GOVERNMENT OF ISLAMIC REPUBLIC OF AFGHANISTAN

SWIM STRENGTHENING WATERSHED AND IRRIGATION MANAGEMENT

Project Name: Chochman Main Canal Rehabilitation
Province: Samangan
District: Khulm

Afghanistan, Samangan.
Date: June 21, 2020

TABLE OF CONTENTS FOR ASLE BAHARAK MAIN CANAL

Chochman Canal
Samangan, Aybak

MAP INFORMATION
Map Produced : Jan 2020
Cartographer: Abdul Razaq
Projection : World Mercator
Datum : WGS 1984

Data Source
Base layer information including boundaries and place names courtesy of the Afghan Geodesy and Cartography Head Office (AGCHO).

Data Disclaimer
All boundaries and map features are approximate and should not be considered authoritative.
While every effort is made to use the best available data, accuracy of features or other information cannot be guaranteed.
Map prepared by the SWIM Project GIS Department.

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0 0.5 1 2 3 4 Kilometers

GENERAL:

1. SAMPLE OF ALL MATERIALS (STONE, PCC, STEEL GATES, RCC, GRAVEL, SAND, DRY STONE, PVC PIPE, GUARD RIAL, WATER STOPPER, ETC.) SHALL BE APPROVED BY SWIM ENGINEER BEFORE THE CONTRACTOR USE FOR THE PROJECT, OTHERWISE SWIM ENGINEERS ARE AUTHORIZED TO REJECT THE USED MATERIALS.
2. ALL CONSTRUCTION WORKS SHALL BE CARRIED OUT WITH CLOSE COORDINATION AND PRIOR APPROVAL OF SWIM ENGINEERS. OTHERWISE SWIM ENGINEERS ARE AUTHORIZED TO REJECT THE EXECUTED WORKS AND CONTRACTOR HAS TO RE-DO IT.
3. ALL QUALITY CONTROL TESTS SHALL BE CARRIED OUT BY THE CONTRACTOR IN A RECOGNIZED LABORATORY (HAVING ABA CERTIFICATE) APPROVED BY SWIM.
4. TO AVOID DELAY IN IRRIGATION, ALL DIVERSION WILL BE MADE IN CONSULTATION WITH COMMUNITY, EITHER THE DIVERSION SHALL BE MADE LEFT SIDE OR RIGHT SIDE OF THE CANAL
5. SWIM IS NOT REHABILITATING THE EXISTING STRUCTURES.

GABION:

1. THE STONE SIZE RANGES FROM 200 MM TO 300 MM. SMALL STONES SHOULD BE AVOIDED. THE STONES USED SHOULD HAVE A MINIMUM SIZE OF NOT LESS THAN "D" (MESH WIDTH) AND NOT GREATER THAN 3.5 TIMES "D", WHERE D IS THE SPECIFIED MESH WIDTH.

STONE MASONRY:

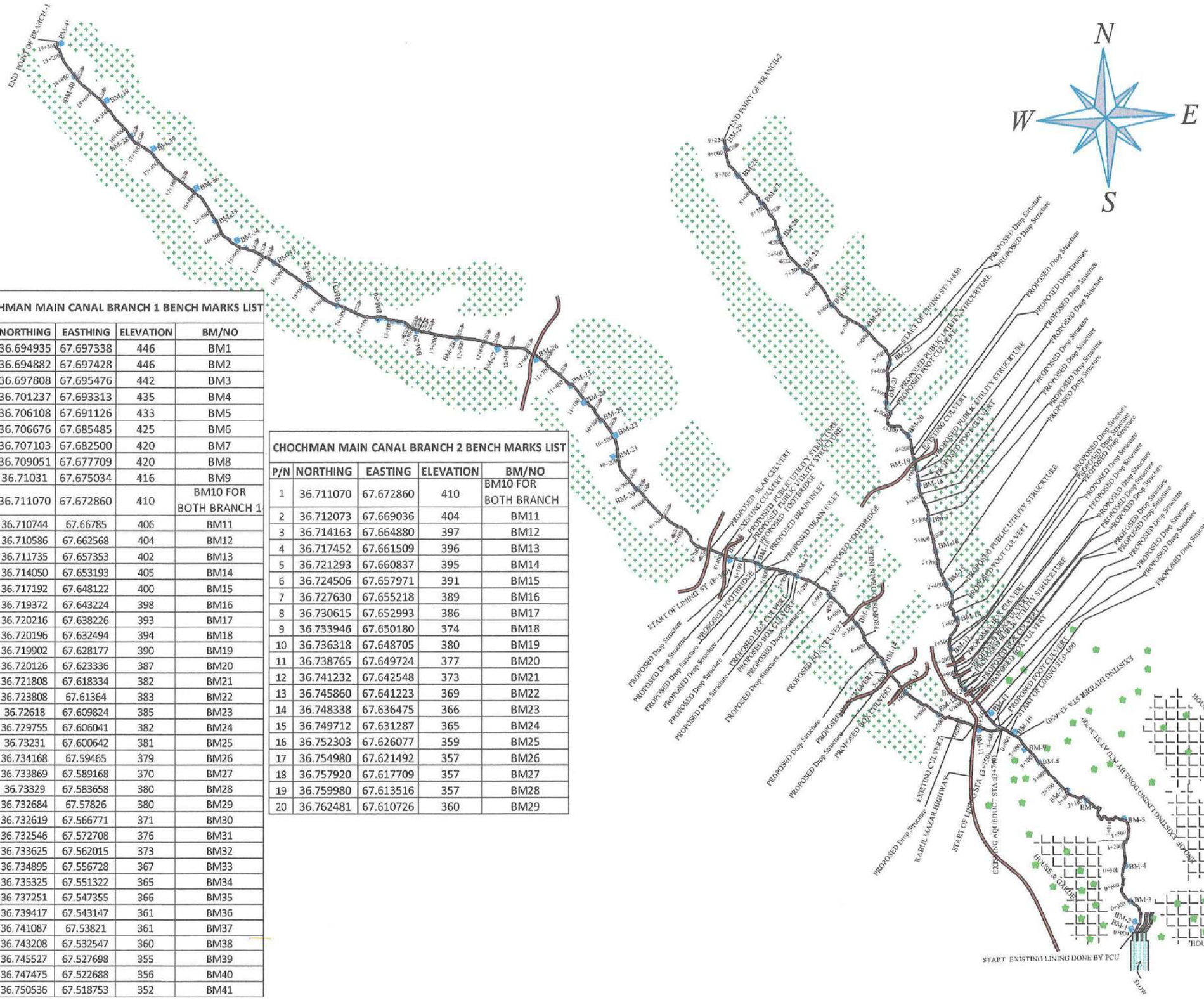
1. ALL STONE MASONRY WALLS SHALL BE WITH RATIO OF 1:4 CEMENT SAND MORTAR WITH CONSIDERING TO 35% OF MASONRY VOLUME.
2. ALL STONES SHALL BE FREE FROM DEFECTS LIKE CAVITIES, CRACKS, SAND HOLES, FLAWS, INJURIOUS VEINS, PATCHES OF LOOSE OR SOFT MATERIALS, ETC. ALSO, THE PERCENTAGE OF WATER ABSORPTION SHALL GENERALLY NOT EXCEED 7.5%, CERTIFICATION REQUIRED
3. STONES USED SHALL BE SMALL ENOUGH TO BE LIFTED AND PLACED BY HAND, LENGTH OF THE STONES SHALL NOT EXCEED THREE TIMES THEIR HEIGHTS, AND THE BREADTH OF THE BASE SHALL NOT BE GREATER THAN THREE-FOURTHS OR THE THICKNESS OF WALL OR LESS THAN 150MM. THE HEIGHT OF STONES FOR RUBBLE MASONRY MAY BE UP TO 300MM
4. STONES WITH ROUND FACES SHALL NOT BE USED AND NEVER EVER ACCEPTABLE.
5. ALL EXPOSED SURFACES OF MORTARED STONE MASONRY SHALL BE POINTED WITH THE CEMENT SAND MORTAR 1:3
6. FOR FACES OF THE STONEMASONRY THAT WILL BE BACKFILLED, CONTRACTOR IS TO MAKES SURE ALL GAPS BETWEEN STONES ARE FILLED WITH MORTAR.

CONCRETE:

1. CONCRETE DESIGN SHALL BE BASED ON 28 DAYS A COMPRESSIVE STRENGTH OF 25MPa FOR RCC AND 20MPa FOR PCC AS SPECIFIED ON THE DRAWINGS.
2. REINFORCEMENT YIELD STRESS "FY" SHALL NOT BE LESS THAN 60000 PSI
3. A MAXIMUM OF 25% STONE TO BE USED IN BOULDER CONCRETE. THE CONCRETE MARK SHALL BE 15MPa AS SPECIFIED IN DESIGN AND DRAWINGS.
4. SAND OR FINE AGGREGATE SHALL FREE FROM SALT, ALKALI, CALCIUM SULPHATE OR VEGETATION.
5. AGGREGATE: COARSE AGGREGATE SHALL CONSIST OF CRUSHED GRAVEL AND SHOULD BE IN COMPLIANCE TO TECHNICAL SPECIFICATION.
6. WATER USED FOR ALL CONCRETE MIXTURE AND CONCRETE CURING SHALL BE FROM A SOURCE APPROVED BY THE SWIM ENGINEER AND AT THE TIME OF USE SHALL BE FREE FROM CONTAMINANTS.
7. THE RANG OF SLUMP FOR CONCRETE SHALL BE BETWEEN (2.5-10) CM.
8. CONCRETE COMPACTION SHALL BE DONE BY USING CONCRETE VIBRATOR AT THE TIME OF POURING IN SUCH A WAY TO FORM A SOLID COMPACT CONCRETE.
9. ALL CONCRETE AND MASONRY WORKS CURING SHOULD BE CONTINUED FOR 14 DAYS.
10. DURING COLD WEATHER ALL CONCRETING AND MASONRY WORKS SHALL BE STOPPED, OR THE CONTRACTOR HAS TO CONSIDER COLD WEATHER CONCRETING PROCEDURE AS ACCEPTED BY THE SWIM ENGINEER.
11. CONCRETE SHUTTERING/FRAMEWORK SHOULD BE DONE WITH HIGH STABILITY AND PROPER BRACING.
12. FOR ALL CONCRETE WORKS (RCC, PCC, BOULDER CONCRETE, MORTAR AND GROUT) SHALL BE MIXED BY CONCRETE MIXER. HAND MIXING IS NOT PERMISSIBLE UNLESS THE VOLUME OF CONCRETE IS LESS THAN 1M^3 AND SHALL BE VERIFIED BY SWIM ENGINEERS AS WELL.
13. THE CONTRACTOR SHALL HAVE AN EXPERIENCED SITE ENGINEER FULL TIME ON THE PROJECT SITE FOR FOLLOW UP THE DESIGN, DRAWINGS AND QUALITY CONTROL PURPOSES. EXECUTION OF WORKS WITHOUT PRESENCE OF SITE ENGINEER IS NOT ACCEPTABLE AND PAYABLE BY SWIM.
14. TWO-COAT PORTLAND CEMENT-BASED PLASTER SHALL BE APPLIED IN ACCORDANCE WITH ASTM C 926 OR EQUIVALENT. THE FINAL COAT SHALL BE FINISHED TO A TRUE AND EVEN SURFACE FREE FROM ROUGH AREAS, CHECKS, OR BLEMISHES. NOMINAL PLASTER FINISH THICKNESS SHALL BE 20MM OR MORE AS DIRECTED BY QC ENGINEER IN THE SITE).
15. INSTALLATION OF PVC OR HDPE WATER STOPPERS MUST BE SECURELY POSITIONED IN THE FORMS TO PREVENT DEFLECTION OR MISALIGNMENT DURING CONCRETE PLACEMENT. TYPE OF WATER STOPPER SHALL BE CONFORM WITH ASTM D2240 (W≥20CM).
16. THE CHAIR BARS DIAMETER AT THE TOP AND BOTTOM R.C.C SLABS OF STRUCTURES IS 12MM AND THE SPACING WILL BE DIRECTED BY SWIM ENGINEER IN THE SITE.
17. GRAVEL CAN BE PRODUCED FROM RIVERBED, CRUSHED PLANT OR OTHER SOURCE TO BE SOUND ENOUGH ASTM 33 AND ASTM C33 AND MEET THE REQUIREMENT OF STRUCTURE THAT HAVE RECOMMENDED BY DESIGN ENGINEER OR CERTIFIED BY QC ENGINEER. ALL CRUSHED STONE OR GRAVEL FOR GRAVELING WORK SHALL BE WELL GRADED AND SHALL CONFORM FULL PROCEDURE IS OUTLINED IN ASTM C136 (AASHTO T-27). OR THE GREATEST SIZE OF AGGREGATE SHOULD NOT BE MORE THAN ONE THIRD OF GRAVEL THICKNESS.

BACKFILLING:

1. BACKFILLING MATERIAL SHALL BE PROPERLY TESTED AND SELECTED TO BE SUITABLE AS PER APPROVAL OF SWIM ENGINEER AND STANDARD PRACTICE.
2. FOR BACKFILLING MAXIMUM THICKNESS OF EACH LOOSE SOIL LAYER SHALL NOT BE MORE THAN 15CM.
3. STANDARD COMPACTION TESTS SHALL BE CARRIED OUT FOR THE BACKFILLING LAYERS BY LAYERS.
4. THE PERCENTAGE OF COMPACTION SHALL BE NOT LESS THAN 95% OF MDD FOR LOAD BEARING STRUCTURES AND AT LEAST 80% OF MDD FOR STRUCTURES IN AGRICULTURAL AREAS
5. LOAD BEARING STRUCTURES ARE: TURNOUT BED AND WALLS, RETAINING WALL, CULVERT WALLS AND BED, AQUEDUCT BED AND WALLS, LINING BED AND WALLS, INTAKE BED AND WALLS, SUPPER PASSAGE BED AND WALLS, DROP BED AND WALLS, WHICH BED OF MENTIONED STRUCTURES NEEDS 95% OF THE MODIFIED PROCTOR TEST. ON BEHIND OF ALL STRUCTURES EXCEPT CULVERT AND ROAD IS CLASSIFIED AS NON-LOAD BEARING, WHICH SHALL BE COMPACTED AT LEAST 80% OF THE MODIFIED PROCTOR TEST.
6. THE LOOSE OR COLLAPSIBLE SUBGRADE MATERIAL SHALL BE REMOVER AND 95% OF THE MODIFIED PROCTOR TEST SHALL BE APPLIED TO THE SUBGRADE SOIL.[i]



LEGEND:-	
Agriculture Area	
Orchard(Garden)	
Bench Mark	
Parental Canal	
Main Canal	
Branch Canal	
P-Turn Out	Turn Out
Residential Area	
Road	
Existing Stone Masonry	
Proposed Stone Masonry	
Existing Culvert	
PROPOSED BOX CULVERT	
Masjid Sharif	
Electric Pole	
Cemetery	
Hand Water Pump	
Tree	
River	
Foot Culvert	
Public utility structure	
Existing Divider	
Existing Aqueduct	
Drop	

CHOCHMAN MAIN CANAL BRANCH 1 BENCH MARKS LIST

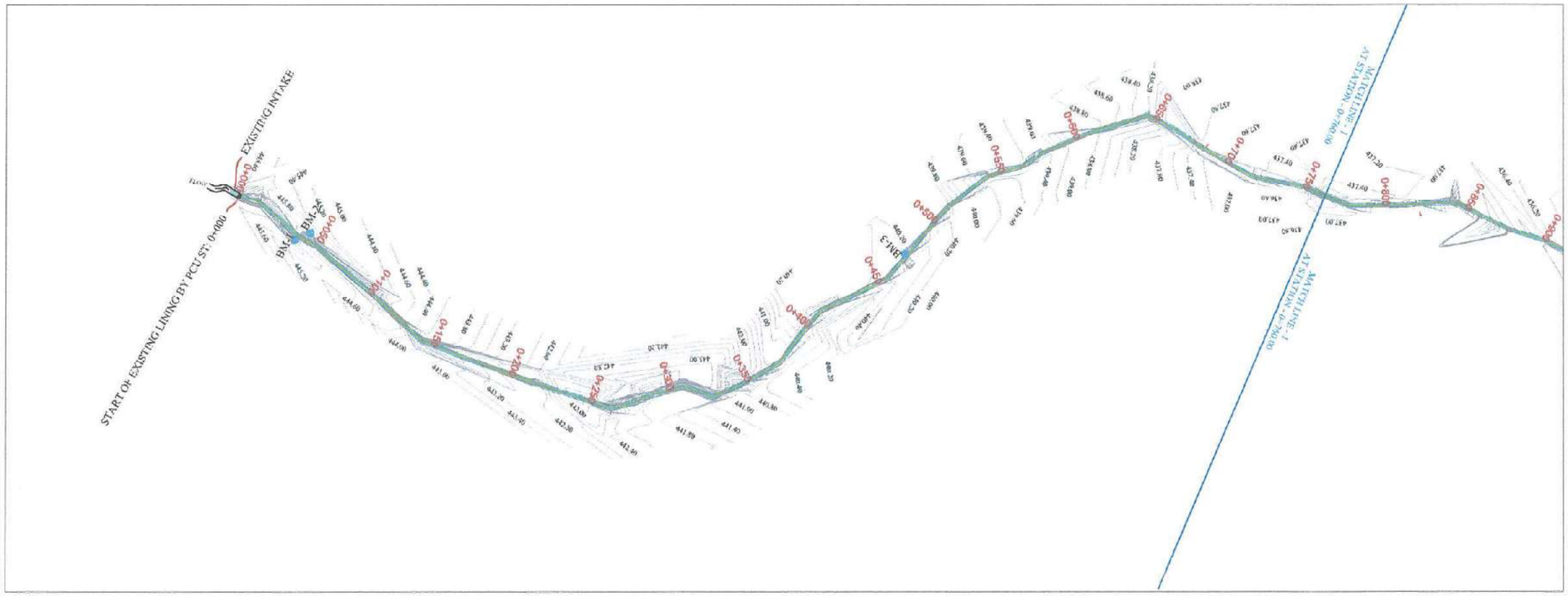
P/N	NORTHING	EASTHING	ELEVATION	BM/NO
1	36.694935	67.697338	446	BM1
2	36.694882	67.697428	446	BM2
3	36.697808	67.695476	442	BM3
4	36.701237	67.693313	435	BM4
5	36.706108	67.691126	433	BM5
6	36.706676	67.685485	425	BM6
7	36.707103	67.682500	420	BM7
8	36.709051	67.677709	420	BM8
9	36.71031	67.675034	416	BM9
10	36.711070	67.672860	410	BM10 FOR BOTH BRANCH 1
11	36.710744	67.66785	406	BM11
12	36.710586	67.662568	404	BM12
13	36.711735	67.657353	402	BM13
14	36.714050	67.653193	405	BM14
15	36.717192	67.648122	400	BM15
16	36.719372	67.643224	398	BM16
17	36.720216	67.638226	393	BM17
18	36.720196	67.632494	394	BM18
19	36.719902	67.628177	390	BM19
20	36.720126	67.623336	387	BM20
21	36.721808	67.618334	382	BM21
22	36.723808	67.61364	383	BM22
23	36.72618	67.609824	385	BM23
24	36.729755	67.606041	382	BM24
25	36.73231	67.600642	381	BM25
26	36.734168	67.59465	379	BM26
27	36.733869	67.589168	370	BM27
28	36.73329	67.583658	380	BM28
29	36.732684	67.57826	380	BM29
30	36.732619	67.566771	371	BM30
31	36.732546	67.572708	376	BM31
32	36.733625	67.562015	373	BM32
33	36.734895	67.556728	367	BM33
34	36.735325	67.551322	365	BM34
35	36.737251	67.547355	366	BM35
36	36.739417	67.543147	361	BM36
37	36.741087	67.53821	361	BM37
38	36.743208	67.532547	360	BM38
39	36.745527	67.527698	355	BM39
40	36.747475	67.522688	356	BM40
41	36.750536	67.518753	352	BM41

CHOCHMAN MAIN CANAL BRANCH 2 BENCH MARKS LIST

P/N	NORTHING	EASTING	ELEVATION	BM/NO
1	36.711070	67.672860	410	BM10 FOR BOTH BRANCH
2	36.712073	67.669036	404	BM11
3	36.714163	67.664880	397	BM12
4	36.717452	67.661509	396	BM13
5	36.721293	67.660837	395	BM14
6	36.724506	67.657971	391	BM15
7	36.727630	67.655218	389	BM16
8	36.730615	67.652993	386	BM17
9	36.733946	67.650180	374	BM18
10	36.736318	67.648705	380	BM19
11	36.738765	67.649724	377	BM20
12	36.741232	67.642548	373	BM21
13	36.745860	67.641223	369	BM22
14	36.748338	67.636475	366	BM23
15	36.749712	67.631287	365	BM24
16	36.752303	67.626077	359	BM25
17	36.754980	67.621492	357	BM26
18	36.757920	67.617709	357	BM27
19	36.759980	67.613516	357	BM28
20	36.762481	67.610726	360	BM29

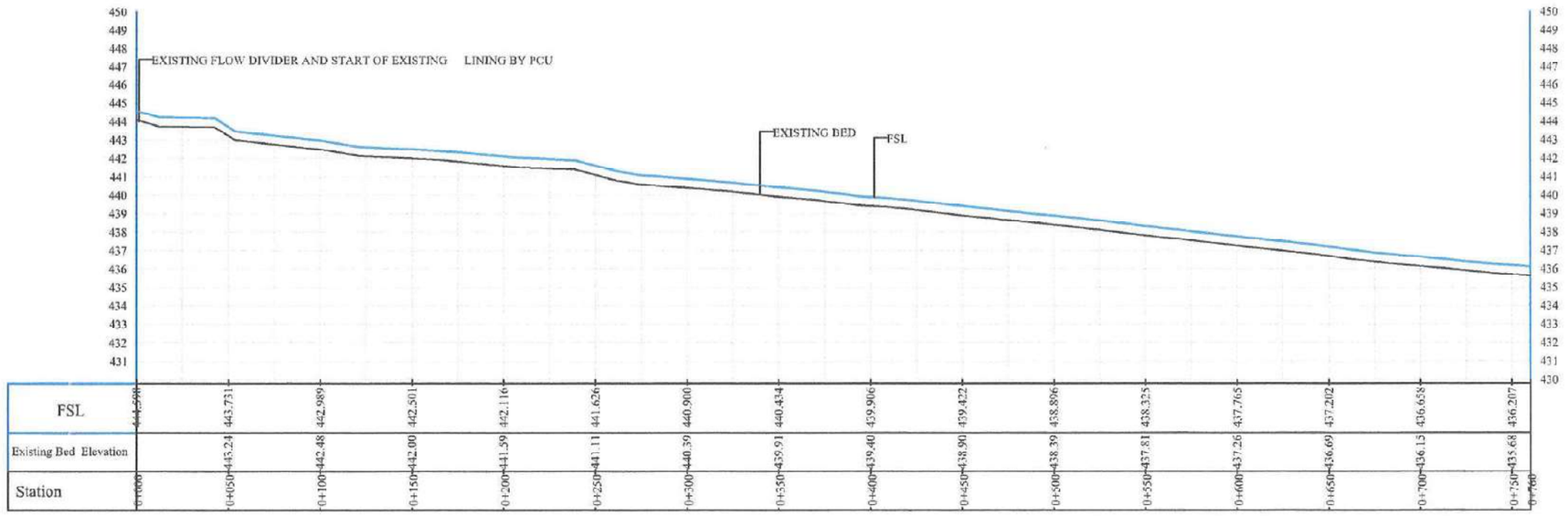
Scale: Not in Scale

USAID FROM THE AMERICAN PEOPLE	STRENGTHENING WATERSHED & IRRIGATION MANAGEMENT SWIM	CANAL NAME	LOCATION	DRAWING TITLE	SURVEYED BY	DRAWING AND DESIGN BY	REVIEWED AND CHECKED BY	SWIM APPROVAL	MEW/RBA, APPROVAL	SHEET NO.
		CHOCHMAN MAIN CANAL	DISTRICT: KHULM PROVINCE: SAMANGAN	GENERAL SITE PLAN	SWIM	MOHAMMAD AFZAL MUJAHID ENGINEER (HYDRAULIC SPECIALIST)	[illegible] IRRIGATION ENGINEER EXPERT	HOPPY MAZIER CHIEF OF PARTY		1/94
						DATE: 6/21/2020	DATE: 21-6-2020	DATE: 21-6-2020 For H.M	DATE: 23/6/020	



LEGEND:-

Agriculture Area	
Orchard(Garden)	
Bench Mark	
Parental Canal	
Main Canal	
Branch Canal	
P-Turn Out	Turn Out
Residential Area	
Road	
Existing Stone Masonry	
Proposed Stone Masonry	
Existing Culvert	
Proposed Culvert	
Masjid Sharif	
Electric Pole	
Cemetery	
Hand Water Pump	
Tree	
River	
Drain Inlet	
Drop	
Existing Aqueduct	
Existing Divider	
contour interval	20cm

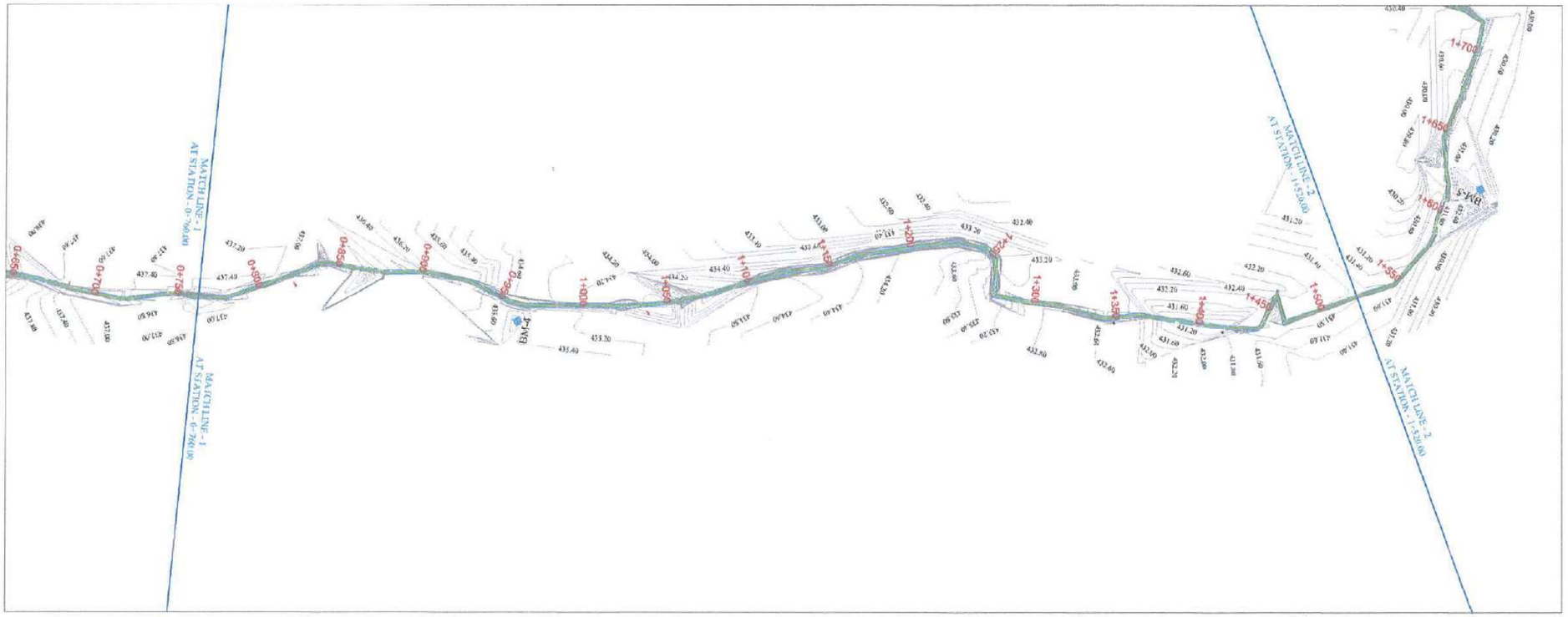


Station	0+000	0+050	0+100	0+150	0+200	0+250	0+300	0+350	0+400	0+450	0+500	0+550	0+600	0+650	0+700	0+750	0+760
Existing Bed Elevation	443.60	443.24	442.48	442.00	441.59	441.11	440.39	439.91	439.40	438.90	438.39	437.81	437.26	436.69	436.15	435.68	435.60
FSL	444.598	443.731	442.989	442.501	442.116	441.626	440.900	440.434	439.906	439.422	438.896	438.325	437.765	437.202	436.658	436.207	436.160

PLAN AND PROFILE

REF. SCALE: 1:1000

USAID FROM THE AMERICAN PEOPLE	STRENGTHENING WATERSHED & IRRIGATION MANAGEMENT SWIM	CANAL NAME	LOCATION	DRAWING TITLE	SURVEYED BY	DRAWING AND DESIGN BY	REVIEWED AND CHECKED BY	SWIM APPROVAL	MEW/RBA APPROVAL	SHEET NO. 02/94
		CHOCHMAN MAIN CANAL CHOCHMAN BRANCH	DISTRICT: KHULM PROVINCE: SAMANGAN	PLAN AND PLOFILE	SWIM	MOHAMMAD AFZAL MUJAHID ENGINEER (HYDRAULIC SPECIALIST) DATE: 6/21/2020	GERALD MANGO IRRIGATION ENGINEER EXPERT DATE: 21-6-2020	HOPPY MAZIER CHIEF OF PART DATE: 21-6-2020	DATE: 23/6/020 For H.M	



LEGEND:-	
Agriculture Area	
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P-Turn Out	Turn Out
Residential Area	
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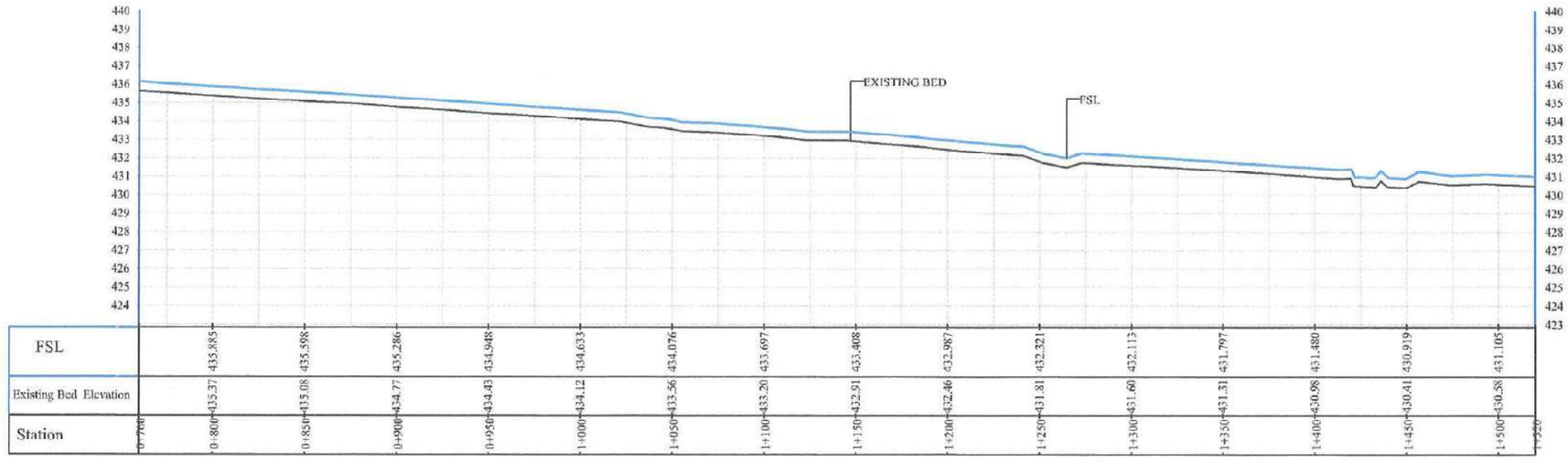
Proposed Stone Masonry	
Existing Culvert	
Proposed Culvert	
Masjid Sharif	
Electric Pole	
Cemetery	
Hand Water Pump	
Tree	
River	
Drain Inlet	
Drop	
Existing Aqueduct	
Existing Divider	
contour interval	20cm

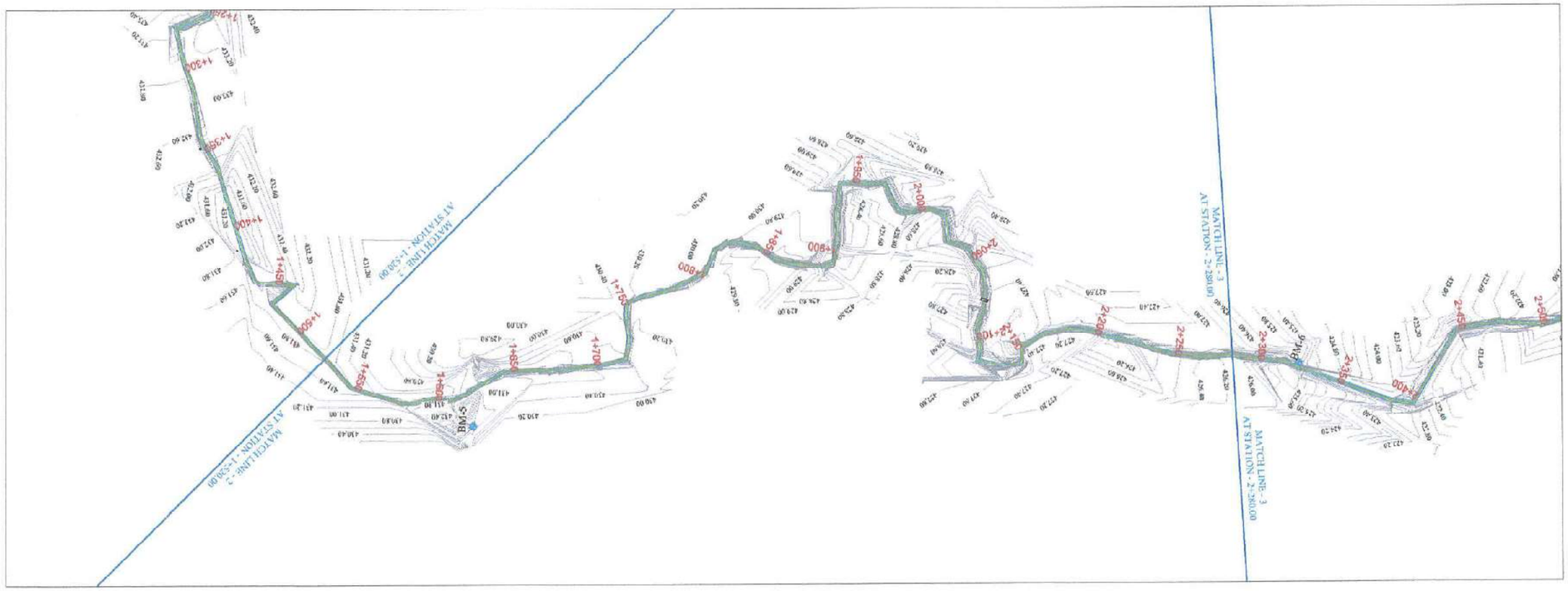


Station	Existing Bed Elevation	FSL
0+760		
0+800	435.37	435.885
0+850	435.08	435.598
0+900	434.77	435.286
0+950	434.43	434.948
1+000	434.12	434.633
1+050	433.56	434.076
1+100	433.20	433.697
1+150	432.91	433.408
1+200	432.46	432.987
1+250	431.81	432.321
1+300	431.60	432.113
1+350	431.31	431.797
1+400	430.98	431.480
1+450	430.41	430.919
1+500	430.58	431.105
1+520		

– PLAN AND PROFILE
– REF. SCALE: 1:1000

USAID FROM THE AMERICAN PEOPLE	STRENGTHENING WATERSHED & IRRIGATION MANAGEMENT SWIM	CANAL NAME	LOCATION	DRAWING TITLE	SURVEYED BY	DRAWING AND DESIGN BY	REVIEWED AND CHECKED BY	SWIM APPROVAL	MEW/RBA APPROVAL	SHEET NO.
		CHOCHMAN MAIN CANAL CHOCHMAN BRANCH	DISTRICT: KHULM PROVINCE: SAMANGAN	PLAN AND PROFILE	SWIM	MOHAMMAD AFZAL MUJADDIDI ENGINEER (HYDRAULIC SPECIALIST) DATE: 6/21/2020	GERALD MACDONALD IRRIGATION ENGINEER EXPERT DATE: 21-6-2020	HOPPY MAZIER CHIEF OF PARTY DATE: 21-6-2020	DATE: 23/6/2020	03/94

For H.M



LEGEND:-

Agriculture Area	
Orchard(Garden)	
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P-Turn Out	Turn Out
Residential Area	
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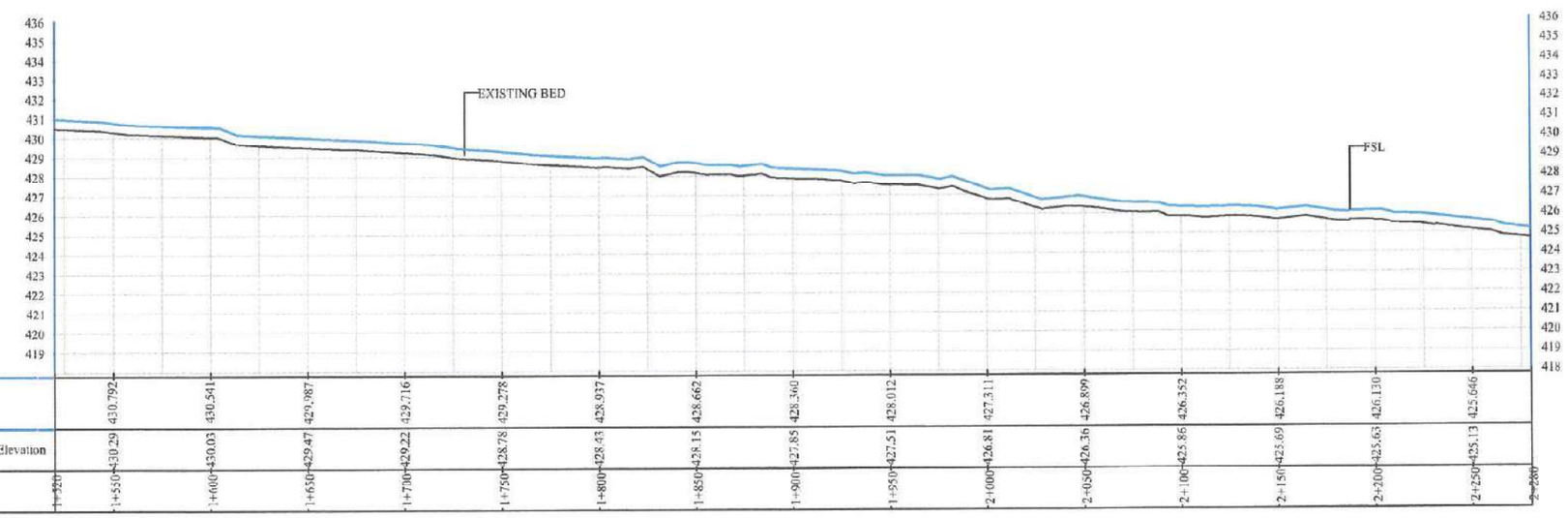
Proposed Culvert	
Masjid Sharif	
Electric Pole	
Cemetery	
Hand Water Pump	
Tree	
River	
Drain Inlet	
Drop	
Existing Aqueduct	
Existing Divider	
contour interval	20cm



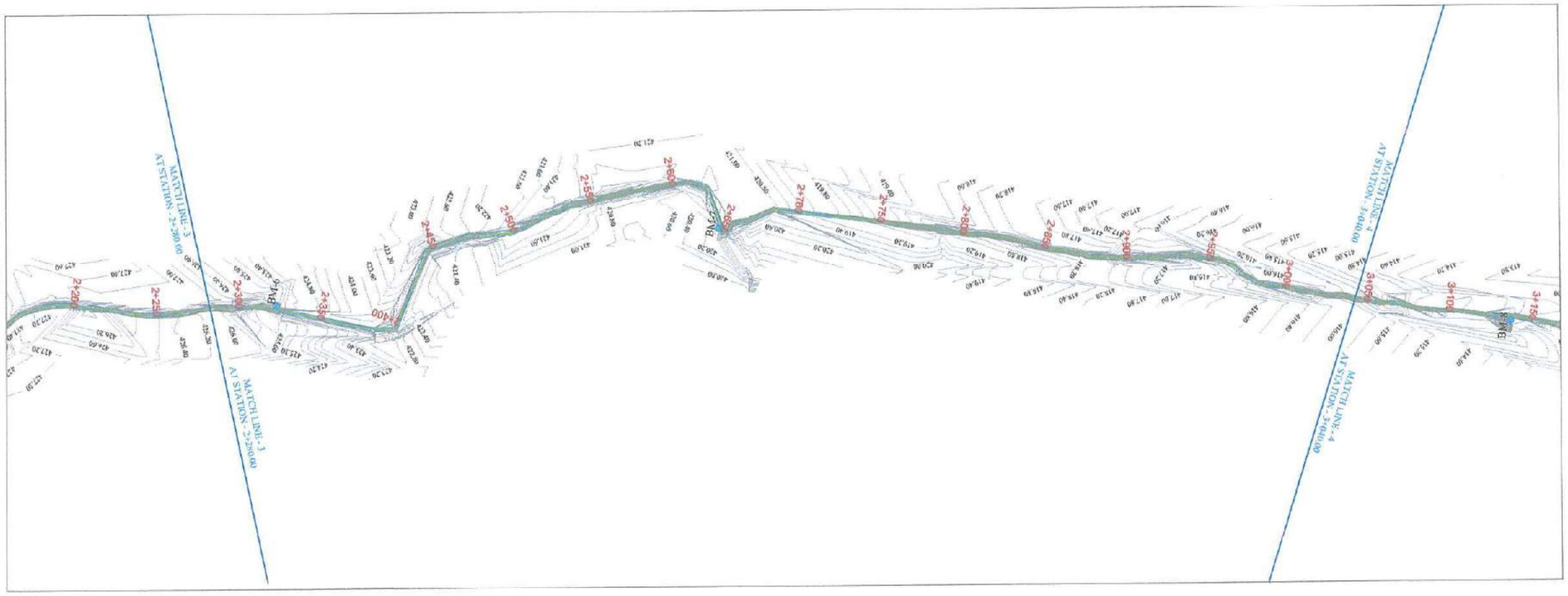
Station	Existing Bed Elevation	FSL
1+320		
1+550	430.29	430.792
1+600	430.03	430.541
1+650	429.47	429.987
1+700	429.22	429.716
1+750	428.78	429.278
1+800	428.43	428.937
1+850	428.15	428.662
1+900	427.85	428.360
1+950	427.51	428.012
2+000	426.81	427.311
2+050	426.36	426.899
2+100	425.86	426.352
2+150	425.69	426.188
2+200	425.63	426.130
2+250	425.13	425.646
2+280		

PLAN AND PROFILE

REF. SCALE: 1:1000

USAID FROM THE AMERICAN PEOPLE	STRENGTHENING WATERSHED & IRRIGATION MANAGEMENT SWIM	CANAL NAME	LOCATION	DRAWING TITLE	SURVEYED BY	DRAWING AND DESIGN BY	REVIEWED AND CHECKED BY	SWIM APPROVAL	MEW/RBA APPROVAL	SHEET NO. 04/94
		CHOCHMAN MAIN CANAL CHOCHMAN BRANCH	DISTRICT: KHULM PROVINCE: SAMANGAN	PLAN AND PROFILE	SWIM	MOHAMMAD AFZAL MUJAHID ENGINEER (HYDRAULIC SPECIALIST) DATE: 6/21/2020	GERALD MALONEY IRRIGATION ENGINEER EXPERT DATE: 21-6-2020	HOPPY MAZIER CHIEF OF PARTY DATE: 21-6-2020	DATE: 23/6/2020	

For H.M



LEGEND:-

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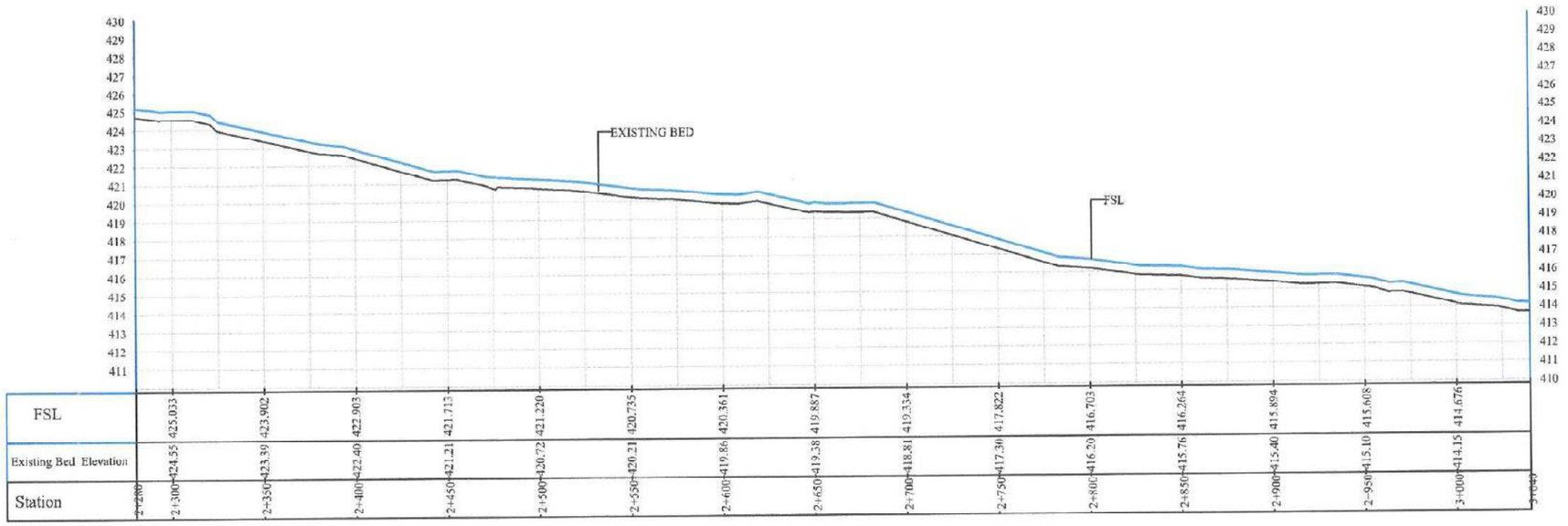
Electric Pole	
Cemetery	
Hand Water Pump	
Tree	
River	
Drain Inlet	
Drop	
Existing Aqueduct	
Existing Divider	
contour interval	20cm



Station	Existing Bed Elevation	FSL
2+280		
2+300	424.55	425.033
2+350	423.39	423.902
2+400	422.40	422.903
2+450	421.21	421.713
2+500	420.72	421.220
2+550	420.21	420.735
2+600	419.86	420.361
2+650	419.38	419.887
2+700	418.81	419.334
2+750	417.30	417.822
2+800	416.20	416.703
2+850	415.76	416.264
2+900	415.40	415.894
2+950	415.10	415.608
3+000	414.15	414.676
3+040		

– PLAN AND PROFILE

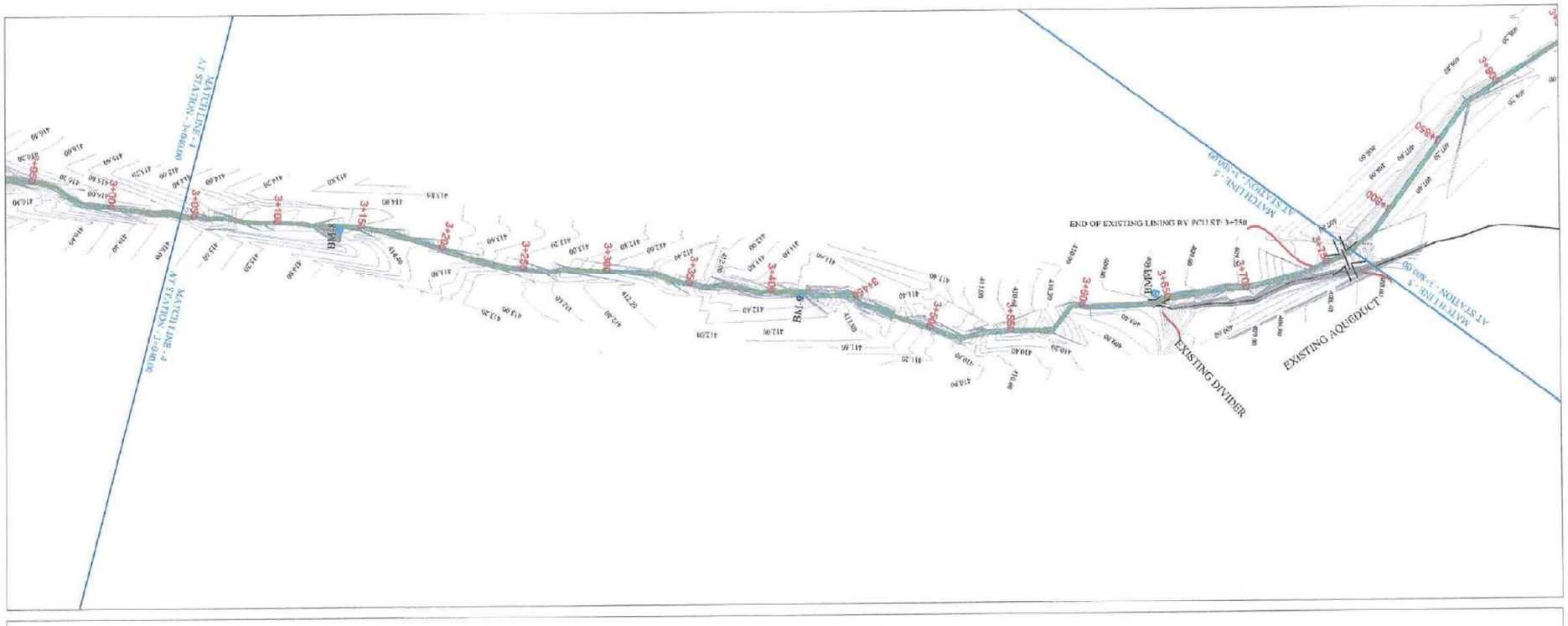
– REF. SCALE: 1:1000

USAID FROM THE AMERICAN PEOPLE

SWIM

STRENGTHENING WATERSHED & IRRIGATION MANAGEMENT	CANAL NAME	LOCATION	DRAWING TITLE	SURVEYED BY	DRAWING AND DESIGN BY	REVIEWED AND CHECKED BY	SWIM APPROVAL	MEW/RBA APPROVAL	SHEET NO.
	CHOCHMAN MAIN CANAL CHOCHMAN BRANCH	DISTRICT: KHULM PROVINCE: SAMANGAN	PLAN AND PROFILE	SWIM	MOHAMMAD AFZAL MUJAHID ENGINEER (HYDRAULIC SPECIALIST)	GERALD MATOVU IRRIGATION ENGINEER EXPERT	HOPPY MAZIER CHIEF OF PARTY		05/94
					DATE: 6/21/2020	DATE: 21-6-2020	DATE: 21-6-2020	DATE: 23/6/2020	

For H.M



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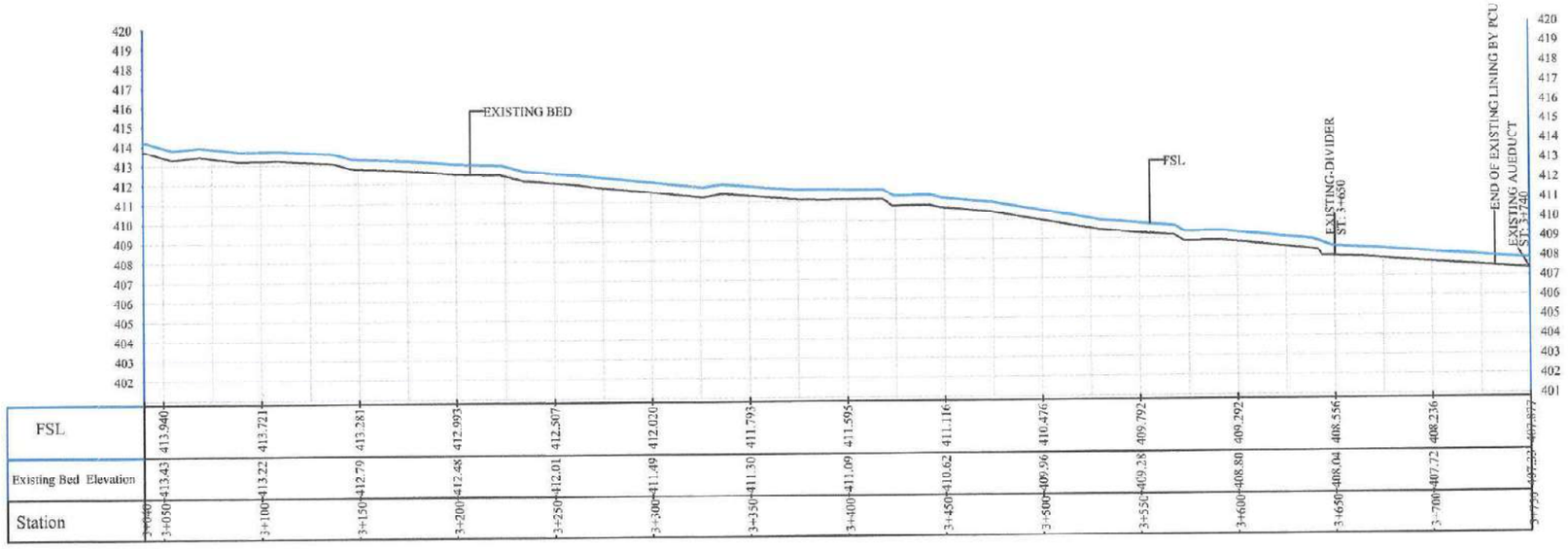
Existing Divider	
contour interval	20cm

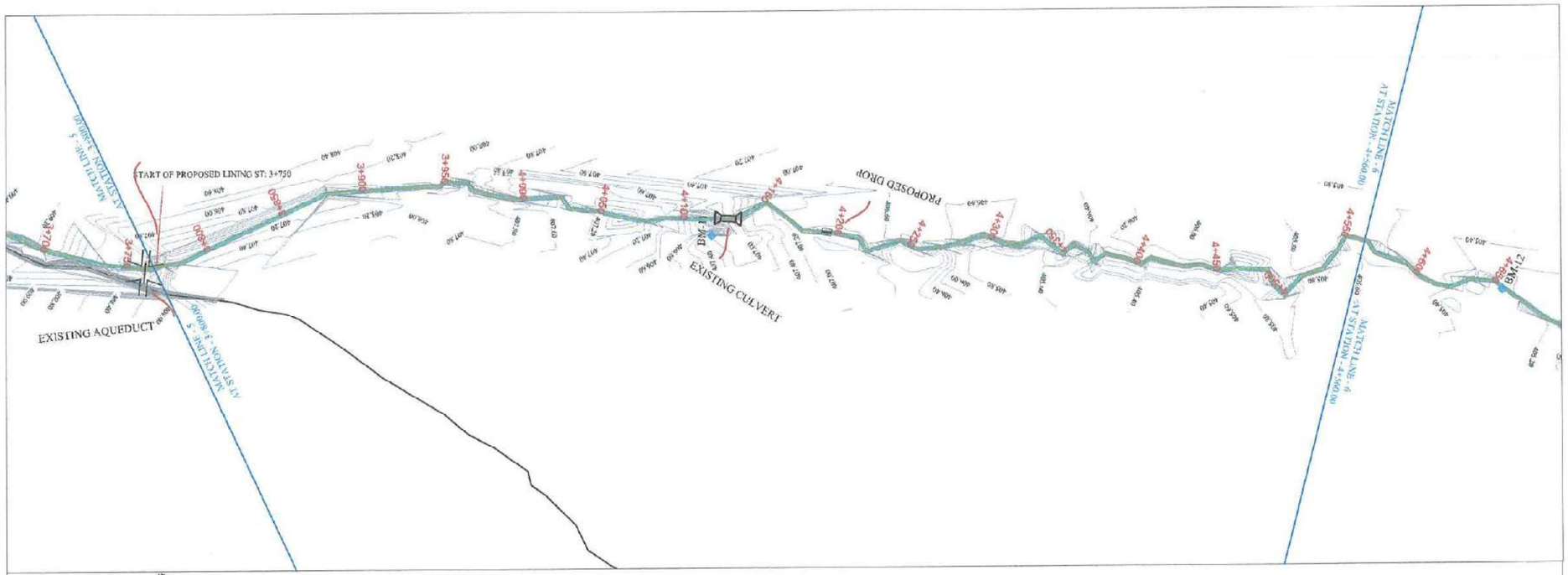


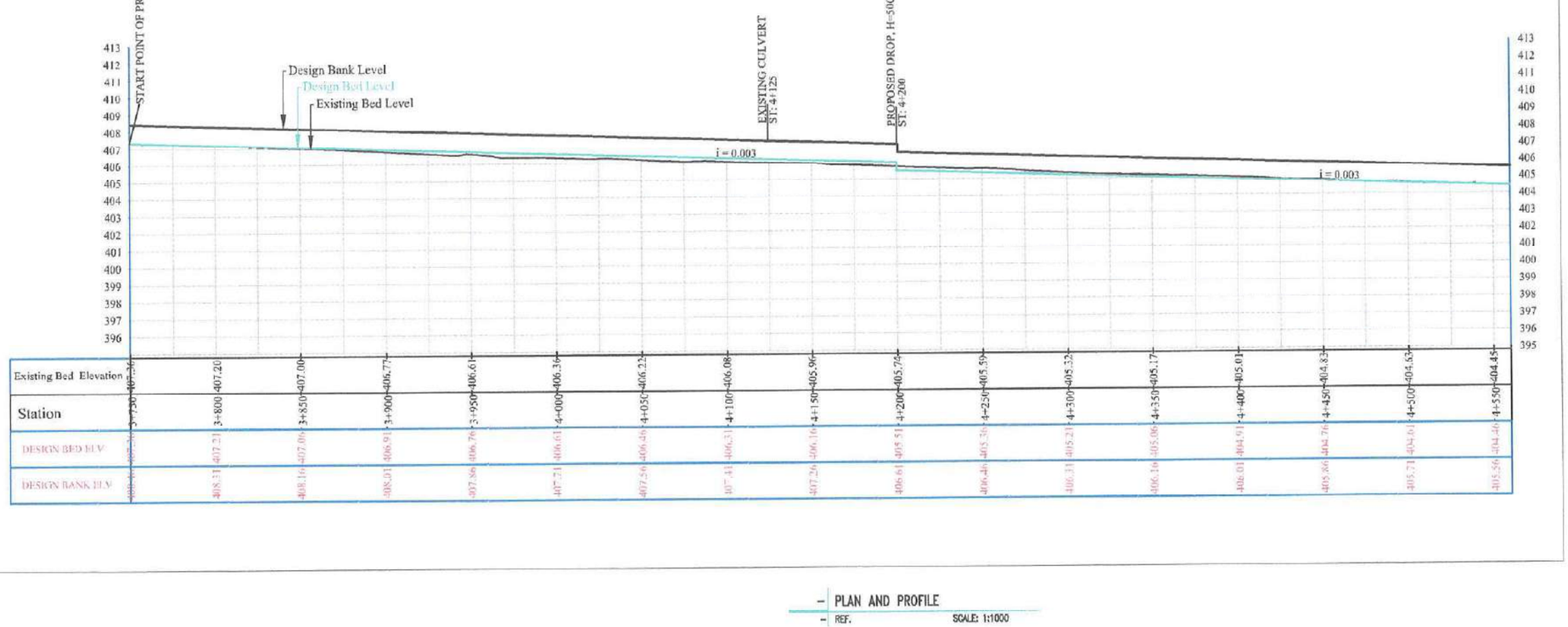
Station	Existing Bed Elevation	FSL
3+040		
3+050	413.43	413.940
3+100	413.22	413.721
3+150	412.79	413.281
3+200	412.48	412.993
3+250	412.01	412.507
3+300	411.49	412.020
3+350	411.30	411.793
3+400	411.09	411.595
3+450	410.62	411.116
3+500	409.96	410.476
3+550	409.28	409.792
3+600	408.80	409.292
3+650	408.04	408.556
3+700	407.72	408.236
3+739	407.23	407.877

– PLAN AND PROFILE
– REF. SCALE: 1:1000

USAID FROM THE AMERICAN PEOPLE	STRENGTHENING WATERSHED & IRRIGATION MANAGEMENT SWIM	CANAL NAME	LOCATION	DRAWING TITLE	SURVEYED BY	DRAWING AND DESIGN BY	REVIEWED AND CHECKED BY	SWIM APPROVAL	MEW/RBA APPROVAL	SHEET NO. 06/94
		CHOCHMAN MAIN CANAL CHOCHMAN BRANCH	DISTRICT: KHUJ M PROVINCE: SAMANGAN	PLAN AND PROFILE	SWIM	MOHAMMAD AFZAL MUJAHID ENGINEER (HYDRAULIC SPECIALIST) DATE: 6/21/2020	GERALD MAYNARD IRRIGATION ENGINEER EXPERT DATE: 21-6-2020	HOPPY MAZIER CHIEF OF P. RT DATE: 21-6-2020	DATE: 23/6/020	

For H.M





LEGEND:-

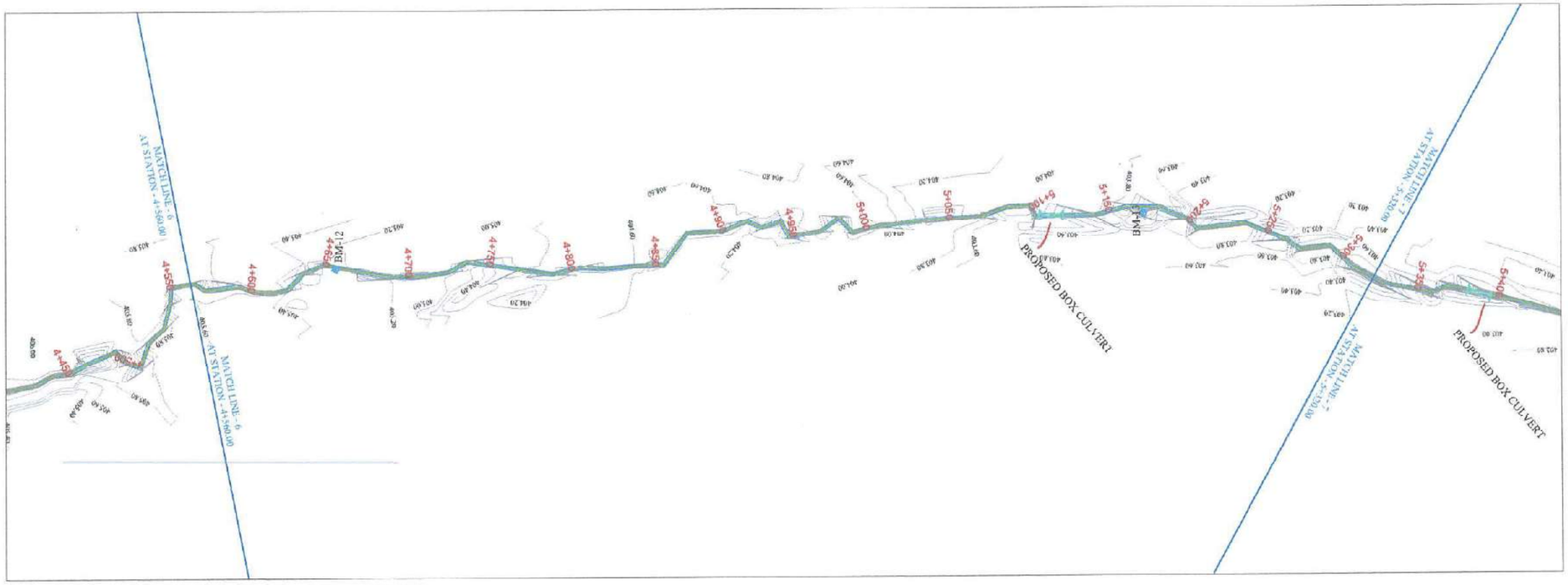
Agriculture Area	
Orchard(Garden)	
Bench Mark	
Parental Canal	
Main Canal	
Branch Canal	
P-Turn Out	Turn Out
Residential Area	
Road	
Existing Stone Masonry	
Proposed Stone Masonry	
Existing Culvert	
Proposed Culvert	
Masjid Sharif	
Electric Pole	
Cemetery	
Hand Water Pump	
Tree	
River	
Drain Inlet	
Drop	
Existing Aqueduct	
Existing Divider	
contour interval	20cm

– PLAN AND PROFILE

– REF. SCALE: 1:1000

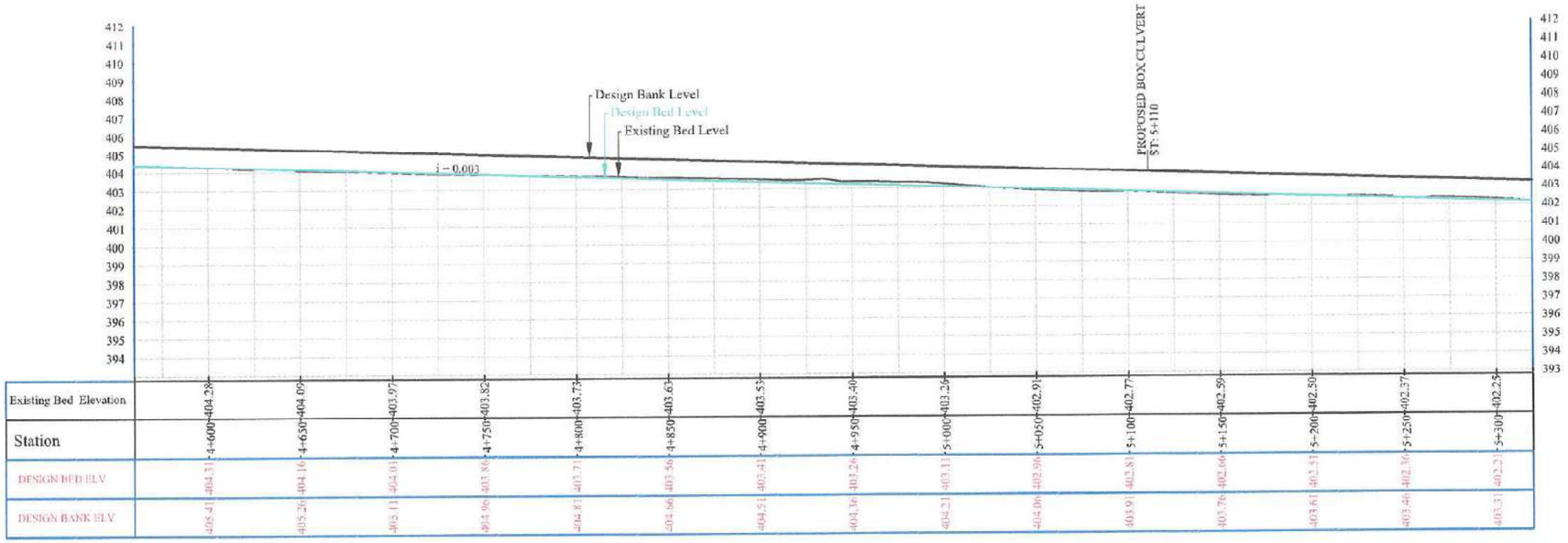
USAID FROM THE AMERICAN PEOPLE	STRENGTHENING WATERSHED & IRRIGATION MANAGEMENT SWIM	CANAL NAME	LOCATION	DRAWING TITLE	SURVEYED BY	DRAWING AND DESIGN BY	REVIEWED AND CHECKED BY	SWIM APPROVAL	MEW/RBA APPROVAL	SHEET NO. 07/94
		CHOCHMAN MAIN CANAL CHOCHMAN BRANCH	DISTRICT: KHULM PROVINCE: SAMANGAN	PLAN AND PROFILE	SWIM	MOHAMMAD AFZAL MUJAHID ENGINEER (HYDRAULIC SPECIALIST) DATE: 6/21/2020	GERALD MALONEY IRRIGATION ENGINEER EXPERT DATE: 21-6-2020	HOPPY MAZIER CHIEF OF PARTY DATE: 21-6-2020	DATE: 23/6/2020	

For H.M



LEGEND:-

Agriculture Area	
Orchard(Garden)	
Bench Mark	
Parental Canal	
Main Canal	
Branch Canal	
P-Turn Out	Turn Out
Residential Area	
Road	
Existing Stone Masonry	
Proposed Stone Masonry	
Existing Culvert	
Proposed Culvert	
Masjid Sharif	
Electric Pole	
Cemetery	
Hand Water Pump	
Tree	
River	
Drain Inlet	
Drop	
Existing Aqueduct	
Existing Divider	
contour interval	20cm



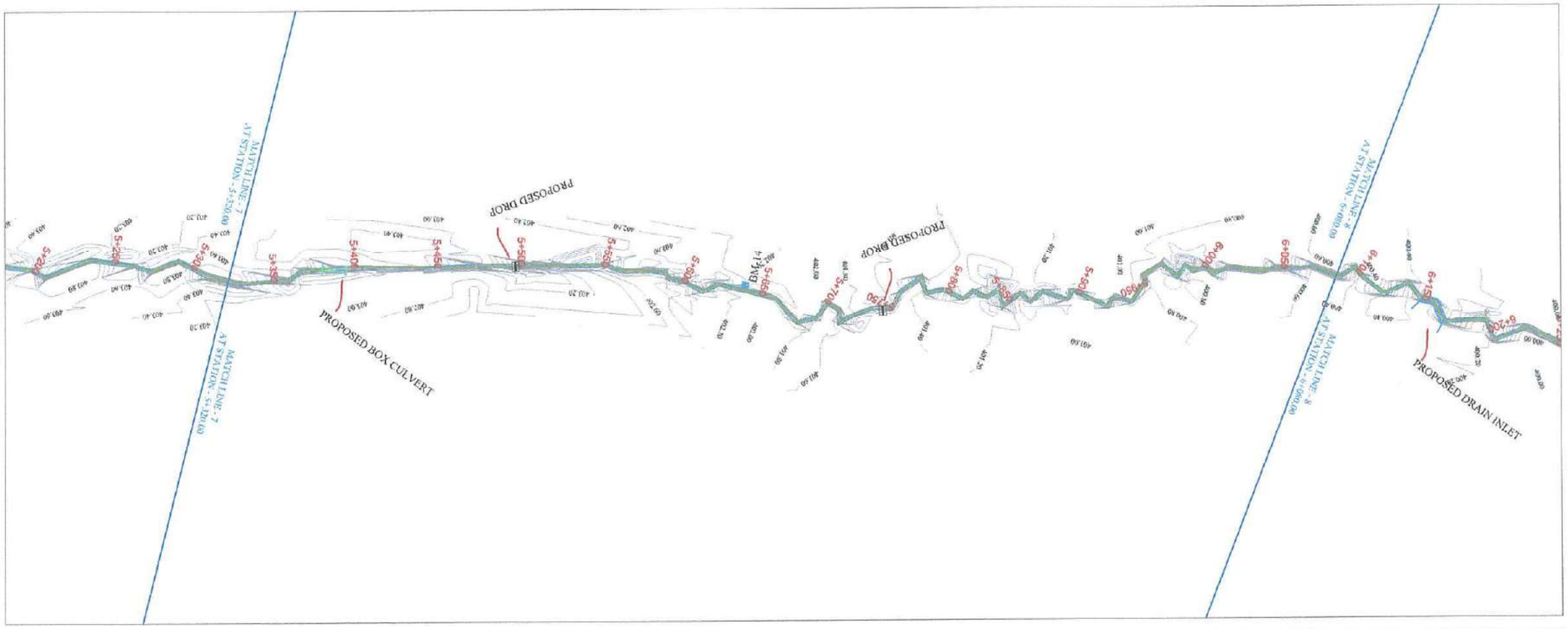
Station	4+600	4+630	4+700	4+750	4+800	4+850	4+900	4+950	5+000	5+050	5+100	5+150	5+200	5+250	5+300
Existing Bed Elevation	404.28	404.09	403.97	403.82	403.73	403.63	403.53	403.40	403.26	403.11	402.91	402.77	402.59	402.59	402.37	402.25
DESIGN BED ELV	404.31	404.16	404.01	403.86	403.71	403.56	403.41	403.26	403.11	402.96	402.81	402.66	402.51	402.36	402.21
DESIGN BANK ELV	405.41	405.26	405.11	404.96	404.81	404.66	404.51	404.36	404.21	404.06	403.91	403.76	403.61	403.46	403.31

PLAN AND PROFILE

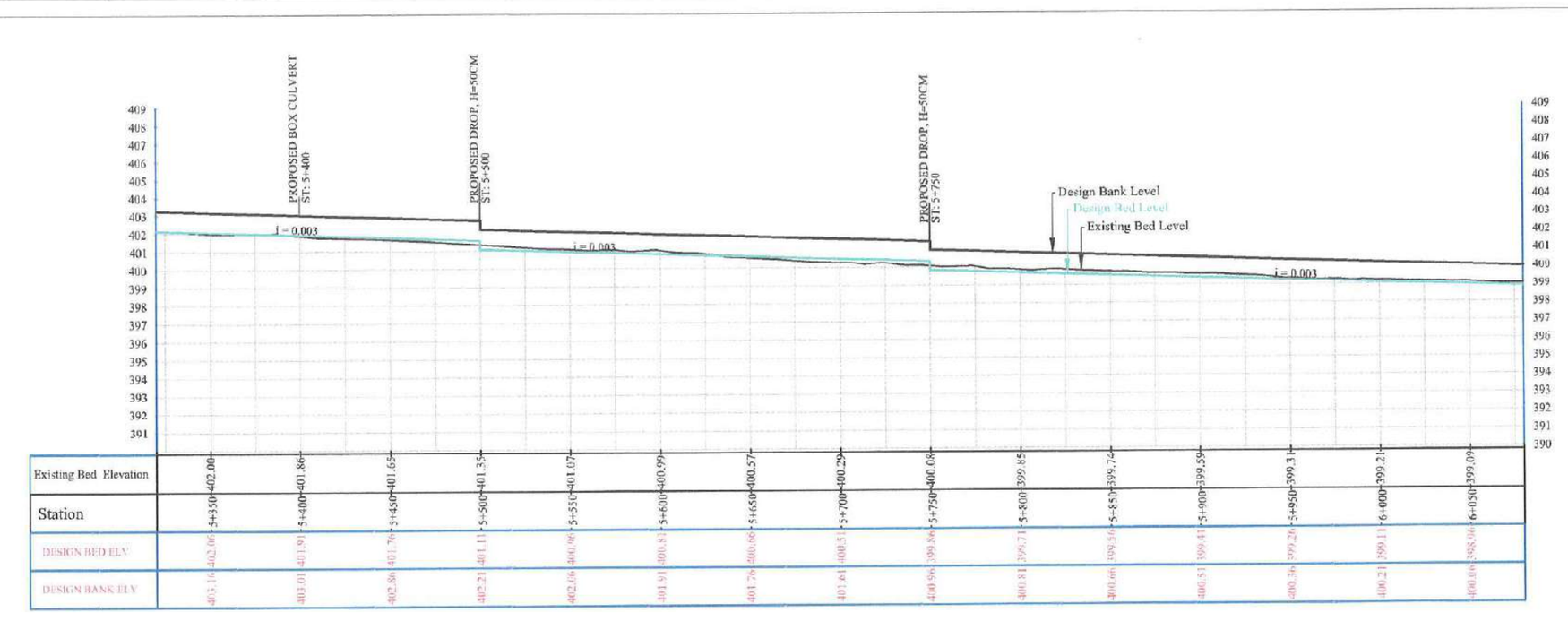
REF. SCALE: 1:1000

USAID FROM THE AMERICAN PEOPLE	STRENGTHENING WATERSHED & IRRIGATION MANAGEMENT SWIM	CANAL NAME	LOCATION	DRAWING TITLE	SURVEYED BY	DRAWING AND DESIGN BY	REVIEWED AND CHECKED BY	SWIM APPROVAL	MEW/RBA APPROVAL	SHEET NO. 08/94
		CHOCHMAN MAIN CANAL CHOCHMAN BRANCH	DISTRICT: KHULM PROVINCE: SAMANGAN	PLAN AND PROFILE	SWIM	MOHAMMAD AFZAL MUJAHID ENGINEER (HYDRAULIC SPECIALIST) DATE: 6/21/2020	GERALD MALONEY IRRIGATION ENGINEER EXPERT DATE: 21-6-2020	HOPPY MAZIER CHIEF OF PARTY DATE: 21-6-2020	DATE: 23/6/2020	

For H.M



LEGEND:-	
Agriculture Area	
Orchard(Garden)	
Bench Mark	
Parental Canal	
Main Canal	
Branch Canal	
P-Turn Out	Turn Out
Residential Area	
Road	
Existing Stone Masonry	
Proposed Stone Masonry	
Existing Culvert	
Proposed Culvert	
Masjid Sharif	
Electric Pole	
Cemetery	
Hand Water Pump	
Tree	
River	
Drain Inlet	
Drop	
Existing Aqueduct	
Existing Divider	
contour interval	20cm



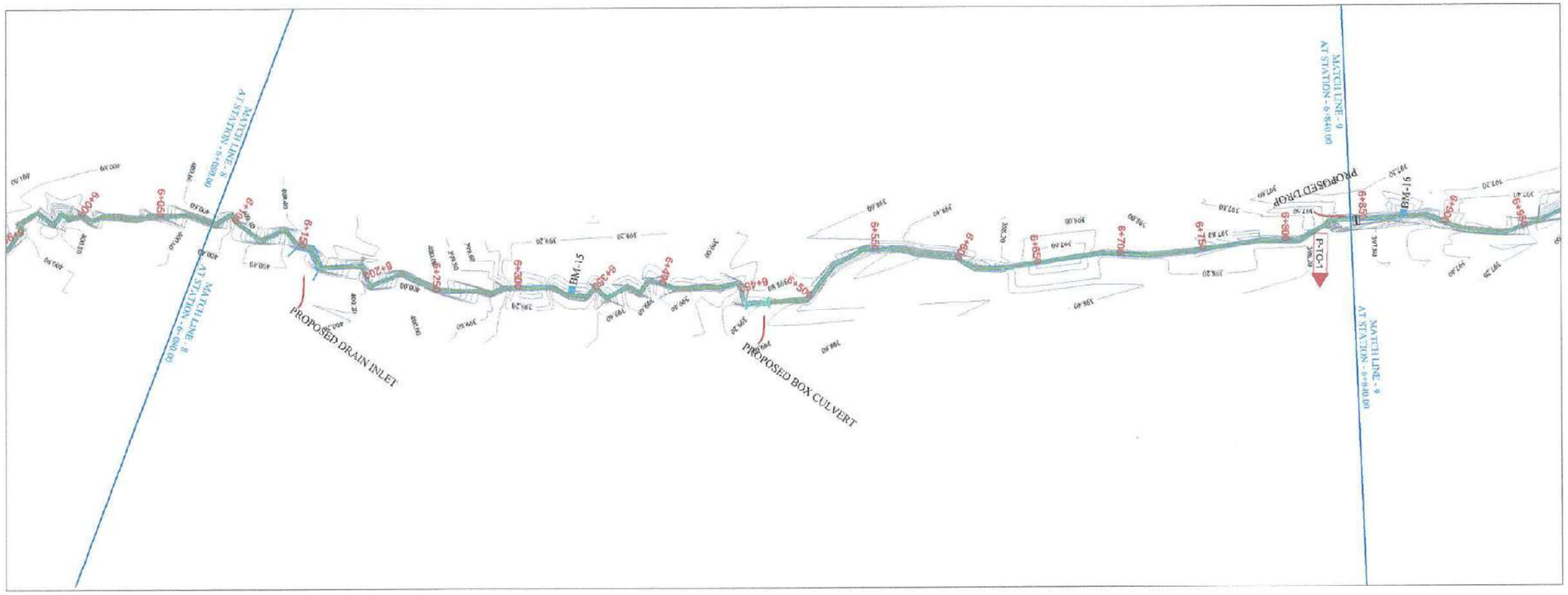
Station	5+350	5+400	5+450	5+500	5+550	5+600	5+650	5+700	5+750	5+800	5+850	5+900	5+950	6+000	6+050
Existing Bed Elevation	402.00	401.86	401.65	401.35	401.07	400.99	400.57	400.29	400.08	399.85	399.74	399.59	399.31	399.21	399.09
DESIGN BED ELV	402.06	401.91	401.76	401.11	400.96	400.82	400.66	400.51	399.86	399.71	399.56	399.41	399.26	399.11	398.96
DESIGN BANK ELV	403.16	403.01	402.86	402.21	402.06	401.91	401.76	401.61	400.96	400.81	400.66	400.51	400.36	400.21	400.06

– PLAN AND PROFILE

– REF. SCALE: 1:1000

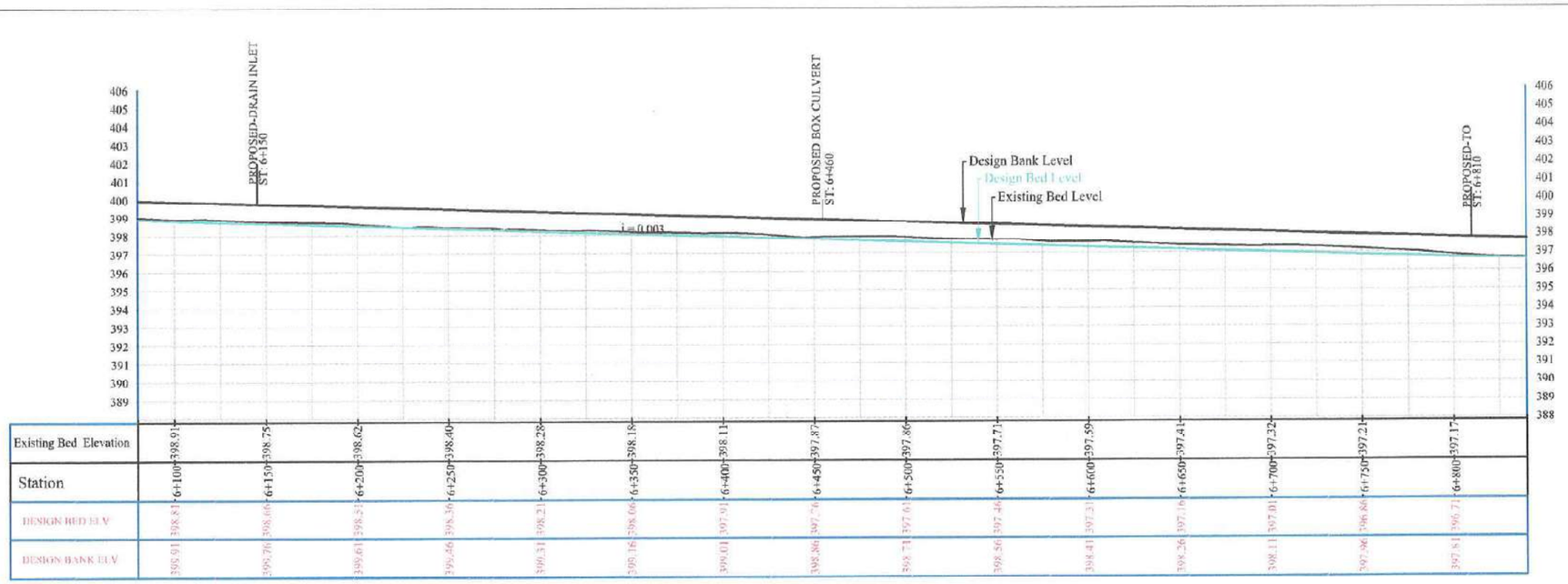
	STRENGTHENING WATERSHED & IRRIGATION MANAGEMENT	CANAL NAME	LOCATION	DRAWING TITLE	SURVEYED BY	DRAWING AND DESIGN BY	REVIEWED AND CHECKED BY	SWIM APPROVAL	MEW/RBA APPROVAL	SHEET NO.
USAID FROM THE AMERICAN PEOPLE	SWIM	CHOCHMAN MAIN CANAL CHOCHMAN BRANCH	DISTRICT: KHULM PROVINCE: SAMANGAN	PLAN AND PROFILE	SWIM	MOHAMMAD AFZAL MUJAHID ENGINEER (HYDRAULIC SPECIALIST)	GERALD MALONEY IRRIGATION ENGINEER EXPERT	HOPPY MAZIER CHIEF OF PARTY		09/94
						DATE: 6/21/2020	DATE: 21-6-2020	DATE: 21-6-2020	DATE: 23/6/20	

For H.M



LEGEND:-

Agriculture Area	
Orchard(Garden)	
Bench Mark	
Parental Canal	
Main Canal	
Branch Canal	
P-Turn Out	Turn Out
Residential Area	
Road	
Existing Stone Masonry	
Proposed Stone Masonry	
Existing Culvert	
Proposed Culvert	
Masjid Sharif	
Electric Pole	
Cemetery	
Hand Water Pump	
Tree	
River	
Drain Inlet	
Drop	
Existing Aqueduct	
Existing Divider	
contour Interval	20cm

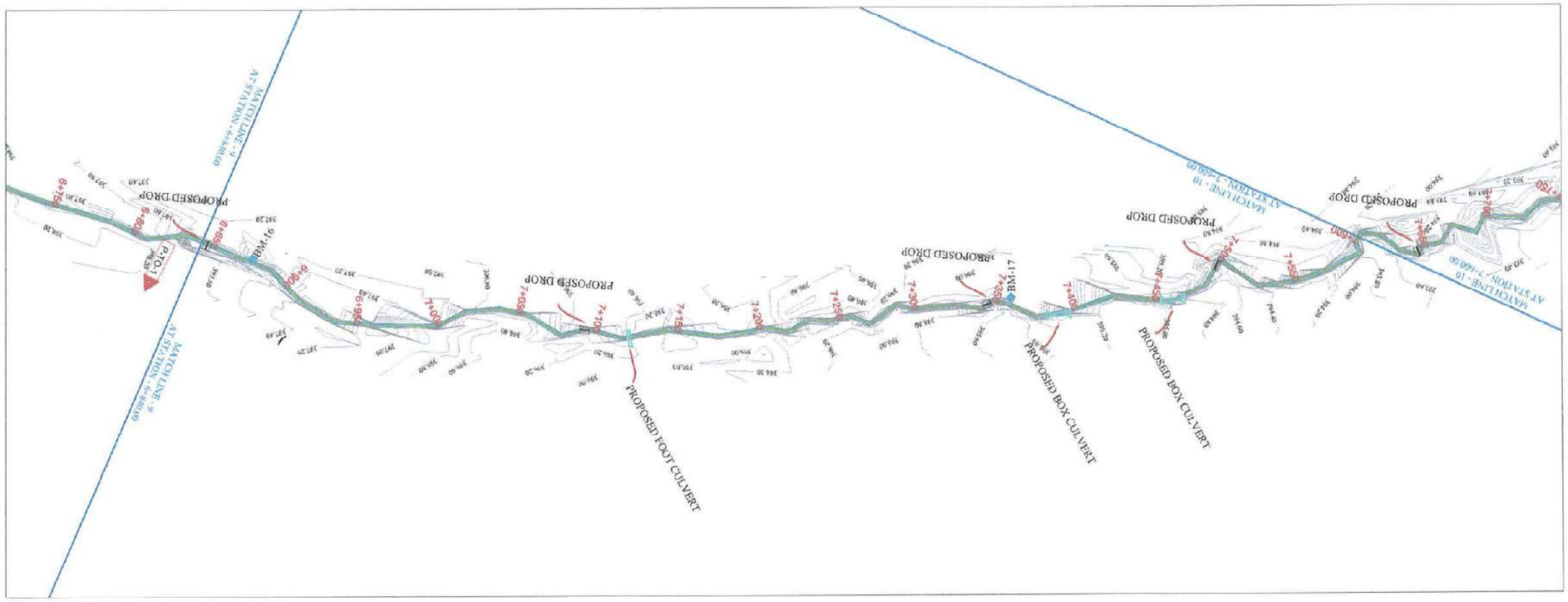


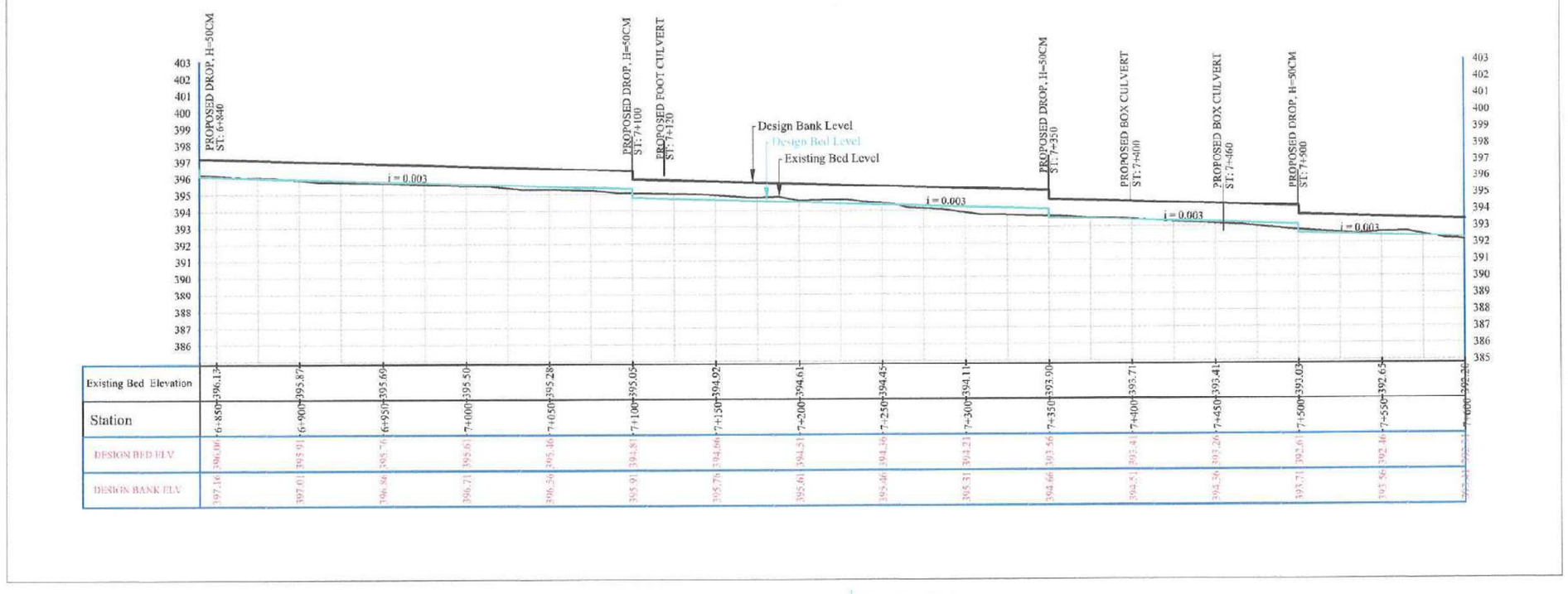
Existing Bed Elevation	398.91	398.75	398.62	398.40	398.28	398.18	398.11	397.87	397.86	397.71	397.59	397.41	397.32	397.21	397.17
Station	6+100	6+150	6+200	6+250	6+300	6+350	6+400	6+450	6+500	6+550	6+600	6+650	6+700	6+750	6+800
DESIGN BED ELV	398.81	398.66	398.51	398.36	398.21	398.06	397.91	397.76	397.61	397.46	397.31	397.16	397.01	396.86	396.71
DESIGN BANK ELV	399.91	399.76	399.61	399.46	399.31	399.16	399.01	398.86	398.71	398.56	398.41	398.26	398.11	397.96	397.81

– PLAN AND PROFILE
– REF. SCALE: 1:1000

USAID FROM THE AMERICAN PEOPLE	STRENGTHENING WATERSHED & IRRIGATION MANAGEMENT SWIM	CANAL NAME	LOCATION	DRAWING TITLE	SURVEYED BY	DRAWING AND DESIGN BY	REVIEWED AND CHECKED BY	SWIM APPROVAL	MEW/RBA APPROVAL	SHEET NO. 10/94
		CHOCHMAN MAIN CANAL CHOCHMAN BRANCH	DISTRICT: KHULM PROVINCE: SAMANGAN	PLAN AND PROFILE	SWIM	MOHAMMAD AFZAL MUJAHID ENGINEER (HYDRAULIC SPECIALIST) DATE: 6/21/2020	GERALD MALONEY IRRIGATION ENGINEER EXPERT DATE: 21-6-2020	HOPPY MAZIER CHIEF OF PARTY DATE: 21-6-2020	DATE: 23/6/2020	

For H.M





LEGEND:-

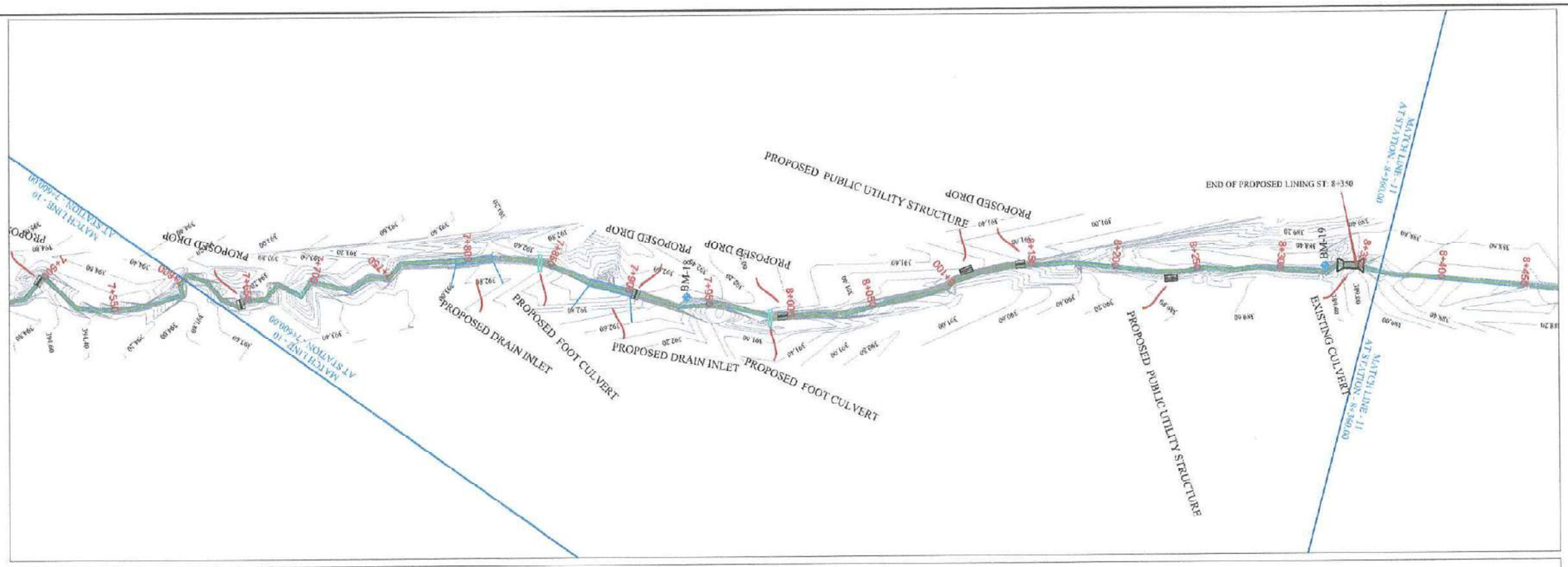
Agriculture Area	
Orchard(Garden)	
Bench Mark	
Parental Canal	
Main Canal	
Branch Canal	
P-Turn Out	Turn Out
Residential Area	
Road	
Existing Stone Masonry	
Proposed Stone Masonry	
Existing Culvert	
Proposed Culvert	
Masjid Sharif	
Electric Pole	
Cemetery	
Hand Water Pump	
Tree	
River	
Drain Inlet	
Drop	
Existing Aqueduct	
Existing Divider	
contour interval	20cm

– PLAN AND PROFILE

– REF. SCALE: 1:1000

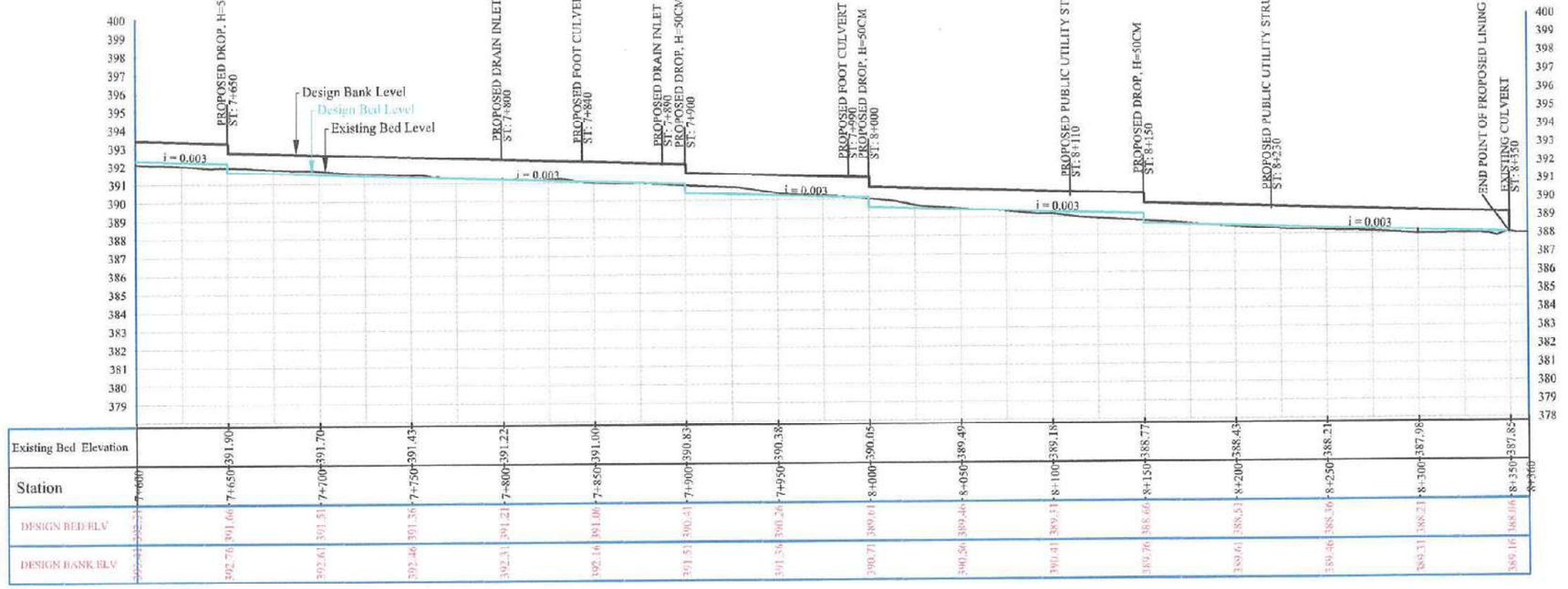
USAID FROM THE AMERICAN PEOPLE	STRENGTHENING WATERSHED & IRRIGATION MANAGEMENT SWIM	CANAL NAME	LOCATION	DRAWING TITLE	SURVEYED BY	DRAWING AND DESIGN BY	REVIEWED AND CHECKED BY	SWIM APPROVAL	MEW/RBA APPROVAL	SHEET NO. 11/94
		CHOCHMAN MAIN CANAL CHOCHMAN BRANCH	DISTRICT: KHULM PROVINCE: SAMANGAN	PLAN AND PROFILE	SWIM	MOHAMMAD AFZAL MUJAHID ENGINEER (HYDRAULIC SPECIALIST) DATE: 6/21/2020	GERALD MALONEY IRRIGATION ENGINEER EXPERT DATE: 21-6-2020	HOPPY MAZIER CHIEF OF PARTY DATE: 21-6-2020	DATE: 23/6/2020	

For H.M



LEGEND:-

Agriculture Area	
Orchard(Garden)	
Bench Mark	
Parental Canal	
Main Canal	
Branch Canal	
P-Turn Out	Turn Out
Residential Area	
Road	
Existing Stone Masonry	
Proposed Stone Masonry	
Existing Culvert	
Proposed Culvert	
Masjid Sharif	
Electric Pole	
Cemetery	
Hand Water Pump	
Tree	
River	
Drain Inlet	
Drop	
Existing Aqueduct	
Existing Divider	
contour interval	20cm



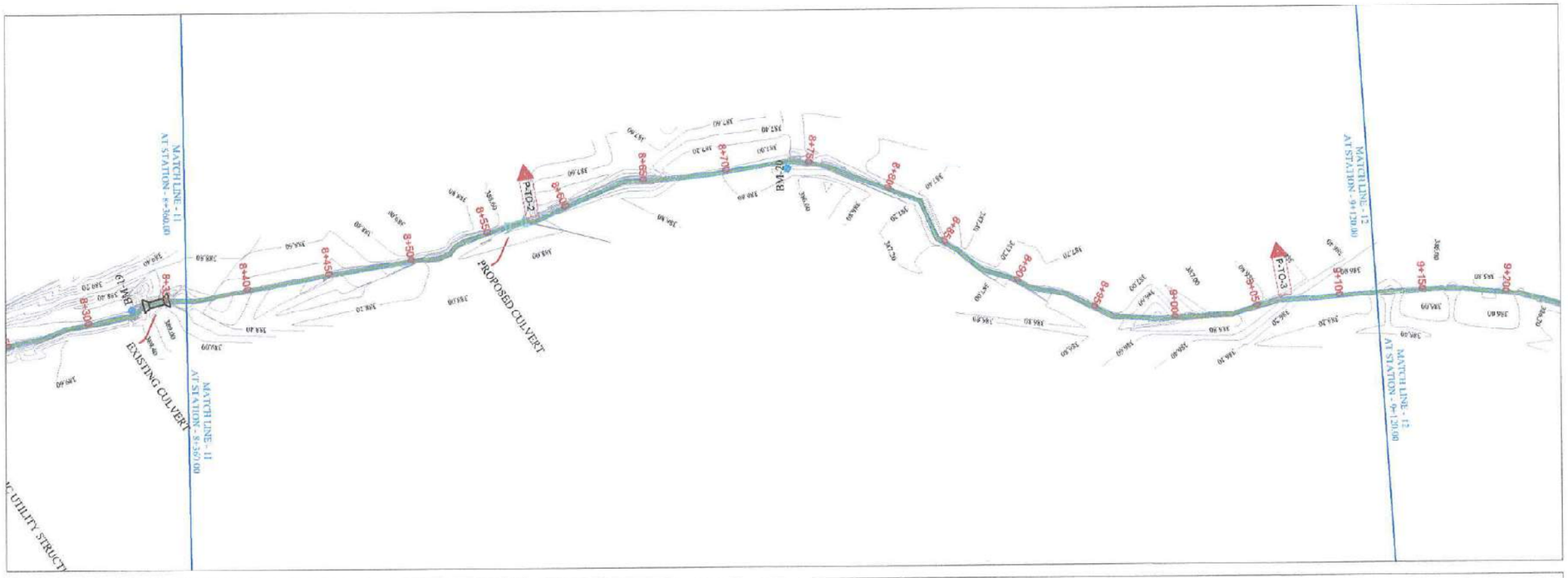
Station	Existing Bed Elevation	DESIGN BED ELV	DESIGN BANK ELV
7+600	392.71	392.71	393.71
7+650	391.90	391.66	392.76
7+700	391.70	391.51	392.61
7+750	391.43	391.36	392.46
7+800	391.22	391.21	392.31
7+850	391.00	391.06	392.16
7+900	390.83	390.81	391.51
7+950	390.38	390.26	391.36
8+000	390.05	389.61	390.71
8+050	389.40	389.46	390.56
8+100	389.18	389.31	390.41
8+150	388.77	388.66	389.76
8+200	388.43	388.51	389.61
8+250	388.21	388.36	389.46
8+300	387.98	388.21	389.31
8+350	387.85	388.06	389.16
8+360			

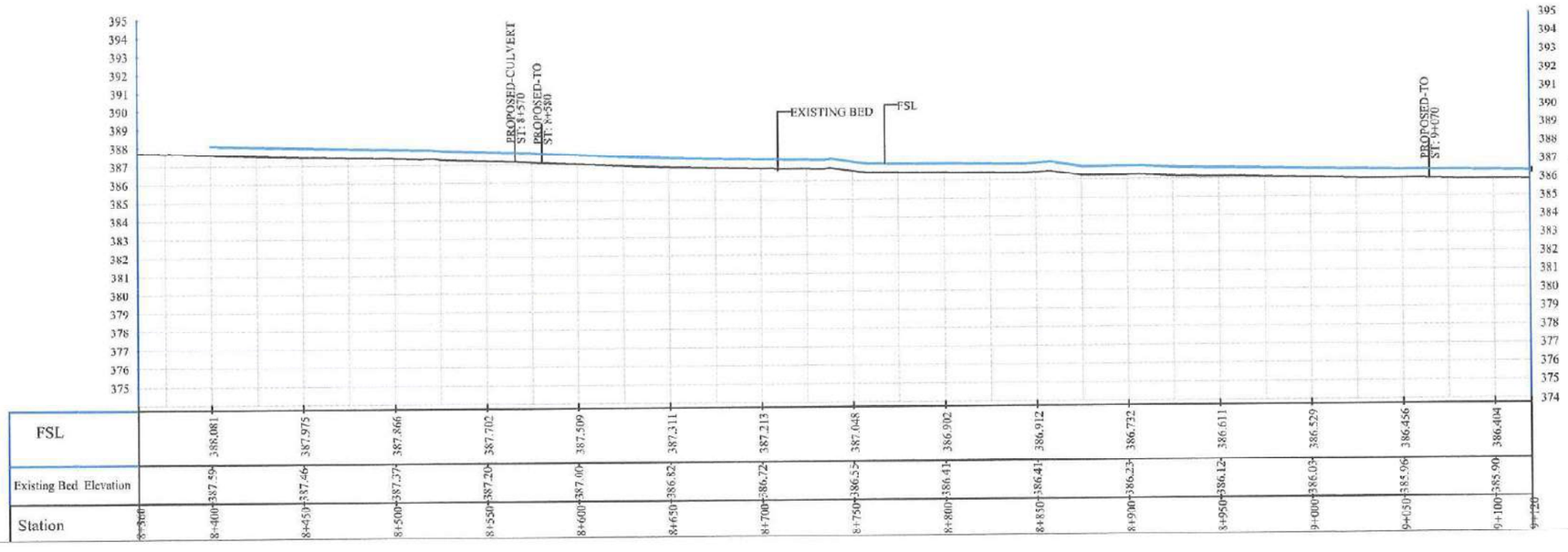
PLAN AND PROFILE

REF. SCALE: 1:1000

USAID FROM THE AMERICAN PEOPLE	STRENGTHENING WATERSHED & IRRIGATION MANAGEMENT SWIM	CANAL NAME	LOCATION	DRAWING TITLE	SURVEYED BY	DRAWING AND DESIGN BY	REVIEWED AND CHECKED BY	SWIM APPROVAL	MEW/RBA APPROVAL	SHEET NO. 12/94
		CHOCHMAN MAIN CANAL CHOCHMAN BRANCH	DISTRICT: KHULM PROVINCE: SAMANGAN	PLAN AND PROFILE	SWIM	MOHAMMAD AFZAL MUJAHID ENGINEER (HYDRAULIC SPECIALIST) DATE: 6/21/2020	GERALD MALONEY IRRIGATION ENGINEER EXPERT DATE: 21-6-2020	HOPPY MAZIEK CHIEF OF PARTY DATE: 21-6-2020	DATE: 23/6/2020	

For H.M





LEGEND:-	
Agriculture Area	
Orchard(Garden)	
Bench Mark	
Parental Canal	
Main Canal	
Branch Canal	
P-Turn Out	Turn Out
Residential Area	
Road	
Existing Stone Masonry	
Proposed Stone Masonry	
Existing Culvert	
Proposed Culvert	
Masjid Sharif	
Electric Pole	
Cemetery	
Hand Water Pump	
Tree	
River	
Drain Inlet	
Drop	
Existing Aqueduct	
Existing Divider	
contour interval	20cm

PLAN AND PROFILE

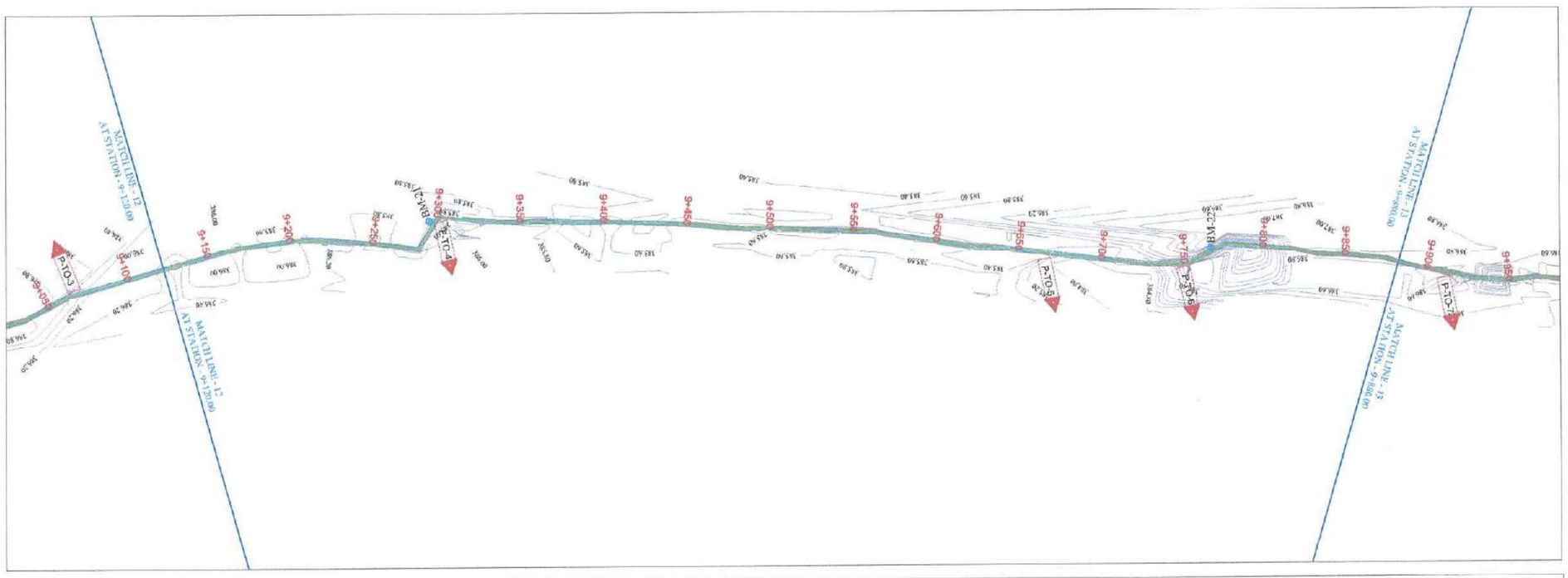
REF. SCALE: 1:1000

USAID FROM THE AMERICAN PEOPLE

STRENGTHENING WATERSHED & IRRIGATION MANAGEMENT	CANAL NAME	LOCATION	DRAWING TITLE	SURVEYED BY	DRAWING AND DESIGN BY	REVIEWED AND CHECKED BY	SWIM APPROVAL	MEW/RBA APPROVAL	SHEET NO.
SWIM	CHOCHMAN MAIN CANAL CHOCHMAN BRANCH	DISTRICT: KHULM PROVINCE: SAMANGAN	PLAN AND PROFILE	SWIM	MOHAMMAD AFZAL MUJAHID ENGINEER (HYDRAULIC SPECIALIST) DATE: 6/21/2020	GERALD MALONEY IRRIGATION ENGINEER EXPERT DATE: 21-6-2020	HOPPY MAZIER CHIEF OF PARTY DATE: 21-6-2020	DATE:	13/94

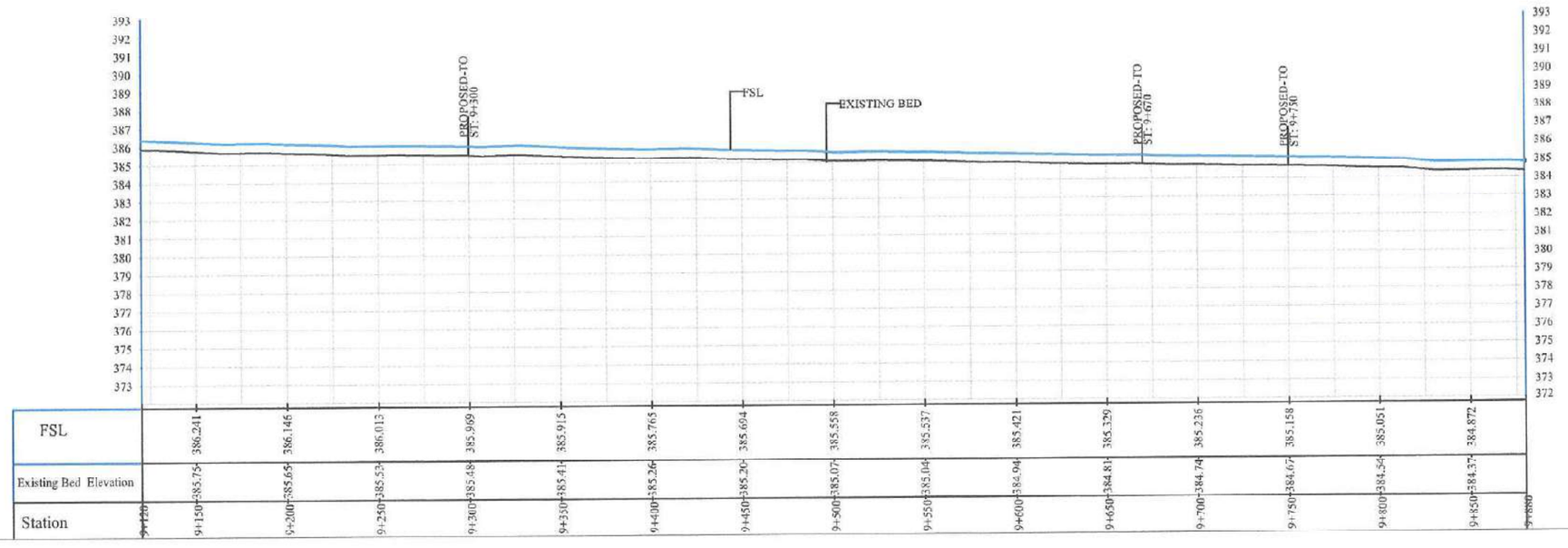
For H.M

23/6/20



LEGEND:-

Agriculture Area	
Orchard(Garden)	
Bench Mark	
Parental Canal	
Main Canal	
Branch Canal	
P-Turn Out	Turn Out
Residential Area	
Road	
Existing Stone Masonry	
Proposed Stone Masonry	
Existing Culvert	
Proposed Culvert	
Masjid Sharif	
Electric Pole	
Cemetery	
Hand Water Pump	
Tree	
River	
Drain Inlet	
Drop	
Existing Aqueduct	
Existing Divider	
contour interval	20cm



Station	Existing Bed Elevation	FSL
9+120		
9+150	385.75	386.241
9+200	385.65	386.146
9+250	385.53	386.013
9+300	385.48	385.969
9+350	385.41	385.915
9+400	385.26	385.765
9+450	385.20	385.694
9+500	385.07	385.558
9+550	385.04	385.537
9+600	384.94	385.421
9+650	384.81	385.329
9+700	384.74	385.236
9+750	384.67	385.158
9+800	384.56	385.051
9+850	384.37	384.872
9+880		

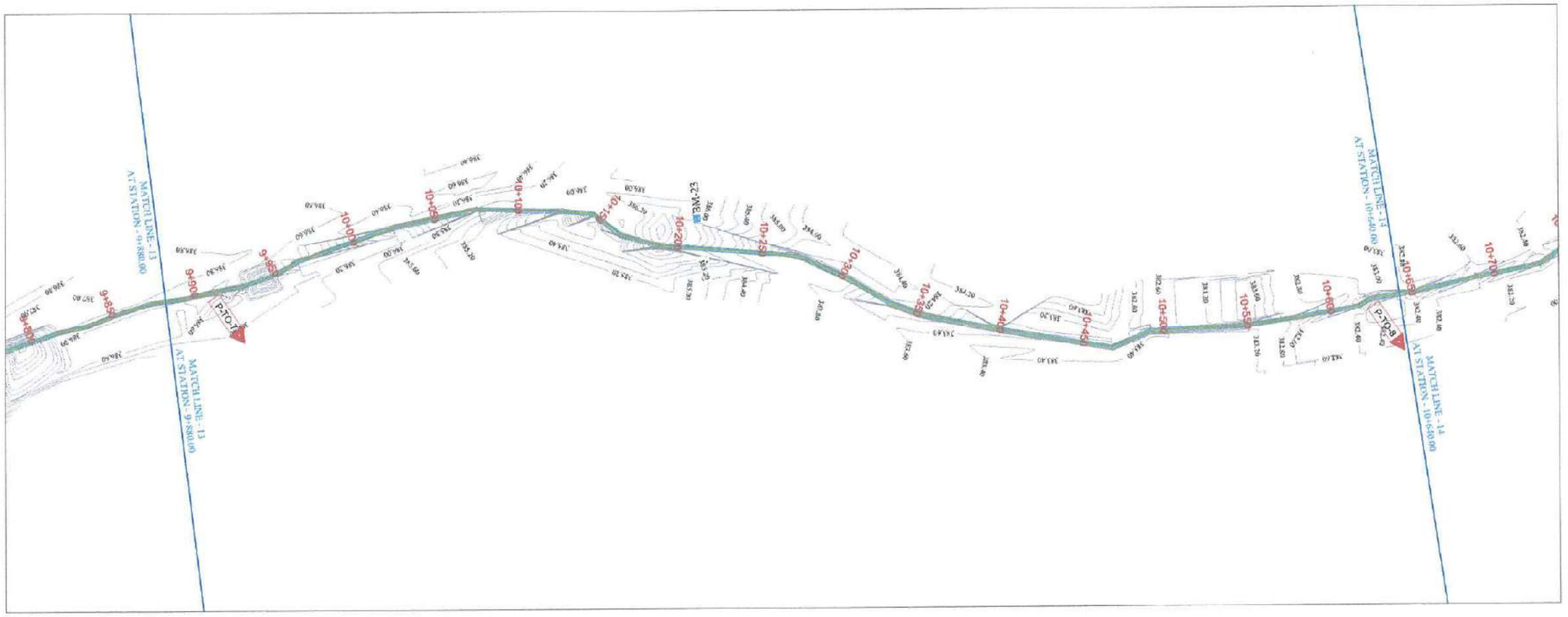
PLAN AND PROFILE

REF. SCALE: 1:1000

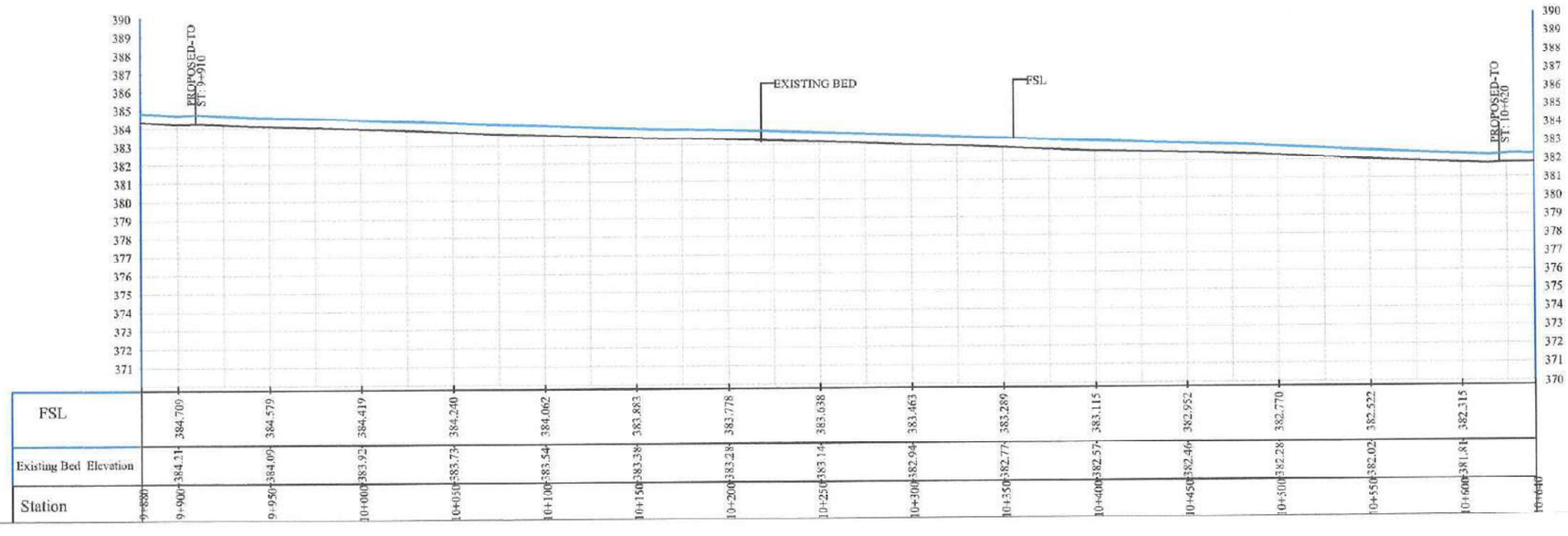
USAID FROM THE AMERICAN PEOPLE

STRENGTHENING WATERSHED & IRRIGATION MANAGEMENT	CANAL NAME	LOCATION	DRAWING TITLE	SURVEYED BY	DRAWING AND DESIGN BY	REVIEWED AND CHECKED BY	SWIM APPROVAL	MEW/RBA APPROVAL	SHEET NO.
SWIM	CHOCHMAN MAIN CANAL CHOCHMAN BRANCH	DISTRICT: KHULM PROVINCE: SAMANGAN	PLAN AND PROFILE	SWIM	MOHAMMAD AFZAL MUJAHID ENGINEER (HYDRAULIC SPECIALIST)	GERALD MALONEY IRRIGATION ENGINEER EXPERT	HOPPY MAZIER CHIEF OF PARTY		14/94
					DATE: 6/21/2020	DATE: 21-6-2020	DATE: 21-6-2020	DATE: 23/6/2020	

For H.M



LEGEND:-	
Agriculture Area	
Orchard(Garden)	
Bench Mark	
Parental Canal	
Main Canal	
Branch Canal	
P-Turn Out	Turn Out
Residential Area	
Road	
Existing Stone Masonry	
Proposed Stone Masonry	
Existing Culvert	
Proposed Culvert	
Masjid Sharif	
Electric Pole	
Cemetery	
Hand Water Pump	
Tree	
River	
Drain Inlet	
Drop	
Existing Aqueduct	
Existing Divider	
contour interval	20cm

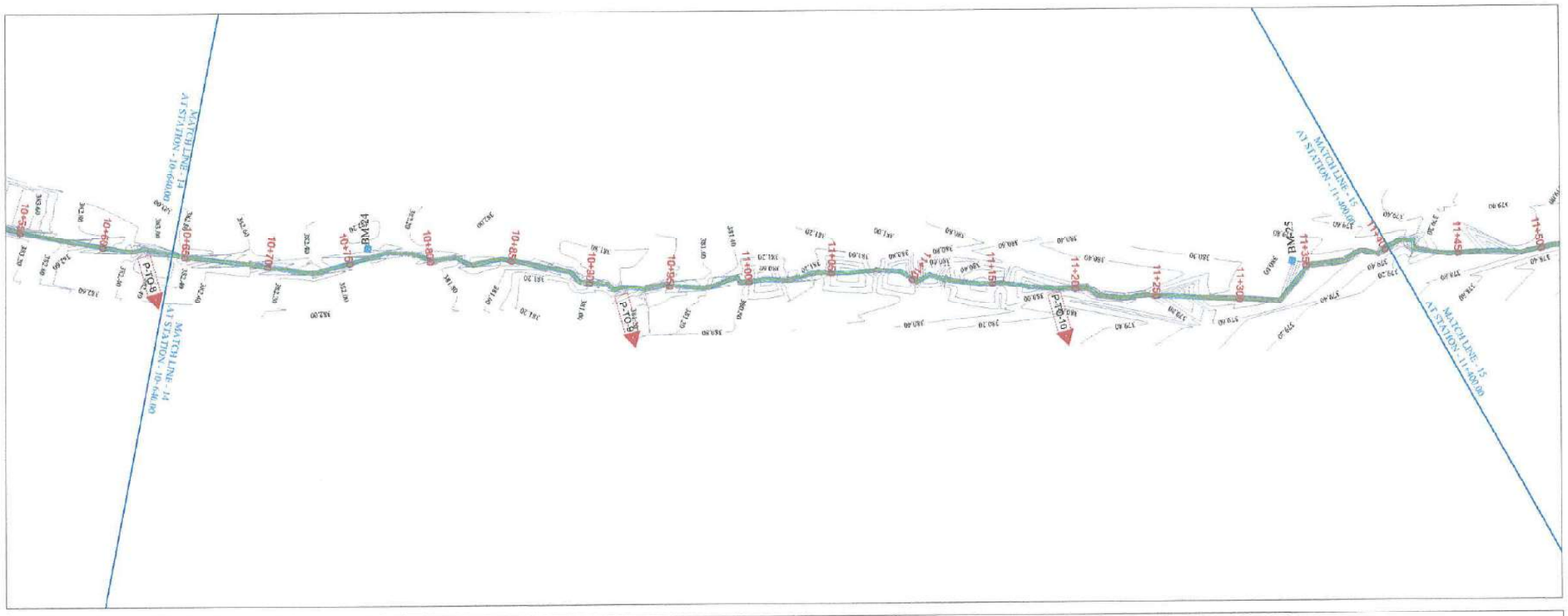


Station	9+880	9+900	9+950	10+000	10+050	10+100	10+150	10+200	10+250	10+300	10+350	10+400	10+450	10+500	10+550	10+600	10+640
Existing Bed Elevation		384.21	384.09	383.92	383.73	383.54	383.38	383.28	383.14	382.94	382.77	382.57	382.46	382.28	382.02	381.81	
FSL		384.709	384.579	384.419	384.240	384.062	383.883	383.778	383.638	383.463	383.289	383.115	382.952	382.770	382.522	382.315	

PLAN AND PROFILE
REF. SCALE: 1:1000

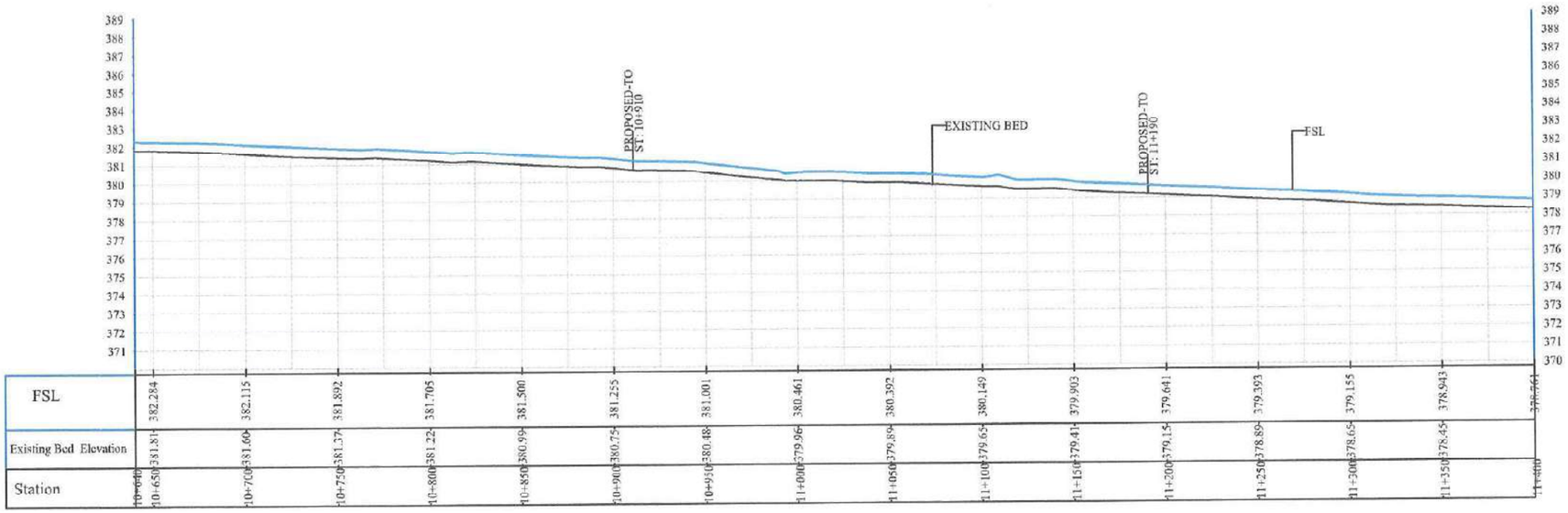
USAID FROM THE AMERICAN PEOPLE	STRENGTHENING WATERSHED & IRRIGATION MANAGEMENT SWIM	CANAL NAME	LOCATION	DRAWING TITLE	SURVEYED BY	DRAWING AND DESIGN BY	REVIEWED AND CHECKED BY	SWIM APPROVAL	MEW/RBA APPROVAL	SHEET NO. 15/94
		CHOCHMAN MAIN CANAL CHOCHMAN BRANCH	DISTRICT: KHULM PROVINCE: SAMANGAN	PLAN AND PROFILE	SWIM	MOHAMMAD AFZAL MUJAHID ENGINEER (HYDRAULIC SPECIALIST) DATE: 6/21/2020	GERALD MALONEY IRRIGATION ENGINEER EXPERT DATE: 21-6-2020	HOPPY MAZIER CHIEF OF PARTY DATE: 21-6-2020	DATE: 23/6/020	

For H.M



LEGEND:-

Agriculture Area	
Orchard(Garden)	
Bench Mark	
Parental Canal	
Main Canal	
Branch Canal	
P-Turn Out	Turn Out
Residential Area	
Road	
Existing Stone Masonry	
Proposed Stone Masonry	
Existing Culvert	
Proposed Culvert	
Masjid Sharif	
Electric Pole	
Cemetery	
Hand Water Pump	
Tree	
River	
Drain Inlet	
Drop	
Existing Aqueduct	
Existing Divider	
contour interval	20cm



Station	10+650	10+700	10+750	10+800	10+850	10+900	10+950	11+000	11+050	11+100	11+150	11+200	11+250	11+300	11+350	11+400
Existing Bed Elevation	381.81	381.60	381.37	381.22	380.99	380.75	380.48	379.96	379.84	379.65	379.41	379.15	378.89	378.65	378.45	
FSL	382.284	382.115	381.892	381.705	381.500	381.255	381.001	380.461	380.392	380.149	379.903	379.641	379.393	379.155	378.943	378.741

– PLAN AND PROFILE

– REF. SCALE: 1:1000

USAID FROM THE AMERICAN PEOPLE	STRENGTHENING WATERSHED & IRRIGATION MANAGEMENT SWIM	CANAL NAME	LOCATION	DRAWING TITLE	SURVEYED BY	DRAWING AND DESIGN BY	REVIEWED AND CHECKED BY	SWIM APPROVAL	MEW/RBA APPROVAL	SHEET NO. 16/94
		CHOCHMAN MAIN CANAL CHOCHMAN BRANCH	DISTRICT: KHULM PROVINCE: SAMANGAN	PLAN AND PROFILE	SWIM	MOHAMMAD AFZAL MUJAHID ENGINEER (HYDRAULIC SPECIALIST) DATE: 6/21/2020	GERALD MALONEY IRRIGATION ENGINEER EXPERT DATE: 21-6-2020	HOPPY MAZIER CHIEF OF PARTY DATE: 21-6-2020 For H.M	DATE: 23/6/20	

وزارت انرژی و آب
Ministry of Energy & Water