973.38
8	I n Foundation Stone masonary cement sand mortar(1:6) for	33.75	Cum.	327	11034.8	1403.00	47344.937
9	In super structure Stone masonary above 30 cm. Thick in cement sand mortar(1:6)	50.45	Cum.	327	16496.2	1403.00	70777.141
10	Stone Kharanja in cement mortar 1:6 for bed and floor including cpaction etc. complete apron	6.90	Cum.	327	2256.3	1403.0	9680.7
11	Providing and laying of cement concrete well mixed in cement mortar 1:2:4 laying in position complete excluding curing with	3.31	Cum.	308.3	1020.16	2552.0	8444.568
12	Flush pointing in cement motar (1:3)	21.93	Sqm.	35.8	785.155	45.50	997.89291
13	20 m.m thick plastering on new surface in cement mortar (1:4)	56.19	Sqm.	38.1	2140.84	95.00	5338.05
14	Dry stone pitching of Hammer dressed witch packing of voids of small stone including all lifts in require profile (23 cm depth)	0.00	Cum.	86		328.00	0
					52540.9	Total	193835.46

TOTAL 193835

Contingency % 5815
Say total Cost 199651
200000.00

Prepared By Recommonded By

J.En. A.En.

Material Statement

NAME OF WORK Construction of M.M.S

Name of Scheme I.W.M.P

S.No.	ITEM	Quantity Cum / Sqm	Cement Begs	Sand Cum	Aggrigate Cum	Stone Cum
1	Cement Concrete (1:4:8)	20.72	66.30	9.32	18.65	–
2	Plaster in C.C. (1:4)	56.19	9.53	1.35	–	–
3	Massonary in Cement sand mortar 1:6	84.19	117.45	25.26	_	92.61
4	Pointing in Cement	21.93	0.90	0.09	_	_
5	Stone Kharanja in cement mortar (1:6)	6.90	9.6255	2.07	_	7.59
6	Cement concrete coping(1:2:4)	3.31	20.32	1.36	2.71	
7	Dry Stone Pitching	0.00	_	_	_	0.00
		TOTAL	224.13	39.45	21.36	100.20
		Say Bags or	225 11.25	MT.		

1	Cement	11.25	MT.
2	Sand	39.45	Cum.
3	Stones	100.20	Cum.
4	Aggregates	21.36	Cum.

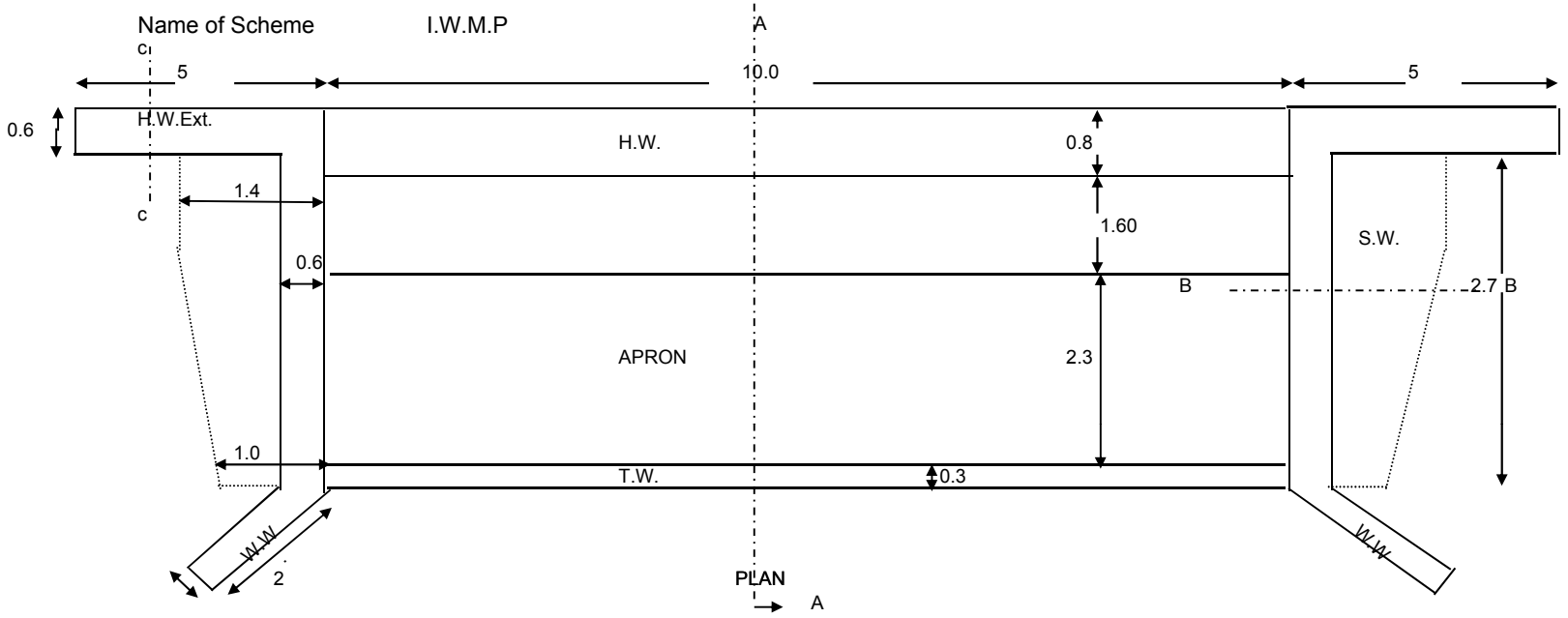
Prepared By Recommonded By

J.En. A.En.

TYPICAL PLAN AND SECTION OF M.M.S

NAME OF WORK Construction of M.M.S

Name of Scheme I.W.M.P



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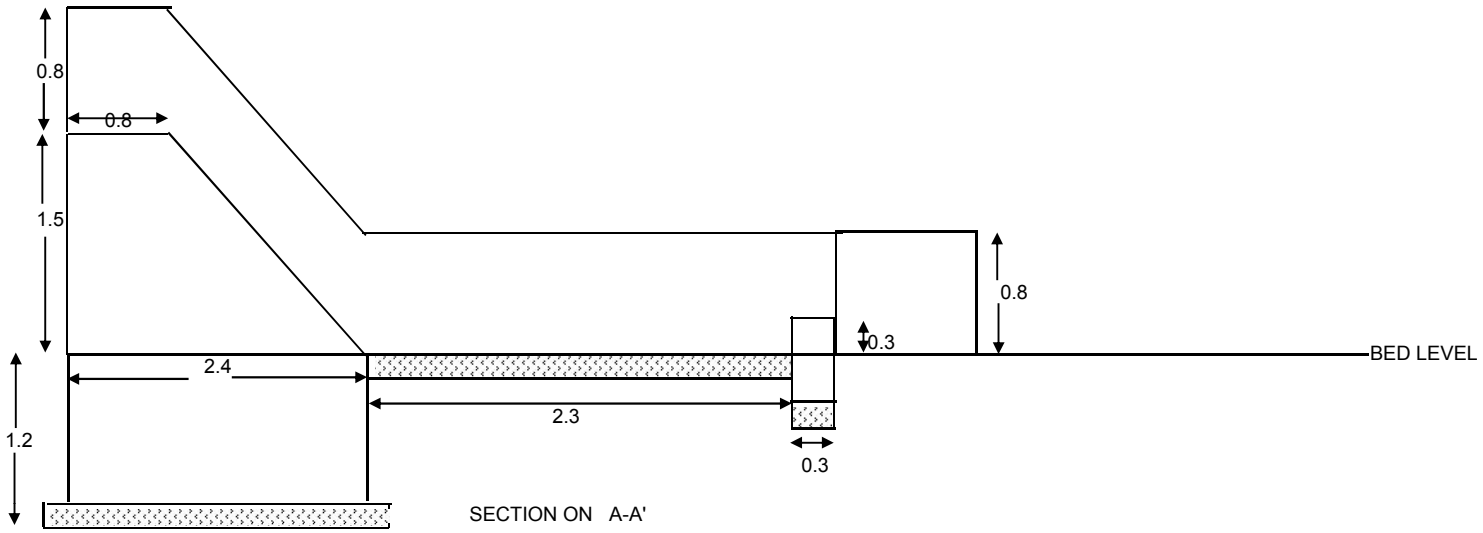
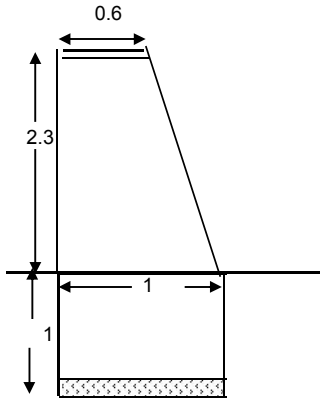
J.En.

Recommended By

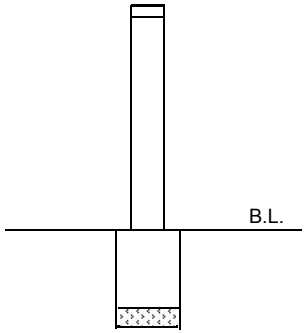
A.En.



SECTION ON A-A'



B-B' SECTION OF S.W.



C-C' SECTION ON H.W.Ext.

MODEL ESTIMATE NO. 17
TECHNICAL REPORT

NAME OF WORK Construction of M.M.S
District Udaipur
Name of Scheme I.W.M.P
Panchayat Samiti Kherwara

This project is taken in I.W.M.P Scheme.The proposed M.M.S will not only reduce velocity of the runoff but also prevent the gullies from furthure soil erosion at the same time it will be very much fruitful in recharging of downstream wells as well as it will increase the moisture content of the soil . So an it improve its productivity the retain water behind the structure can also be used for irrigation , and driniking water for anmimals . The cross section and L-section have been surveyed by dumpy level and catchment area has been taken from G.T. sheet / Revenue map.

Basic Data of Project

		=		
1	Catch ment Area	=	320	Ha.
2	Maxmium Rain fall intencity	=	3	Cm./hr.
3	General nature of catchment Area			
a.	Agricultural land	=	80	Ha.
b.	Pasture Land	=	240	Ha.
4	Height of crest above G.L.	=	2	M.
5	Flood lift	=	0.6	M.
6	Free board	=	0.2	M.
7	Top width of Head wall	=	0.8	M.
8	Bottom width of Head wall	=	2.40	M.
9	Width of concrete Bed	=	2.70	M.
10	Length of crest	=	14	M.
11	Percentage slope of land	=	2.29	
12	No. of well benifited	=		
13	No of farmer benifited	=		
a.	S.C.	=		
b.	S.T.	=		
c.	Others	=		
	Total	=		

14	Area to be benifited	=	
a.	S.C.	=	
b.	S.T.	=	
c.	Others	=	
	Total	=	
15		=	
a.	a)Raito of concrete at bed	=	
	(Cement : Sand :Aggregate)(1:4:8)	=	
b.	b) Raito of Masonary fondation & Super structure	=	
	Cement Mortar(1:6)	=	
c.	c) Raito of plastering and flush pointing of 25 mm.	=	
	Cement Mortar(1:6)	=	
d	Raito of Kharanja in cement mortar	=	
16	Cost of Project	=	300000.00
a.	Labour component	=	78645
b.	Material component	=	212593
c.	Contingency	=	8762

Rates are as per GKN 2011 Udaipur wef 1.4.2011

The Estimate are here with submitted for technical approvel an necessary action

Preapared By Recommended By

J.En. A.En.

Name of work Construction of M.M.S

Catch ment Area	320	Ha.
Maxmium Rain fall intencity	3	Cm/hr
General nature of catchment Area		
Agricultural land	80	
Pasture Land	240	
Height of crest above G.L.	2	
Length of crest	14	
Percentage slope of land	2.29	
No. of well benifited	12	
No of farmer benifited	70	
S.C.	25	
S.T.		
Others	45	
Total	70	
Area to be benifited		
S.C.	25	
S.T.	0	
Others	125	
Total	150	

GKN 200 SIROHI

Desgin calculation of M.M.S

A

Name of work-: Construction of M.M.S

I Available crest length 14 M

ii Total catchment Area 320 Ha. As per G.T.Sheet

iii Peak Runoff Rate

a) By Rational Method Use when catchment is <1300Ha.

$Q_p = 0.0276\ CIA$ Q=Run off in m3/sec.

C= Coefficient of runoff 0.5

$K = L^{3/2}/H^{1/2}$ I= Intensity of rain fall in cm/hr. 3

K = 23150.3 A= Catchment Area in Ha. 320

$Tc = 0.0195K^{0.77}$ L=Maxmium length of travel by runoff water in m. 3500

Tc = 44.74 H= Difference in elevation between most remote point and and outlet point in meter 80

Q_p= 0.0276 0.50 X 3 X 320

Q_p = 13.25

b) By weir formula

$Q = 1.71Lh^{3/2}$

13.25 = 1.71 14 $h^{3/2}$

h 0.67

Say h= 0.6

3 Free Board hw= Wave height in meter

F_b= $1.5h_w$ Df= Fetch length in meter 120 Meter.

$1.5X0.014(D_f)^{1/2}$

F_b= 0.23

Say Fb= 0.2

(B) STRUCTURAL DESGIN

1 Head wall

a) Height of Head wall H= 2

b) Top width(Tw) = $\frac{h}{(P-1)^{1/2}}$ P= Sp.ht. Of masonary 2.3

Tw= 0.53

Top width= 0.8

© Bottom width Bw Tw+0.8H

Bw= 2.40

So Bottom Width= 2.40 Meter

2 Head wall extension

a) Length= H+h+1+Fb

2 + 0.6 + 1 + = 3.60 Meter

say Length of Right side wall = 3 Meter

say Length of left side wall = 5.0 Meter

b) Height of Head Extensionwall = H+h+Fb

2 + 0.6 + 0.2 = 2.8 Meter

c) Top width 0.6 Meter

d) Bottom Width= 0.5(H+h) = 0.5(2 + 0.6)= 1.30 Meter

3 Side wall

a) Length= 1.75H+0.75h+0.45 = 4.4

But as per site condition= 2.7 Meter

b) Height:

At H.W.End= H+h+Fb 2 + 0.6 + 0.2 = 2.8 Meter

At W.W.End= h+fb = 0.6 + 0.2 = 0.8 Meter

c) Top width= 0.6 Meter

d) Bottom width=

At H.W.End= 0.6+0.4(H+h) 1.6 Meter

At W.W.End= 0.6+0.4(1.5h) 1.0 Meter

But taken as= 1.0 Meter

4 Wing wall

a) Height h+Fb 0.6 + 0.2 = 0.8 Meter

b) Length= 2.25h 2.25 X 0.6 = 1.35 Meter Say 2.00 M

c) Top width 0.6 Meter

Bottom width of wing wall 0.6 Meter

5 Apron

a) Length= 14 Meter

b) Width= H+h+Fb 2 + 0.6 + 0.2 2.8 Meter

c) Thickness 0.6 Meter

6 Toe wall

a) Length= 14 Meter

b) Width= 0.3 Meter

c) Height= 0.3 Meter

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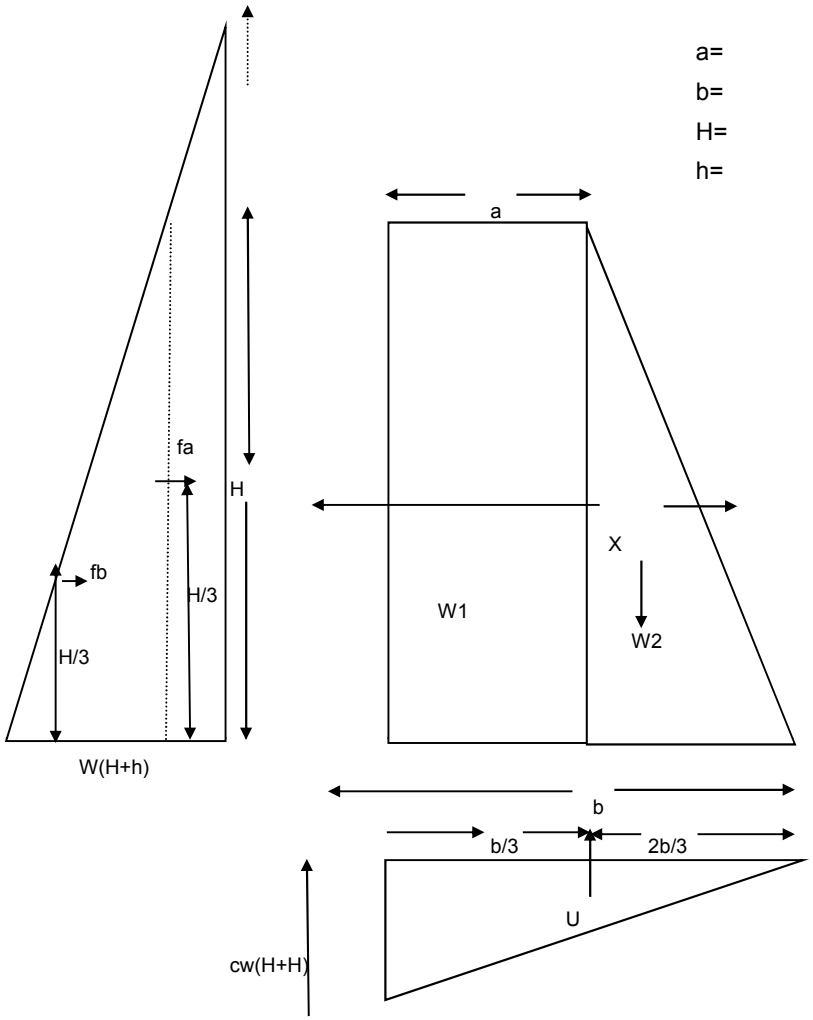
C= Coefficient of runoff		0.5
I= Intensity of rain fall in cm/hr.		3
A= Catchment Area in Ha.		320
L=Maxmium length of travel by runoff water in m.		3500
H= Difference in elevation between most remote point and and outlet point in meter		80
h= Head over the crest in mtr.	0.67	0.6
Df= Fetch length in meter		120
Fb =Free board	0.23	0.2
Top width Tw=	0.80	0.8
Height of cerst	2	2
Bottom Width of Head wall Bw	2.40	2.40
Lenth of Head wall extension Left=	3.60	5
Lenth of Head wall extension Right=		8.0
Length of side wall=	4.40	2.65
Bottom Width of Side wall	1.64	1
	1.0	
Length of wing wall	1.35	2

FREE BODY DIAGRAM



a=	0.8
b=	2.40
H=	2
h=	0.6

Specific Wt. Of masonary P= 2.3 T/m^3

Specific Wt. of water w= 1 T/m^3

Cofficient of uplift pressure c= 0.6

cofficient of friction atbed surface and creep length = 0.75

Weight of Dam-:

Weight of Dam-:

W_1= aHP

W_1= T 3.68 T

W_2= $\frac{b-a}{2}$ HP= 3.68 T

W= W_1+W_2= 3.68 + 3.68 = 7.36 T

Water pressure

At Depth h= P_1 = wh = 1 X 0.6 = 0.6 T/m^2

At Depth H+h= P2 = w(H+h) =

1(2.00 + 0.6) = 2.6 T/m^2

Force aching due to water pressure I.e. Net horizontal

Water force $P=\frac{P1+P2}{2}H=$ = 3.2 T/m^2

Horizontal water pressure at depth h =Fa= wHh= = 1.2 T

At depth H+h = Fb= $\frac{P2-P1}{2}H$ = 2 T

Force due to water column at crest F3 = wha= = 0.48 T

Up lift pressure U = 1/2 cwb (H+h) = 1.872 T

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A.En.

STABILITY CHECKS

1 Safety against over turning

Over turning moment Mo = $Fa \frac{H}{2} + Fb \frac{H}{3} + u \frac{2}{3} b$

$1.20 \frac{2}{2} + 2.000 \frac{2}{3} + 1.87 \frac{2}{3} 2.40$

Mo= 5.529

Restoring Moment Mr = W1 (b-a/2) + W2 (b-a)2/3 + F3 (b-a/2)

Mr=

Mr= 7.36 + 3.925 + 0.960 = 12.2

Factor of safety $\frac{Mr}{Mo} = \frac{12.25}{5.529} = 2.215$ >1.5 Hence

Structure is safe against over turning

2 Safety against Rupture from tension

Net Vertical Pressure V = W1+W2+F3-U

3.68 + 3.68 + 0.48 - 1.872 = 5.968

Position of resultant where it cut the base

$X = \frac{\text{Excess moment(Mr-Mo)}}{\text{Net vertical force}} = \frac{12.25 - 5.529}{5.968} = 1.13$

TRUE

3 Safety against crusing

Eccentricity e = b/2-X

0.075

Crusting stress at the toe of theHead wall

Pc= $\frac{V}{b}$ (1+_6e/b)

Pc= 2.95

Pc<<20 Hence it is safe

4 Safety against sliding

Net vertical Force V= 5.968 T

Restorin force = uV = 0.70 X 5.968 (u=0.65 to 0.75)

4.1776 T

Sliding force Net horizontal force= Fa+Fb

1.2 + 2 = 3.2 T

Factor of safety = Restoring force / Sliding force = 4.178 / 3.2 = 1.306 >1.3 Hence

Hence it is safe

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A.En.

DETAILED ESTIMATE OF M.M.S

NAME OF WORK **Construction of M.M.S**

Name of Scheme **I.W.M.P**

General features of anicut-:

Height of crest above G.L.	2	M.			
Length of Crest	14	M.			
Depth of foundation for H.W. =	1.4	M.	Length of wing wall=	0.0	M.
Bottom width of H.W. =	2.4	M.	Height of Wing wall=	0.8	M.
Top of H.W =	0.8	M.	Bopttom width of Wing wall=	0.6	M.
Length of H.W.Ext =	3.0	M.	Depth of foundation for Wing wall =	0.9	M.
Height of H.W.Ext. at H.W. =	2.8	M.	Height of Toewall=	0.30	M.
Top Width of H.W.Ext.=	0.6	M.	Top & Bopttom width of Toe wall=	0.30	M.
Bottom width for H.W.Ext.	1.3	M.	Depth of foundation for Toe wall =	0.9	M.
Depth of foundation for H.W.Ext.=	1.2	M.	Thickness of Apron=	0.6	M.
Length of side wall=	2.7	M.	Width of Apron =	2.8	M.
Bottom Width of S.W.	1.00	M.	Berm for H.W Ext.	2.0	M.
Height of side wall at W.W.End=	0.80	M.			
Depth of foundation for side wall =	1.2	M.			

S.No.	Item		No	L	B	H	Quantity
1	Dag belling 5cm. To 7.5cm deep(As per item no. page of W.D.& S.C. BSR of Jodhpur circle					Total	
2	Cutting and clearing of ordinary jungle includling bushes shrubs and disposal as per instructrion of engineer incharge		0	X 0.0		=	0 Sqm.

S.No.	Item		No		L		B		H		Quantity	
3	Benching of the base and depositing the execavated material for bund for bund canal dressing etc. all components										7 Model estimate Ashu Como	
										Total		Cum.
4	Earth work excavation for bund in hard dry or moist soil including laying in layer of 15cm. Breaking of clods dressing to require profile with manual compaction including intial lift up to 1.5 m and lead up to 30M.											
										Total		Cum
5	Earth work excavation for foundation in dry or moist soil including ramming of bottom scrapping of sides dipodal of soil intial lift up to 1.5 m and lead up to 30M.											
		H.W.	1	X	14	X	2.7	X	1.4	=	52.92	Cum.
		H.W.Ext Left	1	X	3.0	X	1.3	X	3.2	=	12.48	Cum.
		H.W.Ext Right	1	X	5.0	X	1.3	X	1.2	=	7.80	Cum.
		S.W.	2	X	2.7	X	1.20	X	3.2	=	20.35	Cum.
		W.W.	2	X	0.0	X	0.6	X	0.90	=	0.00	Cum.
		Apron	1	X	14	X	2.8	X	0.60	=	23.52	Cum.
		T.W.	1	X	14	X	0.30	X	0.9	=	3.78	Cum.
										Total	120.85	Cum.
1	Execavation in Hard soil								30%		36.26	Cum.
2	Execavation in ordinary murram								40%		36.26	Cum.
3	Execavation in compacted murram								30%		48.34	Cum.
	Extra Lift of execavcated soil from foundation abiove 1.5 M.						70% of total soil				84.60	Cum

S.No.	Item		No		L		B		H		Quantity	
6	Providing and laying of cement concrete well mixed in cement mortar 1:3:6 laying in position complete excluding curing with maxmium size of aggregate up to 50 mm.										7 Model estimate Ashu Como	
		H.W.	1	X	14.0	X	2.7	X	0.3	=	11.34	Cum.
		H.W.Ext	1	X	3	X	1.3	X	0.3	=	1.17	Cum.
			1	X	5	X	1.3	X	0.3	=	1.95	Cum.
		S.W.	2	X	2.65	X	1.30	X	0.3	=	2.07	Cum.
		W.W.	2	X	0	X	0.6	X	0.3	=	0.00	Cum.
		Apron	1	X	14.0	X	2.8	X	0.3	=	11.76	Cum.
		T.W.	1	X	14.0	X	0.30	X	0.3	=	1.26	Cum.
										Total	29.55	Cum.
7	I n Foundation Stone masonary cement sand mortar(1:6) for above 30 cm. Thick wall											
		H.W.	1	X	14.0	X	2.4	X	1.1	=	36.96	Cum.
		H.W.Ext	1	X	3.0	X	1.3	X	0.9	=	3.51	Cum.
		H.W.Ext	1	X	5.0	X	1.3	X	0.9	=	5.85	Cum.
		S.W.	2	X	2.7	X	1.30	X	0.9	=	6.20	Cum.
		W.W.	4	X	0.0	X	0.6	X	0.6	=	0.00	Cum.
		T.W.	1	X	14.0	X	0.15	X	0.6	=	1.26	Cum.
										Total	53.78	Cum.
8	In super structure Stone masonary above 30 cm. Thick in cement sand mortar(1:6)											
		H.W.	1	X	14.0	X	1.6	X	2	=	44.80	Cum.
		H.W.Ext	1	X	3.0	X	0.95	X	2.8	=	7.98	Cum.
		H.W.Ext	1	X	5.0	X	0.95	X	2.8	=	13.30	Cum.
		S.W.	2	X	2.7	X	0.8	X	1.80	=	7.63	Cum.
		W.W.	2	X	0.0	X	0.6	X	0.8	=	0.00	Cum.
		T.W.	1	X	14.0	X	0.30	X	0.30	=	1.26	Cum.
										Total	74.97	Cum.

S.No.	Item		No		L		B		H		Quantity	
9	Stone Kharanja in cement mortar 1:6 for bed and floor including cpaction etc. complete apron										7 Model estimate Ashu Como	
		Apron	1	X	14.0	X	2.8	X	0.30		11.76	Cum.
										Total	11.76	Cum.
10	Providing and laying of cement concrete well mixed in cement mortar 1:2:4 laying in position complete excluding curing with maxmium size of aggregate up to 20 mm.											
		H.W.	1	X	14.0	X	0.8	X	0.05	=	0.56	Cum.
		H.W.Ext	1	X	3.0	X	0.6	X	0.05	=	0.09	Cum.
			1	X	5.0	X	0.6	X	0.05	=	0.15	Cum.
		S.W.	2	X	2.7	X	0.6	X	0.05	=	0.16	Cum.
		W.W.	2	X	0.0	X	0.6	X	0.05	=	0.00	Cum.
		T.W.	1	X	14.0	X	0.30	X	0.05	=	0.21	Cum.
		Apron	1	X	14.0	X	2.80	X	0.1	=	3.92	Cum.
										Total	5.09	Cum.
11	Flush pointing in cement motar (1:3)											
		H.W.	1	X	14.0	X	2.56			=	35.86	Sqm.
										Total	35.86	Sqm.
12	20 m.m thick plastering on new surface in cement mortar (1:4)											
		H.W.	1	X	14.0	X	2			=	28.00	Sqm.
		H.W.Ext.	1	X	3.0	X	2.8			=	8.40	Sqm.
		H.W.Ext.	1	X	5.0	X	2.8			=	14.00	Sqm.
		S.S	2	X	2.7	X	2.8			=	14.84	Sqm.
		W.W.	2	X	0.0	X	0.8			=	0.00	Sqm.
		T.W.	2	X	14.0	X	0.3			=	8.40	Sqm.
									Total	=	73.64	Sqm.
13	Dry stone pitching of Hammer dressed witch packing of voids of small stone including all lifts in require profile (23 cm depth)			14.0		X	0.00	X	0.23		0.00	Cum

Thickness of C.C. in (1:4:8)	0.3	M.
Length of Crest	14	M.
Depth of foundation for H.W. =	2.0	M
Bottom width of H.W. =	2.4	M
Top of H.W =	0.8	M
Length of H.W.Ext =	3.0	M
Height of H.W.Ext. at H.W. =	2.8	M
Top Width of H.W.Ext.=	0.6	M
Bottom width for H.W.Ext.	1.3	M
Depth of foundation for H.W.Ext.=	1.2	M
Length of side wall=	2.7	M
Bottom Width of S.W.	1.0	M
Height of side wall at W.W.End=	0.8	M
Depth of foundation for side wall =	1.2	M
Length of wing wall=	2.0	M
Height of Wing wall=	0.8	M
Bopttom width of Wing wall=	0.6	M
Depth of foundation for Wing wall =	0.9	M
Height of Toewall=	0.30	M
Top & Bopttom width of Toe wall=	0.3	M
Depth of foundation for Toe wall =	0.9	M
Thickness of Apron=	0.6	M
Width of Apron =	2.8	M

Abstract of Cost of M.M.S

NAME OF WORK **Construction of M.M.S**
Name of Scheme **I.W.M.P**

S.No.	Item	Quatity	Unit	Lab.rate	L.Amount	Rate	Amount
1	Dag belling 5cm. To 7.5cm deep(As per item no. page of W.D.&	0.00	Cum.			0.38	0
2	Cutting and clearing of ordinary jungle includling bushes shrubs and disposal as per instructrion of	0	Sqm.			0.40	0
3	Benching of the base and depositing the execavated material for bund for bund canal	0	Cum.				0
4	Earth work excavation for bund in hard dry or moist soil including laying in layer of 15cm. Breaking	0	Cum.			46.00	0
5	Earth work excavation for foundation in dry or moist soil including ramming of bottom	120.85	Cum.				0
	Execavation in Hard soil	36.26	Cum.	92.00	3336	92.00	3335.5152
	Execavation in ordinary murram	36.26	Cum.	134.0	4858	134.00	4858.2504
	Execavation in compacted murram	48.34	Cum.	178.0	8605	178.00	8604.6624
6	Extra Lift of execavcated soil from foundation abiove 1.5 M.	84.60	Cum.	11.00	930.6	11.00	930.5604
7	Providing and laying of cement concrete well mixed in cement mortar 1:3:6 laying in position complete excluding curing with	29.55	Cum.	315.1	9310	1881.0	55577.907
8	I n Foundation Stone masonary cement sand mortar(1:6) for	53.78	Cum.	327	17586	1403.00	75454.743
9	In super structure Stone masonary above 30 cm. Thick in cement sand mortar(1:6)	74.97	Cum.	327	24516	1403.00	105185.72

10	Stone Kharanja in cement mortar 1:6 for bed and floor including cpaction etc. complete apron	11.76	Cum.	327	3846	1403.0	16499.28
11	Providing and laying of cement concrete well mixed in cement mortar 1:2:4 laying in position complete excluding curing with	5.09	Cum.	308.3	1569	2552.0	12987.128
12	Flush pointing in cement motar (1:3)	35.86	Sqm.	35.8	1284	45.50	1631.5161
13	20 m.m thick plastering on new surface in cement mortar (1:4)	73.64	Sqm.	38.1	2806	95.00	6995.8
14	Dry stone pitching of Hammer dressed witch packing of voids of small stone including all lifts in require profile (23 cm depth)	0.00	Cum.	86		328.00	0
					78645	Total	292061.08

TOTAL	292061
Contingency %	8762
Say total Cost	300823
	300000.00

Prepared By

J.En.

Recommonded By

A.En.

Material Statement

NAME OF WORK Construction of M.M.S

Name of Scheme I.W.M.P

S.No.	ITEM	Quantity Cum / Sqm	Cement Begs	Sand Cum	Aggrigate Cum	Stone Cum
1	Cement Concrete (1:4:8)	29.55	94.55	13.30	26.59	–
2	Plaster in C.C. (1:4)	73.64	12.49	1.77	–	–
3	Massonary in Cement sand mortar 1:6	128.75	179.61	38.63	_	141.63
4	Pointing in Cement	35.86	1.48	0.15	_	_
5	Stone Kharanja in cement mortar (1:6)	11.76	16.4052	3.528	_	12.936
6	Cement concrete coping(1:2:4)	5.09	31.25	2.09	4.17	
7	Dry Stone Pitching	0.00	_	_	_	0.00
		TOTAL	335.78	59.45	30.77	154.56
		Say Bags or	336 16.80	MT.		

1	Cement	16.8	MT.
2	Sand	59.45	Cum.
3	Stones	154.56	Cum.
4	Aggregates	30.77	Cum.

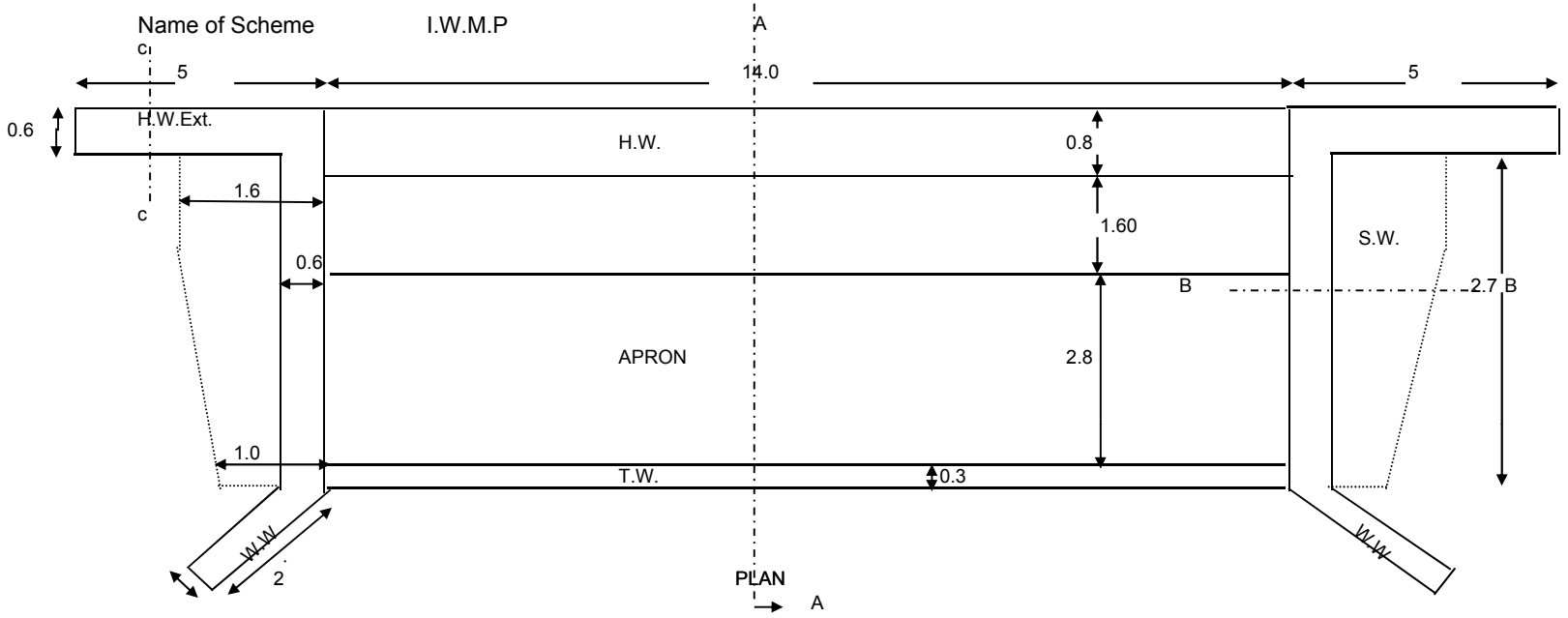
Prepared By Recommonded By

J.En. A.En.

TYPICAL PLAN AND SECTION OF M.M.S

NAME OF WORK Construction of M.M.S

Name of Scheme I.W.M.P



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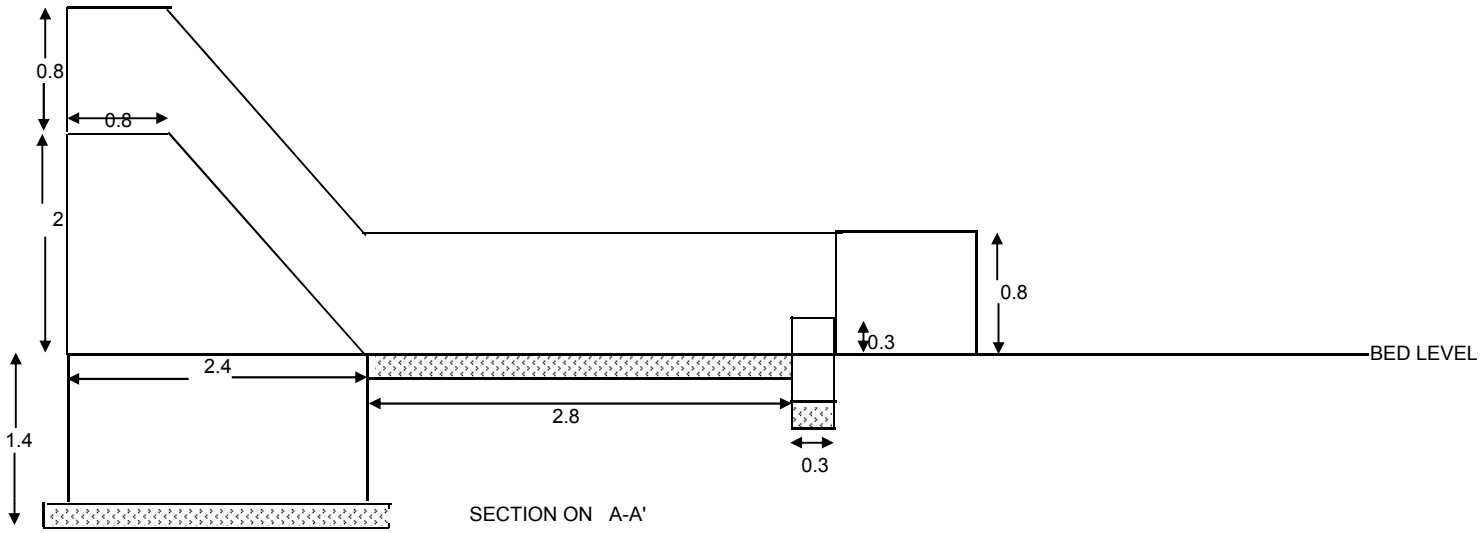
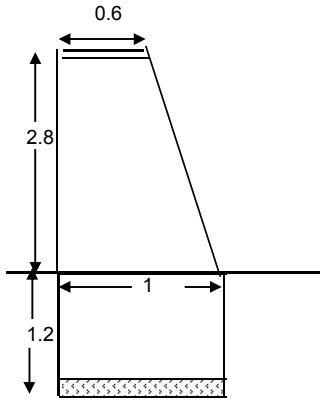
Recommended By

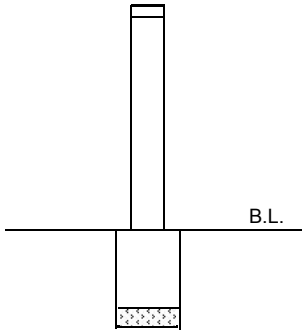
A.En.



SECTION ON A-A'



B-B' SECTION OF S.W.



C-C' SECTION ON H.W.Ext.

MODEL ESTIMATE NO. 18
TECHNICAL REPORT

NAME OF WORK Construction of M.M.S
District Udaipur
Name of Scheme I.W.M.P
Panchayat Samiti Kherwada

This project is taken in I.W.M.P Scheme.The proposed M.M.S will not only reduce velocity of the runoff but also prevent the gullies from furthure soil erosion at the same time it will be very much fruitful in recharging of downstream wells as well as it will increase the moisture content of the soil . So an it improve its productivity the retain water behind the structure can also be used for irrigation , and driniking water for anmimals . The cross section and L-section have been surveyed by dumpy level and catchment area has been taken from G.T. sheet / Revenue map.

Basic Data of Project

		=		
1	Catch ment Area	=	200	Ha.
2	Maxmium Rain fall intencity	=	3	Cm./hr.
3	General nature of catchment Area			
a.	Agricultural land	=	40	Ha.
b.	Pasture Land	=	160	Ha.
4	Height of crest above G.L.	=	1.5	M.
5	Flood lift	=	0.6	M.
6	Free board	=	0.2	M.
7	Top width of Head wall	=	0.8	M.
8	Bottom width of Head wall	=	2.40	M.
9	Width of concrete Bed	=	2.70	M.
10	Length of crest	=	13	M.
11	Percentage slope of land	=	5.71	
12	No. of well benifited	=		
13	No of farmer benifited	=		
a.	S.C.	=		
b.	S.T.	=		
c.	Others	=		
	Total	=		

14	Area to be benifited	=	
a.	S.C.	=	
b.	S.T.	=	
c.	Others	=	
	Total	=	
15		=	
a.	a)Raito of concrete at bed	=	
	(Cement : Sand :Aggregate)(1:4:8)	=	
b.	b) Raito of Masonary fondation & Super structure	=	
	Cement Mortar(1:6)	=	
c.	c) Raito of plastering and flush pointing of 25 mm.	=	
	Cement Mortar(1:6)	=	
d	Raito of Kharanja in cement mortar	=	
16	Cost of Project	=	250000.00
a.	Labour component	=	66838
b.	Material component	=	175841
c.	Contingency	=	7320

Rates are as per GKN 2011 Udaipur wef 1.4.2011

The Estimate are here with submitted for technical approvel an necessary action

Preapared By Recommended By

J.En. A.En.

Name of work Construction of M.M.S

Catch ment Area	200	Ha.
Maxmium Rain fall intencity	3	Cm/hr
General nature of catchment Area		
Agricultural land	40	
Pasture Land	160	
Height of crest above G.L.	1.5	
Length of crest	13	
Percentage slope of land	5.71	
No. of well benifited	12	
No of farmer benifited	70	
S.C.	25	
S.T.		
Others	45	
Total	70	
Area to be benifited		
S.C.	25	
S.T.	0	
Others	125	
Total	150	

GKN 200 SIROHI

Desgin calculation of M.M.S

A

Name of work-: Construction of M.M.S

I Available crest length 13 M

ii Total catchment Area 200 Ha. As per G.T.Sheet

iii Peak Runoff Rate

a) By Rational Method Use when catchment is <1300Ha.

$Q_p = 0.0276\ CIA$ Q=Run off in m3/sec.

C= Coefficient of runoff 0.5

$K = L^{3/2}/H^{1/2}$ I= Intensity of rain fall in cm/hr. 3

K = 8784.9 A= Catchment Area in Ha. 200

$Tc = 0.0195K^{0.77}$ L=Maxmium length of travel by runoff water in m. 2100

Tc = 21.22 H= Difference in elevation between most remote point and and outlet point in meter 120

Q_p= 0.0276 0.50 X 3 X 200

Q_p = 8.28

b) By weir formula

$Q = 1.71Lh^{3/2}$

$8.28 = 1.71 \quad 13\ h^{3/2}$

h 0.52

Say h= 0.6

3 Free Board hw= Wave height in meter

$F_b = 1.5h_w$ Df= Fetch length in meter 120 Meter.

$1.5X0.014(D_f)^{1/2}$

F_b= 0.23

Say Fb= 0.2

(B) STRUCTURAL DESGIN

1 Head wall

a) Height of Head wall H= 1.5

b) Top width(Tw) = $\frac{h}{(P-1)^{1/2}}$ P= Sp.ht. Of masonary 2.3

Tw= 0.53

Top width= 0.8

© Bottom width Bw Tw+0.8H

Bw= 2.00

So Bottom Width= 2.40 Meter

2 Head wall extension

a) Length= H+h+1+Fb

1.5 + 0.6 + 1 + = 3.10 Meter

say Length of Right side wall = 4 Meter

say Length of left side wall = 6.0 Meter

b) Height of Head Extensionwall = H+h+Fb

1.5 + 0.6 + 0.2 = 2.3 Meter

c) Top width 0.6 Meter

d) Bottom Width= 0.5(H+h) = 0.5(1.5 + 0.6)= 1.05 Meter

3 Side wall

a) Length= 1.75H+0.75h+0.45 = 3.53

But as per site condition= 2.7 Meter

b) Height:

At H.W.End= H+h+Fb 1.5 + 0.6 + 0.2 = 2.3 Meter

At W.W.End= h+fb = 0.6 + 0.2 = 0.8 Meter

c) Top width= 0.6 Meter

d) Bottom width=

At H.W.End= 0.6+0.4(H+h) 1.4 Meter

At W.W.End= 0.6+0.4(1.5h) 1.0 Meter

But taken as= 1.0 Meter

4 Wing wall

a) Height h+Fb 0.6 + 0.2 = 0.8 Meter

b) Length= 2.25h 2.25 X 0.6 = 1.35 Meter Say 2.00 M

c) Top width 0.6 Meter

Bottom width of wing wall 0.6 Meter

5 Apron

a) Length= 13 Meter

b) Width= H+h+Fb 1.5 + 0.6 + 0.2 2.3 Meter

c) Thickness 0.6 Meter

6 Toe wall

a) Length= 13 Meter

b) Width= 0.3 Meter

c) Height= 0.3 Meter

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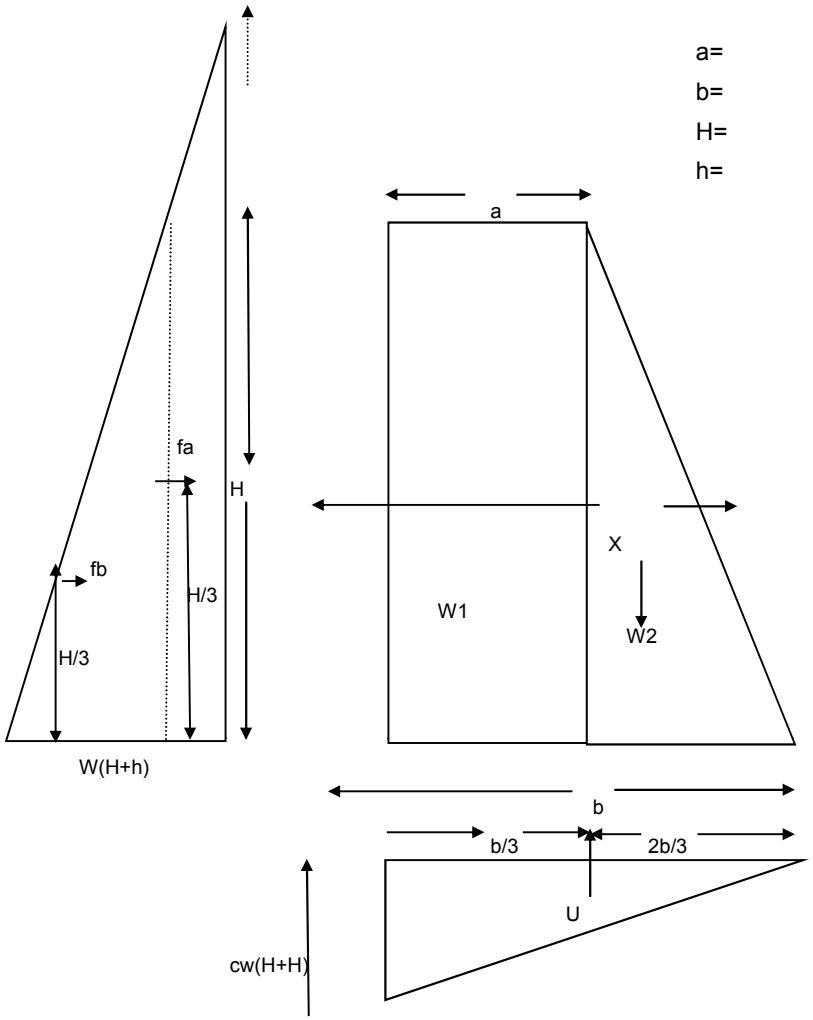
C= Coefficient of runoff		0.5
I= Intensity of rain fall in cm/hr.		3
A= Catchment Area in Ha.		200
L=Maxmium length of travel by runoff water in m.		2100
H= Difference in elevation between most remote point and and outlet point in meter		120
h= Head over the crest in mtr.	0.52	0.6
Df= Fetch length in meter		120
Fb =Free board	0.23	0.2
Top width Tw=	0.80	0.8
Height of cerst	1.5	1.5
Bottom Width of Head wall Bw	2.00	2.40
Lenth of Head wall extension Left=	3.10	5
Lenth of Head wall extension Right=		8.0
Length of side wall=	3.53	2.65
Bottom Width of Side wall	1.44	1
	1.0	
Length of wing wall	1.35	2

FREE BODY DIAGRAM



Specific Wt. Of masonary P= 2.3 T/m^3

Specific Wt. of water w= 1 T/m^3

Cofficient of uplift pressure c= 0.6

cofficient of friction atbed surface and creep length = 0.75

Weight of Dam-:

Weight of Dam-:

W_1= aHP

W_1= T 2.76 T

W_2= $\frac{b-a}{2}$ HP= 2.76 T

W= W_1+W_2= 2.76 + 2.76 = 5.52 T

Water pressure

At Depth h= P_1 = wh = 1 X 0.6 = 0.6 T/m^2

At Depth H+h= P2 = w(H+h) =

1(1.50 + 0.6) = 2.1 T/m^2

Force aching due to water pressure I.e. Net horizontal

Water force $P=\frac{P1+P2}{2}H=$ = 2.025 T/m^2

Horizontal water pressure at depth h =Fa= wHh= = 0.9 T

At depth H+h = Fb= $\frac{P2-P1}{2}H$ = 1.125 T

Force due to water column at crest F3 = wha= = 0.48 T

Up lift pressure U = 1/2 cwb (H+h) = 1.512 T

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J.En.

A.En.

STABILITY CHECKS

1 Safety against over turning

Over turning moment Mo = $Fa \frac{H}{2} + Fb \frac{H}{3} + u \frac{2}{3} b$

$0.90 \frac{1.5}{2} + 1.125 \frac{1.5}{3} + 1.51 \frac{2}{3} 2.40$

Mo= 3.657

Restoring Moment Mr = W1 (b-a/2) + W2 (b-a)2/3 + F3 (b-a/2)

Mr=

Mr= 5.52 + 2.944 + 0.960 = 9.42

Factor of safety $\frac{Mr}{Mo} = \frac{9.424}{3.657} = 2.577$ >1.5 Hence

Structure is safe against over turning

2 Safety against Rupture from tension

Net Vertical Pressure V = W1+W2+F3-U

2.76 + 2.76 + 0.48 - 1.512 = 4.488

Position of resultant where it cut the base

$X = \frac{\text{Excess moment(Mr-Mo)}}{\text{Net vertical force}} = \frac{9.424 - 3.657}{4.488} = 1.29$

TRUE

3 Safety against crusing

Eccentricity e = b/2-X

-0.085

Crusting stress at the toe of theHead wall

Pc= $\frac{V}{b}$ (1+_6e/b)

Pc= 1.47

Pc<<20 Hence it is safe

4 Safety against sliding

Net vertical Force V= 4.488 T

Restorin force = uV = 0.70 X 4.488 (u=0.65 to 0.75)

3.14 T

Sliding force Net horizontal force= Fa+Fb

0.9 + 1.125 = 2.025 T

Factor of safety = Restoring force / Sliding force = 3.142 / 2.025 = 1.55 >1.3 Hence

Hence it is safe

Preapared By

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Recommended By

A.En.

DETAILED ESTIMATE OF M.M.S

NAME OF WORK **Construction of M.M.S**

Name of Scheme **I.W.M.P**

General features of anicut-:

Height of crest above G.L.	1.5 M.		
Length of Crest	13 M.		
Depth of foundation for H.W. =	1.3 M.	Length of wing wall=	0.0 M.
Bottom width of H.W. =	2.4 M.	Height of Wing wall=	0.8 M.
Top of H.W =	0.8 M.	Bopttom width of Wing wall=	0.6 M.
Length of H.W.Ext =	4.0 M.	Depth of foundation for Wing wall =	0.9 M.
Height of H.W.Ext. at H.W. =	2.3 M.	Height of Toewall=	0.30 M.
Top Width of H.W.Ext.=	0.6 M.	Top & Bopttom width of Toe wall=	0.30 M.
Bottom width for H.W.Ext.	1.1 M.	Depth of foundation for Toe wall =	0.9 M.
Depth of foundation for H.W.Ext.=	1.3 M.	Thickness of Apron=	0.6 M.
Length of side wall=	2.7 M.	Width of Apron =	2.3 M.
Bottom Width of S.W.	1.00 M.	Berm for H.W Ext.	2.0 M.
Height of side wall at W.W.End=	0.80 M.		
Depth of foundation for side wall =	1.3 M.		

S.No.	Item		No	L	B	H	Quantity
1	Dag belling 5cm. To 7.5cm deep(As per item no. page of W.D.& S.C. BSR of Jodhpur circle					Total	
2	Cutting and clearing of ordinary jungle includling bushes shrubs and disposal as per instructrion of engineer incharge		0	X 0.0		=	0 Sqm.

S.No.	Item		No		L		B		H		Quantity	
3	Benching of the base and depositing the execavated material for bund for bund canal dressing etc. all components									Total		Cum.
4	Earth work excavation for bund in hard dry or moist soil including laying in layer of 15cm. Breaking of clods dressing to require profile with manual compaction including intial lift up to 1.5 m and lead up to 30M.									Total		Cum
5	Earth work excavation for foundation in dry or moist soil including ramming of bottom scrapping of sides dipodal of soil intial lift up to 1.5 m and lead up to 30M.											
		H.W.	1	X	13	X	2.7	X	1.3	=	45.63	Cum.
		H.W.Ext Left	1	X	4.0	X	1.1	X	3.3	=	13.86	Cum.
		H.W.Ext Right	1	X	6.0	X	1.1	X	1.3	=	8.19	Cum.
		S.W.	2	X	2.7	X	1.30	X	3.3	=	22.74	Cum.
		W.W.	2	X	0.0	X	0.6	X	0.90	=	0.00	Cum.
		Apron	1	X	13	X	2.3	X	0.60	=	17.94	Cum.
		T.W.	1	X	13	X	0.30	X	0.9	=	3.51	Cum.
										Total	111.87	Cum.
1	Execavation in Hard soil								30%		33.56	Cum.
2	Execavation in ordinary murram								40%		33.56	Cum.
3	Execavation in compacted murram								30%		44.75	Cum.
	Extra Lift of execavcated soil from foundation abiove 1.5 M.						70% of total soil				78.31	Cum

S.No.	Item		No		L		B		H		Quantity	
6	Providing and laying of cement concrete well mixed in cement mortar 1:4:8 laying in position complete excluding curing with maxmium size of aggregate up to 50 mm.											
		H.W.	1	X	13.0	X	2.7	X	0.3	=	10.53	Cum.
		H.W.Ext	1	X	4	X	1.1	X	0.3	=	1.26	Cum.
			1	X	6	X	1.1	X	0.3	=	1.89	Cum.
		S.W.	2	X	2.65	X	1.05	X	0.3	=	1.67	Cum.
		W.W.	2	X	0	X	0.6	X	0.3	=	0.00	Cum.
		Apron	1	X	13.0	X	2.3	X	0.3	=	8.97	Cum.
		T.W.	1	X	13.0	X	0.30	X	0.3	=	1.17	Cum.
										Total	25.49	Cum.
7	I n Foundation Stone masonary cement sand mortar(1:6) for above 30 cm. Thick wall											
		H.W.	1	X	13.0	X	2.4	X	1.0	=	31.20	Cum.
		H.W.Ext	1	X	4.0	X	1.1	X	1.0	=	4.20	Cum.
		H.W.Ext	1	X	6.0	X	1.1	X	1.0	=	6.30	Cum.
		S.W.	2	X	2.7	X	1.05	X	1.0	=	5.57	Cum.
		W.W.	4	X	0.0	X	0.6	X	0.6	=	0.00	Cum.
		T.W.	1	X	13.0	X	0.15	X	0.6	=	1.17	Cum.
										Total	48.44	Cum.
8	In super structure Stone masonary above 30 cm. Thick in cement sand mortar(1:6)											
		H.W.	1	X	13.0	X	1.6	X	1.5	=	31.20	Cum.
		H.W.Ext	1	X	4.0	X	0.83	X	2.3	=	7.59	Cum.
		H.W.Ext	1	X	6.0	X	0.83	X	2.3	=	11.39	Cum.
		S.W.	2	X	2.7	X	0.8	X	1.55	=	6.57	Cum.
		W.W.	2	X	0.0	X	0.6	X	0.8	=	0.00	Cum.
		T.W.	1	X	13.0	X	0.30	X	0.30	=	1.17	Cum.
										Total	57.92	Cum.

S.No.	Item		No		L		B		H		Quantity	
9	Stone Kharanja in cement mortar 1:6 for bed and floor including cpaction etc. complete apron											
		Apron	1	X	13.0	X	2.3	X	0.30		8.97	Cum.
										Total	8.97	Cum.
10	Providing and laying of cement concrete well mixed in cement mortar 1:2:4 laying in position complete excluding curing with maxmium size of aggregate up to 20 mm.											
		H.W.	1	X	13.0	X	0.8	X	0.05	=	0.52	Cum.
		H.W.Ext	1	X	4.0	X	0.6	X	0.05	=	0.12	Cum.
			1	X	6.0	X	0.6	X	0.05	=	0.18	Cum.
		S.W.	2	X	2.7	X	0.6	X	0.05	=	0.16	Cum.
		W.W.	2	X	0.0	X	0.6	X	0.05	=	0.00	Cum.
		T.W.	1	X	13.0	X	0.30	X	0.05	=	0.20	Cum.
		Apron	1	X	13.0	X	2.30	X	0.1	=	2.99	Cum.
										Total	4.16	Cum.
11	Flush pointing in cement motar (1:3)											
		H.W.	1	X	13.0	X	2.19			=	28.51	Sqm.
										Total	28.51	Sqm.
12	20 m.m thick plastering on new surface in cement mortar (1:4)											
		H.W.	1	X	13.0	X	1.5			=	19.50	Sqm.
		H.W.Ext.	1	X	4.0	X	2.3			=	9.20	Sqm.
		H.W.Ext.	1	X	6.0	X	2.3			=	13.80	Sqm.
		S.S	2	X	2.7	X	2.3			=	12.19	Sqm.
		W.W.	2	X	0.0	X	0.8			=	0.00	Sqm.
		T.W.	2	X	13.0	X	0.3			=	7.80	Sqm.
									Total	=	62.49	Sqm.
13	Dry stone pitching of Hammer dressed witch packing of voids of small stone including all lifts in require profile (23 cm depth)			13.0	X	0.00	X	0.23			0.00	Cum

Thickness of C.C. in (1:4:8)	0.3	M.
Length of Crest	13	M.
Depth of foundation for H.W. =	2.0	M
Bottom width of H.W. =	2.4	M
Top of H.W =	0.8	M
Length of H.W.Ext =	4.0	M
Height of H.W.Ext. at H.W. =	2.3	M
Top Width of H.W.Ext.=	0.6	M
Bottom width for H.W.Ext.	1.1	M
Depth of foundation for H.W.Ext.=	1.2	M
Length of side wall=	2.7	M
Bottom Width of S.W.	1.0	M
Height of side wall at W.W.End=	0.8	M
Depth of foundation for side wall =	1.2	M
Length of wing wall=	2.0	M
Height of Wing wall=	0.8	M
Bopttom width of Wing wall=	0.6	M
Depth of foundation for Wing wall =	0.9	M
Height of Toewall=	0.30	M
Top & Bopttom width of Toe wall=	0.3	M
Depth of foundation for Toe wall =	0.9	M
Thickness of Apron=	0.6	M
Width of Apron =	2.3	M

Abstract of Cost of M.M.S

NAME OF WORK **Construction of M.M.S**
Name of Scheme **I.W.M.P**

S.No.	Item	Quatity	Unit	Lab.rate	L.Amount	Rate	Amount
1	Dag belling 5cm. To 7.5cm deep(As per item no. page of W.D.&	0.00	Cum.			0.38	0
2	Cutting and clearing of ordinary jungle includling bushes shrubs and disposal as per instructrion of	0	Sqm.			0.40	0
3	Benching of the base and depositing the execavated material for bund for bund canal	0	Cum.				0
4	Earth work excavation for bund in hard dry or moist soil including laying in layer of 15cm. Breaking	0	Cum.			46.00	0
5	Earth work excavation for foundation in dry or moist soil including ramming of bottom	111.87	Cum.				0
	Execavation in Hard soil	33.56	Cum.	92.00	3088	92.00	3087.5292
	Execavation in ordinary murram	33.56	Cum.	134.0	4497	134.00	4497.0534
	Execavation in compacted murram	44.75	Cum.	178.0	7965	178.00	7964.9304
6	Extra Lift of execavcated soil from foundation abiove 1.5 M.	78.31	Cum.	11.00	861.4	11.00	861.3759
7	Providing and laying of cement concrete well mixed in cement mortar 1:4:8 laying in position complete excluding curing with	25.49	Cum.	315.1	8032	1881.0	47945.75
8	I n Foundation Stone masonary cement sand mortar(1:6) for	48.44	Cum.	327	15838	1403.00	67954.305
9	In super structure Stone masonary above 30 cm. Thick in cement sand mortar(1:6)	57.92	Cum.	327	18939	1403.00	81257.551

10	Stone Kharanja in cement mortar 1:6 for bed and floor including cpaction etc. complete apron	8.97	Cum.	327	2933	1403.0	12584.91
11	Providing and laying of cement concrete well mixed in cement mortar 1:2:4 laying in position complete excluding curing with	4.16	Cum.	308.3	1284	2552.0	10626.528
12	Flush pointing in cement motar (1:3)	28.51	Sqm.	35.8	1021	45.50	1297.2608
13	20 m.m thick plastering on new surface in cement mortar (1:4)	62.49	Sqm.	38.1	2381	95.00	5936.55
14	Dry stone pitching of Hammer dressed witch packing of voids of small stone including all lifts in require profile (23 cm depth)	0.00	Cum.	86		328.00	0
					66838	Total	244013.74

TOTAL	244014
Contingency %	7320
Say total Cost	251334
	250000.00

Prepared By

J.En.

Recommonded By

A.En.

Material Statement

NAME OF WORK Construction of M.M.S

Name of Scheme I.W.M.P

S.No.	ITEM	Quantity Cum / Sqm	Cement Begs	Sand Cum	Aggrigate Cum	Stone Cum
1	Cement Concrete (1:4:8)	25.49	81.57	11.47	22.94	–
2	Plaster in C.C. (1:4)	62.49	10.60	1.50	–	–
3	Massonary in Cement sand mortar 1:6	106.35	148.36	31.91	_	116.99
4	Pointing in Cement	28.51	1.17	0.12	_	_
5	Stone Kharanja in cement mortar (1:6)	8.97	12.51315	2.691	_	9.867
6	Cement concrete coping(1:2:4)	4.16	25.57	1.71	3.41	
7	Dry Stone Pitching	0.00	_	_	_	0.00
		TOTAL	279.78	49.39	26.36	126.85
		Say Bags or	280 14.00	MT.		

1	Cement	14	MT.
2	Sand	49.39	Cum.
3	Stones	126.85	Cum.
4	Aggregates	26.36	Cum.

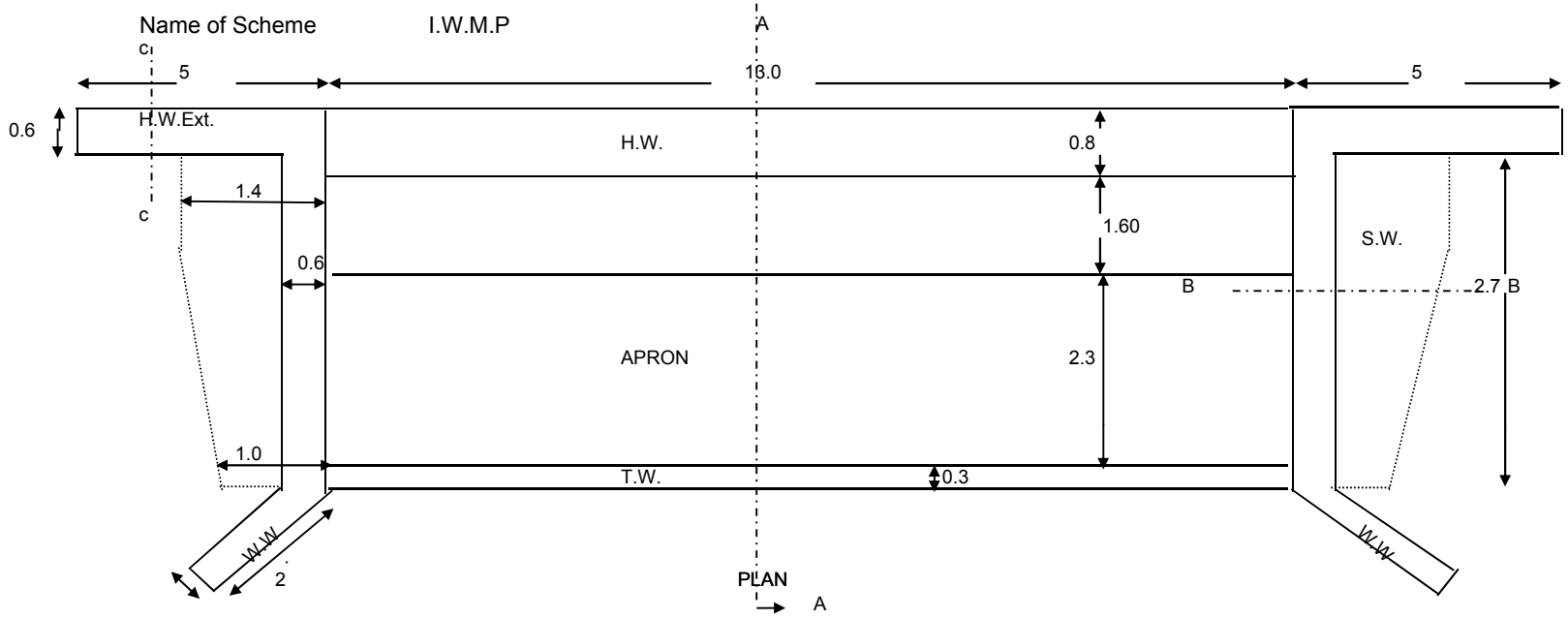
Prepared By Recommonded By

J.En. A.En.

TYPICAL PLAN AND SECTION OF M.M.S

NAME OF WORK Construction of M.M.S

Name of Scheme I.W.M.P



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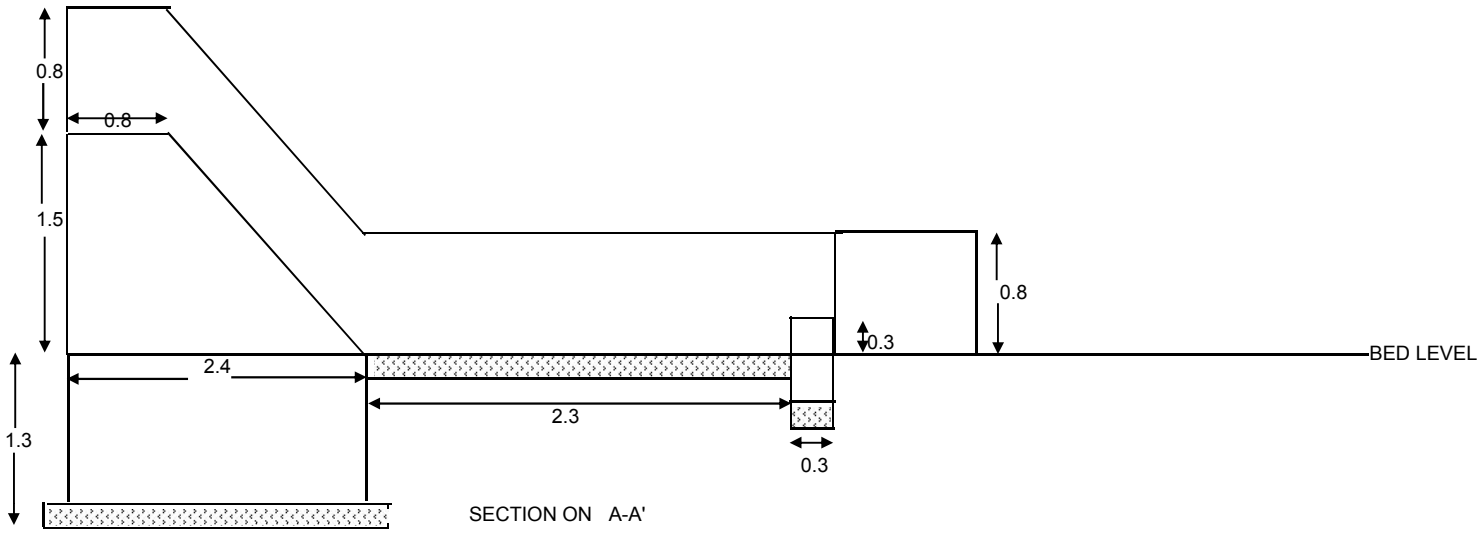
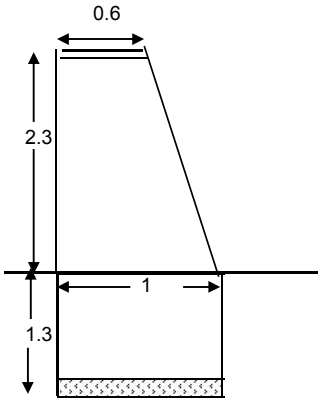
Recommended By

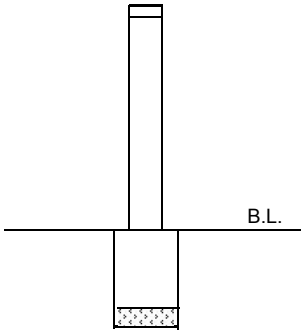
A.En.



SECTION ON A-A'



B-B' SECTION OF S.W.



C-C' SECTION ON H.W.Ext.

MODEL ESTIMATE NO. 19

TECHNICAL REPORT

NAME OF WORK Construction of M.M.S
District Udaipur
Name of Scheme I.W.M.P
Panchayat Samiti Kherwara

This project is taken in I.W.M.P Scheme.The proposed anicut will not only reduce velocity of the runoff but also prevent the gullies from furthure soil erosion at the same time it will be very much fruitful in recharging of downstream wells as well as it will increase the moisture content of the soil . So an it improve its productivity the retain water behind the structure can also be used for irrigation , and driniking water for anmimals . The cross section and L-section have been surveyed by dumpy level and catchment area has been taken from G.T. sheet / Revenue map.

Basic Data of Project

		=		
1	Catch ment Area	=	320	Ha.
2	Maxmium Rain fall intencity	=	3	Cm./hr.
3	General nature of catchment Area			
a.	Agricultural land	=	100	Ha.
b.	Pasture Land	=	220	Ha.
4	Height of crest above G.L.	=	2	M.
5	Flood lift	=	0.6	M.
6	Free board	=	0.2	M.
7	Top width of Head wall	=	0.8	M.
8	Bottom width of Head wall	=	2.40	M.
9	Width of concrete Bed	=	2.70	M.
10	Length of crest	=	23	M.
11	Percentage slope of land	=	1.90	
12	No. of well benifited	=		
13	No of farmer benifited	=		
a.	S.C.	=		
b.	S.T.	=		
c.	Others	=		
	Total	=		

14	Area to be benifited	=	
a.	S.C.	=	
b.	S.T.	=	
c.	Others	=	
	Total	=	
15		=	
a.	a)Raito of concrete at bed	=	
	(Cement : Sand :Aggregate)(1:4:8)	=	
b.	b) Raito of Masonary fondation & Super structure	=	
	Cement Mortar(1:6)	=	
c.	c) Raito of plastering and flush pointing of 25 mm.	=	
	Cement Mortar(1:6)	=	
d	Raito of Kharanja in cement mortar	=	
16	Cost of Project	=	500000.00
a.	Labour component	=	138374
b.	Material component	=	346508
c.	Contingency	=	15118

Rates are as per GKN 2011 Udaipur wef 1.4.2011

The Estimate are here with submitted for technical approvel an necessary action

Preapared By Recommended By

J.En. A.En.

Name of work Construction of M.M.S

Catch ment Area	320	Ha.
Maxmium Rain fall intencity	3	Cm/hr
General nature of catchment Area		
Agricultural land	100	
Pasture Land	220	
Height of crest above G.L.	2	
Length of crest	23	
Percentage slope of land	1.90	
No. of well benifited	12	
No of farmer benifited	70	
S.C.	25	
S.T.		
Others	45	
Total	70	
Area to be benifited		
S.C.	25	
S.T.	0	
Others	125	
Total	150	

GKN 200 SIROHI

Desgin calculation of M.M.S

A

Name of work-: Construction of M.M.S

I Available crest length 23 M

ii Total catchment Area 320 Ha. As per G.T.Sheet

iii Peak Runoff Rate

a) By Rational Method Use when catchment is <1300Ha.

$Q_p = 0.0276\ CIA$ Q=Run off in m3/sec.

C= Coefficient of runoff 0.5

$K = L^{3/2}/H^{1/2}$ I= Intensity of rain fall in cm/hr. 3

K = 30431.9 A= Catchment Area in Ha. 320

$Tc = 0.0195K^{0.77}$ L=Maxmium length of travel by runoff water in m. 4200

Tc = 55.23 H= Difference in elevation between most remote point and and outlet point in meter 80

Q_p= 0.0276 0.50 X 3 X 320

Q_p = 13.25

b) By weir formula

$Q = 1.71Lh^{3/2}$

$13.25 = 1.71 \quad 23\ h^{3/2}$

h 0.48

Say h= 0.6

3 Free Board hw= Wave height in meter

$F_b = 1.5h_w$ Df= Fetch length in meter 120 Meter.

$1.5X0.014(D_f)^{1/2}$

F_b= 0.23

Say Fb= 0.2

(B) STRUCTURAL DESGIN

1 Head wall

a) Height of Head wall H= 2

b) Top width(Tw) = $\frac{h}{(P-1)^{1/2}}$ P= Sp.ht. Of masonary 2.3

Tw= 0.53

Top width= 0.8

© Bottom width Bw Tw+0.8H

Bw= 2.40

So Bottom Width= 2.40 Meter

2 Head wall extension

a) Length= H+h+1+Fb

2 + 0.6 + 1 + = 3.60 Meter

say Length of Right side wall = 5 Meter

say Length of left side wall = 6.0 Meter

b) Height of Head Extensionwall = H+h+Fb

2 + 0.6 + 0.2 = 2.8 Meter

c) Top width 0.6 Meter

d) Bottom Width= 0.5(H+h) = 0.5(2 + 0.6)= 1.30 Meter

3 Side wall

a) Length= 1.75H+0.75h+0.45 = 4.4

But as per site condition= 2.7 Meter

b) Height:

At H.W.End= H+h+Fb 2 + 0.6 + 0.2 = 2.8 Meter

At W.W.End= h+fb = 0.6 + 0.2 = 0.8 Meter

c) Top width= 0.6 Meter

d) Bottom width=

At H.W.End= 0.6+0.4(H+h) 1.6 Meter

At W.W.End= 0.6+0.4(1.5h) 1.0 Meter

But taken as= 1.0 Meter

4 Wing wall

a) Height h+Fb 0.6 + 0.2 = 0.8 Meter

b) Length= 2.25h 2.25 X 0.6 = 1.35 Meter Say 2.00 M

c) Top width 0.6 Meter

Bottom width of wing wall 0.6 Meter

5 Apron

a) Length= 23 Meter

b) Width= H+h+Fb 2 + 0.6 + 0.2 2.8 Meter

c) Thickness 0.6 Meter

6 Toe wall

a) Length= 23 Meter

b) Width= 0.3 Meter

c) Height= 0.3 Meter

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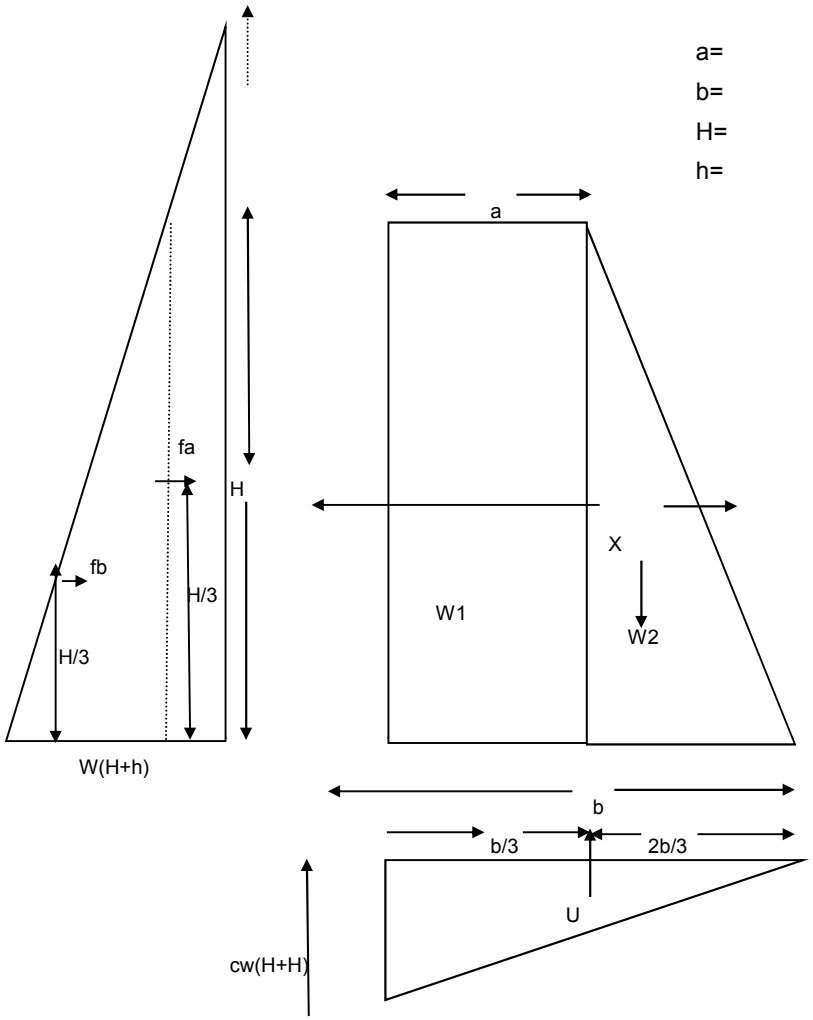
C= Coefficient of runoff		0.5
I= Intensity of rain fall in cm/hr.		3
A= Catchment Area in Ha.		320
L=Maxmium length of travel by runoff water in m.		4200
H= Difference in elevation between most remote point and and outlet point in meter		80
h= Head over the crest in mtr.	0.48	0.6
Df= Fetch length in meter		120
Fb =Free board	0.23	0.2
Top width Tw=	0.80	0.8
Height of cerst	2	2
Bottom Width of Head wall Bw	2.40	2.40
Lenth of Head wall extension Left=	3.60	5
Lenth of Head wall extension Right=		8.0
Length of side wall=	4.40	2.65
Bottom Width of Side wall	1.64	1
	1.0	
Length of wing wall	1.35	2

FREE BODY DIAGRAM



a=	0.8
b=	2.40
H=	2
h=	0.6

Specific Wt. Of masonary P= 2.3 T/m^3

Specific Wt. of water w= 1 T/m^3

Cofficient of uplift pressure c= 0.6

cofficient of friction atbed surface and creep length = 0.75

Weight of Dam-:

Weight of Dam-:

W_1= aHP

W_1= T 3.68 T

W_2= $\frac{b-a}{2}$ HP= 3.68 T

W= W_1+W_2= 3.68 + 3.68 = 7.36 T

Water pressure

At Depth h= P_1 = wh = 1 X 0.6 = 0.6 T/m^2

At Depth H+h= P2 = w(H+h) =

1(2.00 + 0.6) = 2.6 T/m^2

Force aching due to water pressure I.e. Net horizontal

Water force $P=\frac{P1+P2}{2}H=$ = 3.2 T/m^2

Horizontal water pressure at depth h =Fa= wHh= = 1.2 T

At depth H+h = Fb= $\frac{P2-P1}{2}H$ = 2 T

Force due to water column at crest F3 = wha= = 0.48 T

Up lift pressure U = 1/2 cwb (H+h) = 1.872 T

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STABILITY CHECKS

1 Safety against over turning

Over turning moment Mo = $Fa \frac{H}{2} + Fb \frac{H}{3} + u \frac{2}{3} b$

$1.20 \frac{2}{2} + 2.000 \frac{2}{3} + 1.87 \frac{2}{3} 2.40$

Mo= 5.529

Restoring Moment Mr = W1 (b-a/2) + W2 (b-a)2/3 + F3 (b-a/2)

Mr=

Mr= 7.36 + 3.925 + 0.960 = 12.2

Factor of safety $\frac{Mr}{Mo} = \frac{12.25}{5.529} = 2.215$ >1.5 Hence

Structure is safe against over turning

2 Safety against Rupture from tension

Net Vertical Pressure V = W1+W2+F3-U

3.68 + 3.68 + 0.48 - 1.872 = 5.968

Position of resultant where it cut the base

$X = \frac{\text{Excess moment(Mr-Mo)}}{\text{Net vertical force}} = \frac{12.25 - 5.529}{5.968} = 1.13$

TRUE

3 Safety against crusing

Eccentricity e = b/2-X

0.075

Crusting stress at the toe of theHead wall

Pc= $\frac{V}{b}$ (1+_6e/b)

Pc= 2.95

Pc<<20 Hence it is safe

4 Safety against sliding

Net vertical Force V= 5.968 T

Restorin force = uV = 0.70 X 5.968 (u=0.65 to 0.75)

4.1776 T

Sliding force Net horizontal force= Fa+Fb

1.2 + 2 = 3.2 T

Factor of safety = Restoring force / Sliding force = 4.178 / 3.2 = 1.306 >1.3 Hence

Hence it is safe

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A.En.

DETAILED ESTIMATE OF M.M.S

NAME OF WORK **Construction of M.M.S**

Name of Scheme **I.W.M.P**

General features of anicut-:

Length of Crest	23 M.		
Depth of foundation for H.W. =	2.0 M.	Length of wing wall=	0.0 M.
Bottom width of H.W. =	2.4 M.	Height of Wing wall=	0.8 M.
Top of H.W =	0.8 M.	Bopttom width of Wing wall=	0.6 M.
Length of H.W.Ext =	4.0 M.	Depth of foundation for Wing wall =	0.9 M.
Height of H.W.Ext. at H.W. =	2.8 M.	Height of Toewall=	0.30 M.
Top Width of H.W.Ext.=	0.6 M.	Top & Bopttom width of Toe wall=	0.30 M.
Bottom width for H.W.Ext.	1.3 M.	Depth of foundation for Toe wall =	0.9 M.
Depth of foundation for H.W.Ext.=	1.3 M.	Thickness of Apron=	0.6 M.
Length of side wall=	2.7 M.	Width of Apron =	2.8 M.
Bottom Width of S.W.	1.00 M.	Berm for H.W Ext.	2.0 M.
Height of side wall at W.W.End=	0.80 M.		
Depth of foundation for side wall =	2.0 M.		

S.No.	Item		No	L		B		H	Quantity
1	Dag belling 5cm. To 7.5cm deep(As per item no. page of W.D.& S.C. BSR of Jodhpur circle							Total	
2	Cutting and clearing of ordinary jungle includling bushes shrubs and disposal as per instructrion of engineer incharge			0	X	0.0		=	0 Sqm.

S.No.	Item		No	L	B	H		Quantity	
3	Benching of the base and depositing the execavated material for bund for bund canal dressing etc. all components							7 Model estimate Ashu Como	
							Total		Cum.
4	Earth work excavation for bund in hard dry or moist soil including laying in layer of 15cm. Breaking of clods dressing to require profile with manual compaction including intial lift up to 1.5 m and lead up to 30M.								
							Total		Cum
5	Earth work excavation for foundation in dry or moist soil including ramming of bottom scrapping of sides dipodal of soil intial lift up to 1.5 m and lead up to 30M.								
		H.W.	1	X 23	X 2.7	X 2.0	=	124.20	Cum.
		H.W.Ext Left	1	X 4.0	X 1.3	X 3.3	=	17.16	Cum.
		H.W.Ext Right	1	X 6.0	X 1.3	X 2.0	=	15.60	Cum.
		S.W.	2	X 2.7	X 1.30	X 4.0	=	27.56	Cum.
		W.W.	2	X 0.0	X 0.6	X 0.90	=	0.00	Cum.
		Apron	1	X 23	X 2.8	X 0.60	=	38.64	Cum.
		T.W.	1	X 23	X 0.30	X 0.9	=	6.21	Cum.
							Total	229.37	Cum.
1	Execavation in Hard soil					30%		68.81	Cum.
2	Execavation in ordinary murram					40%		68.81	Cum.
3	Execavation in compacted murram					30%		91.75	Cum.
	Extra Lift of execavcated soil from foundation abiove 1.5 M.				70% of total soil			160.56	Cum

S.No.	Item		No		L		B		H		Quantity	
6	Providing and laying of cement concrete well mixed in cement mortar 1:3:6 laying in position complete excluding curing with maxmium size of aggregate up to 50 mm.										7 Model estimate Ashu Como	
		H.W.	1	X	23.0	X	2.7	X	0.3	=	18.63	Cum.
		H.W.Ext	1	X	4	X	1.3	X	0.3	=	1.56	Cum.
			1	X	6	X	1.3	X	0.3	=	2.34	Cum.
		S.W.	2	X	2.65	X	1.30	X	0.3	=	2.07	Cum.
		W.W.	2	X	0	X	0.6	X	0.3	=	0.00	Cum.
		Apron	1	X	23.0	X	2.8	X	0.3	=	19.32	Cum.
		T.W.	1	X	23.0	X	0.30	X	0.3	=	2.07	Cum.
										Total	45.99	Cum.
7	I n Foundation Stone masonary cement sand mortar(1:6) for above 30 cm. Thick wall											
		H.W.	1	X	23.0	X	2.4	X	1.7	=	93.84	Cum.
		H.W.Ext	1	X	4.0	X	1.3	X	1.0	=	5.20	Cum.
		H.W.Ext	1	X	6.0	X	1.3	X	1.0	=	7.80	Cum.
		S.W.	2	X	2.7	X	1.30	X	1.7	=	11.71	Cum.
		W.W.	4	X	0.0	X	0.6	X	0.6	=	0.00	Cum.
		T.W.	1	X	23.0	X	0.15	X	0.6	=	2.07	Cum.
										Total	120.62	Cum.
8	In super structure Stone masonary above 30 cm. Thick in cement sand mortar(1:6)											
		H.W.	1	X	23.0	X	1.6	X	2	=	73.60	Cum.
		H.W.Ext	1	X	4.0	X	0.95	X	2.8	=	10.64	Cum.
		H.W.Ext	1	X	6.0	X	0.95	X	2.8	=	15.96	Cum.
		S.W.	2	X	2.7	X	0.8	X	1.80	=	7.63	Cum.
		W.W.	2	X	0.0	X	0.6	X	0.8	=	0.00	Cum.
		T.W.	1	X	23.0	X	0.30	X	0.30	=	2.07	Cum.
										Total	109.90	Cum.

S.No.	Item		No		L		B		H		Quantity	
9	Stone Kharanja in cement mortar 1:6 for bed and floor including cpaction etc. complete apron										7 Model estimate Ashu Como	
		Apron	1	X	23.0	X	2.8	X	0.30		19.32	Cum.
										Total	19.32	Cum.
10	Providing and laying of cement concrete well mixed in cement mortar 1:2:4 laying in position complete excluding curing with maxmium size of aggregate up to 20 mm.											
		H.W.	1	X	23.0	X	0.8	X	0.05	=	0.92	Cum.
		H.W.Ext	1	X	4.0	X	0.6	X	0.05	=	0.12	Cum.
			1	X	6.0	X	0.6	X	0.05	=	0.18	Cum.
		S.W.	2	X	2.7	X	0.6	X	0.05	=	0.16	Cum.
		W.W.	2	X	0.0	X	0.6	X	0.05	=	0.00	Cum.
		T.W.	1	X	23.0	X	0.30	X	0.05	=	0.35	Cum.
		Apron	1	X	23.0	X	2.80	X	0.1	=	6.44	Cum.
										Total	8.16	Cum.
11	Flush pointing in cement motar (1:3)											
		H.W.	1	X	23.0	X	2.56			=	58.88	Sqm.
										Total	58.88	Sqm.
12	20 m.m thick plastering on new surface in cement mortar (1:4)											
		H.W.	1	X	23.0	X	2			=	46.00	Sqm.
		H.W.Ext.	1	X	4.0	X	2.8			=	11.20	Sqm.
		H.W.Ext.	1	X	6.0	X	2.8			=	16.80	Sqm.
		S.S	2	X	2.7	X	2.8			=	14.84	Sqm.
		W.W.	2	X	0.0	X	0.8			=	0.00	Sqm.
		T.W.	2	X	23.0	X	0.3			=	13.80	Sqm.
									Total	=	102.64	Sqm.
13	Dry stone pitching of Hammer dressed witch packing of voids of small stone including all lifts in require profile (23 cm depth)		23.0	X	0.00	X	0.23				0.00	Cum

Thickness of C.C. in (1:4:8)	0.3 M.	
Length of Crest	23 M.	7 Model estimate Ashu Como
Depth of foundation for H.W. =	2.0 M	
Bottom width of H.W. =	2.4 M	
Top of H.W =	0.8 M	
Length of H.W.Ext =	5.0 M	
Height of H.W.Ext. at H.W. =	2.8 M	
Top Width of H.W.Ext.=	0.6 M	
Bottom width for H.W.Ext.	1.3 M	
Depth of foundation for H.W.Ext.=	1.2 M	
Length of side wall=	2.7 M	
Bottom Width of S.W.	1.0 M	
Height of side wall at W.W.End=	0.8 M	
Depth of foundation for side wall =	1.2 M	
Length of wing wall=	2.0 M	
Height of Wing wall=	0.8 M	
Bopttom width of Wing wall=	0.6 M	
Depth of foundation for Wing wall =	0.9 M	
Height of Toewall=	0.30 M	
Top & Bopttom width of Toe wall=	0.3 M	
Depth of foundation for Toe wall =	0.9 M	
Thickness of Apron=	0.6 M	
Width of Apron =	2.8 M	

Abstract of Cost of M.M.S

NAME OF WORK **Construction of M.M.S**
Name of Scheme **I.W.M.P**

S.No.	Item	Quatity	Unit	Lab.rate	L.Amount	Rate	Amount
1	Dag belling 5cm. To 7.5cm deep(As per item no. page of W.D.&	0.00	Cum.			0.38	0
2	Cutting and clearing of ordinary jungle includling bushes shrubs and disposal as per instructrion of	0	Sqm.			0.40	0
3	Benching of the base and depositing the execavated material for bund for bund canal	0	Cum.				0
4	Earth work excavation for bund in hard dry or moist soil including laying in layer of 15cm. Breaking	0	Cum.			46.00	0
5	Earth work excavation for foundation in dry or moist soil including ramming of bottom	229.37	Cum.				0
	Execavation in Hard soil	68.81	Cum.	92.00	6330.6	92.00	6330.612
	Execavation in ordinary murram	68.81	Cum.	134.0	9220.7	134.00	9220.674
	Execavation in compacted murram	91.75	Cum.	178.0	16331	178.00	16331.144
6	Extra Lift of execavcated soil from foundation abiove 1.5 M.	160.56	Cum.	11.00	1766.1	11.00	1766.149
7	Providing and laying of cement concrete well mixed in cement mortar 1:3:6 laying in position complete excluding curing with	45.99	Cum.	315.1	14491	1881.0	86501.547
8	I n Foundation Stone masonary cement sand mortar(1:6) for	120.62	Cum.	327	39444	1403.00	169234.07
9	In super structure Stone masonary above 30 cm. Thick in cement sand mortar(1:6)	109.90	Cum.	327	35938	1403.00	154192.51

10	Stone Kharanja in cement mortar 1:6 for bed and floor including cpaction etc. complete apron	19.32	Cum.	327	6317.6	1403.0	27105.96
11	Providing and laying of cement concrete well mixed in cement mortar 1:2:4 laying in position complete excluding curing with	8.16	Cum.	308.3	2517	2552.0	20834.528
12	Flush pointing in cement motar (1:3)	58.88	Sqm.	35.8	2107.9	45.50	2679.04
13	20 m.m thick plastering on new surface in cement mortar (1:4)	102.64	Sqm.	38.1	3910.6	95.00	9750.8
14	Dry stone pitching of Hammer dressed witch packing of voids of small stone including all lifts in require profile (23 cm depth)	0.00	Cum.	86		328.00	0
					138374	Total	503947.03

TOTAL	503947
Contingency %	15118
Say total Cost	519065
	500000.00

Prepared By

J.En.

Recommonded By

A.En.

Material Statement

NAME OF WORK Construction of M.M.S

Name of Scheme I.W.M.P

S.No.	ITEM	Quantity Cum / Sqm	Cement Begs	Sand Cum	Aggrigate Cum	Stone Cum
1	Cement Concrete (1:4:8)	45.99	147.16	20.69	41.39	–
2	Plaster in C.C. (1:4)	102.64	17.41	2.46	–	–
3	Massonary in Cement sand mortar 1:6	230.53	321.58	69.16	_	253.58
4	Pointing in Cement	58.88	2.43	0.25	_	_
5	Stone Kharanja in cement mortar (1:6)	19.32	26.9514	5.796	_	21.252
6	Cement concrete coping(1:2:4)	8.16	50.13	3.35	6.69	
7	Dry Stone Pitching	0.00	_	_	_	0.00
		TOTAL	565.65	101.71	48.08	274.83
		Say Bags or	566 28.30	MT.		

1	Cement	28.3	MT.
2	Sand	101.71	Cum.
3	Stones	274.83	Cum.
4	Aggregates	48.08	Cum.

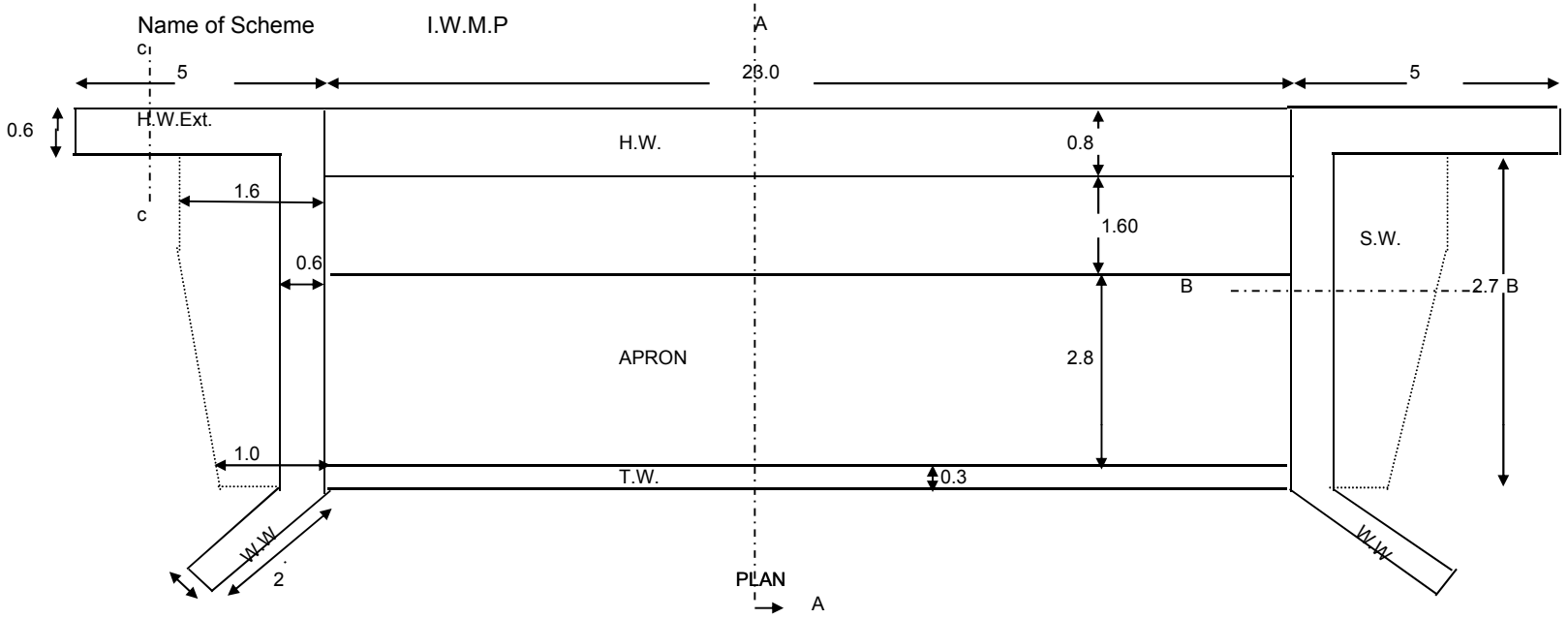
Prepared By Recommonded By

J.En. A.En.

TYPICAL PLAN AND SECTION OF M.M.D

NAME OF WORK Construction of M.M.S

Name of Scheme I.W.M.P

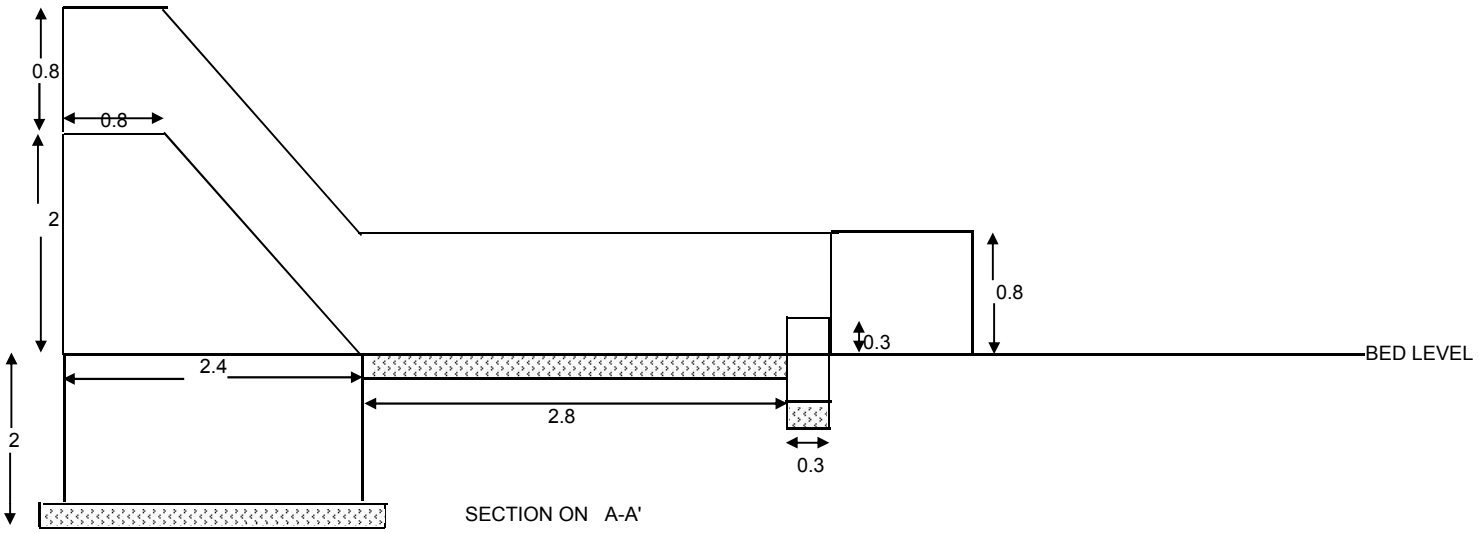


Preapared By

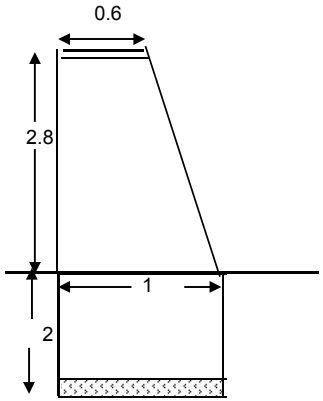
J.En.

Recommended By

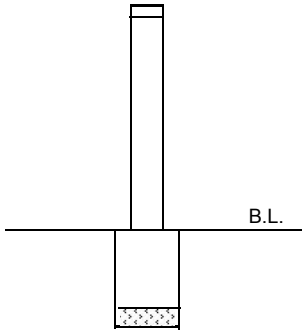
A.En.



SECTION ON A-A'



B-B' SECTION OF S.W.



C-C' SECTION ON H.W.Ext.

Model Estimate No. 20

WHEAT(Triticum estivum)

Demostration area 1 Ha

S.No.	Material name & Qty.		Rate	Total amount
1	Seed	125 Kg	20/Kg.	2500
2	Fertiliger	DAP-75 kg	14/Kg.	1050
		UREA-125 kg	6/Kg.	750
3	Seed treatment	Chloropyriphose-1.25 l	350 /Lit	437.5
4	Control of Weed	2,4-D 1.25 Lt	500/Lt.	625
		Total		5362.5

URAD(BLACK GRAM)

Demostration area 1 Ha

S.No.	Material name & Qty.		Rate.	Total amount
1	Seed	20 Kg	80/Kg.	1600
2	Fertiliger(DAP)	75 kg	14/Kg.	1050
3	Insecticide-Monocrotophose	1.25 l	600 /Lit	750
4	P.S.B. Culture	1 Packate	10/No	10
5	Rhizobium Culture	1 Packate	10/No	10
		Total		3420

MOONG(GREEN GRAM)

Demostration area 1 Ha

S.No.	Material name & Qty.		Rate	Total amount
1	Seed	20 Kg	80/Kg.	1600
2	Fertiliger(DAP)	75 kg	14/Kg.	1050
3	Insecticide-Monocrotophose	1.25 l	600 /Lit	750
4	P.S.B. Culture	1 Packate	10/No	10
5	Rhizobium Culture	1 Packate	10/No	10
		Total		3420

Prepared by

J.En.

Checked & submitted by

A . En
W . D . & S . C .

MAIZE(ZEA MAIZE)

Demostration area 1 Ha

S.No.	Material name & Qty.		Rate	Total amount
1	Seed	25 Kg	50/Kg.	1250
2	Fertiliger	DAP-75 kg	14/Kg.	1050
		UREA-125 kg	6/Kg.	750
3	Insecticide	Methyal parathian 25 kg	20/Kg.	500
4	Seed treatment	P.S.B. 1 Packate	10/No.	10
		Azotobactar 1 Packate	6/No.	6
		Total		3566

MUSTARD

Demostration area 1 Ha

S.No.	Material name & Qty.		Rate	Total amount
1	Seed	5 Kg	50/Kg.	250
2	Fertiliger	DAP-75 kg	14/Kg.	1050
		UREA-125 kg	6/Kg.	750
		GYPSUM 250 Kg	0.7/Kg.	175
3	Insecticide	Methyal parathian 25 kg	20/Kg.	500
		Dimethoate-1.25 Lt	400 /lit	500
		Total		3225

GRAM(CHICK PEA)

Demostration area 1 Ha

S.No.	Material name & Qty.		Rate	Total amount
1	Seed	80 Kg	40/Kg.	3200
2	Fertiliger	DAP-75 kg	14/Kg.	1050
3	Insecticide	Methyal parathian 25 kg	20/Kg.	500
		Monocrotophose-1.25 L	600/ lit	750
4	Seed treatment	Trichoderma 500 gm	150/Kg.	75
		Total		5575

Prepared by

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W . D . & S . C .

Model Estimate No. 21

Estimate of Construction of Vermi Composting Unit

Size of Unit- 5*1.2*0.45

S.No.	Particulars	Dimension						Rate	Amount
		Nos.	L	W	D	Qty	Unit		
1	Excavation work in all kinds of soil (Page 1, item no. 2(B))	1	5.10	1.30	0.3	1.99	cum	92	182.99
2	Providing & laying R.R. stone kharanja in cement mortar 1:6 in one course 23 cm thick (Page 14, item no.100(B))	1	5.10	1.30		6.63	sqm	241	1597.83
3	Cement Concrete in M 10 grade nominal mix with graded stone aggregate 20 mm (Page 18, item no.123)	1	5.10	1.30	0.08	0.53	cum	2552	1353.58
4	Brick masonry in ration 1:6	2	5.00	0.23	0.45	1.04			
		2	0.74	0.23	0.45	0.15			
		1	0.74	0.1	0.45	0.03			
	(Page 3, item no.16(B))					**1.22**	cum	2263	2764.21
5	Cement coping on brick walls in M 10 grade nominal mix with graded stone aggregate 20 mm	2	5	0.23	0.025	0.06			
		2	0.74	0.23	0.025	0.01			
		1	0.74	0.1	0.025	0.0019			
	(Page 18, item no.123)					**0.07**	cum	2552	173.18
6	Cement Plaster in ratio of 1:4 of 20 mm (Page 9, item no.67(B))								
	outer side	2	5	0.45		4.5			
		2	1.2	0.45		1.08			
	Inner side	4	1.77	0.45		3.186			
		4	0.74	0.45		1.332			
						10.10	sqm	95	959.31
	Sub-Total (A)								**7031.10**
7	Add 10% for transportation of small quantity material, water and other equipment at the site. (Page G-59)								703.11
	Sub-Total (B)								**7734.21**
8	Shed of bamboo or local material available in the area with 10 poles including fitting at the site.								1800.00
9	Cost of Earth worms - 12 kg					12		**100**	1200.00
10	Cost of equipment (*Punja*)								85.00
11	Cost of Water can (*Jharra*)								350.00
12	Hand Glooves								125.00
13	Shieve (*Chalna*)								500.00
	Sub-Total (C)								**11794.21**
14	add 3 % contigency								353.83
	Grand Total								**12148.03**

The above rates are based on GKN'11 ZP Udaipur

Prepared by

J.En.

Checked & submitted by

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W . D . & S . C .

Model Estimate No. 22

Estimate of Construction of Compost pit Unit

Size of Unit- 3*2*1

S.No.	Particulars	Dimension						Rate	Amount
		Nos.	L	W	D	Qty	Unit		
1	Excavation work in all kinds of soil (Page 1, item no. 2(B))	1	3.00	2.00	1.00	6.00	cum	92	552.00
2	Provison of one bag SSP					2	Bag	225	450.00
	Sub-Total (C)								**1002.00**
3	add 3 % contigency								30.06
	Grand Total								**1032.06**

The above rates are based on GKN'11 ZP Udaipur

Prepared by

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Checked & submitted by

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W . D . & S . C .

Model Estimate No. 23

Estimate of Construction of manger unit

Size of Unit-2*1*0.45

S.No.	Particulars	Dimension						Rate	Amount
		Nos.	L	W	D	Qty	Unit		
1	Cement Concrete in M 12 grade nominal mix with graded stone aggregate 12 mm (1:2:4) (Page 18, item no.123)	1	2.00	1.00	0.076	0.15	cum	2552	387.90
2	Brick masonry in ratio 1:6 with 112 m.m thick wall	2	2.00		0.45	1.80			
		2	1.00		0.45	0.90			
	(Page 3, item no.18(A))				Total	**2.70**	Sq.m	306	826.20
3	Cement Plaster in ratio of 1:6 of 20 mm (Page 9, item no.68(B))								
	outer side	2	2.00		0.45	1.80			
	Inner side	2	1.80		0.45	1.62			
	outer side	2	1.00		0.45	0.90			
	Inner side	2	0.80		0.45	0.72			
					Total	**5.04**	sqm	82	413.28
	Sub-Total (A)								**1627.38**
	add 3 % contigency								48.82
	Grand Total								**1676.21**
								Say	**1676**

The above rates are based on GKN'11 ZP Udaipur

Prepared by

J.En.

Checked & submitted by

A . En
W . D . & S . C .

v/;k; & 4

ih vkj , vH;kl

tyxg.k lfefr dk uke & ekdjokMk] mn;iqj lqd.M [kjokMk

Ø-l-	fooj.k	dkuiqj	dkrjokl	Mjh	lqybi	cjkBh ckg.kku	cjkBh Hkhyku	Tokl
1	ihvkj , vHk;kl djkuk dk fnukd	16-9-11	18-8-11	15-7-11	21-8-11	8-9-11	10-7-11	28-8-11
2	ihvkj , vH;kl dk LFkku	xke ipk;r	xke ipk;r	xke ipk;r	xke ipk;r	xke ipk;r	xke ipk;r	xke ipk;r

PRA EXERCISE PHOTO G.P. KATARVAS

PRA EXERCISE PHOTO G.P. SULAI

EPA WORKS OF IWMP V – MOKARWARA (KHERWARA)

EPA activity
Chabutara Nirman Kanpur

EPA activities Shamshan
Ghat Nirman - Sulai

EPA activities
Bus Stant-Deri

P.R.A. Activity

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dy xko 22
Lohd`r jkf'k **664.56**

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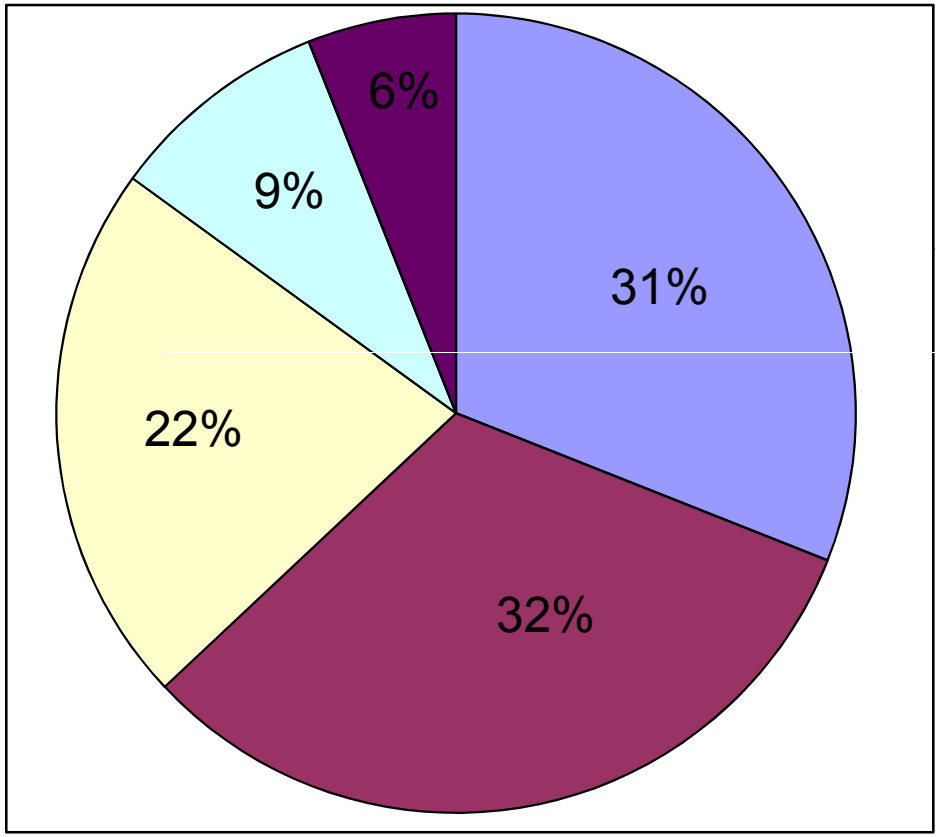

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3	ou Hkfe	0	0.00
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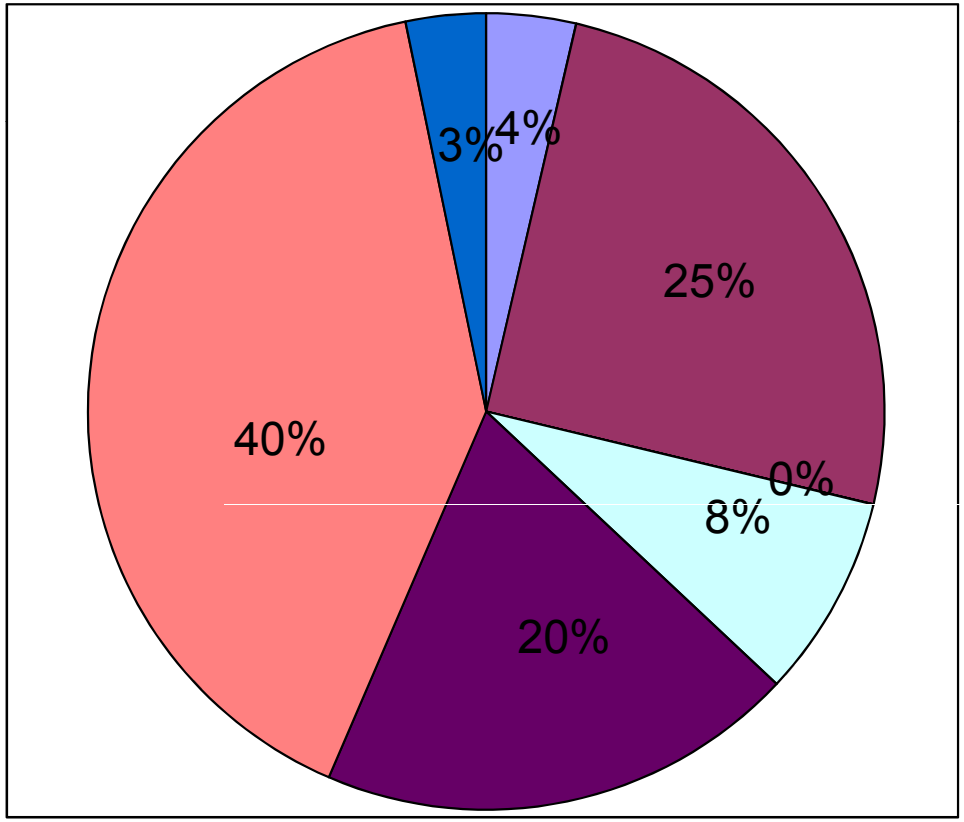

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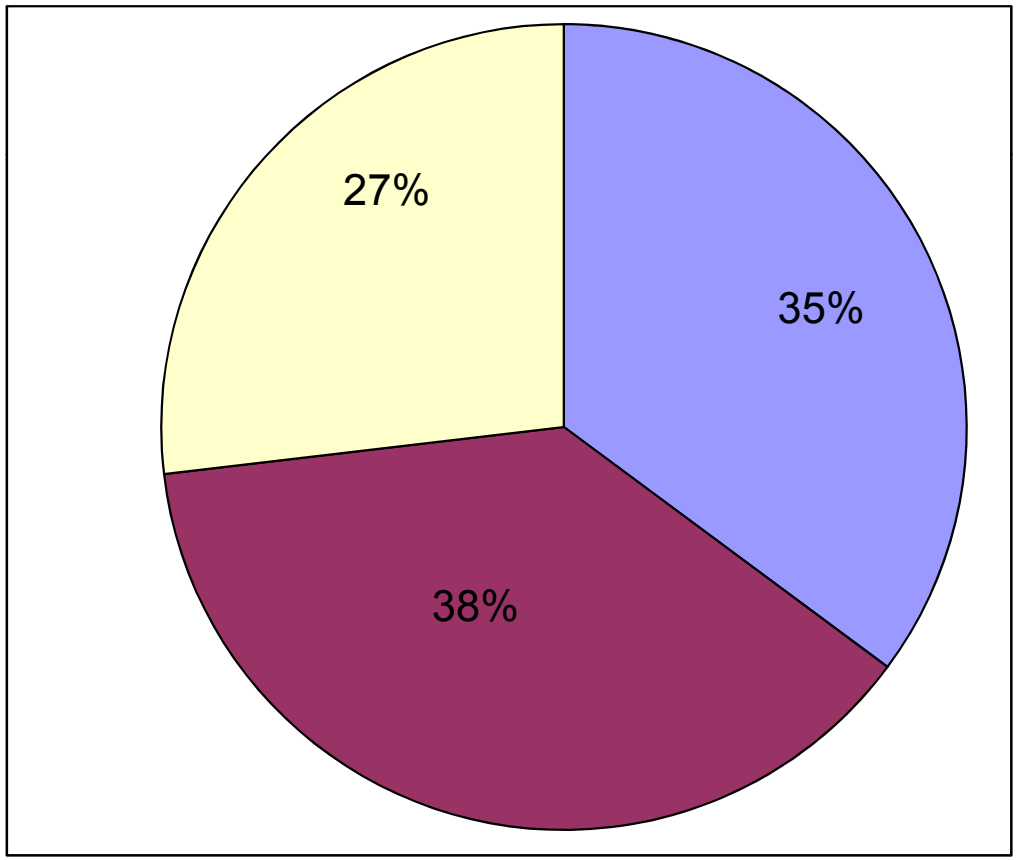

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1	lk{kj	51
2	vui<	30
3	10oh rd	5
4	1 l 8oh rd	12
5	1 Lrkud	2