

**PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KHYBER PAKHTUNKHWA**



SHAKTU DAM (TRIBAL SUB DIVISION BANNU)

October-2021

TENDER DOCUMENTS

Volume -II (Drawings)

RHC Rehman Habib Consultants Private Limited

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PEMC Perfect Engineering & Management Consultants (PEMC)



Cascade Group of Engineering (CGEC)



SHAKTU DAM

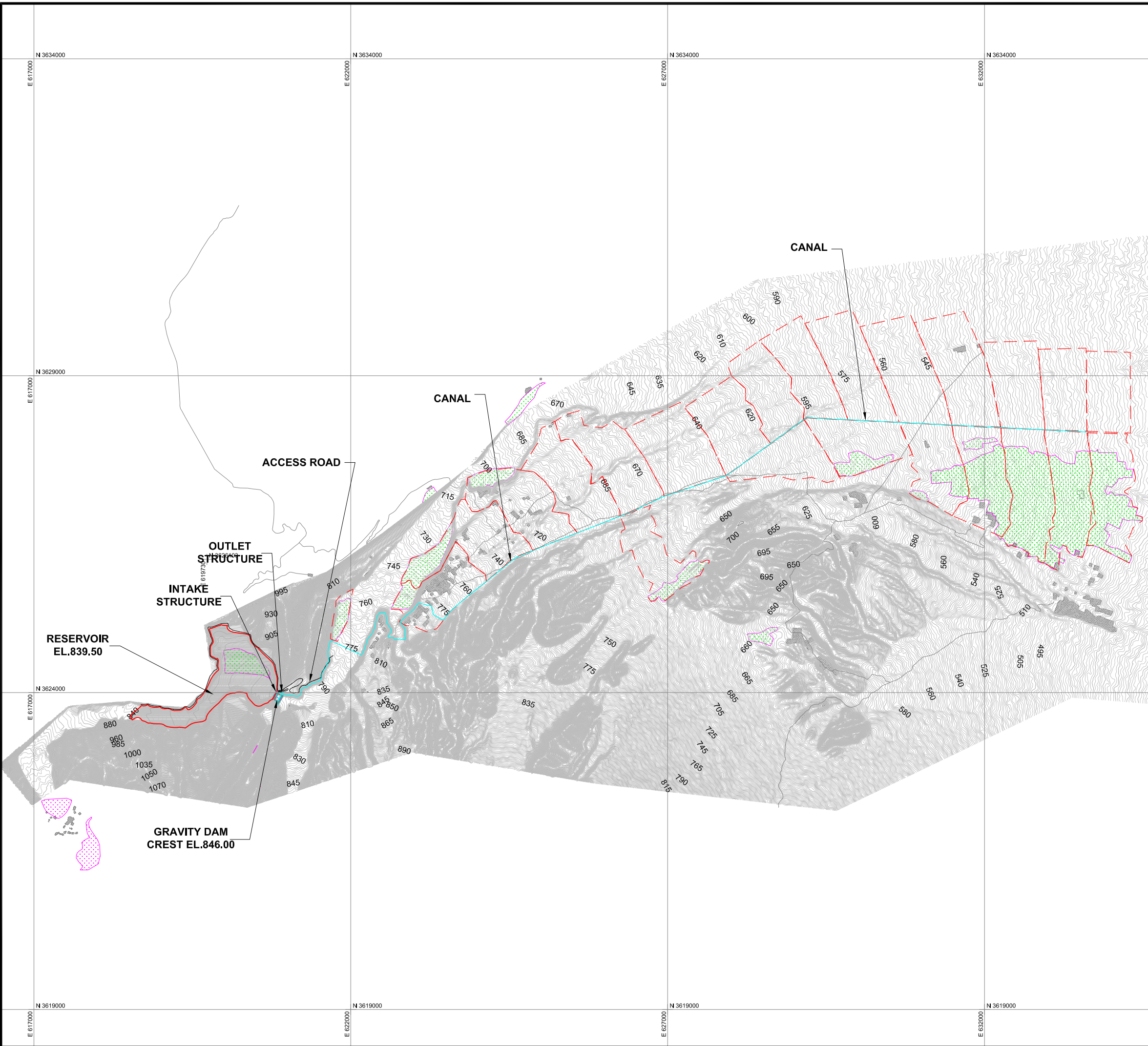
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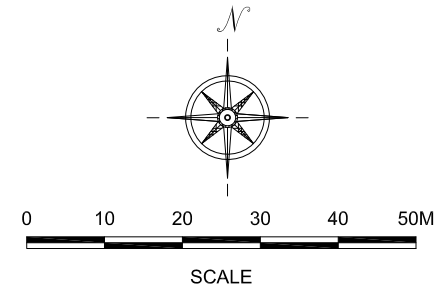


NOTE:

- ALL DIMENSIONS AND ELEVATIONS ARE IN METER UNLESS INDICATED OTHERWISE

LEGEND:

- MAIN CANAL ———
- ACCESS ROAD ———
- CHACKBANDI - - - - -
- CONTOUR MAJOR ——— 845
- CONTOUR MINOR ——— 847
- EXISTING AGRICULTURE
- HOUSE
- EXISTING ROADS ———



REFERENCE DRAWINGS :-

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CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
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CASCADE GROUP OF ENGINEERING & CONSULTANTS
PEMC PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

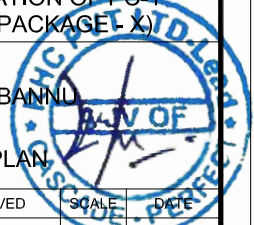
PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

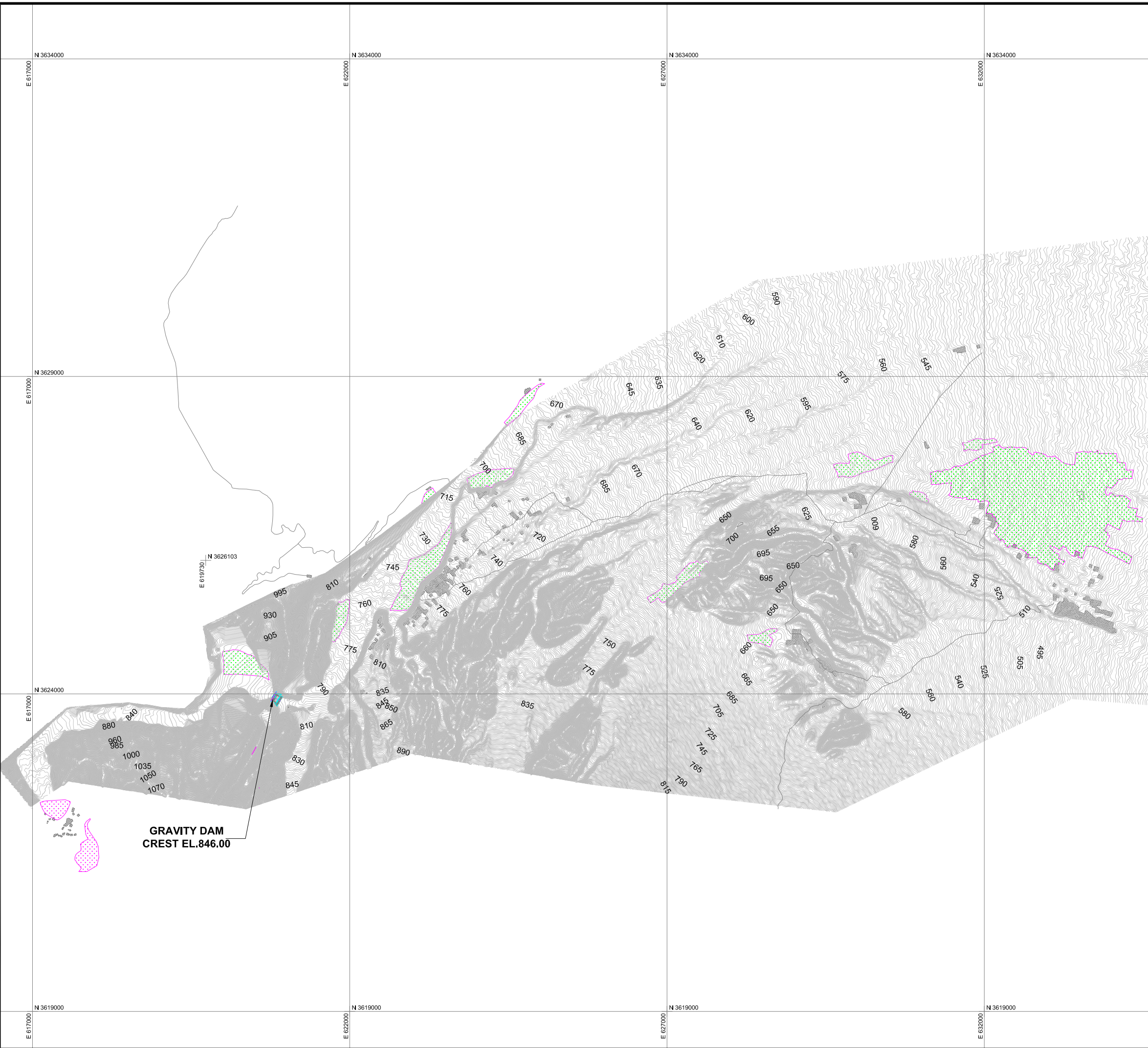
GENERAL LAYOUT PLAN

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-GEN-01 SHEET:- SUB SH.- ----



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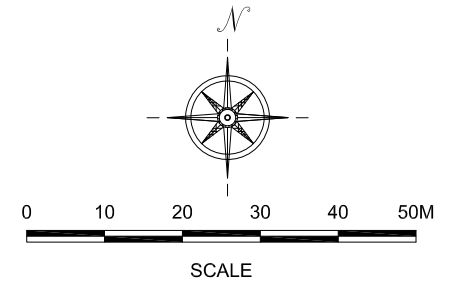


NOTE:

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LEGEND:

- CONTOUR MAJOR 845
- CONTOUR MINOR 847
- CULTIVATED LAND
- HOUSE
- EXISTING ROADS



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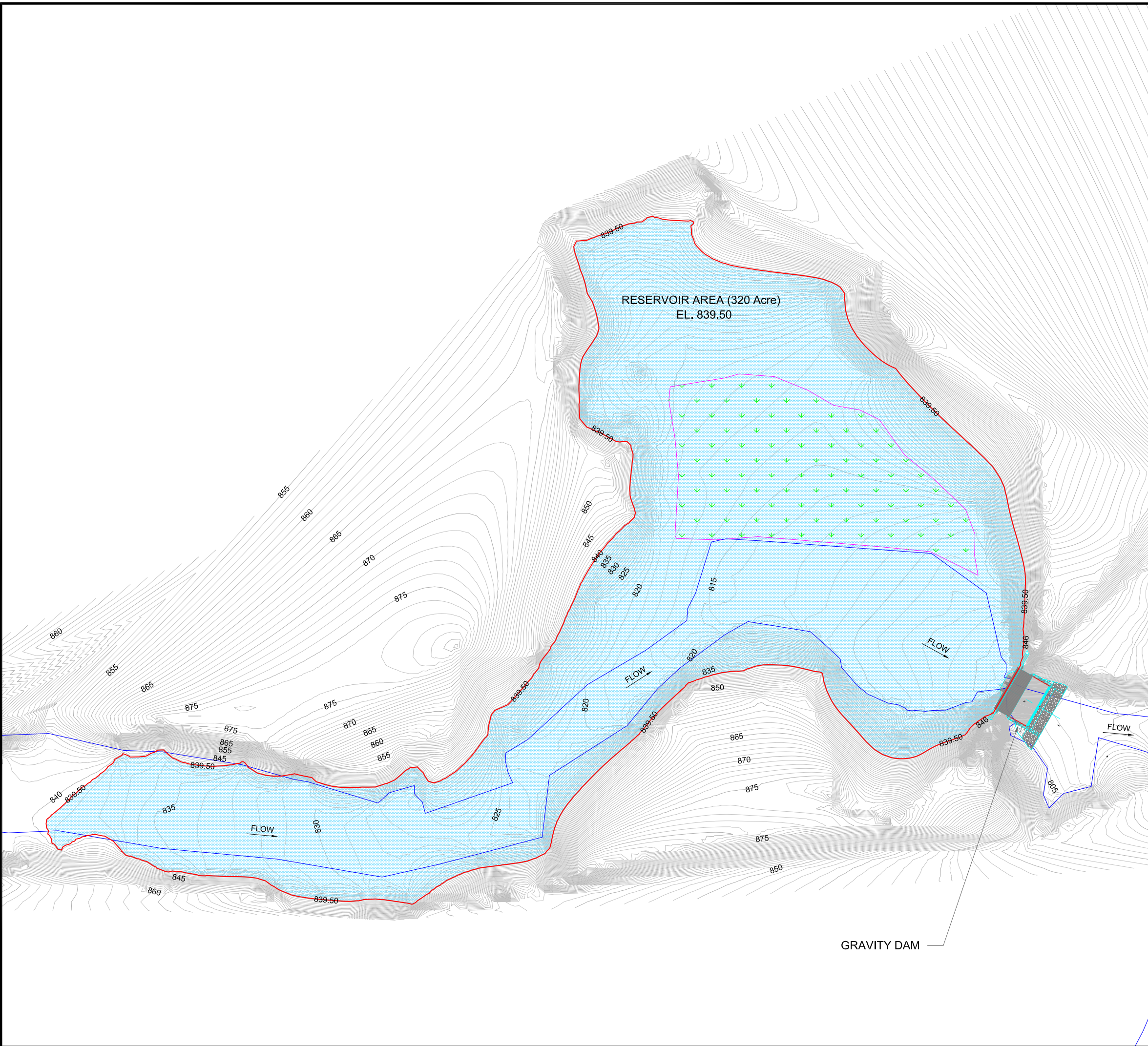
PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
TOPOGRAPHIC SURVEY PLAN

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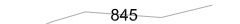


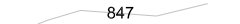
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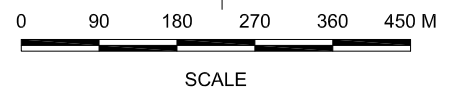
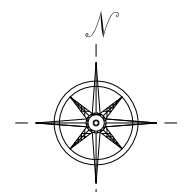
LEGEND:




NULLAH 

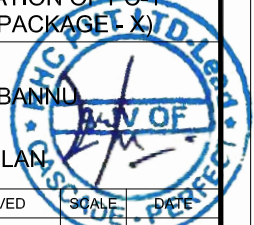
CONTOUR MAJOR  845

CONTOUR MINOR  847

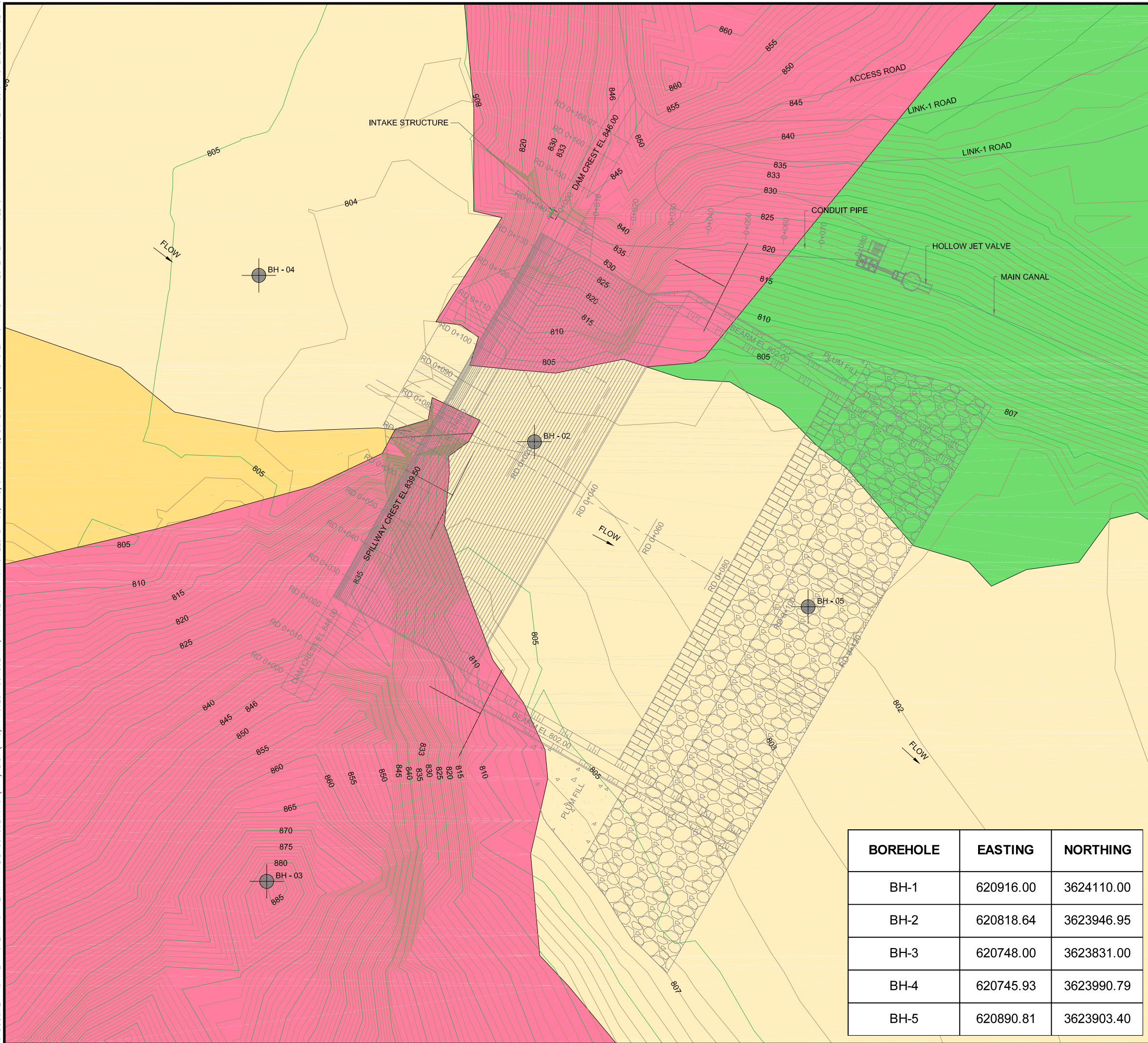
EXISTING AGRICULTURE 



REFERENCE DRAWINGS :-													
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PROJECT: CONSULTANCY SERVICES FOR FEASIBILITY STUDY, DETAIL DESIGN AND PREPARATION OF PC-1 FOR 5 SMALL DAMS IN FATA (PACKAGE X)													
TITLE: SHAKTU DAM TRIBAL SUB-DIVISION BANNU													
<table border="1"> <tr> <td>DRAWN</td> <td>DESIGNED</td> <td>CHECKED</td> <td>APPROVED</td> <td>SCALE</td> <td>DATE</td> </tr> <tr> <td>M.U.Y</td> <td>A.I</td> <td>Zeeshan S.</td> <td>Zafar Iqbal</td> <td>Show</td> <td>Oct, 2021</td> </tr> </table>		DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE	M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Show	Oct, 2021
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE								
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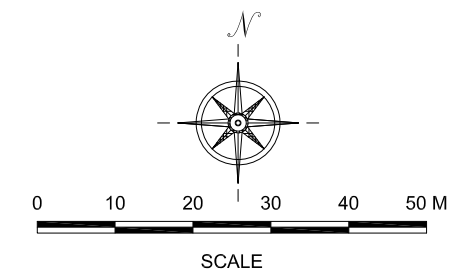


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NOTE:
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GEOLOGICAL LEGEND		
ROCKS Formations	Shale	
	Limestone	
	Sandstone bed interbedded with Shale	
	Clay Bed	
ALLUVIUM	SUBRECENT ALLUVIUM	
	RECENT ALLUVIUM	



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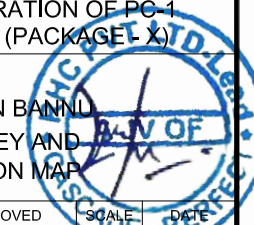
PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
GEOLOGICAL SURVEY AND
BOREHOLE LOCATION MAP

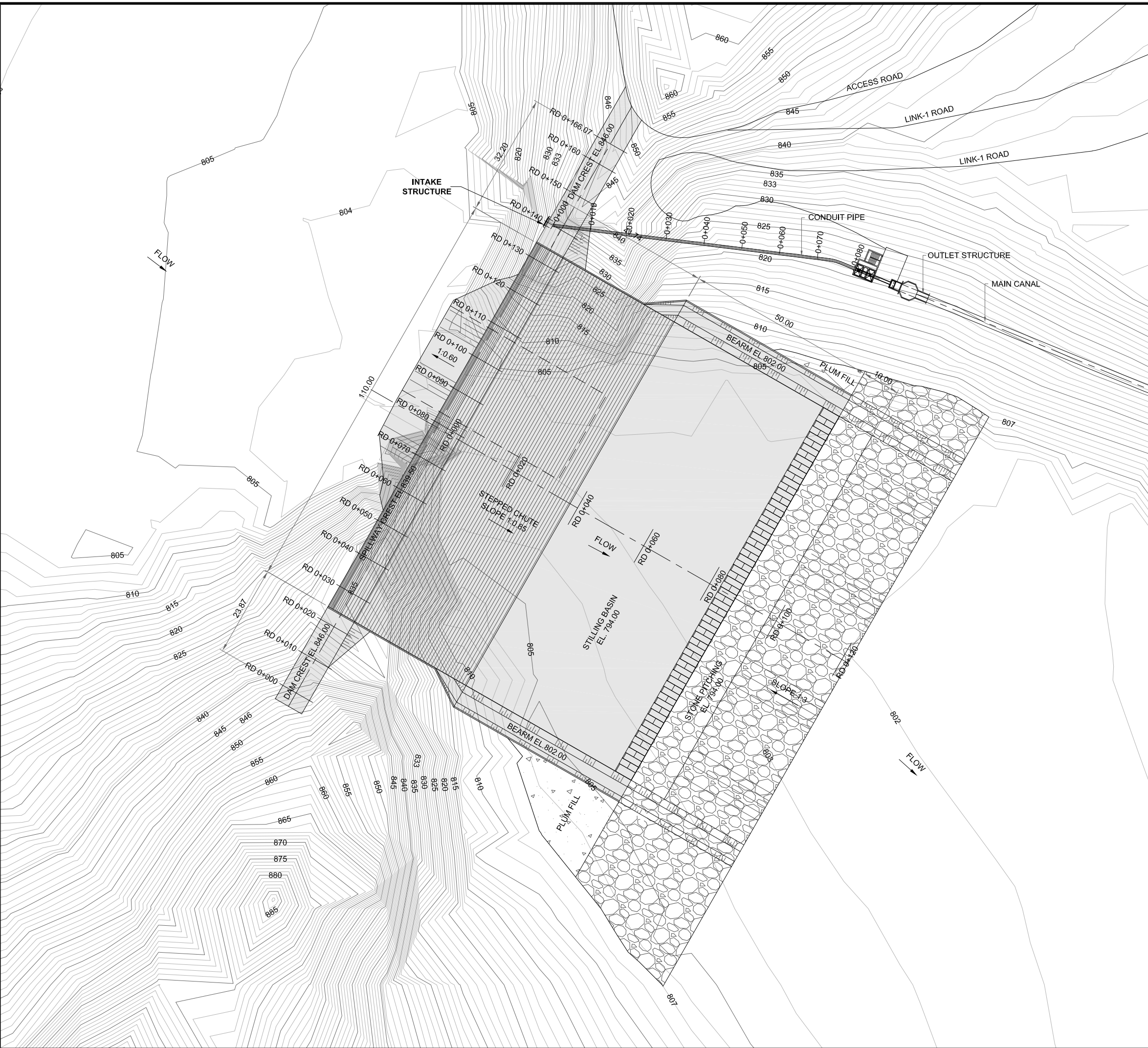
BOREHOLE	EASTING	NORTHING
BH-1	620916.00	3624110.00
BH-2	620818.64	3623946.95
BH-3	620748.00	3623831.00
BH-4	620745.93	3623990.79
BH-5	620890.81	3623903.40

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M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	1:1	Oct, 2021

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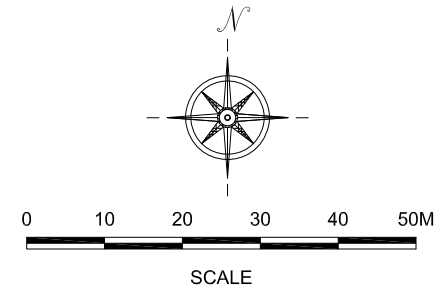


NOTE:

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LEGEND:

- NULLAH
- CONTOUR MAJOR
- CONTOUR MINOR
- EXISTING AGRICULTURE
- HOUSE
- ROAD
- BOREHOLE BH - 01



REFERENCE DRAWINGS :-

SHD-TD-MD-02
SHD-TD-SP-07 TO SHD-TD-SP-28

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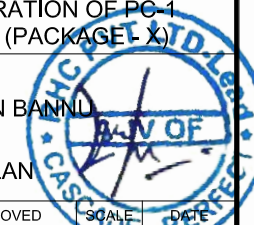
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PSU SMALL DAM SECTION MERGED AREA
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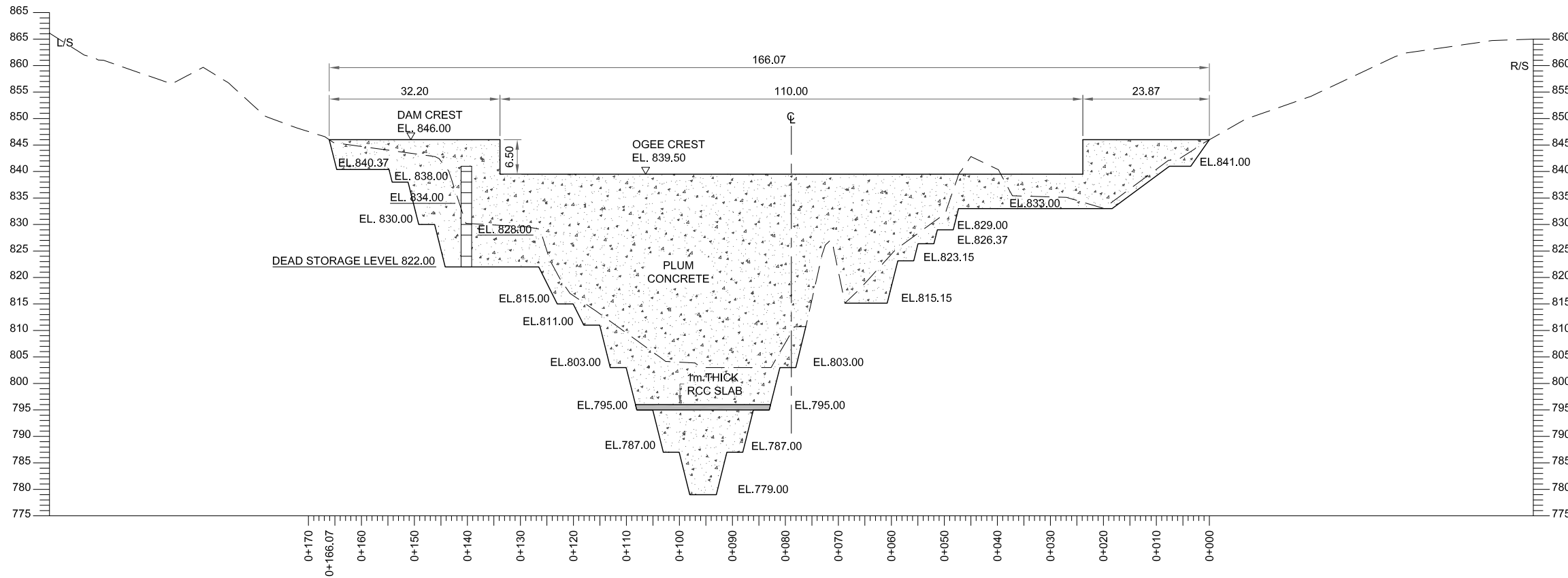
PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
DAM LAYOUT PLAN

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
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DRG.No:- SHD-TD-MD-01			SHEET:-		SUB SH.- ----



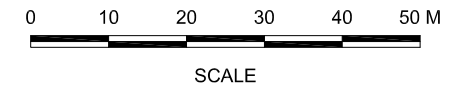
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DAM PROFILE

NOTE:

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REFERENCE DRAWINGS :-

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IRRIGATION DEPARTMENT, KPK.

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PROJECT:

CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PG-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:

SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
DAM LONGITUDINAL SECTION

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
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INSTRUCTIONS FOR GROUTING

The grouting works consist of curtain grouting in abutment of the dam.

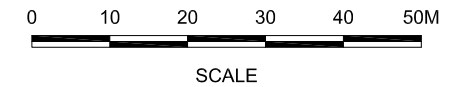
The spacing and depth of grout holes are subject to variation during grouting based on the results and evaluations of permeability and grout-take data.

The grout mix comprises cement suspension stabilized with bentonite.

Some important details for execution of grouting are given below.

- Slush grouting will be required for sealing the rock surface of the structures foundation after cleaning. It will contain 2 to 3 parts of sand to one part of portland cement. The sand will be well graded conforming to ASTM concrete. Its moisture content will be sufficient to produce a mixture which can be poured to penetrate and fill open joints, fissures and fractures in the rock surface and can be broomed over and into the rock surface to fill minor surface discontinuities and irregularities.
- All superficial joints and fissure within the rock surface near the grout hole will be sealed by slush grouting, as directed by the engineer.
- No accumulation of flushing water will be allowed within the foundation area.
- Inflatable or mechanical packers, having a sealing element of minimum length of 8 times of the hole diameter, will be used. Mechanical packers will be preferred for near surface grouting stage.
- Grout pressures will depend upon the depth of grout section. In general, the maximum pressure as measured at the collar of the hole (gauge pressure) shall not exceed 0.07kg/cm² per 0.30m (one psi per foot) of depth when measured normal to the ground surface to the middle of the grout section. Table shows typical pressures for grouting sections.
- Grouting will start with water cement ratio 3:1 with 2% bentonite which may be switched to a thicker mix (water cement 2:1 by volume), in case of fast take or when maximum pressure is not obtained, or when grout-take does not show change even after 30 kg of cement per foot. Switch to thinner mix (water cement 5:1 by volume), in case of very low initial take.
- The bentonite slurry will be pre-activated (soaked and homogenized) over a period of 10 hours in a mix of 1 kg bentonite to 10 liter water.

- During grouting operation, all leaks noticed in the adjacent areas will be plugged immediately and no rock movement will be allowed.
- Grouting of a hole will continue until the hole takes grout at a rate of less than one cubic foot (0.0283 cubic meter) of the grout mixture in 10 minutes at the allowable gauge pressure. The grouting rate during the end phase will not exceed 2 liter per m.
- Once refusal is achieved, the in-let and return valves will be closed and packer will be kept inflated or in-place till dissipation of the gauge pressure.
- Wait for 12 hours before next stage grouting to let the grout stone hardened.
- Take sounding of the hole after completion of waiting time after final stage grouting and backfill with neat cement slurry (water cement ratio 1:1) by tremie method.
- No adjacent grout hole will be grouted simultaneously.
- All testing and grouting record will be maintained and summaries will be prepared or as directed.
- Upon completion of grouting works a comprehensive grouting plan will be prepared along with cross section indicating cement-take quantities.
- Embankment construction in any section will only be started after thorough examination and review of all relevant data.
- Material requirement for all grouting works are briefly described below.
 - a) Water absorption potential of the bentonite shall be at least 500 percent. flow properties of the grout mix shall correspond to marsh flow time >30 seconds.
 - b) The water cement ratio shall not preferably vary beyond the limits of 1:1 to 4:1 or as directed.
 - c) In case of excessively large grout-take, the cement suspension may be blended with clay, stone dust, fly ash or similar material.
- Water Tests should be carried out in primary stages before injection to amplify information available from site investigation.
- Tests should be carried out in secondary stage of grouting before injection to indicate the results of primary injection.
- Tests should be carried out in individual test holes at any time to indicate the results of all the treatments carried out before that time.
- Test holes drilled for this purpose should be sited midway b/w completed injection holes.





REFERENCE DRAWINGS :-

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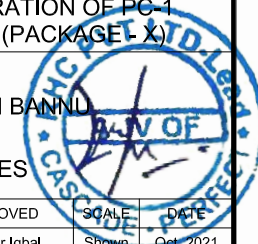
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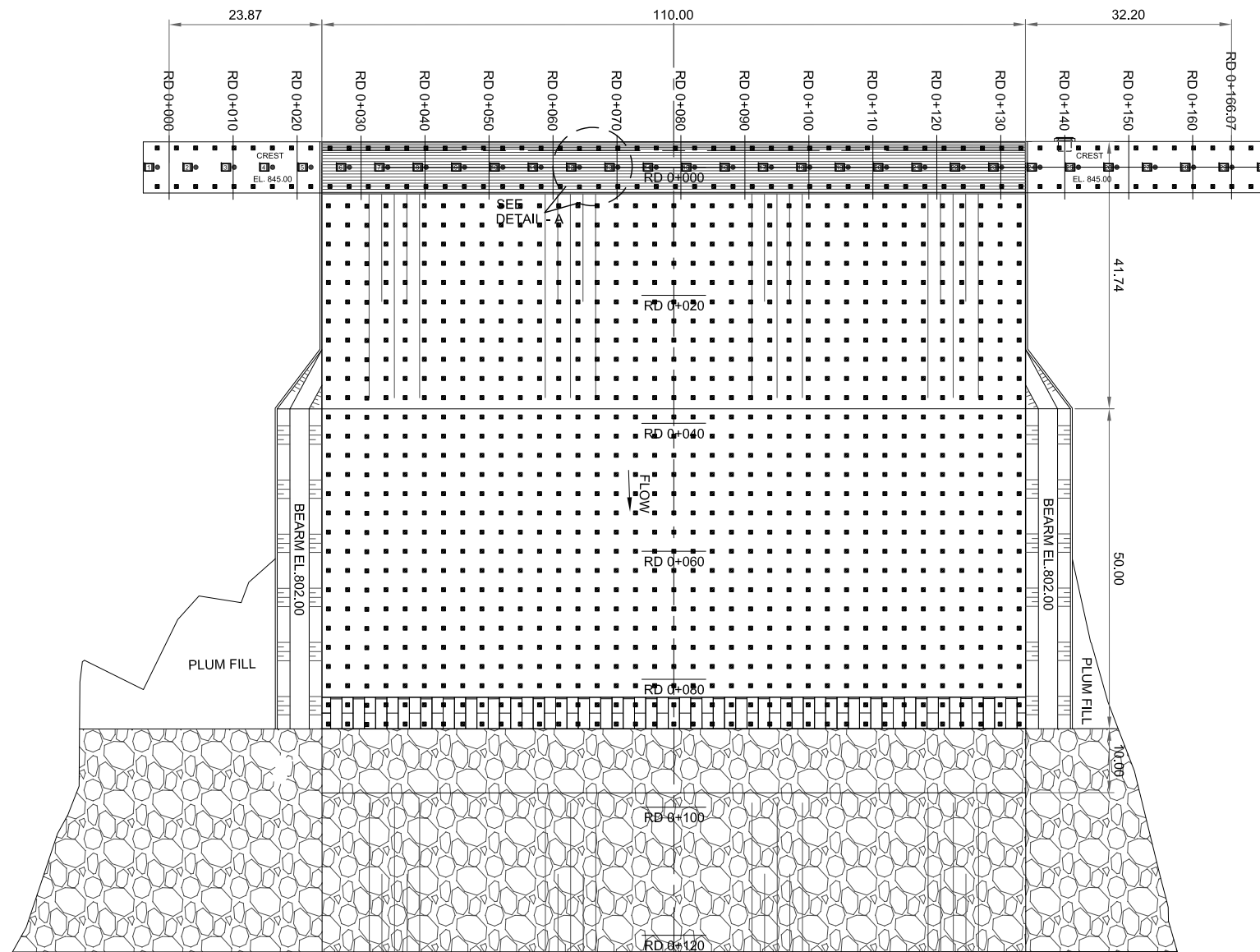
TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
GROUTING NOTES

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
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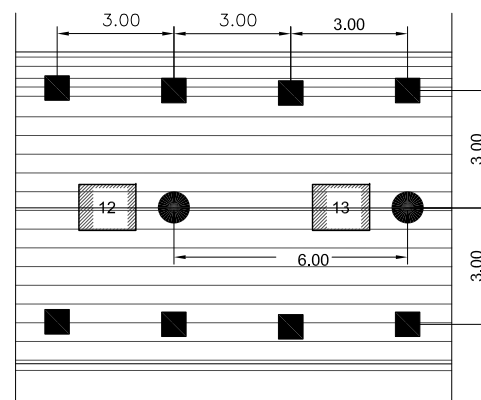
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MAIN DAM GROUTING PLAN

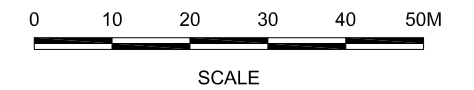


DETAIL - A
SCALE = 1:3

NOTE:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METER UNLESS INDICATED OTHERWISE

- CONSOLIDATION GROUT HOLE
- CURTAIN GROUT HOLE



REFERENCE DRAWINGS :-

- SHD-TD-MD-01
- SHD-TD-MD-03
- SHD-TD-MD-05
- SHD-TD-MD-06

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP
OF ENGINEERING & CONSULTANTS
PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

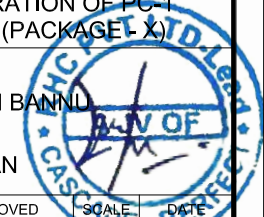
PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

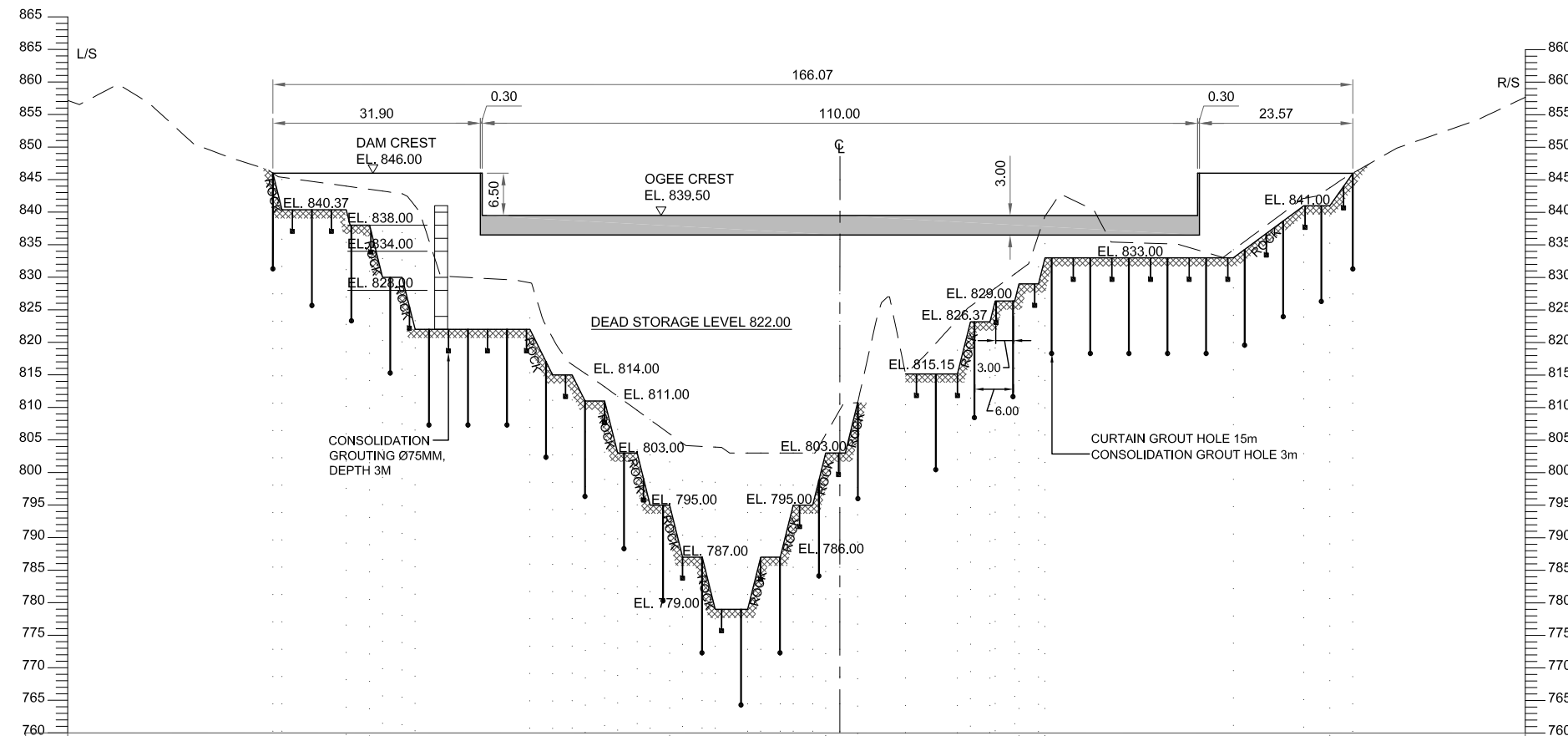
TITLE:
GROUTING PLAN

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-MD-04 SHEET:- SUB SH.- ----



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EXCA. / FILL LEVEL	NSL	OFFSET
846.000	846.000	186.070
840.370	845.443	164.660
840.370	844.009	154.790
838.000	843.515	151.190
830.000	843.240	148.190
830.000	842.813	146.190
822.000	840.935	144.190
822.000	829.146	126.540
815.000	821.000	123.040
811.000	816.591	120.040
811.000	815.000	118.020
811.000	812.863	115.040
803.000	811.718	113.040
803.000	809.556	110.040
795.000	808.111	108.040
795.000	805.944	105.040
787.000	804.500	103.040
787.000	804.017	100.040
779.000	803.905	98.040
779.000	802.989	93.040
787.000	802.988	91.040
787.000	802.987	88.040
795.000	802.986	86.040
795.000	803.284	83.040
803.000	806.000	81.040
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810.731	810.865	76.140
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826.371	826.337	54.980
829.000	830.426	51.980
829.000	830.853	51.330
833.000	836.000	46.330
833.000	839.190	47.330
833.000	834.000	18.352
841.000	842.126	7.533
841.000	844.000	3.520
846.000	846.000	0.000

DAM CROSS SECTION (GROUTING PROFILE)

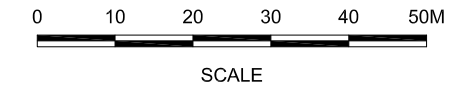
NOTE:

- ALL DIMENSIONS AND ELEVATIONS ARE IN METER UNLESS INDICATED OTHERWISE

LEGEND:

CURTAIN GROUT HOLE 15m

CONSOLIDATION GROUTING Ø75MM, DEPTH 3M



REFERENCE DRAWINGS :-

- SHD-TD-MD-03
- SHD-TD-MD-04
- SHD-TD-MD-06

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:

PSU SMALL DAM SECTION MERGED AREA IRRIGATION DEPARTMENT, KPK.

CONSULTANTS:

- A J.V OF
- RHC** REHMAN HABIB CONSULTANTS (PVT) LTD.
- CASCADE GROUP** OF ENGINEERING & CONSULTANTS
- PEMC** PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:

CONSULTANCY SERVICES FOR FEASIBILITY STUDY, DETAIL DESIGN AND PREPARATION OF PC-1 FOR 5 SMALL DAMS IN FATA (PACKAGE X)

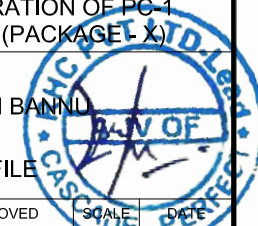
SHAKTU DAM TRIBAL SUB-DIVISION BANNU

TITLE:

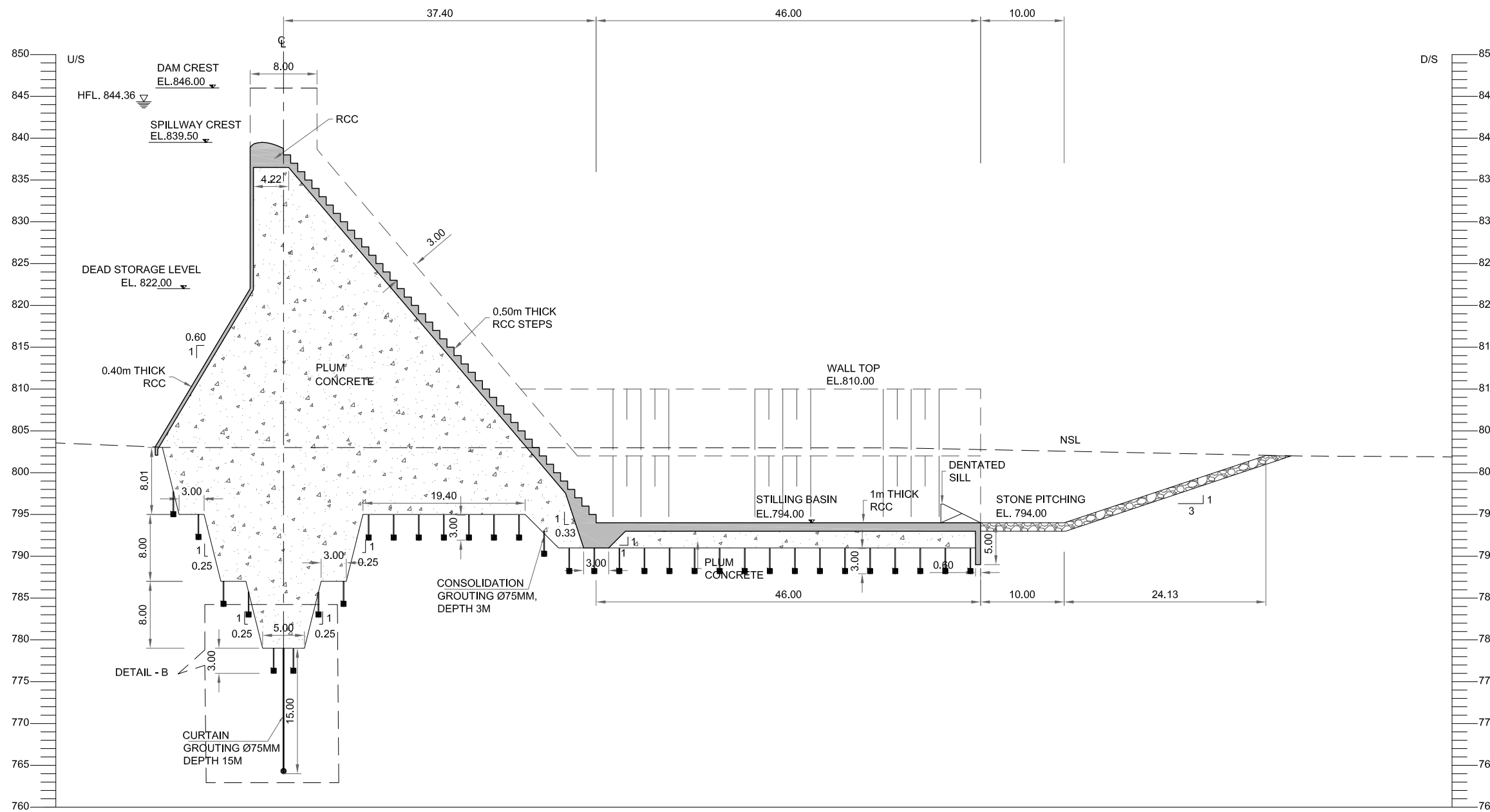
GROUTING PROFILE

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-MD-05 SHEET:- SUB SH.- ----



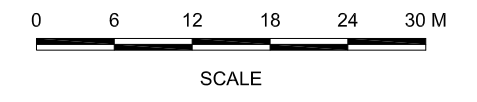
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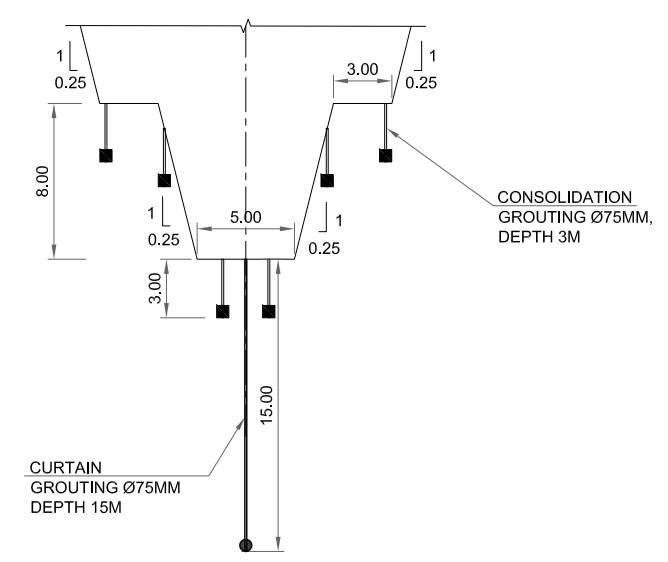
NOTE:
1. ALL DIMENSIONS AND ELEVATIONS ARE IN METER UNLESS INDICATED OTHERWISE

LEGEND:

- CURTAIN GROUT HOLE 15m
- CONSOLIDATION GROUTING Ø75MM, DEPTH 3M



RD 0+090



DETAIL - B
SCALE = 1:4

REFERENCE DRAWINGS :-

SHD-TD-MD-03
SHD-TD-MD-04
SHD-TD-MD-05

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

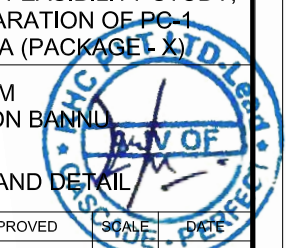
CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP OF ENGINEERING & CONSULTANTS
PEMC PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

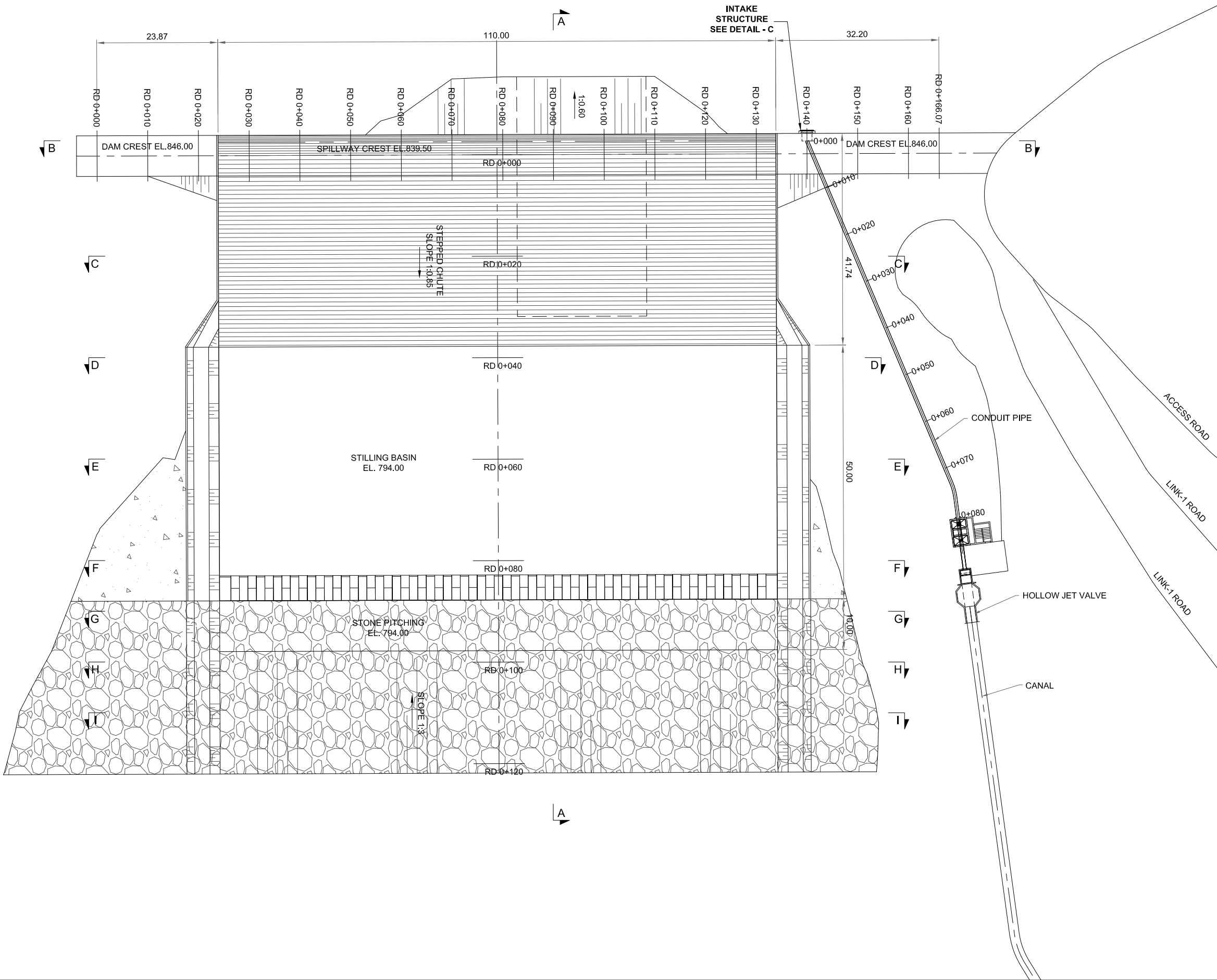
TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
GROUTING SECTION AND DETAIL

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-MD-06 SHEET:- SUB SH.- ----

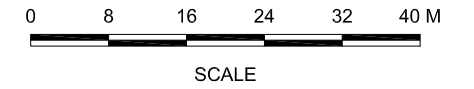


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NOTE:

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REFERENCE DRAWINGS :-

SHD-TD-MD-01

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CLIENT:

PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS:

- A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
-  **CASCADE GROUP OF ENGINEERING & CONSULTANTS**
-  **PERFECT ENGINEERING & MANAGEMENT CONSULTANTS**

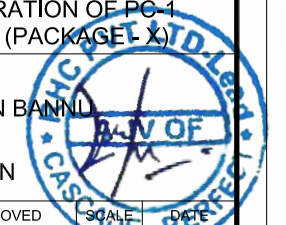
PROJECT:

CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PG-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

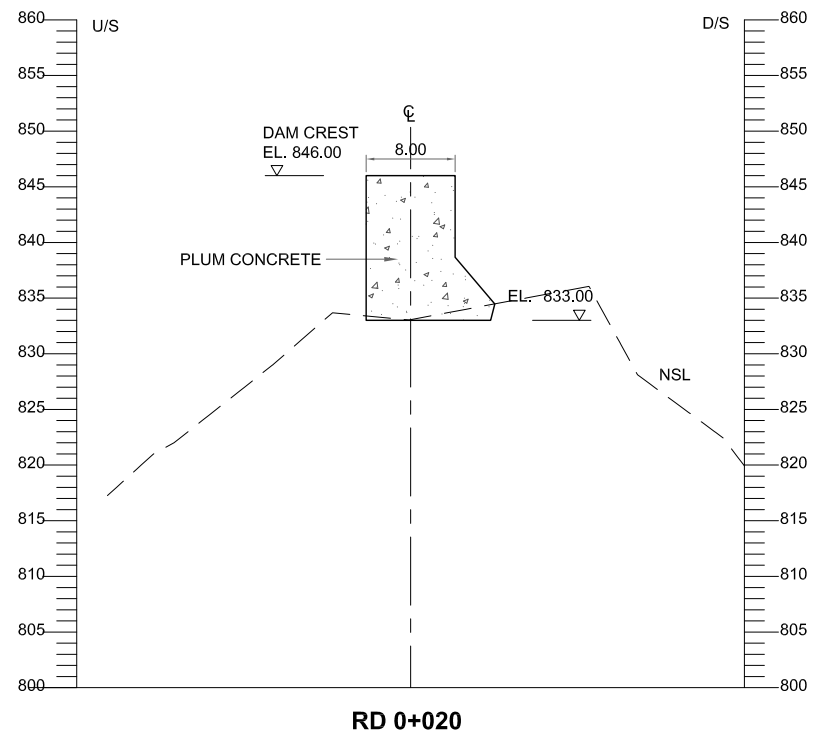
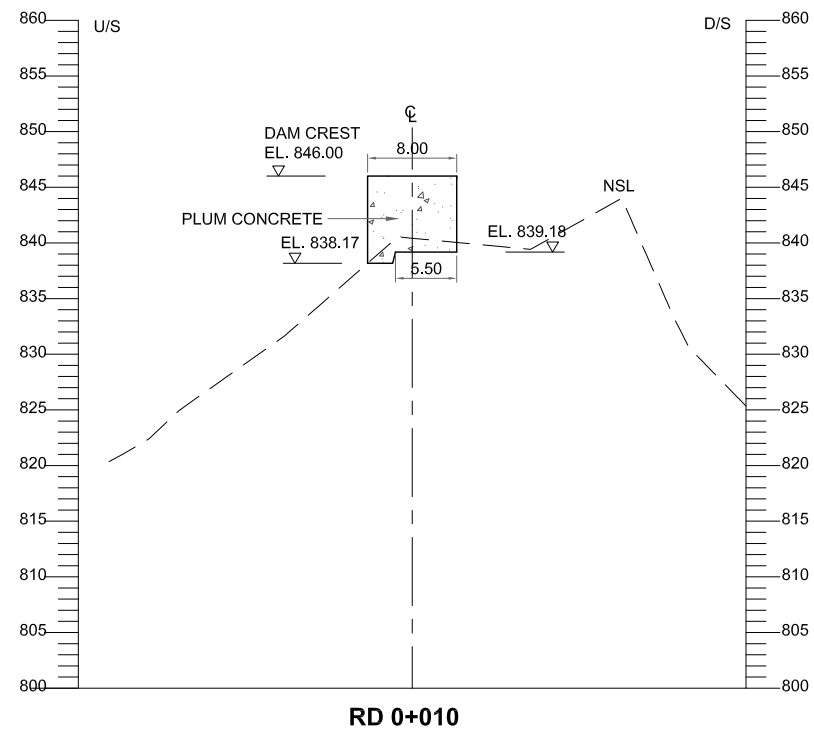
TITLE:

SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
MAIN DAM &
SPILLWAY PLAN

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Show	Oct, 2021
DRG.No:- SHD-TD-SP-07		SHEET:-		SUB SH.- ----	

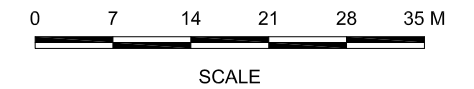


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REFERENCE DRAWINGS :-

SHD-TD-SP-07

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CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
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 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

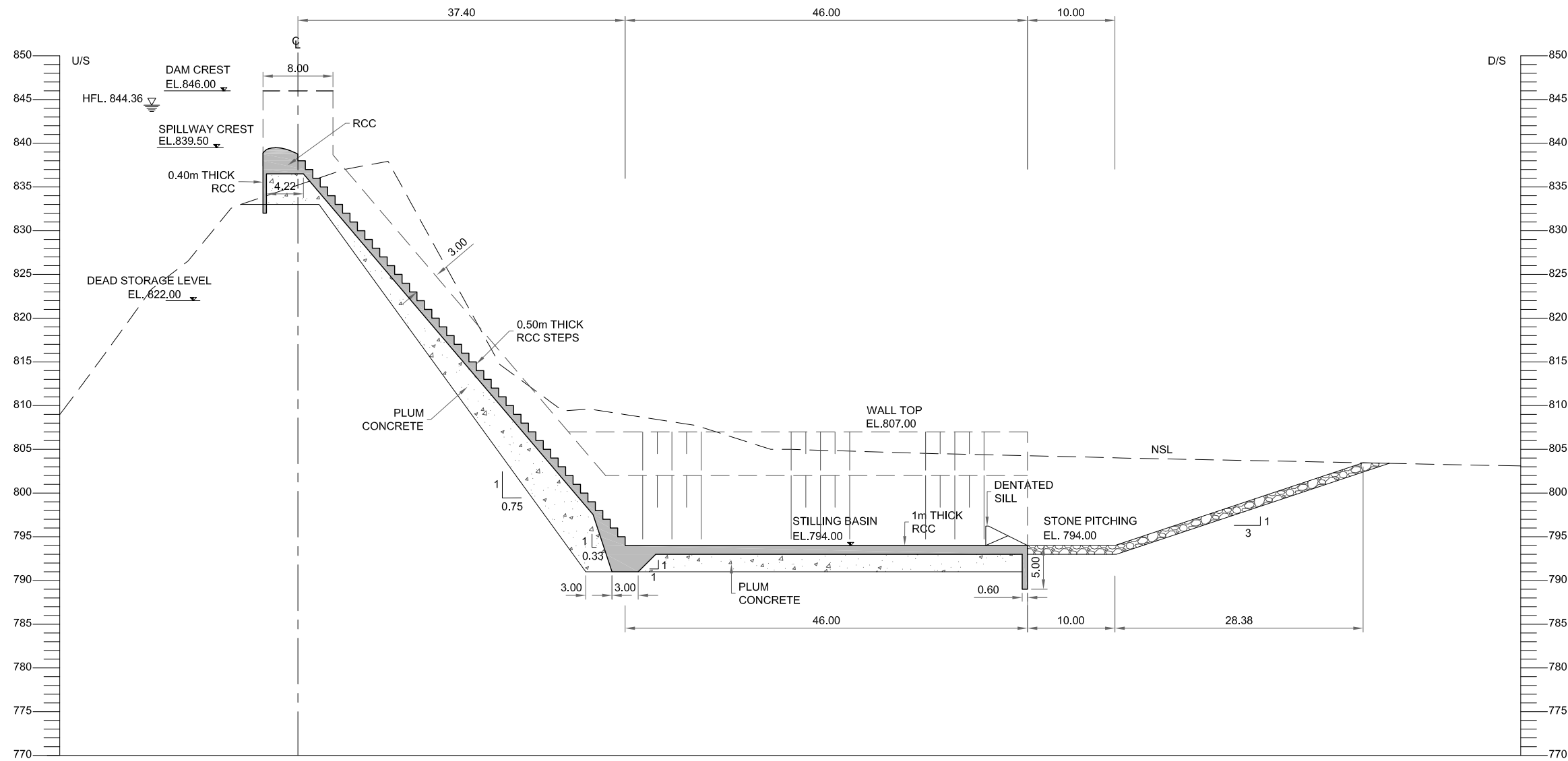
PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
GRAVITY DAM CROSS SECTION
(NON OVERFLOW MONOLITH)

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Show	Oct, 2021
DRG.No:- SHD-TD-MD-08		SHEET:-		SUB SH.- ----	



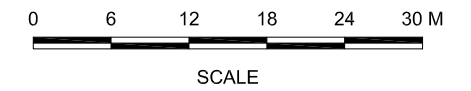
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RD 0+030

NOTE:

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REFERENCE DRAWINGS :-

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CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
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CASCADE GROUP
OF ENGINEERING & CONSULTANTS

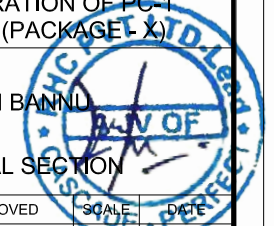
PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

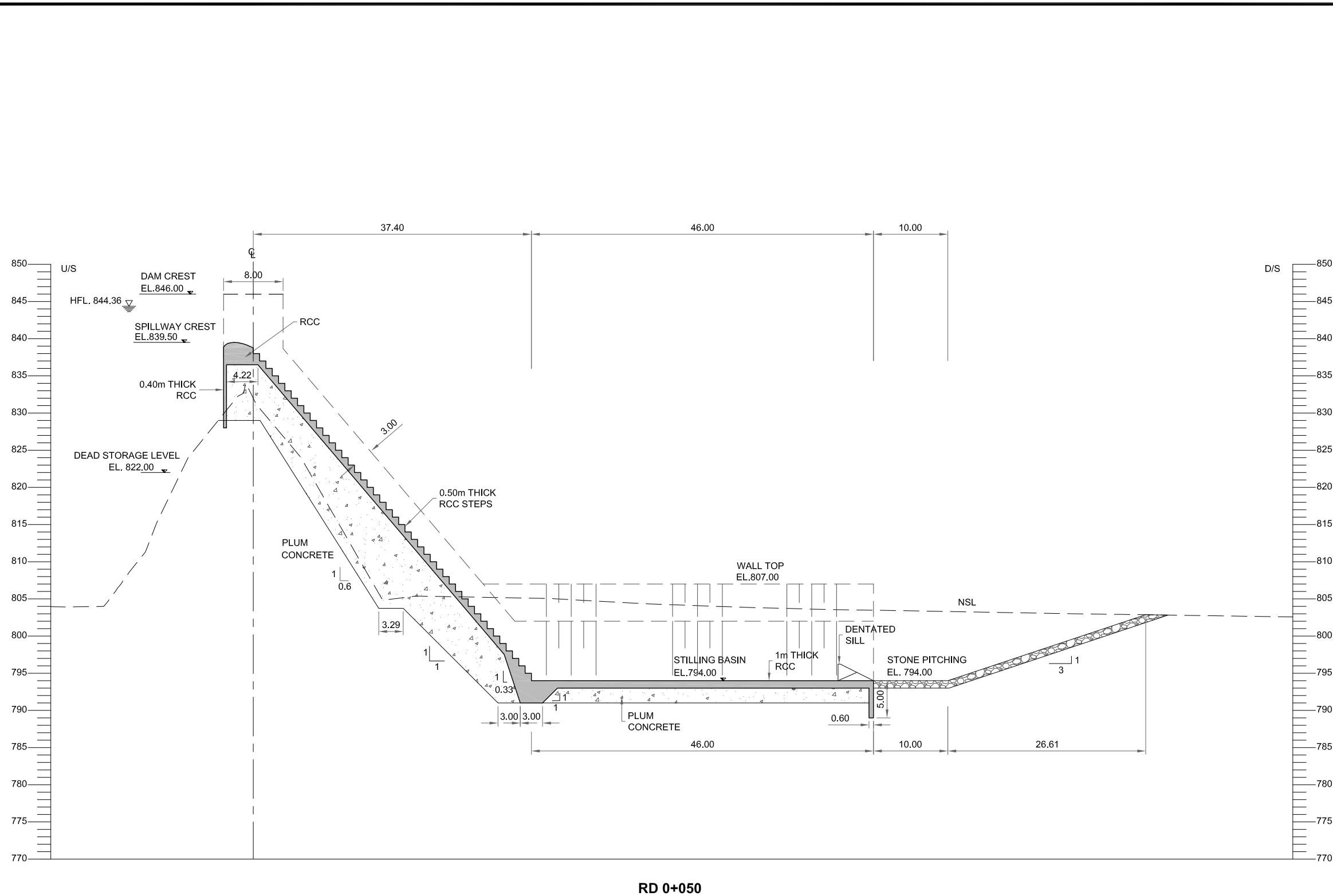
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

TITLE:
SPILLWAY LONGITUDINAL SECTION

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021
DRG.No:-	SHD-TD-SP-09	SHEET:-	SUB SH.-	----	----



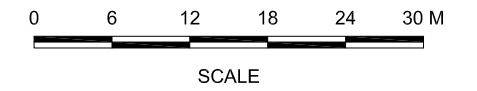
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RD 0+050

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REFERENCE DRAWINGS :-

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CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V. OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.

CASCADE GROUP
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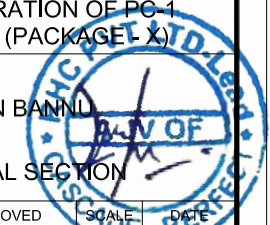
PERFECT ENGINEERING &
MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

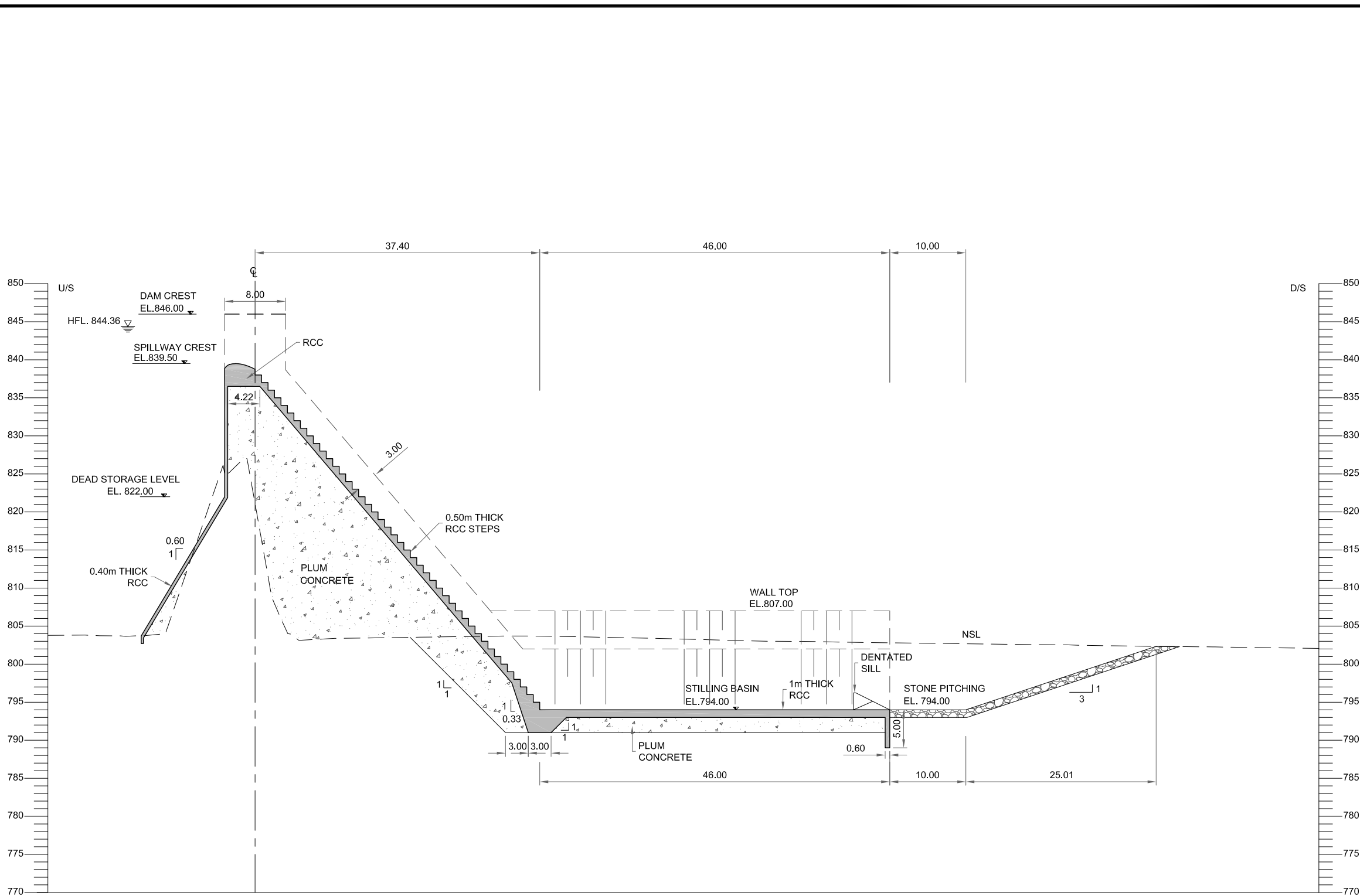
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

TITLE:
SPILLWAY LONGITUDINAL SECTION

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021
DRG.No:-	SHD-TD-SP-10	SHEET:-	SUB SH.-	----	----



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RD 0+070

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SHD-TD-SP-07

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CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.

CASCADE GROUP
OF ENGINEERING & CONSULTANTS

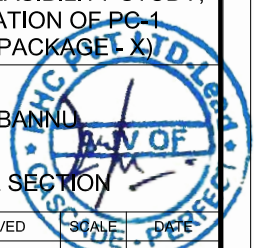
PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PG-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

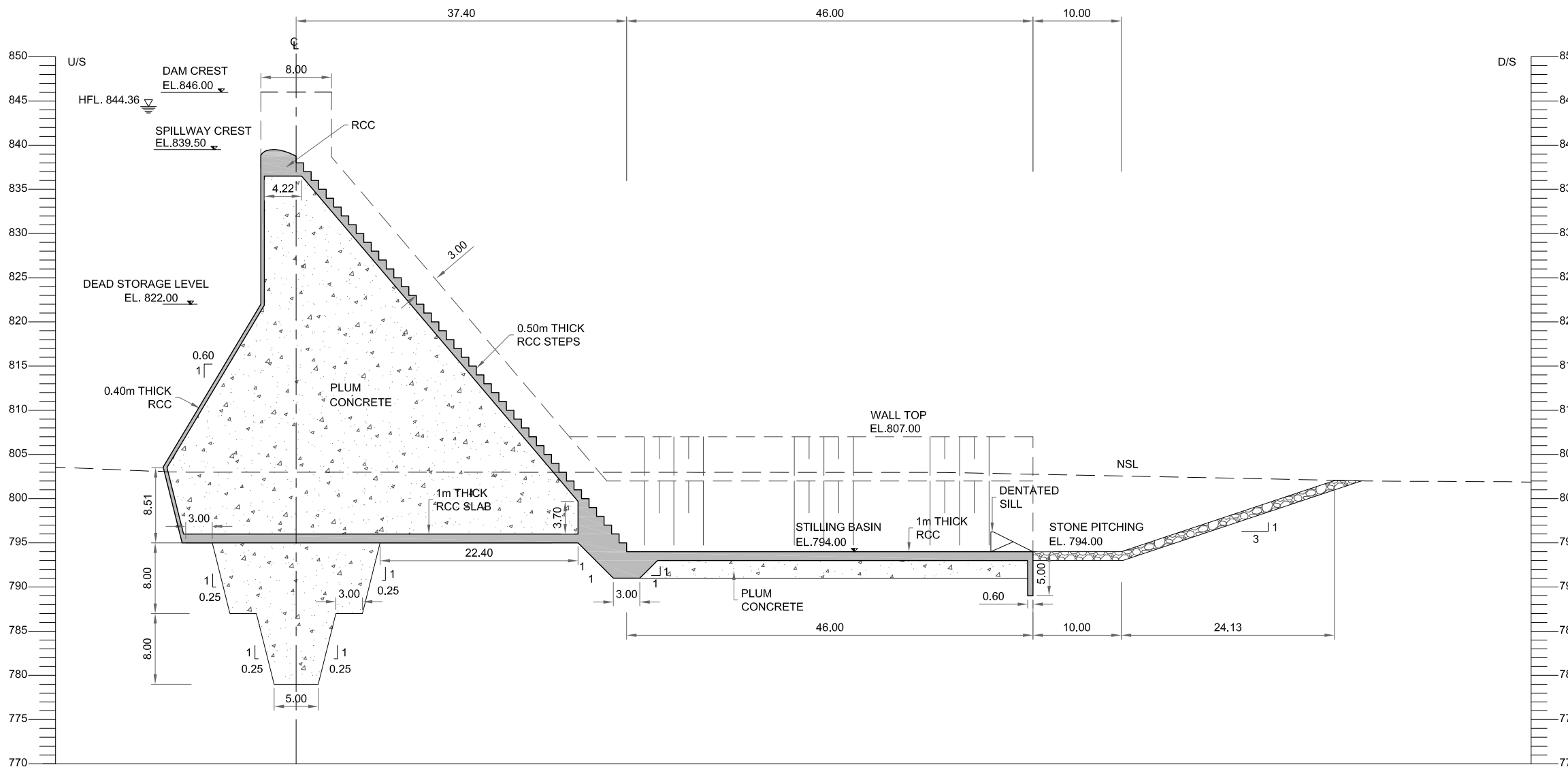
TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
SPILLWAY LONGITUDINAL SECTION

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-SP-11 SHEET:- SUB SH.- ----



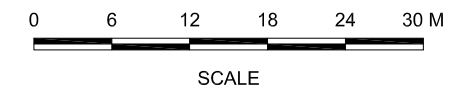
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RD 0+090

NOTE:

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REFERENCE DRAWINGS :-

SHD-TD-SP-07

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CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.

CASCADE GROUP
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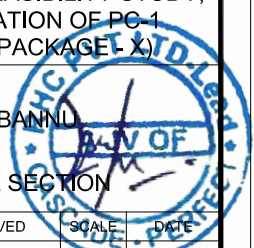
PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

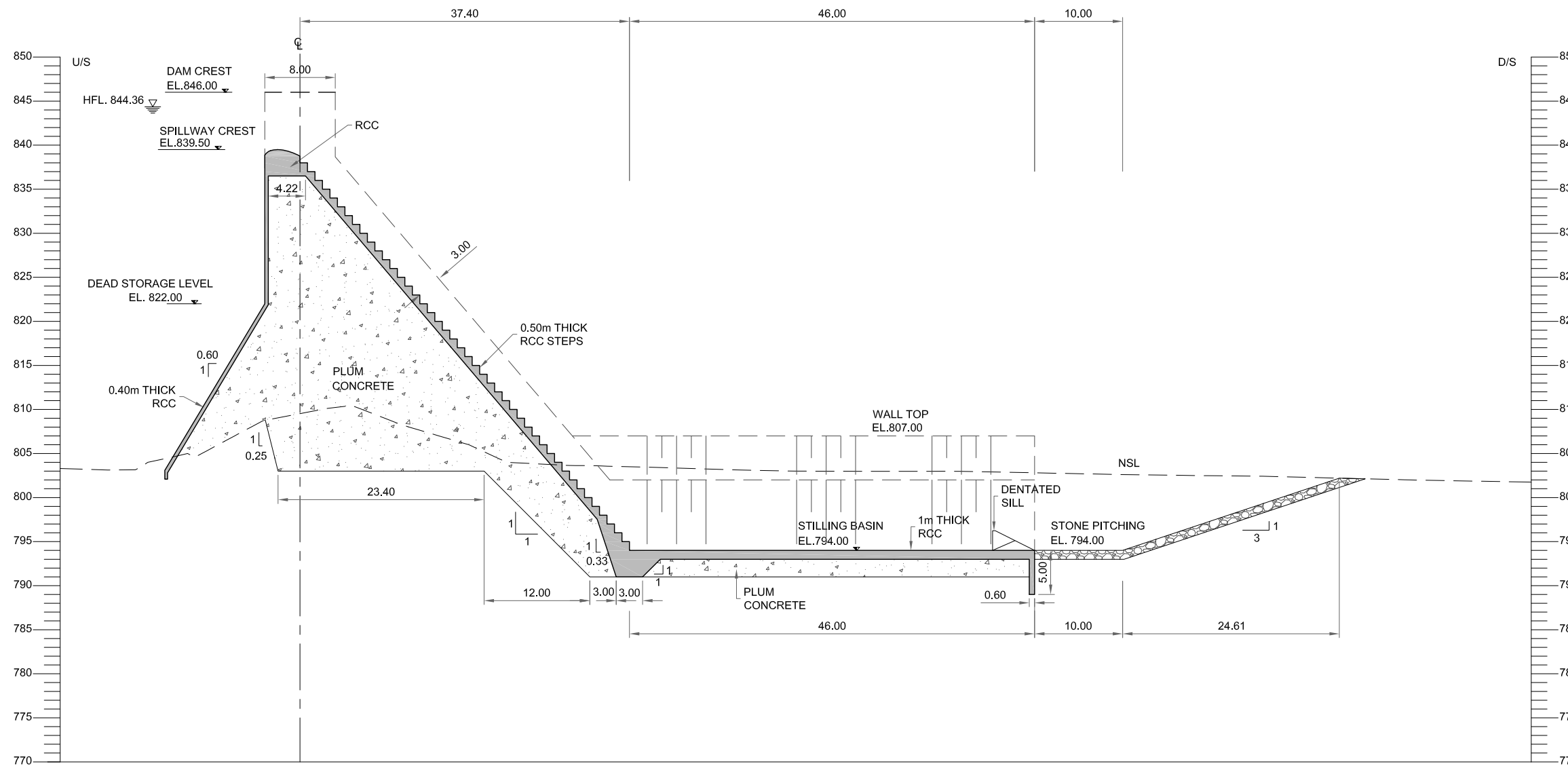
TITLE:
SPILLWAY LONGITUDINAL SECTION

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-SP-12 SHEET:- SUB SH.- ----



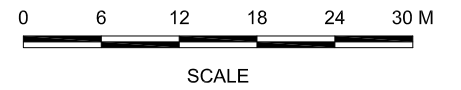
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RD 0+110

NOTE:

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REFERENCE DRAWINGS :-

SHD-TD-SP-07

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CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

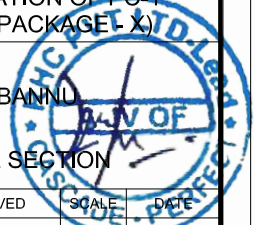
PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PG-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

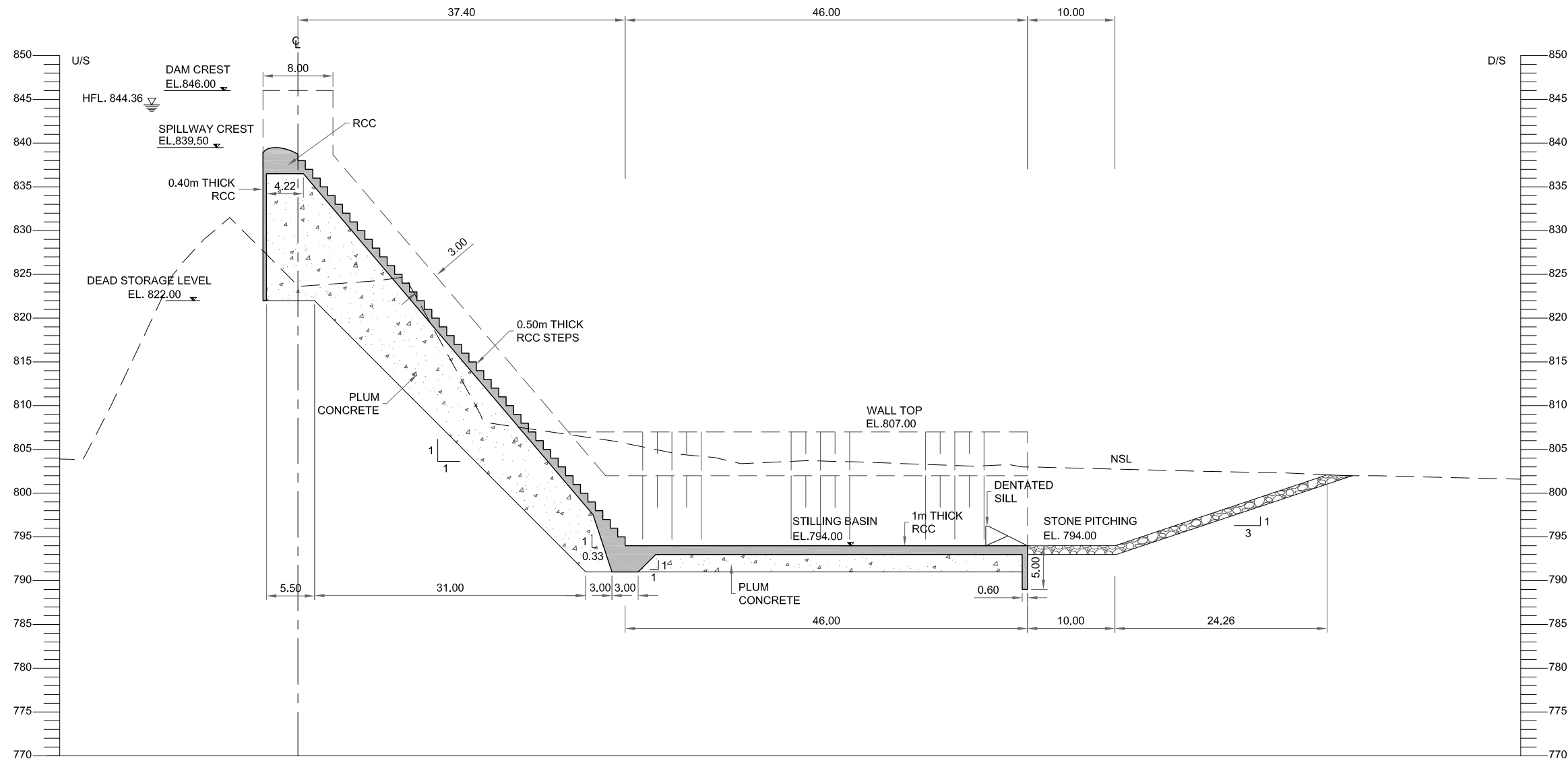
TITLE:
SPILLWAY LONGITUDINAL SECTION

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-SP-13 SHEET:- SUB SH.- ----

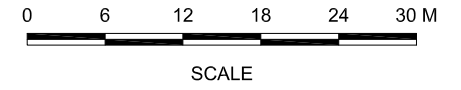
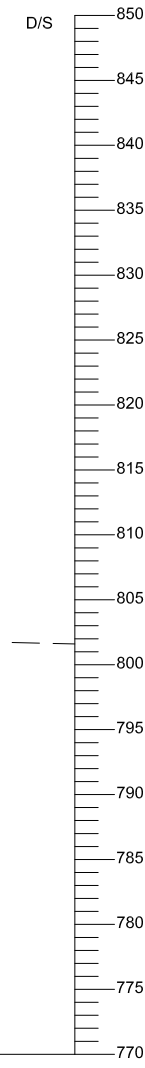


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NOTE:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METER UNLESS INDICATED OTHERWISE



RD 0+130

REFERENCE DRAWINGS :-

SHD-TD-SP-07

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.

CASCADE GROUP
OF ENGINEERING & CONSULTANTS

PERFECT ENGINEERING &
MANAGEMENT CONSULTANTS

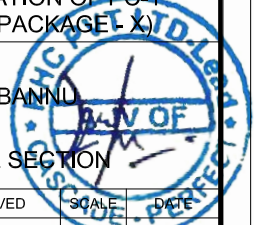
PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PG-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

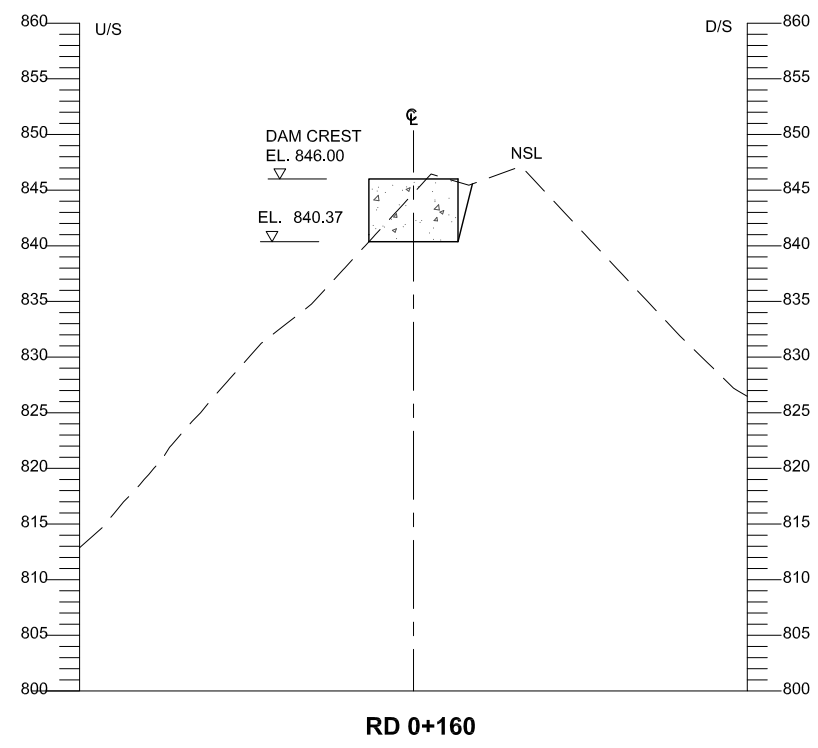
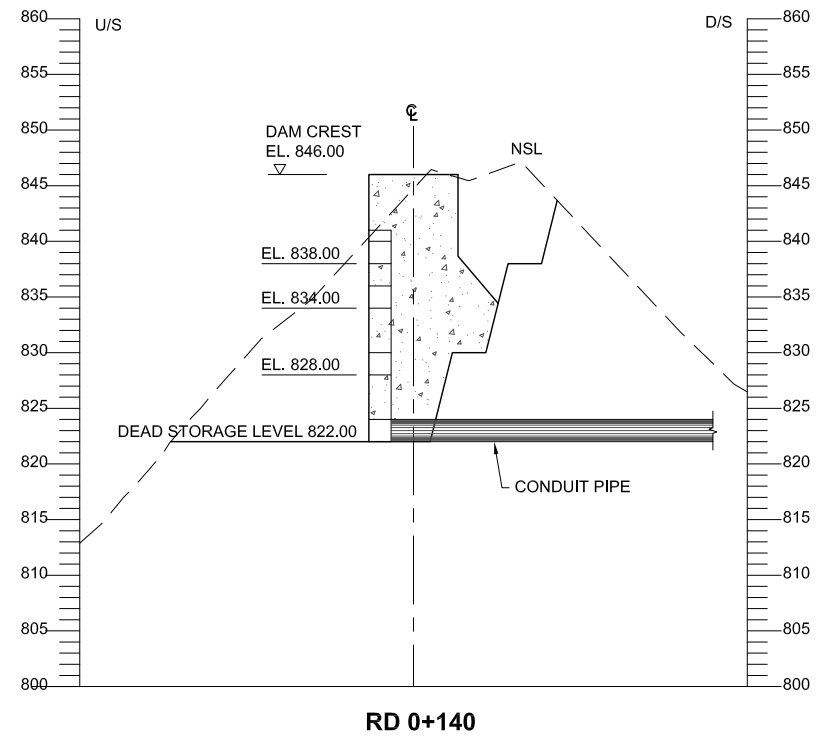
TITLE:
SPILLWAY LONGITUDINAL SECTION

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-SP-14 SHEET:- SUB SH.- ----

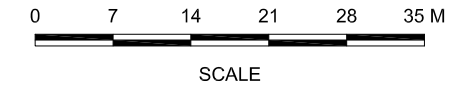


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NOTE:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METER UNLESS INDICATED OTHERWISE





REFERENCE DRAWINGS :-

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

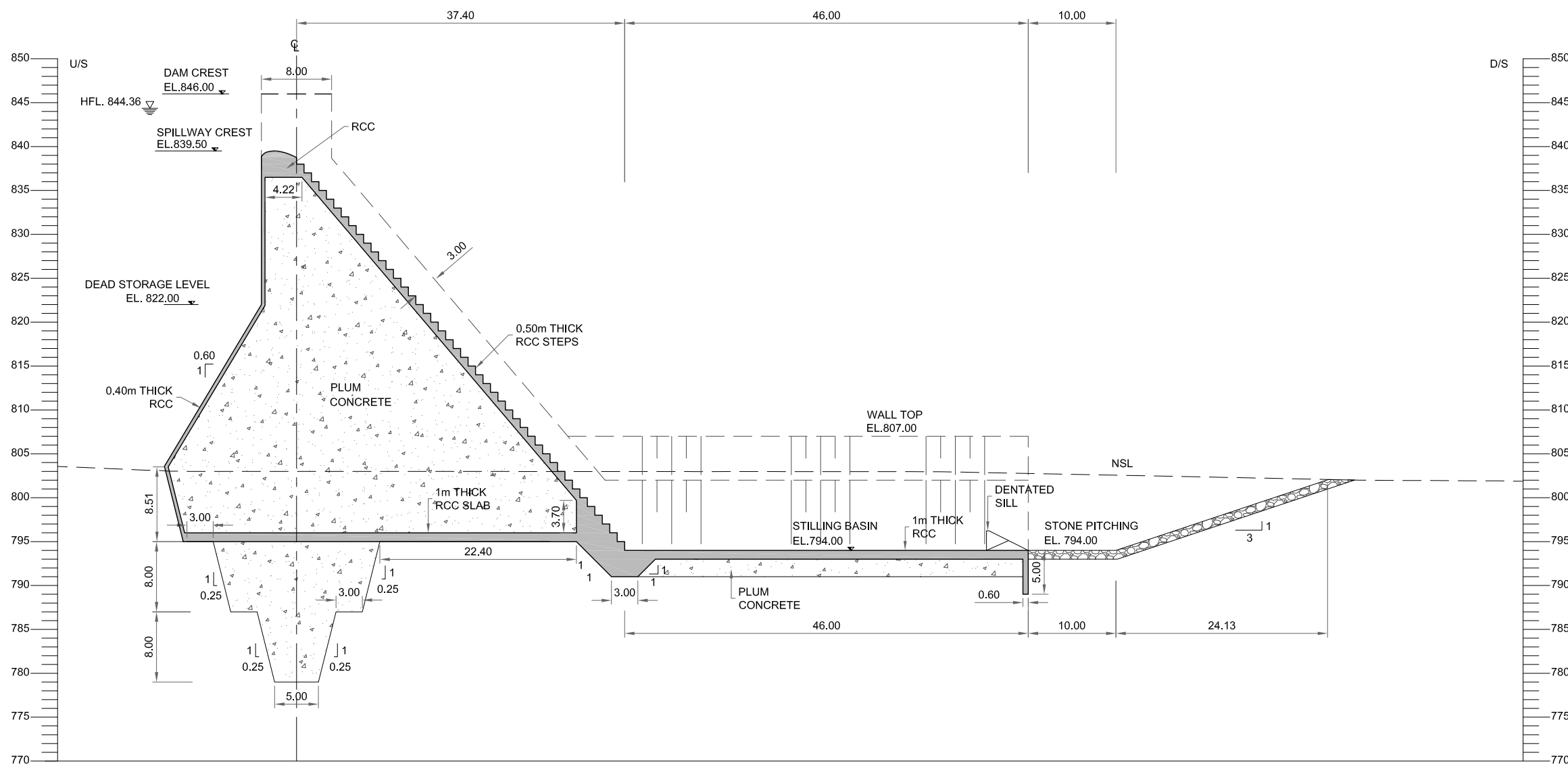
TITLE: GRAVITY DAM CROSS SECTIONS
(NON OVERFLOW MONOLITH)

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-MD-15 SHEET:- SUB SH.- ----



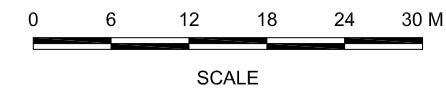
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SECTION A-A

NOTE:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METER UNLESS INDICATED OTHERWISE



REFERENCE DRAWINGS :-

SHD-TD-SP-07

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.

CASCADE GROUP OF ENGINEERING & CONSULTANTS

PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

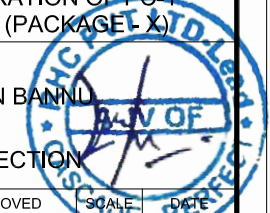
PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

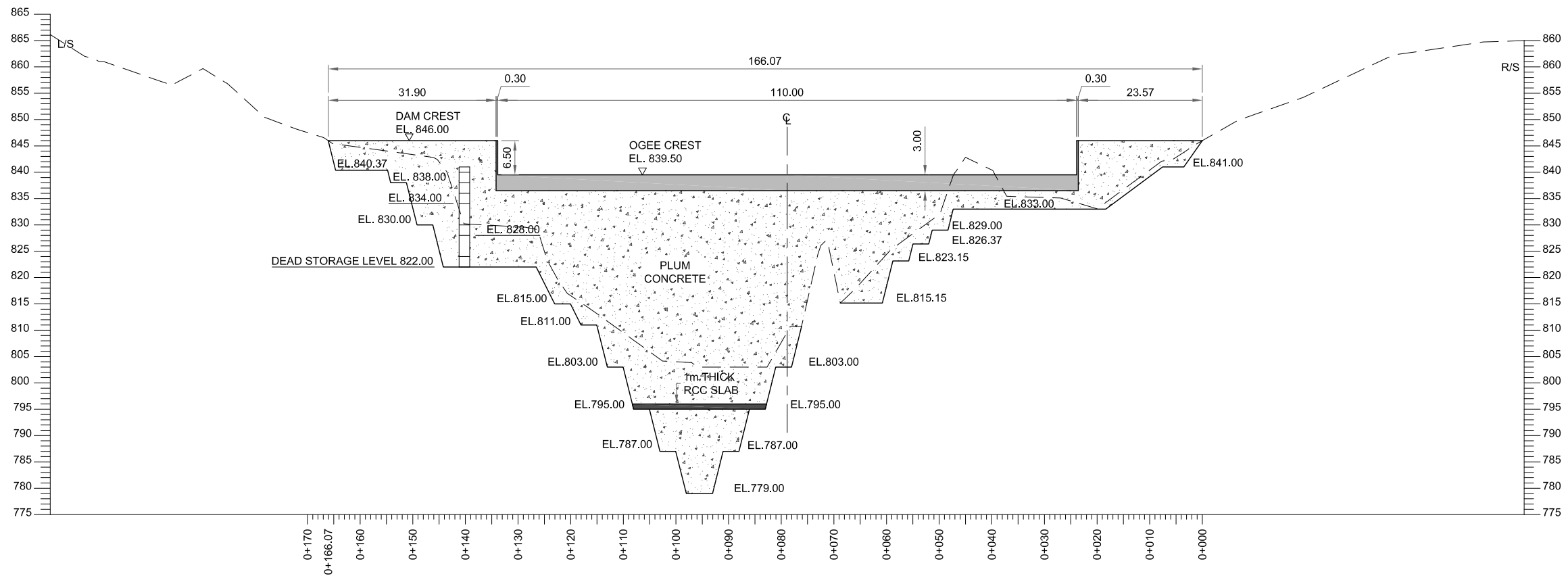
TITLE:
SPILLWAY CROSS SECTION

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-SP-16 SHEET:- SUB SH.- ----

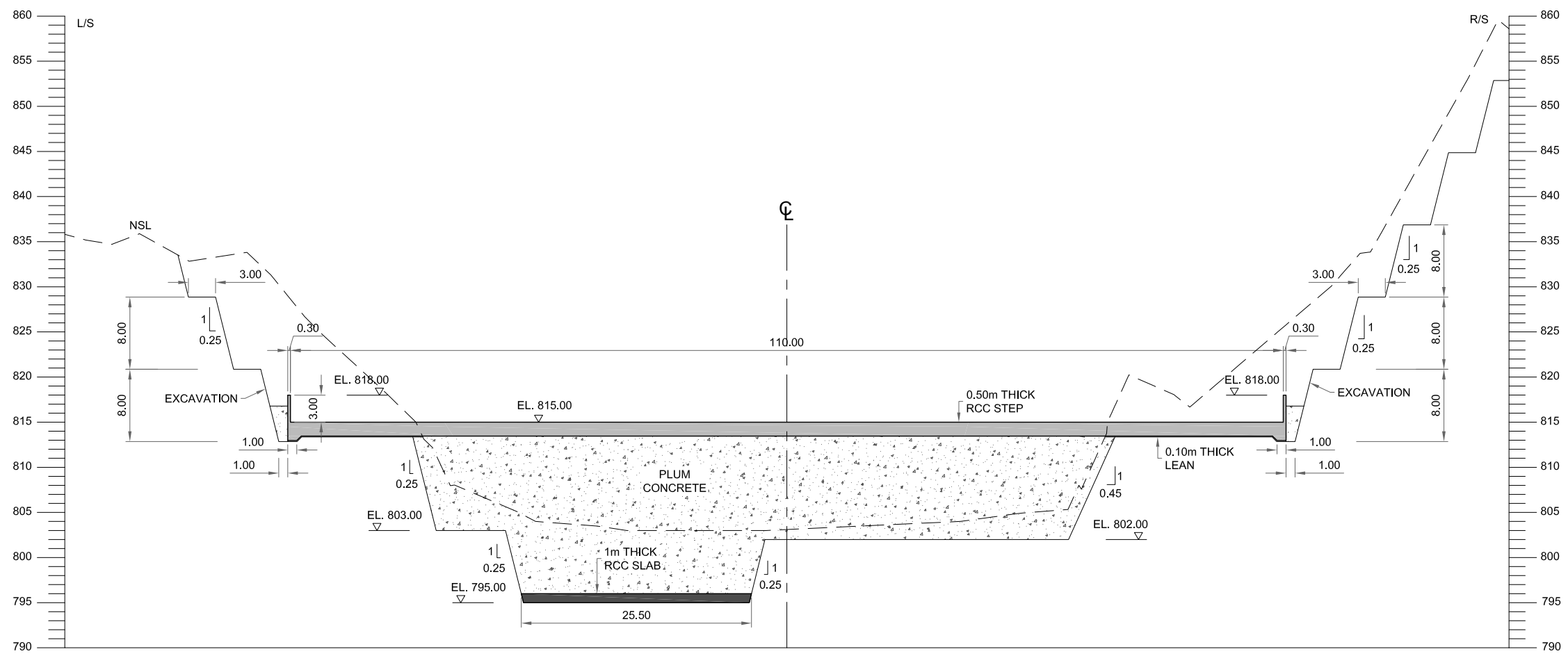
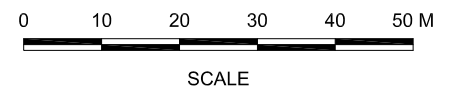


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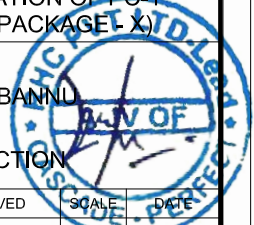
SECTION B-B

NOTE:
 1. ALL DIMENSIONS AND ELEVATIONS ARE IN METER UNLESS INDICATED OTHERWISE

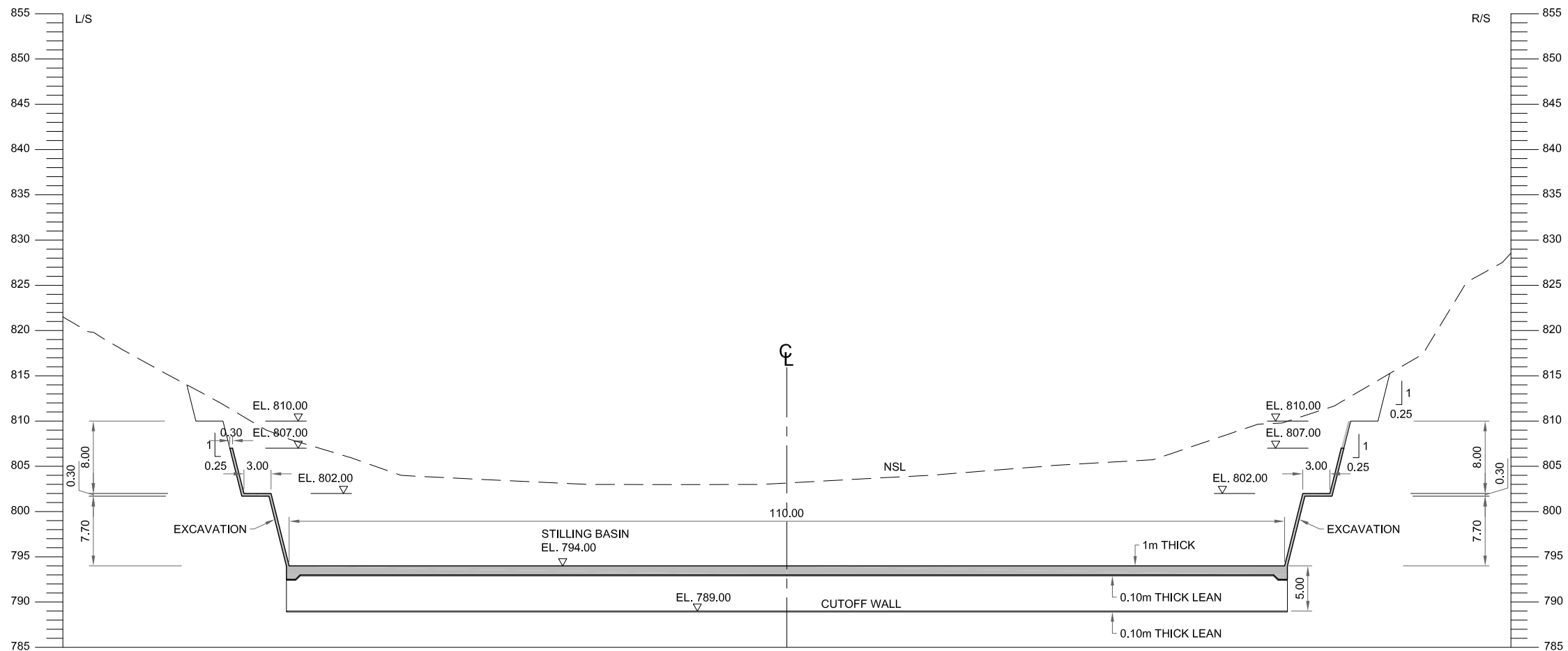


SECTION C-C
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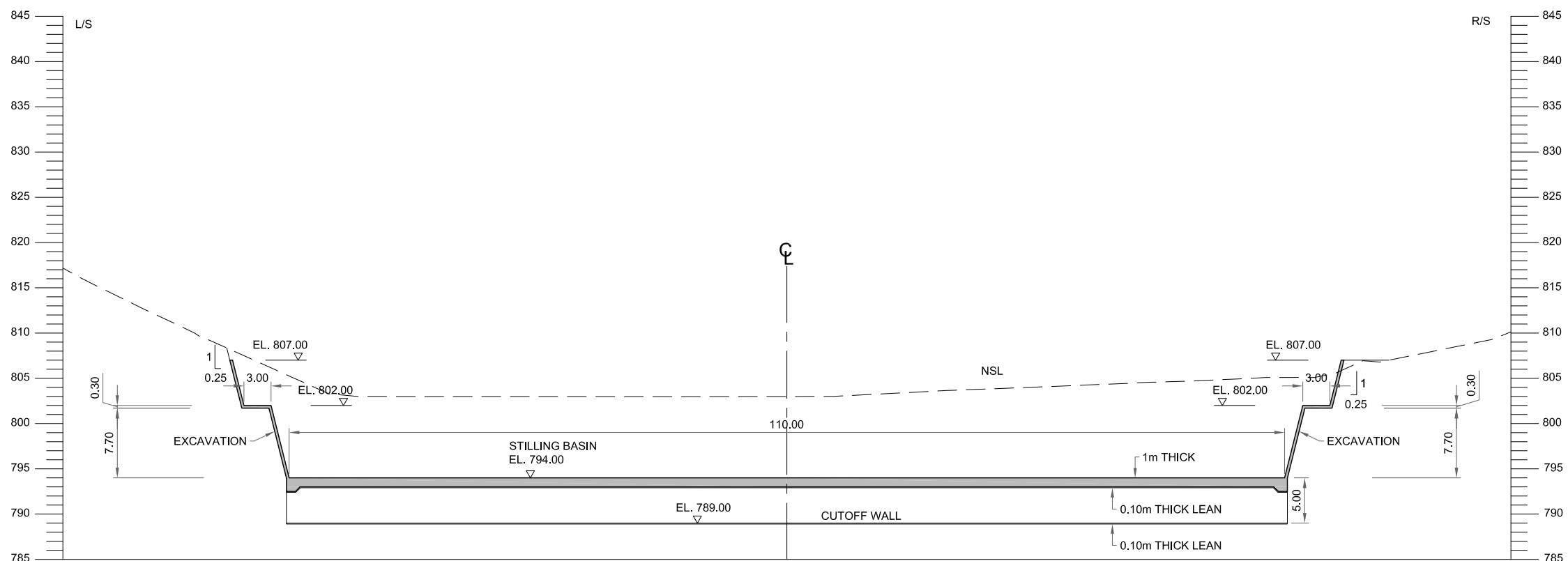
REFERENCE DRAWINGS :-					
SHD-TD-SP-07					
DRAWING IS RELEASED					
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CLIENT: PSU SMALL DAM SECTION MERGED AREA IRRIGATION DEPARTMENT, KPK.					
CONSULTANTS: A J.V OF RHC REHMAN HABIB CONSULTANTS (PVT) LTD. CASCADE GROUP OF ENGINEERING & CONSULTANTS PERFECT ENGINEERING & MANAGEMENT CONSULTANTS					
PROJECT: CONSULTANCY SERVICES FOR FEASIBILITY STUDY, DETAIL DESIGN AND PREPARATION OF PC-1 FOR 5 SMALL DAMS IN FATA (PACKAGE X)					
TITLE: SHAKTU DAM TRIBAL SUB-DIVISION BANNU					
SHEET:-					
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Show	Oct, 2021
DRG.No:- SHD-TD-SP-17			SHEET:-		SUB SH.-:----



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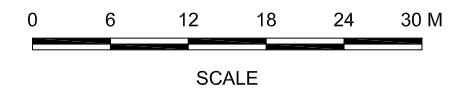
SECTION D-D



SECTION E-E

NOTE:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METER UNLESS INDICATED OTHERWISE



REFERENCE DRAWINGS :-

SHD-TD-SP-07

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

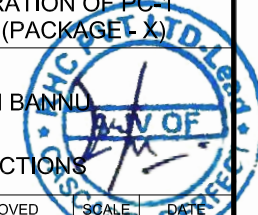
CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP OF ENGINEERING & CONSULTANTS
PEMC PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

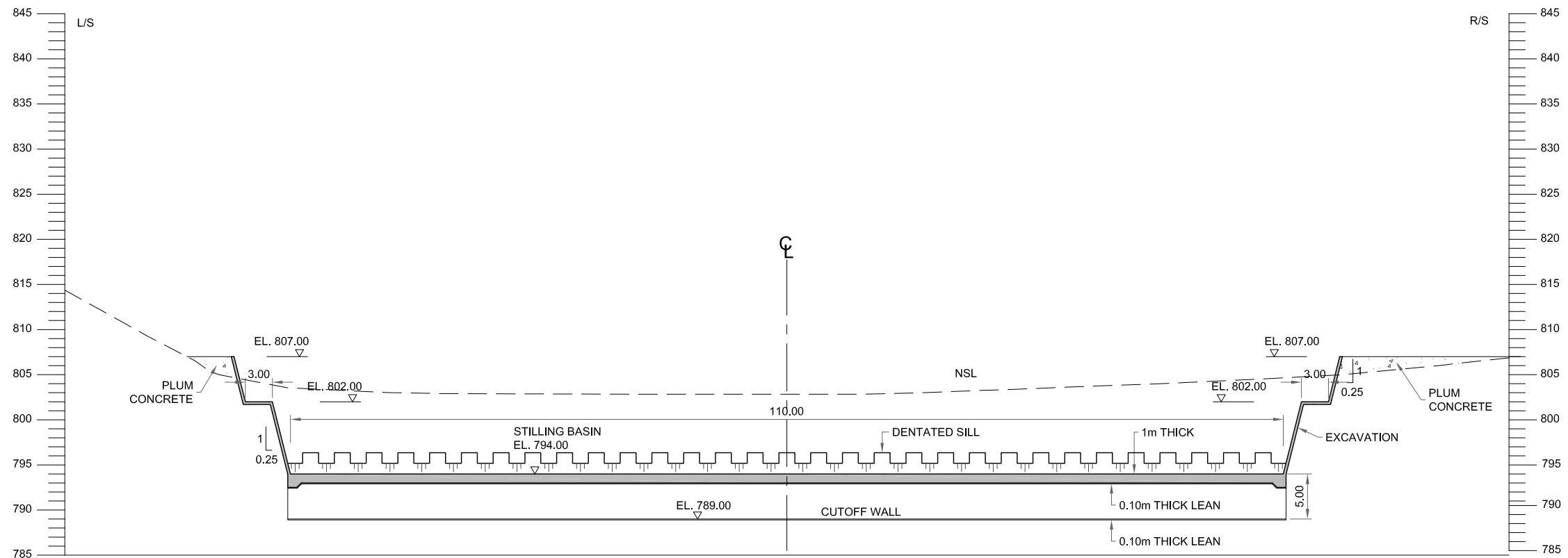
TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
SPILLWAY CROSS SECTIONS

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Show	Oct, 2021

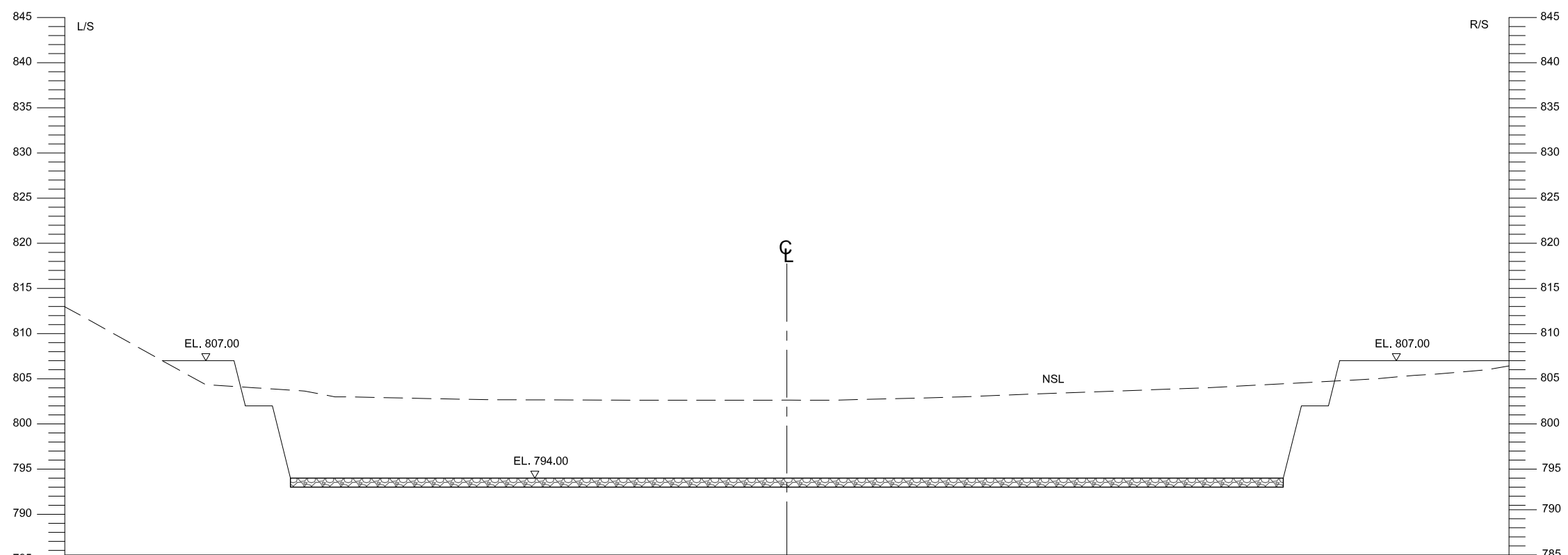
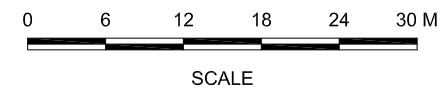
DRG.No:- SHD-TD-SP-18 SHEET:- SUB SH.- ----



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SECTION F-F



SECTION G-G

NOTE:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METER UNLESS INDICATED OTHERWISE

REFERENCE DRAWINGS :-

SHD-TD-SP-07

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

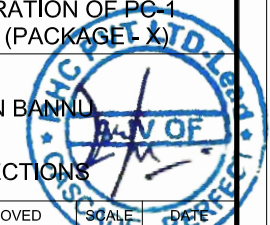
CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

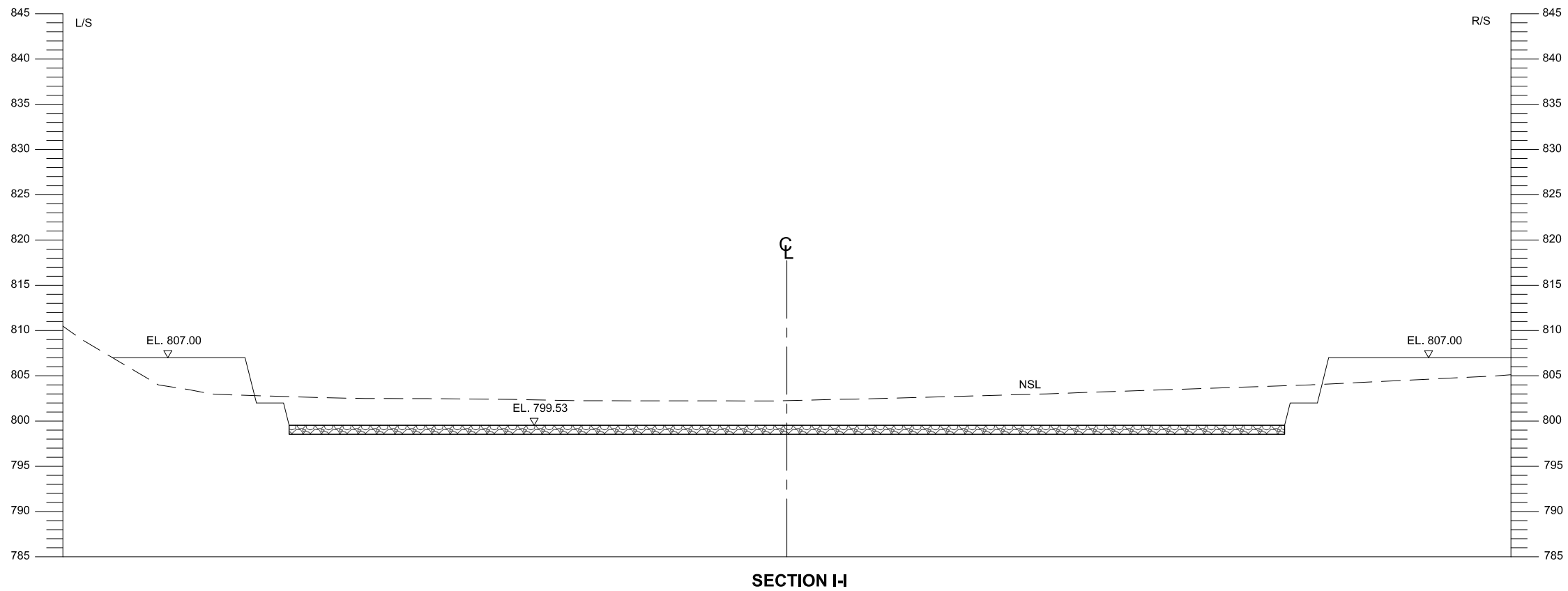
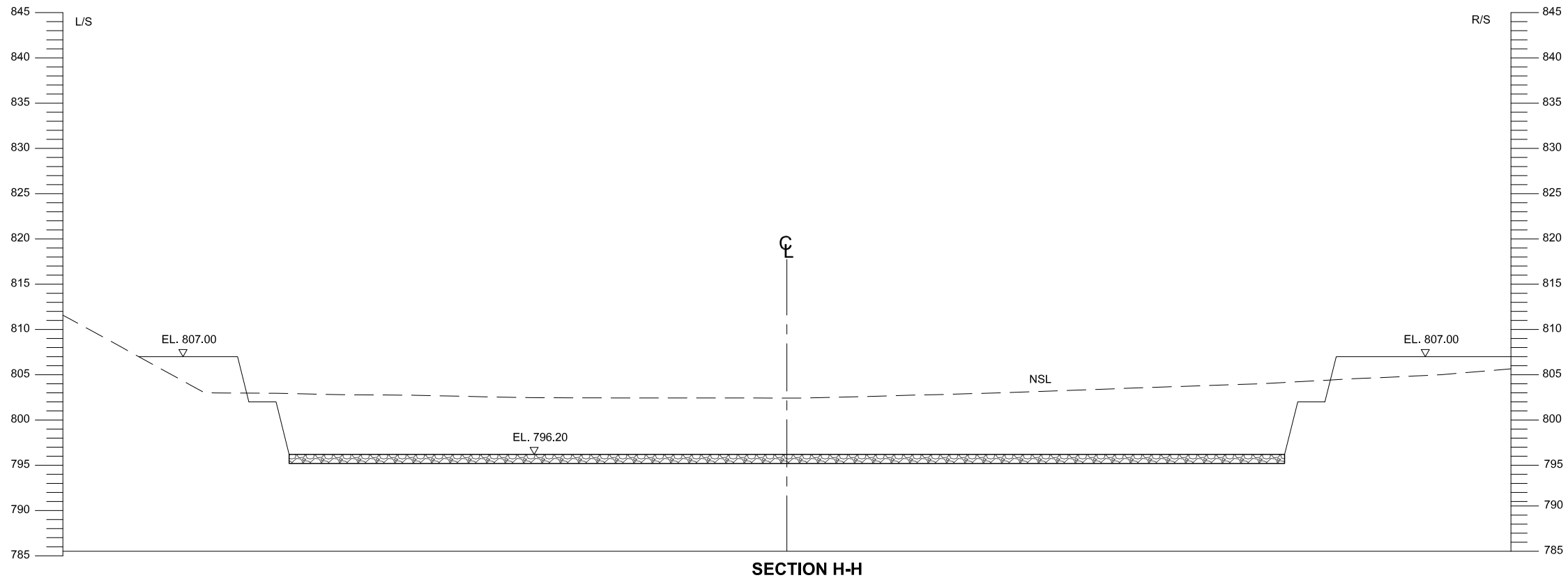
TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
SPILLWAY CROSS SECTIONS

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-SP-19 SHEET:- SUB SH.- ----

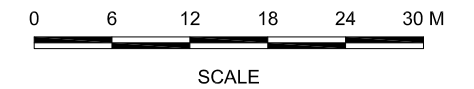


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NOTE:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METER UNLESS INDICATED OTHERWISE



REFERENCE DRAWINGS :-

SHD-TD-SP-07



DRAWING IS RELEASED

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CLIENT:

PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS:

A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

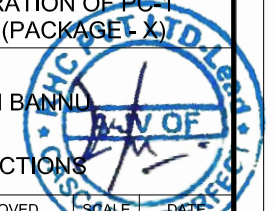
PROJECT:

CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

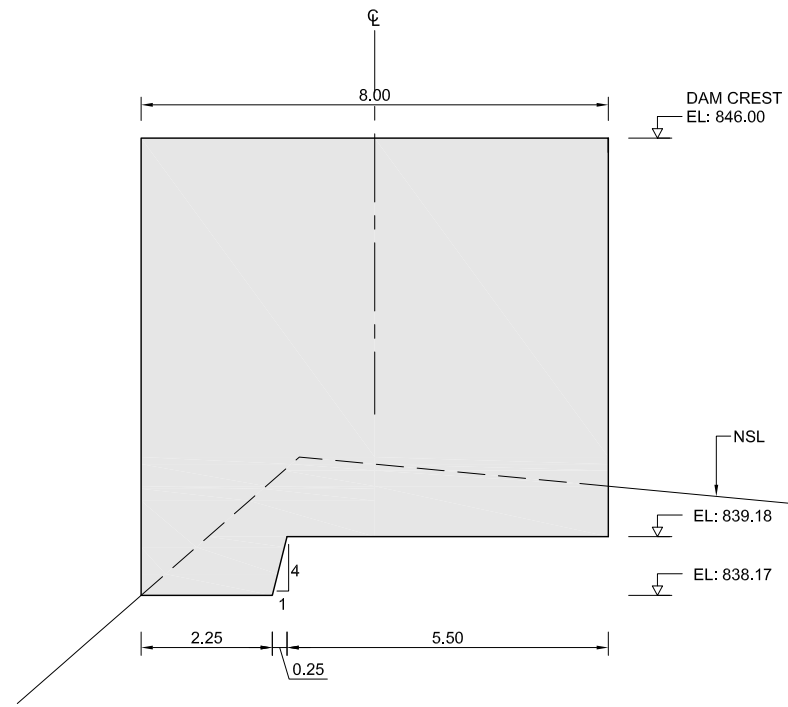
TITLE:

SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
SPILLWAY CROSS SECTIONS

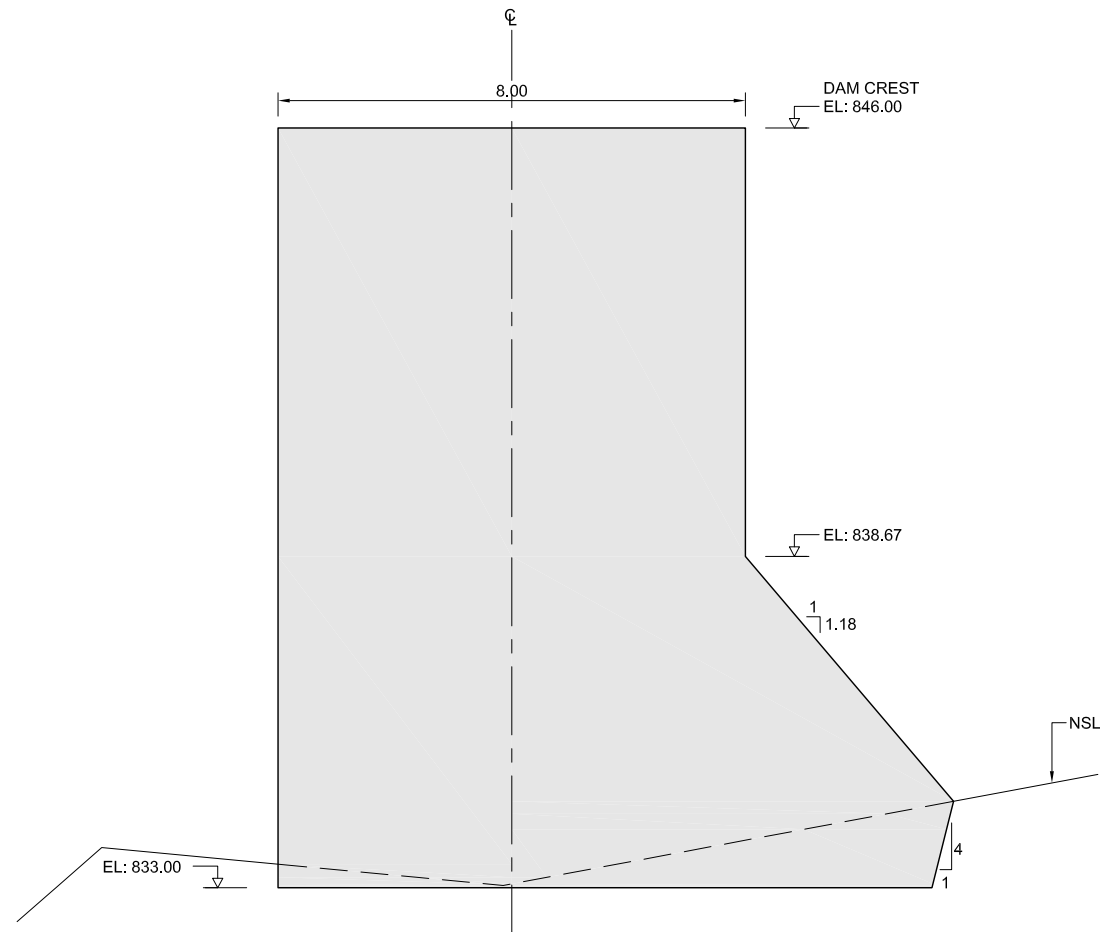
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Show	Oct, 2021
DRG.No:- SHD-TD-SP-20		SHEET:-		SUB SH.-: ----	



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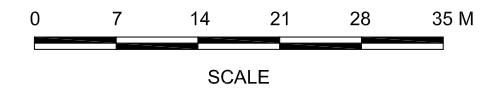
SECTION AT RD: 0+000



SECTION AT RD: 0+020

NOTE:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METER UNLESS INDICATED OTHERWISE





REFERENCE DRAWINGS :-

SHD-TD-MD-01

DRAWING IS RELEASED

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CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

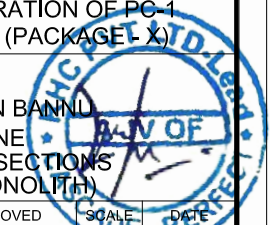
CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

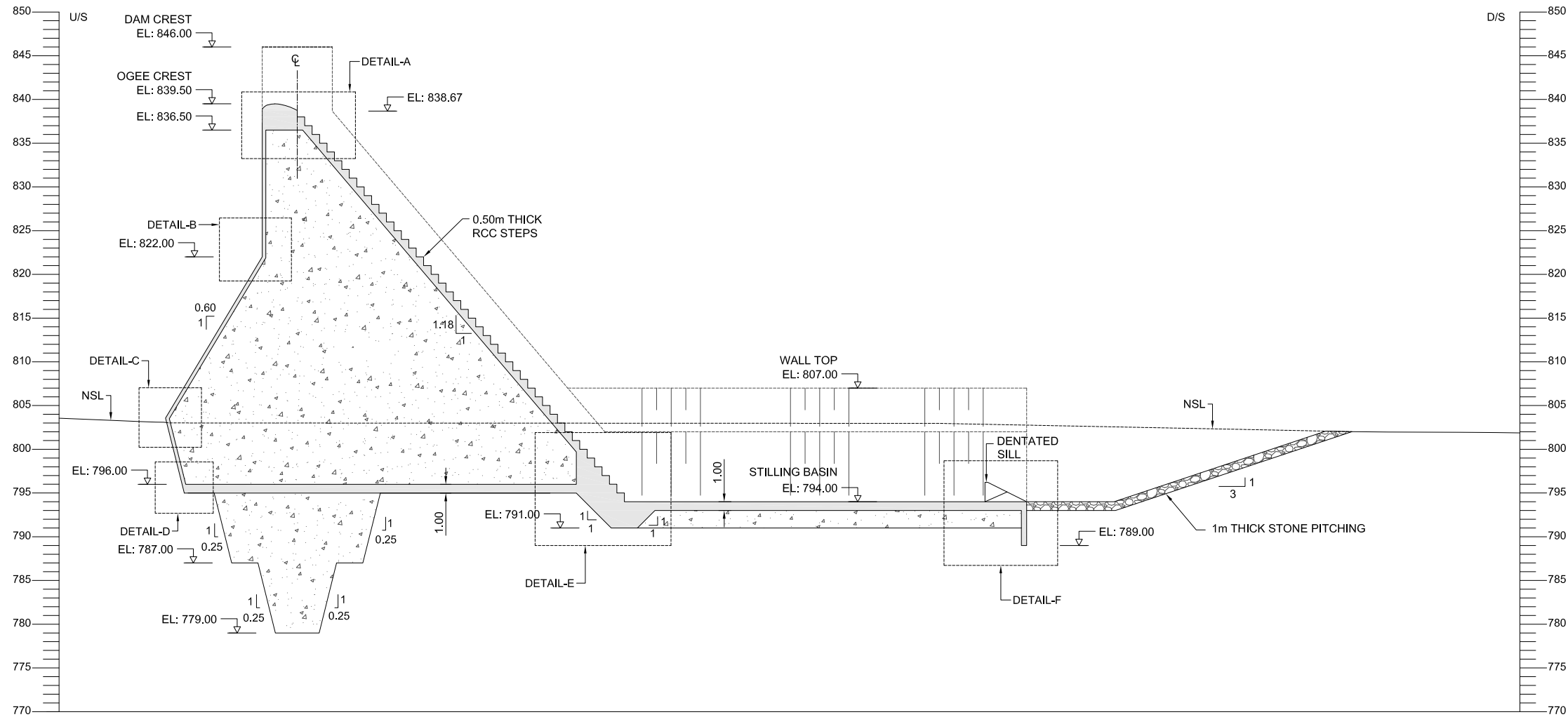
TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
CONCRETE OUTLINE
GRAVITY DAM CROSS SECTIONS
(NON OVERFLOW MONOLITH)

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-MD-21 SHEET:- SUB SH.- ----



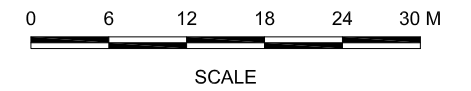
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**SECTION A-A
(RD 0+090)**

NOTE:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METER UNLESS INDICATED OTHERWISE



REFERENCE DRAWINGS :-

SHD-TD-SP-07

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FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.

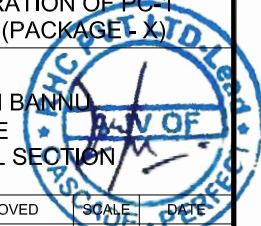
CASCADE GROUP
OF ENGINEERING & CONSULTANTS

PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

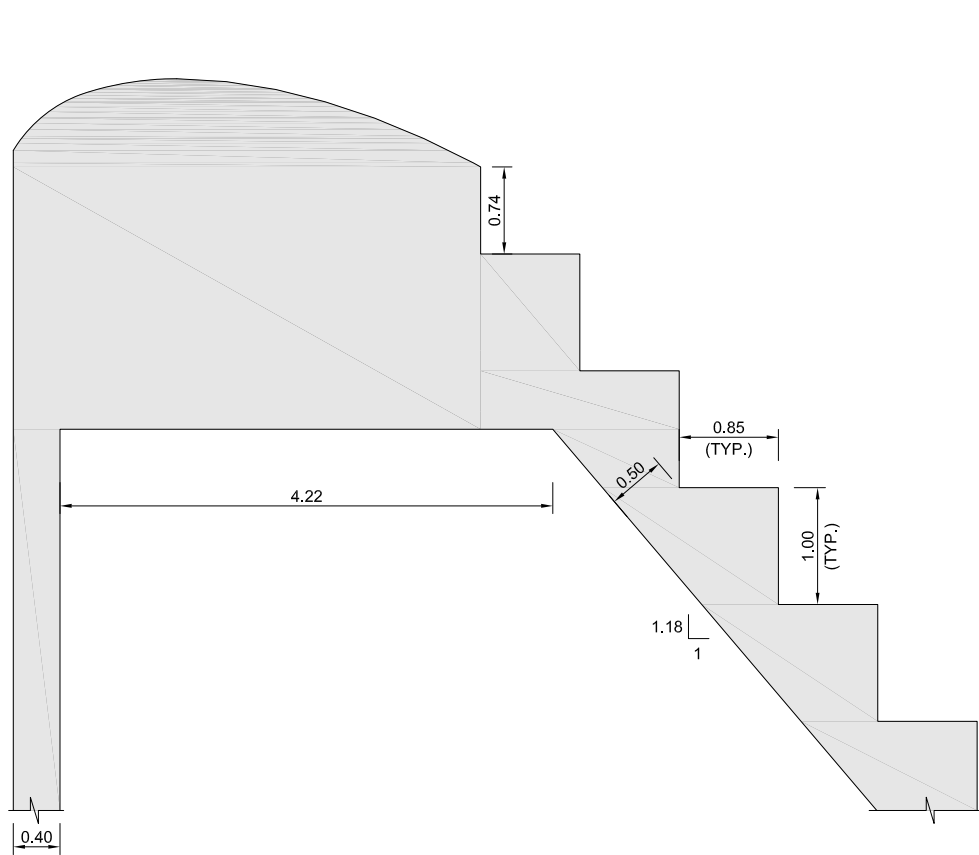
PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
CONC. OUTLINE
SPILLWAY LONGITUDINAL SECTION
RD 0+090

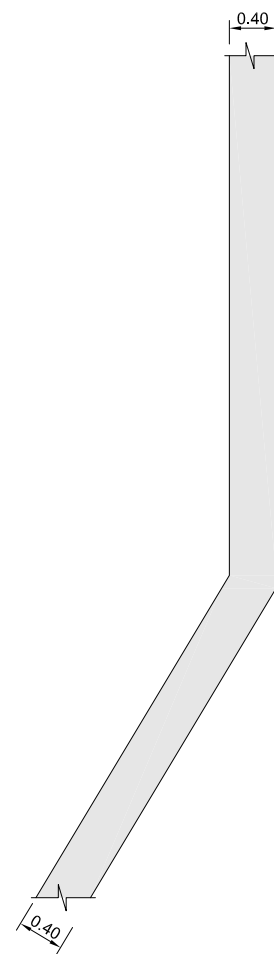
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021
DRG.No:-	SHD-TD-SP-22	SHEET:-	SUB SH.-	----	----



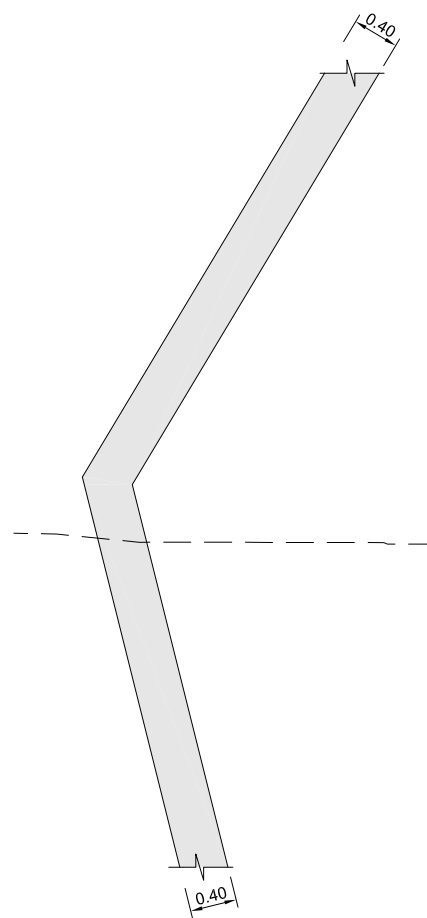
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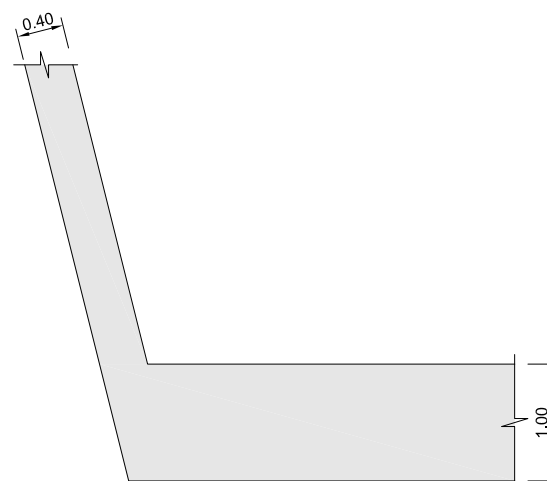
DETAIL-A



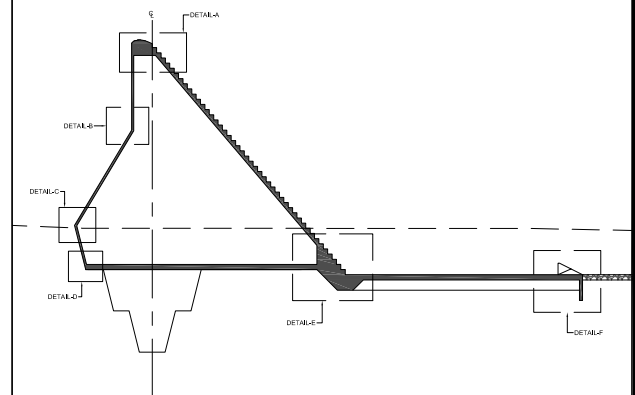
DETAIL-B



DETAIL-C



DETAIL-D



REFERENCE DRAWINGS :-

SHD-TD-SP-22

DRAWING IS RELEASED

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CLIENT:

PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS:

A J.V OF

RHC REHMAN HABIB CONSULTANTS (PVT) LTD.



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MANAGEMENT CONSULTANTS

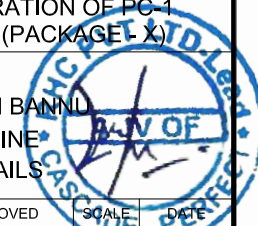
PROJECT:

CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PG-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

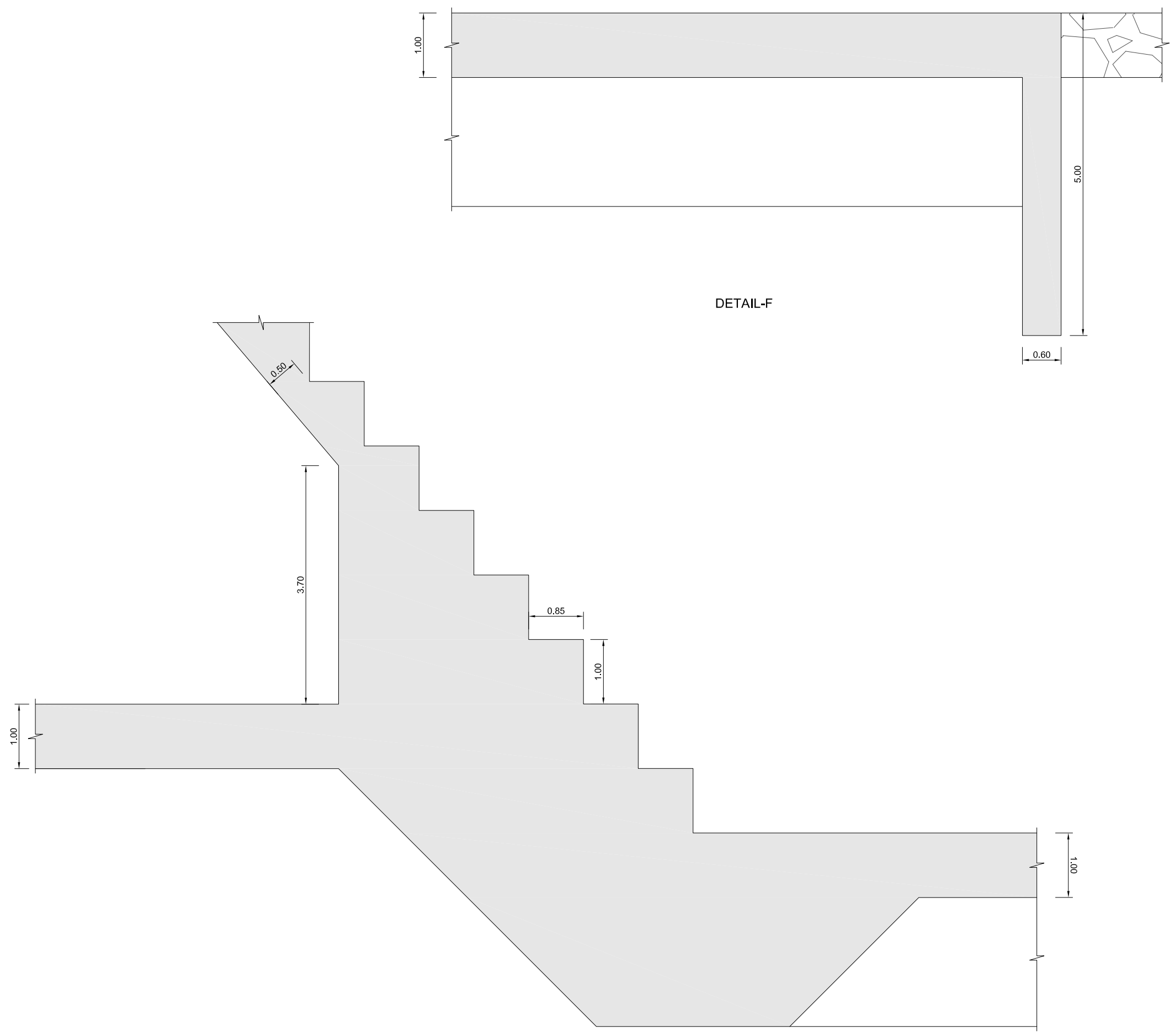
TITLE:

SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
CONCRETE OUTLINE
SECTIONS & DETAILS

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021
DRG.No:-	SHD-TD-SP-23	SHEET:-	SUB SH.-	----	----

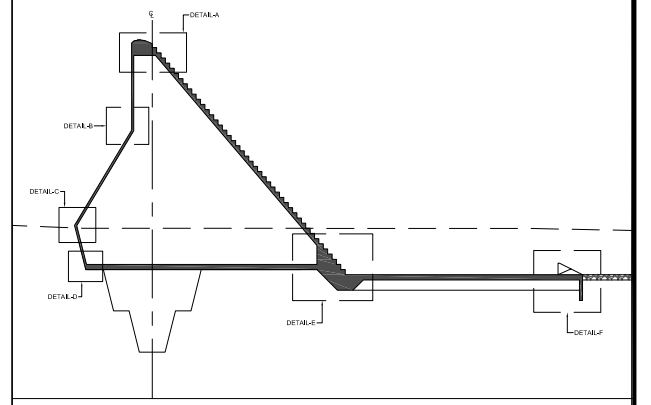


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DETAIL-F

DETAIL-E





REFERENCE DRAWINGS :-

SHD-TD-SP-22

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

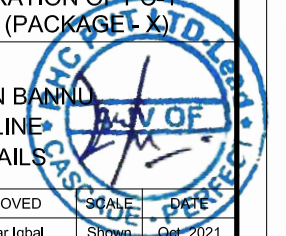
CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

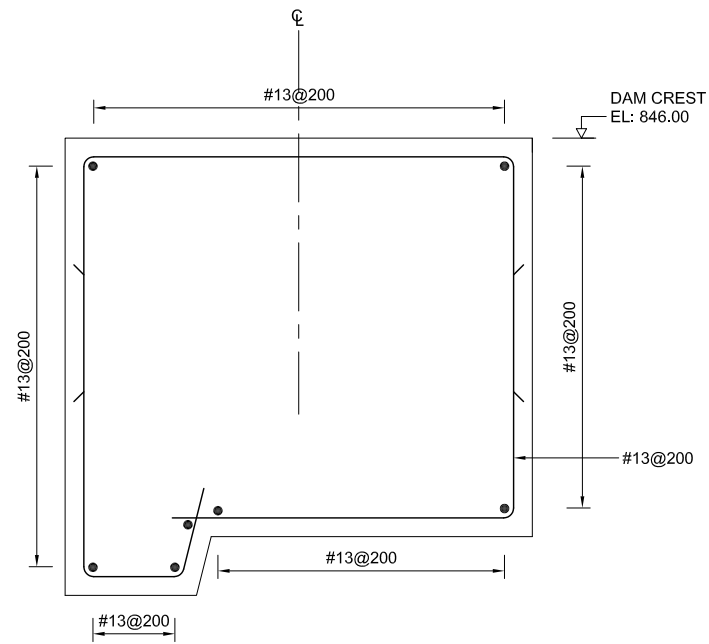
TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
CONCRETE OUTLINE
SECTIONS & DETAILS

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

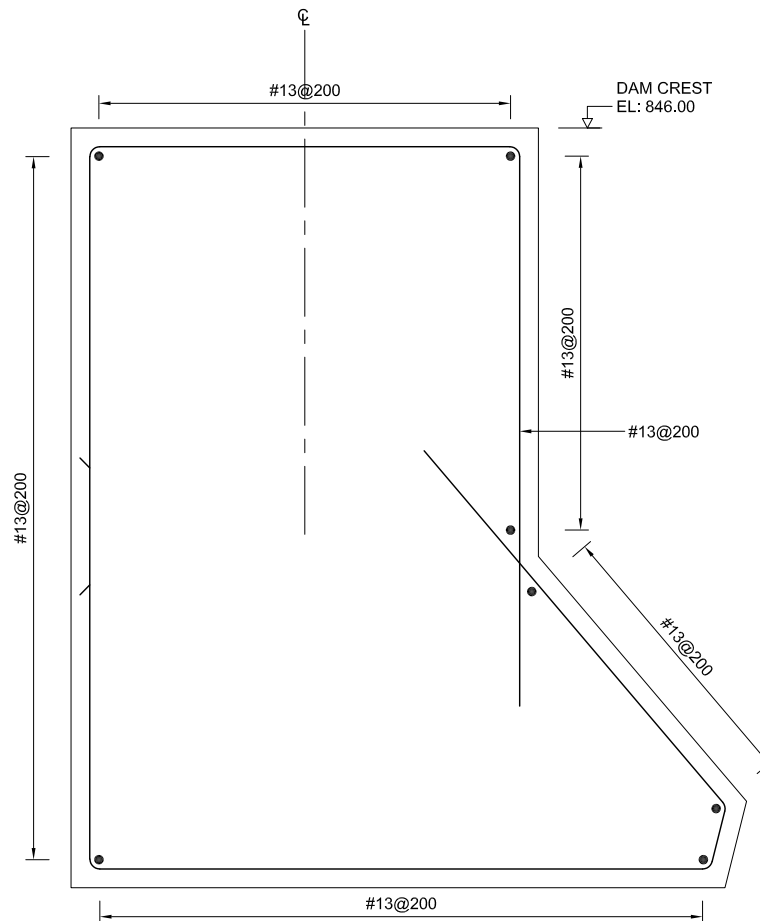
DRG.No:- SHD-TD-SP-24 SHEET:- SUB SH.- ----



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SECTION AT RD: 0+000

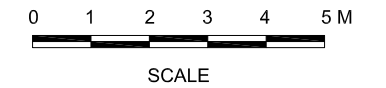


SECTION AT RD: 0+020

NOTE:

- ALL DIMENSIONS AND ELEVATIONS ARE IN METER UNLESS INDICATED OTHERWISE

ASTMA615		
Nominal Weights (Masses), Nominal Dimensions		
Bar Designation No.	Nominal Weight, lb/ft (Nominal Mass, Kg/m)	Diameter, in. (mm)
3(10)	0.036 (0.560)	0.375 (9.5)
4(13)	0.668 (0.994)	0.500 (12.7)
5(16)	1.043 (1.552)	0.625 (15.9)
6(19)	1.502 (2.235)	0.750 (19.1)
7(22)	2.044 (3.042)	0.875 (22.2)
8(25)	2.670 (3.973)	1.000 (25.4)
9(29)	3.400 (5.060)	1.128 (28.7)
10(32)	4.303 (6.404)	1.270 (32.3)
11(36)	5.313 (7.907)	1.410 (35.8)
14(43)	7.650 (11.38)	1.693 (43.0)
18(57)	13.60 (20.24)	2.257 (57.3)



REFERENCE DRAWINGS :-

SHD-TD-MD-01

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:

PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS:

A J.V OF

RHC REHMAN HABIB CONSULTANTS (PVT) LTD.



CASCADE GROUP
OF ENGINEERING & CONSULTANTS



PERFECT ENGINEERING &
MANAGEMENT CONSULTANTS

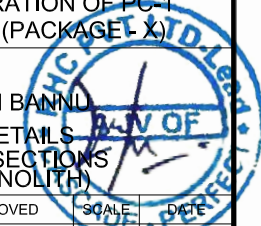
PROJECT:

CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PG-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

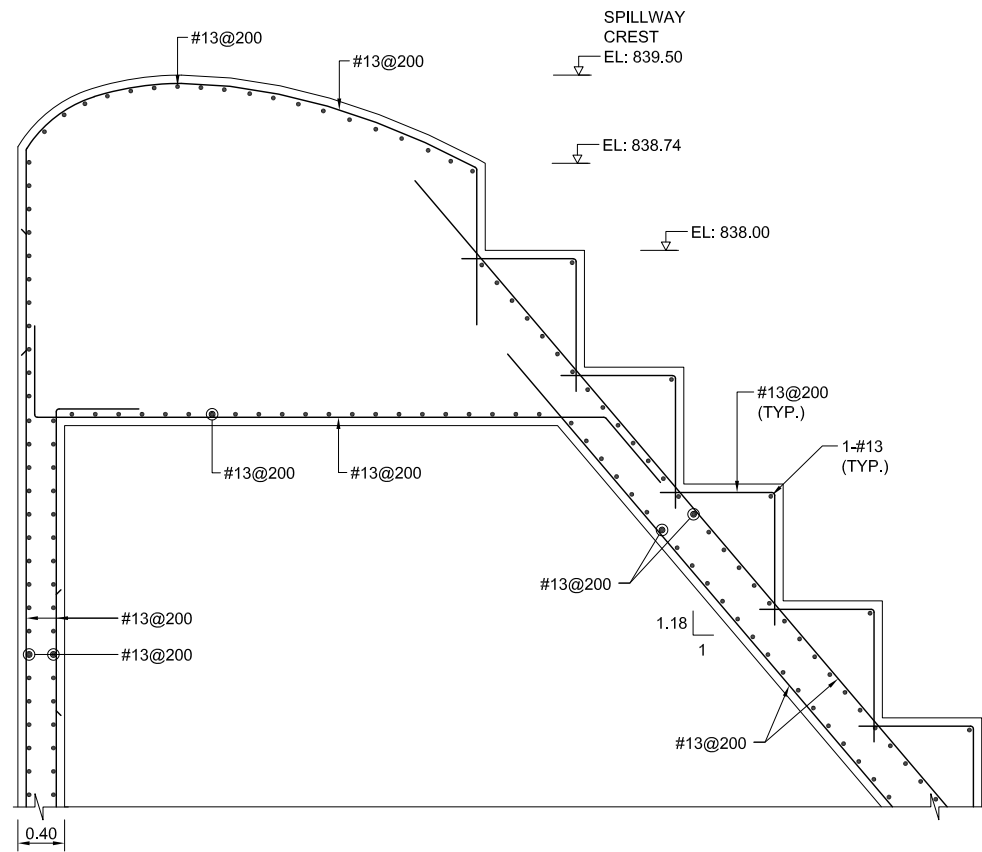
TITLE:

SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
REINFORCEMENT DETAILS
GRAVITY DAM CROSS SECTIONS
(NON OVERFLOW MONOLITH)

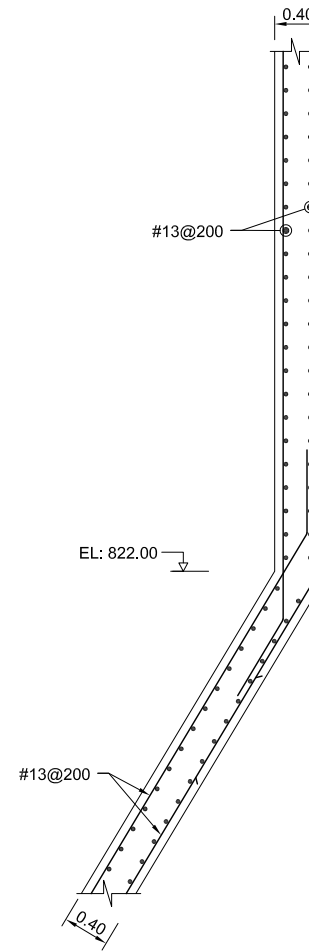
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021
DRG.No:-	SHD-TD-MD-25	SHEET:-	SUB SH.-	----	----



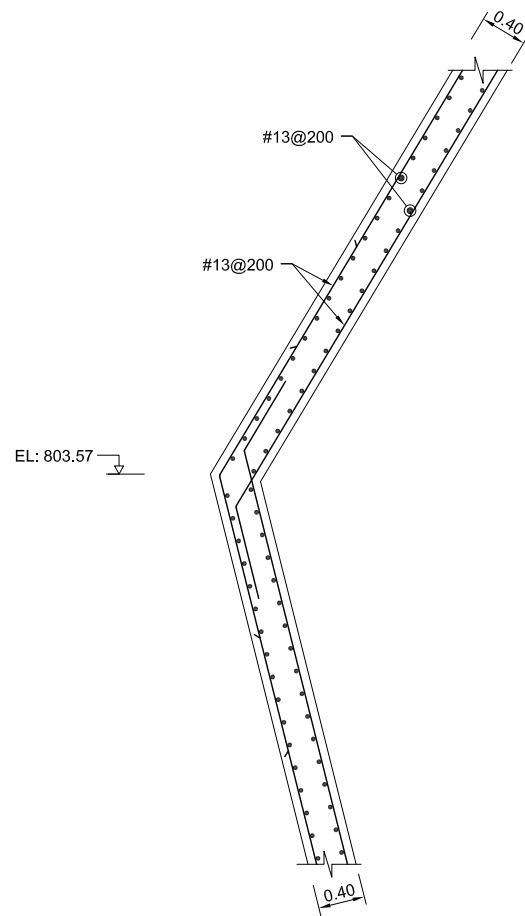
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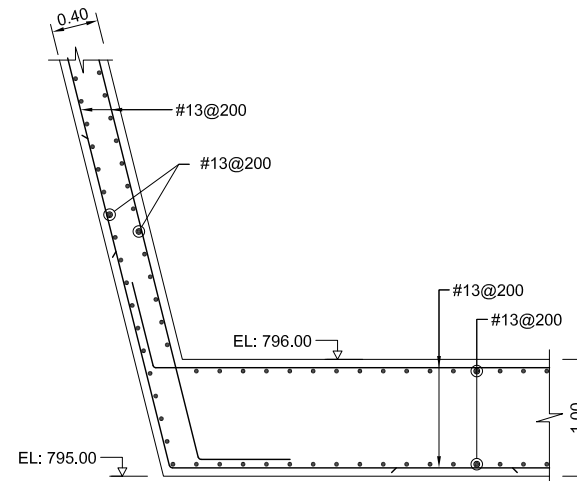
DETAIL-A



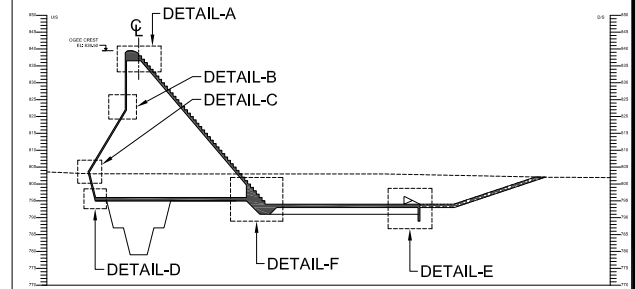
DETAIL-B



DETAIL-C



DETAIL-D



SPILLWAY LONGITUDINAL SECTION

ASTMA615		
Nominal Weights (Masses), Nominal Dimensions		
Bar Designation No.	Nominal Weight, lb/ft (Nominal Mass, Kg/m)	Diameter, in. (mm)
3(10)	0.036 (0.560)	0.375 (9.5)
4(13)	0.668 (0.994)	0.500 (12.7)
5(16)	1.043 (1.552)	0.625 (15.9)
6(19)	1.502 (2.235)	0.750 (19.1)
7(22)	2.044 (3.042)	0.875 (22.2)
8(25)	2.670 (3.973)	1.000 (25.4)
9(29)	3.400 (5.060)	1.128 (28.7)
10(32)	4.303 (6.404)	1.270 (32.3)
11(36)	5.313 (7.907)	1.410 (35.8)
14(43)	7.650 (11.38)	1.693 (43.0)
18(57)	13.60 (20.24)	2.257 (57.3)

REFERENCE DRAWINGS :-

SHD-TD-SP-22

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.

CASCADE GROUP
OF ENGINEERING & CONSULTANTS

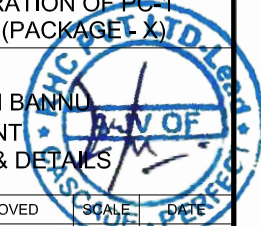
PERFECT ENGINEERING &
MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

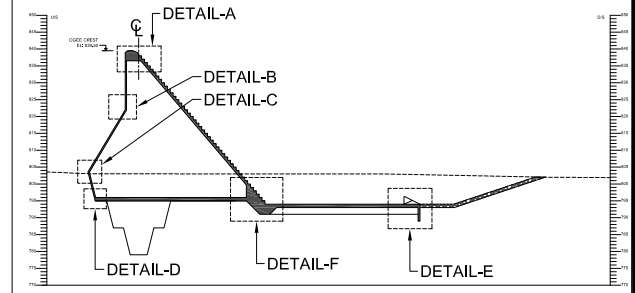
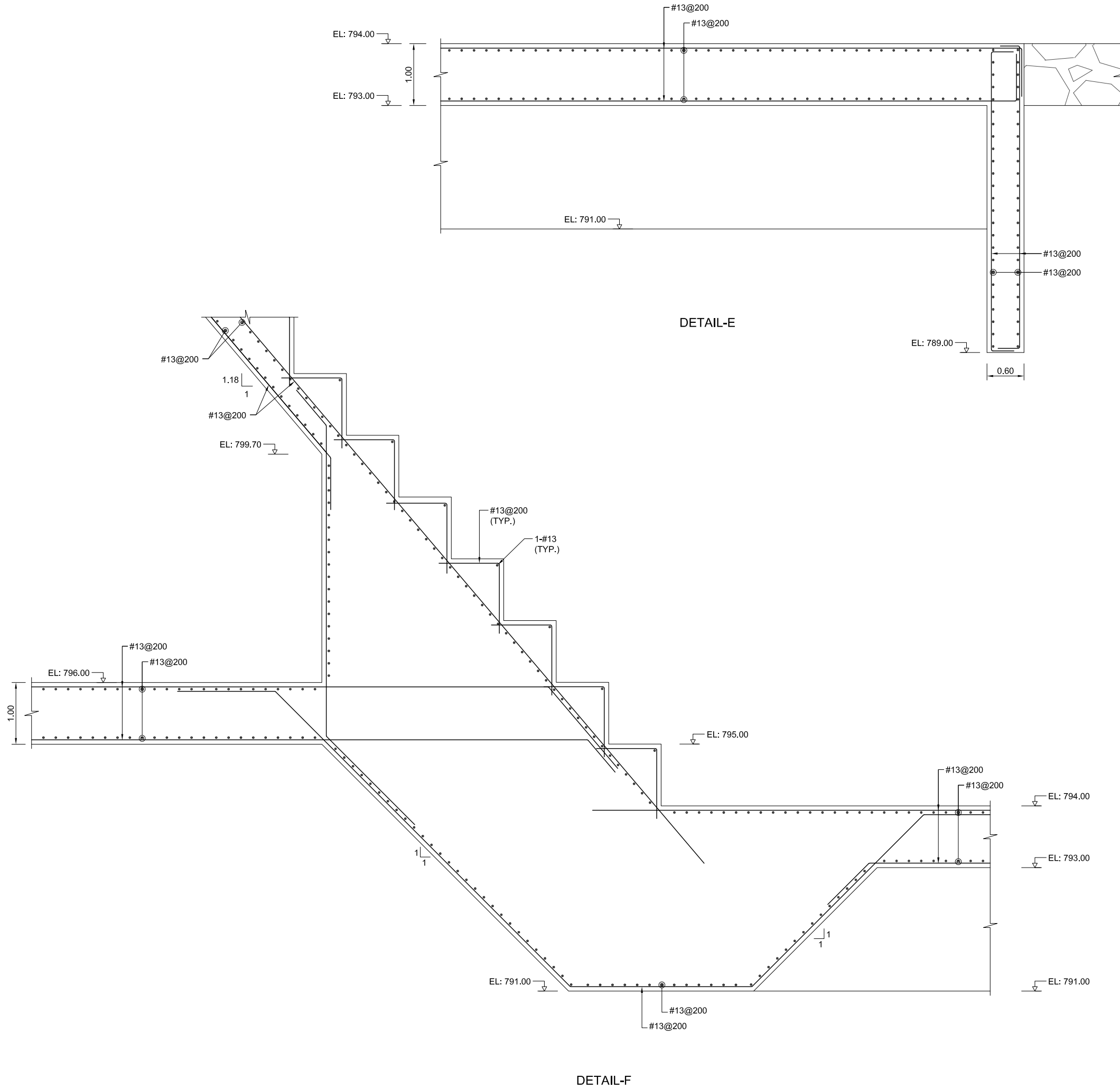
TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
REINFORCEMENT
SPILLWAY SECTION & DETAILS
RD 0+090

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-SP-26 SHEET:- SUB SH.- ----



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ASTM A615		
Nominal Weights (Masses), Nominal Dimensions		
Bar Designation No.	Nominal Weight, lb/ft (Nominal Mass, Kg/m)	Diameter, in. (mm)
3(10)	0.036 (0.560)	0.375 (9.5)
4(13)	0.668 (0.994)	0.500 (12.7)
5(16)	1.043 (1.552)	0.625 (15.9)
6(19)	1.502 (2.235)	0.750 (19.1)
7(22)	2.044 (3.042)	0.875 (22.2)
8(25)	2.670 (3.973)	1.000 (25.4)
9(29)	3.400 (5.060)	1.128 (28.7)
10(32)	4.303 (6.404)	1.270 (32.3)
11(36)	5.313 (7.907)	1.410 (35.8)
14(43)	7.650 (11.38)	1.693 (43.0)
18(57)	13.60 (20.24)	2.257 (57.3)

REFERENCE DRAWINGS :-

SHD-TD-SP-22

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA IRRIGATION DEPARTMENT, KPK.

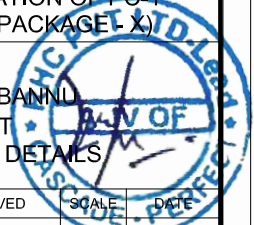
CONSULTANTS:
A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCAD CASCADE GROUP OF ENGINEERING & CONSULTANTS
PEMC PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY, DETAIL DESIGN AND PREPARATION OF PC-1 FOR 5 SMALL DAMS IN FATA (PACKAGE X)

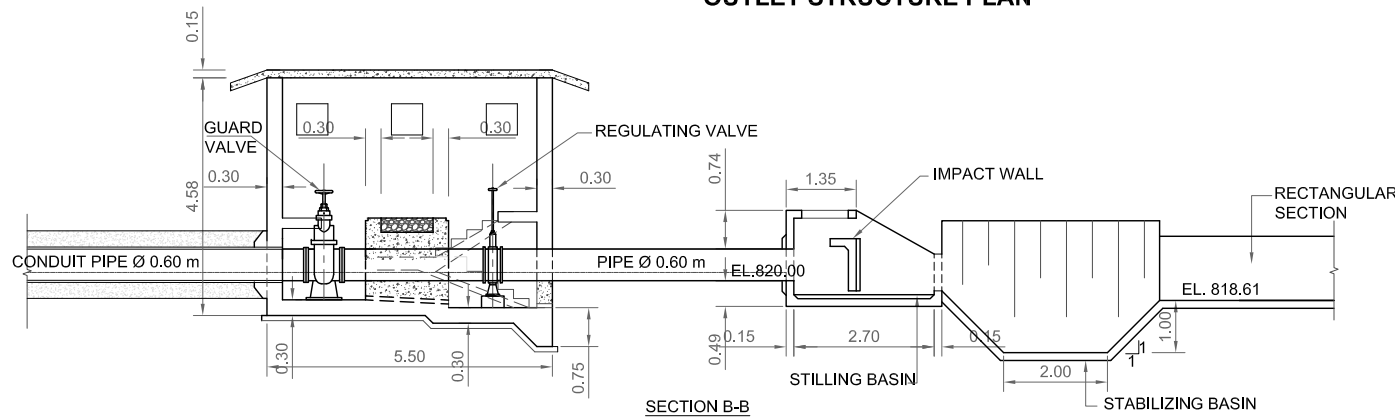
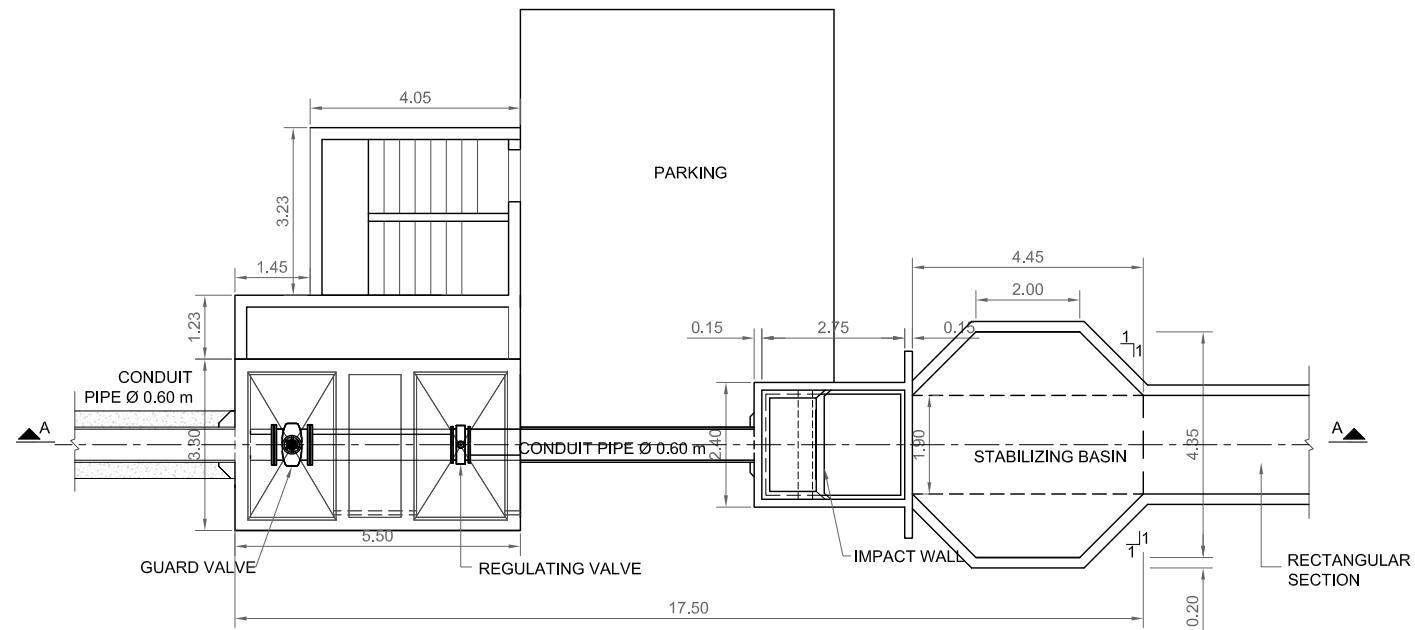
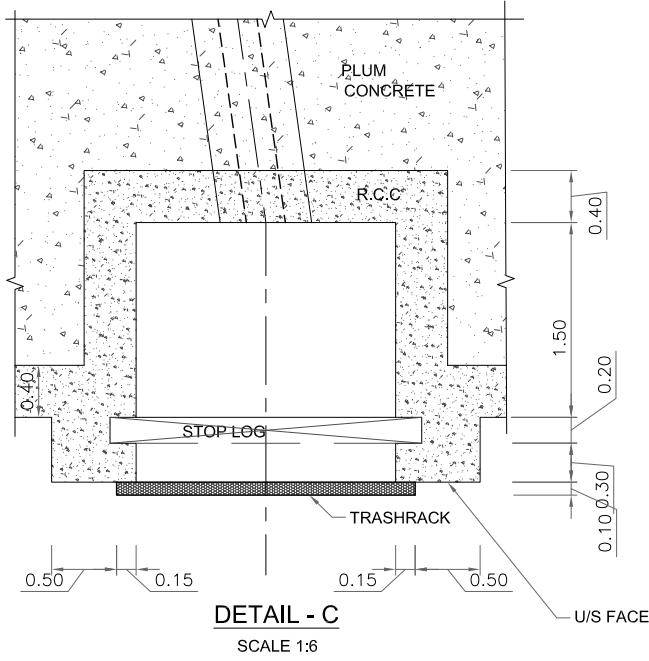
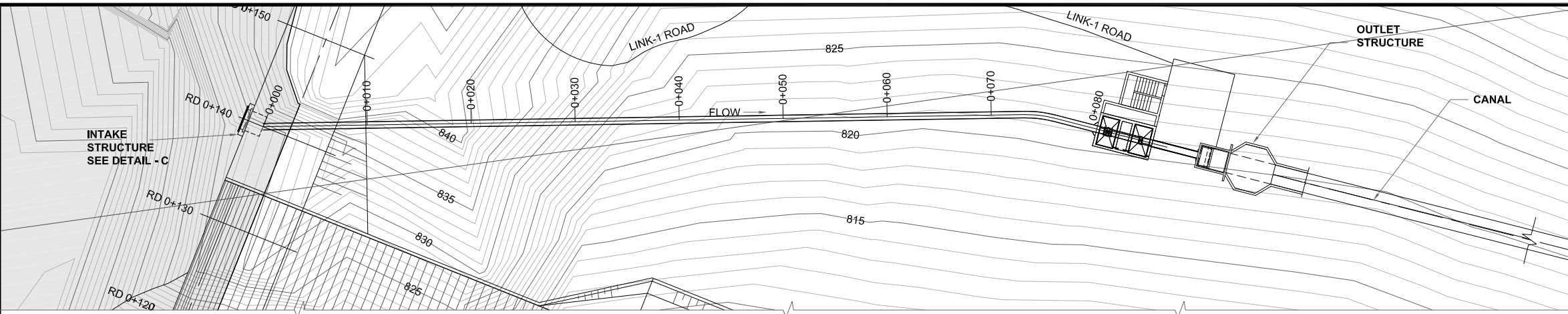
TITLE:
SHAKTU DAM TRIBAL SUB-DIVISION BANNU REINFORCEMENT SPILLWAY SECTION & DETAILS RD 0+090

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Show	Oct, 2021

DRG.No:- SHD-TD-SP-27 SHEET:- SUB SH.- ----



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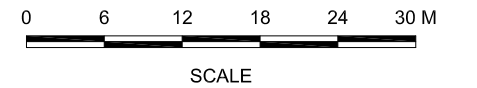


OUTLET STRUCTURE SECTION A-A

SCALE 1:1.5

NOTE:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METER UNLESS INDICATED OTHERWISE



REFERENCE DRAWINGS :-

SHD-TD-MD-01

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

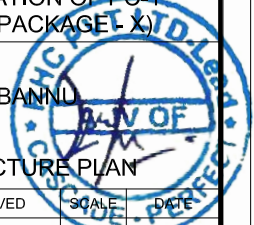
CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP OF ENGINEERING & CONSULTANTS
PEMC PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

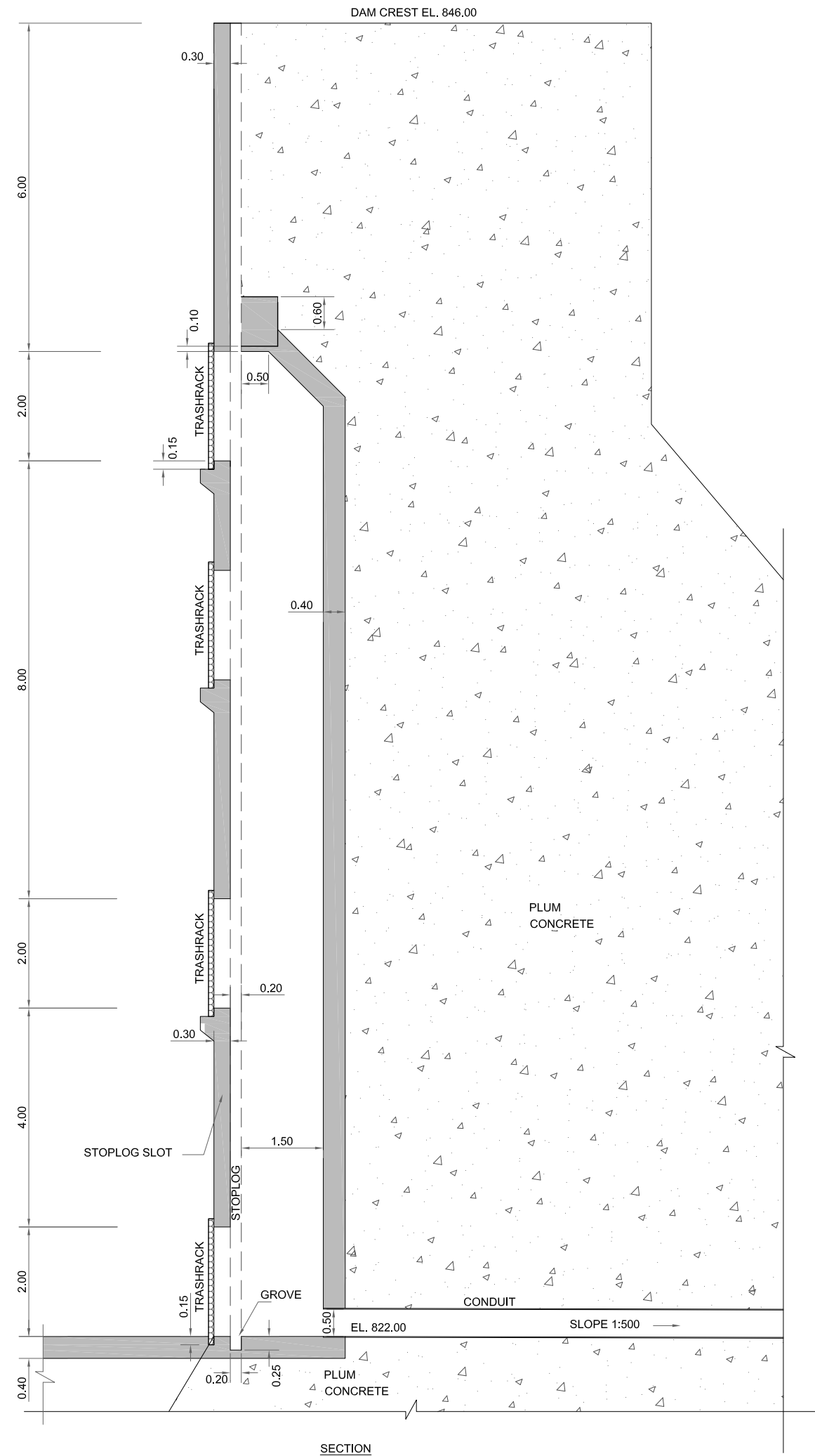
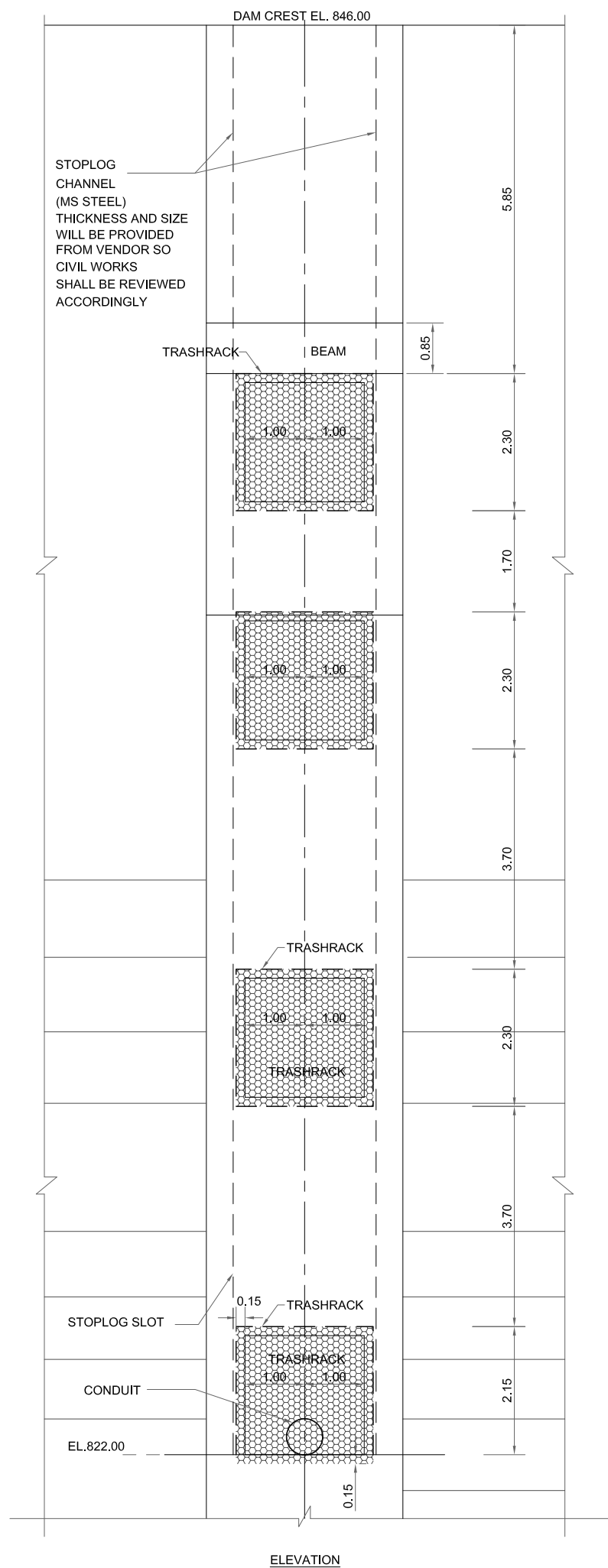
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

TITLE:
INTAKE AND OUTLET STRUCTURE PLAN

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021
DRG.No:-	SHD-TD-IC-01	SHEET:-	SUB SH.-	----	----

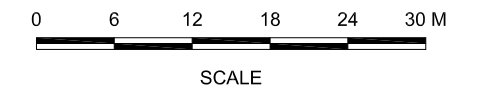


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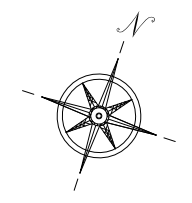
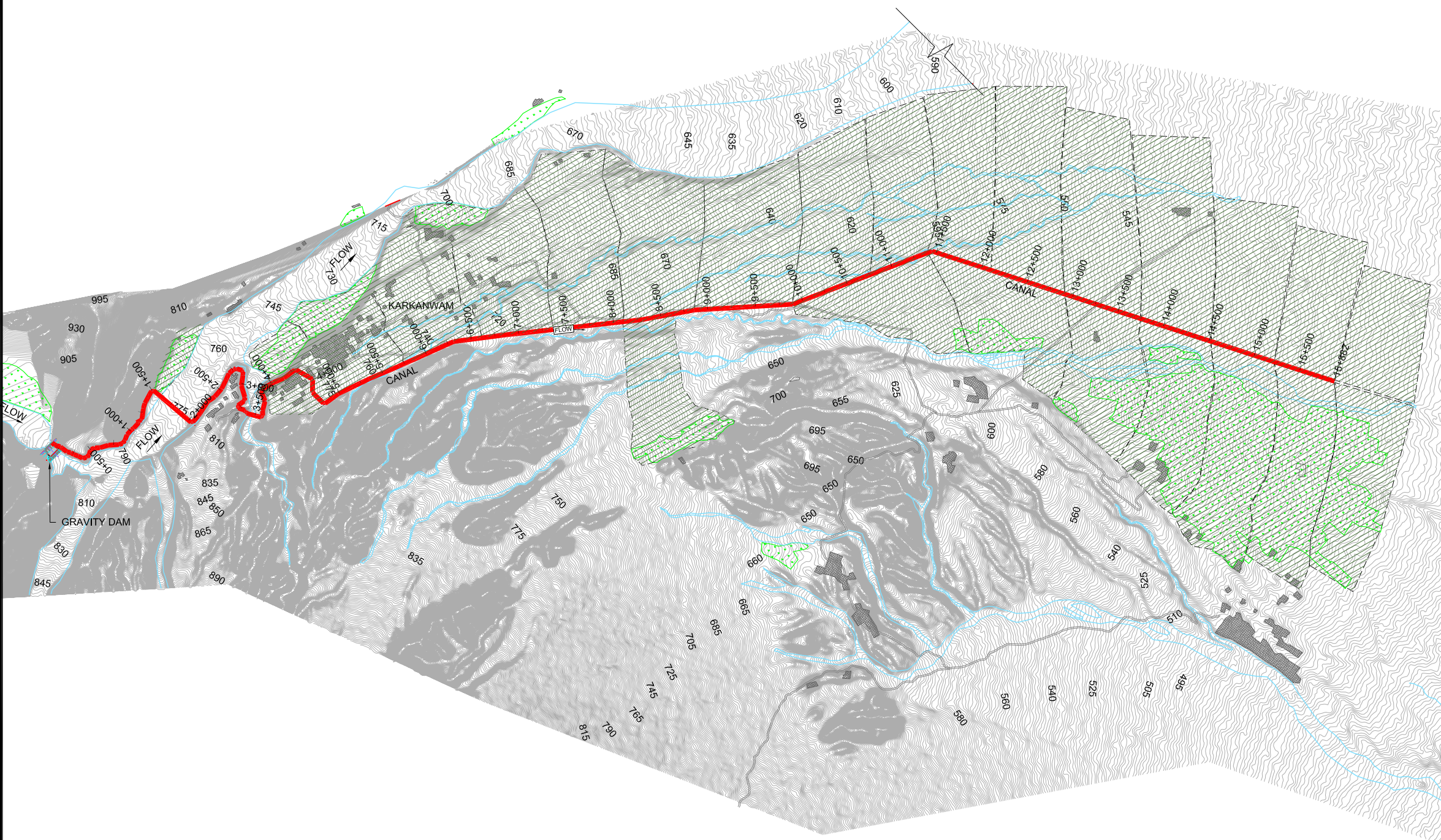
NOTE:

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METER UNLESS INDICATED OTHERWISE



REFERENCE DRAWINGS :-					
SHD-TD-IC-01					
DRAWING IS RELEASED					
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CLIENT: PSU SMALL DAM SECTION MERGED AREA IRRIGATION DEPARTMENT, KPK.					
CONSULTANTS: A J.V OF RHC REHMAN HABIB CONSULTANTS (PVT) LTD. CASCADE GROUP OF ENGINEERING & CONSULTANTS PEMC PERFECT ENGINEERING & MANAGEMENT CONSULTANTS					
PROJECT: CONSULTANCY SERVICES FOR FEASIBILITY STUDY, DETAIL DESIGN AND PREPARATION OF PG-1 FOR 5 SMALL DAMS IN FATA (PACKAGE X)					
SHAKTU DAM TRIBAL SUB-DIVISION BANNU					
TITLE: INTAKE STRUCTURE ELEVATION AND DETAIL					
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Show	Oct, 2021
DRG.No:- SHD-TD-IC-02		SHEET:-		SUB SH.- ----	

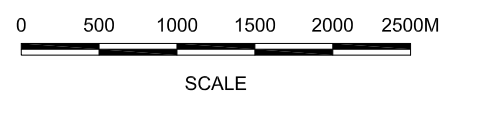
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NOTES:-
1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND:

CHAKBANDI BOUNDARY	
EXISTING COMMAND AREA	
VILLAGE	
MAIN CANAL	
NULLAH BOUNDARY	



REFERENCE DRAWINGS :-
SHD-TD-IR- 02 TO SHD-TD-IR- 18

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
MERGED AREAS DEVELOPMENT AUTHORITY
SMALL DAM SECTION
IRRIGATION DEPARTMENT. KPK.

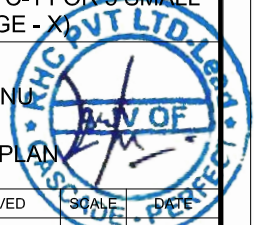
CONSULTANTS: A J.V OF
REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP OF ENGINEERING & CONSULTANTS
PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY, DETAIL DESIGN & SUPERVISION PC-1 FOR 5 SMALL DAMS IN FATA (PACKAGE - X)

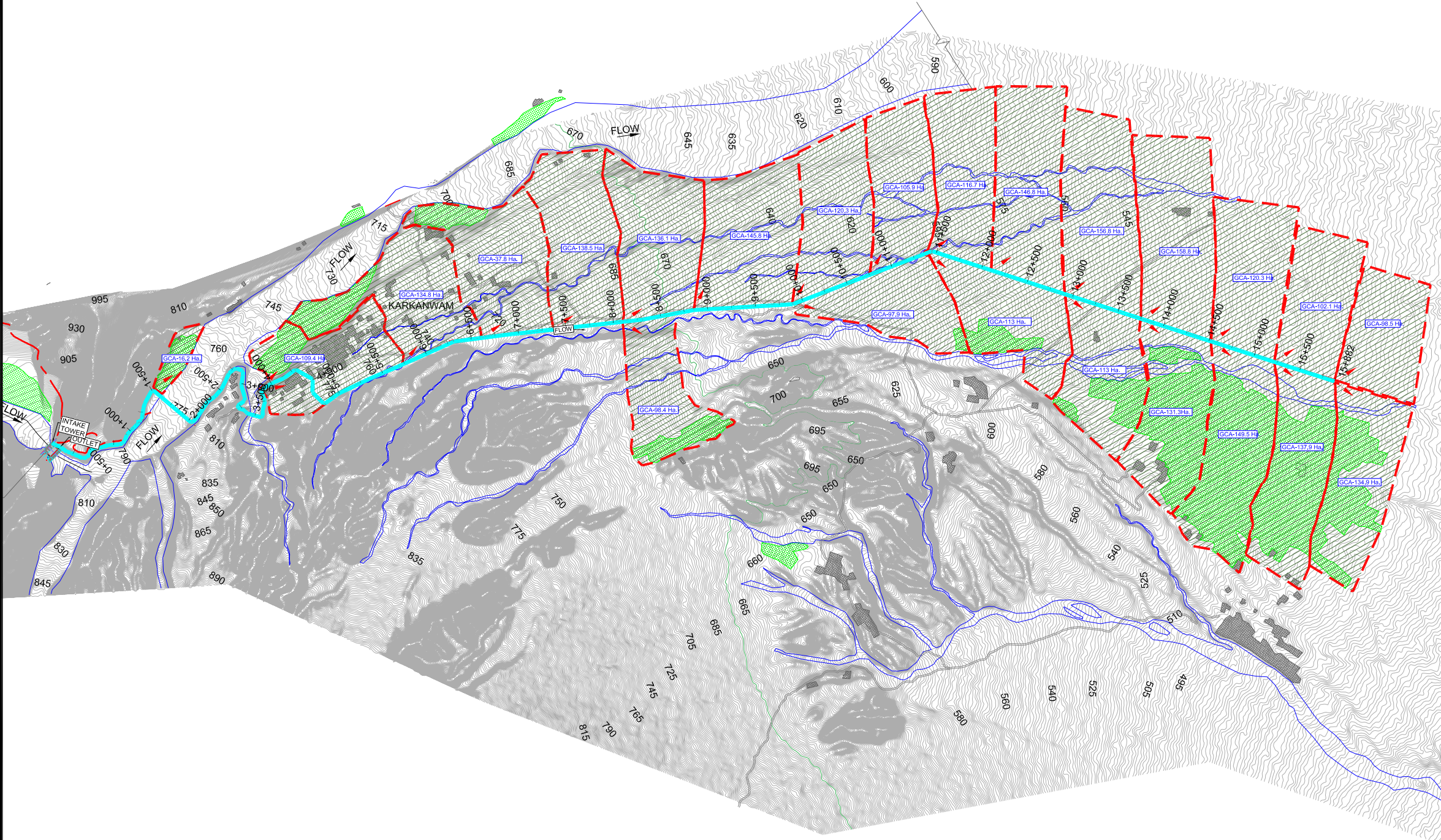
TITLE:
SHAKTU DAM
DISTRICT F.R. BANNU
IRRIGATION LAYOUT PLAN

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	JUNE-2021

DRG.No:- SHD-TD-IR-01 SHEET:- SUB SH.- ----



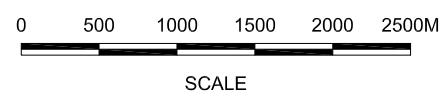
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NOTES:-
1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND:

- CHAKBANDI BOUNDARY
- EXISTING COMMAND AREA
- VILLAGE
- MAIN CANAL
- NULLAH BOUNDARY
- ROAD
- OUTLET



REFERENCE DRAWINGS :-

SHD-TD-IR-01

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
MERGED AREAS DEVELOPMENT AUTHORITY
SMALL DAM SECTION
IRRIGATION DEPARTMENT, KPK.

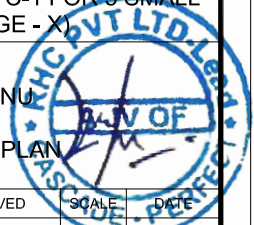
CONSULTANTS: A J.V OF
REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP OF ENGINEERING & CONSULTANTS
PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN & SUPERVISION PC-1 FOR 5 SMALL
DAMS IN FATA (PACKAGE - X)

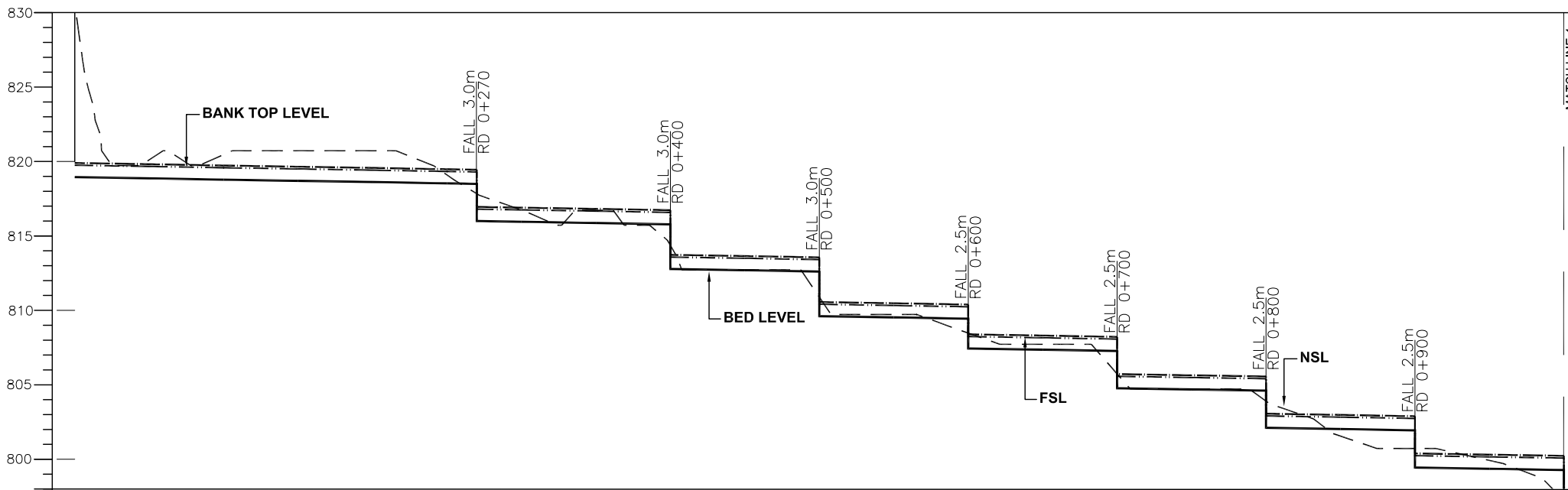
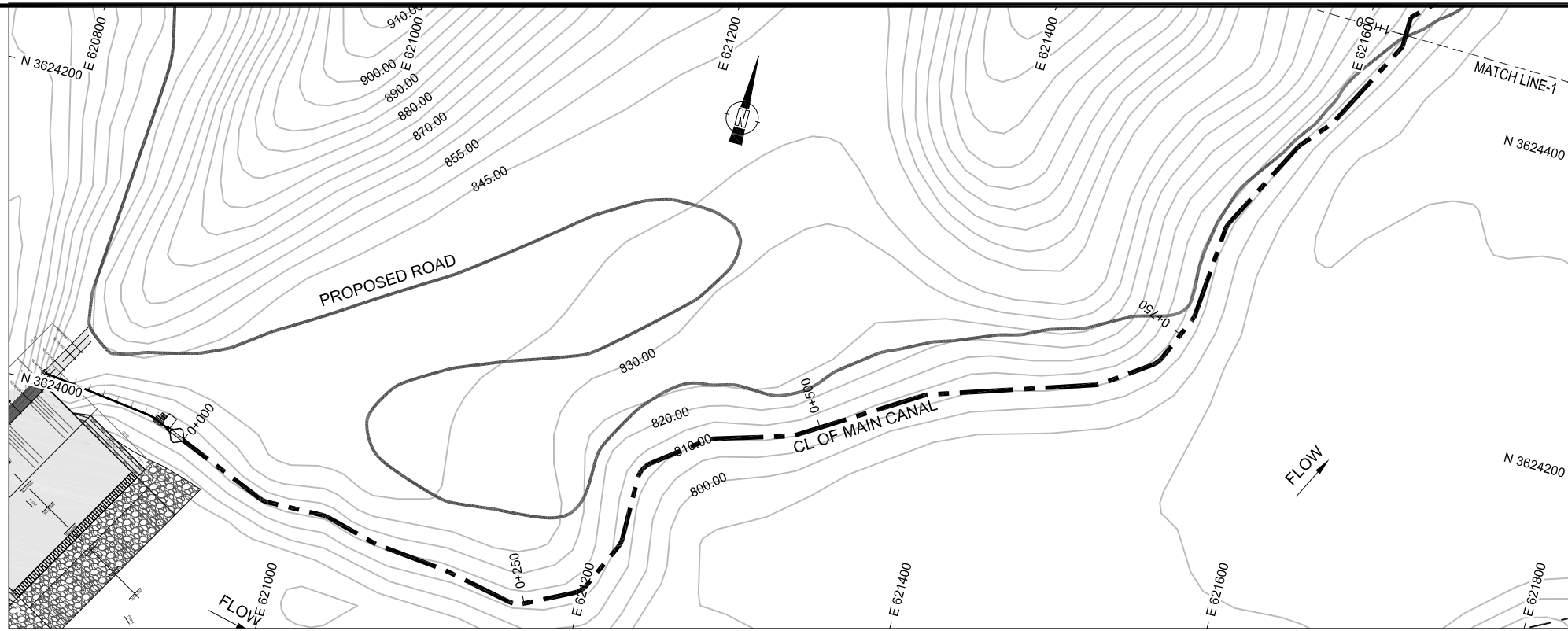
TITLE:
SHAKTU DAM
DISTRICT F.R. BANNU
CHAK BANDI LAYOUT PLAN

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Sho	JUNE-2021

DRG.No:- SHD-TD-IR-02 SHEET:- SUB SH.- ----



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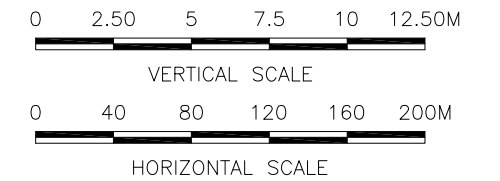


NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND

- AQUEDUCT
- MAIN CANAL
- EXISTING ROAD
- VILLAGES/HOUSES
- EXISTING COMMAND AREA
- CONTOUR
- OUTLET
- DRAINAGE CULVERT
- NULLAH
- BANK
- FSL
- BED
- NSL



REFERENCE DRAWINGS :-

SHD-TD-IR-01

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.

CASCAD GROUP
OF ENGINEERING & CONSULTANTS

PERFECT ENGINEERING &
MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

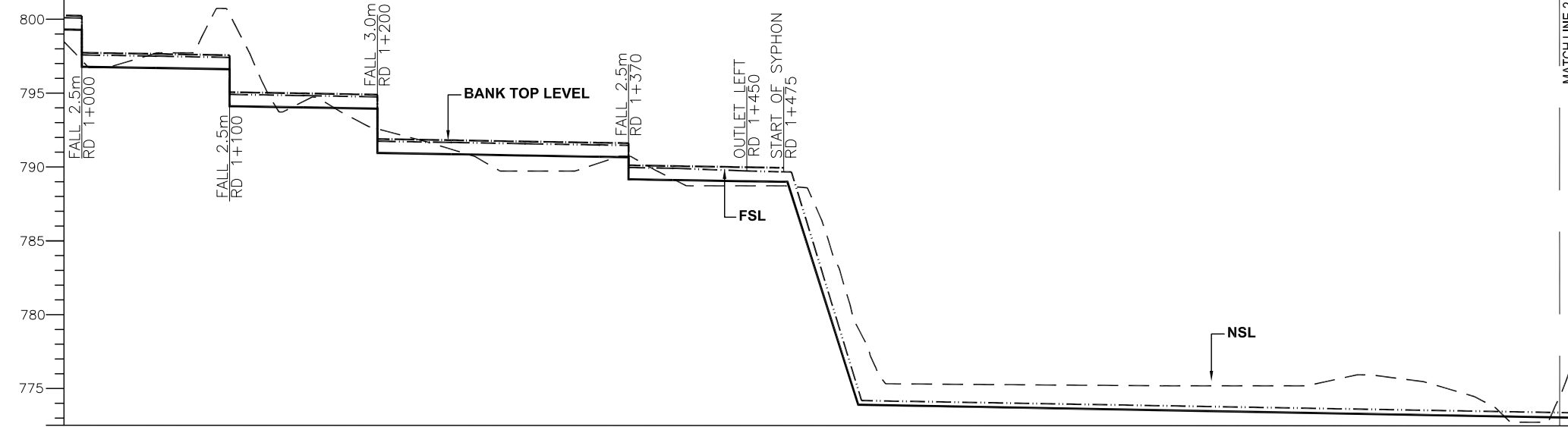
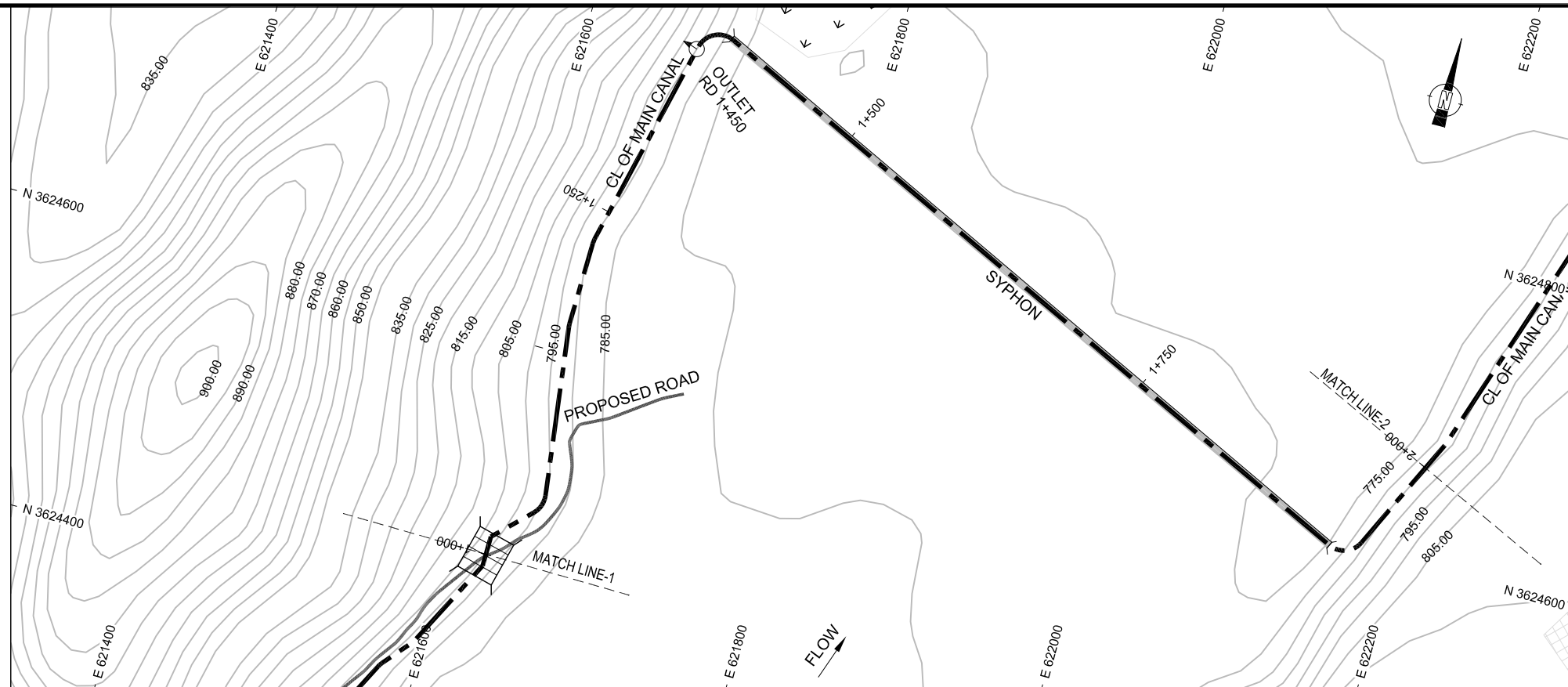
TITLE:
MAIN CANAL PLAN & PROFILE
RD 0+000 TO RD 1+000

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Show	Oct, 2021

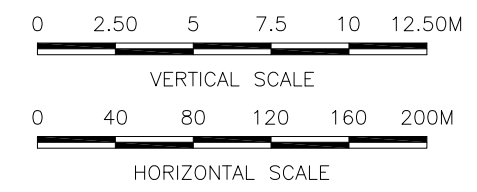
DRG.No:- SHD-TD-IR-03 SHEET:- SUB SH.- ----

DESIGN DATA	DESIGN DATA																													
	VELOCITY (m/sec)	1.11																												
MANNING'S n / TYPE	0.016																													
DISCHARGE (Cumec)	0.803																													
FSD (m)	0.80																													
BED WIDTH (m) RECTANGULAR	0.90																													
BANK TOP LEVEL (BTL)	819.73	819.65	819.56	819.48	819.40	819.31	819.28	819.13	816.78	816.73	816.65	816.56	813.56	813.48	813.39	810.22	808.22	808.14	808.05	805.55	805.47	805.39	802.74	802.89	802.81	802.72	800.22	800.14	800.06	797.56
DESIGN FSL	819.58	819.50	819.41	819.33	819.25	819.16	819.13	816.63	816.58	816.50	816.41	813.41	813.33	813.24	810.07	808.07	807.99	807.90	805.40	805.32	805.24	802.74	802.66	802.57	800.07	799.99	799.91	797.41		
DESIGN BED LEVEL (DBL)	818.78	818.70	818.61	818.53	818.45	818.36	818.33	815.83	815.78	815.70	815.61	812.61	812.53	812.44	809.27	807.27	807.19	807.10	804.60	804.52	804.44	801.94	801.86	801.77	799.27	799.19	799.11	796.61		
NSL	829.96	820.47	820.80	821.00	821.00	819.29	818.04	818.04	816.98	817.00	814.42	813.00	813.00	810.98	810.98	808.71	808.00	805.86	805.86	805.00	804.10	801.79	801.00	801.00	800.17	797.36	797.36	796.61		
R.D	0+000	0+050	0+100	0+150	0+200	0+250	0+270	0+270	0+300	0+350	0+400	0+400	0+450	0+500	0+500	0+550	0+600	0+600	0+650	0+700	0+700	0+750	0+800	0+800	0+850	0+900	0+900	0+950	1+000	1+000

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- NOTES:-**
1. ALL LEVELS AND DIMENSIONS ARE IN METER
- LEGEND**
- AQUEDUCT
 - MAIN CANAL
 - EXISTING ROAD
 - VILLAGES/HOUSES
 - EXISTING COMMAND AREA
 - CONTOUR
 - OUTLET
 - DRAINAGE CULVERT
 - NULLAH
 - BANK
 - FSL
 - BED
 - NSL



REFERENCE DRAWINGS :-

SHD-TD-IR-01

DRAWING IS RELEASED

FOR TENDER ONLY

DESIGN DATA	SYPHON																											
	1+000	1+050	1+100	1+150	1+200	1+250	1+300	1+350	1+370	1+370	1+370	1+400	1+450	1+450	1+475	1+500	1+550	1+600	1+650	1+700	1+750	1+800	1+850	1+900	1+950	2+000	2+000	
VELOCITY (m/sec)	1.11																											
MANNING'S n / TYPE	0.016																											
DISCHARGE (Cumec)	0.803																											
FSD (m)	0.80																											
BED WIDTH (m) RECTANGULAR	0.90																											
BANK TOP LEVEL (BTL)	800.06 797.56	797.48	797.39 794.89	794.81	794.72 791.72	791.64	791.55	791.47	791.44 789.94	789.89	789.81 789.81	789.77	789.40	789.66 789.66	789.62	789.77	789.81	789.87	789.88	789.88	789.82	789.82	789.82	789.82	789.82	789.82	789.82	789.82
DESIGN FSL	799.91 797.41	797.33	797.24 794.74	794.66	794.57 791.57	791.49	791.40	791.32	791.29 789.79	789.74	789.66 789.66	789.62	791.40	789.66 789.66	789.62	789.77	789.81	789.87	789.88	789.88	789.82	789.82	789.82	789.82	789.82	789.82	789.82	789.82
DESIGN BED LEVEL (DBL)	799.11 796.61	796.53	796.44 793.94	793.86	793.77 790.77	790.69	790.60	790.52	790.49 788.99	788.94	788.86 788.86	788.82	790.60	788.86 788.86	788.82	788.94	788.94	788.94	788.94	788.94	788.94	788.94	788.94	788.94	788.94	788.94	788.94	788.94
NSL	797.36 797.36	798.00	800.35 800.35	794.78	792.82 792.82	791.44	790.00	790.00	790.59 791.00	791.00	789.40 789.00	789.00	789.00	789.00	789.00	789.00	780.43	776.87	776.63	776.39	776.15	776.00	776.00	776.00	776.66	776.19	774.36 774.36	
R.D	1+000 1+000	1+050	1+100 1+100	1+150	1+200 1+200	1+250	1+300 1+300	1+350	1+370 1+370	1+370	1+400	1+450 1+450	1+475	1+500	1+550	1+600	1+650	1+700	1+750	1+800	1+850	1+900	1+950	2+000 2+000	2+000 2+000			

CLIENT:
**PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.**

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP OF ENGINEERING & CONSULTANTS
PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE- X)

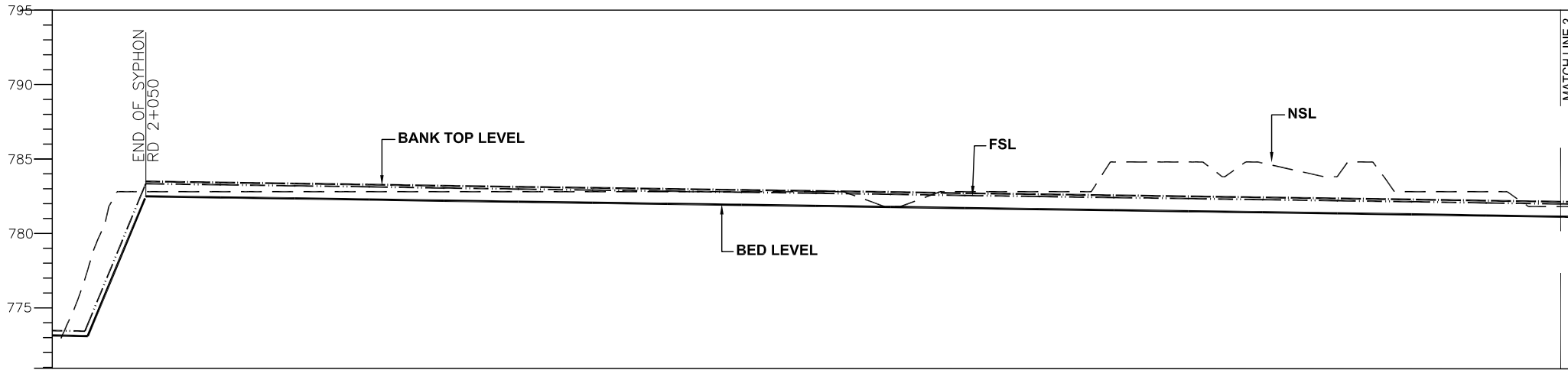
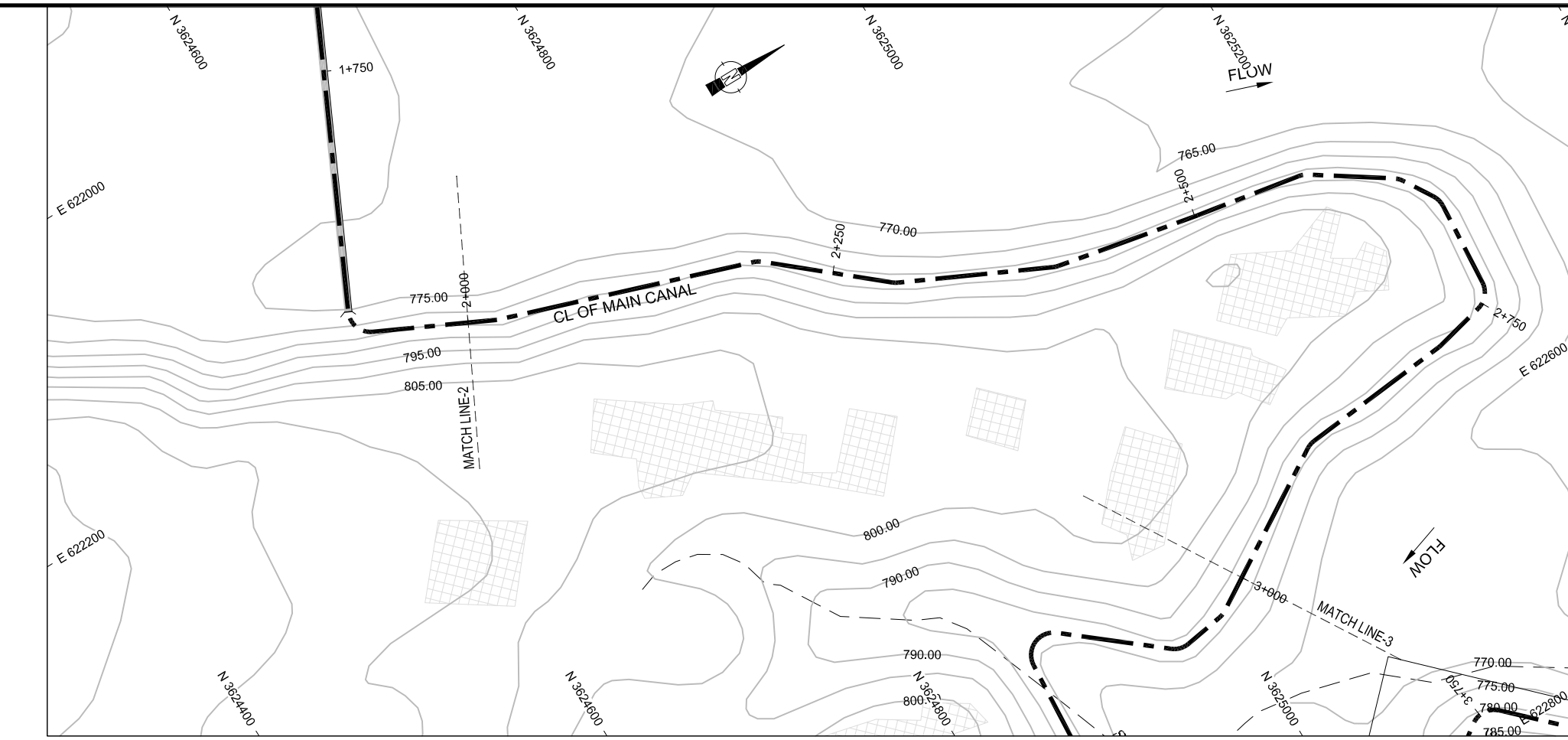
TITLE:
**SHAKTU DAM
TRIBAL SUB-DIVISION BANNU**
**MAIN CANAL PLAN & PROFILE
RD 1+000 TO RD 2+000**

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	AJ	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-IR-04 SHEET:- SUB SH.- ----



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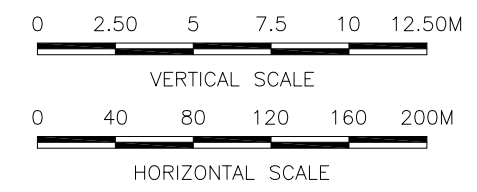


NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND

- AQUEDUCT
- MAIN CANAL
- EXISTING ROAD
- VILLAGES/HOUSES
- EXISTING COMMAND AREA
- CONTOUR
- OUTLET
- DRAINAGE CULVERT
- NULLAH
- BANK
- FSL
- BED
- NSL



REFERENCE DRAWINGS :-

SHD-TD-IR-01
 DRAWING IS RELEASED
 FOR TENDER ONLY

CLIENT:
 PSU SMALL DAM SECTION MERGED AREA
 IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
 CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
 DETAIL DESIGN AND PREPARATION OF PC-1
 FOR 5 SMALL DAMS IN FATA (PACKAGE- X)

TITLE:
 SHAKTU DAM
 TRIBAL SUB-DIVISION BANNU
 MAIN CANAL PLAN & PROFILE
 RD 2+000 TO RD 3+000

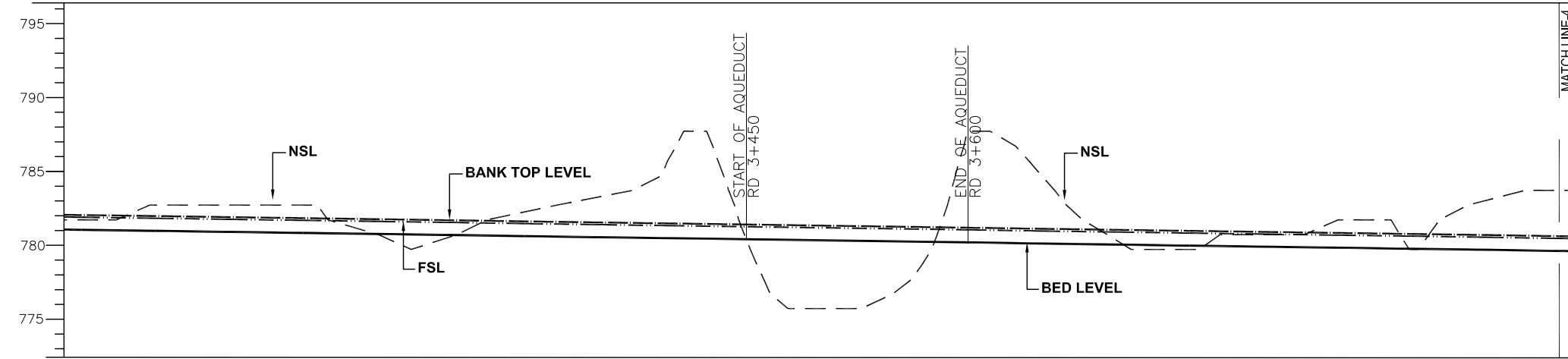
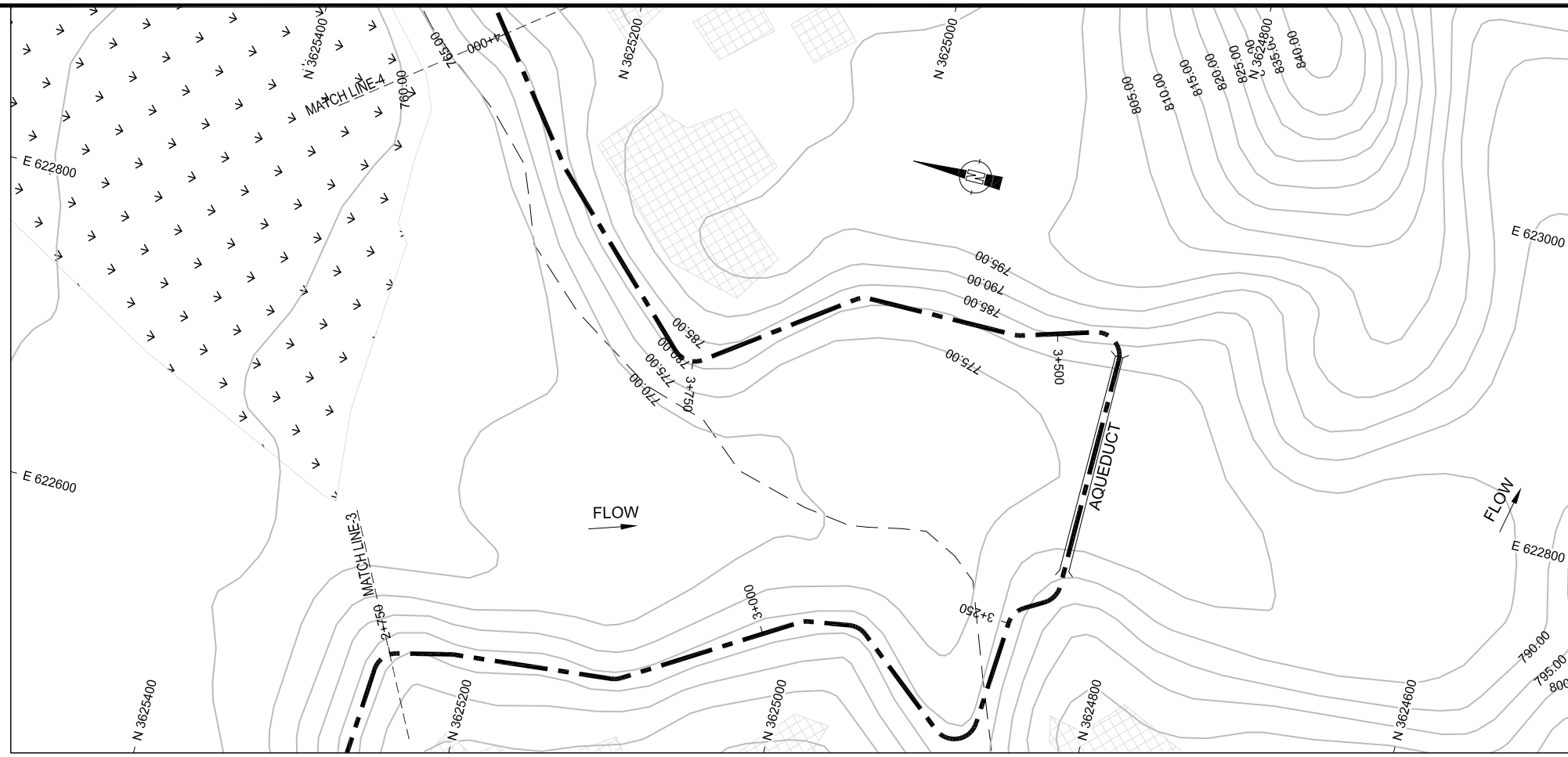
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	AJ	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-IR-05 SHEET:- SUB SH.- ----

DESIGN DATA	VELOCITY (m/sec)		1.04																			
	MANNING'S n / TYPE		0.016																			
DISCHARGE (Cumec)		SYPHON	0.798																			
FSD (m)		0.85																				
BED WIDTH (m) RECTANGULAR		0.90																				
BANK TOP LEVEL (BTL)	774.36	783.28	783.17	783.10	783.03	782.95	782.88	782.81	782.74	782.67	782.60	782.53	782.45	782.38	782.31	782.24	782.17	782.10	782.03	781.95	781.88	781.88
DESIGN FSL	774.36	783.08	783.02	782.95	782.88	782.80	782.73	782.66	782.59	782.52	782.45	782.38	782.30	782.23	782.16	782.09	782.02	781.95	781.88	781.80	781.73	781.73
DESIGN BED LEVEL (DBL)	774.36	782.28	782.17	782.10	782.03	781.95	781.88	781.81	781.74	781.67	781.60	781.53	781.45	781.38	781.31	781.24	781.17	781.10	781.03	780.95	780.88	780.88
NSL	774.36	783.00	783.00	783.00	783.00	783.00	783.00	783.00	783.00	783.00	783.00	782.00	783.00	783.00	785.00	785.00	784.89	784.19	783.00	783.00	782.00	780.88
R.D	2+000	2+050	2+100	2+150	2+200	2+250	2+300	2+350	2+400	2+450	2+500	2+550	2+600	2+650	2+700	2+750	2+800	2+850	2+900	2+950	3+000	3+000



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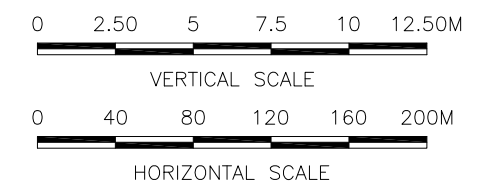


NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND

- AQUEDUCT
- MAIN CANAL
- EXISTING ROAD
- VILLAGES/HOUSES
- EXISTING COMMAND AREA
- CONTOUR
- OUTLET
- DRAINAGE CULVERT
- NULLAH
- BANK
- FSL
- BED
- NSL



REFERENCE DRAWINGS :-

SHD-TD-IR-01

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

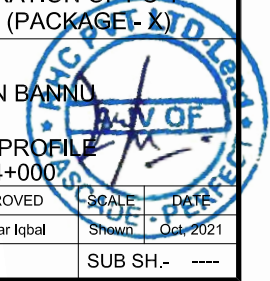
CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE- X)

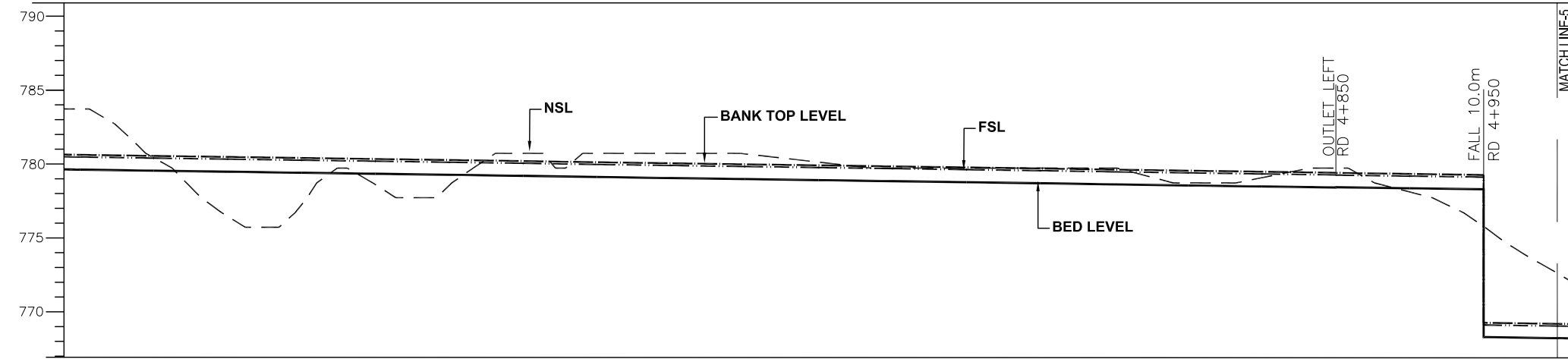
TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
MAIN CANAL PLAN & PROFILE
RD 3+000 TO RD 4+000

DESIGN DATA	DESIGN DATA											DESIGN DATA										
	3+000	3+050	3+100	3+150	3+200	3+250	3+300	3+350	3+400	3+450	3+500	3+550	3+600	3+650	3+700	3+750	3+800	3+850	3+900	3+950	4+000	4+000
VELOCITY (m/sec)	1.04											1.04										
MANNING'S n / TYPE	0.016											0.016										
DISCHARGE (Cumec)	0.798											0.798										
FSD (m)	0.85											0.85										
BED WIDTH (m) RECTANGULAR	0.90											0.90										
BANK TOP LEVEL (BTL)	781.88 781.88	781.81	781.74	781.67	781.60	781.53	781.45	781.38	781.31	781.24			781.03	780.95	780.88	780.81	780.74	780.67	780.60	780.53	780.45	780.45
DESIGN FSL	781.73 781.73	781.66	781.59	781.52	781.45	781.38	781.30	781.23	781.16	781.09			780.88	780.80	780.73	780.66	780.59	780.52	780.45	780.38	780.30	780.30
DESIGN BED LEVEL (DBL)	780.88 780.88	780.81	780.74	780.67	780.60	780.53	780.45	780.38	780.31	780.24			780.03	779.95	779.88	779.81	779.74	779.67	779.60	779.53	779.45	779.45
NSL	782.00 782.00	783.00	783.00	783.00	780.99	780.91	782.57	783.57	786.79	780.35			788.00	784.82	780.57	780.00	781.00	782.00	780.00	783.33	784.00	784.00
R.D	3+000 3+000	3+050	3+100	3+150	3+200	3+250	3+300	3+350	3+400	3+450	3+500	3+550	3+600	3+650	3+700	3+750	3+800	3+850	3+900	3+950	4+000 4+000	4+000

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	AJ	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021
DRG.No:- SHD-TD-IR-06		SHEET:-		SUB SH.-	



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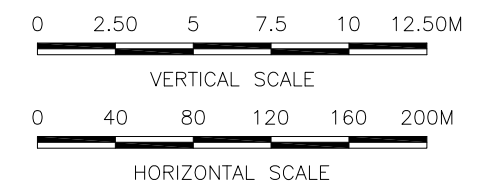


NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND

- AQUEDUCT
- MAIN CANAL
- EXISTING ROAD
- VILLAGES/HOUSES
- EXISTING COMMAND AREA
- CONTOUR
- OUTLET
- DRAINAGE CULVERT
- NULLAH
- BANK
- FSL
- BED
- NSL



REFERENCE DRAWINGS :-

- SHD-TD-IR-01
- DRAWING IS RELEASED
- FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE- X)

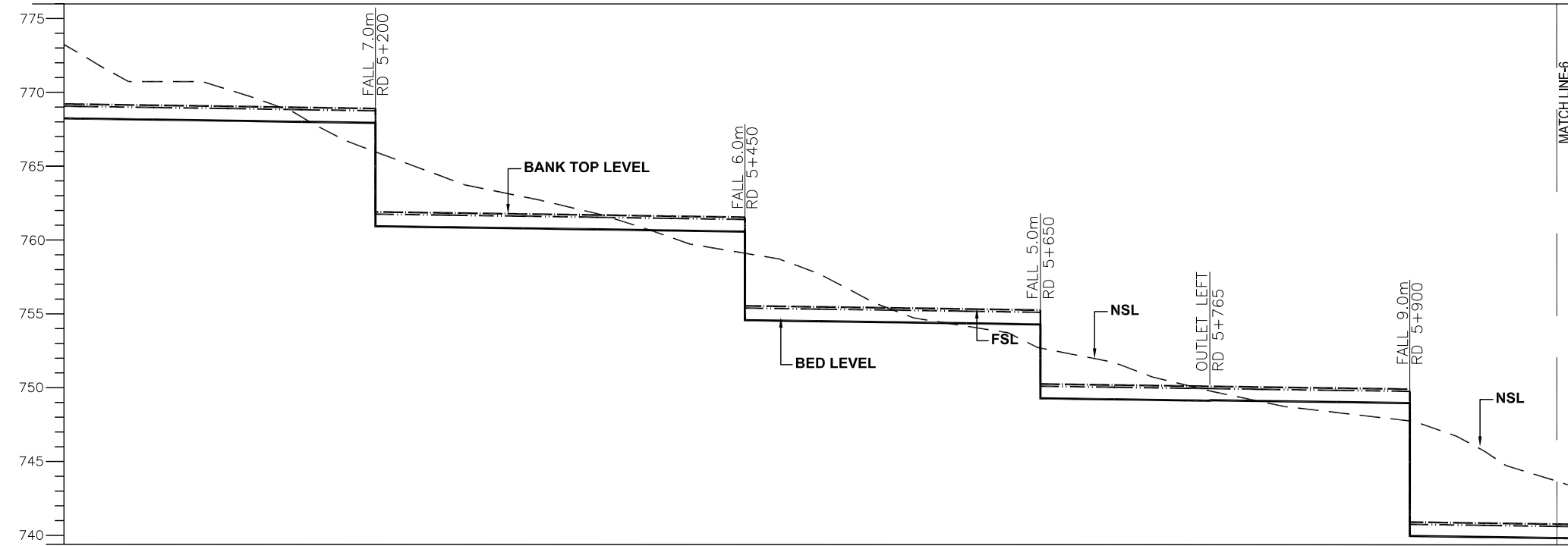
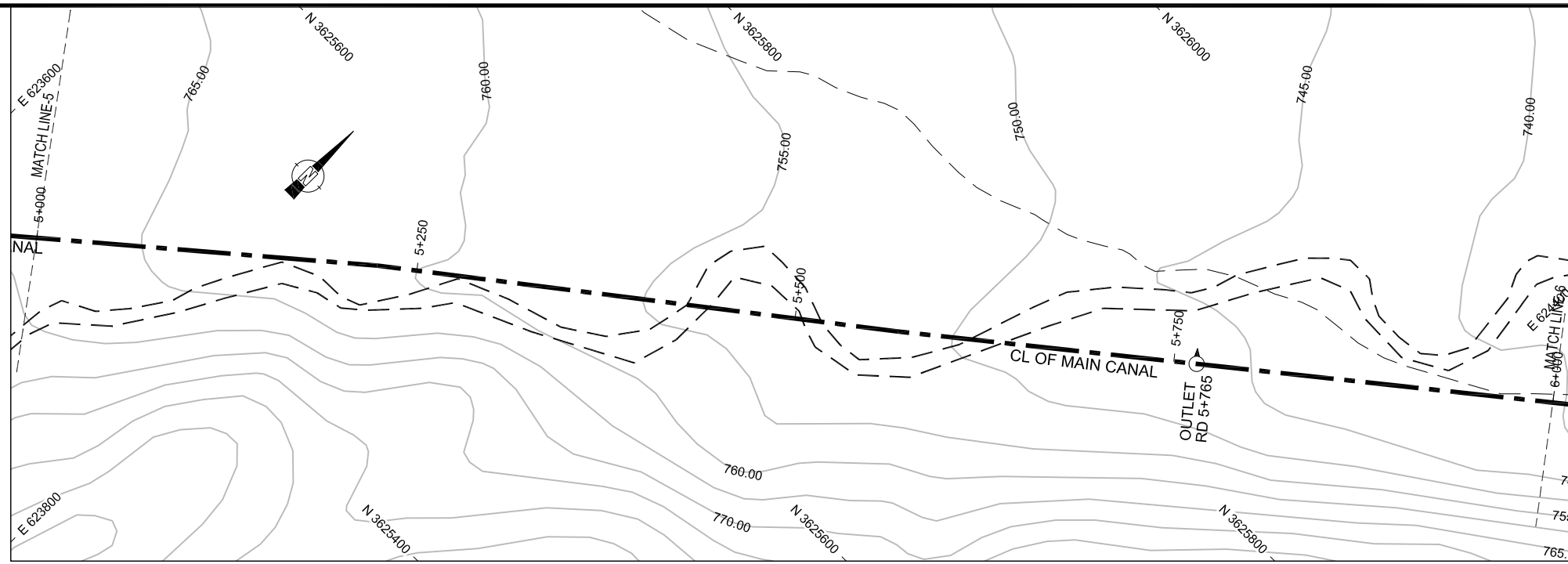
TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
MAIN CANAL PLAN & PROFILE
RD 4+000 TO RD 5+000

DESIGN DATA	DESIGN DATA																								
	VELOCITY (m/sec)	1.04																							
MANNING'S n / TYPE	0.016																								
DISCHARGE (CumeC)	0.798																								
FSD (m)	0.85																								
BED WIDTH (m) RECTANGULAR	0.90																								
BANK TOP LEVEL (BTL)	780.45	780.45	780.38	780.31	780.24	780.17	780.10	780.03	779.95	779.88	779.81	779.74	779.67	779.60	779.53	779.45	779.38	779.31	779.24	779.23	779.16	779.09	779.09	769.02	769.02
DESIGN FSL	780.30	780.30	780.23	780.16	780.09	780.02	779.95	779.88	779.80	779.73	779.66	779.59	779.52	779.45	779.38	779.30	779.23	779.16	779.09	779.08	779.01	778.94	778.94	768.87	768.87
DESIGN BED LEVEL (DBL)	779.45	779.45	779.38	779.31	779.24	779.17	779.10	779.03	778.95	778.88	778.81	778.74	778.67	778.60	778.53	778.45	778.38	778.31	778.24	778.26	778.19	778.12	778.12	768.05	768.05
NSL	784.00	784.00	780.63	776.66	777.67	778.81	778.96	781.00	781.00	781.00	780.95	780.39	780.00	780.00	780.00	780.00	779.00	779.38	780.00	780.00	778.36	775.98	775.98	772.81	772.81
R.D	4+000	4+000	4+050	4+100	4+150	4+200	4+250	4+300	4+350	4+400	4+450	4+500	4+550	4+600	4+650	4+700	4+750	4+800	4+850	4+850	4+900	4+950	4+950	5+000	5+000

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	AJ	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-IR-07 SHEET:- SUB SH.- ----

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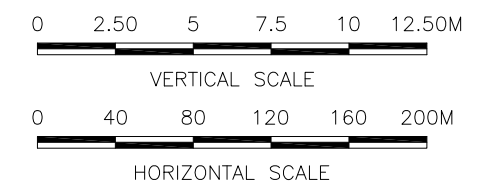


NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND

- AQUEDUCT
- MAIN CANAL
- EXISTING ROAD
- VILLAGES/HOUSES
- EXISTING COMMAND AREA
- CONTOUR
- OUTLET
- DRAINAGE CULVERT
- NULLAH
- BANK
- FSL
- BED
- NSL



REFERENCE DRAWINGS :-

SHD-TD-IR-01

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE- X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
MAIN CANAL PLAN & PROFILE
RD 5+000 TO RD 6+000

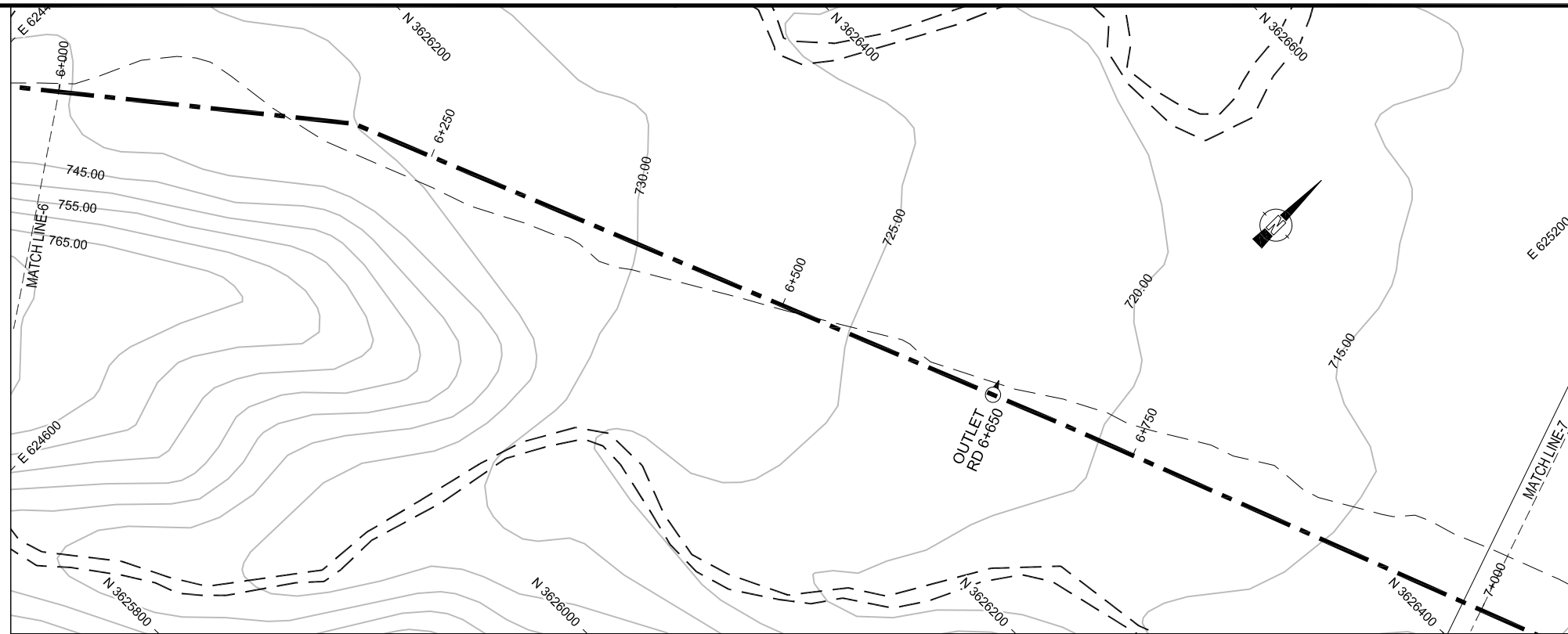
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	AJ	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-IR-08 SHEET:- SUB SH.- ----

DESIGN DATA	VELOCITY (m/sec)		MANNING'S n / TYPE		DISCHARGE (Cumec)		FSD (m)		BED WIDTH (m) RECTANGULAR	
	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right
BANK TOP LEVEL (BTL)	769.02	769.02	768.87	768.87	768.05	767.98	768.80	768.73	768.65	768.80
DESIGN FSL	768.87	768.87	768.05	767.98	768.73	768.65	768.80	768.73	768.65	768.80
DESIGN BED LEVEL (DBL)	768.05	767.98	768.73	768.65	768.80	768.73	768.65	768.80	768.73	768.65
NSL	772.81	772.81	771.00	770.43	768.53	766.20	766.20	764.35	763.18	762.03
R.D	5+000	5+050	5+100	5+150	5+200	5+250	5+300	5+350	5+400	5+450
	5+000	5+050	5+100	5+150	5+200	5+250	5+300	5+350	5+400	5+450
	5+050	5+100	5+150	5+200	5+250	5+300	5+350	5+400	5+450	5+500
	5+100	5+150	5+200	5+250	5+300	5+350	5+400	5+450	5+500	5+550
	5+150	5+200	5+250	5+300	5+350	5+400	5+450	5+500	5+550	5+600
	5+200	5+250	5+300	5+350	5+400	5+450	5+500	5+550	5+600	5+650
	5+250	5+300	5+350	5+400	5+450	5+500	5+550	5+600	5+650	5+700
	5+300	5+350	5+400	5+450	5+500	5+550	5+600	5+650	5+700	5+750
	5+350	5+400	5+450	5+500	5+550	5+600	5+650	5+700	5+750	5+800
	5+400	5+450	5+500	5+550	5+600	5+650	5+700	5+750	5+800	5+850
	5+450	5+500	5+550	5+600	5+650	5+700	5+750	5+800	5+850	5+900
	5+500	5+550	5+600	5+650	5+700	5+750	5+800	5+850	5+900	5+950
	5+550	5+600	5+650	5+700	5+750	5+800	5+850	5+900	5+950	6+000
	5+600	5+650	5+700	5+750	5+800	5+850	5+900	5+950	6+000	6+000



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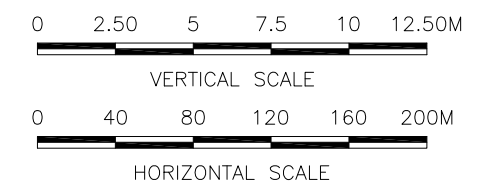
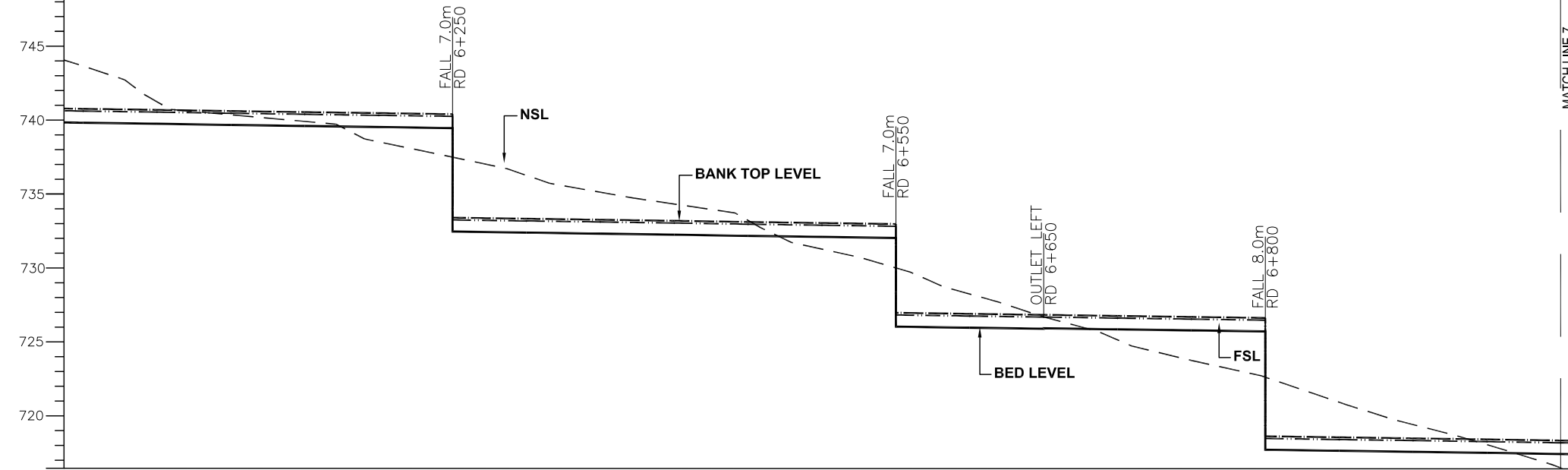


NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND

- AQUEDUCT
- MAIN CANAL
- EXISTING ROAD
- VILLAGES/HOUSES
- EXISTING COMMAND AREA
- CONTOUR
- OUTLET
- DRAINAGE CULVERT
- NULLAH
- BANK
- FSL
- BED
- NSL



REFERENCE DRAWINGS :-

SHD-TD-IR-01

DRAWING IS RELEASED

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CLIENT: PSU SMALL DAM SECTION MERGED AREA IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

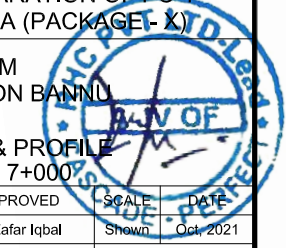
PROJECT: CONSULTANCY SERVICES FOR FEASIBILITY STUDY, DETAIL DESIGN AND PREPARATION OF PC-1 FOR 5 SMALL DAMS IN FATA (PACKAGE- X)

TITLE: SHAKTU DAM TRIBAL SUB-DIVISION BANNU
 MAIN CANAL PLAN & PROFILE RD 6+000 TO RD 7+000

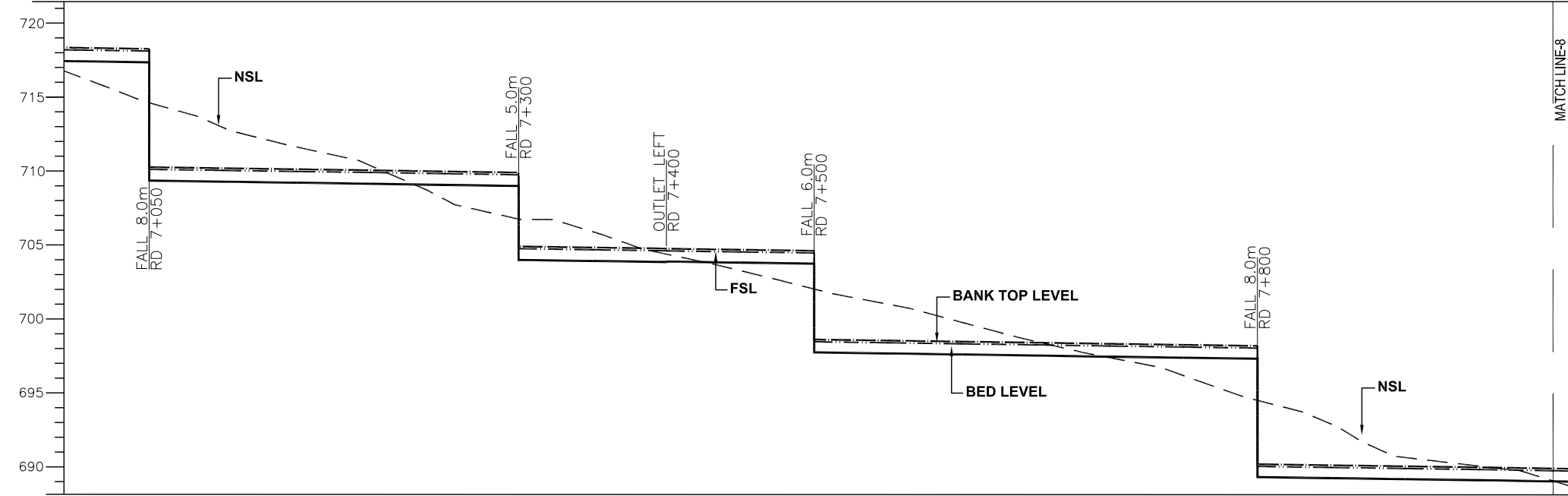
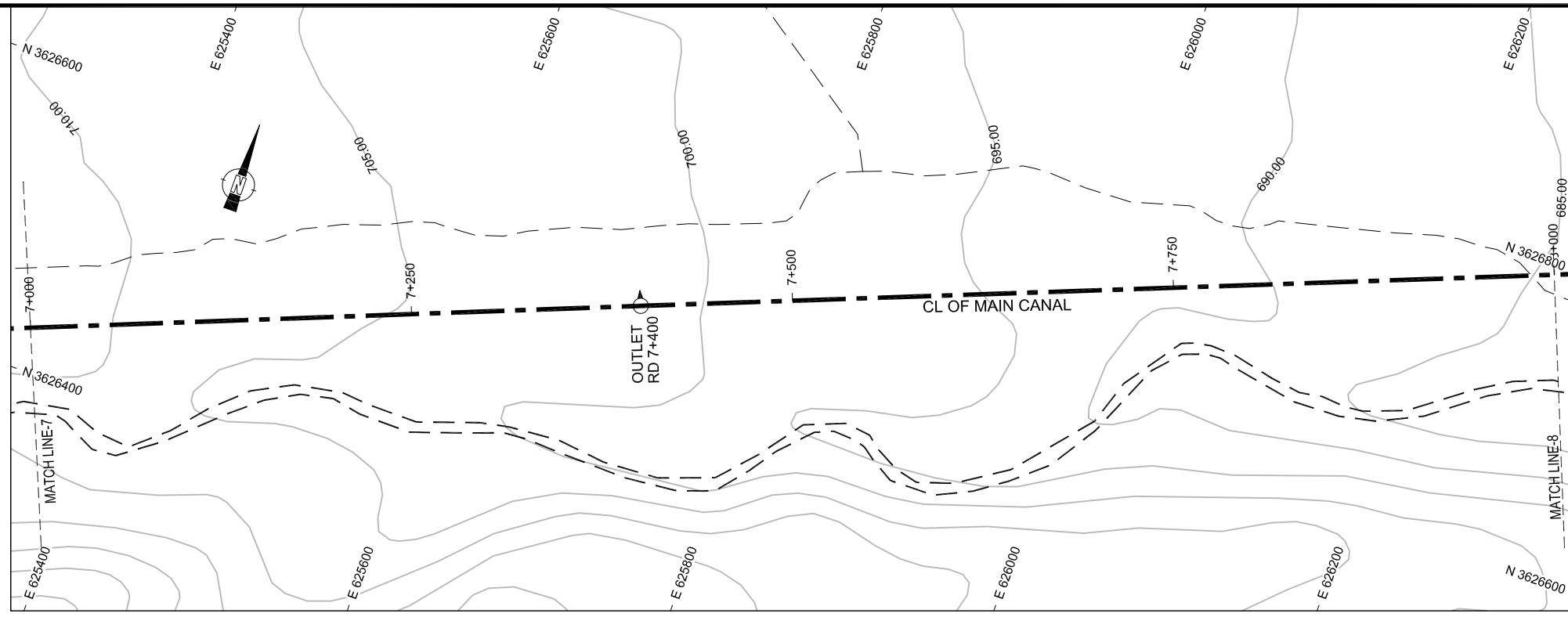
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	AJ	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-IR-09 SHEET:- SUB SH.- ----

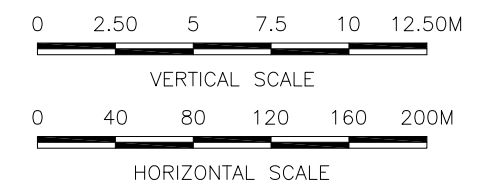
DESIGN DATA	DESIGN DATA																											
	VELOCITY (m/sec)	1.03																1.02										
MANNING'S n / TYPE	0.016																0.016											
DISCHARGE (Cumec)	0.731																0.693											
FSD (m)	0.79																0.76											
BED WIDTH (m) RECTANGULAR	0.90																0.90											
BANK TOP LEVEL (BTL)	740.59	740.59	740.52	740.44	740.37	740.30	740.23	733.23	733.16	733.09	733.02	732.94	732.87	732.80	726.80	726.73	726.66	726.66	726.59	726.52	726.45	718.45	718.38	718.31	718.24			
DESIGN FSL	740.44	740.44	740.37	740.29	740.22	740.15	740.08	733.08	733.01	732.94	732.87	732.79	732.72	732.65	726.65	726.58	726.51	726.51	726.44	726.37	726.30	718.30	718.23	718.16	718.09			
DESIGN BED LEVEL (DBL)	739.65	739.65	739.58	739.50	739.43	739.36	739.29	732.29	732.22	732.15	732.08	732.00	731.93	731.86	725.86	725.79	725.72	725.75	725.68	725.61	725.54	717.54	717.47	717.40	717.33			
NSL	745.92	745.92	743.89	741.44	740.62	740.18	738.78	737.74	737.74	736.50	735.38	734.58	733.42	731.52	731.52	730.25	730.25	728.48	726.94	726.94	725.36	724.00	722.85	722.85	721.16			
R.D	6+000	6+000	6+050	6+100	6+150	6+200	6+250	6+250	6+300	6+350	6+400	6+450	6+500	6+500	6+550	6+550	6+600	6+650	6+650	6+700	6+750	6+800	6+800	6+850	6+900	6+950	7+000	7+000



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- NOTES:-**
1. ALL LEVELS AND DIMENSIONS ARE IN METER
- LEGEND**
- AQUEDUCT
 - MAIN CANAL
 - EXISTING ROAD
 - VILLAGES/HOUSES
 - EXISTING COMMAND AREA
 - CONTOUR
 - OUTLET
 - DRAINAGE CULVERT
 - NULLAH
 - BANK
 - FSL
 - BED
 - NSL



REFERENCE DRAWINGS :-

SHD-TD-IR-01

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE- X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
MAIN CANAL PLAN & PROFILE
RD 7+000 TO RD 8+000

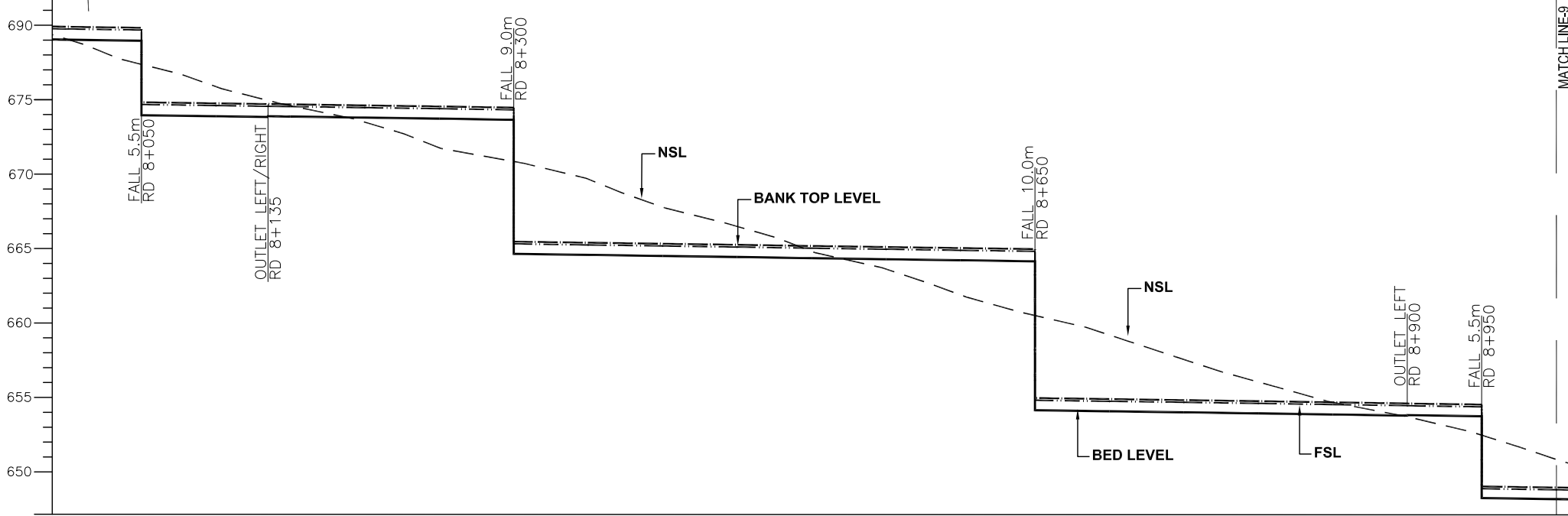
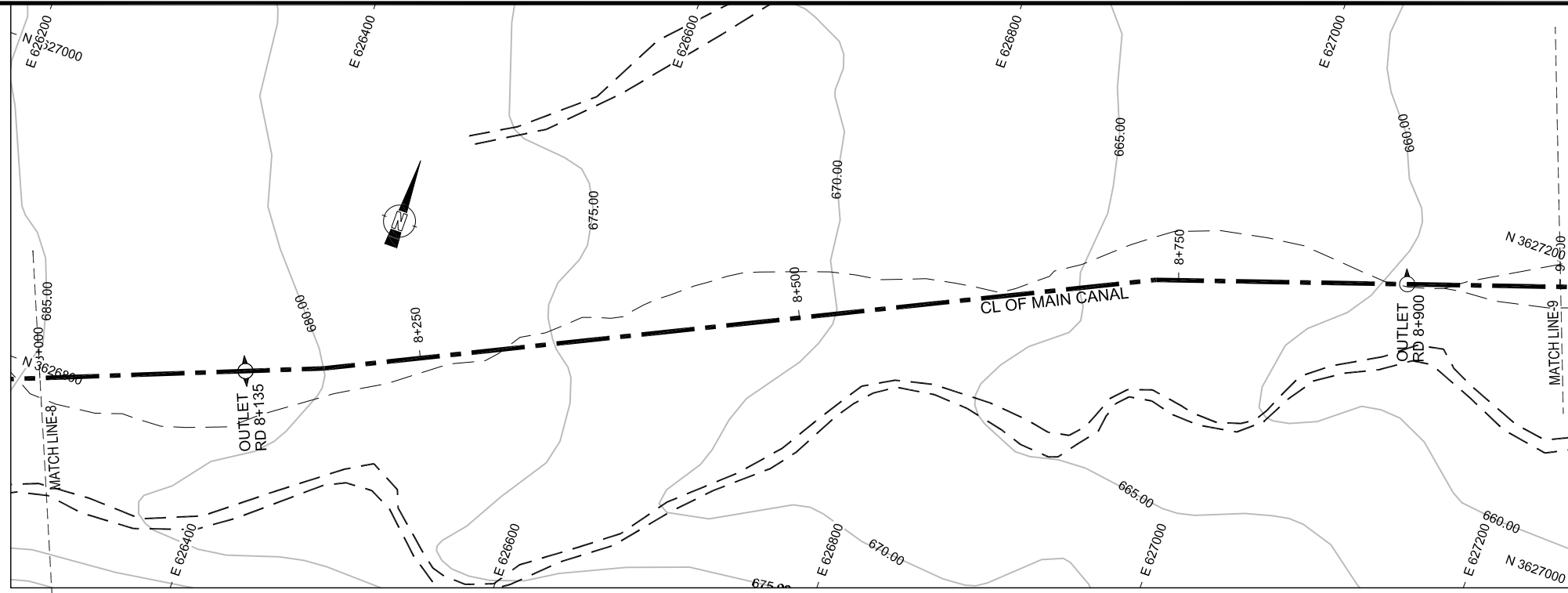
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	AJ	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-IR-10 SHEET:- SUB SH.- ----

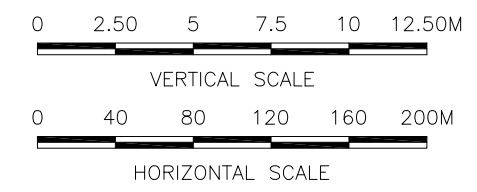
DESIGN DATA	DESIGN DATA																									
	VELOCITY (m/sec)	1.02														1.01										
MANNING'S n / TYPE	0.016																									
DISCHARGE (CumeC)	0.693																									
FSD (m)	0.76																									
BED WIDTH (m) RECTANGULAR	0.90																									
BANK TOP LEVEL (BTL)	718.16	718.16	718.09	710.02	709.95	709.88	709.80	709.73	704.73	704.66	704.59	704.58	704.51	704.44	698.37	698.30	698.23	698.15	698.08	698.01	690.01	689.94	689.87	689.80	689.72	689.72
DESIGN FSL	718.01	718.01	717.94	709.87	709.80	709.73	709.65	709.58	704.58	704.51	704.44	704.43	704.36	704.29	698.22	698.15	698.08	698.00	697.93	697.86	689.86	689.79	689.72	689.65	689.57	689.57
DESIGN BED LEVEL (DBL)	717.25	717.25	717.18	709.11	709.04	708.97	708.89	708.82	703.82	703.75	703.68	703.71	703.64	703.57	697.50	697.43	697.36	697.28	697.21	697.14	689.14	689.07	689.00	688.93	688.85	688.85
NSL	719.66	719.66	718.29	714.85	714.85	713.16	711.87	710.58	708.29	707.00	707.00	706.14	704.63	704.63	702.27	702.27	701.25	700.01	698.73	697.64	696.40	694.74	694.74	693.12	690.90	690.90
R.D	7+000	7+000	7+050	7+100	7+150	7+200	7+250	7+300	7+300	7+350	7+400	7+400	7+450	7+500	7+500	7+600	7+650	7+700	7+750	7+800	7+800	7+850	7+900	7+950	8+000	8+000



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- NOTES:-**
1. ALL LEVELS AND DIMENSIONS ARE IN METER
- LEGEND**
- AQUEDUCT
 - MAIN CANAL
 - EXISTING ROAD
 - VILLAGES/HOUSES
 - EXISTING COMMAND AREA
 - CONTOUR
 - OUTLET
 - DRAINAGE CULVERT
 - NULLAH
 - BANK
 - FSL
 - BED
 - NSL



REFERENCE DRAWINGS :-

SHD-TD-IR-01

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

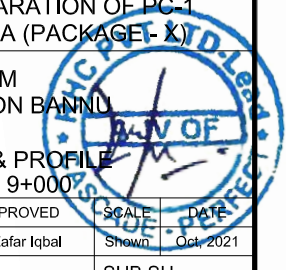
PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE- X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
MAIN CANAL PLAN & PROFILE
RD 8+000 TO RD 9+000

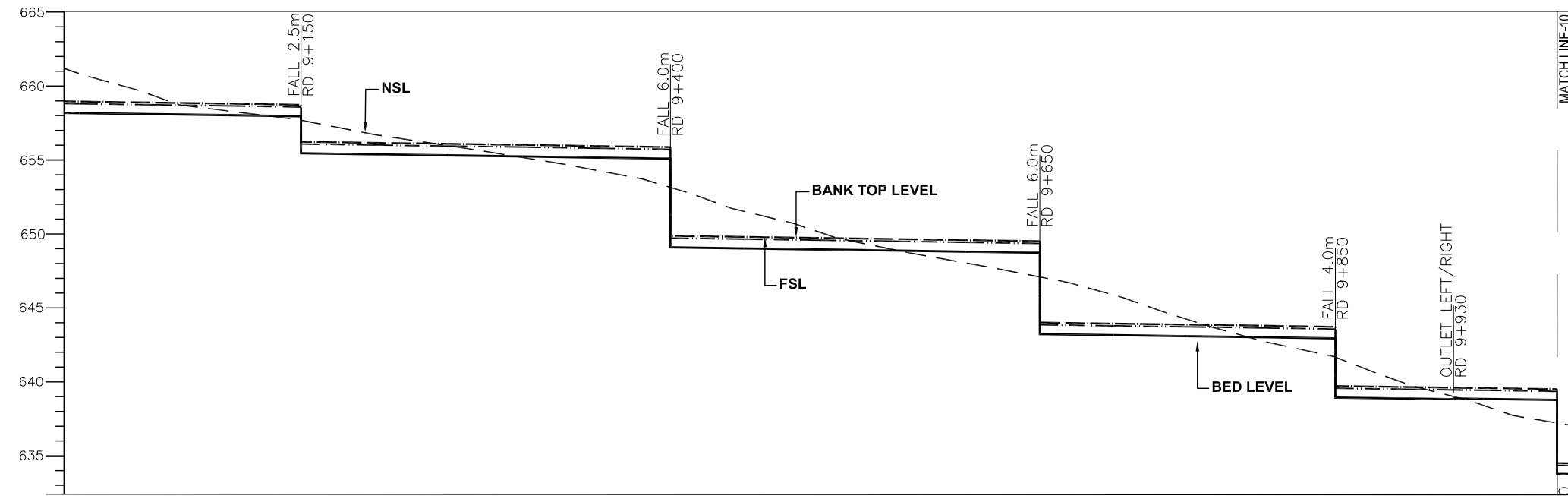
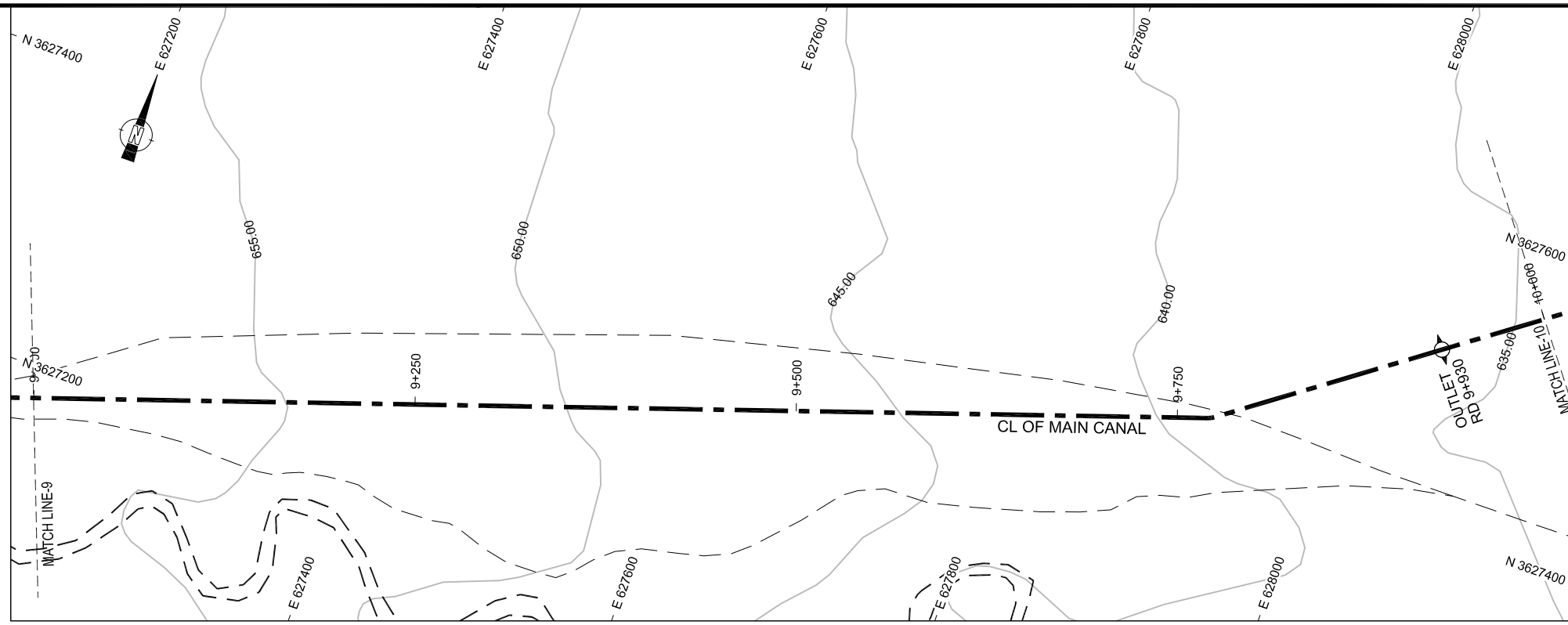
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	AJ	Zeeshan S.	Zafar Iqbal	Showa	Oct, 2021

DRG.No:- SHD-TD-IR-11 SHEET:- SUB SH.- ----

DESIGN DATA	VELOCITY (m/sec)		MANNING'S n / TYPE		DISCHARGE (Cumec)		FSD (m)		BED WIDTH (m) RECTANGULAR																						
	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right																					
BANK TOP LEVEL (BTL)	689.72	689.72	689.65	684.65	684.58	684.53	684.53	684.44	684.37	684.29	675.29	675.22	675.15	675.08	675.00	674.93	674.86	674.79	664.79	664.72	664.65	664.58	664.50	664.43	664.35	664.28	664.20	658.78	658.78		
DESIGN FSL	689.57	689.57	689.50	684.50	684.43	684.38	684.38	684.29	684.22	684.14	675.14	675.07	675.00	674.93	674.85	674.78	674.71	674.64	664.64	664.57	664.50	664.43	664.35	664.28	664.27	664.20	664.20	658.70	658.63	658.63	
DESIGN BED LEVEL (DBL)	688.85	688.85	688.78	683.78	683.71	683.66	683.66	683.62	683.55	683.47	674.47	674.40	674.33	674.26	674.18	674.11	674.04	673.97	663.97	663.90	663.83	663.76	663.68	663.61	663.64	663.57	663.57	658.07	658.00	658.00	
NSL	690.90	690.90	690.32	689.30	687.61	686.60	685.19	684.84	683.72	682.00	681.10	681.10	679.89	678.01	676.73	675.04	673.85	672.12	670.75	670.75	669.43	667.78	666.28	664.92	663.95	663.95	663.95	662.70	662.70	662.70	662.70
R.D	8+000	8+000	8+050	8+050	8+100	8+135	8+135	8+200	8+250	8+300	8+300	8+350	8+400	8+450	8+500	8+550	8+600	8+650	8+650	8+700	8+750	8+800	8+850	8+900	8+900	8+950	9+000	9+000	9+000	9+000	



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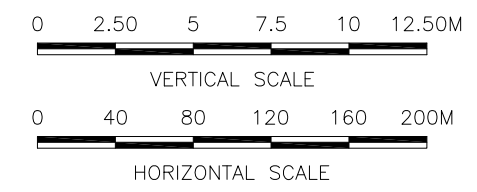


NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND

- AQUEDUCT
- MAIN CANAL
- EXISTING ROAD
- VILLAGES/HOUSES
- EXISTING COMMAND AREA
- CONTOUR
- OUTLET
- DRAINAGE CULVERT
- NULLAH
- BANK
- FSL
- BED
- NSL



REFERENCE DRAWINGS :-

- SHD-TD-IR-01
- DRAWING IS RELEASED
- FOR TENDER ONLY

DESIGN DATA	VELOCITY (m/sec)		MANNING'S n / TYPE		DISCHARGE (Cumec)		FSD (m)		BED WIDTH (m) RECTANGULAR															
	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right														
BANK TOP LEVEL (BTL)	658.78	658.78	658.71	658.64	658.56	658.06	655.99	655.92	655.85	655.77	659.70	649.63	649.56	649.49	649.41	649.26	649.34	643.70	643.63	643.55	639.44	639.34	639.34	
DESIGN FSL	658.63	658.63	658.56	658.49	658.41	655.91	655.84	655.77	655.70	655.62	659.55	649.48	649.41	649.34	649.26	649.19	643.69	643.62	643.55	643.48	643.40	639.29	639.19	639.19
DESIGN BED LEVEL (DBL)	658.00	658.00	657.93	657.86	657.78	655.28	655.21	655.14	655.07	654.99	658.92	648.85	648.78	648.71	648.63	648.56	643.06	642.99	642.92	642.85	642.77	638.66	638.61	638.61
NSL	662.70	662.70	661.07	659.59	658.58	657.94	657.94	656.97	656.22	655.42	656.59	653.39	651.77	650.39	649.21	648.29	647.35	647.35	646.12	644.46	643.02	640.04	637.48	637.48
R.D	9+000	9+050	9+100	9+150	9+200	9+250	9+300	9+350	9+400	9+450	9+500	9+550	9+600	9+650	9+700	9+750	9+800	9+850	9+900	9+930	9+950	10+000	10+000	

CLIENT: PSU SMALL DAM SECTION MERGED AREA IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP OF ENGINEERING & CONSULTANTS
PEMC PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT: CONSULTANCY SERVICES FOR FEASIBILITY STUDY, DETAIL DESIGN AND PREPARATION OF PC-1 FOR 5 SMALL DAMS IN FATA (PACKAGE- X)

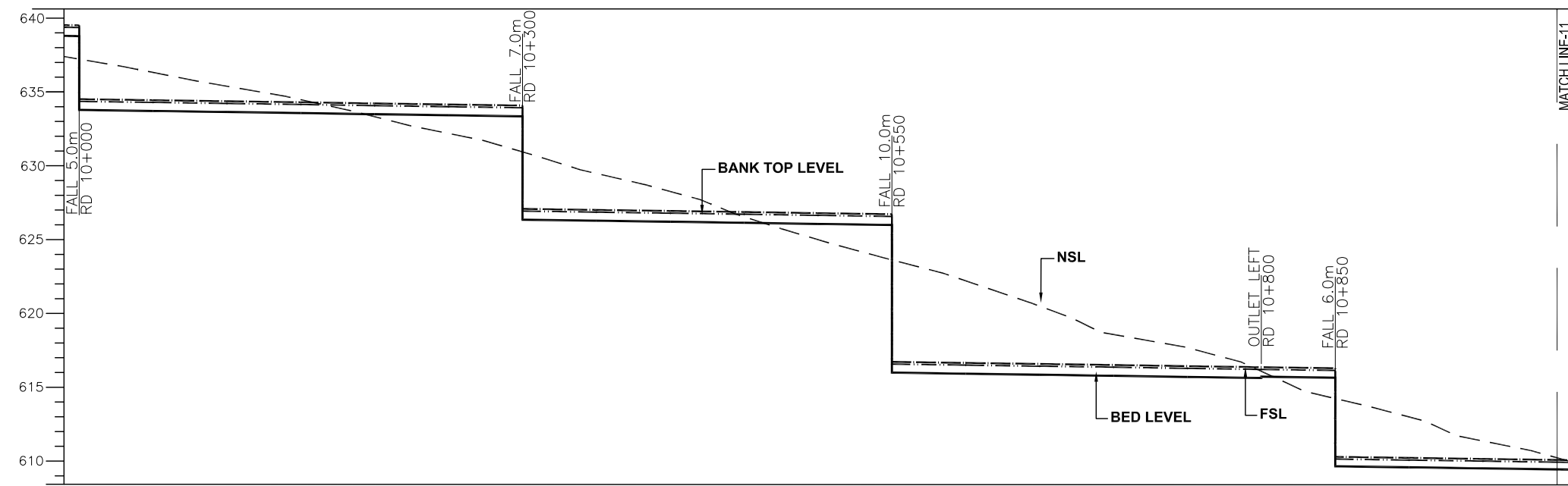
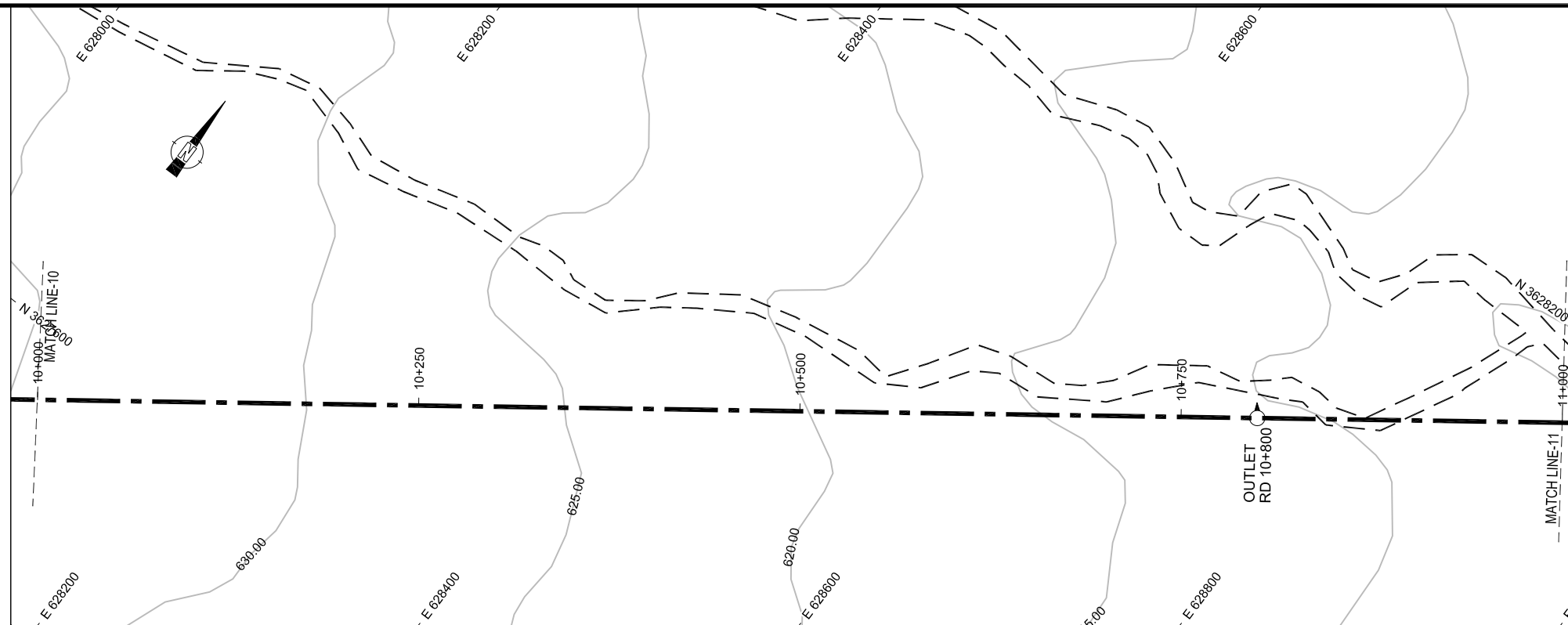
TITLE: SHAKTU DAM TRIBAL SUB-DIVISION BANNU
 MAIN CANAL PLAN & PROFILE RD 9+000 TO RD 10+000

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	AJ	Zeeshan S.	Zafar Iqbal	Show	Oct, 2021

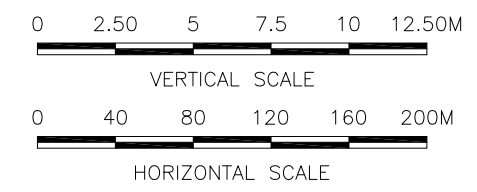
DRG.No:- SHD-TD-IR-12 SHEET:- SUB SH.- ----



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- NOTES:-**
- ALL LEVELS AND DIMENSIONS ARE IN METER
- LEGEND**
- AQUEDUCT
 - MAIN CANAL
 - EXISTING ROAD
 - VILLAGES/HOUSES
 - EXISTING COMMAND AREA
 - CONTOUR
 - OUTLET
 - DRAINAGE CULVERT
 - NULLAH
 - BANK
 - FSL
 - BED
 - NSL



REFERENCE DRAWINGS :-

SHD-TD-IR-01

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.

CASCAD GROUP
OF ENGINEERING & CONSULTANTS

PERFECT ENGINEERING &
MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE- X)

SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

TITLE:
MAIN CANAL PLAN & PROFILE
RD 10+000 TO RD 11+000

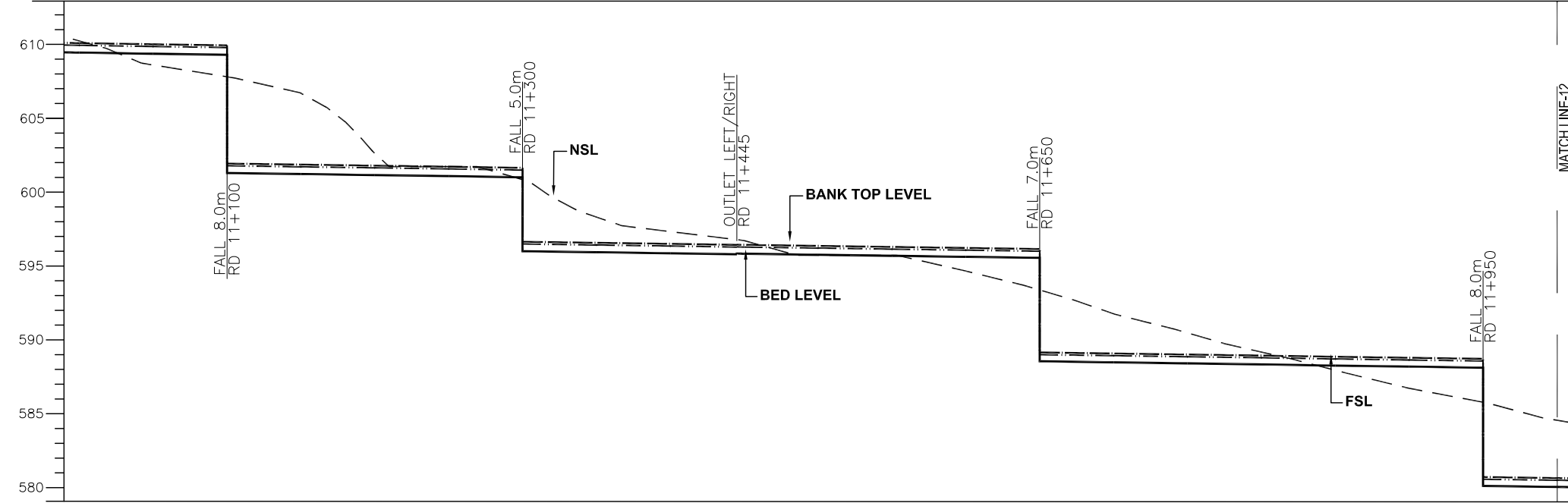
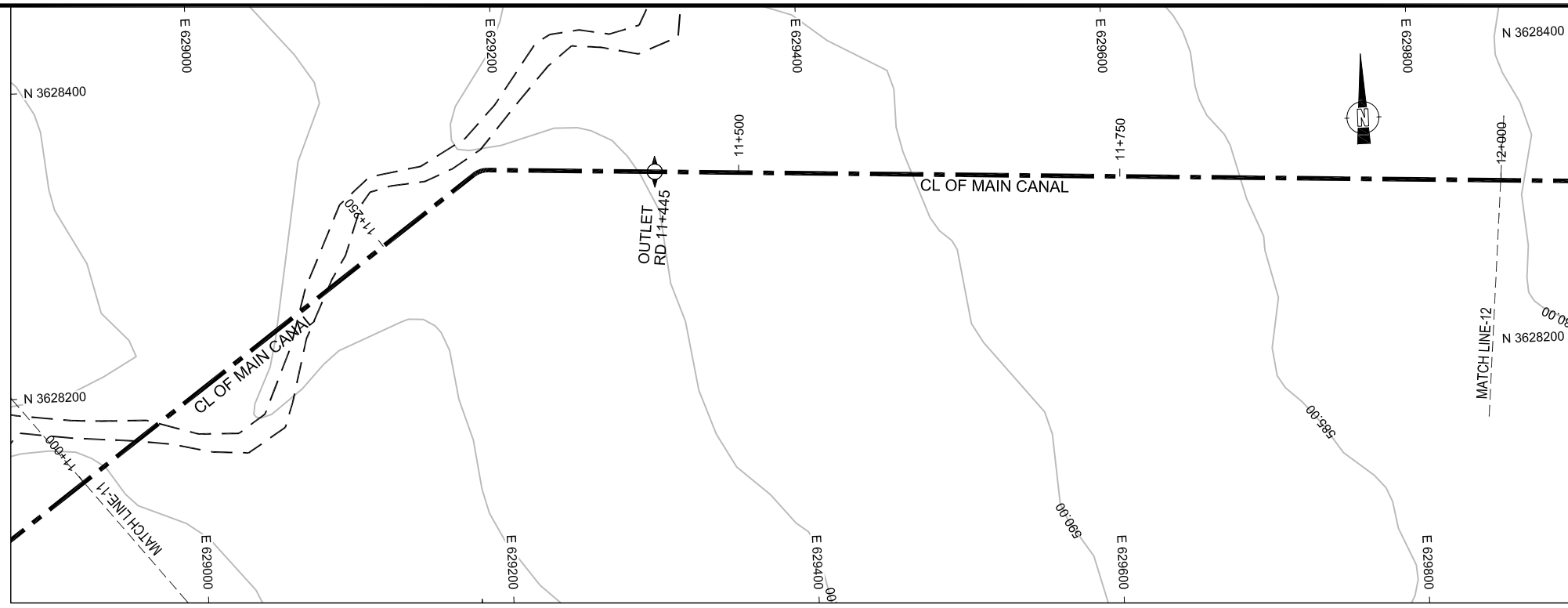
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	AJ	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-IR-13 SHEET:- SUB SH.- ----

DESIGN DATA	VELOCITY (m/sec)		MANNING'S n / TYPE		DISCHARGE (Cumec)		FSD (m)		BED WIDTH (m) RECTANGULAR																		
	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right																	
BANK TOP LEVEL (BTL)	639.34	634.34	634.27	634.20	634.13	634.05	633.98	633.91	626.84	626.77	626.70	626.62	626.55	616.55	616.48	616.41	616.34	616.26	616.19	616.12	610.12	610.05	609.98	609.91	609.84		
DESIGN FSL	639.19	634.19	634.12	634.05	633.98	633.90	633.83	633.76	626.76	626.69	626.62	626.55	626.47	626.40	616.40	616.33	616.26	616.19	616.11	616.04	616.04	615.97	610.90	610.83	609.76	609.76	609.76
DESIGN BED LEVEL (DBL)	638.61	633.61	633.54	633.47	633.40	633.32	633.25	633.18	626.18	626.11	626.04	625.97	625.89	625.82	615.82	615.75	615.68	615.61	615.53	615.46	615.55	615.48	609.41	609.34	609.27	609.27	609.27
NSL	637.48	637.48	636.57	635.64	634.73	633.57	632.44	631.18	626.18	629.73	628.50	626.78	625.24	623.87	623.87	622.44	620.73	618.83	616.30	616.30	614.49	613.24	611.62	610.47	608.86	608.86	608.86
R.D	10+000	10+050	10+100	10+150	10+200	10+250	10+300	10+350	10+400	10+450	10+500	10+550	10+600	10+650	10+700	10+800	10+850	10+900	10+950	11+000	11+000						



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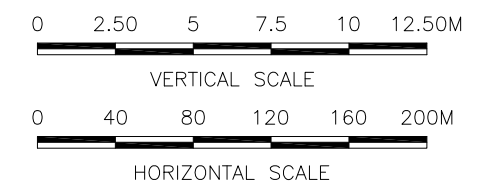


NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND

- AQUEDUCT
- MAIN CANAL
- EXISTING ROAD
- VILLAGES/HOUSES
- EXISTING COMMAND AREA
- CONTOUR
- OUTLET
- DRAINAGE CULVERT
- NULLAH
- BANK
- FSL
- BED
- NSL



REFERENCE DRAWINGS :-

SHD-TD-IR-01

DRAWING IS RELEASED

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CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE- X)

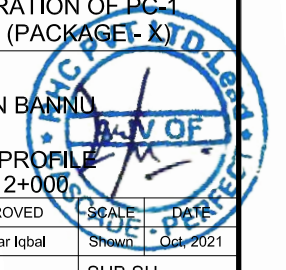
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

TITLE:
MAIN CANAL PLAN & PROFILE
RD 11+000 TO RD 12+000

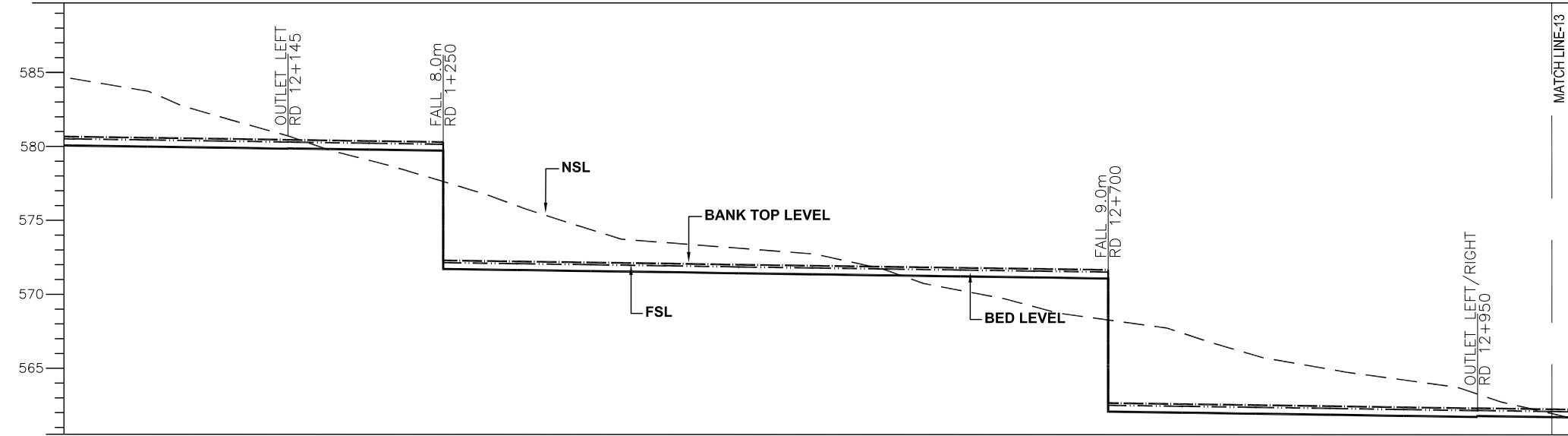
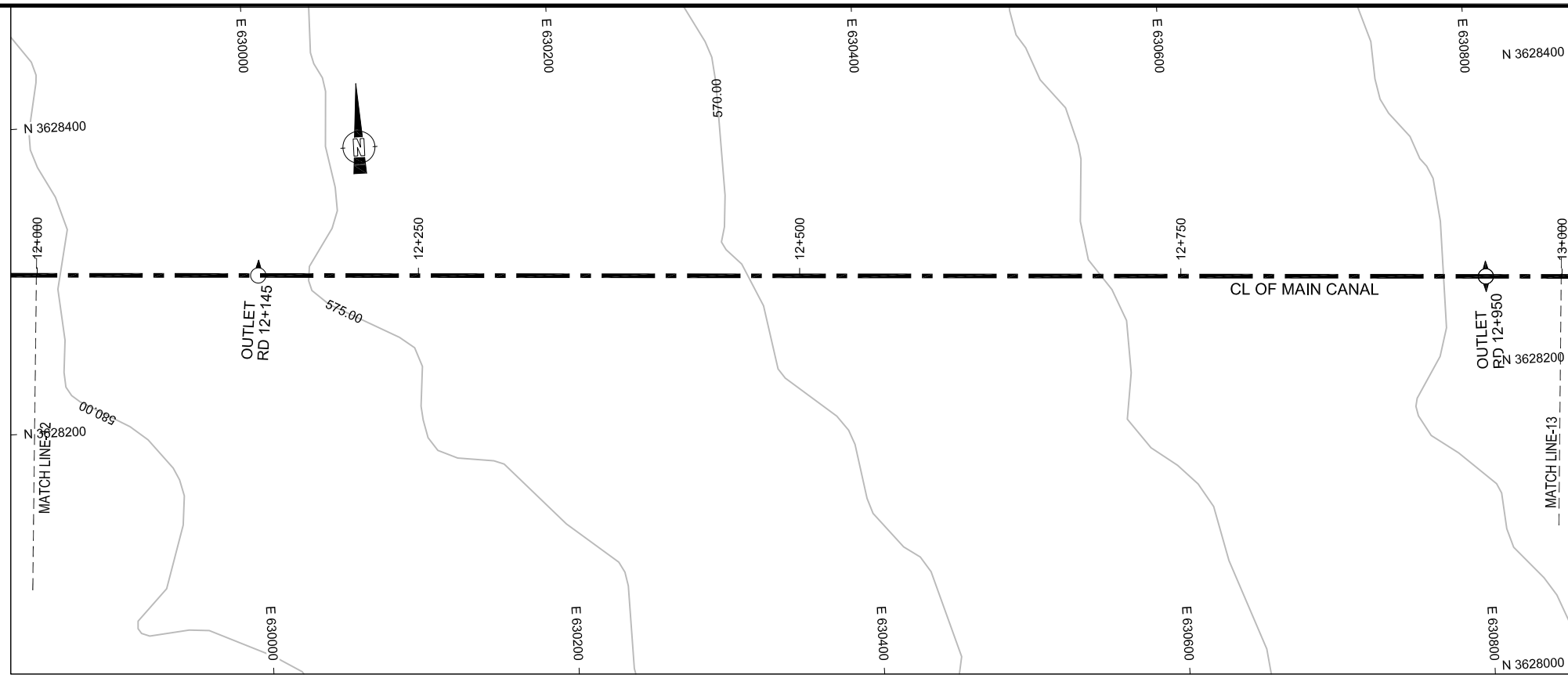
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	AJ	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

DRG.No:- SHD-TD-IR-14 SHEET:- SUB SH.- ----

DESIGN DATA	DESIGN DATA										DESIGN DATA																
	VELOCITY (m/sec)	1.08										1.03															
MANNING'S n / TYPE	0.014										0.014																
DISCHARGE (CumeC)	0.460										0.397																
FSD (m)	0.49										0.45																
TOP WIDTH (m) PARABOLIC	0.76										0.76																
BANK TOP LEVEL (BTL)	609.91	609.91	609.83	609.76	601.76	601.69	601.62	601.55	601.47	596.47	596.40	596.33	596.26	596.26	596.27	596.19	596.12	596.05	595.98	588.83	588.83	588.76	588.69	588.62	588.55	580.48	580.48
DESIGN FSL	609.76	609.76	609.68	609.61	601.61	601.54	601.47	601.40	601.32	596.32	596.25	596.18	596.11	596.11	596.12	596.04	595.97	595.90	595.83	588.83	588.83	588.76	588.69	588.62	588.54	588.48	580.33
DESIGN BED LEVEL (DBL)	609.27	609.27	609.19	609.12	601.12	601.05	600.98	600.91	600.83	595.83	595.76	595.69	595.62	595.62	595.67	595.59	595.52	595.45	595.38	588.38	588.38	588.31	588.24	588.17	588.09	587.95	579.88
NSL	608.86	608.86	608.06	608.06	606.90	602.78	602.00	601.09	601.09	598.54	597.59	597.04	597.04	596.90	596.00	594.90	593.61	593.61	592.00	590.71	588.31	588.19	586.98	586.04	586.04	582.21	579.88
R.D	11+000	11+000	11+050	11+100	11+100	11+150	11+200	11+250	11+300	11+300	11+350	11+400	11+445	11+450	11+500	11+550	11+600	11+650	11+650	11+700	11+750	11+800	11+850	11+900	11+950	12+000	12+000



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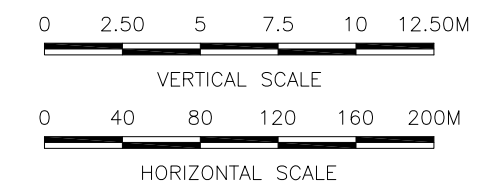


NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND

- AQUEDUCT
- MAIN CANAL
- EXISTING ROAD
- VILLAGES/HOUSES
- EXISTING COMMAND AREA
- CONTOUR
- OUTLET
- DRAINAGE CULVERT
- NULLAH
- BANK
- FSL
- BED
- NSL



REFERENCE DRAWINGS :-

SHD-TD-IR-01

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FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP
OF ENGINEERING & CONSULTANTS
PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

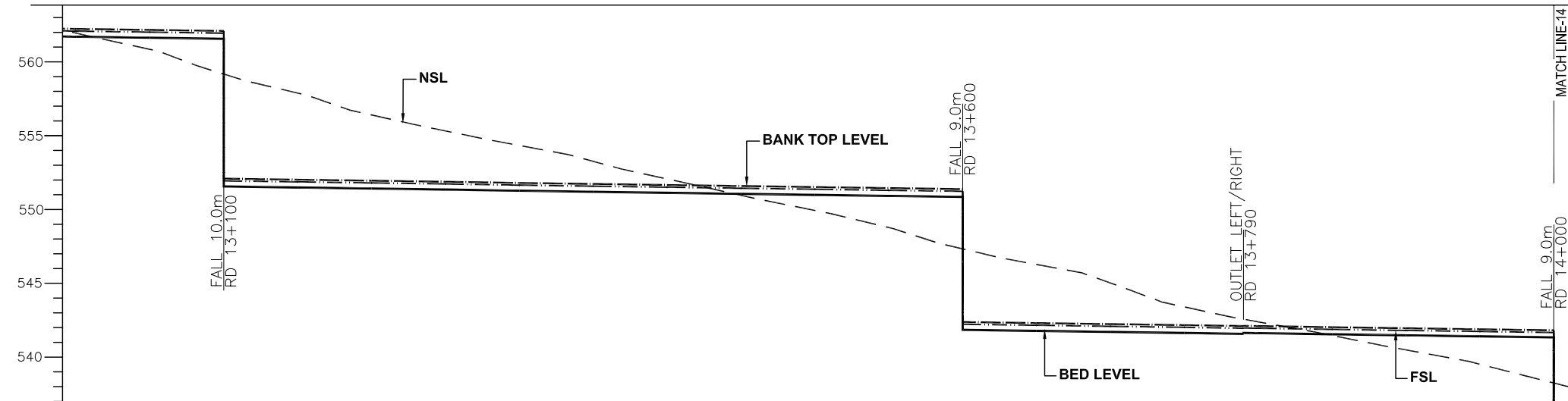
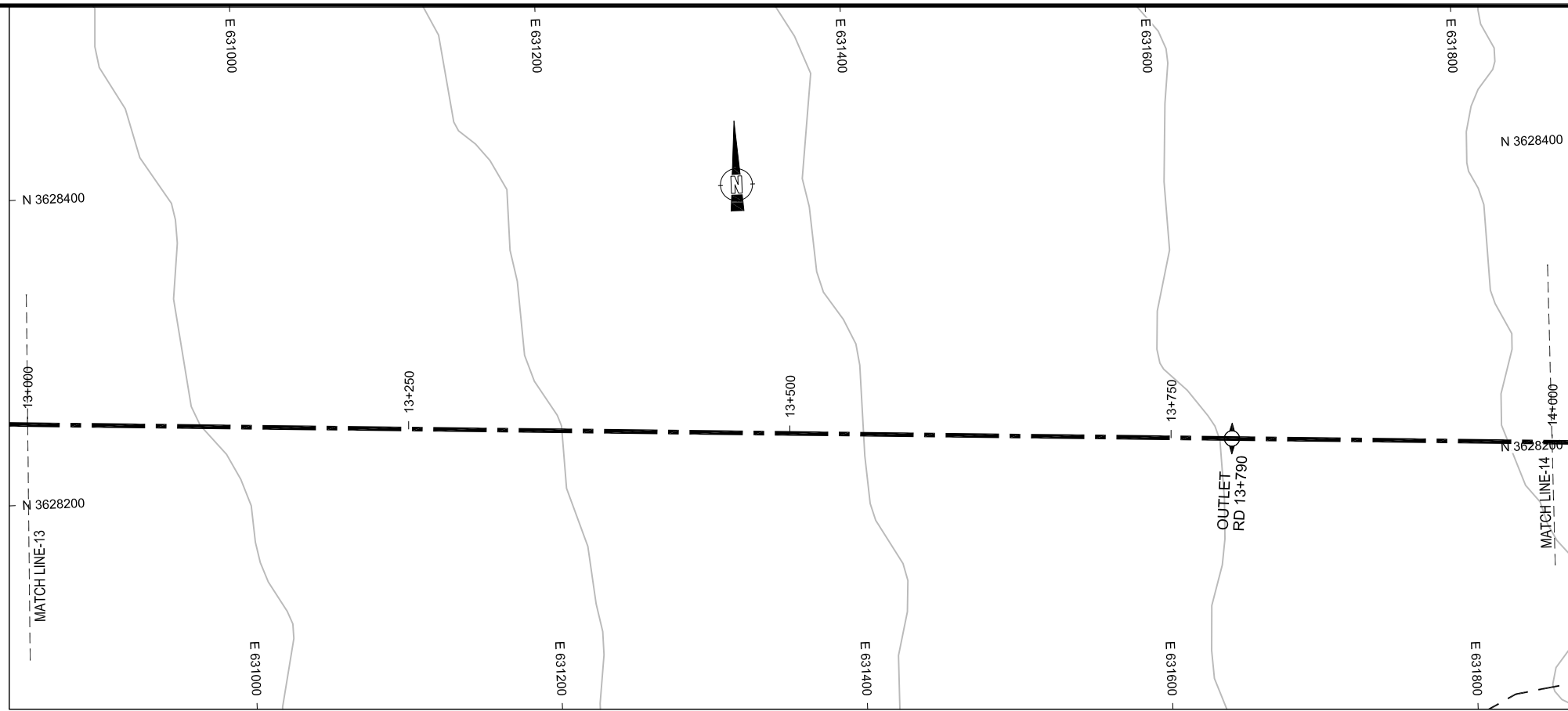
TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

MAIN CANAL PLAN & PROFILE
RD 12+000 TO RD 13+000

DESIGN DATA	VELOCITY (m/sec)		MANNING'S n / TYPE		DISCHARGE (CumeC)		FSD (m)		TOP WIDTH (m)												
	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right											
VELOCITY (m/sec)	1.03						1.0		0.94												
MANNING'S n / TYPE	0.014						0.014		0.014												
DISCHARGE (CumeC)	0.397						0.357		0.282												
FSD (m)	0.45						0.43		0.38												
TOP WIDTH (m)	0.76						0.76		0.76												
BANK TOP LEVEL (BTL)	580.48 580.48	580.41 580.34	580.27 580.29	580.19	580.12 572.12	572.05	571.98	571.91	571.83	571.76	571.69	571.62	571.55	571.48 562.48	562.41	562.34	562.27	562.19	562.12 562.13	562.06 562.06	
DESIGN FSL	580.33 580.33	580.26 580.19	580.12 580.12	580.04	579.97 571.97	571.90	571.83	571.76	571.68	571.61	571.54	571.47	571.40	571.33 562.33	562.26	562.19	562.12	562.04	561.97 561.98	561.91 561.91	
DESIGN BED LEVEL (DBL)	579.88 579.88	579.81 579.74	579.67 579.69	579.61	579.54 571.54	571.47	571.40	571.33	571.25	571.18	571.11	571.04	570.97	570.90 561.90	561.83	561.76	561.69	561.61	561.54 561.60	561.53 561.53	
NSL	582.21 582.21	580.94 580.94	579.37 579.30	577.87	576.22 574.60	573.77	573.38	573.00	571.85	570.52	569.40	568.53	568.53	567.62 566.09	565.19	564.47	563.49	563.49	561.10 561.10	561.91 561.91	
R.D	12+000 12+000	12+050	12+100	12+145 12+150	12+200	12+250 12+250	12+300	12+350	12+400	12+450	12+500	12+550	12+600	12+650	12+700 12+700	12+750	12+800	12+850	12+900	12+950 12+950	13+000 13+000

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct 2021
DRG.No:- SHD-TD-IR-15		SHEET:-		SUB SH.-	

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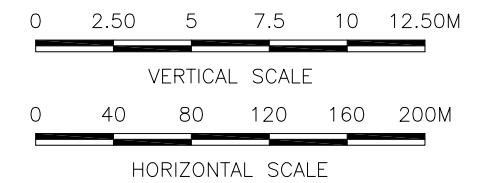


NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND

- AQUEDUCT
- MAIN CANAL
- EXISTING ROAD
- VILLAGES/HOUSES
- EXISTING COMMAND AREA
- CONTOUR
- OUTLET
- DRAINAGE CULVERT
- NULLAH
- BANK
- FSL
- BED
- NSL



REFERENCE DRAWINGS :-

SHD-TD-IR-01

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.

CASCAD GROUP
OF ENGINEERING & CONSULTANTS

PERFECT ENGINEERING &
MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

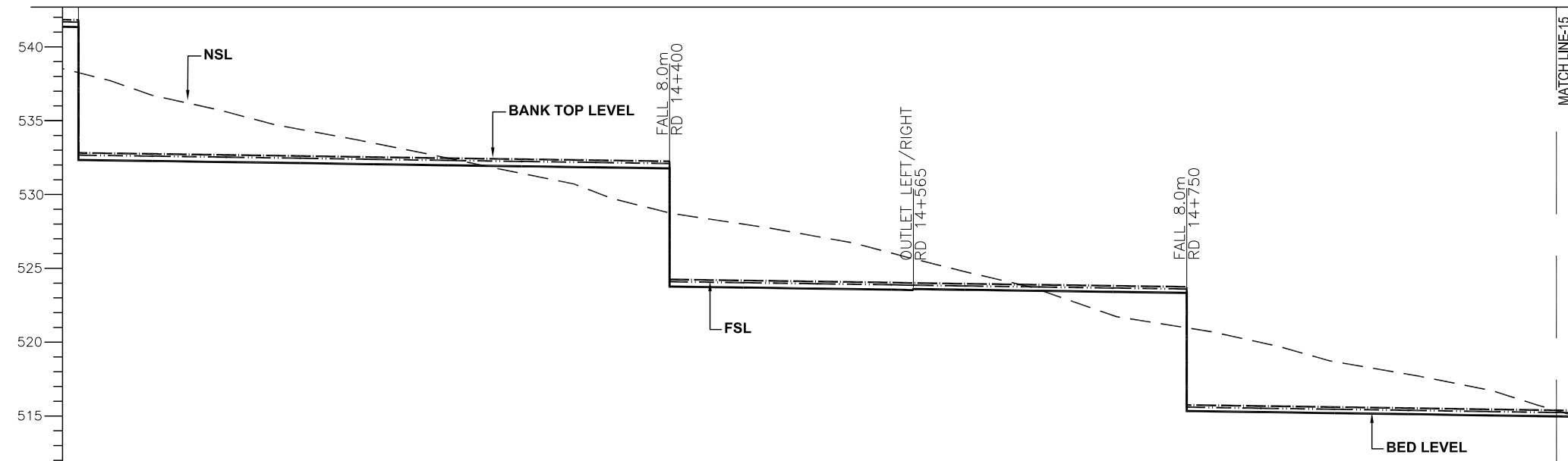
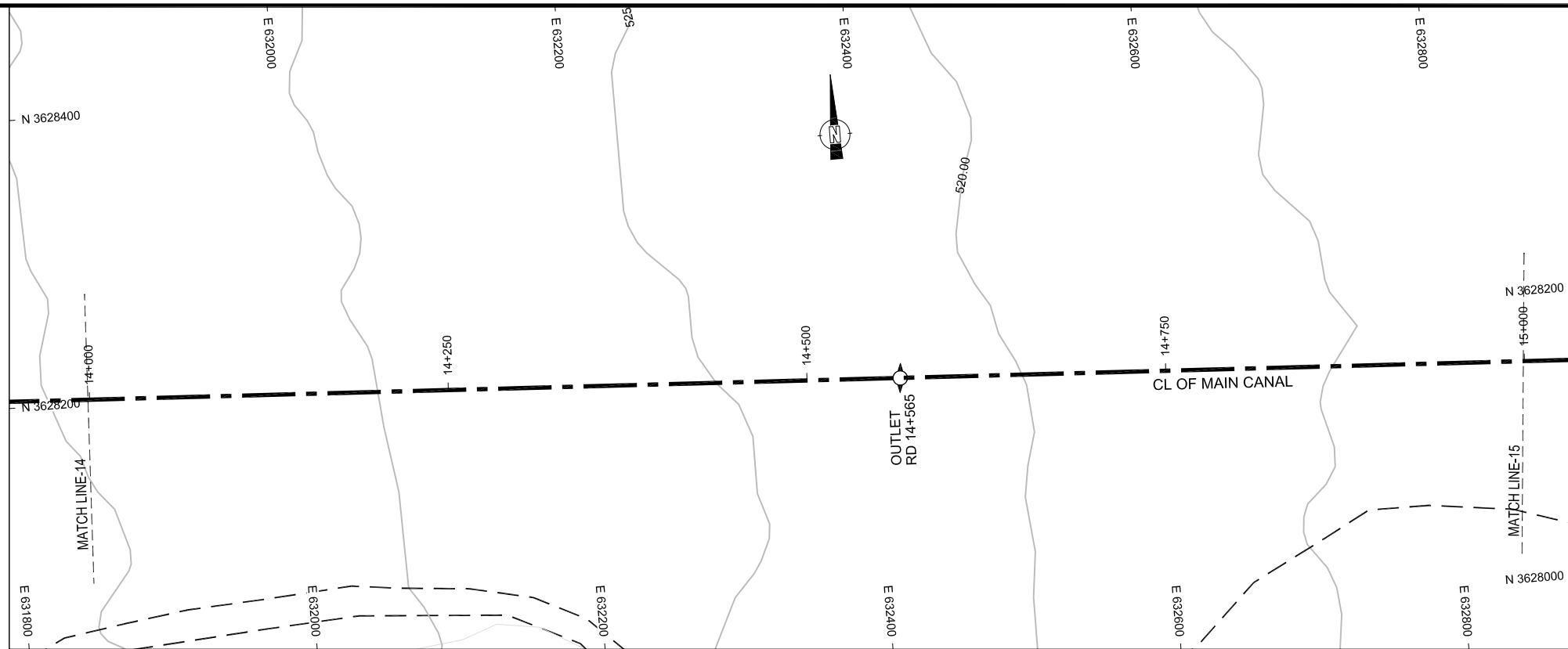
TITLE:
MAIN CANAL PLAN & PROFILE
RD 13+000 TO RD 14+000

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Show	Oct, 2021

DRG.No:- SHD-TD-IR-16 SHEET:- SUB SH.- ----

DESIGN DATA	VELOCITY (m/sec)		0.94		0.86	
	MANNING'S n / TYPE		0.014		0.014	
DISCHARGE (Cumec)		0.282		0.203		
FSD (m)		0.38		0.33		
TOP WIDTH (m)		0.76		0.76		
BANK TOP LEVEL (BTL)	562.06 562.06	561.99 561.92 551.92	551.85 551.78 551.71 551.63 551.56 551.48 551.41 551.34 551.27 551.20 551.13 551.21 551.21 542.14 542.07 542.00	541.94 541.94 541.95 541.86 541.79 541.72 541.65 532.65	541.94 541.94 541.95 541.86 541.79 541.72 541.65 532.65	541.65 532.65
DESIGN FSL	561.91 561.91	561.84 561.77 551.77	551.70 551.63 551.56 551.48 551.41 551.34 551.27 551.20 551.13 551.06 551.06 542.06 541.99 541.92 541.85	541.79 541.79 541.80 541.71 541.64 541.57 541.50 532.50	541.79 541.79 541.80 541.71 541.64 541.57 541.50 532.50	541.50 532.50
DESIGN BED LEVEL (DBL)	561.53 561.53	561.46 561.39 551.39	551.32 551.25 551.18 551.10 551.03 550.96 550.89 550.82 550.75 550.68 541.68 541.61 541.54 541.47	541.41 541.41 541.46 541.47 541.38 541.31 541.24 541.17 532.17	541.41 541.41 541.46 541.47 541.38 541.31 541.24 541.17 532.17	541.17 532.17
NSL	561.10 561.10	559.41 559.41 558.13	556.65 555.57 554.59 553.51 552.32 551.21 550.19 549.03 547.58 546.53 547.58 545.26 543.65	539.77 538.50 538.50 535.84 535.84	539.77 538.50 538.50 535.84 535.84	535.84 535.84
R.D	13+000 13+000	13+050 13+100 13+100	13+150 13+200 13+250 13+300 13+350 13+400 13+450 13+500 13+550 13+600 13+600	13+650 13+700 13+750 13+790 13+800	13+850 13+900 13+950 14+000 14+000	14+000 14+000

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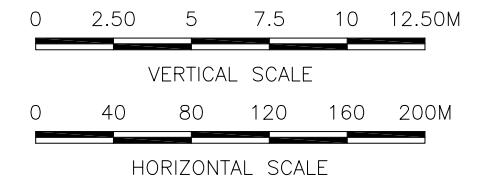


NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND

- AQUEDUCT
- MAIN CANAL
- EXISTING ROAD
- VILLAGES/HOUSES
- EXISTING COMMAND AREA
- CONTOUR
- OUTLET
- DRAINAGE CULVERT
- NULLAH
- BANK
- FSL
- BED
- NSL



REFERENCE DRAWINGS :-

SHD-TD-IR-01

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.

CASCADIE GROUP
OF ENGINEERING & CONSULTANTS

PERFECT ENGINEERING &
MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PG-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

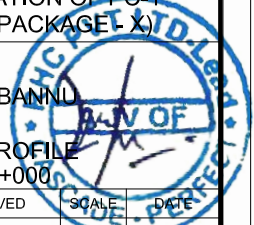
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

TITLE:
MAIN CANAL PLAN & PROFILE
RD 14+000 TO RD 15+000

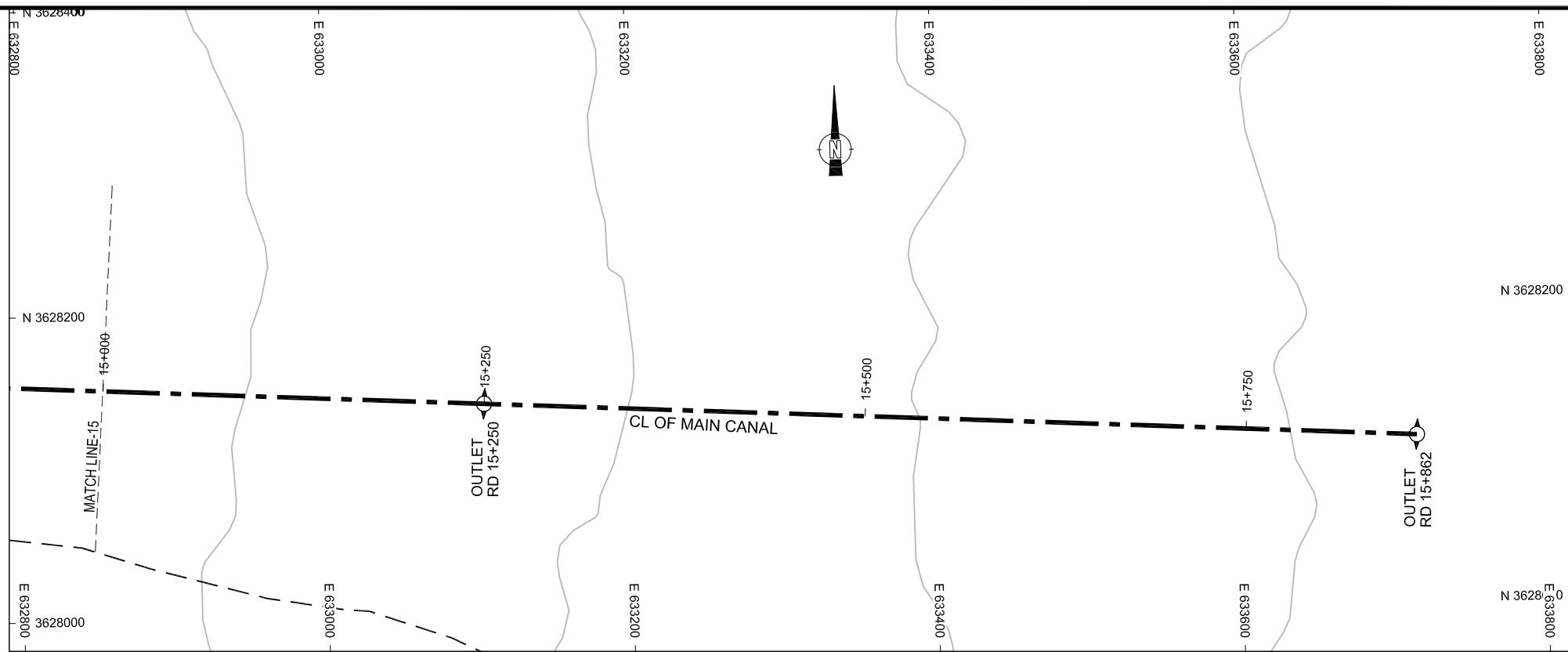
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	1:1	Oct, 2021

DRG.No:- SHD-TD-IR-17 SHEET:- SUB SH.- ----

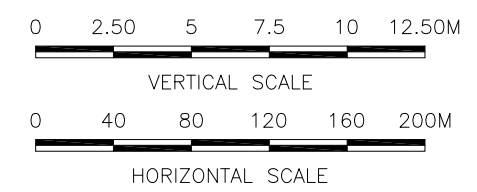
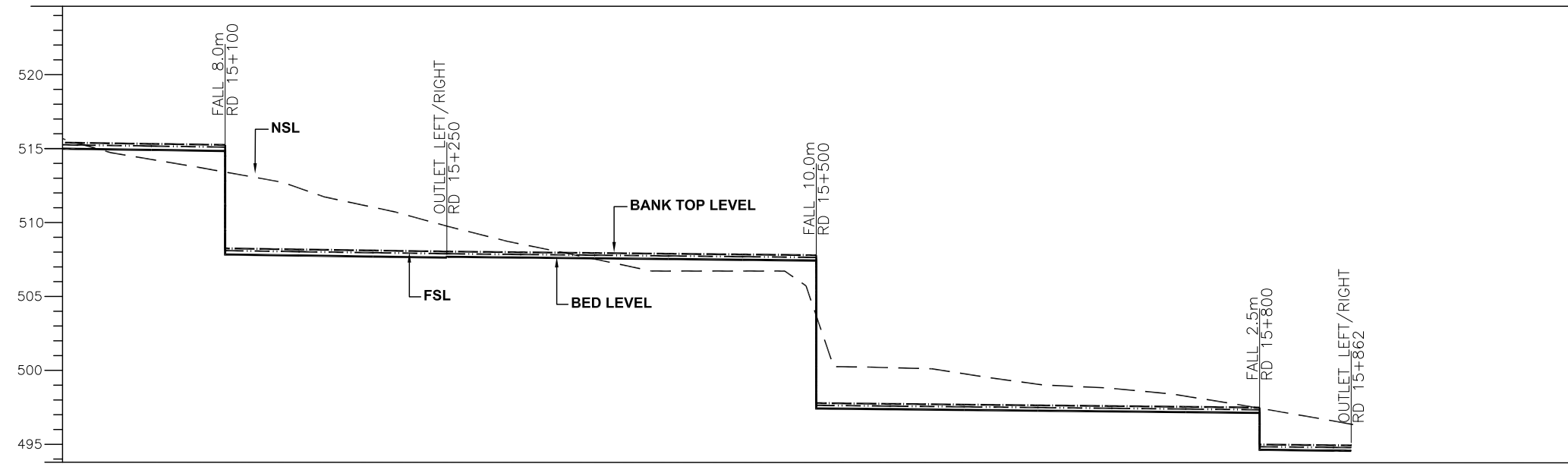
DESIGN DATA	VELOCITY (m/sec)		0.86		0.76																						
	MANNING'S n / TYPE		0.014		0.014																						
DISCHARGE (Cumecc)		0.203		0.13																							
FSD (m)		0.33		0.26																							
TOP WIDTH (m)		0.76		0.76																							
BANK TOP LEVEL (BTL)	541.65 532.65	532.58	532.51	532.44	532.36	532.29	532.22	532.15	532.08	532.08	524.01	523.94	523.87	523.84	523.84	523.84	523.79	523.72	523.65	523.58	515.58	515.51	515.44	515.37	515.29	515.22	515.22
DESIGN FSL	541.50 532.50	532.43	532.36	532.29	532.21	532.14	532.07	532.00	531.93	523.93	523.86	523.79	523.72	523.69	523.69	523.69	523.64	523.57	523.50	523.43	515.43	515.36	515.29	515.22	515.14	515.07	515.07
DESIGN BED LEVEL (DBL)	541.17 532.17	532.10	532.03	531.96	531.88	531.81	531.74	531.67	531.60	523.60	523.53	523.46	523.39	523.36	523.36	523.36	523.38	523.31	523.24	523.17	515.17	515.10	515.03	514.96	514.88	514.81	514.81
NSL	536.97 535.84	534.67	533.73	532.71	531.68	530.38	529.00	529.00	528.25	527.41	526.29	525.89	525.89	525.02	523.79	523.69	523.69	523.57	520.23	518.94	518.08	517.11	515.62	514.52	513.67	513.67	513.67
R.D	14+000 14+000	14+050	14+100	14+150	14+200	14+250	14+300	14+350	14+400 14+400	14+450	14+500	14+550	14+565 14+565	14+565 14+565	14+600	14+650	14+700	14+750 14+750	14+800	14+850	14+900	14+950	15+000 15+000	15+000 15+000	15+000 15+000	15+000 15+000	15+000 15+000



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- NOTES:-**
1. ALL LEVELS AND DIMENSIONS ARE IN METER
- LEGEND**
- AQUEDUCT
 - MAIN CANAL
 - EXISTING ROAD
 - VILLAGES/HOUSES
 - EXISTING COMMAND AREA
 - CONTOUR
 - OUTLET
 - DRAINAGE CULVERT
 - NULLAH
 - BANK
 - FSL
 - BED
 - NSL



REFERENCE DRAWINGS :-

SHD-TD-IR-01

DRAWING IS RELEASED

FOR TENDER ONLY

DESIGN DATA	DESIGN DATA																									
	VELOCITY (m/sec)	0.76														0.55										
MANNING'S n / TYPE	0.014																									
DISCHARGE (Cumec)	0.13																									
FSD (m)	0.26																									
TOP WIDTH (m)	0.76																									
BANK TOP LEVEL (BTL)	515.22	515.22	515.15	515.08	515.08	508.01	507.94	507.87	507.87	507.87	507.82	507.77	507.72	507.67	507.62	507.62	497.62	497.57	497.52	497.47	497.42	497.37	497.32	494.82	494.77	494.76
DESIGN FSL	515.07	515.07	515.00	514.93	507.93	507.86	507.79	507.72	507.72	507.72	507.67	507.62	507.57	507.52	507.47	497.47	497.42	497.37	497.32	497.32	497.27	497.22	497.17	494.67	494.62	494.61
DESIGN BED LEVEL (DBL)	514.81	514.81	514.74	514.67	507.67	507.60	507.53	507.46	507.46	507.46	507.41	507.36	507.31	507.26	497.26	497.21	497.16	497.11	497.06	497.06	497.01	496.96	494.46	494.40	494.40	494.40
NSL	513.67	513.67	512.57	511.29	510.00	510.00	510.00	510.00	508.80	507.78	507.00	507.00	505.14	505.14	503.60	502.34	500.94	499.89	498.75	497.70	497.70	496.84	495.94	495.94	495.94	495.94
R.D	15+000	15+000	15+050	15+100	15+100	15+150	15+200	15+250	15+250	15+300	15+350	15+400	15+450	15+500	15+500	15+550	15+600	15+650	15+700	15+750	15+800	15+800	15+850	15+862	15+862	

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

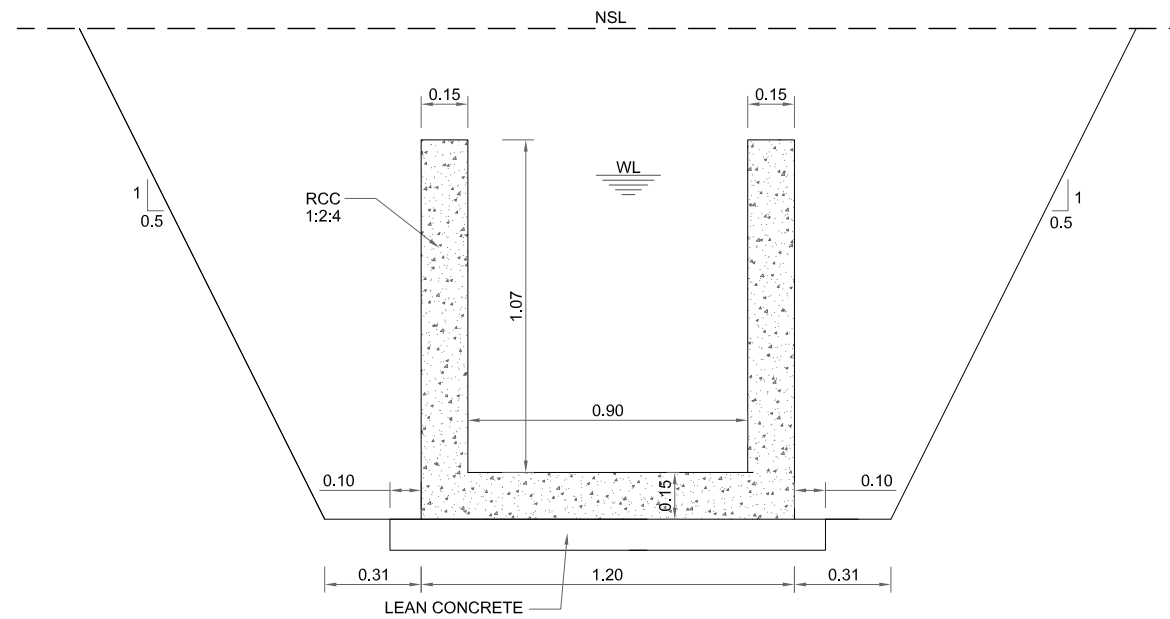
CONSULTANTS:
A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP OF ENGINEERING & CONSULTANTS
PEMC PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

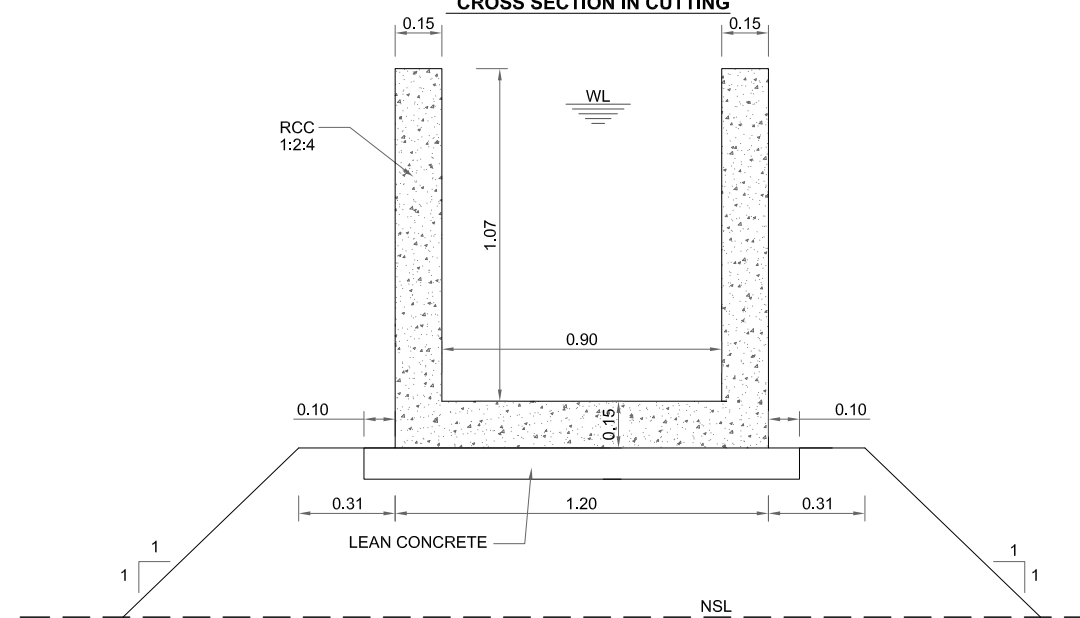
TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
MAIN CANAL PLAN & PROFILE
RD 15+000 TO RD 15+862

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021

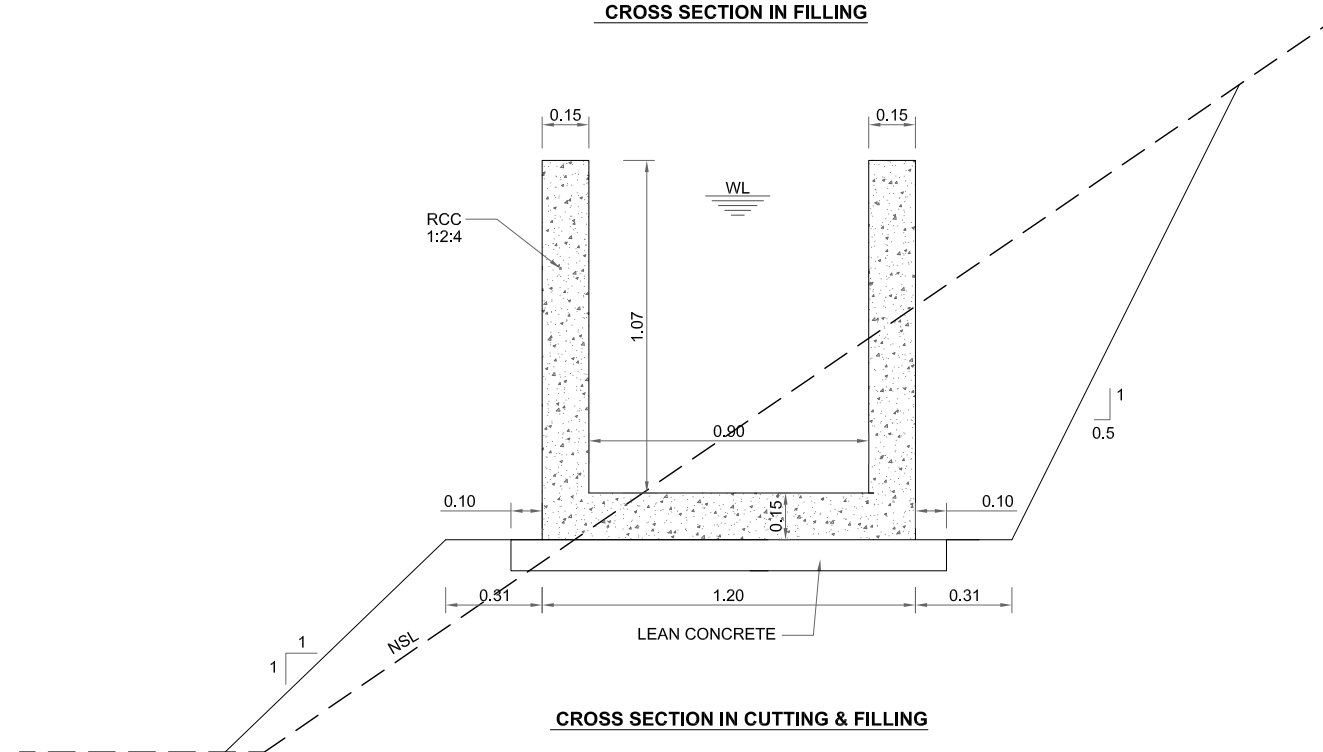
DRG.No:- SHD-TD-IR-18 SHEET:- SUB SH.- ----



CROSS SECTION IN CUTTING



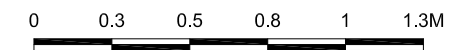
CROSS SECTION IN FILLING



CROSS SECTION IN CUTTING & FILLING

NOTES:-

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS UNLESS INDICATED OTHERWISE.



REFERENCE DRAWINGS :-

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:

PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS:

- A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
- CASCADE GROUP**
OF ENGINEERING & CONSULTANTS
- PERFECT ENGINEERING & MANAGEMENT CONSULTANTS**

PROJECT:

CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PG-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

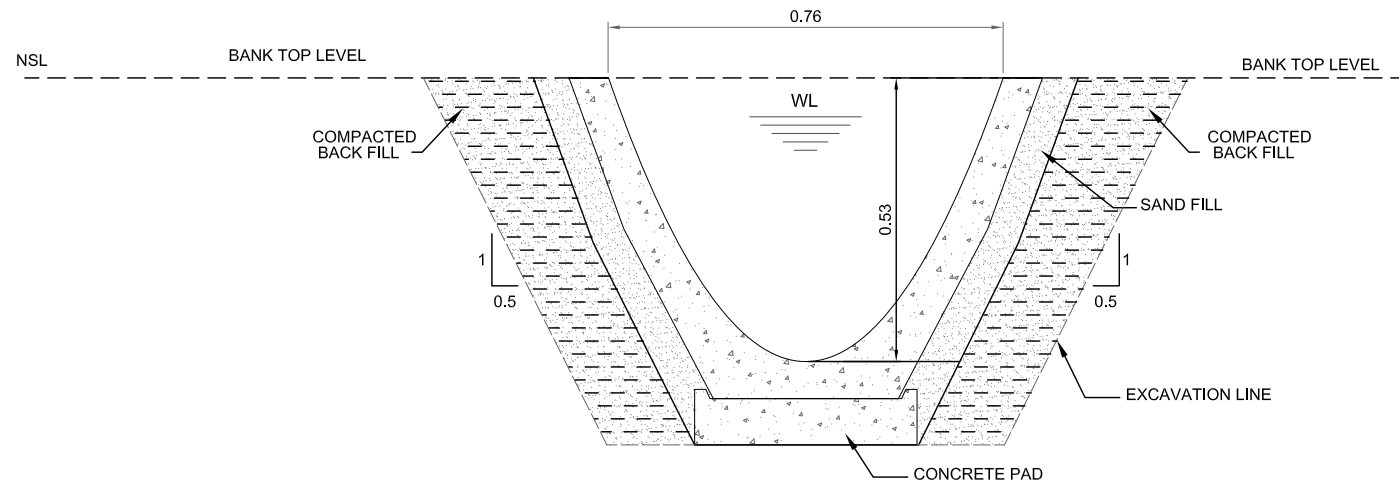
TITLE:

TYPICAL X- SECTIONS OF RECTANGULAR CANAL

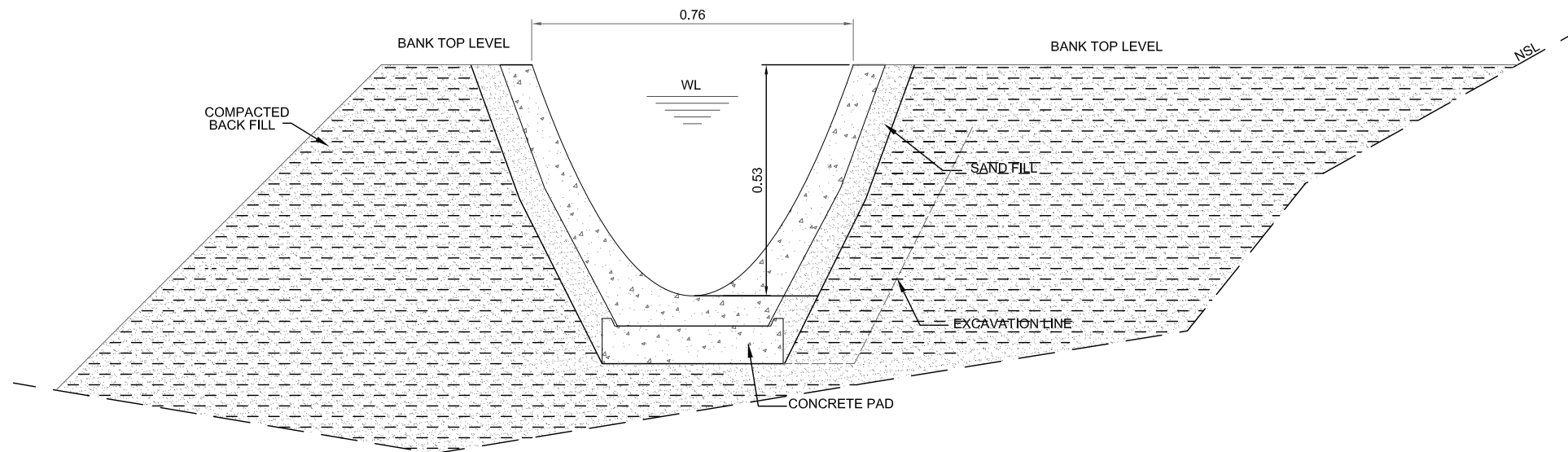
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.A	A.I	Zeeshan S.	Zafar Iqbal	1:1	JUNE-2021

DRG.No:- SHD-TD-IR-19 SHEET:-- SUB SH.- ----

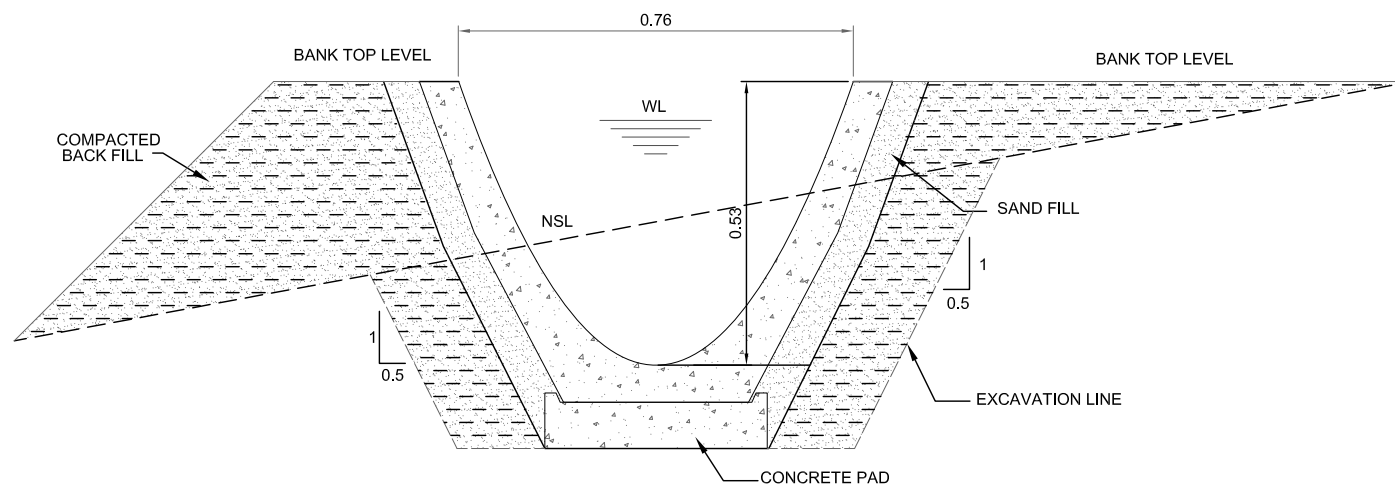
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CROSS SECTION IN CUTTING



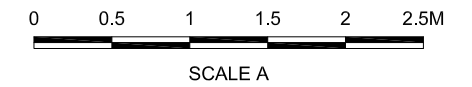
CROSS SECTION IN FILLING



CROSS SECTION IN CUTTING & FILLING

NOTES:-

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS UNLESS INDICATED OTHERWISE.



REFERENCE DRAWINGS :-



DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:

PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS:

- A J.V OF
- RHC** REHMAN HABIB CONSULTANTS (PVT) LTD.
-  CASCADE GROUP OF ENGINEERING & CONSULTANTS
-  PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:

CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PG-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

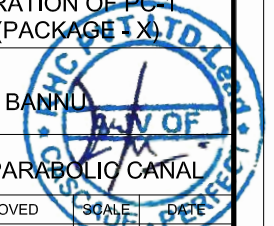
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

TITLE:

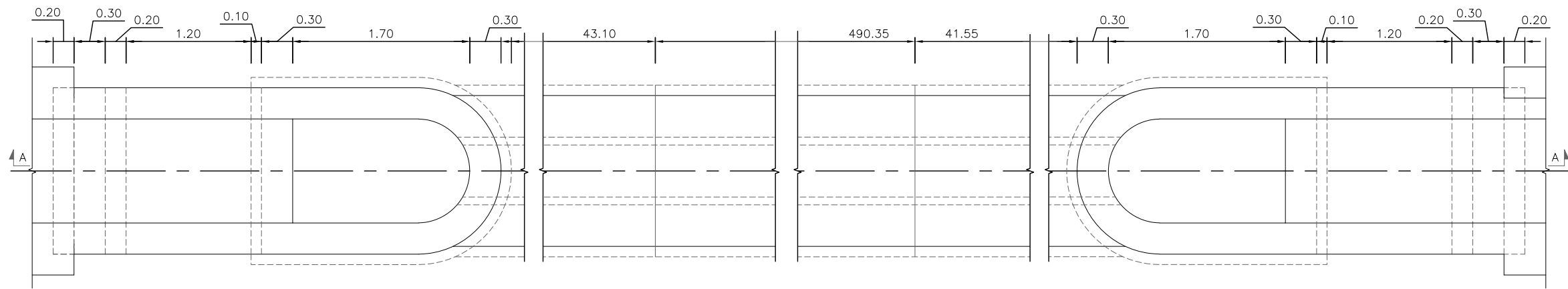
TYPICAL CROSS SECTIONS OF PARABOLIC CANAL

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	1:1	JUNE-2021

DRG.No:- SHD-TD-IR-20 SHEET:-- SUB SH.- ----

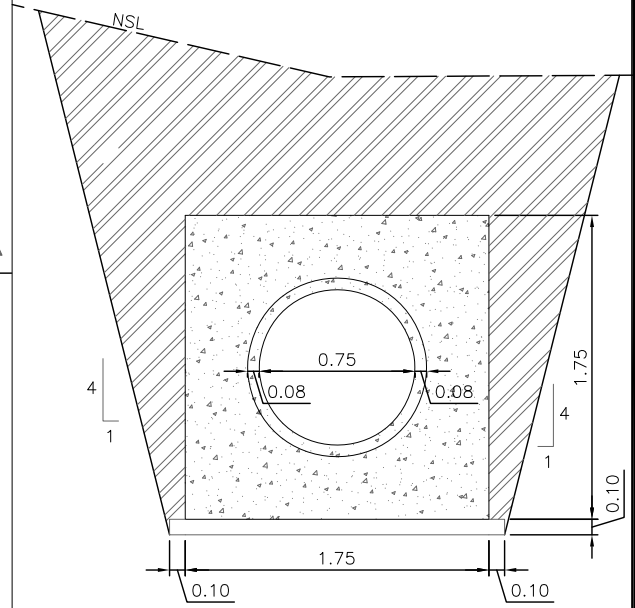


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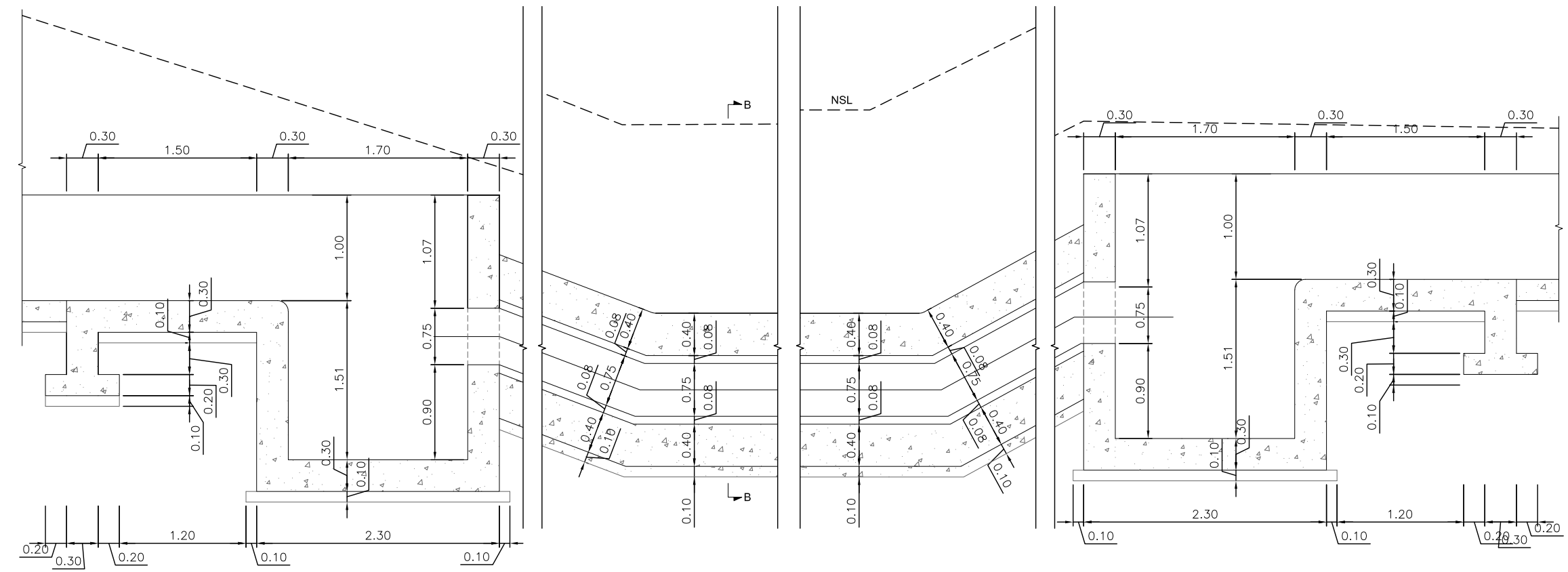
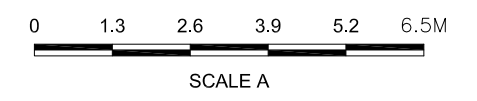


PLAN

NOTES:-
 1. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS UNLESS INDICATED OTHERWISE.



SECTION B-B



SECTION A-A

REFERENCE DRAWINGS :-

DRAWING IS RELEASED
 FOR TENDER ONLY

CLIENT:
 PSU SMALL DAM SECTION MERGED AREA IRRIGATION DEPARTMENT, KPK.

CONSULTANTS:
 A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP OF ENGINEERING & CONSULTANTS
PEMC PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

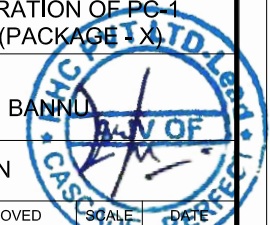
PROJECT:
 CONSULTANCY SERVICES FOR FEASIBILITY STUDY, DETAIL DESIGN AND PREPARATION OF PC-1 FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:
 SHAKTU DAM TRIBAL SUB-DIVISION BANNU

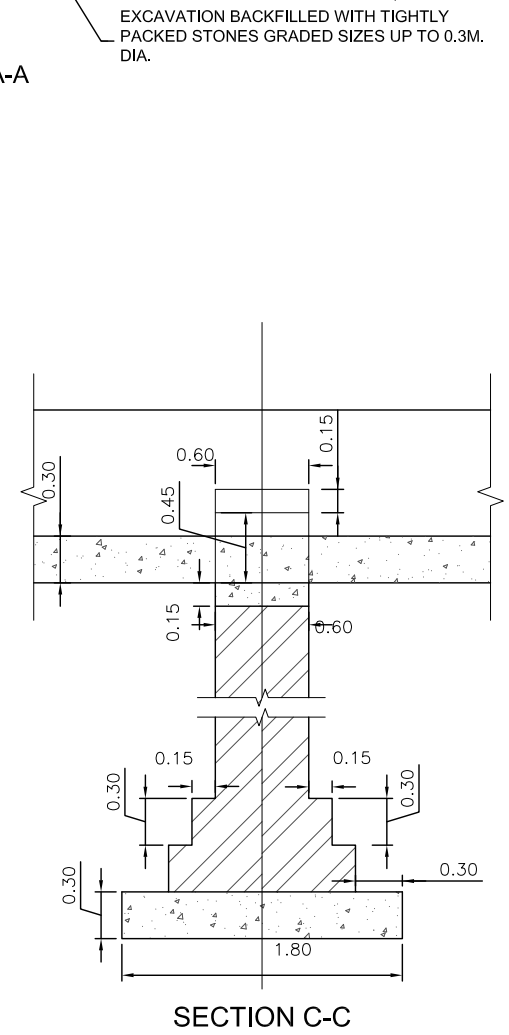
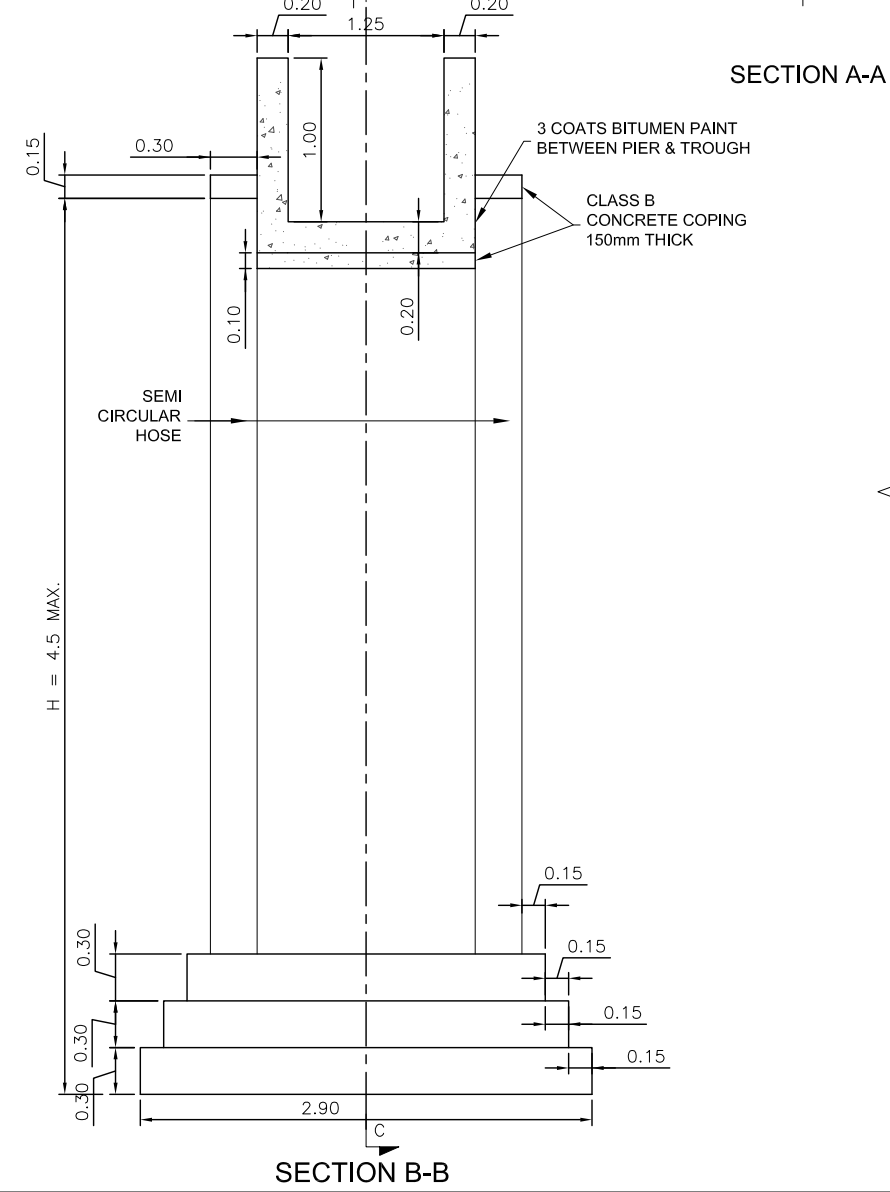
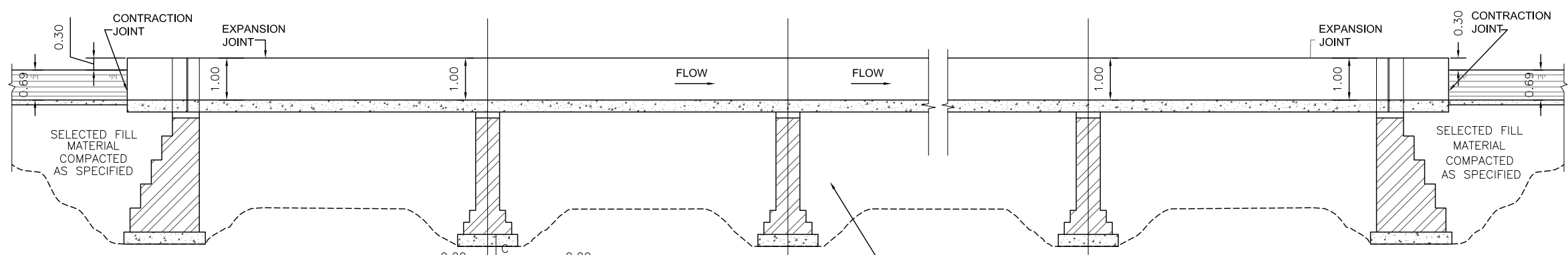
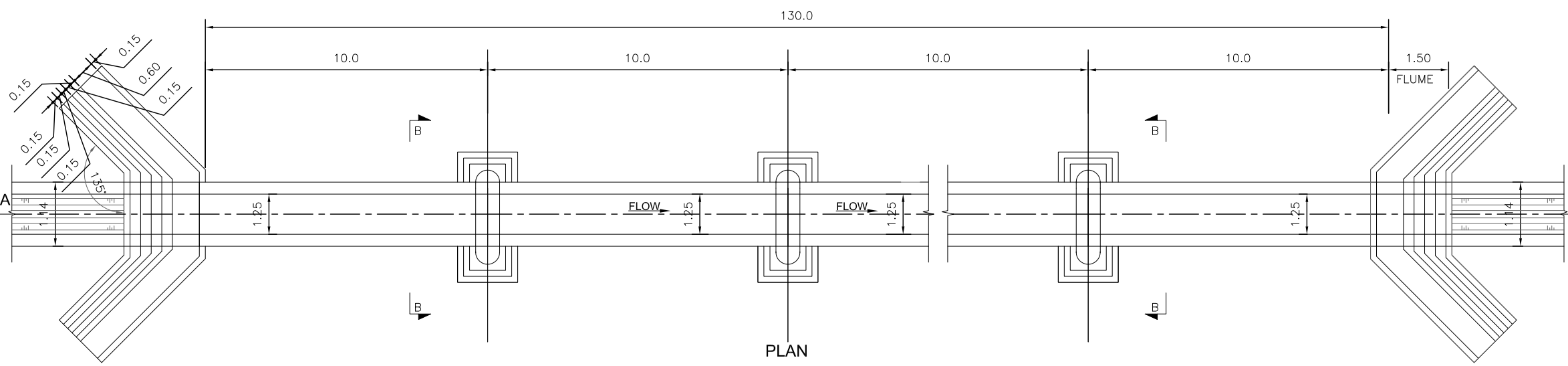
TITLE:
 CANAL SYPHON

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	1:1	JUNE-2021

DRG.No:- SHD-TD-IR-21 SHEET:- SUB SH.- ----



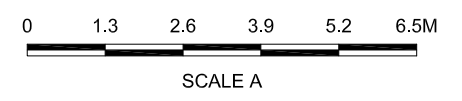
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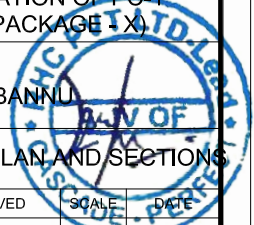
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NOTES:-

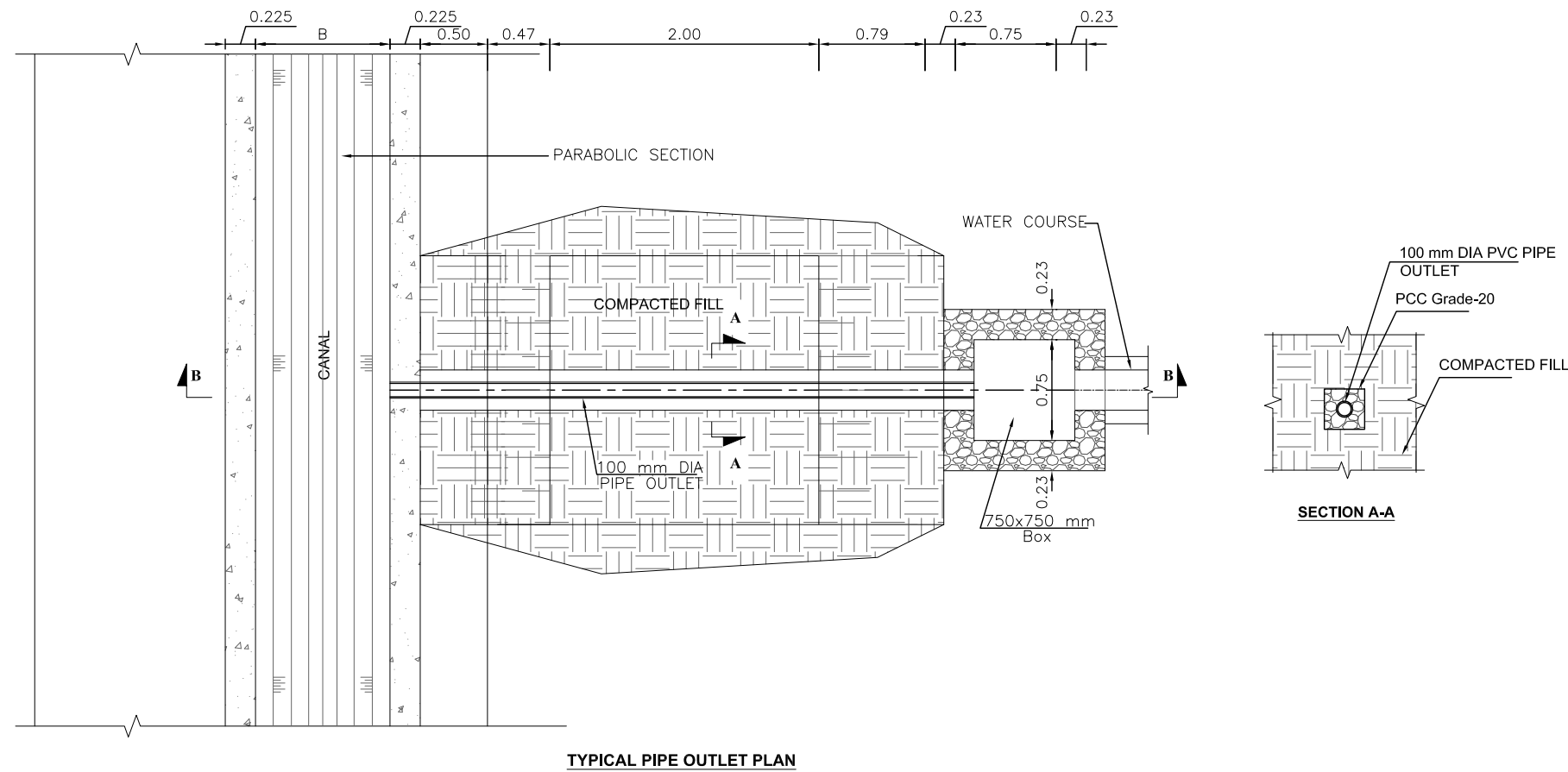
1. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS UNLESS INDICATED OTHERWISE.



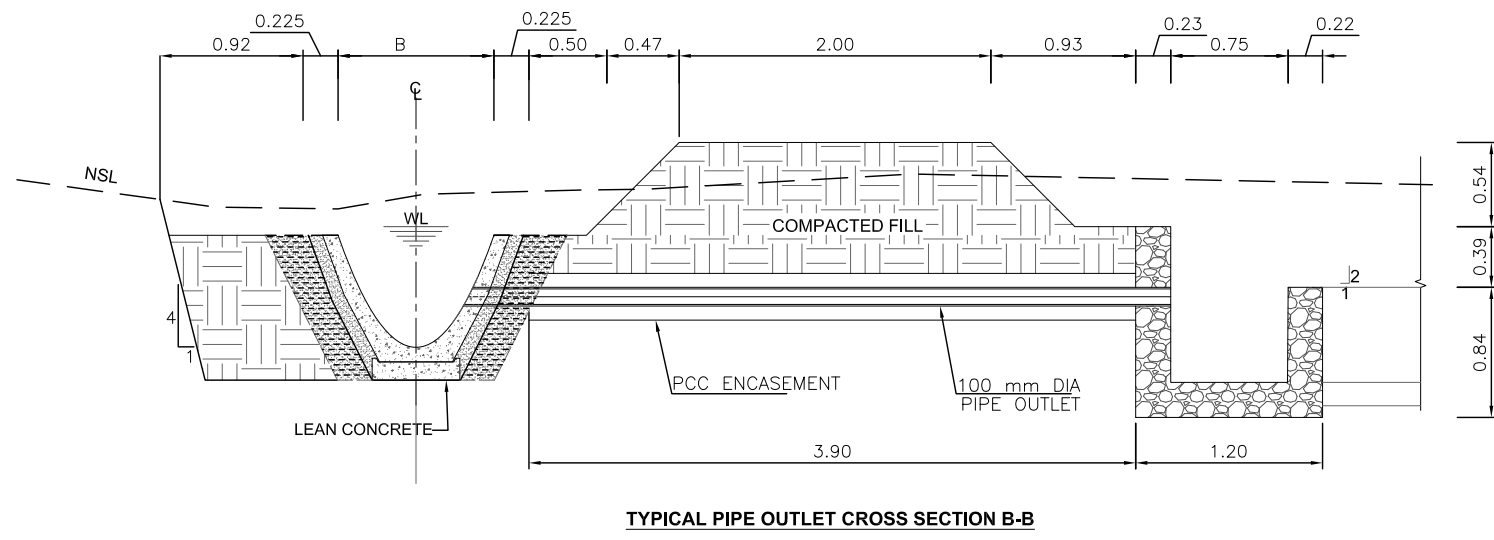
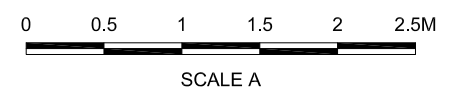
REFERENCE DRAWINGS :-					
DRAWING IS RELEASED					
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CLIENT: PSU SMALL DAM SECTION MERGED AREA IRRIGATION DEPARTMENT, KPK.					
CONSULTANTS: A J.V OF RHC REHMAN HABIB CONSULTANTS (PVT) LTD. CASCADE GROUP OF ENGINEERING & CONSULTANTS PEMC PERFECT ENGINEERING & MANAGEMENT CONSULTANTS					
PROJECT: CONSULTANCY SERVICES FOR FEASIBILITY STUDY, DETAIL DESIGN AND PREPARATION OF PG-1 FOR 5 SMALL DAMS IN FATA (PACKAGE 1 X)					
SHAKTU DAM TRIBAL SUB-DIVISION BANNU					
TITLE: AQUEDUCT SINGLE TROUGH PLAN AND SECTIONS					
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	1:1	JUNE-2021
DRG.No:- SHD-TD-IR-22		SHEET:-		SUB SH.-	



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NOTES:-
 1. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS UNLESS INDICATED OTHERWISE.



REFERENCE DRAWINGS :-

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
 PSU SMALL DAM SECTION MERGED AREA IRRIGATION DEPARTMENT, KPK.

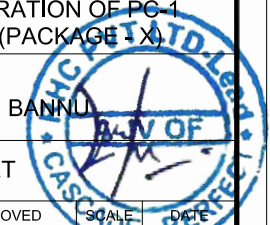
CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP OF ENGINEERING & CONSULTANTS
PERM PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
 CONSULTANCY SERVICES FOR FEASIBILITY STUDY, DETAIL DESIGN AND PREPARATION OF PG-1 FOR 5 SMALL DAMS IN FATA (PACKAGE 1 X)

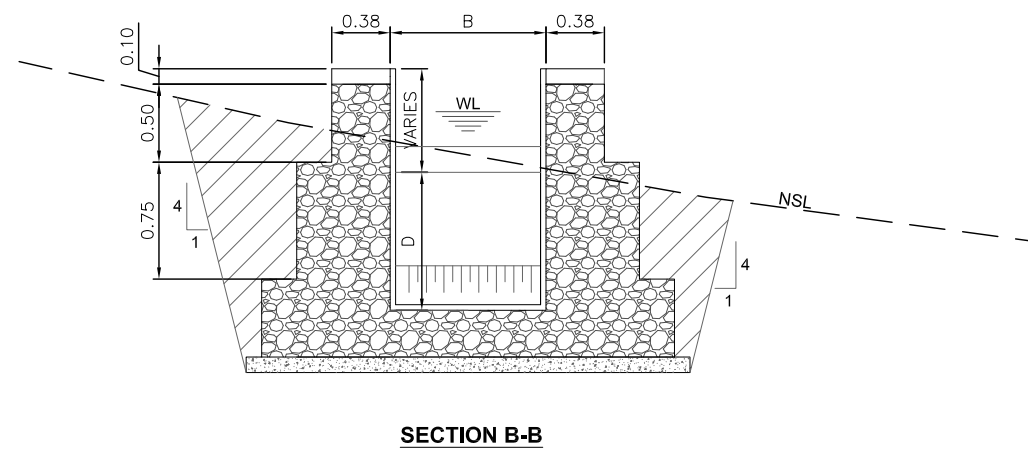
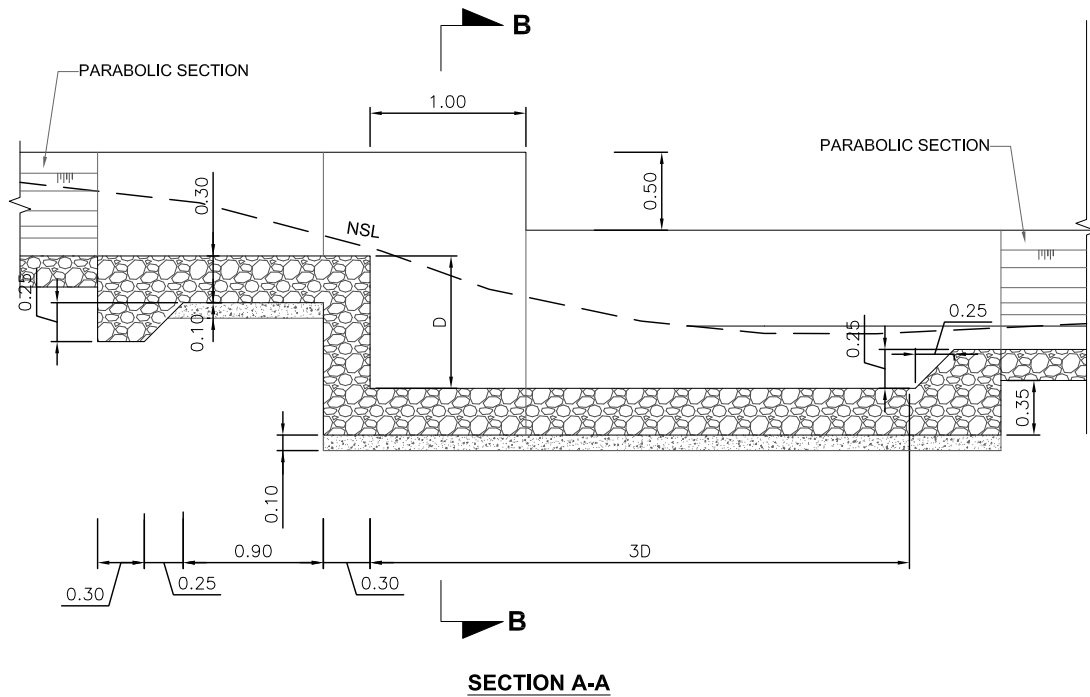
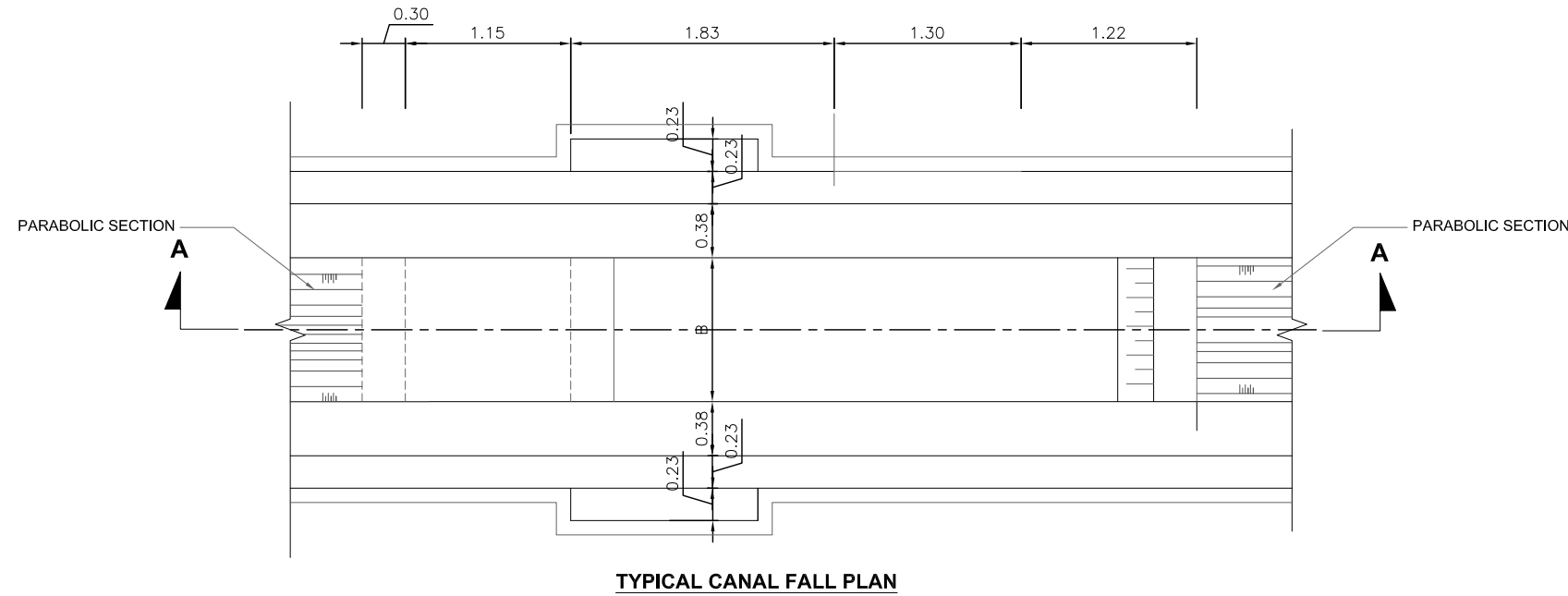
TITLE:
 SHAKTU DAM TRIBAL SUB-DIVISION BANNU
 TYPICAL PIPE OUTLET

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	1:1	JUNE-2021

DRG.No:- SHD-TD-IR-23 SHEET:- SUB SH.- ----

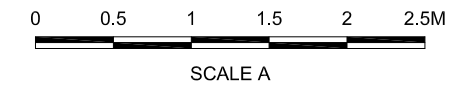


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NOTES:-

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS UNLESS INDICATED OTHERWISE.



REFERENCE DRAWINGS :-

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:

PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS:

- A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP OF ENGINEERING & CONSULTANTS
PEMC PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:

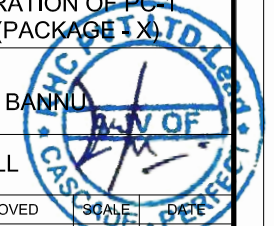
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PG-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

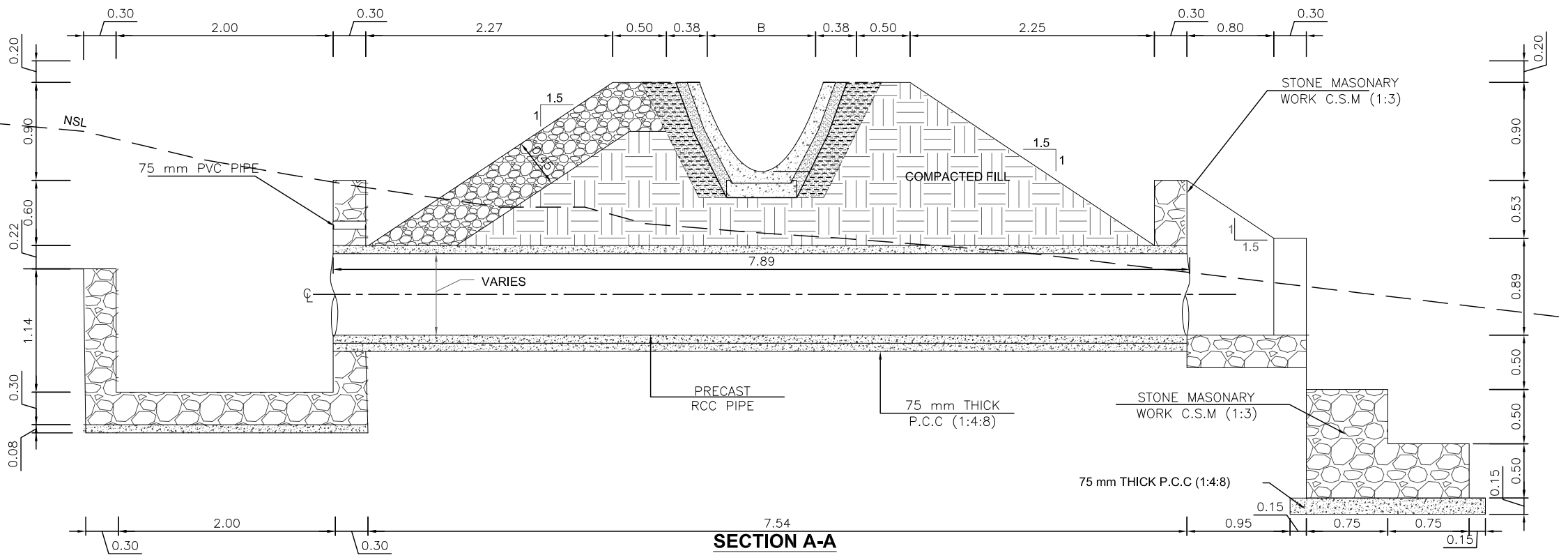
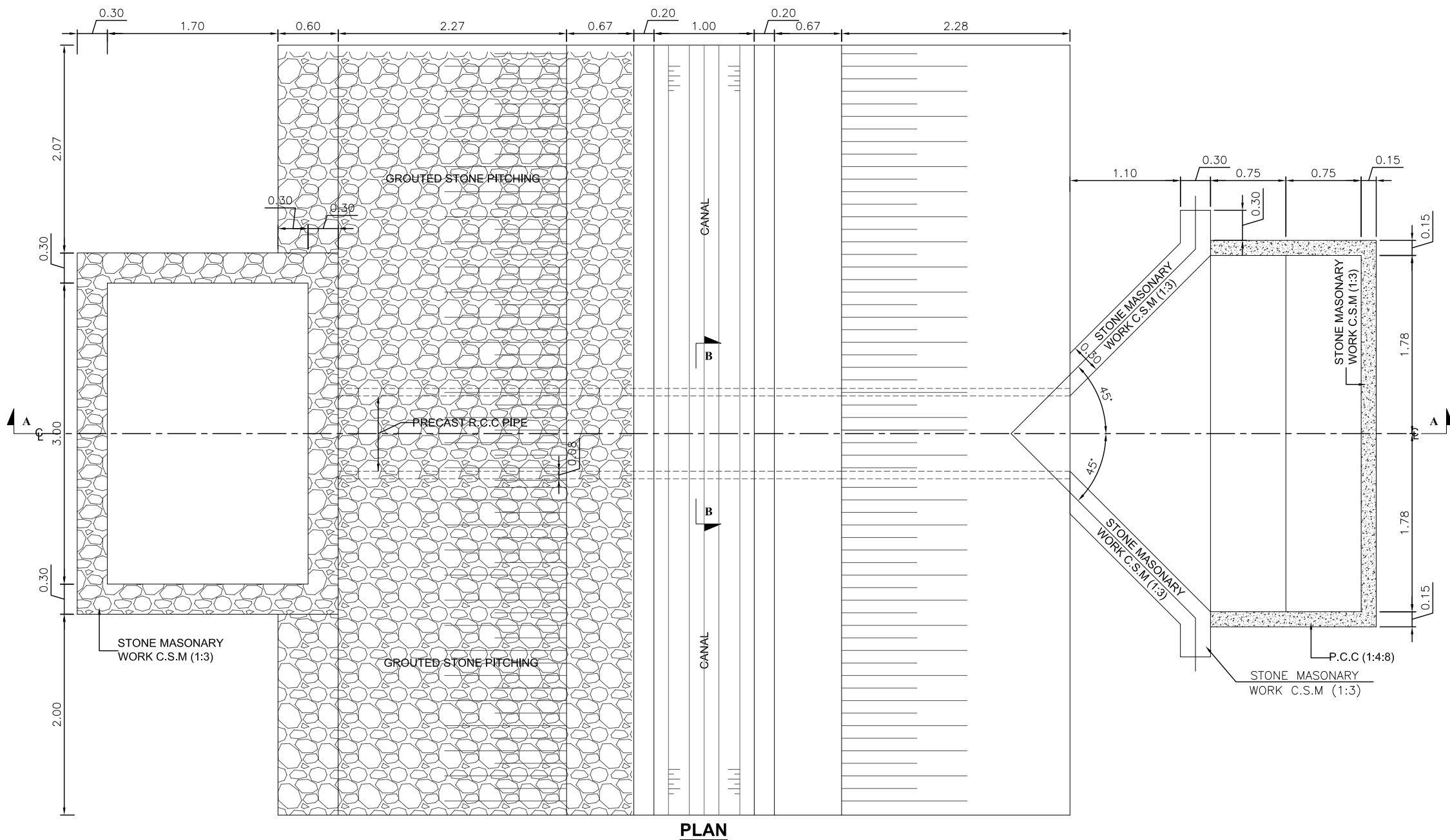
TITLE:

TYPICAL VERTICAL FALL

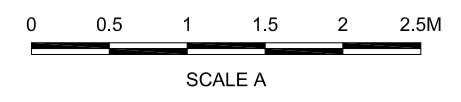
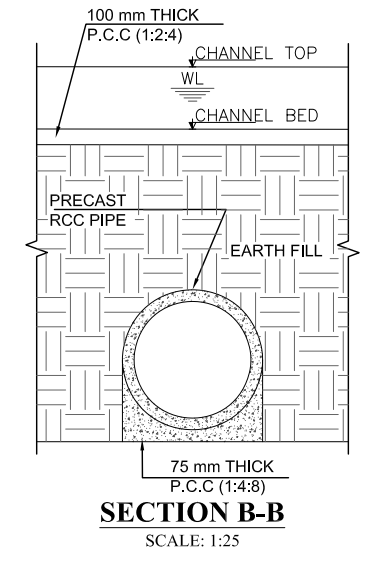
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Show	JUNE-2021
DRG.No:-	SHD-TD-IR-24	SHEET:-	SUB SH.-	----	----



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NOTES:-
 1. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS UNLESS INDICATED OTHERWISE.



REFERENCE DRAWINGS :-

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FOR TENDER ONLY

CLIENT:
 PSU SMALL DAM SECTION MERGED AREA IRRIGATION DEPARTMENT, KPK.

CONSULTANTS:
 A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP OF ENGINEERING & CONSULTANTS
PEMC PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

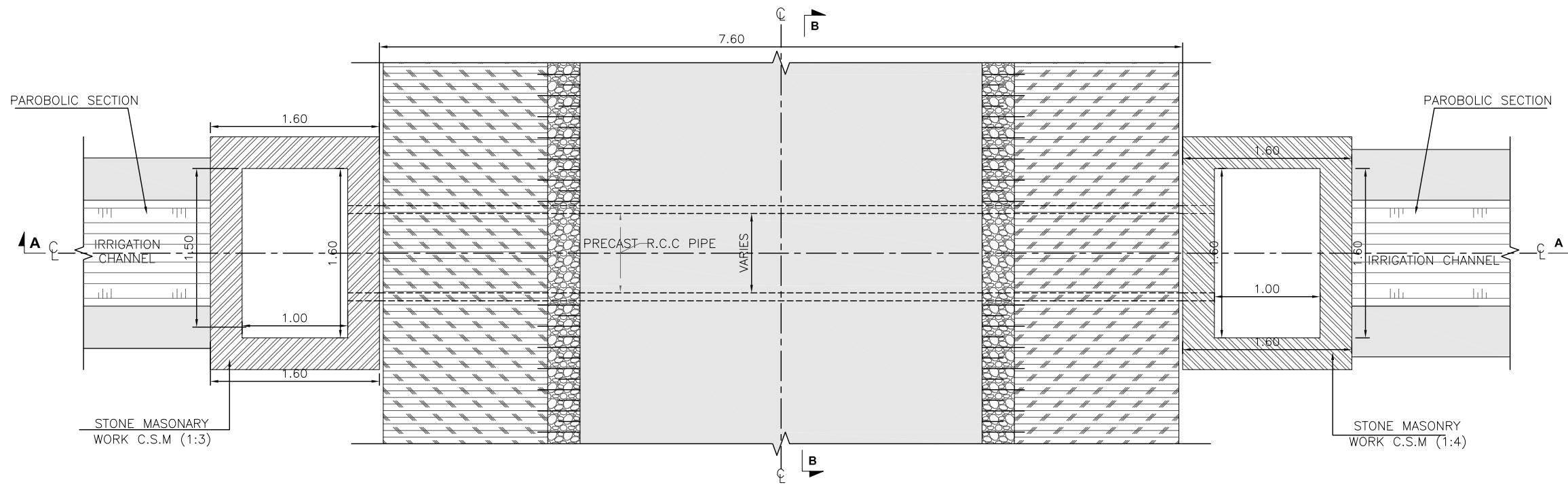
PROJECT:
 CONSULTANCY SERVICES FOR FEASIBILITY STUDY, DETAIL DESIGN AND PREPARATION OF PG-1 FOR 5 SMALLDAMS IN FATA (PACKAGE 1 X)

TITLE:
 SHAKTU DAM TRIBAL SUB-DIVISION BANNU
 DRAINAGE CULVERT

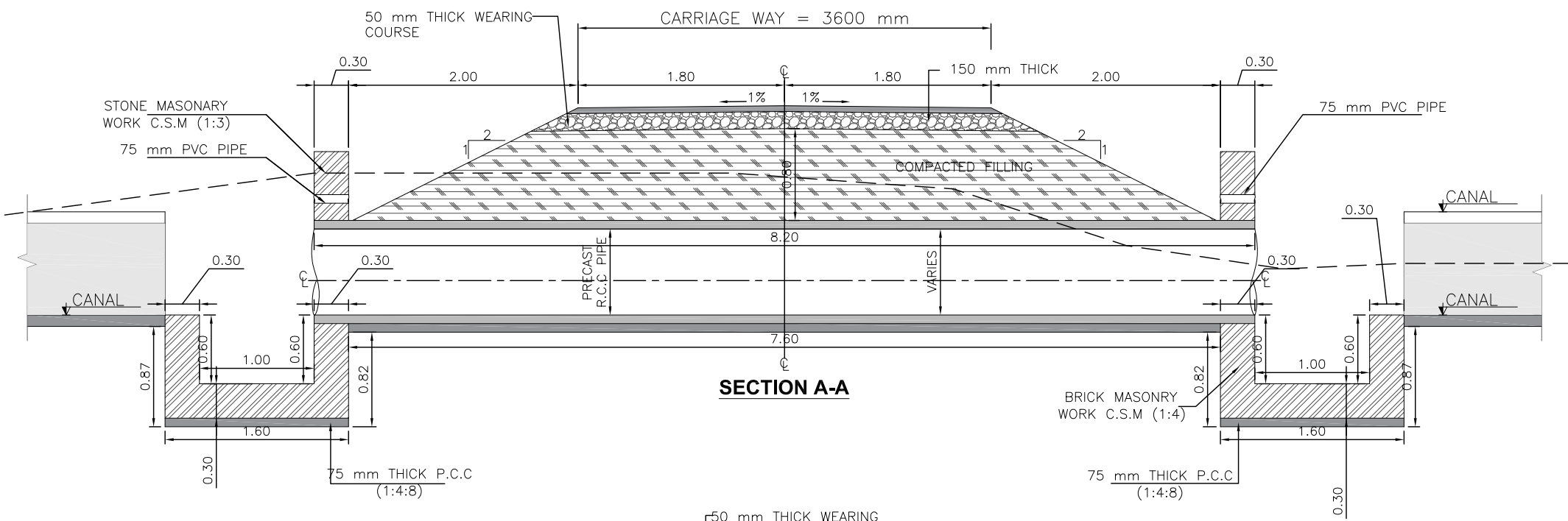
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M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	1:25	JUNE-2021

DRG.No:- SHD-TD-IR-25 **SHEET:-** SUB SH.- ----

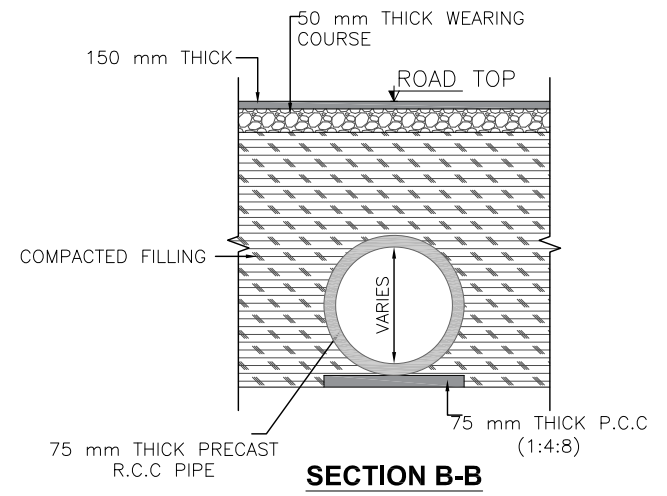
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PLAN



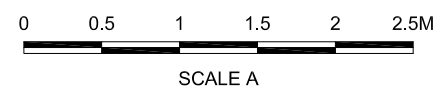
SECTION A-A



SECTION B-B

NOTES:-

1. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS UNLESS INDICATED OTHERWISE.



REFERENCE DRAWINGS :-

DRAWING IS RELEASED

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CLIENT:
PSU SMALL DAM SECTION MERGED AREA IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP OF ENGINEERING & CONSULTANTS
PEMC PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

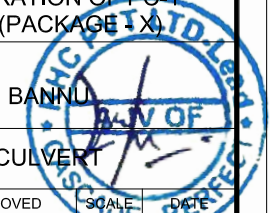
PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY, DETAIL DESIGN AND PREPARATION OF PC-1 FOR 5 SMALLDAMS IN FATA (PACKAGE 1 X)

SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

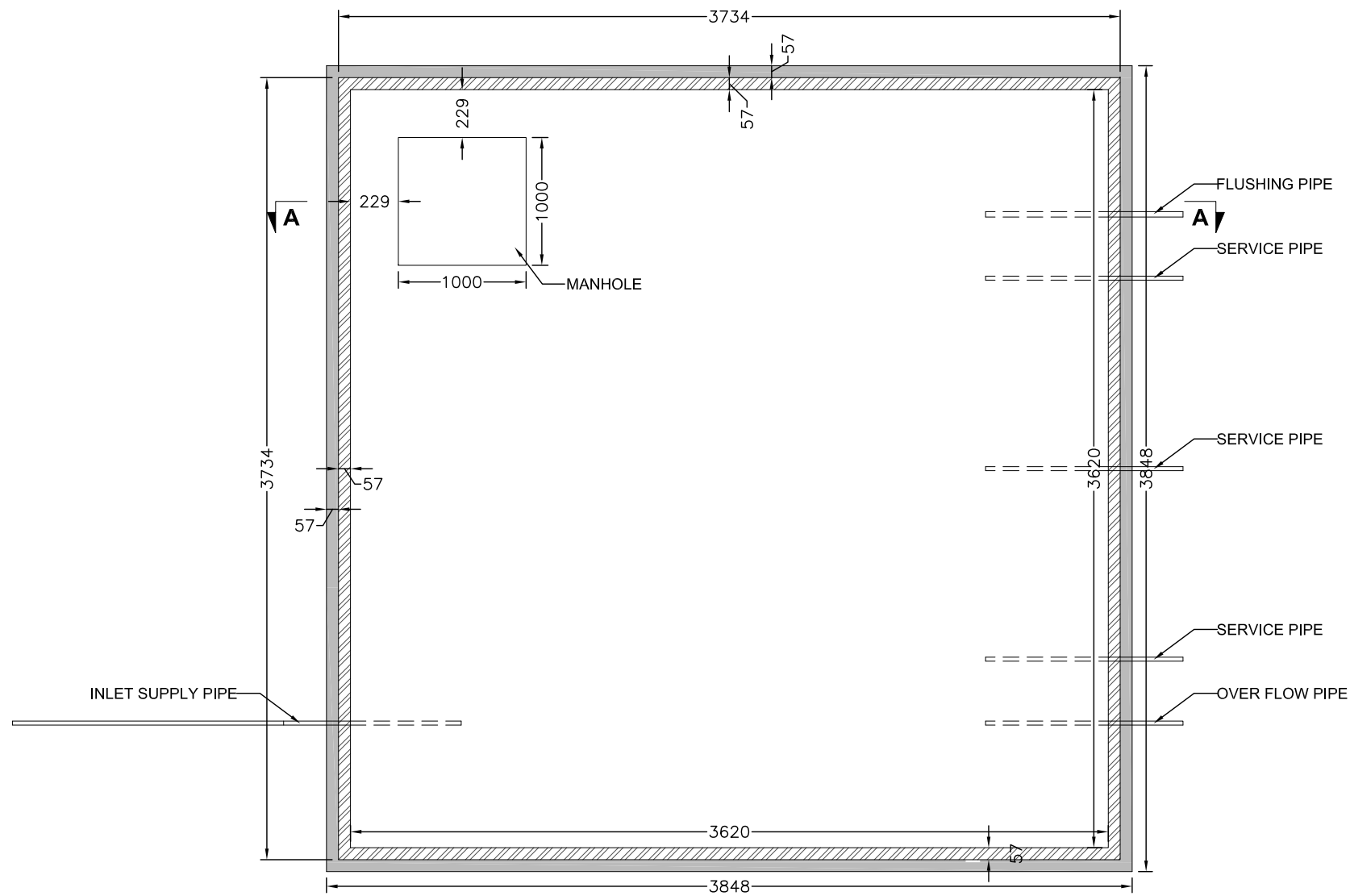
TITLE: TYPICAL ROAD CULVERT

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	1:1	JUNE-2021

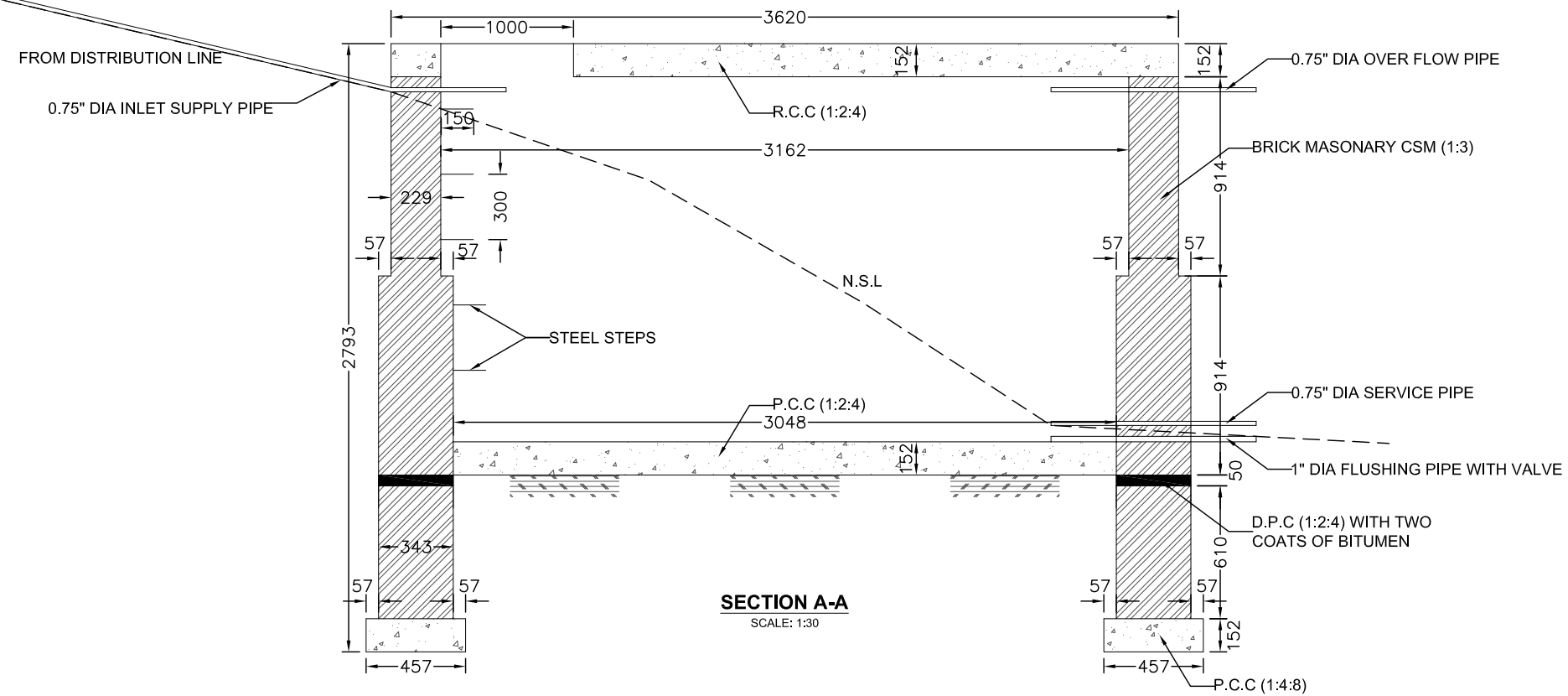
DRG.No:- SHD-TD-IR-26 SHEET:- SUB SH.- ----



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PLAN
SCALE: 1:30



SECTION A-A
SCALE: 1:30

NOTES:

1. ALL DIMENSIONS & LEVELS ARE IN MILI METERS UNLESS OTHER WISE SPECIFIED.

REFERENCE DRAWINGS :-

DRAWING IS RELEASED

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CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.

CASCADE GROUP
OF ENGINEERING & CONSULTANTS

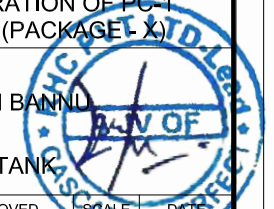
PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PG-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

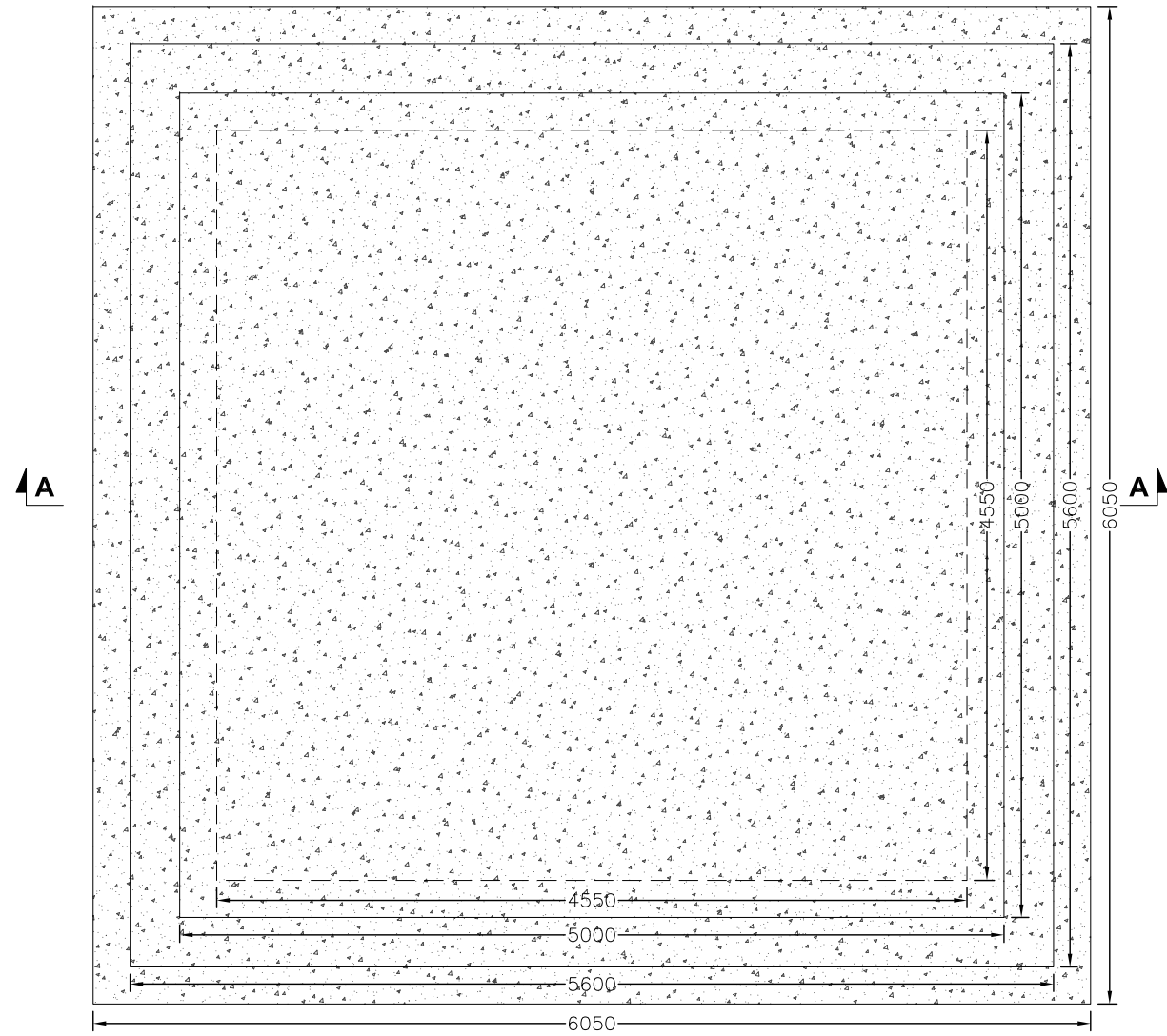
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU

TITLE:
SURFACE WATER TANK

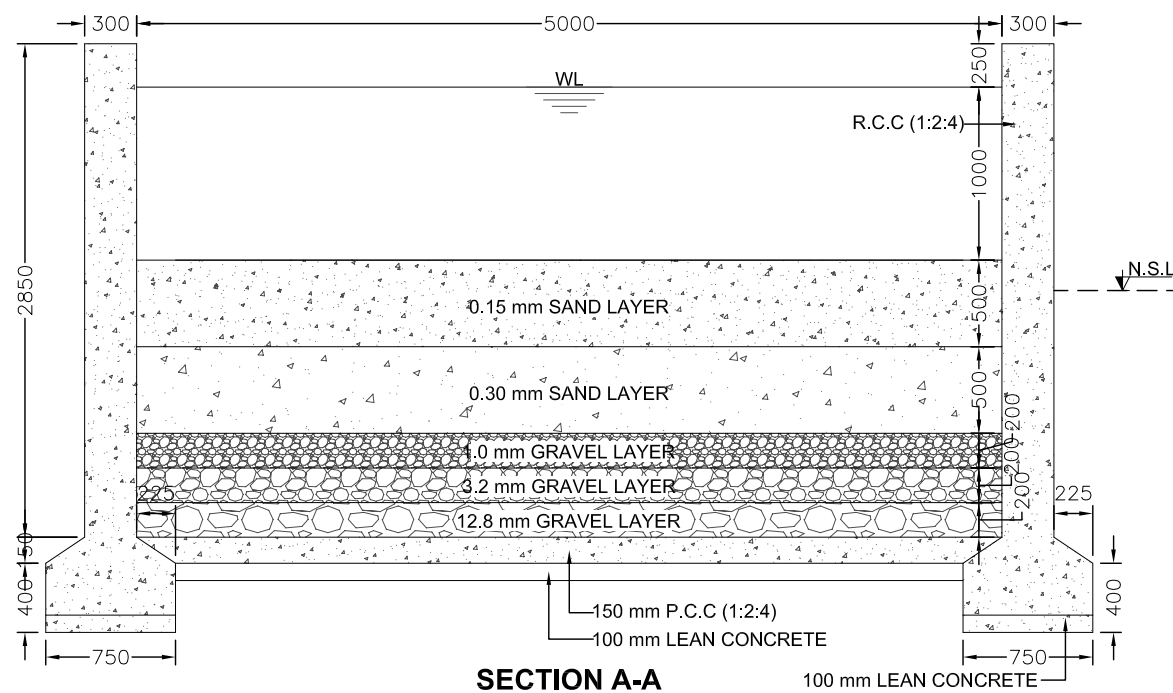
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Shown	Oct, 2021
DRG.No:-	SHD-FS-WS-14	SHEET:-	SUB SH.-	----	----



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PLAN
SCALE: 1:70



SECTION A-A
SCALE: 1:70

NOTES:



1. ALL DIMENSIONS & LEVELS ARE IN MILI METERS UNLESS OTHER WISE SPECIFIED.

REFERENCE DRAWINGS :-

DRAWING IS RELEASED

FOR TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

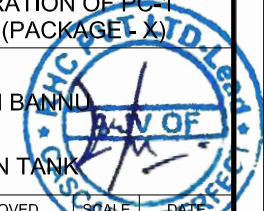
CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PG-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

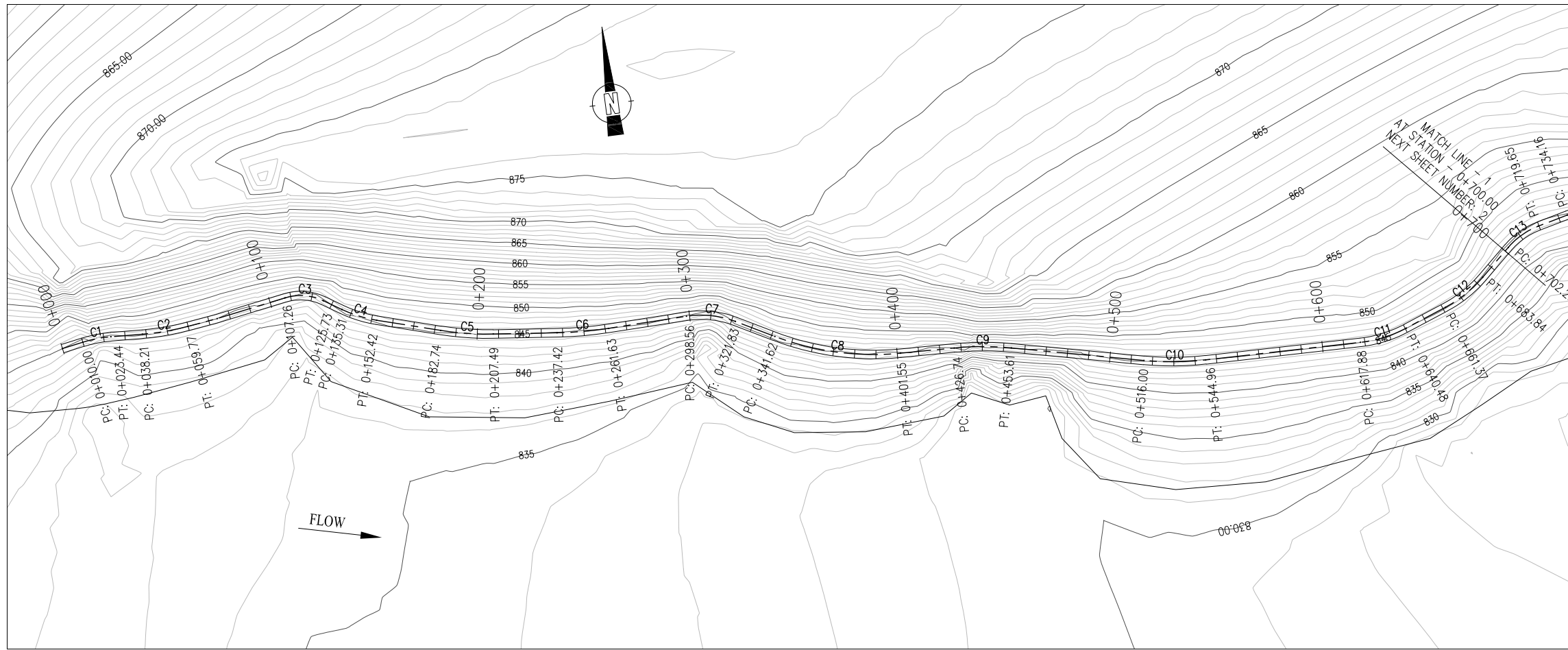
TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
WATER FILTERATION TANK

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
M.U.Y	A.I	Zeeshan S.	Zafar Iqbal	Show	Oct, 2021

DRG.No:- SHD-TD-WS-15 SHEET:- SUB SH.- ----



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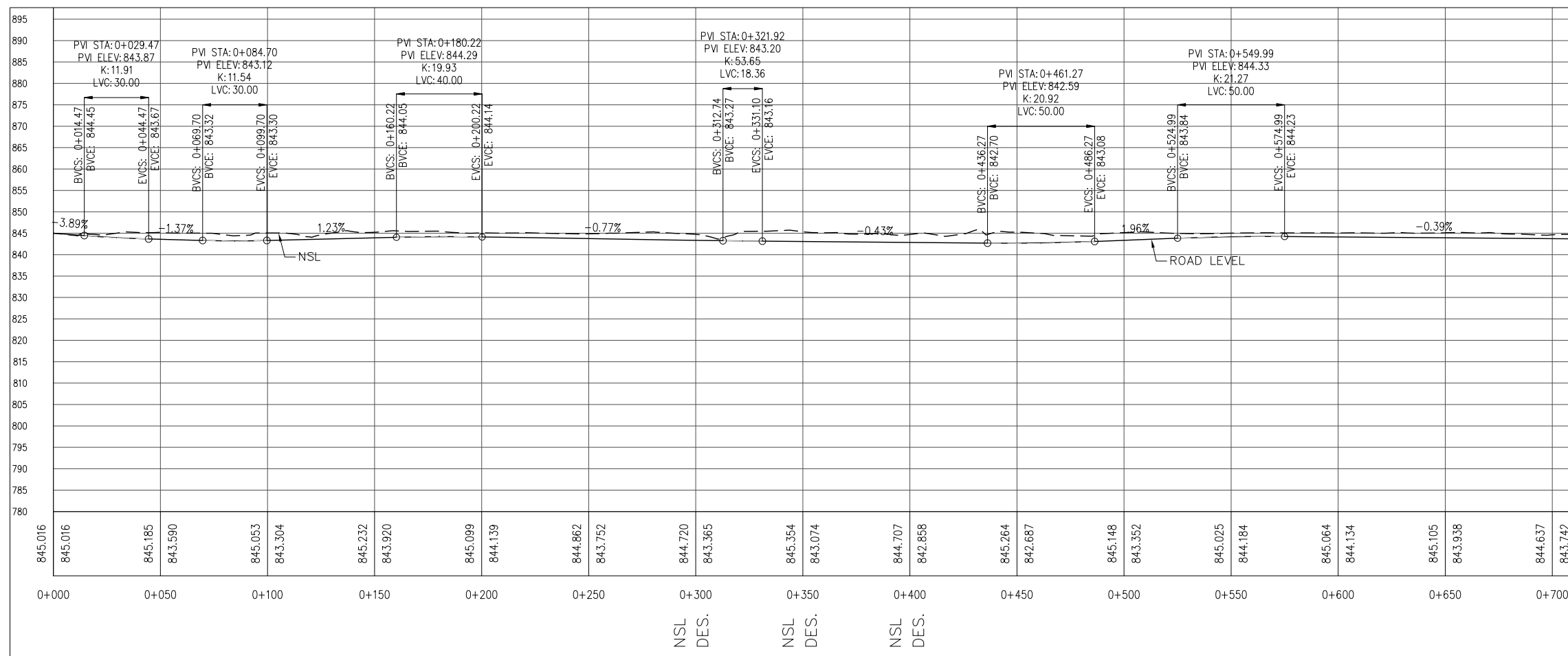
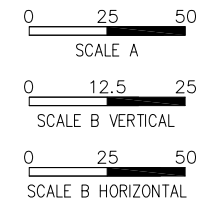
PLAN
SCALE A

NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND:

- CENTRE LINE OF ACCESS ROAD
- EXISTING ROAD
- CONTOUR (INDEX)
- NORTH DIRECTION
- CULVERT



PROFILE
SCALE B

REFERENCE DRAWINGS :-

DRAWING IS RELEASED

TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.

CASCADE GROUP
OF ENGINEERING & CONSULTANTS

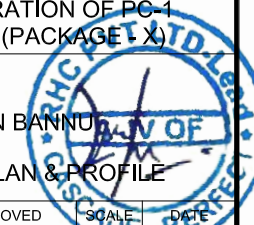
PERFECT ENGINEERING &
MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
DAM TOP ACCESS ROAD PLAN & PROFILE

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
NABI	A.I	Zeeshan S.	Zafar Iqbal	Show	OCT-2021

DRG.No:- SSD-TD-AR-01 SHEET:- SUB SH.- ----



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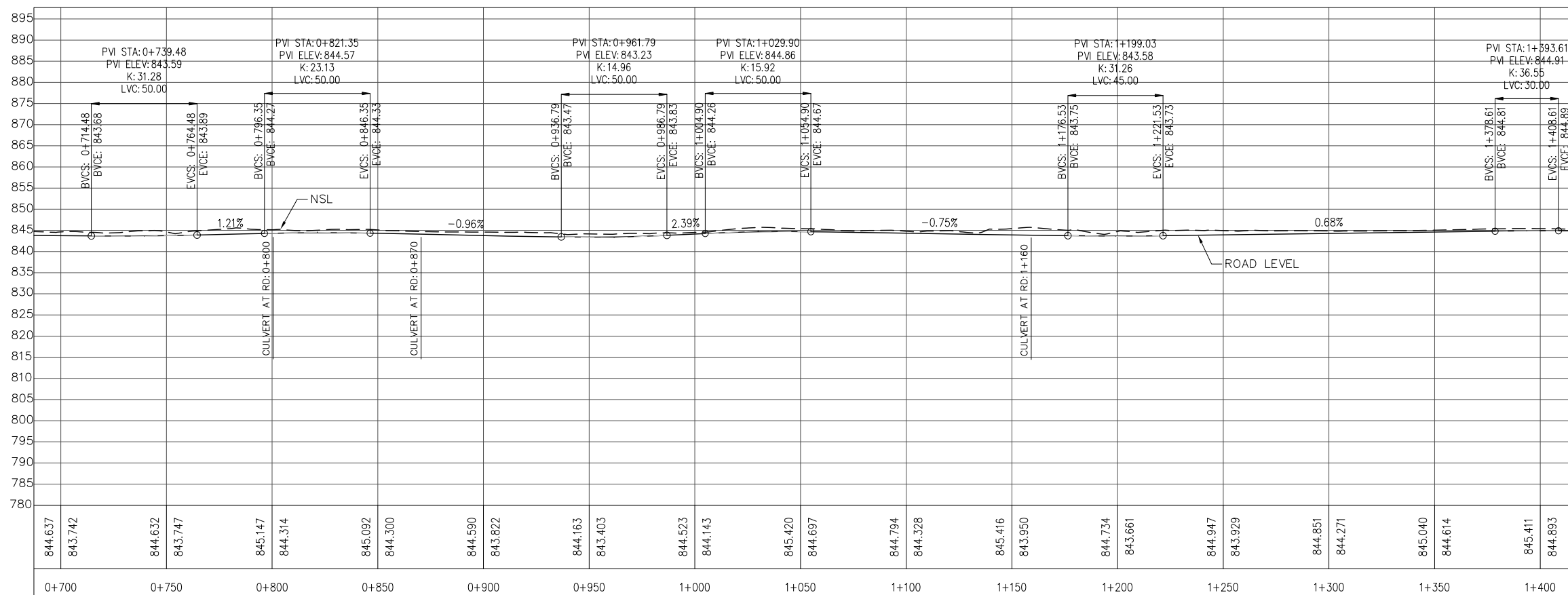
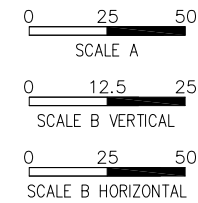
PLAN
SCALE A

NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND:

- CENTRE LINE OF ACCESS ROAD
- EXISTING ROAD
- CONTOUR (INDEX)
- NORTH DIRECTION
- CULVERT



PROFILE
SCALE B

REFERENCE DRAWINGS :-

DRAWING IS RELEASED

TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.

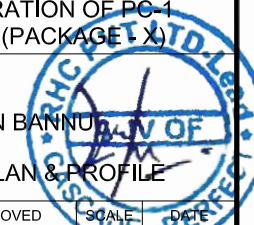
CASCADE GROUP
OF ENGINEERING & CONSULTANTS

PERFECT ENGINEERING &
MANAGEMENT CONSULTANTS

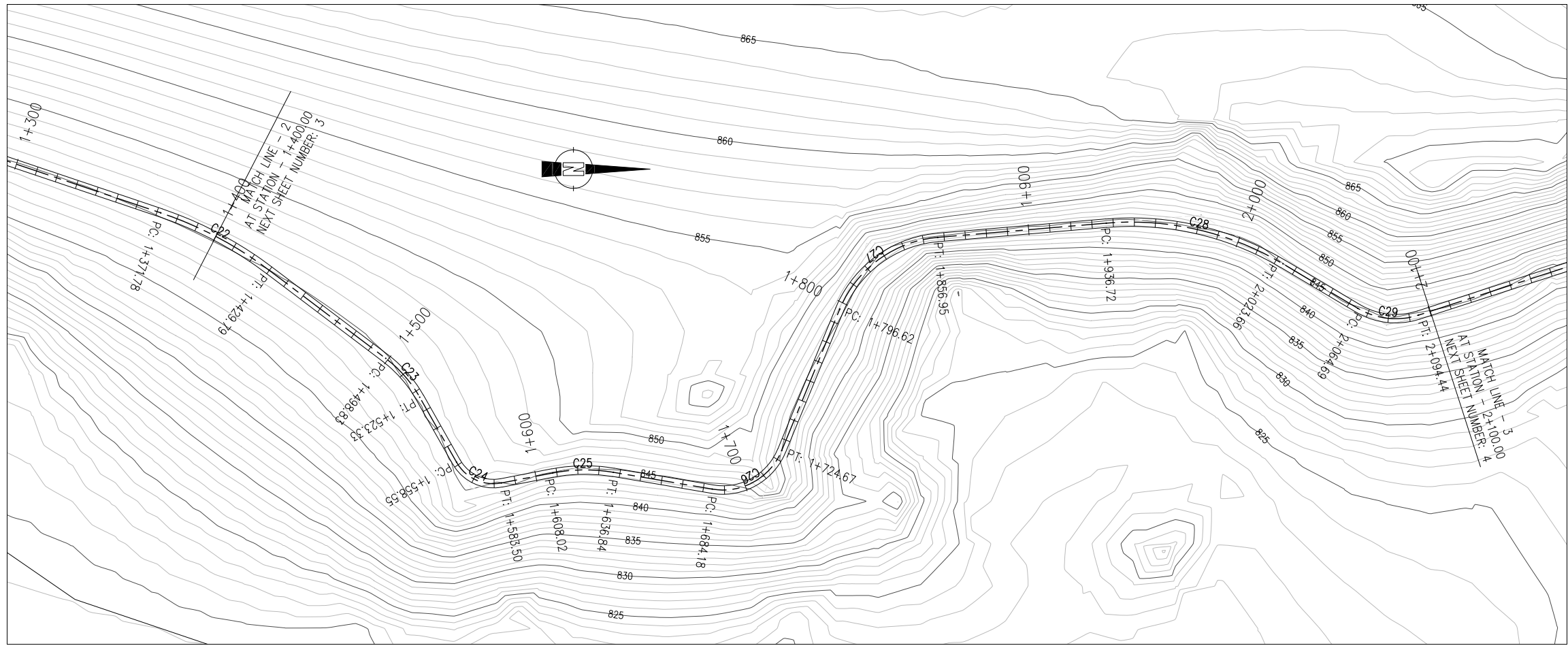
PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
DAM TOP ACCESS ROAD PLAN & PROFILE

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
NABI	A.I	Zeeshan S.	Zafar Iqbal	Show	OCT-2021
DRG.No:- SSD-TD-AR-02			SHEET:-		SUB SH.- ----

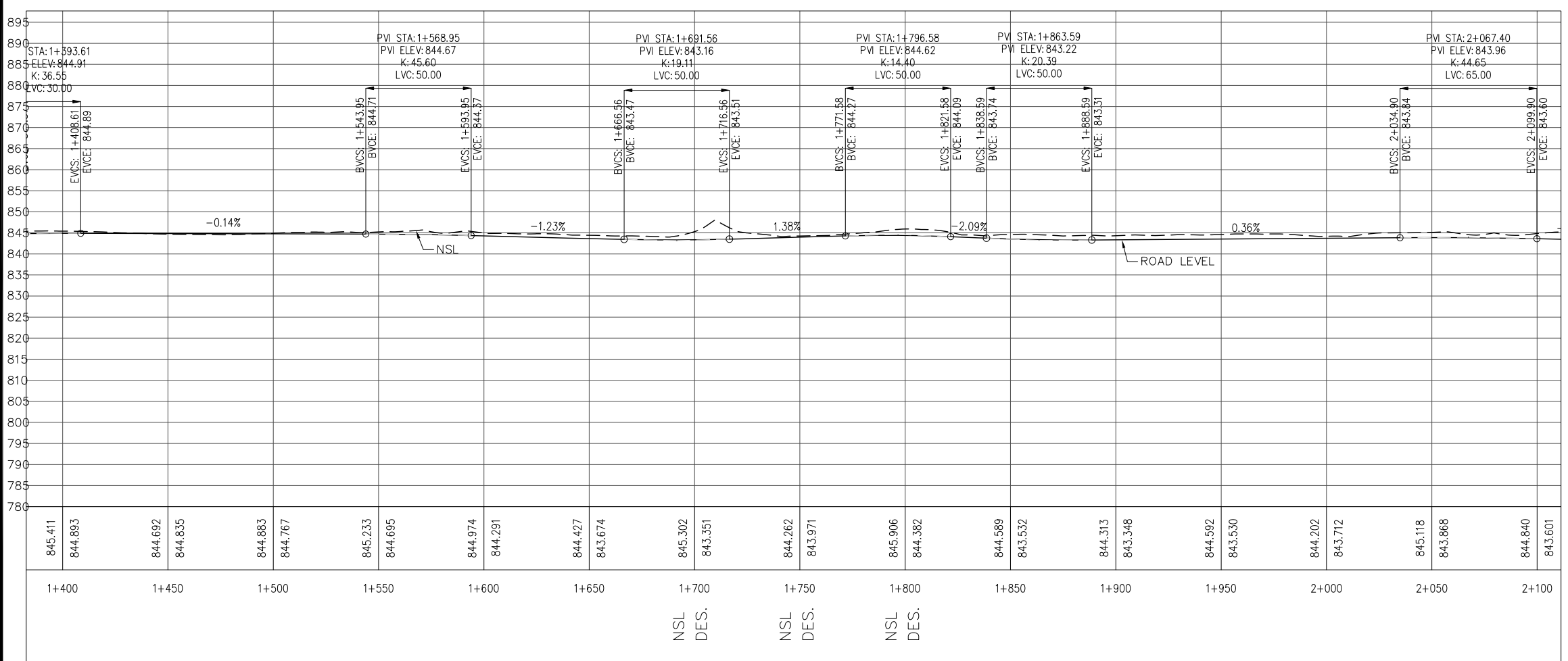
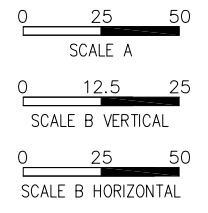
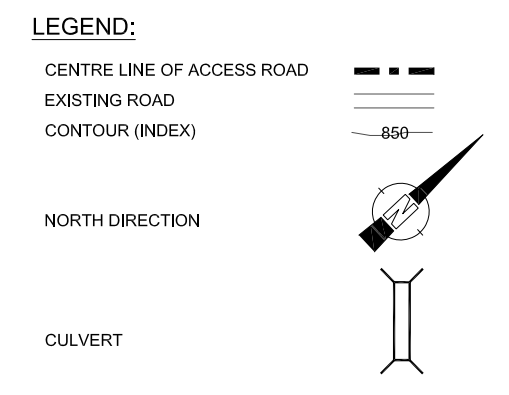


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PLAN
SCALE A

NOTES:-
1. ALL LEVELS AND DIMENSIONS ARE IN METER



PROFILE
SCALE B

REFERENCE DRAWINGS :-

DRAWING IS RELEASED

TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

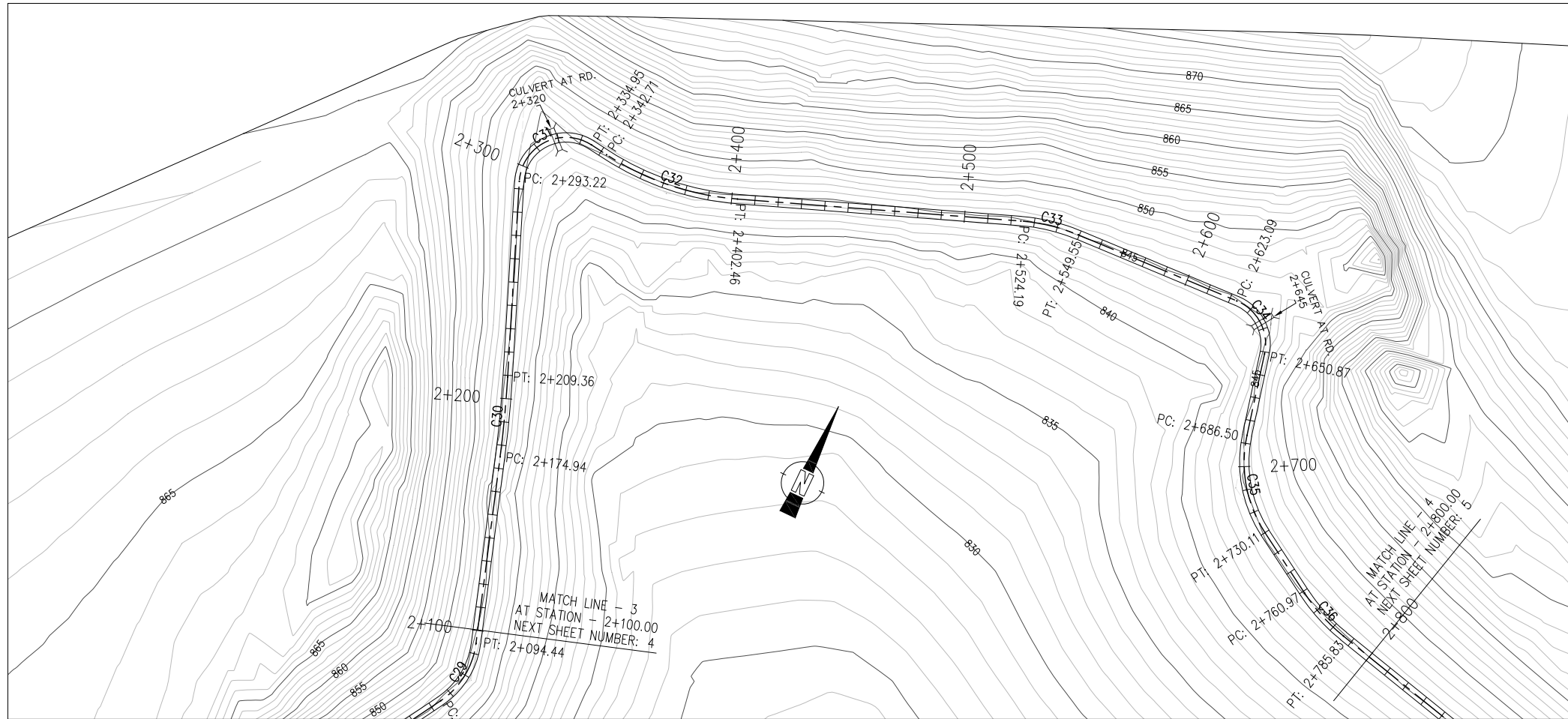
PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
DAM TOP ACCESS ROAD PLAN & PROFILE

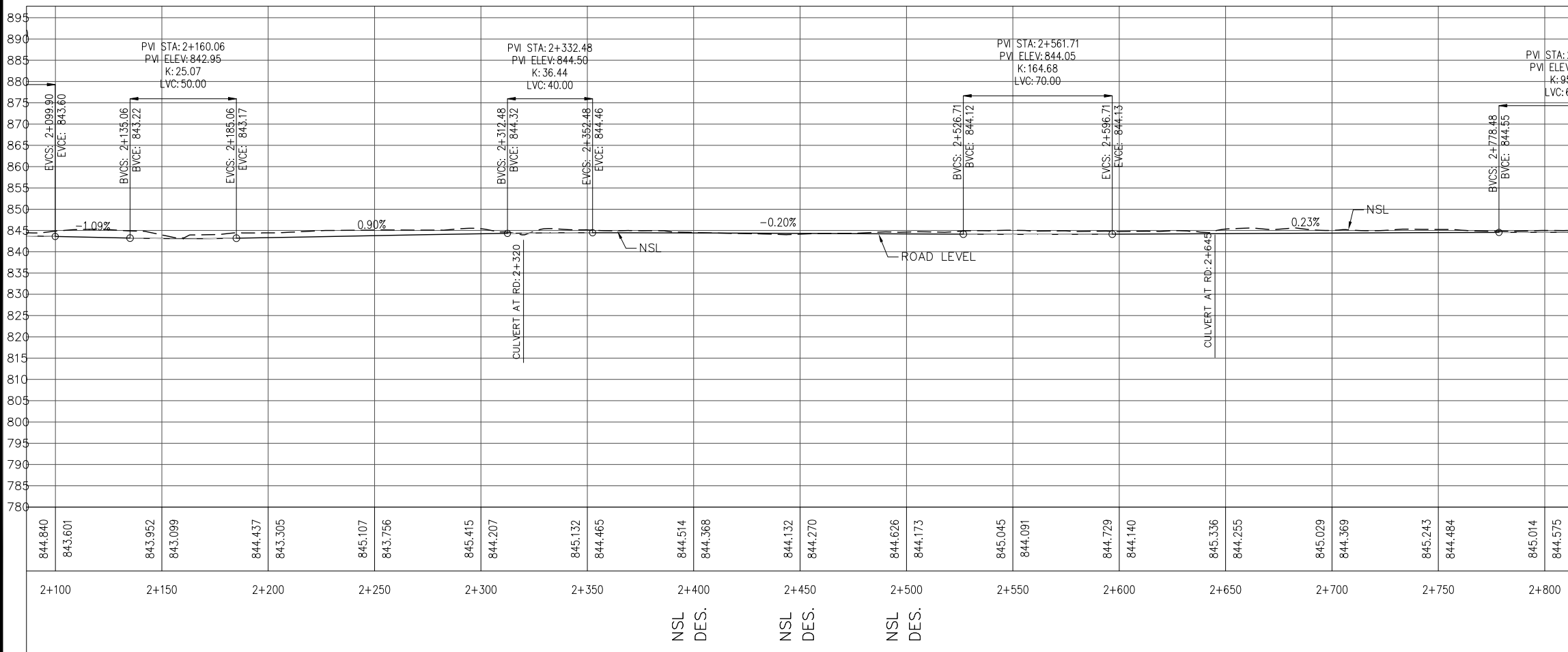
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
NABI	A.I	Zeeshan S.	Zafar Iqbal	AS SHOWN	OCT-2021

DRG.No:- SSD-TD-AR-03 SHEET:- SUB SH.- ----

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PLAN
SCALE A



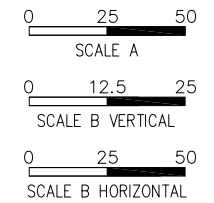
PROFILE
SCALE B

NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND:

- CENTRE LINE OF ACCESS ROAD
- EXISTING ROAD
- CONTOUR (INDEX)
- NORTH DIRECTION
- CULVERT



REFERENCE DRAWINGS :-

DRAWING IS RELEASED

TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.

CASCADE GROUP
OF ENGINEERING & CONSULTANTS

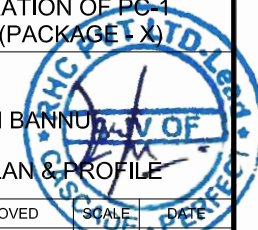
PERFECT ENGINEERING &
MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
DAM TOP ACCESS ROAD PLAN & PROFILE

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
NABI	A.I	Zeeshan S.	Zafar Iqbal	Shown	OCT-2021

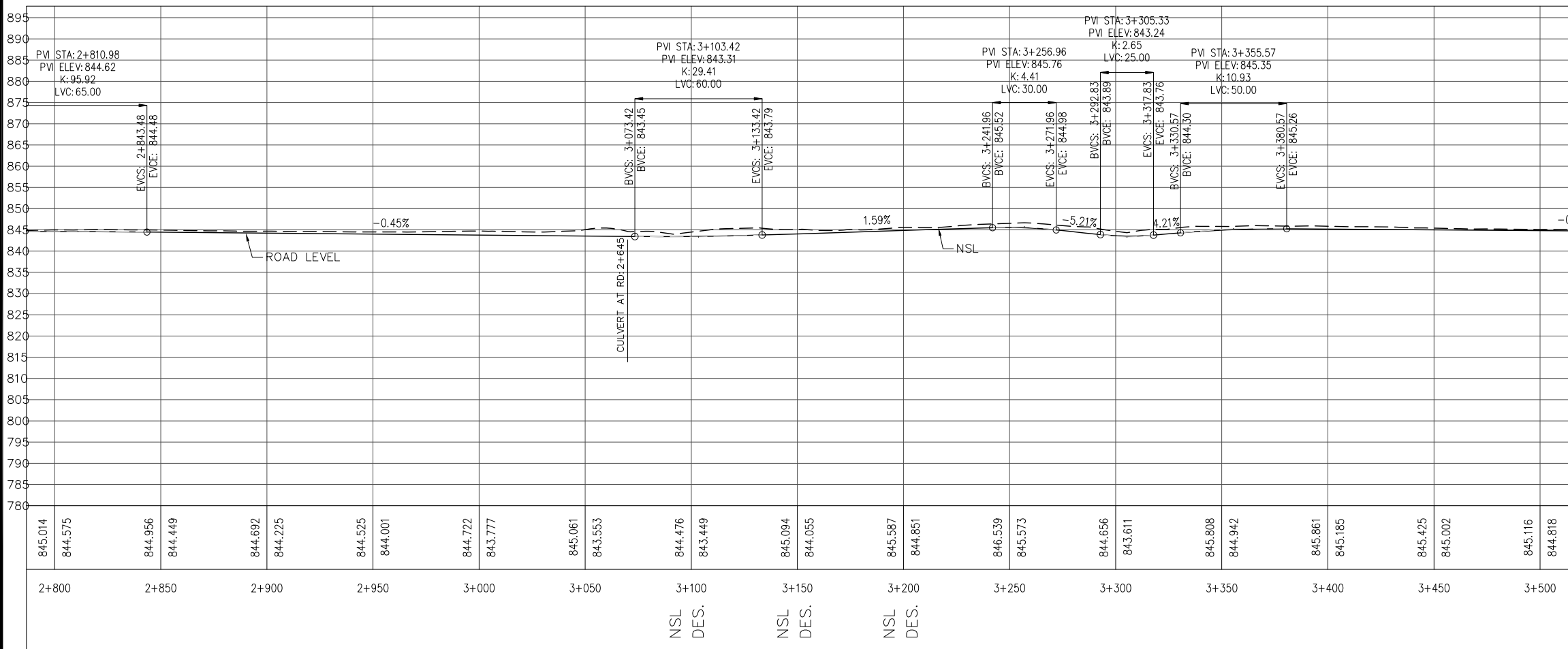
DRG.No:- SSD-TD-AR-04 SHEET:- SUB SH.- ----



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PLAN
SCALE A



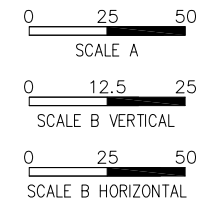
PROFILE
SCALE B

NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND:

- CENTRE LINE OF ACCESS ROAD
- EXISTING ROAD
- CONTOUR (INDEX)
- NORTH DIRECTION
- CULVERT



REFERENCE DRAWINGS :-

DRAWING IS RELEASED

TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.

CASCAD GROUP
OF ENGINEERING & CONSULTANTS

PERFECT ENGINEERING &
MANAGEMENT CONSULTANTS

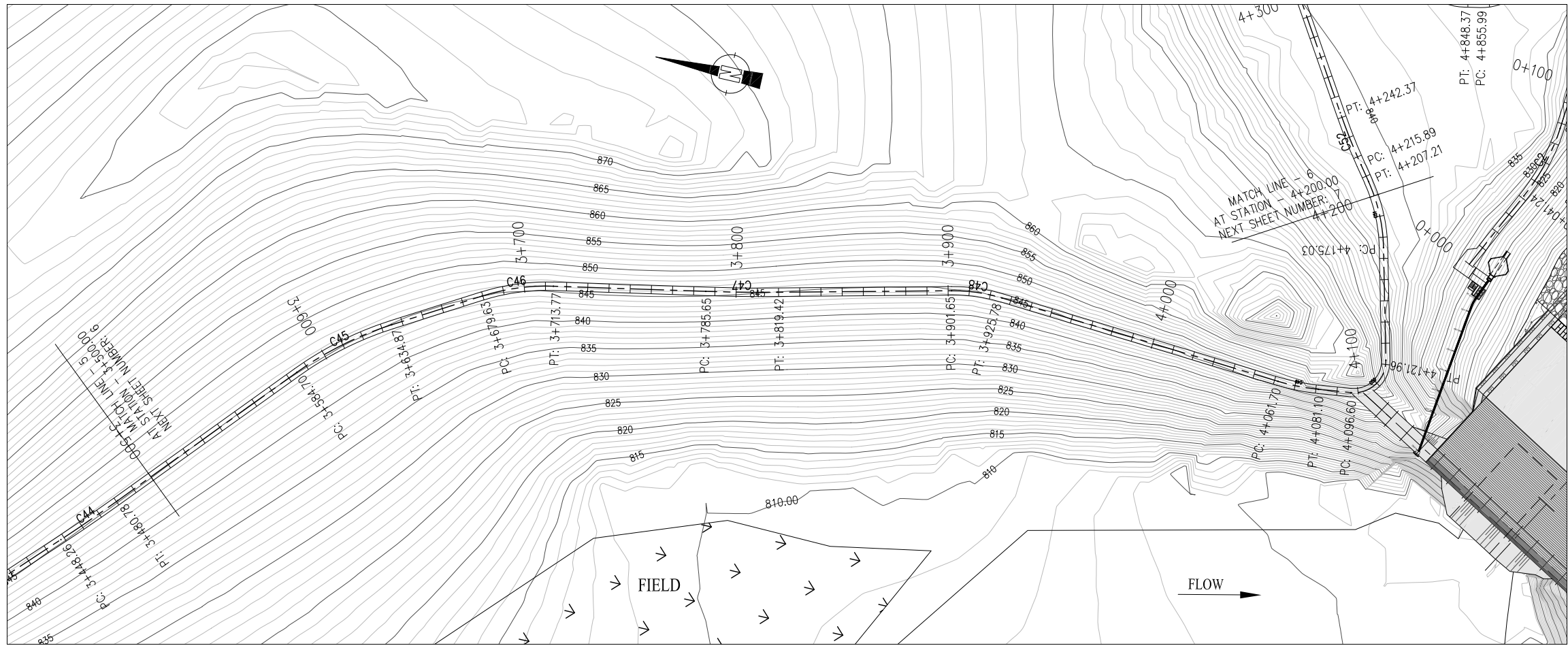
PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
DAM TOP ACCESS ROAD PLAN & PROFILE

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
NABI	A.I	Zeeshan S.	Zafar Iqbal	Show	OCT-2021

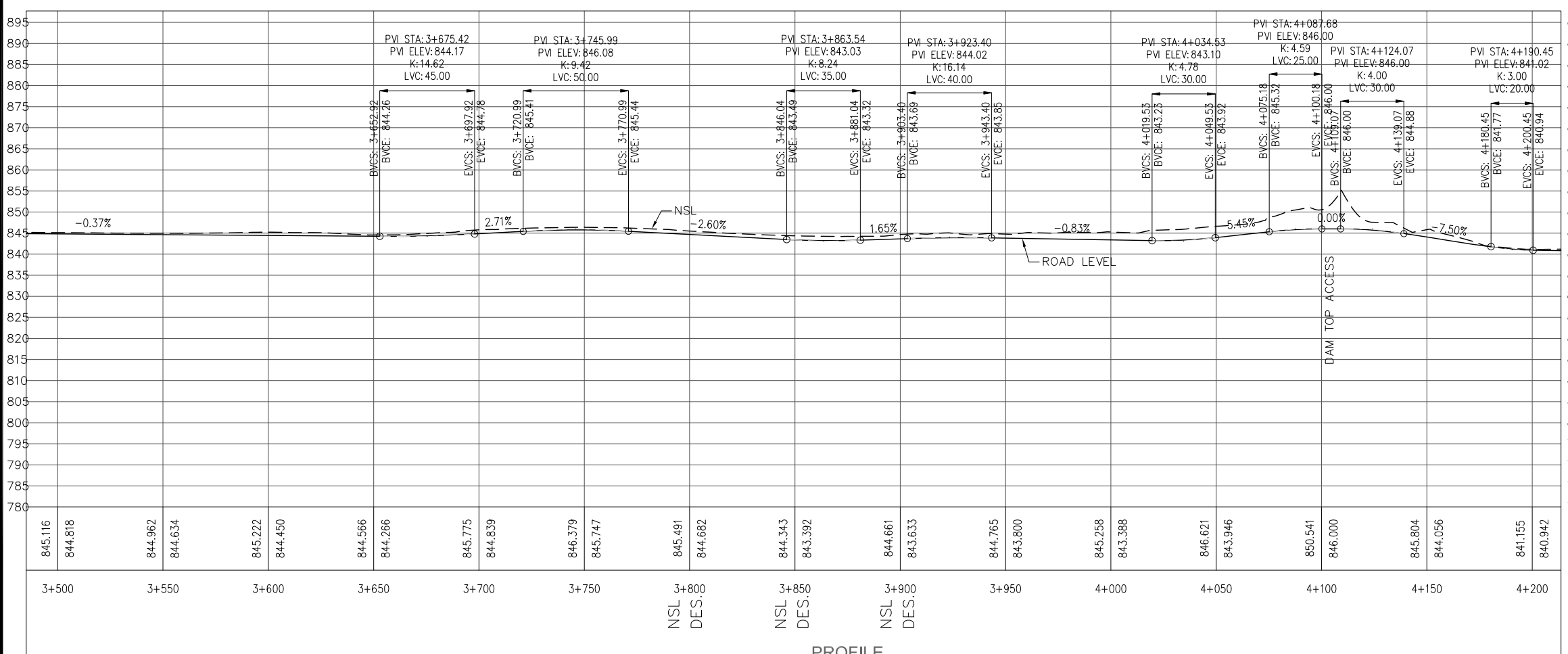
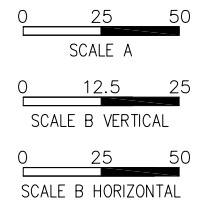
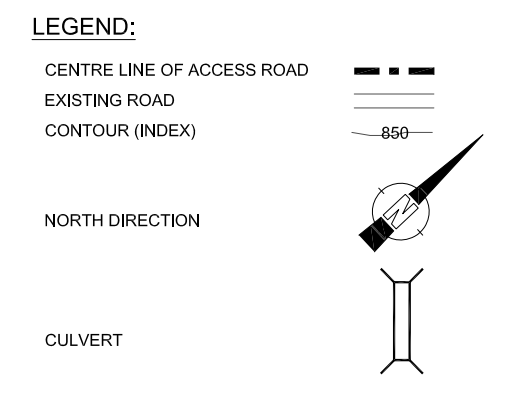
DRG.No:- SSD-TD-AR-05 SHEET:- SUB SH.- ----

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PLAN SCALE A

NOTES:-
1. ALL LEVELS AND DIMENSIONS ARE IN METER



PROFILE SCALE B

REFERENCE DRAWINGS :-

DRAWING IS RELEASED

TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP OF ENGINEERING & CONSULTANTS
PERM PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
DAM TOP ACCESS ROAD PLAN & PROFILE

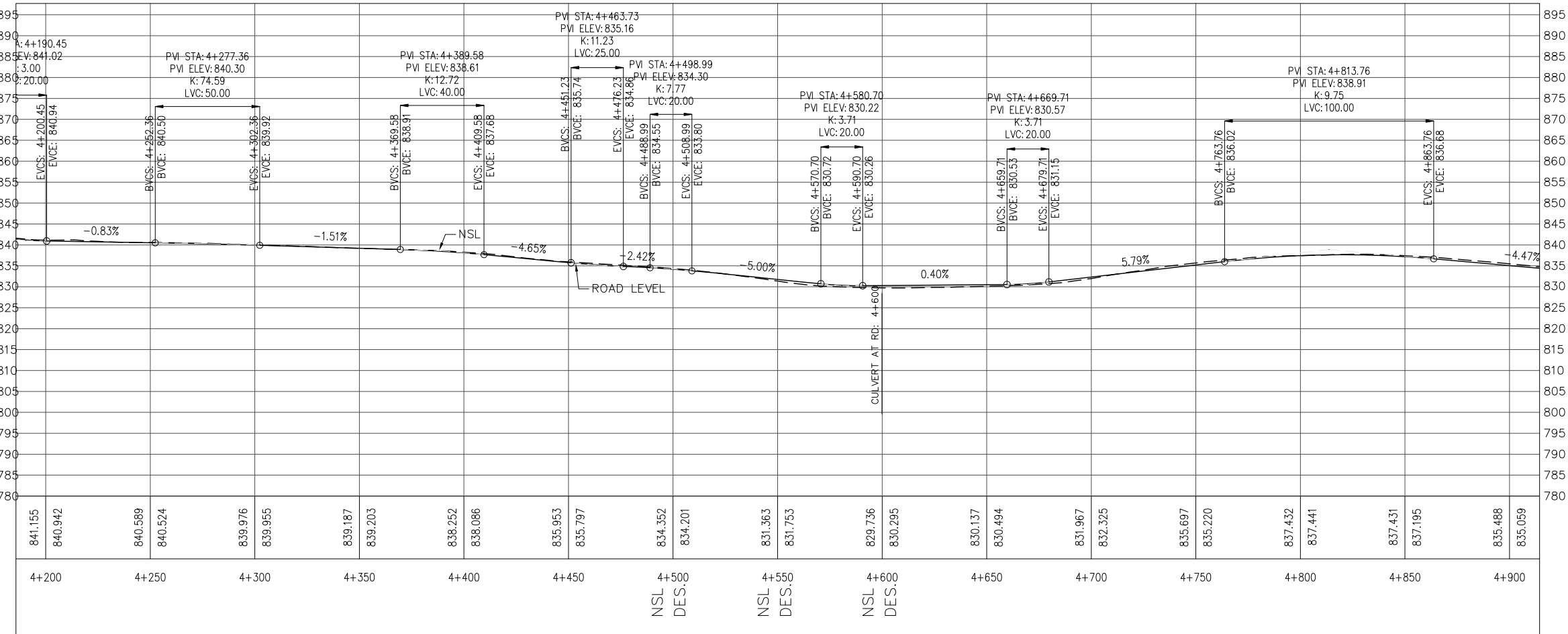
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
NABI	A.I	Zeeshan S.	Zafar Iqbal	Show	OCT-2021

DRG.No:- SSD-TD-AR-06 SHEET:- SUB SH.- ----

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PLAN SCALE A

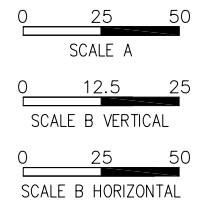


PROFILE SCALE B

NOTES:-
1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND:

- CENTRE LINE OF ACCESS ROAD
- EXISTING ROAD
- CONTOUR (INDEX)
- NORTH DIRECTION
- CULVERT



REFERENCE DRAWINGS :-

DRAWING IS RELEASED

TENDER ONLY

CLIENT: PSU SMALL DAM SECTION MERGED AREA IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

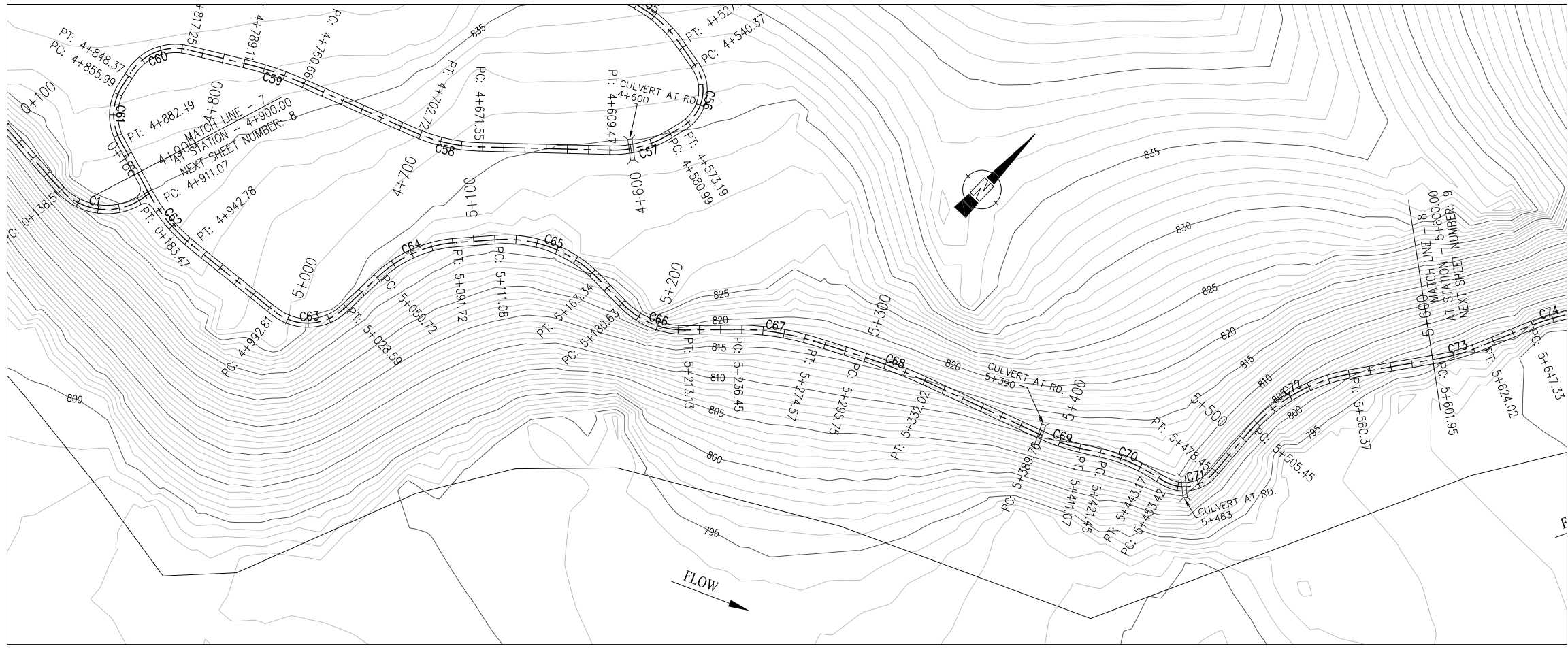
PROJECT: CONSULTANCY SERVICES FOR FEASIBILITY STUDY, DETAIL DESIGN AND PREPARATION OF PC-1 FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE: SHAKTU DAM TRIBAL SUB-DIVISION BANNU
DAM TOP ACCESS ROAD PLAN & PROFILE

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
NABI	A.I	Zeeshan S.	Zafar Iqbal	Show	OCT-2021

DRG.No:- SSD-TD-AR-07 SHEET:- SUB SH.- ----

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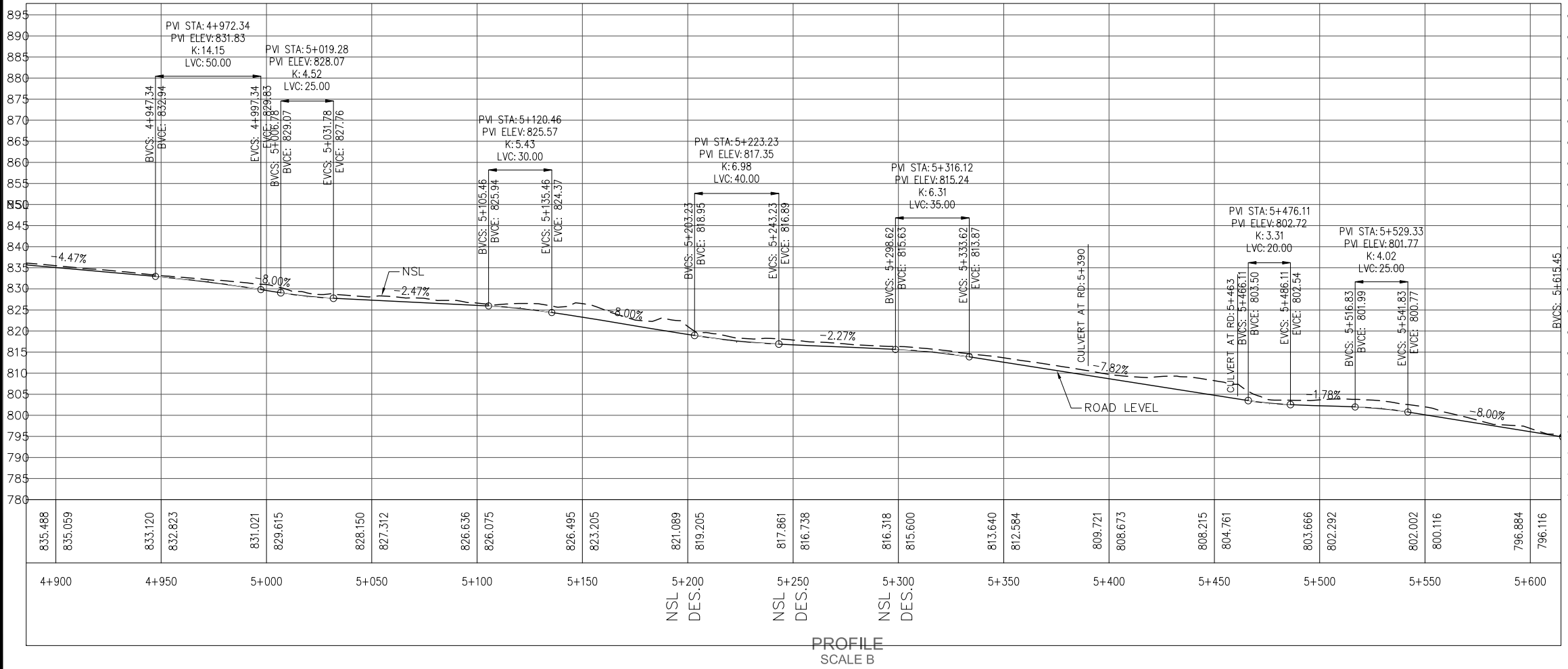
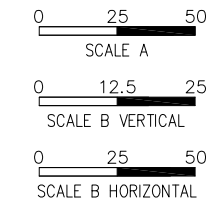
PLAN
SCALE A

NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND:

- CENTRE LINE OF ACCESS ROAD
- EXISTING ROAD
- CONTOUR (INDEX) 850
- NORTH DIRECTION
- CULVERT



PROFILE
SCALE B

REFERENCE DRAWINGS :-

DRAWING IS RELEASED

TENDER ONLY

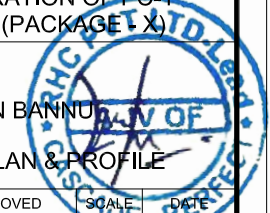
CLIENT:
PSU SMALL DAM SECTION MERGED AREA IRRIGATION DEPARTMENT, KPK.

CONSULTANTS:
A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP OF ENGINEERING & CONSULTANTS
PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

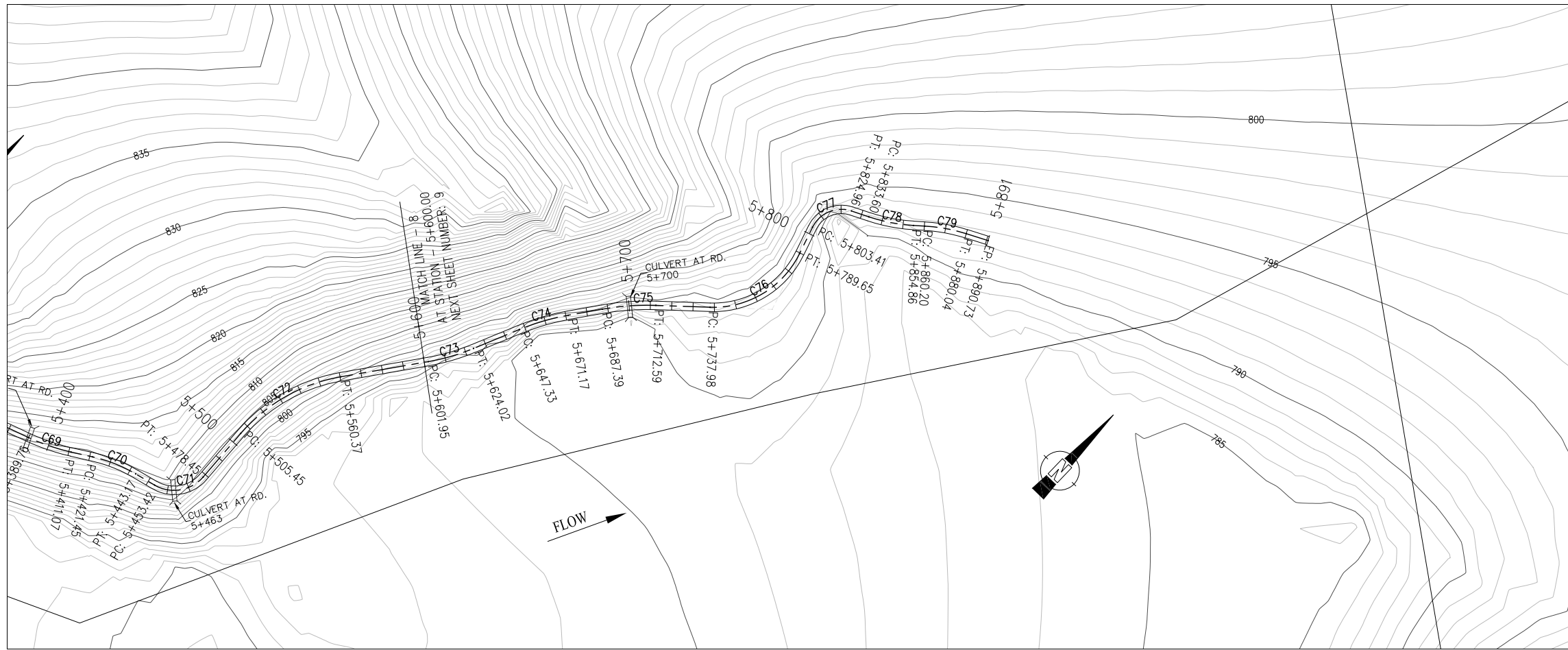
PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY, DETAIL DESIGN AND PREPARATION OF PC-1 FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:
SHAKTU DAM TRIBAL SUB-DIVISION BANNU
DAM TOP ACCESS ROAD PLAN & PROFILE

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
NABI	A.I	Zeeshan S.	Zafar Iqbal	1:1	OCT-2021
DRG.No:- SSD-TD-AR-08			SHEET:-		SUB SH.-



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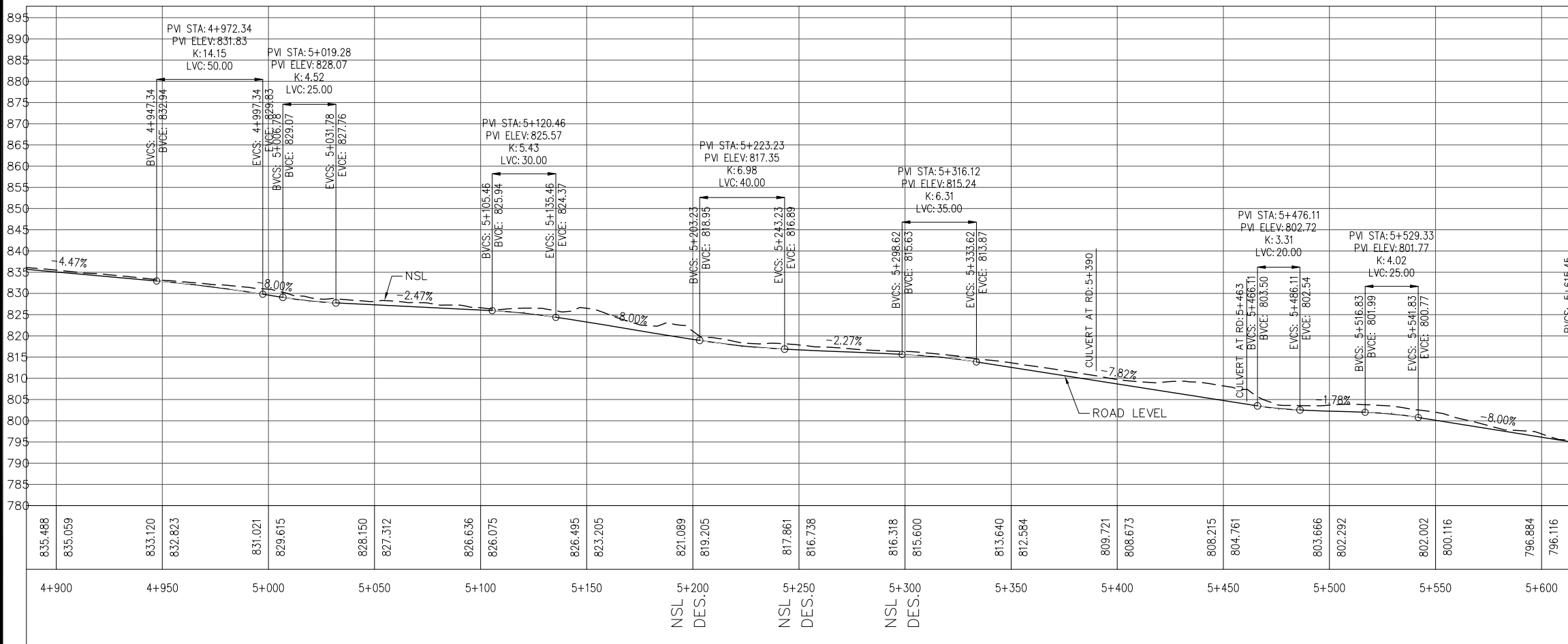
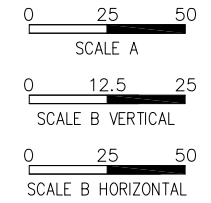
PLAN
SCALE A

NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND:

- CENTRE LINE OF ACCESS ROAD
- EXISTING ROAD
- CONTOUR (INDEX) 850
- NORTH DIRECTION
- CULVERT



PROFILE
SCALE B

REFERENCE DRAWINGS :-

DRAWING IS RELEASED

TENDER ONLY

CLIENT:

PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS:

- A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
- CASCADE GROUP**
OF ENGINEERING & CONSULTANTS
- PERFECT ENGINEERING &**
MANAGEMENT CONSULTANTS

PROJECT:

CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

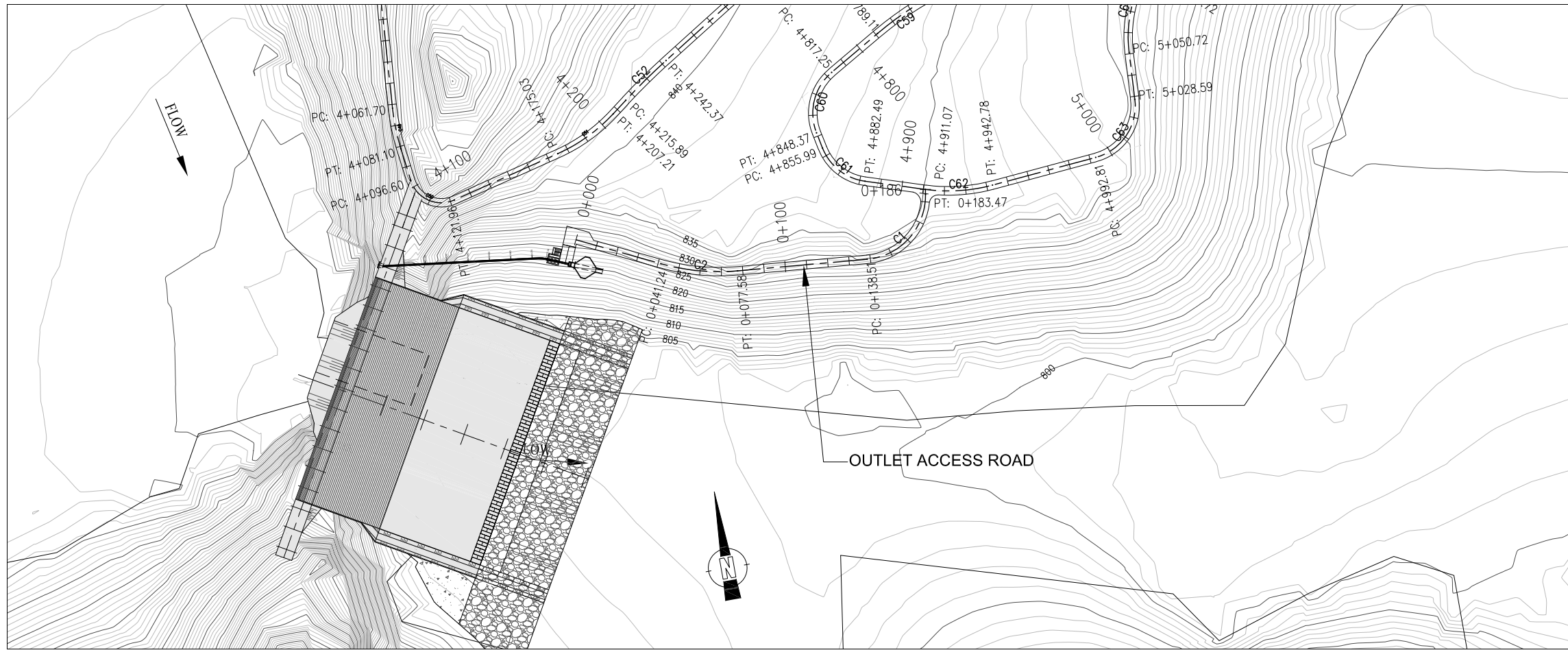
TITLE:

SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
DAM TOP ACCESS ROAD PLAN & PROFILE

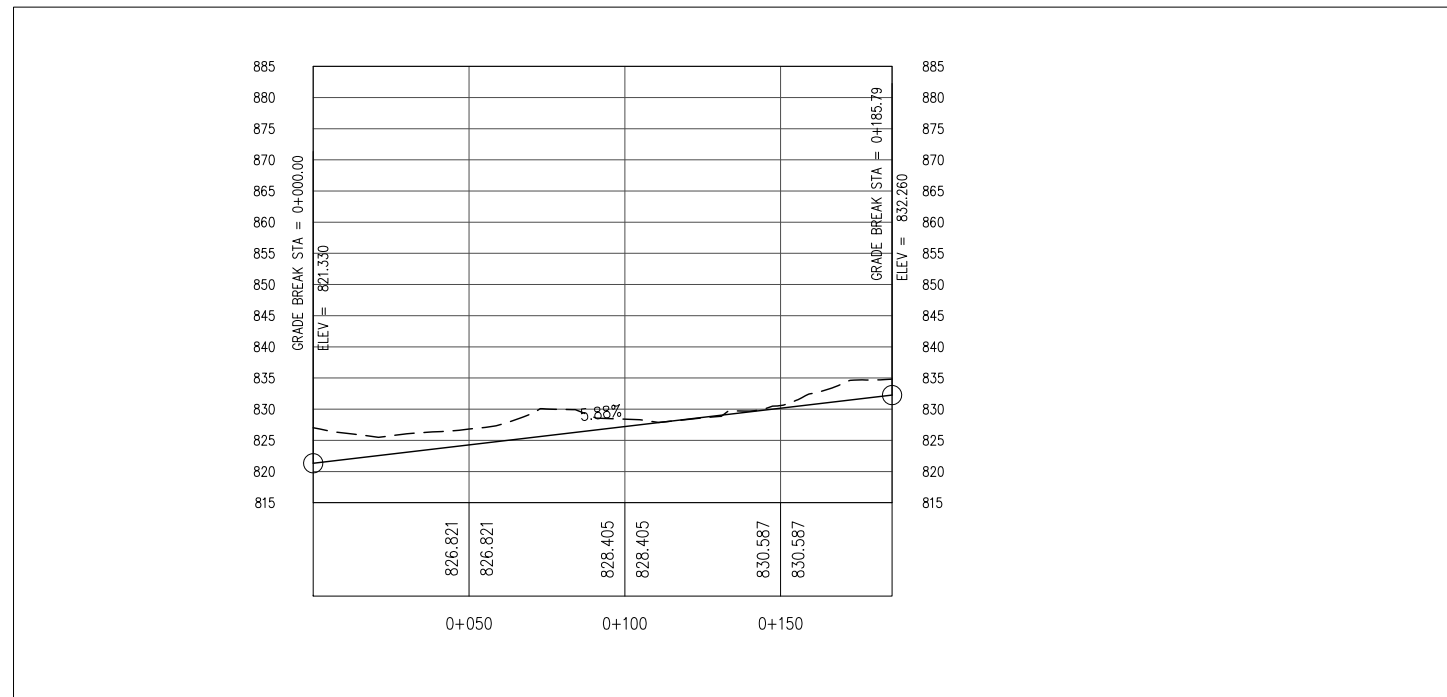
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
NABI	A.I	Zeeshan S.	Zafar Iqbal	Shown	OCT-2021

DRG.No:- SSD-TD-AR-09 SHEET:- SUB SH.- ----

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PLAN
SCALE A



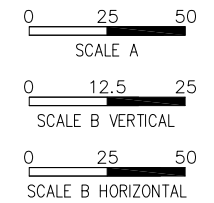
PROFILE
SCALE B

NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND:

- CENTRE LINE OF ACCESS ROAD
- EXISTING ROAD
- CONTOUR (INDEX)
- NORTH DIRECTION
- CULVERT



REFERENCE DRAWINGS :-

DRAWING IS RELEASED

TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

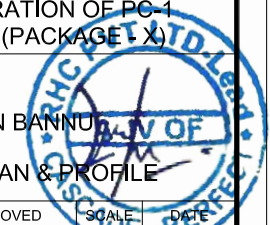
CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
 CASCADE GROUP OF ENGINEERING & CONSULTANTS
 PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
OUTLET ACCESS ROAD PLAN & PROFILE

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
NABI	A.I	Zeeshan S.	Zafar Iqbal	1:1	OCT-2021

DRG.No:- SSD-TD-AR-10 SHEET:- SUB SH.- ----



SHAKTU DAM ACCESS ROAD HORENANTAL ALIGNMENT PI & CURVE ELEMENTS TABLE												
Curve #	START CHAINAGE	PI STA	END CHAINAGE	PI EASTING	PI NORTING	DELTA ANGLE	TANGENT	RADIUS	CURVE LENGTH	EXTERNAL SECANT	MID ORDINATE	CHORD LENGTH
C1	0+009.997	0+016.746	0+023.437	618703.894	3623812.580	12.834	6.748	60.000	13.440	0.378	0.376	13.412
C2	0+038.213	0+049.020	0+059.769	618736.187	3623811.023	10.292	10.807	120.000	21.555	0.486	0.484	21.526
C3	0+107.265	0+116.943	0+125.733	618803.352	3623821.463	42.327	9.679	25.000	18.469	1.808	1.686	18.052
C4	0+135.311	0+143.924	0+152.419	618826.796	3623806.395	16.337	8.612	60.000	17.108	0.615	0.609	17.050
C5	0+182.741	0+195.147	0+207.487	618876.049	3623791.908	10.128	12.406	140.000	24.746	0.549	0.546	24.714
C6	0+237.417	0+249.543	0+261.632	618930.185	3623785.966	7.708	12.126	180.000	24.215	0.408	0.407	24.197
C7	0+298.561	0+310.463	0+321.832	618991.123	3623787.502	29.630	11.902	45.000	23.271	1.547	1.496	23.013
C8	0+341.622	0+372.127	0+401.548	619045.945	3623758.125	26.411	30.505	130.000	59.926	3.531	3.438	59.397
C9	0+426.740	0+440.218	0+453.612	619115.086	3623755.984	10.997	13.477	140.000	26.872	0.647	0.644	26.831
C10	0+515.996	0+530.532	0+544.964	619203.247	3623736.001	11.855	14.536	140.000	28.968	0.753	0.749	28.916
C11	0+617.881	0+629.315	0+640.478	619302.120	3623734.420	21.578	11.434	60.000	22.597	1.080	1.061	22.464
C12	0+661.374	0+672.738	0+683.836	619343.004	3623749.838	21.450	11.364	60.000	22.462	1.067	1.048	22.331
C13	0+702.231	0+711.126	0+719.653	619371.680	3623775.759	28.519	8.895	35.000	17.421	1.113	1.078	17.242
C14	0+734.158	0+742.652	0+750.535	619402.681	3623783.254	37.533	8.494	25.000	16.377	1.404	1.329	16.086
C15	0+774.123	0+798.737	0+818.253	619454.500	3623760.248	63.212	24.614	40.000	44.130	6.966	5.933	41.926
C16	0+855.419	0+870.079	0+884.595	619513.676	3623808.634	13.931	14.660	120.000	29.176	0.892	0.886	29.104
C17	0+911.286	0+924.318	0+937.124	619546.251	3623852.182	18.505	13.032	80.000	25.837	1.055	1.041	25.725
C18	0+960.686	0+994.042	1+025.076	619568.207	3623918.597	36.893	33.355	100.000	64.390	5.416	5.138	63.283
C19	1+055.501	1+065.958	1+076.376	619629.157	3623960.981	8.543	10.457	140.000	20.875	0.390	0.389	20.855
C20	1+116.148	1+133.375	1+150.402	619678.203	3624007.292	15.097	17.227	130.000	34.254	1.136	1.127	34.155
C21	1+171.973	1+185.567	1+199.046	619705.613	3624051.942	12.926	13.594	120.000	27.073	0.768	0.763	27.016
C22	1+371.782	1+401.038	1+429.787	619774.446	3624256.244	18.464	29.256	180.000	58.005	2.362	2.331	57.755
C23	1+498.832	1+511.254	1+523.330	619841.208	3624344.575	23.394	12.422	60.000	24.498	1.272	1.246	24.328
C24	1+558.550	1+572.942	1+583.500	619895.188	3624375.143	71.476	14.391	20.000	24.950	4.640	3.766	23.363
C25	1+608.018	1+622.587	1+636.841	619884.985	3624427.640	20.643	14.570	80.000	28.823	1.316	1.295	28.668
C26	1+684.179	1+708.182	1+724.668	619899.378	3624512.336	77.328	24.004	30.000	40.489	8.421	6.575	37.485
C27	1+796.623	1+830.225	1+856.951	619779.522	3624561.535	62.846	33.602	55.000	60.328	9.452	8.066	57.349
C28	1+936.715	1+981.641	2+023.659	619766.173	3624719.263	35.582	44.925	140.000	86.944	7.032	6.695	85.553
C29	2+064.693	2+080.530	2+094.437	619818.213	3624806.752	48.691	15.837	35.000	29.744	3.416	3.112	28.857
C30	2+174.938	2+192.154	2+209.356	619783.225	3624914.780	3.944	17.216	500.000	34.419	0.296	0.296	34.412
C31	2+293.221	2+327.552	2+334.953	619732.740	3625040.430	119.553	34.331	20.000	41.732	19.732	9.932	34.563
C32	2+342.712	2+373.219	2+402.461	619804.689	3625030.749	28.528	30.507	120.000	59.749	3.817	3.699	59.133
C33	2+524.188	2+536.979	2+549.555	619958.891	3625089.526	18.168	12.791	80.000	25.367	1.016	1.003	25.261
C34	2+623.093	2+639.749	2+650.870	620061.762	3625094.373	79.574	16.656	20.000	27.777	6.027	4.631	25.597
C35	2+686.504	2+709.523	2+730.105	620078.861	3625021.031	45.422	23.019	55.000	43.602	4.623	4.264	42.469
C36	2+760.966	2+773.498	2+785.828	620135.513	3624986.375	17.806	12.532	80.000	24.862	0.976	0.964	24.762
C37	2+865.877	2+878.791	2+891.701	620238.029	3624961.481	2.466	12.914	600.000	25.824	0.139	0.139	25.822
C38	2+986.218	2+999.547	3+012.815	620356.497	3624938.060	9.524	13.329	160.000	26.596	0.554	0.552	26.566
C39	3+050.971	3+069.773	3+084.562	620422.243	3624913.207	64.154	18.802	30.000	33.591	5.405	4.580	31.864
C40	3+130.144	3+159.952	3+188.083	620430.679	3624819.393	33.197	29.808	100.000	57.939	4.348	4.167	57.132
C41	3+204.256	3+214.938	3+225.564	620465.825	3624774.947	10.174	10.682	120.000	21.308	0.475	0.473	21.280

NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND:

- CENTRE LINE OF ACCESS ROAD
- EXISTING ROAD
- CONTOUR (INDEX)

- NORTH DIRECTION

- CULVERT

0 25 50
SCALE A

0 12.5 25
SCALE B VERTICAL

0 25 50
SCALE B HORIZONTAL

REFERENCE DRAWINGS :-

DRAWING IS RELEASED

TENDER ONLY

CLIENT:
PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP OF ENGINEERING & CONSULTANTS
PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT:
CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:
SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
DAM TOP ACCESS ROAD SETTING-OUT DATA

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
NABI	A.I	Zeeshan S.	Zafar Iqbal	1:1	OCT-2021
DRG.No:- SSD-TD-AR-11			SHEET:-		SUB SH.- ----

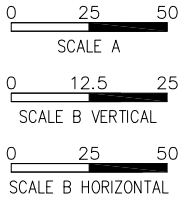
Curve #	START CHAINAGE	PI STA	END CHAINAGE	PI EASTING	PI NORTING	DELTA ANGLE	TANGENT	RADIUS	CURVE LENGTH	EXTERNAL SECANT	MID ORDINATE	CHORD LENGTH
C42	3+274.708	3+288.149	3+301.526	620520.707	3624726.407	9.603	13.440	160.000	26.818	0.564	0.562	26.787
C43	3+313.494	3+323.939	3+334.309	620551.149	3624707.468	11.926	10.445	100.000	20.815	0.544	0.541	20.778
C44	3+448.265	3+464.522	3+480.776	620652.648	3624610.087	2.328	16.258	800.000	32.512	0.165	0.165	32.509
C45	3+584.698	3+609.993	3+634.874	620761.627	3624513.720	17.968	25.296	160.000	50.176	1.987	1.963	49.971
C46	3+679.628	3+696.869	3+713.775	620805.992	3624438.544	19.565	17.241	100.000	34.147	1.475	1.454	33.981
C47	3+785.651	3+802.537	3+819.417	620826.185	3624334.482	2.418	16.886	800.000	33.766	0.178	0.178	33.764
C48	3+901.653	3+913.811	3+925.784	620851.975	3624226.232	17.283	12.158	80.000	24.131	0.919	0.908	24.040
C49	4+061.701	4+071.431	4+081.100	620841.289	3624068.790	11.115	9.730	100.000	19.399	0.472	0.470	19.369
C50	4+096.597	4+113.518	4+121.962	620846.595	3624026.977	96.888	16.921	15.000	25.365	7.612	5.050	22.449
C51	4+175.033	4+191.342	4+207.210	620930.289	3624048.031	23.045	16.309	80.000	32.177	1.646	1.612	31.961
C52	4+215.893	4+229.138	4+242.366	620960.759	3624071.130	5.056	13.245	300.000	26.473	0.292	0.292	26.465
C53	4+346.454	4+374.151	4+401.760	621083.605	3624148.220	7.922	27.697	400.000	55.306	0.958	0.955	55.262
C54	4+439.631	4+452.064	4+464.448	621143.330	3624198.391	8.887	12.434	160.000	24.817	0.482	0.481	24.792
C55	4+483.265	4+506.363	4+527.363	621189.845	3624226.501	42.110	23.098	60.000	44.098	4.292	4.006	43.112
C56	4+540.372	4+561.825	4+573.189	621246.354	3624215.552	94.014	21.453	20.000	32.817	9.330	6.362	29.258
C57	4+580.992	4+595.630	4+609.471	621235.008	3624173.150	32.635	14.638	50.000	28.479	2.099	2.014	28.096
C58	4+671.553	4+687.334	4+702.716	621166.684	3624110.794	22.319	15.782	80.000	31.163	1.542	1.513	30.967
C59	4+760.655	4+774.922	4+789.113	621084.038	3624080.605	10.191	14.267	160.000	28.458	0.635	0.632	28.420
C60	4+817.253	4+835.188	4+848.368	621031.917	3624050.201	71.310	17.934	25.000	31.115	5.768	4.686	29.145
C61	4+855.988	4+870.636	4+882.488	621039.977	3624010.815	60.732	14.648	25.000	26.499	3.975	3.430	25.276
C62	4+911.068	4+927.134	4+942.777	621096.464	3623992.787	22.710	16.065	80.000	31.709	1.597	1.566	31.502
C63	4+992.812	5+014.544	5+028.591	621183.960	3624000.455	82.001	21.732	25.000	35.780	8.125	6.132	32.803
C64	5+050.719	5+072.059	5+091.725	621187.362	3624065.567	39.157	21.340	60.000	41.005	3.682	3.469	40.212
C65	5+111.085	5+138.999	5+163.340	621233.406	3624116.438	49.900	27.914	60.000	52.255	6.176	5.599	50.619
C66	5+180.635	5+197.841	5+213.133	621295.782	3624114.208	46.551	17.207	40.000	32.499	3.544	3.255	31.612
C67	5+236.450	5+255.673	5+274.573	621338.394	3624156.088	18.202	19.223	120.000	38.123	1.530	1.511	37.963
C68	5+295.747	5+313.908	5+332.019	621390.890	3624182.034	7.422	18.161	280.000	36.272	0.588	0.587	36.247
C69	5+389.758	5+400.454	5+411.070	621472.829	3624210.055	12.211	10.697	100.000	21.312	0.570	0.567	21.272
C70	5+421.447	5+432.398	5+443.174	621500.253	3624226.592	17.784	10.952	70.000	21.728	0.852	0.841	21.640
C71	5+453.422	5+468.439	5+478.452	621535.498	3624234.927	79.674	15.017	18.000	25.030	5.441	4.178	23.062
C72	5+505.449	5+534.043	5+560.372	621531.827	3624305.438	39.335	28.593	80.000	54.923	4.956	4.667	53.850
C73	5+601.955	5+613.031	5+624.018	621579.994	3624370.875	12.641	11.077	100.000	22.063	0.612	0.608	22.018
C74	5+647.330	5+659.296	5+671.169	621598.637	3624413.316	12.417	11.967	110.000	23.840	0.649	0.645	23.793
C75	5+687.391	5+700.037	5+712.589	621622.714	3624446.296	12.031	12.646	120.000	25.198	0.664	0.661	25.152
C76	5+737.979	5+767.086	5+789.651	621672.738	3624491.081	65.791	29.107	45.000	51.672	8.593	7.215	48.880
C77	5+803.408	5+816.525	5+824.964	621655.786	3624544.433	82.338	13.117	15.000	21.556	4.926	3.708	19.748
C78	5+833.600	5+844.294	5+854.862	621685.123	3624558.294	15.228	10.694	80.000	21.262	0.712	0.705	21.199
C79	5+860.201	5+870.174	5+880.045	621704.893	3624575.190	14.212	9.973	80.000	19.843	0.619	0.614	19.792

Curve #	START CHAINAGE	PI STA	END CHAINAGE	PI EASTING	PI NORTING	DELTA ANGLE	TANGENT	RADIUS	CURVE LENGTH	EXTERNAL SECANT	MID ORDINATE	CHORD LENGTH
C1	0+041.241	0+059.614	0+077.582	620969.590	3623976.992	20.822	18.373	100.000	36.341	1.674	1.646	36.142
C2	0+138.509	0+166.420	0+183.470	621076.409	3623967.817	85.869	27.912	30.000	44.961	10.976	8.036	40.870

NOTES:-
1. ALL LEVELS AND DIMENSIONS ARE IN METER

LEGEND:

- CENTRE LINE OF ACCESS ROAD
- EXISTING ROAD
- CONTOUR (INDEX)
- NORTH DIRECTION
- CULVERT



REFERENCE DRAWINGS :-

DRAWING IS RELEASED

TENDER ONLY

CLIENT: PSU SMALL DAM SECTION MERGED AREA IRRIGATION DEPARTMENT, KPK.

CONSULTANTS: A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP OF ENGINEERING & CONSULTANTS
PERFECT ENGINEERING & MANAGEMENT CONSULTANTS

PROJECT: CONSULTANCY SERVICES FOR FEASIBILITY STUDY, DETAIL DESIGN AND PREPARATION OF PG-1 FOR 5 SMALL DAMS IN FATA (PACKAGE X)

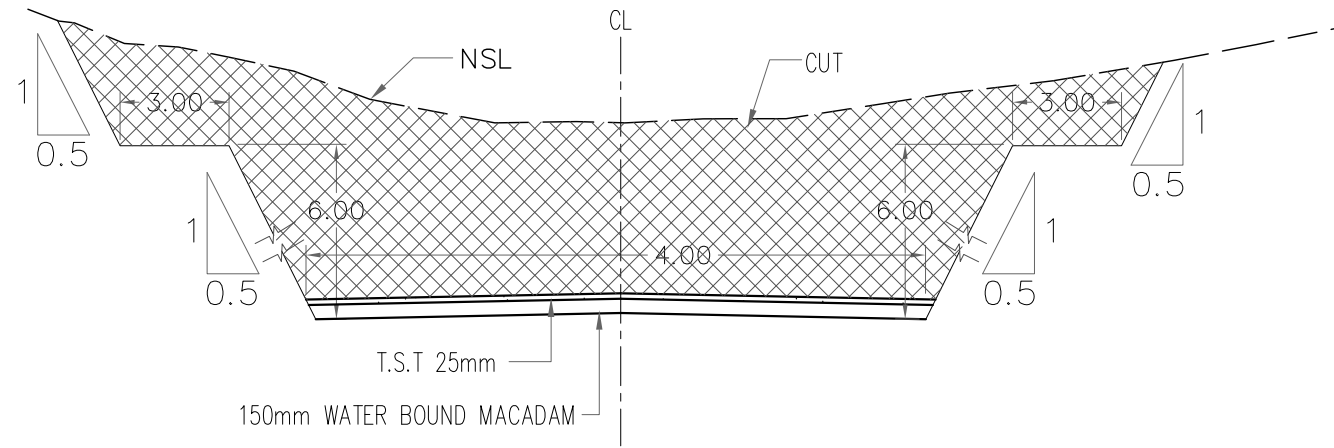
TITLE: SHAKTU DAM TRIBAL SUB-DIVISION BANNU

DAM TOP & OUTLET ACCESS ROAD SETTING OUT DATA

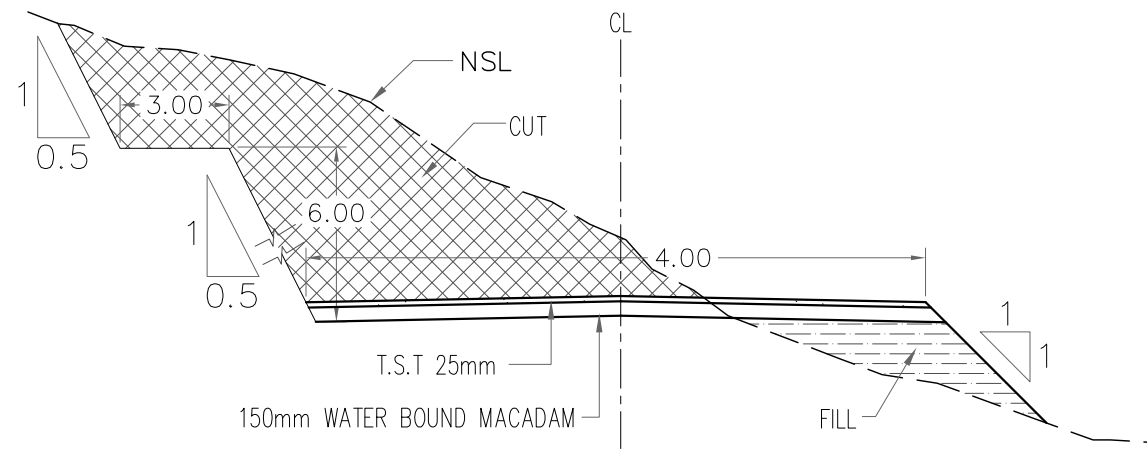
DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
NABI	A.I	Zeeshan S.	Zafar Iqbal	AS SHOWN	OCT-2021

DRG.No:- SSD-TD-AR-12 SHEET:- SUB SH.- ----

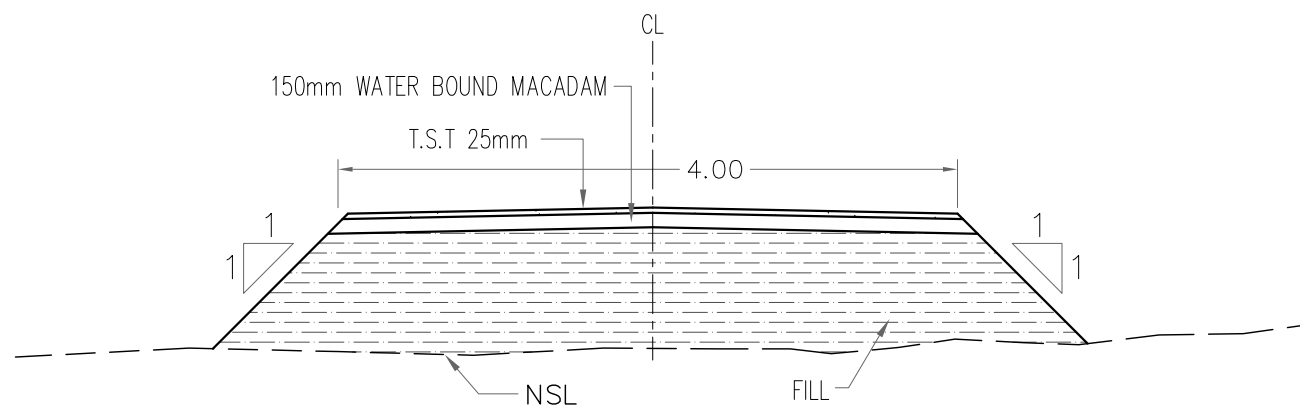
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TYPICAL SECTION IN CUT



TYPICAL SECTION IN CUT & FILL



TYPICAL SECTION IN FILL

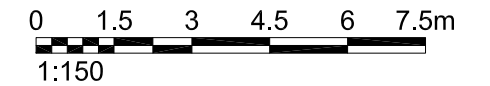
NOTES:-

1. ALL LEVELS AND DIMENSIONS ARE IN METER.

LEGEND:-

CUT AREA

FILL AREA



REFERENCE DRAWINGS :-

DRAWING IS RELEASED

TENDER ONLY

CLIENT:

PSU SMALL DAM SECTION MERGED AREA
IRRIGATION DEPARTMENT, KPK.

CONSULTANTS:

A J.V OF
RHC REHMAN HABIB CONSULTANTS (PVT) LTD.
CASCADE GROUP
OF ENGINEERING & CONSULTANTS
PERFECT ENGINEERING &
MANAGEMENT CONSULTANTS

PROJECT:

CONSULTANCY SERVICES FOR FEASIBILITY STUDY,
DETAIL DESIGN AND PREPARATION OF PC-1
FOR 5 SMALL DAMS IN FATA (PACKAGE X)

TITLE:

SHAKTU DAM
TRIBAL SUB-DIVISION BANNU
TYPICAL CROSS SECTION OF ROAD

DRAWN	DESIGNED	CHECKED	APPROVED	SCALE	DATE
NABI	A.I	Zeeshan S.	Zafar Iqbal	1:150	OCT-2021
DRG.No:- SSD-TD-AR-13			SHEET:-	SUB SH.- ----	

