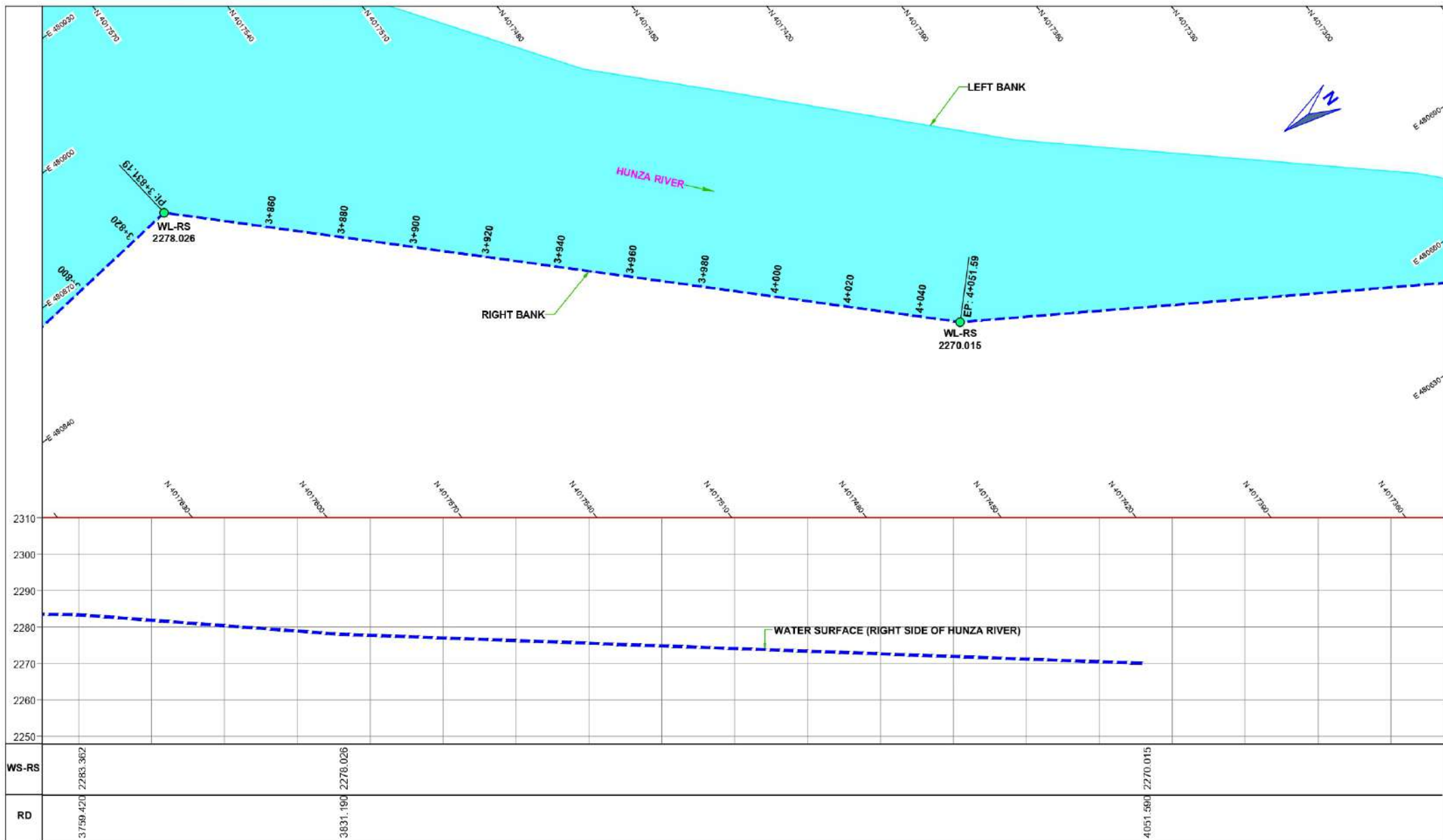


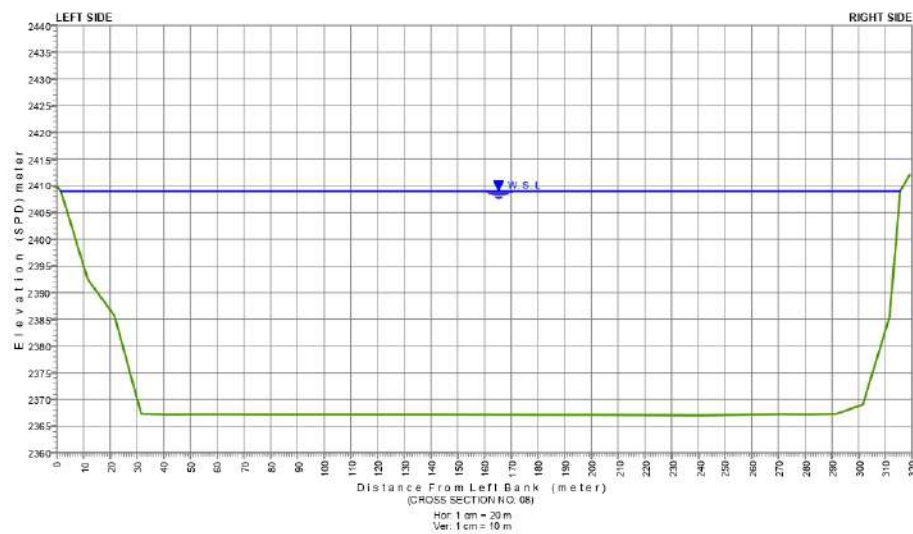
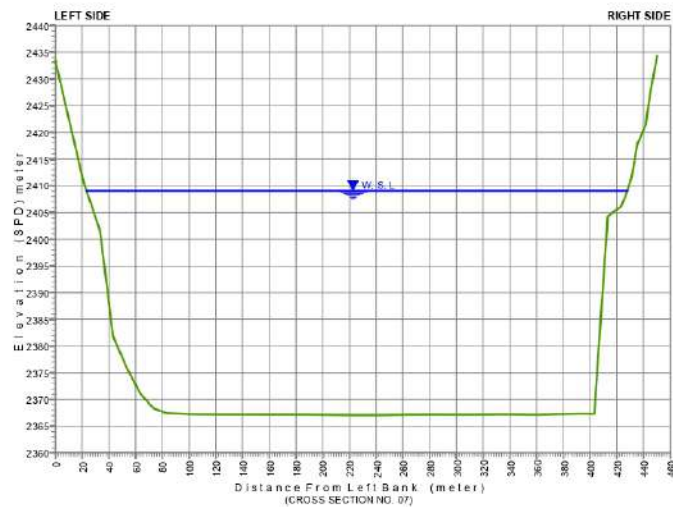
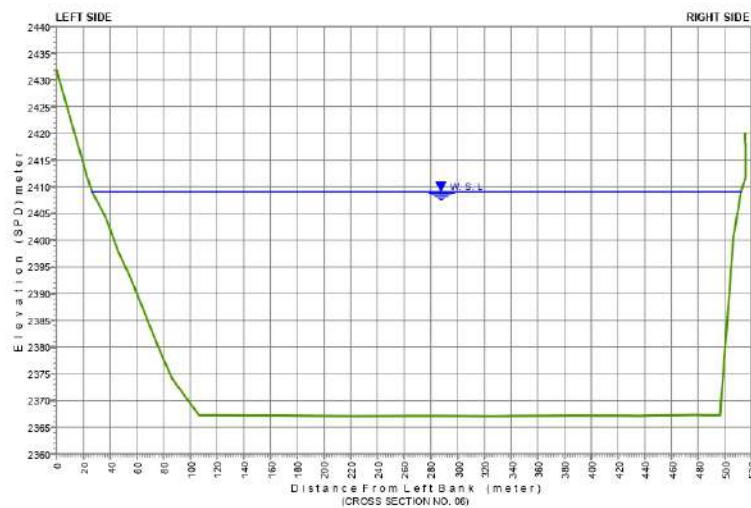
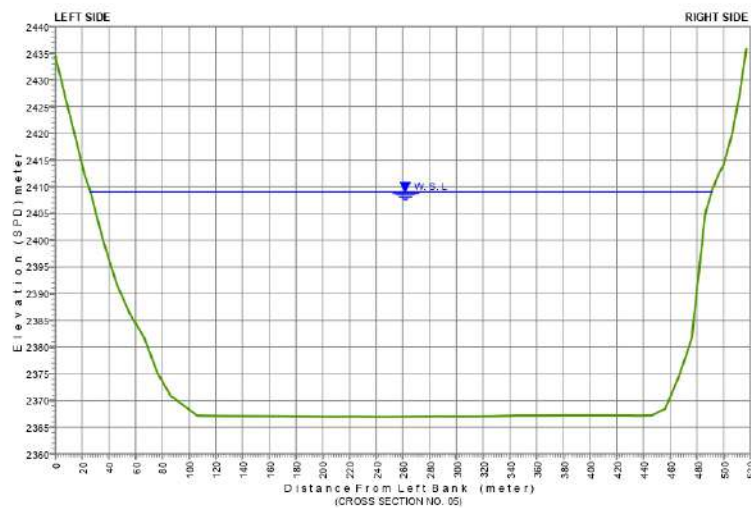


NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METERS UNLESS OTHERWISE SPECIFIED.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY HYDRO PLANNING ORGANIZATION			
PREPARED	PROJECT	ATTABAD LAKE HPP FEASIBILITY STUDY REPORT	
DRAWN	TITLE	WATER SURFACE PLAN AND PROFILE (HUNZA RIVER)	
CHECKED		(Sheet 11 of 11)	
APPROVED	DATE	SCALE	DWG No.
Abid Sheikh	Jun: 2021	1 : 1,000	AFS-SP-261
		REVISIONS	



LEGEND

OBSERVED WATER LEVEL ———

OBSERVED BED LEVEL ———

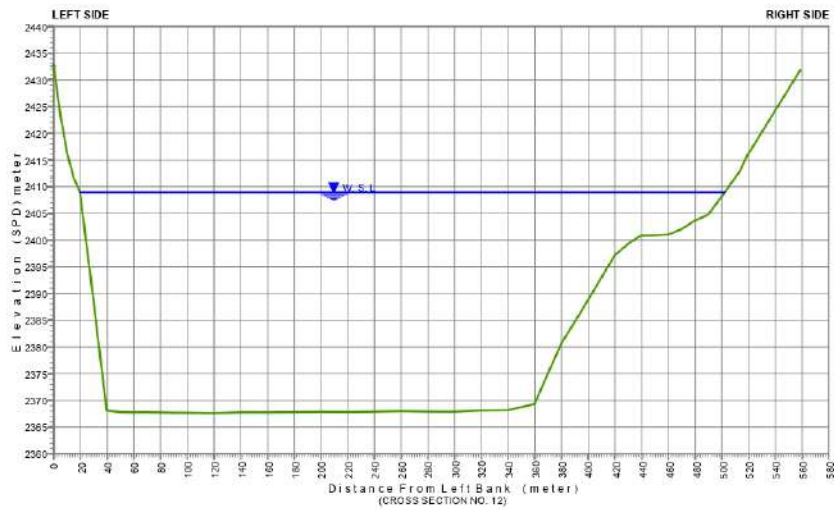
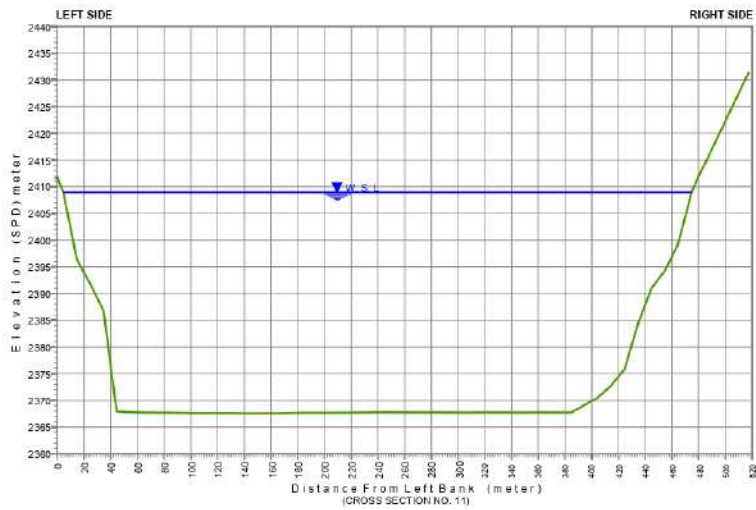
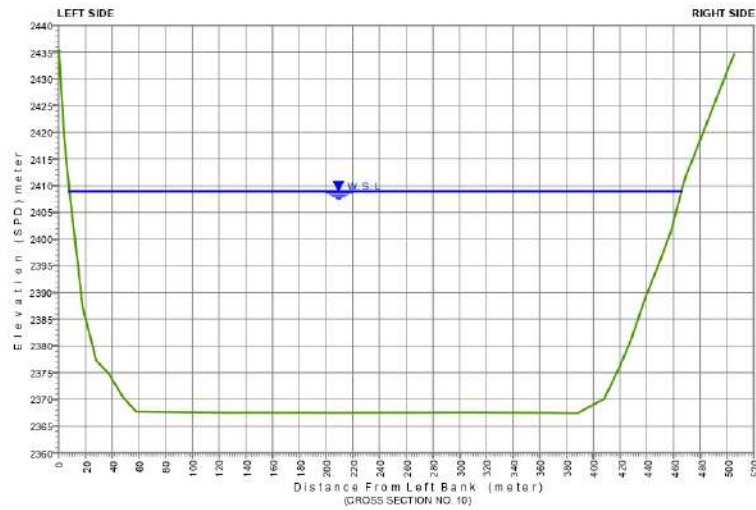
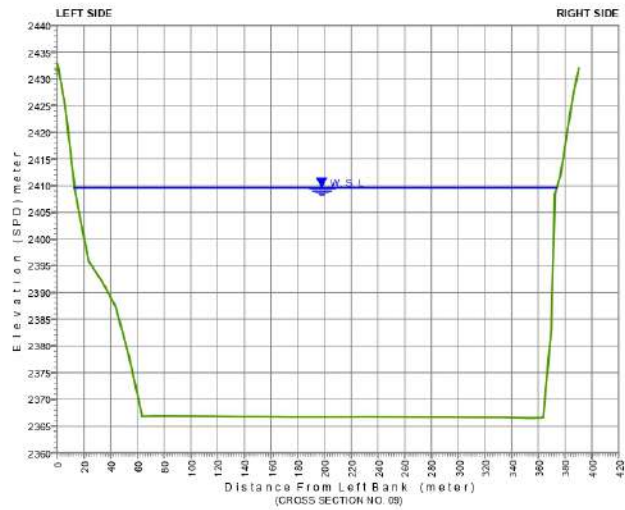
NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METERS UNLESS OTHERWISE SPECIFIED.
2. HYDROGRAPHIC SURVEY BY ISRIP - WAPDA.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

PREPARED PROJECT	ATTABAD LAKE HPP
DRAWN TITLE	FEASIBILITY STUDY REPORT
Arshad CHECKED	HYDROGRAPHIC SURVEY OF
	ATTABAD LAKE
	X - Sections No. 05,06,07 & 08
Chsan APPROVED	DATE
Abid Sheikh	Jun: 2021
SCALE	DWG No:
Hor: 1 cm = 40 m	AFS-HS-272
Ver: 1 cm = 10 m	REVISIONS



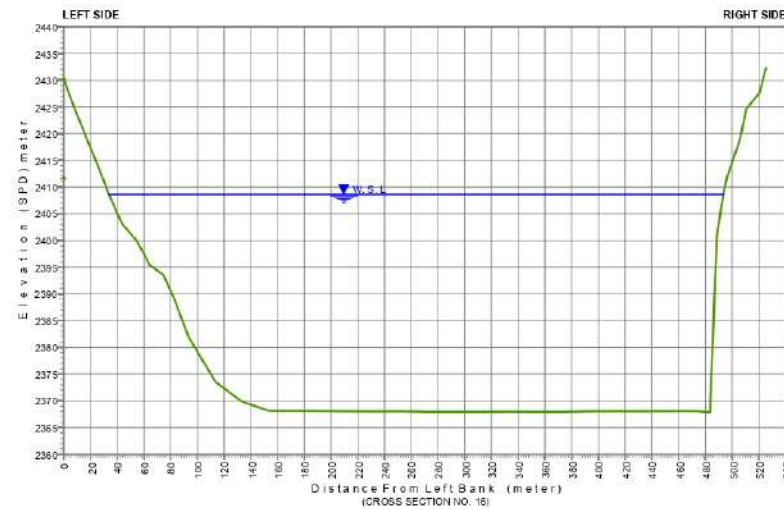
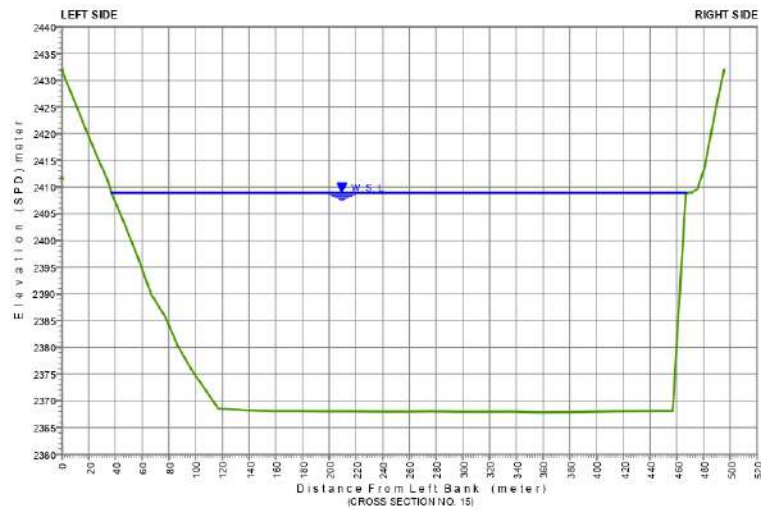
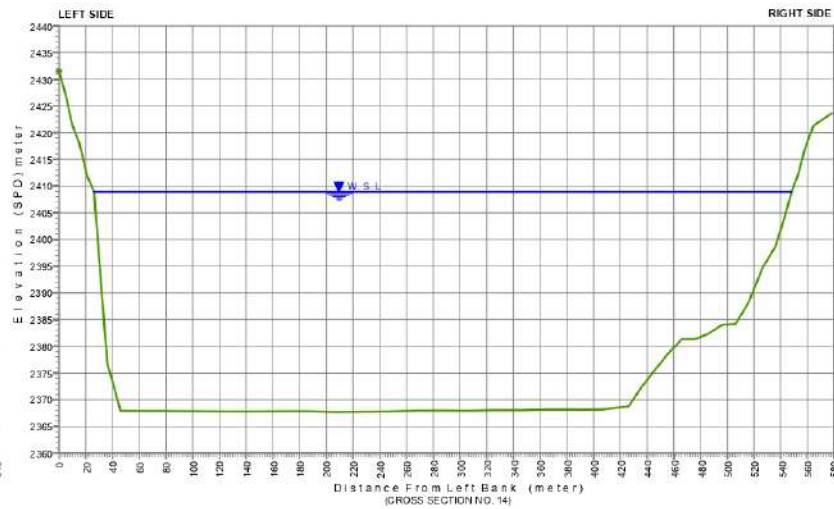
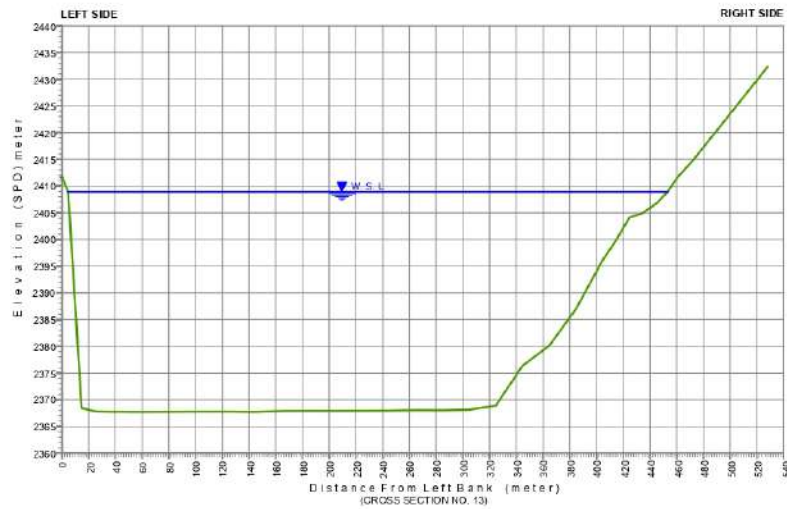
LEGEND

OBSERVED WATER LEVEL ———
OBSERVED BED LEVEL ———

NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METERS UNLESS OTHERWISE SPECIFIED.
2. HYDROGRAPHIC SURVEY BY **ISRIP** - WAPDA.

 PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY HYDRO PLANNING ORGANIZATION		PROJECT ATTABAD LAKE HPP FEASIBILITY STUDY REPORT	
		TITLE HYDROGRAPHIC SURVEY OF ATTABAD LAKE X - Sections No. 09,10,11 & 12	
PREPARED Ehsan	DRAWN Arshad	CHECKED Ehsan	APPROVED Abid Sheikh
DATE Jun: 2021	SCALE Hor: 1 cm = 40 m Ver: 1 cm = 10 m	DWG No. AFS-HS-273	REVISIONS



LEGEND

OBSERVED WATER LEVEL ———
OBSERVED BED LEVEL ———

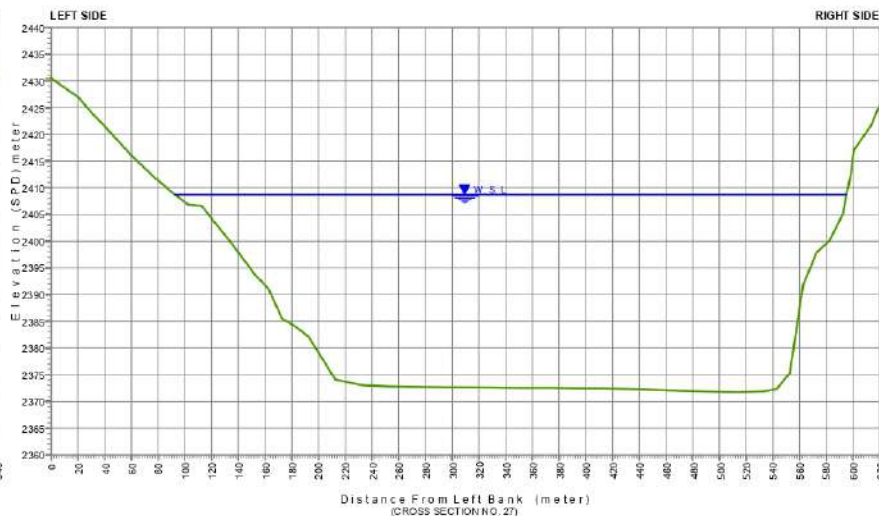
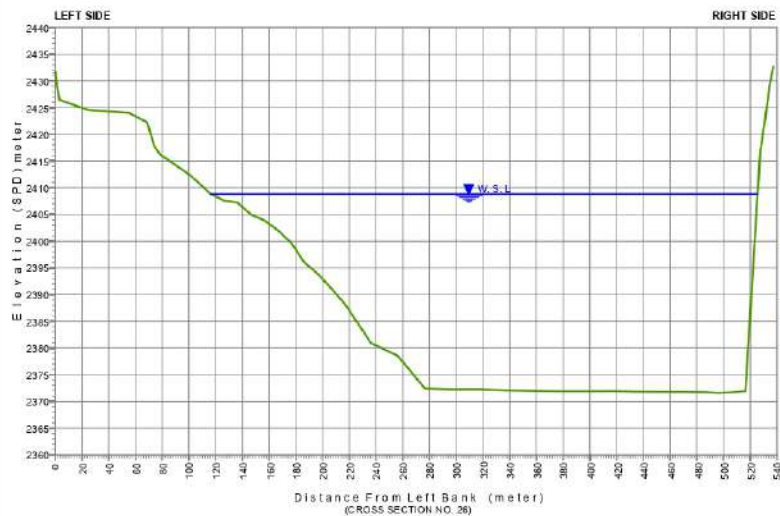
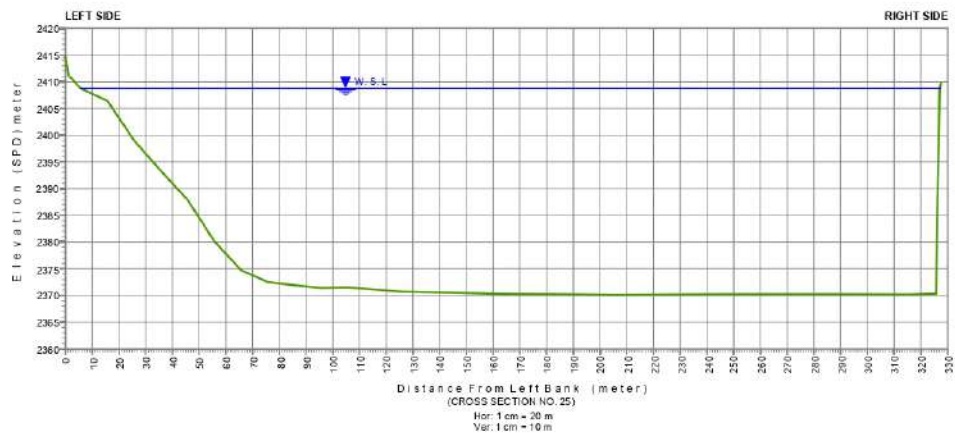
NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METERS UNLESS OTHERWISE SPECIFIED.
2. HYDROGRAPHIC SURVEY BY **ISRIP** - WAPDA.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

PREPARED	PROJECT	ATTABAD LAKE HPP FEASIBILITY STUDY REPORT	
DRAWN	TITLE	HYDROGRAPHIC SURVEY OF ATTABAD LAKE	
CHECKED		X - Sections No. 13,14,15 & 16	
APPROVED	DATE	SCALE	DWG No.
Abid Sheikh	Jun: 2021	Hor: 1 cm = 40 m Ver: 1 cm = 10 m	AFS-HS-274
		REVISIONS	



LEGEND

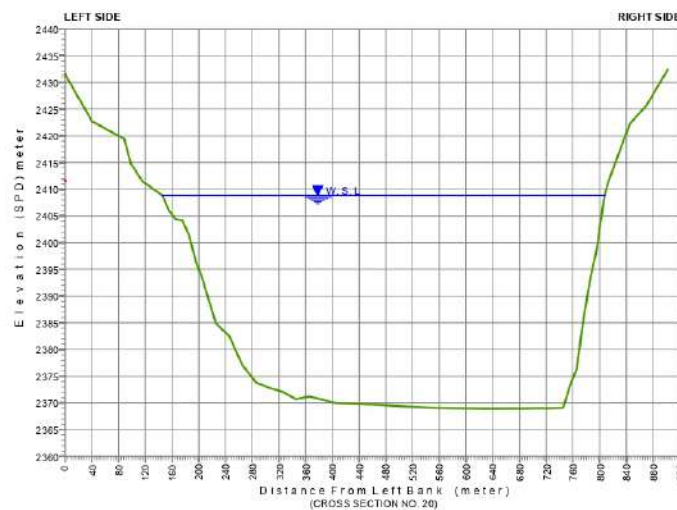
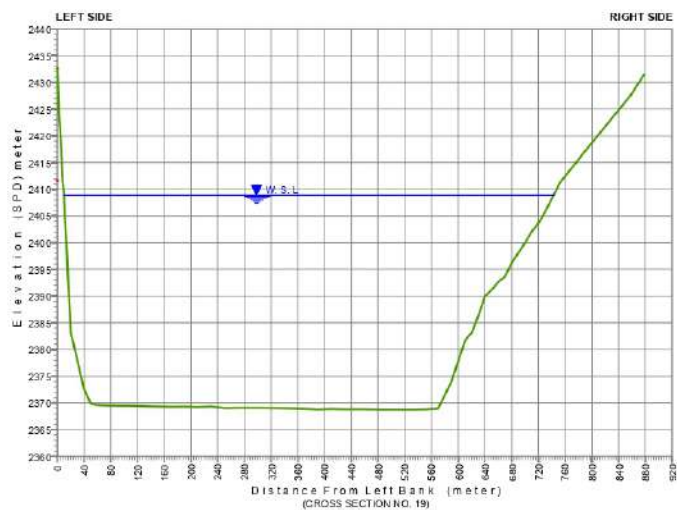
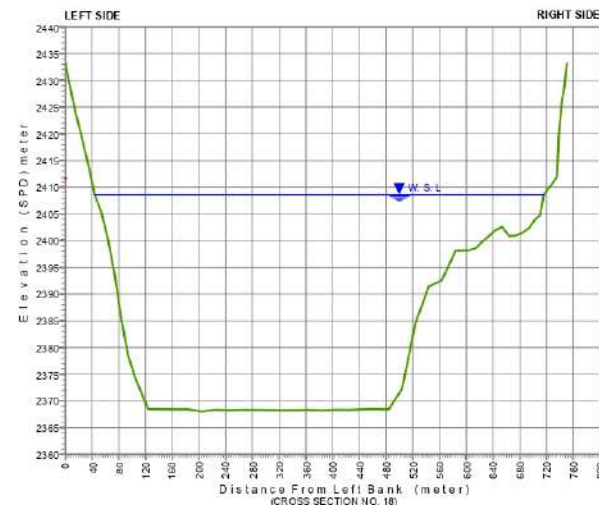
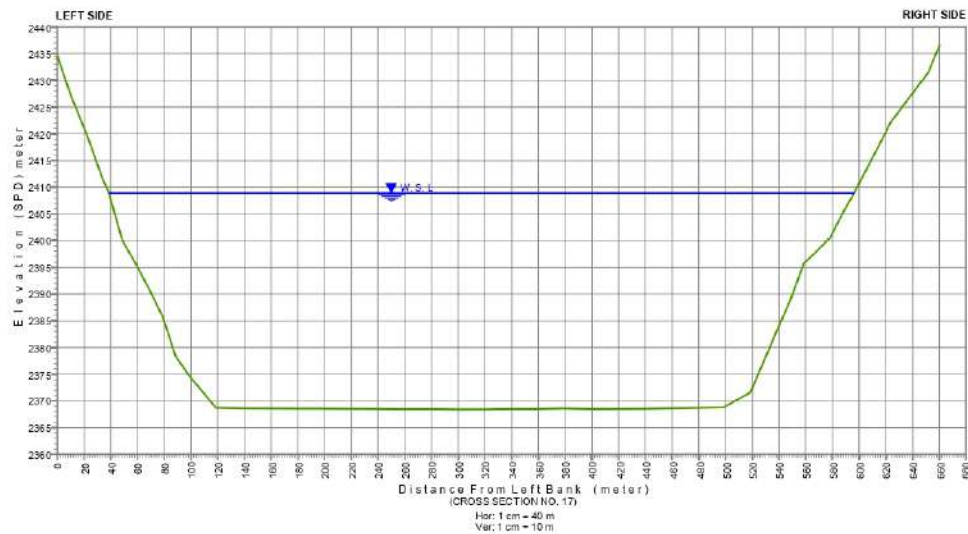
OBSERVED WATER LEVEL ———

OBSERVED BED LEVEL ———

NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METERS UNLESS OTHERWISE SPECIFIED.
2. HYDROGRAPHIC SURVEY BY ISRIP - WAPDA.

 PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY HYDRO PLANNING ORGANIZATION		ATTABAD LAKE HPP FEASIBILITY STUDY REPORT	
PREPARED	PROJECT	HYDROGRAPHIC SURVEY OF ATTABAD LAKE X - Sections No. 25, 26, & 27	
Arshad	DRAWN		
Arshad	CHECKED		
Arshad	APPROVED	DATE	REVISIONS
Abid Sheikh	Jun: 2021	SCALE Hor: 1 cm = 40 m Ver: 1 cm = 10 m	DWG No: AFS-HS-277



LEGEND

OBSERVED WATER LEVEL ———

OBSERVED BED LEVEL ———

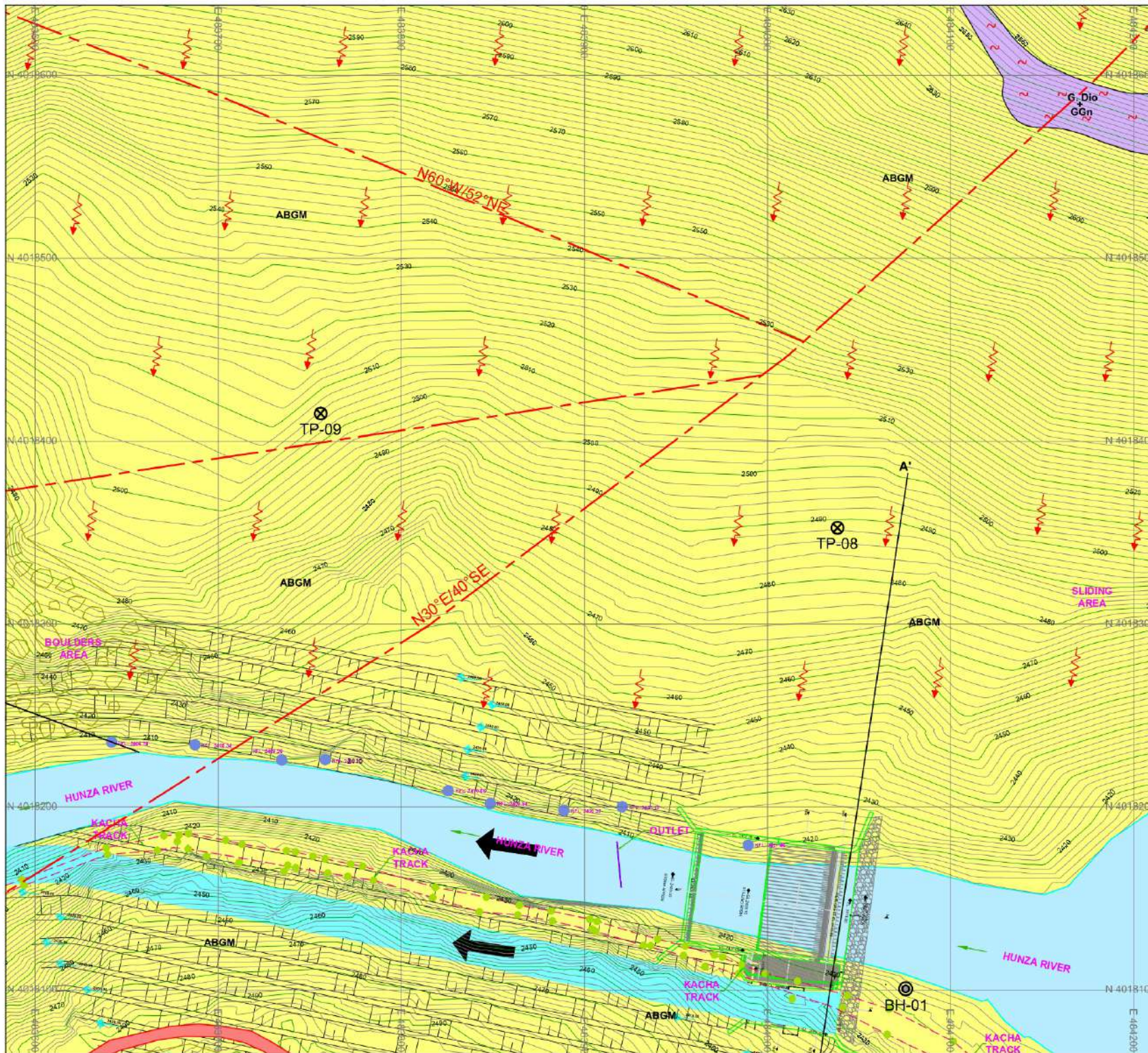
NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METERS UNLESS OTHERWISE SPECIFIED.
2. HYDROGRAPHIC SURVEY BY **ISRIP** - WAPDA.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

PREPARED	PROJECT	ATTABAD LAKE HPP	
Ehsan		FEASIBILITY STUDY REPORT	
DRAWN	TITLE	HYDROGRAPHIC SURVEY OF	
Arshad		ATTABAD LAKE	
CHECKED		X - Sections No. 17,18,19 & 20	
Ehsan			
APPROVED	DATE	SCALE	DWG No.
Abid Sheikh	Jun: 2021	Hor: 1 cm = 80 m Ver: 1 cm = 10 m	AFS-HS-275
			REVISIONS



KEY PLAN:

				4	1
	16	13	10	7	
19	17	14	11	8	5
20	18	15	12	9	6
					3

LEGEND (GEOLOGY)

SOIL UNITS:

ABGM	Angular boulders and gravel with sand and appreciable amount of fines.
RBGM	Rounded boulders and gravel with sand and appreciable amount of fines.
CT	Cultivated Terrace.
Mor	Morainic Material
CS	Clayey Silt.

ROCK UNITS:

G.Dio	Granodiorite
G.Dio + GGn	Granodiorite + Granitic Gneiss.
BR	Fault Breccia.
	Dip and Strike of joint sets in rock.
	Dip and Strike of foliation.
	Active slide.
	Shear zone.
	Fault
	Bore Hole.
	Test Pit.
	River
	Confirmed Contact
	Inferred Contact



NOTE.

- ALL THE UNITS ARE IN METERS UNLESS OTHERWISE NOTED
- SURVEY OF PAKISTAN (SOP) METRIC COORDINATE SYSTEM WAS USED FOR FIELD OBSERVATIONS.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

PREPARED PROJECT
Nauman Naseer

ATTABAD LAKE HPP
FEASIBILITY STUDY REPORT

DRAWN
Arshad

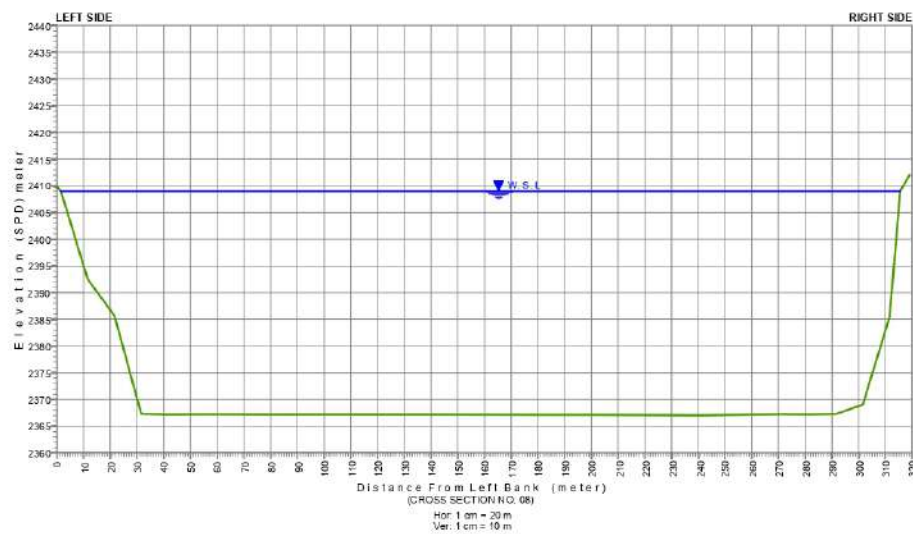
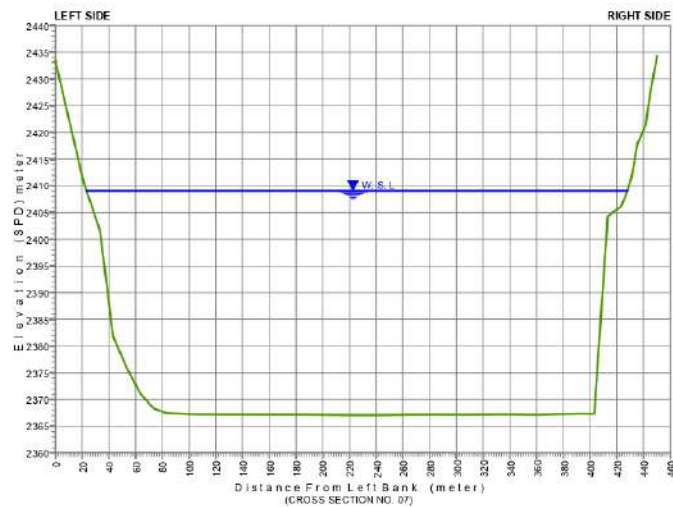
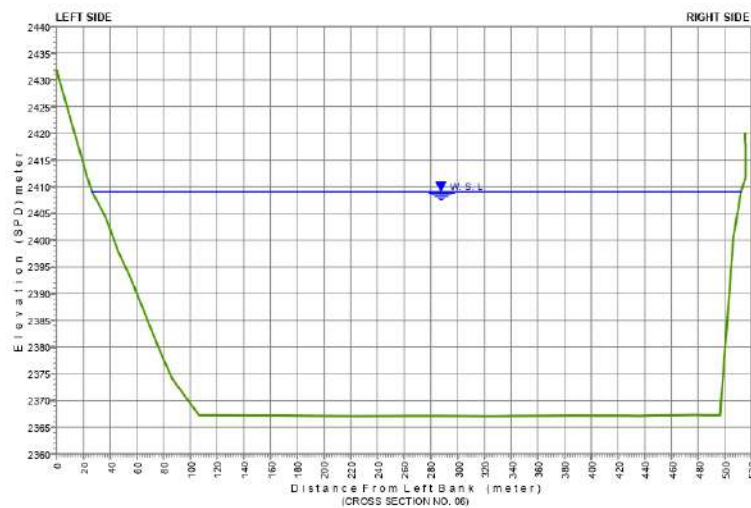
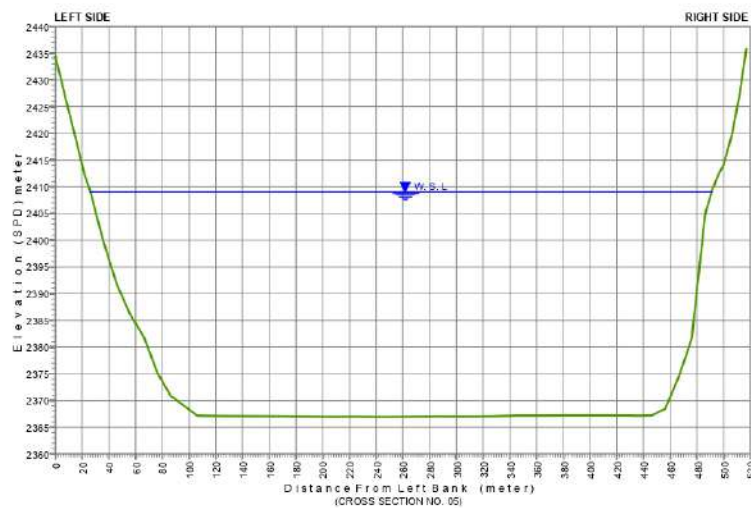
SURFACE GEOLOGICAL MAP

Sheet 5 of 20

CHECKED
Nasiruddin Umar Tang

APPROVED
Abid Sheikh

DATE	SCALE	DWG No.	REVISIONS
Jun: 2021	1 : 2,000	AFS-GE-297	



LEGEND

OBSERVED WATER LEVEL ———

OBSERVED BED LEVEL ———

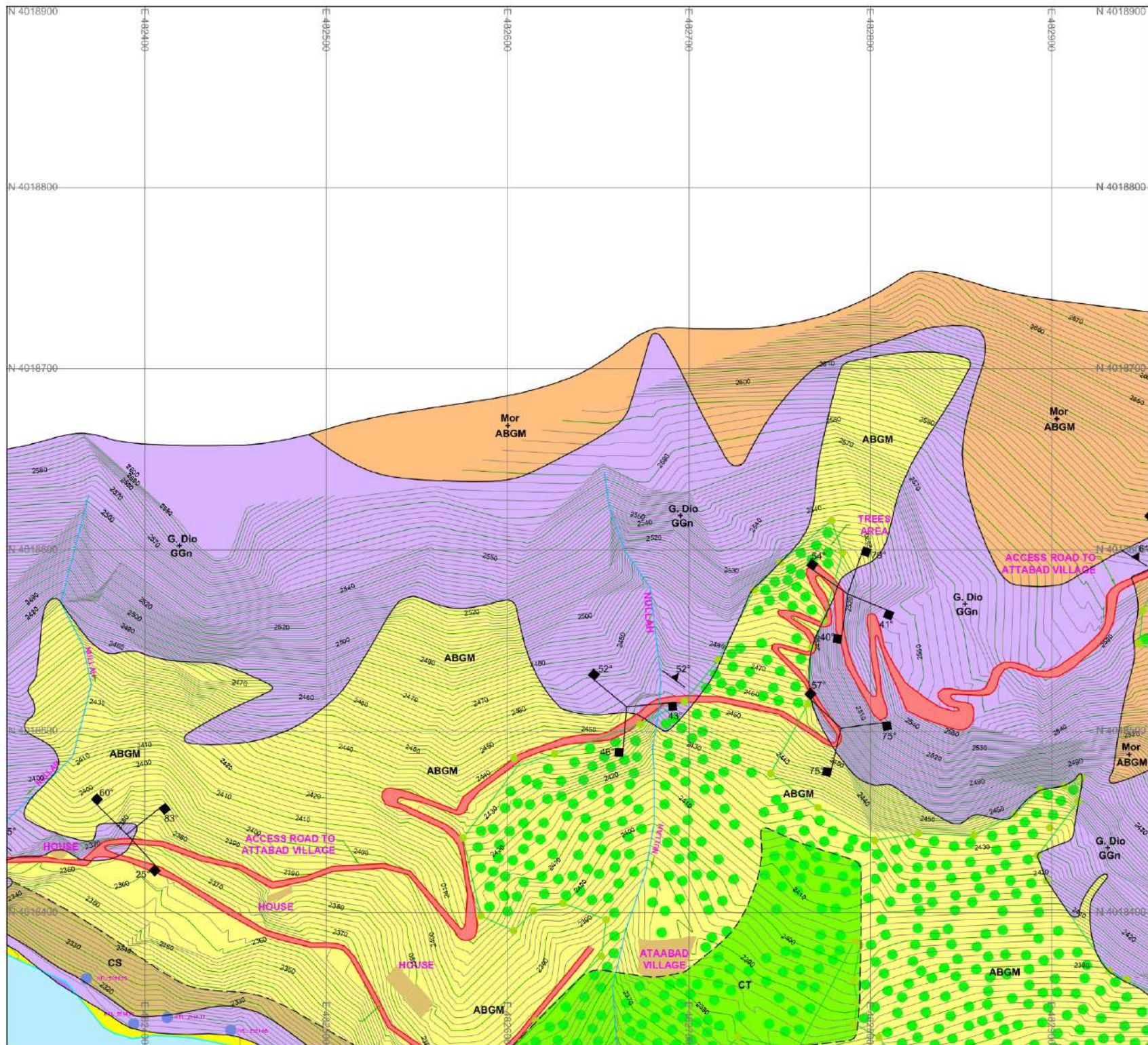
NOTE:

- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METERS UNLESS OTHERWISE SPECIFIED.
- HYDROGRAPHIC SURVEY BY ISRIP - WAPDA.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

PREPARED PROJECT	ATTABAD LAKE HPP FEASIBILITY STUDY REPORT
DRAWN	TITLE
Arshad CHECKED	HYDROGRAPHIC SURVEY OF ATTABAD LAKE
Chsan APPROVED	X - Sections No. 05,06,07 & 08
Abid Sheikh	DATE
Jun: 2021	SCALE Hor: 1 cm = 40 m Ver: 1 cm = 10 m
	DWG No: AFS-HS-272
	REVISIONS



KEY PLAN:

				4	1
	16	13	10	7	
19	17	14	11	8	5
20	18	15	12	9	6
					3

LEGEND (GEOLOGY)

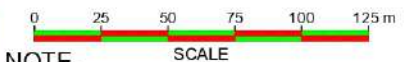
SOIL UNITS:

ABGM	Angular boulders and gravel with sand and appreciable amount of fines.
RBGM	Rounded boulders and gravel with sand and appreciable amount of fines.
CT	Cultivated Terrace.
Mor	Morainic Material
CS	Clayey Silt.

ROCK UNITS:

G.Dio	Granodiorite
G.Dio + GGn	Granodiorite + Granitic Gneiss.
BR	Fault Breccia.
	Dip and Strike of joint sets in rock.
	Dip and Strike of foliation.

	Active slide.
	Shear zone.
	Fault
	Bore Hole.
	Test Pit.
	River
	Confirmed Contact
	Inferred Contact



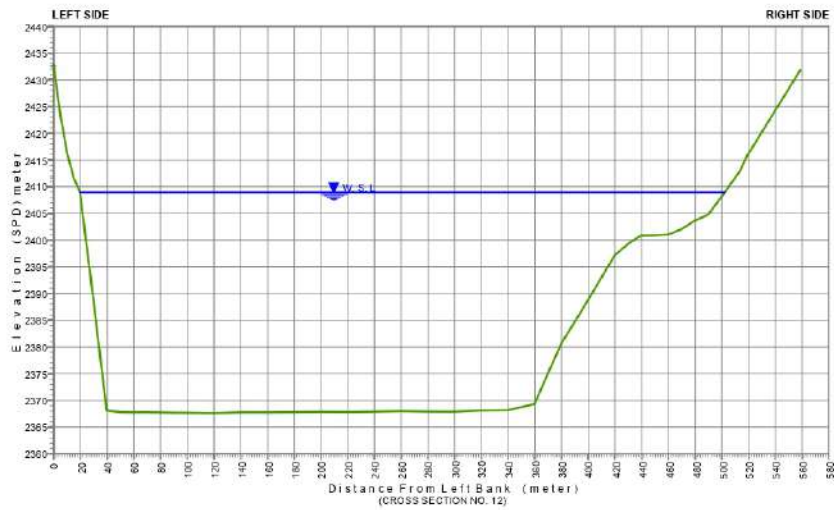
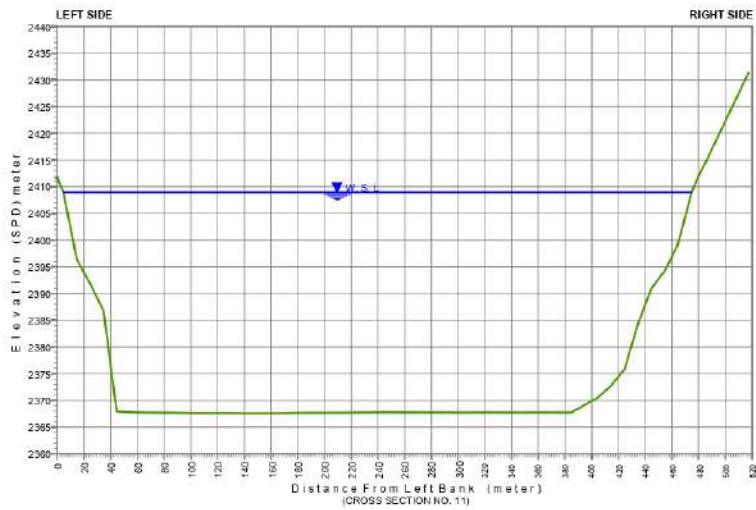
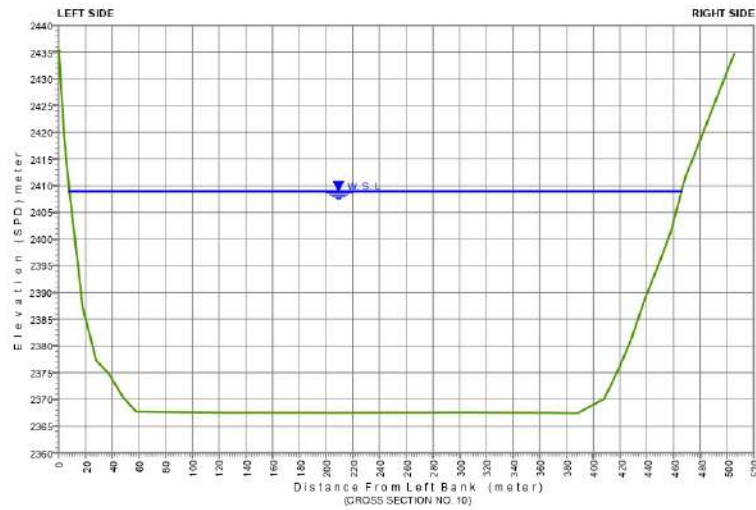
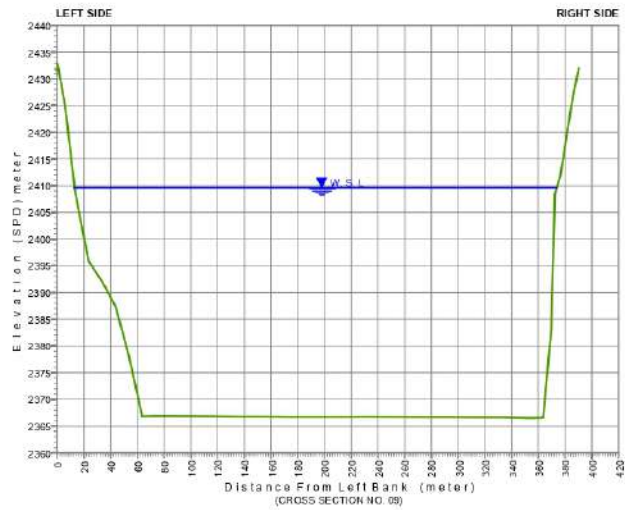
NOTE.

- ALL THE UNITS ARE IN METERS UNLESS OTHERWISE NOTED
- SURVEY OF PAKISTAN (SOP) METRIC COORDINATE SYSTEM WAS USED FOR FIELD OBSERVATIONS.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

PREPARED PROJECT	Nauman Naseer	ATTABAD LAKE HPP		
DRAWN	Arshad	FEASIBILITY STUDY REPORT		
CHECKED	Nasiruddin Umar Tang	SURFACE GEOLOGICAL MAP		
APPROVED	Abid Sheikh	Sheet 10 of 20		
DATE	Jun: 2021	SCALE	1 : 2,000	DWG No.
				AFS-GE-302
				REVISIONS



LEGEND

OBSERVED WATER LEVEL ————
OBSERVED BED LEVEL ————

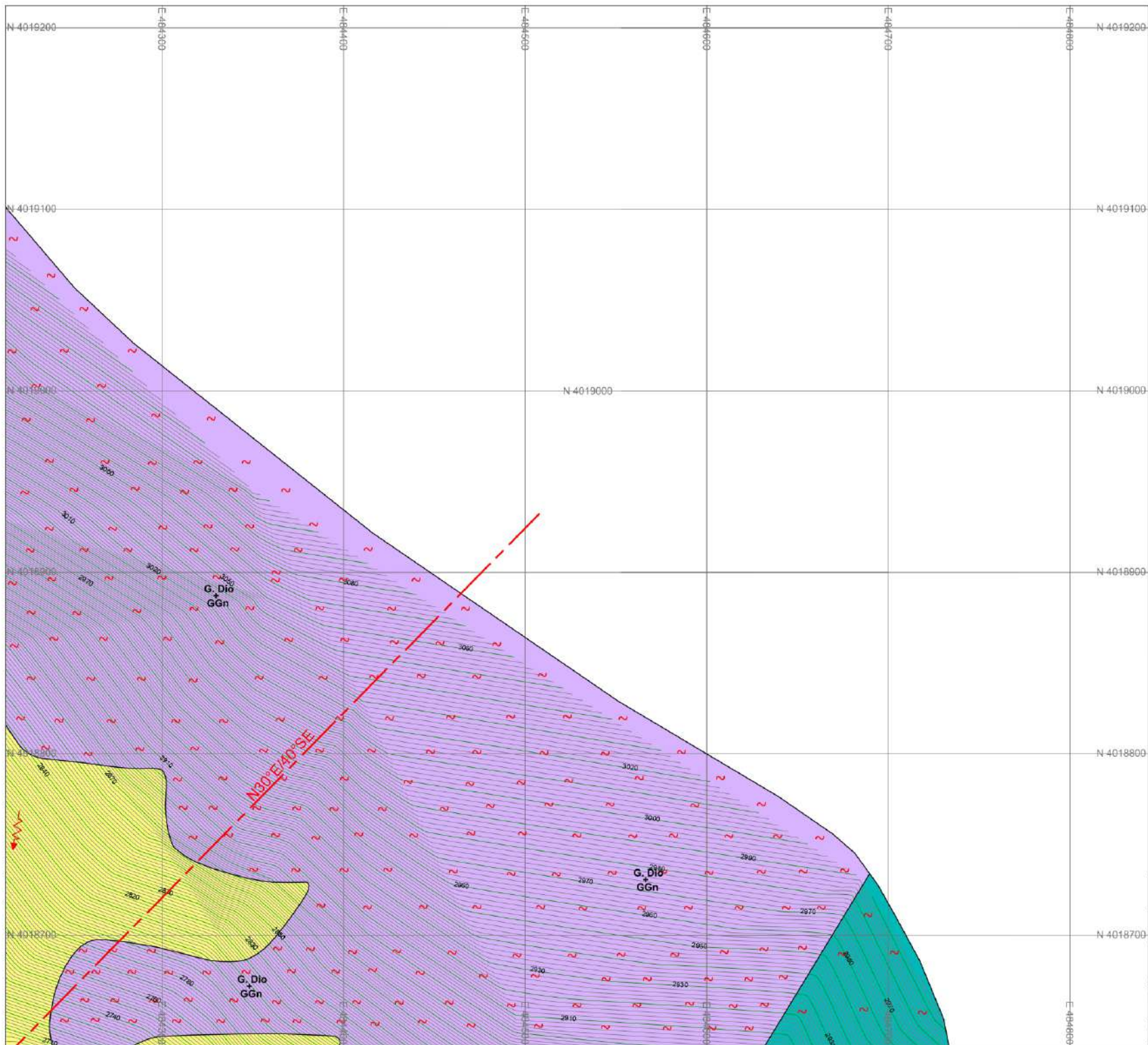
NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METERS UNLESS OTHERWISE SPECIFIED.
2. HYDROGRAPHIC SURVEY BY **ISRIP** - WAPDA.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

PREPARED	PROJECT	ATTABAD LAKE HPP FEASIBILITY STUDY REPORT	
DRAWN	TITLE	HYDROGRAPHIC SURVEY OF ATTABAD LAKE	
CHECKED		X - Sections No. 09,10,11 & 12	
APPROVED	DATE	SCALE Hor: 1 cm = 40 m Ver: 1 cm = 10 m	DWG No. AFS-HS-273
Abid Sheikh	Jun: 2021		REVISIONS



KEY PLAN:

					4	1
	16	13	10	7	5	2
19	17	14	11	8	6	3
20	18	15	12	9		

LEGEND (GEOLOGY)

SOIL UNITS:

ABGM	Angular boulders and gravel with sand and appreciable amount of fines.
RBGM	Rounded boulders and gravel with sand and appreciable amount of fines.
CT	Cultivated Terrace.
Mor	Morainic Material
CS	Clayey Silt.

ROCK UNITS:

G.Dio	Granodiorite
G.Dio + GGn	Granodiorite + Granitic Gneiss.
BR	Fault Breccia.
	Dip and Strike of joint sets in rock.
	Dip and Strike of foliation.
	Active slide.
	Shear zone.
	Fault
BH	Bore Hole.
TP	Test Pit.
	River
	Confirmed Contact
	Inferred Contact



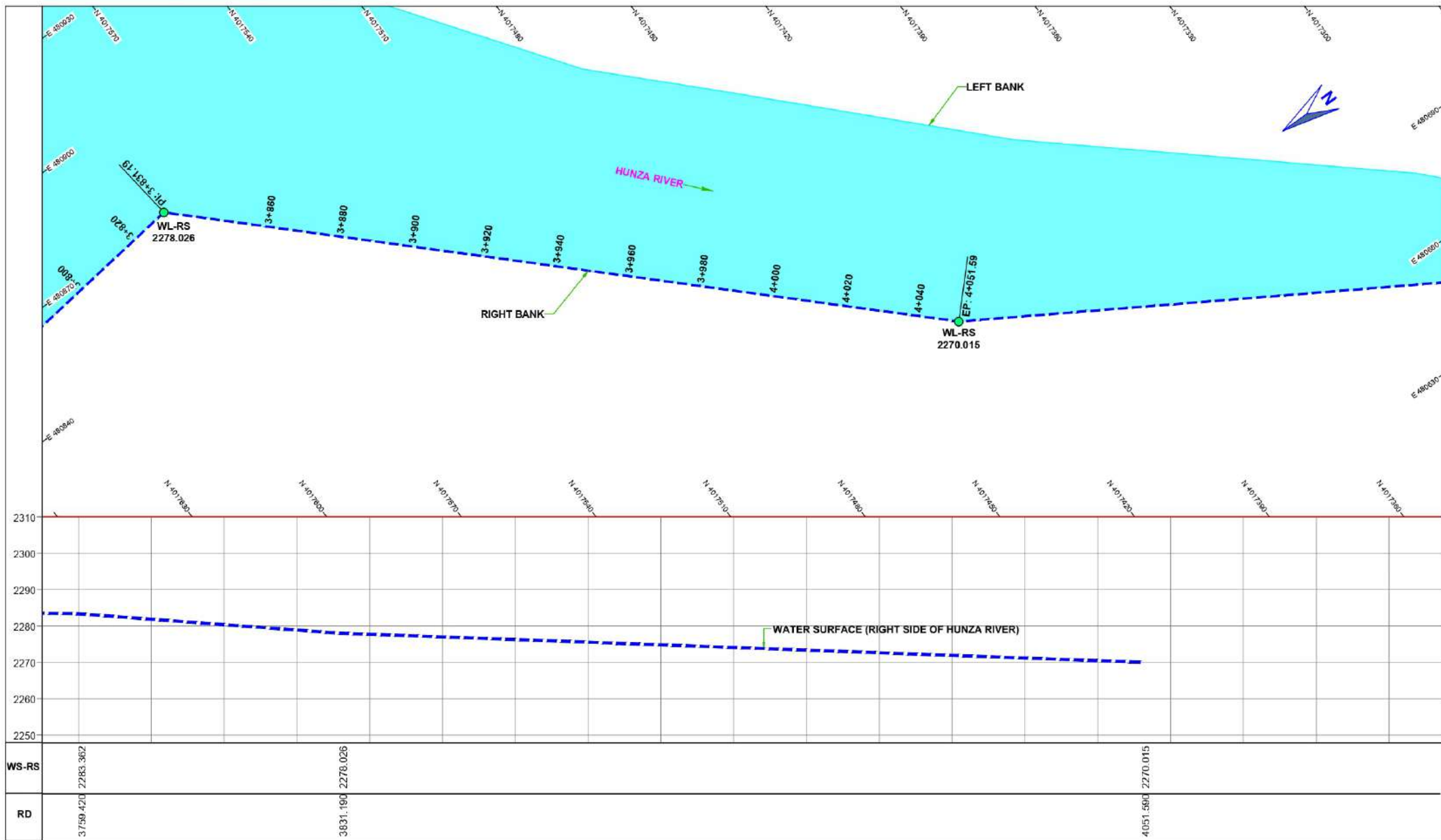
NOTE:

- ALL THE UNITS ARE IN METERS UNLESS OTHERWISE NOTED
- SURVEY OF PAKISTAN (SOP) METRIC COORDINATE SYSTEM WAS USED FOR FIELD OBSERVATIONS.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

PREPARED	PROJECT	ATTABAD LAKE HPP		
Nauman Nasser		FEASIBILITY STUDY REPORT		
DRAWN	TITLE	SURFACE GEOLOGICAL MAP		
Arshad		Sheet 1 of 20		
CHECKED				
Nasiruddin Umar Tariq				
APPROVED	DATE	SCALE	DWGN.	REVISIONS
Abid Sheikh	Jun: 2021	1 : 2,000	AFS-GE-293	

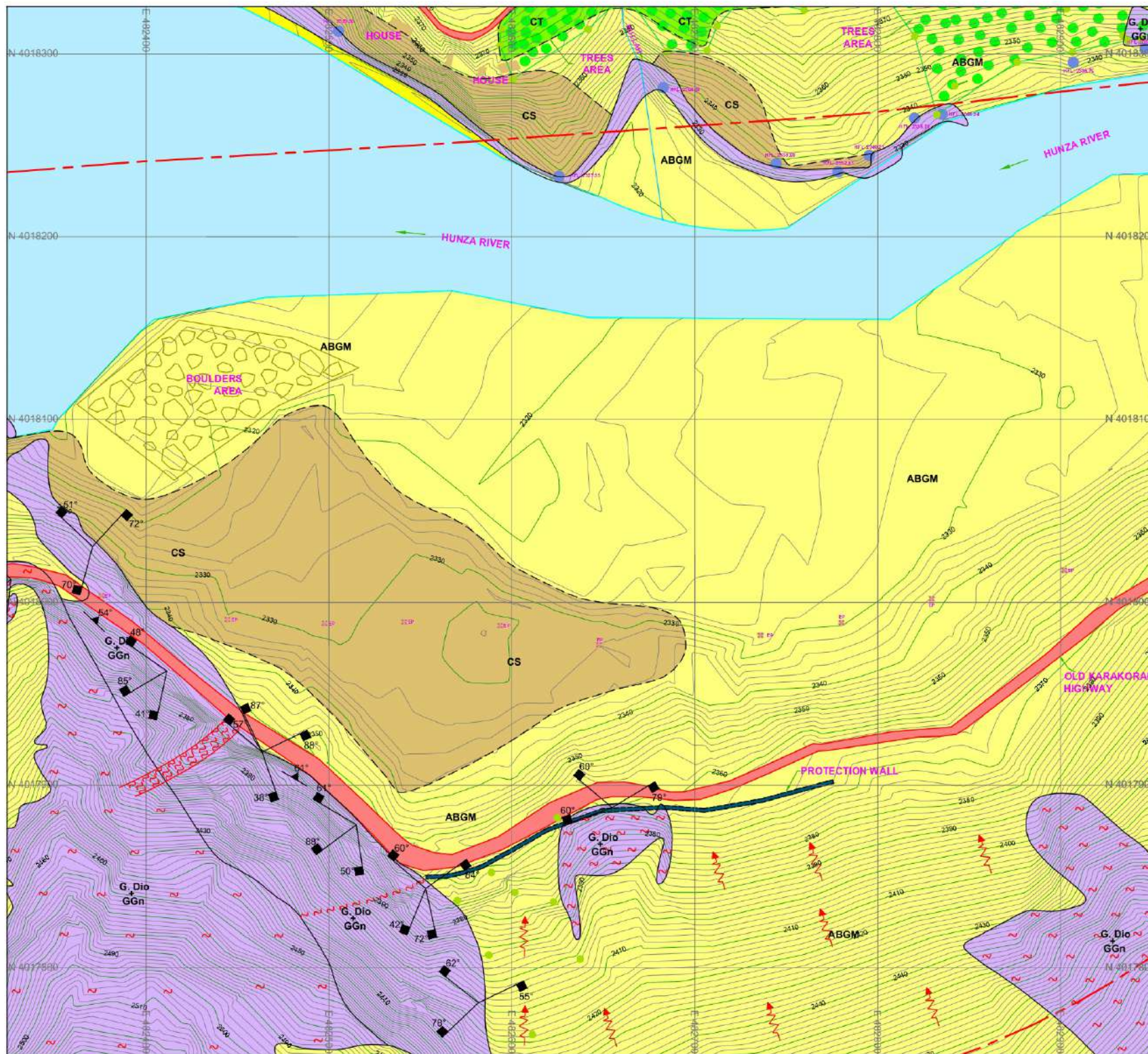


NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METERS UNLESS OTHERWISE SPECIFIED.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY			
HYDRO PLANNING ORGANIZATION			
PREPARED	PROJECT	ATTABAD LAKE HPP FEASIBILITY STUDY REPORT	
DRAWN	TITLE		
CHECKED	DATE	WATER SURFACE PLAN AND PROFILE (HUNZA RIVER) (Sheet 11 of 11)	
APPROVED	SCALE		
Abid Sheikh	Jun: 2021	DWG No:	AFS-SP-261
		REVISIONS	



KEY PLAN:

				4	1
	16	13	10	7	
19	17	14	11	8	5
20	18	15	12	9	6

LEGEND (GEOLOGY)

SOIL UNITS:

ABGM	Angular boulders and gravel with sand and appreciable amount of fines.
RBGM	Rounded boulders and gravel with sand and appreciable amount of fines.
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G.Dio + GGn	Granodiorite + Granitic Gneiss.
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	Dip and Strike of foliation.
	Active slide.
	Shear zone.
	Fault
	Bore Hole.
	Test Pit.
	River
	Confirmed Contact
	Inferred Contact

NOTE.

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- SURVEY OF PAKISTAN (SOP) METRIC COORDINATE SYSTEM WAS USED FOR FIELD OBSERVATIONS.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

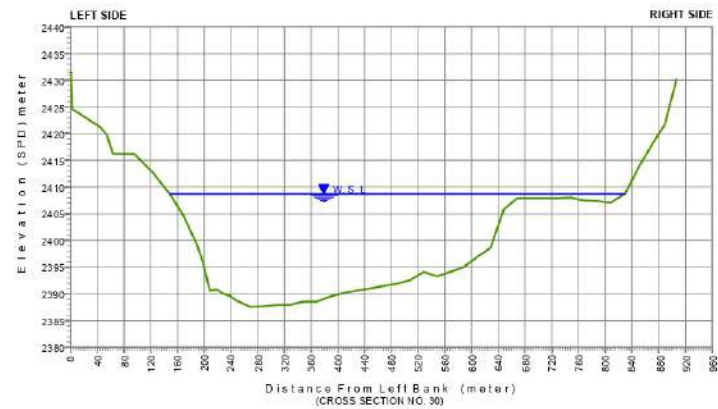
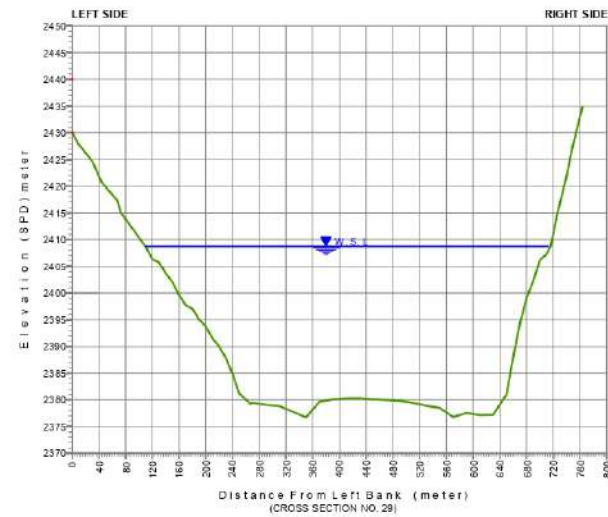
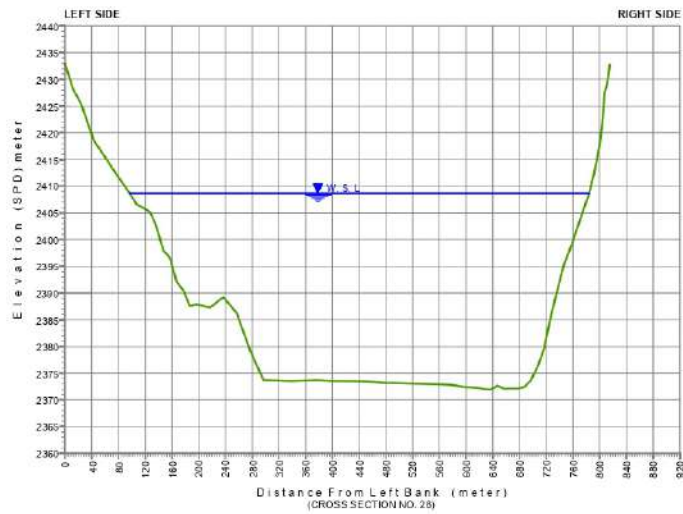
PREPARED BY
Nauman
Maseer
DRAWN BY
Arshad
CHECKED BY
Nasiruddin
Umar Tang
APPROVED BY
Abid Sheikh

ATTABAD LAKE HPP
FEASIBILITY STUDY REPORT

SURFACE GEOLOGICAL MAP

Sheet 11 of 20

DATE	SCALE	DWG No.	REVISIONS
Jun: 2021	1 : 2,000	AFS-GE-303	



LEGEND

OBSERVED WATER LEVEL ———

OBSERVED BED LEVEL ———

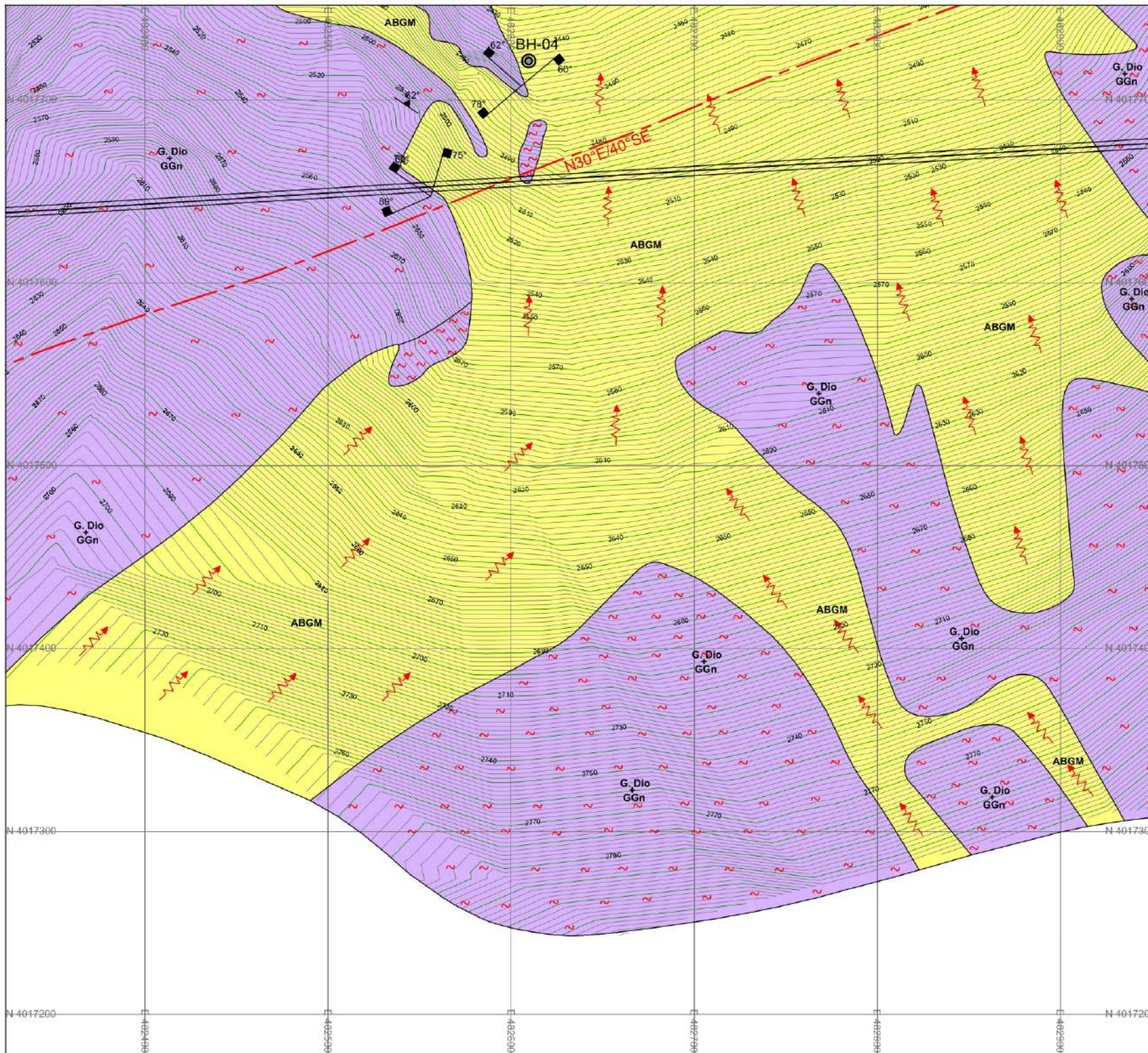
NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METERS UNLESS OTHERWISE SPECIFIED.
2. HYDROGRAPHIC SURVEY BY **ISRIP** - WAPDA.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

PREPARED	PROJECT	ATTABAD LAKE HPP FEASIBILITY STUDY REPORT	
Drawn	TITLE	HYDROGRAPHIC SURVEY OF ATTABAD LAKE	
Checked		X - Sections No. 28,29 & 30	
APPROVED	DATE	SCALE Hor: 1 cm = 80 m Ver: 1 cm = 10 m	DWG No. AFS-HS-278
Abid Sheikh	Jun: 2021		REVISIONS



KEY PLAN:

				4	1
	16	13	10	7	
19	17	14	11	8	5
20	18	15	12	9	6
					3

LEGEND (GEOLOGY)

SOIL UNITS:

ABGM	Angular boulders and gravel with sand and appreciable amount of fines.
RBGM	Rounded boulders and gravel with sand and appreciable amount of fines.
CT	Cultivated Terrace.
Mor	Morainic Material
CS	Clayey Silt.

ROCK UNITS:

G.Dio	Granodiorite
G.Dio + GGn	Granodiorite + Granitic Gneiss.
BR	Fault Breccia.
	Dip and Strike of joint sets in rock.
	Dip and Strike of foliation.
	Active slide.
	Shear zone.
	Fault
	Bore Hole.
	Test Pit.
	River
	Confirmed Contact
	Inferred Contact



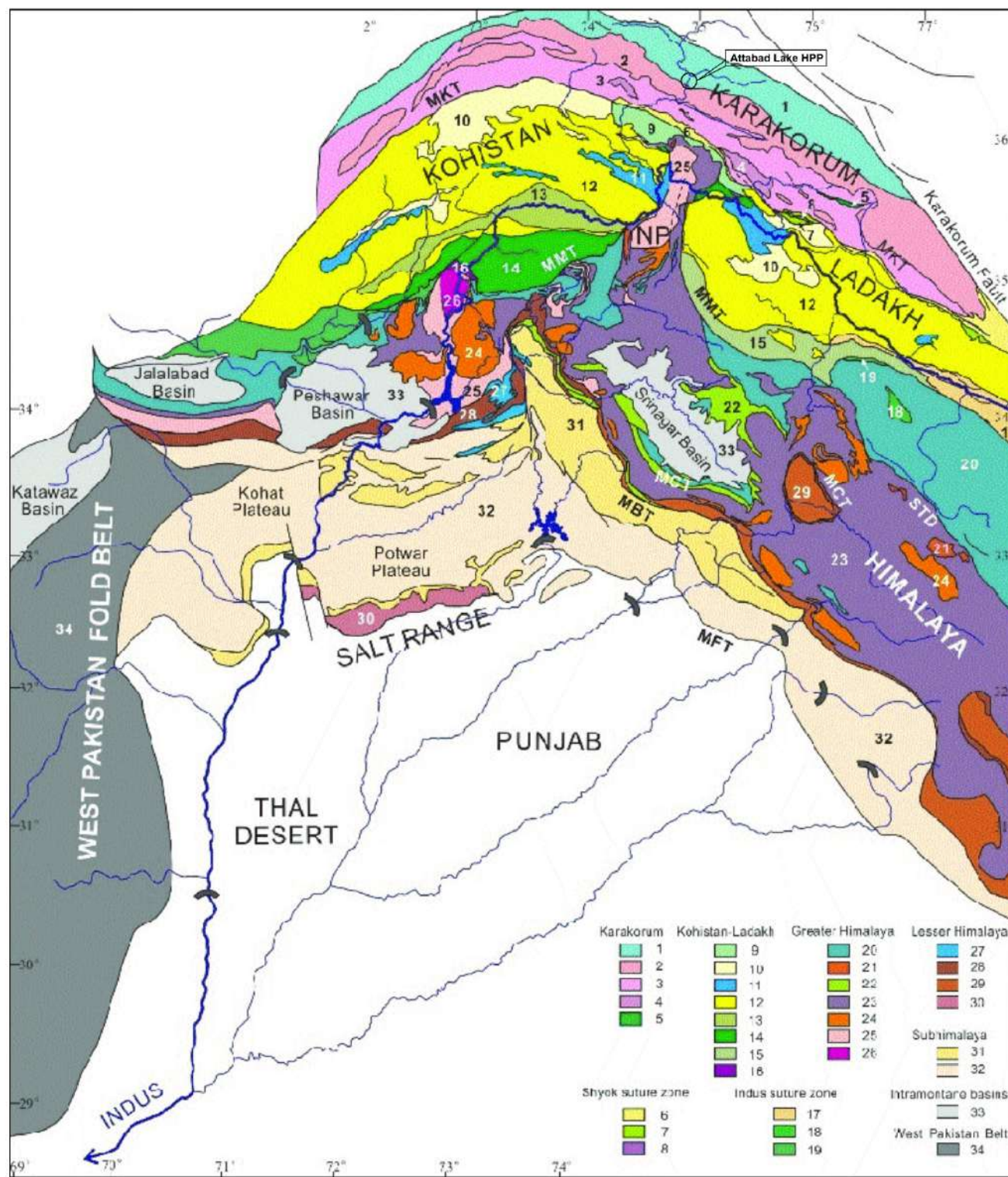
NOTE.

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- SURVEY OF PAKISTAN (SOP) METRIC COORDINATE SYSTEM WAS USED FOR FIELD OBSERVATIONS.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

PREPARED	PROJECT	ATTABAD LAKE HPP			
Nauman Naseer		FEASIBILITY STUDY REPORT			
DRAWN	TITLE	SURFACE GEOLOGICAL MAP			
Arshad					
CHECKED		Sheet 12 of 20			
Nasiruddin Umar Tang		DATE	SCALE	DWG No.	REVISIONS
APPROVED		Jun: 2021	1 : 2,000	AFS-GE-304	
Abid Sheikh					



- MKT** Main Karakoram Thrust
MMT Main Mantle Thrust
MCT Main Central Thrust
MBT Main Boundary Thrust
PT Panjal Thrust
DF Darban Fault
KBT/ Kashmir Boundary Thrust /
HFT Himalayan Frontal Thrust
SRT Salt Range Thrust

SOURCE:

Pecher et al. 2008



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

PREPARED
 Nauman
 DRAWN

PROJECT
ATTABAD LAKE HPP
FEASIBILITY STUDY REPORT

Arshad
 CHECKED

TITLE
REGIONAL GEOLOGICAL MAP

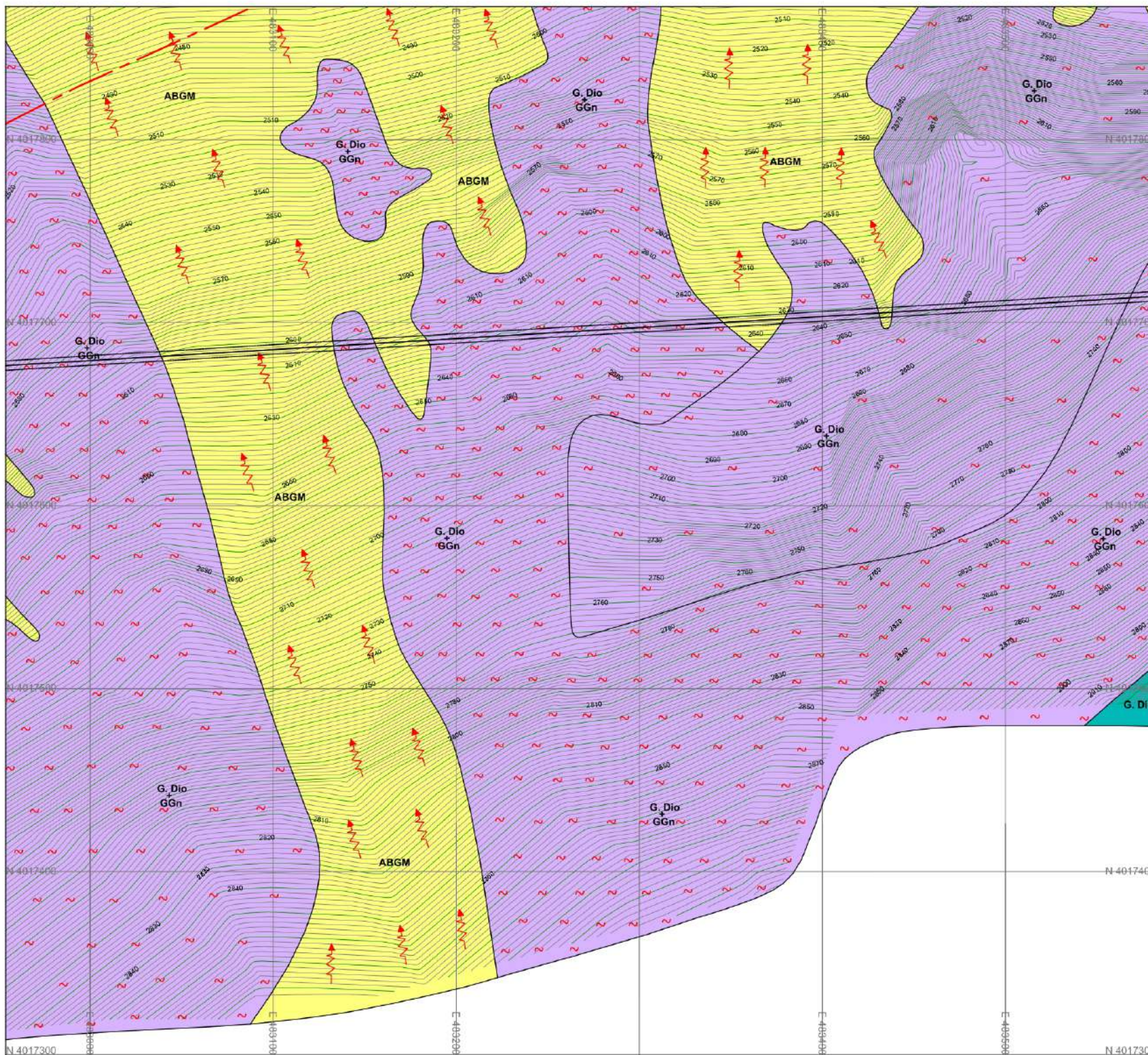
APPROVED
 Abid Sheikh

DATE
 Jun: 2021

SCALE
 N.T.S

DWG No:
 AFS-GE-291

REVISIONS



KEY PLAN:

				4	1
	16	13	10	7	
19	17	14	11	8	5
20	18	15	12	9	6
					3

LEGEND (GEOLOGY)

SOIL UNITS:

ABGM	Angular boulders and gravel with sand and appreciable amount of fines.
RBGM	Rounded boulders and gravel with sand and appreciable amount of fines.
CT	Cultivated Terrace.
Mor	Morainic Material
CS	Clayey Silt.

ROCK UNITS:

G.Dio	Granodiorite
G.Dio + GGn	Granodiorite + Granitic Gneiss.
BR	Fault Breccia.
	Dip and Strike of joint sets in rock.
	Dip and Strike of foliation.
	Active slide.
	Shear zone.
	Fault
	Bore Hole.
	Test Pit.
	River
	Confirmed Contact
	Inferred Contact



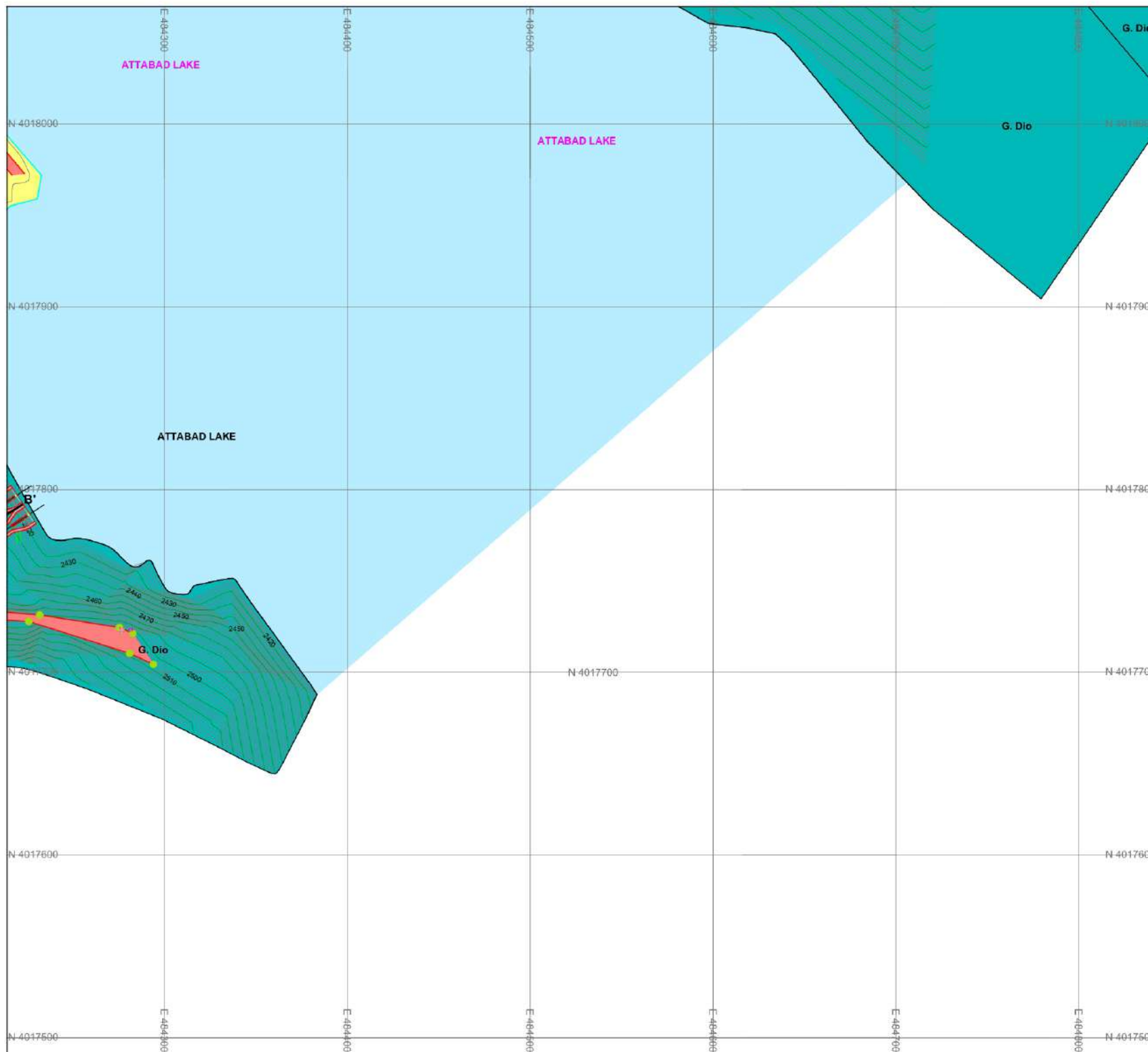
NOTE.

- ALL THE UNITS ARE IN METERS UNLESS OTHERWISE NOTED
- SURVEY OF PAKISTAN (SOP) METRIC COORDINATE SYSTEM WAS USED FOR FIELD OBSERVATIONS.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

PREPARED	PROJECT	ATTABAD LAKE HPP			
Nauman Naseer		FEASIBILITY STUDY REPORT			
DRAWN	TITLE	SURFACE GEOLOGICAL MAP			
Arshad					
CHECKED					
Nasiruddin Umar Tang					
		Sheet 9 of 20			
APPROVED	DATE	SCALE	DWG No.	REVISIONS	
Abid Sheikh	Jun: 2021	1 : 2,000	AFS-GE-301		



KEY PLAN:

				4	1
	16	13	10	7	
19	17	14	11	8	5
20	18	15	12	9	6

LEGEND (GEOLOGY)

SOIL UNITS:

ABGM	Angular boulders and gravel with sand and appreciable amount of fines.
RBGM	Rounded boulders and gravel with sand and appreciable amount of fines.
CT	Cultivated Terrace.
Mor	Morainic Material
CS	Clayey Silt.

ROCK UNITS:

G. Dio	Granodiorite
G. Dio + GGn	Granodiorite + Granitic Gneiss.
BR	Fault Breccia.

Dip and Strike of joint sets in rock.

Dip and Strike of foliation.

Active slide.

Shear zone.

Fault

Bore Hole.

Test Pit.

River

Confirmed Contact

Inferred Contact



NOTE.

- ALL THE UNITS ARE IN METERS UNLESS OTHERWISE NOTED
- SURVEY OF PAKISTAN (SOP) METRIC COORDINATE SYSTEM WAS USED FOR FIELD OBSERVATIONS.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

PREPARED PROJECT

Nauman

Naseer

DRAWN TITLE

Arshad

CHECKED

Nasiruddin

Umar Tang

APPROVED

Abid Sheikh

ATTABAD LAKE HPP
FEASIBILITY STUDY REPORT

SURFACE GEOLOGICAL MAP

Sheet 3 of 20

DATE

Jun: 2021

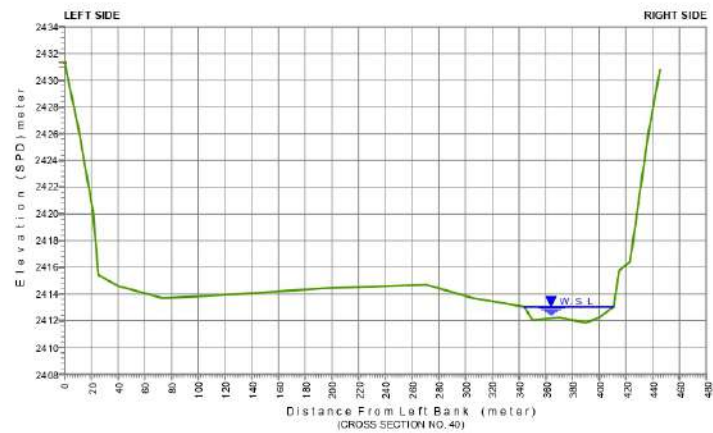
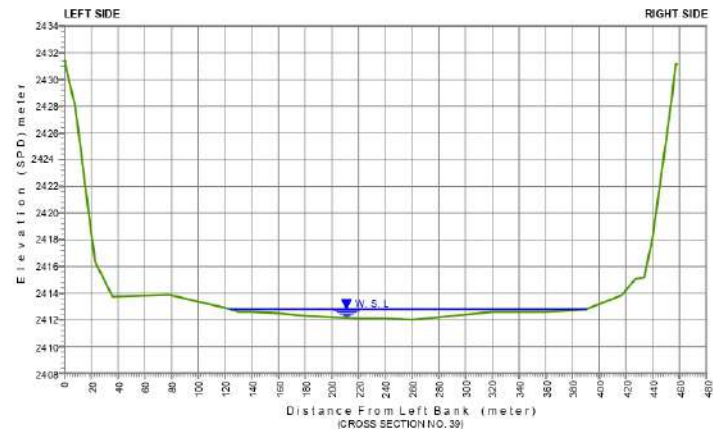
SCALE

1 : 2,000

DWG No.

AFS-GE-295

REVISIONS



LEGEND

OBSERVED WATER LEVEL

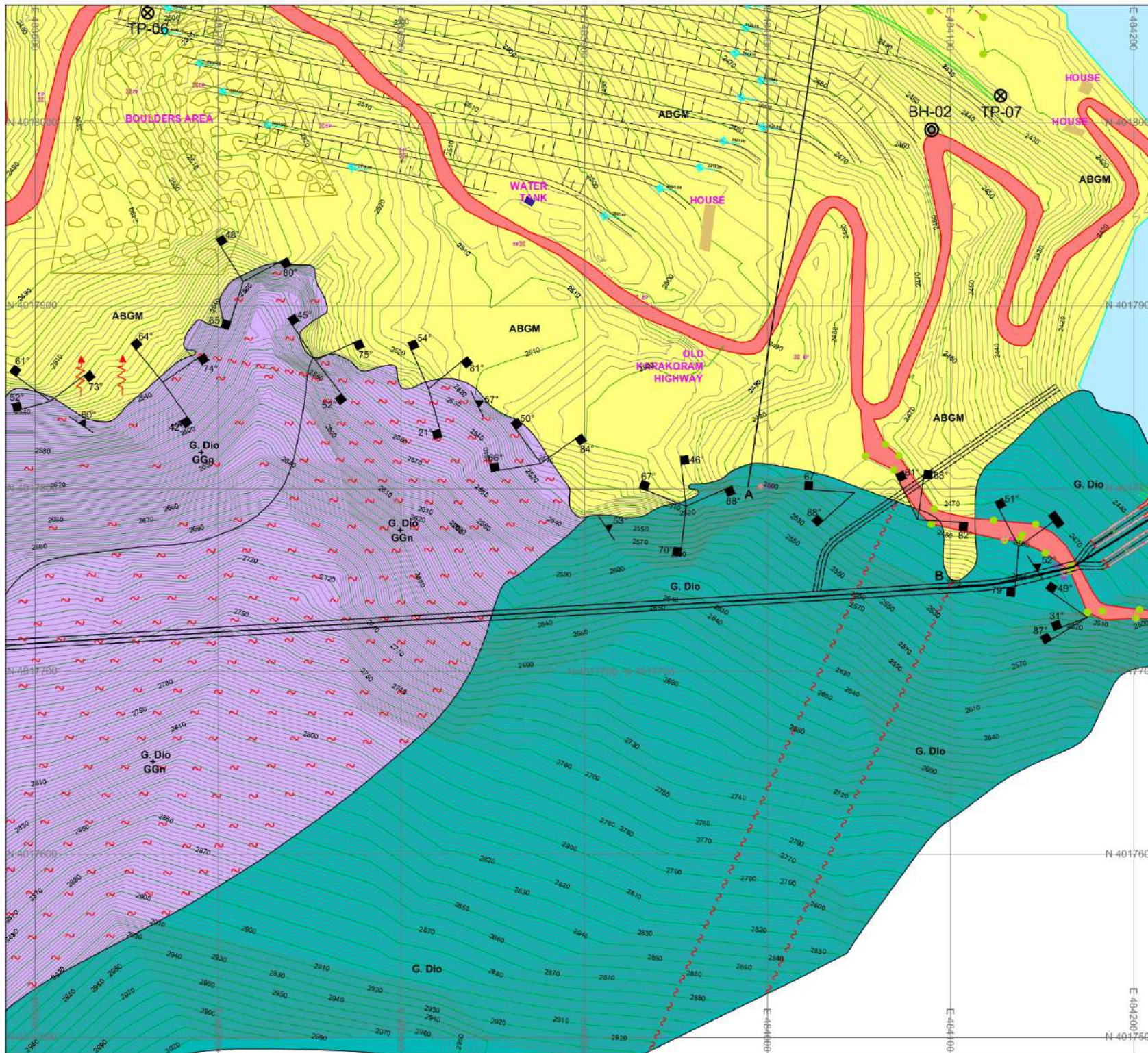
OBSERVED BED LEVEL



NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METERS UNLESS OTHERWISE SPECIFIED.
2. HYDROGRAPHIC SURVEY BY **ISRIP** - WAPDA.

 PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY HYDRO PLANNING ORGANIZATION		ATTABAD LAKE HPP FEASIBILITY STUDY REPORT	
PREPARED	PROJECT	HYDROGRAPHIC SURVEY OF ATTABAD LAKE X - Sections No. 39 & 40	
Drawn	TITLE		
Arshad	CHECKED		
APPROVED	DATE	SCALE	DWG No.
Abid Sheikh	Jun: 2021	Hor: 1 cm = 40 m Ver: 1 cm = 04 m	AFS-HS-281
		REVISIONS	



KEY PLAN:

				4	1
	16	13	10	7	5
19	17	14	11	8	2
20	18	15	12	9	3

LEGEND (GEOLOGY)

SOIL UNITS:

- ABGM** Angular boulders and gravel with sand and appreciable amount of fines.
- RBGM** Rounded boulders and gravel with sand and appreciable amount of fines.
- CT** Cultivated Terrace.
- Mor** Morainic Material
- CS** Clayey Silt.

ROCK UNITS:

- G.Dio** Granodiorite
- G.Dio + GGn** Granodiorite + Granitic Gneiss.
- BR** Fault Breccia.
- Dip and Strike of joint sets in rock.
- Dip and Strike of foliation.
- Active slide.
- Shear zone.
- Fault
- Bore Hole.
- Test Pit.
- River
- Confirmed Contact
- Inferred Contact



NOTE.

1. ALL THE UNITS ARE IN METERS UNLESS OTHERWISE NOTED
2. SURVEY OF PAKISTAN (SOP) METRIC COORDINATE SYSTEM WAS USED FOR FIELD OBSERVATIONS.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

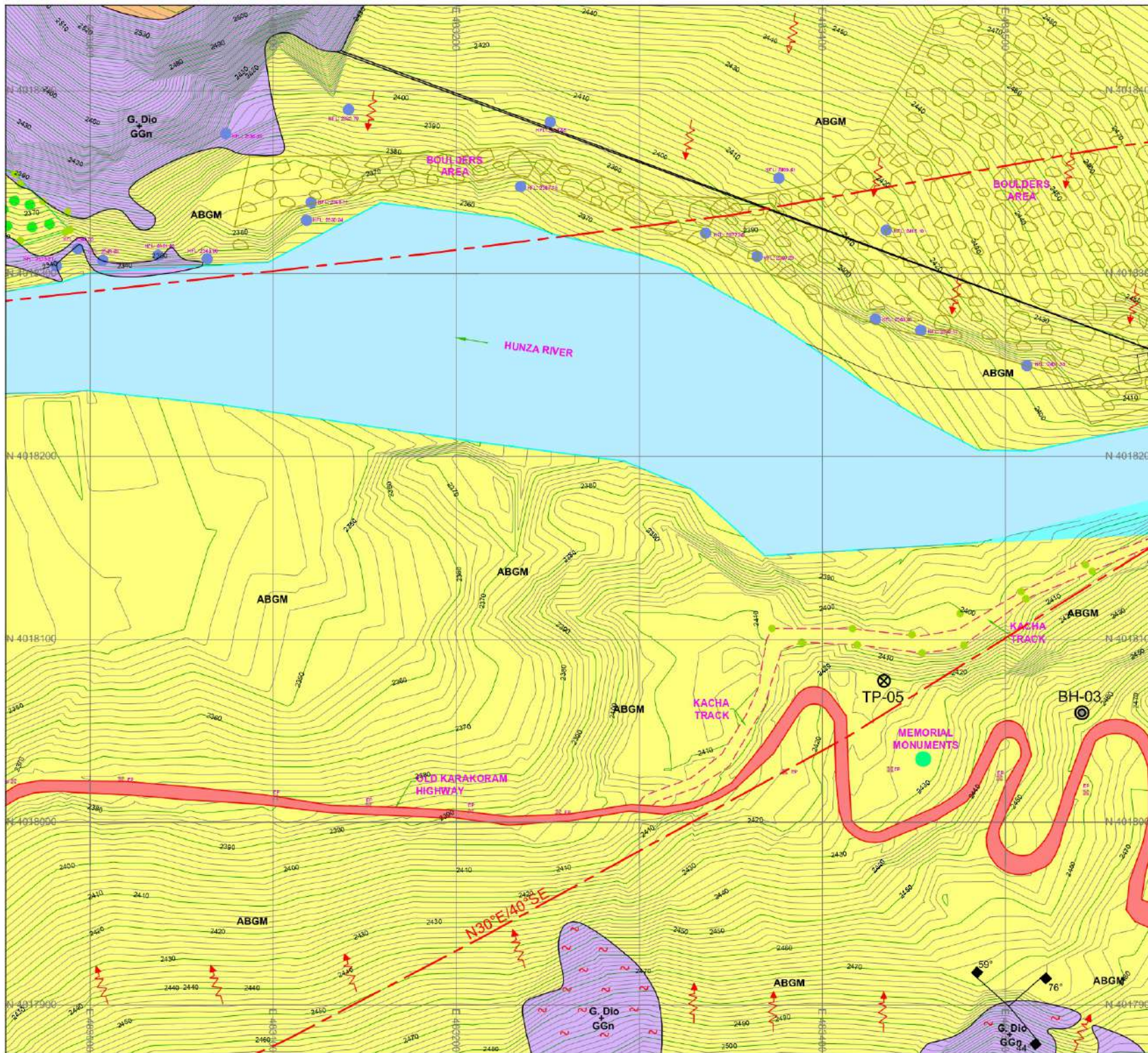
PREPARED PROJECT
Nauman
Naseer
DRAWN TITLE
Arshad
CHECKED
Nasiruddin
Umar Tang
APPROVED
Abid Sheikh

ATTABAD LAKE HPP
FEASIBILITY STUDY REPORT

SURFACE GEOLOGICAL MAP

Sheet 6 of 20

DATE SCALE DWG No. REVISIONS
Jun: 2021 1 : 2,000 AFS-GE-298



KEY PLAN:

				7	4	1
	16	13	10		5	2
19	17	14	11	8	6	3
20	18	15	12	9		

LEGEND (GEOLOGY)

SOIL UNITS:

ABGM	Angular boulders and gravel with sand and appreciable amount of fines.
RBGM	Rounded boulders and gravel with sand and appreciable amount of fines.
CT	Cultivated Terrace.
Mor	Morainic Material
CS	Clayey Silt.

ROCK UNITS:

G.Dio	Granodiorite
G.Dio + GGn	Granodiorite + Granitic Gneiss.
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	Dip and Strike of foliation.
	Active slide.
	Shear zone.
	Fault
	Bore Hole.
	Test Pit.
	River
	Confirmed Contact
	Inferred Contact



NOTE.

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- SURVEY OF PAKISTAN (SOP) METRIC COORDINATE SYSTEM WAS USED FOR FIELD OBSERVATIONS.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

PREPARED PROJECT

ATTABAD LAKE HPP
FEASIBILITY STUDY REPORT

Nauman Naseer

DRAWN

SURFACE GEOLOGICAL MAP

Arshad

CHECKED

Sheet 8 of 20

APPROVED

DATE

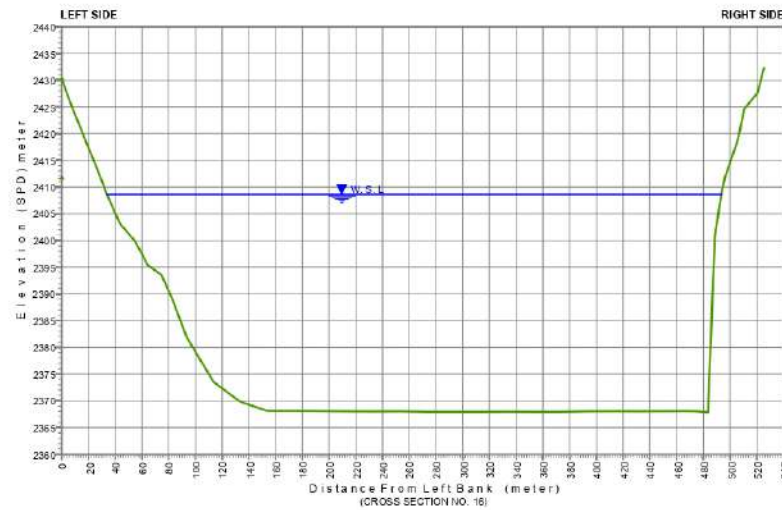
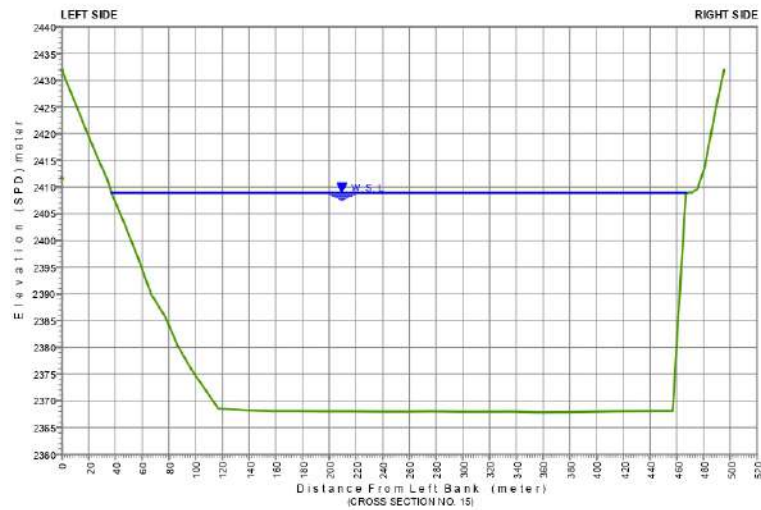
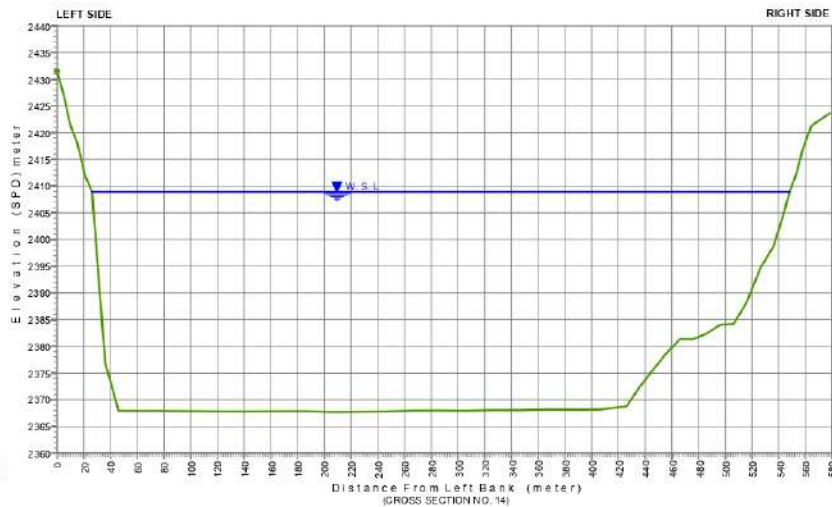
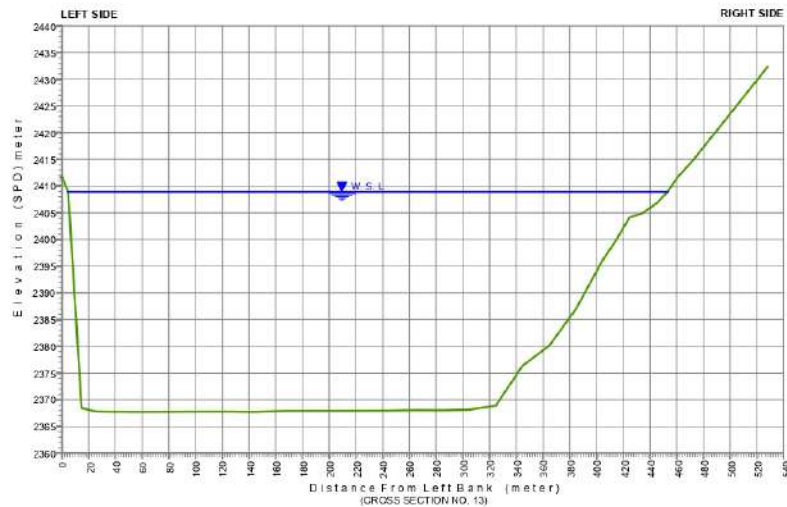
Abid Sheikh

Jun: 2021

SCALE 1 : 2,000

DWG No. AFS-GE-300

REVISIONS



LEGEND

OBSERVED WATER LEVEL ———
OBSERVED BED LEVEL ———

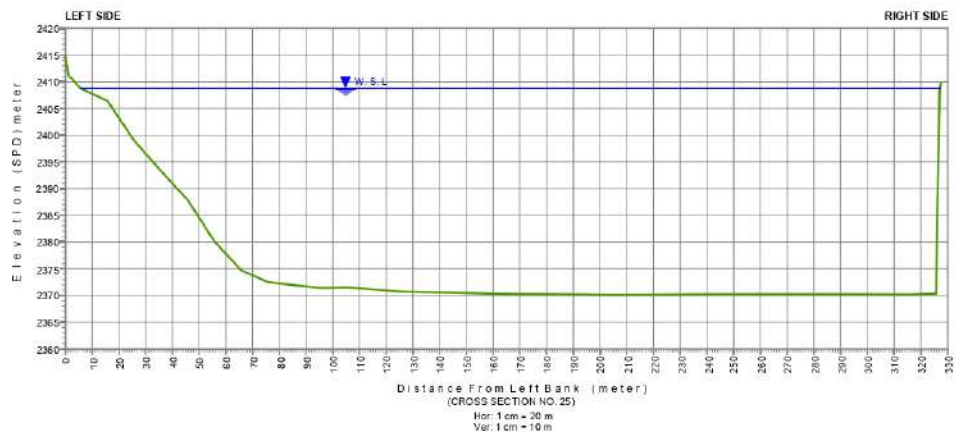
NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METERS UNLESS OTHERWISE SPECIFIED.
2. HYDROGRAPHIC SURVEY BY **ISRIP** - WAPDA.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

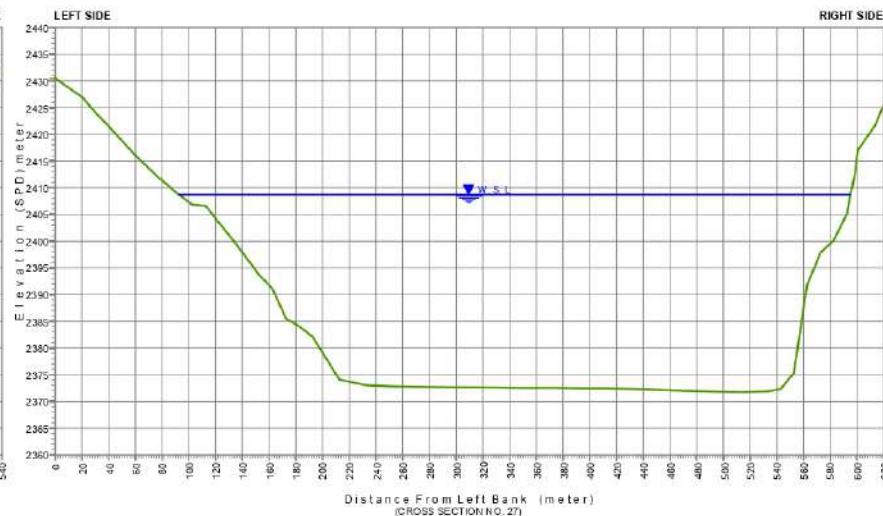
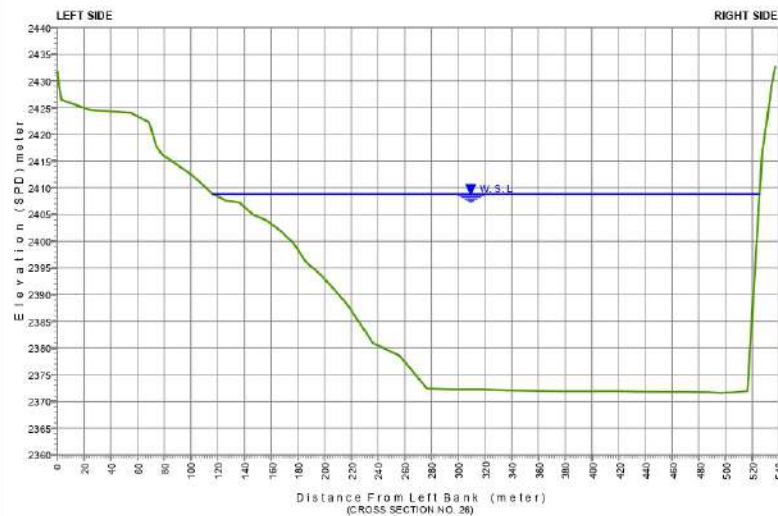
PREPARED	PROJECT	ATTABAD LAKE HPP FEASIBILITY STUDY REPORT	
DRAWN	TITLE	HYDROGRAPHIC SURVEY OF ATTABAD LAKE	
CHECKED		X - Sections No. 13,14,15 & 16	
APPROVED	DATE	SCALE	DWG No.
Abid Sheikh	Jun: 2021	Hor: 1 cm = 40 m Ver: 1 cm = 10 m	AFS-HS-274
		REVISIONS	



LEGEND

OBSERVED WATER LEVEL ———

OBSERVED BED LEVEL ———



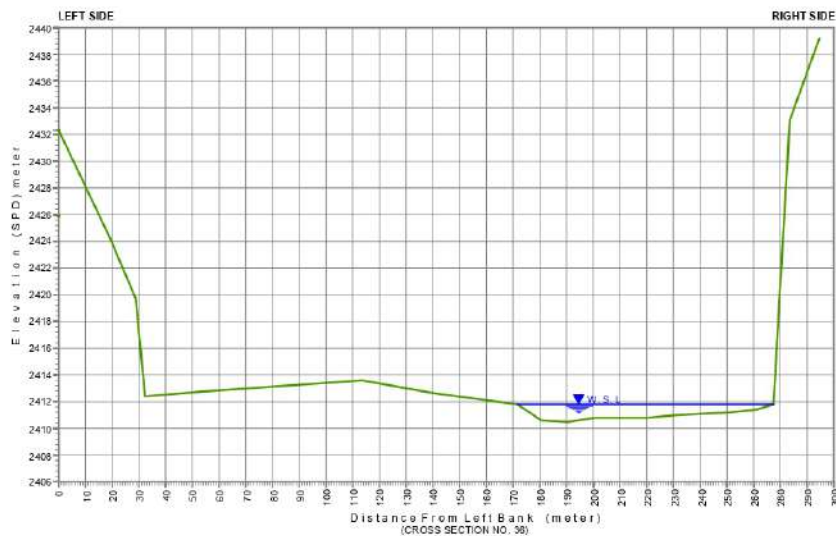
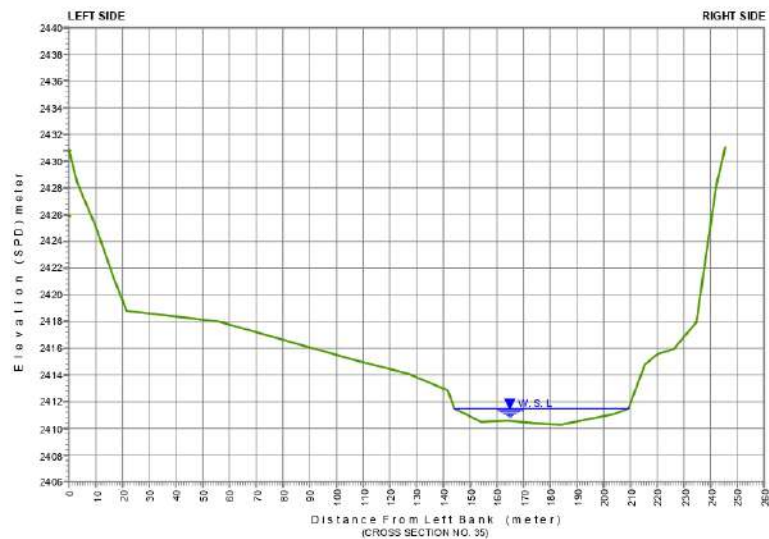
NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METERS UNLESS OTHERWISE SPECIFIED.
2. HYDROGRAPHIC SURVEY BY ISRIP - WAPDA.



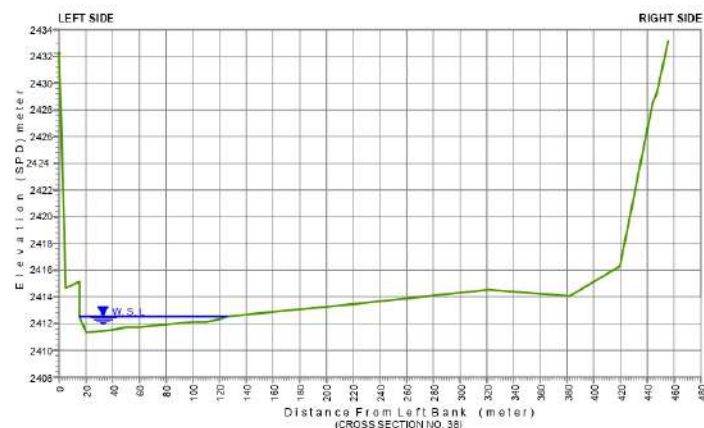
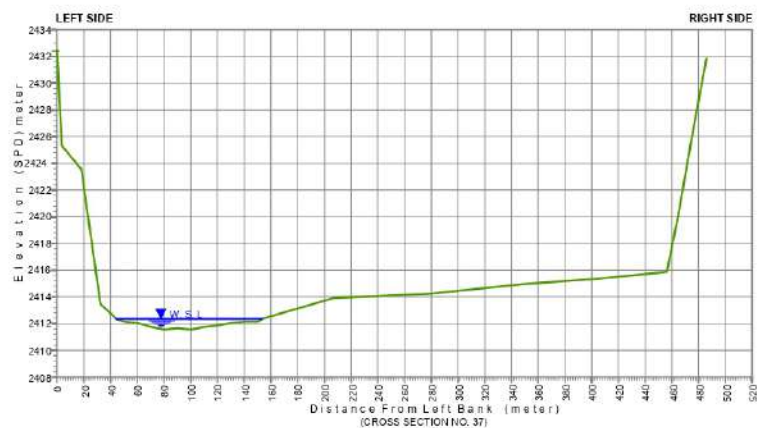
PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

PREPARED	PROJECT	ATTABAD LAKE HPP FEASIBILITY STUDY REPORT		
DRAWN	TITLE	HYDROGRAPHIC SURVEY OF ATTABAD LAKE		
CHECKED		X - Sections No. 25, 26, & 27		
APPROVED	DATE	SCALE	DWG No:	REVISIONS
Abid Sheikh	Jun: 2021	Hor: 1 cm = 40 m Ver: 1 cm = 10 m	AFS-HS-277	



LEGEND

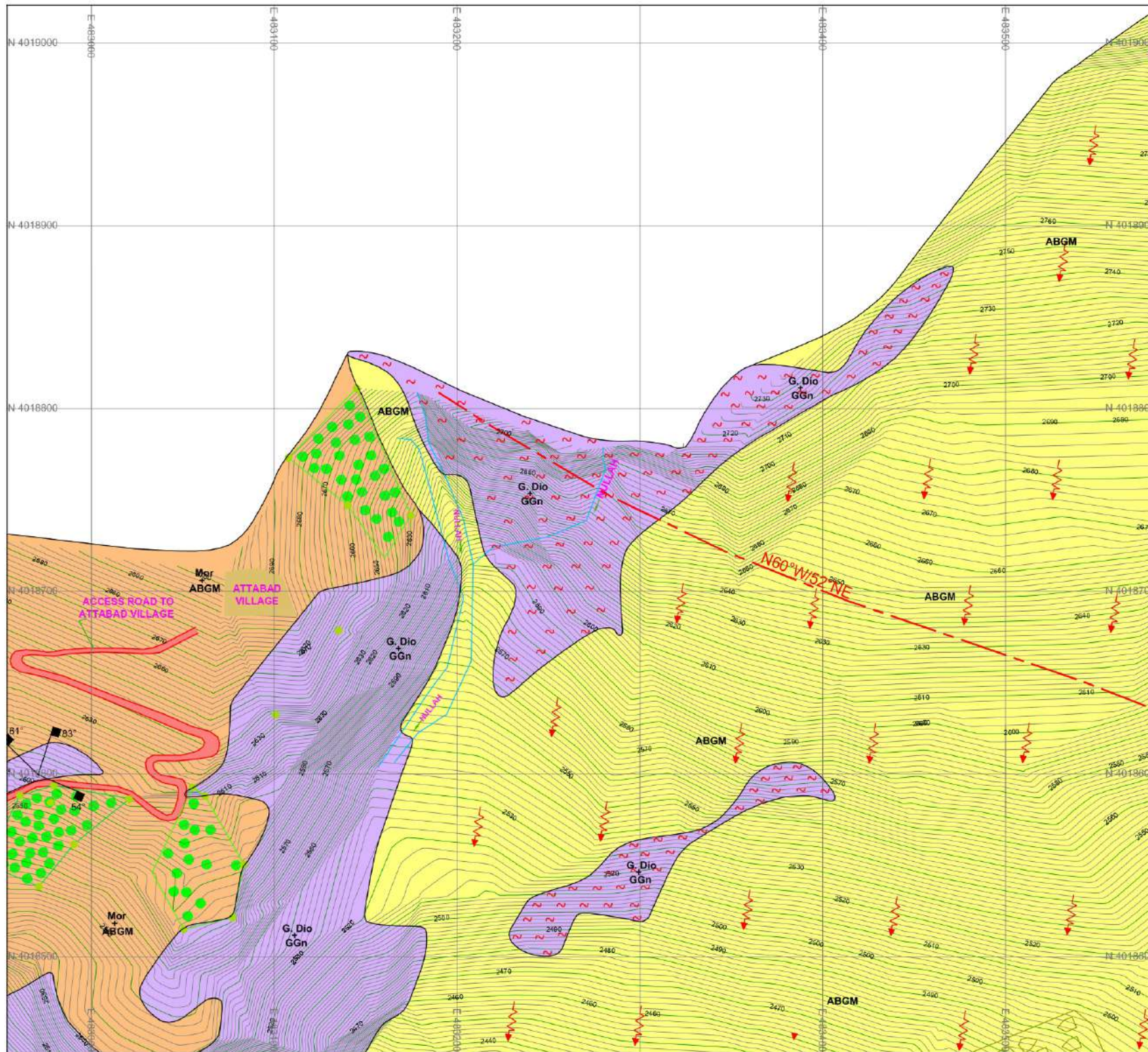
OBSERVED WATER LEVEL ————
OBSERVED BED LEVEL ————



NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METERS UNLESS OTHERWISE SPECIFIED.
2. HYDROGRAPHIC SURVEY BY ISRIP - WAPDA

 PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY HYDRO PLANNING ORGANIZATION	
PREPARED BY Ehsan	PROJECT TITLE ATTABAD LAKE HPP FEASIBILITY STUDY REPORT
DRAWN BY Arshad	HYDROGRAPHIC SURVEY OF ATTABAD LAKE X - Sections No. 35,36,37 & 38
CHECKED BY Ehsan	
APPROVED BY Abid Sheikh	DATE Jun: 2021
SCALE Hor: 1 cm = 40 m Ver: 1 cm = 04 m	
DWG No: AFS-HS-280	
REVISIONS	



KEY PLAN:

					4	1
	16	13	10	7	5	2
19	17	14	11	8	6	3
20	18	15	12	9		

LEGEND (GEOLOGY)

SOIL UNITS:

ABGM	Angular boulders and gravel with sand and appreciable amount of fines.
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	Dip and Strike of foliation.
	Active slide.
	Shear zone.
	Fault
	Bore Hole.
	Test Pit.
	River
	Confirmed Contact
	Inferred Contact

NOTE.

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- SURVEY OF PAKISTAN (SOP) METRIC COORDINATE SYSTEM WAS USED FOR FIELD OBSERVATIONS.



PAKISTAN WATER AND POWER DEVELOPMENT AUTHORITY
HYDRO PLANNING ORGANIZATION

PREPARED BY
Nauman
Maseer

DRAWN BY
Arshad

CHECKED BY
Nasiruddin
Umar Tang

APPROVED BY
Abid Sheikh

PROJECT TITLE
ATTABAD LAKE HPP
FEASIBILITY STUDY REPORT

SURFACE GEOLOGICAL MAP

Sheet 7 of 20

DATE	SCALE	DWG No.	REVISIONS
Jun: 2021	1 : 2,000	AFS-GE-299	