

APPENDIX A – PHOTOS AND DRAWINGS



PHOTOS

Photos are included in a set of electronic folders on digital media as listed below.

AERIAL (18)

Power and Irrigation House (4)

IRRIGATION INTAKE STRUCTURE (37)

Bridge Crane (37)

Bulk Head (8)

Encoder House (3)

Wheel Gate (9)

IRRIGATION TUNNEL (0)

Jet Valves (24)

Rotovalves (38)

Tunnel (12)

Valve House (5)

Exterior (2)

Generator (14)

Jet Valve HPU's (7)

Sump Pumps (4)

Switchboard (12)

POWERHOUSE (38)

Diesel Generator (2)

CONTRACT REQUIREMENTS

DRAWING NO.

TITLE

BASE INSTRUMENTATION BASE PLAN VIEW

INSTRUMENTATION ELEVATION

ORIGINAL DRAWINGS (MORRISON-KNUDSEN AFGHANISTAN, INC)

Drawings provided here are available from the original design documents and are provided to the Contractor for information only. Photos have been taken from 2004 to present and are provided for information only.

The drawings listed here refer to scans of the paper copy obtained directly from the project office in Afghanistan. The original design drawings eventually became the property of URS Corporation, who has confirmed that the originals are no longer on file. If the drawings are not on the list, they no probably longer exist. Many of the drawings listed in the original design manual are not listed below.

1. KAJAKI DAM TUNNEL DRAWINGS

<u>DRAWING NO.</u>	<u>TITLE</u>
13-F-26	INTAKE TOWER – RECORDER HOUSE MISSING - REFERENCED IN OTHER PLANS
13-F-28	INTAKE TOWER – CONCRETE OUTLINE, SHEET 2 MISSING - REFERENCED IN OTHER PLANS
15-B-1	IRRIGATION TUNNEL – GATE & STOP LOG LIFTING DEVICE – ALTERATION OF GUIDE BEAMS
15-F-1 (R1)	IRRIGATION TUNNEL – STOP LOG GUIDES -- DETAILS
15-F-2 (R3)	IRRIGATION TUNNEL – STOP LOG GUIDES – ASSEMBLY & ANCHOR BOLTS
15-F-3 (R3)	IRRIGATION TUNNEL – STOP LOG – ASSEMBLY & DETAILS
15-F-4	IRRIGATION TUNNEL – STOP LOG – OUTLINE & REINFORCEMENT
15-F-5 (R1)	IRRIGATION TUNNEL – GATE & STOP LOG LIFTING DEVICE – ASSEMBLY & DETAILS
15-F-6	IRRIGATION TUNNEL – TRASHRACK
15-F-7	IRRIGATION TUNNEL – TRASHRACK GUIDES
15-F-8	IRRIGATION TUNNEL – CRANE – CLEARANCE DIAGRAM
15-F-9 (R2)	IRRIGATION TUNNEL – INTAKE TOWER – MISC METALWORK – SHEET 1
15-F-10 (R1)	IRRIGATION TUNNEL – INTAKE TOWER – MISC METALWORK – SHEET 2
15-F-11 (R1)	IRRIGATION TUNNEL – WHEEL GATE – ASSEMBLY
15-F-12 (R1)	IRRIGATION TUNNEL – WHEEL GATE – LEAF
15-F-13 (R1)	IRRIGATION TUNNEL – WHEEL GATE – SEALS
15-F-14	IRRIGATION TUNNEL – WHEEL GATE – WHEELS
15-F-15 (R2)	IRRIGATION TUNNEL – WHEEL GATE GUIDES –ASSEMBLY & ANCHOR BOLTS
15-F-16	IRRIGATION TUNNEL – WHEEL GATE GUIDES –DETAILS
15-F-17 (R2)	IRRIGATION TUNNEL – INTAKE TOWER ACCESS BRIDGE – ASSEMBLY & TRUSS
15-F-18	IRRIGATION TUNNEL – INTAKE TOWER – MISC METALWORK –SHEET 3
15-F-55 (R2)	IRRIGATION TUNNEL – TESTING TEMPORARY INSTALLATON – DETAILS
15-F-64 (R1)	IRRIGATION TUNNEL – MISCELLANEOUS METALWORK
15-F-65 (R1)	IRRIGATION TUNNEL – INTAKE TOWER ACCESS BRIDGE – BENT AND GIRDER
17-F-3	VALVE HOUSE – POWER AND LIGHTING PLANS
17-F-4 (R1)	VALVE HOUSE – POWER AND LIGHTING – SECTIONS AND DETAILS
17-F-5 (R2)	VALVE HOUSE SWITCHBOARD – ELEMENTARY WIRING (superseded by Square D shop drawings)
17-F-6 (R2)	ELECTRICAL – AERIAL DISTRIBUTION LINE – PLAN AND DETAILS

KAJAKI DAM – IRRIGATION TUNNEL WORKS

17-F-7 (R1) EMERGENCY GENERATOR HOUSE – POWER AND LIGHTING
17-F-8 ELECTRICAL – SINGLE LINE DIAGRAM

Shop Drawings (BERGER ENGINEERING WORKS, INC.)

<u>DRAWING NO.</u>	<u>TITLE</u>
9698-D20	75 TON CRANE FOR KAJAKAI DAM INTAKE TUNNEL – GENERAL ARRANGEMENTS & CLEARANCE DIAGRAM
9768-D8	RUNWAY CONDUCTOR ANCHOR BOLT PLAN – KAJAKAI INTAKE CRANE
9772-D6	TROLLEY WHEEL ASS'Y – KAJAKAI INTAKE CRANE
9773-D10	75 TON LOAD BLOCK
9774-G20	TROLLEY HOIST ARRANGEMENT – 75 TON KAJAKAI INTAKE CRANE
9785-D8	CRANE CONTROL SCHMATIC DIAG. EXISTS BUT ELECTRONIC COPY IS CORRUPT
9787-G22	CRANE BRIDGE DETAIL – KAJAKAI INTAKE CRANE
9794-G22	CRANE CATWALK DETAIL – KAJAKAI INTAKE CRANE
9799-G23	BRIDGE DRIVE MACH. ASS'Y – KAJAKAI INTAKE CRANE
9801-F22	CRANE BRIDGE WHEEL TRUCK ASS'Y – KAJAKAI INTAKE CRANE
9836-D8	TROLLEY DRIFT LOCK – ASSEMBLY & LOCATION – KAJAKAI INTAKE CRANE
10141-D10	15 TON HOOK ASS'Y – KAJAKAI INTAKE CRANE
10164-D8	ELECTRICAL CONDUIT– KAJAKAI INTAKE CRANE
10198-B36	LOAD BRAKE ASS'Y– KAJAKAI INTAKE CRANE

2. KAJAKI DAM TUNNEL DRAWINGS

<u>DRAWING NO.</u>	<u>TITLE</u>
13-F-46	IRRIGATION TUNNEL – VALVE HOUSE – REINFORCEMENT – SHEET 1
13-F-47	IRRIGATION TUNNEL – VALVE HOUSE – REINFORCEMENT – SHEET 2
13-F-48	IRRIGATION TUNNEL – VALVE HOUSE – REINFORCEMENT – SHEET 3
13-F-49	IRRIGATION TUNNEL – VALVE HOUSE – REINFORCEMENT – SHEET 4
13-F-50	IRRIGATION TUNNEL – VALVE HOUSE – REINFORCEMENT – SHEET 5
13-F-51	IRRIGATION TUNNEL – VALVE HOUSE – REINFORCEMENT – SHEET 6
13-F-52(R1)	IRRIGATION TUNNEL – VALVE HOUSE – ARCHITECTURAL DETAILS
13-F-53	IRRIGATION TUNNEL – UPSTREAM PORTAL – EXCAVATON
13-F-54	POWER TUNNEL – UPSTREAM PORTAL – EXCAVATON
13-F-55	POWER TUNNEL – UPSTREAM PORTAL – OUTLINE & REINFORCEMENT – SHEET 1
13-F-56(R3)	POWER TUNNEL – UPSTREAM PORTAL – OUTLINE & REINFORCEMENT – SHEET 2
13-F-57(R2)	POWER TUNNEL –PLUG
13-F-61(R3)	IRRIGATION TUNNEL – ROTOVALVE CHAMBER – CONCRETE OUTLINE
13-F-62	IRRIGATION TUNNEL – ROTOVALVE CHAMBER – REINFORCEMENT – SHEET 1
13-F-63	IRRIGATION TUNNEL – ROTOVALVE CHAMBER – REINFORCEMENT – SHEET 2
13-F-64	IRRIGATION TUNNEL – ROTOVALVE CHAMBER – REINFORCEMENT – SHEET 3
13-F-66(R1)	IRRIGATION TUNNEL – VALVE HOUSE – REINFORCEMENT – SHEET 8

KAJAKI DAM – IRRIGATION TUNNEL WORKS

13-F-67	IRRIGATION TUNNEL – VALVE HOUSE – REINFORCEMENT – SHEET 9
13-F-68	IRRIGATION TUNNEL – PIPE TRENCHES AND EQUIPMENT – FOUNDATIONS
13-F-70(R0)	IRRIGATION TUNNEL –ROTOVALVE CHAMBER – ROTOVALVE DRAINS
15-F-52	IRRIGATION TUNNEL – ROTOVALVE CHAMBER – HOIST & RAIL
15-F-53	IRRIGATION TUNNEL – STEEL CONDUIT – ASSEMBLY & MISC DETAILS MISSING
15-F-54 (R1)	IRRIGATION TUNNEL – STEEL CONDUIT – DETAILS OF SECTIONS
15-F-55 (R2)	IRRIGATION TUNNEL – TESTING TEMPORARY INSTALLATION – DETAILS
15-F-56 (R5)	IRRIGATION TUNNEL – VALVE HOUSE AND TUNNEL – MISCELLANEOUS METALWORK
15-F-57 (R1)	IRRIGATION TUNNEL – VALVE HOUSE AND TUNNEL – LADDERS AND RAILINGS
15-F-59 (R0)	IRRIGATION TUNNEL – VENTILATING SYSTEM – PLANS AND SECTIONS
15-F-60 (R1)	IRRIGATION TUNNEL – VENTILATING SYSTEM – DETAILS
15-F-61 (R1)	IRRIGATION TUNNEL – VALVE HOUSE – PLUMBING & DRAIN LINES DETAILS
15-F-64 (R1)	IRRIGATION TUNNEL – MISCELLANEOUS METALWORK
15-F-66 (R1)	IRRIGATION TUNNEL – ROTOVALVE CONTROL PIPING – PLANS AND SECTIONS
15-F-67	IRRIGATION TUNNEL – ROTOVALVE CONTROL PIPING – DETAILS
17-F-1 (R1)	IRRIGATION TUNNEL – VALVE CHAMBER, TUNNEL AND VALVE HOUSE – GROUNDING PLAN
17-F-2	IRRIGATION TUNNEL – VALVE CHAMBER AND TUNNEL – POWER AND LIGHTING
17-F-3	VALVE HOUSE – POWER AND LIGHTING PLANS
17-F-4 (R1)	VALVE HOUSE – POWER AND LIGHTING – SECTIONS AND DETAILS
17-F-5 (R2)	VALVE HOUSE SWITCHBOARD – ELEMENTARY WIRING (superseded by Square D shop drawings)
17-F-6 (R2)	ELECTRICAL – AERIAL DISTRIBUTION LINE – PLAN AND DETAILS
17-F-7 (R1)	EMERGENCY GENERATOR HOUSE – POWER AND LIGHTING
17-F-8	ELECTRICAL – SINGLE LINE DIAGRAM
505-27-570	IRRIGATION TUNNEL – SPECIAL CONDUIT NIPPLES
505-27-936	IRRIGATION TUNNEL – CONDUIT NIPPLES

Shop Drawings (SCOTT CO. – MECH CONTRACTOR)

<u>DRAWING NO.</u>	<u>TITLE</u>
KAJ-V-1	IRRIGATION TUNNEL VENTILATING SYSTEM – KEY PLAN AND TYPICAL DETAILS
KAJ-V-2	IRRIGATION TUNNEL VENTILATING SYSTEM –DUCWORK DETAILS
KAJ-V-3	IRRIGATION TUNNEL VENTILATING SYSTEM – MISC. DETAILS

Shop Drawings (SQUARE D COMPANY)

<u>DRAWING NO.</u>	<u>TITLE</u>
C-2059 SF	NAMEPLATE DETAILS
D-1855 SF-1	VALVE HOUSE SWITCHBOARD – 3 & 4 WIRE, 400 VOLT, 50 CYCLES
D-1855 SF-2	VALVE HOUSE SWITCHBOARD – WIRING DIAGRAM PANELS 1 & 2
D-1855 SF-2A	VALVE HOUSE SWITCHBOARD – WIRING DIAGRAM PANELS 3, 4 & 5
D-1855 SF-3	SCHEDULES & CATALOG NUMBERS – OF EQUIPMENT MANUFACTURED – & SUPPLIED BY SQUARE D CO. – FOR VALVE HOUSE SWITCHBOARD

KAJAKI DAM – IRRIGATION TUNNEL WORKS

Shop Drawings (S. MORGAN SMITH CO.)

<u>DRAWING NO.</u>	<u>TITLE</u>
5846-IB-2	P.S. DRAFT TUBE
6084-A-2	BILL OF MATERIAL - BODY - 84" DIA - 115 PSI ROTOVALVE
6084-C-2	BILL OF MATERIAL - LOWER HEAD - 84" DIA - 115 PSI ROTOVALVE
6084-D-2	BILL OF MATERIAL - UPPER HEAD - 84" DIA - 115 PSI ROTOVALVE
6084-E-1	SECTIONAL ASSEMBLY NO. 1 - (PARALLEL TO WATERWAY) - 84" DIA - 115 PSI ROTOVALVE
6084-F-1	SECTIONAL ASSEMBLY NO. 2 - (PERPENDICULAR TO WATERWAY) - 84" DIA - 115 PSI ROTOVALVE
6084-G-1	SECTIONAL PLAN FOR 84" DIA - 115 PSI ROTOVALVE
6084-I-2	LOWER TRUNNION BEARING FOR 84" DIA - 115 PSI ROTOVALVE
6084-J-2	PLUG & HEAD BUSHINGS FOR 84" DIA - 115 PSI ROTOVALVE
6084-K-1	PLUG DETAIL NO. 1 - HALF SECTION 84" DIA - 115 PSI ROTOVALVE
6084-AA-1	CONTROL PIPING FOR 84" DIA - 115 PSI ROTOVALVE
6084-AB-2	CONTROL VALVE BRACKETS FOR 84" DIA - 115 PSI ROTOVALVE
6084-AC-2	LIFT NUT FOR - 84" -115 PSI ROTOVALVE
6084-AD-3	MOUNTING DETAILS - MOTOR - PUMPUNIT - 84" - 115 PSI ROTOVALVE
6084-AE-2	LIFTER LEVER FOR - 84" - 115 PSI ROTOVALVE
6084-AF-3	LIFT BUSHING FOR 84" - 115 PSI ROTOVALVE
6084-AH-3	PIVOTING BOLTS - ROTATOR & LIFT LEVER - 84" - 115 PSI ROTOVALVE
6084-AI-3	SHAFT SLEEVE FOR 84" - 115 PSI ROTOVALVE
6084-AJ-2	SHAFT FOR 84" - 115 PSI ROTOVALVE
P5200-ALD-2	ASSEMBLY PROCEDURE & CLEARANCE DWG - 84" DIA - 115 PSI HYDRAULICALLY OPERATED ROTOVALVE

Shop Drawings (WESTINGHOUSE ELECTRIC CORPORATION)

<u>DRAWING NO.</u>	<u>TITLE</u>
SV-1J-167	BODY INLET SECTION - 84" HOLLOW JET VALVE
SV-1J-168	BODY OUTLET SECTION
SV-1J-170	VALVE ASSEMBLY - 84" HOLLOW JET VALVE
SV-1J-171	GENERAL ARRANGEMENT - 84" HOLLOW JET VALVE
35-F-142	VALVE OPERATOR ASSY.

3. ARGHANDAB PROJECT

Original Drawings (MORRISON-KNUDSEN AFGHANISTAN, INC)

<u>DRAWING NO.</u>	<u>TITLE</u>
13-F-30(R1)	EMERGENCY GENERATOR HOUSE (Same structure as used on Kajaki Project)

4. KAJAKAI HYDROELECTRIC PROJECT

Original Drawings (DA AFGHANISTAN BRESHNA MOASSESSA)

<u>DRAWING NO.</u>	<u>TITLE</u>
GG-47-501(R5)	POWERHOUSE AND SWITCHYARD – MAIN POWER ONE LINE DIAGRAM
GG-47-531(R7)	POWERHOUSE AND SWITCHYARD – AUXILIARY POWER ONE LINE DIAGRAM