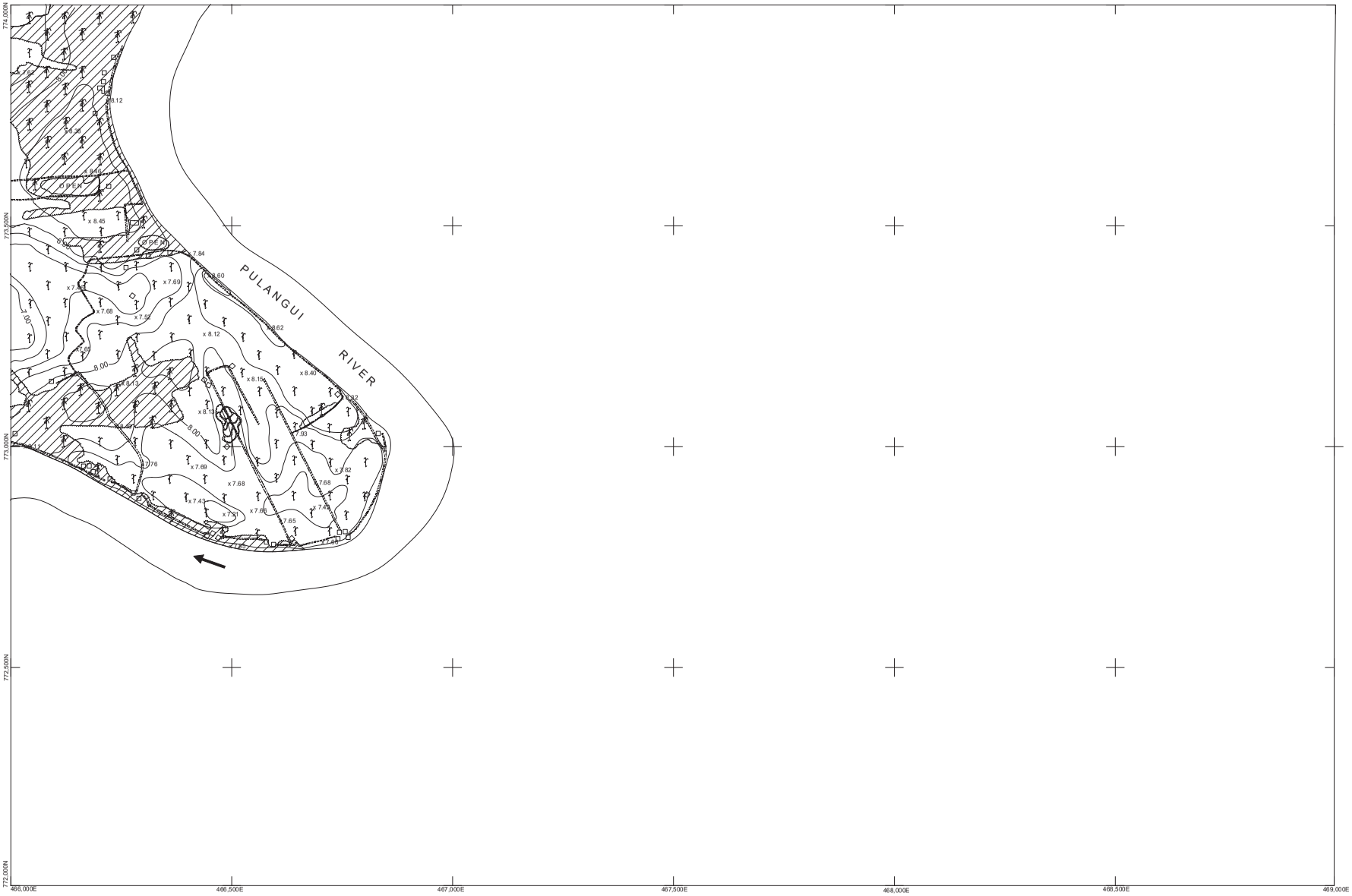

					18	
					21	
1	2	28 3	29 4	30 5	31 6	7
14	13	12	11	10	9	8
15	16	17	18	19	20	21
	27	26	25	24	23	22
	28	29	30	31	32	
				34	33	

INDEX TO ADJOINING SHEETS

LEGENDS

- PROPOSED HEADWORKS / DIVERSION WORKS
- EXISTING HEADWORKS / DIVERSION WORKS
- MAIN CANAL (EXISTING)
- MAIN CANAL (PROPOSED)
- LATERAL /SUB-LATERAL (EXISTING)
- LATERAL /SUB-LATERAL (PROPOSED)
- EXISTING MAIN FARM DITCHES (MFD OR SFD)
- MAIN FARM DITCH (PROPOSED)
- SUPPLEMENTARY FARM DITCH (PROPOSED) (ARROW PIN LOCATION SIGNIFIES AREA SERVED)
- MAIN DRAINS / EXISTING FARM DRAINS, DRAINAGE DITCHES
- MAIN DRAINS / PROPOSED FARM DRAINS DRAINAGE DITCHES (ARROW PIN LOCATION SIGNIFIES AREA DRAINED)
- LIMIT OF TURNOUT AREA
- EXISTING CANAL STRUCTURE
- PROPOSED CANAL STRCTURE
- PIPELINE / LONG STRUCTURES (TUNNEL / SIPHON / FLUMES / CUT & COVER)
- EXISTING TURNOUT WITH MFD/SFD
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- PROPOSED SERVICE ROAD (ALONG EXISTING MC, LATERALS OR SUB LATERALS)
- PROPOSED ACCESS ROAD
- RAILWAYS
- EXISTING NATIONAL ROAD / HIGHWAYS / PROVINCIAL ROADS
- EXISTING BRGY. ROADS /STREETS / OTHER ROADS
- TRAIL
- EXCLUDED AREA
- LIMIT OF IRRIGABLE / PROJECT AREA
- CREEKS / RIVERS / NATURAL WATERWAYS
- ROTATIONAL AREA PRESENTATION
- ROTATIONAL UNIT PRESENTATION

SCALE 1 : 4,000

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REV. NO.	DATE	NATURE OF REVISION	BY	CHECKED	RECOM	APPROVED N/A
3						
2						
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REPUBLIC OF THE PHILIPPINES

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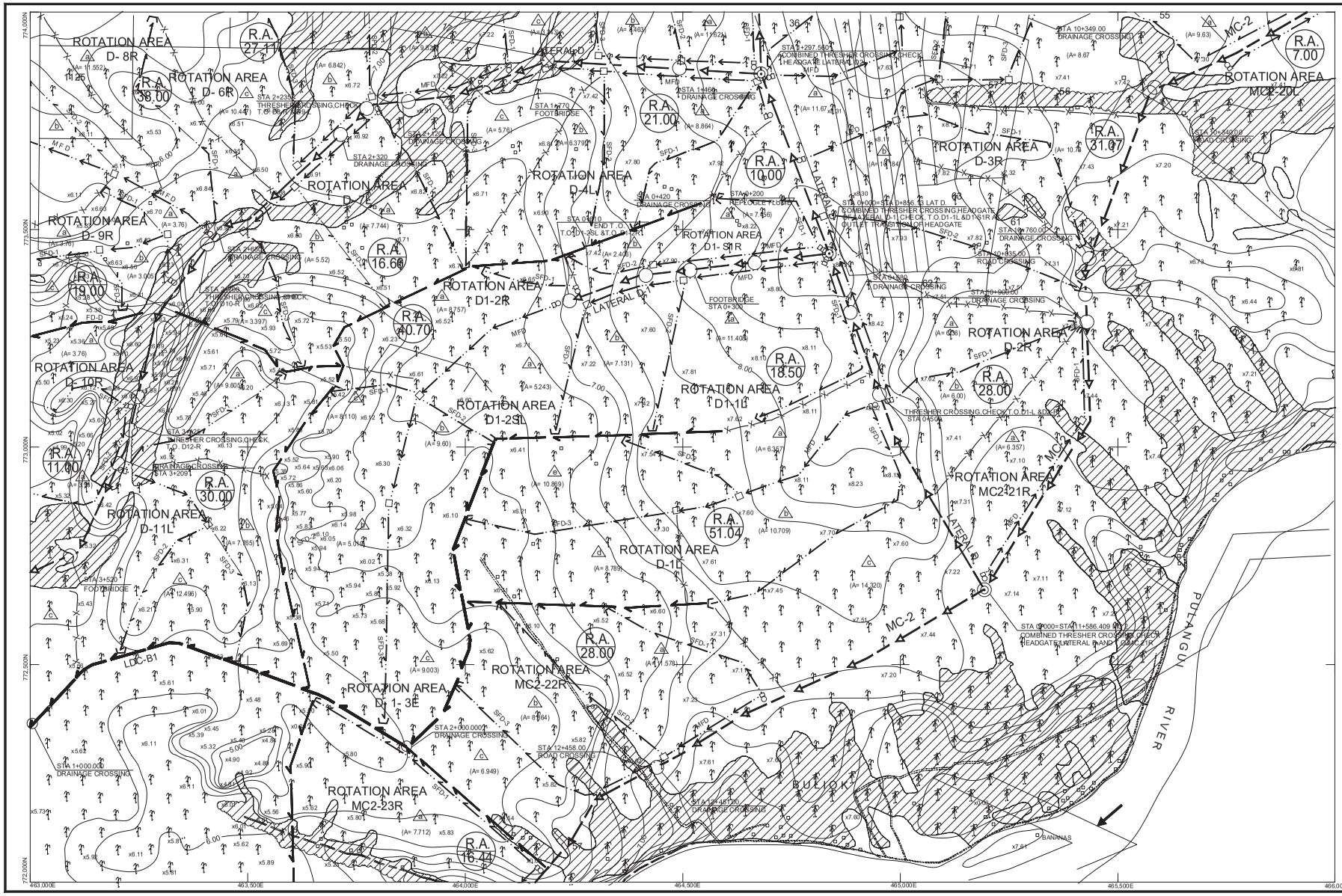

					18	
					21	
1	2	28 / 3	29 / 4	30 / 5	31 / 6	7
14	13	12	11	10	9	8
15	16	17	18	19	20	21
	27	26	25	24	23	22
	28	29	30	31	32	
				34	33	

INDEX TO ADJOINING SHEETS

LEGENDS

- PROPOSED HEADWORKS / DIVERSION WORKS
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- RAILWAYS
- EXISTING NATIONAL ROAD / HIGHWAYS / PROVINCIAL ROADS
- EXISTING BRGY. ROADS /STREETS / OTHER ROADS
- TRAIL
- EXCLUDED AREA
- LIMIT OF IRRIGABLE / PROJECT AREA
- CREEKS / RIVERS / NATURAL WATERWAYS
- RAA No. — ROTATIONAL AREA PRESENTATION
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SCALE 1 : 4,000

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REV NO.	DATE	NATURE OF REVISION	BY	CHECKED	RECOM	APPROVED
3						
2						
1						

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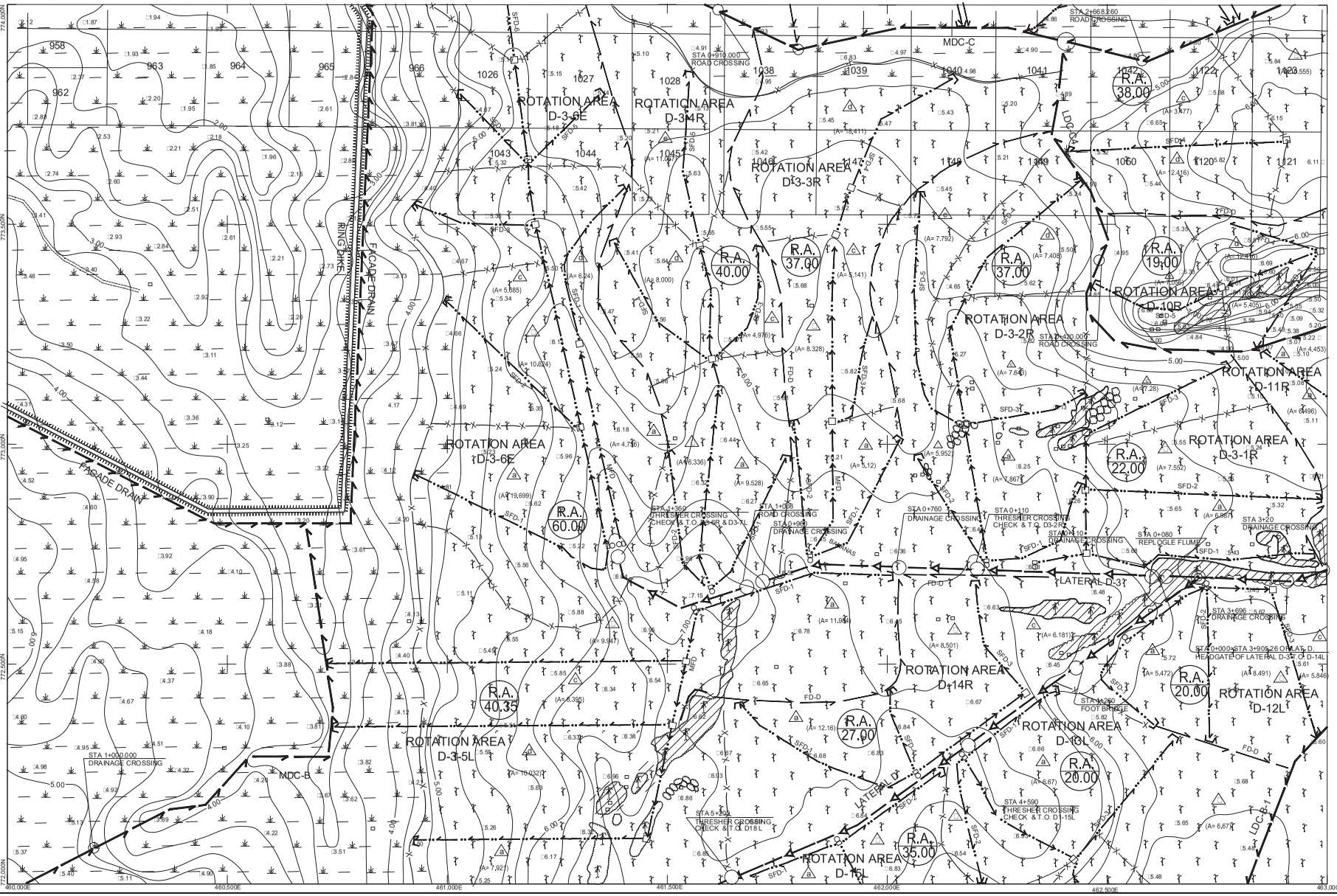

					18	
					21	
1	2	28 3	29 4	30 5	31 6	7
14	13	12	11	10	9	8
15	16	17	18	19	20	21
	27	26	25	24	23	22
	28	29	30	31	32	
				34	33	

INDEX TO ADJOINING SHEETS

LEGENDS

- PROPOSED HEADWORKS / DIVERSION WORKS
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- EXISTING BRGY. ROADS /STREETS / OTHER ROADS
- TRAIL
- EXCLUDED AREA
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REV. NO.	DATE	NATURE OF REVISION	BY	CHECKED	RECOM.	APPROVED
3						
2						
1						

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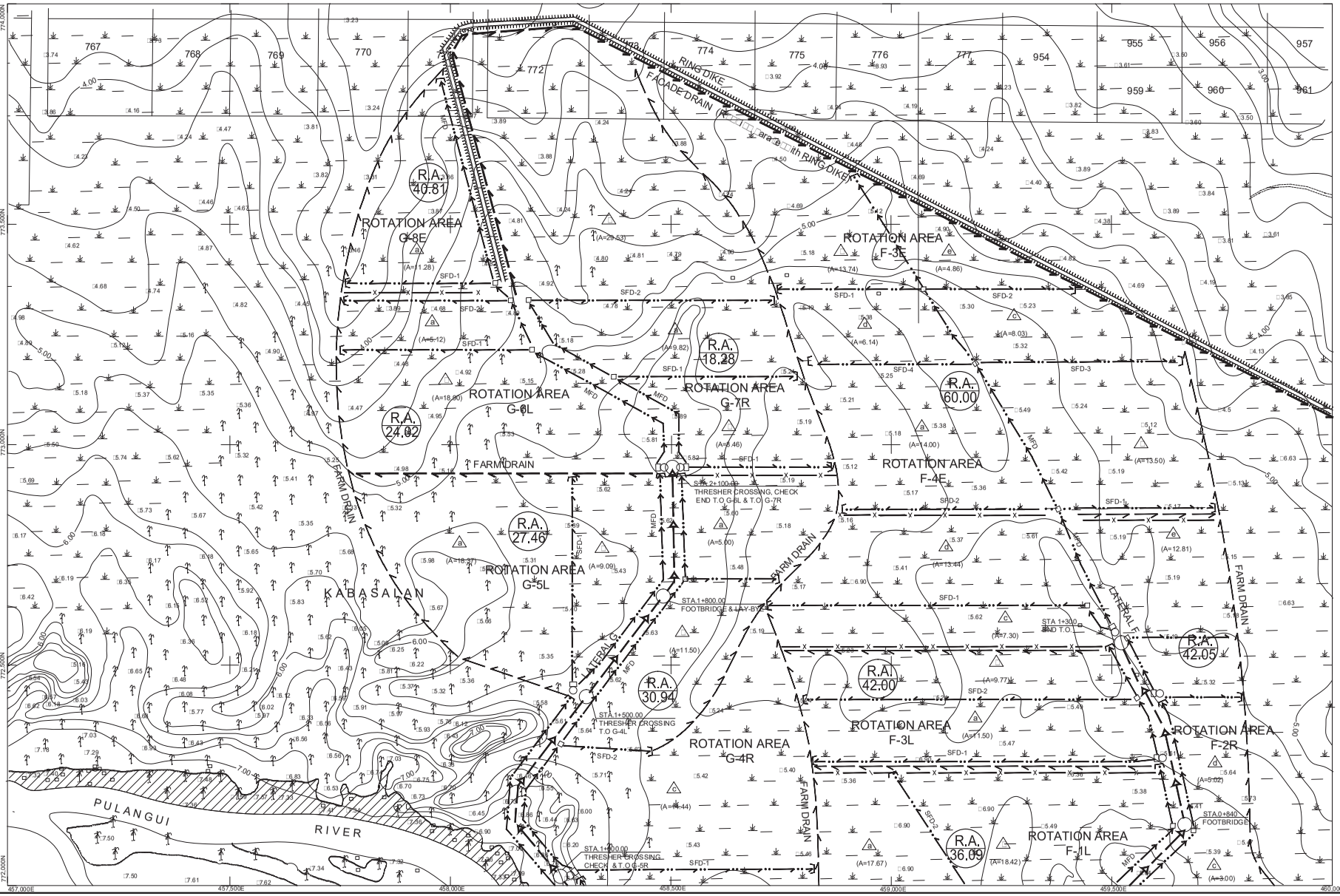
MMIP-COT.MAG.2015 DWG NO.NIA-R-12-MMIP-I.LMSA-29 SHEET 24 OF 34



					18	
					21	
1	2	28 / 3	29 / 4	30 / 5	31 / 6	7
14	13	12	11	10	9	8
15	16	17	18	19	20	21
	27	26	25	24	23	22
	28	29	30	31	32	
				34	33	

INDEX TO ADJOINING SHEETS

LEGENDS

- PROPOSED HEADWORKS / DIVERSION WORKS
- EXISTING HEADWORKS / DIVERSION WORKS
- MAIN CANAL (EXISTING)
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- RAILWAYS
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- TRAIL
- EXCLUDED AREA
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- R.A. / Has — ROTATIONAL AREA PRESENTATION
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SCALE 1 : 4,000

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REV NO.	DATE	NATURE OF REVISION	BY	CHECKED	RECOM.	APPROVED NA
3						
2						
1						

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MALITUBOG MARIDAGAO IRRIGATION PROJECT
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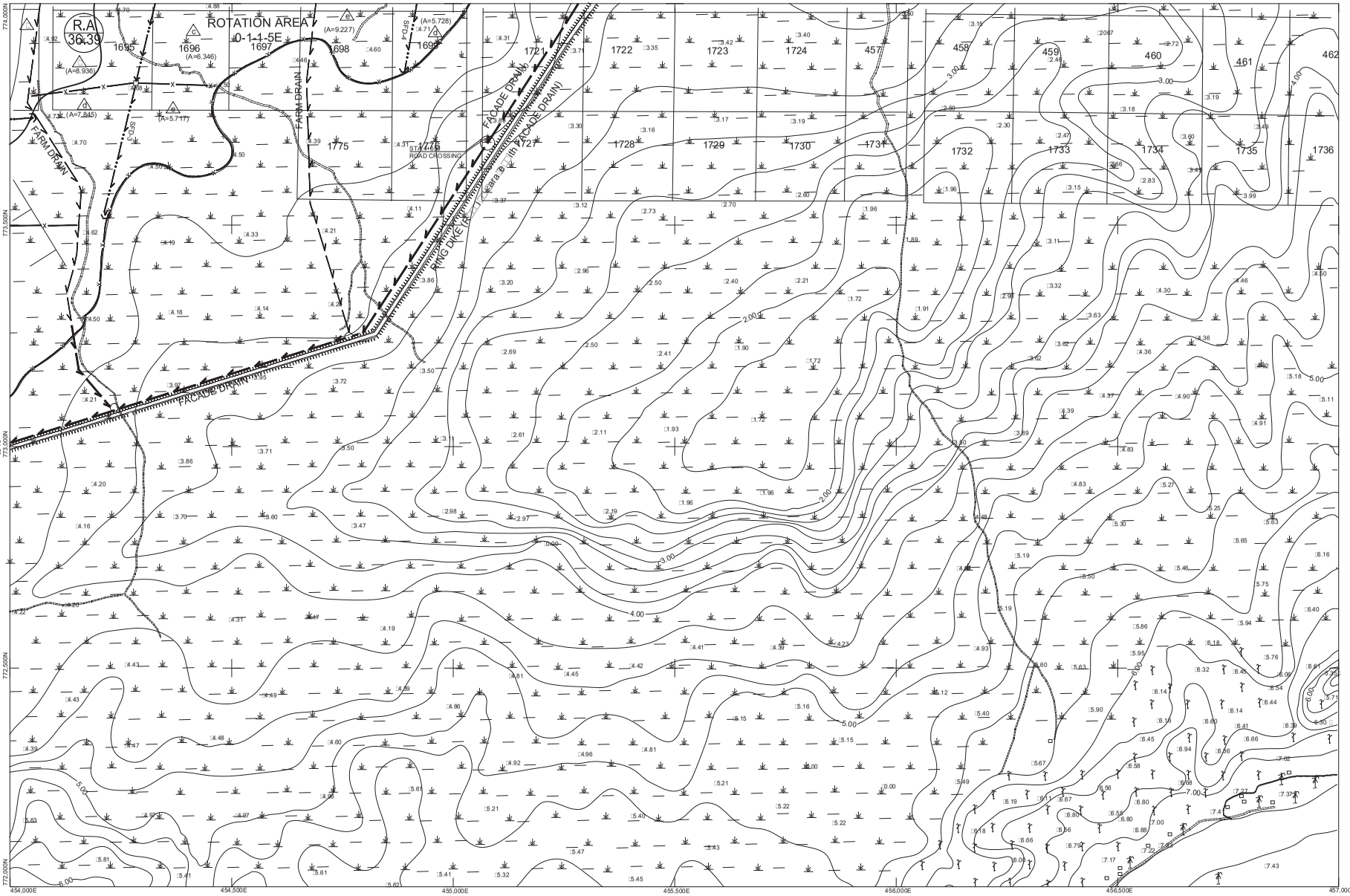

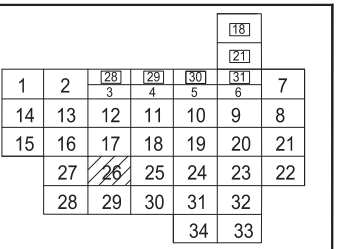

INDEX TO ADJOINING SHEETS

LEGENDS

- PROPOSED HEADWORKS / DIVERSION WORKS
- EXISTING HEADWORKS / DIVERSION WORKS
- MAIN CANAL (EXISTING)
- MAIN CANAL (PROPOSED)
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- RAILWAYS
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- EXISTING BRGY. ROADS /STREETS / OTHER ROADS
- TRAIL
- EXCLUDED AREA
- LIMIT OF IRRIGABLE / PROJECT AREA
- CREEKS / RIVERS / NATURAL WATERWAYS
- ROTATIONAL AREA PRESENTATION
- ROTATIONAL UNIT PRESENTATION

SCALE 1 : 4,000

0 50 100 200 300 400M

REV NO.	DATE	NATURE OF REVISION	BY	CHECKED	RECOM.	APPROVED
3						
2						
1						

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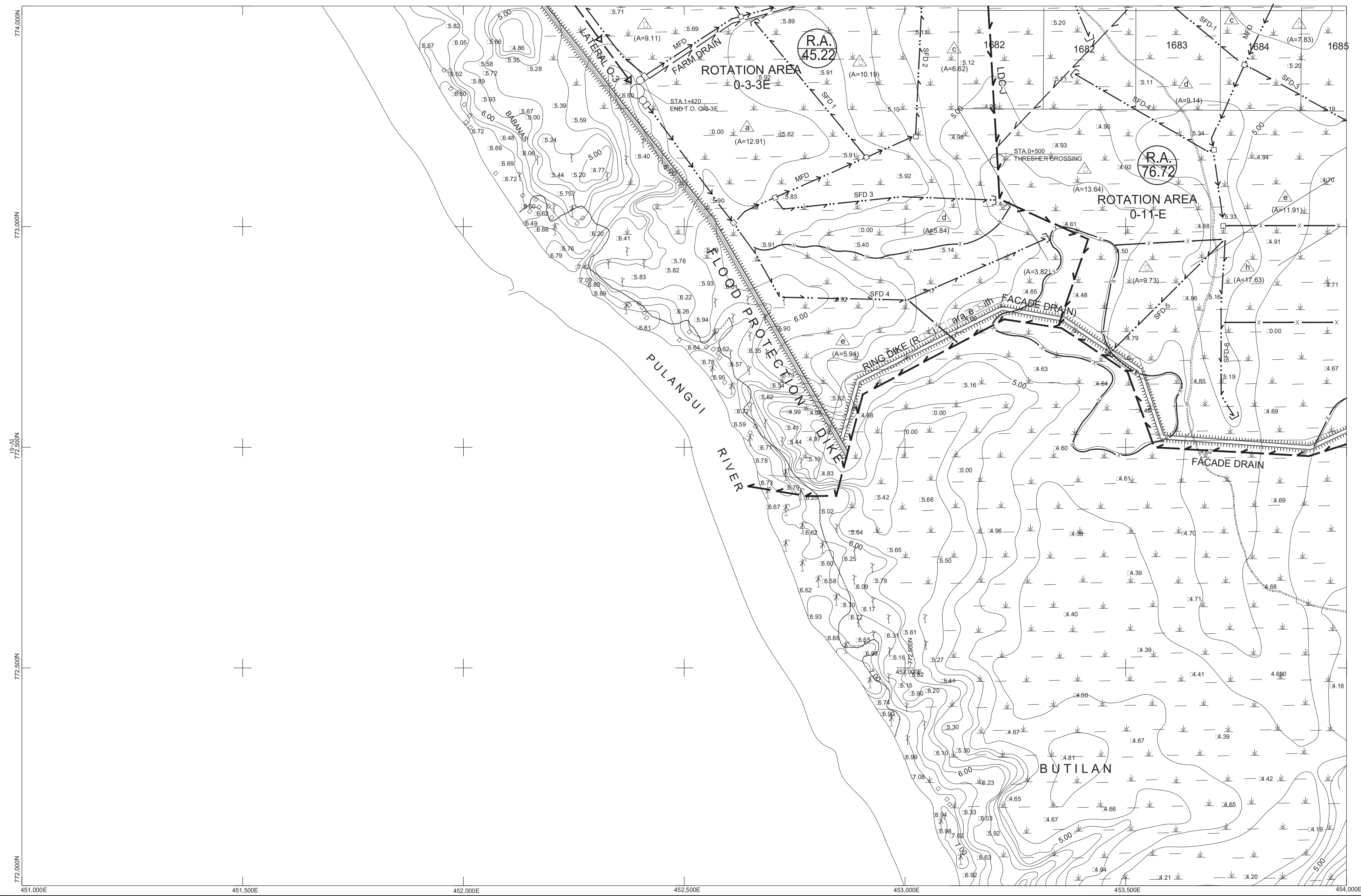

INDEX TO ADJOINING SHEETS

						18	
						21	
1	2	28 / 3	29 / 4	30 / 5	31 / 6		7
14	13	12	11	10	9	8	
15	16	17	18	19	20	21	
	27	26	25	24	23	22	
	28	29	30	31	32		
				34	33		

LEGENDS

- PROPOSED HEADWORKS / DIVERSION WORKS
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- TRAIL
- ROTATIONAL AREA PRESENTATION
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SCALE 1 : 4,000

0 50 100 200 300 400M

REV NO.	DATE	NATURE OF REVISION	BY	CHECKED	RECOM.	APPROVED NIA
1						
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3						

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MMIP-COT.MAG 2015 | DWG NO.NIA-R-12-MMIPII LMSA -32 | SHEET 27 OF 34

					18	
					21	
1	2	28 3	29 4	30 5	31 6	7
14	13	12	11	10	9	8
15	16	17	18	19	20	21
	27	26	25	24	23	22
	28	29	30	31	32	
				34	33	

INDEX TO ADJOINING SHEETS

LEGENDS

- PROPOSED HEADWORKS / DIVERSION WORKS
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3						
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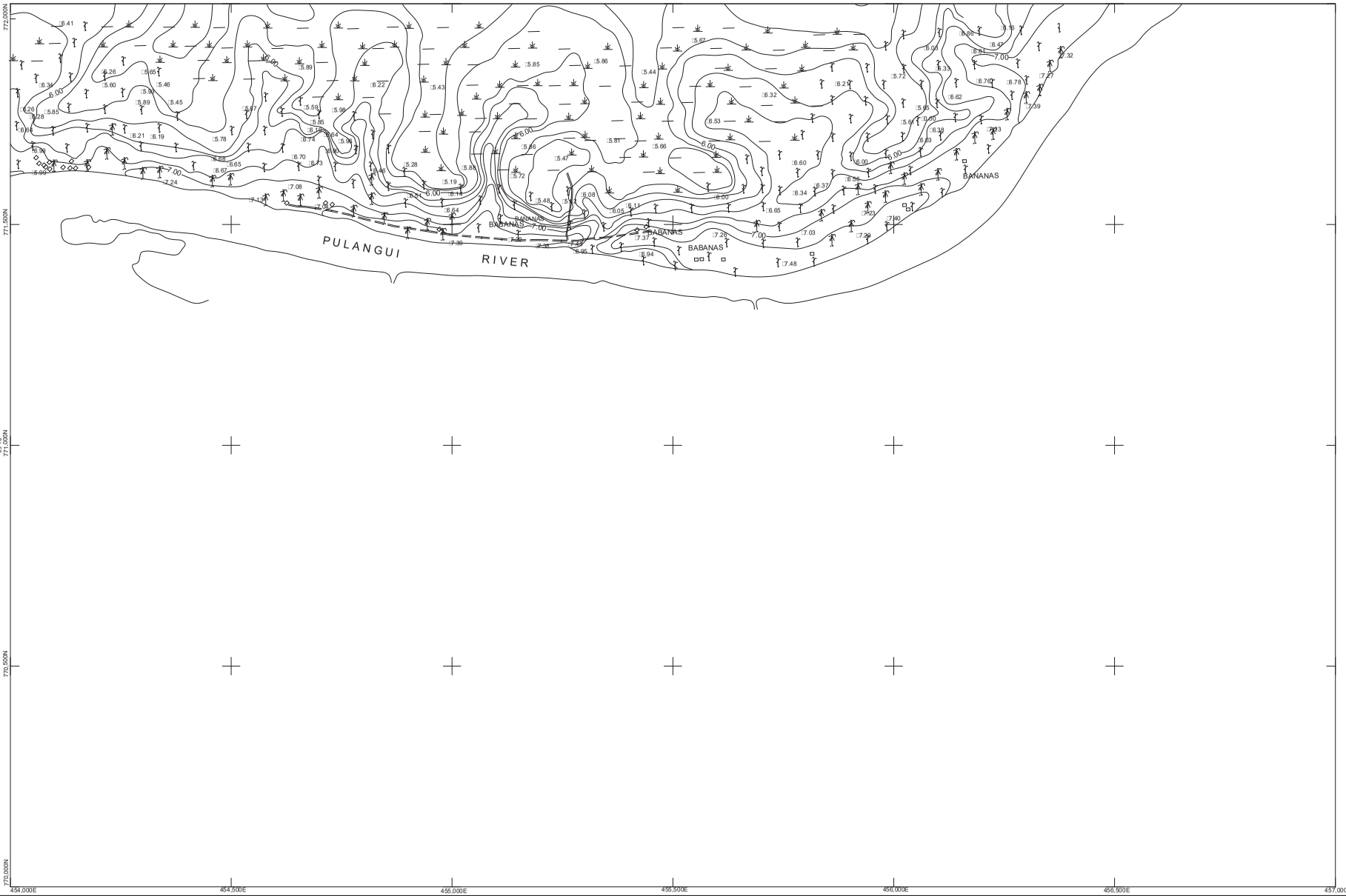

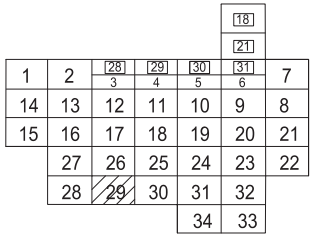

INDEX TO ADJOINING SHEETS

LEGENDS

- PROPOSED HEADWORKS / DIVERSION WORKS
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- MAIN CANAL (PROPOSED)
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- LIMIT OF TURNOUT AREA
- EXISTING CANAL STRUCTURE
- PROPOSED CANAL STRCTURE
- PIPELINE / LONG STRUCTURES (TUNNEL / SIPHON / FLUMES / CUT & COVER)
- EXISTING TURNOUT WITH MFD/SFD
- PROPOSED TURNOUT WITH MFD/SFD
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- ROTATIONAL AREA PRESENTATION
- ROTATIONAL UNIT PRESENTATION

SCALE 1 : 4,000

0 50 100 200 300 400M

REV. NO.	DATE	NATURE OF REVISION	BY	CHECKED	RECOM.	APPROVED
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2						
1						

REPUBLIC OF THE PHILIPPINES

NATIONAL IRRIGATION ADMINISTRATION

REGION-12 MIDSAYAP, COTABATO

PROVINCE OF NORTH COTABATO

MALITUBOG MARIDAGAO IRRIGATION PROJECT

NORTH COTABATO AND MAGUINDANAO

LOWER MALITUBOG SERVICE AREA

IRRIGATION AND DRAINAGE NETWORK

LOWER MALITUBOG

DRAFTING		DESIGN	
CADD:	KVPDIMACULANGAN	DESIGNED:	KVPDIMACULANGAN
REVIEWED:	HS DUCAO	CHECKED:	HS DUCAO
		REVIEWED:	RM SARIGUMBA

SUBMITTED:

ALI S. SATOL

ACTING PROJECT MANAGER

RECOMMENDING APPROVAL:

LYDIA S. ESGUERA

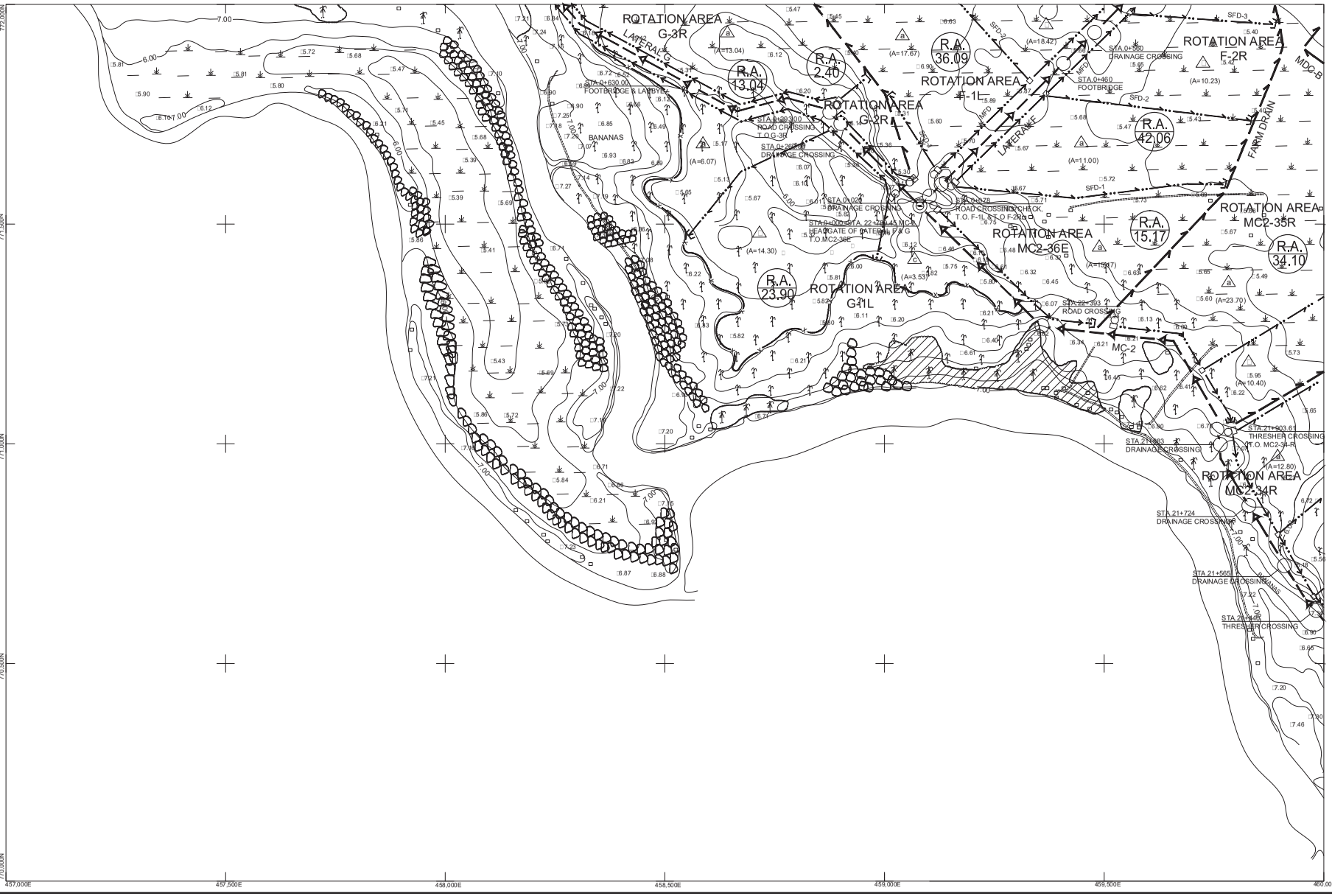
MANAGER,ENGINEERING DEPARTMENT

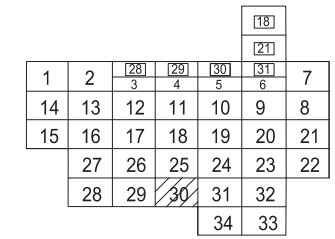
APPROVED:

C"AR M. SULAIK

DEPUTY ADMINISTRATOR FOR ENGINEERING & OPERATION

MMIP-COT.MAG 2015 | DWG NO. NIA-R-12-MMIP II.LMSA -34 | SHEET 29 OF 34





INDEX TO ADJOINING SHEETS

LEGENDS

- PROPOSED HEADWORKS / DIVERSION WORKS
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SCALE 1 : 4,000

0 50 100 200 300 400M

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REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION
REGION-12 MIDSAYAP, COTABATO

PROVINCE OF NORTH COTABATO
MALITUBOG MARIDAGAO IRRIGATION PROJECT
NORTH COTABATO AND MAGUINDANAO

LOWER MALITUBOG SERVICE AREA

DRAFTING		DESIGN	
CADD:	KVPDIMACULANGAN	DESIGNED:	KVPDIMACULANGAN
REVIEWED:	HS DUCAO	CHECKED:	HS DUCAO
		REVIEWED:	RM SARIGUMBA

SUBMITTED:

ALI S. SATOL
ACTING PROJECT MANAGER

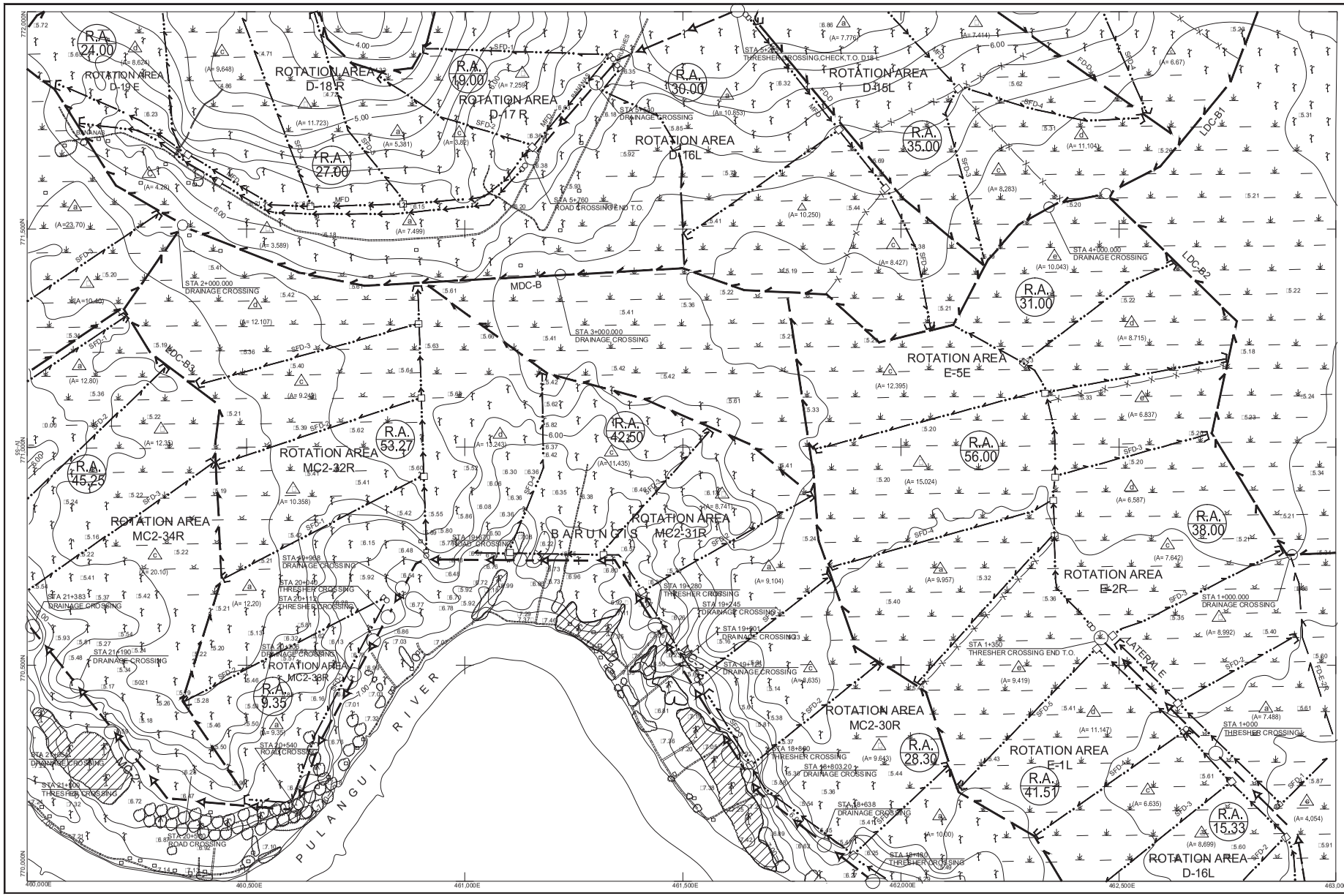
RECOMMENDING APPROVAL:

LYDIA S. ESGUERA
MANAGER,ENGINEERING DEPARTMENT

APPROVED:

C'□AR M. SULAIK
DEPUTY ADMINISTRATOR FOR ENGINEERING & OPERATION

MMP-COT.MAG.2015 | DWG.NO.NIA-R-12-MMPIILMSA-35 | SHEET 30 OF 34



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					21	
1	2	28 / 3	29 / 4	30 / 5	31 / 6	7
14	13	12	11	10	9	8
15	16	17	18	19	20	21
	27	26	25	24	23	22
	28	29	30	31	32	
				34	33	

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- PROPOSED HEADWORKS / DIVERSION WORKS
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- CREEKS / RIVERS / NATURAL WATERWAYS
- R.A. / Has. — ROTATIONAL AREA PRESENTATION
- R.U. / Has. — ROTATIONAL UNIT PRESENTATION

SCALE 1 : 4,000

0 50 100 200 300 400M

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REPUBLIC OF THE PHILIPPINES

NATIONAL IRRIGATION ADMINISTRATION

REGION-12 MIDSAYAP, COTABATO

PROVINCE OF NORTH COTABATO

MALITUBOG MARIDAGAO IRRIGATION PROJECT

NORTH COTABATO AND MAGUINDANAO

LOWER MALITUBOG SERVICE AREA

IRRIGATION AND DRAINAGE NETWORK

LOWER MALITUBOG

DRAFTING		DESIGN	
CADD:	AB CERVERA	DESIGNED:	KVPDIMAGULANGAN
REVIEWED:	HS DUCAO	CHECKED:	HS DUCAO
		REVIEWED:	RM SARIGUMBA

SUBMITTED:

ALI S. SATOL

ACTING PROJECT MANAGER

RECOMMENDING APPROVAL:

LYDIA S. ESGUERA

MANAGER,ENGINEERING DEPARTMENT

APPROVED:

C'AR M. SULAIK

DEPUTY ADMINISTRATOR FOR ENGINEERING & OPERATION

MMIP-COTMAG 2015 | DWG NO.NIA-R-12-MMIP-II.LMSA -36 | SHEET 31 OF 34

					18	
					21	
1	2	28 / 3	29 / 4	30 / 5	31 / 6	7
14	13	12	11	10	9	8
15	16	17	18	19	20	21
	27	26	25	24	23	22
	28	29	30	31	32	
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0 50 100 200 300 400M

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3						
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REPUBLIC OF THE PHILIPPINES

NATIONAL IRRIGATION ADMINISTRATION

REGION-12 MIDSAYAP, COTABATO

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NORTH COTABATO AND MAGUINDANAO

LOWER MALITUBOG SERVICE AREA

IRRIGATION AND DRAINAGE NETWORK

DRAFTING		DESIGN	
CADD:	AB CERVERA	CHECKED:	KP/PDM/CULANGAN
REVIEWED:	HS DUCAO	REVIEWED:	HS DUCAO
		SUBMITTED:	RM SARIGUMBA

SUBMITTED:

ALI S. SATOL

ACTING PROJECT MANAGER

RECOMMENDING APPROVAL:

LYDIA S. ESGUERA

MANAGER,ENGINEERING DEPARTMENT

APPROVED:

CZAR M. SULAIK

DEPUTY ADMINISTRATOR FOR ENGINEERING & OPERATION

MMIP-COT.MAG 20-15 | DWG NO.N/A-R 12-MMIP/ELMSA-37 | SHEET 32 OF 34

IV-34

					18	
					21	
1	2	28 / 3	29 / 4	30 / 5	31 / 6	7
14	13	12	11	10	9	8
15	16	17	18	19	20	21
	27	26	25	24	23	22
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SCALE 1 : 4,000

0 50 100 200 300 400M

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REPUBLIC OF THE PHILIPPINES

NATIONAL IRRIGATION ADMINISTRATION

REGION-12 MIDSAYAP, COTABATO

PROVINCE OF NORTH COTABATO
MALITUBOG MARIDAGAO IRRIGATION PROJECT
NORTH COTABATO AND MAGUINDANAO

LOWER MALITUBOG SERVICE AREA

IRRIGATION AND DRAINAGE NETWORK

LOWER MALITUBOG

DRAFTING		DESIGN	
CADD:	AB CERVERA	DESIGNED:	KVPDIMACULANGAN
REVIEWED:	HS DUCAO	CHECKED:	HS DUCAO
		REVIEWED:	RM SARIGUMBA

SUBMITTED:

ALI S. SATOL
ACTING PROJECT MANAGER

RECOMMENDING APPROVAL:

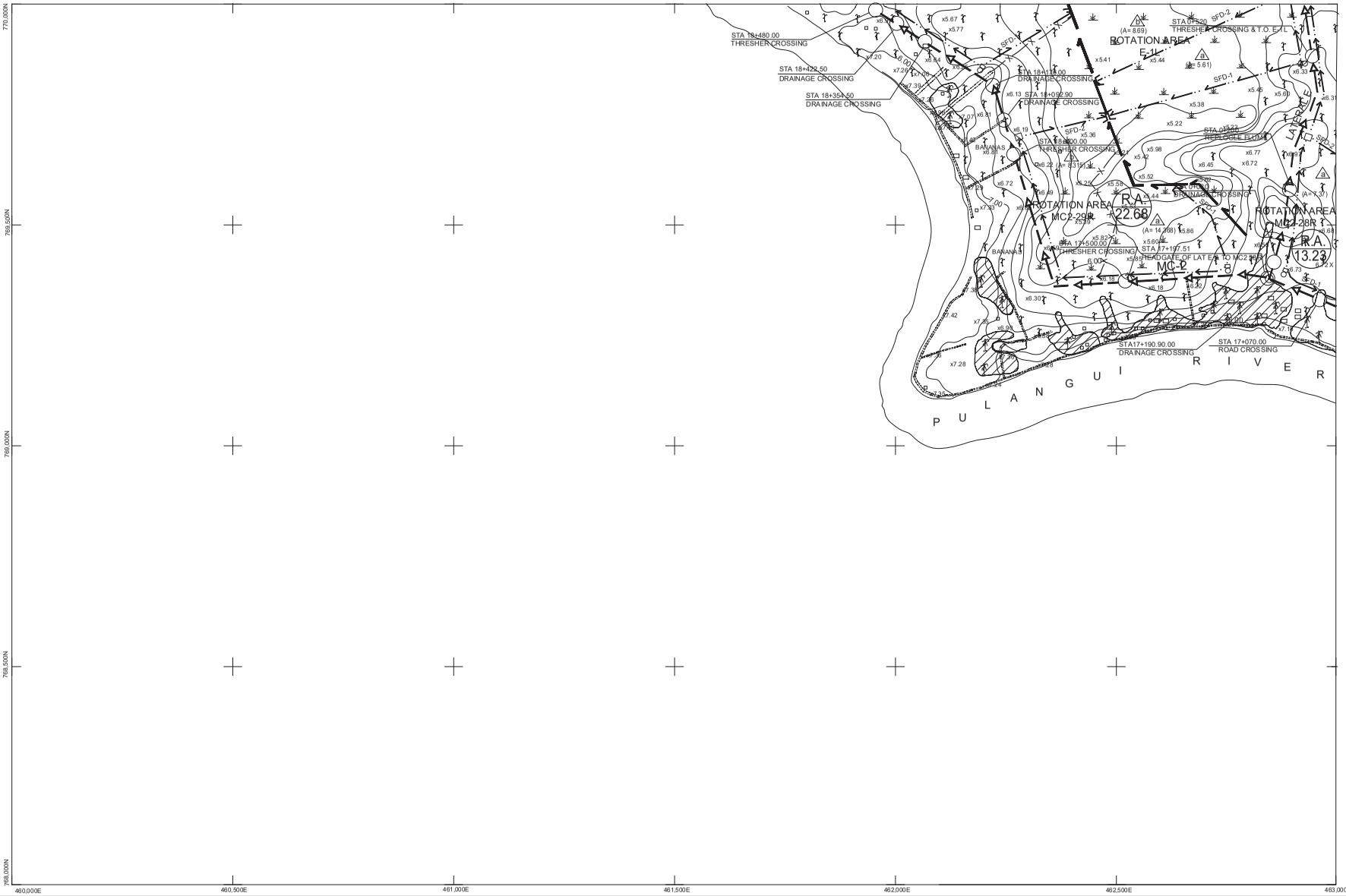
LYDIA S. ESGUERA
MANAGER,ENGINEERING DEPARTMENT

APPROVED:

C'ZAR M. SULAIK
DEPUTY ADMINISTRATOR FOR ENGINEERING & OPERATION

MMIP-OOT.MAG 20:5 | DWG NO.NIA-R-12-MMIPII LMSA -38 | SHEET 33 OF 34

IV-57



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1	2	28 / 3	29 / 4	30 / 5	31 / 6	7
14	13	12	11	10	9	8
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	28	29	30	31	32	
				34	33	

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0 50 100 200 300 400M

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REPUBLIC OF THE PHILIPPINES

NATIONAL IRRIGATION ADMINISTRATION

REGION-12 MIDSAYAP, COTABATO

PROVINCE OF NORTH COTABATO

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NORTH COTABATO AND MAGUINDANAO

LOWER MALITUBOG SERVICE AREA

IRRIGATION AND DRAINAGE NETWORK

LOWER MALITUBOG

DRAFTING		DESIGN	
CADD:	AB CERVERA	DESIGNED:	KVPOMACULANGAN
REVIEWED:	HS DUCAO	CHECKED:	HS DUCAO
		REVIEWED:	RM SARIGUMBA

SUBMITTED:

ALI S. SATOL

ACTING PROJECT MANAGER

RECOMMENDING APPROVAL:

LYDIA S. ESGUERA

MANAGER,ENGINEERING DEPARTMENT

APPROVED:

C'ZAR M. SULAIK

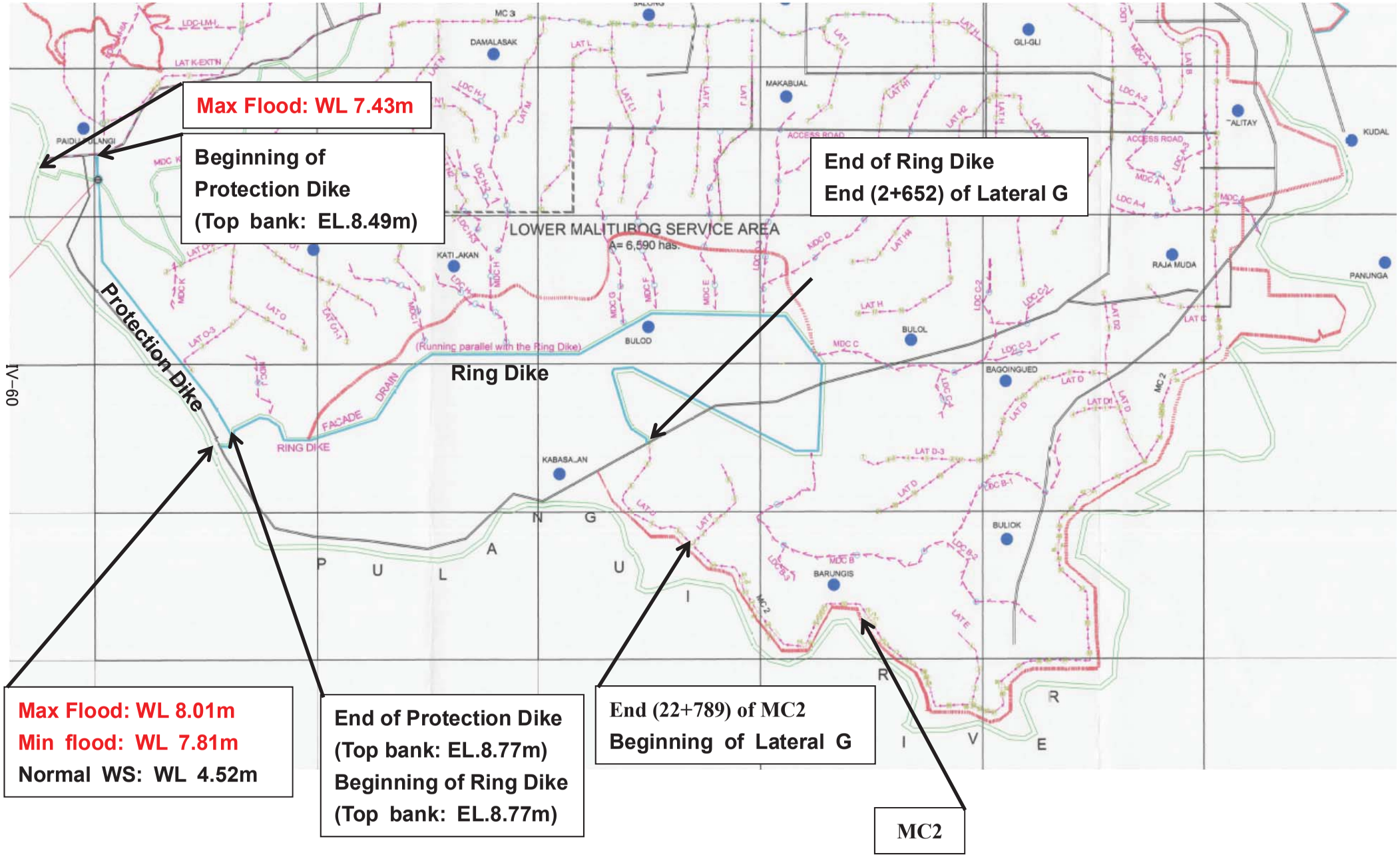
DEPUTY ADMINISTRATOR FOR ENGINEERING & OPERATION

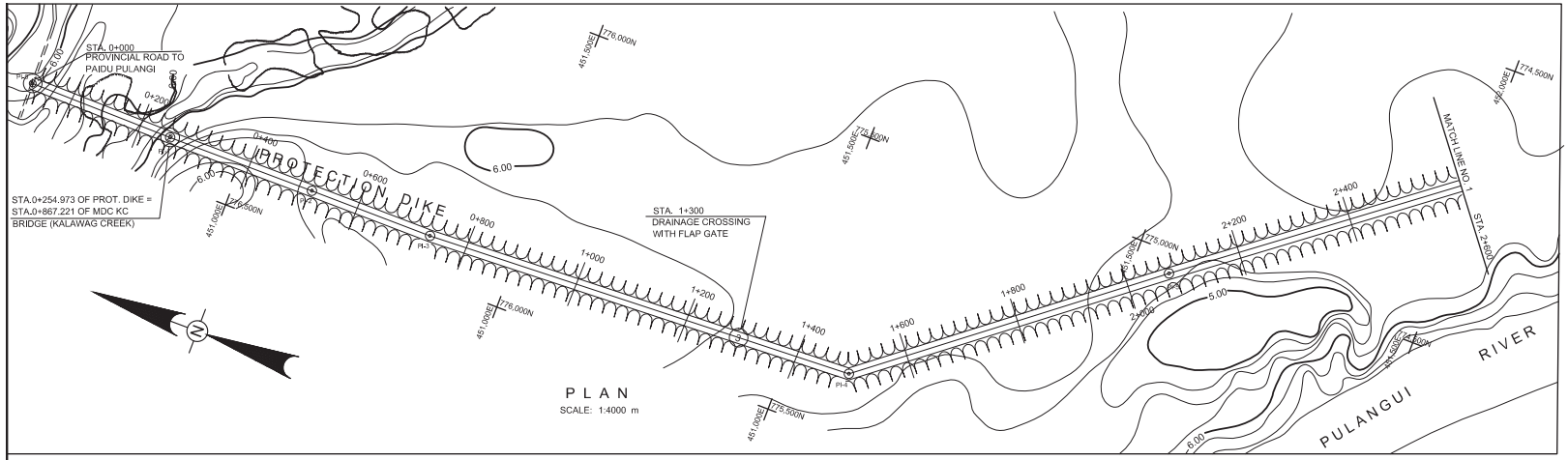
MMIP-COT.MAG 2015 DWG NO.NIA-R-12-MMIP-ILMSA-39 SHEET 34 OF 34

IV-38

IV.1.4 ORIGINAL PLAN OF PROTECTION DIKE AND RING DIKE

Original Plan of Protection Dike and Ring Dike





P L A N

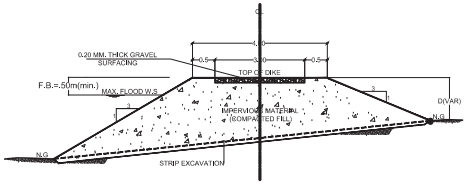
SCALE: 1:4000 m

TRAVERSE LINE DATA

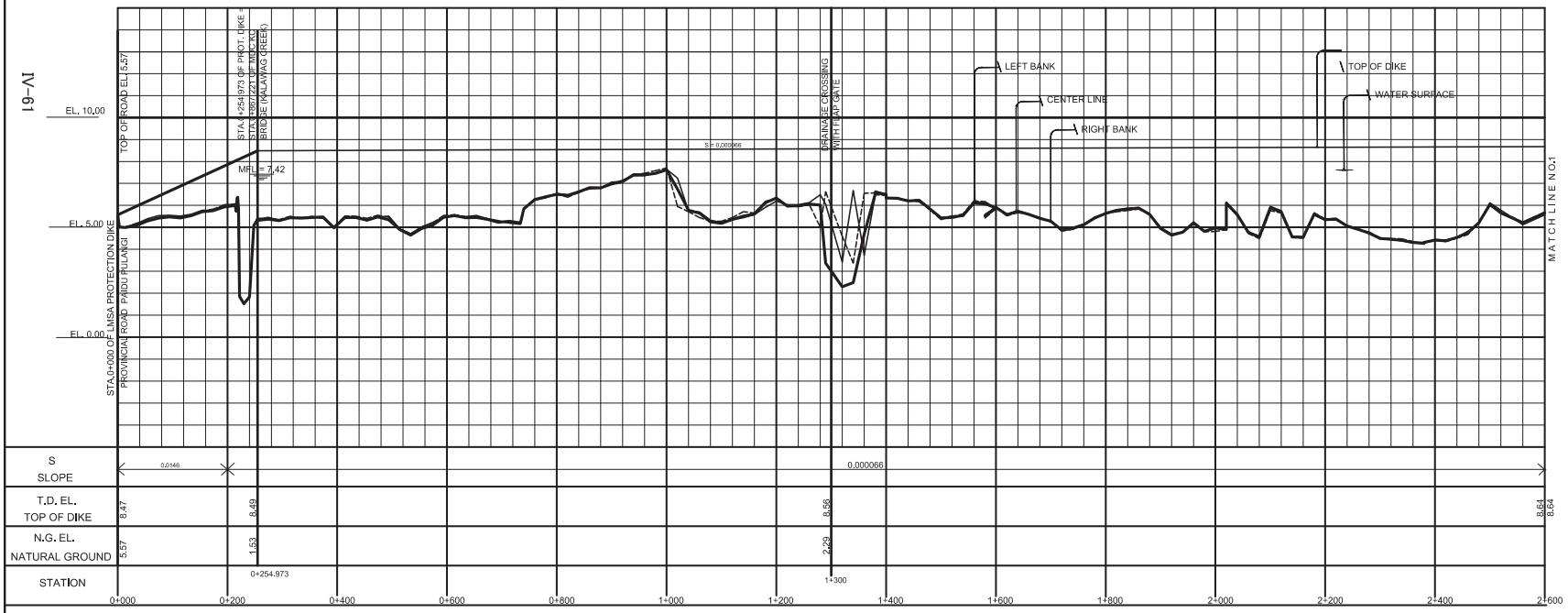
STATION	LINE		DISTANCE	AZIMUTH	COORDINATES	
	OCC	OBS			NORTHINGS	EASTINGS
0+000		PI-0			776,885.380	451,078.448
0+254.974	PI-0	PI-1	254.974	00-46-39	776,630.430	451,074.988
0+516.224	PI-1	PI-2	261.250	359-58-54	776,369.179	451,075.072
0+734.318	PI-2	PI-3	218.094	00-14-18	776,151.087	451,074.165
1+494.975	PI-3	PI-4	760.657	357-35-21	775,391.103	451,106.162
2+073.722	PI-4	PI-5	578.747	321-54-47	774,935.585	451,463.170

NOTES:

1. ALL DIMENSIONS, ELEVATIONS AND STATIONING ARE IN METERS UNLESS OTHERWISED SPECIFIED
2. DATE OF SURVEY - APRIL 13, 2015



TYPICAL ROAD DIKE SECTION



PROFILE SCALE HOR. 1:4000 mts. VERT. 1:100 mts.

GOOD FOR CONSTRUCTION

CONSULTANT NIA

REV. No.	DATE	NATURE OF REVISIONS	BY	CHECKED	RECOM.	APPROVED
3						
2						
1						

REPUBLIC OF THE PHILIPPINES
OFFICE OF THE PRESIDENT

NATIONAL IRRIGATION ADMINISTRATION
MALITUBOG MARIDAGAO IRRIGATION PROJECT
NORTH COTABATO AND MAGUINDANAO

LOWER MALITUBOG PROTECTION DIKE
PLAN AND PROFILE

LOWER MALITUBOG STA. 0+000 - STA. 2+600

DRAFTING
DRAWN : ED TAWAN
CHECKED : HS DUCAO

DESIGN
PREPARED : ED TAWAN
CHECKED : HS DUCAO
SUBMITTED : HS DUCAO

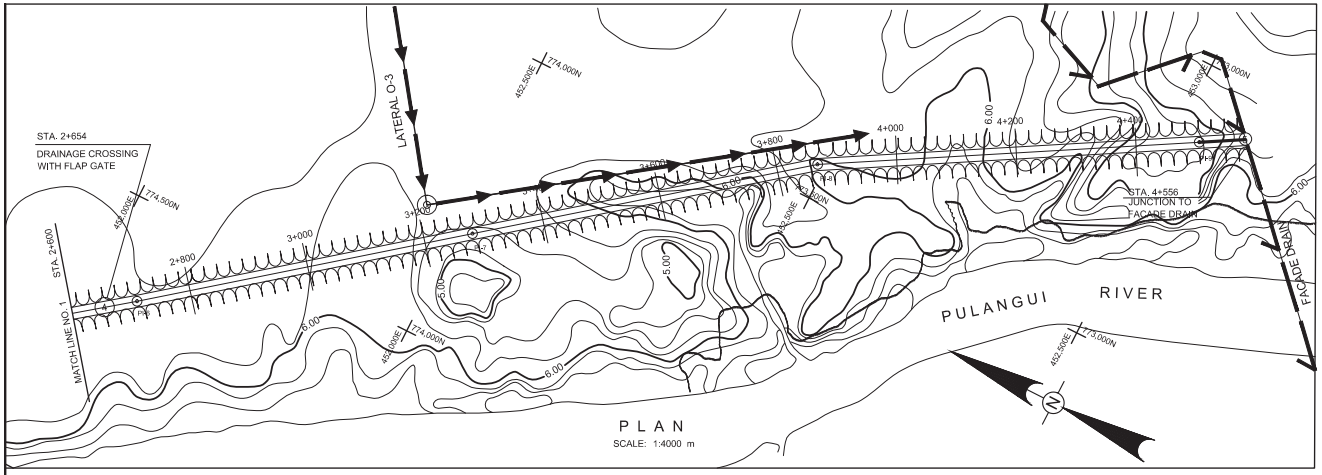
RECOMMENDED:

REYNALDO M. SARIGUMBA
MANAGER, ENG'G DIVISION

APPROVED :

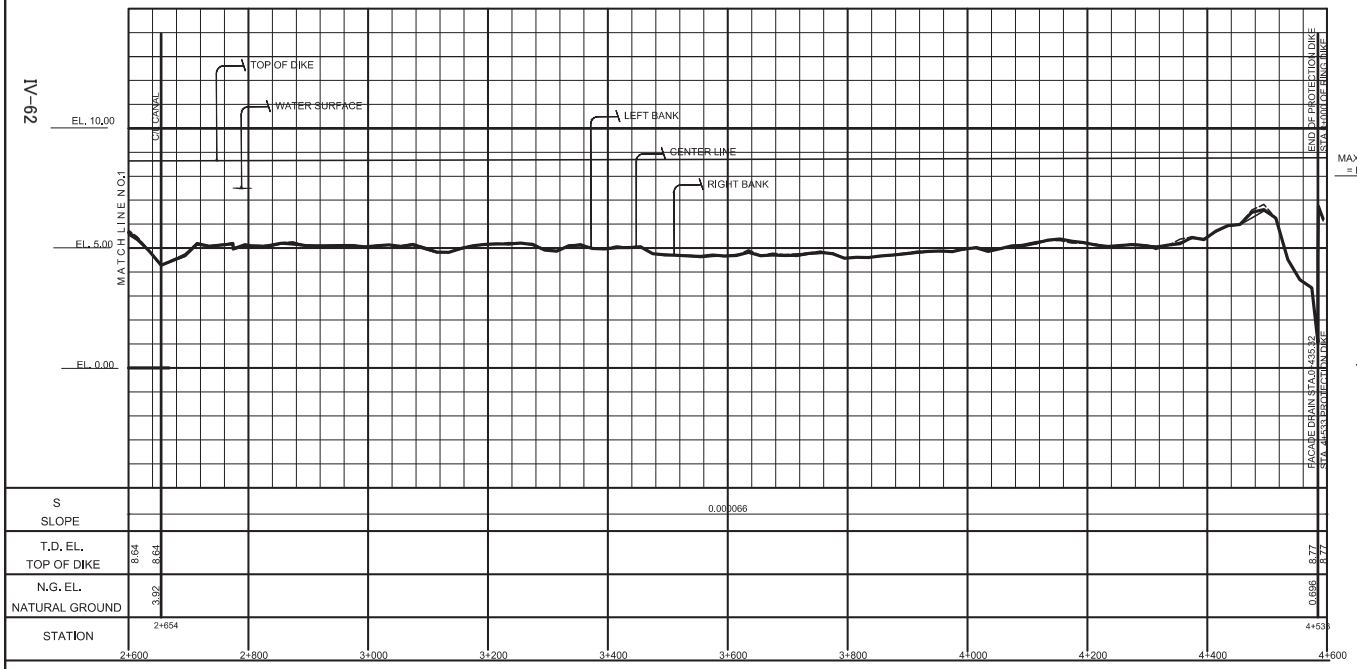
NOLDIN S. OYOD
PROJECT MANAGER

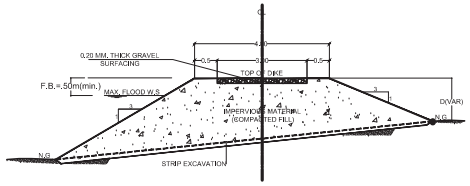
DATE: DWG. NO MMIP. SHEET 1 OF 2



TRAVERSE LINE DATA

STATION	LINE		DISTANCE	AZIMUTH	COORDINATES	
	OCC	OBS			NORTHINGS	EASTINGS
2+709.769	PI-5	PI-6	636.047	332-35-52	774,430.315	451,849.509
3+280.543	PI-6	PI-7	570.774	321-52-43	773,981.284	452,201.865
3+868.587	PI-7	PI-8	588.044	321-54-42	773,518.458	452,564.615
4+507.209	PI-8	PI-9	638.621	329-55-44	772,965.793	452,884.612
4+556.000	PI-9	E/C	48.792	329-50-55	772,923.602	452,909.120





TYPICAL ROAD DIKE SECTION

NOTES:

1. ALL DIMENSIONS, ELEVATIONS AND STATIONING ARE IN METERS UNLESS OTHERWISED SPECIFIED
2. DATE OF SURVEY - APRIL 13, 2015

GOOD FOR CONSTRUCTION

CONSULTANT NIA

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REPUBLIC OF THE PHILIPPINES
OFFICE OF THE PRESIDENT

NATIONAL IRRIGATION ADMINISTRATION
MALITUBOG MARIDAGAO IRRIGATION PROJECT
NORTH COTABATO AND MAGUINDANAO

LOWER MALITUBOG PROTECTION DIKE
PLAN AND PROFILE

LOWER MALITUBOG STA. 2+600 - STA. 4+556

DRAFTING
DRAWN : ED TAWAN
CHECKED : HS DUCAO

DESIGN
PREPARED : ED TAWAN
CHECKED : HS DUCAO
SUBMITTED : HS DUCAO

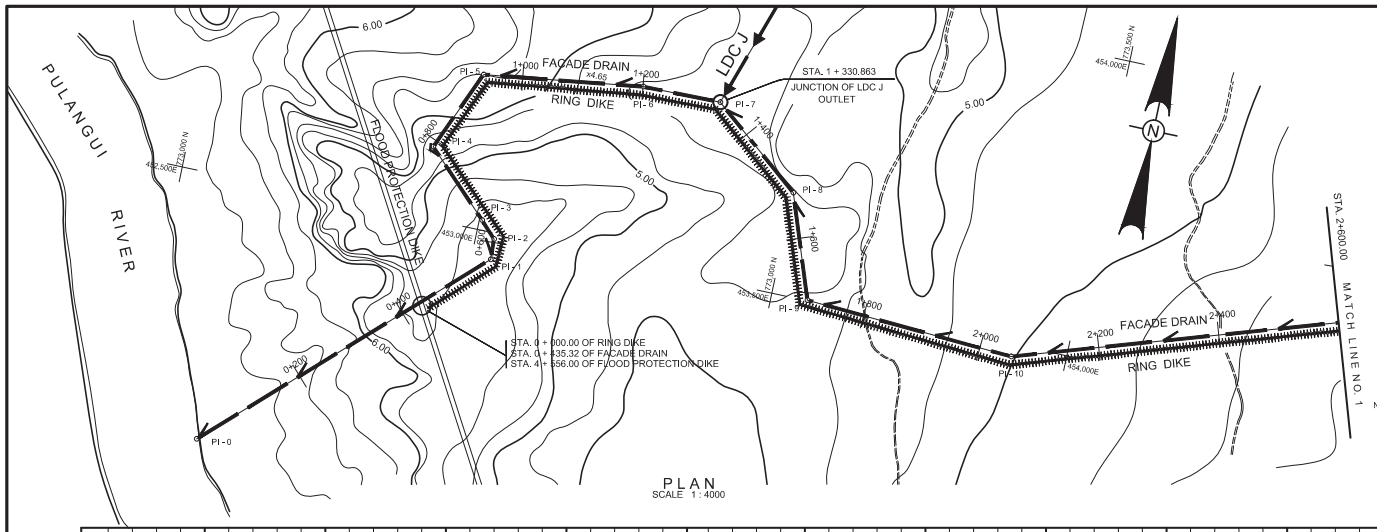
RECOMMENDED:

REYNALDO M. SARIGUMBA
MANAGER, ENG'G DIVISION

APPROVED :

NOLDIN S. OYOD
PROJECT MANAGER

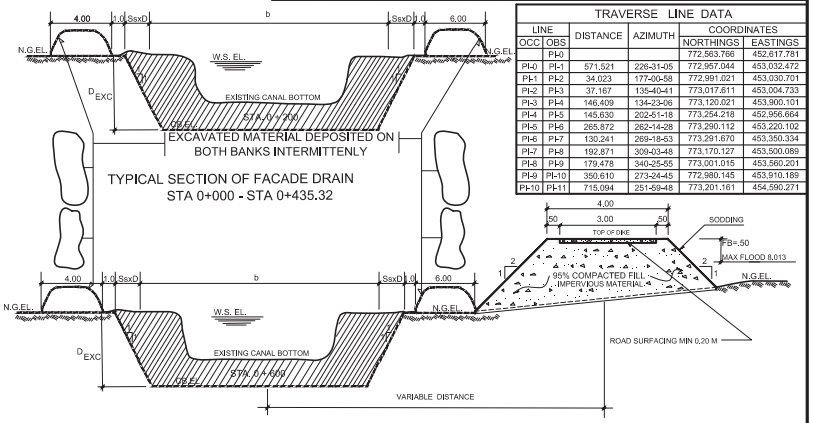
DATE: DWG. NO MMIP. SHEET 2 OF 2



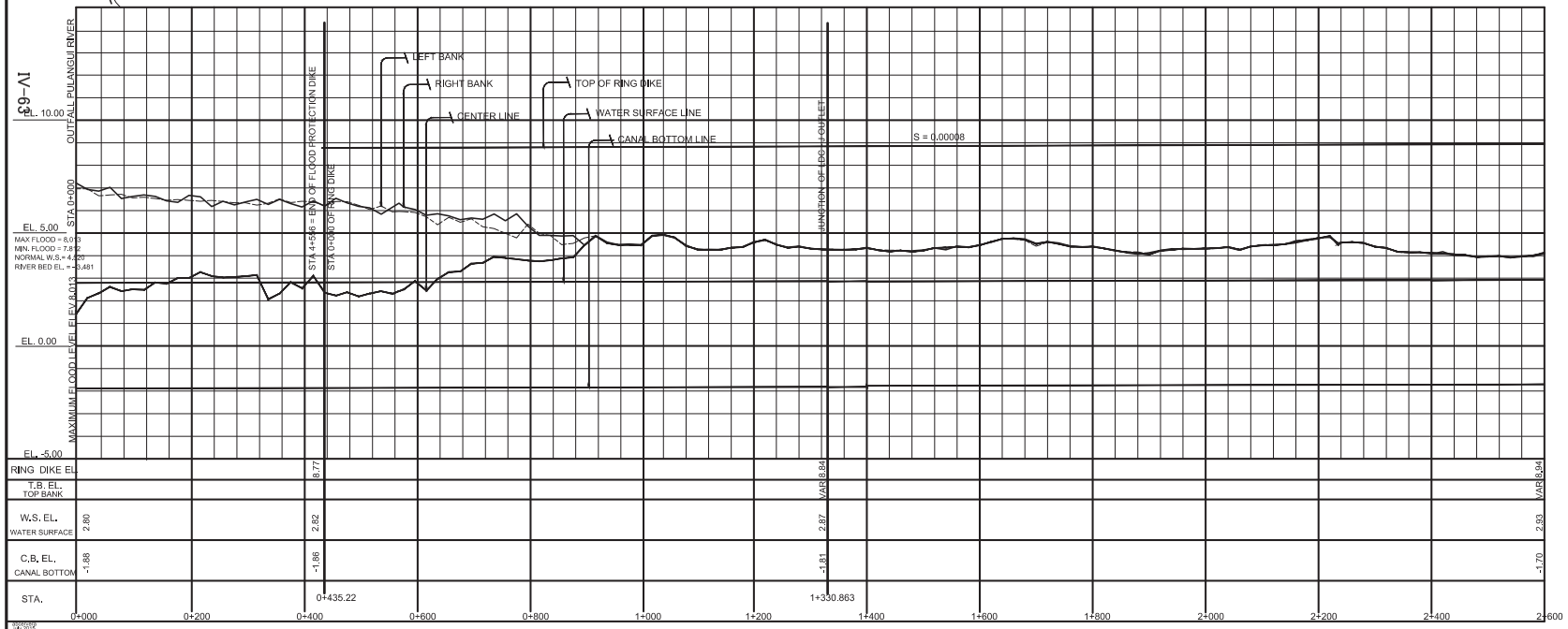
PLAN
SCALE 1 : 4000

CANAL ELEMENTS														
STATION		Q	V	A	b	d	D	Dc	R	tr	tl	Ss	S	n
FROM	TO	cu.m/s	m/s	m	m	m	m	m	m	m	m			
0+000	1+400.00	46.56	0.41	114.90	19.90	4.68	VAR		3.47	4.00	6.00	1:1	0.00005	0.040
1+400.00	3+440.00	45.04	0.40	112.06	19.60	4.63	VAR		3.43	4.00	6.00	1:1	0.00005	0.040

TRAVERSE LINE DATA					
LINE		DISTANCE	AZIMUTH	COORDINATES	
OCC	OBS			NORTHINGS	EASTINGS
	PI-0			772,563.766	452,617.781
PI-0	PI-1	571.521	226-31-05	772,957.044	453,032.472
PI-1	PI-2	34.023	177-00-58	772,991.021	453,030.701
PI-2	PI-3	37.167	135-40-41	773,017.611	453,004.733
PI-3	PI-4	146.409	134-23-06	773,120.021	453,900.101
PI-4	PI-5	145.630	202-51-18	773,254.218	452,956.664
PI-5	PI-6	265.872	262-14-28	773,290.112	453,220.102
PI-6	PI-7	130.241	269-18-53	773,291.670	453,350.334
PI-7	PI-8	192.871	309-03-48	773,170.127	453,500.089
PI-8	PI-9	179.478	340-25-55	773,001.015	453,560.201
PI-9	PI-10	350.610	273-24-45	772,980.145	453,910.189
PI-10	PI-11	715.094	251-59-48	773,201.161	454,590.271



TYPICAL FACADE DRAIN & RING DIKE SECTION
(FACING UPSTREAM)
STA 0+435.32 - STA 0+880



PROFILE SCALE HOR. 1:4000 mts. VERT. 1:100 mts.

NOTES:

1. ALL DIMENSIONS, ELEVATIONS AND STATIONING ARE IN METERS UNLESS OTHERWISED SPECIFIED
2. DATE OF SURVEY - APRIL 14, 2014

GOOD FOR CONSTRUCTION

CONSULTANT N/A

REV. No.	DATE	NATURE OF REVISIONS	BY	CHECKED	RECOM.	APPROVED
3						
2						
1						

REPUBLIC OF THE PHILIPPINES
OFFICE OF THE PRESIDENT
NATIONAL IRRIGATION ADMINISTRATION
MALITUBOG MARIDAGAO IRRIGATION PROJECT
NORTH COTABATO AND MAGUINDANAO

FACADE DRAIN
PLAN AND PROFILE

LOWER MALITUBOG STA 0+000 - STA 2+600

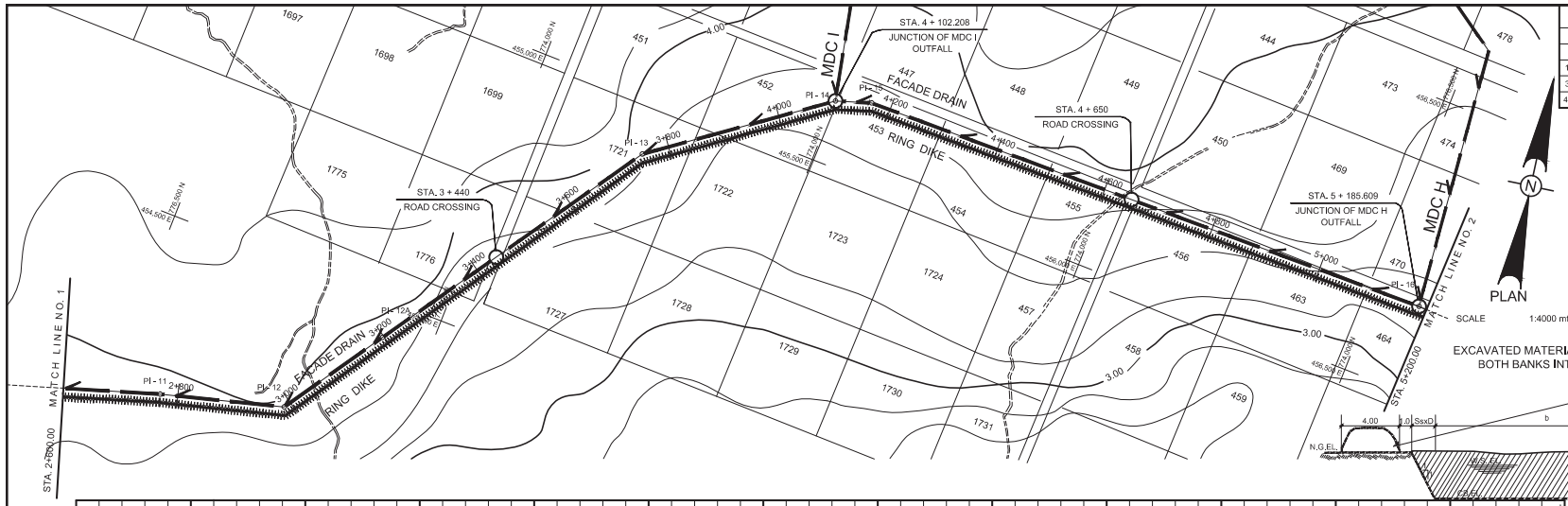
DRAFTING
CADD AB CERVERA
CHECKED : HS DUCAO

DESIGN
DESIGNED : LA ARANAS
CHECKED : HS DUCAO
SUBMITTED : HS DUCAO

RECOMMENDED:
REYNALDO M. SARIGUMBA
MANAGER-ENG'G DIVISION

APPROVED :
NOLDIN S. OYOD
PROJECT MANAGER

DATE: DWG. NO MMIP. SHEET 1 OF 6

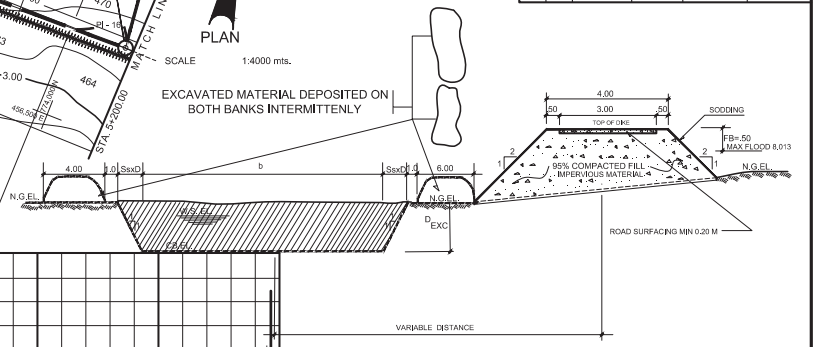


PLAN

SCALE 1:4000 mts.

CANAL ELEMENTS															
STATION		Q	V	A	b	d	D	Dc	R	tr	tl	Ss	S	n
FROM	TO	cu.m/s	m/s	m	m	m	m	m	m	m	m			
1+400.00	3+440.00	45.04	0.40	112.06	19.60	4.63	VAR		3.43	4.00	6.00	1:1	0.00005	0.040
3+440.00	4+650.00	42.122	0.40	106.55	19.10	4.51	VAR		3.34	4.00	6.00	1:1	0.00005	0.040
4+650.00	5+680.00	37.095	0.39	96.30	17.50	4.40	VAR		3.22	4.00	6.00	1:1	0.00005	0.040

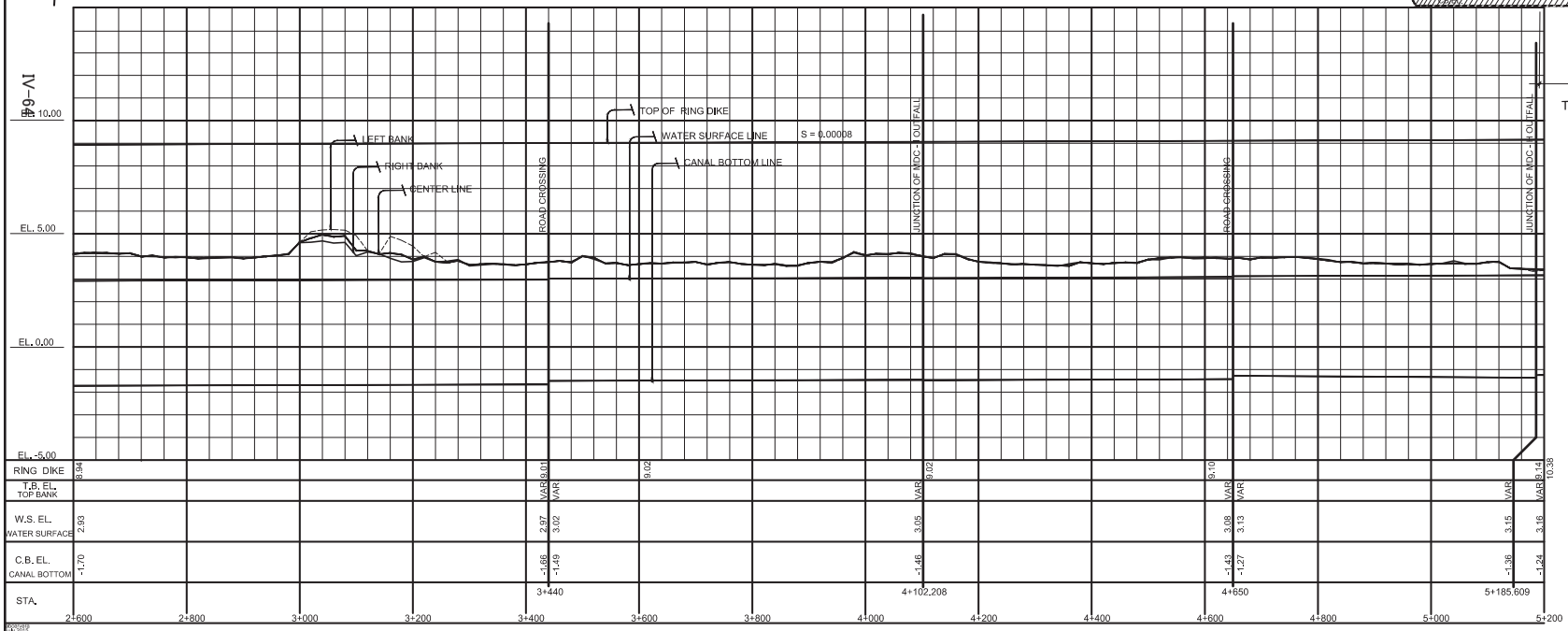
TRAVERSE LINE DATA					
LINE		DISTANCE	AZIMUTH	COORDINATES	
OCC	OBS			NORTHINGS	EASTINGS
PI-10	PI-11	715.094	251-59-48	773,201.161	454,590.271
PI-11	PI-12	217.948	254-21-13	773,259.941	454,800.143
PI-12	PI-12A	210.035	213-16-30	773,435.540	454,915.380
PI-12A	PI-13	555.473	213-16-30	773,899.941	455,220.145
PI-13	PI-14	349.836	233-07-55	774,109.834	455,500.021
PI-14	PI-15	63.422	251-29-23	774,129.969	455,560.162
PI-15	PI-16	1,019.979	268-52-55	774,149.871	456,579.946
PI-16	PI-17	960.365	271-09-18	774,130.110	457,560.112



TYPICAL FACADE DRAIN & RING DIKE SECTION
(FACING UPSTREAM)
STA 0+880 - STA 5+200

N O T E S :

1. ALL DIMENSIONS, ELEVATIONS AND STATIONING ARE IN METERS UNLESS OTHERWISED SPECIFIED
2. DATE OF SURVEY - APRIL 14, 2014



PROFILE SCALE HOR. 1:4000 mts.
VERT. 1:100 mts.

GOOD FOR CONSTRUCTION

CONSULTANT NIA

REV. NO.	DATE	NATURE OF REVISIONS	BY	CHECKED	RECOM.	APPROVED
3						
2						
1						

REPUBLIC OF THE PHILIPPINES
OFFICE OF THE PRESIDENT
NATIONAL IRRIGATION ADMINISTRATION
MALITUBOG MARIDAGAO IRRIGATION PROJECT
NORTH COTABATO AND MAGUINDANAO

FACADE DRAIN
PLAN AND PROFILE

LOWER MALITUBOG STA 2+600 - 5+200

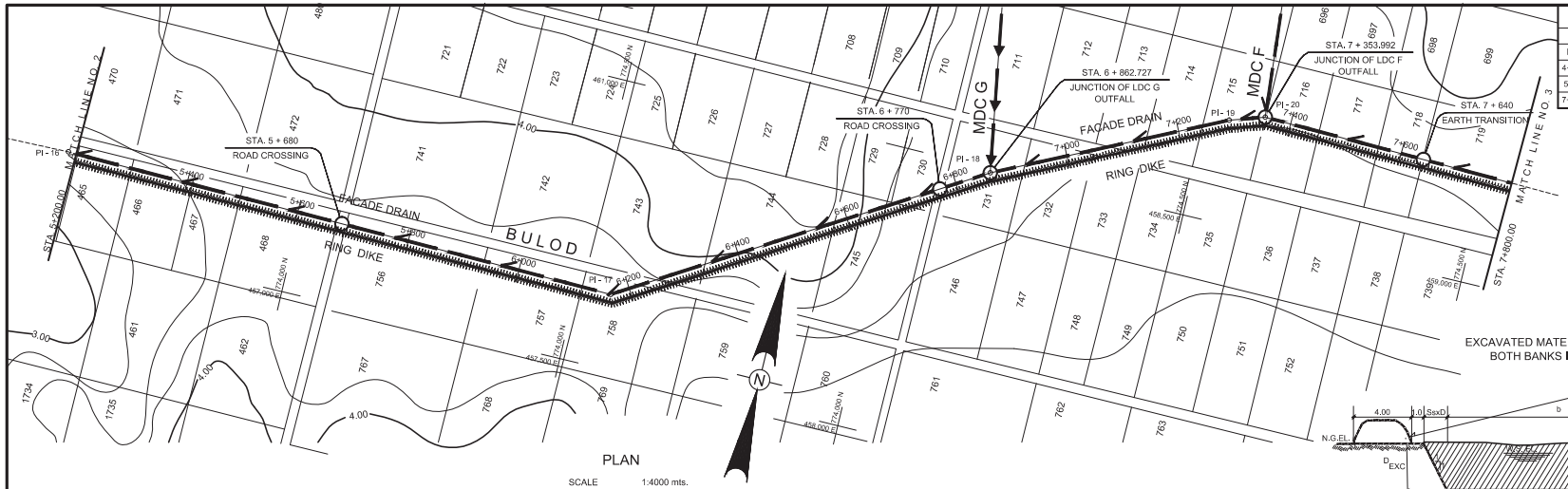
DRAFTING
CADD : AB CERVERA
CHECKED : HS DUCAO

DESIGN
DESIGNED : LA ARANAS
CHECKED : HS DUCAO
SUBMITTED : HS DUCAO

RECOMMENDED:
REYNALDO M. SARIGUMBA
MANAGER-ENG'G DIVISION

APPROVED :
NOLDIN S. OYOD
PROJECT MANAGER

DATE: DWG. NO MMIP. SHEET 2 OF 6

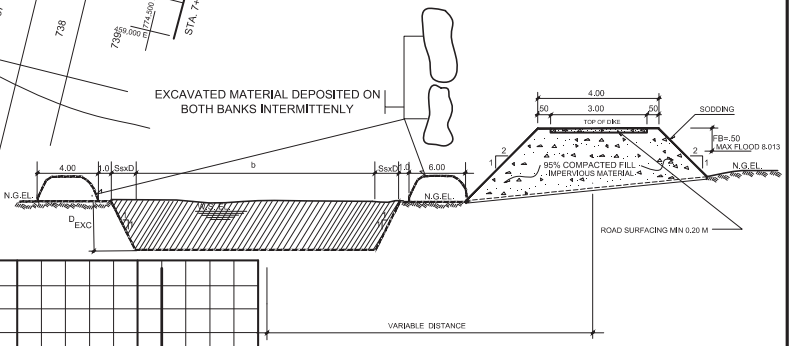


PLAN

SCALE 1:4000 mts.

CANAL ELEMENTS														
STATION		Q	V	A	b	d	D	Dc	R	tr	tl	Ss	S	n
FROM	TO	cu.m/s	m/s	m	m	m	m	m	m	m	m			
4+650.00	5+680.00	37.095	0.39	96.30	17.50	4.40	VAR		3.22	4.00	6.00	1:1	0.00005	0.040
5+680.00	7+640.00	33.987	0.38	90.23	17.00	4.25	VAR		3.11	4.00	6.00	1:1	0.00005	0.040
7+640.00	9+210.00	25.694	0.35	73.15	15.30	3.82	VAR		2.80	4.00	6.00	1:1	0.00005	0.040

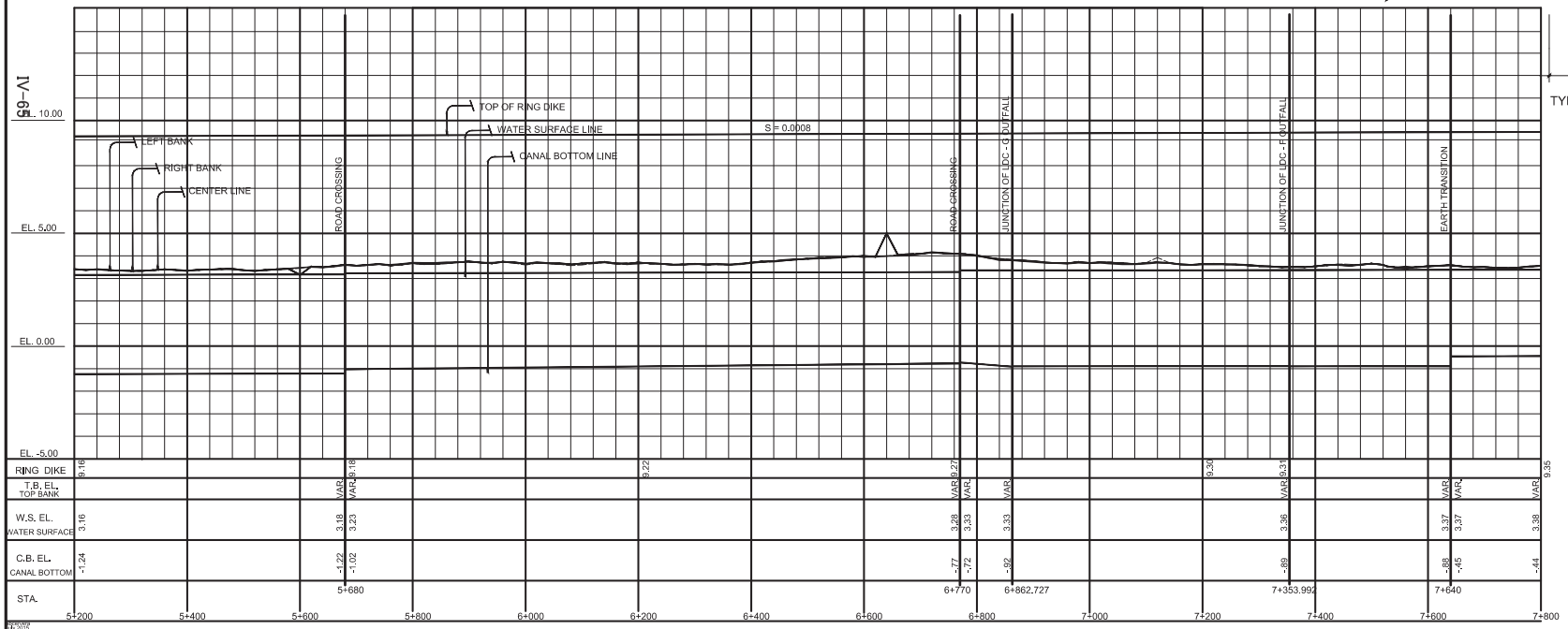
TRAVERSE LINE DATA					
LINE		DISTANCE	AZIMUTH	COORDINATES	
OCC	OBS			NORTHINGS	EASTINGS
PI-16	PI-17	980.365	271-09-18	774,130.110	457,560.112
PI-17	PI-18	696.753	238-40-17	774,492.384	458,155.278
PI-18	PI-19	427.896	244-00-23	774,679.918	458,539.889
PI-19	PI-20	63.369	251-36-22	774,699.914	458,600.020
PI-20	PI-21	800.271	271-25-23	774,680.040	459,400.044



TYPICAL FACADE DRAIN & RING DIKE SECTION

(FACING UPSTREAM)

STA 5+500 - STA 7+800



PROFILE SCALE HOR. 1:4000 mts. VERT. 1:100 mts.

NOTES:

1. ALL DIMENSIONS, ELEVATIONS AND STATIONING ARE IN METERS UNLESS OTHERWISED SPECIFIED
2. DATE OF SURVEY - APRIL 14, 2014

GOOD FOR CONSTRUCTION

CONSULTANT NIA

REV. No.	DATE	NATURE OF REVISIONS	BY	CHECKED	RECOM.	APPROVED NIA
3						
2						
1						

REPUBLIC OF THE PHILIPPINES
OFFICE OF THE PRESIDENT
NATIONAL IRRIGATION ADMINISTRATION
MALITUBOG MARIDAGAO IRRIGATION PROJECT
NORTH COTABATO AND MAGUINDANAO

FACADE DRAIN
PLAN AND PROFILE

LOWER MALITUBOG STA 5+200 - 7+800

DRAFTING
CADD : AB CERVERA
CHECKED : HS DUCAO

DESIGN
DESIGNED : LA ARANAS
CHECKED : HS DUCAO
SUBMITTED : HS DUCAO

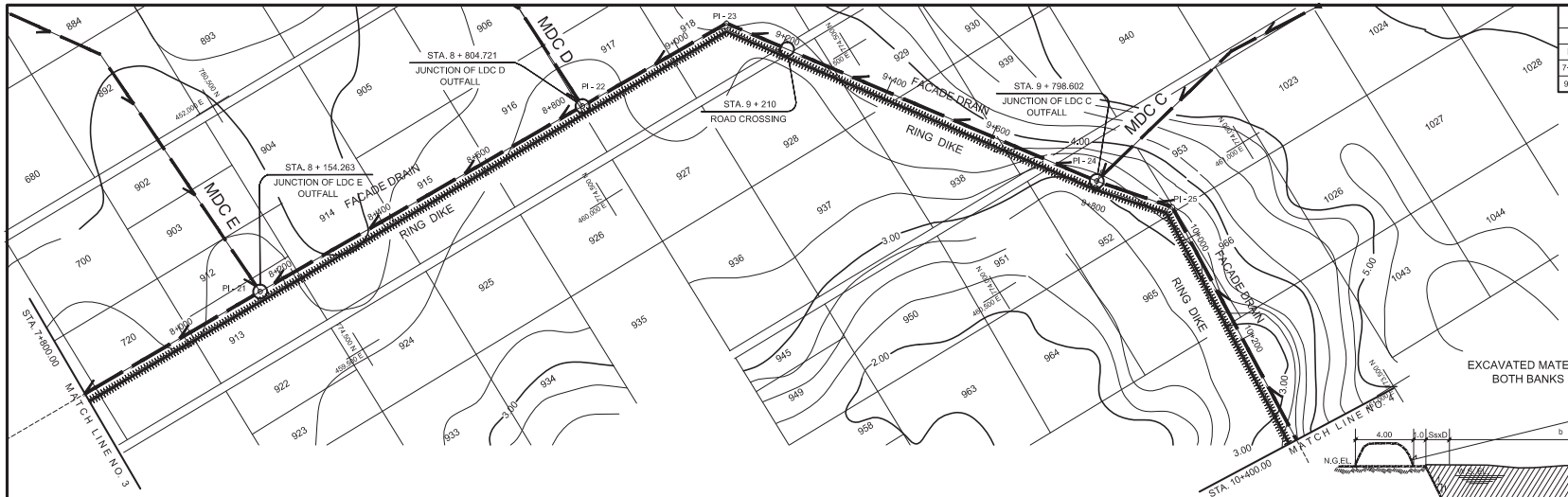
RECOMMENDED:

REYNALDO M. SARIGUMBA
MANAGER-ENG'G DIVISION

APPROVED :

NOLDIN S. OYOD
PROJECT MANAGER

DATE: DWG. NO MMIP. SHEET 3 OF 6

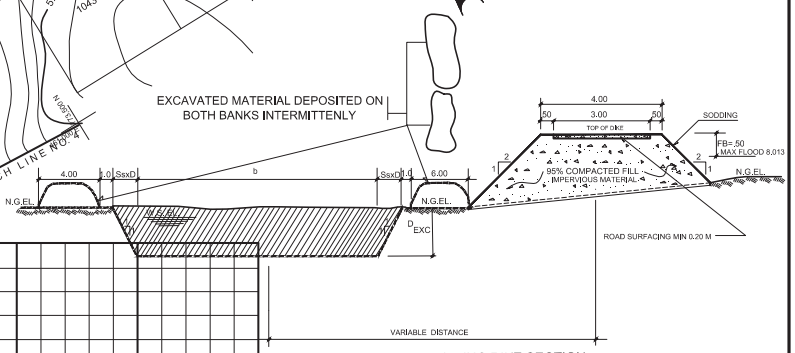


CANAL ELEMENTS														
STATION		Q	V	A	b	d	D	Dc	R	tr	tl	Ss	S	n
FROM	TO	cu.m/s	m/s	m	m	m	m	m	m	m	m			
7+640.00	9+210.00	25.694	0.35	73.15	15.30	3.82	VAR		2.80	4.00	6.00	1:1	0.00005	0.040
9+210.00	11+148.822	15.648	0.31	49.82	11.60	3.34	VAR		2.37	4.00	6.00	1:1	0.00005	0.040
										4.00	6.00			

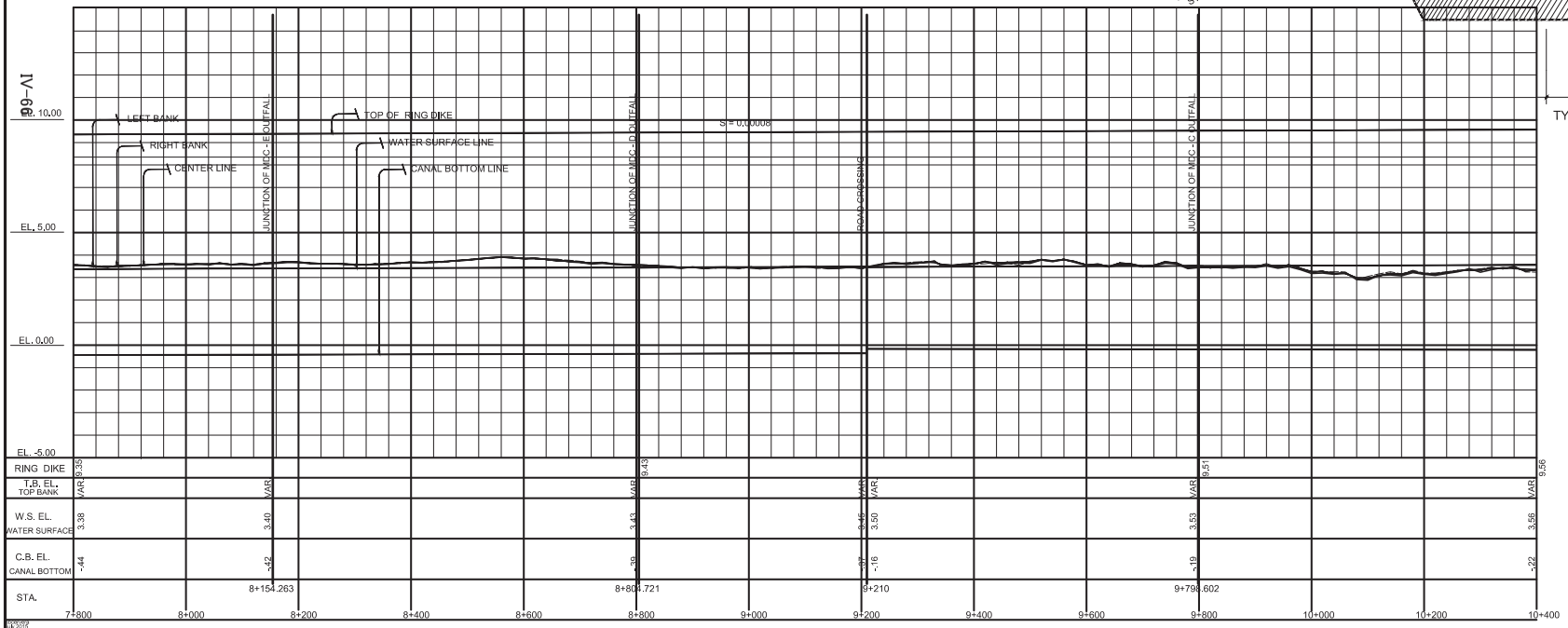
TRAVERSE LINE DATA					
LINE		DISTANCE	AZIMUTH	COORDINATES	
OCC	OBS			NORTHINGS	EASTINGS
PI-20	PI-21	800.271	271-25-23	774,680.040	459,400.044
PI-21	PI-22	650.458	271-44-14	774,660.321	460,050.203
PI-22	PI-23	290.274	271-45-25	774,651.421	460,340.341
PI-23	PI-24	703.607	324-45-23	774,076.781	460,746.360
PI-24	PI-25	140.131	320-37-21	773,968.462	460,835.263
PI-25	PI-26	1,120.771	03-35-52	772,849.900	460,764.933

PLAN

SCALE 1:4000 mts.



TYPICAL FACADE DRAIN & RING DIKE SECTION
(FACING UPSTREAM)
STA 7+800 - STA 10+400



PROFILE SCALE HOR. 1:4000 mts.
VERT. 1:100 mts.

NOTES:

1. ALL DIMENSIONS, ELEVATIONS AND STATIONING ARE IN METERS UNLESS OTHERWISED SPECIFIED
2. DATE OF SURVEY - APRIL 14, 2014

GOOD FOR CONSTRUCTION

CONSULTANT N/A

REV. No.	DATE	NATURE OF REVISIONS	BY	CHECKED	RECOM.	APPROVED
3						
2						
1						

REPUBLIC OF THE PHILIPPINES
OFFICE OF THE PRESIDENT
NATIONAL IRRIGATION ADMINISTRATION
MALITUBOG MARIDAGAO IRRIGATION PROJECT
NORTH COTABATO AND MAGUINDANAO

FACADE DRAIN
PLAN AND PROFILE

LOWER MALITUBOG STA 7+800 - 10+400

DRAFTING		DESIGN	
CADD	AB CERVERA	DESIGNED :	LA ARANAS
CHECKED :	HS DUCAO	CHECKED :	HS DUCAO
		SUBMITTED	HS DUCAO

RECOMMENDED:

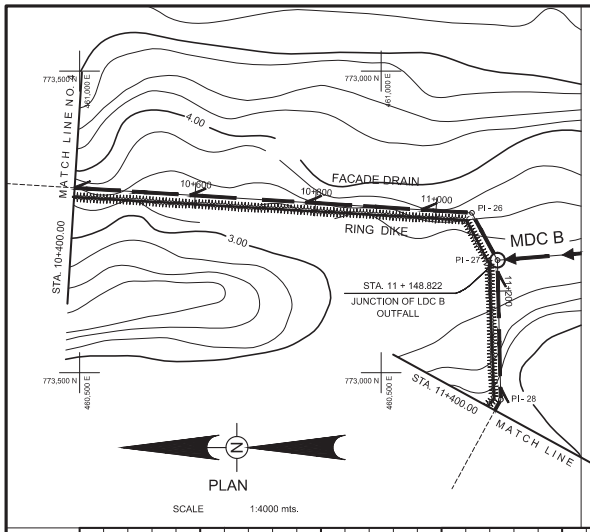
REYNALDO M. SARIGUMBA
MANAGER-ENG'G DIVISION

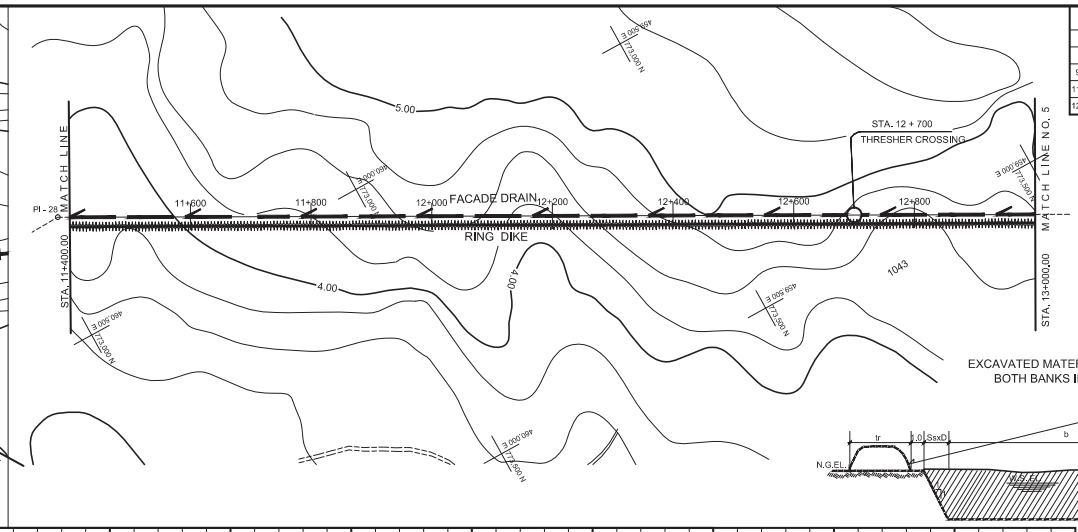
APPROVED :

NOLDIN S. OYOD
PROJECT MANAGER

DATE: DWG. NO MMIP. SHEET 4 OF 6

IV-66



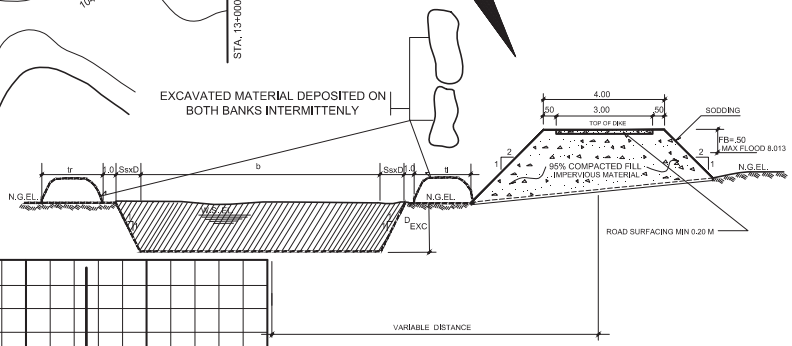


CANAL ELEMENTS														
STATION		Q	V	A	b	d	D	Dc	R	tr	tl	Ss	S	n
FROM	TO	cu.m/s	m/s	m	m	m	m	m	m	m	m			
9+210.00	11+148.822	15.648	0.31	49.82	11.60	3.34	VAR		2.37	4.00	6.00	1:1	0.00005	0.040
11+148.822	12+700.00	6.5112	0.26	25.23	6.70	2.69	VAR		1.76	4.00	6.00	1:1	0.00005	0.040
12+700.00	14+070.00	1.242	0.17	7.14	2.50	1.70	VAR		0.98	2.00	4.00	1:1	0.00005	0.040

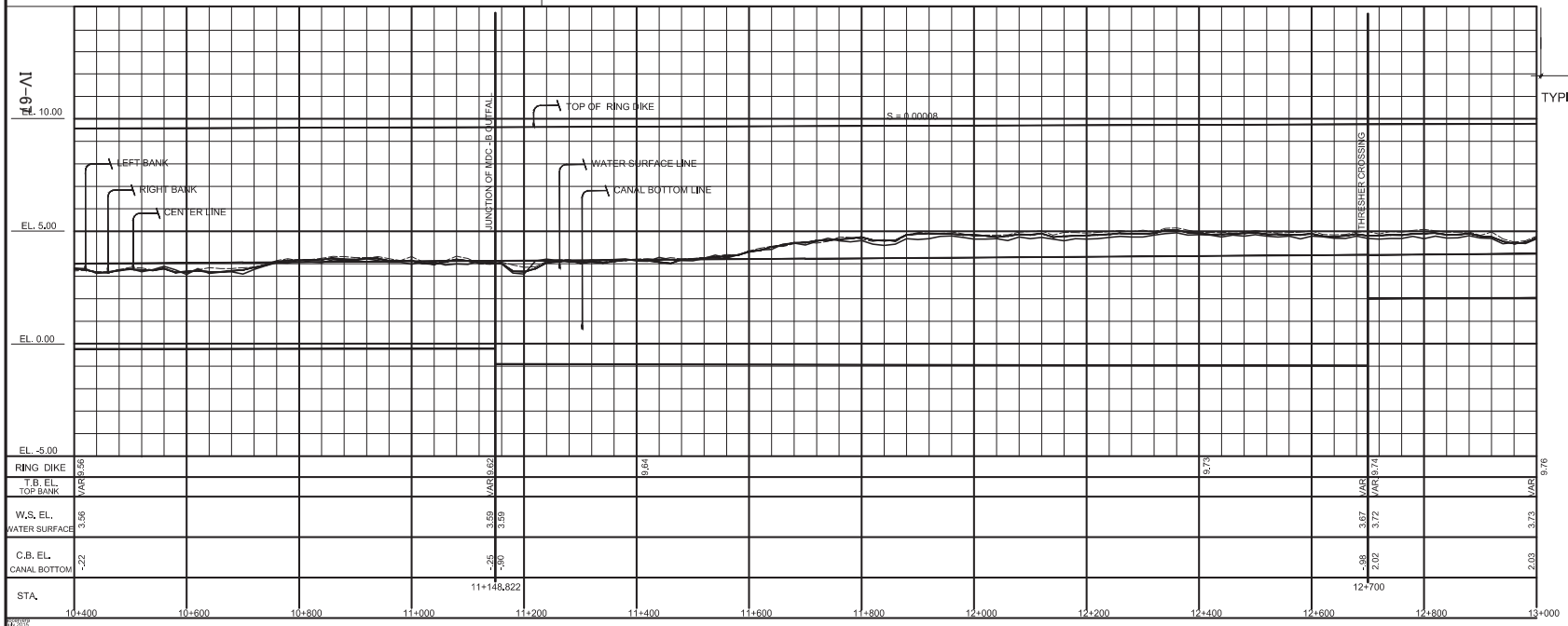
TRAVERSE LINE DATA					
LINE		DISTANCE	AZIMUTH	COORDINATES	
OCC	OBS			NORTHINGS	EASTINGS
PI-25	PI-26	1,120.771	03-35-52	772,849.900	460,764.933
PI-26	PI-27	89.318	61-33-00	772,807.350	460,686.402
PI-27	PI-28	231.081	88-39-50	772,801.962	460,455.384
PI-28	PI-29	2,453.091	118-40-32	773,979.076	458,303.162

PLAN

SCALE 1:4000 mts.



TYPICAL FACADE DRAIN & RING DIKE SECTION
(FACING UPSTREAM)
STA 10+400 - STA 13+000



PROFILE SCALE HOR. 1:4000 mts.
VERT. 1:100 mts.

NOTES:

1. ALL DIMENSIONS, ELEVATIONS AND STATIONING ARE IN METERS UNLESS OTHERWISED SPECIFIED
2. DATE OF SURVEY - APRIL 14, 2014

GOOD FOR CONSTRUCTION

CONSULTANT NIA

REV. No.	DATE	NATURE OF REVISIONS	BY	CHECKED	RECOM.	APPROVED
3						
2						
1						

REPUBLIC OF THE PHILIPPINES
OFFICE OF THE PRESIDENT
NATIONAL IRRIGATION ADMINISTRATION
MALITUBOG MARIDAGAO IRRIGATION PROJECT
NORTH COTABATO AND MAGUINDANAO

FACADE DRAIN
PLAN AND PROFILE

LOWER MALITUBOG STA 10+400 - 13+000

DRAFTING		DESIGN	
CADD	AB CERVERA	DESIGNED :	LA ARANAS
CHECKED :	HS DUCAO	CHECKED :	HS DUCAO
		SUBMITTED :	HS DUCAO

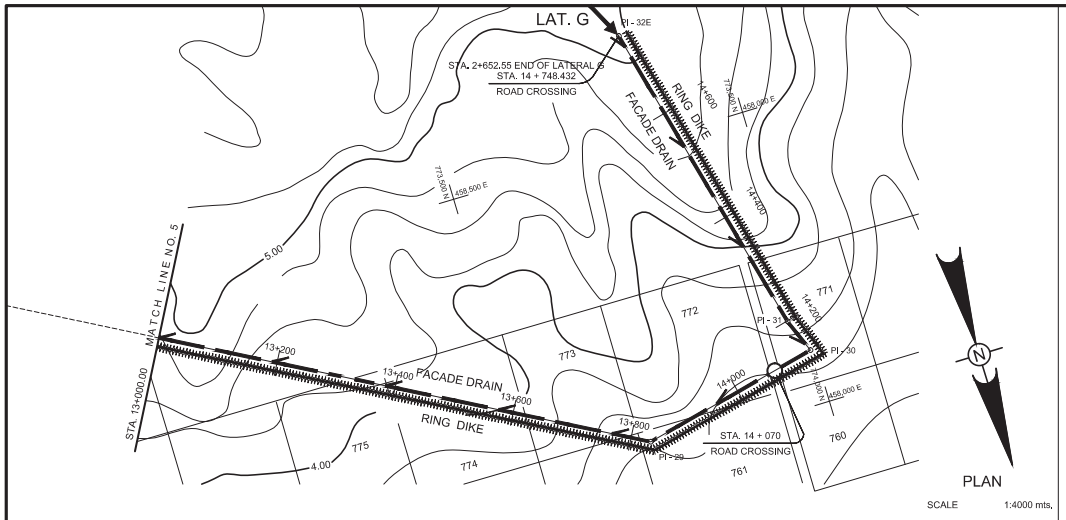
RECOMMENDED:

REYNALDO M. SARIGUMBA
MANAGER-ENG'G DIVISION

APPROVED :

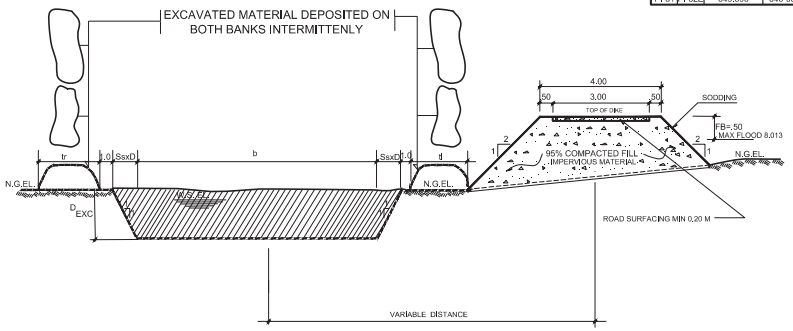
NOLDIN S. OYOD
PROJECT MANAGER

DATE: DWG. NO MMIP. SHEET 5 OF 6

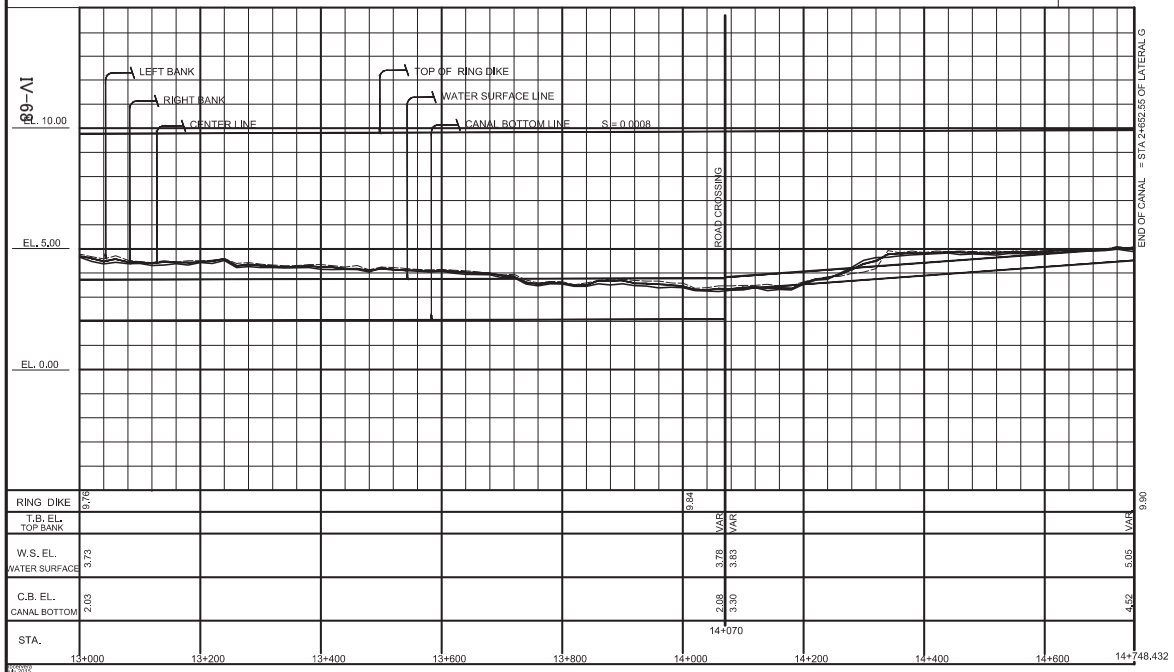


CANAL ELEMENTS														
STATION		Q	V	A	b	d	D	Dc	R	tr	tl	Ss	S	n
FROM	TO	cu.m/s	m/s	m	m	m	m	m	m	m	m			
12+700.00	14+070.00	1.242	0.17	7.14	2.50	1.70	VAR		0.98			1:1	0.00005	0.040
14+070.00	14+748.432	0.247	0.45	0.55	0.50	0.53	VAR		0.27			1:1	0.0018	0.040

TRAVERSE LINE DATA					
LINE		DISTANCE	AZIMUTH	COORDINATES	
OCC	OBS			NORTHINGS	EASTINGS
PI-28	PI-29	2,453.091	118-40-32	773,979.076	458,303.162
PI-29	PI-30	305.124	76-55-34	773,910.055	458,005.947
PI-30	PI-31	60.918	338-17-35	773,853.457	458,028.478
PI-31	PI-32E	549.396	346-08-58	773,320.036	458,159.958



TYPICAL FACADE DRAIN & RING DIKE SECTION
(FACING UPSTREAM)
STA 13+000 - STA 14+748.432



PROFILE SCALE HOR. 1:4000 mts.
VERT. 1:100 mts.

NOTES:

1. ALL DIMENSIONS, ELEVATIONS AND STATIONING ARE IN METERS UNLESS OTHERWISED SPECIFIED
2. DATE OF SURVEY - APRIL 14, 2014

GOOD FOR CONSTRUCTION

CONSULTANT NIA

REV. No.	DATE	NATURE OF REVISIONS	BY	CHECKED	RECOM.	APPROVED
3						
2						
1						

REPUBLIC OF THE PHILIPPINES
OFFICE OF THE PRESIDENT
NATIONAL IRRIGATION ADMINISTRATION
MALITUBOG MARIDAGAO IRRIGATION PROJECT
NORTH COTABATO AND MAGUINDANAO

LOWER MALITUBOG STA 13+000 - 14+748.432

DRAFTING
CADD : AB CERVERA
CHECKED : HS DUCAO

DESIGN
DESIGNED : LA ARANAS
CHECKED : HS DUCAO
SUBMITTED : HS DUCAO

RECOMMENDED:
REYNALDO M. SARIGUMBA
MANAGER-ENG'G DIVISION

APPROVED :
NOLDIN S. OYOD
PROJECT MANAGER

DATE: DWG. NO MMIP. SHEET 6 OF 6