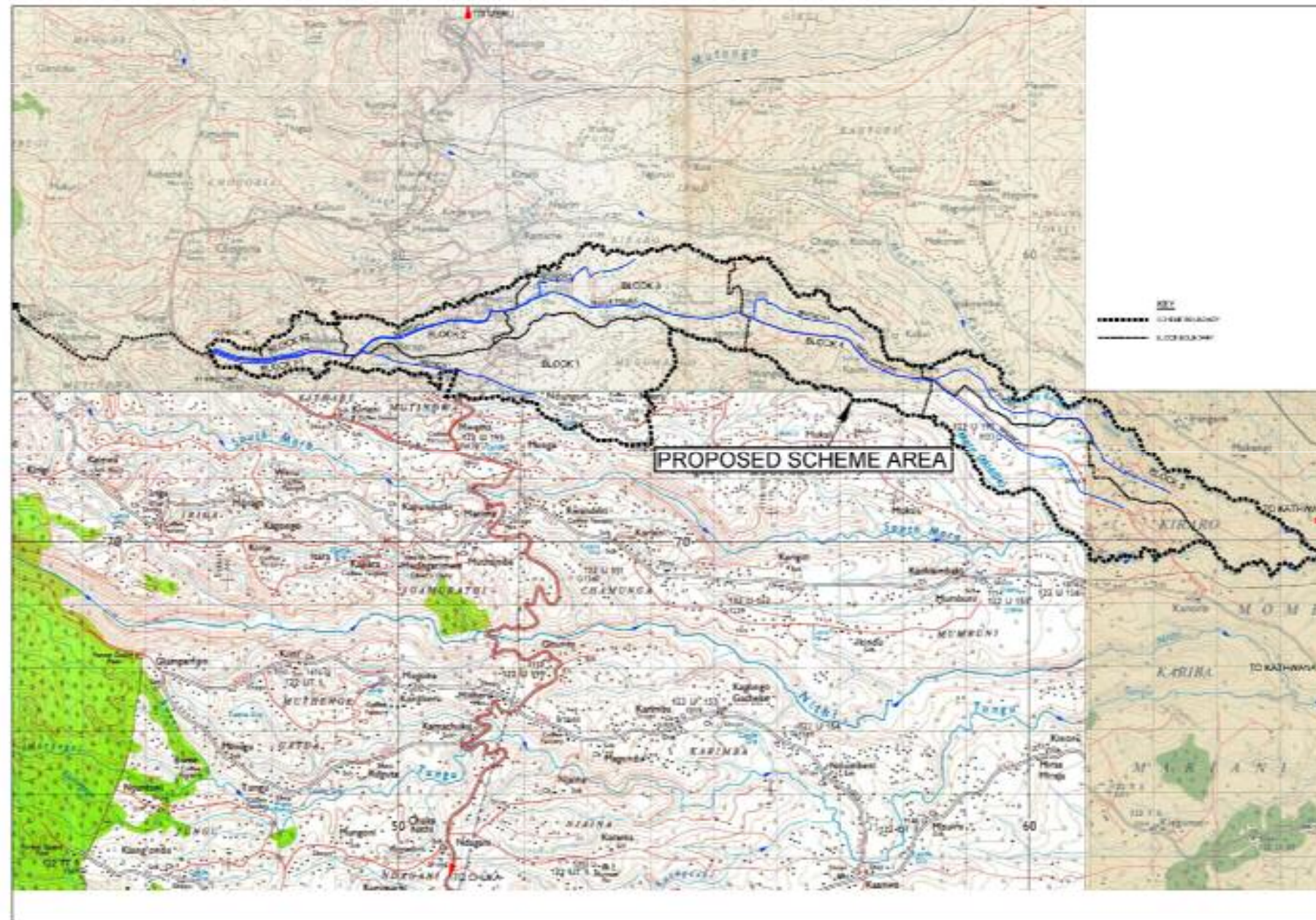




## FEASIBILITY STUDY, DESIGN AND PREPARATION OF TENDER DOCUMENTS FOR KIRUMI KIAMUJARI IRRIGATION SCHEME



**VOLUME III:**

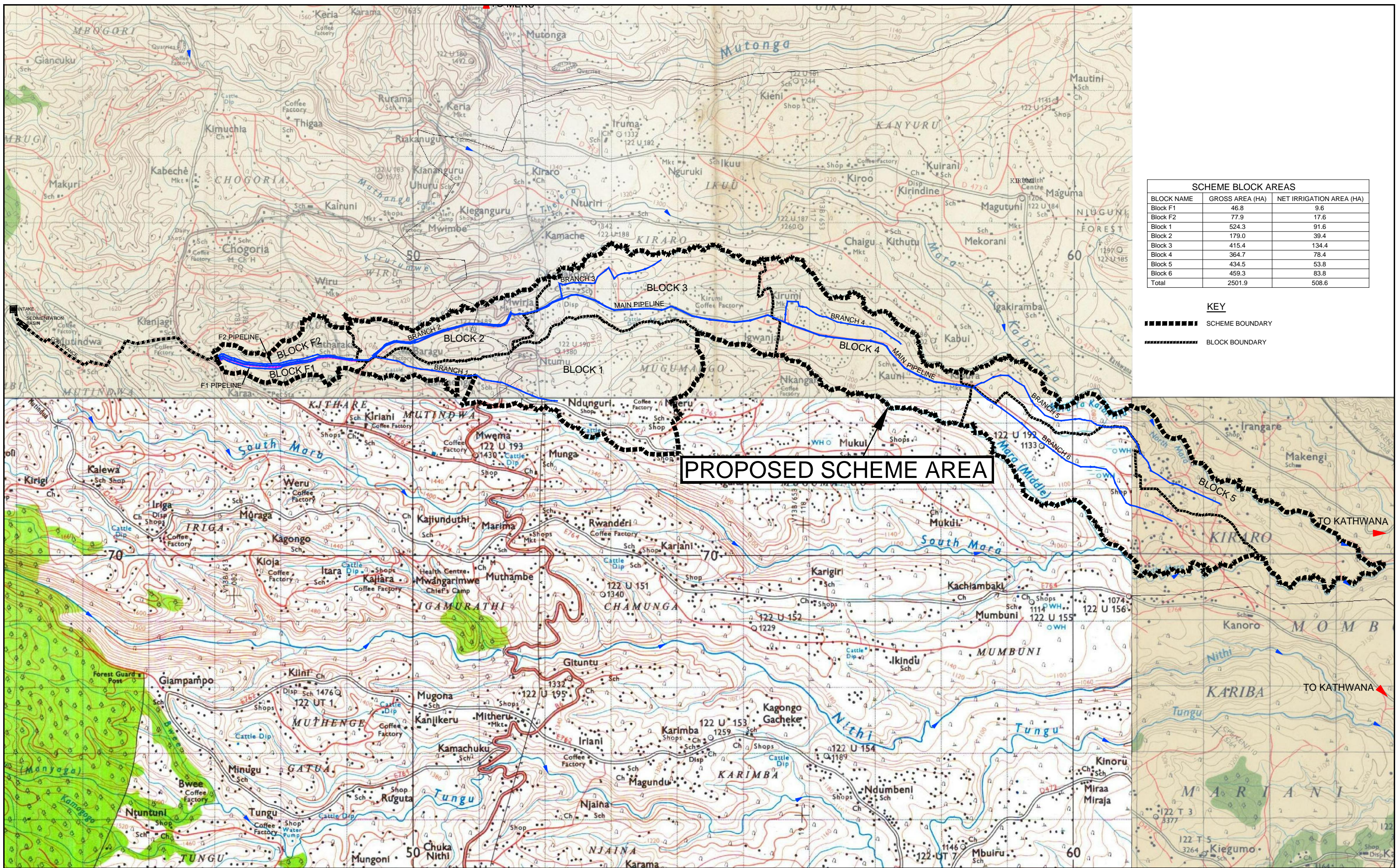
**BOOK OF DRAWINGS**

**AUGUST 2014**

**SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
KIRUMI KIAMUJARI IRRIGATION SCHEME - LIST OF DRAWINGS**

DRAWING No	DRAWINGS DESCRIPTION	SHEETS
	<b>GENERAL</b>	
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KKIS/DD/002	PROJECT IRRIGATION BLOCK AREAS	4
KKIS/DD/003	SCHEME MEMBERSHIP SPREAD	4
KKIS/DD/004	SCHEME ROAD NETWORK	4
	<b>HEADWORKS</b>	
KKIS/DD/101	HEADWORKS SITE MAP	1
KKIS/DD/102	INTAKE WORKS - PLAN AND SECTIONS	2
KKIS/DD/103	INTAKE WORKS - GATES, SCREENS, TRASHRACKS AND STOPLOGS DETAILS	1
KKIS/DD/104	INTAKE WORKS - SLIDE GATE DETAILS	1
KKIS/DD/105	SEDIMENTATION BASIN - PLAN AND SECTIONS	2
	<b>PIPELINE LAYOUT</b>	
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	<b>MAJOR PIPELINE PROFILES</b>	
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KKIS/DD/302	MAIN PIPELINE PROFILE	9
KKIS/DD/303	BRANCH 1 PIPELINE PROFILE	3
KKIS/DD/304	BRANCH 2 PIPELINE PROFILE	2
KKIS/DD/305	BRANCH 3 PIPELINE PROFILE	2
KKIS/DD/306	BRANCH 4 PIPELINE PROFILE	2
KKIS/DD/307	BRANCH 5 PIPELINE PROFILE	4
KKIS/DD/308	BRANCH 6 PIPELINE PROFILE	3
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KKIS/DD/402	F2 PIPELINE PROFILE	2
KKIS/DD/403	F2-1 PIPELINE PROFILE	1
KKIS/DD/404	F2-2 PIPELINE PROFILE	1
KKIS/DD/405	B1-2 PIPELINE PROFILE	1
KKIS/DD/406	B1-3 PIPELINE PROFILE	1
KKIS/DD/407	B1-4 PIPELINE PROFILE	1
KKIS/DD/408	B1-6 PIPELINE PROFILE	2
KKIS/DD/409	B1-6-3 PIPELINE PROFILE	1
KKIS/DD/410	B1-6-4 PIPELINE PROFILE	1
KKIS/DD/411	B1-8 PIPELINE PROFILE	2
KKIS/DD/412	B1-9 PIPELINE PROFILE	2
KKIS/DD/413	B1-9-1 PIPELINE PROFILE	1
KKIS/DD/414	B1-9-1-1 PIPELINE PROFILE	1
KKIS/DD/415	B1-9-2 PIPELINE PROFILE	1
KKIS/DD/416	B1-9-3 PIPELINE PROFILE	2
KKIS/DD/417	B1-10 PIPELINE PROFILE	1
KKIS/DD/418	B2-1 PIPELINE PROFILE	1
KKIS/DD/419	B2-2 PIPELINE PROFILE	1
KKIS/DD/420	B2-3 PIPELINE PROFILE	2
KKIS/DD/421	B2-4 PIPELINE PROFILE	2
KKIS/DD/422	B2-4-1 PIPELINE PROFILE	1
KKIS/DD/423	B2-7 PIPELINE PROFILE	1
KKIS/DD/424	B3-1 PIPELINE PROFILE	1
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KKIS/DD/426	B3-2-2 PIPELINE PROFILE	1
KKIS/DD/427	B3-4 PIPELINE PROFILE	1
KKIS/DD/428	B3-5 PIPELINE PROFILE	1
KKIS/DD/429	B3-6 PIPELINE PROFILE	1
KKIS/DD/430	B3-7 PIPELINE PROFILE	3
KKIS/DD/431	B3-7-1 PIPELINE PROFILE	1
KKIS/DD/432	B3-7-3 PIPELINE PROFILE	1
KKIS/DD/433	B3-7-5 PIPELINE PROFILE	1
KKIS/DD/434	B3-7-7 PIPELINE PROFILE	1
KKIS/DD/435	B3-7-7-1 PIPELINE PROFILE	1
KKIS/DD/436	B3-8 PIPELINE PROFILE	1
KKIS/DD/437	B4-1 PIPELINE PROFILE	2
KKIS/DD/438	B4-2 PIPELINE PROFILE	3

DRAWING No	DRAWINGS DESCRIPTION	SHEETS
	<b>DISTRIBUTION PIPELINE PROFILES</b>	
KKIS/DD/439	B4-2-1 PIPELINE PROFILE	2
KKIS/DD/440	B4-2-3 PIPELINE PROFILE	2
KKIS/DD/441	B4-2-5 PIPELINE PROFILE	1
KKIS/DD/442	B4-3 PIPELINE PROFILE	1
KKIS/DD/443	B4-4 PIPELINE PROFILE	1
KKIS/DD/444	B4-6 PIPELINE PROFILE	1
KKIS/DD/445	B4-7 PIPELINE PROFILE	1
KKIS/DD/446	B4-7-1 PIPELINE PROFILE	1
KKIS/DD/447	B5-1 PIPELINE PROFILE	1
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KKIS/DD/449	B5-4 PIPELINE PROFILE	1
KKIS/DD/450	B5-5 PIPELINE PROFILE	1
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KKIS/DD/452	B5-7 PIPELINE PROFILE	1
KKIS/DD/453	B5-8 PIPELINE PROFILE	1
KKIS/DD/454	B5-9 PIPELINE PROFILE	2
KKIS/DD/455	B6-1 PIPELINE PROFILE	2
KKIS/DD/456	B6-1-1 PIPELINE PROFILE	1
KKIS/DD/457	B6-2 PIPELINE PROFILE	3
KKIS/DD/458	B6-2-1 PIPELINE PROFILE	2
KKIS/DD/459	B6-2-1-2 PIPELINE PROFILE	1
KKIS/DD/460	B6-2-3 PIPELINE PROFILE	1
KKIS/DD/461	B6-3 PIPELINE PROFILE	1
KKIS/DD/462	B6-3-1 PIPELINE PROFILE	1
KKIS/DD/463	B6-4 PIPELINE PROFILE	2
KKIS/DD/464	B6-4-1 PIPELINE PROFILE	1
KKIS/DD/465	B6-4-3 PIPELINE PROFILE	1
KKIS/DD/466	B6-5 PIPELINE PROFILE	1
KKIS/DD/467	B6-6 PIPELINE PROFILE	1
	<b>IN - FIELD SYSTEM</b>	
KKIS/DD/501	IN- FIELD SPRINKLER SYSTEM ARRANGEMENT	1
	<b>JUNCTION DETAILS</b>	
KKIS/DD/601	MAINLINE	1
KKIS/DD/602	BRANCH B1	2
KKIS/DD/603	BRANCH B2	2
KKIS/DD/604	BRANCH B3	2
KKIS/DD/605	BRANCH B4	2
KKIS/DD/606	BRANCH B5	2
KKIS/DD/607	BRANCH B6	2
KKIS/DD/608	DISTRIBUTION F1	1
KKIS/DD/609	DISTRIBUTION F2	2
KKIS/DD/610	DISTRIBUTION B1	5
KKIS/DD/611	DISTRIBUTION B2	2
KKIS/DD/612	DISTRIBUTION B3	6
KKIS/DD/613	DISTRIBUTION B4	4
KKIS/DD/614	DISTRIBUTION B5	3
KKIS/DD/615	DISTRIBUTION B6	5
	<b>TYPICAL PIPELINE FACILITIES</b>	
KKIS/DD/701	THRUST, SUPPORT BLOCKS AND PIPE BEDDING DETAILS	1
KKIS/DD/702	WASHOUT AND AIR VALVES CHAMBER DETAILS	1
KKIS/DD/703	SECTION VALVE CHAMBER DETAILS	1
KKIS/DD/704	PIPELINE MARKER POSTS AND BENCHMARK DETAILS	1
KKIS/DD/705	ROAD CROSSING DETAILS	1
	<b>OTHER FACILITIES</b>	
KKIS/DD/801	PROJECT SIGNBOARD	1
KKIS/DD/802	RESIDENT ENGINEER'S SITE OFFICE AND PIT LATRINE	1



SCHEME BLOCK AREAS		
BLOCK NAME	GROSS AREA (HA)	NET IRRIGATION AREA (HA)
Block F1	46.8	9.6
Block F2	77.9	17.6
Block 1	524.3	91.6
Block 2	179.0	39.4
Block 3	415.4	134.4
Block 4	364.7	78.4
Block 5	434.5	53.8
Block 6	459.3	83.8
Total	2501.9	508.6

**KEY**  
 ■■■■■■■■ SCHEME BOUNDARY  
 - - - - - BLOCK BOUNDARY

**PROPOSED SCHEME AREA**

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

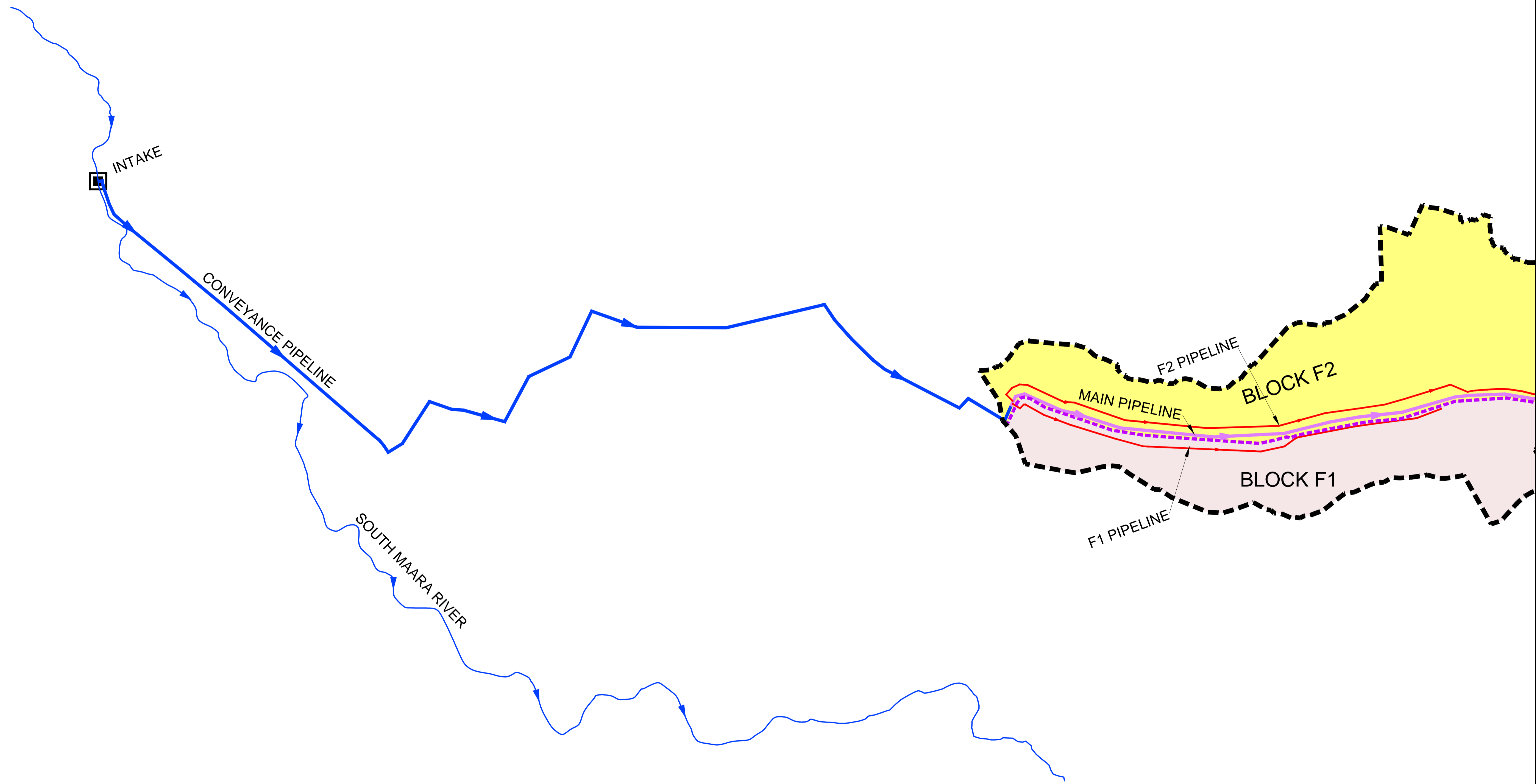
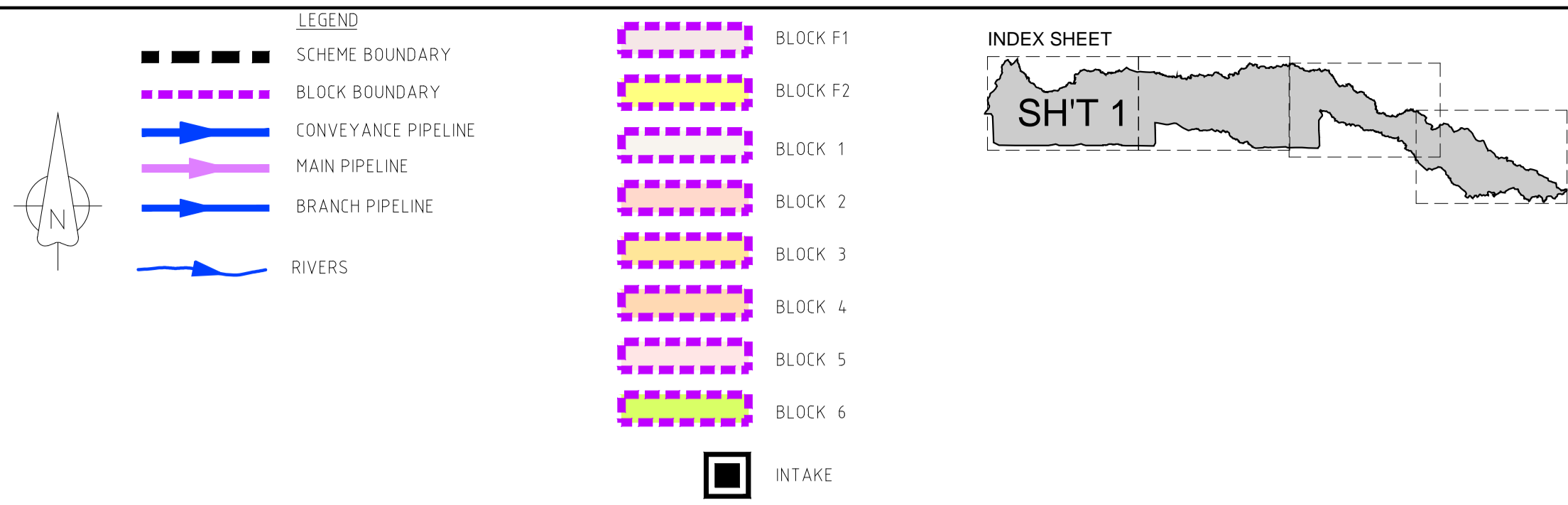
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**PROJECT**  
 SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
 KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**  
 PROJECT LOCATION MAP

Date:	JULY 2014	JOB No.	000811
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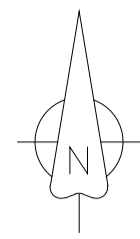
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

PROJECT IRRIGATION BLOCK AREAS

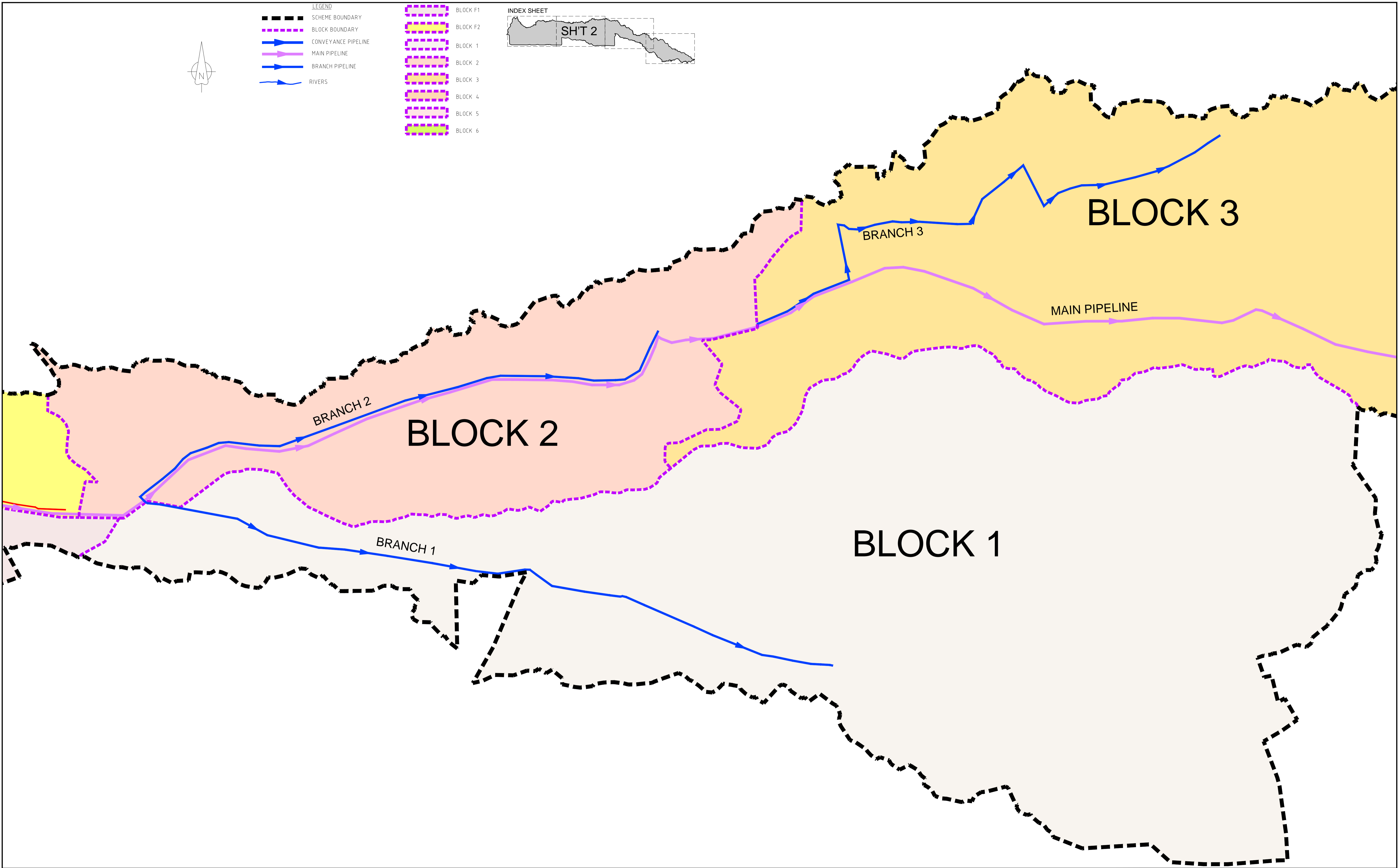
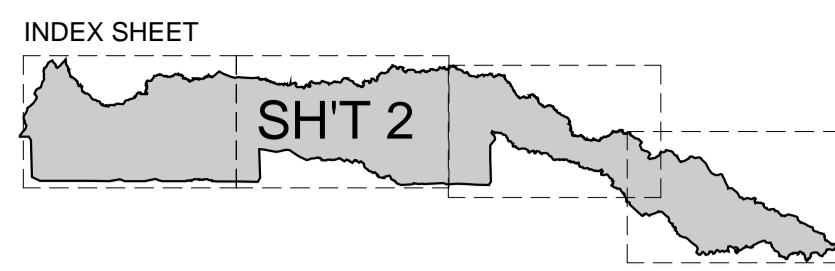
SHEET 1 OF 4

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- LEGEND**
- SCHEME BOUNDARY
  - - - BLOCK BOUNDARY
  - CONVEYANCE PIPELINE
  - MAIN PIPELINE
  - BRANCH PIPELINE
  - RIVERS

- BLOCK F1
- BLOCK F2
- BLOCK 1
- BLOCK 2
- BLOCK 3
- BLOCK 4
- BLOCK 5
- BLOCK 6




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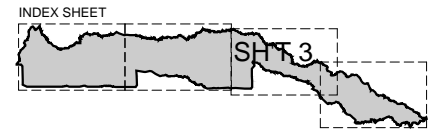
**PROJECT**

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
KIRUMI KIAMUJARI IRRIGATION SCHEME

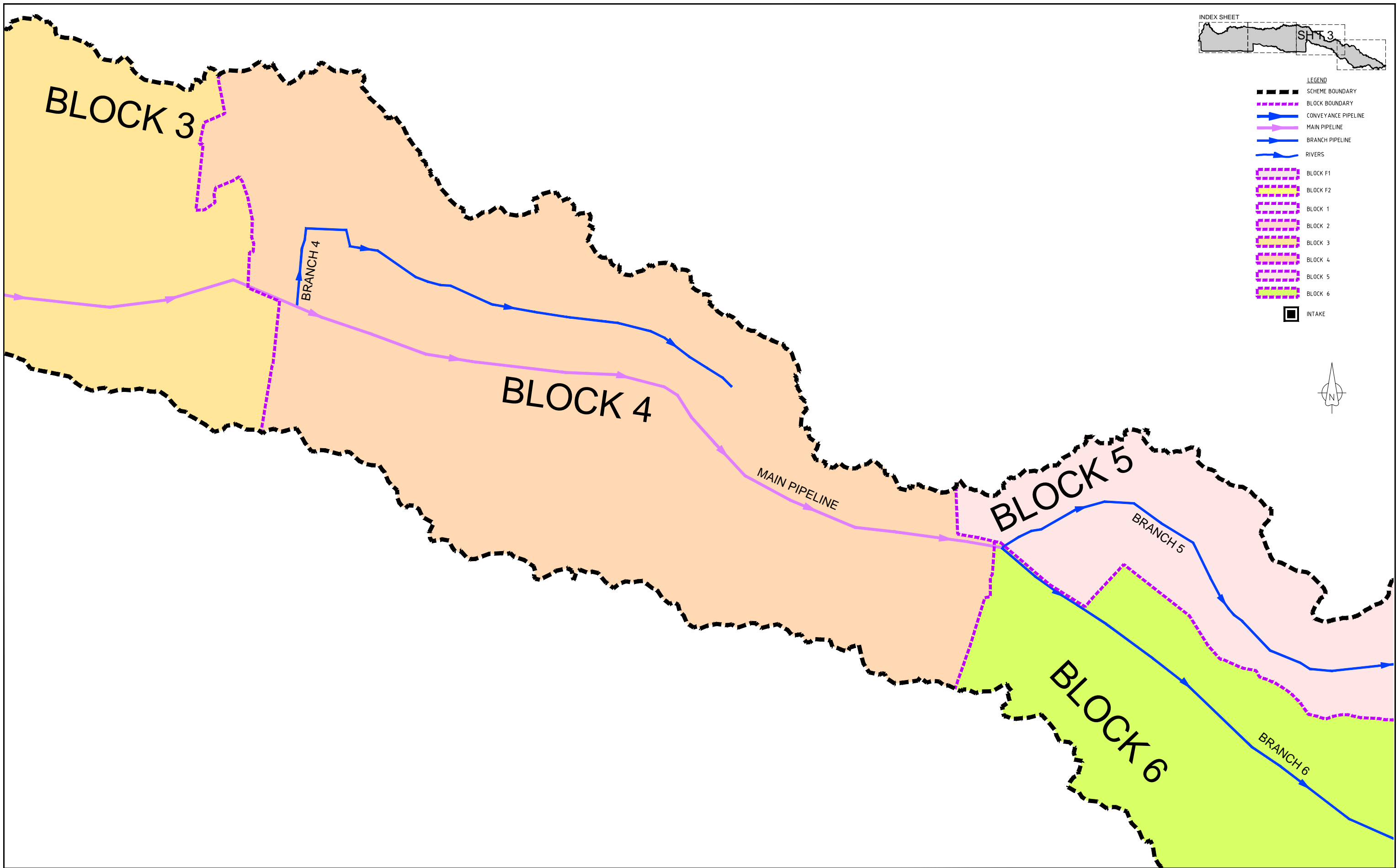
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PROJECT IRRIGATION BLOCK AREAS  
SHEET 2 OF 4

Date:	JULY 2014	JOB No:	000811
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- LEGEND**
- SCHEME BOUNDARY
  - - - BLOCK BOUNDARY
  - CONVEYANCE PIPELINE
  - MAIN PIPELINE
  - BRANCH PIPELINE
  - RIVERS
  - [ ] BLOCK F1
  - [ ] BLOCK F2
  - [ ] BLOCK 1
  - [ ] BLOCK 2
  - [ ] BLOCK 3
  - [ ] BLOCK 4
  - [ ] BLOCK 5
  - [ ] BLOCK 6
  - INTAKE



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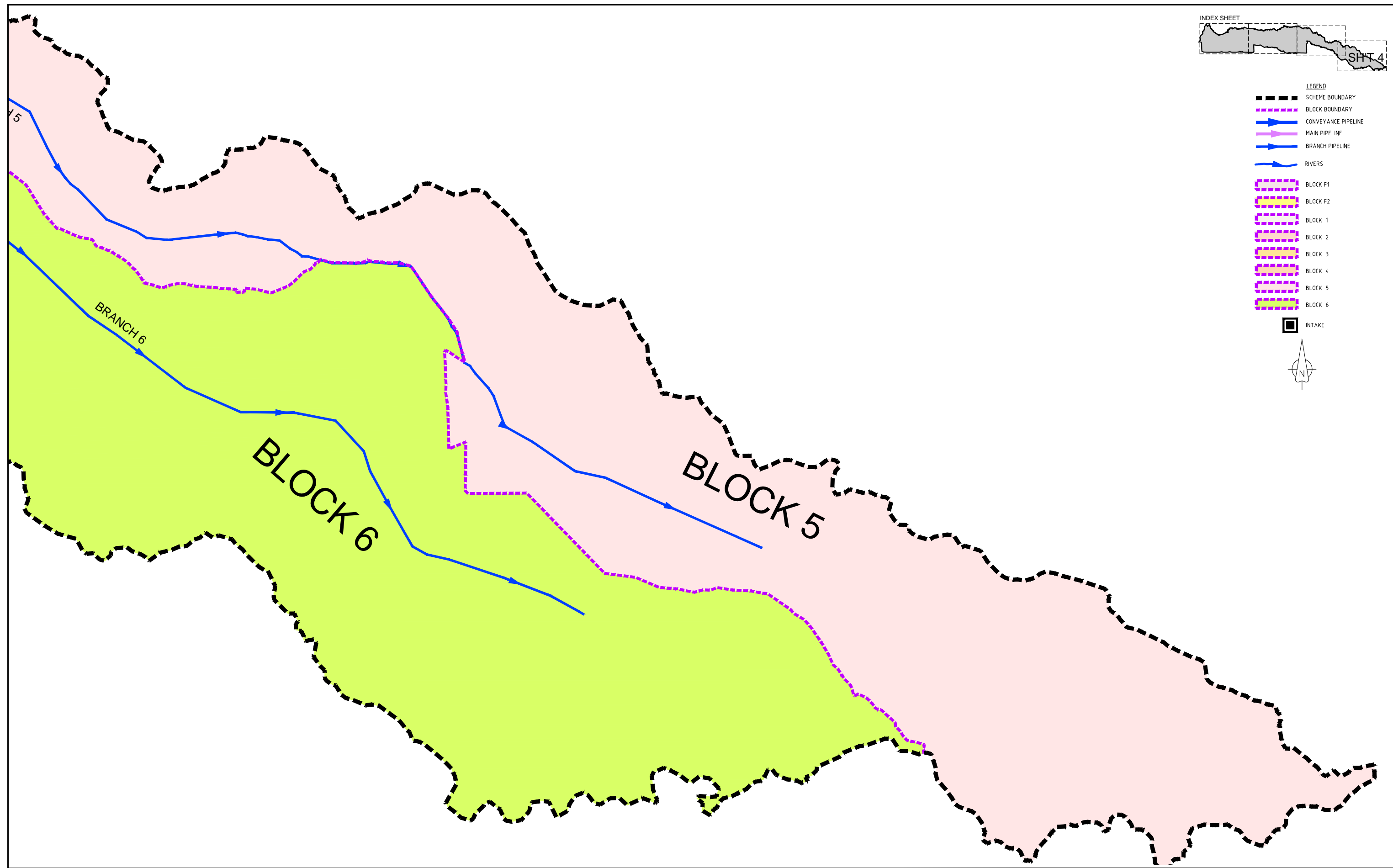
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Date:	JULY 2014	JOB No.	000811
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**LEGEND**

- SCHEME BOUNDARY
- - - BLOCK BOUNDARY
- CONVEYANCE PIPELINE
- MAIN PIPELINE
- BRANCH PIPELINE
- ~ RIVERS
- [ ] BLOCK F1
- [ ] BLOCK F2
- [ ] BLOCK 1
- [ ] BLOCK 2
- [ ] BLOCK 3
- [ ] BLOCK 4
- [ ] BLOCK 5
- [ ] BLOCK 6
- INTAKE



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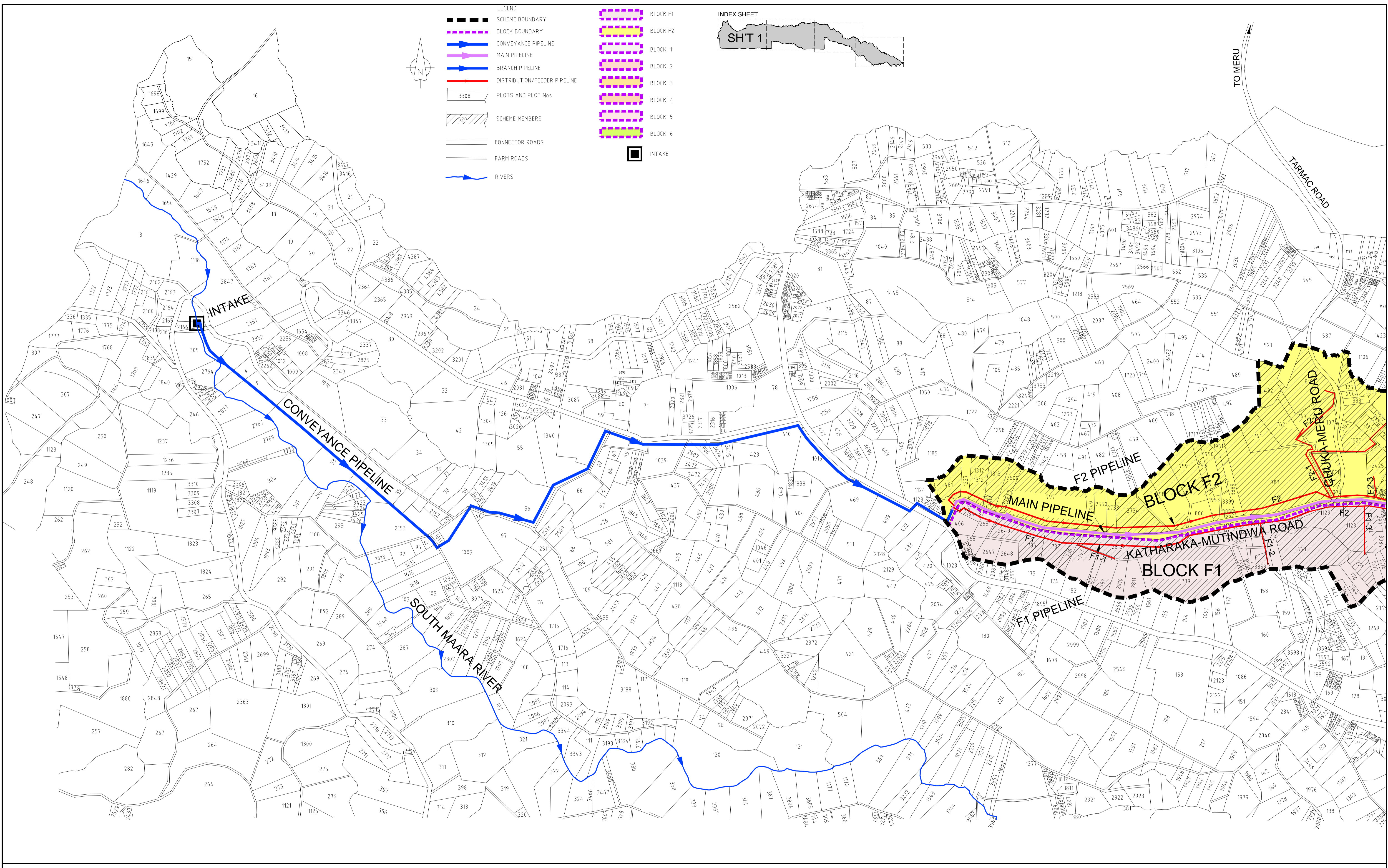
KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**

PROJECT IRRIGATION BLOCK AREAS

SHEET 4 OF 4

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**SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)**

KIRIMI KIAMUJARI IRRIGATION SCHEME

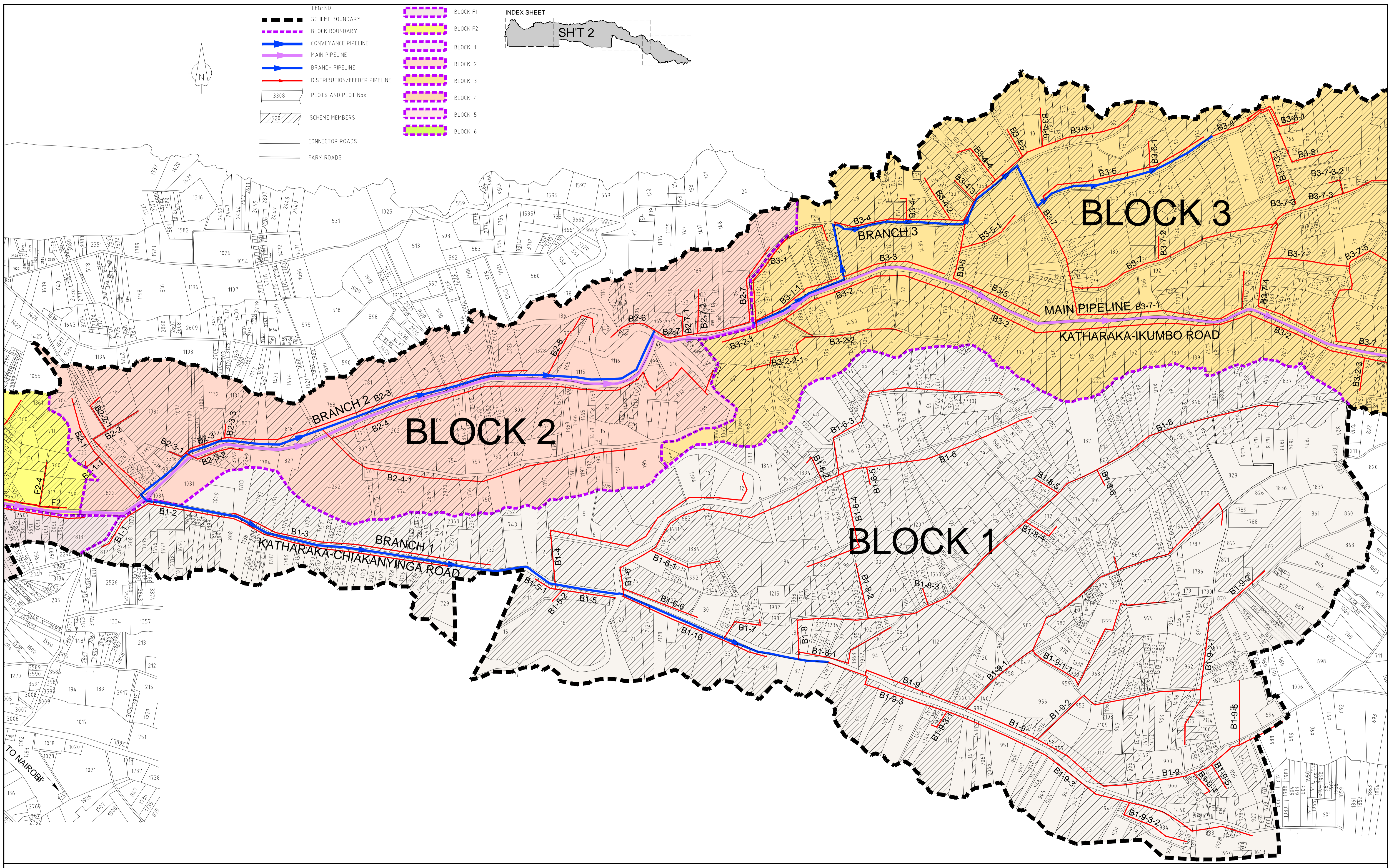
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**SCHEME MEMBERSHIP SPREAD**

SHEET 1 OF 4

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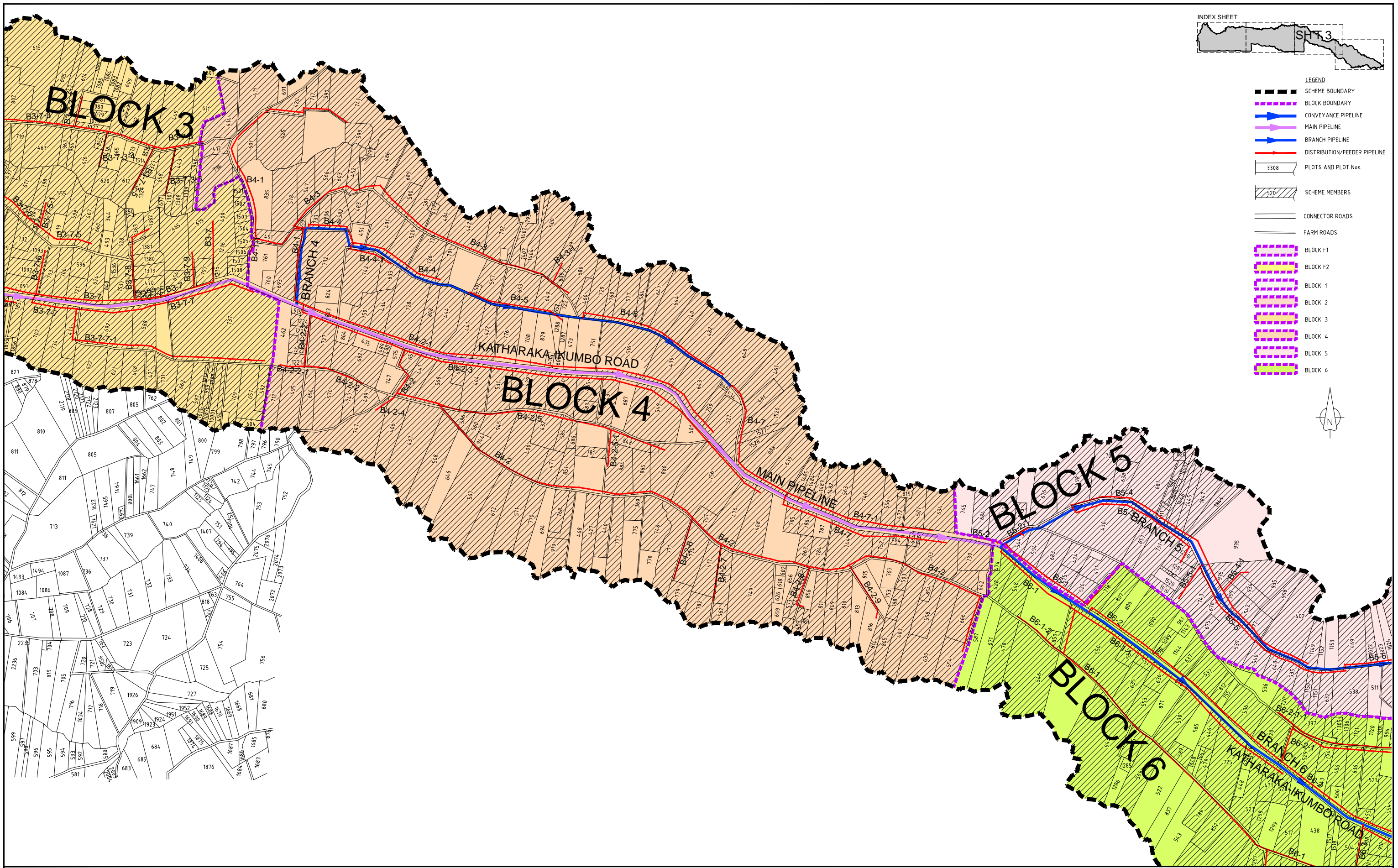
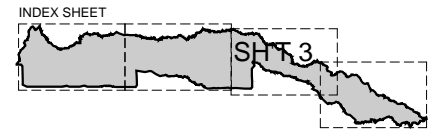
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

SCHEME MEMBERSHIP SPREAD

SHEET 2 OF 4

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- LEGEND**
- SCHEME BOUNDARY
  - BLOCK BOUNDARY
  - CONVEYANCE PIPELINE
  - MAIN PIPELINE
  - BRANCH PIPELINE
  - DISTRIBUTION/FEDER PIPELINE
  - PLOTS AND PLOT Nos
  - SCHEME MEMBERS
  - CONNECTOR ROADS
  - FARM ROADS
  - BLOCK F1
  - BLOCK F2
  - BLOCK 1
  - BLOCK 2
  - BLOCK 3
  - BLOCK 4
  - BLOCK 5
  - BLOCK 6



REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE


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DRG TITLE

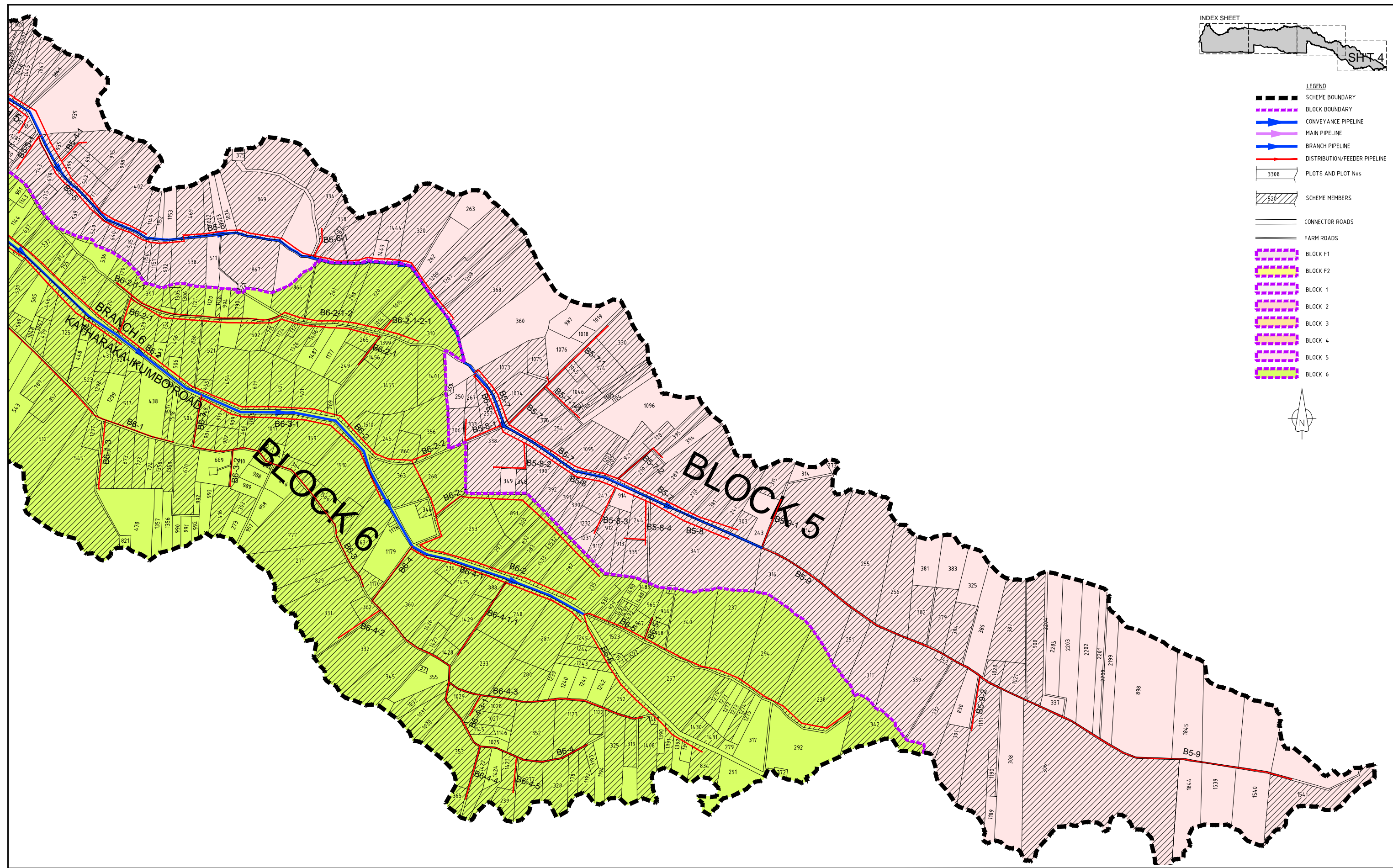
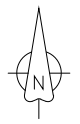
SCHEME MEMBERSHIP SPREAD

SHEET 3 OF 4

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  - - - BLOCK BOUNDARY
  - CONVEYANCE PIPELINE
  - MAIN PIPELINE
  - BRANCH PIPELINE
  - DISTRIBUTION/FEEDER PIPELINE
  - 3308 PLOTS AND PLOT Nos
  - 520 SCHEME MEMBERS
  - CONNECTOR ROADS
  - FARM ROADS
  - BLOCK F1
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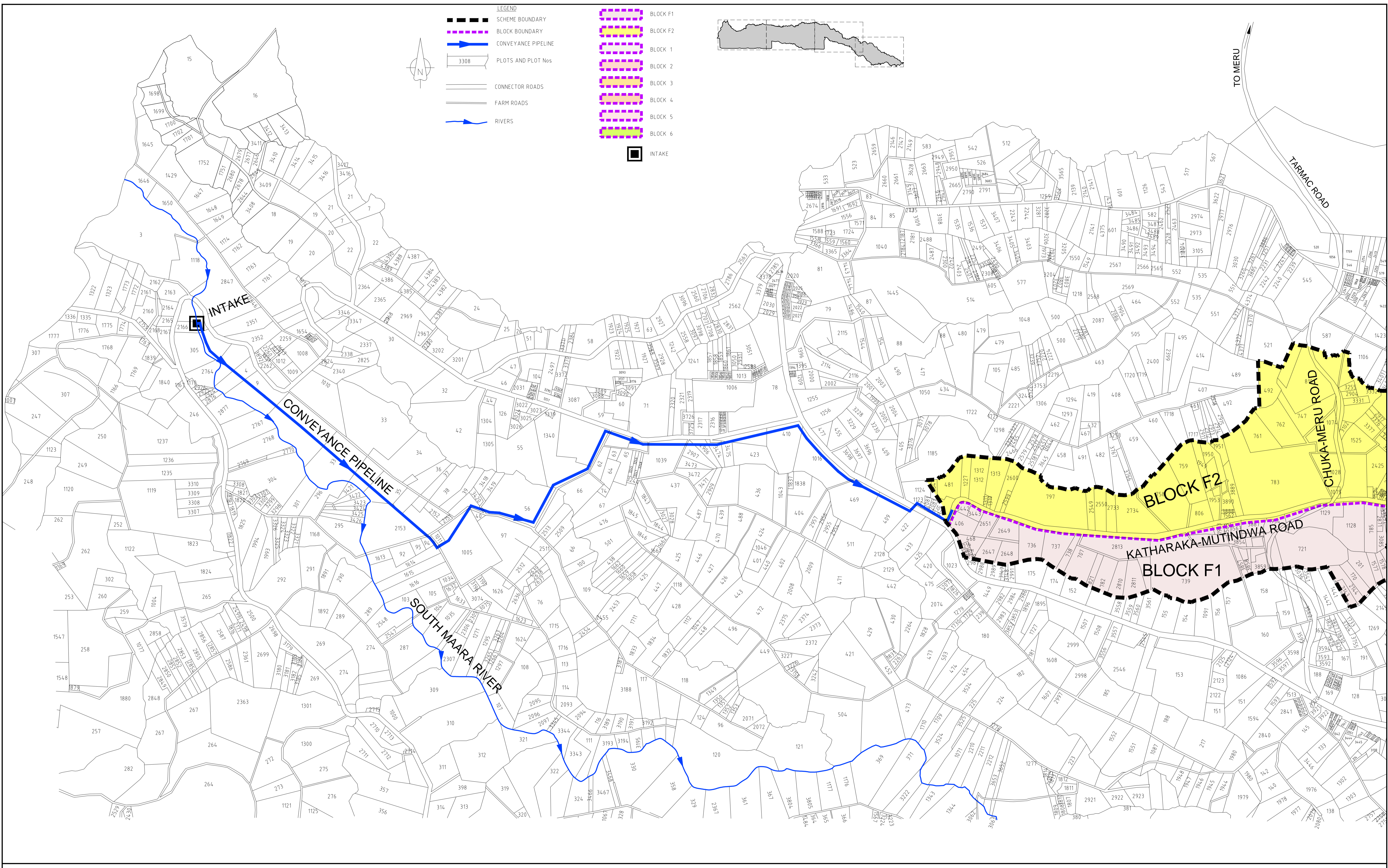
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

SCHEME MEMBERSHIP SPREAD

SHEET 4 OF 4

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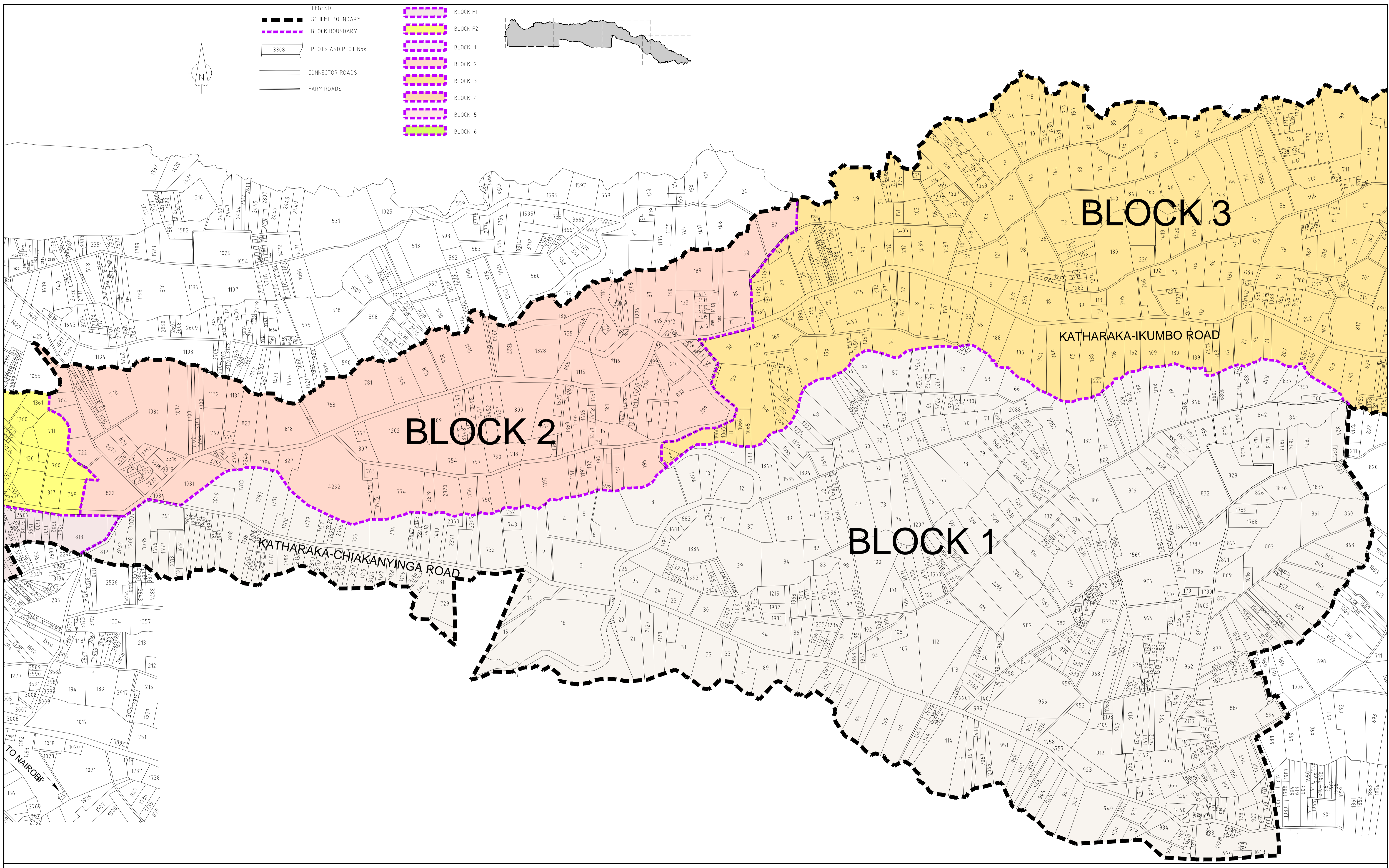
KIRIMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

**SCHEME ROAD NETWORK**

SHEET 1 OF 4

Date:	JULY 2014	JOB No:	000811
Designed:	BM	Cad Filename:	00811.Cad
Drawn:	JKN	DRG No:	SHDP/KKIS/DD/004
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Approved:	MBN	Scale:	1:7000



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MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

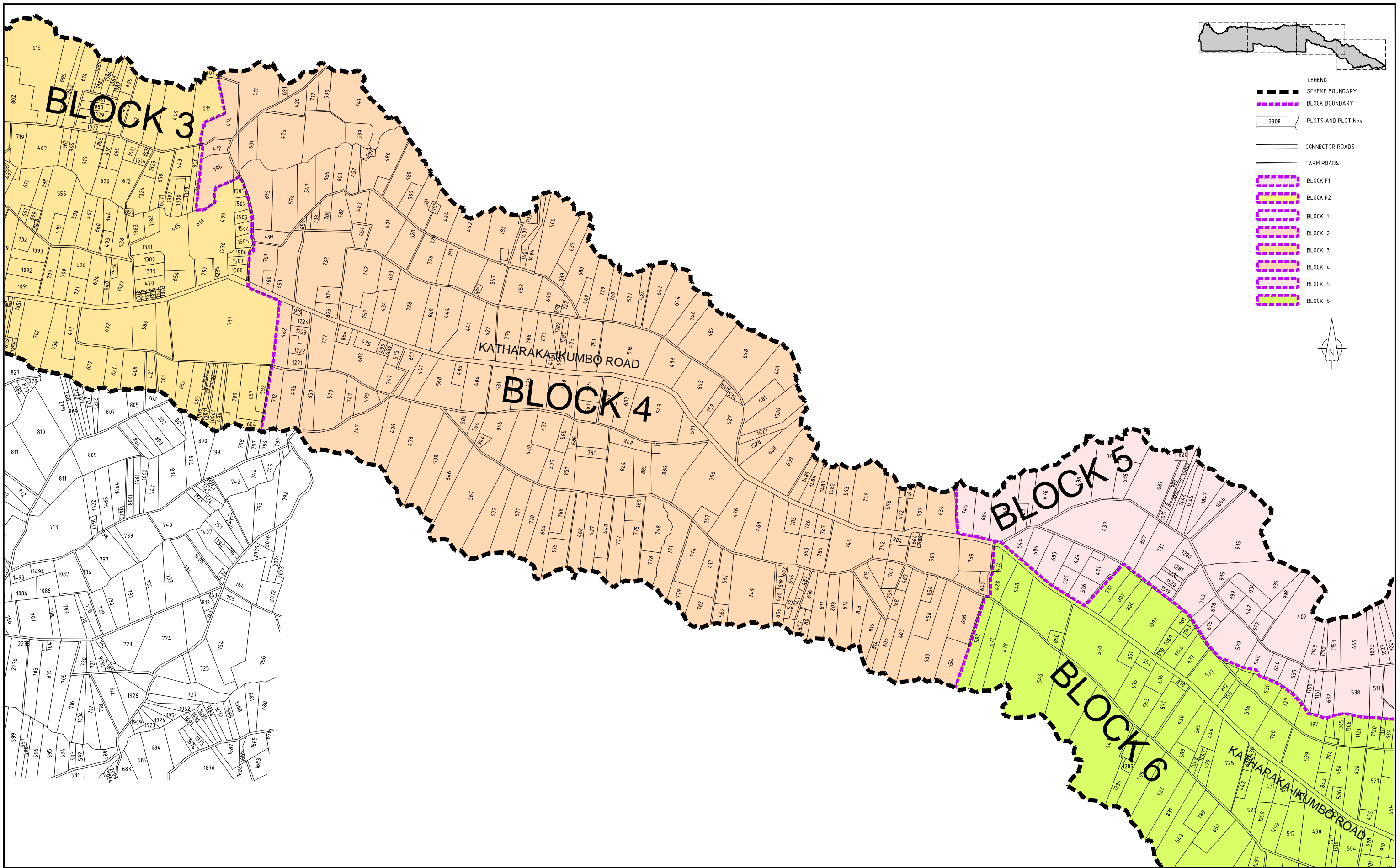
KIRIMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

SCHEME ROAD NETWORK

SHEET 2 OF 4

Date:	JULY 2014	JOB No:	000811
Designed:	BM	Cad Filename:	00811.Cad
Drawn:	JKN	DRG No:	SHDP/KKIS/DD/004
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PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

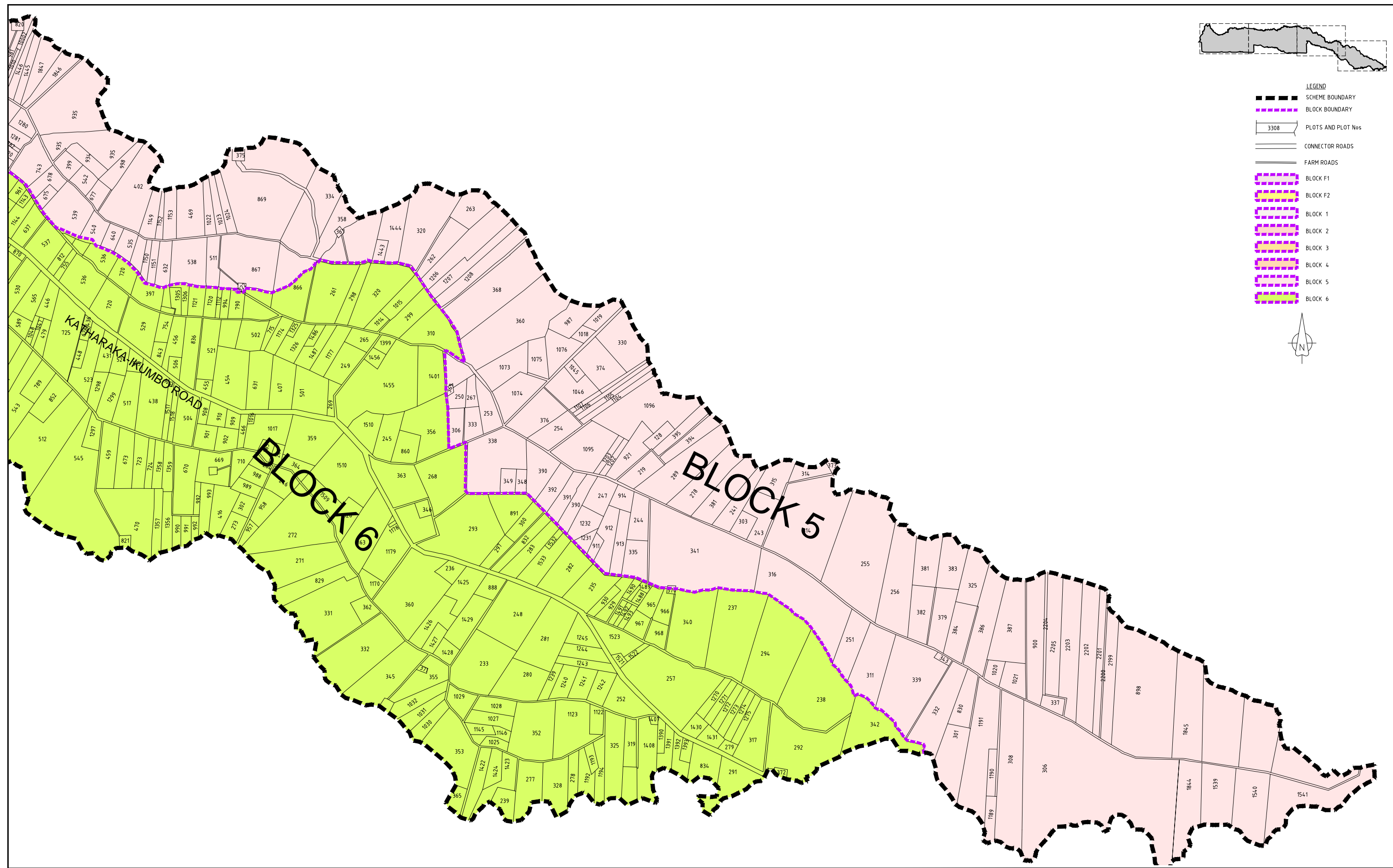
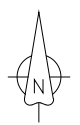
SCHEME ROAD NETWORK

SHEET 3 OF 4

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.Cad
Drawn:	JKN	DRG No.	SHDP/KKIS/DD/004
Checked:	JON	REV	O
Approved:	MBN		
Scale:	1:7000		



- LEGEND**
- SCHEME BOUNDARY
  - BLOCK BOUNDARY
  - 3308 PLOTS AND PLOT Nos
  - CONNECTOR ROADS
  - FARM ROADS
  - BLOCK F1
  - BLOCK F2
  - BLOCK 1
  - BLOCK 2
  - BLOCK 3
  - BLOCK 4
  - BLOCK 5
  - BLOCK 6



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PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

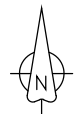
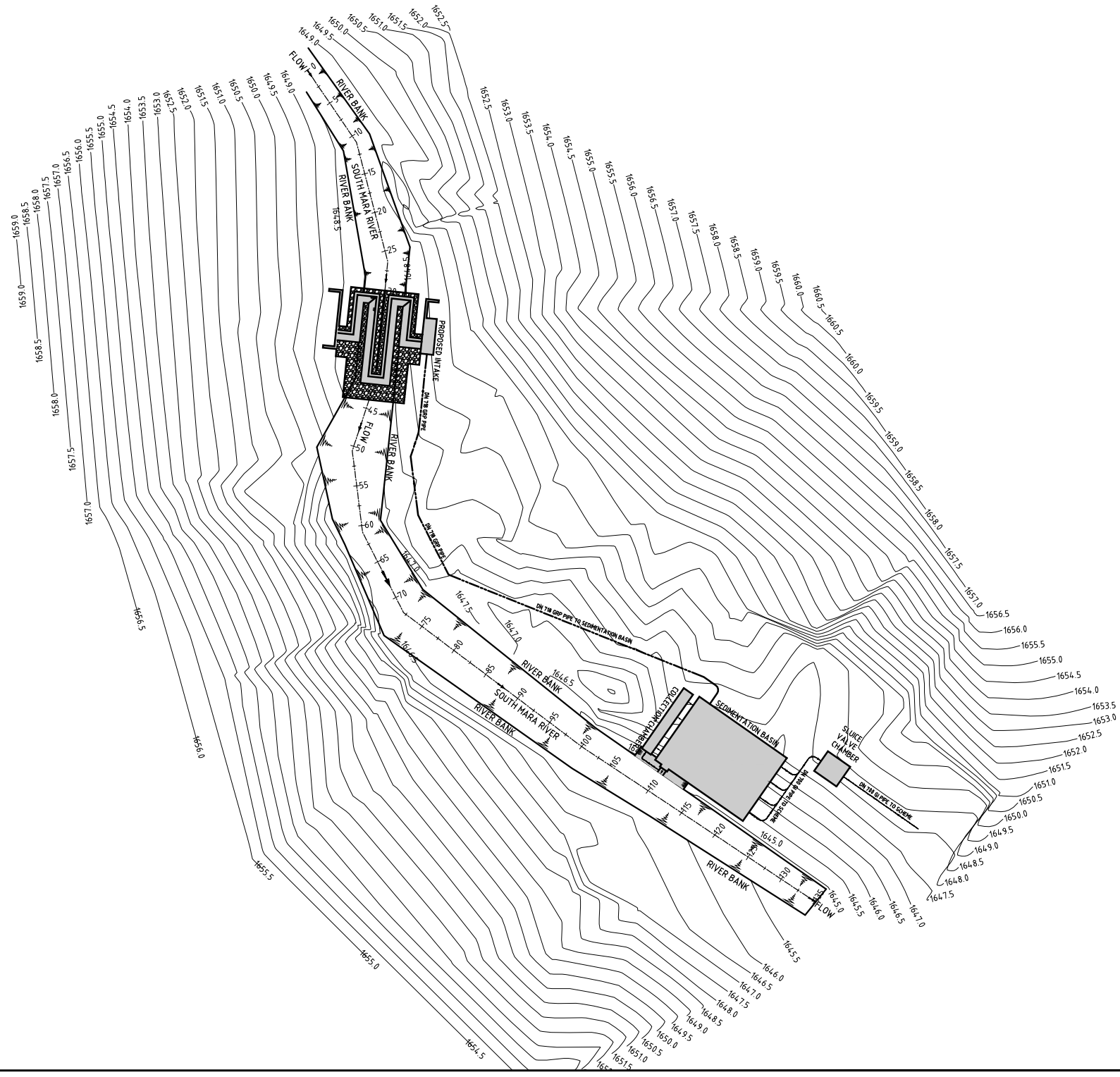
SCHEME ROAD NETWORK

SHEET 4 OF 4

Date:	JULY 2014	JOB No.	000811
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Checked:	JON	REV	O
Approved:	MBN	Scale:	1:7000

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MT1  
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 1673.185



LEGEND

- 1655.0 CONTOUR
- 1655.5 ROCK OUTCROP
- PROPOSED PIPELINE
- RIVER BANK
- TEMPORARY BENCH MARK



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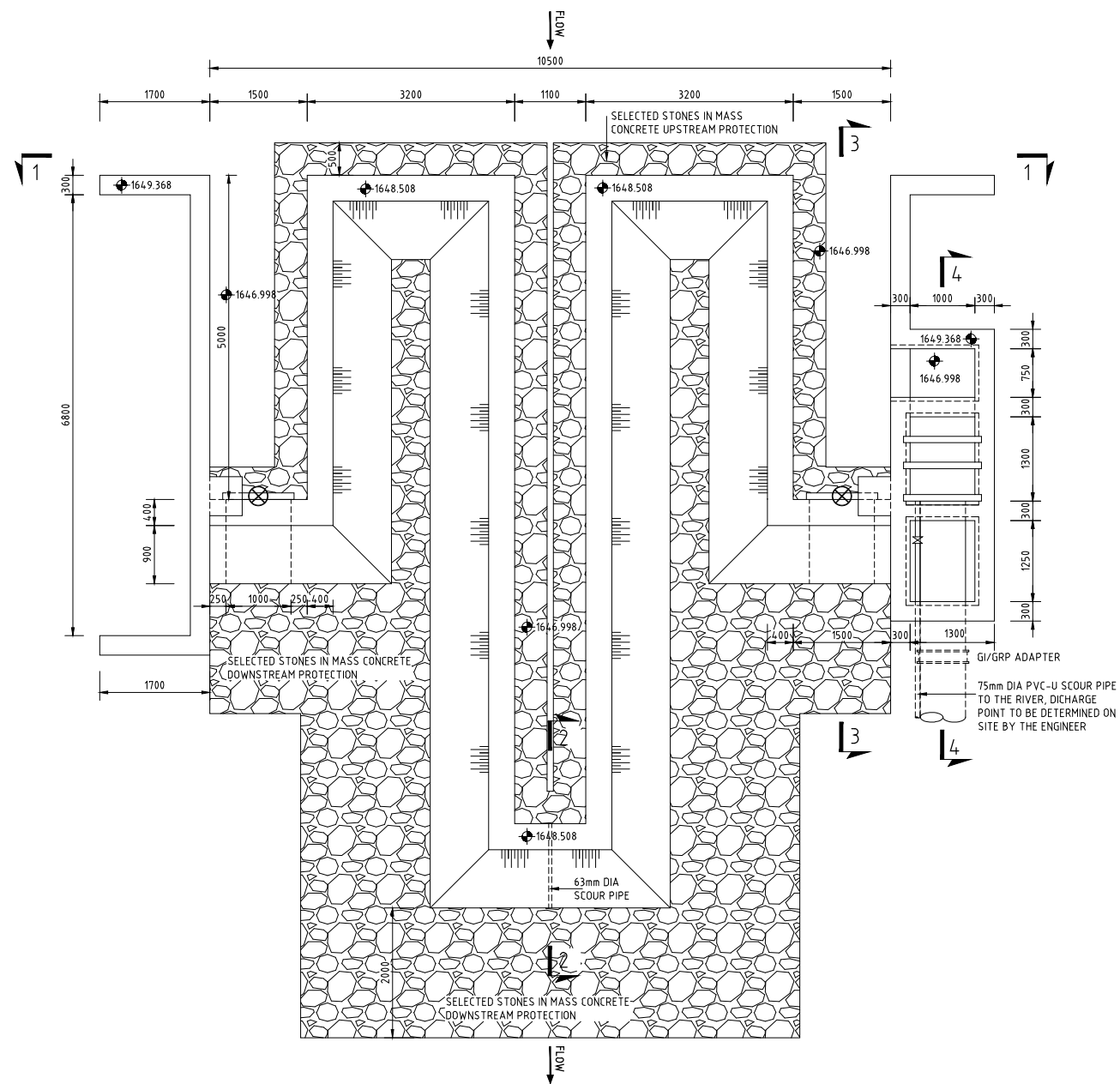
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PROJECT  
**SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)**  
**KIRUMI KIAMUJARI IRRIGATION SCHEME**

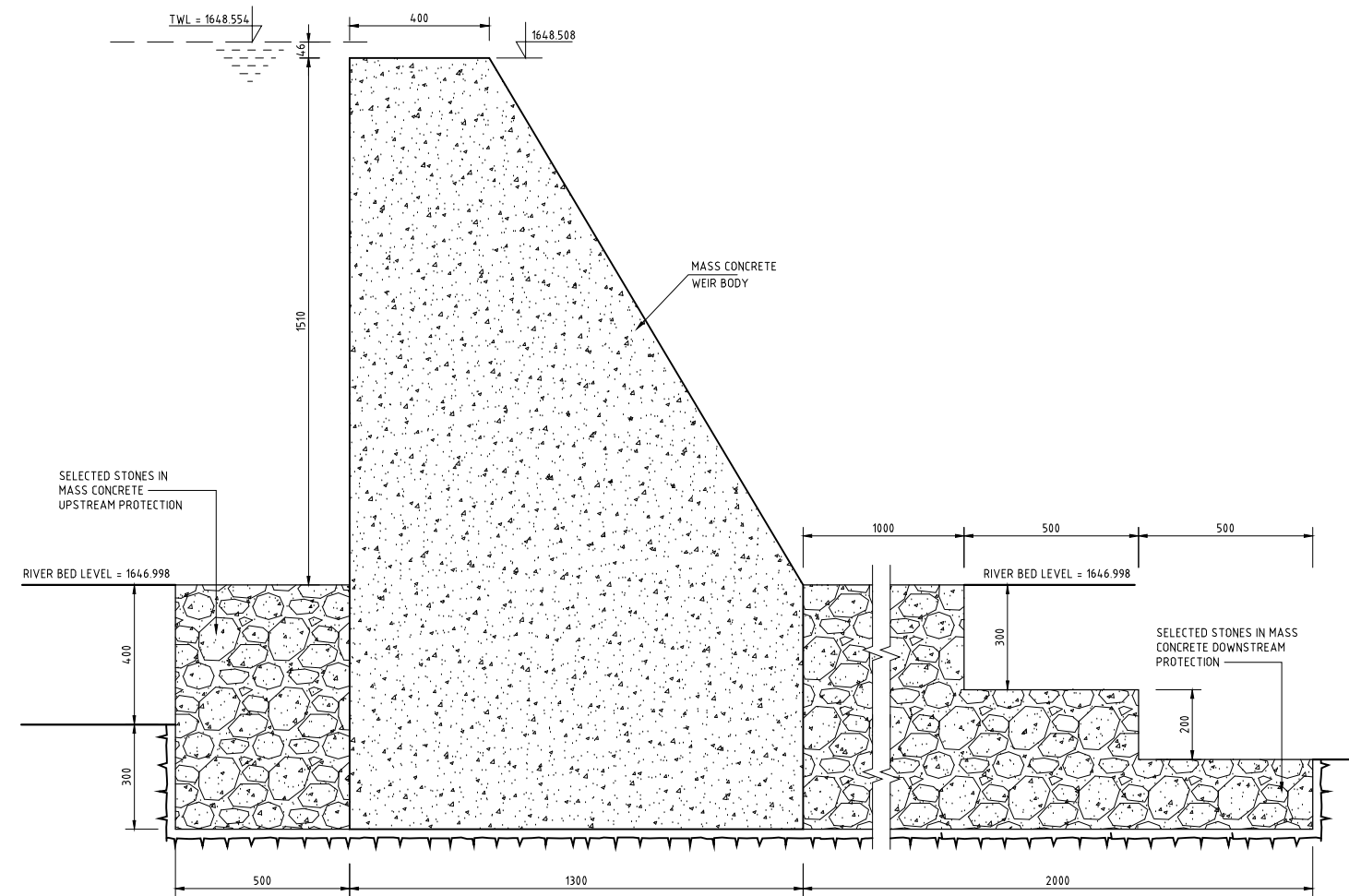
DRG TITLE  
**HEADWORKS SITE MAP**

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Drawn:	JKN	DRG No.	<b>KKIS/DD/101</b>
Checked:	JON	REV	<b>0</b>
Approved:	MBN	Scale:	1:50 (AT A1)






PLAN  
1:50 (AT A1), 1:100 (AT A3)



SECTION 2-2  
1:10 (AT A1), 1:20 (AT A3)

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

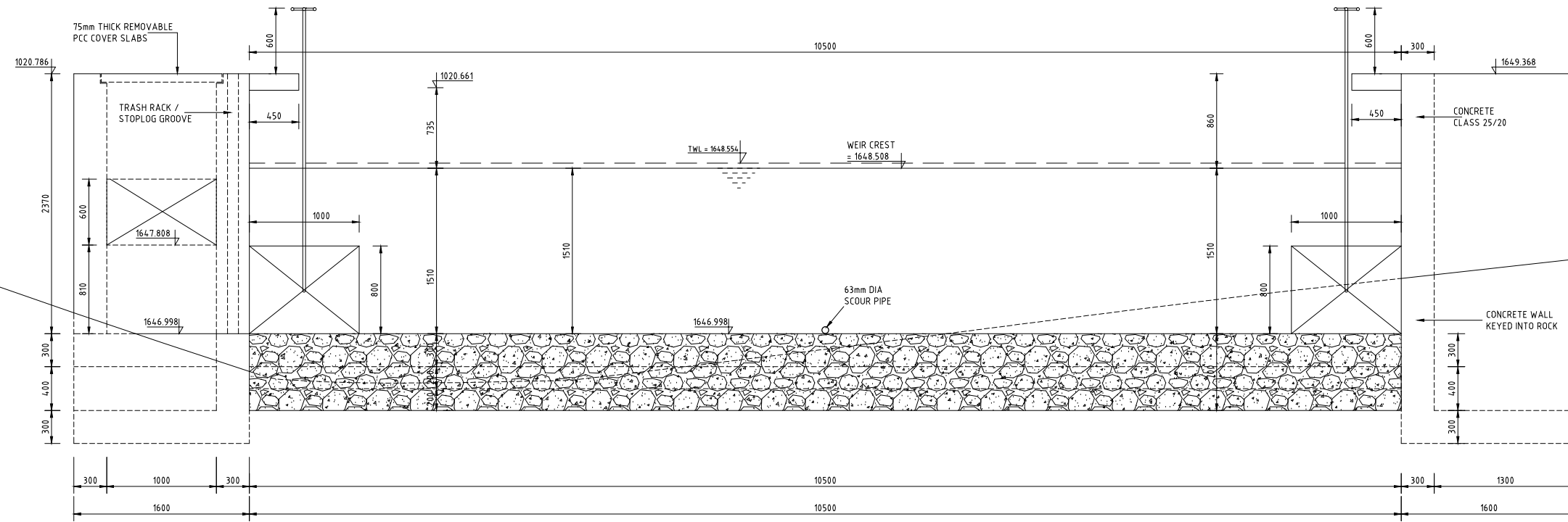
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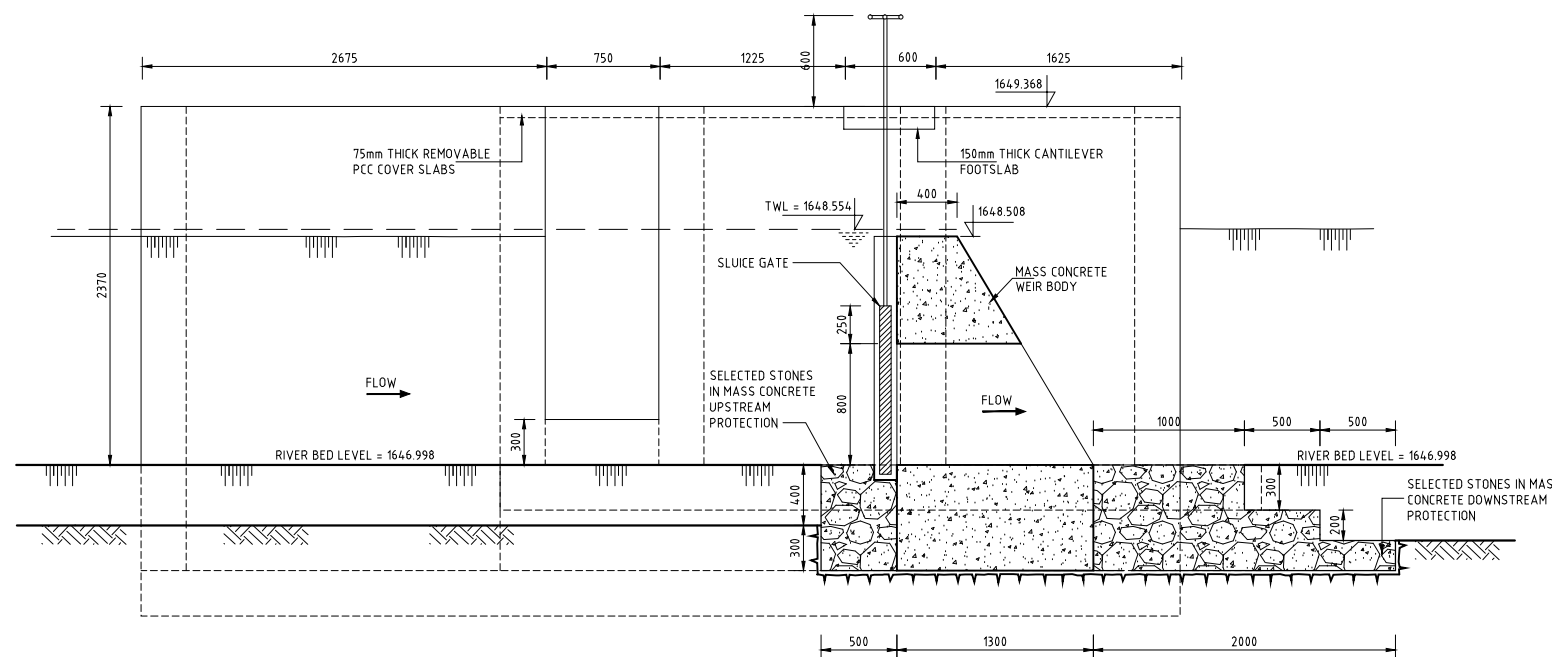
PROJECT  
**SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)**  
**KIRUMI KIAMUJARI IRRIGATION SCHEME**

DRG TITLE  
**INTAKE WORKS**  
**GENERAL LAYOUT AND SECTION**  
**SHEET 1 OF 2**

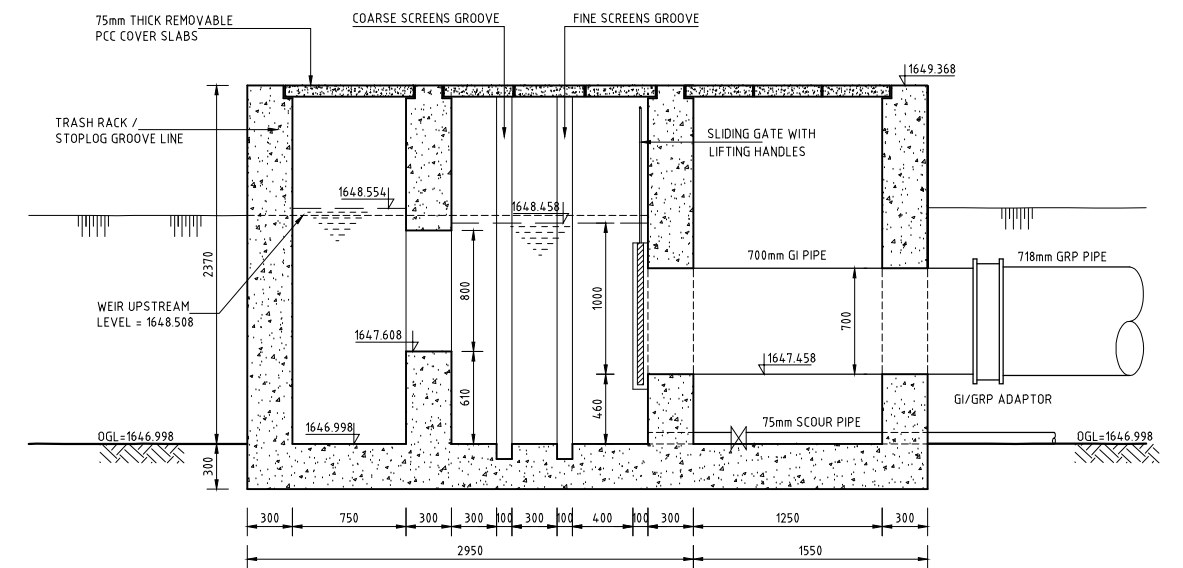
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Drawn:	RRM	DRG No.	KKIS/DD/102
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Approved:	MBN	Scale:	AS SHOWN



SECTION 1-1  
1:25 (AT A1), 1:50 (AT A3)



SECTION 3-3  
1:25 (AT A1), 1:50 (AT A3)



SECTION 4-4  
1:25 (AT A1), 1:50 (AT A3)

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

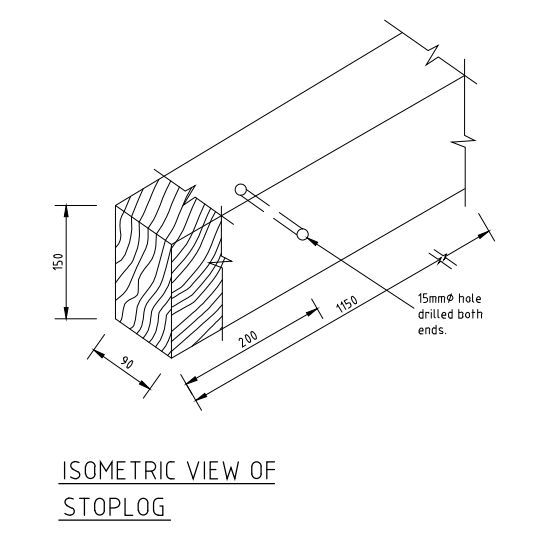
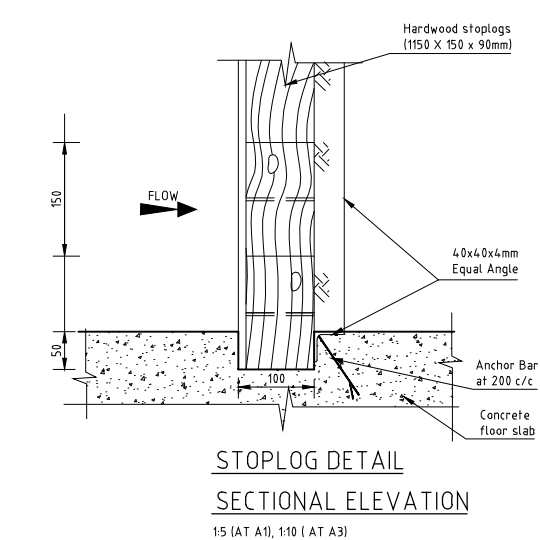
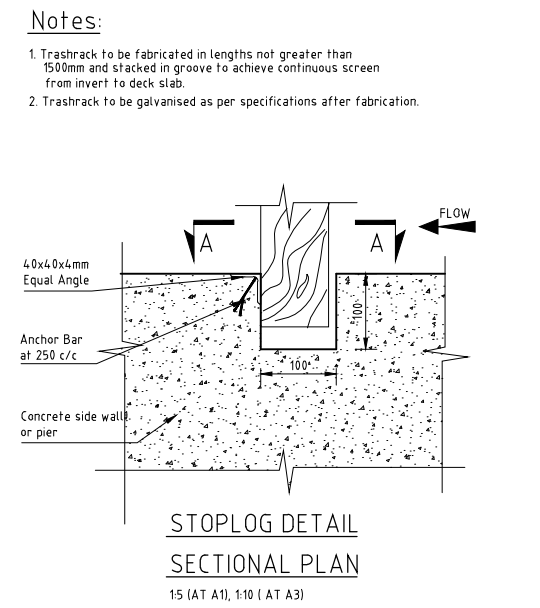
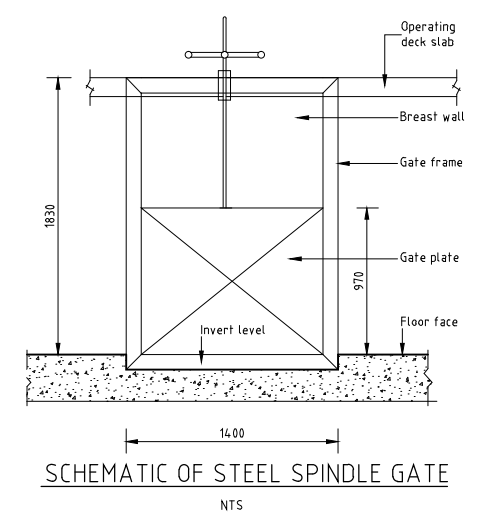
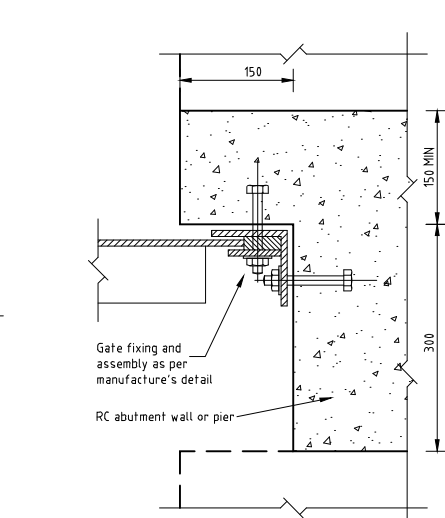
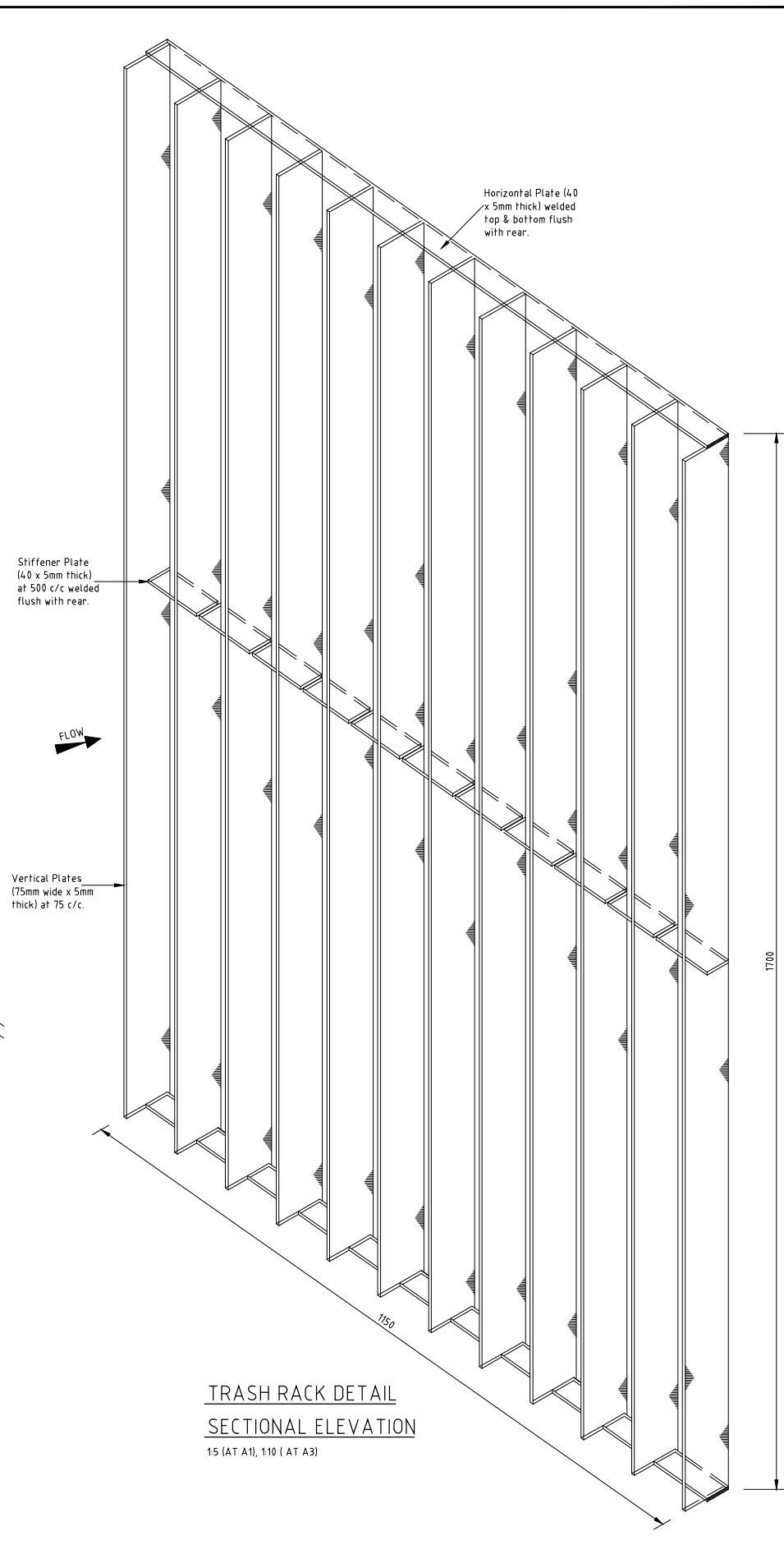
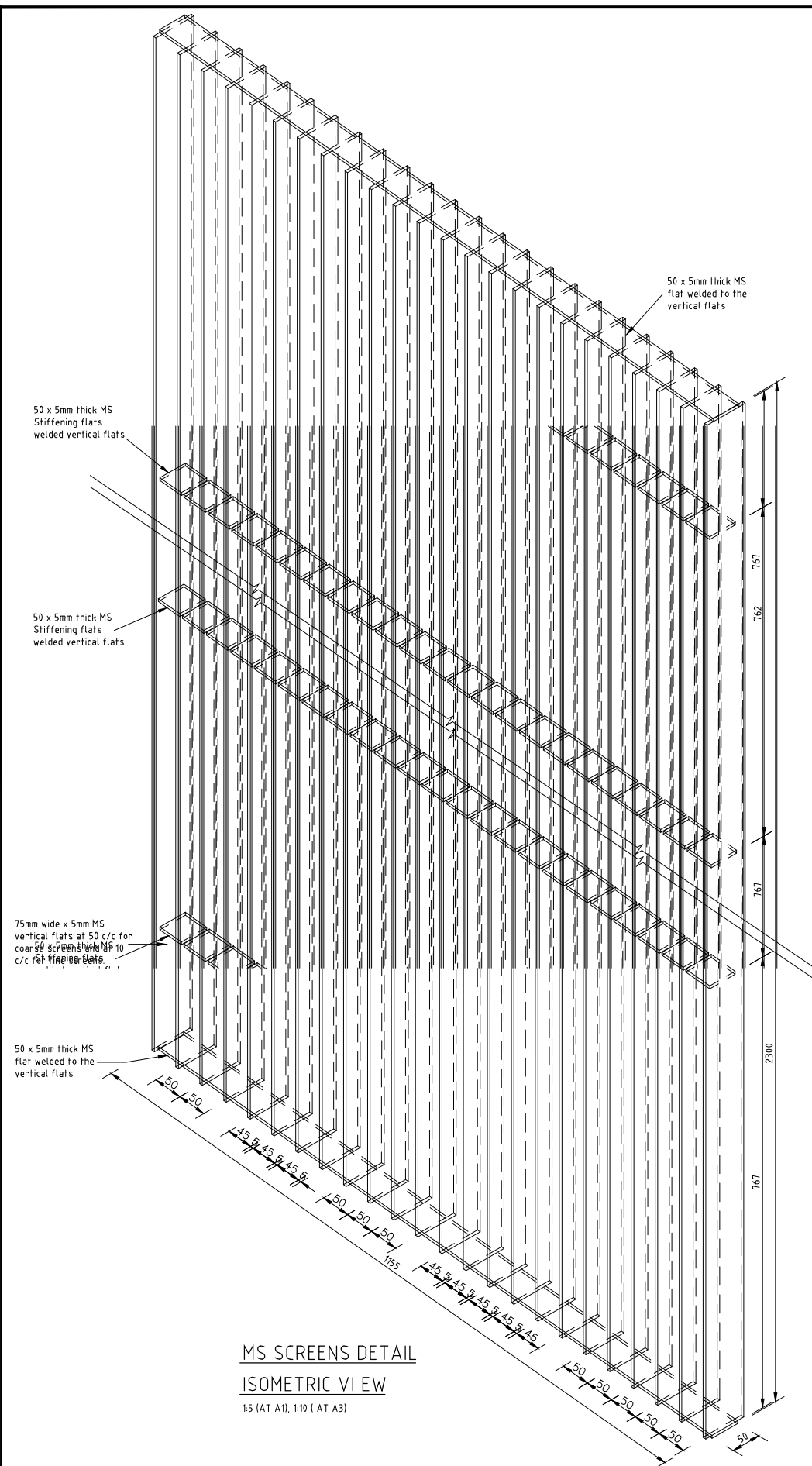
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PROJECT  
 SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
 KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE  
 INTAKE WORKS  
 SECTIONAL DETAILS  
 SHEET 2 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811\Cad\
Drawn:	RRM	DRG No.	KKIS/DD/102
Checked:	JON	REV	O
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REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

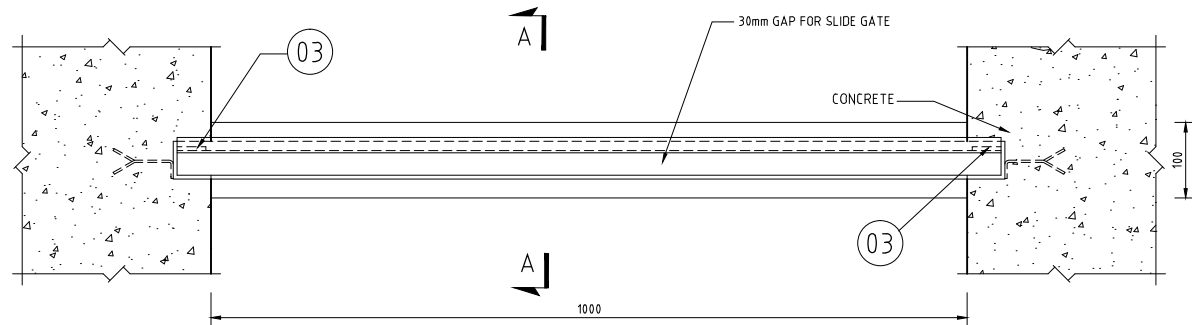
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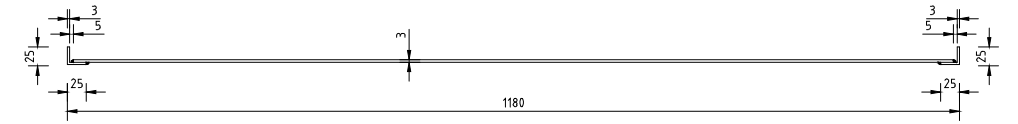
PROJECT  
**SMALL SCALE HORTICULTURE  
DEVELOPMENT PROJECT (SHDP)**  
**KIRUMI KIAMUJARI  
IRRIGATION SCHEME**

DRG TITLE  
**INTAKE WORKS**  
**GATES, SCREENS, TRASHRACKS  
AND STOPLOG DETAILS**

Date:	JULY 2014	JOB No.	<b>000811</b>
Designed:	BM	Cad Filename	00811.Cad
Drawn:	JKN	DRG No.	<b>KKIS/DD/103</b>
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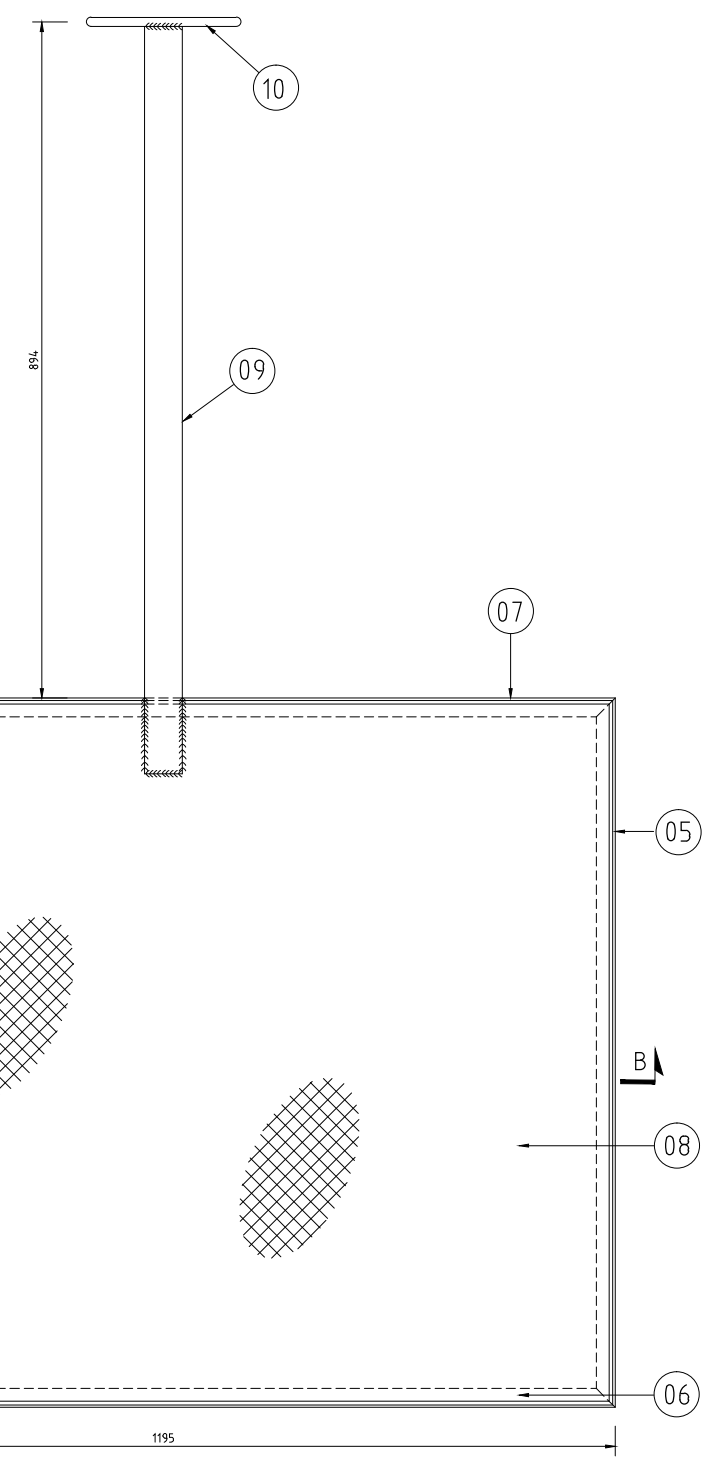


**PLAN OF FRAME**  
1:5 (AT A1), 1:10 (AT A3)

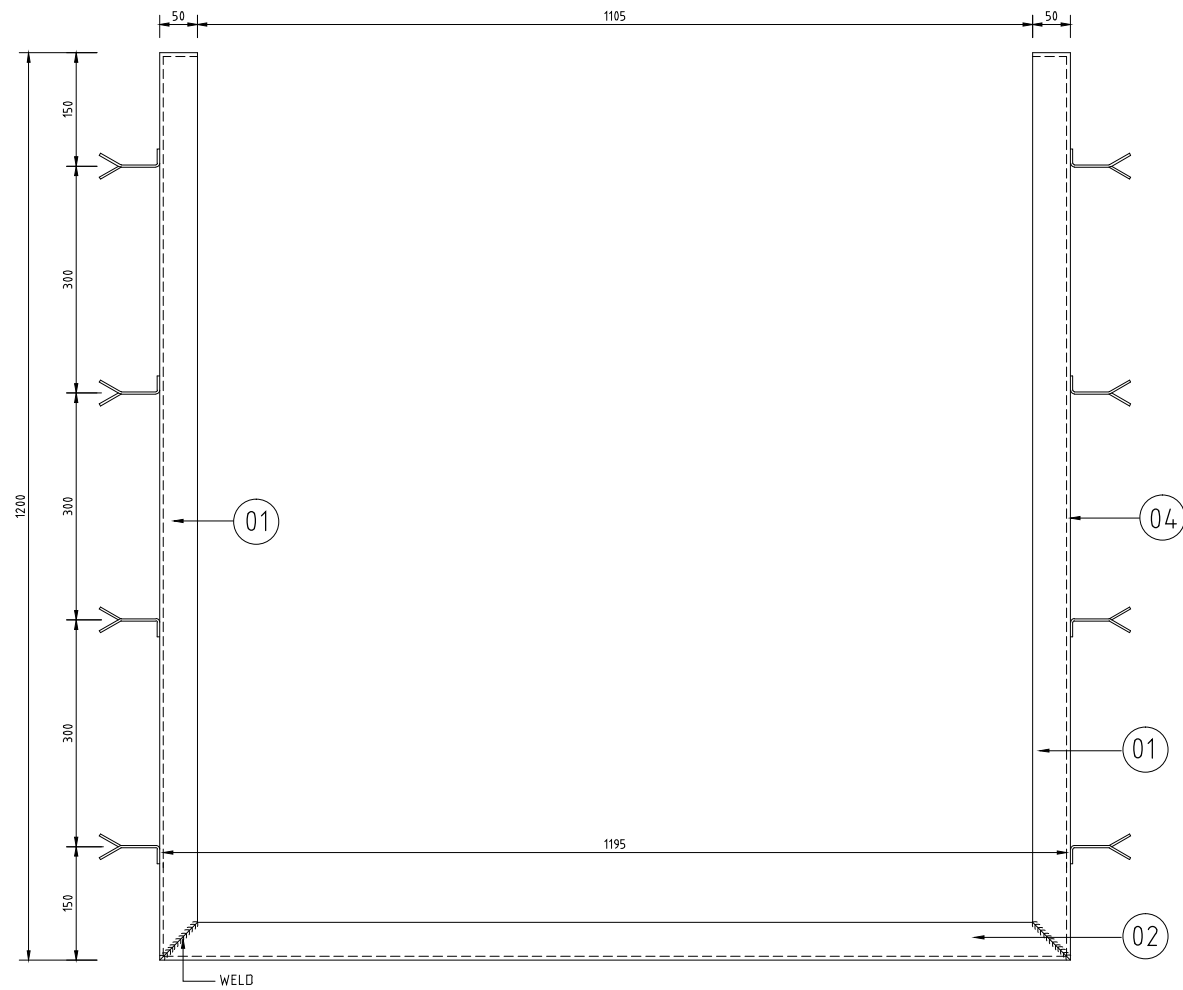


**SECTION B-B**  
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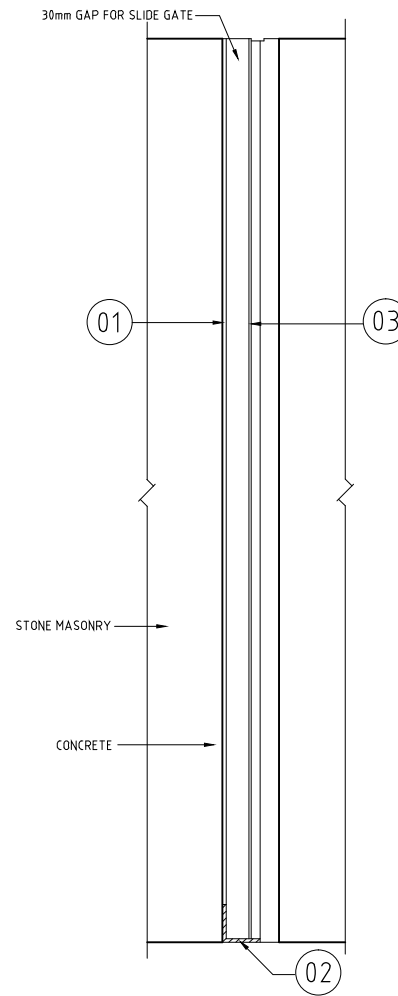
PART No.	DESCRIPTION	MATERIAL	CORROSION PROTECTION	STEEL SECTION DIMENSIONS (mm)
<b>FRAME FIXED IN GROOVES:</b>				
01	Angle iron - frame sides	Structural Steel	Galvanised	50 x 50 x 5
02	Angle iron - frame bottom	Structural Steel	Galvanised	50 x 50 x 5
03	Flat iron - runner guide	Mild Steel Plate	Galvanised	38 x 3
04	Anchor plate	Mild Steel Plate	Galvanised	80 X25X3
<b>GATE BLADE</b>				
05	Angle Iron - blade sides	Structural Steel	Galvanised	25 x 25 x 3
06	Angle Iron - blade bottom	Structural Steel	Galvanised	25 x 25 x 3
07	Angle Iron - blade top	Structural Steel	Galvanised	25 x 25 x 3
08	Gate blade	Mild Steel Plate	Galvanised	3
09	Gate handle bar	Structural Steel	Galvanised	50 x 5
10	Gate handle	Mild Steel rod	Galvanised	12 dia. - 160



**MS SLIDE GATE**  
1:5 (AT A1), 1:10 (AT A3)



**SLIDE GATE FRAME**  
1:5 (AT A1), 1:10 (AT A3)



**SECTION A-A**  
1:5 (AT A1), 1:10 (AT A3)

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

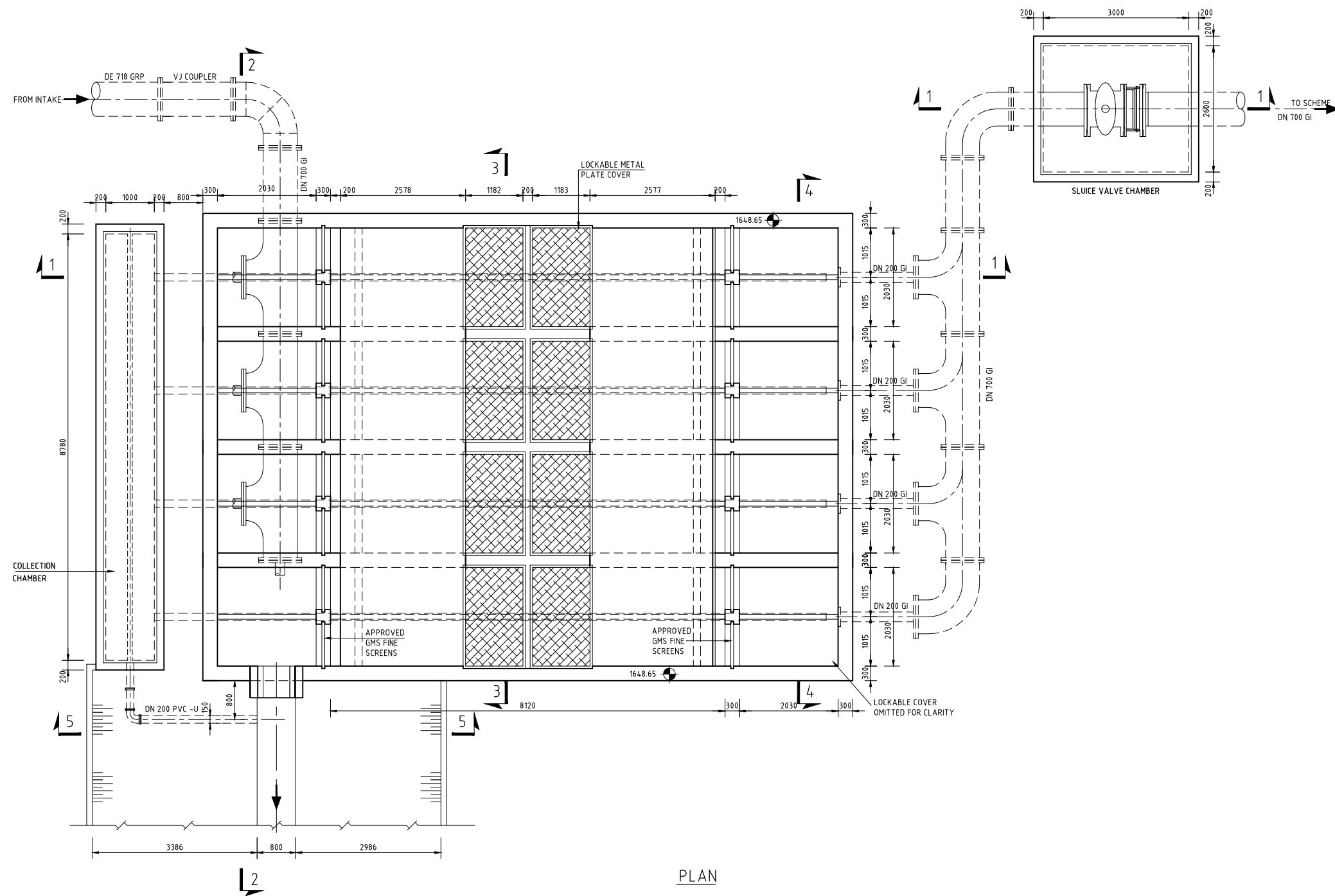
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PROJECT  
**SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)**  
**KIRUMI KIAMUJARI IRRIGATION SCHEME**

DRG TITLE  
**INTAKE WORKS**  
**SLIDE GATE DETAILS**

Date:	JULY 2014	JOB No.	<b>000811</b>
Designed:	BM	Cad Filename	00811.Cad
Drawn:	JKN	DRG No.	<b>KKIS/DD/104</b>
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Approved:	MBN	Scale:	AS SHOWN



PLAN

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

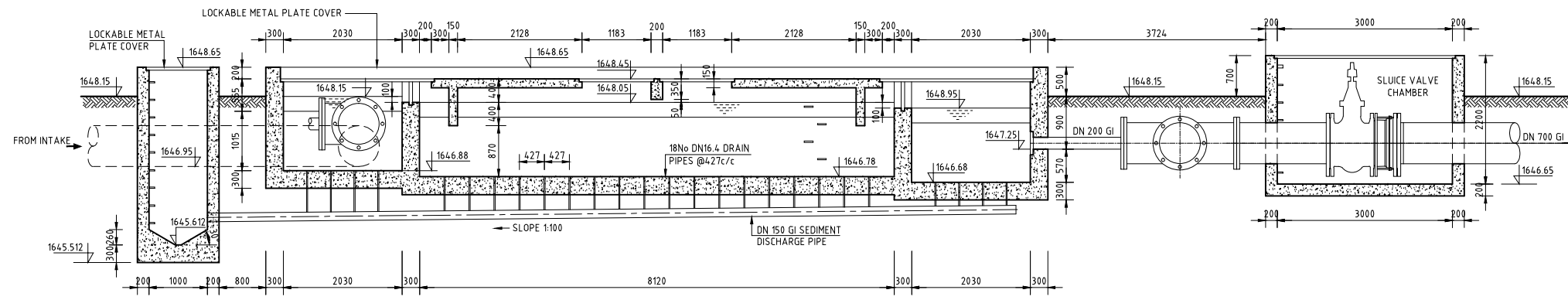
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SEDIMENTATION BASIN

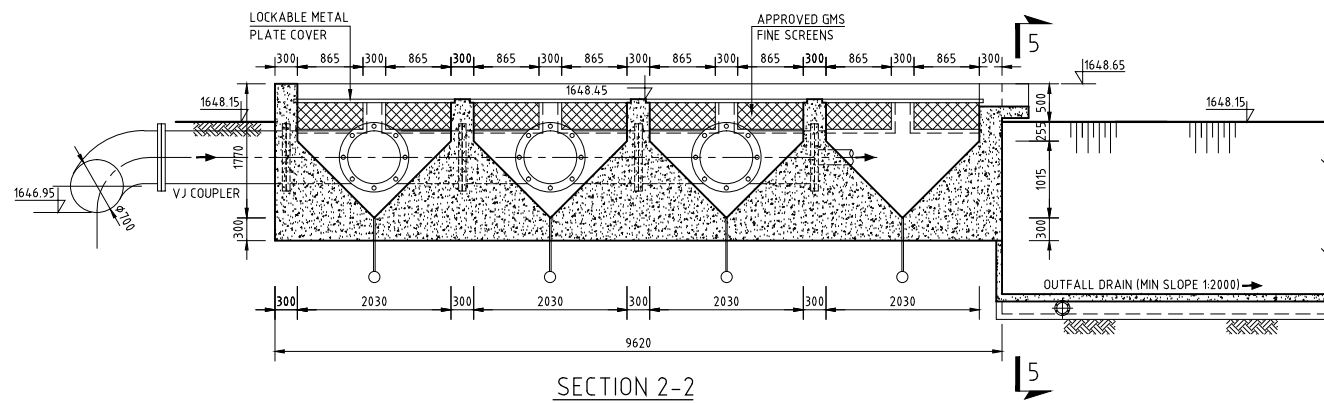
LAYOUT PLAN

SHEET 1 OF 2

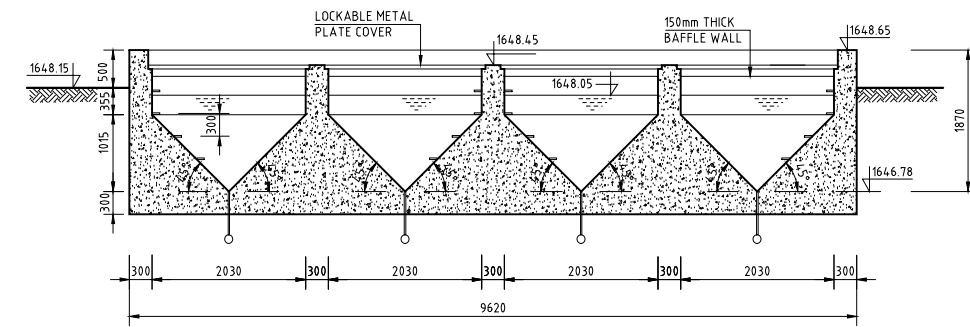
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Approved:	MBN	Scale:	1:50 (AT A1)



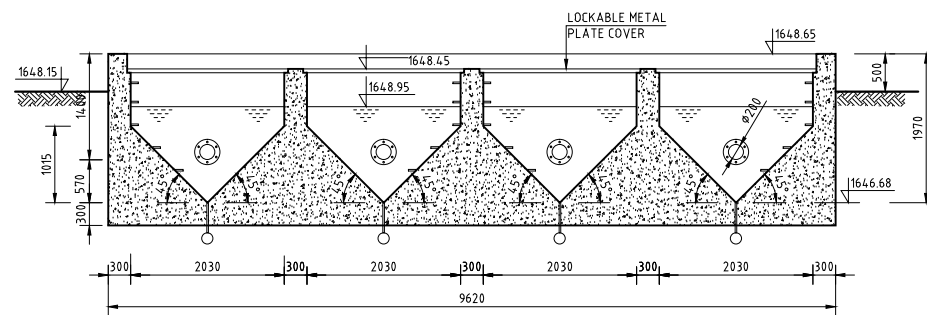
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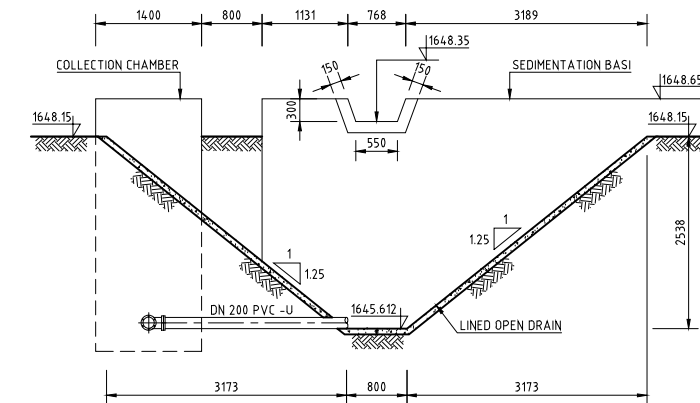
SECTION 2-2



SECTION 3-3



SECTION 4-4



SECTION 5-5

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

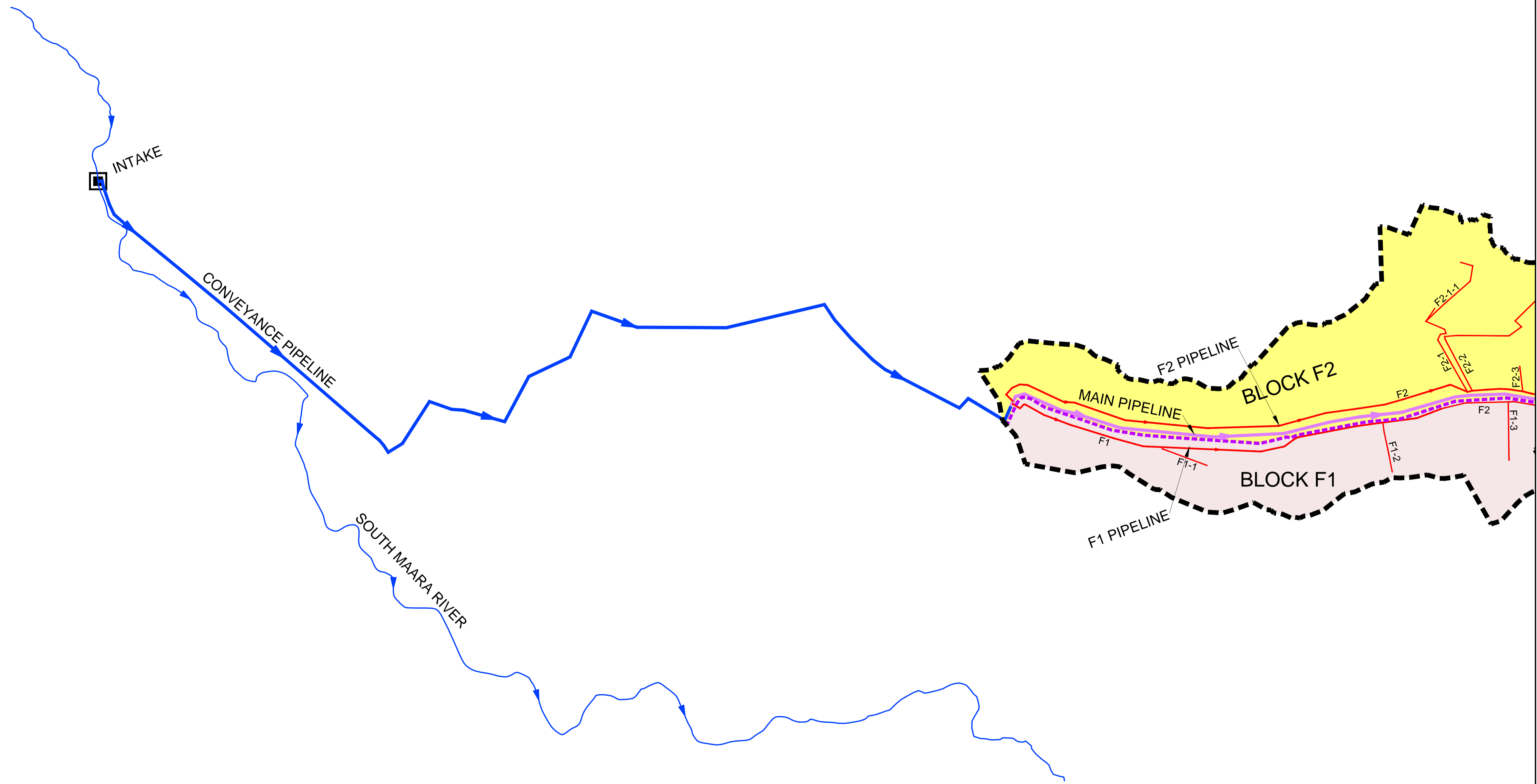
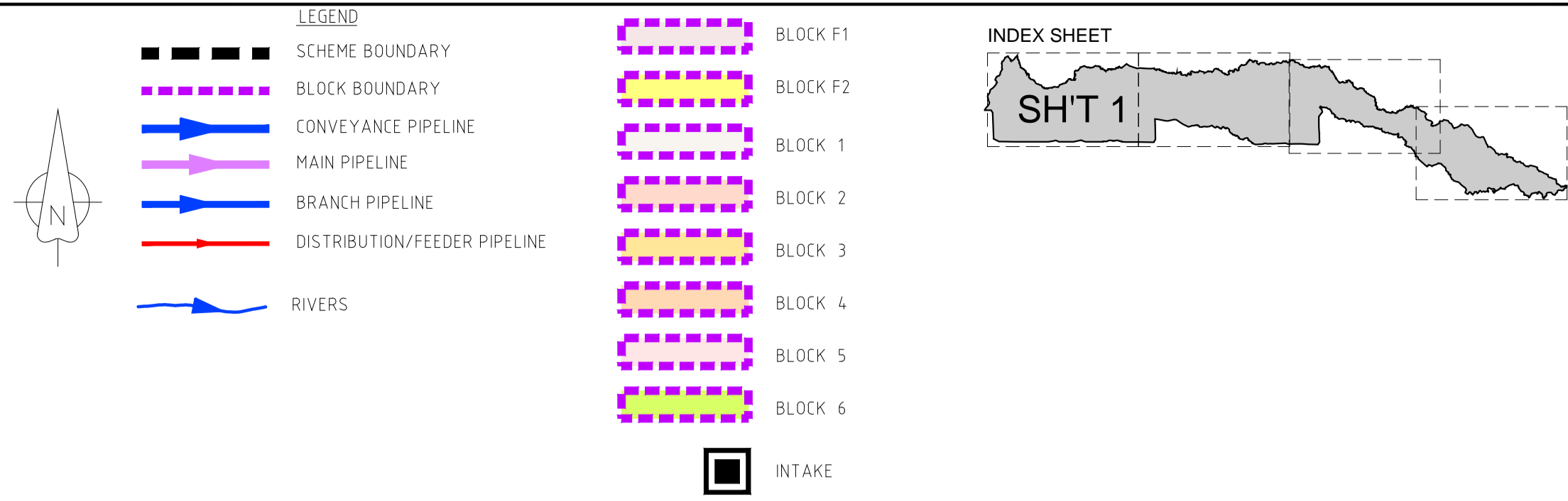
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PROJECT  
 SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
 KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE  
 SEDIMENTATION BASIN  
 SECTIONAL DETAILS  
 SHEET 2 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG No.	KKIS/DD/105
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PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

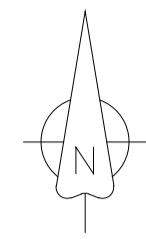
KIRIMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

SCHEME PIPELINES NETWORK

SHEET 1 OF 4

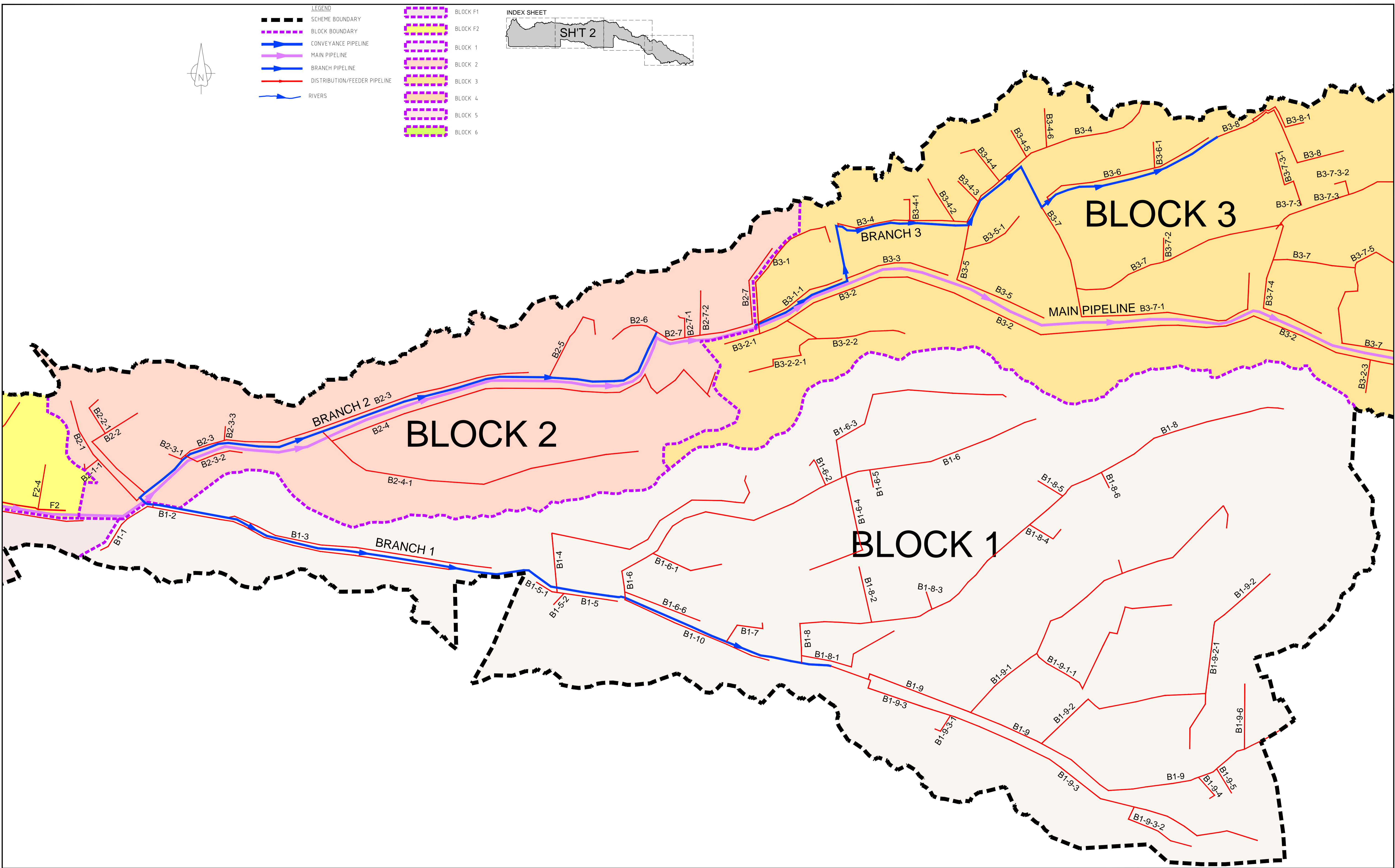
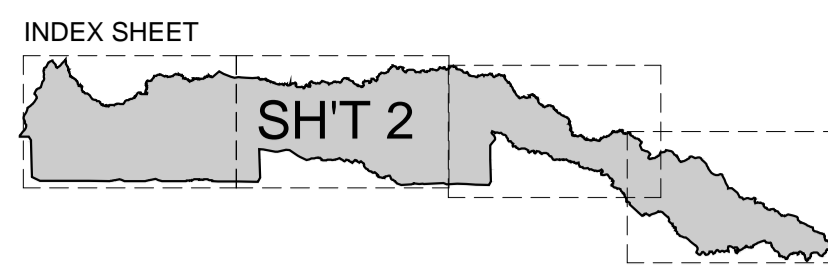
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Drawn:	JKN	DRG No.	SHDP/KKIS/DD/201
Checked:	JON	REV	O
Approved:	MBN	Scale:	1:7000



**LEGEND**

- SCHEME BOUNDARY
- BLOCK BOUNDARY
- CONVEYANCE PIPELINE
- MAIN PIPELINE
- BRANCH PIPELINE
- DISTRIBUTION/FEEDER PIPELINE
- RIVERS

- BLOCK F1
- BLOCK F2
- BLOCK 1
- BLOCK 2
- BLOCK 3
- BLOCK 4
- BLOCK 5
- BLOCK 6



REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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**PROJECT**

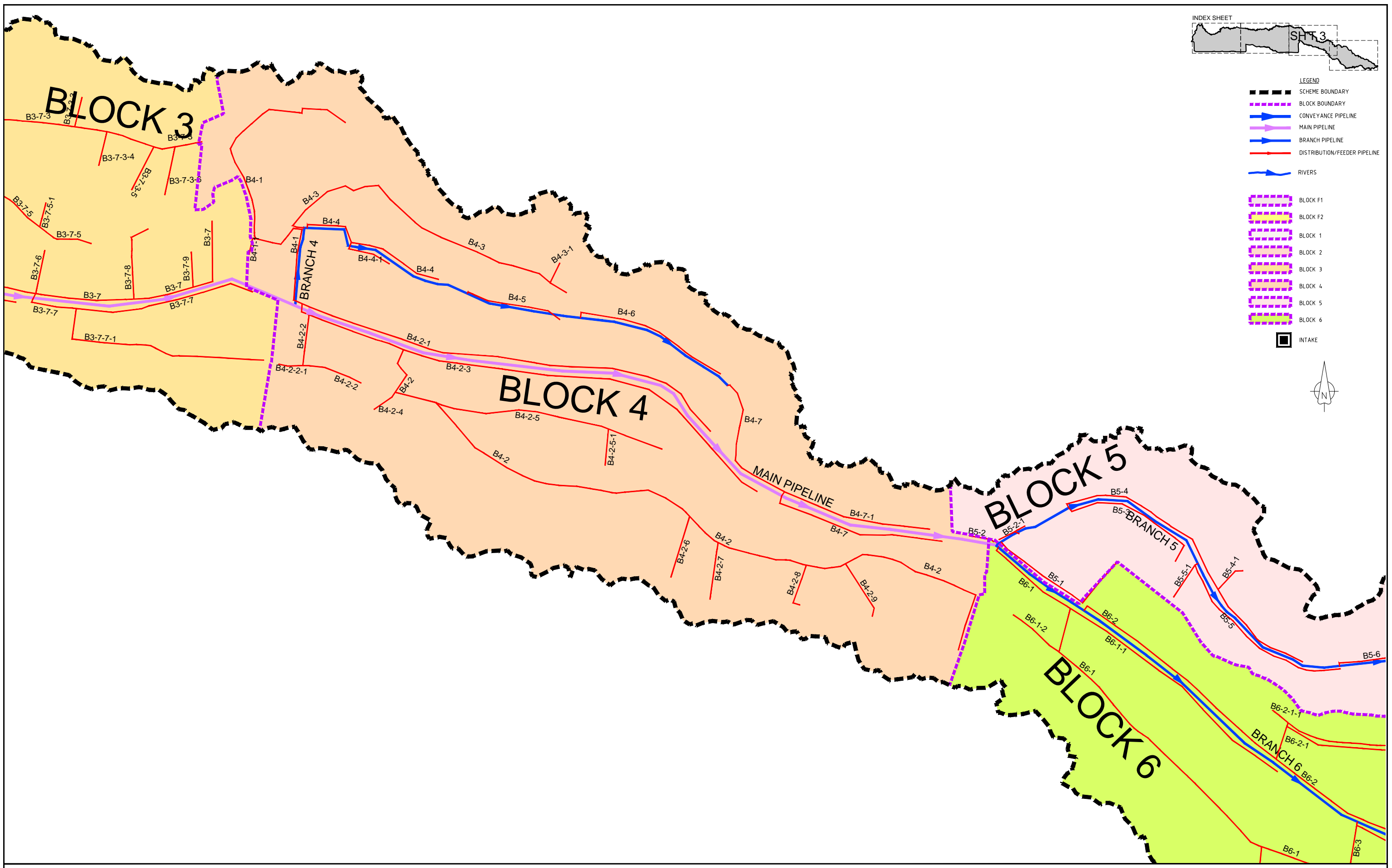
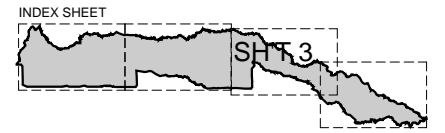
SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**

SCHEME PIPELINES NETWORK  
SHEET 2 OF 4

Date:	JULY 2014	JOB No:	000811
Designed:	BM	Cad Filename:	00811.cad
Drawn:	JKN	DRG No:	SHDP/KKIS/DD/201
Checked:	JON	REV	O
Approved:	MBN	Scale:	1:7000





REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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 E-mail: gibb@gibbafrika.com  
 Website: www.gibbafrika.com

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 MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT  
 SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
 KIRUMI KIAMUJARI IRRIGATION SCHEME

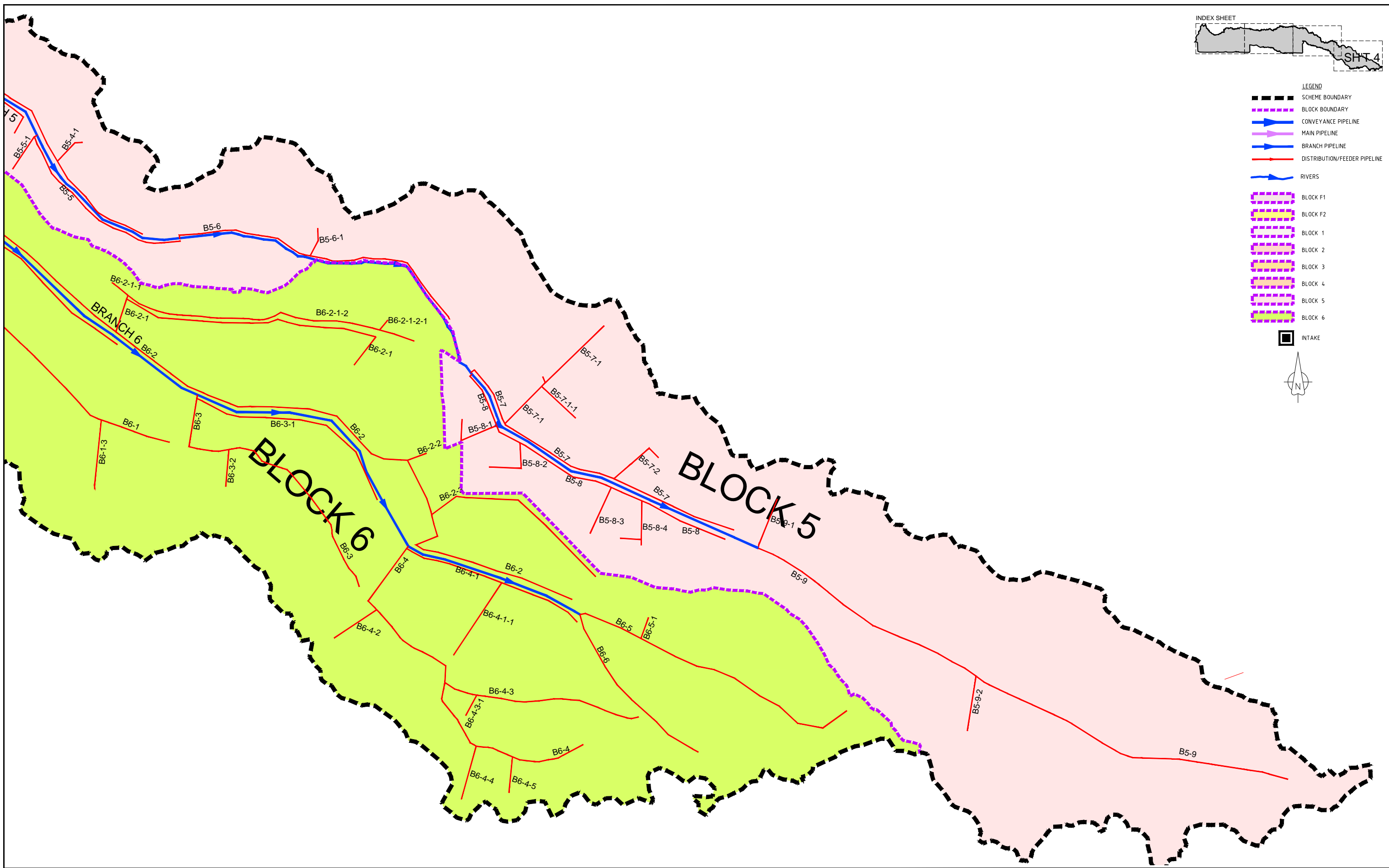
DRG TITLE  
 SCHEME PIPELINES NETWORK  
 SHEET 3 OF 4

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.Cad
Drawn:	JKN	DRG No.	SHDP/KKIS/DD/201
Checked:	JON	REV	O
Approved:	MBN		
Scale:	1:7000		



**LEGEND**

- SCHEME BOUNDARY
- - - BLOCK BOUNDARY
- CONVEYANCE PIPELINE
- MAIN PIPELINE
- BRANCH PIPELINE
- DISTRIBUTION/FEEDER PIPELINE
- RIVERS
- [ ] BLOCK F1
- [ ] BLOCK F2
- [ ] BLOCK 1
- [ ] BLOCK 2
- [ ] BLOCK 3
- [ ] BLOCK 4
- [ ] BLOCK 5
- [ ] BLOCK 6
- INTAKE



REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

**PROJECT**

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**

SCHEME PIPELINES NETWORK

SHEET 4 OF 4







Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG No.	SHDP/KKIS/DD/201
Checked:	JON	REV	O
Approved:	MBN		
Scale:	1:7000		



STATIC = 1647.95

HGL

**LEGEND**

-  HYDRAULIC GRADE LINE
-  EXISTING GROUND PROFILE
-  PIPE INVERT
-  WASHOUT
-  SINGLE AIR VALVE
-  DOUBLE AIR VALVE

DATUM  
1580 m amsl

HYDRAULIC GRADE (m amsl)	1.000 1643.801 1644.800 14.000.00
CHAINAGE (m)	1.000 1643.833 1644.935 14.20.00
GROUND LEVEL (m amsl)	1.000 1644.129 1645.130 14.40.00
INVERT LEVEL (m amsl)	1.000 1643.565 1644.565 14.80.00
TRENCH DEPTH (m)	1.000 1642.875 1643.875 15.00.00
STEADY-STATE HEAD (m)	1.000 1642.243 1643.245 15.20.00
DESIGN FLOW (l/s)	445
OFFTAKE (l/s)	
PIPE DETAILS	DN718 GRP
BEDDING DETAILS	

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE


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PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

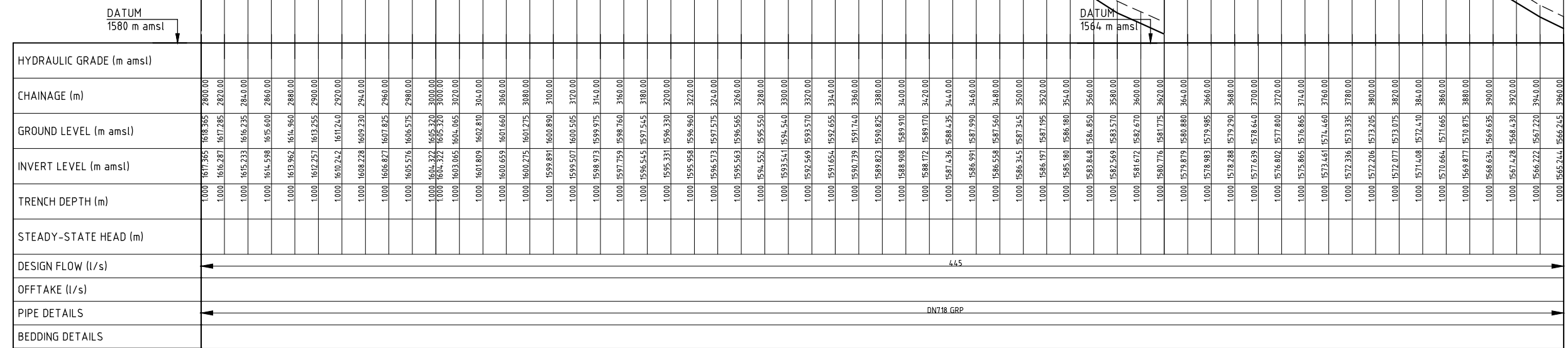
CONVEYANCE PIPELINE PROFILE

SHEET 2 OF 3

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811/cad
Drawn:	WKM	DRG No.	KKIS/DD/301
Checked:	JON	REV	O
Approved:	MBN		
Scale:	1:7000		

**LEGEND**

- HYDRAULIC GRADE LINE
- EXISTING GROUND PROFILE
- PIPE INVERT
- WASHOUT
- SINGLE AIR VALVE
- DOUBLE AIR VALVE



REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

CONVEYANCE PIPELINE PROFILE

SHEET 3 OF 3

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	WKM	DRG No.	KKIS/DD/301
Checked:	JON	REV	O
Approved:	MBN		
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











STATIC = 1377.95

**LEGEND**

-  HYDRAULIC GRADE LINE
-  EXISTING GROUND PROFILE
-  PIPE INVERT
-  WASHOUT
-  SINGLE AIR VALVE
-  DOUBLE AIR VALVE

DATUM  
1321 m amsl

HYDRAULIC GRADE (m amsl)	
CHAINAGE (m)	5000.00
GROUND LEVEL (m amsl)	1356.975
INVERT LEVEL (m amsl)	1355.975
TRENCH DEPTH (m)	1.000
STEADY-STATE HEAD (m)	
DESIGN FLOW (l/s)	189
OFFTAKE (l/s)	
PIPE DETAILS	DN355 PVC-U(B)
BEDDING DETAILS	

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE


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PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

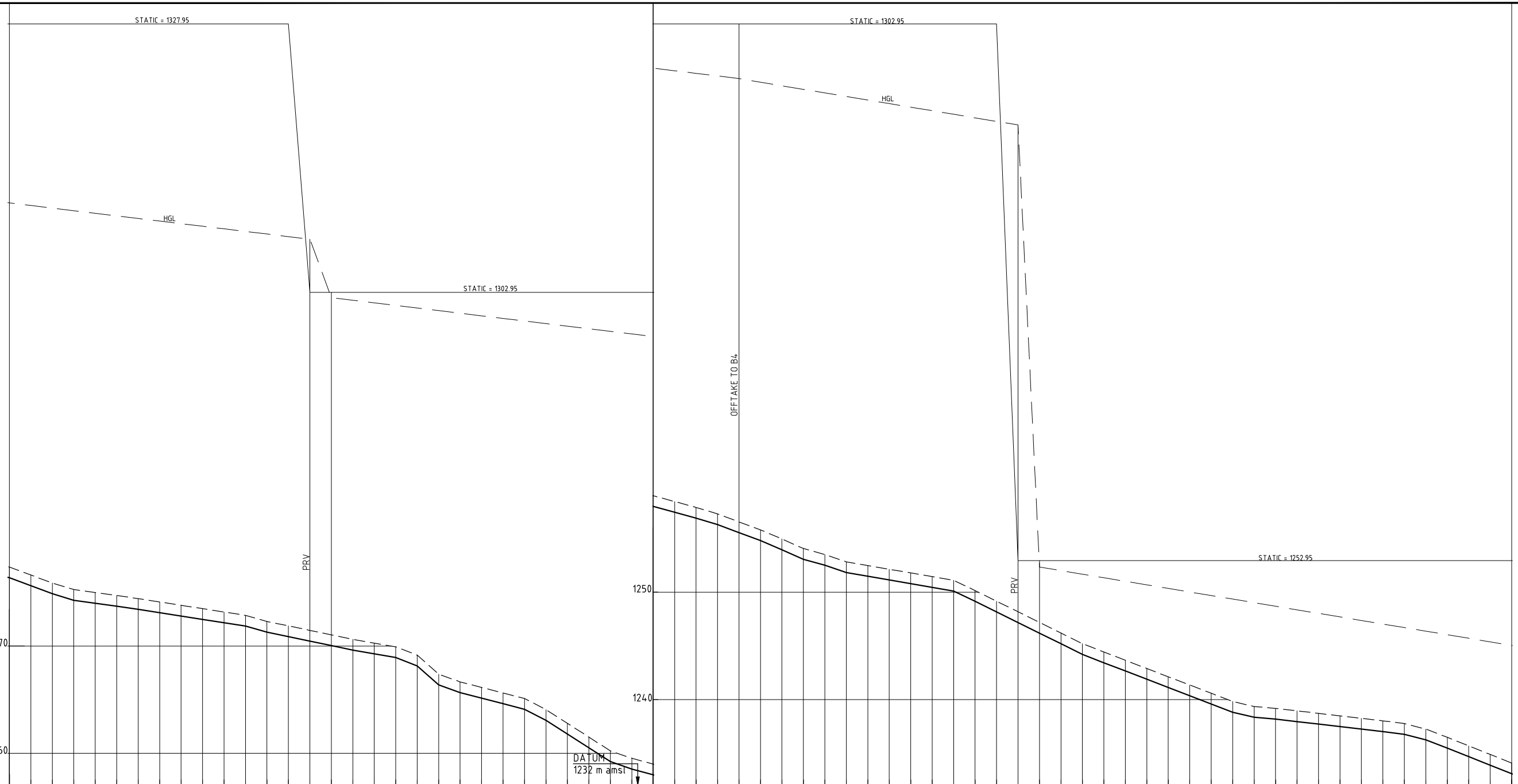
MAIN PIPELINE PROFILE

SHEET 5 OF 9

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	000811.cad
Drawn:	WKM	DRG No.	KKIS/DD/302
Checked:	JON	REV	O
Approved:	MBN		
Scale:	H=1:2000 V=1:200		



- LEGEND**
- HYDRAULIC GRADE LINE
  - - - EXISTING GROUND PROFILE
  - PIPE INVERT
  - ▼ WASHOUT
  - ▲ SINGLE AIR VALVE
  - ▲▲ DOUBLE AIR VALVE



HYDRAULIC GRADE (m amsl)	CHAINAGE (m)	GROUND LEVEL (m amsl)	INVERT LEVEL (m amsl)	TRENCH DEPTH (m)	STEADY-STATE HEAD (m)	DESIGN FLOW (l/s)	OFFTAKE (l/s)	PIPE DETAILS	BEDDING DETAILS
1276.351	8400.00	1271.355	1271.355	1.000					
1275.612	8420.00	1276.610	1276.610	1.000					
1275.865	8440.00	1275.865	1275.865	1.000					
1275.260	8460.00	1274.260	1274.260	1.000					
1274.980	8480.00	1273.982	1273.982	1.000					
1274.700	8500.00	1273.702	1273.702	1.000					
1274.415	8520.00	1273.417	1273.417	1.000					
1274.105	8540.00	1273.104	1273.104	1.000					
1273.790	8560.00	1272.791	1272.791	1.000					
1273.480	8580.00	1272.478	1272.478	1.000					
1273.165	8600.00	1272.166	1272.166	1.000					
1272.855	8620.00	1271.853	1271.853	1.000					
1272.290	8640.00	1271.289	1271.289	1.000					
1271.870	8660.00	1270.872	1270.872	1.000					
1271.455	8680.00	1270.455	1270.455	1.000					
1271.035	8700.00	1270.037	1270.037	1.000					
1270.620	8720.00	1269.620	1269.620	1.000					
1270.270	8740.00	1269.269	1269.270	1.000					
1269.975	8760.00	1268.977	1268.975	1.000					
1269.145	8780.00	1268.147	1268.145	1.000					
1267.380	8800.00	1266.379	1266.380	1.000					
1266.660	8820.00	1265.658	1265.660	1.000					
1266.140	8840.00	1265.141	1265.140	1.000					
1265.675	8860.00	1264.674	1264.675	1.000					
1265.110	8880.00	1264.108	1264.110	1.000					
1264.070	8900.00	1263.068	1264.070	1.000					
1262.790	8920.00	1261.790	1262.790	1.000					
1261.510	8940.00	1260.512	1261.510	1.000					
1260.235	8960.00	1259.234	1260.235	1.000					
1259.540	8980.00	1258.540	1259.540	1.000					
1258.995	9000.00	1257.995	1258.995	1.000					
1258.450	9020.00	1257.451	1258.450	1.000					
1257.905	9040.00	1256.906	1257.905	1.000					
1257.300	9060.00	1256.298	1257.300	1.000					
1256.555	9080.00	1255.554	1256.555	1.000					
1255.810	9100.00	1254.811	1255.810	1.000					
1254.965	9120.00	1253.964	1254.965	1.000					
1254.075	9140.00	1253.074	1254.075	1.000					
1253.515	9160.00	1252.515	1253.515	1.000					
1252.830	9180.00	1251.830	1252.830	1.000					
1252.485	9200.00	1251.486	1252.485	1.000					
1252.145	9220.00	1251.143	1252.145	1.000					
1251.800	9240.00	1250.799	1251.800	1.000					
1251.455	9260.00	1250.455	1251.455	1.000					
1251.110	9280.00	1250.111	1251.110	1.000					
1250.855	9300.00	1249.856	1250.855	1.000					
1249.165	9320.00	1248.167	1249.165	1.000					
1248.180	9340.00	1247.178	1248.180	1.000					
1247.190	9360.00	1246.188	1247.190	1.000					
1246.200	9380.00	1245.199	1246.200	1.000					
1245.210	9400.00	1244.209	1245.210	1.000					
1244.230	9420.00	1243.231	1244.230	1.000					
1243.245	9440.00	1242.246	1243.245	1.000					
1242.265	9460.00	1241.263	1242.265	1.000					
1241.285	9480.00	1240.284	1241.285	1.000					
1240.305	9500.00	1239.305	1240.305	1.000					
1239.320	9520.00	1238.320	1239.320	1.000					
1238.340	9540.00	1237.340	1238.340	1.000					
1237.355	9560.00	1236.352	1237.355	1.000					
1236.365	9580.00	1235.363	1236.365	1.000					
1235.375	9600.00	1234.375	1235.375	1.000					
1234.385	9620.00	1233.385	1234.385	1.000					
1233.395	9640.00	1232.395	1233.395	1.000					
1232.405	9660.00	1231.405	1232.405	1.000					
1231.415	9680.00	1230.415	1231.415	1.000					
1230.425	9700.00	1229.425	1230.425	1.000					
1229.435	9720.00	1228.435	1229.435	1.000					
1228.445	9740.00	1227.445	1228.445	1.000					
1227.455	9760.00	1226.455	1227.455	1.000					
1226.465	9780.00	1225.465	1226.465	1.000					
1225.475	9800.00	1224.475	1225.475	1.000					

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE


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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE







MAIN PIPELINE PROFILE

SHEET 7 OF 9

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	000811.cad
Drawn:	WKM	DRG No.	KKIS/DD/302
Checked:	JON	REV	O
Approved:	MBN		
Scale:	H=1:2000 V=1:200		

STATIC = 1252.95

**LEGEND**


-  HYDRAULIC GRADE LINE
-  EXISTING GROUND PROFILE
-  PIPE INVERT
-  WASHOUT
-  SINGLE AIR VALVE
-  DOUBLE AIR VALVE

DATUM  
1192 m amsl

HYDRAULIC GRADE (m amsl)	1.000 1233.086 1234.085 9800.00
CHAINAGE (m)	1.000 1232.288 1233.290 9820.00
GROUND LEVEL (m amsl)	1.000 1231.489 1232.490 9840.00
INVERT LEVEL (m amsl)	1.000 1230.691 1231.690 9860.00
TRENCH DEPTH (m)	1.000 1229.893 1230.895 9880.00
STEADY-STATE HEAD (m)	1.000 1229.094 1230.095 9900.00
DESIGN FLOW (l/s)	1.000 1228.280 1229.280 9920.00
OFFTAKE (l/s)	1.000 1227.481 1228.480 9940.00
PIPE DETAILS	1.000 1226.682 1227.680 9960.00
BEDDING DETAILS	1.000 1225.883 1226.880 9980.00
	1.000 1225.084 1226.080 10000.00
	1.000 1224.285 1225.280 10020.00
	1.000 1223.486 1224.480 10040.00
	1.000 1222.687 1223.680 10060.00
	1.000 1221.888 1222.880 10080.00
	1.000 1221.089 1222.080 10100.00
	1.000 1220.290 1221.280 10120.00
	1.000 1219.491 1220.480 10140.00
	1.000 1218.692 1219.680 10160.00
	1.000 1217.893 1218.880 10180.00
	1.000 1217.094 1218.080 10200.00
	1.000 1216.295 1217.280 10220.00
	1.000 1215.496 1216.480 10240.00
	1.000 1214.697 1215.680 10260.00
	1.000 1213.898 1214.880 10280.00
	1.000 1213.099 1214.080 10300.00
	1.000 1212.300 1213.280 10320.00
	1.000 1211.501 1212.480 10340.00
	1.000 1210.702 1211.680 10360.00
	1.000 1209.903 1210.880 10380.00
	1.000 1209.104 1210.080 10400.00
	1.000 1208.305 1209.280 10420.00
	1.000 1207.506 1208.480 10440.00
	1.000 1206.707 1207.680 10460.00
	1.000 1205.908 1206.880 10480.00
	1.000 1205.109 1206.080 10500.00
	1.000 1204.310 1205.280 10520.00
	1.000 1203.511 1204.480 10540.00
	1.000 1202.712 1203.680 10560.00
	1.000 1201.913 1202.880 10580.00
	1.000 1201.114 1202.080 10600.00
	1.000 1200.315 1201.280 10620.00
	1.000 1199.516 1200.480 10640.00
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	1.000 1193.124 1196.500 10800.00
	1.000 1192.325 1196.000 10820.00
	1.000 1191.526 1195.500 10840.00
	1.000 1190.727 1195.000 10860.00
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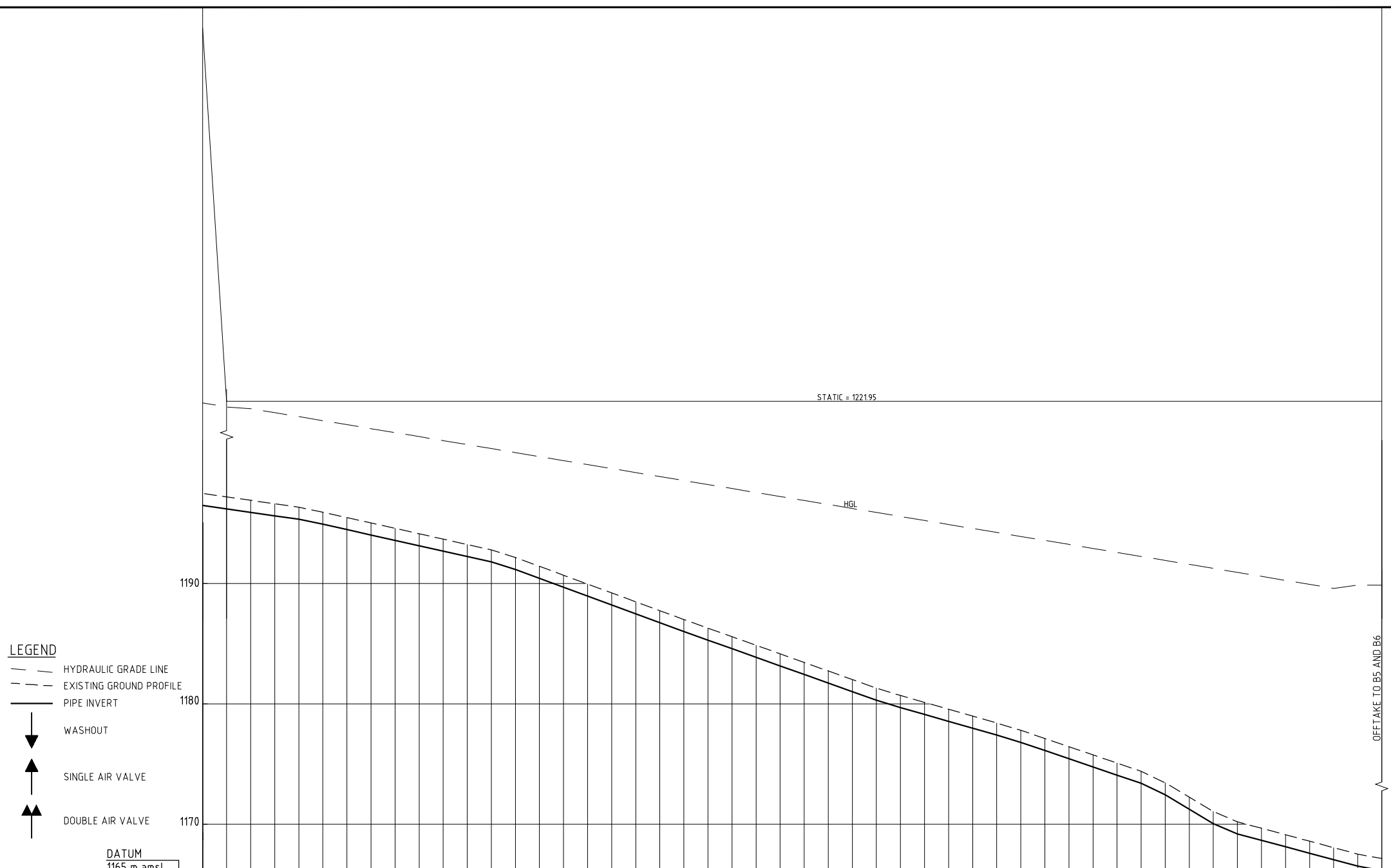
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PROJECT  
 SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
 KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE  
 MAIN PIPELINE PROFILE  
 SHEET 8 OF 9

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	000811.cad
Drawn:	WKM	DRG No.	KKIS/DD/302
Checked:	JON	REV	O
Approved:	MBN		
Scale:	H=1:2000 V=1:200		



LEGEND	
	HYDRAULIC GRADE LINE
	EXISTING GROUND PROFILE
	PIPE INVERT
	WASHOUT
	SINGLE AIR VALVE
	DOUBLE AIR VALVE

	DATUM 1165 m amsl
HYDRAULIC GRADE (m amsl)	1221.95
CHAINAGE (m)	1170.00
GROUND LEVEL (m amsl)	1190.00
INVERT LEVEL (m amsl)	1170.00
TRENCH DEPTH (m)	1.000
STEADY-STATE HEAD (m)	1.000
DESIGN FLOW (l/s)	120
OFFTAKE (l/s)	120
PIPE DETAILS	DN280 PVC-U(B)
BEDDING DETAILS	

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

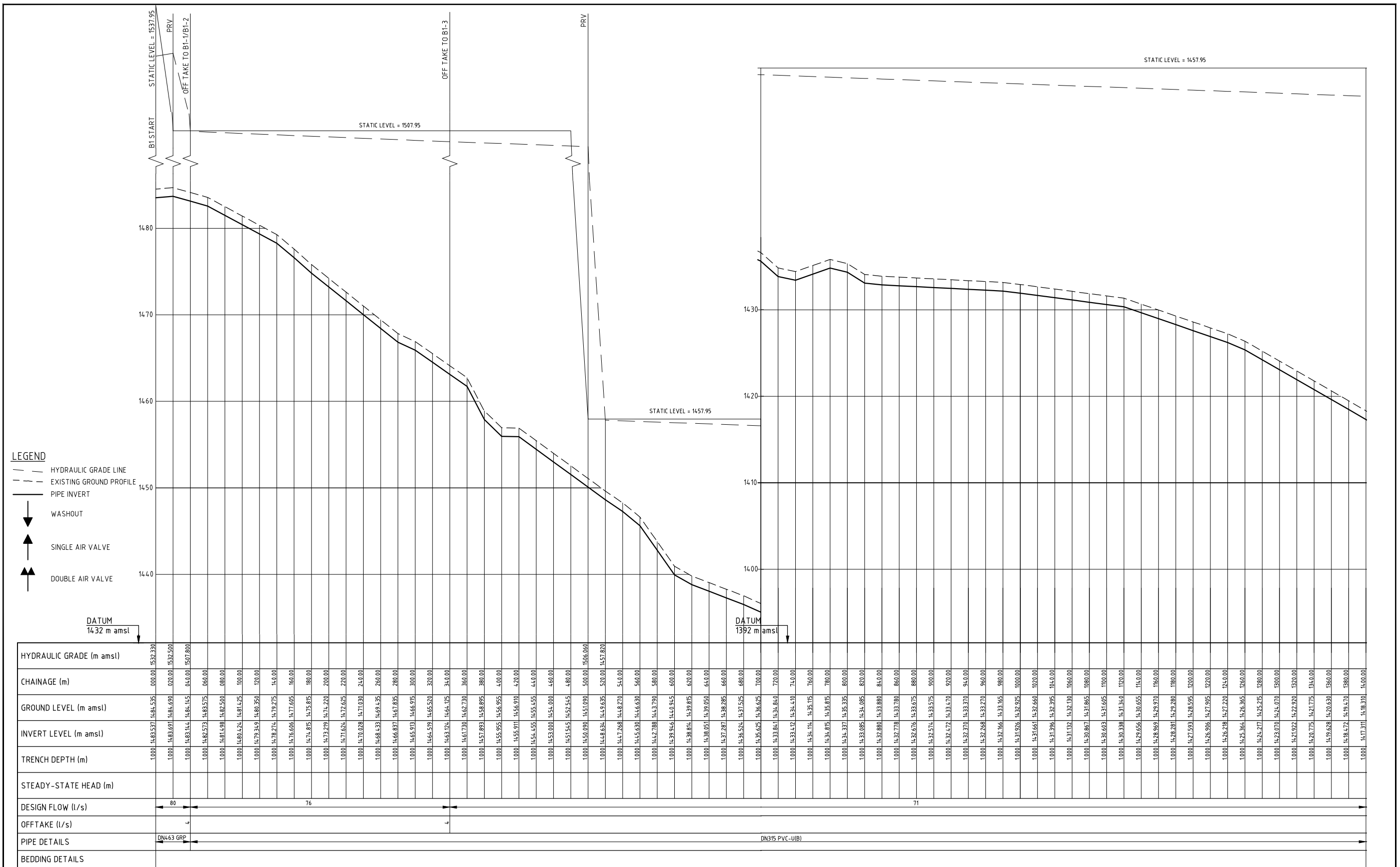
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 AGRICULTURE,  
 LIVESTOCK &  
 FISHERIES

PROJECT  
 SMALL SCALE HORTICULTURE  
 DEVELOPMENT PROJECT (SHDP)  
 KIRUMI KIAMUJARI  
 IRRIGATION SCHEME

DRG TITLE  
 MAIN PIPELINE PROFILE  
 SHEET 9 OF 9

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00011.cad
Drawn:	WKM	DRG No.	KKIS/DD/302
Checked:	JON	REV	O
Approved:	MBN		
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REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

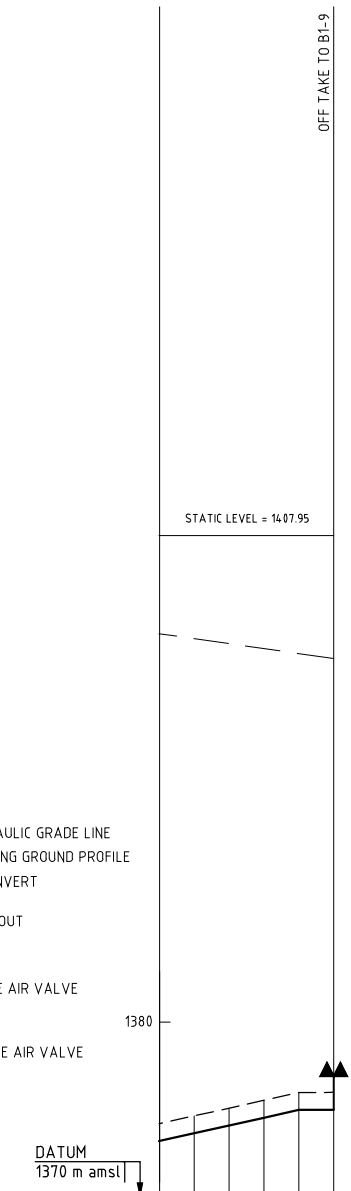
<b>CONSULTANT</b>  <b>GIBB Africa</b> CONSULTING • DESIGN • MANAGEMENT GIBB AFRICA LIMITED P O Box 30020, NAIROBI 00100, KENYA Tel + (254) 20 3245000, 2518801, 250577 Fax + (254) 20 2130884 E-mail: gibb@gibbafrika.com Website: www.gibbafrika.com	<b>CLIENT</b>  REPUBLIC OF KENYA MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES	<b>PROJECT</b> SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP) KIRUMI KIAMUJARI IRRIGATION SCHEME	<b>ORG TITLE</b> BRANCH 1 PIPELINE PROFILE SHEET 1 OF 3	Date: JULY 2014 Designed: BM Drawn: JKN Checked: JON Approved: MBN Scale: H=1:2000, V=1:200	JOB No. 000811 Cad Filename 00811\Ca0 DRG No. SHDP/KKIS/DD/303 REV O
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**LEGEND**

- - - HYDRAULIC GRADE LINE
- - - EXISTING GROUND PROFILE
- PIPE INVERT
- ↓ WASHOUT
- ↑ SINGLE AIR VALVE
- ↑↑ DOUBLE AIR VALVE



HYDRAULIC GRADE (m amsl)	
CHAINAGE (m)	2800.00
GROUND LEVEL (m amsl)	1374.195
INVERT LEVEL (m amsl)	1373.197
TRENCH DEPTH (m)	1.000
STEADY-STATE HEAD (m)	
DESIGN FLOW (l/s)	17
OFF TAKE (l/s)	17
PIPE DETAILS	DN160 PVC-U(B)
BEDDING DETAILS	

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE


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 Website: www.gibafrica.com

CLIENT



REPUBLIC OF KENYA  
 MINISTRY OF AGRICULTURE,  
 LIVESTOCK &  
 FISHERIES

PROJECT

SMALL SCALE HORTICULTURE  
 DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI  
 IRRIGATION SCHEME

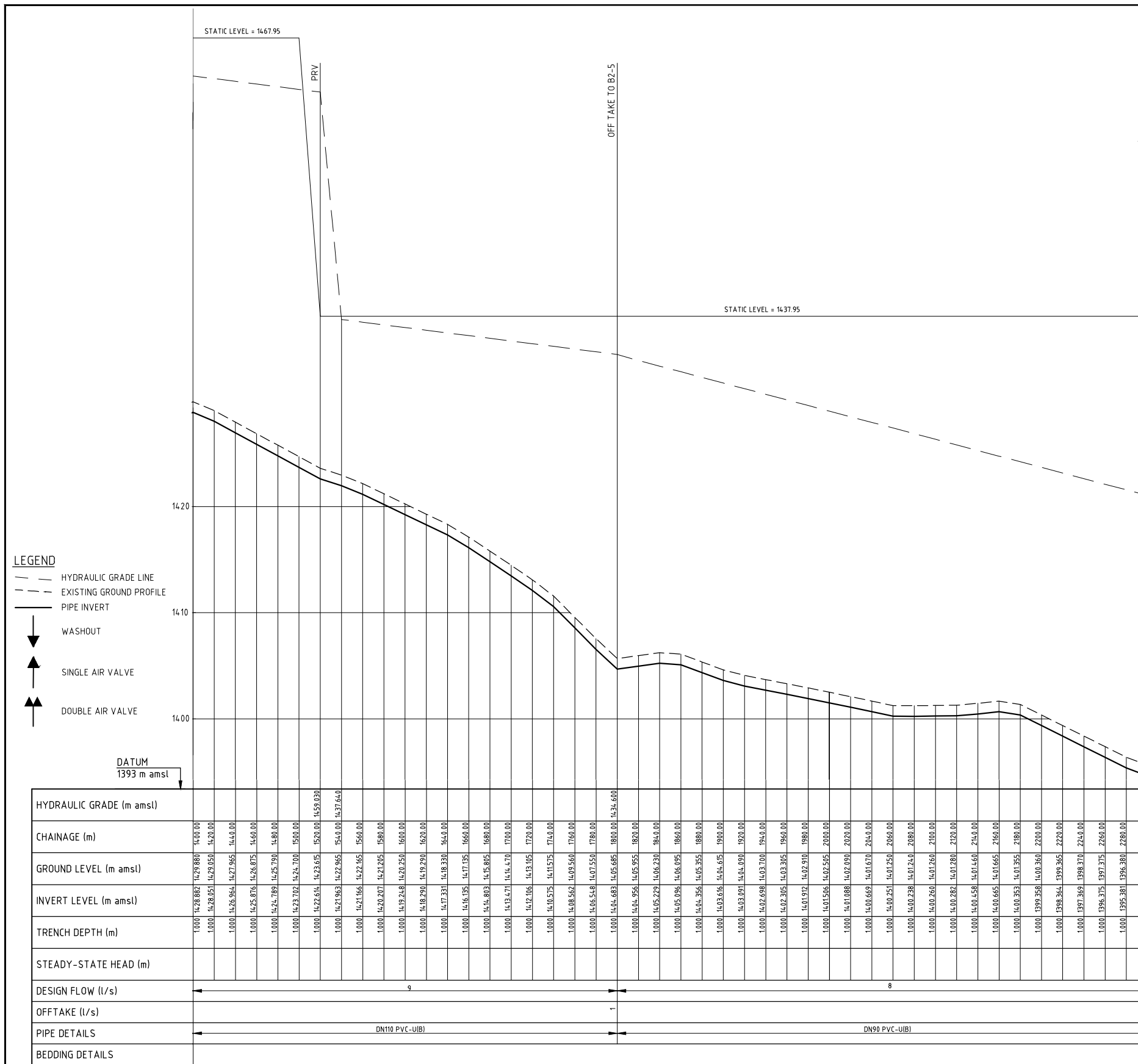
DRG TITLE

BRANCH 1 PIPELINE PROFILE

SHEET 3 OF 3

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.Cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/303
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200





- LEGEND**
- HYDRAULIC GRADE LINE
  - - - EXISTING GROUND PROFILE
  - PIPE INVERT
  - ↓ WASHOUT
  - ↑ SINGLE AIR VALVE
  - ↑↑ DOUBLE AIR VALVE

HYDRAULIC GRADE (m amsl)	CHAINAGE (m)	GROUND LEVEL (m amsl)	INVERT LEVEL (m amsl)	TRENCH DEPTH (m)	STEADY-STATE HEAD (m)	DESIGN FLOW (l/s)	OFFTAKE (l/s)	PIPE DETAILS	BEDDING DETAILS
1428.882	1400.00	1428.880	1400.00	1.000					
1428.051	1420.00	1428.050	1420.00	1.000					
1426.964	1440.00	1427.965	1440.00	1.000					
1425.876	1460.00	1426.875	1460.00	1.000					
1424.789	1480.00	1425.790	1480.00	1.000					
1423.702	1500.00	1424.700	1500.00	1.000					
1422.614	1520.00	1423.615	1520.00	1.000					
1421.527	1540.00	1422.528	1540.00	1.000					
1420.440	1560.00	1421.440	1560.00	1.000					
1419.353	1580.00	1420.353	1580.00	1.000					
1418.266	1600.00	1419.266	1600.00	1.000					
1417.179	1620.00	1418.179	1620.00	1.000					
1416.092	1640.00	1417.092	1640.00	1.000					
1415.005	1660.00	1416.005	1660.00	1.000					
1413.918	1680.00	1414.918	1680.00	1.000					
1412.831	1700.00	1413.831	1700.00	1.000					
1411.744	1720.00	1412.744	1720.00	1.000					
1410.657	1740.00	1411.657	1740.00	1.000					
1409.570	1760.00	1410.570	1760.00	1.000					
1408.483	1780.00	1409.483	1780.00	1.000					
1407.396	1800.00	1408.396	1800.00	1.000					
1406.309	1820.00	1407.309	1820.00	1.000					
1405.222	1840.00	1406.222	1840.00	1.000					
1404.135	1860.00	1405.135	1860.00	1.000					
1403.048	1880.00	1404.048	1880.00	1.000					
1401.961	1900.00	1402.961	1900.00	1.000					
1400.874	1920.00	1401.874	1920.00	1.000					
1400.787	1940.00	1401.787	1940.00	1.000					
1400.700	1960.00	1401.700	1960.00	1.000					
1400.613	1980.00	1401.613	1980.00	1.000					
1400.526	2000.00	1401.526	2000.00	1.000					
1400.439	2020.00	1401.439	2020.00	1.000					
1400.352	2040.00	1401.352	2040.00	1.000					
1400.265	2060.00	1401.265	2060.00	1.000					
1400.178	2080.00	1401.178	2080.00	1.000					
1400.091	2100.00	1401.091	2100.00	1.000					
1400.004	2120.00	1401.004	2120.00	1.000					
1399.917	2140.00	1400.917	2140.00	1.000					
1399.830	2160.00	1400.830	2160.00	1.000					
1399.743	2180.00	1400.743	2180.00	1.000					
1399.656	2200.00	1400.656	2200.00	1.000					
1399.569	2220.00	1400.569	2220.00	1.000					
1399.482	2240.00	1400.482	2240.00	1.000					
1399.395	2260.00	1400.395	2260.00	1.000					
1399.308	2280.00	1400.308	2280.00	1.000					
1399.221	2300.00	1400.221	2300.00	1.000					

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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REPUBLIC OF KENYA  
MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

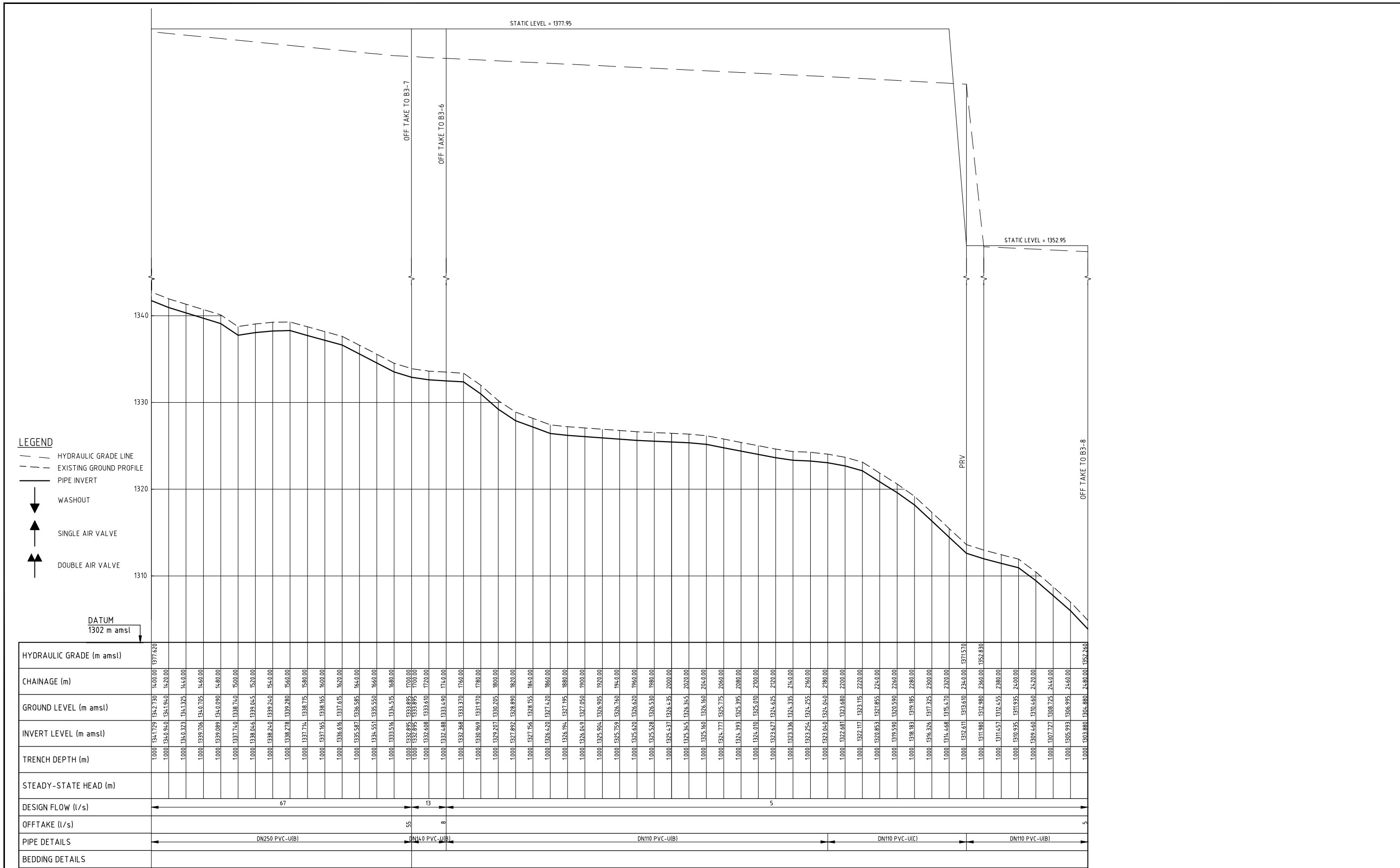
SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

BRANCH 2 PIPELINE PROFILE  
SHEET 2 OF 2

Date:	JULY 2014	JOB No.	0008111
Designed:	BM	Cad Filename	008111.cad
Drawn:	JKN	Checked:	JON
Approved:	MBN	DRG. No.	SHDP/KKIS/DD/304
Scale:	H=1:2000, V=1:200	REV	O





REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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Website: www.gibbafrika.com

CLIENT

REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

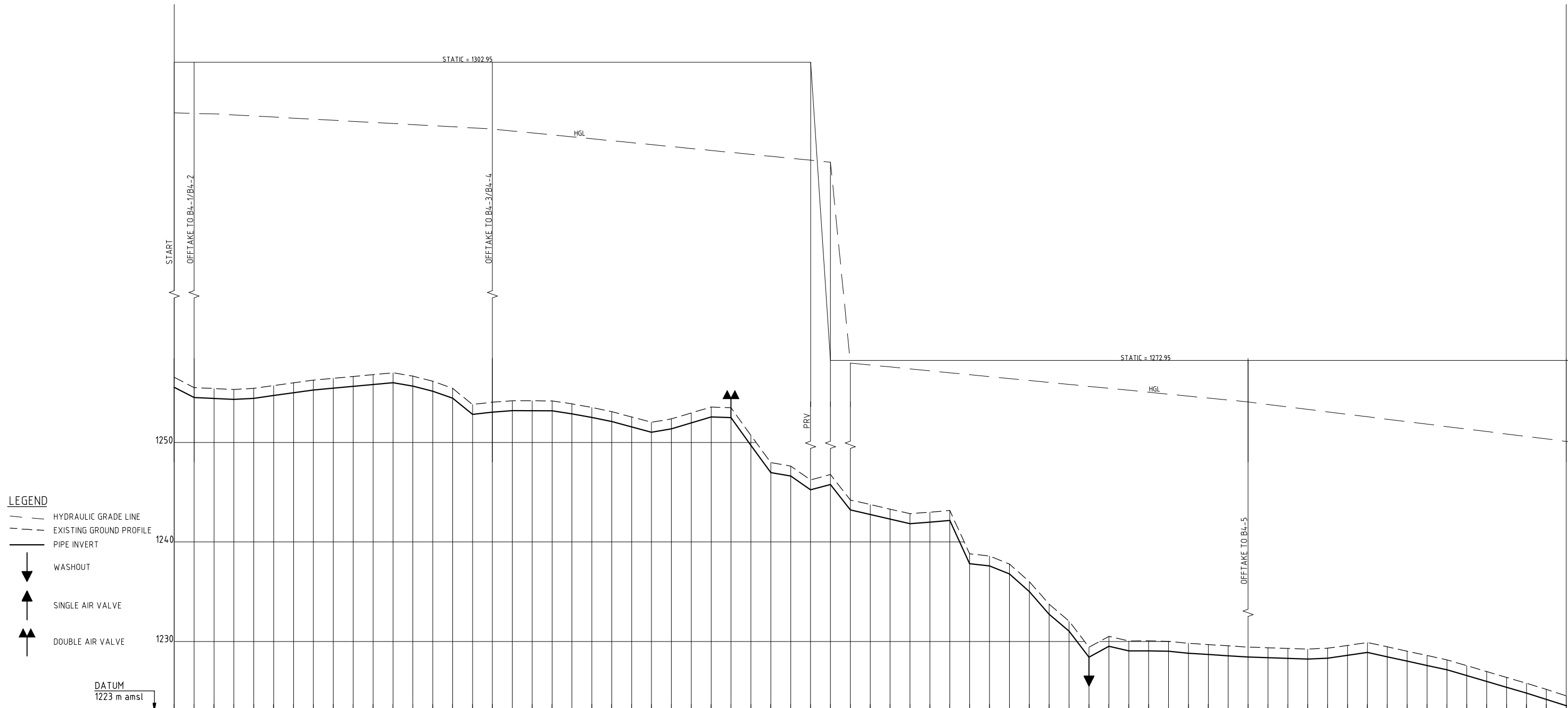
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

BRANCH 3 PIPELINE PROFILE

SHEET 2 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG No.	SHDP/KKIS/DD/305
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200



- LEGEND**
- HYDRAULIC GRADE LINE
  - - - EXISTING GROUND PROFILE
  - PIPE INVERT
  - ▼ WASHOUT
  - ▲ SINGLE AIR VALVE
  - ▲▲ DOUBLE AIR VALVE

HYDRAULIC GRADE (m amsl)	CHAINAGE (m)	GROUND LEVEL (m amsl)	INVERT LEVEL (m amsl)	TRENCH DEPTH (m)	STEADY-STATE HEAD (m)	DESIGN FLOW (l/s)	OFFTAKE (l/s)	PIPE DETAILS	BEDDING DETAILS
1255.554	000.00	1256.555	1255.554	1.000		69	42	DN200 PVC-U(B)	
1255.520	020.00	1255.520	1255.520	1.000					
1255.475	040.00	1255.475	1255.475	1.000					
1255.330	060.00	1255.330	1255.330	1.000					
1255.445	080.00	1255.445	1255.445	1.000					
1255.720	100.00	1255.720	1255.720	1.000					
1255.995	120.00	1255.995	1255.995	1.000					
1256.270	140.00	1256.270	1256.270	1.000					
1256.460	160.00	1256.460	1256.460	1.000					
1256.640	180.00	1256.640	1256.640	1.000					
1256.825	200.00	1256.825	1256.825	1.000					
1257.005	220.00	1257.005	1257.005	1.000					
1257.200	240.00	1257.200	1257.200	1.000					
1257.400	260.00	1257.400	1257.400	1.000					
1257.550	280.00	1257.550	1257.550	1.000					
1257.820	300.00	1257.820	1257.820	1.000					
1258.050	320.00	1258.050	1258.050	1.000					
1258.200	340.00	1258.200	1258.200	1.000					
1258.350	360.00	1258.350	1258.350	1.000					
1258.500	380.00	1258.500	1258.500	1.000					
1258.650	400.00	1258.650	1258.650	1.000					
1258.800	420.00	1258.800	1258.800	1.000					
1258.950	440.00	1258.950	1258.950	1.000					
1259.100	460.00	1259.100	1259.100	1.000					
1259.250	480.00	1259.250	1259.250	1.000					
1259.400	500.00	1259.400	1259.400	1.000					
1259.550	520.00	1259.550	1259.550	1.000					
1259.700	540.00	1259.700	1259.700	1.000					
1259.850	560.00	1259.850	1259.850	1.000					
1259.950	580.00	1259.950	1259.950	1.000					
1260.050	600.00	1260.050	1260.050	1.000					
1260.150	620.00	1260.150	1260.150	1.000					
1260.250	640.00	1260.250	1260.250	1.000					
1260.350	660.00	1260.350	1260.350	1.000					
1260.450	680.00	1260.450	1260.450	1.000					
1260.550	700.00	1260.550	1260.550	1.000					
1260.650	720.00	1260.650	1260.650	1.000					
1260.750	740.00	1260.750	1260.750	1.000					
1260.850	760.00	1260.850	1260.850	1.000					
1260.950	780.00	1260.950	1260.950	1.000					
1261.050	800.00	1261.050	1261.050	1.000					
1261.150	820.00	1261.150	1261.150	1.000					
1261.250	840.00	1261.250	1261.250	1.000					
1261.350	860.00	1261.350	1261.350	1.000					
1261.450	880.00	1261.450	1261.450	1.000					
1261.550	900.00	1261.550	1261.550	1.000					
1261.650	920.00	1261.650	1261.650	1.000					
1261.750	940.00	1261.750	1261.750	1.000					
1261.850	960.00	1261.850	1261.850	1.000					
1261.950	980.00	1261.950	1261.950	1.000					
1262.050	1000.00	1262.050	1262.050	1.000					
1262.150	1020.00	1262.150	1262.150	1.000					
1262.250	1040.00	1262.250	1262.250	1.000					
1262.350	1060.00	1262.350	1262.350	1.000					
1262.450	1080.00	1262.450	1262.450	1.000					
1262.550	1100.00	1262.550	1262.550	1.000					
1262.650	1120.00	1262.650	1262.650	1.000					
1262.750	1140.00	1262.750	1262.750	1.000					
1262.850	1160.00	1262.850	1262.850	1.000					
1262.950	1180.00	1262.950	1262.950	1.000					
1263.050	1200.00	1263.050	1263.050	1.000					
1263.150	1220.00	1263.150	1263.150	1.000					
1263.250	1240.00	1263.250	1263.250	1.000					
1263.350	1260.00	1263.350	1263.350	1.000					
1263.450	1280.00	1263.450	1263.450	1.000					
1263.550	1300.00	1263.550	1263.550	1.000					
1263.650	1320.00	1263.650	1263.650	1.000					
1263.750	1340.00	1263.750	1263.750	1.000					
1263.850	1360.00	1263.850	1263.850	1.000					
1263.950	1380.00	1263.950	1263.950	1.000					
1264.050	1400.00	1264.050	1264.050	1.000					

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

BRANCH 4 PIPELINE PROFILE

SHEET 1 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	WKM	DRG No.	KKIS/DD/306
Checked:	JON	REV	O
Approved:	MBN		
Scale:	H=1:2000 V=1:200		



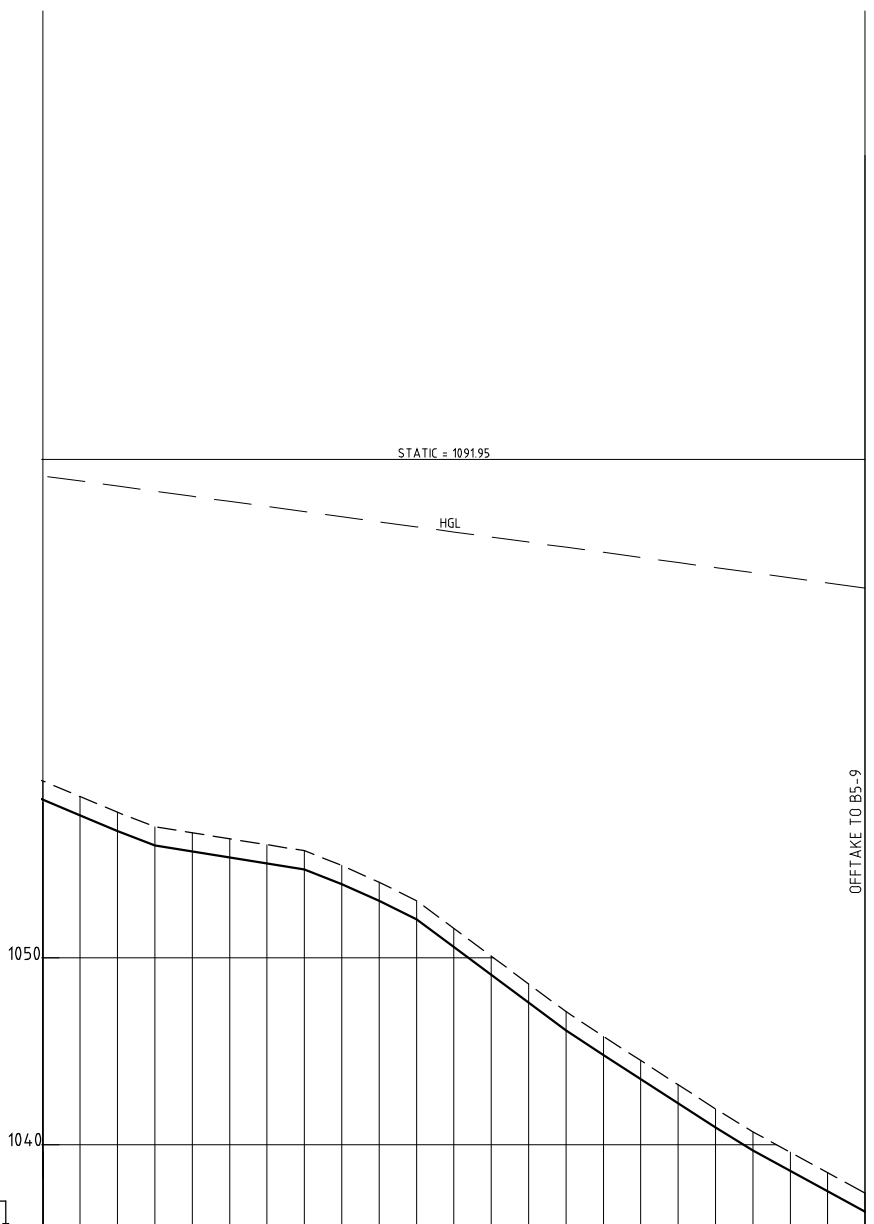








- LEGEND**
- HYDRAULIC GRADE LINE
  - - - EXISTING GROUND PROFILE
  - PIPE INVERT
  - ↓ WASHOUT
  - ↑ SINGLE AIR VALVE
  - ↑↑ DOUBLE AIR VALVE



HYDRAULIC GRADE (m amsl)	
CHAINAGE (m)	4200.00
GROUND LEVEL (m amsl)	1058.472
INVERT LEVEL (m amsl)	1057.472
TRENCH DEPTH (m)	1.000
STEADY-STATE HEAD (m)	
DESIGN FLOW (l/s)	9
OFFTAKE (l/s)	9
PIPE DETAILS	DN110 PVC-U(B)
BEDDING DETAILS	

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

BRANCH 5 PIPELINE PROFILE

SHEET 4 OF 4

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	000811.cad
Drawn:	WKM	DRG No.	KKIS/DD/307
Checked:	JON	REV	O
Approved:	MBN		
Scale:	H=1:2000 V=1:200		



STATIC = 1166.95

STATIC = 1141.95

- LEGEND**
- HYDRAULIC GRADE LINE
  - - - EXISTING GROUND PROFILE
  - PIPE INVERT
  - ▼ WASHOUT
  - ▲ SINGLE AIR VALVE
  - ▲▲ DOUBLE AIR VALVE

DATUM  
1095 m amsl

HYDRAULIC GRADE (m amsl)	
CHAINAGE (m)	1400.00
GROUND LEVEL (m amsl)	1120.00
INVERT LEVEL (m amsl)	1110.00
TRENCH DEPTH (m)	1100.00
STEADY-STATE HEAD (m)	
DESIGN FLOW (l/s)	30
OFFTAKE (l/s)	8
PIPE DETAILS	DN160 PVC-U(B)
BEDDING DETAILS	

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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PROJECT  
SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE  
BRANCH 6 PIPELINE PROFILE  
SHEET 2 OF 3

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	0081/cad
Drawn:	WKM	DRG No.	KKIS/DD/308
Checked:	JON	REV	O
Approved:	MBN		
Scale:	H=1:2000 V=1:200		

**LEGEND**

- - - HYDRAULIC GRADE LINE
- - - EXISTING GROUND PROFILE
- - - PIPE INVERT
- ▼ WASHOUT
- ▲ SINGLE AIR VALVE
- ▲▲ DOUBLE AIR VALVE

DATUM  
1071 m amsl

HYDRAULIC GRADE (m amsl)		1101.344	1102.345	2800.00	
CHAINAGE (m)		100.00	101.144	102.145	2820.00
GROUND LEVEL (m amsl)		1100.956	1101.955	2840.00	
INVERT LEVEL (m amsl)		1101.768	1101.770	2860.00	
TRENCH DEPTH (m)		1100.580	1101.580	2880.00	
STEADY-STATE HEAD (m)		1100.982	1100.980	2900.00	
DESIGN FLOW (l/s)		1100.295	1100.295	2920.00	
OFFTAKE (l/s)		1099.697	1099.695	2940.00	
PIPE DETAILS		1099.200	1098.920	2960.00	
BEDDING DETAILS		1098.235	1098.235	2980.00	
		1097.575	1097.575	3000.00	
		1096.920	1096.920	3020.00	
		1096.265	1096.265	3040.00	
		1095.610	1095.610	3060.00	
		1094.955	1094.955	3080.00	
		1094.300	1094.300	3100.00	
		1093.645	1093.645	3120.00	
		1092.990	1092.990	3140.00	
		1092.335	1092.335	3160.00	
		1091.680	1091.680	3180.00	
		1091.025	1091.025	3200.00	
		1090.370	1090.370	3220.00	
		1089.715	1089.715	3240.00	
		1089.060	1089.060	3260.00	
		1088.405	1088.405	3280.00	
		1087.750	1087.750	3300.00	
		1087.095	1087.095	3320.00	
		1086.440	1086.440	3340.00	
		1085.785	1085.785	3360.00	
		1085.130	1085.130	3380.00	
		1084.475	1084.475	3400.00	
		1083.820	1083.820	3420.00	
		1083.165	1083.165	3440.00	
		1082.510	1082.510	3460.00	
		1081.855	1081.855	3480.00	
		1081.200	1081.200	3500.00	
		1080.545	1080.545	3520.00	
		1079.890	1079.890	3540.00	
		1079.235	1079.235	3560.00	
		1078.580	1078.580	3580.00	
		1077.925	1077.925	3600.00	
		1077.270	1077.270	3620.00	
		1076.615	1076.615	3640.00	
		1075.960	1075.960	3660.00	
		1075.305	1075.305	3680.00	
		1074.650	1074.650	3700.00	
		1073.995	1073.995	3720.00	
		1073.340	1073.340	3740.00	
		1072.685	1072.685	3760.00	
		1072.030	1072.030	3780.00	
		1071.375	1071.375	3800.00	

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE


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SMALL SCALE HORTICULTURE  
DEVELOPMENT PROJECT (SHDP)

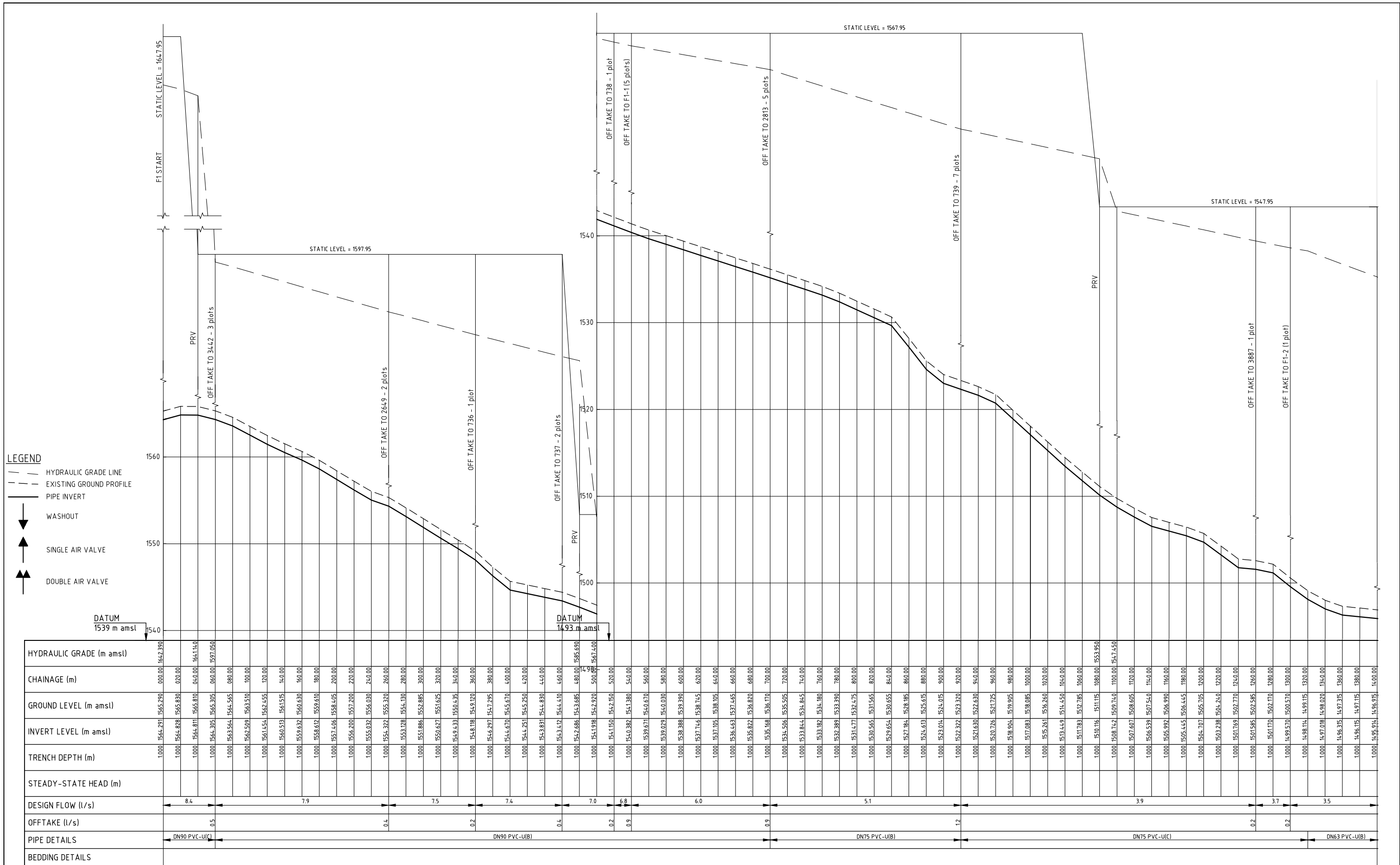
KIRUMI KIAMUJARI  
IRRIGATION SCHEME

DRG TITLE

BRANCH 6 PIPELINE PROFILE

SHEET 3 OF 3

Date:	JULY 2014	JOB No. 000811
Designed:	BM	
Drawn:	WKM	Cad Filename 000811.cad
Checked:	JON	
Approved:	MBN	DRG No. KKIS/DD/308
Scale:	H=1:2000 V=1:200	REV O



**LEGEND**

- - - HYDRAULIC GRADE LINE
- - - EXISTING GROUND PROFILE
- PIPE INVERT
- ▼ WASHOUT
- ▲ SINGLE AIR VALVE
- ▲▲ DOUBLE AIR VALVE

HYDRAULIC GRADE (m amsl)	1547.390	1546.291	1565.290	0.00	1647.390
CHAINAGE (m)	0.00	0.00	0.00	0.00	1647.390
GROUND LEVEL (m amsl)	1564.828	1565.830	1566.810	1567.810	1568.810
INVERT LEVEL (m amsl)	1544.305	1545.305	1546.305	1547.305	1548.305
TRENCH DEPTH (m)	1.000	1.000	1.000	1.000	1.000
STEADY-STATE HEAD (m)	8.4	7.9	7.5	7.4	7.0
DESIGN FLOW (l/s)	0.5	0.4	0.2	0.4	0.2
OFFTAKE (l/s)					
PIPE DETAILS	DN90 PVC-U(C)			DN90 PVC-U(B)	DN75 PVC-U(B)
BEDDING DETAILS					

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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REPUBLIC OF KENYA  
MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

**PROJECT**

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**

F1 PIPELINE PROFILE

SHEET 1 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/401
Checked:	JON	Scale:	H=1:2000, V=1:200
Approved:	MBN	REV	O

STATIC LEVEL = 1547.95

**LEGEND**

- HYDRAULIC GRADE LINE
- - - EXISTING GROUND PROFILE
- PIPE INVERT
- ▼ WASHOUT
- ▲ SINGLE AIR VALVE
- ▲▲ DOUBLE AIR VALVE

DATUM  
1481 m amsl

HYDRAULIC GRADE (m amsl)											
CHAINAGE (m)	1400.00	1406.00	1412.00	1418.00	1424.00	1430.00	1436.00	1442.00	1448.00	1454.00	
GROUND LEVEL (m amsl)	1495.91	1496.95	1497.15	1497.35	1497.55	1497.75	1497.95	1498.15	1498.35	1498.55	
INVERT LEVEL (m amsl)	1495.91	1496.95	1497.15	1497.35	1497.55	1497.75	1497.95	1498.15	1498.35	1498.55	
TRENCH DEPTH (m)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
STEADY-STATE HEAD (m)											
DESIGN FLOW (l/s)	3.5			3.2			2.5			1.6	
OFFTAKE (l/s)	0.4			0.7			0.9			0.4	
PIPE DETAILS	DN63 PVC-U(B)										
BEDDING DETAILS											

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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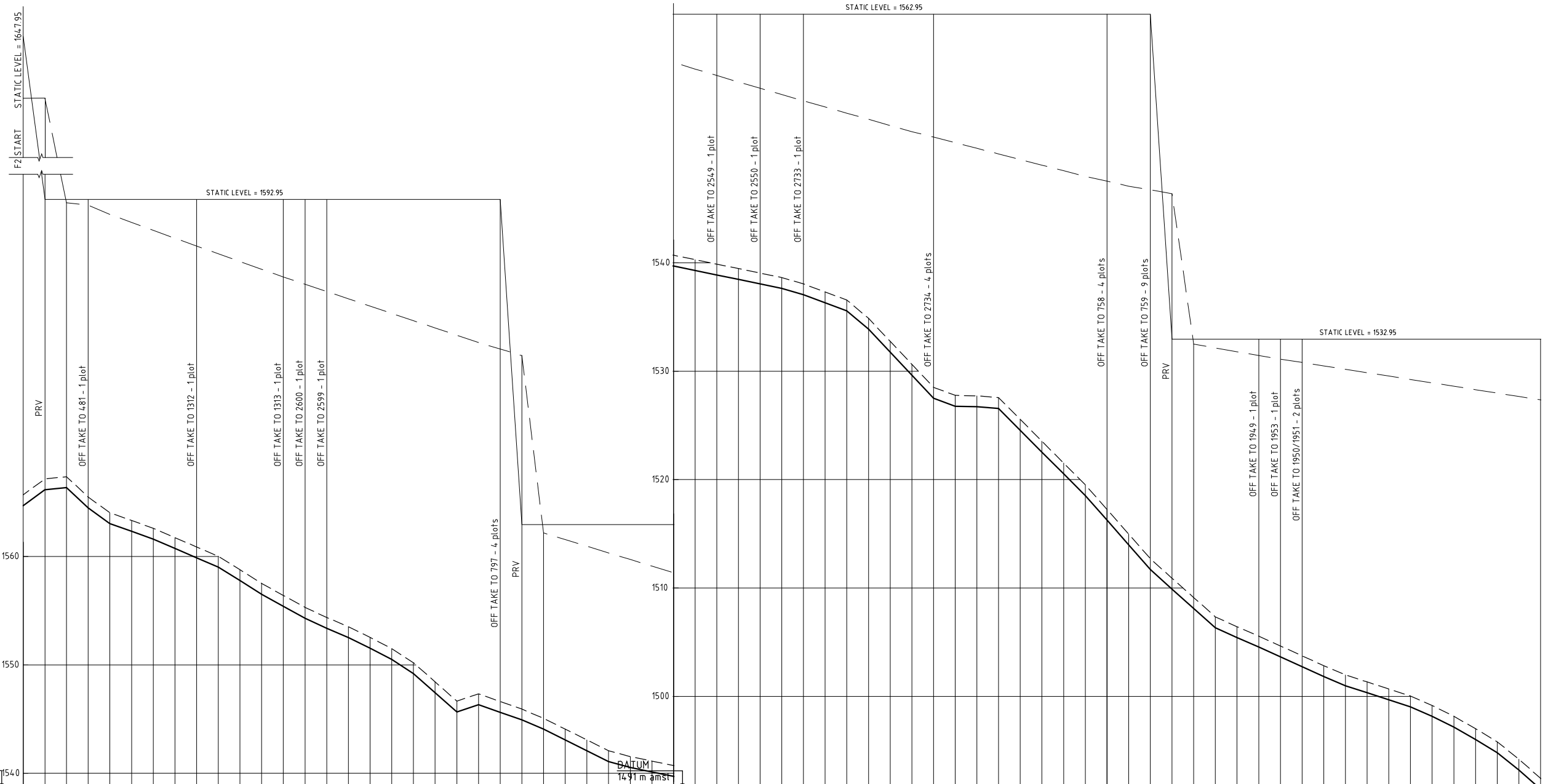
PROJECT  
SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE  
F1 PIPELINE PROFILE  
SHEET 2 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/401
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200



- LEGEND**
- HYDRAULIC GRADE LINE
  - - - EXISTING GROUND PROFILE
  - PIPE INVERT
  - ▼ WASHOUT
  - ▲ SINGLE AIR VALVE
  - ▲▲ DOUBLE AIR VALVE



HYDRAULIC GRADE (m amsl)	1.000	1564.697	1565.695	1600.00	1642.240
CHAINAGE (m)	1.000	1566.159	1567.160	1620.00	1642.250
GROUND LEVEL (m amsl)	1.000	1566.367	1567.365	1640.00	1597.650
INVERT LEVEL (m amsl)	1.000	1564.592	1565.490	1660.00	
TRENCH DEPTH (m)	1.000	1563.142	1564.140	1680.00	
STEADY-STATE HEAD (m)	1.000	1562.330	1563.330	1700.00	
DESIGN FLOW (l/s)	1.000	1561.608	1562.610	1720.00	
OFFTAKE (l/s)	1.000	1560.745	1561.745	1740.00	
PIPE DETAILS	1.000	1559.882	1560.880	1760.00	
BEDDING DETAILS	1.000	1559.018	1560.020	1780.00	
	1.000	1557.184	1558.185	1800.00	
	1.000	1556.518	1557.520	1820.00	
	1.000	1555.474	1556.470	1840.00	
	1.000	1554.306	1555.305	1860.00	
	1.000	1553.377	1554.375	1880.00	
	1.000	1552.424	1553.420	1900.00	
	1.000	1551.534	1552.535	1920.00	
	1.000	1550.502	1551.500	1940.00	
	1.000	1549.424	1550.205	1960.00	
	1.000	1547.429	1548.430	1980.00	
	1.000	1545.653	1546.655	2000.00	
	1.000	1546.324	1547.325	2020.00	
	1.000	1545.623	1546.625	2040.00	
	1.000	1544.922	1545.920	2060.00	
	1.000	1544.066	1545.065	2080.00	
	1.000	1543.089	1544.070	2100.00	
	1.000	1542.072	1543.070	2120.00	
	1.000	1541.074	1542.075	2140.00	
	1.000	1540.534	1541.535	2160.00	
	1.000	1540.121	1541.120	2180.00	
	1.000	1539.708	1540.710	2200.00	
	1.000	1539.295	1540.295	2220.00	
	1.000	1538.882	1539.880	2240.00	
	1.000	1538.470	1539.470	2260.00	
	1.000	1538.057	1539.055	2280.00	
	1.000	1537.644	1538.645	2300.00	
	1.000	1537.058	1538.060	2320.00	
	1.000	1536.314	1537.315	2340.00	
	1.000	1535.569	1536.570	2360.00	
	1.000	1533.874	1534.875	2380.00	
	1.000	1531.754	1532.755	2400.00	
	1.000	1529.634	1530.635	2420.00	
	1.000	1527.514	1528.515	2440.00	
	1.000	1526.772	1527.770	2460.00	
	1.000	1526.225	1527.225	2480.00	
	1.000	1526.571	1527.570	2500.00	
	1.000	1524.556	1525.555	2520.00	
	1.000	1522.540	1523.540	2540.00	
	1.000	1520.525	1521.525	2560.00	
	1.000	1518.509	1519.510	2580.00	
	1.000	1516.457	1517.455	2600.00	
	1.000	1513.982	1514.980	2620.00	
	1.000	1511.707	1512.705	2640.00	
	1.000	1509.898	1510.900	2660.00	
	1.000	1508.116	1509.115	2680.00	
	1.000	1506.334	1507.335	2700.00	
	1.000	1505.448	1506.420	2720.00	
	1.000	1504.553	1505.555	2740.00	
	1.000	1503.645	1504.645	2760.00	
	1.000	1502.738	1503.740	2780.00	
	1.000	1501.830	1502.830	2800.00	
	1.000	1500.980	1501.980	2820.00	
	1.000	1500.331	1501.330	2840.00	
	1.000	1499.682	1500.680	2860.00	
	1.000	1499.033	1500.035	2880.00	
	1.000	1498.053	1499.155	2900.00	
	1.000	1497.159	1498.160	2920.00	
	1.000	1496.074	1497.075	2940.00	
	1.000	1494.804	1495.805	2960.00	
	1.000	1493.206	1494.205	2980.00	
	1.000	1491.536	1492.435	3000.00	

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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**PROJECT**

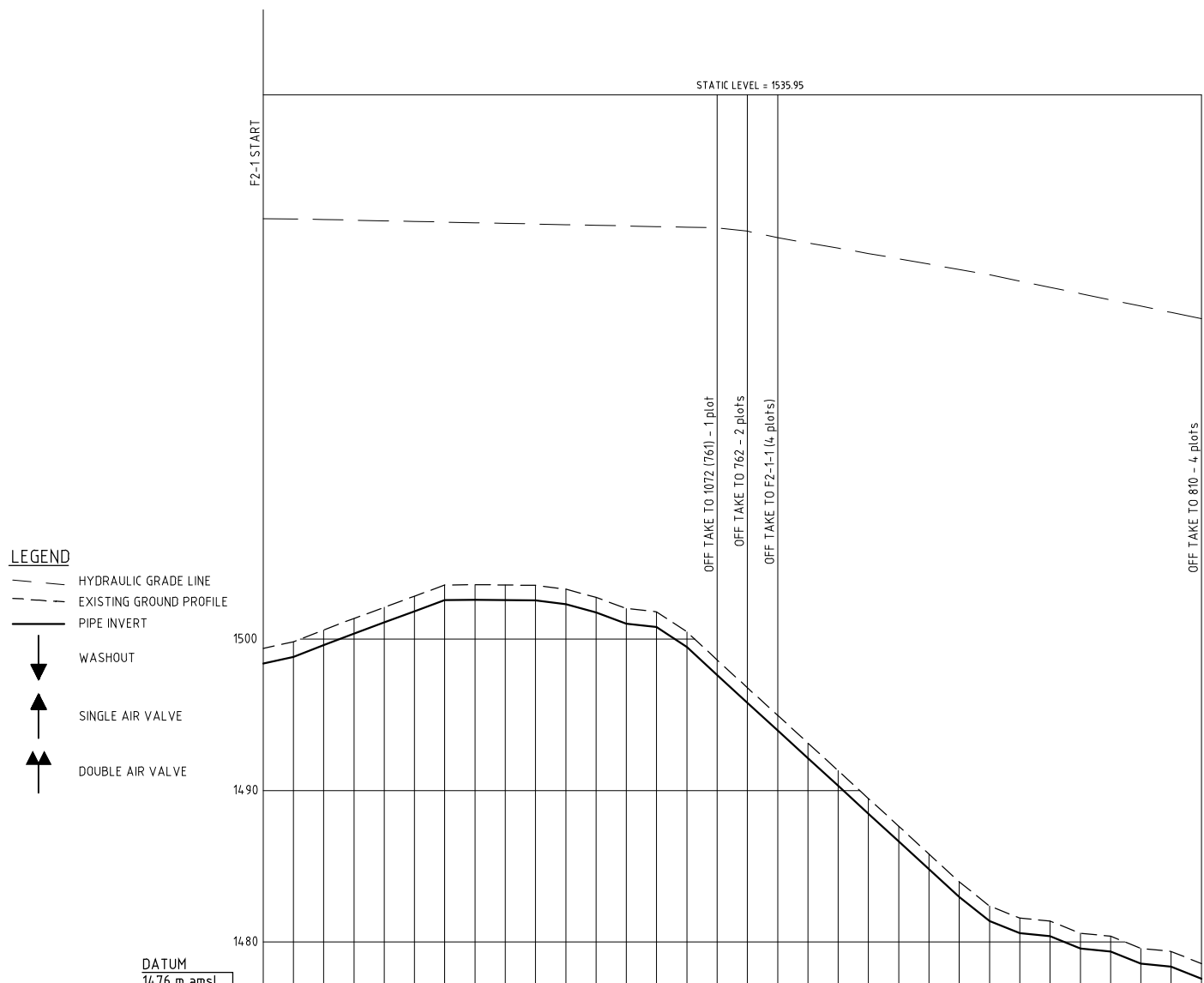
SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**

F2 PIPELINE PROFILE  
SHEET 1 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad File name	0811Cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/402
Checked:	JON	REV	0
Approved:	MBN	Scale:	H=1:2000, V=1:200





- LEGEND**
- HYDRAULIC GRADE LINE
  - - - EXISTING GROUND PROFILE
  - PIPE INVERT
  - ▼ WASHOUT
  - ▲ SINGLE AIR VALVE
  - ▲▲ DOUBLE AIR VALVE

HYDRAULIC GRADE (m amsl)	1500.00	1498.395	1499.395	1500.00	1521.170
CHAINAGE (m)	0.00	0.00	0.00	0.00	620.00
GROUND LEVEL (m amsl)	1498.824	1499.824	1499.824	1499.824	1478.000
INVERT LEVEL (m amsl)	1498.395	1499.395	1499.395	1499.395	1477.571
TRENCH DEPTH (m)	0.00	0.00	0.00	0.00	0.00
STEADY-STATE HEAD (m)					
DESIGN FLOW (l/s)		19		0.7	
OFFTAKE (l/s)			0.2	0.4	0.7
PIPE DETAILS	DN90 PVC-U(B)		DN63 PVC-U(B)		DN40 PVC-U(C)
BEDDING DETAILS					

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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**PROJECT**

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

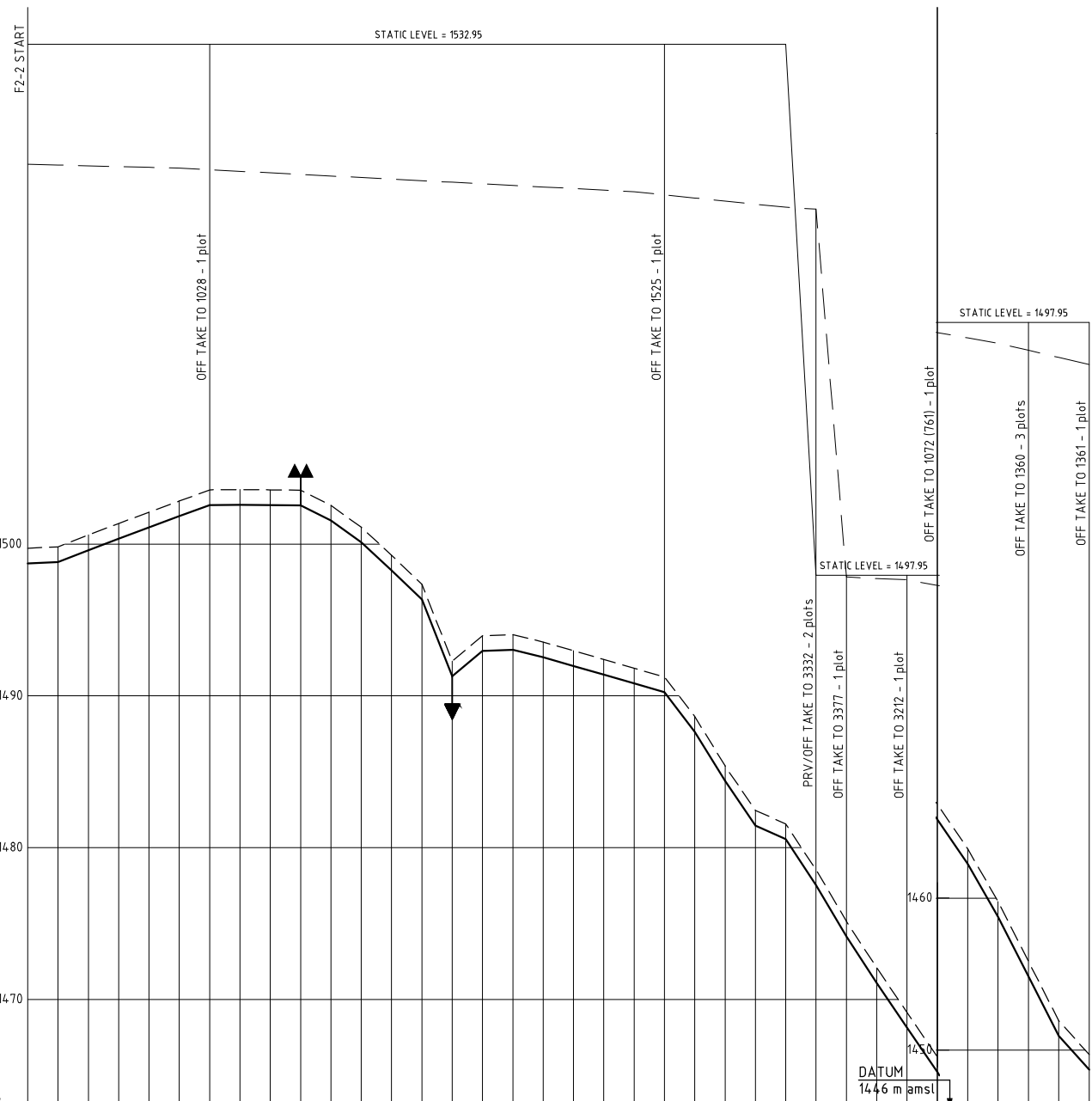
KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**

F2-1 PIPELINE PROFILE

SHEET 1 OF 1

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/403
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200



- LEGEND**
- - - HYDRAULIC GRADE LINE
  - - - EXISTING GROUND PROFILE
  - - - PIPE INVERT
  - ▼ WASHOUT
  - ▲ SINGLE AIR VALVE
  - ▲▲ DOUBLE AIR VALVE

HYDRAULIC GRADE (m amsl)	1.000	14.98	1.392	14.99	1.730	0.000	0.00	1525.040
CHAINAGE (m)	0.000	1.000	14.98	1.824	14.99	8.25	0.20	0.00
GROUND LEVEL (m amsl)	1.000	14.99	6.07	15.00	6.05	0.40	0.00	0.00
INVERT LEVEL (m amsl)	1.000	15.00	3.67	15.01	3.65	0.60	0.00	0.00
TRENCH DEPTH (m)	1.000	15.01	1.04	15.02	1.05	0.80	0.00	0.00
STEADY-STATE HEAD (m)	1.000	15.01	1.840	15.02	1.840	1.00	0.00	0.00
DESIGN FLOW (l/s)	1.000	15.02	5.77	15.03	5.75	1.20	0.00	0.00
OFFTAKE (l/s)	1.000	15.02	6.00	15.03	6.00	14.00	0.00	0.00
PIPE DETAILS	1.000	15.02	5.78	15.03	5.80	16.00	0.00	0.00
BEDDING DETAILS	1.000	15.02	5.56	15.03	5.55	18.00	0.00	0.00

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

**CONSULTANT**

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Website: www.gibbafica.com

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MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

**PROJECT**

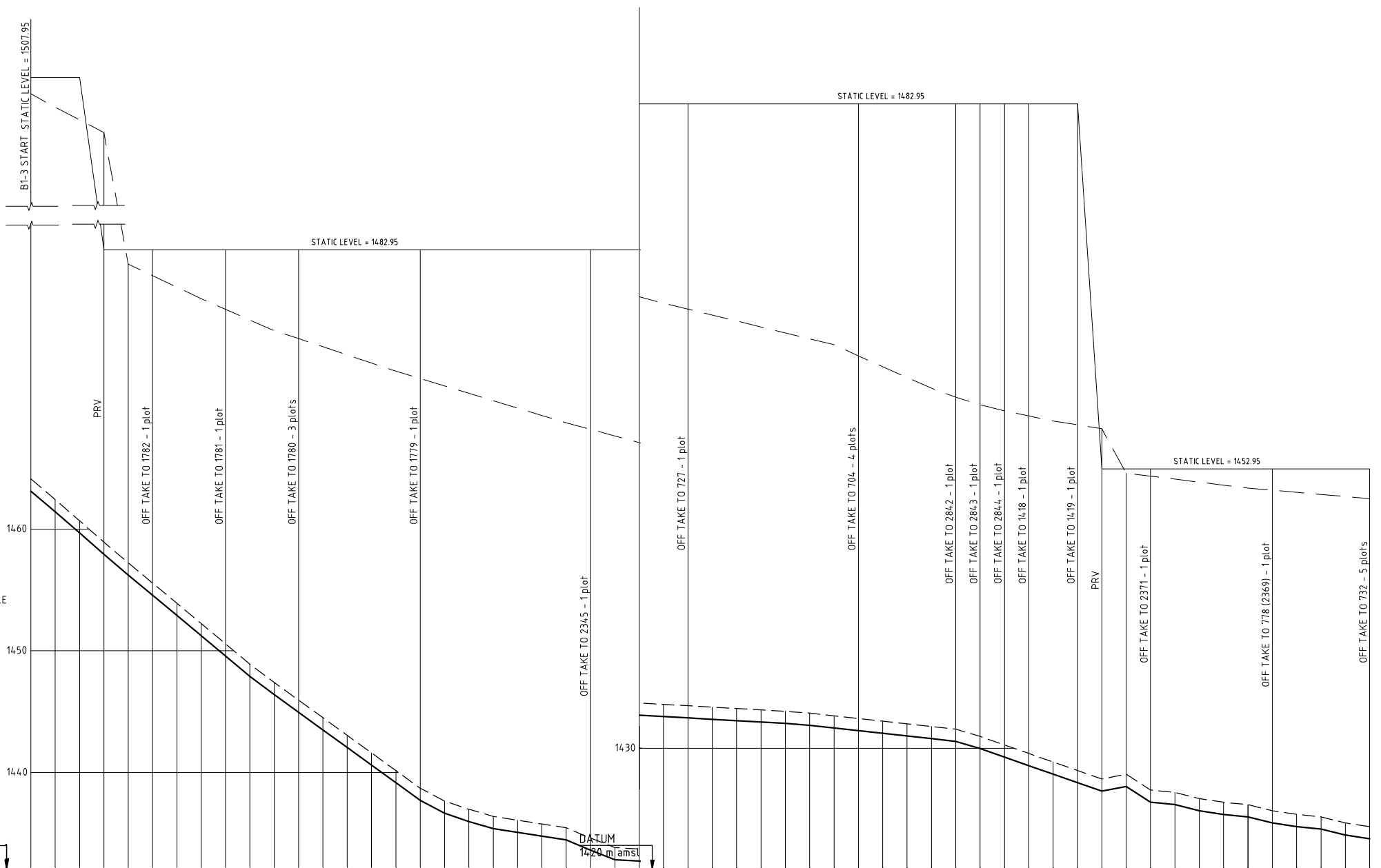
SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**

F2-2 PIPELINE PROFILE  
SHEET 1 OF 1

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/404
Checked:	JON	Scale:	H=1:2000, V=1:200
Approved:	MBN	REV	O





- LEGEND**
- HYDRAULIC GRADE LINE
  - - - - EXISTING GROUND PROFILE
  - PIPE INVERT
  - ▼ WASHOUT
  - ▲ SINGLE AIR VALVE
  - ▲▲ DOUBLE AIR VALVE

DATUM  
1432 m amsl

DATUM  
1430 m amsl

HYDRAULIC GRADE (m amsl)	CHAINAGE (m)	GROUND LEVEL (m amsl)	INVERT LEVEL (m amsl)	TRENCH DEPTH (m)	STEADY-STATE HEAD (m)	DESIGN FLOW (l/s)	OFFTAKE (l/s)	PIPE DETAILS	BEDDING DETAILS
1506.633	0.00	1464.125	1443.124	1.00					
1500.00	14.81789	1457.235	1456.233	1.00		4.2	0.2	DN63 PVC-U(B)	
1482.95	200.00	1447.400	1446.399	1.00		4.0	0.2	DN63 PVC-U(B)	
1482.95	270.00	1444.580	1443.580	1.00		3.9	0.5	DN63 PVC-U(B)	
1482.95	330.00	1444.165	1443.165	1.00		3.3	0.2	DN63 PVC-U(B)	
1482.95	380.00	1440.155	1439.155	1.00		3.2	0.2	DN63 PVC-U(B)	
1482.95	460.00	1437.800	1436.800	1.00		3.0	0.2	DN63 PVC-U(B)	
1482.95	510.00	1433.715	1432.715	1.00		3.0	0.2	DN63 PVC-U(B)	
1482.95	560.00	1433.860	1432.860	1.00		2.8	0.2	DN63 PVC-U(B)	
1482.95	600.00	1433.150	1432.150	1.00		2.8	0.2	DN63 PVC-U(B)	
1482.95	620.00	1433.610	1432.610	1.00		2.1	0.2	DN63 PVC-U(B)	
1482.95	640.00	1431.790	1430.790	1.00		2.1	0.2	DN63 PVC-U(B)	
1482.95	700.00	1432.230	1431.230	1.00		1.9	0.2	DN63 PVC-U(B)	
1482.95	780.00	1430.975	1429.975	1.00		1.8	0.2	DN63 PVC-U(B)	
1482.95	800.00	1430.735	1429.735	1.00		1.6	0.2	DN63 PVC-U(B)	
1482.95	820.00	1429.575	1428.575	1.00		1.4	0.2	DN63 PVC-U(B)	
1482.95	840.00	1428.875	1427.875	1.00		1.4	0.2	DN63 PVC-U(B)	
1482.95	860.00	1428.075	1427.075	1.00		1.2	0.2	DN63 PVC-U(B)	
1482.95	900.00	1427.865	1426.865	1.00		1.1	0.2	DN63 PVC-U(B)	
1482.95	920.00	1426.565	1425.565	1.00		1.1	0.2	DN63 PVC-U(B)	
1482.95	940.00	1426.365	1425.365	1.00		0.9	0.2	DN63 PVC-U(B)	
1482.95	960.00	1425.865	1424.865	1.00		0.9	0.2	DN63 PVC-U(B)	
1482.95	980.00	1425.565	1424.565	1.00		0.9	0.2	DN63 PVC-U(B)	
1482.95	1000.00	1424.865	1423.865	1.00		0.9	0.2	DN63 PVC-U(B)	
1482.95	1020.00	1424.865	1423.865	1.00		0.9	0.2	DN63 PVC-U(B)	
1482.95	1040.00	1424.565	1423.565	1.00		0.9	0.2	DN63 PVC-U(B)	
1482.95	1060.00	1424.365	1423.365	1.00		0.9	0.2	DN63 PVC-U(B)	
1482.95	1080.00	1423.865	1422.865	1.00		0.9	0.2	DN63 PVC-U(B)	
1482.95	1100.00	1423.565	1422.565	1.00		0.9	0.2	DN63 PVC-U(B)	

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

**CONSULTANT**

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MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

**PROJECT**

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**

B1-3 PIPELINE PROFILE  
SHEET 1 OF 1

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/406
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200







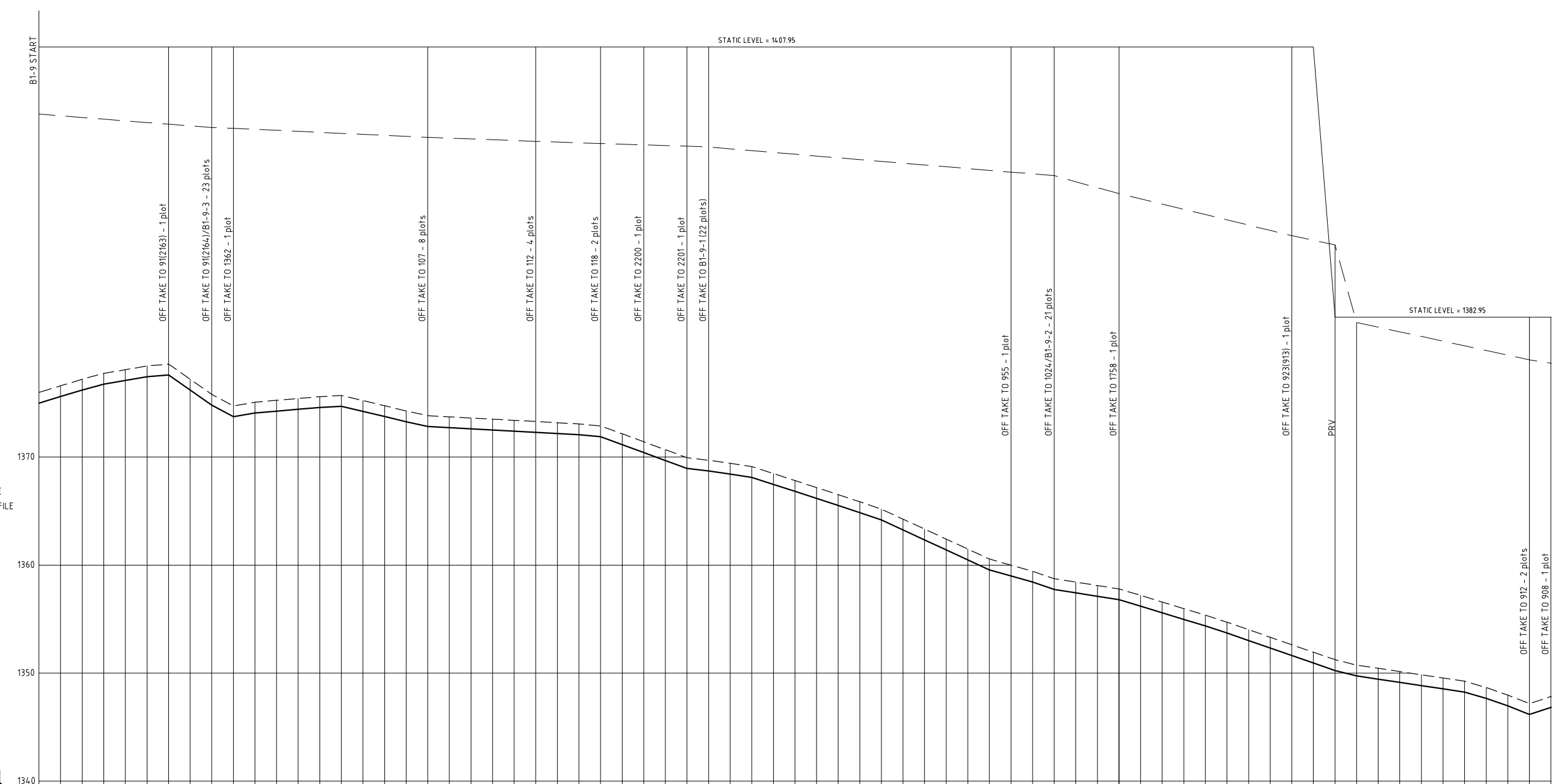












- LEGEND**
- - - - HYDRAULIC GRADE LINE
  - . - . EXISTING GROUND PROFILE
  - - - - PIPE INVERT
  - ↓ WASHOUT
  - ↑ SINGLE AIR VALVE
  - ↑↑ DOUBLE AIR VALVE

	0.000	1374.886	1375.985	14.017550
HYDRAULIC GRADE (m amsl)				
CHAINAGE (m)	0.000	1375.597	1376.595	14.017550
GROUND LEVEL (m amsl)	1374.886	1375.985	1377.210	14.000
INVERT LEVEL (m amsl)	1374.886	1375.985	1377.210	14.000
TRENCH DEPTH (m)	0.000	0.000	0.000	0.000
STEADY-STATE HEAD (m)				
DESIGN FLOW (l/s)		17.9		
OFFTAKE (l/s)		0.2	4.6	0.2
PIPE DETAILS			DN160 PVC-U(B)	
BEDDING DETAILS				

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

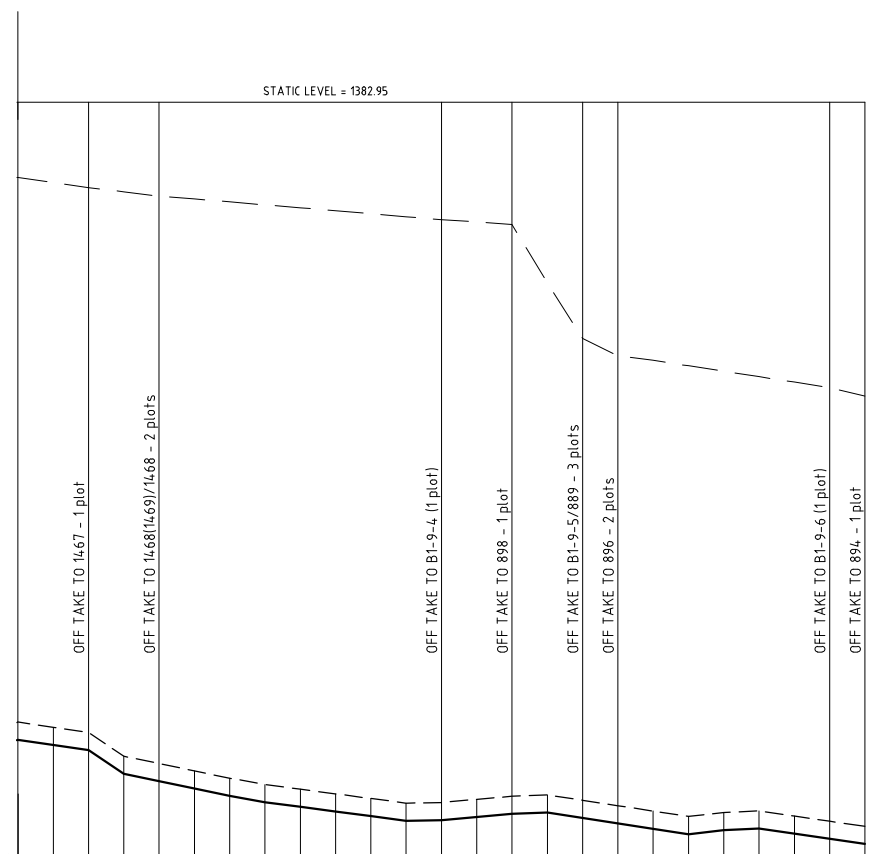
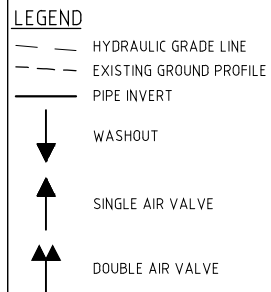
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

B1-9 PIPELINE PROFILE

SHEET 1 OF 2

Date:	JULY 2014	JOB No:	000811
Designed:	BM	Cad Filename:	00811.cad
Drawn:	JKN		
Checked:	JON		
Approved:	MBN	DRG. No.:	SHDP/KKIS/DD/412
Scale:	H=1:2000, V=1:200	REV	



HYDRAULIC GRADE (m amsl)	CHAINAGE (m)	GROUND LEVEL (m amsl)	INVERT LEVEL (m amsl)	TRENCH DEPTH (m)	STEADY-STATE HEAD (m)	DESIGN FLOW (l/s)	OFFTAKE (l/s)	PIPE DETAILS	BEDDING DETAILS
1340.00	1400.00	1347.895	1347.895	1.000		2.1	0.2	DN63 PVC-U(B)	
1340.00	1420.00	1347.540	1347.540	1.000		1.9	0.4		
1340.00	1440.00	1347.245	1347.245	1.000		1.6	0.2	DN32 PVC-U(B)	
1340.00	1460.00	1345.895	1345.895	1.000		1.4	0.2		
1340.00	1480.00	1345.495	1345.495	1.000		1.2	0.5	DN20 PVC-U(B)	
1340.00	1500.00	1345.070	1345.070	1.000		0.7	0.4		
1340.00	1520.00	1344.660	1344.660	1.000		0.4	0.2		
1340.00	1540.00	1344.295	1344.295	1.000					
1340.00	1560.00	1344.095	1344.095	1.000					
1340.00	1580.00	1343.770	1343.770	1.000					
1340.00	1600.00	1343.510	1343.510	1.000					
1340.00	1620.00	1343.245	1343.245	1.000					
1340.00	1640.00	1343.280	1343.280	1.000					
1340.00	1660.00	1343.455	1343.455	1.000					
1340.00	1680.00	1343.635	1343.635	1.000					
1340.00	1700.00	1343.715	1343.715	1.000					
1340.00	1720.00	1343.405	1343.405	1.000					
1340.00	1740.00	1343.300	1343.300	1.000					
1340.00	1760.00	1342.795	1342.795	1.000					
1340.00	1780.00	1342.485	1342.485	1.000					
1340.00	1800.00	1342.270	1342.270	1.000					
1340.00	1820.00	1342.800	1342.800	1.000					
1340.00	1840.00	1342.510	1342.510	1.000					
1340.00	1860.00	1342.215	1342.215	1.000					
1340.00	1880.00	1341.925	1341.925	1.000					
1340.00	1900.00	1341.635	1341.635	1.000					

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

**CONSULTANT**

**GIBB Africa**

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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

**PROJECT**

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

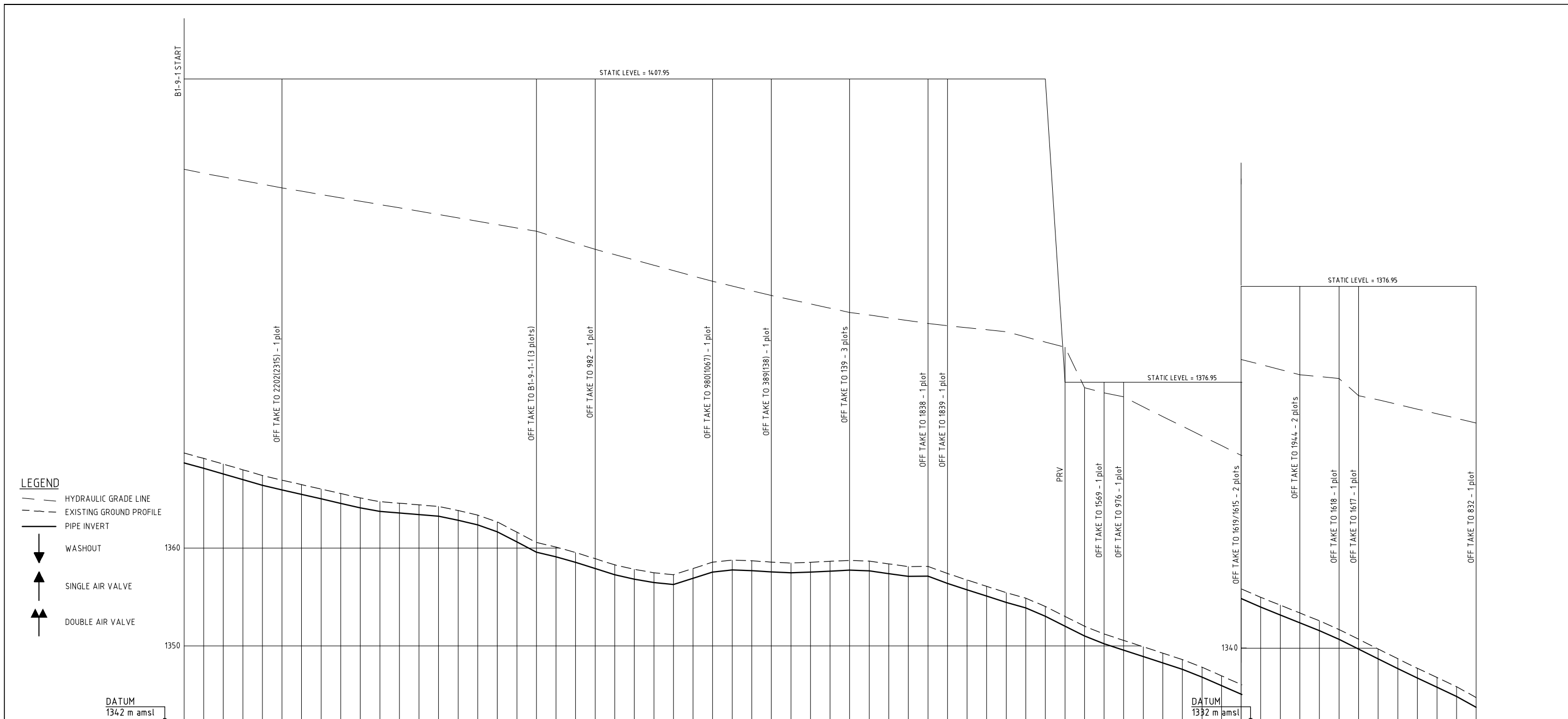
KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**

B1-9 PIPELINE PROFILE

SHEET 2 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/412
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200



- LEGEND**
- HYDRAULIC GRADE LINE
  - - - EXISTING GROUND PROFILE
  - PIPE INVERT
  - ▼ WASHOUT
  - ▲ SINGLE AIR VALVE
  - ▲▲ DOUBLE AIR VALVE

HYDRAULIC GRADE (m amsl)	1.000   1368.706   1369.705   0.000.00   1368.710
CHAINAGE (m)	1.000   1368.162   1369.160   0.20.00   1368.162
GROUND LEVEL (m amsl)	1.000   1367.582   1368.580   0.40.00   1367.582
INVERT LEVEL (m amsl)	1.000   1367.001   1368.000   0.60.00   1367.001
TRENCH DEPTH (m)	1.000   1366.420   1367.420   0.80.00   1366.420
STEADY-STATE HEAD (m)	1.000   1365.839   1366.840   1.00.00   1365.839
DESIGN FLOW (l/s)	1.000   1365.258   1366.260   1.20.00   1365.258
OFFTAKE (l/s)	1.000   1364.677   1365.680   1.40.00   1364.677
PIPE DETAILS	1.000   1364.096   1365.100   1.60.00   DN75 PVC-U(B)
BEDDING DETAILS	1.000   1363.515   1364.520   1.80.00   DN63 PVC-U(B)
	1.000   1362.934   1363.940   2.00.00   DN50 PVC-U(B)
	1.000   1362.353   1363.360   2.20.00   DN40 PVC-U(B)
	1.000   1361.772   1362.780   2.40.00   DN20 PVC-U(B)
	1.000   1361.191   1362.200   2.60.00   DN20 PVC-U(B)
	1.000   1360.610   1361.620   2.80.00   DN20 PVC-U(B)
	1.000   1360.029   1361.040   3.00.00   DN20 PVC-U(B)
	1.000   1359.448   1360.460   3.20.00   DN20 PVC-U(B)
	1.000   1358.867   1359.880   3.40.00   DN20 PVC-U(B)
	1.000   1358.286   1359.300   3.60.00   DN20 PVC-U(B)
	1.000   1357.705   1358.720   3.80.00   DN20 PVC-U(B)
	1.000   1357.124   1358.140   4.00.00   DN20 PVC-U(B)
	1.000   1356.543   1357.560   4.20.00   DN20 PVC-U(B)
	1.000   1355.962   1356.980   4.40.00   DN20 PVC-U(B)
	1.000   1355.381   1356.400   4.60.00   DN20 PVC-U(B)
	1.000   1354.800   1355.820   4.80.00   DN20 PVC-U(B)
	1.000   1354.219   1355.240   5.00.00   DN20 PVC-U(B)
	1.000   1353.638   1354.660   5.20.00   DN20 PVC-U(B)
	1.000   1353.057   1354.080   5.40.00   DN20 PVC-U(B)
	1.000   1352.476   1353.500   5.60.00   DN20 PVC-U(B)
	1.000   1351.895   1352.920   5.80.00   DN20 PVC-U(B)
	1.000   1351.314   1352.340   6.00.00   DN20 PVC-U(B)
	1.000   1350.733   1351.760   6.20.00   DN20 PVC-U(B)
	1.000   1350.152   1351.180   6.40.00   DN20 PVC-U(B)
	1.000   1349.571   1350.600   6.60.00   DN20 PVC-U(B)
	1.000   1348.990   1350.020   6.80.00   DN20 PVC-U(B)
	1.000   1348.409   1349.440   7.00.00   DN20 PVC-U(B)
	1.000   1347.828   1348.860   7.20.00   DN20 PVC-U(B)
	1.000   1347.247   1348.280   7.40.00   DN20 PVC-U(B)
	1.000   1346.666   1347.700   7.60.00   DN20 PVC-U(B)
	1.000   1346.085   1347.120   7.80.00   DN20 PVC-U(B)
	1.000   1345.504   1346.540   8.00.00   DN20 PVC-U(B)
	1.000   1344.923   1345.960   8.20.00   DN20 PVC-U(B)
	1.000   1344.342   1345.380   8.40.00   DN20 PVC-U(B)
	1.000   1343.761   1344.800   8.60.00   DN20 PVC-U(B)
	1.000   1343.180   1344.220   8.80.00   DN20 PVC-U(B)
	1.000   1342.599   1343.640   9.00.00   DN20 PVC-U(B)
	1.000   1342.018   1343.060   9.20.00   DN20 PVC-U(B)
	1.000   1341.437   1342.480   9.40.00   DN20 PVC-U(B)
	1.000   1340.856   1341.900   9.60.00   DN20 PVC-U(B)
	1.000   1340.275   1341.320   9.80.00   DN20 PVC-U(B)
	1.000   1339.694   1340.740   10.00.00   DN20 PVC-U(B)
	1.000   1339.113   1340.160   10.20.00   DN20 PVC-U(B)
	1.000   1338.532   1339.580   10.40.00   DN20 PVC-U(B)
	1.000   1337.951   1339.000   10.60.00   DN20 PVC-U(B)
	1.000   1337.370   1338.420   10.80.00   DN20 PVC-U(B)
	1.000   1336.789   1337.840   11.00.00   DN20 PVC-U(B)
	1.000   1336.208   1337.260   11.20.00   DN20 PVC-U(B)
	1.000   1335.627   1336.680   11.40.00   DN20 PVC-U(B)
	1.000   1335.046   1336.100   11.60.00   DN20 PVC-U(B)
	1.000   1334.465   1335.520   11.80.00   DN20 PVC-U(B)
	1.000   1333.884   1334.940   12.00.00   DN20 PVC-U(B)

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

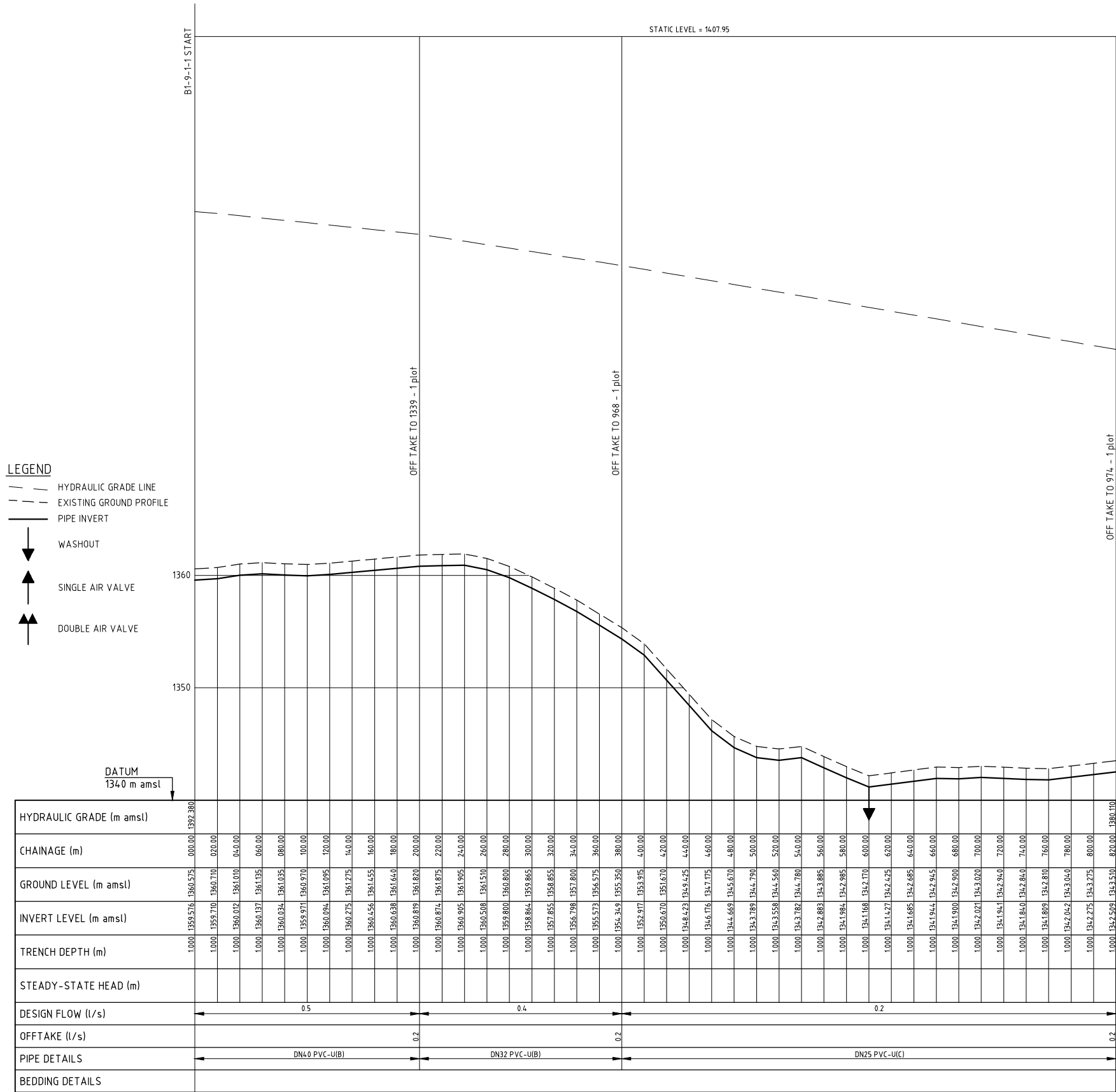
DRG TITLE

B1-9-1 PIPELINE PROFILE

SHEET 1 OF 1

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/413
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200





REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

B1-9-1-1 PIPELINE PROFILE

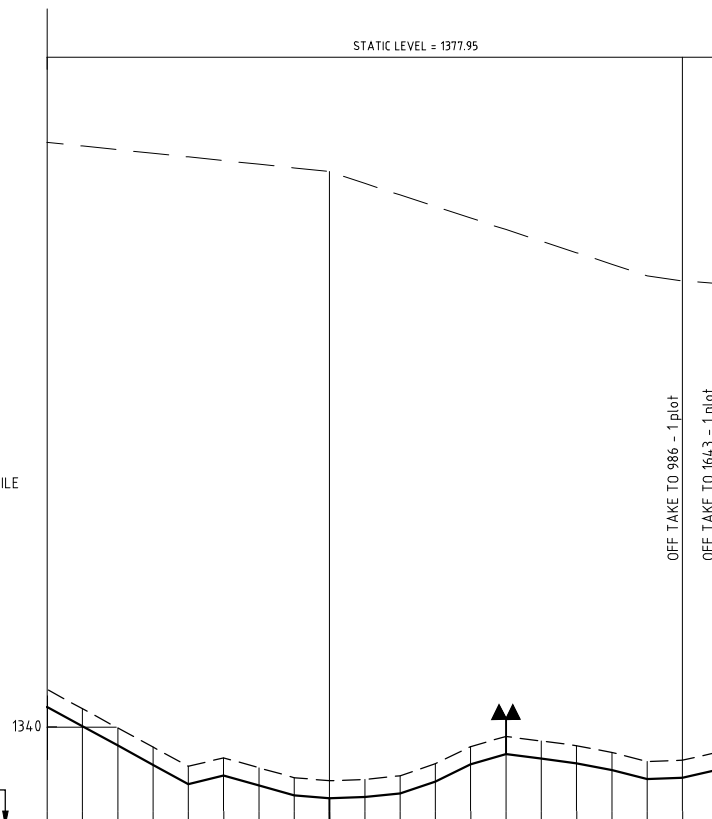
SHEET 1 OF 1

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/414
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200





- LEGEND**
- HYDRAULIC GRADE LINE
  - - - EXISTING GROUND PROFILE
  - PIPE INVERT
  - ↓ WASHOUT
  - ↑ SINGLE AIR VALVE
  - ↑↑ DOUBLE AIR VALVE



HYDRAULIC GRADE (m amsl)	CHAINAGE (m)	GROUND LEVEL (m amsl)	INVERT LEVEL (m amsl)	TRENCH DEPTH (m)	STEADY-STATE HEAD (m)	DESIGN FLOW (l/s)	OFFTAKE (l/s)	PIPE DETAILS	BEDDING DETAILS
1342.00	1420.00	1342.00	1342.00	0.00					
1340.00	1420.00	1340.00	1340.00	0.00					
1338.96	1420.00	1338.96	1338.96	0.00					
1337.87	1460.00	1337.87	1337.87	0.00					
1337.78	1480.00	1337.78	1337.78	0.00					
1337.69	1500.00	1337.69	1337.69	0.00					
1337.60	1520.00	1337.60	1337.60	0.00					
1337.51	1540.00	1337.51	1337.51	0.00					
1337.42	1560.00	1337.42	1337.42	0.00					
1337.33	1580.00	1337.33	1337.33	0.00		0.5			
1337.24	1600.00	1337.24	1337.24	0.00					
1337.15	1620.00	1337.15	1337.15	0.00					
1337.06	1640.00	1337.06	1337.06	0.00					
1336.97	1660.00	1336.97	1336.97	0.00					
1336.88	1680.00	1336.88	1336.88	0.00					
1336.79	1700.00	1336.79	1336.79	0.00					
1336.70	1720.00	1336.70	1336.70	0.00					
1336.61	1740.00	1336.61	1336.61	0.00			0.2	DN25 PVC-U(8)	
1336.52	1760.00	1336.52	1336.52	0.00			0.2	DN25 PVC-U(8)	
1336.43	1780.00	1336.43	1336.43	0.00			0.2	DN25 PVC-U(8)	


REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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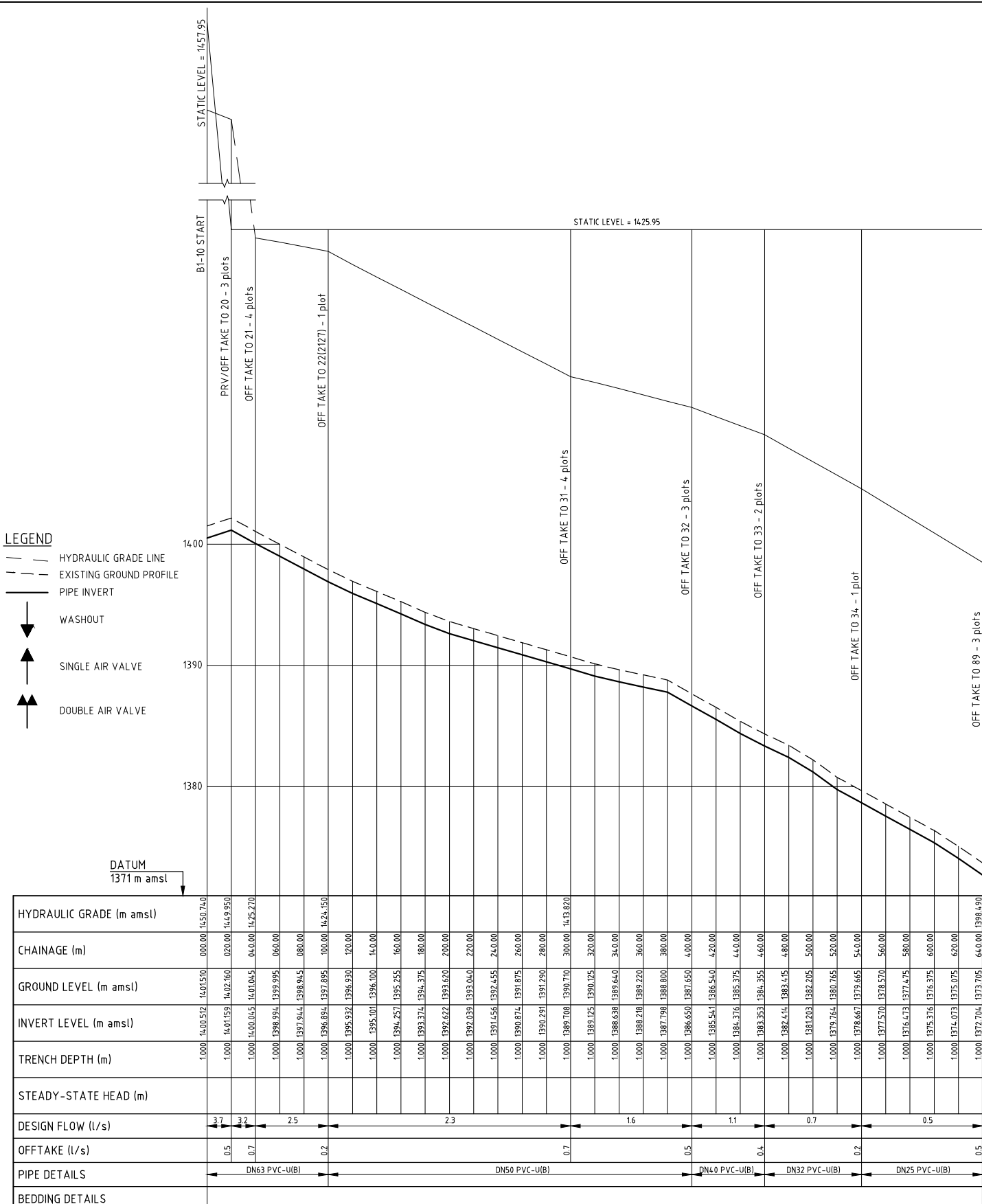
**PROJECT**

**SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)**  
**KIRURI KIAMUJARI IRRIGATION SCHEME**

**DRG TITLE**

**B1-9-3 PIPELINE PROFILE**  
**SHEET 2 OF 2**

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
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Checked:	JON	REV	O
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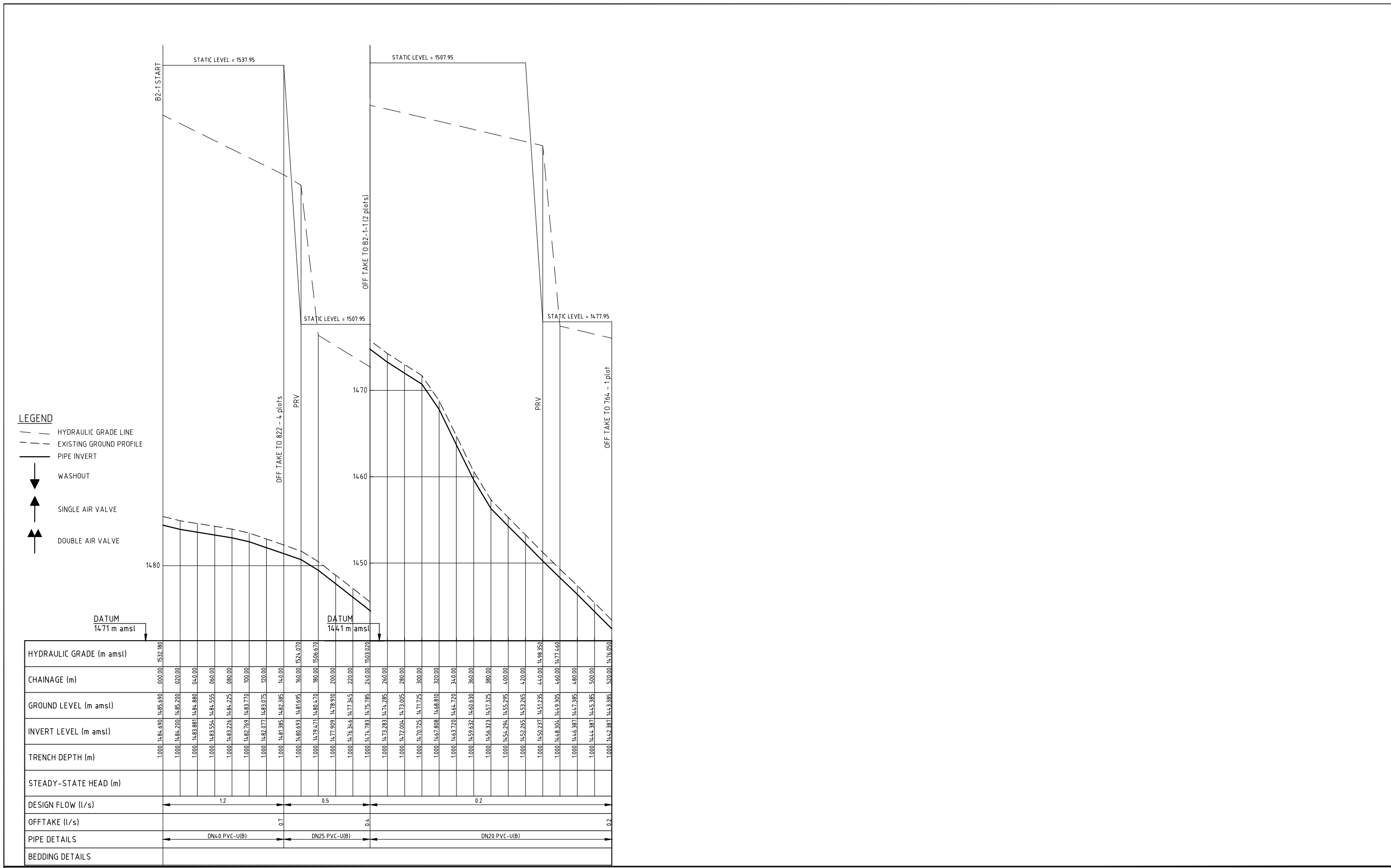
REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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**MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES**

PROJECT  
**SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)**  
**KIRUMI KIAMUJARI IRRIGATION SCHEME**

DRG TITLE		SHEET 1 OF 1	
Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/417
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200



REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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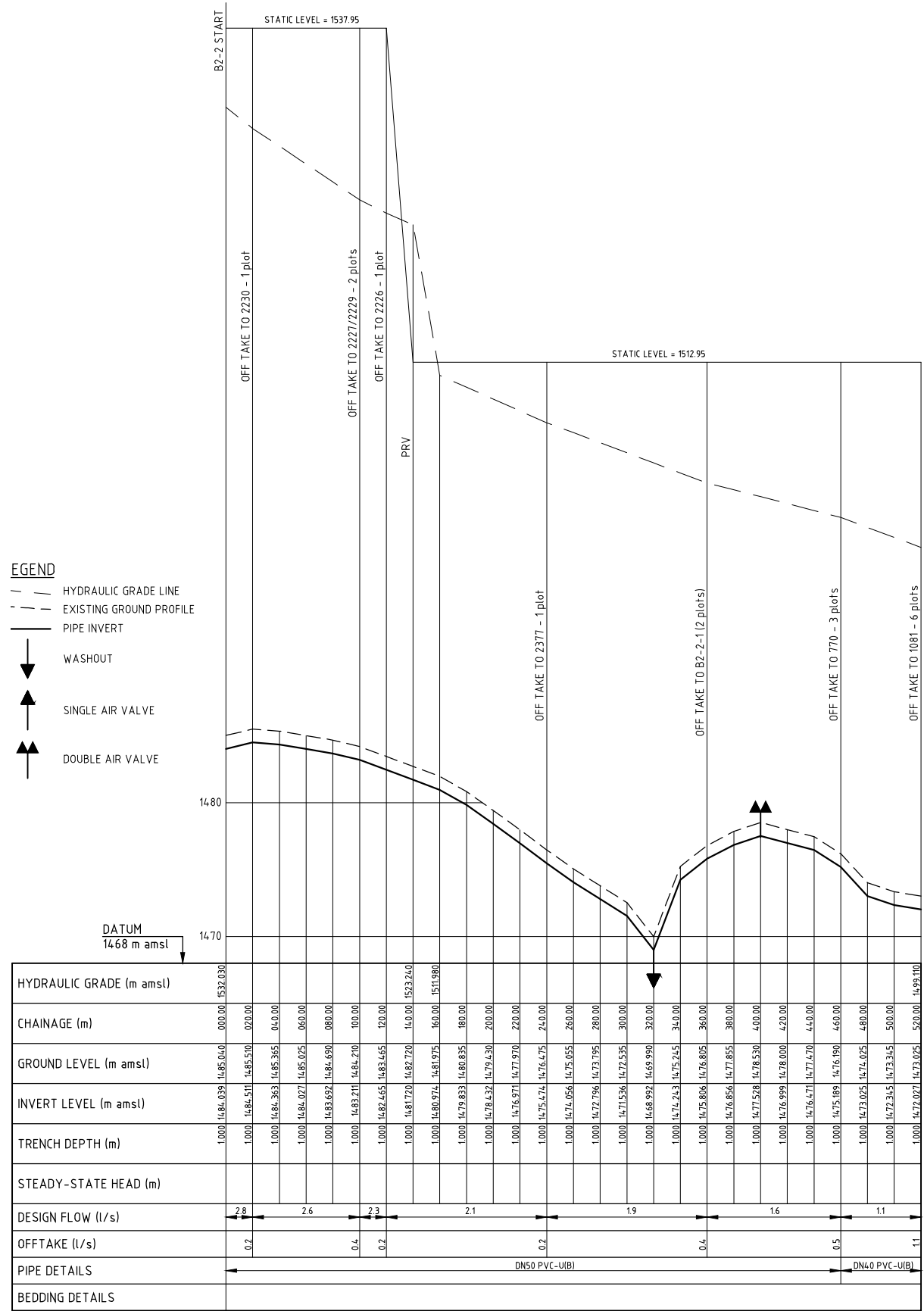


**PROJECT**

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE		Date:		JOB No.	REV
B2-1 PIPELINE PROFILE		JULY 2014	000811	Cad Filename: 00811.cad	
SHEET 1 OF 1		Designed: BM	DRG. No. SHDP/KKIS/DD/418		Scale: H=1:2000, V=1:200
		Drawn: JKN		Checked: JON	
Approved: MBN					



REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

**PROJECT**

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**

B2-2 PIPELINE PROFILE







SHEET 1 OF 1

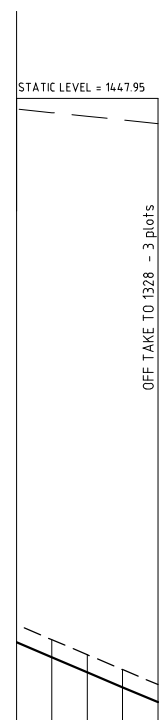
Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/419
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200





**LEGEND**

-  HYDRAULIC GRADE LINE
-  EXISTING GROUND PROFILE
-  PIPE INVERT
-  WASHOUT
-  SINGLE AIR VALVE
-  DOUBLE AIR VALVE



HYDRAULIC GRADE (m amsl)									
CHAINAGE (m)	14.00.00								
GROUND LEVEL (m amsl)	14.18.14.5	14.17.30.0	14.16.45.5	14.15.60.5	14.14.76.0	14.13.91.5	14.13.07.0	14.12.22.5	14.11.38.0
INVERT LEVEL (m amsl)	14.17.14.7	14.16.30.0	14.15.45.3	14.14.60.6	14.13.75.9	14.12.91.2	14.12.06.5	14.11.21.8	14.10.37.1
TRENCH DEPTH (m)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
STEADY-STATE HEAD (m)									
DESIGN FLOW (l/s)	0.5								
OFFTAKE (l/s)	0.5								
PIPE DETAILS	DN40 PVC-U(B)								
BEDDING DETAILS									

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

**CONSULTANT**

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MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

**PROJECT**

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

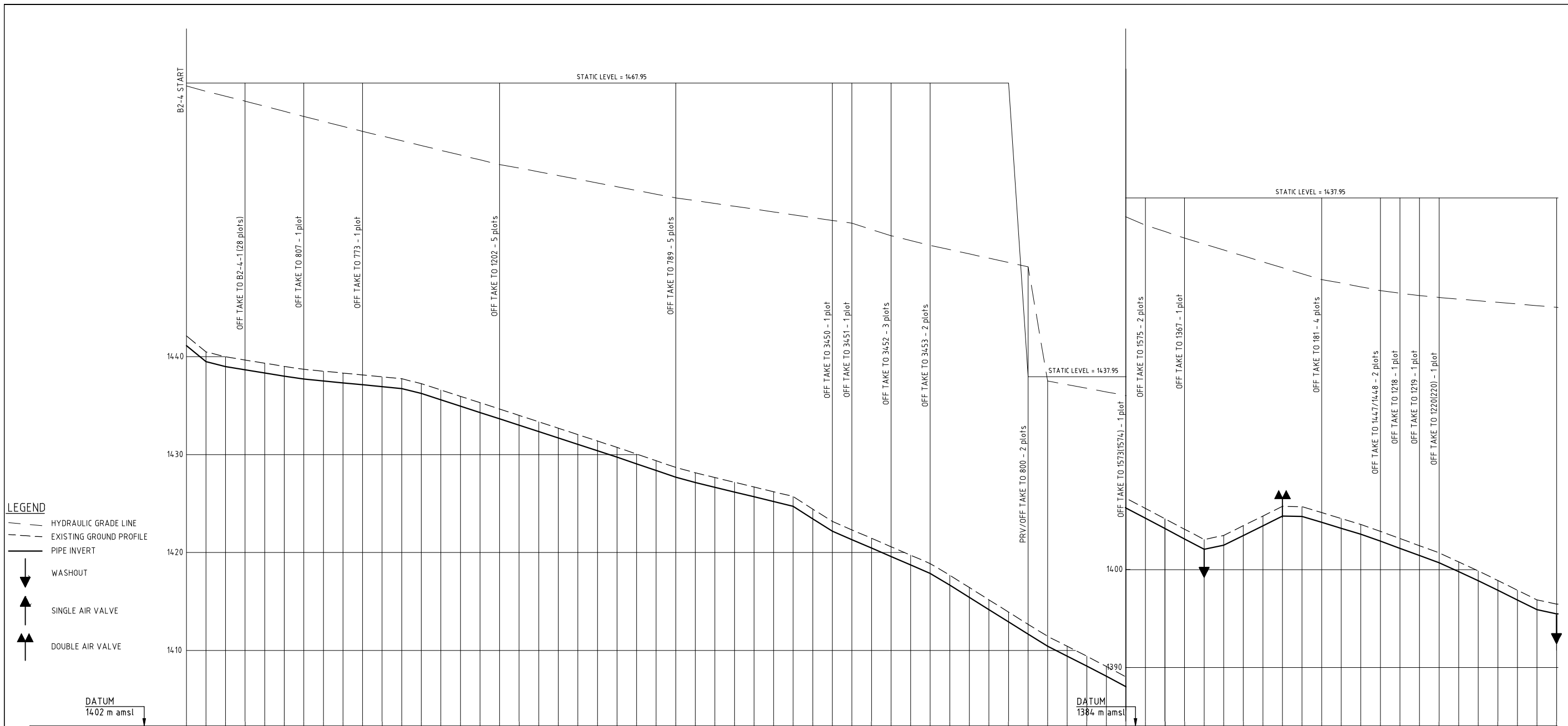
KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**

B2-3 PIPELINE PROFILE

SHEET 2 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/420
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200



- LEGEND**
- HYDRAULIC GRADE LINE
  - EXISTING GROUND PROFILE
  - PIPE INVERT
  - WASHOUT
  - SINGLE AIR VALVE
  - DOUBLE AIR VALVE

HYDRAULIC GRADE (m amsl)	1467.660																					
CHAINAGE (m)	000.00, 14.2130, 028.00, 14.0490, 042.00, 14.3990, 056.00, 14.3990, 070.00, 14.3990, 084.00, 14.3990, 098.00, 14.3990, 112.00, 14.3990, 126.00, 14.3990, 140.00, 14.3990, 154.00, 14.3990, 168.00, 14.3990, 182.00, 14.3990, 196.00, 14.3990, 210.00, 14.3990, 224.00, 14.3990, 238.00, 14.3990, 252.00, 14.3990, 266.00, 14.3990, 280.00, 14.3990, 294.00, 14.3990, 308.00, 14.3990, 322.00, 14.3990, 336.00, 14.3990, 350.00, 14.3990, 364.00, 14.3990, 378.00, 14.3990, 392.00, 14.3990, 406.00, 14.3990, 420.00, 14.3990, 434.00, 14.3990, 448.00, 14.3990, 462.00, 14.3990, 476.00, 14.3990, 490.00, 14.3990, 504.00, 14.3990, 518.00, 14.3990, 532.00, 14.3990, 546.00, 14.3990, 560.00, 14.3990, 574.00, 14.3990, 588.00, 14.3990, 602.00, 14.3990, 616.00, 14.3990, 630.00, 14.3990, 644.00, 14.3990, 658.00, 14.3990, 672.00, 14.3990, 686.00, 14.3990, 700.00, 14.3990, 714.00, 14.3990, 728.00, 14.3990, 742.00, 14.3990, 756.00, 14.3990, 770.00, 14.3990, 784.00, 14.3990, 798.00, 14.3990, 812.00, 14.3990, 826.00, 14.3990, 840.00, 14.3990, 854.00, 14.3990, 868.00, 14.3990, 882.00, 14.3990, 896.00, 14.3990, 910.00, 14.3990, 924.00, 14.3990, 938.00, 14.3990, 952.00, 14.3990, 966.00, 14.3990, 980.00, 14.3990, 994.00, 14.3990, 1008.00, 14.3990, 1022.00, 14.3990, 1036.00, 14.3990, 1050.00, 14.3990, 1064.00, 14.3990, 1078.00, 14.3990, 1092.00, 14.3990, 1106.00, 14.3990, 1120.00, 14.3990, 1134.00, 14.3990, 1148.00, 14.3990, 1162.00, 14.3990, 1176.00, 14.3990, 1190.00, 14.3990, 1204.00, 14.3990, 1218.00, 14.3990, 1232.00, 14.3990, 1246.00, 14.3990, 1260.00, 14.3990, 1274.00, 14.3990, 1288.00, 14.3990, 1302.00, 14.3990, 1316.00, 14.3990, 1330.00, 14.3990, 1344.00, 14.3990, 1358.00, 14.3990, 1372.00, 14.3990, 1386.00, 14.3990, 1400.00																					
GROUND LEVEL (m amsl)	1467.660, 1467.660																					
INVERT LEVEL (m amsl)	1402.00, 1402.00																					
TRENCH DEPTH (m)	1.000, 1.000																					
STEADY-STATE HEAD (m)	1.000, 1.000																					
DESIGN FLOW (l/s)	12.4, 7.5, 7.4, 7.2, 0.9, 0.9, 5.4, 5.3, 5.1, 4.6, 4.2, 3.9, 3.7, 3.3, 3.2, 2.5, 2.1, 1.9, 1.8, 1.6																					
OFFTAKE (l/s)	4.9, 0.2, 0.2, 0.9, 0.9, 0.2, 0.2, 0.5, 0.4, 0.4, 0.2, 0.2, 0.2, 0.2, 0.7, 0.4, 0.2, 0.2, 0.2, 0.2, 0.2																					
PIPE DETAILS	DN110 PVC-U(II), DN90 PVC-U(II), DN75 PVC-U(II), DN63 PVC-U(II)																					
BEDDING DETAILS																						

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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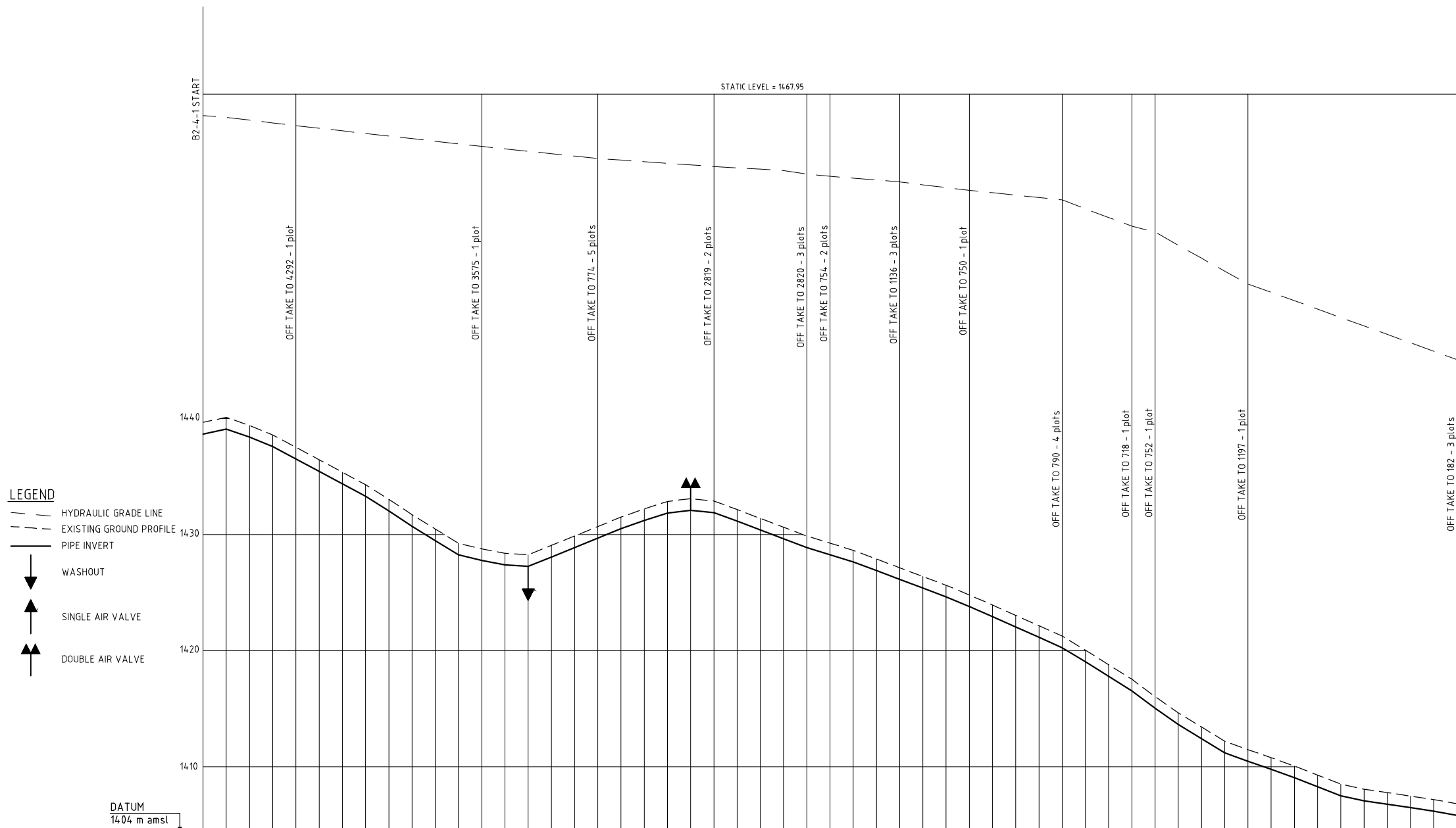
**CLIENT**  
 REPUBLIC OF KENYA  
 MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

**PROJECT**  
 SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
 KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**  
 B2-4 PIPELINE PROFILE  
 SHEET 1 OF 2

Date:	JULY 2014	JOB No:	000811
Designed:	BM	Cad Filename:	00811.cad
Drawn:	JKN	DRG. No.:	SHDP/KKIS/DD/421
Checked:	JON	REV	0
Approved:	MBN	Scale:	H=1:2000, V=1:200





HYDRAULIC GRADE (m amsl)	CHAINAGE (m)	GROUND LEVEL (m amsl)	INVERT LEVEL (m amsl)	TRENCH DEPTH (m)	STEADY-STATE HEAD (m)	DESIGN FLOW (l/s)	OFFTAKE (l/s)	PIPE DETAILS	BEDDING DETAILS
14.66	0.00	14.39	14.38	0.00	1.27	4.9			
14.65	100.00	14.39	14.38	0.00	1.27	4.9			
14.64	200.00	14.39	14.38	0.00	1.27	4.9			
14.63	300.00	14.39	14.38	0.00	1.27	4.9			
14.62	400.00	14.39	14.38	0.00	1.27	4.9			
14.61	500.00	14.39	14.38	0.00	1.27	4.9			
14.60	600.00	14.39	14.38	0.00	1.27	4.9			
14.59	700.00	14.39	14.38	0.00	1.27	4.9			
14.58	800.00	14.39	14.38	0.00	1.27	4.9			
14.57	900.00	14.39	14.38	0.00	1.27	4.9			
14.56	1000.00	14.39	14.38	0.00	1.27	4.9			

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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 MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT  
 SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
 KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE  
 B2-4-1 PIPELINE PROFILE  
 SHEET 1 OF 1

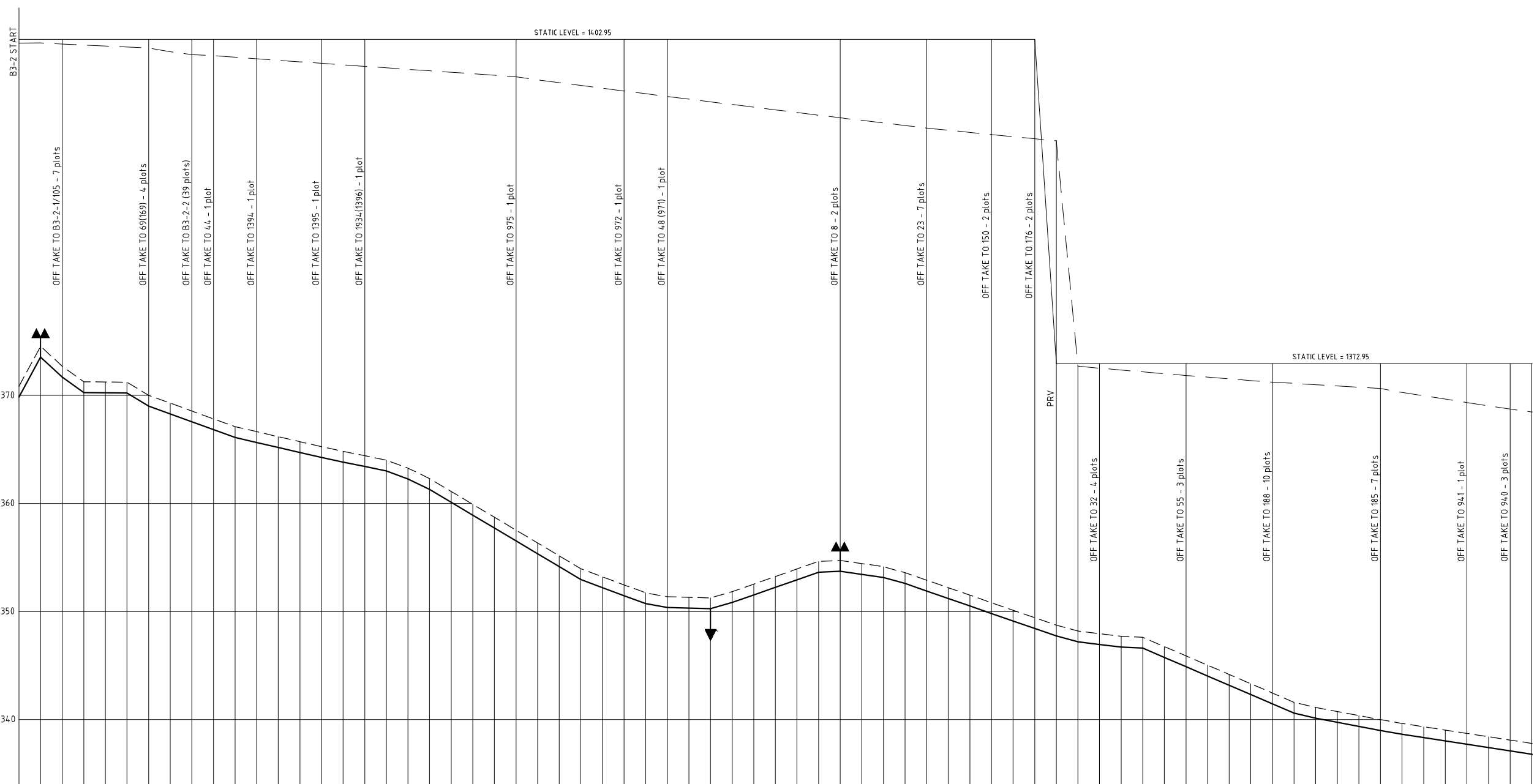
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Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/422
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200





STATIC LEVEL = 1402.95

STATIC LEVEL = 1372.95



- LEGEND**
- HYDRAULIC GRADE LINE
  - - - EXISTING GROUND PROFILE
  - PIPE INVERT
  - ▼ WASHOUT
  - ▲ SINGLE AIR VALVE
  - ▲▲ DOUBLE AIR VALVE

DATUM  
1333 m amsl

HYDRAULIC GRADE (m amsl)	CHAINAGE (m)	GROUND LEVEL (m amsl)	INVERT LEVEL (m amsl)	TRENCH DEPTH (m)	STEADY-STATE HEAD (m)	DESIGN FLOW (l/s)	OFFTAKE (l/s)	PIPE DETAILS	BEDDING DETAILS
1402.95	0.00	1370.835	1370.835	0.00					
1370.835	0.00	1370.835	1370.835	0.00		26.1	1.2	DN200 PVC-U(B)	
1370.835	0.00	1370.835	1370.835	0.00		24.9	0.7		
1370.835	0.00	1370.835	1370.835	0.00		17.3	0.2		
1370.835	0.00	1370.835	1370.835	0.00		17.2	0.2		
1370.835	0.00	1370.835	1370.835	0.00		17.0	0.2	DN160 PVC-U(B)	
1370.835	0.00	1370.835	1370.835	0.00		16.8	0.2		
1370.835	0.00	1370.835	1370.835	0.00		16.6	0.2		
1370.835	0.00	1370.835	1370.835	0.00		16.5	0.2		
1370.835	0.00	1370.835	1370.835	0.00		16.3	0.2		
1370.835	0.00	1370.835	1370.835	0.00		16.1	0.4		
1370.835	0.00	1370.835	1370.835	0.00		15.8	1.2	DN140 PVC-U(B)	
1370.835	0.00	1370.835	1370.835	0.00		14.5	0.4		
1370.835	0.00	1370.835	1370.835	0.00		14.2	0.4		
1370.835	0.00	1370.835	1370.835	0.00		13.8	0.7		
1370.835	0.00	1370.835	1370.835	0.00		13.1	0.5		
1370.835	0.00	1370.835	1370.835	0.00		12.6	1.8		
1370.835	0.00	1370.835	1370.835	0.00		10.9	1.2		
1370.835	0.00	1370.835	1370.835	0.00		9.6	0.2	DN110 PVC-U(B)	
1370.835	0.00	1370.835	1370.835	0.00		9.5	0.5		
1370.835	0.00	1370.835	1370.835	0.00		8.9			

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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PROJECT

SMALL SCALE HORTICULTURE  
DEVELOPMENT PROJECT (SHDP)

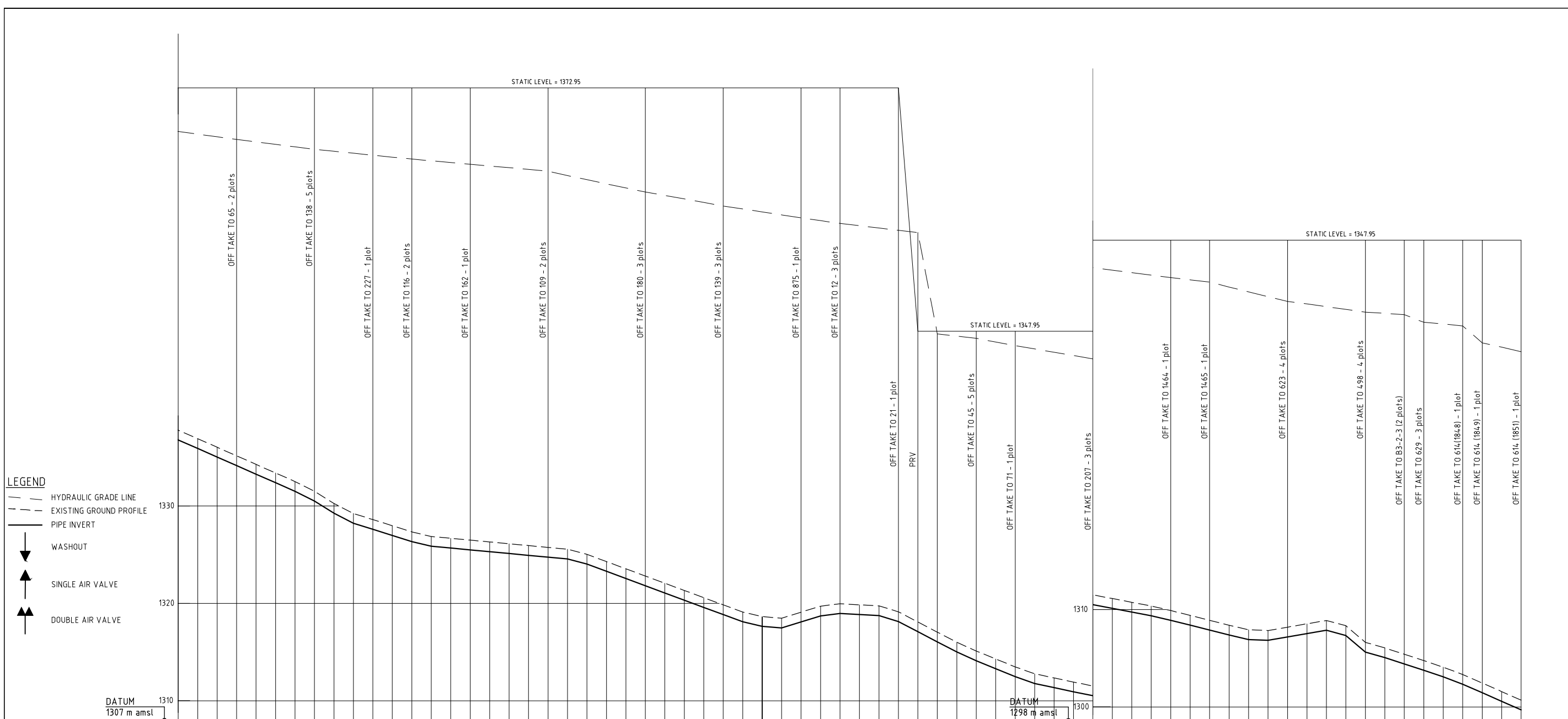
KIRUMI KIAMUJARI  
IRRIGATION SCHEME

DRG TITLE

B3-2 PIPELINE PROFILE

SHEET 1 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/425
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200



**LEGEND**

- - -	HYDRAULIC GRADE LINE
- - -	EXISTING GROUND PROFILE
—	PIPE INVERT
↓	WASHOUT
↑	SINGLE AIR VALVE
↑↑	DOUBLE AIR VALVE

	DATUM 1310 1307 m amsl			DATUM 1300 1298 m amsl		
HYDRAULIC GRADE (m amsl)	1336.796	1337.795	1420.000	1330.796	1331.795	1420.000
CHAINAGE (m)	0.00	1336.920	1420.000	0.00	1336.920	1420.000
GROUND LEVEL (m amsl)	1336.000	1335.160	1460.000	1335.000	1334.200	1460.000
INVERT LEVEL (m amsl)	1334.500	1333.400	1500.000	1333.500	1332.500	1500.000
TRENCH DEPTH (m)	0.500	0.400	0.600	0.500	0.400	0.600
STEADY-STATE HEAD (m)	1.000	1.000	1.000	1.000	1.000	1.000
DESIGN FLOW (l/s)	8.9	8.6	7.7	7.5	7.2	7.0
OFFTAKE (l/s)	0.4	0.3	0.2	0.4	0.2	0.2
PIPE DETAILS	DN110 PVC-U(II)		DN90 PVC-U(II)		DN75 PVC-U(II)	
BEDDING DETAILS	DN110 PVC-U(II)		DN90 PVC-U(II)		DN75 PVC-U(II)	

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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REPUBLIC OF KENYA



MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

**PROJECT**

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**

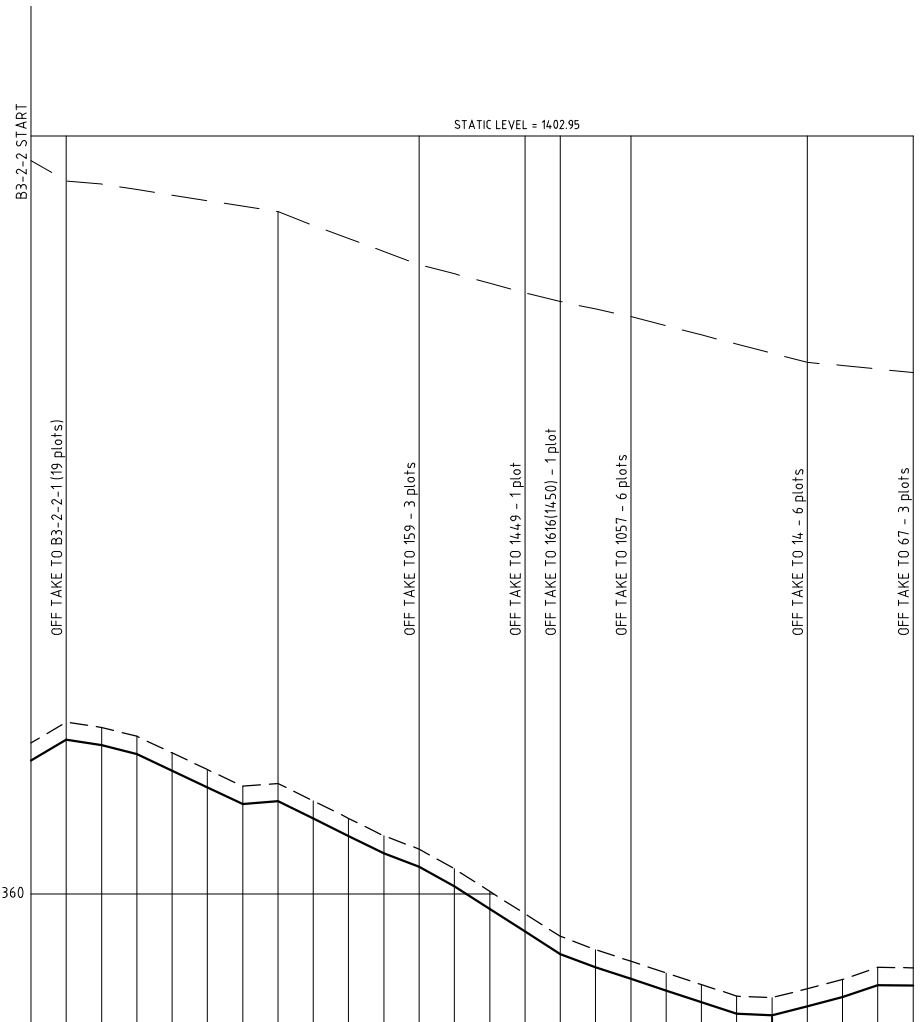
B3-2 PIPELINE PROFILE

SHEET 2 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	080811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/425
Checked:	JON	REV	0
Approved:	MBN	Scale:	H=1:2000, V=1:200



- LEGEND**
- HYDRAULIC GRADE LINE
  - EXISTING GROUND PROFILE
  - PIPE INVERT
  - WASHOUT
  - SINGLE AIR VALVE
  - DOUBLE AIR VALVE



HYDRAULIC GRADE (m amsl)	1401.540	1367.557	1368.555	0.000	1401.540
CHAINAGE (m)	0.00	0.20	0.20	0.20	0.20
GROUND LEVEL (m amsl)	1368.555	1369.730	1369.435	1368.930	1367.985
INVERT LEVEL (m amsl)	1367.557	1368.555	1368.555	1368.555	1368.555
TRENCH DEPTH (m)	1.000	1.000	1.000	1.000	1.000
STEADY-STATE HEAD (m)					
DESIGN FLOW (l/s)	6.8	3.3	35	3.0	2.8
OFFTAKE (l/s)				0.5	0.2
PIPE DETAILS	DN75 PVC-U(B)		DN63 PVC-U(B)		DN50 PVC-U(B)
BEDDING DETAILS					

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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**PROJECT**

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

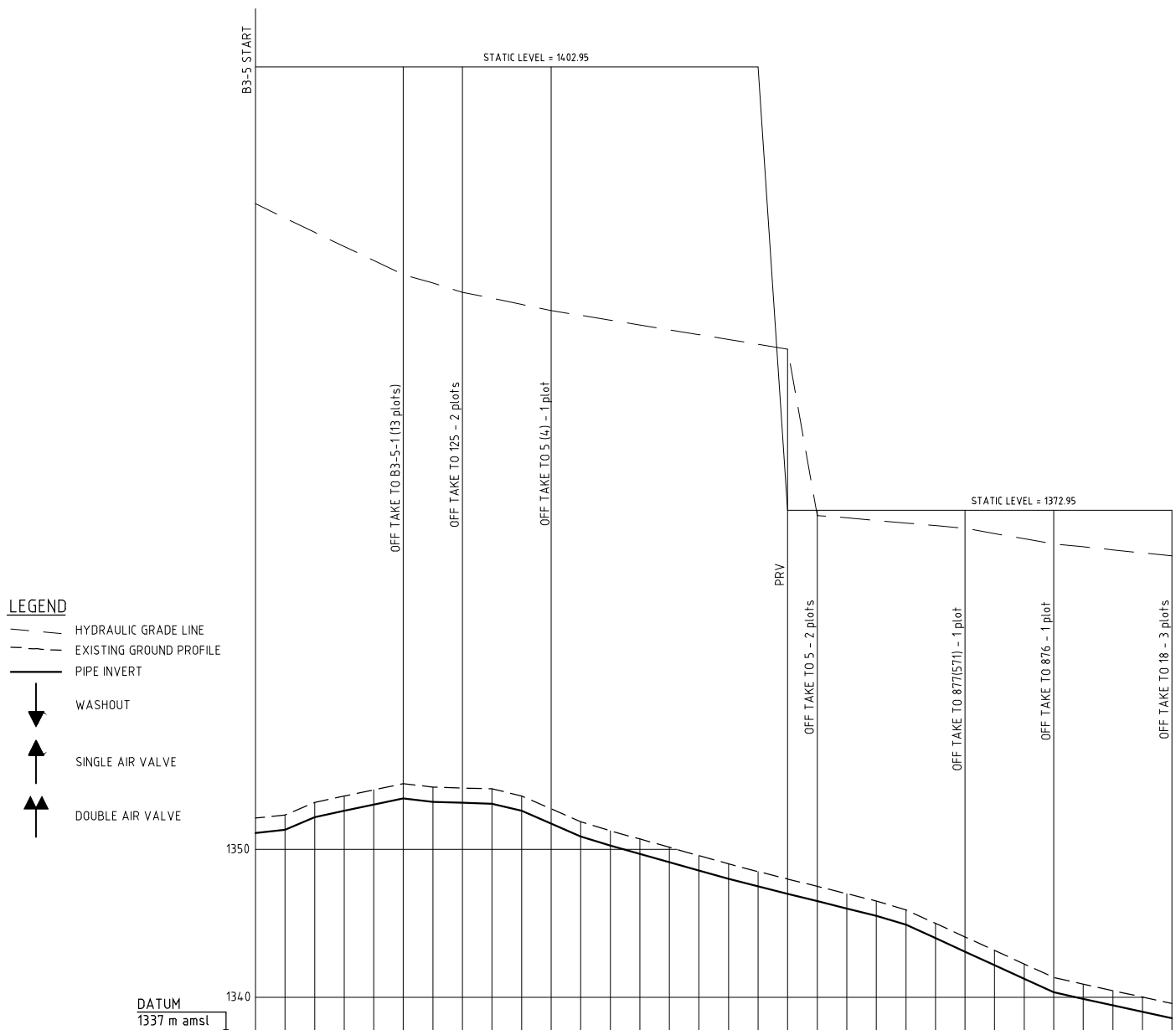
**DRG TITLE**

B3-2-2 PIPELINE PROFILE

SHEET 1 OF 1

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/426
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200





- LEGEND**
- HYDRAULIC GRADE LINE
  - EXISTING GROUND PROFILE
  - PIPE INVERT
  - WASHOUT
  - SINGLE AIR VALVE
  - DOUBLE AIR VALVE

HYDRAULIC GRADE (m amsl)	1350.00	1351.021	1352.120	1352.000	1353.699
CHAINAGE (m)	0.00	320.00	640.00	960.00	1280.00
GROUND LEVEL (m amsl)	1352.120	1352.335	1353.075	1353.610	1354.030
INVERT LEVEL (m amsl)	1351.021	1352.120	1353.445	1354.220	1354.160
TRENCH DEPTH (m)	1.100	1.215	0.630	0.410	0.870
STEADY-STATE HEAD (m)					
DESIGN FLOW (l/s)		4.0	18	14	12
OFFTAKE (l/s)		2.3	0.4	0.2	0.4
PIPE DETAILS	DN63 PVC-U(B)		DN50 PVC-U(B)		
BEDDING DETAILS					

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

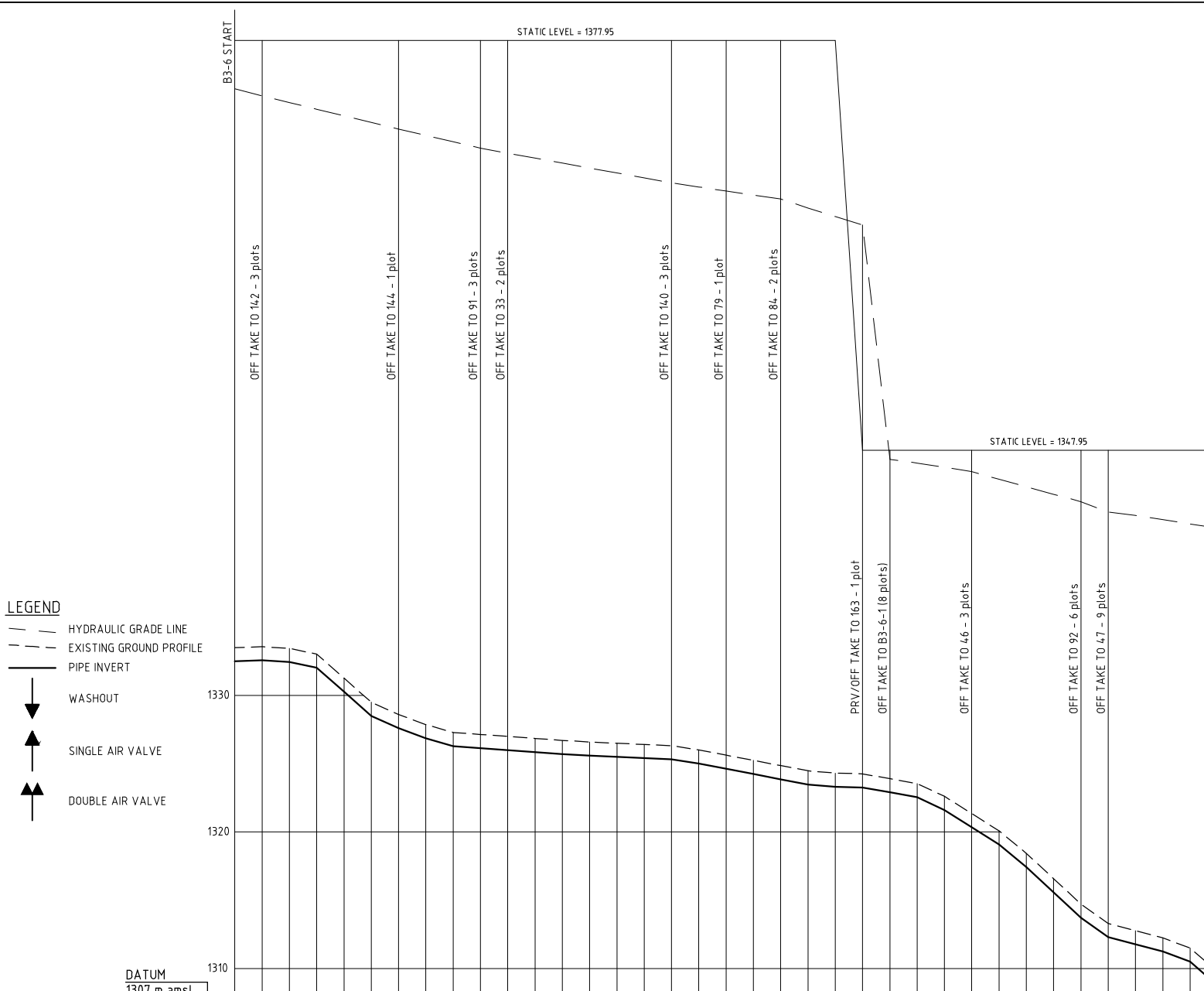
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

B3-5 PIPELINE PROFILE

SHEET 1 OF 1

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/428
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200



CHAINAGE (m)	GROUND LEVEL (m amsl)	INVERT LEVEL (m amsl)	TRENCH DEPTH (m)	STEADY-STATE HEAD (m)	DESIGN FLOW (l/s)	OFFTAKE (l/s)	PIPE DETAILS	BEDDING DETAILS
0.00	1333.490	1332.488	1.000		7.7	0.5	DN90 PVC-U(B)	
0.20	1333.560	1332.559	1.000					
0.40	1333.440	1332.440	1.000		7.2			
0.60	1333.015	1332.017	1.000					
0.80	1331.255	1330.256	1.000					
1.00	1329.495	1328.495	1.000					
1.20	1328.595	1327.594	1.000		7.0	0.2		
1.40	1327.860	1327.860	1.000					
1.60	1327.280	1327.280	1.000					
1.80	1327.135	1326.135	1.000		6.5	0.5		
2.00	1326.950	1326.950	1.000			0.4		
2.20	1326.845	1326.845	1.000					
2.40	1326.700	1326.700	1.000		6.1			
2.60	1326.585	1326.585	1.000					
2.80	1326.490	1326.490	1.000					
3.00	1326.400	1326.400	1.000					
3.20	1326.310	1326.310	1.000			0.5		
3.40	1326.005	1326.005	1.000		5.6			
3.60	1325.620	1325.620	1.000			0.2		
3.80	1325.240	1325.240	1.000		5.4			
4.00	1324.855	1324.855	1.000			0.4		
4.20	1324.470	1324.470	1.000					
4.40	1324.305	1324.305	1.000		5.1			
4.60	1324.255	1324.255	1.000			0.2		
4.80	1324.095	1324.095	1.000		4.9	1.4	DN75 PVC-U(B)	
5.00	1323.535	1323.535	1.000					
5.20	1323.605	1322.605	1.000		3.5			
5.40	1321.340	1321.340	1.000			0.5		
5.60	1320.880	1320.880	1.000		3.0		DN63 PVC-U(B)	
5.80	1318.430	1317.432	1.000					
6.00	1316.575	1315.574	1.000			1.1	DN50 PVC-U(B)	
6.20	1314.715	1313.717	1.000			1.6	DN50 PVC-U(B)	
6.40	1313.290	1312.291	1.000		19			
6.60	1312.770	1311.768	1.000					
6.80	1312.245	1311.246	1.000		0.4		DN32 PVC-U(B)	
7.00	1311.490	1310.492	1.000					
7.20	1309.760	1308.760	1.000					
7.40	1308.240	1307.240	1.000					

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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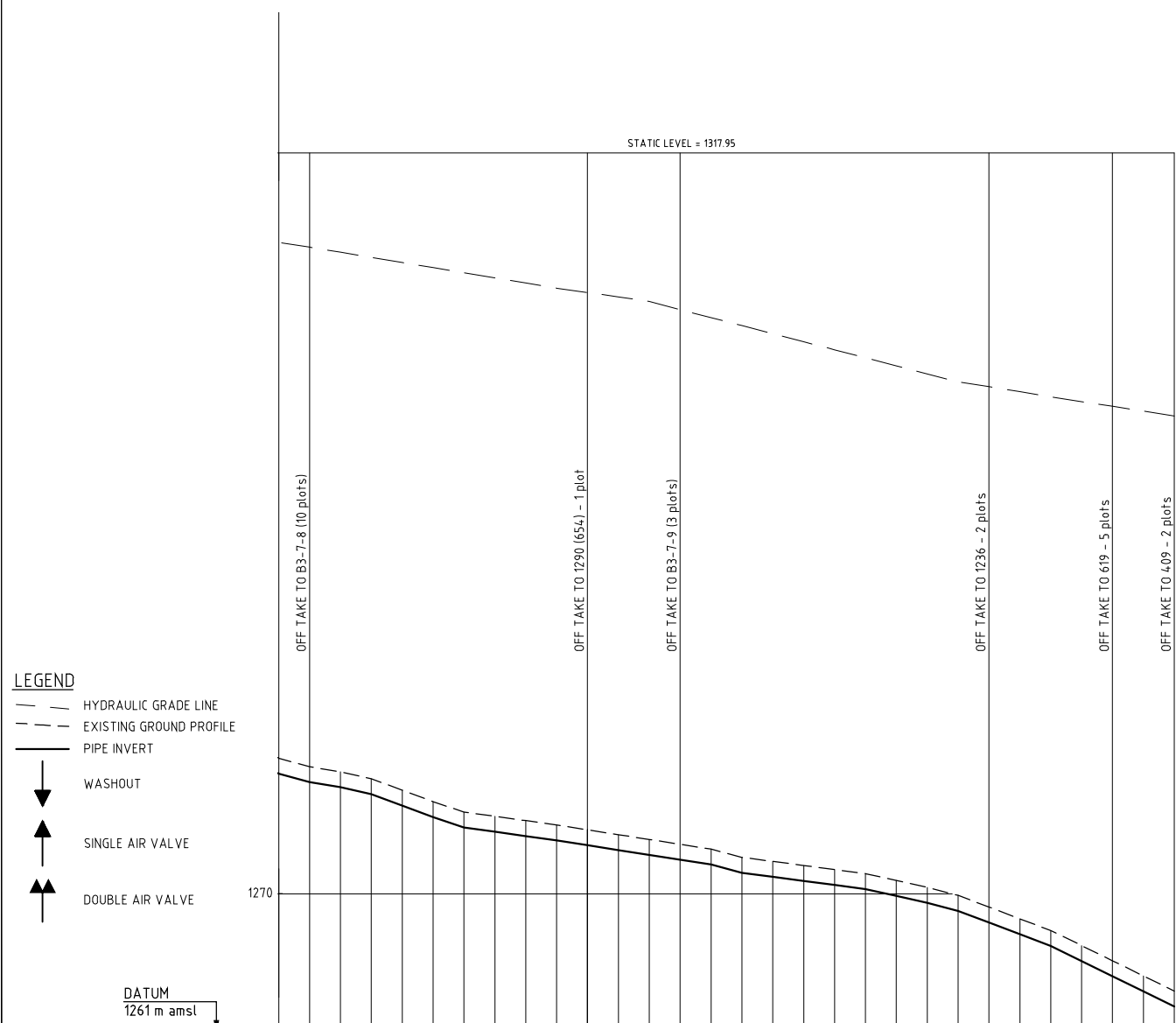
PROJECT  
 SMALL SCALE HORTICULTURE  
 DEVELOPMENT PROJECT (SHDP)  
 KIRUMI KIAMUJARI  
 IRRIGATION SCHEME

DRG TITLE  
 B3-6 PIPELINE PROFILE  
 SHEET 1 OF 1

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/429
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200







- LEGEND**
- HYDRAULIC GRADE LINE
  - - - EXISTING GROUND PROFILE
  - PIPE INVERT
  - ▼ WASHOUT
  - ▲ SINGLE AIR VALVE
  - ▲▲ DOUBLE AIR VALVE

DATUM  
1261 m amsl

HYDRAULIC GRADE (m amsl)	1270																															
CHAINAGE (m)	2800.00	2820.00	2840.00	2860.00	2880.00	2900.00	2920.00	2940.00	2960.00	2980.00	3000.00	3020.00	3040.00	3060.00	3080.00	3100.00	3120.00	3140.00	3160.00	3180.00	3200.00	3220.00	3240.00	3260.00	3280.00	3300.00	3320.00	3340.00	3360.00			
GROUND LEVEL (m amsl)	1277.780	1278.780	1278.230	1277.900	1277.555	1276.710	1275.965	1275.300	1274.008	1273.739	1273.458	1273.165	1272.832	1272.519	1272.207	1271.894	1271.563	1271.099	1270.835	1270.572	1270.308	1269.876	1269.421	1268.892	1268.184	1266.626	1265.451	1264.671	1263.690	1262.710	1261.980	
INVERT LEVEL (m amsl)	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780	1277.780		
TRENCH DEPTH (m)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
STEADY-STATE HEAD (m)																																
DESIGN FLOW (l/s)	4.0	2.3					2.1					1.6					1.2					0.3										
OFFTAKE (l/s)	18						0.2					0.5										0.9	0.3									
PIPE DETAILS	DN75 PVC-U(B)		DN63 PVC-U(B)										DN50 PVC-U(B)										DN32 PVC-U(B)									
BEDDING DETAILS																																

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

CONSULTANT

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CLIENT



REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

B3-7 PIPELINE PROFILE

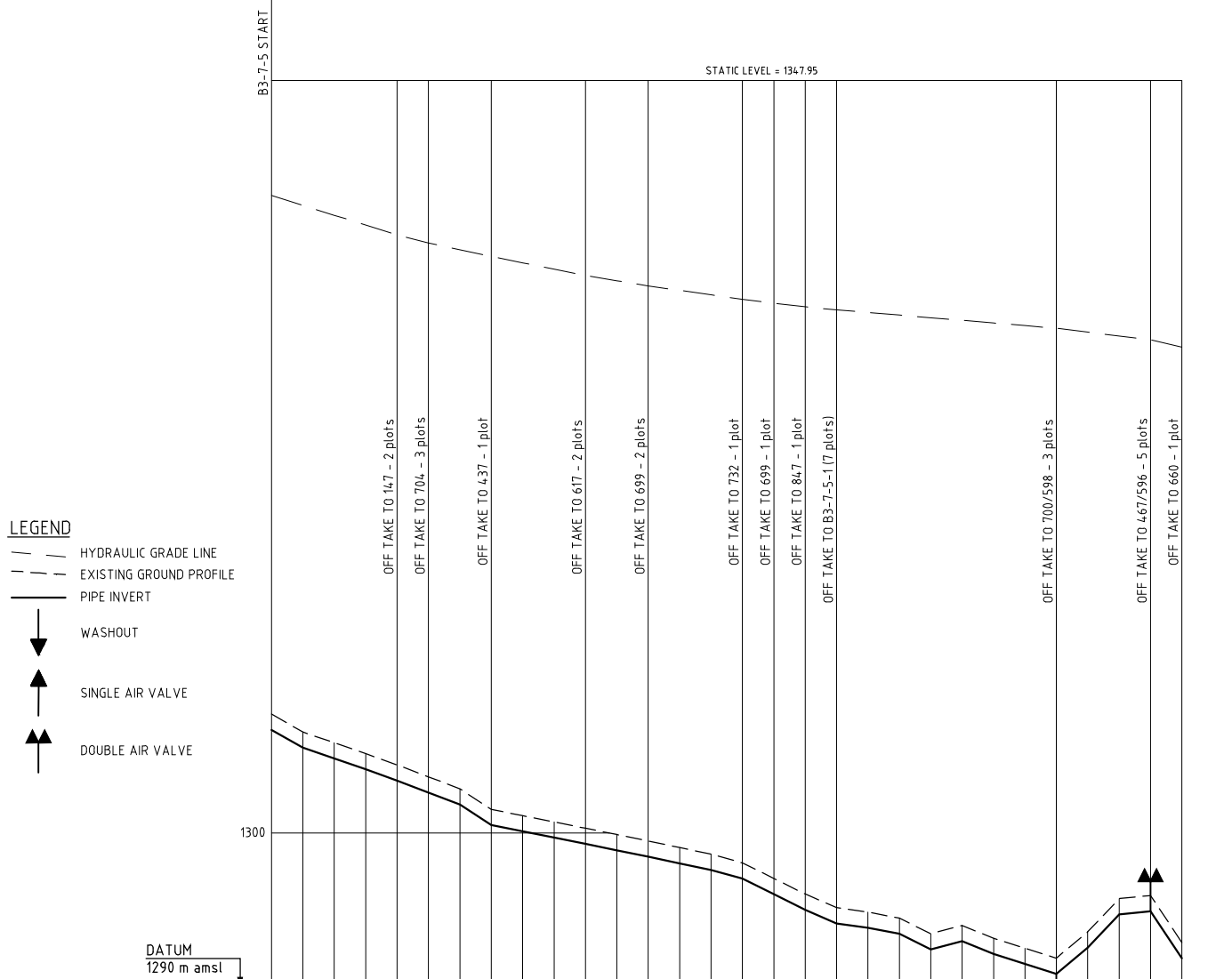
SHEET 3 OF 3

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/430
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200









HYDRAULIC GRADE (m amsl)	CHAINAGE (m)	GROUND LEVEL (m amsl)	INVERT LEVEL (m amsl)	TRENCH DEPTH (m)	STEADY-STATE HEAD (m)	DESIGN FLOW (l/s)	OFFTAKE (l/s)	PIPE DETAILS	BEDDING DETAILS
1340.640	0.00	1307.575	1306.576	1.000					
1336.435	0.20	1306.435	1305.437	1.000		5.1			
1305.750	0.40	1305.750	1304.748	1.000			0.4		
1305.060	0.60	1305.060	1304.058	1.000			0.5		
1304.340	0.80	1304.340	1303.340	1.000					
1303.580	1.00	1303.580	1302.582	1.000					
1302.875	1.20	1302.875	1301.823	1.000					
1301.505	1.40	1301.505	1300.507	1.000					
1301.05	1.60	1301.05	1300.066	1.000					
1300.705	1.80	1300.705	1299.706	1.000					
1300.305	2.00	1300.305	1299.305	1.000			0.4		
1299.905	2.20	1299.905	1298.905	1.000					
1299.450	2.40	1299.450	1298.489	1.000			0.4		
1299.070	2.60	1299.070	1298.071	1.000					
1298.655	2.80	1298.655	1297.653	1.000					
1298.095	3.00	1298.095	1297.097	1.000			0.2		
1297.105	3.20	1297.105	1296.105	1.000			0.2		
1296.115	3.40	1296.115	1295.114	1.000			0.2		
1294.740	3.60	1294.740	1293.742	1.000			1.2		
1294.560	3.80	1294.560	1293.961	1.000					
1294.575	4.00	1294.575	1293.576	1.000					
1293.585	4.20	1293.585	1292.585	1.000					
1294.115	4.40	1294.115	1293.115	1.000		16			
1293.286	4.60	1293.286	1292.286	1.000					
1292.660	4.80	1292.660	1291.658	1.000					
1292.030	5.00	1292.030	1291.031	1.000			0.3		
1293.700	5.20	1293.700	1292.701	1.000					
1295.870	5.40	1295.870	1294.872	1.000		11			
1296.020	5.60	1296.020	1295.021	1.000			0.9		
1293.020	5.80	1293.020	1293.018	1.000		0.2			
1330.960	5.80	1330.960	1330.960	0.000					

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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Website: www.gibbafrika.com

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REPUBLIC OF KENYA  
MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

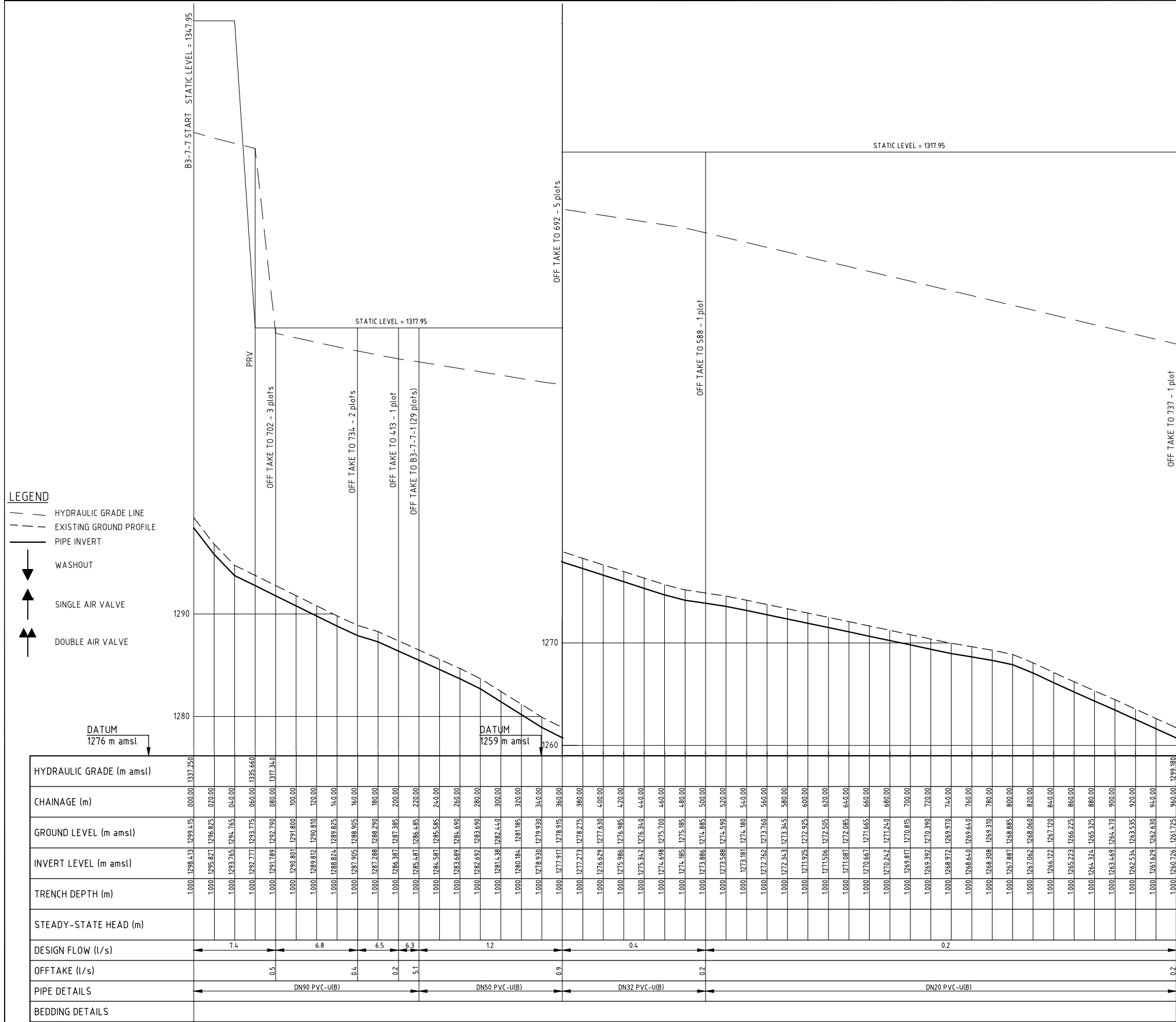
PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
KIRURI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

B3-7-5 PIPELINE PROFILE  
SHEET 1 OF 1

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/433
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200



- LEGEND**
- HYDRAULIC GRADE LINE
  - - - EXISTING GROUND PROFILE
  - ..... PIPE INVERT
  - ↓ WASHOUT
  - ↑ SINGLE AIR VALVE
  - ↑↑ DOUBLE AIR VALVE

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

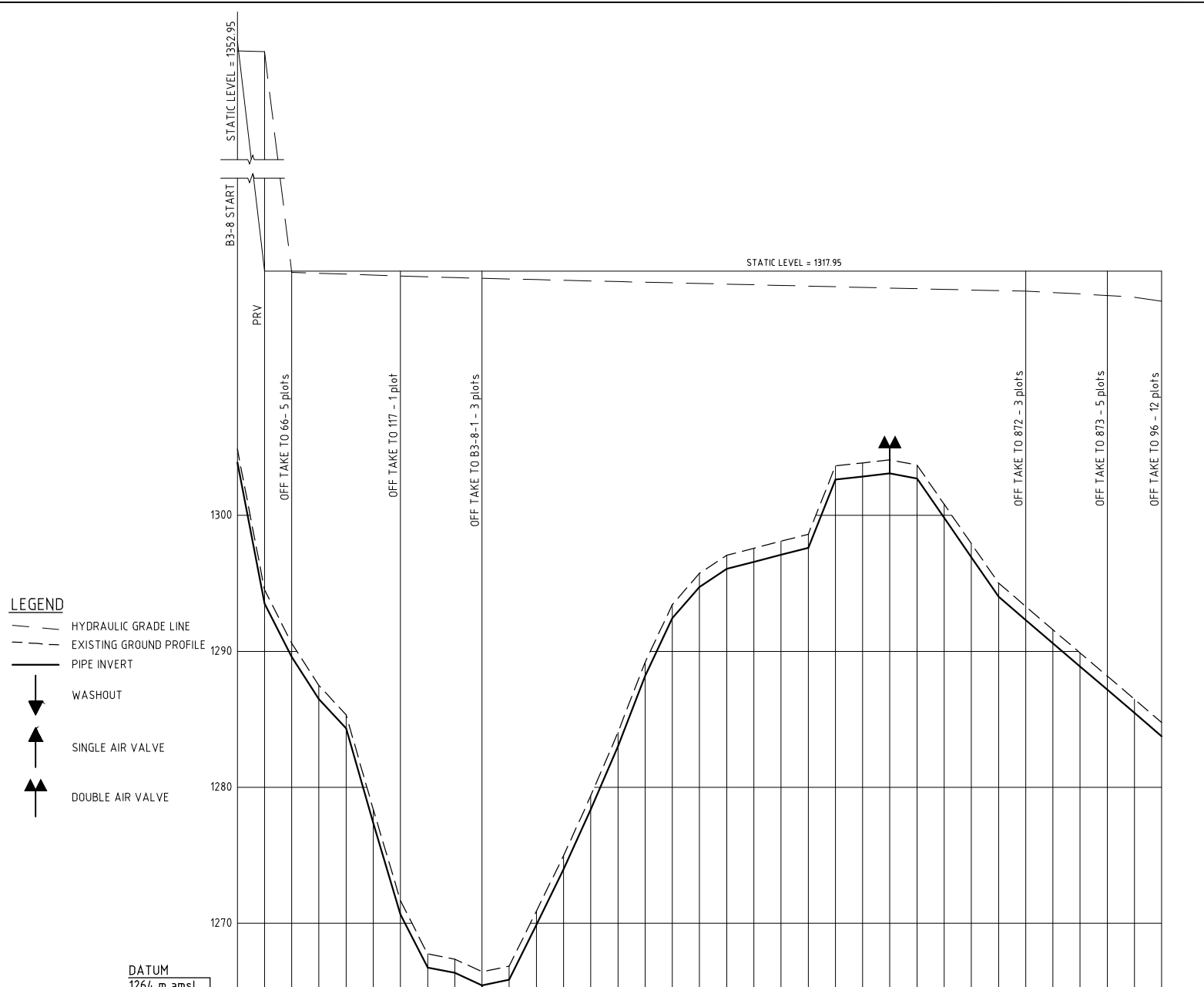
DRG TITLE

B3-7-7 PIPELINE PROFILE

SHEET 1 OF 1

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/434
Checked:	JON	REV	O
Approved:	MBN		
Scale:	H=1:2000, V=1:200		





HYDRAULIC GRADE (m amsl)	1352.260	1352.160	1317.830	1266.435	1266.845	1270.900	1274.975	1279.375	1284.035	1289.190	1293.440	1295.130	1297.065	1297.580	1298.095	1298.615	1303.630	1303.855	1304.080	1303.710	1300.815	1297.920	1295.025	1293.300	1291.590	1289.885	1288.180	1286.470	1284.760	1315.770							
CHAINAGE (m)	0.00	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00	2.20	2.40	2.60	2.80	3.00	3.20	3.40	3.60	3.80	4.00	4.20	4.40	4.60	4.80	5.00	5.20	5.40	5.60	5.80	6.00	6.20	6.40	6.60	6.80		
GROUND LEVEL (m amsl)	1304.880	1294.515	1290.590	1287.490	1285.325	1278.365	1271.665	1267.750	1267.360	1266.435	1266.845	1270.900	1274.975	1279.375	1284.035	1289.190	1293.440	1295.130	1297.065	1297.580	1298.095	1298.615	1303.630	1303.855	1304.080	1303.710	1300.815	1297.920	1295.025	1293.300	1291.590	1289.885	1288.180	1286.470	1284.760		
INVERT LEVEL (m amsl)	1303.880	1293.517	1289.589	1286.490	1285.325	1277.363	1270.665	1266.750	1266.362	1265.435	1265.845	1269.900	1273.974	1278.374	1283.035	1288.190	1292.439	1294.130	1296.063	1296.579	1297.094	1297.609	1298.124	1303.139	1303.364	1303.589	1303.210	1299.313	1296.418	1294.693	1292.978	1291.263	1289.548	1287.833	1286.118	1284.403	
TRENCH DEPTH (m)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
STEADY-STATE HEAD (m)																																					
DESIGN FLOW (l/s)		5.1		4.2		4.0									3.5																						
OFFTAKE (l/s)		0.9				0.2				0.5																											
PIPE DETAILS		DN110 PVC-U(B)															DN90 PVC-U(B)					DN75 PVC-U(B)															
BEDDING DETAILS																																					

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

**CONSULTANT**

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 Website: www.gibbafrika.com

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 MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES



**PROJECT**

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
 KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**

B3-8 PIPELINE PROFILE  
 SHEET 1 OF 1

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG. No.	SHDP/KKIS/DD/436
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000, V=1:200









STATIC = 1287.95

HGL

OFFTAKE TO 74.1 - 4 PLOTS

OFFTAKE TO 599 - 2 PLOTS

**LEGEND**

-  HYDRAULIC GRADE LINE
-  EXISTING GROUND PROFILE
-  PIPE INVERT
-  WASHOUT
-  SINGLE AIR VALVE
-  DOUBLE AIR VALVE

DATUM  
1240 m amsl

HYDRAULIC GRADE (m amsl)						
CHAINAGE (m)	1400.00	1420.00	1440.00	1460.00	1480.00	1500.00
GROUND LEVEL (m amsl)	1251.980	1249.760	1247.665	1245.790	1243.915	1242.020
INVERT LEVEL (m amsl)	1250.980	1248.761	1246.663	1244.790	1242.917	1241.019
TRENCH DEPTH (m)	1.000	1.000	1.000	1.000	1.000	1.000
STEADY-STATE HEAD (m)						
DESIGN FLOW (l/s)	1.1		0.4			
OFFTAKE (l/s)	0.7		0.4			
PIPE DETAILS	DN63 PVC-UI(B)		DN32 PVC-UI(B)			
BEDDING DETAILS						


REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

B4-1 PIPELINE PROFILE

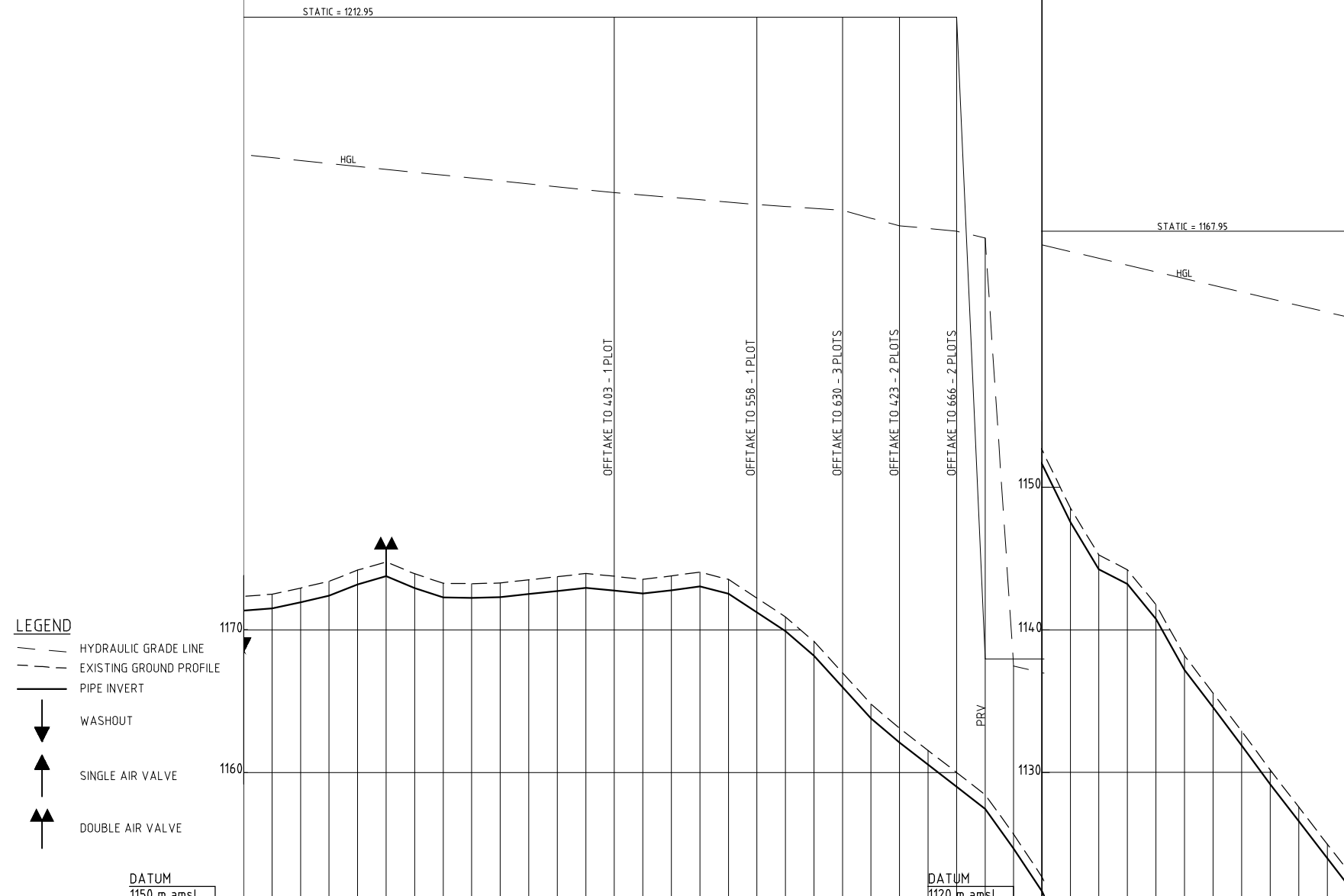
SHEET 2 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.Cad
Drawn:	WKM	DRG No.	KKIS/DD/437
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000 V=1:200









- LEGEND**
- HYDRAULIC GRADE LINE
  - EXISTING GROUND PROFILE
  - PIPE INVERT
  - WASHOUT
  - SINGLE AIR VALVE
  - DOUBLE AIR VALVE

HYDRAULIC GRADE (m amsl)	1171.353	1172.355	2800.00	1171.496	1172.495	2820.00	1171.932	1172.930	2840.00	1172.400	1173.400	2860.00	1173.185	1174.185	2880.00	1173.760	1174.760	2900.00	1172.929	1173.930	2920.00	1172.266	1173.265	2940.00	1172.234	1173.235	2960.00	1172.285	1173.285	2980.00	1172.505	1173.505	3000.00	1172.505	1173.505	3000.00	1172.726	1173.725	3020.00	1172.946	1173.945	3040.00	1172.757	1173.755	3060.00	1172.539	1173.540	3080.00	1172.776	1173.775	3100.00	1173.051	1174.050	3120.00	1172.632	1173.630	3140.00	1171.221	1172.220	3160.00	1169.910	1170.910	3180.00	1168.185	1169.185	3200.00	1165.989	1166.990	3220.00	1163.793	1164.795	3240.00	1162.094	1163.095	3260.00	1160.546	1161.545	3280.00	1158.998	1160.000	3300.00	1157.449	1158.450	3320.00	1154.674	1155.675	3340.00	1151.651	1152.650	3360.00	1147.543	1148.545	3380.00	1144.245	1145.245	3400.00	1143.216	1144.215	3420.00	1140.769	1141.770	3440.00	1137.185	1138.185	3460.00	1134.565	1135.565	3480.00	1131.895	1132.895	3500.00	1129.174	1130.175	3520.00	1126.575	1127.575	3540.00	1123.977	1124.975	3560.00	1121.379	1122.380	3580.00
CHAINAGE (m)																																																																																																																											
GROUND LEVEL (m amsl)																																																																																																																											
INVERT LEVEL (m amsl)																																																																																																																											
TRENCH DEPTH (m)																																																																																																																											
STEADY-STATE HEAD (m)																																																																																																																											
DESIGN FLOW (l/s)	18																		16		14	9	0.5	0.2																																																																																																			
OFFTAKE (l/s)																			0.2		0.2		0.5	0.4	0.4														0.2																																																																																				
PIPE DETAILS	DN63 PVC-U(B)																																																																																																																										
BEDDING DETAILS																																																																																																																											

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE


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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

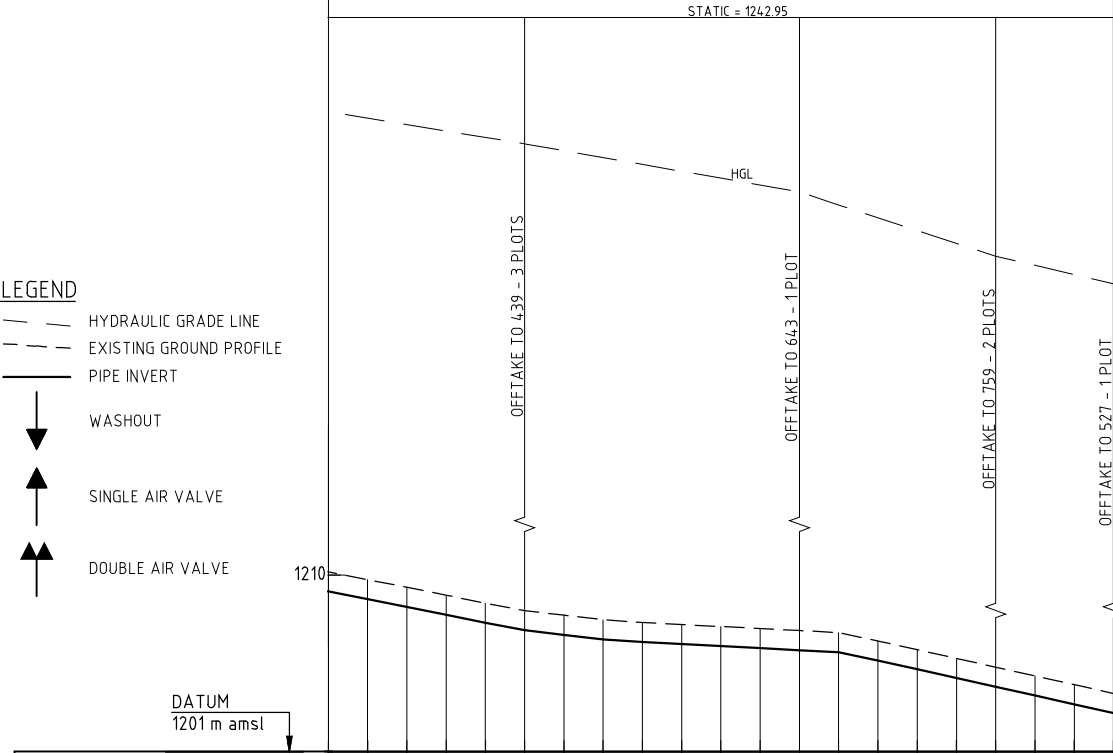
B4-2 PIPELINE PROFILE

SHEET 3 OF 3

Date:	JULY 2014	JOB No.	000811
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Drawn:	WKM	DRG No.	KKIS/DD/438
Checked:	JON	REV	O
Approved:	MBN		
Scale:	H=1:2000 V=1:200		



- LEGEND**
- HYDRAULIC GRADE LINE
  - EXISTING GROUND PROFILE
  - PIPE INVERT
  - WASHOUT
  - SINGLE AIR VALVE
  - DOUBLE AIR VALVE



	1400.00	1420.00	1440.00	1460.00	1480.00	1500.00	1520.00	1540.00	1560.00	1580.00	1600.00	1620.00	1640.00	1660.00	1680.00	1700.00	1720.00	1740.00	1760.00	1780.00	1800.00
HYDRAULIC GRADE (m amsl)	1205.113	1205.718	1206.382	1207.086	1207.825	1208.604	1209.428	1210.292	1211.199	1212.154	1213.161	1214.224	1215.347	1216.524	1217.759	1219.057	1220.412	1221.818	1223.270	1224.772	1226.319
CHAINAGE (m)	1400.00	1420.00	1440.00	1460.00	1480.00	1500.00	1520.00	1540.00	1560.00	1580.00	1600.00	1620.00	1640.00	1660.00	1680.00	1700.00	1720.00	1740.00	1760.00	1780.00	1800.00
GROUND LEVEL (m amsl)	1205.113	1205.718	1206.382	1207.086	1207.825	1208.604	1209.428	1210.292	1211.199	1212.154	1213.161	1214.224	1215.347	1216.524	1217.759	1219.057	1220.412	1221.818	1223.270	1224.772	1226.319
INVERT LEVEL (m amsl)	1205.113	1205.718	1206.382	1207.086	1207.825	1208.604	1209.428	1210.292	1211.199	1212.154	1213.161	1214.224	1215.347	1216.524	1217.759	1219.057	1220.412	1221.818	1223.270	1224.772	1226.319
TRENCH DEPTH (m)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
STEADY-STATE HEAD (m)																					
DESIGN FLOW (l/s)			1.2					0.7						0.5							0.2
OFFTAKE (l/s)						0.5							0.2							0.4	0.2
PIPE DETAILS			DN50 PVC-U(B)				DN40 PVC-U(B)				DN32 PVC-U(B)				DN20 PVC-U(B)						
BEDDING DETAILS																					

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
KIRUMI KIAMUJARI IRRIGATION SCHEME







DRG TITLE

B4-2-1 PIPELINE PROFILE  
SHEET 2 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811\Cad\
Drawn:	WKM	DRG No.	KKIS/DD/439
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000 V=1:200

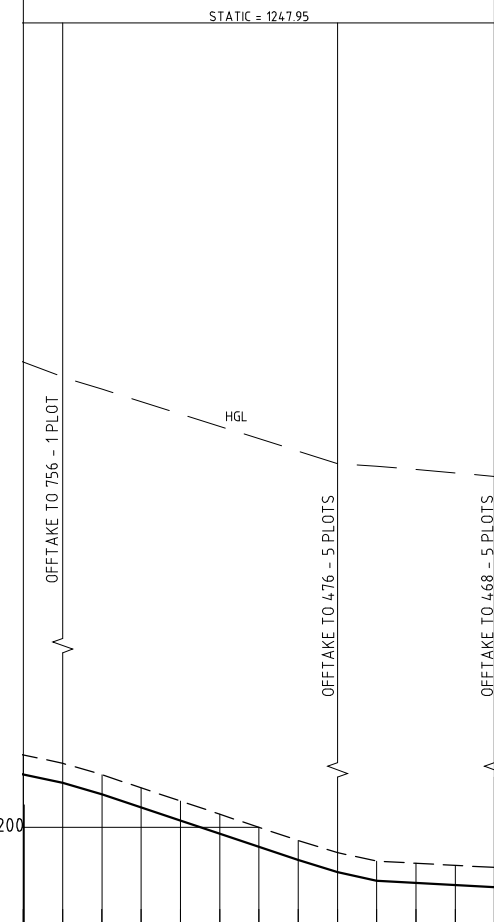


**LEGEND**

-  HYDRAULIC GRADE LINE
-  EXISTING GROUND PROFILE
-  PIPE INVERT
-  WASHOUT
-  SINGLE AIR VALVE
-  DOUBLE AIR VALVE

DATUM  
1195 m amsl

HYDRAULIC GRADE (m amsl)		
CHAINAGE (m)	1420.00	1640.00
GROUND LEVEL (m amsl)	1202.265	1197.955
INVERT LEVEL (m amsl)	1202.265	1197.955
TRENCH DEPTH (m)	0.000	0.000
STEADY-STATE HEAD (m)		
DESIGN FLOW (l/s)	1.9	0.9
OFFTAKE (l/s)	0.2	0.9
PIPE DETAILS	DN50 PVC-U(B)	
BEDDING DETAILS		



REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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MINISTRY OF  
AGRICULTURE,  
LIVESTOCK &  
FISHERIES

PROJECT

SMALL SCALE HORTICULTURE  
DEVELOPMENT PROJECT (SHDP)

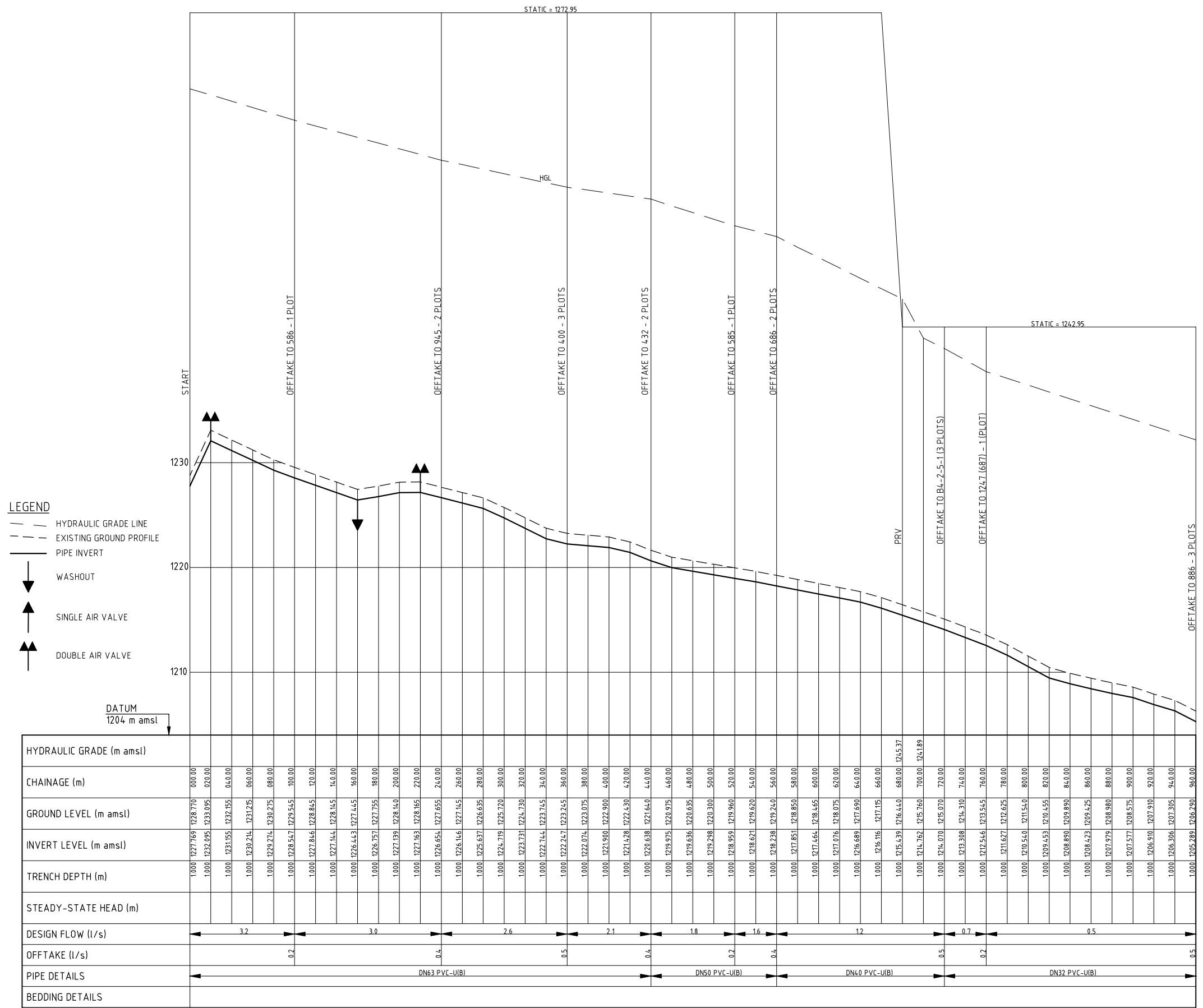
KIRUMI KIAMUJARI  
IRRIGATION SCHEME

DRG TITLE

B4-2-3 PIPELINE PROFILE

SHEET 2 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	0081m.Cad
Drawn:	WKM	DRG No.	KKIS/DD/440
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000 V=1:200



- LEGEND**
- HYDRAULIC GRADE LINE
  - - - EXISTING GROUND PROFILE
  - PIPE INVERT
  - ▼ WASHOUT
  - ▲ SINGLE AIR VALVE
  - ▲▲ DOUBLE AIR VALVE

	0+00	0+100	0+200	0+300	0+400	0+500	0+600	0+700	0+800	0+900	0+960	
HYDRAULIC GRADE (m amsl)	1228.710	1228.710	1228.710	1228.710	1228.710	1228.710	1228.710	1228.710	1228.710	1228.710	1228.710	
CHAINAGE (m)	0.00	100.00	200.00	300.00	400.00	500.00	600.00	700.00	800.00	900.00	960.00	
GROUND LEVEL (m amsl)	1233.095	1233.095	1233.095	1233.095	1233.095	1233.095	1233.095	1233.095	1233.095	1233.095	1233.095	
INVERT LEVEL (m amsl)	1228.710	1228.710	1228.710	1228.710	1228.710	1228.710	1228.710	1228.710	1228.710	1228.710	1228.710	
TRENCH DEPTH (m)	5.385	5.385	5.385	5.385	5.385	5.385	5.385	5.385	5.385	5.385	5.385	
STEADY-STATE HEAD (m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
DESIGN FLOW (l/s)	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	
OFFTAKE (l/s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PIPE DETAILS	DN63 PVC-U(B)			DN50 PVC-U(B)			DN40 PVC-U(B)			DN32 PVC-U(B)		
BEDDING DETAILS												

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

B4-2-5 PIPELINE PROFILE

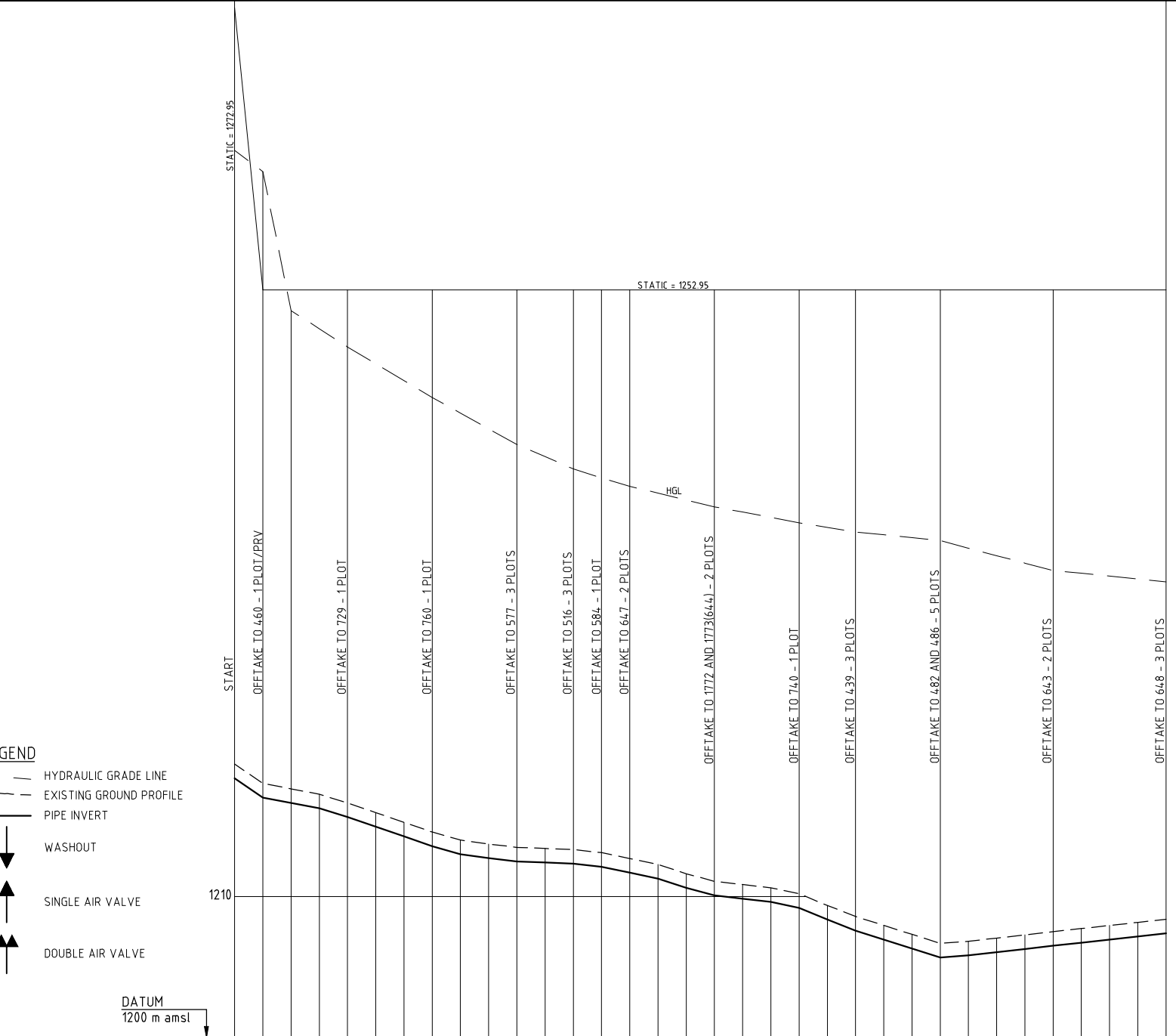
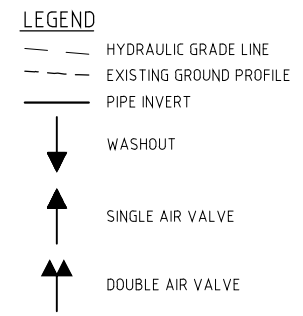
SHEET 1 OF 1

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	000811.cad
Drawn:	WKM	DRG No.	KKIS/DD/441
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000 V=1:200









HYDRAULIC GRADE (m amsl)	CHAINAGE (m)	GROUND LEVEL (m amsl)	INVERT LEVEL (m amsl)	TRENCH DEPTH (m)	STEADY-STATE HEAD (m)	DESIGN FLOW (l/s)	OFFTAKE (l/s)	PIPE DETAILS	BEDDING DETAILS
1261.34	0.00	1219.375	1219.375	0.00		4.9	0.2	DN63 PVC-U(B)	
1251.49	0.20	1218.005	1218.005	0.20		4.7	0.2		
	0.40	1217.624	1217.624	0.40		4.6	0.2	DN63 PVC-U(B)	
	0.60	1217.240	1217.240	0.60		4.4	0.2		
	0.80	1216.855	1216.855	0.80		4.4	0.2	DN63 PVC-U(B)	
	1.00	1216.470	1216.470	1.00		3.9	0.2		
	1.20	1216.085	1216.085	1.20		3.9	0.2	DN63 PVC-U(B)	
	1.40	1215.700	1215.700	1.40		3.3	0.2		
	1.60	1215.315	1215.315	1.60		3.2	0.2	DN63 PVC-U(B)	
	1.80	1214.930	1214.930	1.80		2.8	0.2		
	2.00	1214.545	1214.545	2.00		2.8	0.2	DN63 PVC-U(B)	
	2.20	1214.160	1214.160	2.20		2.5	0.2		
	2.40	1213.775	1213.775	2.40		2.5	0.2	DN63 PVC-U(B)	
	2.60	1213.390	1213.390	2.60		2.3	0.2		
	2.80	1213.005	1213.005	2.80		2.3	0.2	DN63 PVC-U(B)	
	3.00	1212.620	1212.620	3.00		1.8	0.2		
	3.20	1212.235	1212.235	3.20		1.8	0.2	DN63 PVC-U(B)	
	3.40	1211.850	1211.850	3.40		0.9	0.2		
	3.60	1211.465	1211.465	3.60		0.9	0.2	DN63 PVC-U(B)	
	3.80	1211.080	1211.080	3.80		0.9	0.2		
	4.00	1210.695	1210.695	4.00		0.9	0.2	DN63 PVC-U(B)	
	4.20	1210.310	1210.310	4.20		0.5	0.2		
	4.40	1209.925	1209.925	4.40		0.5	0.2	DN63 PVC-U(B)	
	4.60	1209.540	1209.540	4.60		0.5	0.2		
	4.80	1209.155	1209.155	4.80		0.5	0.2	DN63 PVC-U(B)	
	5.00	1208.770	1208.770	5.00		0.5	0.2		
	5.20	1208.385	1208.385	5.20		0.5	0.2	DN63 PVC-U(B)	
	5.40	1208.000	1208.000	5.40		0.5	0.2		
	5.60	1207.615	1207.615	5.60		0.5	0.2	DN63 PVC-U(B)	
	5.80	1207.230	1207.230	5.80		0.5	0.2		
	6.00	1206.845	1206.845	6.00		0.5	0.2	DN63 PVC-U(B)	
	6.20	1206.460	1206.460	6.20		0.5	0.2		
	6.40	1206.075	1206.075	6.40		0.5	0.2	DN63 PVC-U(B)	
	6.60	1205.690	1205.690	6.60		0.5	0.2		

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

**PROJECT**

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**

B4-6 PIPELINE PROFILE

SHEET 1 OF 1

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	0001/cad
Drawn:	WKM	DRG No.	KKIS/DD/444
Checked:	JON	REV	O
Approved:	MBN		
Scale:	H=1:2000 V=1:200		



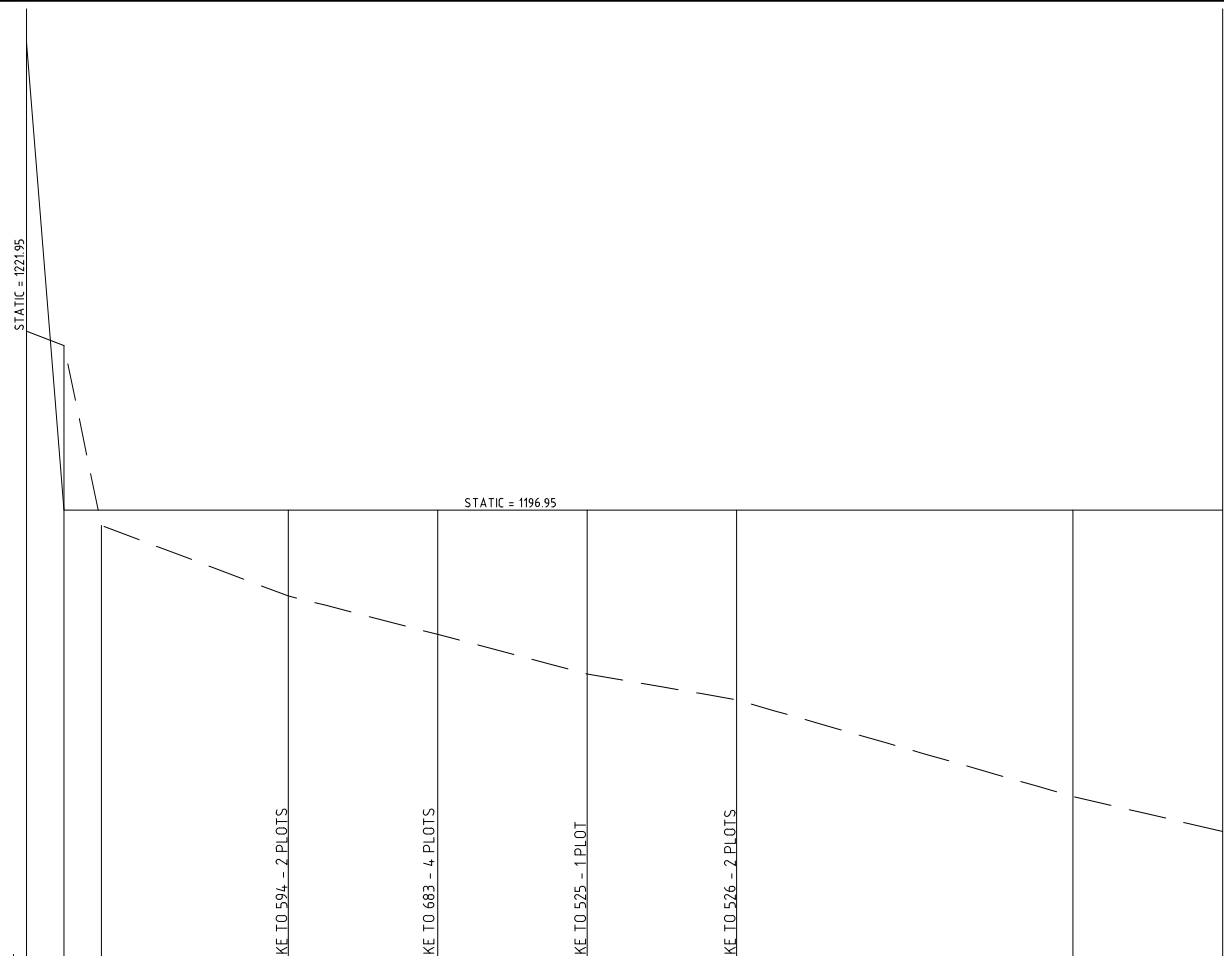


**LEGEND**

- HYDRAULIC GRADE LINE
- EXISTING GROUND PROFILE
- PIPE INVERT
- WASHOUT
- SINGLE AIR VALVE
- DOUBLE AIR VALVE

DATUM  
1151 m amsl

HYDRAULIC GRADE (m amsl)	CHAINAGE (m)	GROUND LEVEL (m amsl)	INVERT LEVEL (m amsl)	TRENCH DEPTH (m)	STEADY-STATE HEAD (m)	DESIGN FLOW (l/s)	OFFTAKE (l/s)	PIPE DETAILS	BEDDING DETAILS
1166.246	000.00	1167.245	1166.246	1.000					
1165.870	070.00	1166.870	1165.870	1.000					
1165.672	040.00	1166.610	1165.672	1.000		1.9			
1165.198	060.00	1166.200	1165.198	1.000			0.4	DN50 PVC-U(B)	
1164.650	080.00	1165.650	1164.650	1.000					
1164.102	100.00	1165.100	1164.102	1.000					
1163.542	120.00	1164.540	1163.542	1.000					
1162.941	140.00	1163.940	1162.941	1.000					
1162.341	160.00	1163.340	1162.341	1.000					
1161.740	180.00	1162.740	1161.740	1.000		1.6			
1161.139	200.00	1162.140	1161.139	1.000					
1160.482	220.00	1161.480	1160.482	1.000					
1159.743	240.00	1160.745	1159.743	1.000					
1159.005	260.00	1160.005	1159.005	1.000					
1158.267	280.00	1159.265	1158.267	1.000					
1157.505	300.00	1158.505	1157.505	1.000					
1156.681	320.00	1157.680	1156.681	1.000					
1155.856	340.00	1156.855	1155.856	1.000					
1155.161	360.00	1156.160	1155.161	1.000					
1154.466	380.00	1155.465	1154.466	1.000					
1153.772	400.00	1154.770	1153.772	1.000					
1153.077	420.00	1154.075	1153.077	1.000					
1152.278	440.00	1153.280	1152.278	1.000					
1151.928	460.00	1152.930	1151.928	1.000					
1151.579	480.00	1152.580	1151.579	1.000					
1151.461	500.00	1152.460	1151.461	1.000					
1151.098	520.00	1152.060	1151.098	1.000					
1151.654	540.00	1152.655	1151.654	1.000					
1151.251	560.00	1152.250	1151.251	1.000					
1151.827	580.00	1152.825	1151.827	1.000					
1152.293	600.00	1153.295	1152.293	1.000					
1152.043	620.00	1153.045	1152.043	1.000					
1152.021	640.00	1153.020	1152.021	1.000			0.2	DN20 PVC-U(B)	



REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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**REPUBLIC OF KENYA**

**MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES**

**PROJECT**

**SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)**

**KIRUMI KIAMUJARI IRRIGATION SCHEME**







**DRG TITLE**

**B5-1 PIPELINE PROFILE**

**SHEET 1 OF 1**

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	0001/cad
Drawn:	WKM	DRG No.	KKIS/DD/447
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=12000 V=1200

**LEGEND**

-  HYDRAULIC GRADE LINE
-  EXISTING GROUND PROFILE
-  PIPE INVERT
-  WASHOUT
-  SINGLE AIR VALVE
-  DOUBLE AIR VALVE

DATUM  
1146 m amsl

HYDRAULIC GRADE (m amsl)																																				
CHAINAGE (m)	0+00	0+20	0+40	0+60	0+80	1+00	1+20	1+40	1+60	1+80	2+00	2+20	2+40	2+60	2+80	3+00	3+20	3+40	3+60	3+80	4+00	4+20	4+40	4+60	4+80	5+00	5+20	5+40	5+60	5+80	6+00	6+20				
GROUND LEVEL (m amsl)	1163.425	1163.040	1162.665	1162.285	1161.905	1161.530	1161.155	1160.780	1160.405	1160.030	1159.655	1159.280	1158.905	1158.530	1158.155	1157.780	1157.405	1157.030	1156.655	1156.280	1155.905	1155.530	1155.155	1154.780	1154.405	1154.030	1153.655	1153.280	1152.905	1152.530	1152.155	1151.780	1151.405	1151.030		
INVERT LEVEL (m amsl)	1162.423	1162.042	1161.664	1161.285	1160.907	1160.528	1160.149	1159.770	1159.391	1159.012	1158.633	1158.254	1157.875	1157.496	1157.117	1156.738	1156.359	1155.980	1155.601	1155.222	1154.843	1154.464	1154.085	1153.706	1153.327	1152.948	1152.569	1152.190	1151.811	1151.432	1151.053	1150.674	1150.295			
TRENCH DEPTH (m)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
STEADY-STATE HEAD (m)																																				
DESIGN FLOW (l/s)	11											0.7					0.5				0.4		0.2													
OFFTAKE (l/s)												0.4												0.2												0.2
PIPE DETAILS	DN40 PVC-U(B)																																			
BEDDING DETAILS																																				

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

B5-3 PIPELINE PROFILE

SHEET 1 OF 1

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	WKM	DRG No.	KKIS/DD/448
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000 V=1:200



**LEGEND**

- HYDRAULIC GRADE LINE
- EXISTING GROUND PROFILE
- PIPE INVERT
- WASHOUT
- SINGLE AIR VALVE
- DOUBLE AIR VALVE

DATUM  
1122 m amsl

HYDRAULIC GRADE (m amsl)	CHAINAGE (m)	GROUND LEVEL (m amsl)	INVERT LEVEL (m amsl)	TRENCH DEPTH (m)	STEADY-STATE HEAD (m)	DESIGN FLOW (l/s)	OFFTAKE (l/s)	PIPE DETAILS	BEDDING DETAILS
1143.786	000.00	1144.785	1143.786	1.000		4.7			
1143.048	020.00	1144.050	1143.048	1.000			0.2		
1142.456	040.00	1143.455	1142.456	1.000		4.6			
1141.863	060.00	1142.865	1141.863	1.000					
1141.271	080.00	1142.270	1141.271	1.000					
1140.678	100.00	1141.680	1140.678	1.000					
1140.086	120.00	1141.085	1140.086	1.000					
1139.493	140.00	1140.495	1139.493	1.000		3.9			
1138.882	160.00	1139.880	1138.882	1.000					
1138.237	180.00	1139.235	1138.237	1.000					
1137.582	200.00	1138.590	1137.582	1.000					
1137.179	220.00	1138.180	1137.179	1.000			0.2		
1136.806	240.00	1137.805	1136.806	1.000		3.7			
1136.167	260.00	1136.765	1136.167	1.000			0.5		
1135.457	280.00	1135.455	1135.457	1.000					
1134.692	300.00	1134.690	1134.692	1.000		3.2			
1133.927	320.00	1133.925	1133.927	1.000			0.5		
1133.162	340.00	1133.160	1133.162	1.000					
1132.396	360.00	1132.395	1132.396	1.000		2.6			
1131.631	380.00	1131.630	1131.631	1.000					
1130.840	400.00	1130.840	1130.840	1.000					
1129.922	420.00	1129.920	1129.922	1.000		1.9			
1128.004	440.00	1128.005	1128.004	1.000			0.7		
1127.602	460.00	1128.600	1127.602	1.000					
1127.242	480.00	1128.240	1127.242	1.000		1.2			
1126.883	500.00	1127.885	1126.883	1.000					
1126.524	520.00	1127.525	1126.524	1.000			0.7		
1126.145	540.00	1127.145	1126.145	1.000					
1125.764	560.00	1126.765	1125.764	1.000		0.7			
1125.384	580.00	1126.385	1125.384	1.000			0.5		
1125.151	600.00	1126.150	1125.151	1.000					
1124.970	620.00	1125.970	1124.970	1.000		0.7			
1124.788	640.00	1125.790	1124.788	1.000					
1124.607	660.00	1125.605	1124.607	1.000		0.7			
1124.425	680.00	1125.425	1124.425	1.000					
1124.265	700.00	1125.265	1124.265	1.000			0.2		
1124.122	720.00	1125.120	1124.122	1.000					
1123.978	740.00	1124.980	1123.978	1.000		0.5			
1123.835	760.00	1124.835	1123.835	1.000			0.2		
1123.651	780.00	1124.650	1123.651	1.000					

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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**MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES**

**PROJECT**

**SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)**

**KIRUMI KIAMUJARI IRRIGATION SCHEME**

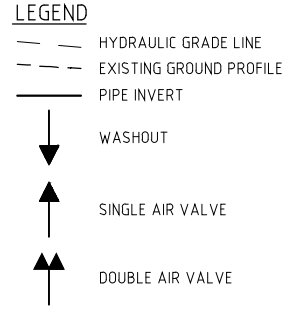
**DRG TITLE**

**B5-5 PIPELINE PROFILE**

**SHEET 1 OF 1**

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	0001/cad
Drawn:	WKM	DRG No.	KKIS/DD/450
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000 V=1:200





HYDRAULIC GRADE (m amsl)	[Values from graph]																							
CHAINAGE (m)	[Values from graph]																							
GROUND LEVEL (m amsl)	[Values from graph]																							
INVERT LEVEL (m amsl)	[Values from graph]																							
TRENCH DEPTH (m)	[Values from graph]																							
STEADY-STATE HEAD (m)	[Values from graph]																							
DESIGN FLOW (l/s)	4.4	4.2	4.0	3.9	3.2	2.3	1.9	1.8	1.6	1.4	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1			
OFFTAKE (l/s)	0.2	0.2				0.2	0.7	0.9	0.4				0.2							0.2	0.2	0.2	1.1	
PIPE DETAILS	DN90 PVC-U(B)													DN75 PVC-U(B)						DN63 PVC-U(B)				
BEDDING DETAILS																								

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES



**PROJECT**

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**

B5-6 PIPELINE PROFILE

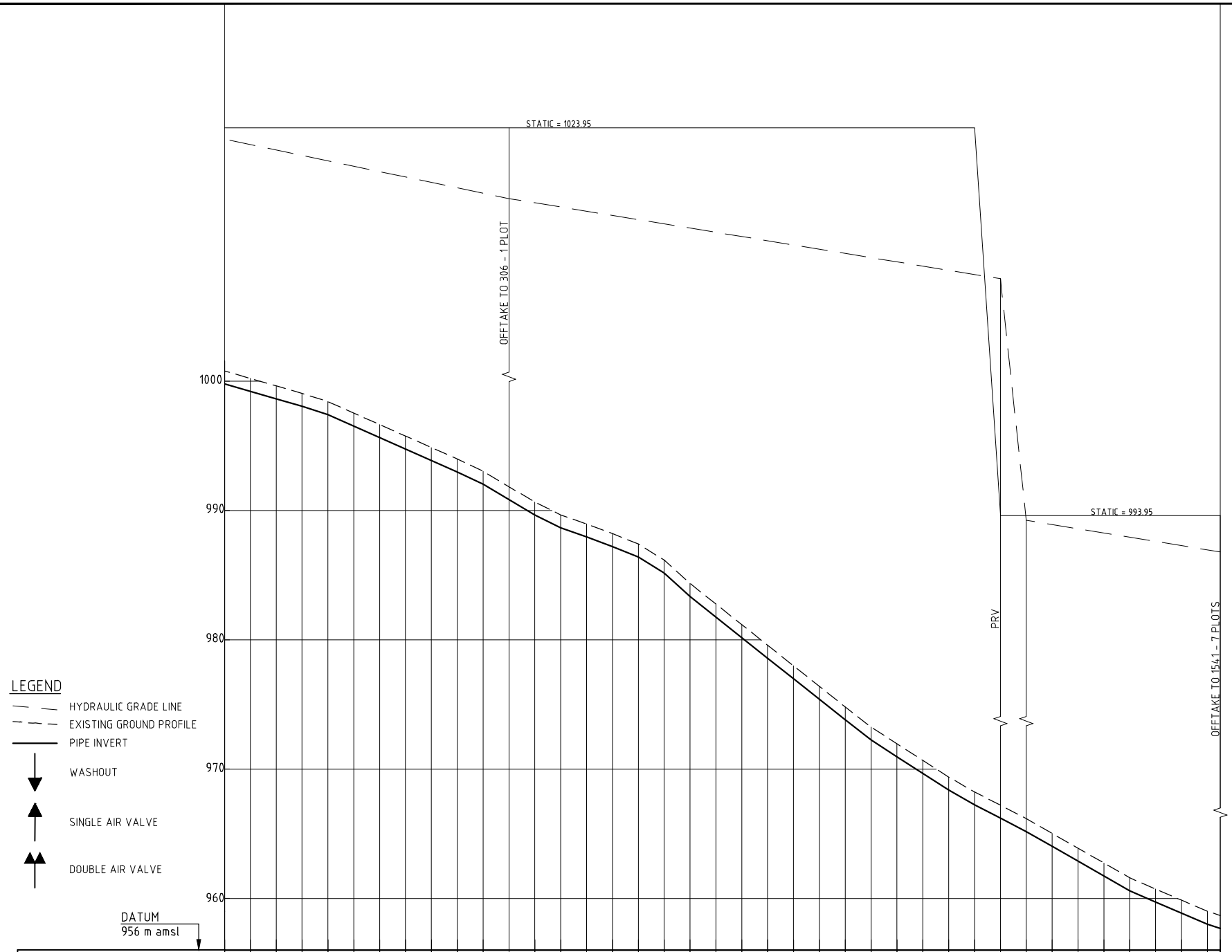
SHEET 1 OF 1

Date:	JULY 2014	Job No.	000811
Designed:	BM	Cad Filename	000811.cad
Drawn:	WKM	DRG No.	KKIS/DD/451
Checked:	JON	REV	O
Approved:	MBN		
Scale:	H=1:2000 V=1:200		









- LEGEND**
- HYDRAULIC GRADE LINE
  - - - EXISTING GROUND PROFILE
  - PIPE INVERT
  - ▼ WASHOUT
  - ▲ SINGLE AIR VALVE
  - ▲▲ DOUBLE AIR VALVE

	DATUM 956 m amsl
HYDRAULIC GRADE (m amsl)	
CHAINAGE (m)	
GROUND LEVEL (m amsl)	
INVERT LEVEL (m amsl)	
TRENCH DEPTH (m)	
STEADY-STATE HEAD (m)	
DESIGN FLOW (l/s)	1.4
OFFTAKE (l/s)	0.2
PIPE DETAILS	DN50 PVC-U(B)
BEDDING DETAILS	

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

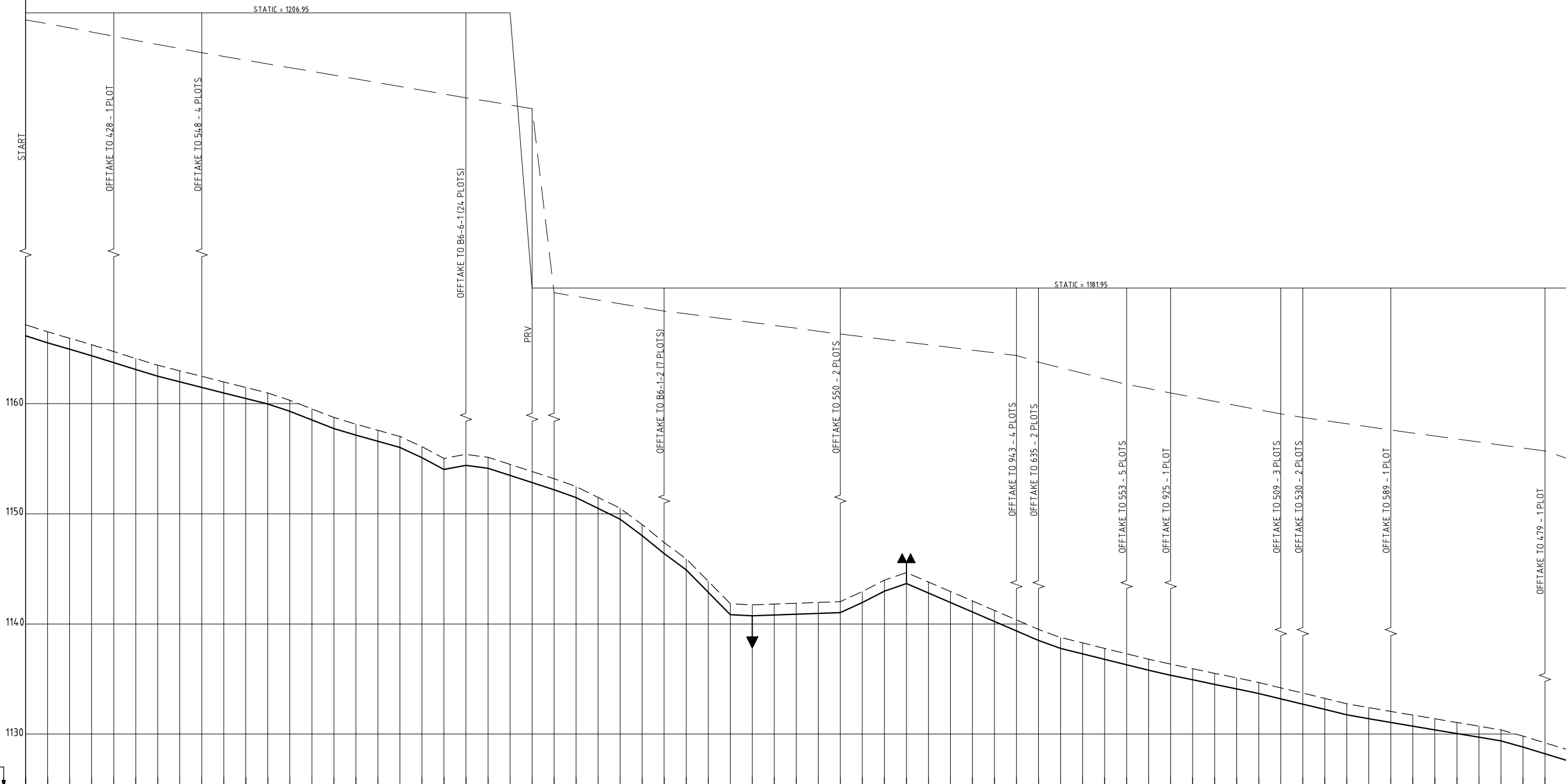
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

B5-9 PIPELINE PROFILE

SHEET 2 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	0001/cad
Drawn:	WKM	DRG No.	KKIS/DD/454
Checked:	JON	REV	O
Approved:	MBN		
Scale:	H=1:2000 V=1:200		



- LEGEND**
- HYDRAULIC GRADE LINE
  - EXISTING GROUND PROFILE
  - PIPE INVERT
  - WASHOUT
  - SINGLE AIR VALVE
  - DOUBLE AIR VALVE

DATUM  
1125 m amsl

HYDRAULIC GRADE (m amsl)																											
CHAINAGE (m)	000.00	100.00	200.00	300.00	400.00	500.00	600.00	700.00	800.00	900.00	1000.00	1100.00	1200.00	1300.00	1400.00	1500.00	1600.00	1700.00	1800.00	1900.00	2000.00	2100.00	2200.00	2300.00	2400.00	2500.00	
GROUND LEVEL (m amsl)	1166.165	1165.521	1164.944	1164.365	1163.735	1163.050	1162.431	1161.887	1161.483	1161.180	1160.978	1160.874	1160.860	1160.930	1161.071	1161.274	1161.532	1161.844	1162.210	1162.631	1163.107	1163.638	1164.224	1164.866	1165.564	1166.318	1167.128
INVERT LEVEL (m amsl)	1166.165	1165.521	1164.944	1164.365	1163.735	1163.050	1162.431	1161.887	1161.483	1161.180	1160.978	1160.874	1160.860	1160.930	1161.071	1161.274	1161.532	1161.844	1162.210	1162.631	1163.107	1163.638	1164.224	1164.866	1165.564	1166.318	1167.128
TRENCH DEPTH (m)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
STEADY-STATE HEAD (m)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DESIGN FLOW (l/s)		15.1		14.9		14.2																					
OFFTAKE (l/s)		0.2		0.7		6.2																					
PIPE DETAILS	DN125 PVC-U(B)												DN110 PVC-U(B)										DN90 PVC-U(B)				
BEDDING DETAILS																											

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

CONSULTANT

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AGRICULTURE,  
LIVESTOCK &  
FISHERIES

PROJECT

SMALL SCALE HORTICULTURE  
DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI  
IRRIGATION SCHEME

DRG TITLE

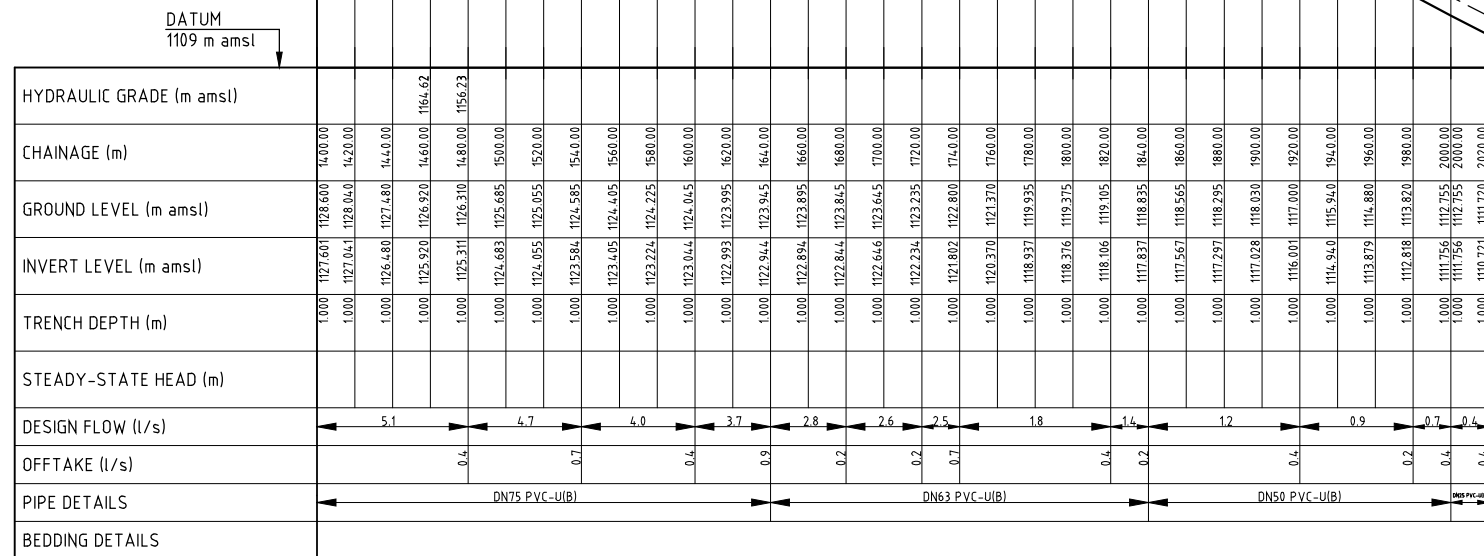
BG-1 PIPELINE PROFILE

SHEET 1 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	008111.cad
Drawn:	WKM	DRG. No.	KKIS/DD/455
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000 V=1:200

**LEGEND**

- HYDRAULIC GRADE LINE
- EXISTING GROUND PROFILE
- PIPE INVERT
- WASHOUT
- SINGLE AIR VALVE
- DOUBLE AIR VALVE



REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

B6-1 PIPELINE PROFILE

SHEET 2 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811\Cad\
Drawn:	WKM	DRG. No.	KKIS/DD/455
Checked:	JON	REV	O
Approved:	MBN	Scale:	H=1:2000 V=1:200

**LEGEND**

- HYDRAULIC GRADE LINE
- EXISTING GROUND PROFILE
- PIPE INVERT
- WASHOUT
- SINGLE AIR VALVE
- DOUBLE AIR VALVE

DATUM  
1123 m amsl

HYDRAULIC GRADE (m amsl)														
CHAINAGE (m)	000.00	195.400	390.800	586.200	781.600	977.000	1172.400	1367.800	1563.200	1758.600	1954.000	2149.400	2344.800	2540.200
GROUND LEVEL (m amsl)	1154.000	1153.699	1152.816	1151.380	1149.455	1147.070	1144.274	1141.000	1137.299	1133.200	1128.745	1123.970	1118.810	1113.280
INVERT LEVEL (m amsl)	1154.000	1153.699	1152.816	1151.380	1149.455	1147.070	1144.274	1141.000	1137.299	1133.200	1128.745	1123.970	1118.810	1113.280
TRENCH DEPTH (m)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
STEADY-STATE HEAD (m)														
DESIGN FLOW (l/s)	4.2													
OFFTAKE (l/s)	1.4													
PIPE DETAILS	DN63 PVC-U(B)													
BEDDING DETAILS														

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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PROJECT  
 SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
 KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE  
 B6-1-1 PIPELINE PROFILE  
 SHEET 1 OF 1

Date:	JULY 2014	JOB No. 000811
Designed:	BM	
Drawn:	WKM	Cad Filename 00811/cad
Checked:	JON	
Approved:	MBN	DRG No. KKIS/DD/456
Scale:	H=1:2000 V=1:200	REV O







**LEGEND**


- HYDRAULIC GRADE LINE
- - - EXISTING GROUND PROFILE
- PIPE INVERT
- ▼ WASHOUT
- ▲ SINGLE AIR VALVE
- ▲▲ DOUBLE AIR VALVE

DATUM  
1072 m amsl

HYDRAULIC GRADE (m amsl)																														
CHAINAGE (m)	0+00	0+10	0+20	0+30	0+40	0+50	0+60	0+70	0+80	0+90	0+100	0+110	0+120	0+130	0+140	0+150	0+160	0+170	0+180	0+190	0+200	0+210	0+220	0+230	0+240	0+250				
GROUND LEVEL (m amsl)	1095.615	1095.615	1095.615	1094.985	1094.275	1093.680	1093.135	1092.530	1091.935	1091.200	1090.465	1089.735	1089.000	1088.265	1087.530	1086.795	1086.060	1085.325	1084.590	1083.855	1083.120	1082.385	1081.650	1080.915	1080.180	1079.445	1078.710			
INVERT LEVEL (m amsl)	1095.615	1095.615	1095.615	1094.985	1094.275	1093.680	1093.135	1092.530	1091.935	1091.200	1090.465	1089.735	1089.000	1088.265	1087.530	1086.795	1086.060	1085.325	1084.590	1083.855	1083.120	1082.385	1081.650	1080.915	1080.180	1079.445	1078.710			
TRENCH DEPTH (m)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
STEADY-STATE HEAD (m)																														
DESIGN FLOW (l/s)	2.1							1.4							1.1					0.9					0.4					
OFF TAKE (l/s)	0.7							0.4							0.2					0.5					0.4					
PIPE DETAILS	DN63 PVC-U(B)										DN50 PVC-U(B)															DN25 PVC-U(B)				
BEDDING DETAILS																														

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

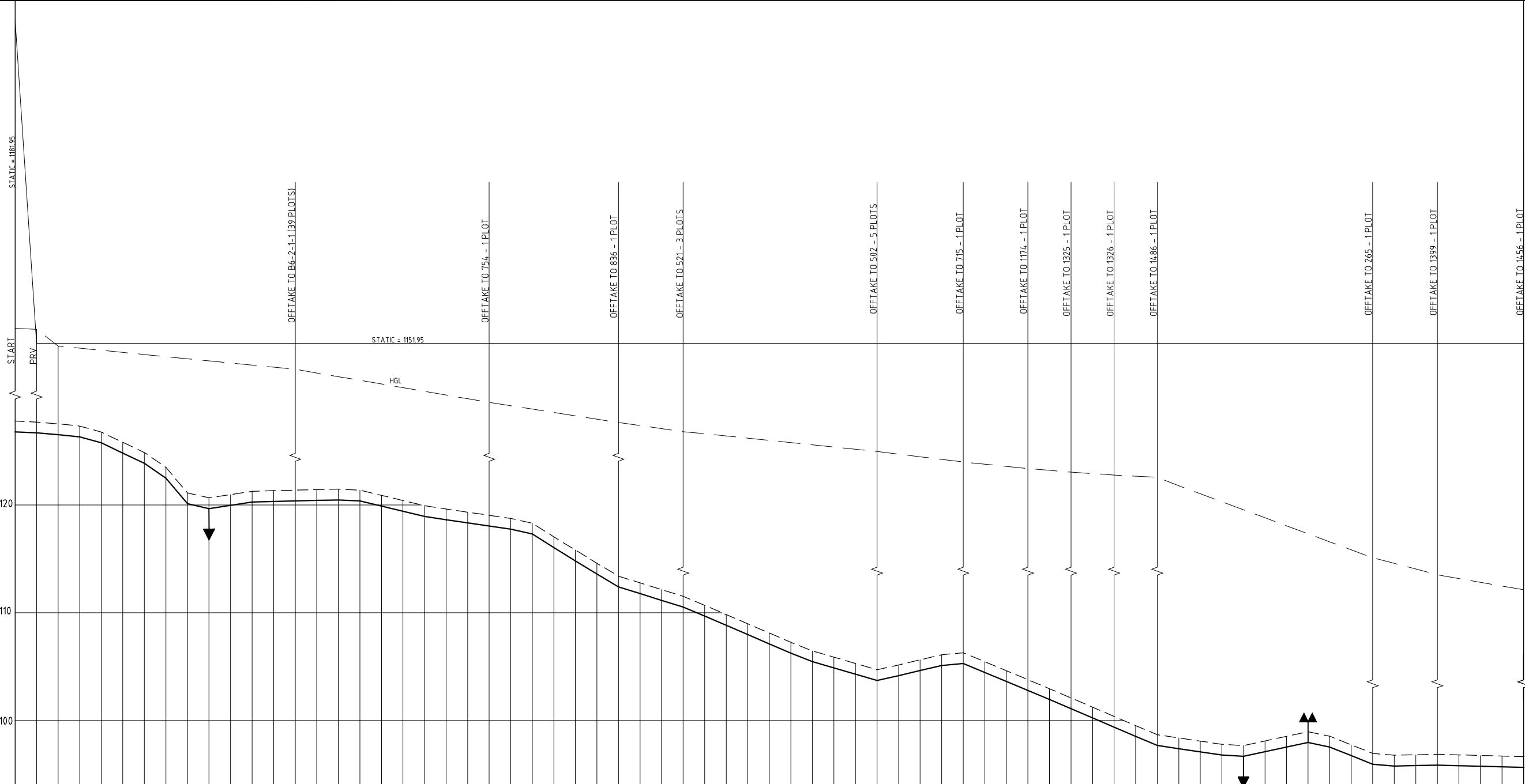
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 FISHERIES

PROJECT  
 SMALL SCALE HORTICULTURE  
 DEVELOPMENT PROJECT (SHDP)  
 KIRUMI KIAMUJARI  
 IRRIGATION SCHEME

DRG TITLE  
 B6-2 PIPELINE PROFILE  
 SHEET 3 OF 3

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	000811.cad
Drawn:	WKM	DRG No.	KKIS/DD/457
Checked:	JON	REV	O
Approved:	MBN		
Scale:	H=1:2000 V=1:200		



- LEGEND**
- - - HYDRAULIC GRADE LINE
  - - - EXISTING GROUND PROFILE
  - PIPE INVERT
  - ▼ WASHOUT
  - ▲ SINGLE AIR VALVE
  - ▲▲ DOUBLE AIR VALVE

CHAINAGE (m)	GROUND LEVEL (m amsl)	INVERT LEVEL (m amsl)	TRENCH DEPTH (m)	STEADY-STATE HEAD (m)	DESIGN FLOW (l/s)	OFFTAKE (l/s)	PIPE DETAILS	BEDDING DETAILS
0+00.00	1127.795	1127.795	0.00				DN125 PVC-U(II)	
0+20.00	1127.700	1127.700	0.00				DN125 PVC-U(II)	
0+40.00	1127.540	1127.540	0.00				DN125 PVC-U(II)	
0+60.00	1127.330	1127.330	0.00				DN125 PVC-U(II)	
0+80.00	1126.780	1126.780	0.00		10.5		DN125 PVC-U(II)	
1+00.00	1124.826	1125.825	1.00				DN125 PVC-U(II)	
1+20.00	1124.875	1124.875	0.00				DN125 PVC-U(II)	
1+40.00	1123.495	1123.495	0.00				DN125 PVC-U(II)	
1+60.00	1121.120	1121.120	0.00				DN125 PVC-U(II)	
1+80.00	1119.669	1119.669	0.00				DN125 PVC-U(II)	
2+00.00	1119.972	1120.970	1.00				DN125 PVC-U(II)	
2+20.00	1121.275	1121.275	0.00				DN125 PVC-U(II)	
2+40.00	1121.335	1121.335	0.00				DN125 PVC-U(II)	
2+60.00	1121.380	1121.380	0.00				DN125 PVC-U(II)	
2+80.00	1121.430	1121.430	0.00				DN125 PVC-U(II)	
3+00.00	1121.475	1121.475	0.00				DN125 PVC-U(II)	
3+20.00	1121.384	1121.385	0.00				DN125 PVC-U(II)	
3+40.00	1119.901	1120.900	1.00		3.7		DN125 PVC-U(II)	
3+60.00	1119.418	1120.420	1.00				DN125 PVC-U(II)	
3+80.00	1118.935	1119.935	1.00				DN125 PVC-U(II)	
4+00.00	1118.631	1119.630	1.00				DN125 PVC-U(II)	
4+20.00	1118.340	1119.340	1.00				DN125 PVC-U(II)	
4+40.00	1118.050	1119.050	1.00				DN125 PVC-U(II)	
4+60.00	1117.759	1118.760	1.00				DN125 PVC-U(II)	
4+80.00	1117.310	1118.310	1.00				DN125 PVC-U(II)	
5+00.00	1116.050	1117.050	1.00			3.5	DN75 PVC-U(II)	
5+20.00	1114.823	1115.825	1.00				DN75 PVC-U(II)	
5+40.00	1113.595	1114.595	1.00				DN75 PVC-U(II)	
5+60.00	1112.401	1113.400	1.00				DN75 PVC-U(II)	
5+80.00	1111.777	1112.775	1.00				DN75 PVC-U(II)	
6+00.00	1111.553	1112.555	1.00				DN75 PVC-U(II)	
6+20.00	1110.529	1111.530	1.00				DN75 PVC-U(II)	
6+40.00	1109.690	1110.690	1.00				DN75 PVC-U(II)	
6+60.00	1108.831	1109.830	1.00				DN75 PVC-U(II)	
6+80.00	1107.972	1108.970	1.00				DN75 PVC-U(II)	
7+00.00	1107.113	1108.115	1.00				DN75 PVC-U(II)	
7+20.00	1106.254	1107.255	1.00				DN75 PVC-U(II)	
7+40.00	1105.462	1106.460	1.00				DN75 PVC-U(II)	
7+60.00	1104.878	1105.880	1.00				DN75 PVC-U(II)	
7+80.00	1104.294	1105.295	1.00				DN75 PVC-U(II)	
8+00.00	1103.709	1104.710	1.00				DN75 PVC-U(II)	
8+20.00	1104.159	1105.160	1.00				DN75 PVC-U(II)	
8+40.00	1104.631	1105.630	1.00				DN75 PVC-U(II)	
8+60.00	1105.102	1106.100	1.00				DN75 PVC-U(II)	
8+80.00	1105.286	1106.285	1.00				DN75 PVC-U(II)	
9+00.00	1104.453	1105.455	1.00				DN75 PVC-U(II)	
9+20.00	1103.620	1104.620	1.00				DN75 PVC-U(II)	
9+40.00	1102.787	1103.785	1.00				DN75 PVC-U(II)	
9+60.00	1101.951	1102.950	1.00				DN75 PVC-U(II)	
9+80.00	1101.093	1102.095	1.00				DN75 PVC-U(II)	
10+00.00	1100.234	1101.235	1.00				DN75 PVC-U(II)	
10+20.00	1100.234	1101.235	1.00				DN75 PVC-U(II)	
10+40.00	1099.376	1100.375	1.00				DN75 PVC-U(II)	
10+60.00	1098.518	1099.520	1.00				DN75 PVC-U(II)	
10+80.00	1097.677	1098.675	1.00				DN75 PVC-U(II)	
11+00.00	1097.380	1098.380	1.00				DN75 PVC-U(II)	
11+20.00	1097.083	1098.085	1.00				DN75 PVC-U(II)	
11+40.00	1096.786	1097.785	1.00				DN75 PVC-U(II)	
11+60.00	1096.670	1097.670	1.00				DN75 PVC-U(II)	
11+80.00	1097.100	1098.100	1.00			11	DN75 PVC-U(II)	
12+00.00	1097.529	1098.520	1.00				DN75 PVC-U(II)	
12+20.00	1097.959	1098.960	1.00				DN75 PVC-U(II)	
12+40.00	1097.536	1098.535	1.00				DN75 PVC-U(II)	
12+60.00	1096.739	1097.740	1.00				DN75 PVC-U(II)	
12+80.00	1095.942	1096.940	1.00				DN75 PVC-U(II)	
13+00.00	1095.771	1096.770	1.00				DN75 PVC-U(II)	
13+20.00	1095.814	1096.815	1.00				DN75 PVC-U(II)	
13+40.00	1095.858	1096.860	1.00				DN75 PVC-U(II)	
13+60.00	1095.760	1096.760	1.00				DN75 PVC-U(II)	
13+80.00	1095.740	1096.740	1.00				DN75 PVC-U(II)	
14+00.00	1095.660	1096.660	1.00				DN75 PVC-U(II)	
14+20.00	1095.641	1096.640	1.00				DN75 PVC-U(II)	

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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**CLIENT**  
  
 REPUBLIC OF KENYA  
 MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

**PROJECT**  
 SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
 KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**  
 B6-2-1 PIPELINE PROFILE  
 SHEET 1 OF 2

Date:	JULY 2014	JOB No:	000811
Designed:	BM	Cad Filename:	000811.cad
Drawn:	WKM	DRG No:	KKIS/DD/458
Checked:	JON	REV:	0
Approved:	MBN		
Scale:	H=1:2000 V=1:200		

**LEGEND**

- HYDRAULIC GRADE LINE
- EXISTING GROUND PROFILE
- PIPE INVERT
- ▼ WASHOUT
- ▲ SINGLE AIR VALVE
- ▲▲ DOUBLE AIR VALVE

DATUM  
1094 m amsl

HYDRAULIC GRADE (m amsl)			
CHAINAGE (m)	1400.00	1420.00	1440.00
GROUND LEVEL (m amsl)	1096.640	1096.560	1096.550
INVERT LEVEL (m amsl)	1095.640	1095.560	1095.550
TRENCH DEPTH (m)	1.000	1.000	1.000
STEADY-STATE HEAD (m)			
DESIGN FLOW (l/s)	0.5		
OFFTAKE (l/s)	0.5		
PIPE DETAILS	DN40 PVC-UIB		
BEDDING DETAILS			

OFFTAKE TO 1456 - 1 PLOT

OFFTAKE TO 249 AND 1455 - 3 PLOTS

STATIC = 115195

HGL

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE


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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

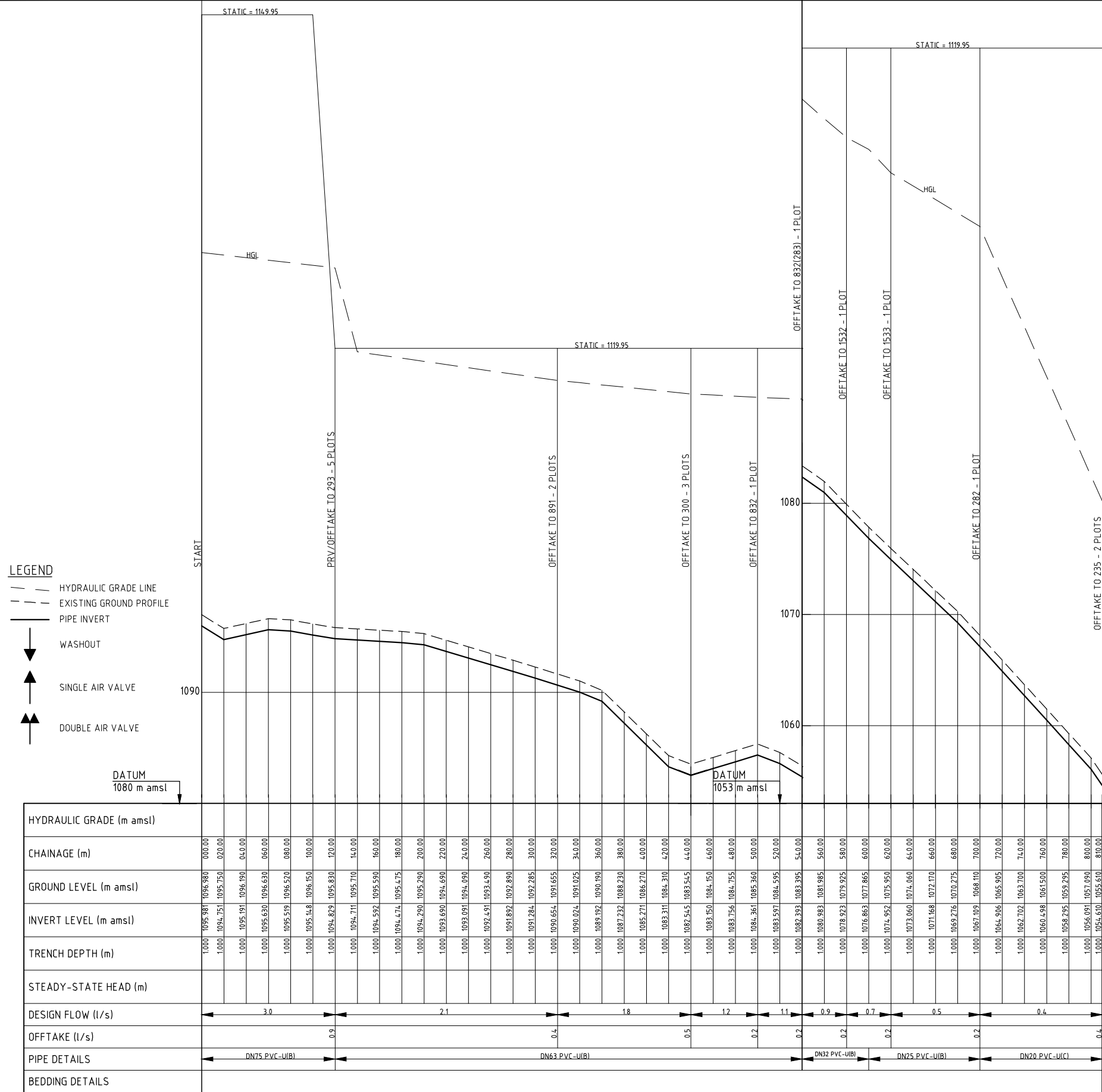
DRG TITLE

B6-2-1 PIPELINE PROFILE

SHEET 2 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	0001/cadv
Drawn:	WKM	DRG No.	KKIS/DD/458
Checked:	JON	REV	O
Approved:	MBN		
Scale:	H=1:2000 V=1:200		





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FISHERIES

**PROJECT**

SMALL SCALE HORTICULTURE  
DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI  
IRRIGATION SCHEME

**DRG TITLE**

B6-2-3 PIPELINE PROFILE

SHEET 1 OF 1

Date:	JULY 2014	JOB No.	000811
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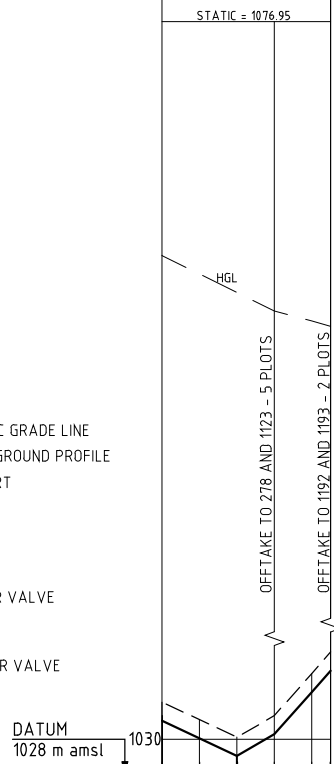








- LEGEND**
- HYDRAULIC GRADE LINE
  - - - EXISTING GROUND PROFILE
  - PIPE INVERT
  - ↓ WASHOUT
  - ↑ SINGLE AIR VALVE
  - ↑↑ DOUBLE AIR VALVE



HYDRAULIC GRADE (m amsl)					
CHAINAGE (m)	14.00.00	14.20.00	14.40.00	14.60.00	14.80.00
GROUND LEVEL (m amsl)	1031.995	1031.060	1030.120	1031.270	1033.520
INVERT LEVEL (m amsl)	1030.994	1030.058	1029.122	1030.272	1032.522
TRENCH DEPTH (m)	1.000	1.000	1.000	1.000	1.000
STEADY-STATE HEAD (m)					
DESIGN FLOW (l/s)		1.2	0.4		
OFFTAKE (l/s)			0.2	0.4	
PIPE DETAILS		DN40 PVC-U(B)	DN25 PVC-U(B)		
BEDDING DETAILS					

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

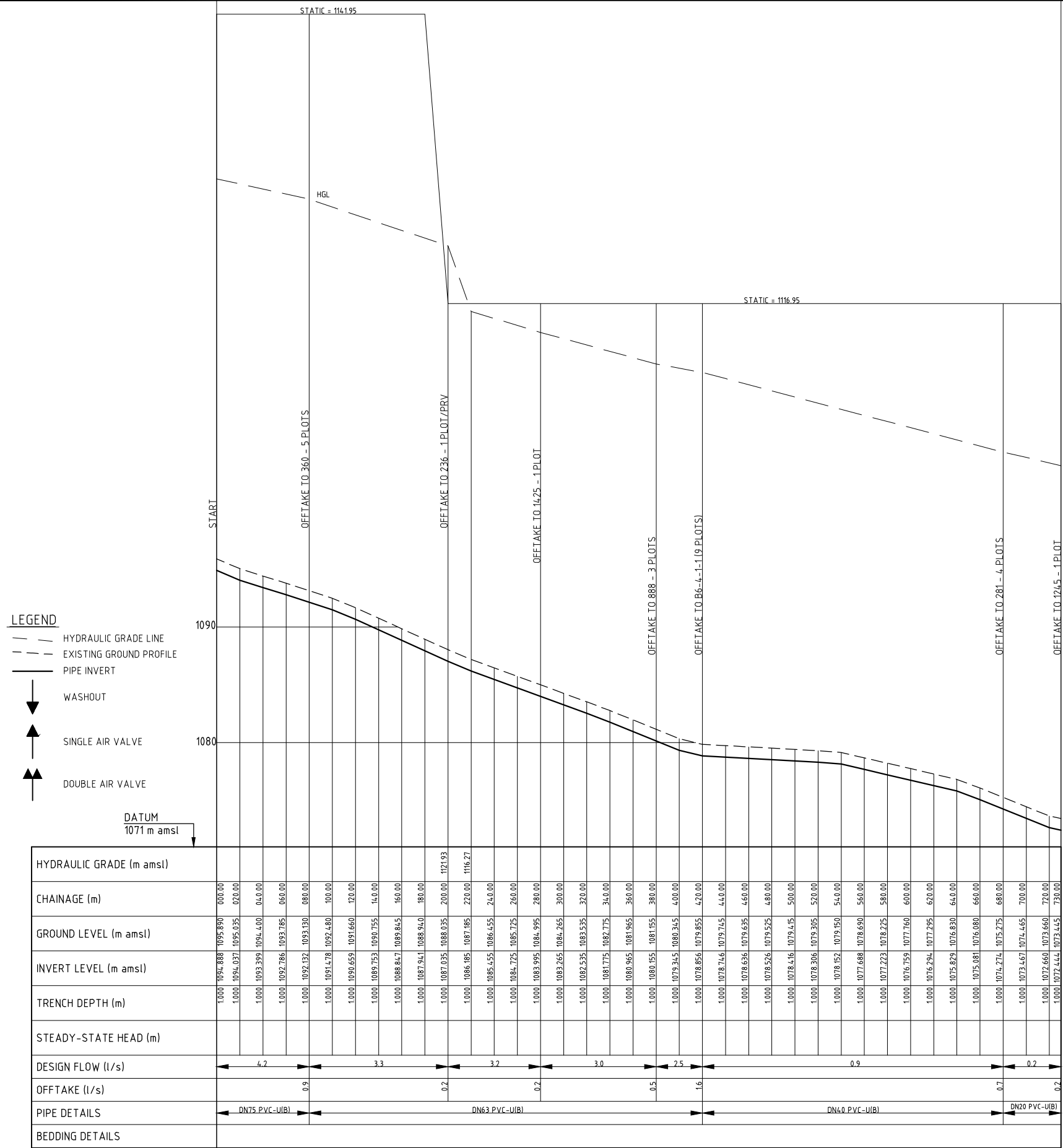
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

B6-4 PIPELINE PROFILE

SHEET 2 OF 2

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Approved:	MBN		
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REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE


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MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

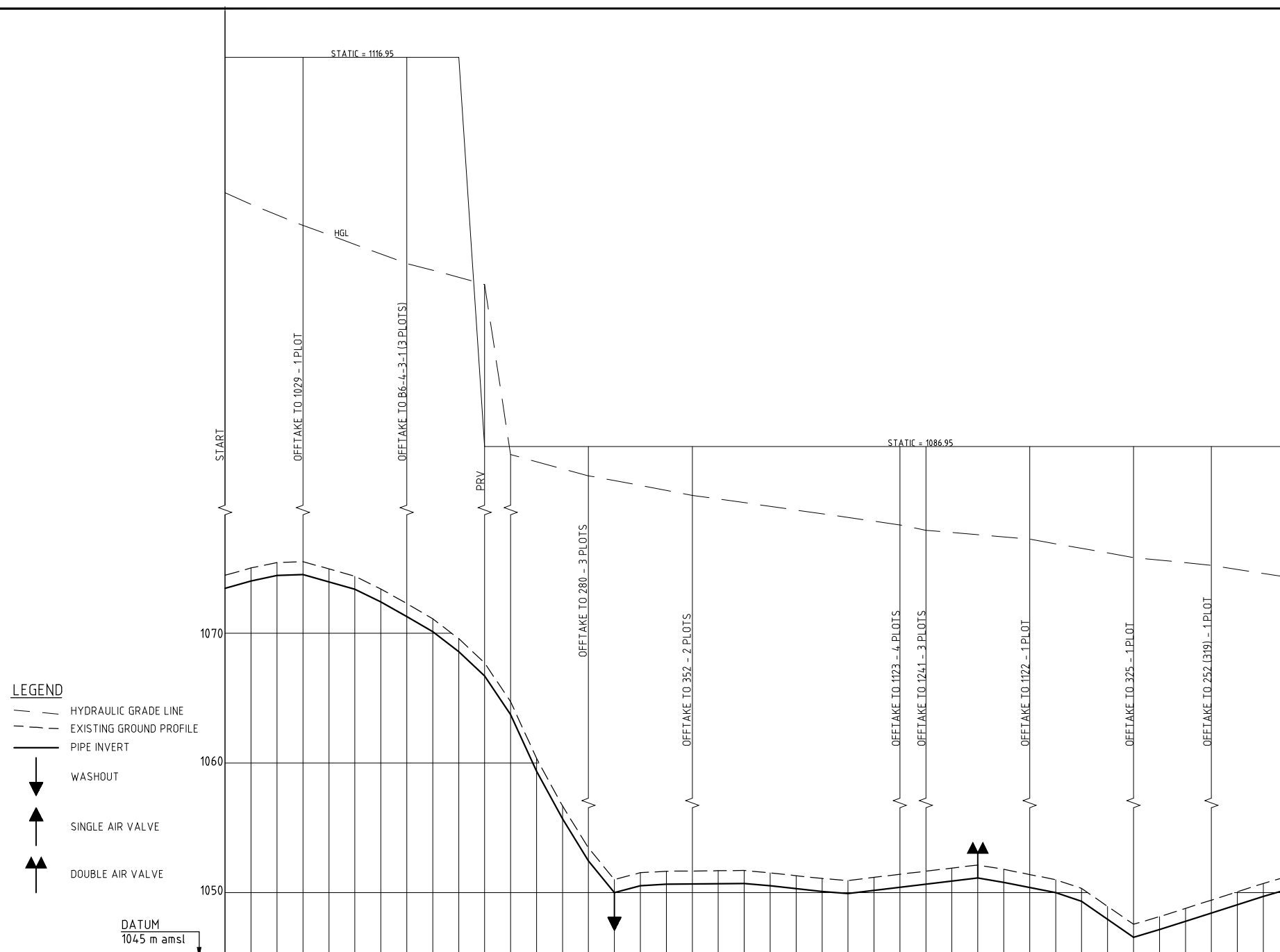
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

B6-4-1 PIPELINE PROFILE

SHEET 1 OF 1

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	000811.cad
Drawn:	WKM	DRG No.	KKIS/DD/464
Checked:	JON	REV	O
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**LEGEND**

- HYDRAULIC GRADE LINE
- EXISTING GROUND PROFILE
- PIPE INVERT
- WASHOUT
- SINGLE AIR VALVE
- DOUBLE AIR VALVE

HYDRAULIC GRADE (m amsl)	CHAINAGE (m)	GROUND LEVEL (m amsl)	INVERT LEVEL (m amsl)	TRENCH DEPTH (m)	STEADY-STATE HEAD (m)	DESIGN FLOW (l/s)	OFFTAKE (l/s)	PIPE DETAILS	BEDDING DETAILS
1074.460	0+00.00	1074.460	1073.461	1.000					
1075.025	0+20.00	1075.025	1074.025	1.000					
1075.450	0+40.00	1075.450	1074.450	1.000					
1075.515	0+60.00	1075.515	1074.517	1.000			0.2		
1074.950	0+80.00	1074.950	1073.950	1.000					
1074.385	1+00.00	1074.385	1073.383	1.000					
1073.410	1+20.00	1073.410	1072.410	1.000					
1072.285	1+40.00	1072.285	1071.285	1.000			0.5		
1071.110	1+60.00	1071.110	1070.111	1.000					
1069.580	1+80.00	1069.580	1068.581	1.000					
1067.700	2+00.00	1067.700	1066.700	1.000					
1064.725	2+20.00	1064.725	1063.725	1.000					
1060.355	2+40.00	1060.355	1059.353	1.000					
1056.685	2+60.00	1056.685	1055.686	1.000					
1053.455	2+80.00	1053.455	1052.453	1.000			0.5		
1051.015	3+00.00	1051.015	1050.014	1.000					
1051.545	3+20.00	1051.545	1050.545	1.000					
1051.655	3+40.00	1051.655	1050.656	1.000					
1051.675	3+60.00	1051.675	1050.675	1.000			0.4		
1051.695	3+80.00	1051.695	1050.695	1.000					
1051.775	4+00.00	1051.775	1050.774	1.000					
1051.535	4+20.00	1051.535	1050.533	1.000					
1051.315	4+40.00	1051.315	1050.314	1.000					
1051.095	4+60.00	1051.095	1050.096	1.000					
1050.945	4+80.00	1050.945	1049.943	1.000					
1051.180	5+00.00	1051.180	1050.182	1.000					
1051.420	5+20.00	1051.420	1050.421	1.000					
1051.660	5+40.00	1051.660	1050.660	1.000			0.7		
1051.900	5+60.00	1051.900	1050.899	1.000			0.5		
1052.140	5+80.00	1052.140	1051.138	1.000					
1051.800	6+00.00	1051.800	1050.798	1.000					
1051.400	6+20.00	1051.400	1050.402	1.000					
1051.005	6+40.00	1051.005	1050.005	1.000					
1050.330	6+60.00	1050.330	1049.331	1.000					
1048.950	6+80.00	1048.950	1047.951	1.000					
1047.570	7+00.00	1047.570	1046.572	1.000					
1048.155	7+20.00	1048.155	1047.155	1.000					
1048.795	7+40.00	1048.795	1047.793	1.000					
1049.430	7+60.00	1049.430	1048.432	1.000					
1050.070	7+80.00	1050.070	1049.070	1.000					
1050.710	8+00.00	1050.710	1049.708	1.000					
1051.295	8+20.00	1051.295	1050.295	1.000					

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)







KIRUMI KIAMUJARI IRRIGATION SCHEME

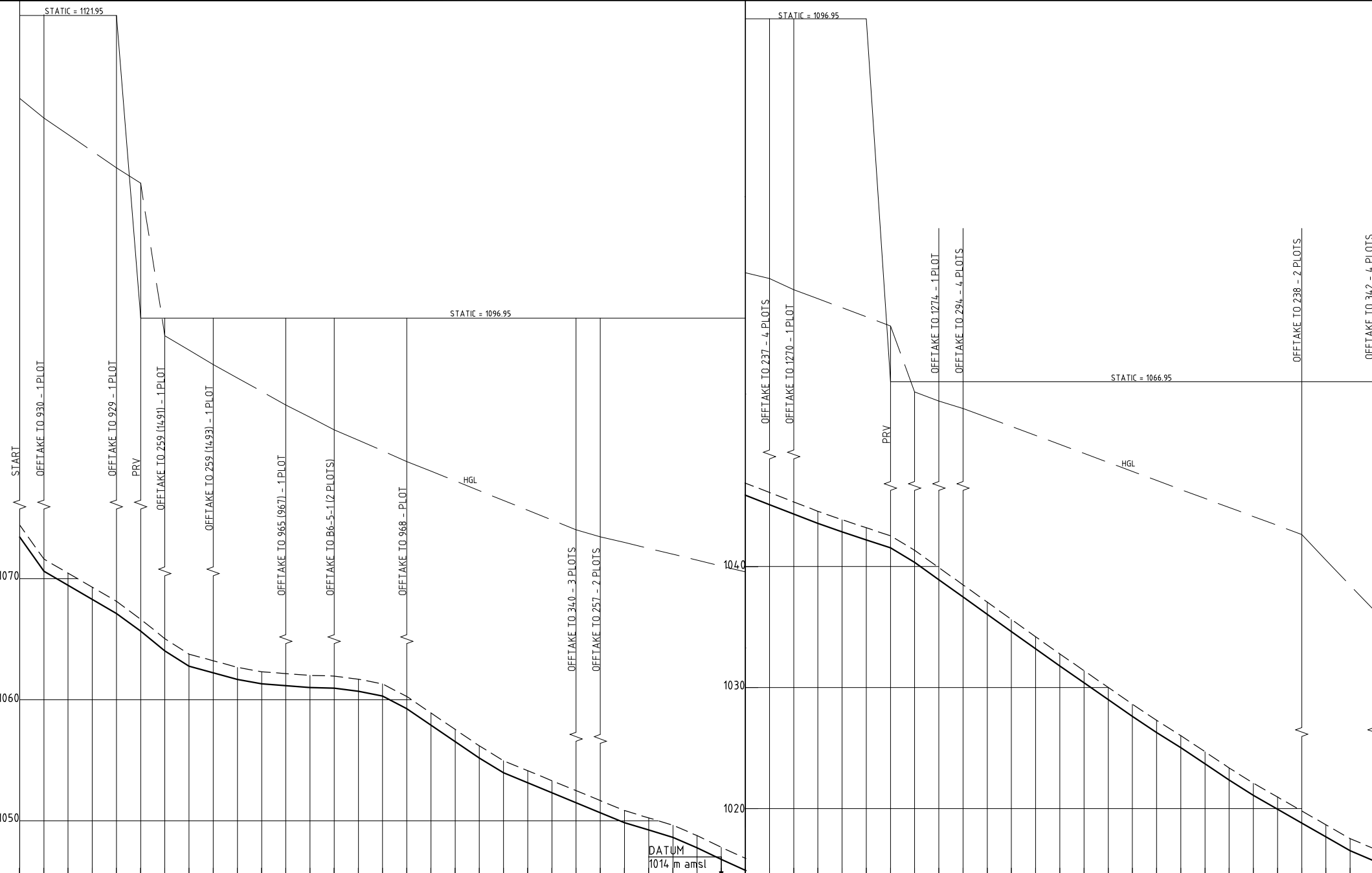
DRG TITLE

B6-4-3 PIPELINE PROFILE

SHEET 1 OF 1

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	WKM	DRG No.	KKIS/DD/465
Checked:	JON	REV	O
Approved:	MBN		
Scale:	H=12000 V=1200		


- LEGEND**
-  HYDRAULIC GRADE LINE
  -  EXISTING GROUND PROFILE
  -  PIPE INVERT
  -  WASHOUT
  -  SINGLE AIR VALVE
  -  DOUBLE AIR VALVE



CHAINEAGE (m)	GROUND LEVEL (m amsl)	INVERT LEVEL (m amsl)	TRENCH DEPTH (m)	STEADY-STATE HEAD (m)	DESIGN FLOW (l/s)	OFFTAKE (l/s)	PIPE DETAILS
0+00.00	1073.443	1071.445	1.998	2.000	5.1	0.2	DN63 PVC-U(B)
0+20.00	1070.619	1071.620	0.999	1.999	4.9	0.2	DN63 PVC-U(B)
0+40.00	1069.456	1070.455	0.999	1.999	4.7	0.2	DN63 PVC-U(B)
0+60.00	1068.293	1069.295	0.998	1.998	4.6	0.2	DN63 PVC-U(B)
0+80.00	1067.130	1068.130	0.999	1.999	4.4	0.2	DN63 PVC-U(B)
1+00.00	1065.661	1066.660	0.999	1.999	4.2	0.4	DN63 PVC-U(B)
1+20.00	1064.044	1065.045	0.999	1.999	4.4	0.2	DN63 PVC-U(B)
1+40.00	1062.772	1063.770	0.998	1.998	4.2	0.2	DN63 PVC-U(B)
1+60.00	1062.224	1063.225	0.999	1.999	4.4	0.2	DN63 PVC-U(B)
1+80.00	1061.675	1062.675	0.999	1.999	4.2	0.2	DN63 PVC-U(B)
2+00.00	1061.309	1062.310	0.999	1.999	3.9	0.2	DN63 PVC-U(B)
2+20.00	1061.160	1062.160	0.999	1.999	3.7	0.4	DN63 PVC-U(B)
2+40.00	1061.011	1062.010	0.999	1.999	3.7	0.4	DN63 PVC-U(B)
2+60.00	1060.956	1061.955	0.999	1.999	3.7	0.4	DN63 PVC-U(B)
2+80.00	1060.697	1061.695	0.998	1.998	3.7	0.4	DN63 PVC-U(B)
3+00.00	1060.310	1061.310	0.999	1.999	3.7	0.4	DN63 PVC-U(B)
3+20.00	1059.266	1060.265	0.999	1.999	3.2	0.5	DN63 PVC-U(B)
3+40.00	1057.906	1058.905	0.999	1.999	3.2	0.4	DN63 PVC-U(B)
3+60.00	1056.546	1057.545	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
3+80.00	1055.186	1056.185	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
4+00.00	1053.961	1054.960	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
4+20.00	1053.137	1054.135	0.998	1.998	2.8	0.4	DN63 PVC-U(B)
4+40.00	1052.313	1053.315	0.998	1.998	2.8	0.4	DN63 PVC-U(B)
4+60.00	1051.489	1052.490	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
4+80.00	1050.665	1051.665	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
5+00.00	1049.844	1050.845	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
5+20.00	1049.238	1050.240	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
5+40.00	1048.631	1049.630	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
5+60.00	1048.024	1049.023	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
5+80.00	1047.417	1048.417	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
6+00.00	1046.807	1047.805	0.998	1.998	2.8	0.4	DN63 PVC-U(B)
6+20.00	1045.896	1046.895	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
6+40.00	1045.119	1046.120	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
6+60.00	1044.343	1045.345	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
6+80.00	1043.567	1044.565	0.998	1.998	2.8	0.4	DN63 PVC-U(B)
7+00.00	1042.869	1043.870	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
7+20.00	1042.205	1043.205	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
7+40.00	1041.542	1042.540	0.998	1.998	2.8	0.4	DN63 PVC-U(B)
7+60.00	1040.947	1041.945	0.998	1.998	2.8	0.4	DN63 PVC-U(B)
7+80.00	1038.916	1039.915	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
8+00.00	1037.484	1038.485	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
8+20.00	1036.054	1037.055	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
8+40.00	1034.629	1035.630	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
8+60.00	1033.205	1034.205	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
8+80.00	1031.780	1032.780	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
9+00.00	1030.391	1031.390	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
9+20.00	1029.006	1030.005	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
9+40.00	1027.621	1028.620	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
9+60.00	1026.291	1027.290	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
9+80.00	1025.035	1026.035	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
10+00.00	1023.699	1024.700	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
10+20.00	1022.364	1023.365	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
10+40.00	1021.098	1022.098	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
10+60.00	1019.953	1020.955	0.998	1.998	2.8	0.4	DN63 PVC-U(B)
10+80.00	1018.809	1019.810	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
11+00.00	1017.664	1018.665	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
11+20.00	1016.520	1017.520	0.999	1.999	2.8	0.4	DN63 PVC-U(B)
11+40.00	1015.687	1016.685	0.998	1.998	2.8	0.4	DN63 PVC-U(B)

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

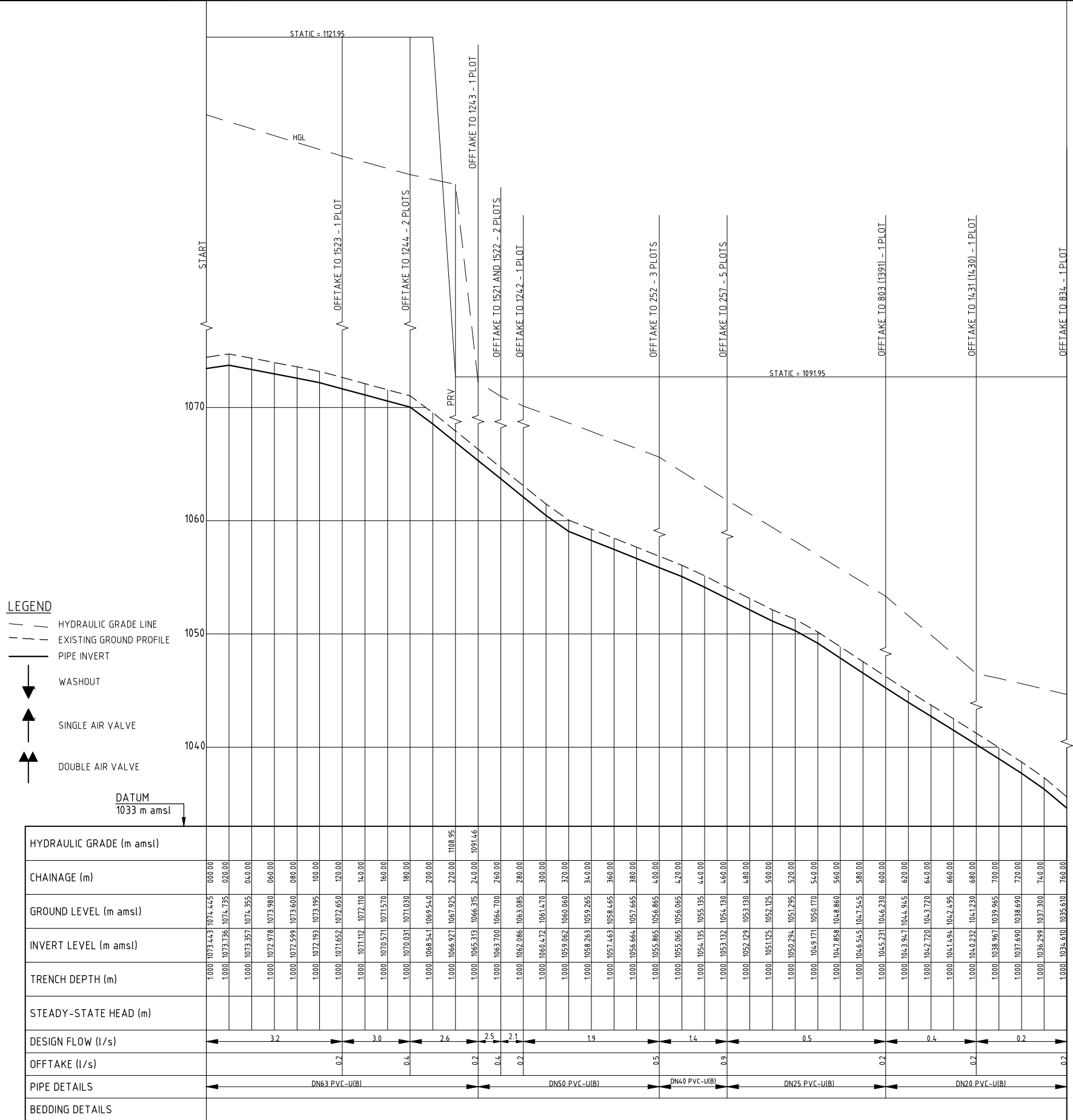
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**MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES**

**PROJECT**  
**SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)**  
**KIRUMI KIAMUJARI IRRIGATION SCHEME**

**DRG TITLE**  
**B6-5 PIPELINE PROFILE**  
**SHEET 1 OF 1**

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	WKM	DRG No.	KKIS/DD/466
Checked:	JON	REV	O
Approved:	MBN	Scale: H=12000 V=1200	



REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

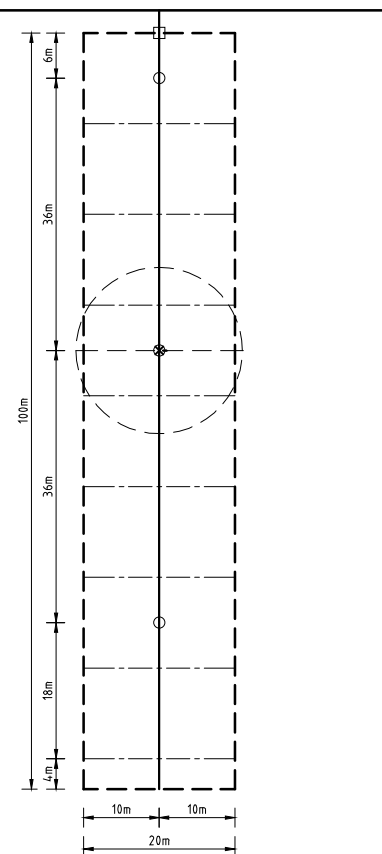
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B6-6 PIPELINE PROFILE

SHEET 1 OF 1

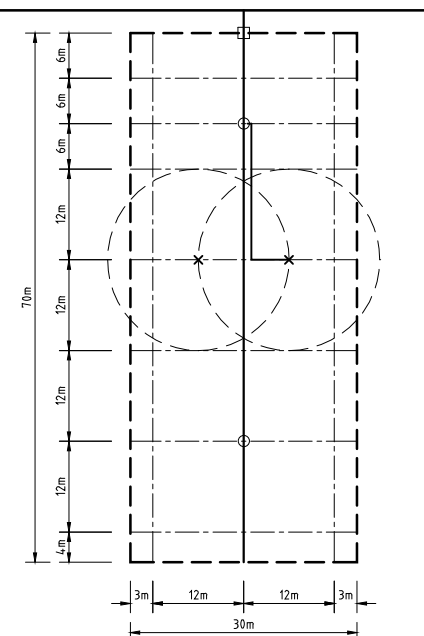
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Checked:	JON	REV	O
Approved:	MBN		
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**PLOT CATEGORY 1**  
Underground Distribution Pipe (PVC-U)



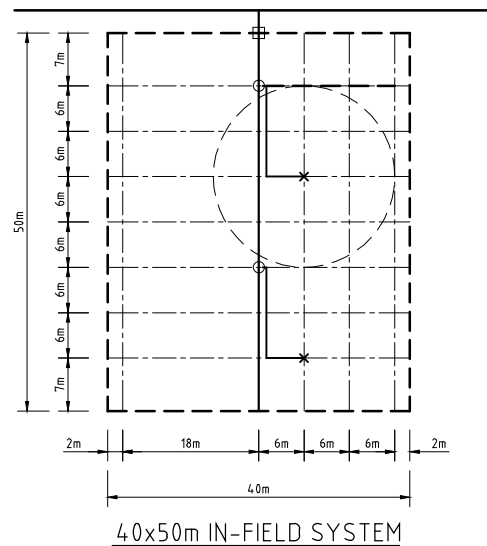
20x100m IN-FIELD SYSTEM

**PLOT CATEGORY 2**  
Underground Distribution Pipe (PVC-U)



30x70m IN-FIELD SYSTEM

**PLOT CATEGORY 3**  
Underground Distribution Pipe (PVC-U)



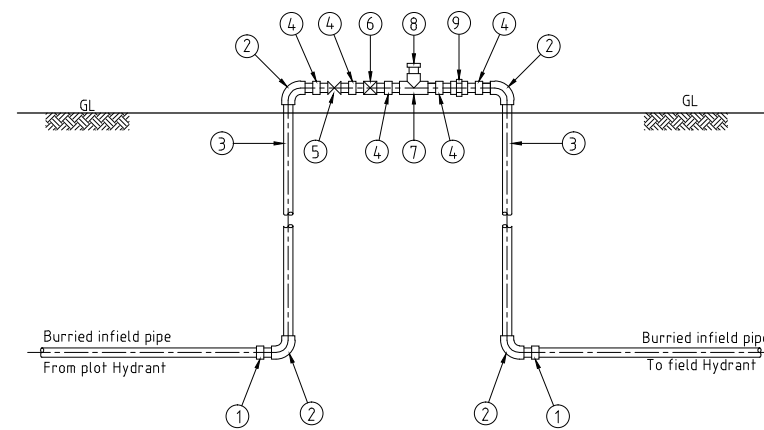
40x50m IN-FIELD SYSTEM

- KEY**
- Plot Hydrant
  - Buried PVC-U field line
  - Field Hydrant
  - Sprinkler lateral (HDPE/LDPE/reinforced rubber)
  - Sprinkler line
  - × Sprinkler position

**NOTES**

- 1 The Plot Hydrant is to be placed at the head of the irrigated plot.
- 2 Field Hydrants spaced in the plot.
- 3 HDPE to be connected to field hydrant.

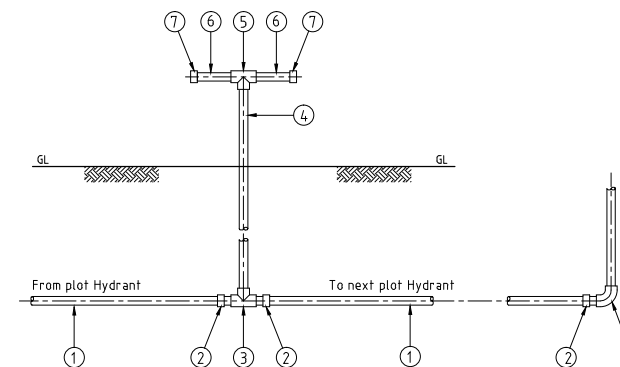
CATEGORY	SIZE	BURIED PVC-U (m)	No. OF FIELD HYDRANTS	HDPE LENGTH (m)	No. OF SPRINKLERS	No. OF COUPLERS	BLOCK NAME									
							F1	F2	B1	B2	B3	B4	B5	B6	TOTAL	
I	20 X 100	78	3	30	1	3	0	0	75	48	180	34	55	21	413	
II	30 X 70	54	2	30	1	3	4	4	82	37	158	88	77	110	560	
III	40 X 50	31	2	36	1	4	4.4	8.4	301	112	334	270	137	288	1,570	
<b>TOTAL</b>							<b>4.8</b>	<b>8.8</b>	<b>458</b>	<b>197</b>	<b>672</b>	<b>392</b>	<b>269</b>	<b>419</b>	<b>2,543</b>	



PLOT HYDRANT

**KEY**

- 1 GI/PVC-U adaptor
- 2 25mm dia GI elbow
- 3 25mm dia GI riser (1m long)
- 4 25mm dia GI nipple
- 5 25mm dia gate valve
- 6 25mm dia flow limiter
- 7 25x20mm dia GI tee
- 8 20mm dia plug
- 9 25mm dia union
- 10 20-25mm dia PVC-U pipe



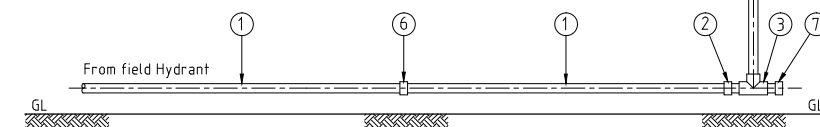
FIELD HYDRANT

**KEY**

- 1 20-25mm dia PVC-U pipe
- 2 GI/PVC-U adaptor
- 3 25x19mm dia GI tee
- 4 19mm dia GI riser (1m long)
- 5 19mm dia GI equal tee
- 6 19mm dia GI piece (0.1m long)
- 7 19mm dia GI end caps to be connected to HDPE/rubber/PVC-U pipe
- 8 25mm dia PVC-U end cap/ plug or elbow

**KEY**

- 1 HDPE/LDPE pipe (6.0m log units) from field hydrant
- 2 HDPE/GI adaptor
- 3 GI equal tee
- 4 1m high, 12/16mm dia GI/HDPE riser with support
- 5 Sprinkler unit
- 6 HDPE/LDPE line coupler
- 7 12mm dia GI plug



SPRINKLER SYSTEM

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

CONSULTANT

**GIBB Africa**

CONSULTING • DESIGN • MANAGEMENT

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P O Box 30020, NAIROBI 00100, KENYA  
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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

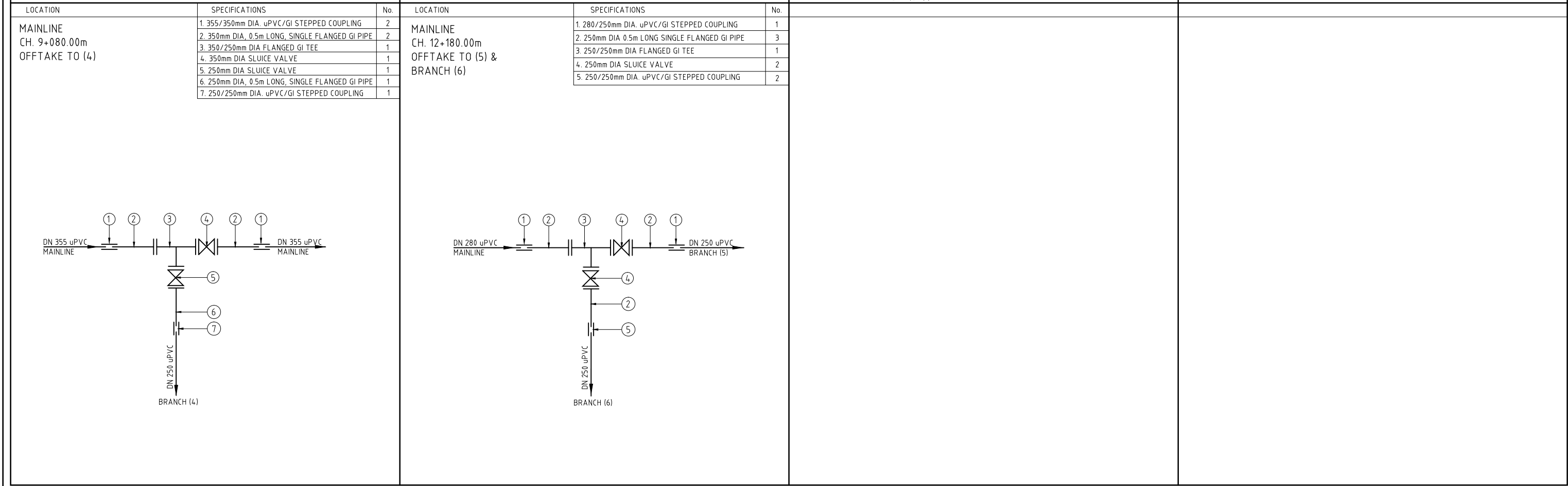
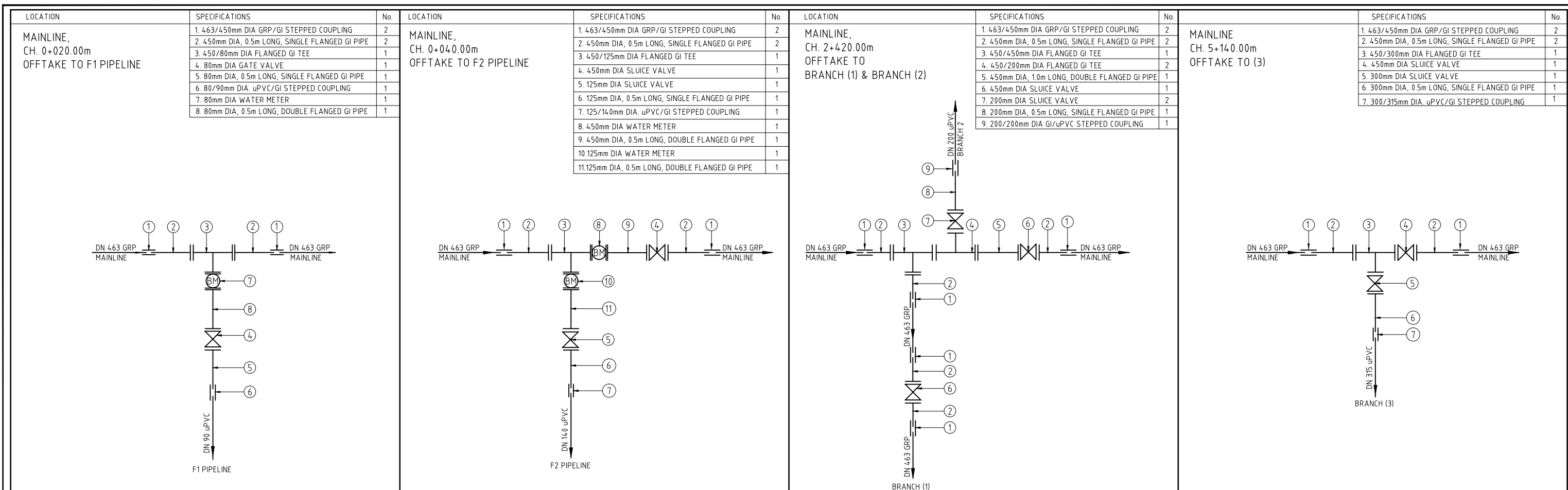
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

INFIELD SYSTEM LAYOUT AND DETAILS

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG No.	SHDP/KKIS/DD/501
Checked:	JON	REV	O
Approved:	MBN	Scale:	1:50 (AT A1)





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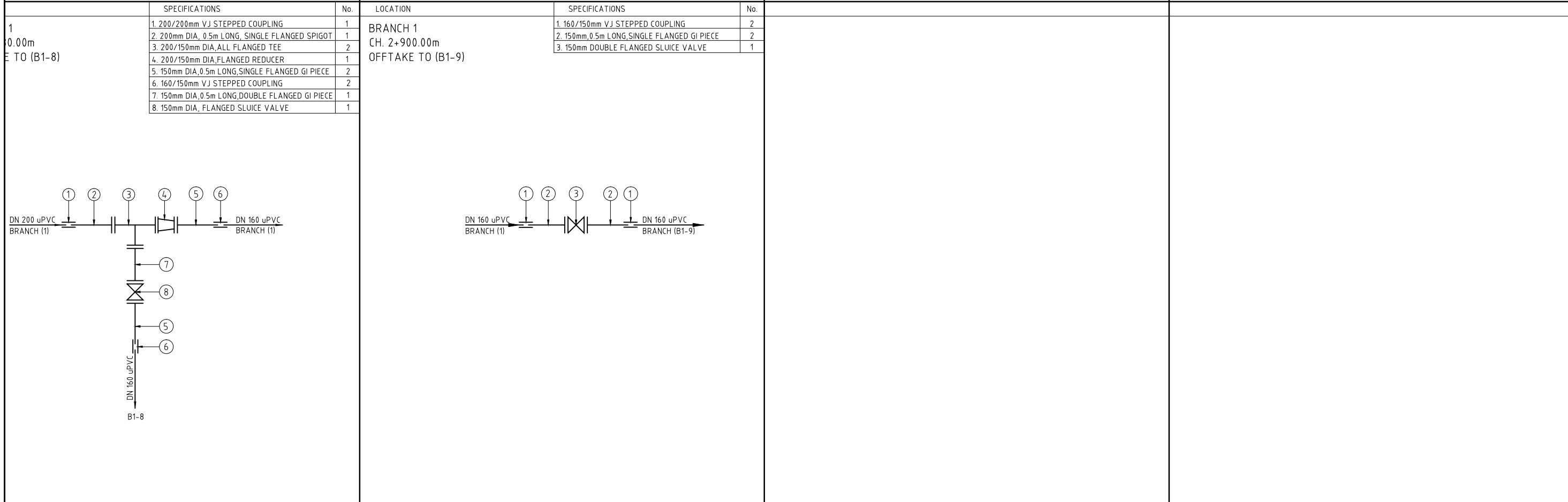
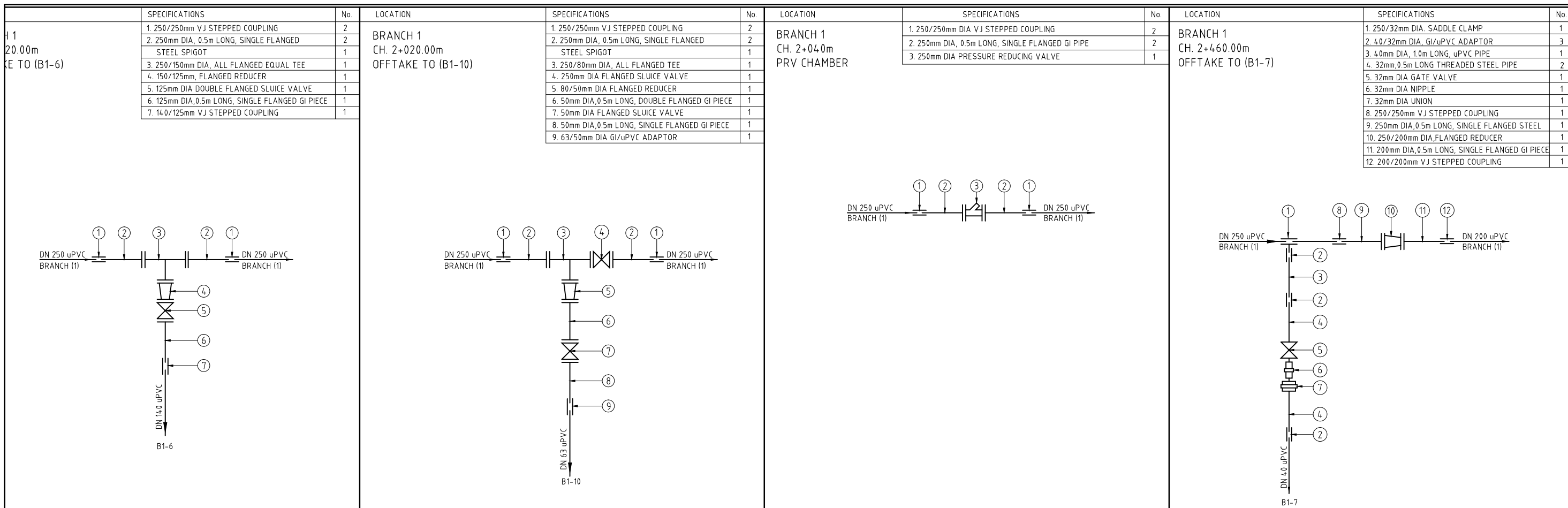
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

BRANCH 1  
JUNCTIONS FITTING DETAILS

SHEET 1 OF 2

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PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

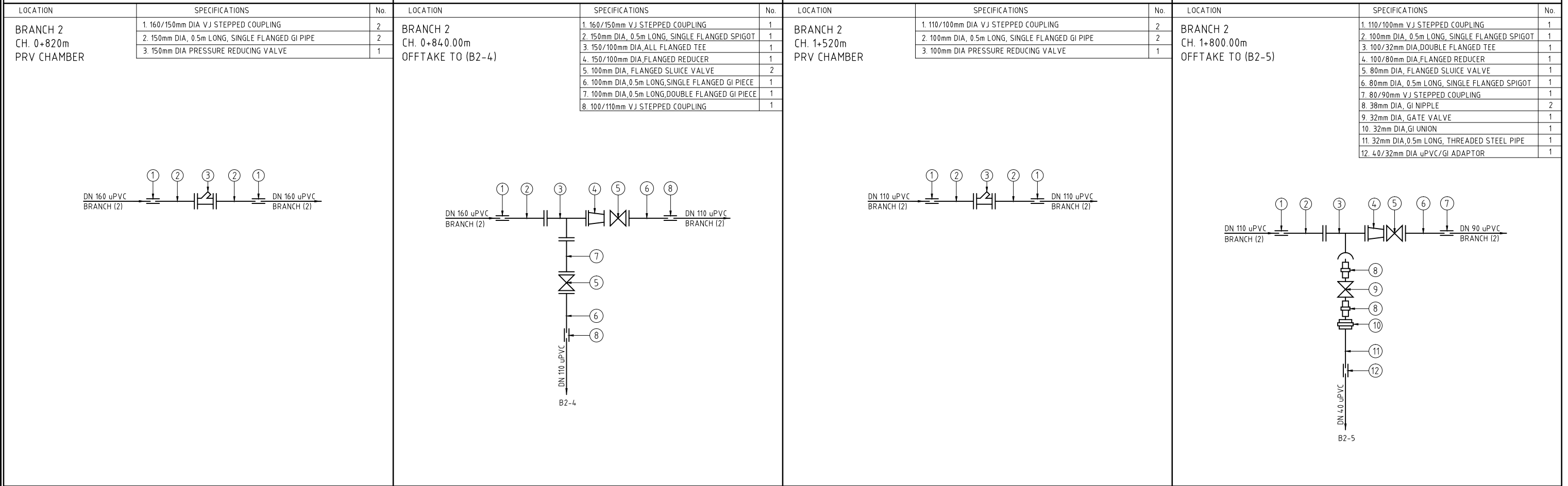
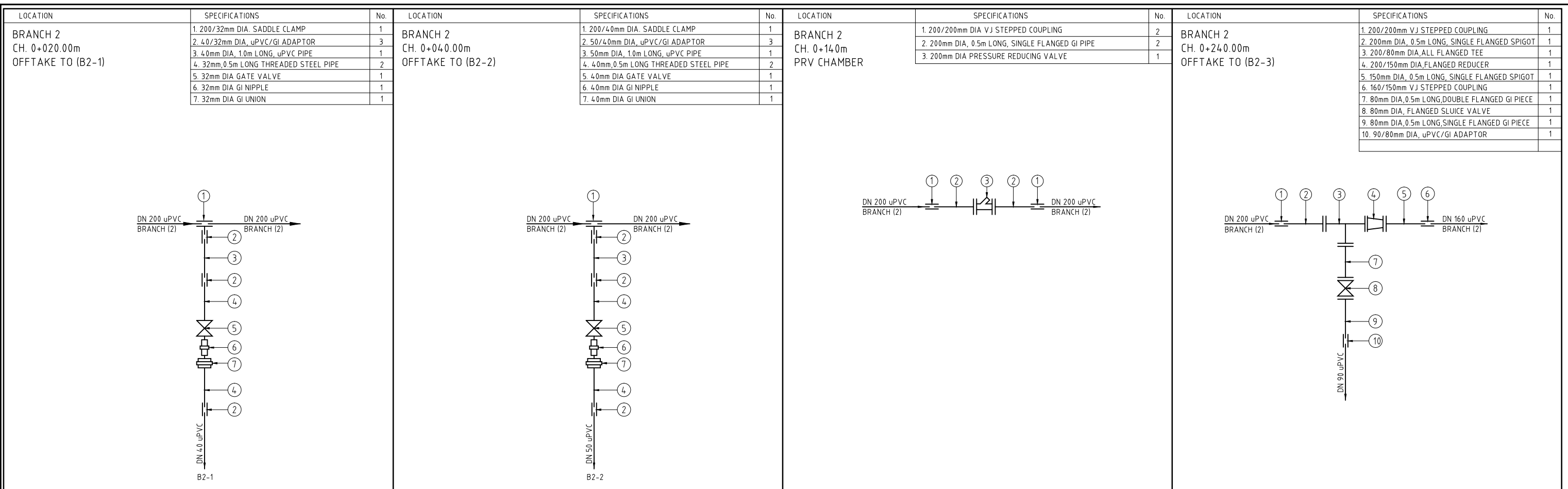
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

BRANCH 1 JUNCTIONS FITTING DETAILS

SHEET 2 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	RRM	DRG No.	KKIS/DD/602
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Scale:	NTS		



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SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

BRANCH 2 JUNCTIONS FITTING DETAILS

SHEET 1 OF 2

Date:	JULY 2014	JOB No.	000811
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LOCATION	SPECIFICATIONS	No.
BRANCH 2 CH. 2+300.00m OFFTAKE TO (B2-6) AND (B2-7)	1. 50/40mm DIA uPVC/GI ADAPTOR	1
	2. 40mm DIA, 0.5m LONG, SINGLE FLANGED GI PIECE	1
	3. 40mm DIA FLANGED SLUICE VALVE	1
	4. 80/40mm, FLANGED REDUCER	1
	5. 80/80mm DIA, ALL FLANGED TEE	1
	6. 80/65mm, FLANGED REDUCER	1
	7. 65mm DIA FLANGED SLUICE VALVE	1
	8. 65mm DIA, 0.5m LONG, SINGLE FLANGED GI PIECE	1
	9. 75/65mm VJ STEPPED COUPLING	1
	10. 80mm DIA, 0.5m LONG, SINGLE FLANGED GI PIECE	1
	11. 80/90mm VJ STEPPED COUPLING	1

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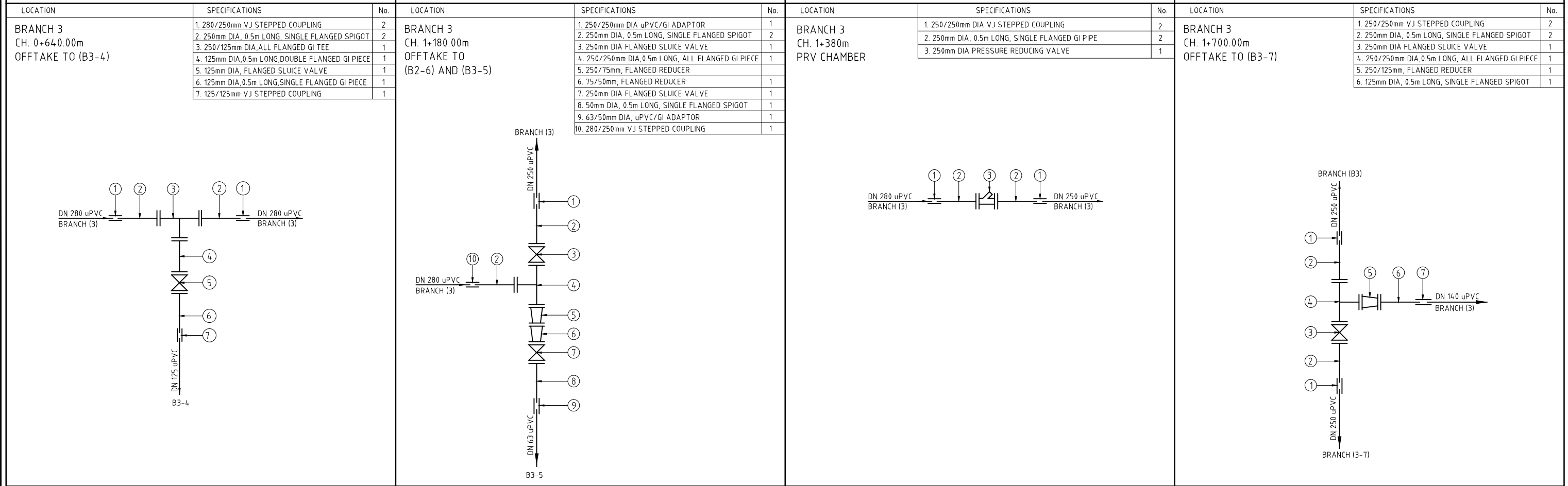
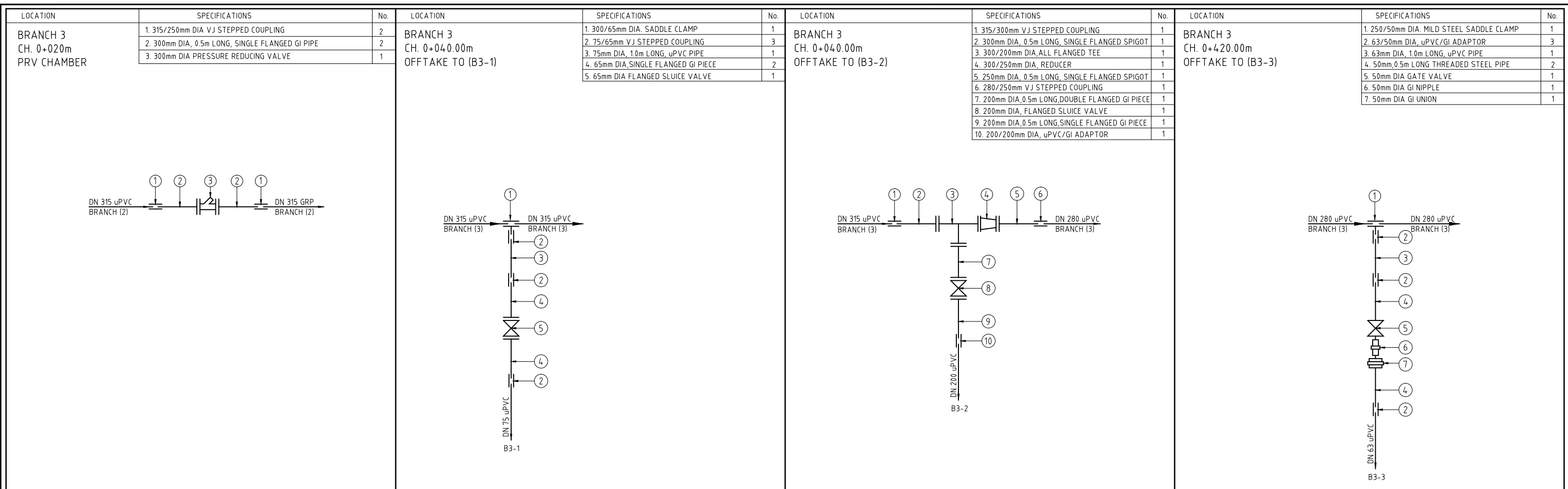
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BRANCH 2  
JUNCTIONS FITTING DETAILS

SHEET 2 OF 2

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SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

BRANCH 3 JUNCTIONS FITTING DETAILS

SHEET 1 OF 2

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LOCATION	SPECIFICATIONS	No.
BRANCH 3 CH. 0+020m PRV CHAMBER	1. 315/250mm DIA VJ STEPPED COUPLING	2
	2. 300mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 300mm DIA PRESSURE REDUCING VALVE	1

LOCATION	SPECIFICATIONS	No.
BRANCH 3 CH. 0+040.00m OFFTAKE TO (B3-1)	1. 300/65mm DIA. SADDLE CLAMP	1
	2. 75/65mm VJ STEPPED COUPLING	3
	3. 75mm DIA, 1.0m LONG, uPVC PIPE	1
	4. 65mm DIA, SINGLE FLANGED GI PIECE	2
	5. 65mm DIA FLANGED SLUICE VALVE	1

LOCATION	SPECIFICATIONS	No.
BRANCH 3 CH. 0+040.00m OFFTAKE TO (B3-2)	1. 315/300mm VJ STEPPED COUPLING	1
	2. 300mm DIA, 0.5m LONG, SINGLE FLANGED SPIGOT	1
	3. 300/200mm DIA, ALL FLANGED TEE	1
	4. 300/250mm DIA, REDUCER	1
	5. 250mm DIA, 0.5m LONG, SINGLE FLANGED SPIGOT	1
	6. 280/250mm VJ STEPPED COUPLING	1
	7. 200mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIECE	1
	8. 200mm DIA, FLANGED SLUICE VALVE	1
	9. 200mm DIA, 0.5m LONG, SINGLE FLANGED GI PIECE	1
	10. 200/200mm DIA, uPVC/GI ADAPTOR	1

LOCATION	SPECIFICATIONS	No.
BRANCH 3 CH. 0+420.00m OFFTAKE TO (B3-3)	1. 250/50mm DIA. MILD STEEL SADDLE CLAMP	1
	2. 63/50mm DIA, uPVC/GI ADAPTOR	3
	3. 63mm DIA, 1.0m LONG, uPVC PIPE	1
	4. 50mm, 0.5m LONG THREADED STEEL PIPE	2
	5. 50mm DIA GATE VALVE	1
	6. 50mm DIA GI NIPPLE	1
	7. 50mm DIA GI UNION	1

LOCATION	SPECIFICATIONS	No.
BRANCH 3 CH. 0+640.00m OFFTAKE TO (B3-4)	1. 280/250mm VJ STEPPED COUPLING	2
	2. 250mm DIA, 0.5m LONG, SINGLE FLANGED SPIGOT	2
	3. 250/125mm DIA, ALL FLANGED GI TEE	1
	4. 125mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIECE	1
	5. 125mm DIA, FLANGED SLUICE VALVE	1
	6. 125mm DIA, 0.5m LONG, SINGLE FLANGED GI PIECE	1
	7. 125/125mm VJ STEPPED COUPLING	1

LOCATION	SPECIFICATIONS	No.
BRANCH 3 CH. 1+180.00m OFFTAKE TO (B2-6) AND (B3-5)	1. 250/250mm DIA uPVC/GI ADAPTOR	1
	2. 250mm DIA, 0.5m LONG, SINGLE FLANGED SPIGOT	2
	3. 250mm DIA FLANGED SLUICE VALVE	1
	4. 250/250mm DIA, 0.5m LONG, ALL FLANGED GI PIECE	1
	5. 250/75mm, FLANGED REDUCER	1
	6. 75/50mm, FLANGED REDUCER	1
	7. 250mm DIA FLANGED SLUICE VALVE	1
	8. 50mm DIA, 0.5m LONG, SINGLE FLANGED SPIGOT	1
	9. 63/50mm DIA, uPVC/GI ADAPTOR	1
	10. 280/250mm VJ STEPPED COUPLING	1

LOCATION	SPECIFICATIONS	No.
BRANCH 3 CH. 1+380m PRV CHAMBER	1. 250/250mm DIA VJ STEPPED COUPLING	2
	2. 250mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 250mm DIA PRESSURE REDUCING VALVE	1

LOCATION	SPECIFICATIONS	No.
BRANCH 3 CH. 1+700.00m OFFTAKE TO (B3-7)	1. 250/250mm VJ STEPPED COUPLING	2
	2. 250mm DIA, 0.5m LONG, SINGLE FLANGED SPIGOT	2
	3. 250mm DIA FLANGED SLUICE VALVE	1
	4. 250/250mm DIA, 0.5m LONG, ALL FLANGED GI PIECE	1
	5. 250/125mm, FLANGED REDUCER	1
	6. 125mm DIA, 0.5m LONG, SINGLE FLANGED SPIGOT	1

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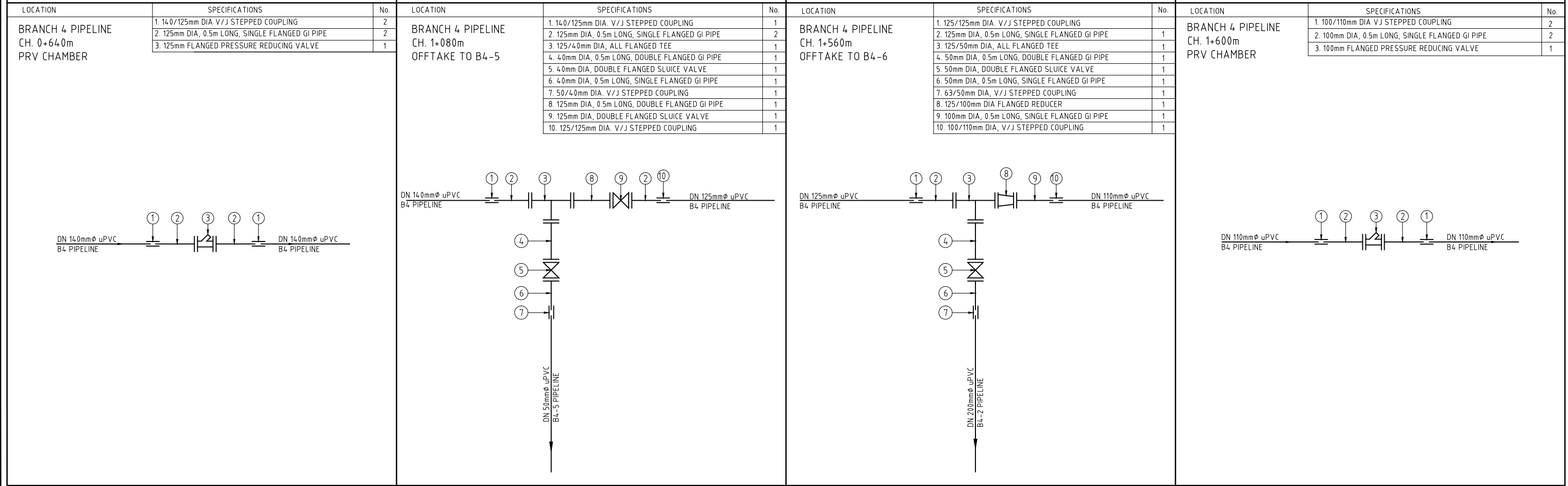
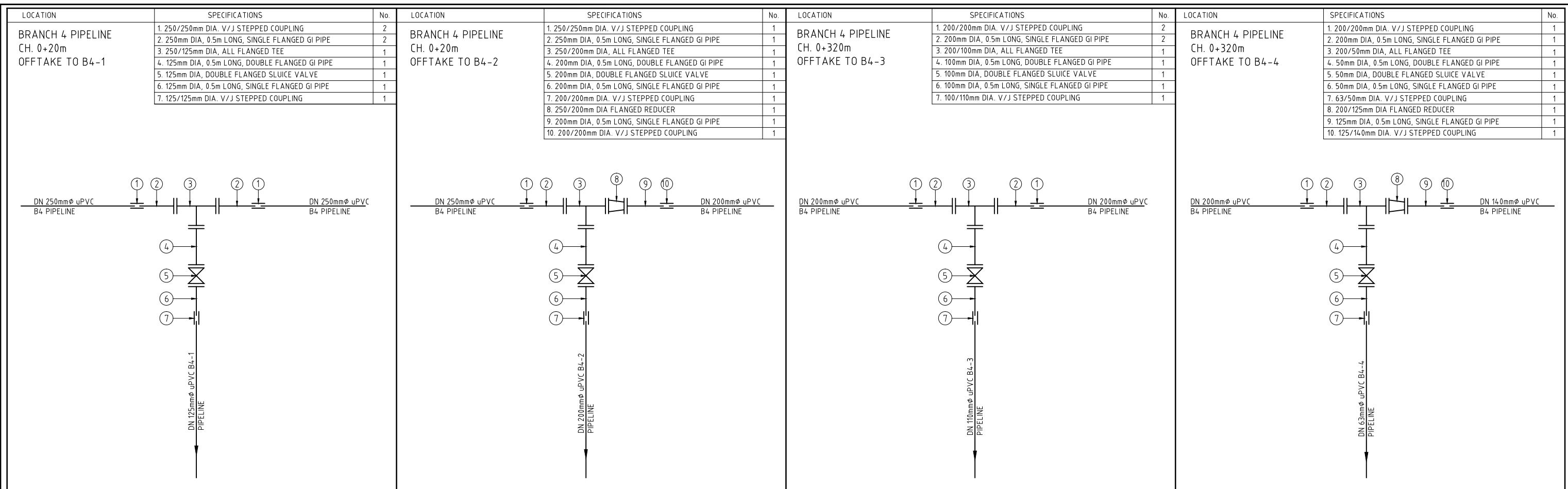
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

BRANCH 3 JUNCTIONS FITTING DETAILS

SHEET 2 OF 2

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SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

BRANCH 4 JUNCTIONS FITTING DETAILS

SHEET 1 OF 2

Date:	JULY 2014	JOB No.	000811
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LOCATION	SPECIFICATIONS	No.
BRANCH 4 PIPELINE CH. 2+24.0m OFFTAKE TO B4-7	1. 100/110mm DIA VJ STEPPED COUPLING	2
	2. 100mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 100mm DIA, DOUBLE FLANGED SLUICE VALVE	1

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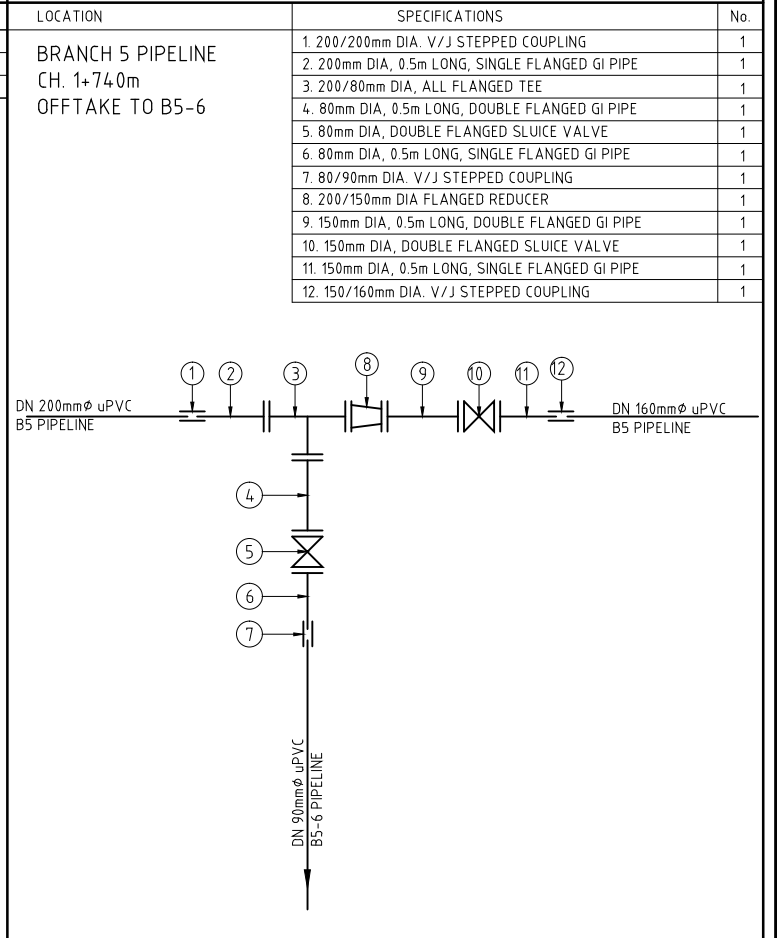
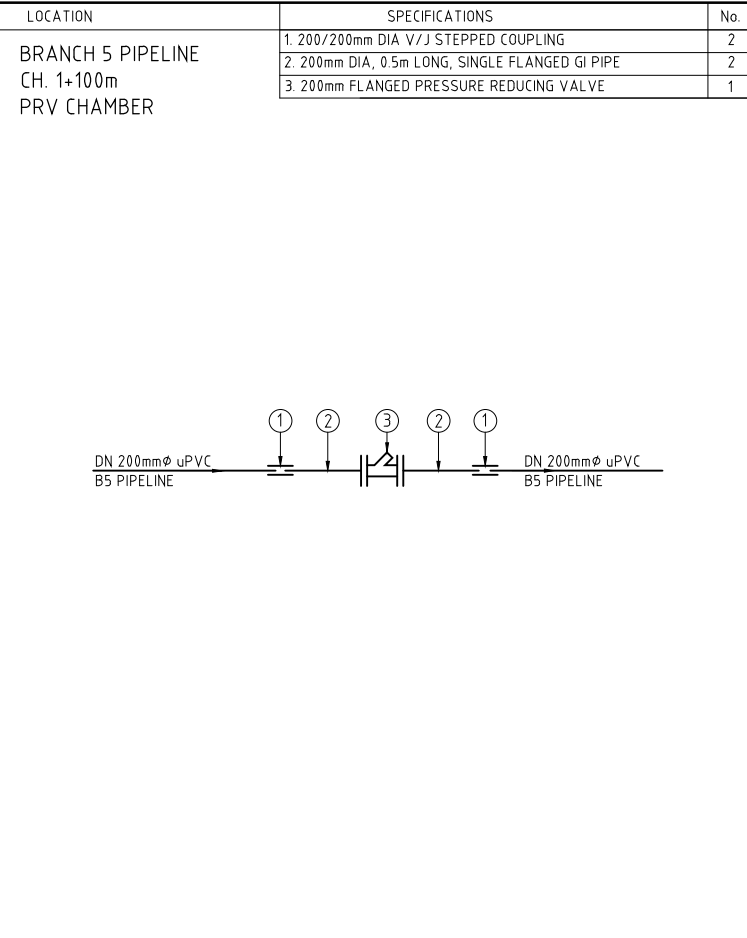
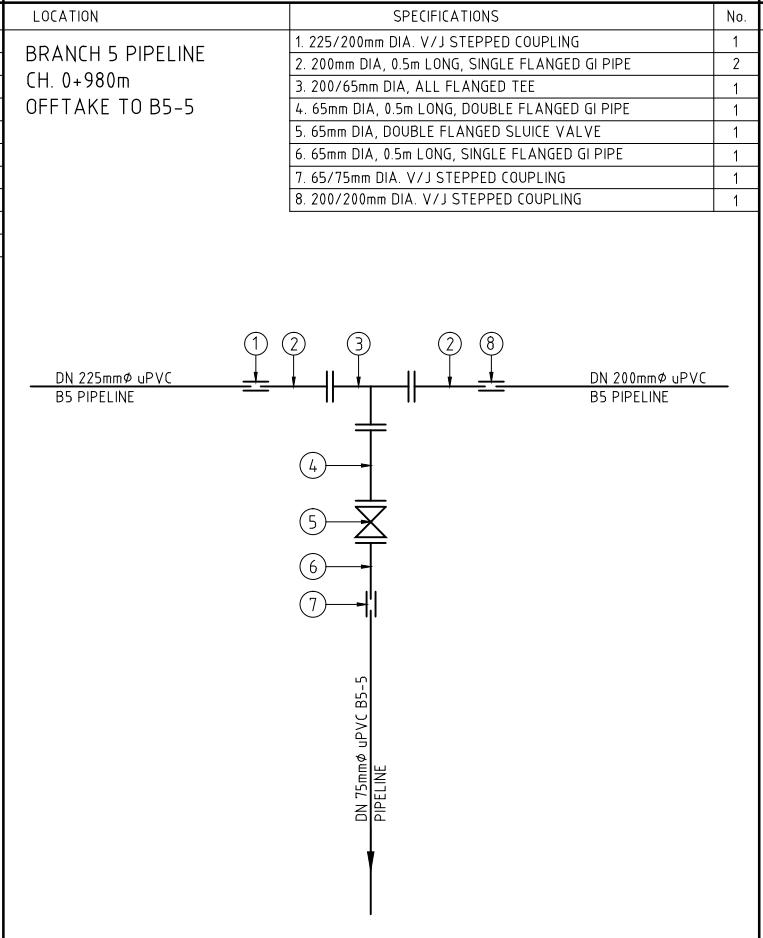
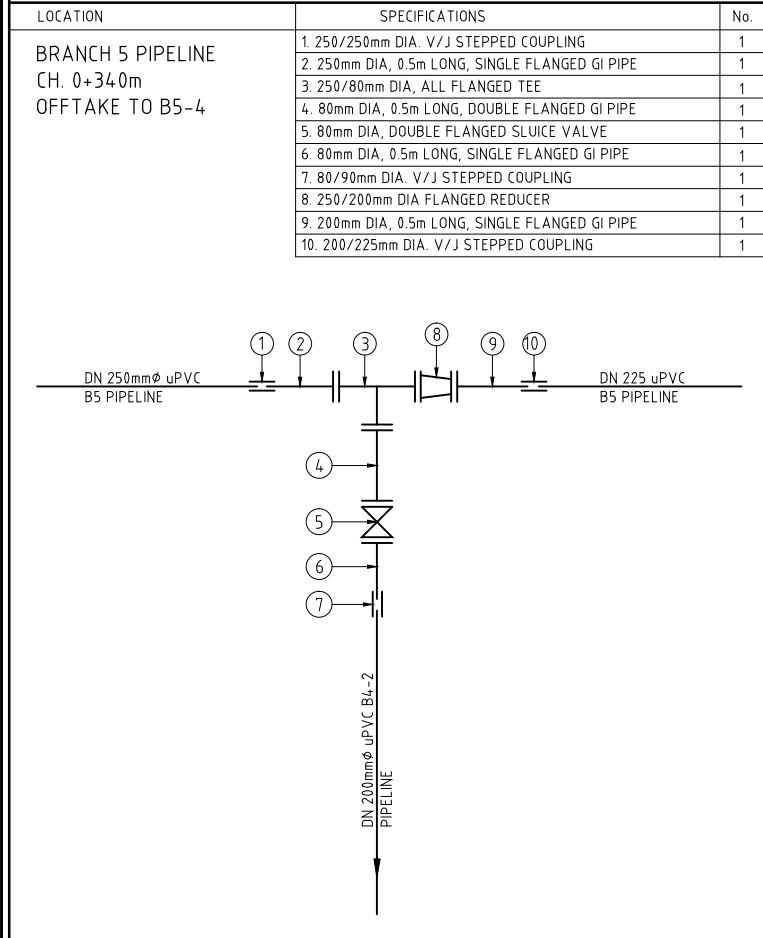
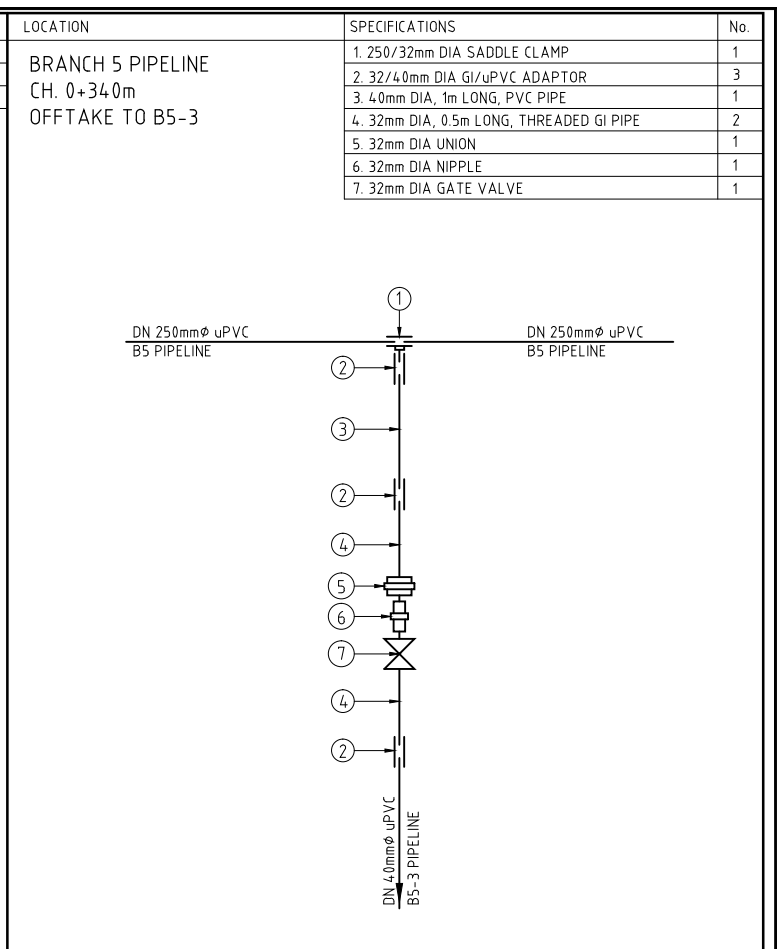
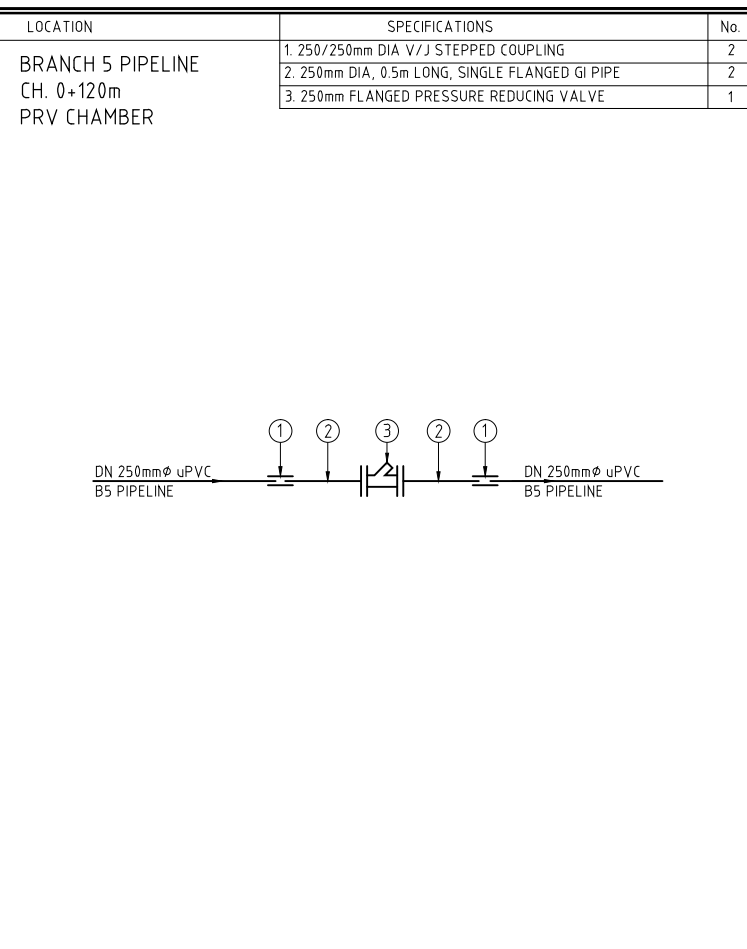
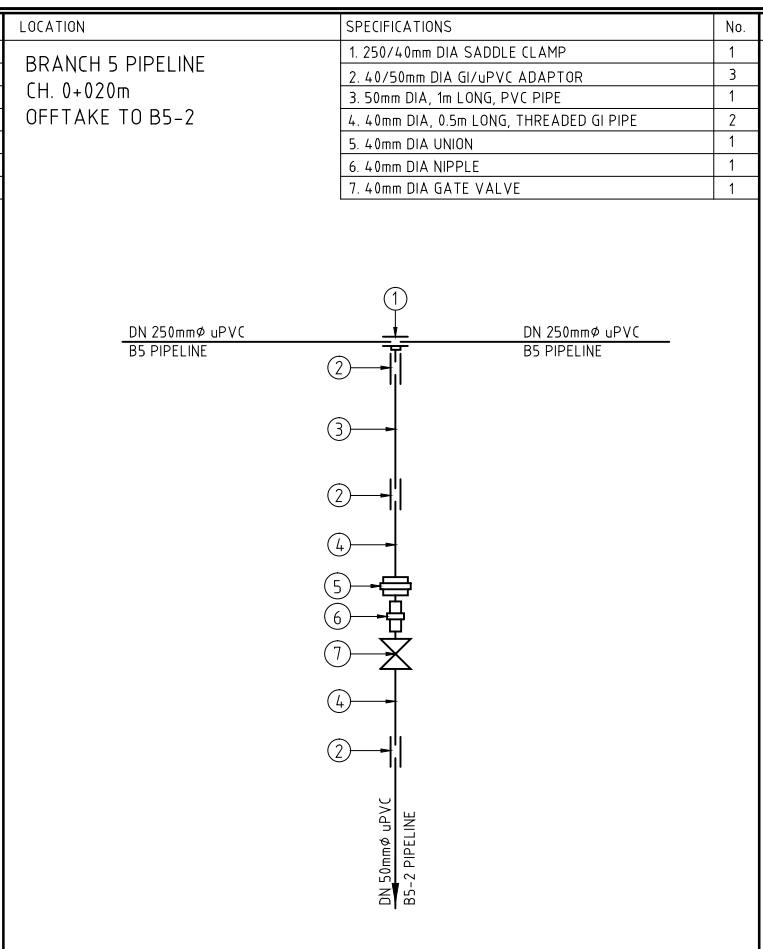
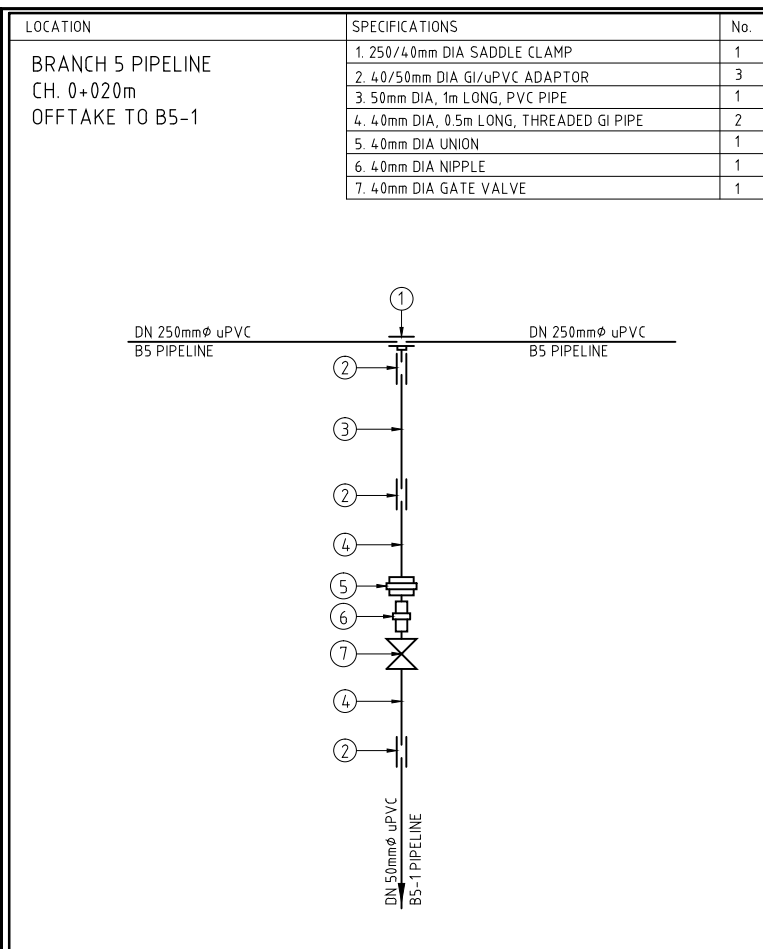
KIRUMI KIAMUJARI IRRIGATION SCHEME

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BRANCH 4 JUNCTIONS FITTING DETAILS

SHEET 2 OF 2

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KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

BRANCH 5 JUNCTIONS FITTING DETAILS

SHEET 1 OF 2

Date:	JULY 2014	JOB No.	000811
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LOCATION	SPECIFICATIONS	No.	LOCATION	SPECIFICATIONS	No.	LOCATION	SPECIFICATIONS	No.	LOCATION	SPECIFICATIONS	No.
BRANCH 5 PIPELINE CH. 2+060m PRV CHAMBER	1. 160/150mm DIA V/J STEPPED COUPLING	2	BRANCH 5 PIPELINE CH. 3+060m PRV CHAMBER	1. 160/150mm DIA V/J STEPPED COUPLING	2	BRANCH 5 PIPELINE CH. 3+220m OFFTAKE TO B5-7	1. 160/150mm DIA. V/J STEPPED COUPLING	1	BRANCH 5 PIPELINE CH. 3+240m OFFTAKE TO B5-8	1. 140/125mm DIA. V/J STEPPED COUPLING	1
	2. 150mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2		2. 150mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2		2. 150mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1		2. 125mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	3. 150mm FLANGED SLUICE VALVE	1		3. 150mm FLANGED PRESSURE REDUCING VALVE	1		3. 150/125mm DIA, ALL FLANGED TEE	1		3. 125/125mm DIA, ALL FLANGED TEE	1
	4. 150mm FLANGED PRESSURE REDUCING VALVE	1					4. 125mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	2		4. 125mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	1
							5. 125mm DIA, DOUBLE FLANGED SLUICE VALVE	2		5. 125mm DIA, DOUBLE FLANGED SLUICE VALVE	1
							6. 125mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2		6. 125mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
							7. 125/125mm DIA. V/J STEPPED COUPLING	1		7. 125/125mm DIA. V/J STEPPED COUPLING	1
							8. 150/125mm DIA FLANGED REDUCER	1		8. 125/100mm DIA FLANGED REDUCER	1
							9. 140/125mm DIA. V/J STEPPED COUPLING	1		9. 100mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
								10. 100/110mm DIA. V/J STEPPED COUPLING		1	

DN 160mm $\phi$  uPVC B5 PIPELINE

DN 160mm $\phi$  uPVC B5 PIPELINE

DN 160mm $\phi$  uPVC B5 PIPELINE

DN 140mm $\phi$  uPVC B5 PIPELINE

DN 125mm $\phi$  uPVC B5-7 PIPELINE

DN 140mm $\phi$  uPVC B5 PIPELINE

DN 110mm $\phi$  uPVC B5 PIPELINE

DN 125mm $\phi$  uPVC B4-2 PIPELINE

LOCATION	SPECIFICATIONS	No.	LOCATION	SPECIFICATIONS	No.
BRANCH 5 PIPELINE CH. 4+140m PRV CHAMBER	1. 100/110mm DIA V/J STEPPED COUPLING	2	BRANCH 5 PIPELINE CH. 4+640m OFFTAKE TO B5-9	1. 100/110mm DIA V/J STEPPED COUPLING	2
	2. 100mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2		2. 100mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 100mm FLANGED PRESSURE REDUCING VALVE	1		3. 100mm DIA, DOUBLE FLANGED SLUICE VALVE	1

DN 110mm $\phi$  uPVC B5 PIPELINE

DN 110mm $\phi$  uPVC B5 PIPELINE

DN 110mm $\phi$  uPVC B5-9 PIPELINE

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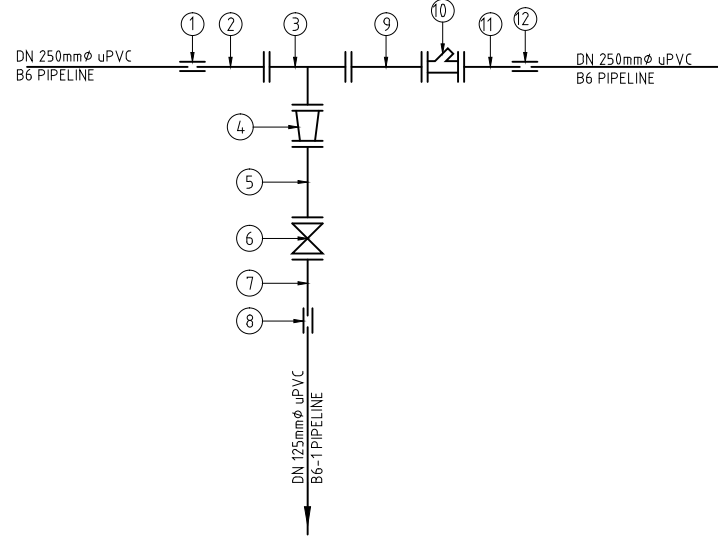
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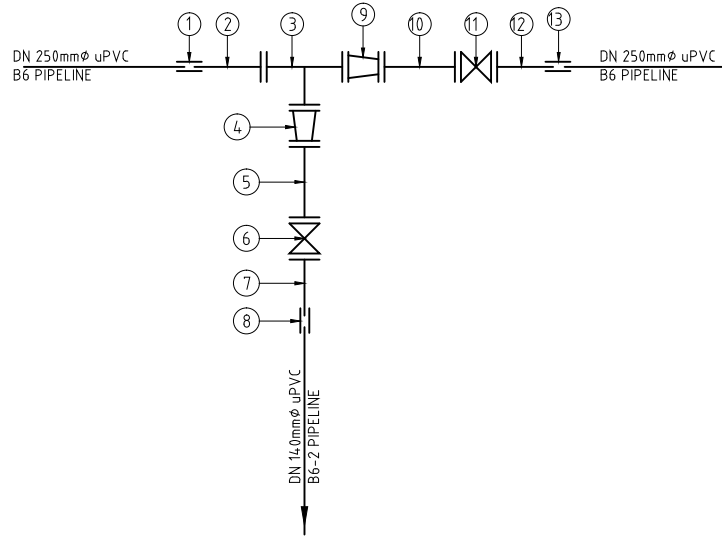
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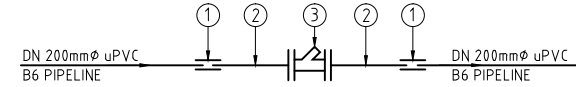
LOCATION	SPECIFICATIONS	No.
BRANCH 6 PIPELINE CH. 0+020m OFFTAKE TO B6-1	1. 250/250mm DIA. V/J STEPPED COUPLING	2
	2. 250mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 250/150mm DIA, ALL FLANGED TEE	1
	4. 150/125mm DIA FLANGED REDUCER	1
	5. 125mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	1
	6. 125mm DIA, DOUBLE FLANGED SLUICE VALVE	1
	7. 125mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	8. 125/125mm DIA. V/J STEPPED COUPLING	1
	9. 250mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	1
	10. 250mm FLANGED PRESSURE REDUCING VALVE	1
	11. 250mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1



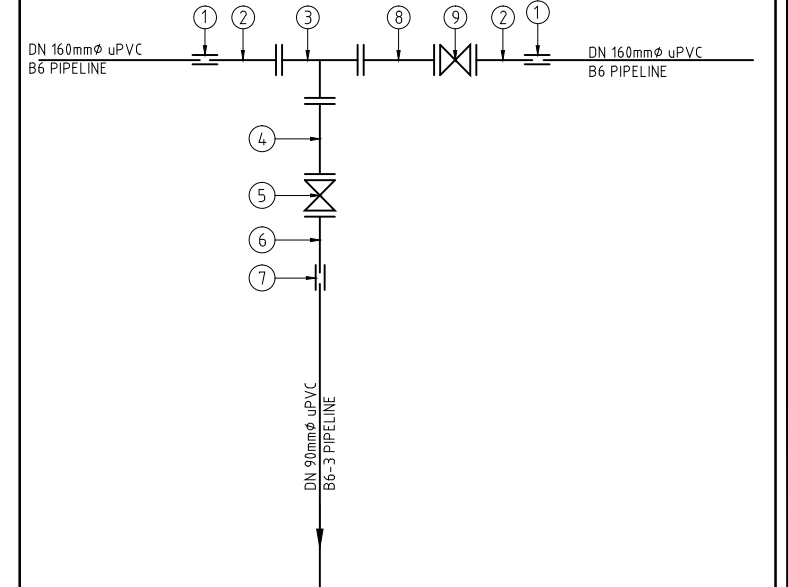
LOCATION	SPECIFICATIONS	No.
BRANCH 6 PIPELINE CH. 0+460m OFFTAKE TO B6-2	1. 250/250mm DIA. V/J STEPPED COUPLING	2
	2. 250mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 250/150mm DIA, ALL FLANGED TEE	1
	4. 150/125mm DIA, FLANGED REDUCER	1
	5. 125mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	1
	6. 125mm DIA, DOUBLE FLANGED SLUICE VALVE	1
	7. 125mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	8. 125/140mm DIA. V/J STEPPED COUPLING	1
	9. 250/200mm DIA FLANGED REDUCER	1
	10. 200mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	1
	11. 200mm DIA, DOUBLE FLANGED SLUICE VALVE	1
	12. 200mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	13. 200/200mm DIA. V/J STEPPED COUPLING	1



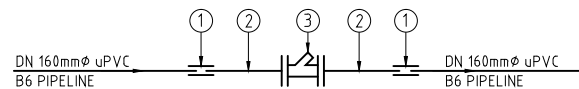
LOCATION	SPECIFICATIONS	No.
BRANCH 6 PIPELINE CH. 0+480m PRV CHAMBER	1. 200/200mm DIA V/J STEPPED COUPLING	2
	2. 200mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 200mm FLANGED PRESSURE REDUCING VALVE	1



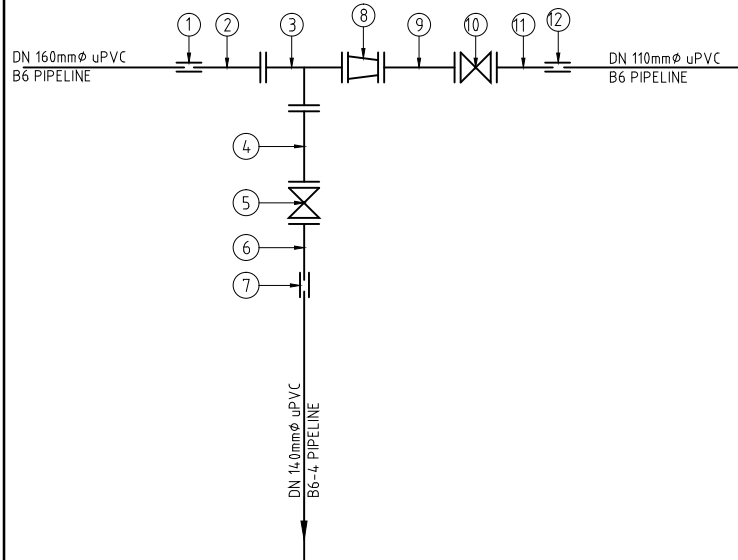
LOCATION	SPECIFICATIONS	No.
BRANCH 6 PIPELINE CH. 1+880m OFFTAKE TO B6-3	1. 160/150mm DIA. V/J STEPPED COUPLING	2
	2. 150mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 150/80mm DIA, ALL FLANGED TEE	1
	4. 80mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	1
	5. 80mm DIA, DOUBLE FLANGED SLUICE VALVE	1
	6. 80mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	7. 80/90mm DIA. V/J STEPPED COUPLING	1
	8. 150mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	1
	9. 150mm DIA, DOUBLE FLANGED SLUICE VALVE	1



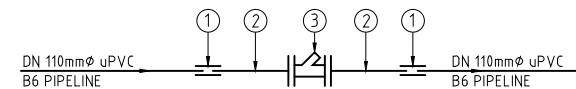
LOCATION	SPECIFICATIONS	No.
BRANCH 6 PIPELINE CH. 1+900m PRV CHAMBER	1. 160/150mm DIA V/J STEPPED COUPLING	2
	2. 150mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 150mm FLANGED PRESSURE REDUCING VALVE	1



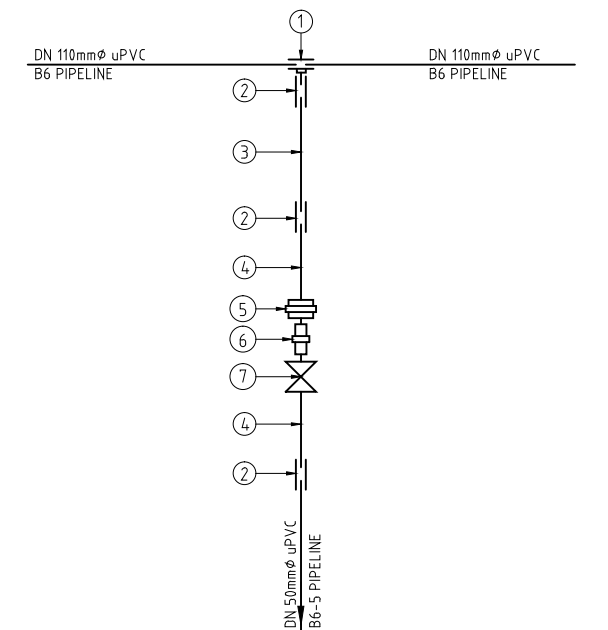
LOCATION	SPECIFICATIONS	No.
BRANCH 6 PIPELINE CH. 3+040m OFFTAKE TO B6-4	1. 160/150mm DIA. V/J STEPPED COUPLING	1
	2. 150mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	3. 150/125mm DIA, ALL FLANGED TEE	1
	4. 125mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	1
	5. 125mm DIA, DOUBLE FLANGED SLUICE VALVE	1
	6. 125mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	7. 125/140mm DIA. V/J STEPPED COUPLING	1
	8. 150/100mm DIA FLANGED REDUCER	1
	9. 100mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	1
	10. 100mm DIA, DOUBLE FLANGED SLUICE VALVE	1
	11. 100mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	12. 100/110mm DIA. V/J STEPPED COUPLING	1



LOCATION	SPECIFICATIONS	No.
BRANCH 6 PIPELINE CH. 3+220m PRV CHAMBER	1. 100/110mm DIA V/J STEPPED COUPLING	2
	2. 100mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 100mm FLANGED PRESSURE REDUCING VALVE	1



LOCATION	SPECIFICATIONS	No.
BRANCH 6 PIPELINE CH. 3+800m OFFTAKE TO B6-5	1. 100/50mm DIA SADDLE CLAMP	1
	2. 63/50mm DIA GI/uPVC ADAPTOR	3
	3. 63mm DIA, 1m LONG, PVC PIPE	1
	4. 50mm DIA, 0.5m LONG, THREADED GI PIPE	2
	5. 50mm DIA UNION	1
	6. 50mm DIA NIPPLE	1
	7. 50mm DIA GATE VALVE	1



REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

BRANCH 6 JUNCTIONS FITTING DETAILS

SHEET 1 OF 2

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	RRM	DRG No.	KKIS/DD/607
Checked:	JON	REV	O
Approved:	MBN	Scale:	NTS

LOCATION	SPECIFICATIONS	No.
BRANCH 6 PIPELINE CH. 3+800m OFFTAKE TO B6-6	1. 100/110mm DIA V/J STEPPED COUPLING	1
	2. 100mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	3. 100/50mm DIA, FLANGED REDUCER	1
	4. 50mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	1
	5. 100mm DIA, DOUBLE FLANGED GATE VALVE	1
	6. 50mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	7. 50/63mm DIA, V/J STEPPED COUPLING	1

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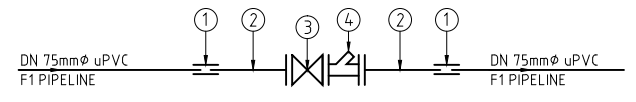
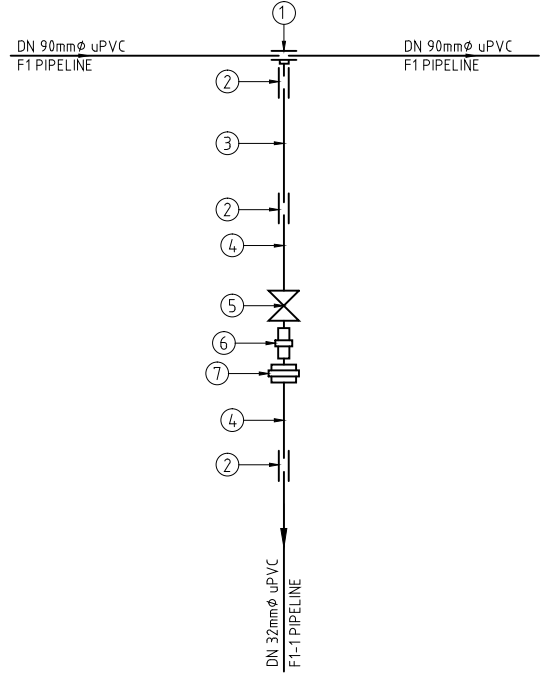
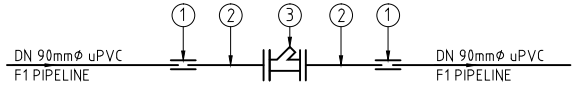
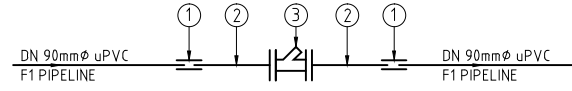
DRG TITLE

BRANCH 6 JUNCTIONS FITTING DETAILS

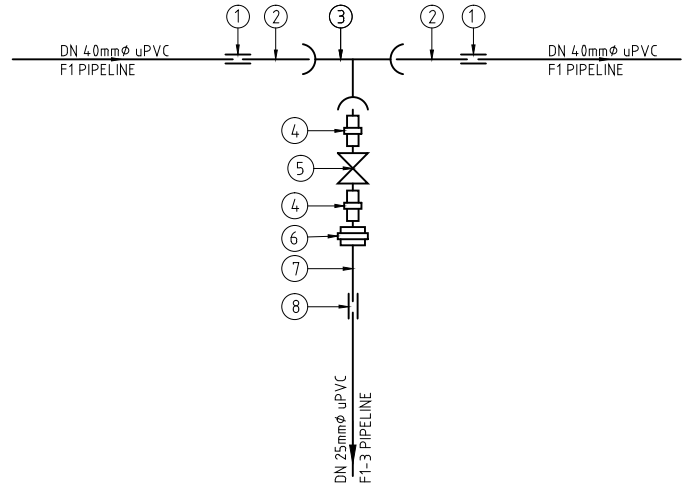
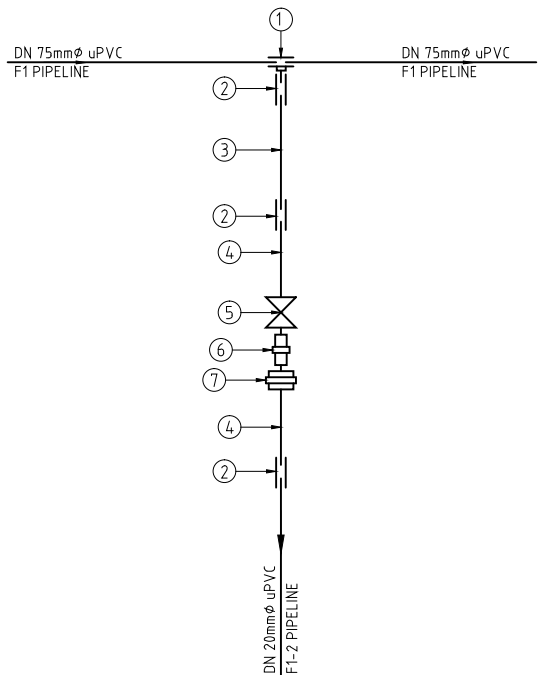
SHEET 2 OF 2

Date:	JULY 2014	JOB No.	000811
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Drawn:	RRM	DRG No.	KKIS/DD/607
Checked:	JON	REV	O
Approved:	MBN		
Scale:	NTS		

LOCATION	SPECIFICATIONS	No.	LOCATION	SPECIFICATIONS	No.	LOCATION	SPECIFICATIONS	No.	LOCATION	SPECIFICATIONS	No.
F1 PIPELINE CH. 0+020m PRV CHAMBER	1. 90/80mm DIA VJ STEPPED COUPLING	2	F1 PIPELINE CH. 0+480m PRV CHAMBER	1. 90/80mm DIA VJ STEPPED COUPLING	2	F1 PIPELINE CH. 0+540m OFFTAKE TO F1-1	1. 80/25mm DIA SADDLE CLAMP	1	F1 PIPELINE CH. 1+080m PRV CHAMBER	1. 75/65mm DIA V/J STEPPED COUPLING	2
	2. 80mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2		2. 80mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2		2. 32/25mm DIA uPVC/GI ADAPTOR	3		2. 65mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 80mm DIA PRESSURE REDUCING VALVE	1		3. 80mm DIA PRESSURE REDUCING VALVE	1		3. 32mm DIA, 1m LONG, uPVC PIPE	1		3. 65mm DIA FLANGED SLUICE VALVE	1
				4. 25mm DIA, 0.5m LONG, THREADED GI PIPE	2		4. 65mm DIA PRESSURE REDUCING VALVE	1			
							5. 25mm DIA GATE VALVE	1			
							6. 25mm DIA NIPPLE	1			
							7. 25mm DIA UNION	1			



LOCATION	SPECIFICATIONS	No.	LOCATION	SPECIFICATIONS	No.
F1 PIPELINE CH. 1+300m OFFTAKE TO F1-2	1. 65/15mm DIA SADDLE CLAMP	1	F1 PIPELINE CH. 1+740m OFFTAKE TO F1-3	1. 40/32mm DIA uPVC/GI ADAPTOR	2
	2. 20/15mm DIA uPVC/GI ADAPTOR	3		2. 32mm DIA, 0.5m LONG, THREADED GI PIPE	2
	3. 20mm DIA, 1m LONG, uPVC PIPE	1		3. 32/20mm DIA, THREADED GI TEE	1
	4. 15mm DIA, 0.5m LONG, THREADED GI PIPE	2		4. 20mm DIA GI NIPPLE	2
	5. 15mm DIA GATE VALVE	1		5. 20mm DIA GATE VALVE	1
	6. 15mm DIA NIPPLE	1		6. 20mm DIA GI UNION	1
	7. 15mm DIA UNION	1		7. 20mm DIA, 0.5m LONG, THREADED GI PIPE	1
				8. 25/20mm DIA uPVC/GI ADAPTOR	1



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PROJECT

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KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

DISTRIBUTION F1 JUNCTIONS FITTING DETAILS

SHEET 1 OF 1

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.Cad
Drawn:	PMK	DRG No.	SHDP/KKIS/DD/608
Checked:	JON	REV	O
Approved:	MBN		
Scale:	NTS		

LOCATION	SPECIFICATIONS	No.
F2 PIPELINE CH. 0+020m PRV CHAMBER	1. 140/125mm DIA V/J STEPPED COUPLING	2
	2. 125mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 125mm DIA PRESSURE REDUCING VALVE	1

LOCATION	SPECIFICATIONS	No.
F2 PIPELINE CH. 0+460m PRV CHAMBER	1. 110/100mm DIA V/J STEPPED COUPLING	2
	2. 100mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 100mm DIA PRESSURE REDUCING VALVE	1

LOCATION	SPECIFICATIONS	No.
F2 PIPELINE CH. 1+060m PRV CHAMBER	1. 110/100mm DIA V/J STEPPED COUPLING	2
	2. 100mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 100mm DIA FLANGED SLUICE VALVE	1
	4. 100mm DIA PRESSURE REDUCING VALVE	1

LOCATION	SPECIFICATIONS	No.
F2 PIPELINE CH. 1+640m OFFTAKE TO F2-1	1. 110/100mm DIA. V/J STEPPED COUPLING	2
	2. 100mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 100/80mm DIA, ALL FLANGED GI TEE	1
	4. 80mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	1
	5. 80mm DIA FLANGED SLUICE VALVE	1
	6. 80mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	7. 90/80mm DIA. V/J STEPPED COUPLING	1

LOCATION	SPECIFICATIONS	No.
F2 PIPELINE CH. 1+660m OFFTAKE TO F2-2	1. 110/100mm DIA. V/J STEPPED COUPLING	2
	2. 100mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 100/80mm DIA, ALL FLANGED GI TEE	1
	4. 80mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	1
	5. 80mm DIA FLANGED SLUICE VALVE	1
	6. 80mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	7. 90/80mm DIA. V/J STEPPED COUPLING	1

LOCATION	SPECIFICATIONS	No.
F2 PIPELINE CH. 1+840m OFFTAKE TO F2-3	1. 65/15mm DIA SADDLE CLAMP	1
	2. 20/15mm DIA uPVC/GI ADAPTOR	3
	3. 20mm DIA, 1m LONG, uPVC PIPE	1
	4. 15mm DIA, 0.5m LONG, THREADED GI PIPE	2
	5. 15mm DIA GATE VALVE	1
	6. 15mm DIA NIPPLE	1
	7. 15mm DIA UNION	1

LOCATION	SPECIFICATIONS	No.
F2 PIPELINE CH. 2+000m OFFTAKE TO F2-4	1. 63/50mm DIA uPVC/GI ADAPTOR	1
	2. 50mm DIA, 0.5m LONG, THREADED GI PIPE	1
	3. 50/32mm DIA, THREADED GI TEE	1
	4. 50mm DIA GI NIPPLE	1
	5. 50/32mm DIA SOCKETED REDUCER	1
	6. 32mm DIA GI NIPPLE	3
	7. 32mm DIA GI UNION	2
	8. 32mm DIA, 0.5m LONG, THREADED GI PIPE	2
	9. 40/32mm DIA uPVC/GI ADAPTOR	2
	10. 32mm DIA GATE VALVE	1

LOCATION	SPECIFICATIONS	No.
F2-1 PIPELINE CH. 0+340m OFFTAKE TO F2-1-1	1. 50/40mm DIA uPVC/GI ADAPTOR	1
	2. 40mm DIA, 0.5m LONG, THREADED GI PIPE	1
	3. 40/20mm DIA, THREADED GI TEE	1
	4. 40mm DIA GI NIPPLE	1
	5. 40/32mm DIA SOCKETED REDUCER	1
	6. 32mm DIA GI NIPPLE	1
	7. 32mm DIA GI UNION	1
	8. 32mm DIA, 0.5m LONG, THREADED GI PIPE	1
	9. 40/32mm DIA uPVC/GI ADAPTOR	1
	10. 20mm DIA GI NIPPLE	2
	11. 20mm DIA GATE VALVE	1
	12. 20mm DIA GI UNION	1
	13. 20mm DIA, 0.5m LONG, THREADED GI PIPE	1
	14. 25/20mm DIA uPVC/GI ADAPTOR	1

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

DISTRIBUTION F2  
JUNCTIONS FITTING DETAILS

SHEET 1 OF 2

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Designed:	BM	Cad Filename	00811.cad
Drawn:	PMK	DRG No.	SHDP/KKIS/DD/609
Checked:	JON	REV	O
Approved:	MBN	Scale:	NTS

LOCATION	SPECIFICATIONS	No.
F2-2 PIPELINE CH. 0+520m PRV CHAMBER	1. 63/50mm DIA uPVC/GI ADAPTOR	2
	2. 50mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 50mm DIA PRESSURE REDUCING VALVE	1

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REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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DRG TITLE

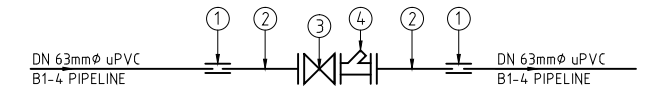
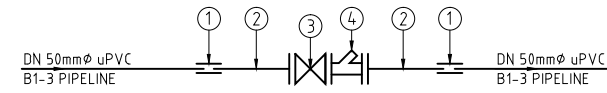
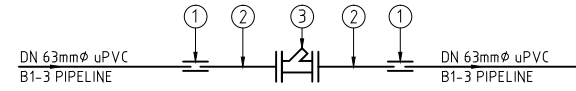
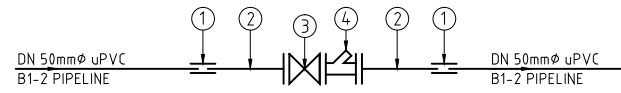
DISTRIBUTION F2  
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SHEET 2 OF 2

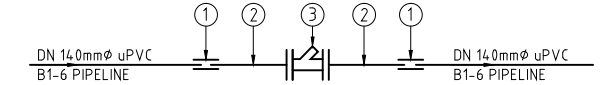
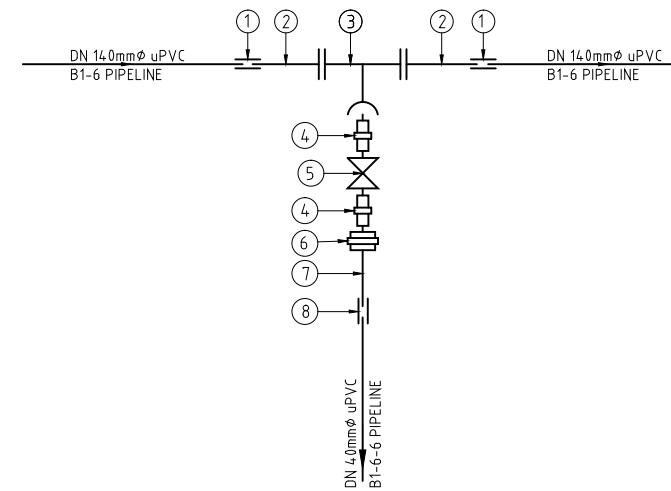
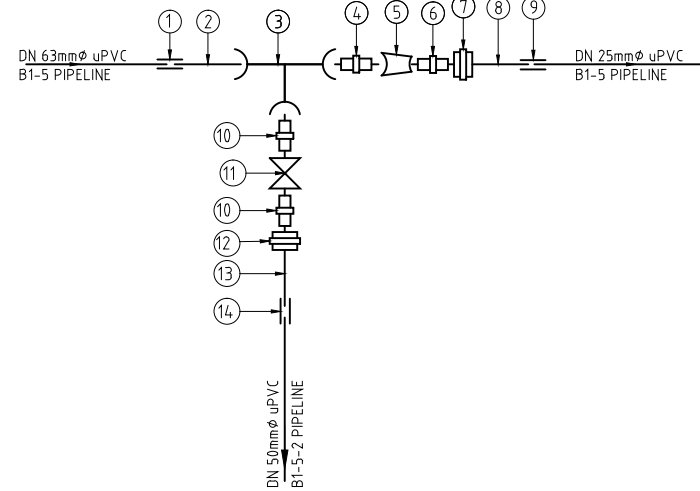
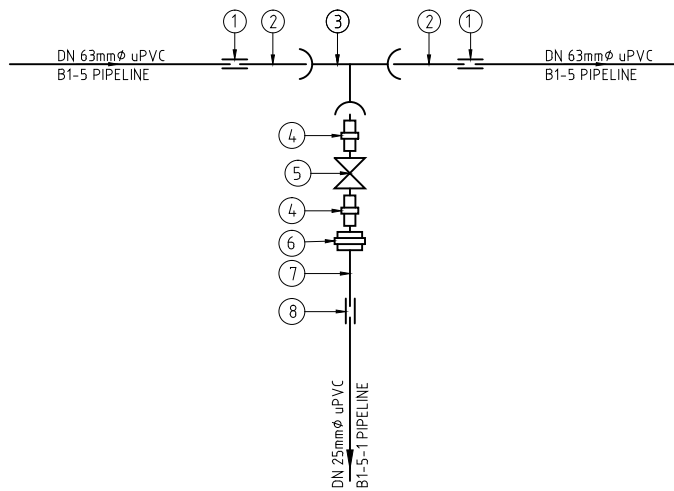
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Scale:	NTS		



LOCATION	SPECIFICATIONS	No.	LOCATION	SPECIFICATIONS	No.	LOCATION	SPECIFICATIONS	No.	LOCATION	SPECIFICATIONS	No.
B1-2 PIPELINE CH. 0+480m PRV CHAMBER	1. 50/40mm DIA uPVC/GI ADAPTOR	2	B1-3 PIPELINE CH. 0+060m PRV CHAMBER	1. 63/50mm DIA uPVC/GI ADAPTOR	2	B1-3 PIPELINE CH. 0+880m PRV CHAMBER	1. 50/40mm DIA uPVC/GI ADAPTOR	2	B1-4 PIPELINE CH. 0+520m PRV CHAMBER	1. 63/50mm DIA uPVC/GI ADAPTOR	2
	2. 4.0mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2		2. 50mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2		2. 4.0mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2		2. 50mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 4.0mm DIA FLANGED SLUICE VALVE	1		3. 50mm DIA PRESSURE REDUCING VALVE	1		3. 4.0mm DIA FLANGED SLUICE VALVE	1		3. 50mm DIA FLANGED SLUICE VALVE	1
	4. 4.0mm DIA PRESSURE REDUCING VALVE	1					4. 4.0mm DIA PRESSURE REDUCING VALVE	1		4. 50mm DIA PRESSURE REDUCING VALVE	1



LOCATION	SPECIFICATIONS	No.	LOCATION	SPECIFICATIONS	No.	LOCATION	SPECIFICATIONS	No.	LOCATION	SPECIFICATIONS	No.
B1-5 PIPELINE CH. 0+020m OFFTAKE TO B1-5-1	1. 63/50mm DIA uPVC/GI ADAPTOR	2	B1-5 PIPELINE CH. 0+040m OFFTAKE TO B1-5-2	1. 63/50mm DIA uPVC/GI ADAPTOR	1	B1-6 PIPELINE CH. 0+020m OFFTAKE TO B1-6-6	1. 14.0/125mm DIA V/J STEPPED COUPLING	2	B1-6 PIPELINE CH. 0+080m PRV CHAMBER	1. 14.0/125mm DIA V/J STEPPED COUPLING	2
	2. 50mm DIA, 0.5m LONG, THREADED GI PIPE	2		2. 50mm DIA, 0.5m LONG, THREADED GI PIPE	1		2. 125mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2		2. 125mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 50/20mm DIA, THREADED GI TEE	1		3. 50/4.0mm DIA THREADED GI TEE	1		3. 125/32mm DIA, DOUBLE FLANGED GI TEE	1		3. 125mm DIA PRESSURE REDUCING VALVE	1
	4. 20mm DIA GI NIPPLE	2		4. 50mm DIA GI NIPPLE	1		4. 32mm DIA GI NIPPLE	2			
	5. 20mm DIA GATE VALVE	1		5. 50/20mm DIA SOCKETED REDUCER	1		5. 32mm DIA GATE VALVE	1			
	6. 20mm DIA GI UNION	1		6. 20mm DIA GI NIPPLE	1		6. 32mm DIA GI UNION	1			
	7. 20mm DIA, 0.5m LONG, THREADED GI PIPE	1		7. 20mm DIA GI UNION	1		7. 32mm DIA, 0.5m LONG, THREADED GI PIPE	1			
	8. 25/20mm DIA uPVC/GI ADAPTOR	1		8. 20mm DIA, 0.5m LONG, THREADED GI PIPE	1		8. 4.0/32mm DIA uPVC/GI ADAPTOR	1			
				9. 25/20mm DIA uPVC/GI ADAPTOR	1						
				10. 4.0mm DIA GI NIPPLE	2						
				11. 4.0mm DIA GATE VALVE	1						
				12. 4.0mm DIA GI UNION	1						
				13. 4.0mm DIA, 0.5m LONG, THREADED GI PIPE	1						
				14. 50/4.0mm DIA uPVC/GI ADAPTOR	1						



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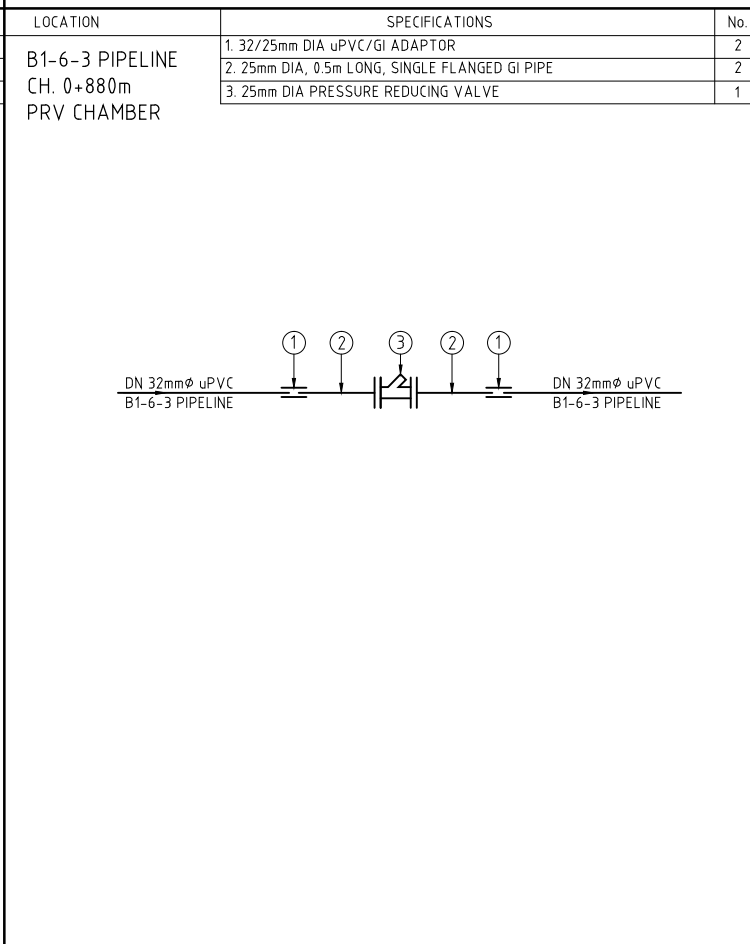
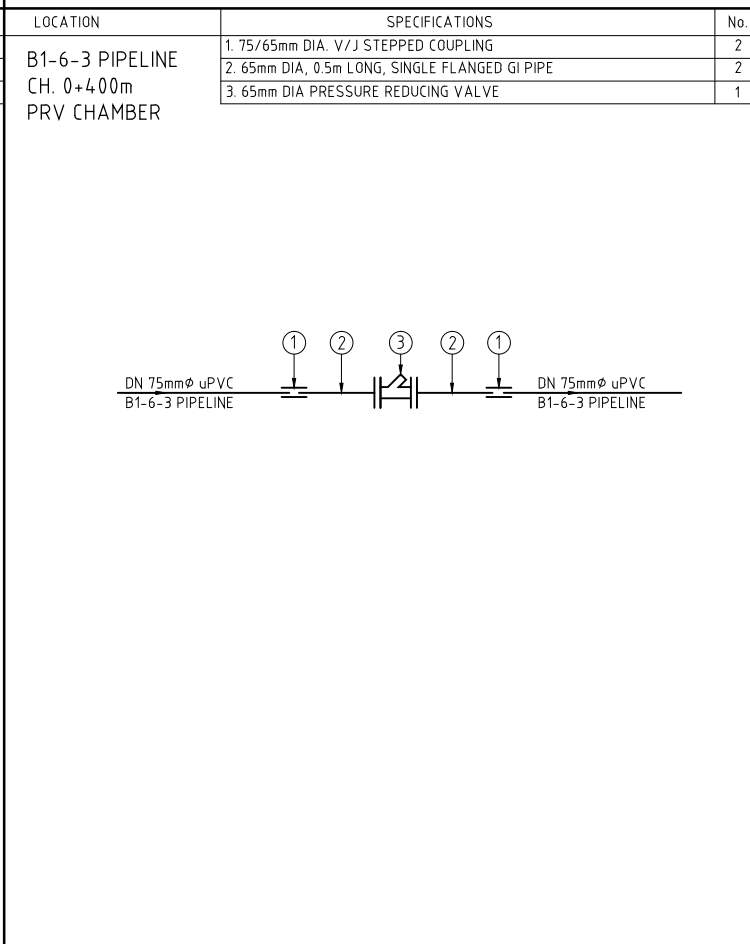
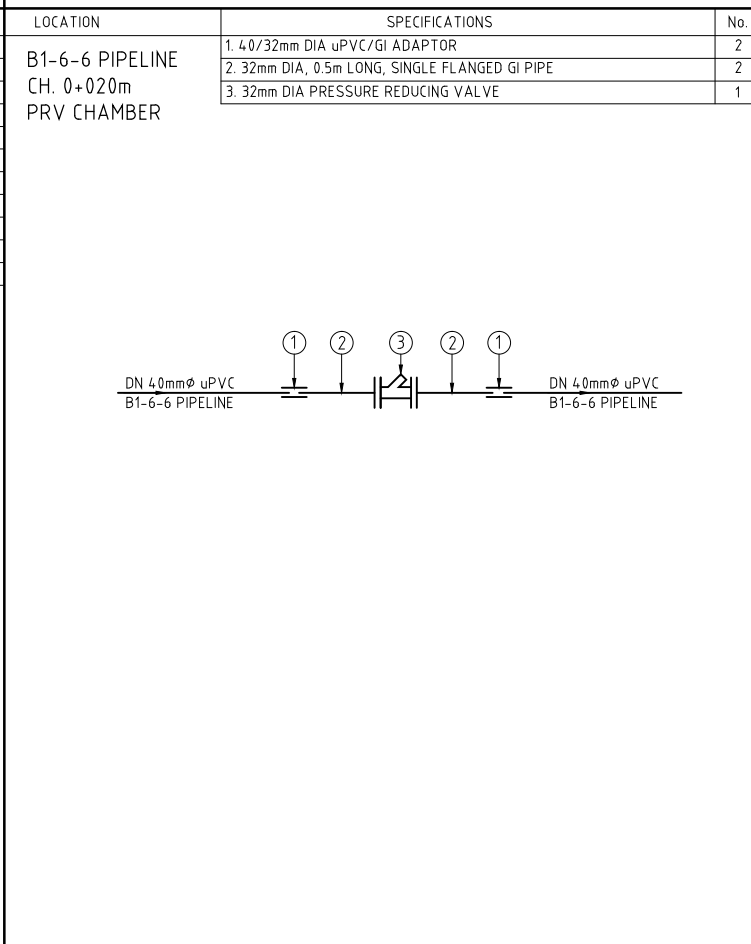
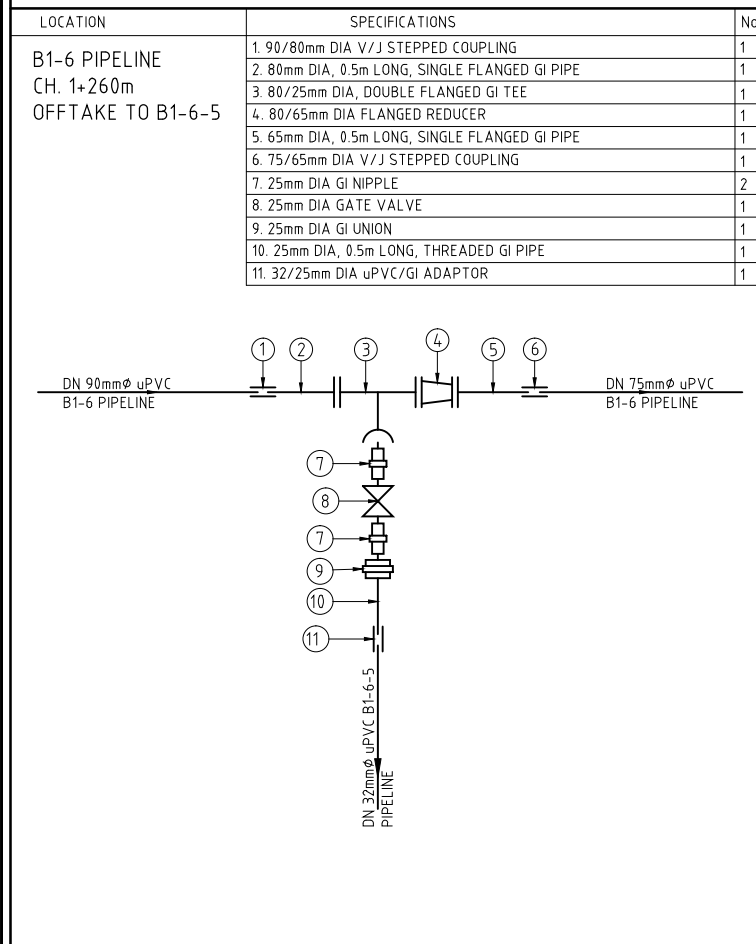
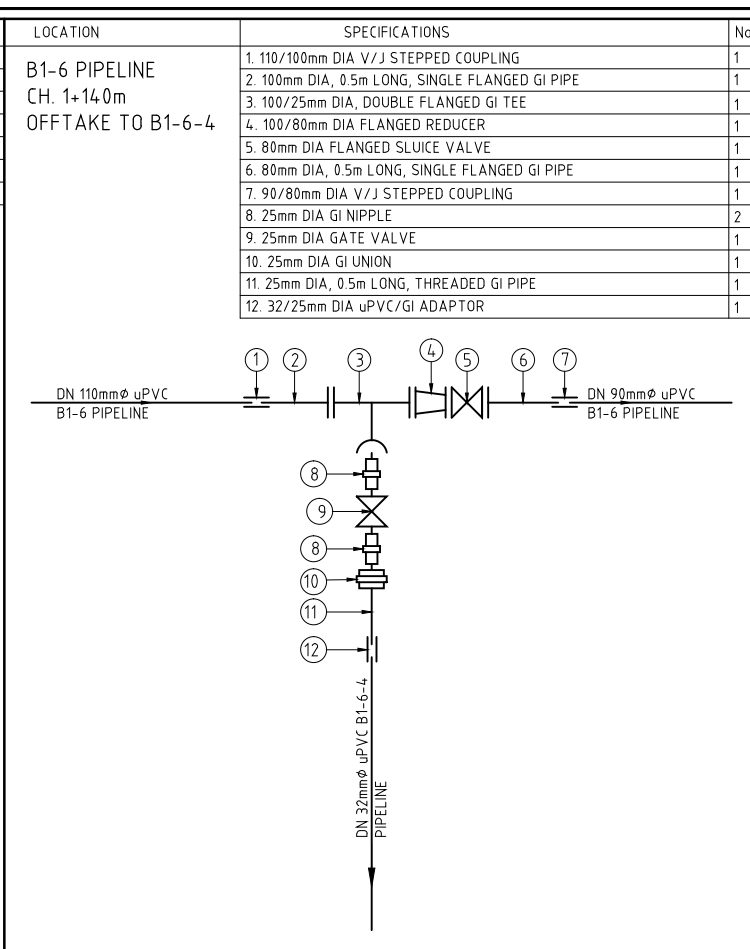
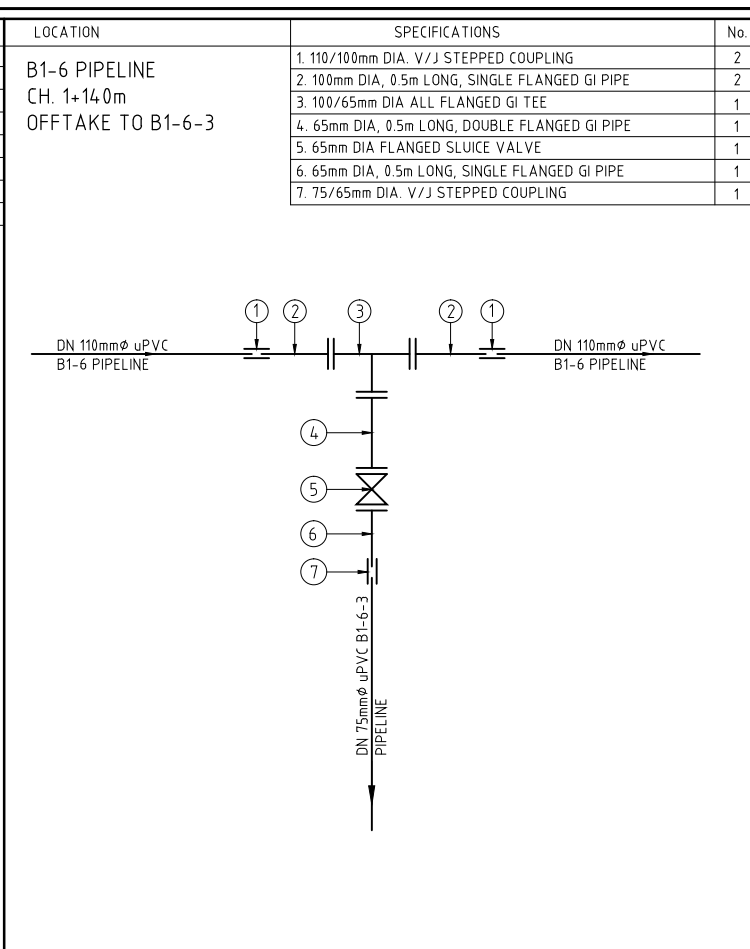
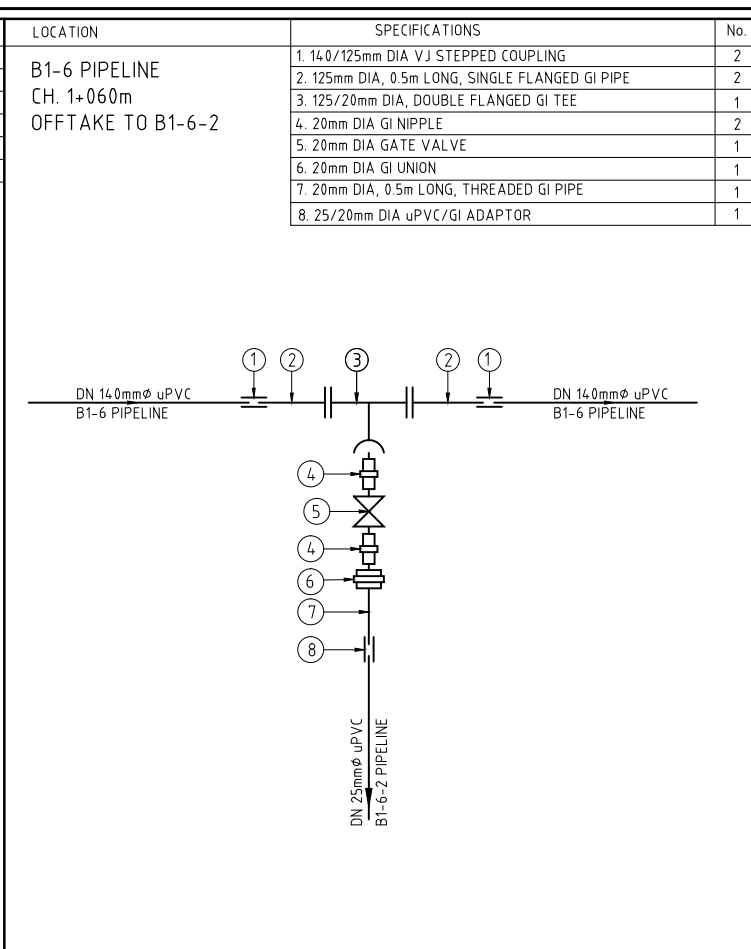
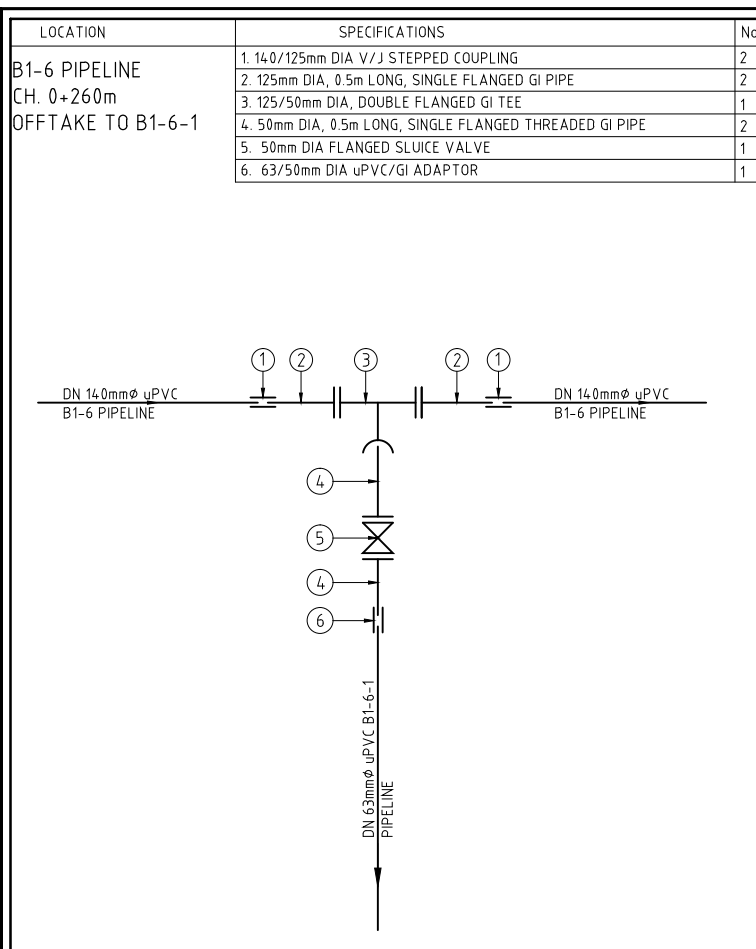
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

DISTRIBUTION B1 JUNCTIONS FITTING DETAILS

SHEET 1 OF 5

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PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

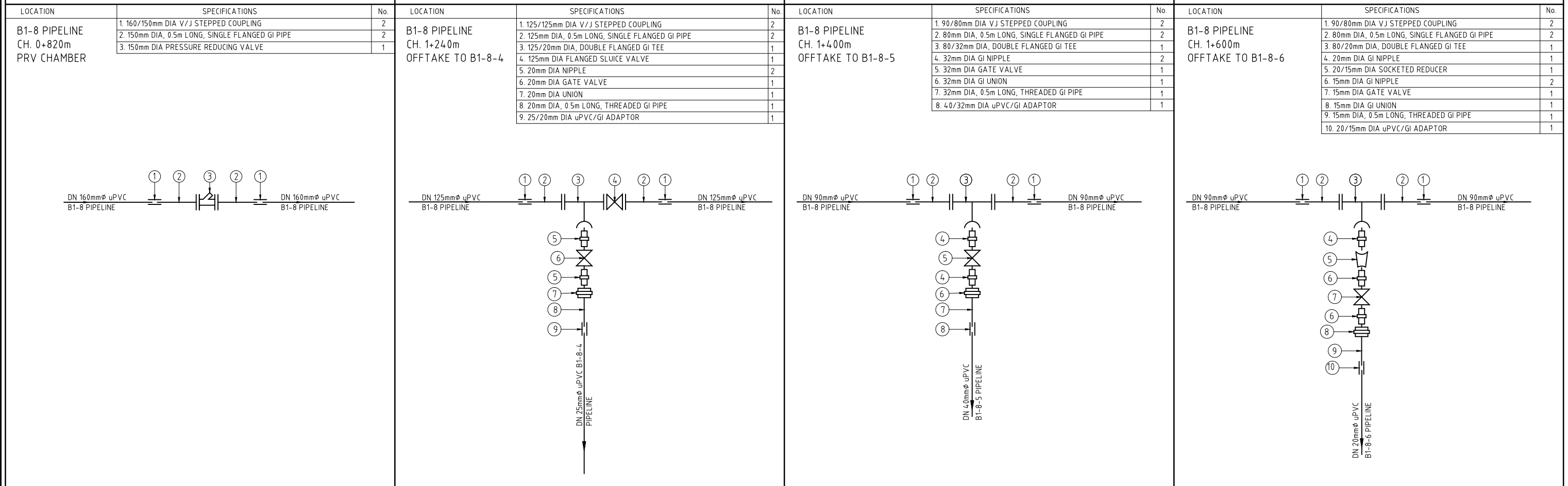
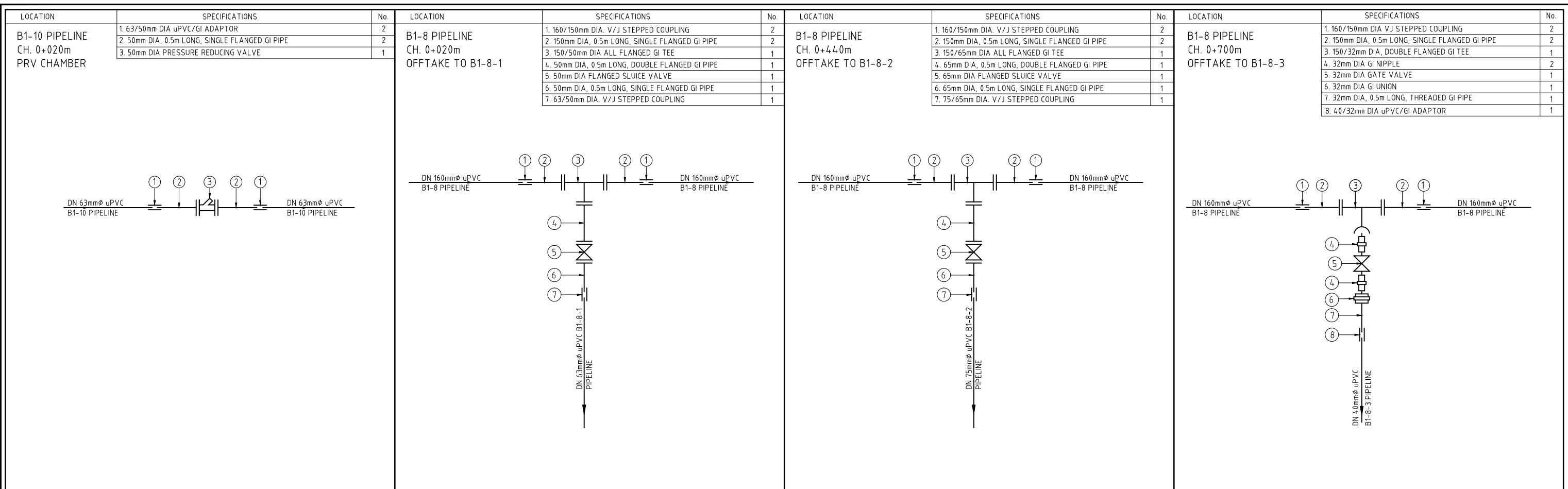
KIRUMI KIAMUJARI IRRIGATION SCHEME

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DISTRIBUTION B1 JUNCTIONS FITTING DETAILS

SHEET 2 OF 5

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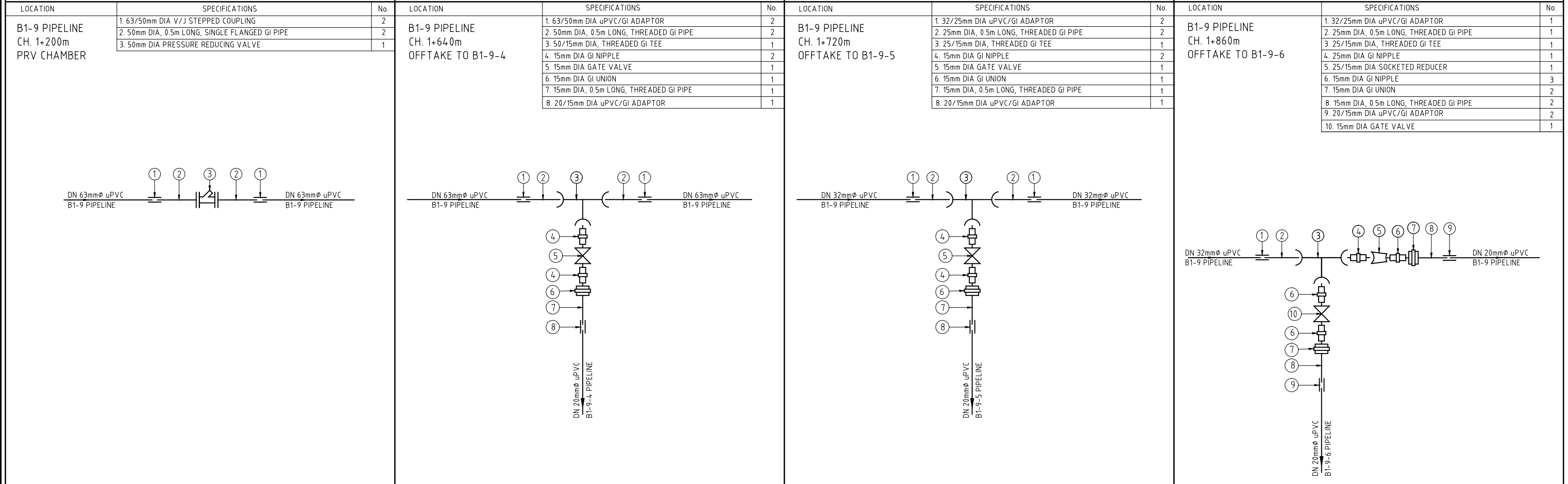
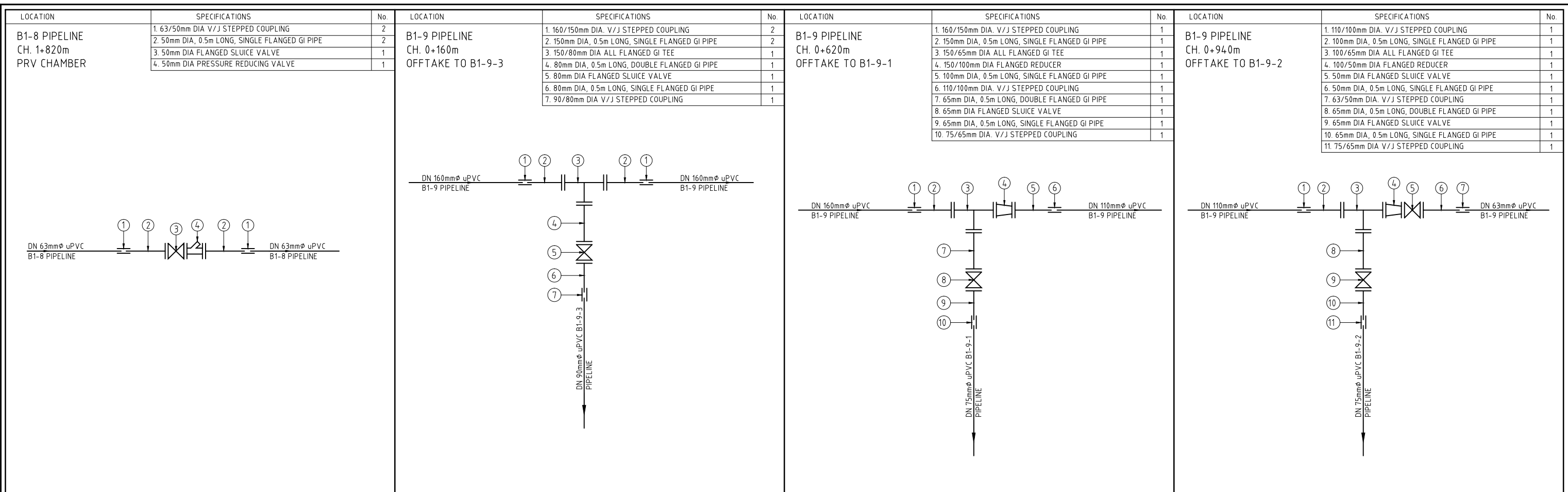
KIRUMI KIAMUJARI  
IRRIGATION SCHEME

**DRG TITLE**

DISTRIBUTION B1  
JUNCTIONS FITTING DETAILS

SHEET 3 OF 5

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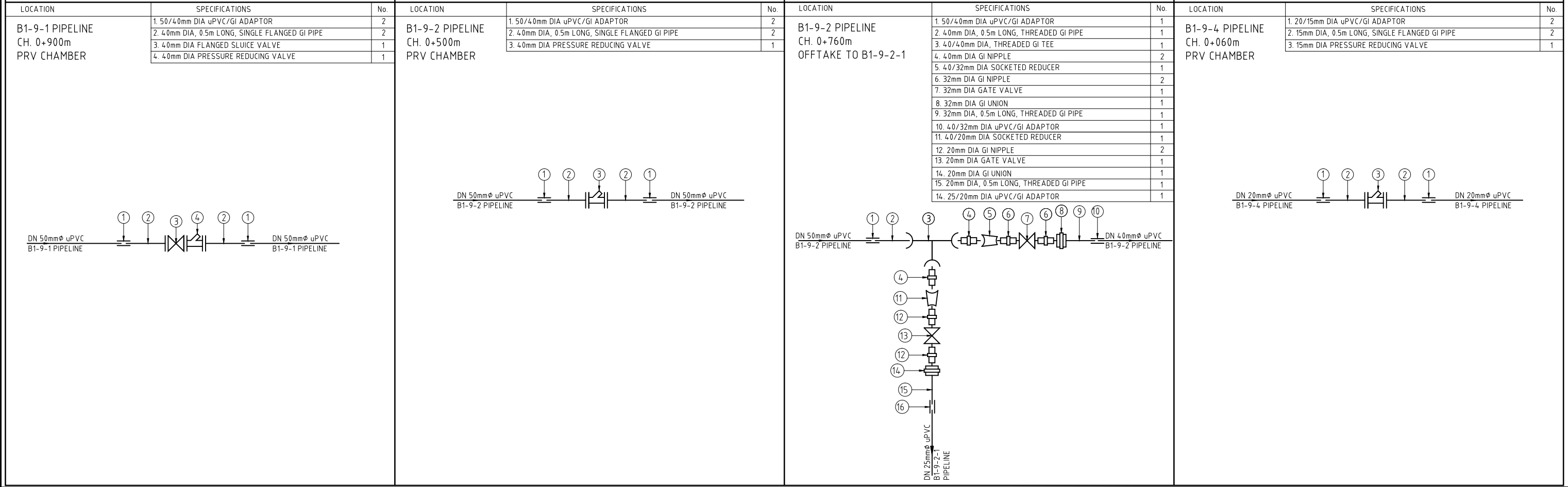
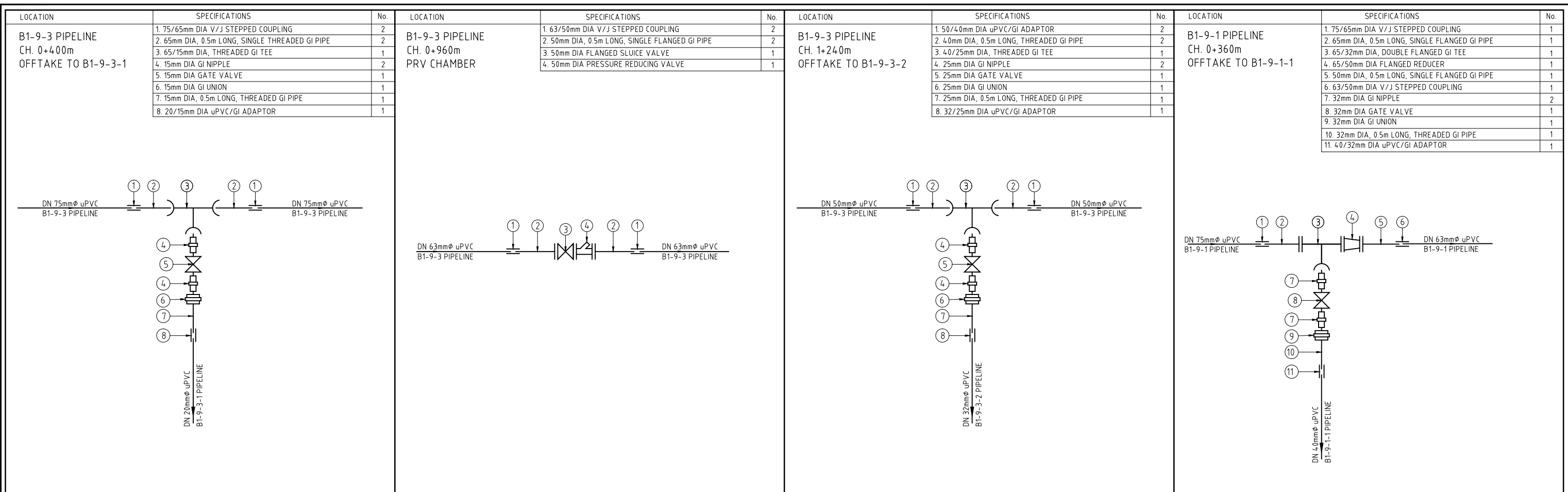
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE


DISTRIBUTION B1 JUNCTIONS FITTING DETAILS

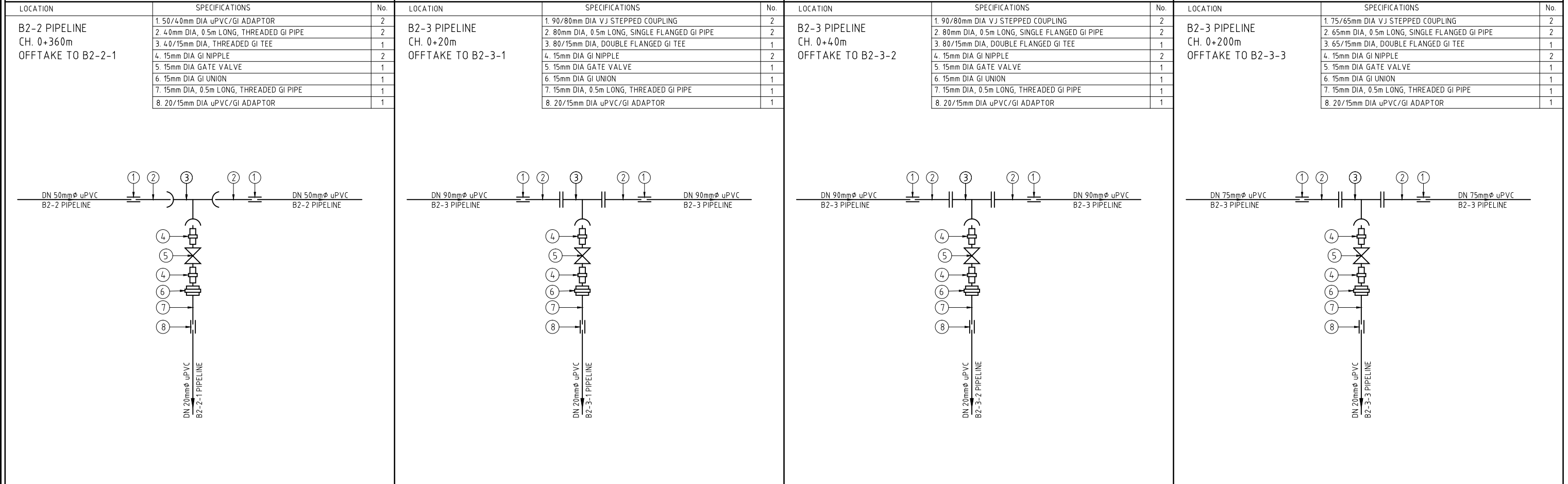
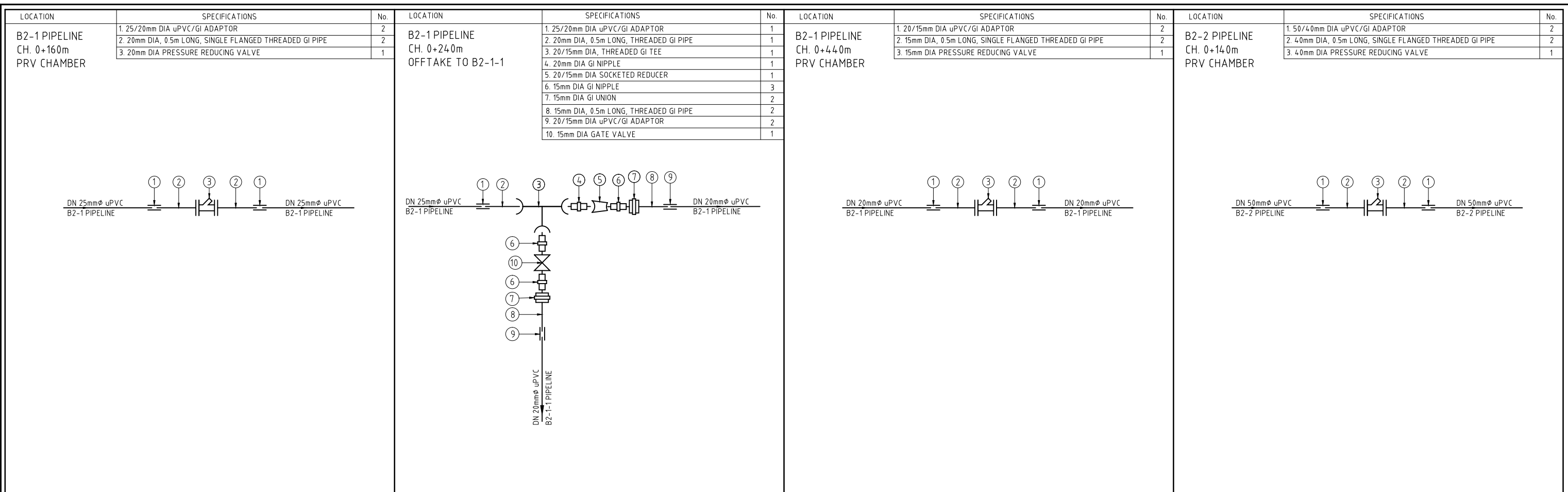
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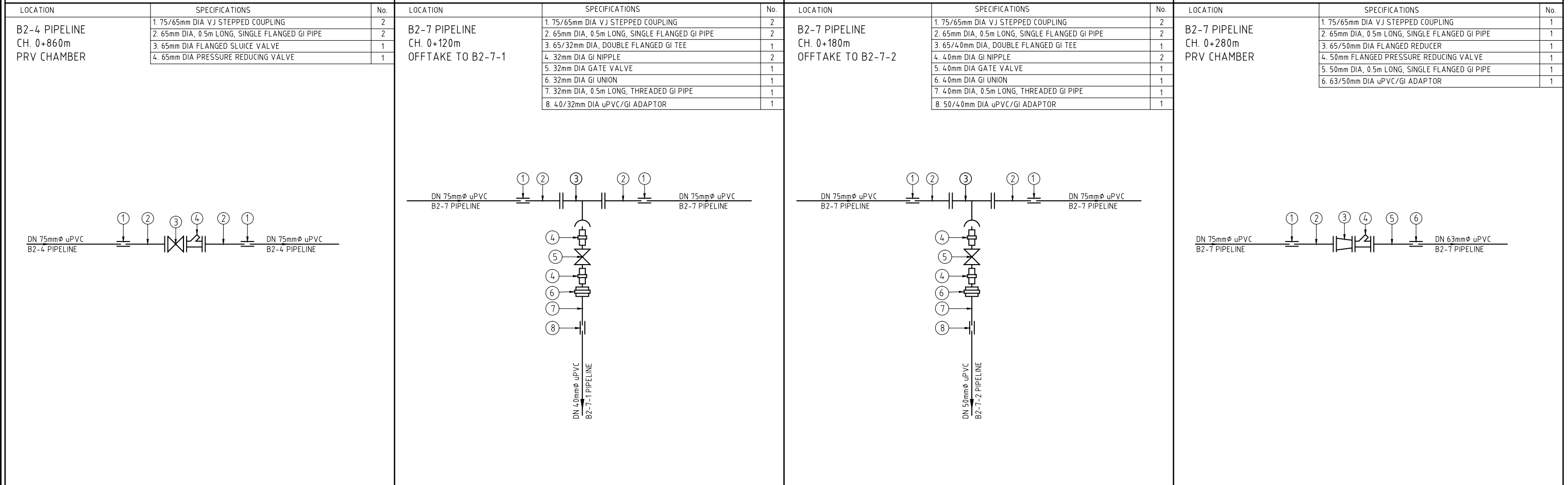
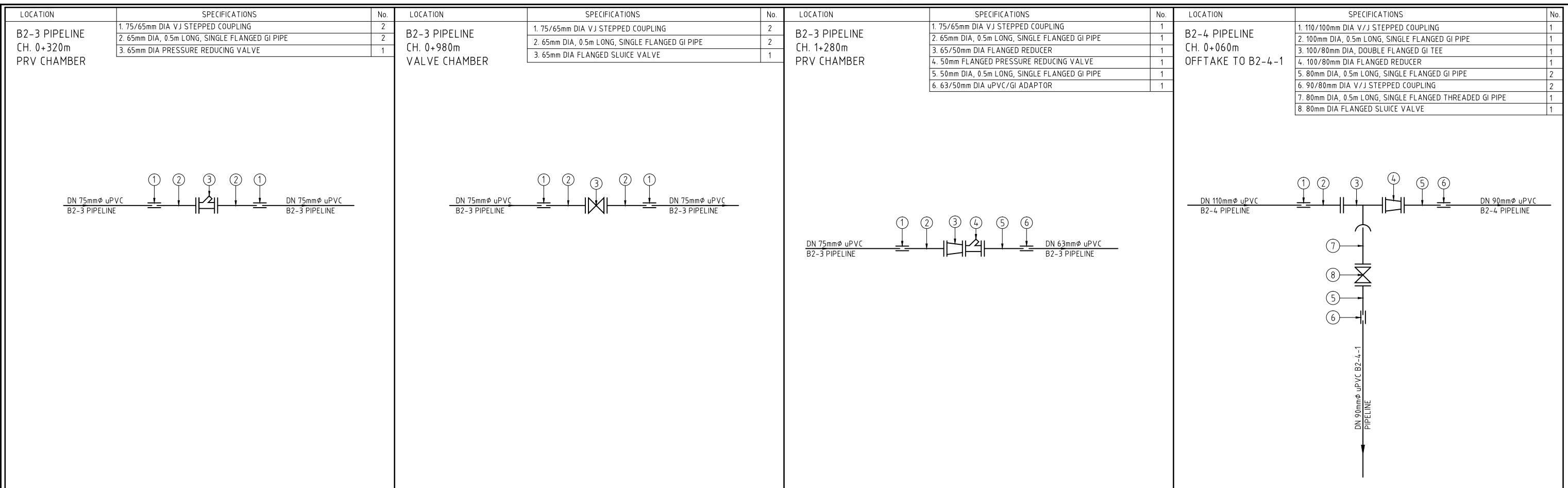
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

DISTRIBUTION B2  
JUNCTIONS FITTING DETAILS

SHEET 1 OF 2

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SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

DISTRIBUTION B2  
JUNCTIONS FITTING DETAILS

SHEET 2 OF 2

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LOCATION	SPECIFICATIONS	No.
B3-1 PIPELINE CH. 0+020m OFF TAKE TO B3-1-1	1. 75/65mm DIA V/J STEPPED COUPLING	1
	2. 65mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	3. 65/50mm DIA, DOUBLE FLANGED GI TEE	1
	4. 65/50mm DIA FLANGED REDUCER	1
	5. 50mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	6. 63/50mm DIA uPVC/GI ADAPTOR	2
	7. 50mm DIA GI NIPPLE	2
	8. 50mm DIA GATE VALVE	1
	9. 50mm DIA GI UNION	1
	10. 50mm DIA, 0.5m LONG, THREADED GI PIPE	1

LOCATION	SPECIFICATIONS	No.
B3-1 PIPELINE CH. 0+440m PRV CHAMBER	1. 50/40mm DIA uPVC/GI ADAPTOR	1
	2. 40mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	3. 40/20mm DIA FLANGED REDUCER	1
	4. 20mm FLANGED PRESSURE REDUCING VALVE	1
	5. 20mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	6. 25/20mm DIA uPVC/GI ADAPTOR	1

LOCATION	SPECIFICATIONS	No.
B3-2 PIPELINE CH. 0+040m OFF TAKE TO B3-2-1	1. 200/200mm DIA. V/J STEPPED COUPLING	2
	2. 200mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 200/200mm DIA, ALL FLANGED GI TEE	1
	4. 200/100mm DIA FLANGED REDUCER	1
	5. 100/50mm DIA FLANGED REDUCER	1
	6. 50mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	1
	7. 50mm DIA FLANGED GATE VALVE	1
	8. 50mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	9. 63/50mm DIA uPVC/GI ADAPTOR	1

LOCATION	SPECIFICATIONS	No.
B3-2 PIPELINE CH. 0+160m OFF TAKE TO B3-2-2	1. 160/150mm DIA. V/J STEPPED COUPLING	2
	2. 150mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 150/65mm DIA, ALL FLANGED GI TEE	1
	4. 65mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	1
	5. 65mm DIA FLANGED SLUICE VALVE	1
	6. 65mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	7. 75/65mm DIA. V/J STEPPED COUPLING	1

LOCATION	SPECIFICATIONS	No.
B3-2 PIPELINE CH. 0+960m PRV CHAMBER	1. 140/125mm DIA V/J STEPPED COUPLING	2
	2. 125mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 125mm DIA FLANGED SLUICE VALVE	1
	4. 125mm DIA PRESSURE REDUCING VALVE	1

LOCATION	SPECIFICATIONS	No.
B3-2 PIPELINE CH. 2+160m PRV CHAMBER	1. 90/80mm DIA V/J STEPPED COUPLING	2
	2. 80mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 80mm DIA FLANGED SLUICE VALVE	1
	4. 80mm DIA PRESSURE REDUCING VALVE	1

LOCATION	SPECIFICATIONS	No.
B3-2 PIPELINE CH. 2+660m OFF TAKE TO B3-2-3	1. 63/50mm DIA uPVC/GI ADAPTOR	1
	2. 50mm DIA, 0.5m LONG, THREADED GI PIPE	1
	3. 50/15mm DIA, THREADED GI TEE	1
	4. 50mm DIA GI NIPPLE	1
	5. 50/32mm DIA SOCKETED REDUCER	1
	6. 32mm DIA GI NIPPLE	1
	7. 32mm DIA GI UNION	1
	8. 32mm DIA, 0.5m LONG, THREADED GI PIPE	1
	9. 40/32mm DIA uPVC/GI ADAPTOR	1
	10. 15mm DIA GI NIPPLE	2
	11. 15mm DIA GATE VALVE	1
	12. 15mm DIA GI UNION	1
	13. 15mm DIA, 0.5m LONG, THREADED GI PIPE	1
	14. 20/15mm DIA uPVC/GI ADAPTOR	1

LOCATION	SPECIFICATIONS	No.
B3-2-2 PIPELINE CH. 0+20m OFF TAKE TO B3-2-2-1	1. 75/65mm DIA. V/J STEPPED COUPLING	3
	2. 65mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	3
	3. 65/65mm DIA ALL FLANGED GI TEE	1
	4. 65mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	1
	5. 65mm DIA FLANGED SLUICE VALVE	1

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SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

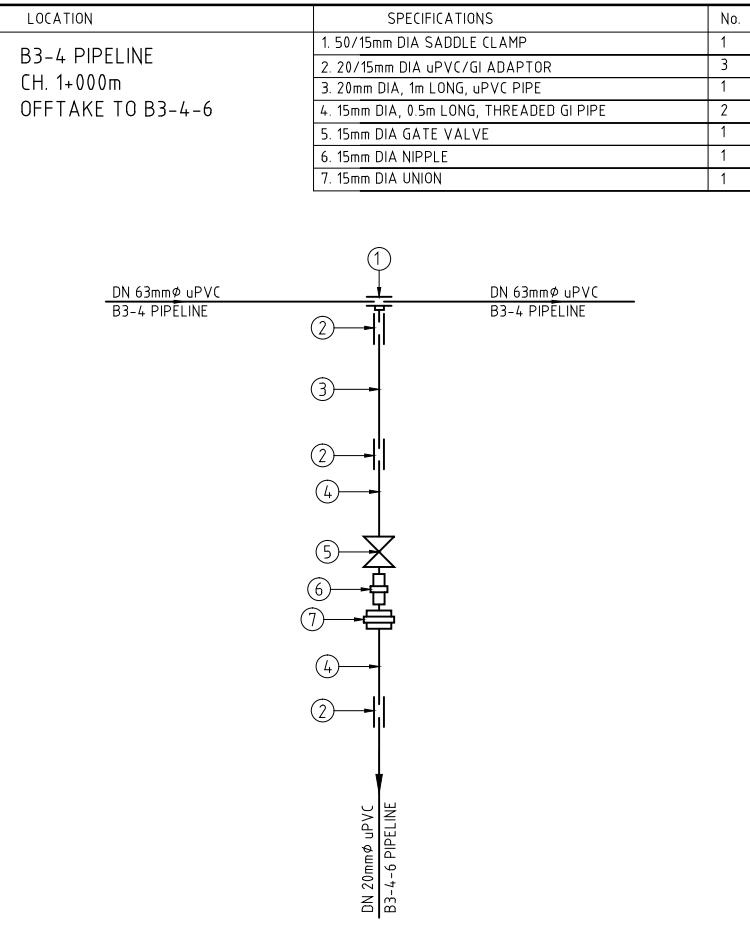
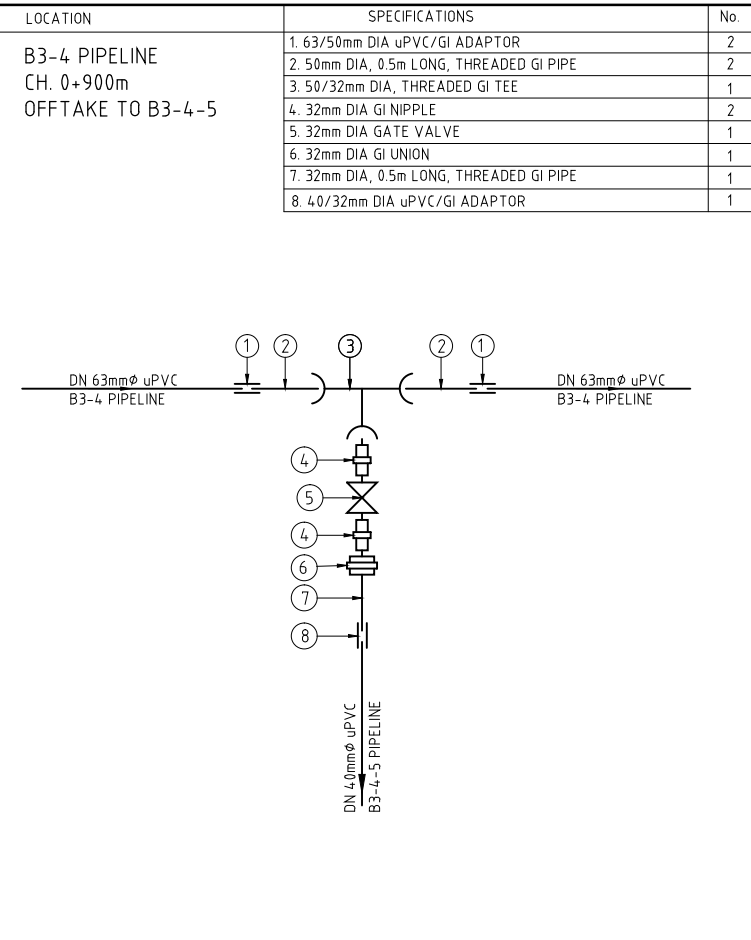
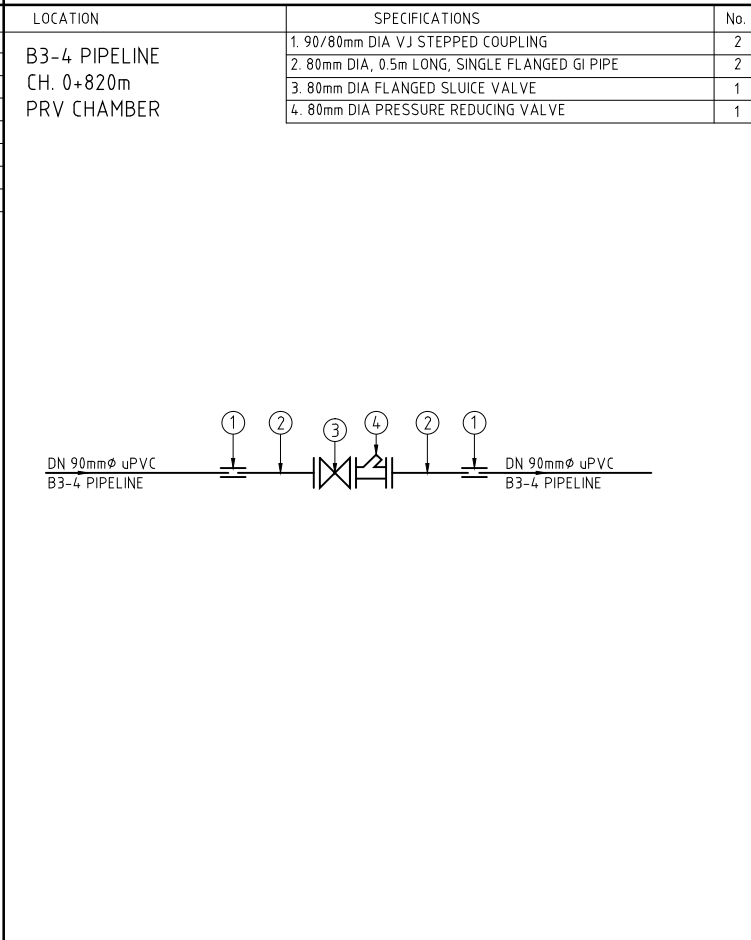
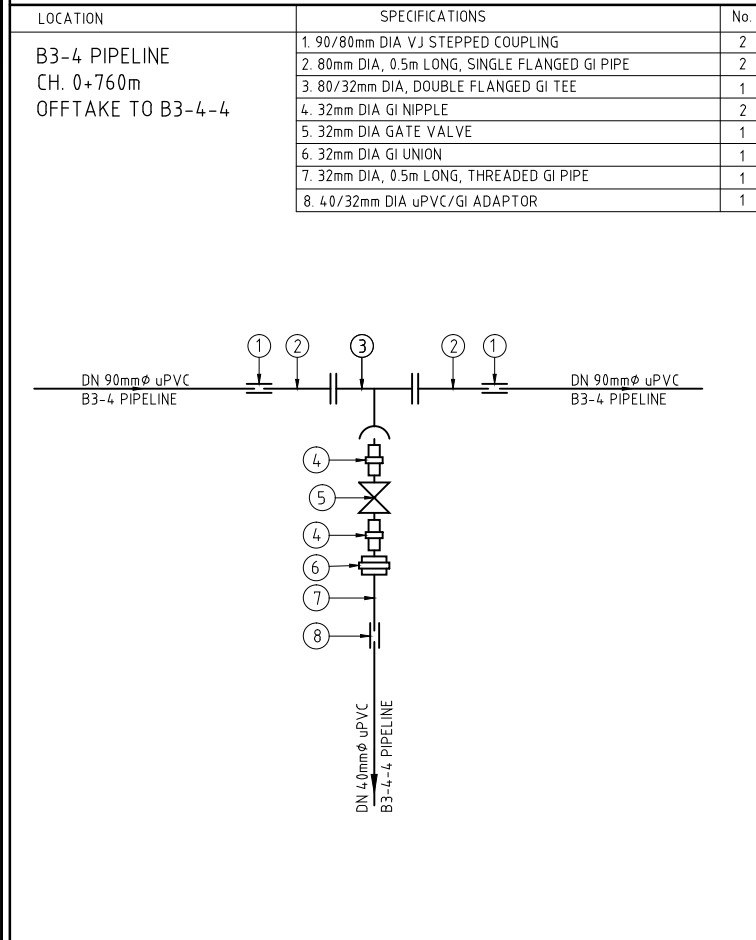
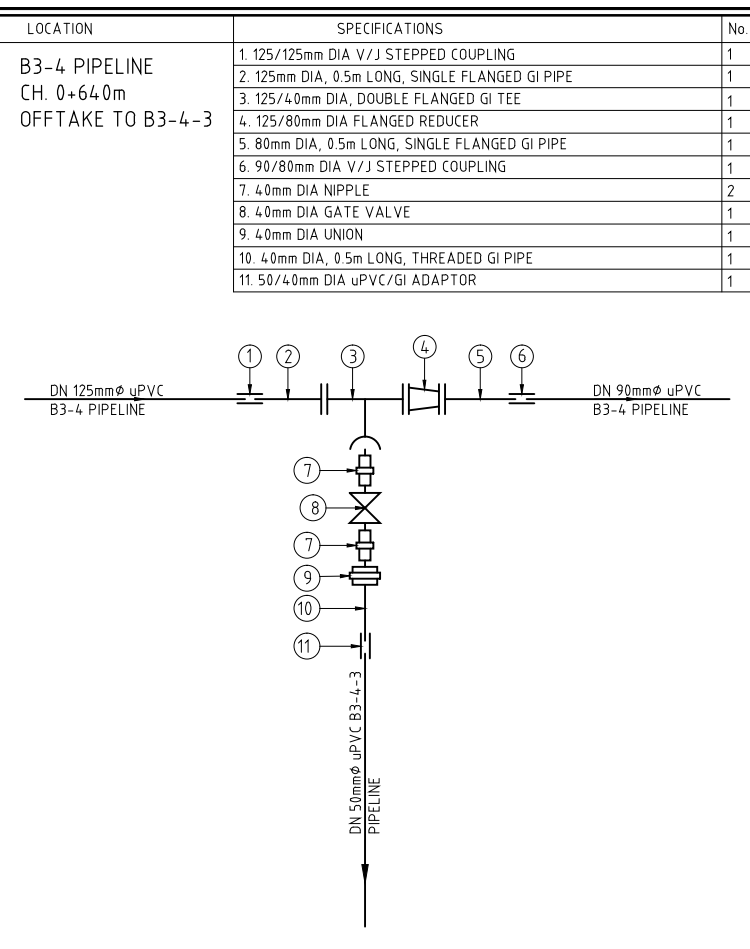
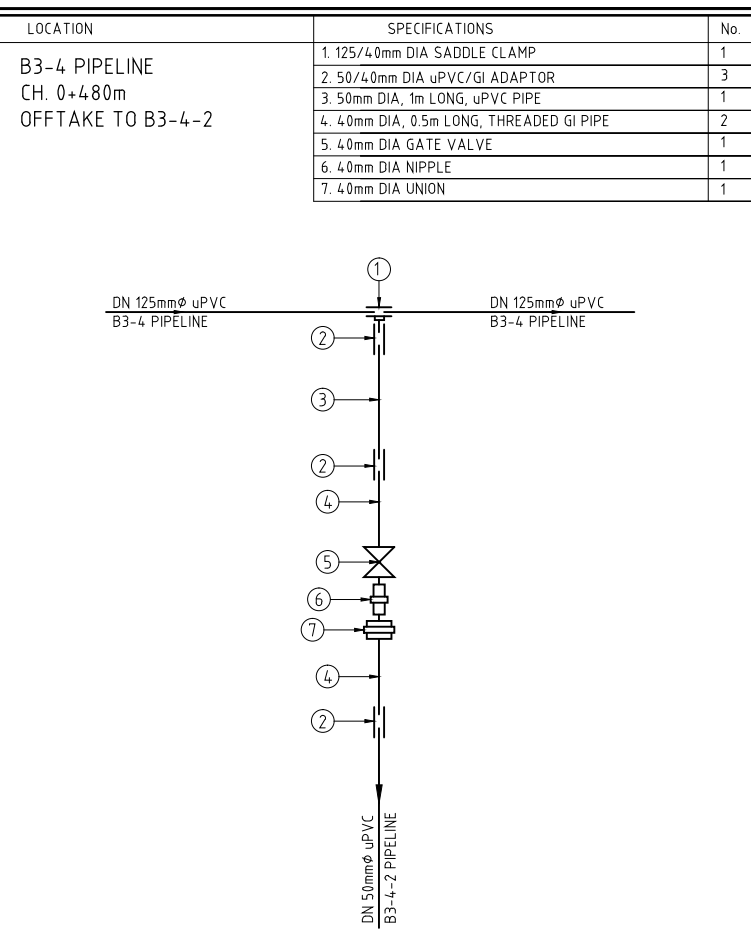
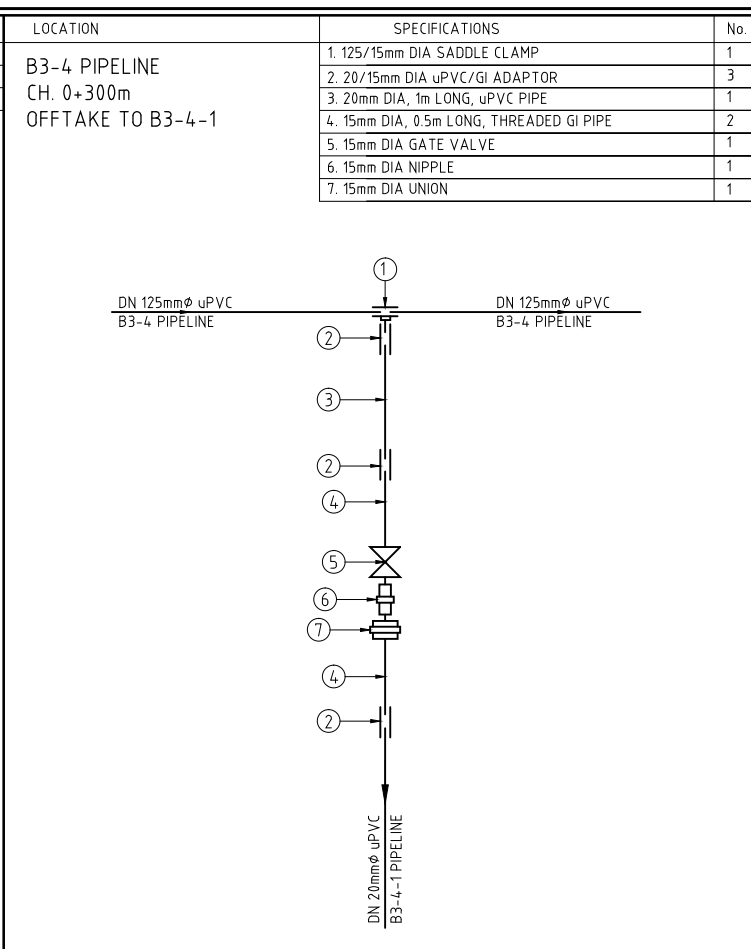
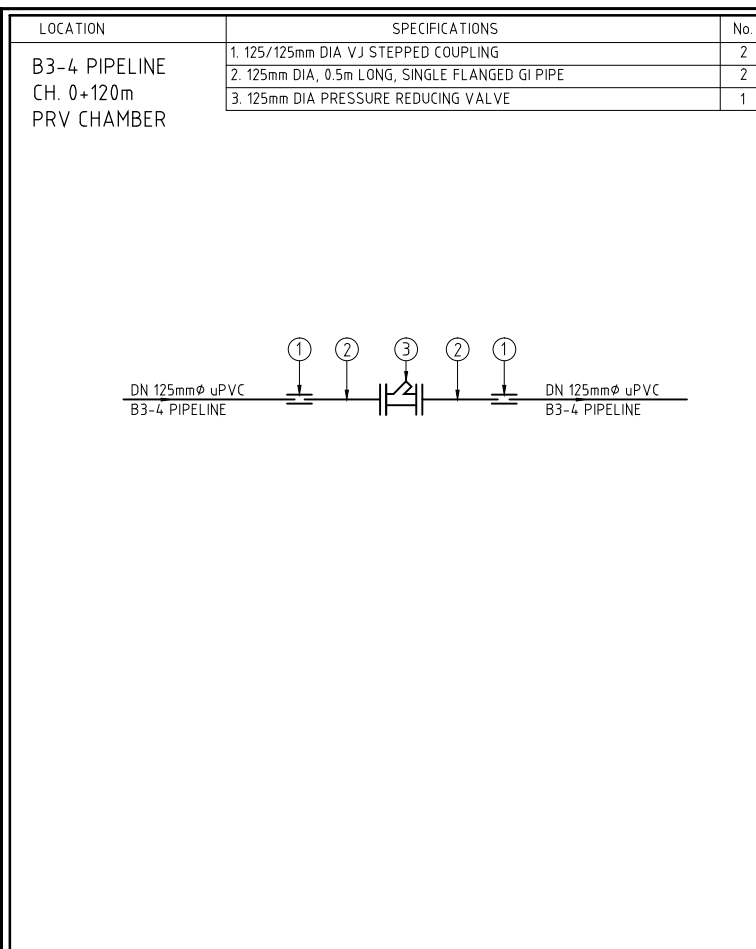
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DISTRIBUTION B3  
JUNCTIONS FITTING DETAILS

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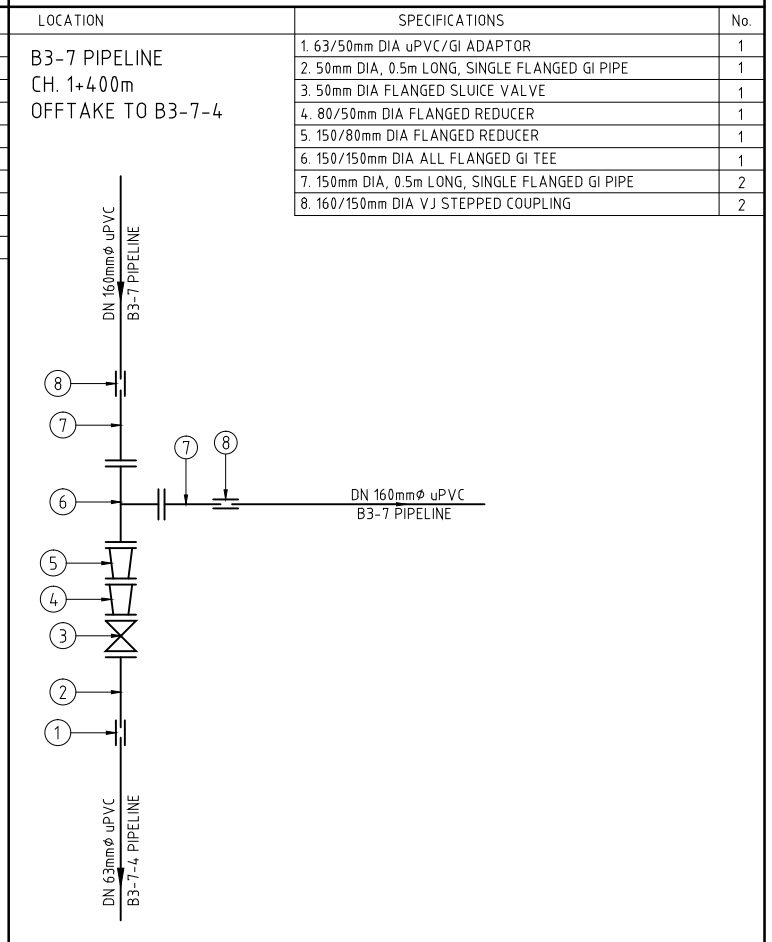
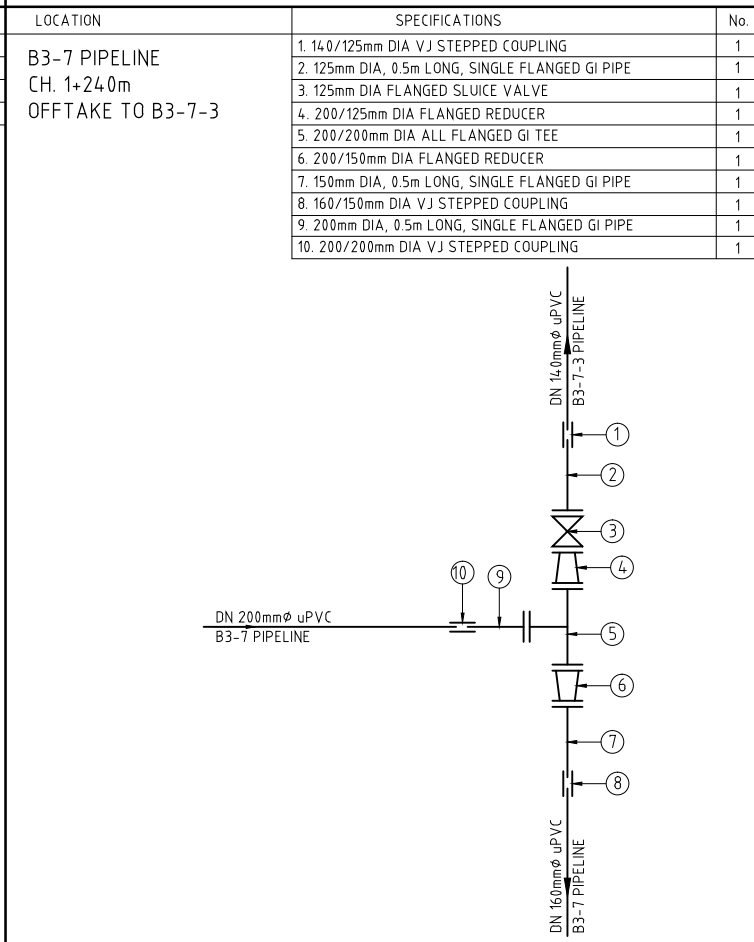
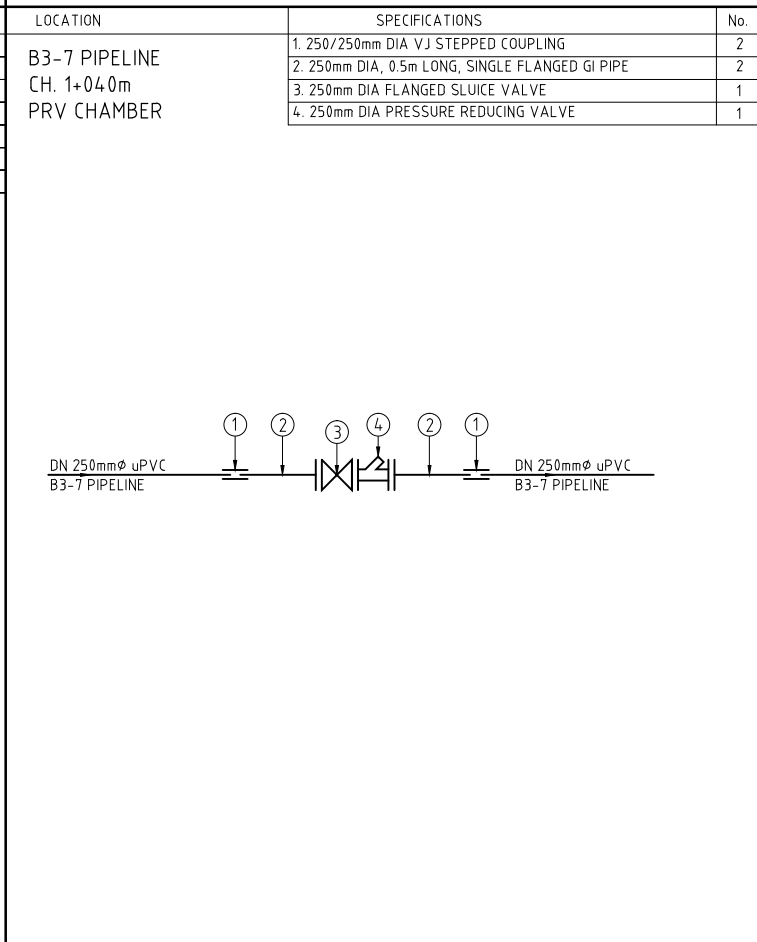
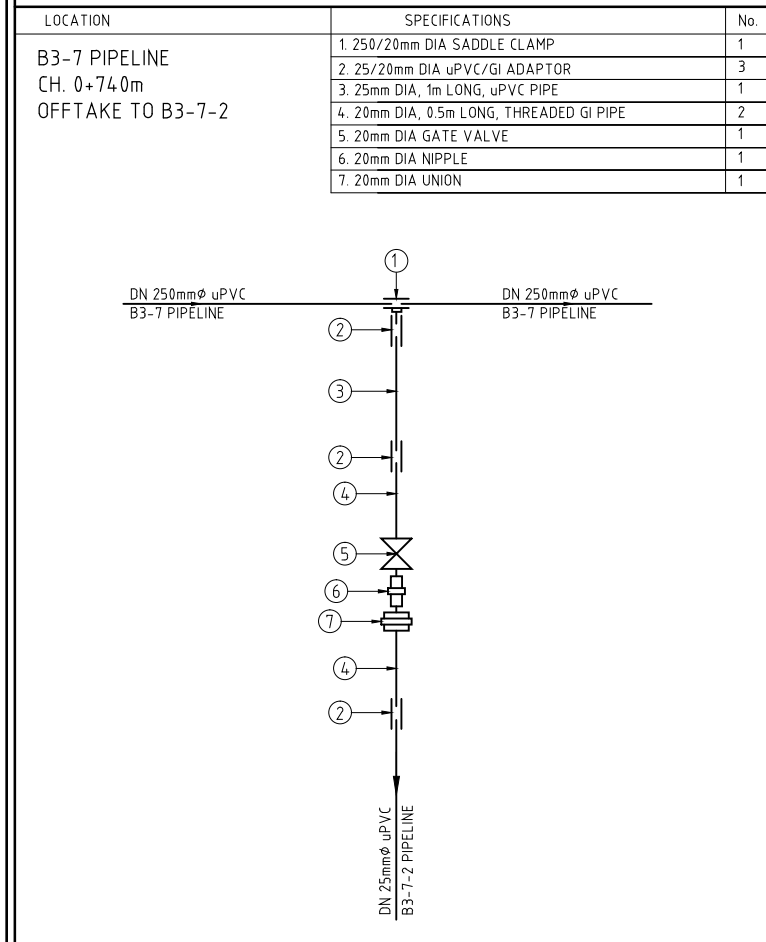
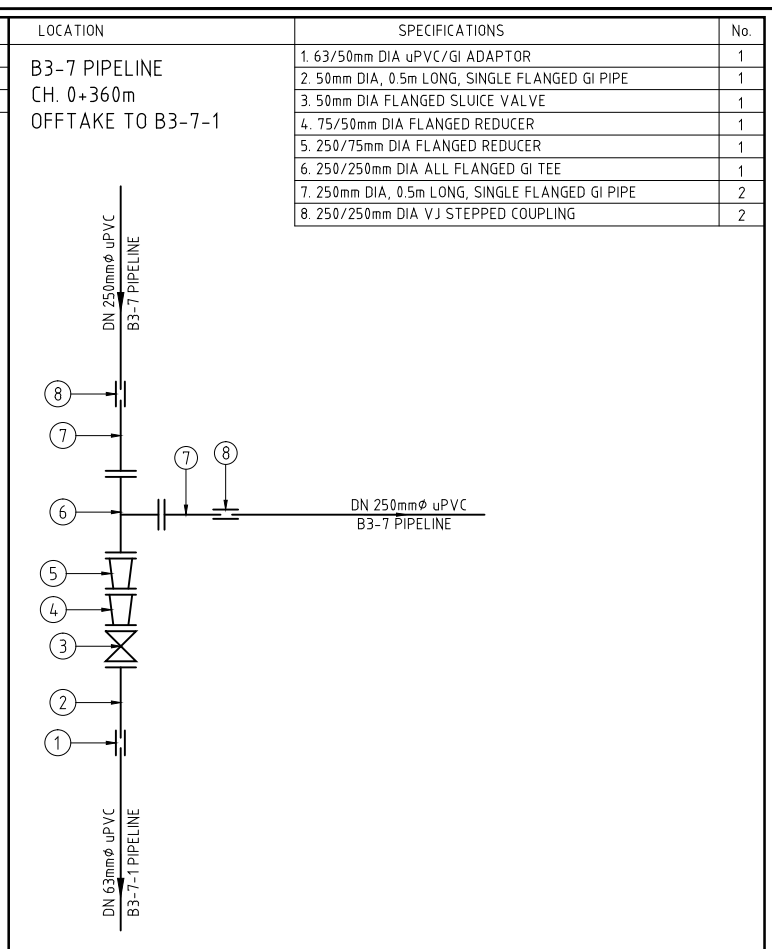
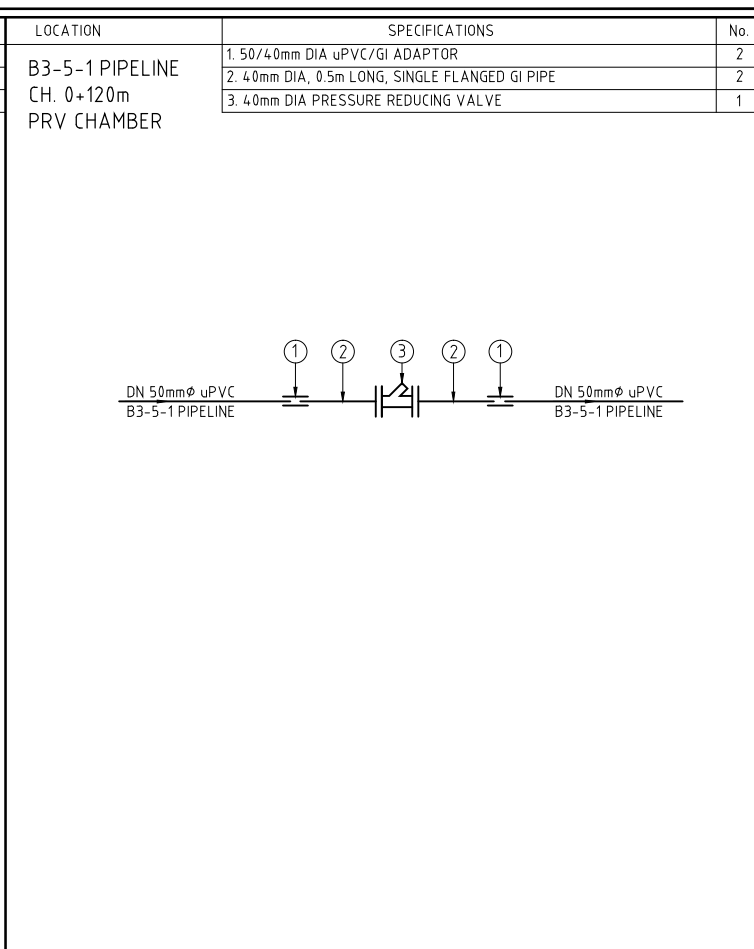
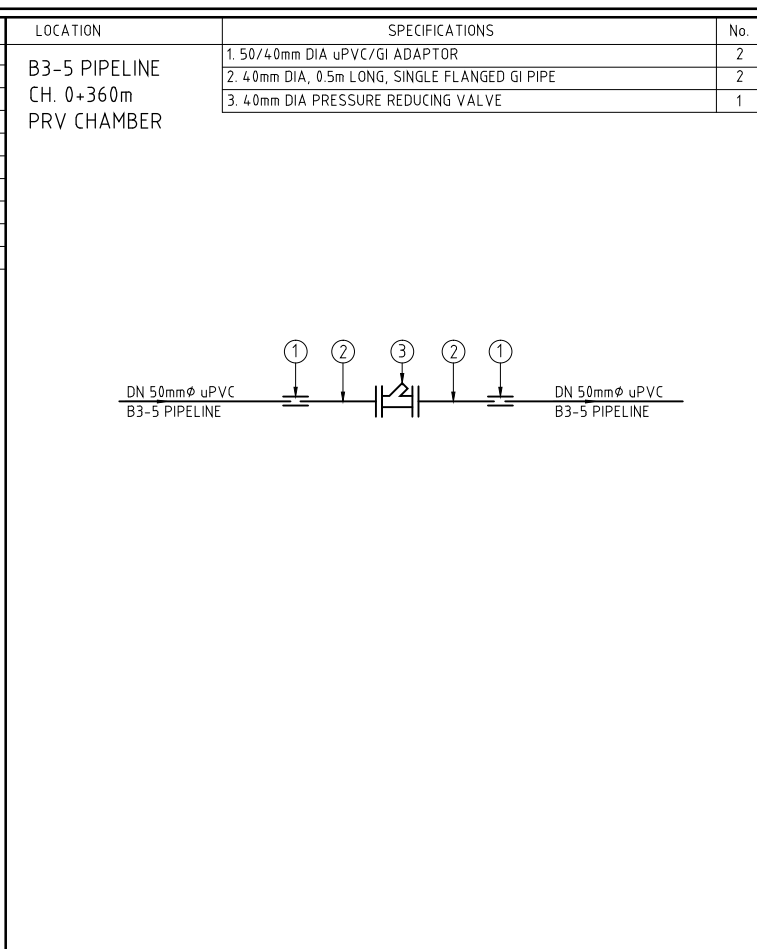
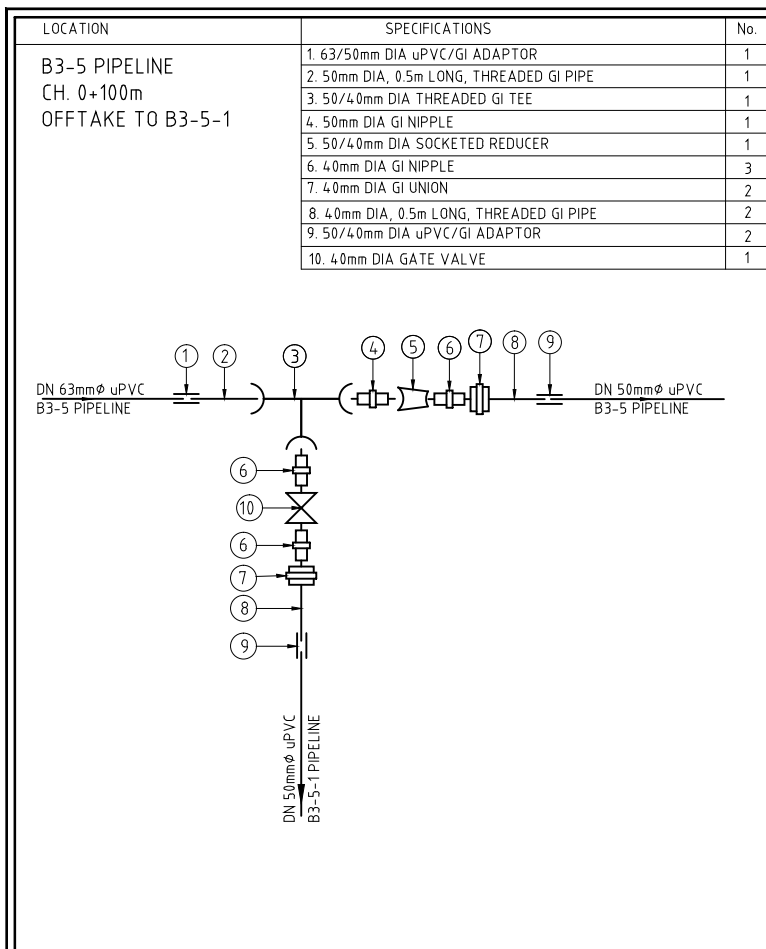
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DISTRIBUTION B3  
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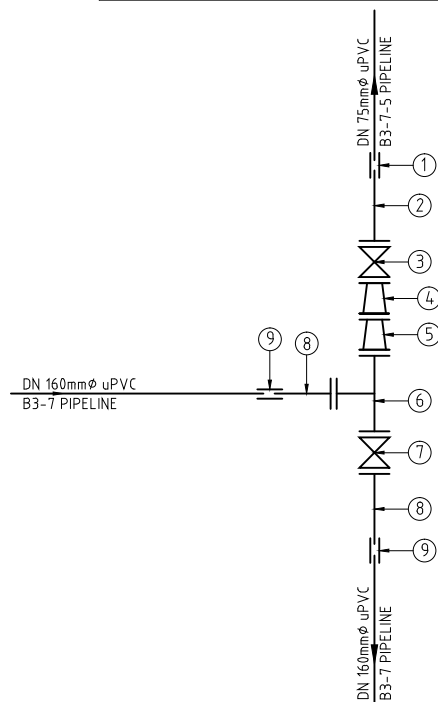
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DISTRIBUTION B3 JUNCTIONS FITTING DETAILS

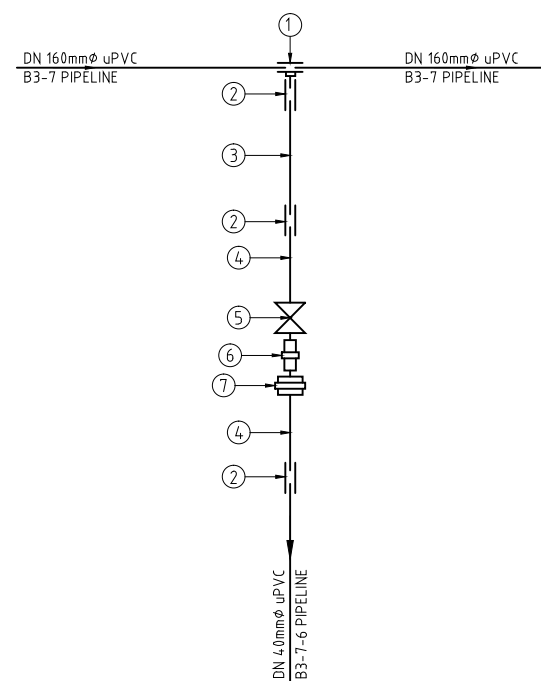
SHEET 3 OF 6

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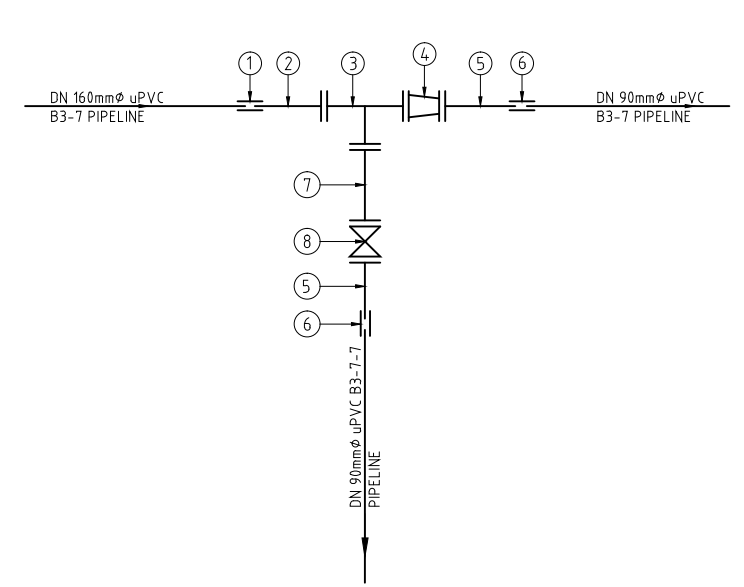
LOCATION	SPECIFICATIONS	No.
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	2. 65mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	3. 65mm DIA FLANGED SLUICE VALVE	1
	4. 80/65mm DIA FLANGED REDUCER	1
	5. 150/80mm DIA FLANGED REDUCER	1
	6. 150/150mm DIA ALL FLANGED GI TEE	1
	7. 150mm DIA FLANGED SLUICE VALVE	1
	8. 150mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	9. 160/150mm DIA V/J STEPPED COUPLING	2



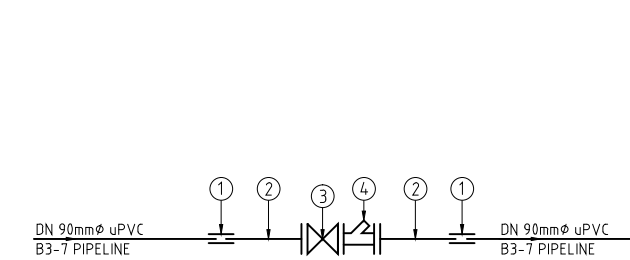
LOCATION	SPECIFICATIONS	No.
B3-7 PIPELINE CH. 2+420m OFF TAKE TO B3-7-6	1. 150/32mm DIA SADDLE CLAMP	1
	2. 40/32mm DIA uPVC/GI ADAPTOR	3
	3. 40mm DIA, 1m LONG, uPVC PIPE	1
	4. 32mm DIA, 0.5m LONG, THREADED GI PIPE	2
	5. 32mm DIA GATE VALVE	1
	6. 32mm DIA NIPPLE	1
	7. 32mm DIA UNION	1



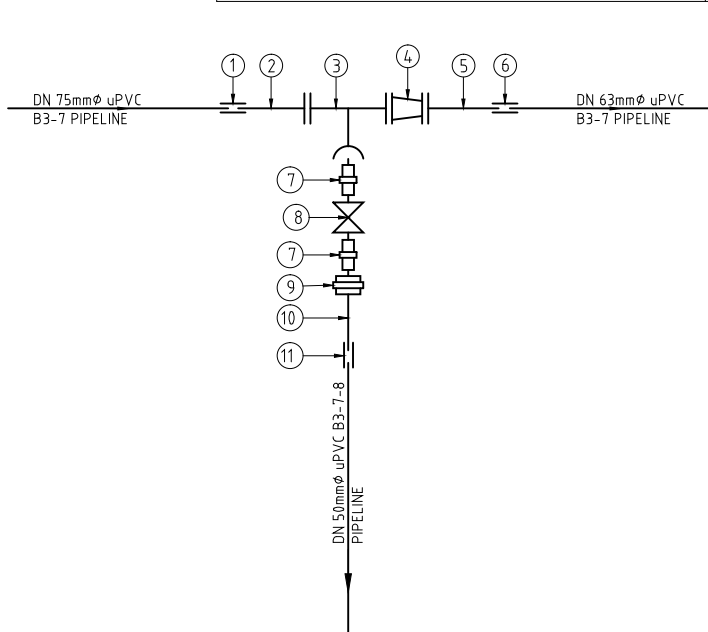
LOCATION	SPECIFICATIONS	No.
B3-7 PIPELINE CH. 2+420m OFF TAKE TO B3-7-7	1. 160/150mm DIA. V/J STEPPED COUPLING	1
	2. 150mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	3. 150/80mm DIA ALL FLANGED GI TEE	1
	4. 150/80mm DIA FLANGED REDUCER	1
	5. 80mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	6. 90/80mm DIA. V/J STEPPED COUPLING	2
	7. 80mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	1
	8. 80mm DIA FLANGED SLUICE VALVE	1



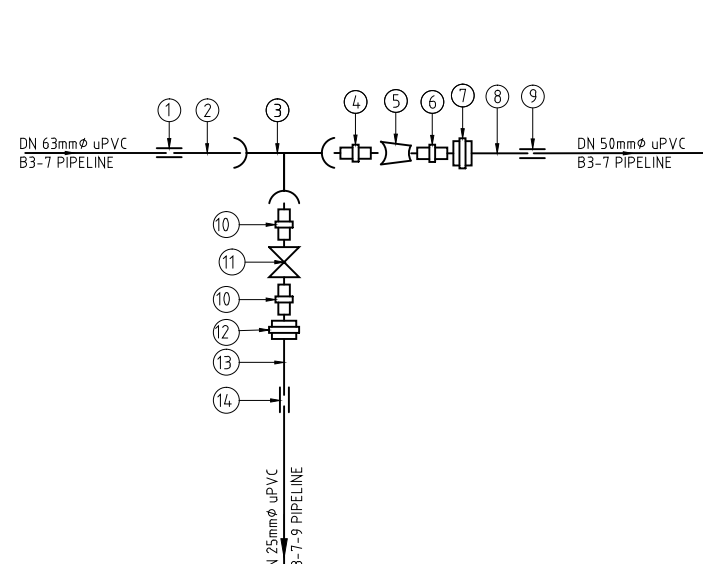
LOCATION	SPECIFICATIONS	No.
B3-7 PIPELINE CH. 2+460m PRV CHAMBER	1. 90/80mm DIA V/J STEPPED COUPLING	2
	2. 80mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 80mm DIA FLANGED SLUICE VALVE	1
	4. 80mm DIA PRESSURE REDUCING VALVE	1



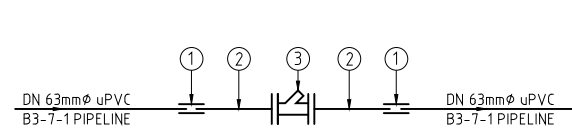
LOCATION	SPECIFICATIONS	No.
B3-7 PIPELINE CH. 2+820m OFF TAKE TO B3-7-8	1. 75/65mm DIA V/J STEPPED COUPLING	1
	2. 65mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	3. 65/40mm DIA, DOUBLE FLANGED GI TEE	1
	4. 65/50mm DIA FLANGED REDUCER	1
	5. 50mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	6. 63/50mm DIA uPVC/GI ADAPTOR	1
	7. 40mm DIA NIPPLE	2
	8. 40mm DIA GATE VALVE	1
	9. 40mm DIA UNION	1
	10. 40mm DIA, 0.5m LONG, THREADED GI PIPE	1
	11. 50/40mm DIA uPVC/GI ADAPTOR	1



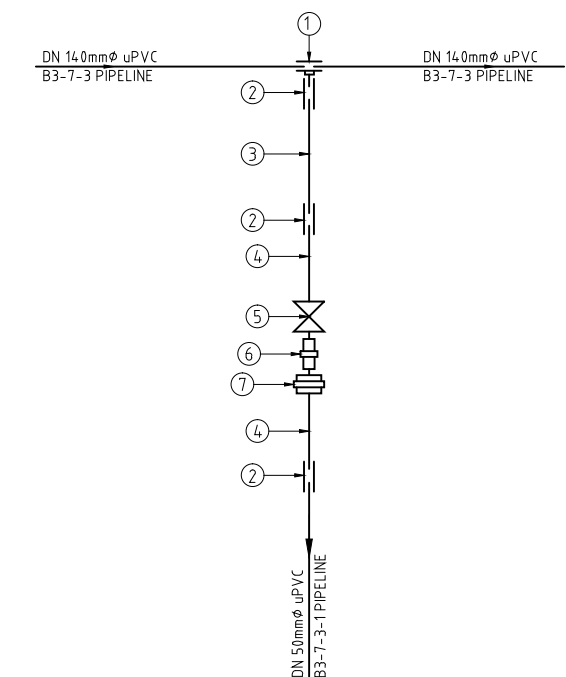
LOCATION	SPECIFICATIONS	No.
B3-7 PIPELINE CH. 3+060m OFF TAKE TO B3-7-9	1. 63/50mm DIA uPVC/GI ADAPTOR	1
	2. 50mm DIA, 0.5m LONG, THREADED GI PIPE	1
	3. 50/20mm DIA, THREADED GI TEE	1
	4. 50mm DIA GI NIPPLE	1
	5. 50/40mm DIA SOCKETED REDUCER	1
	6. 40mm DIA GI NIPPLE	1
	7. 40mm DIA GI UNION	1
	8. 40mm DIA, 0.5m LONG, THREADED GI PIPE	1
	9. 50/40mm DIA uPVC/GI ADAPTOR	1
	10. 20mm DIA GI NIPPLE	2
	11. 20mm DIA GATE VALVE	1
	12. 20mm DIA GI UNION	1
	13. 20mm DIA, 0.5m LONG, THREADED GI PIPE	1
	14. 25/20mm DIA uPVC/GI ADAPTOR	1



LOCATION	SPECIFICATIONS	No.
B3-7-1 PIPELINE CH. 0+540m PRV CHAMBER	1. 63/50mm DIA uPVC/GI ADAPTOR	2
	2. 50mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 50mm DIA PRESSURE REDUCING VALVE	1



LOCATION	SPECIFICATIONS	No.
B3-7-3 PIPELINE CH. 0+120m OFF TAKE TO B3-7-3-1	1. 125/40mm DIA SADDLE CLAMP	1
	2. 50/40mm DIA uPVC/GI ADAPTOR	3
	3. 50mm DIA, 1m LONG, uPVC PIPE	1
	4. 40mm DIA, 0.5m LONG, THREADED GI PIPE	2
	5. 40mm DIA GATE VALVE	1
	6. 40mm DIA NIPPLE	1
	7. 40mm DIA UNION	1



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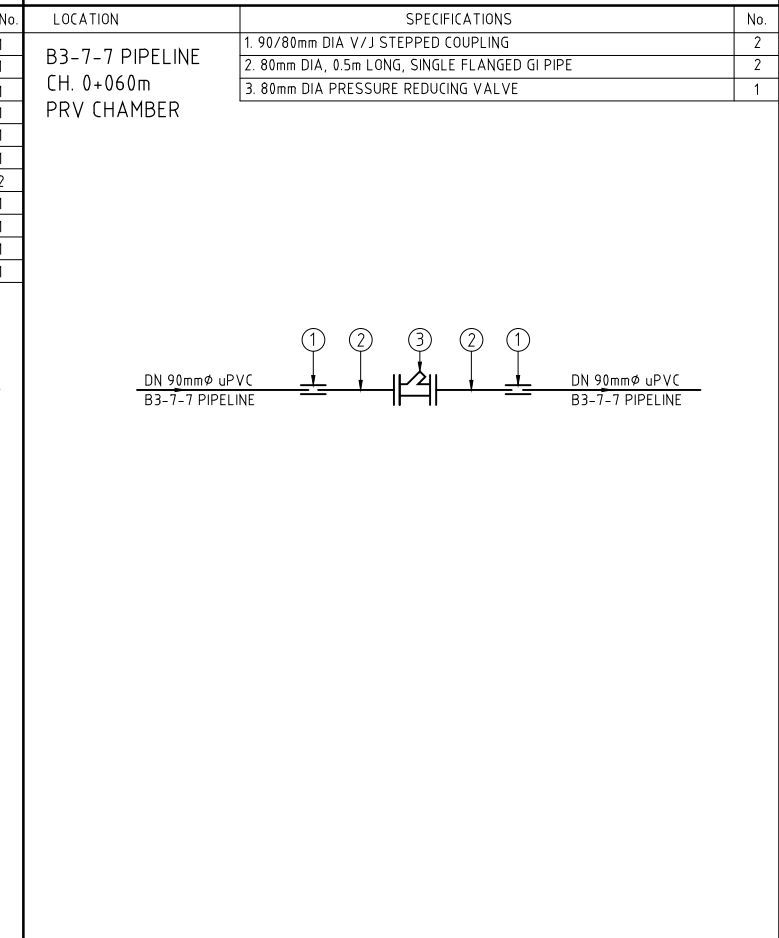
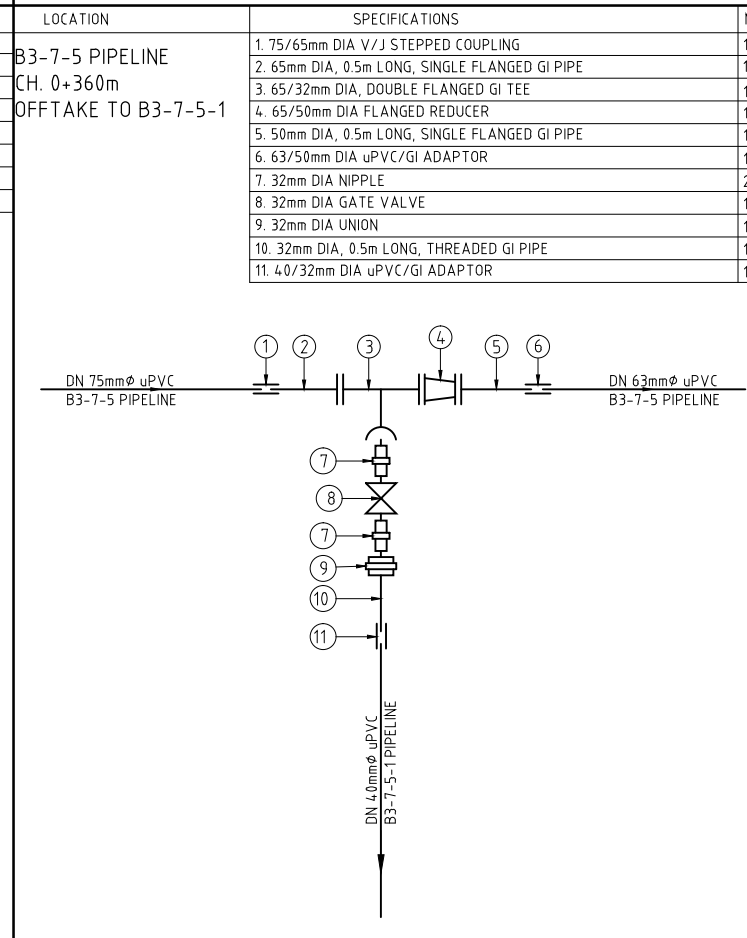
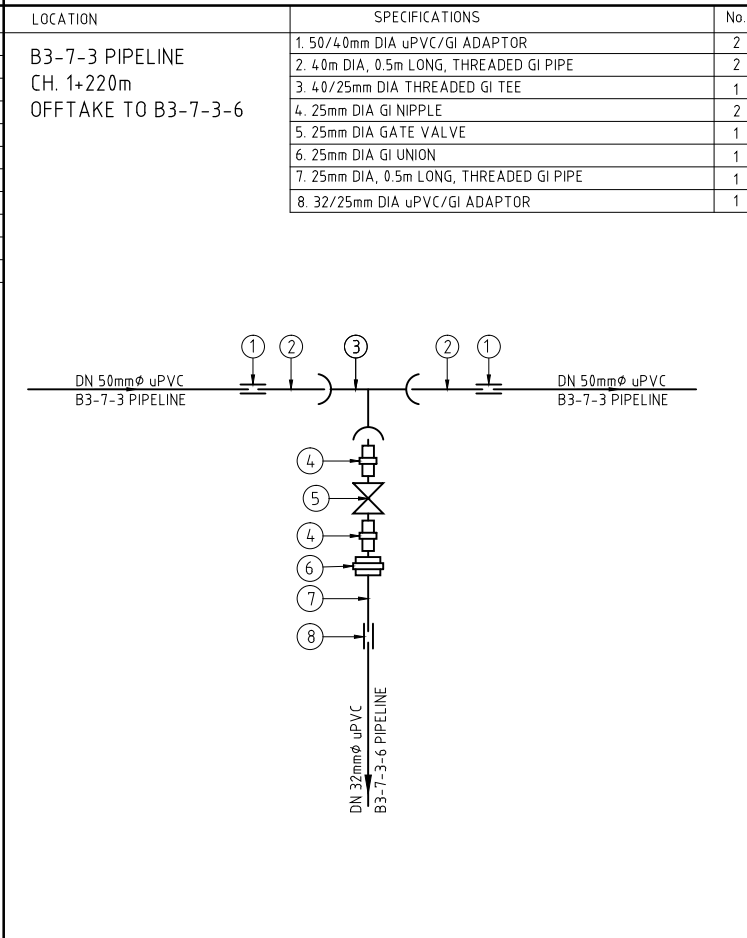
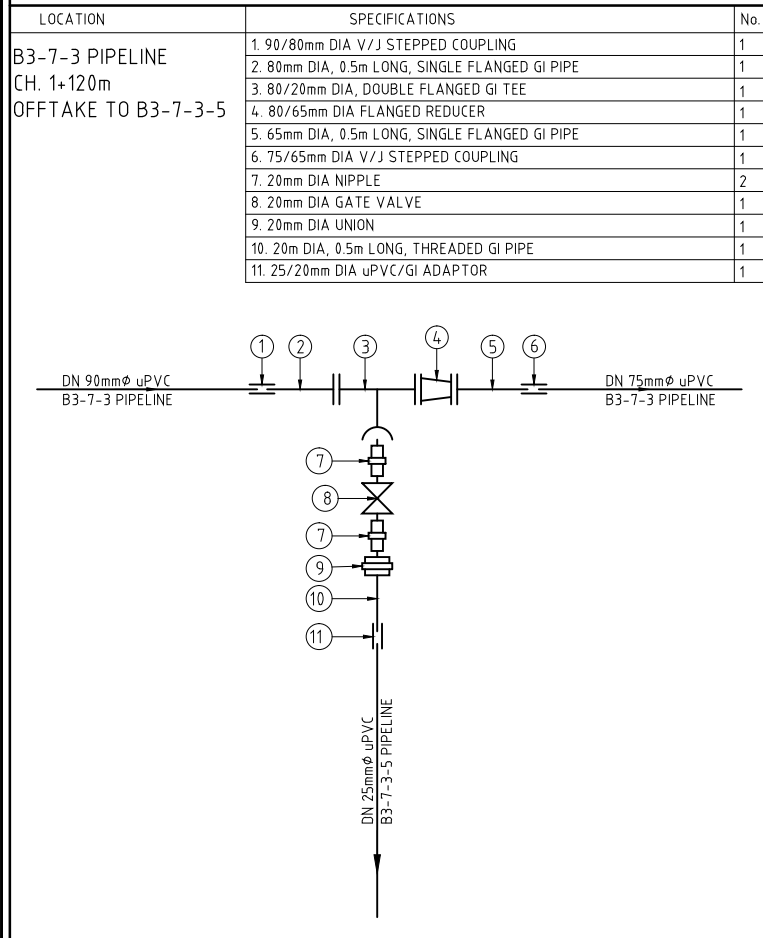
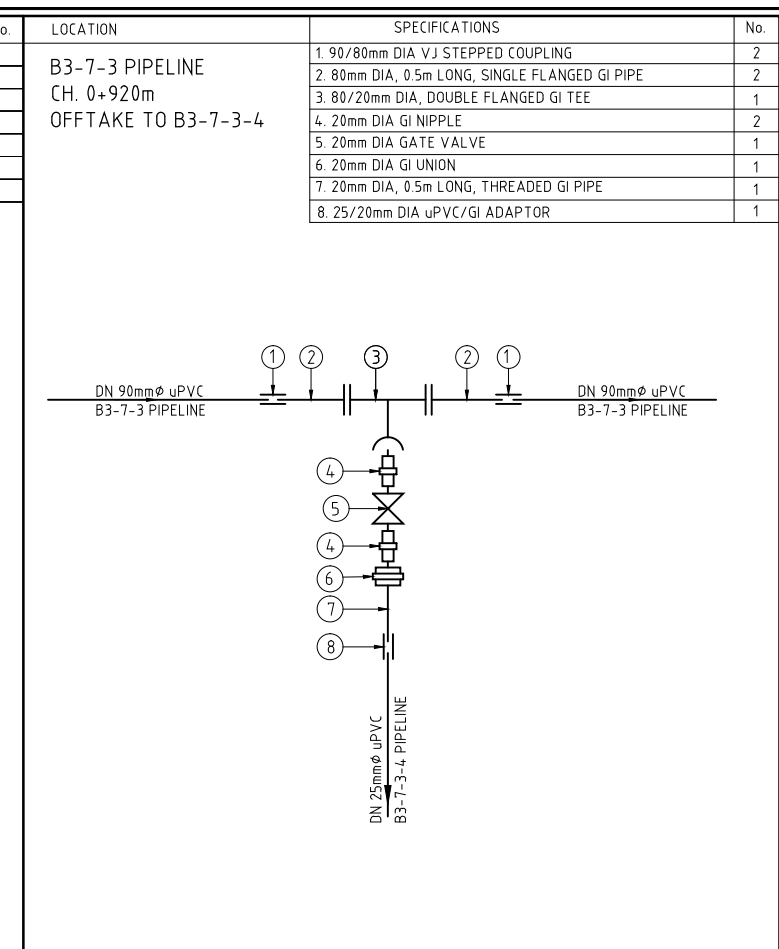
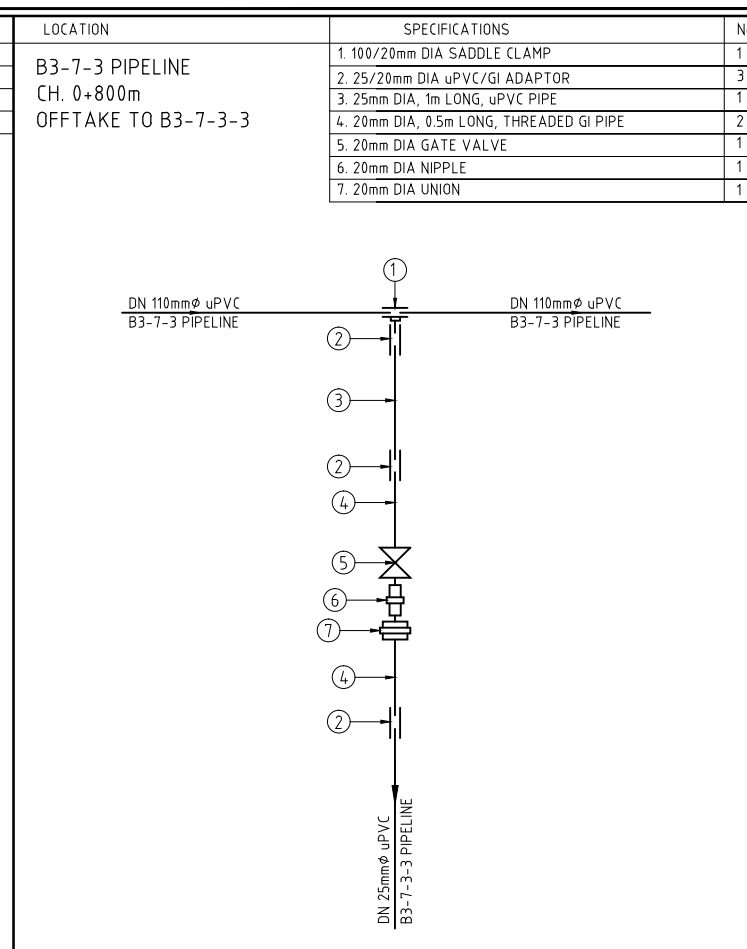
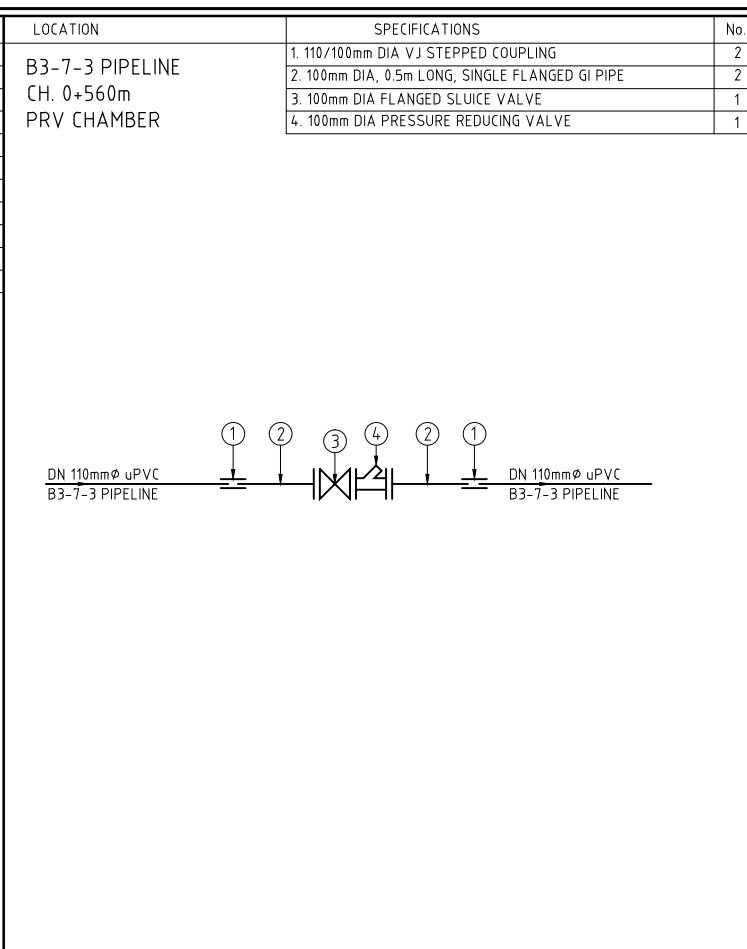
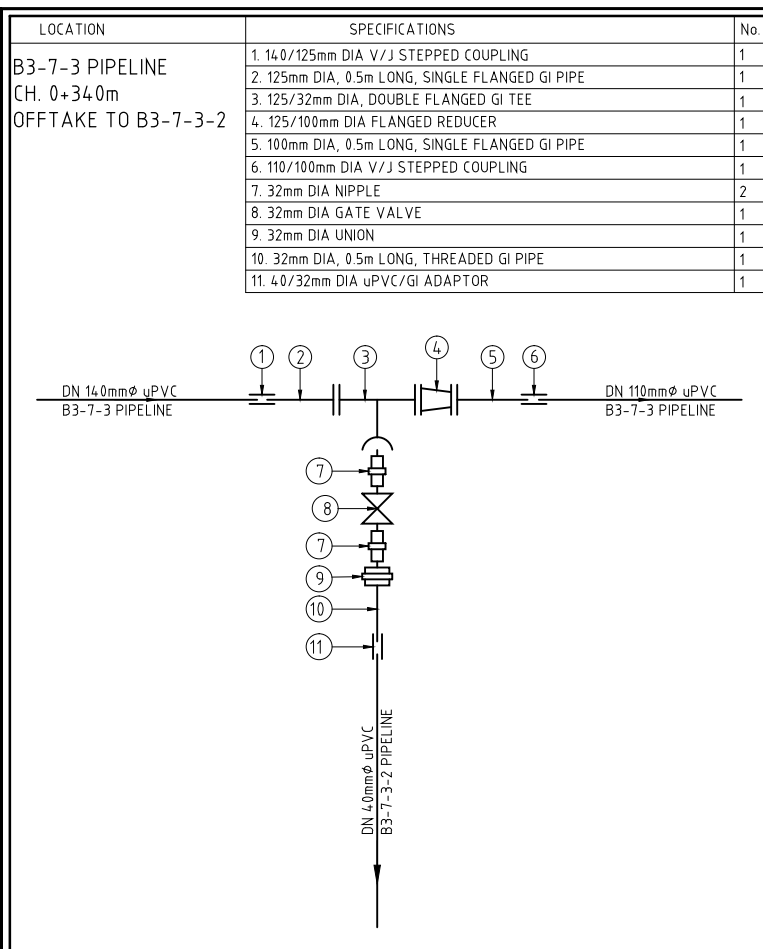
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

DISTRIBUTION B3  
JUNCTIONS FITTING DETAILS

SHEET 4 OF 6

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KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

DISTRIBUTION B3  
JUNCTIONS FITTING DETAILS

SHEET 5 OF 6

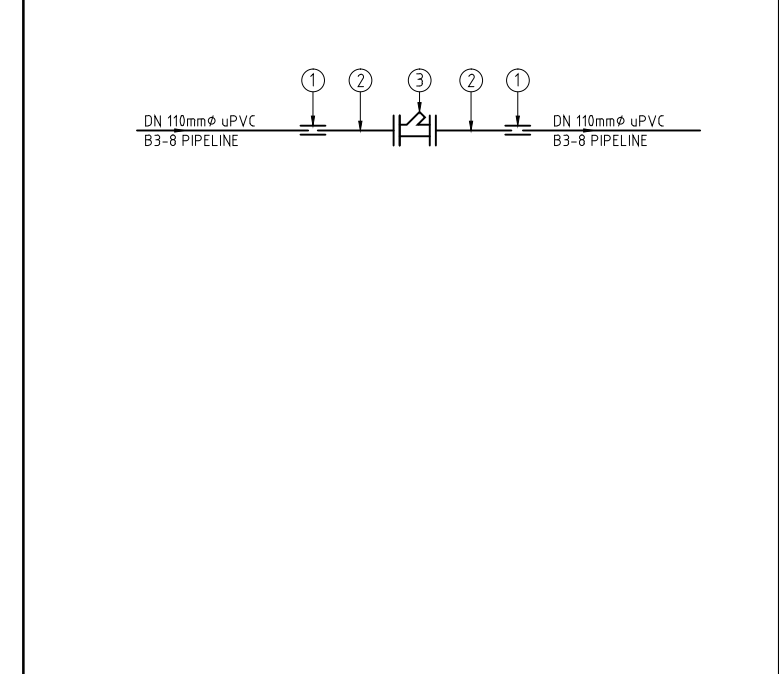
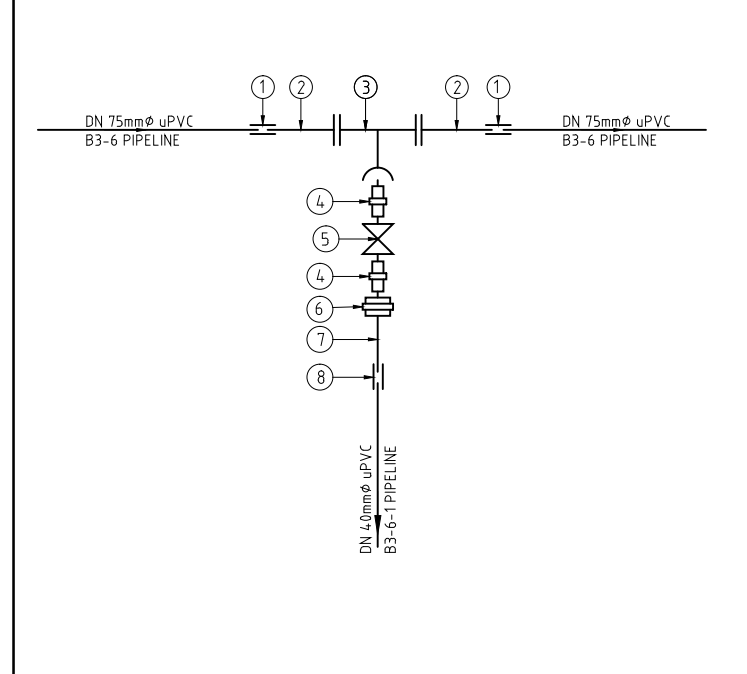
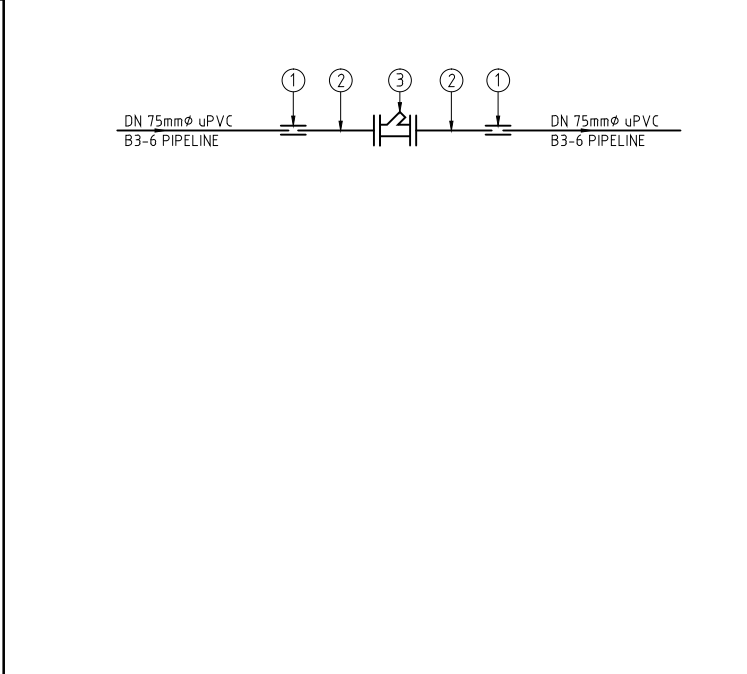
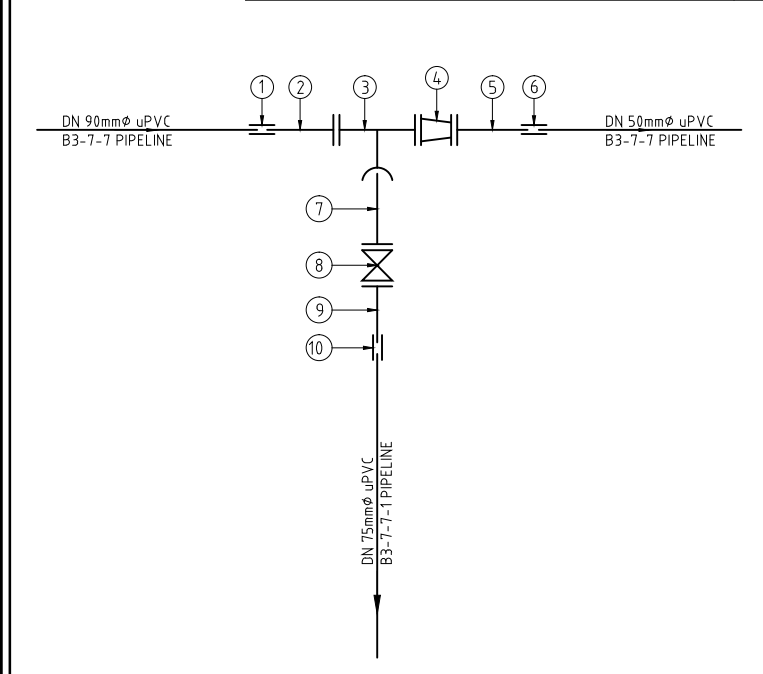
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LOCATION	SPECIFICATIONS	No.
B3-7-7 PIPELINE CH. 0+220m OFFTAKE TO B3-7-7-1	1. 90/80mm DIA V/J STEPPED COUPLING	1
	2. 80mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	3. 80/65mm DIA, DOUBLE FLANGED GI TEE	1
	4. 80/40mm DIA FLANGED REDUCER	1
	5. 40mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	6. 50/40mm DIA uPVC/GI ADAPTOR	1
	7. 65mm DIA, 0.5m LONG, SINGLE FLANGED THREADED GI PIPE	1
	8. 65mm DIA FLANGED SLUICE VALVE	1
	9. 65mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	1
	10. 75/65mm DIA V/J STEPPED COUPLING	1

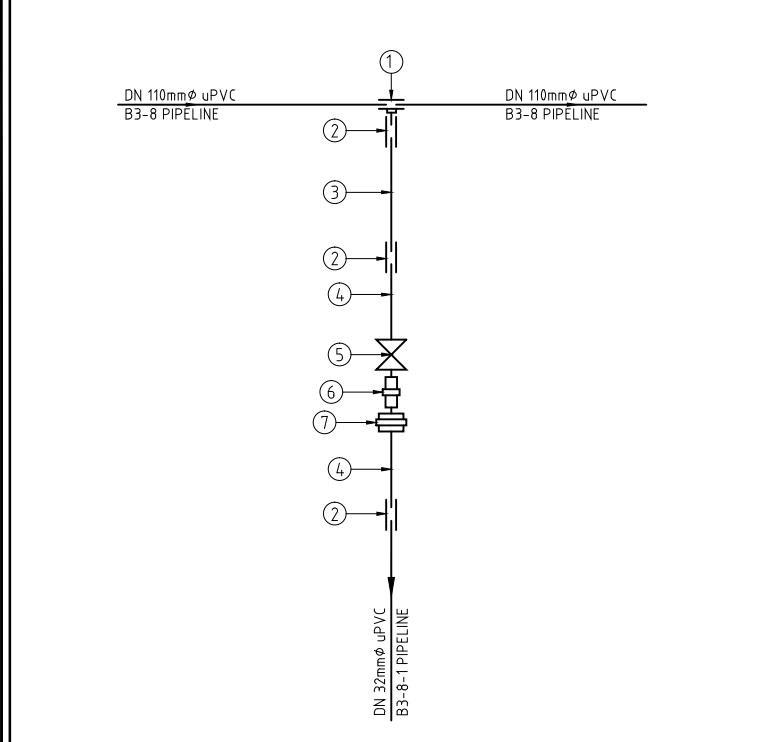
LOCATION	SPECIFICATIONS	No.
B3-6 PIPELINE CH. 0+460m PRV CHAMBER	1. 75/65mm DIA V/J STEPPED COUPLING	2
	2. 65mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 65mm DIA PRESSURE REDUCING VALVE	1

LOCATION	SPECIFICATIONS	No.
B3-6 PIPELINE CH. 0+480m OFFTAKE TO B3-6-1	1. 75/65mm DIA V/J STEPPED COUPLING	2
	2. 65mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 65/32mm DIA, DOUBLE FLANGED GI TEE	1
	4. 32mm DIA GI NIPPLE	2
	5. 32mm DIA GATE VALVE	1
	6. 32mm DIA GI UNION	1
	7. 32mm DIA, 0.5m LONG, THREADED GI PIPE	1
	8. 40/32mm DIA uPVC/GI ADAPTOR	1

LOCATION	SPECIFICATIONS	No.
B3-8 PIPELINE CH. 0+020m PRV CHAMBER	1. 110/100mm DIA V/J STEPPED COUPLING	2
	2. 100mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 100mm DIA PRESSURE REDUCING VALVE	1



LOCATION	SPECIFICATIONS	No.
B3-8 PIPELINE CH. 0+180m OFFTAKE TO B3-8-1	1. 100/25mm DIA SADDLE CLAMP	1
	2. 32/25mm DIA uPVC/GI ADAPTOR	3
	3. 32mm DIA, 1m LONG, uPVC PIPE	1
	4. 25mm DIA, 0.5m LONG, THREADED GI PIPE	2
	5. 25mm DIA GATE VALVE	1
	6. 25mm DIA NIPPLE	1
	7. 25mm DIA UNION	1



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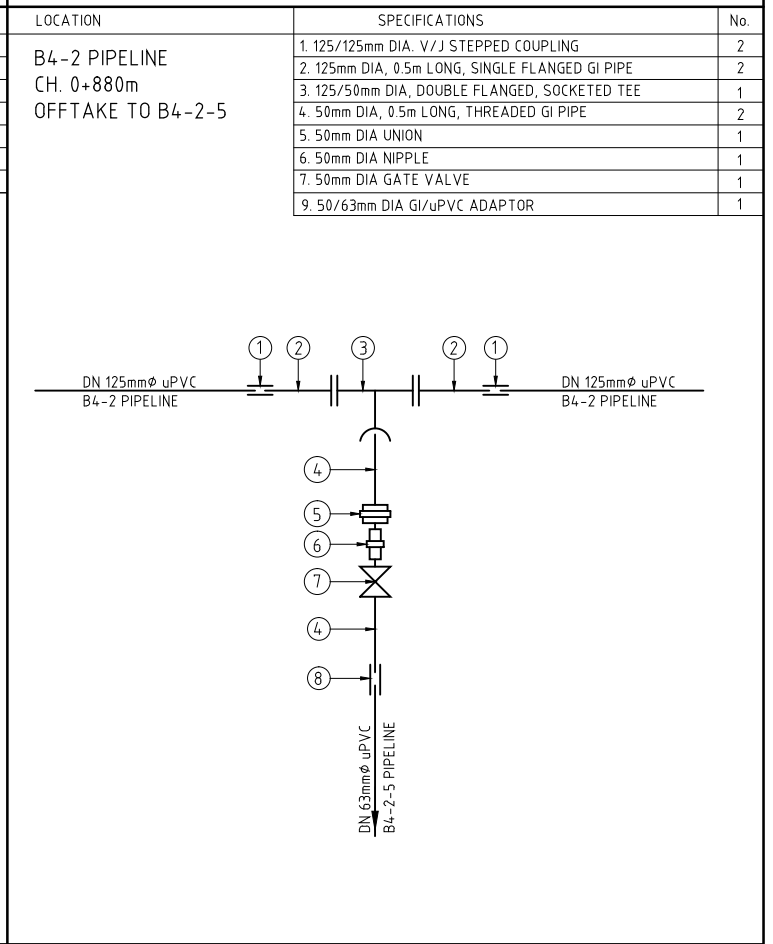
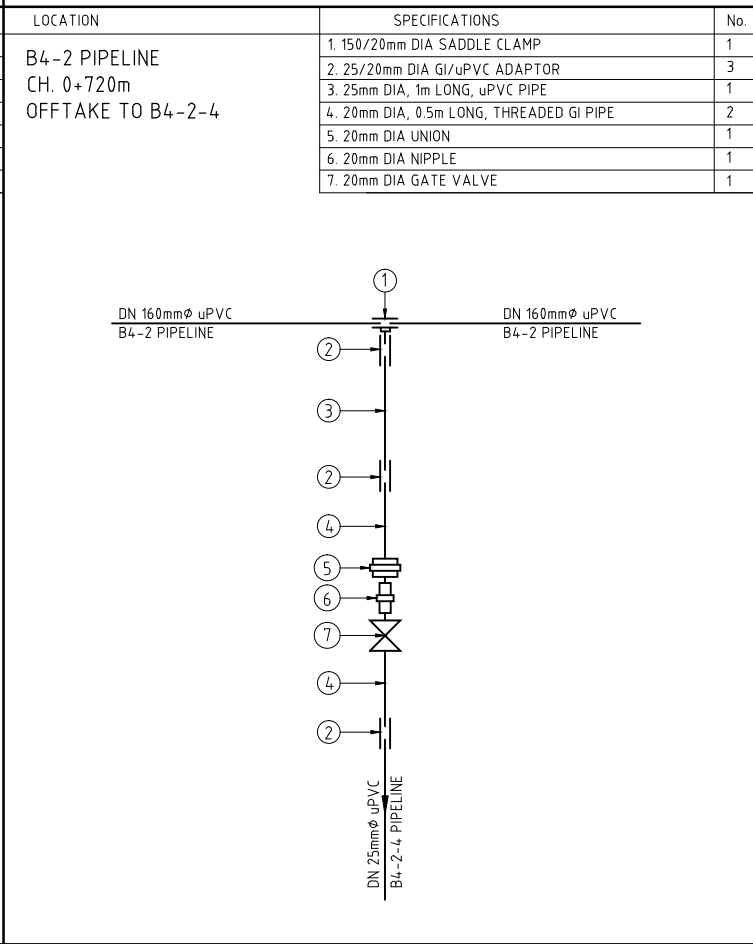
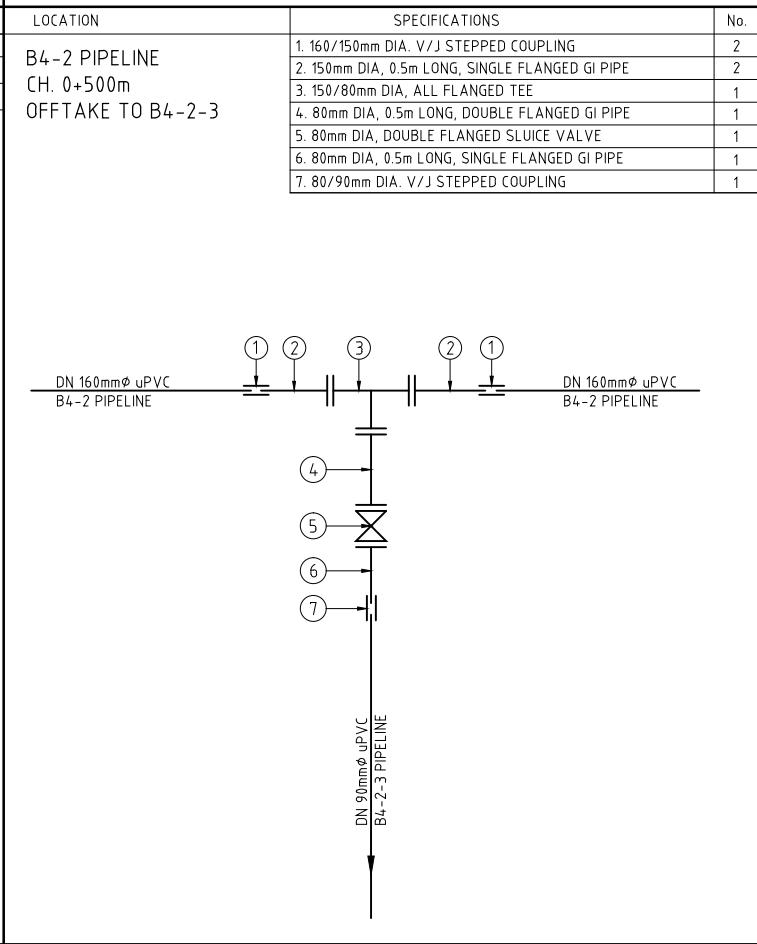
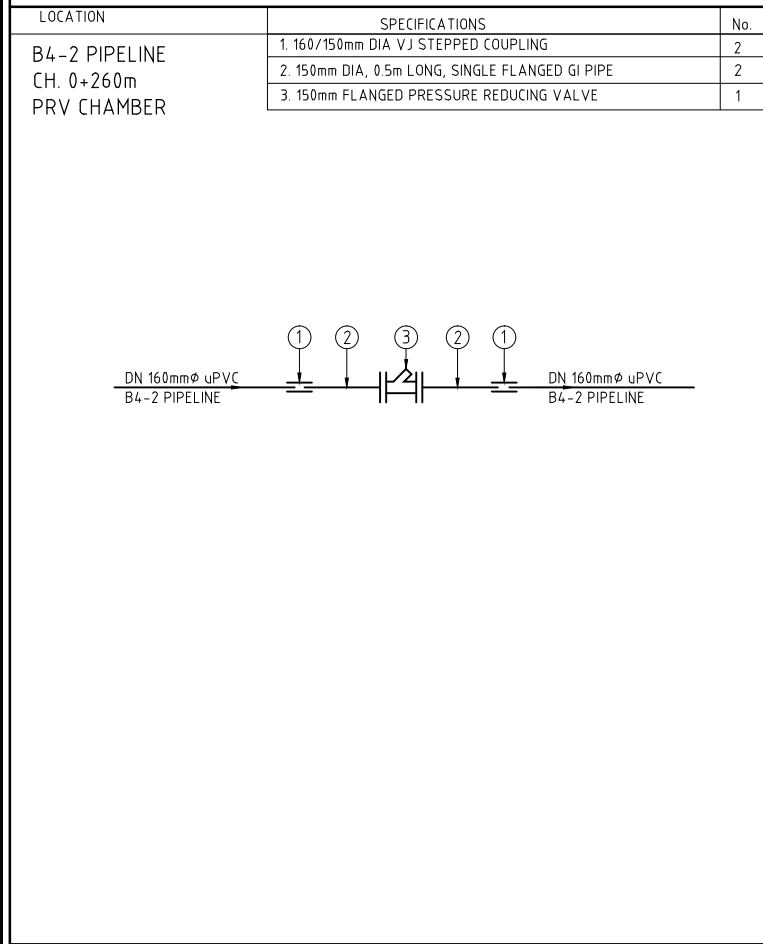
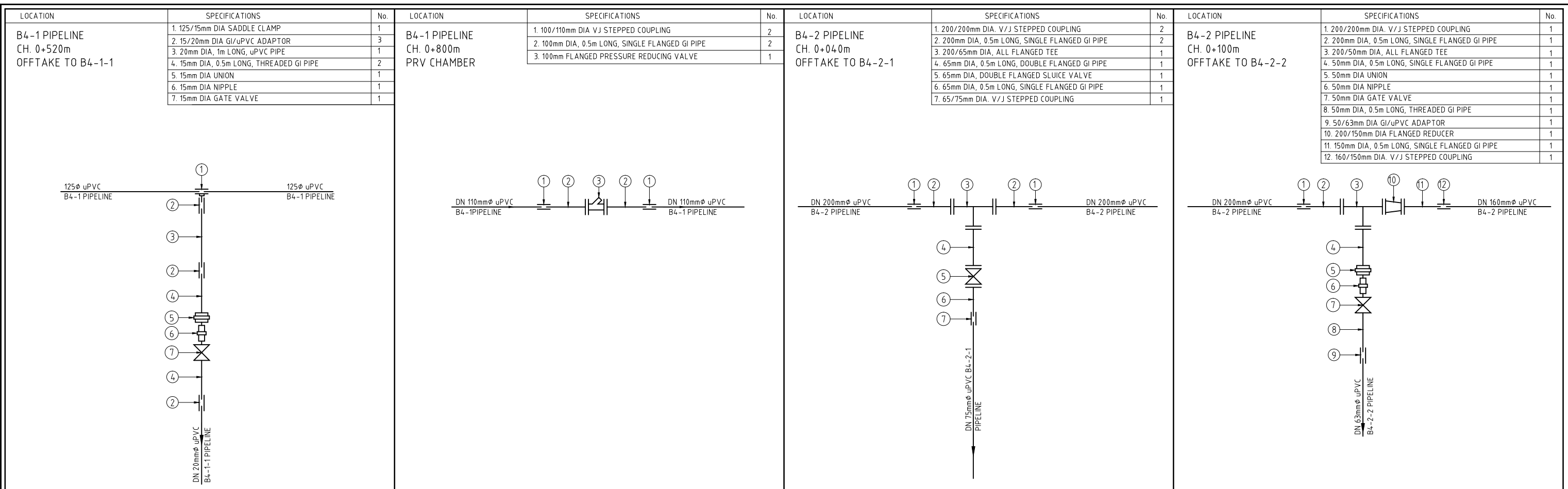
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

DISTRIBUTION B3 JUNCTIONS FITTING DETAILS

SHEET 6 OF 6

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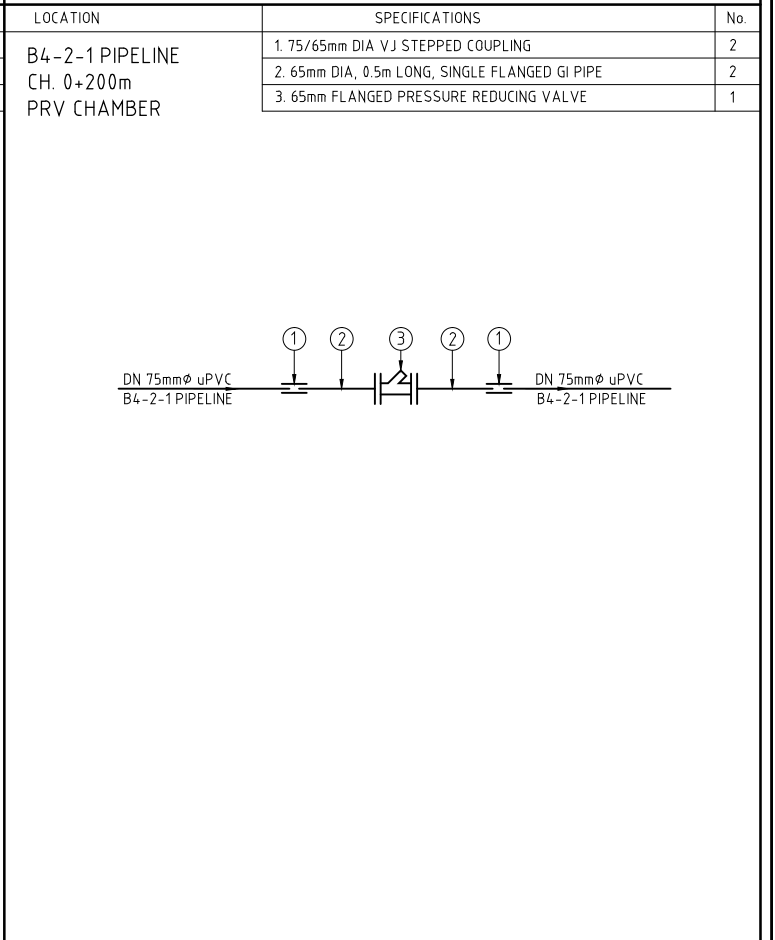
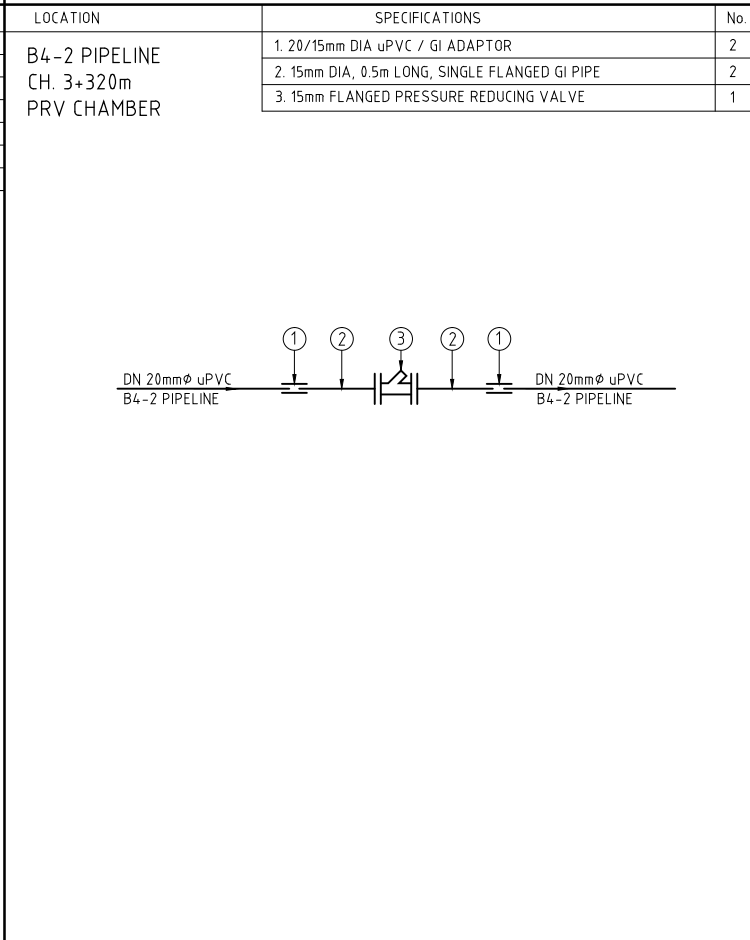
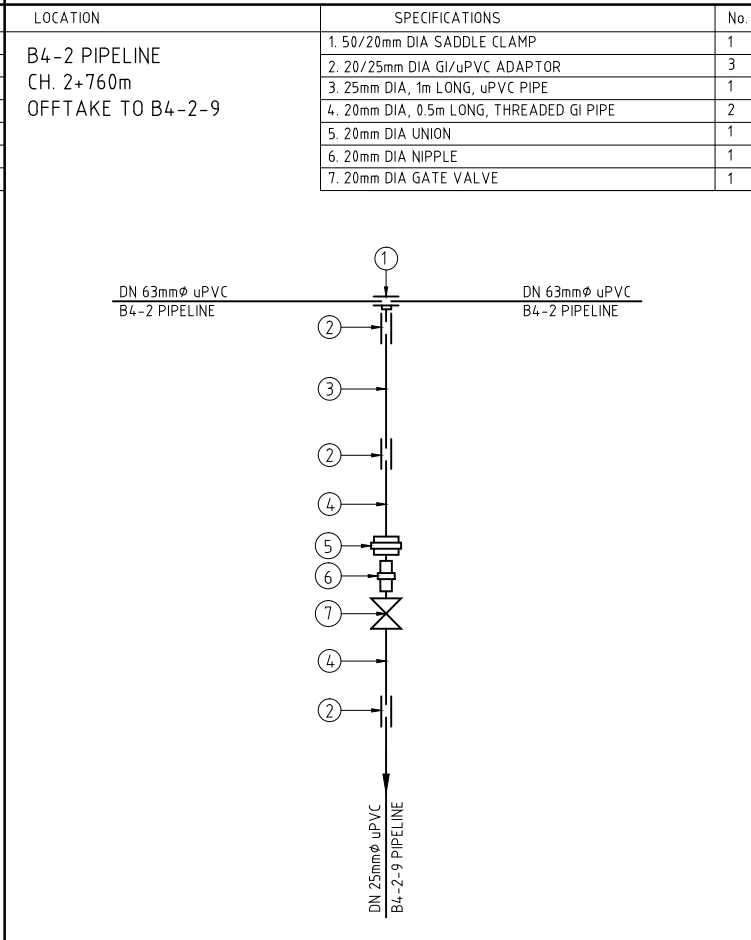
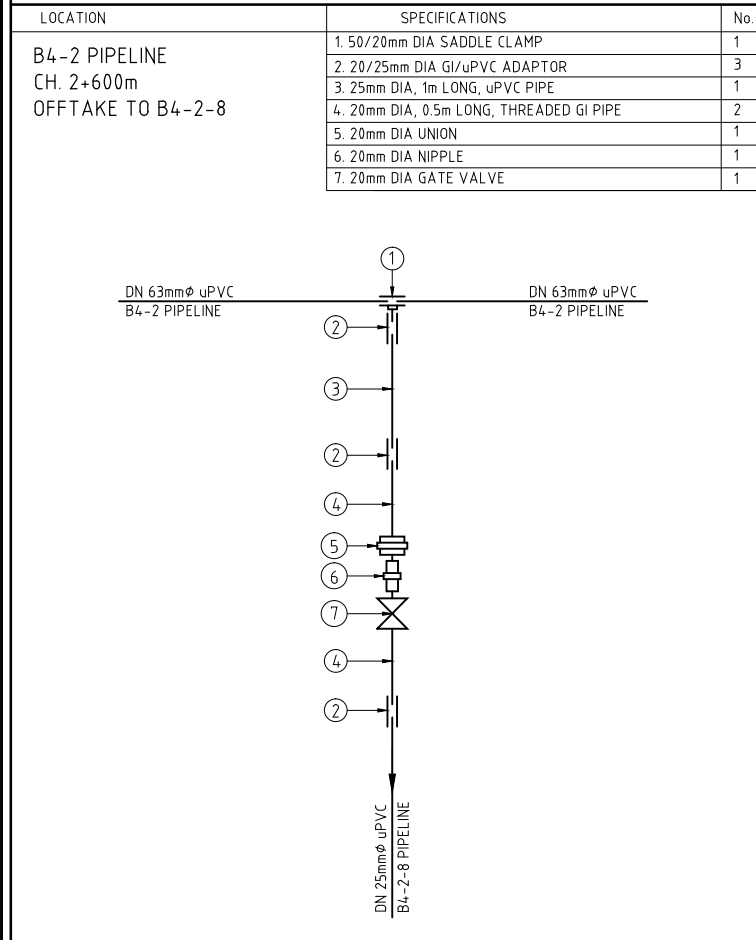
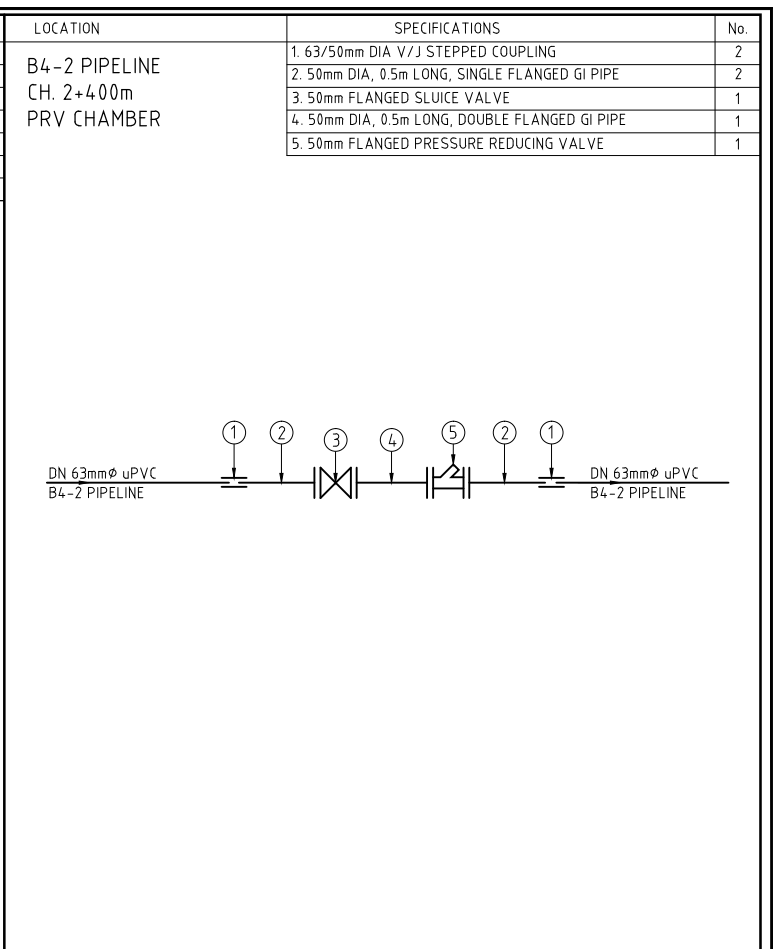
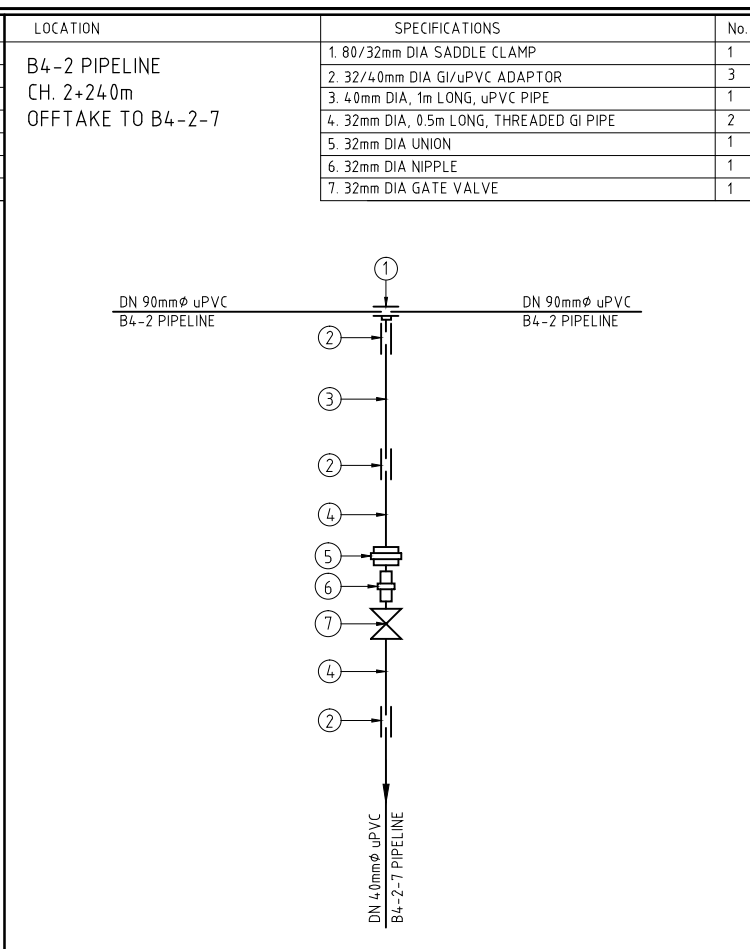
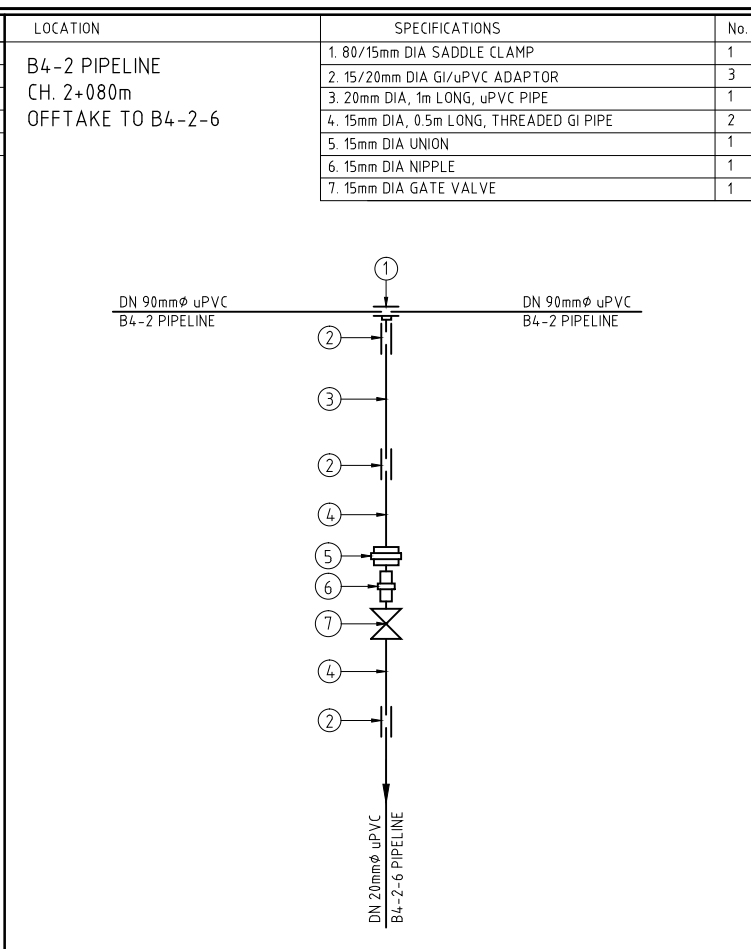
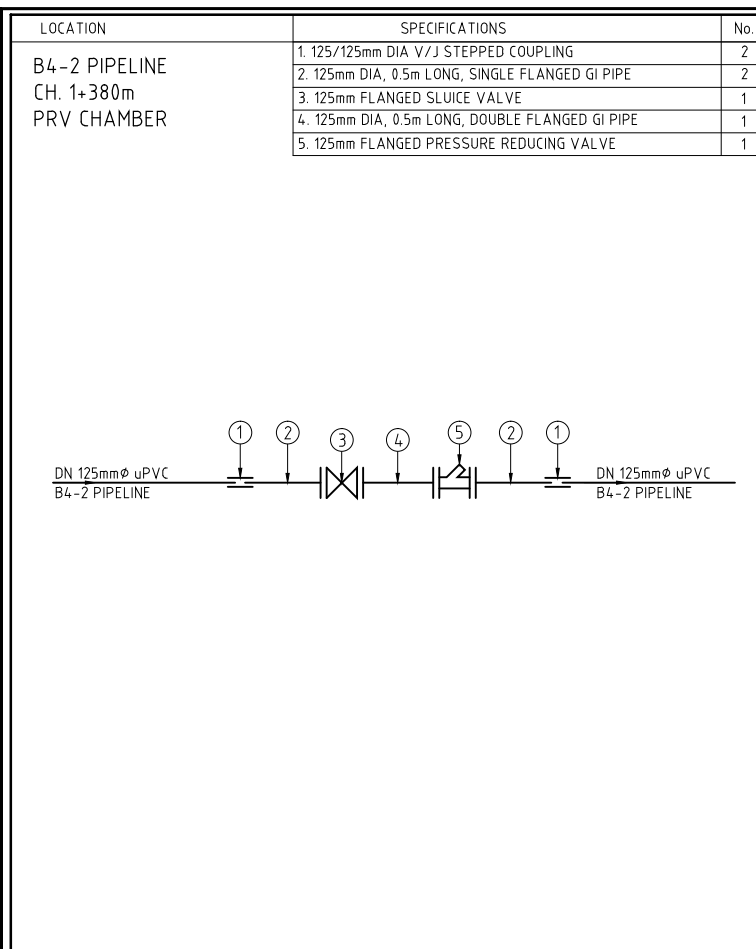
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DRG TITLE

DISTRIBUTION B4  
JUNCTIONS FITTING DETAILS

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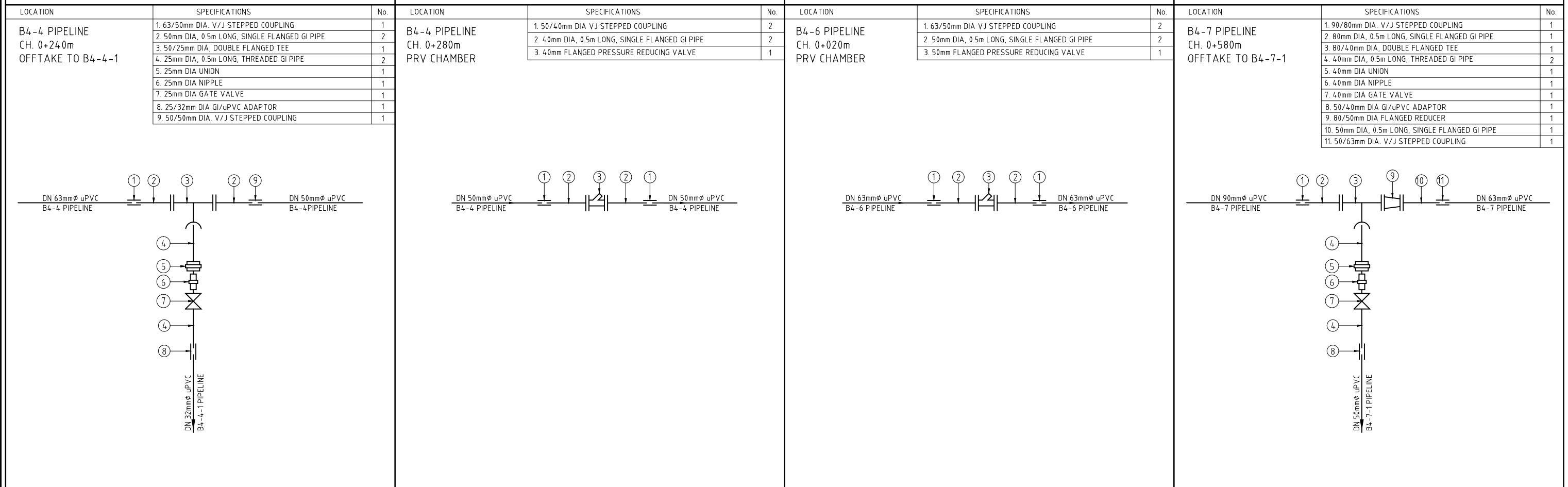
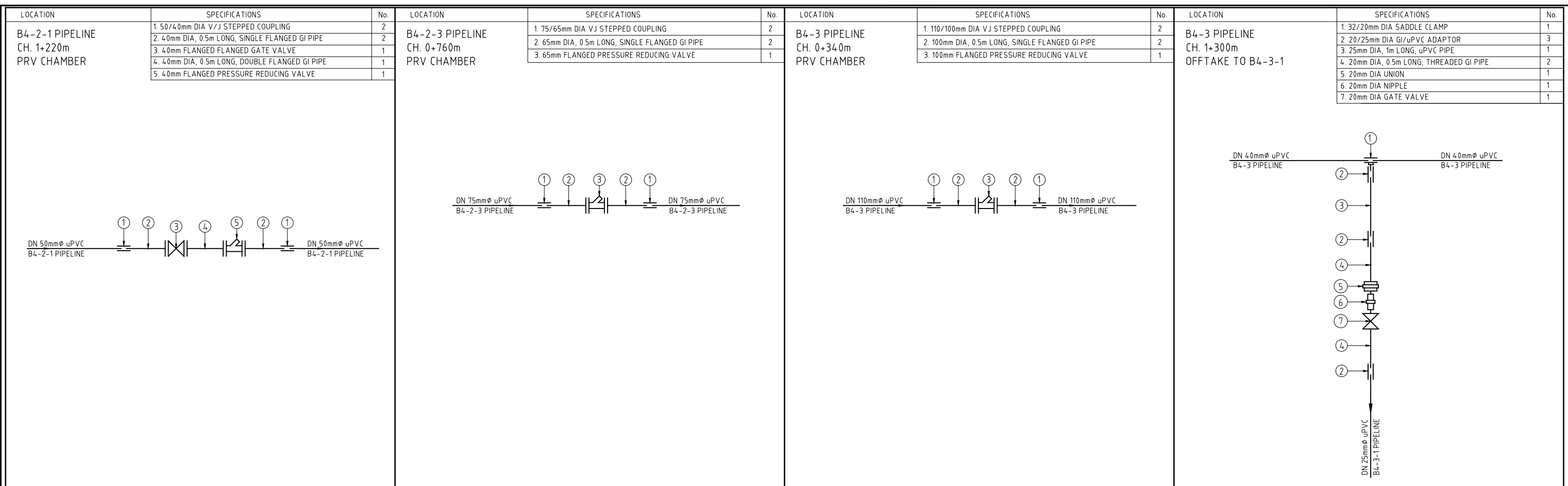
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DRG TITLE

DISTRIBUTION B4  
JUNCTIONS FITTING DETAILS

SHEET 2 OF 4

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KIRUMI KIAMUJARI  
IRRIGATION SCHEME

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LOCATION	SPECIFICATIONS	No.	LOCATION	SPECIFICATIONS	No.
B4-7 PIPELINE CH. 0+700m PRV CHAMBER	1. 63/50mm DIA VJ STEPPED COUPLING	2	B4-7-1 PIPELINE CH. 0+120m PRV CHAMBER	1. 50/40mm DIA VJ STEPPED COUPLING	2
	2. 50mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2		2. 40mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 50mm FLANGED PRESSURE REDUCING VALVE	1		3. 40mm FLANGED PRESSURE REDUCING VALVE	1

DN 63mm $\phi$  uPVC  
B4-7 PIPELINE

DN 50mm $\phi$  uPVC  
B4-7-1 PIPELINE

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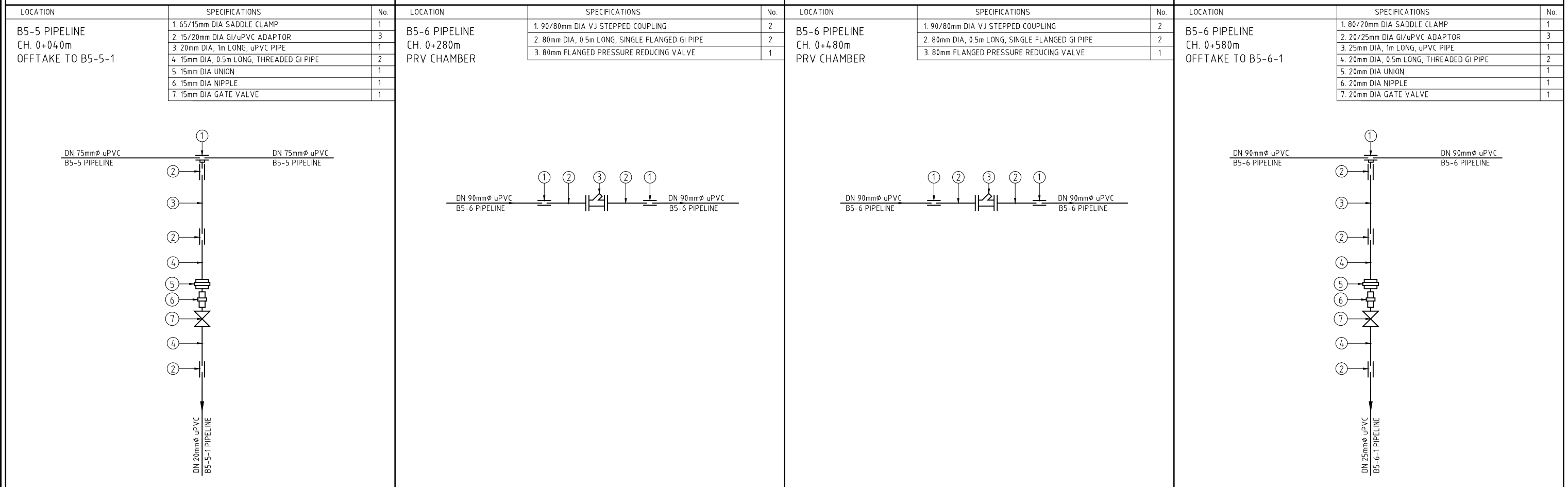
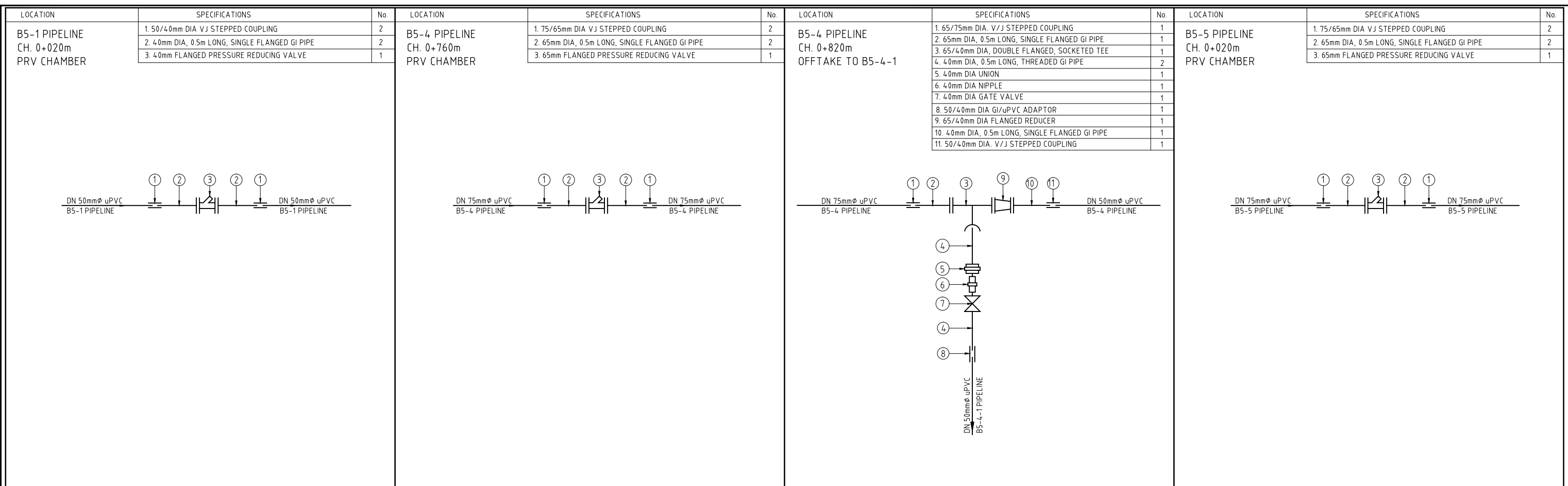
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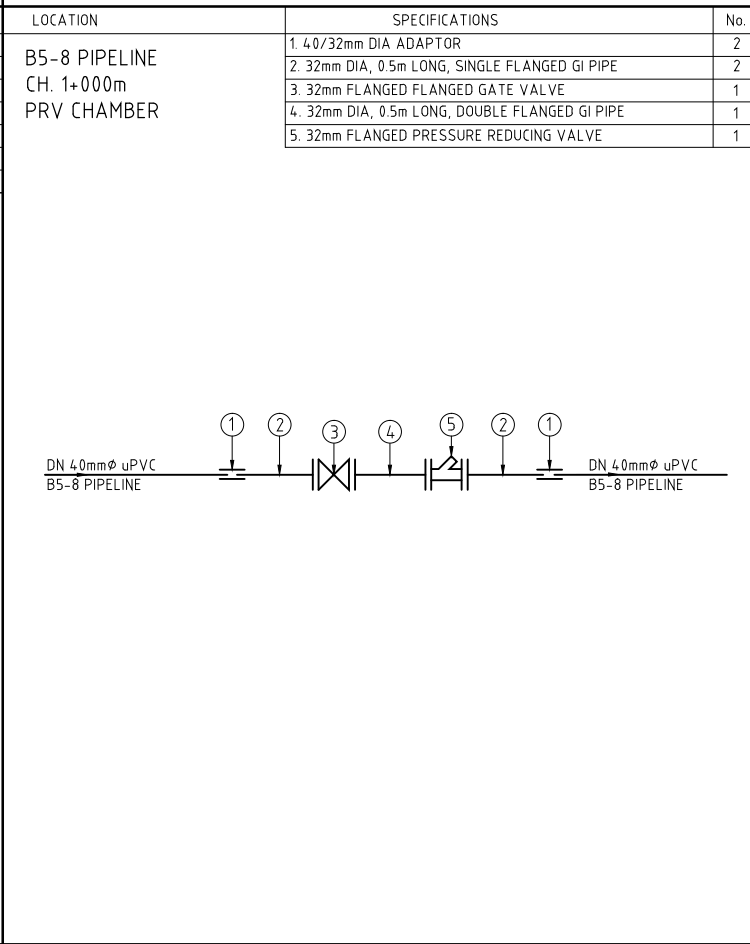
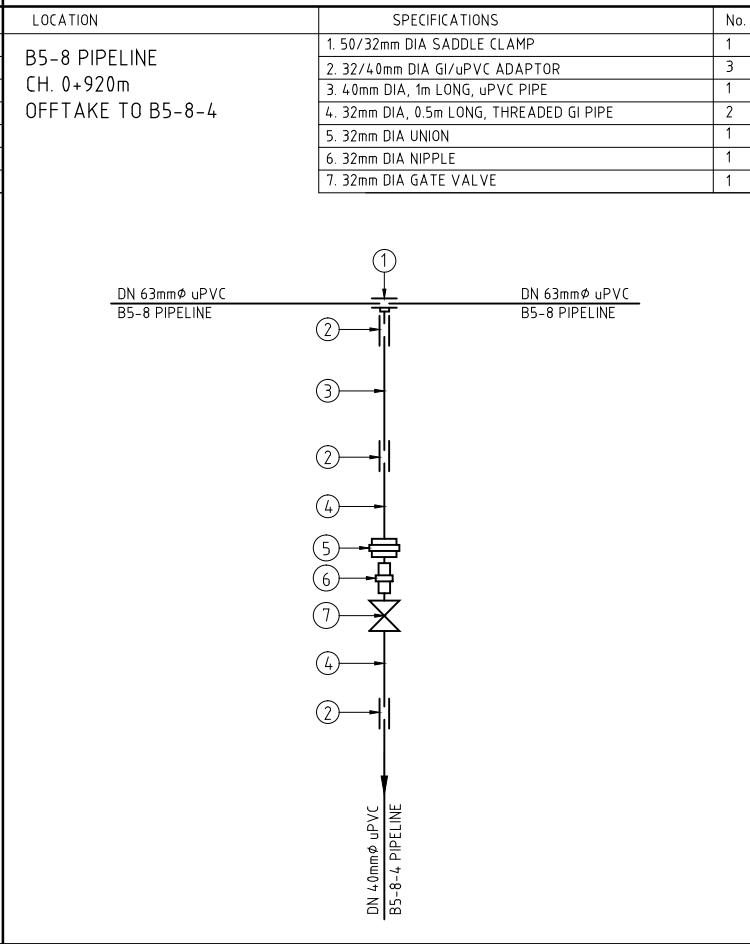
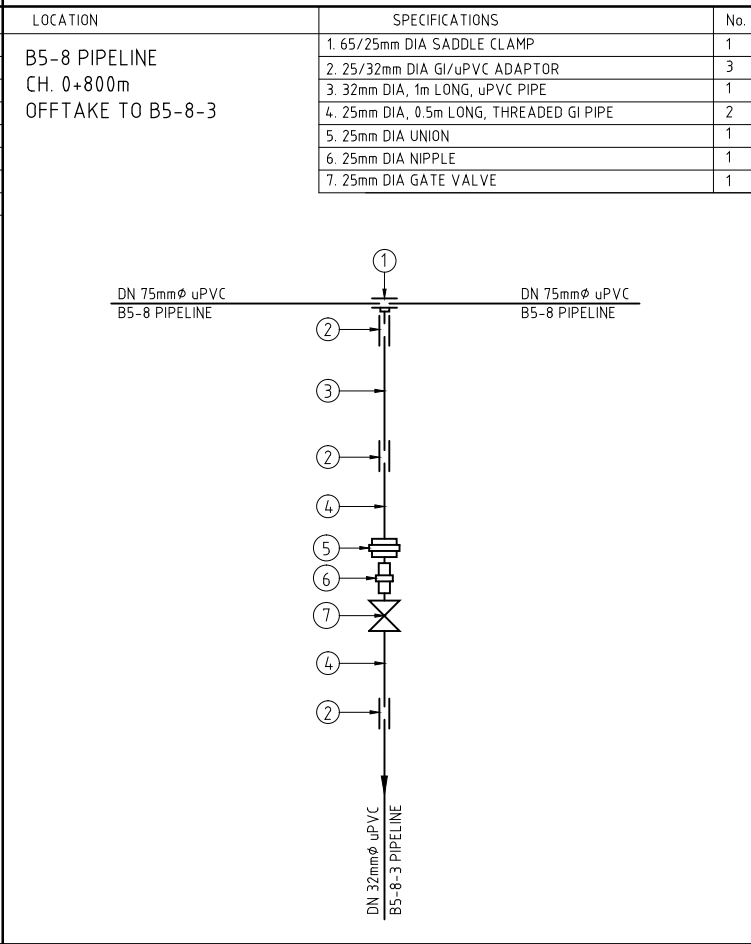
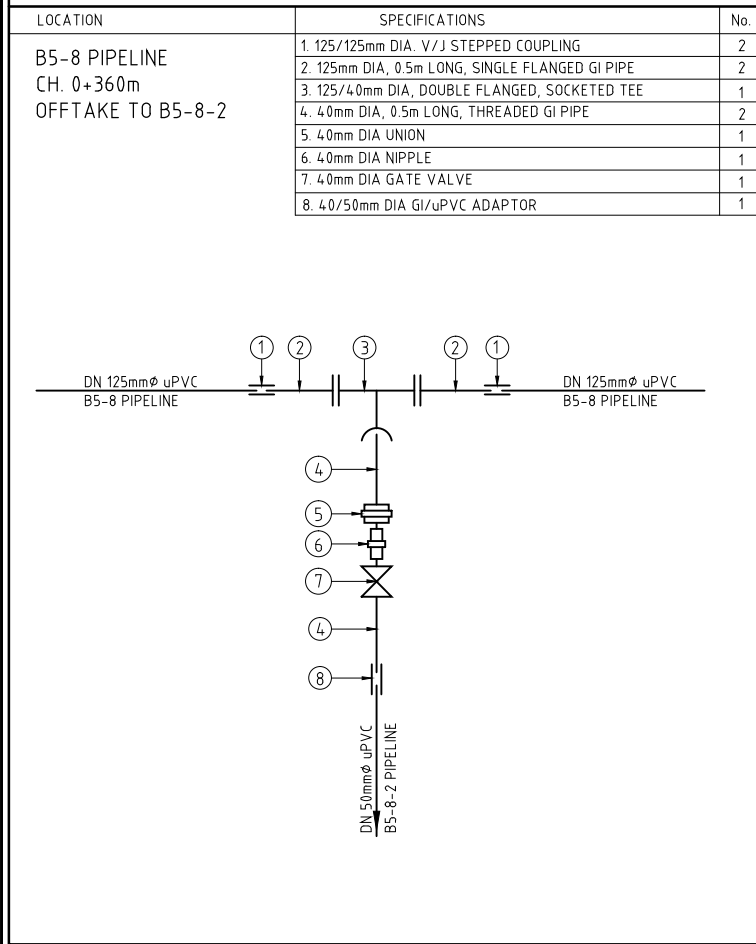
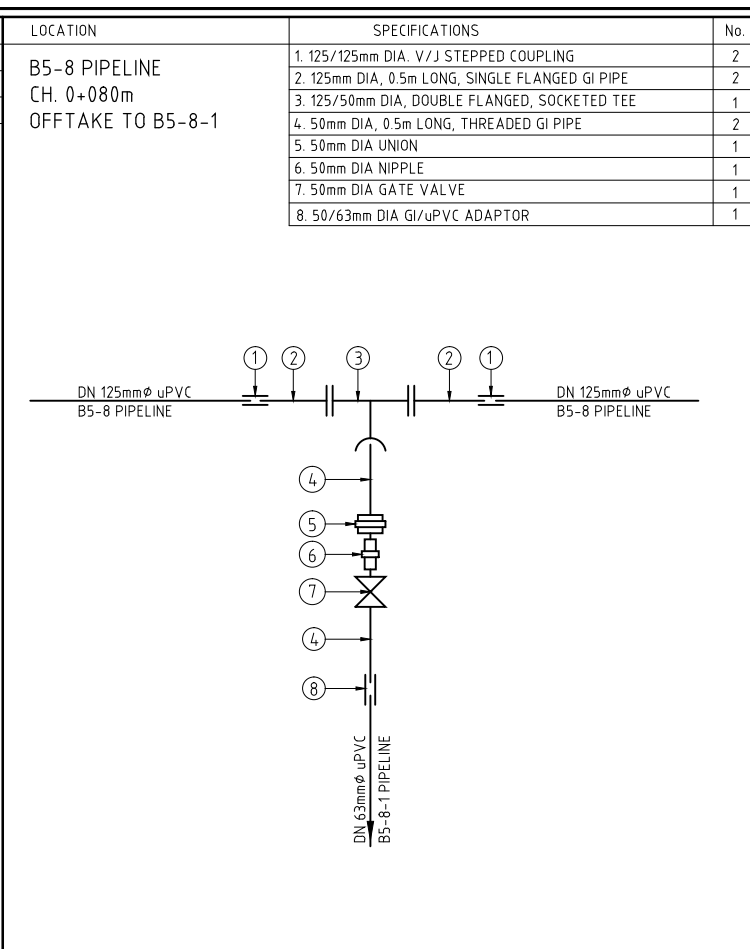
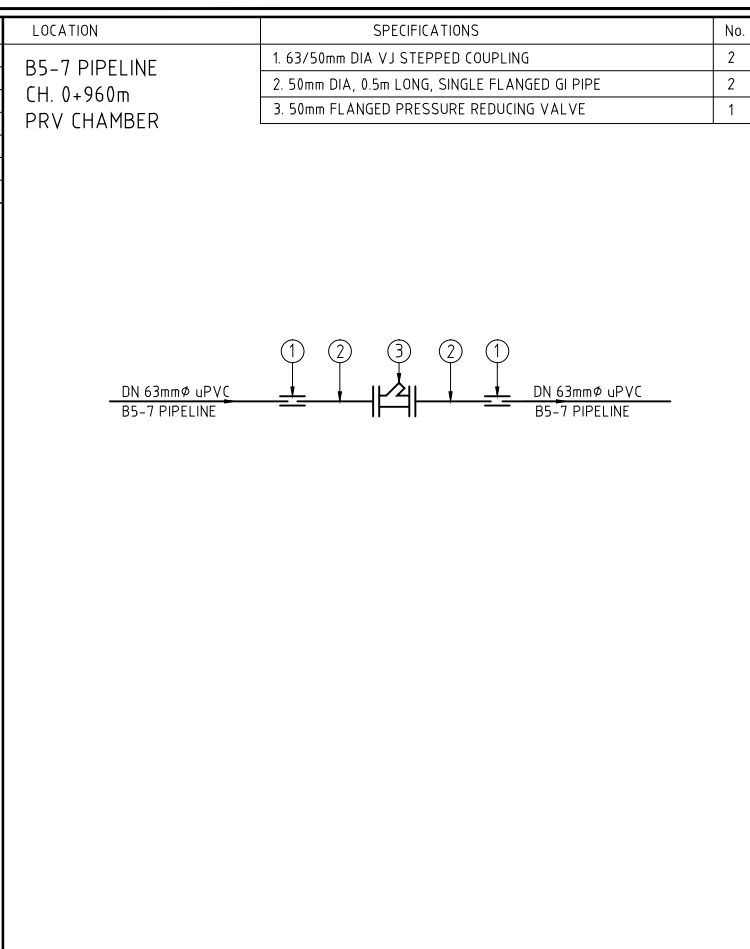
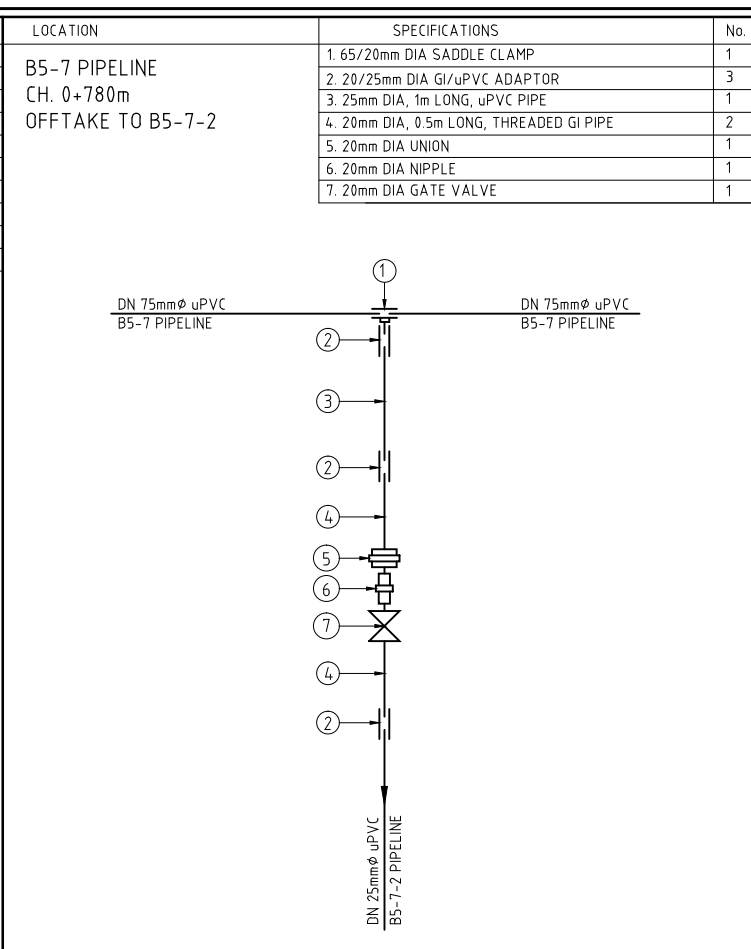
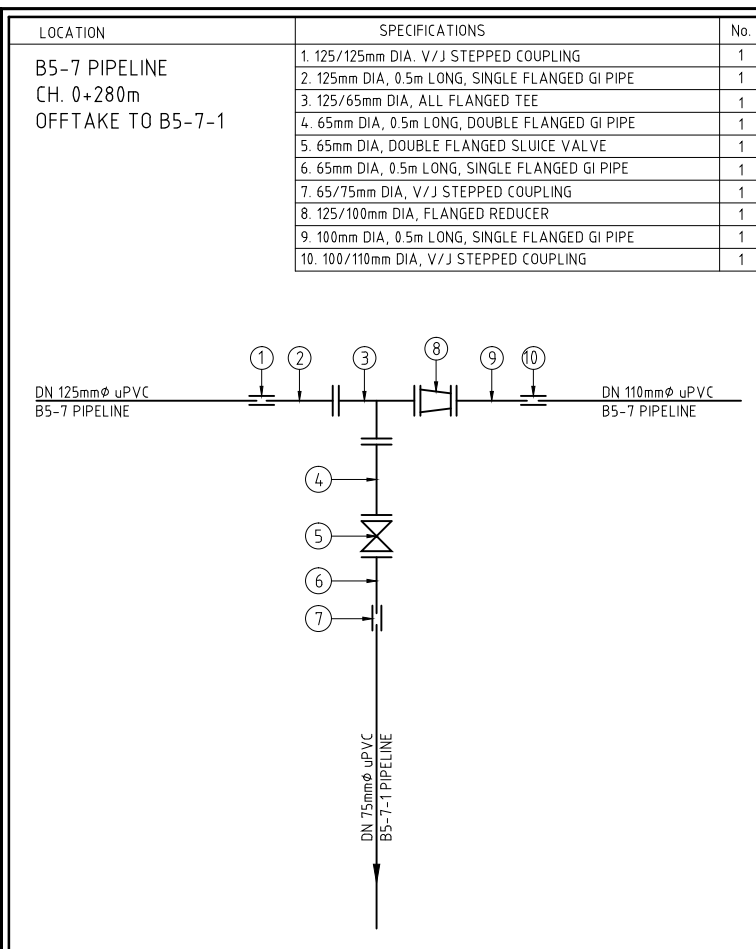
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

DISTRIBUTION B5  
JUNCTIONS FITTING DETAILS

SHEET 1 OF 3

Date:	JULY 2014	JOB No.	000811
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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

DISTRIBUTION B5 JUNCTIONS FITTING DETAILS

SHEET 2 OF 3

Date:	JULY 2014	JOB No.	000811
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LOCATION	SPECIFICATIONS	No.	LOCATION	SPECIFICATIONS	No.	LOCATION	SPECIFICATIONS	No.	LOCATION	SPECIFICATIONS	No.
B5-9 PIPELINE CH. 0+020m OFFTAKE TO B5-9-1	1. 100/15mm DIA SADDLE CLAMP	1	B5-9 PIPELINE CH. 1+040m OFFTAKE TO B5-9-2	1. 65/20mm DIA SADDLE CLAMP	1	B5-9 PIPELINE CH. 1+360m PRV CHAMBER	1. 50/40mm DIA ADAPTOR	2	B5-9 PIPELINE CH. 2+000m PRV CHAMBER	1. 50/40mm DIA ADAPTOR	2
	2. 15/20mm DIA GI/uPVC ADAPTOR	3		2. 20/25mm DIA GI/uPVC ADAPTOR	3		2. 32mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2		2. 32mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 20mm DIA, 1m LONG, uPVC PIPE	1		3. 25mm DIA, 1m LONG, uPVC PIPE	1		3. 32mm FLANGED FLANGED GATE VALVE	1		3. 32mm FLANGED FLANGED GATE VALVE	1
	4. 15mm DIA, 0.5m LONG, THREADED GI PIPE	2		4. 20mm DIA, 0.5m LONG, THREADED GI PIPE	2		4. 32mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	1		4. 32mm DIA, 0.5m LONG, DOUBLE FLANGED GI PIPE	1
	5. 15mm DIA UNION	1		5. 20mm DIA UNION	1		5. 32mm FLANGED PRESSURE REDUCING VALVE	1		5. 32mm FLANGED PRESSURE REDUCING VALVE	1
	6. 15mm DIA NIPPLE	1		6. 20mm DIA NIPPLE	1						
	7. 15mm DIA GATE VALVE	1		7. 20mm DIA GATE VALVE	1						

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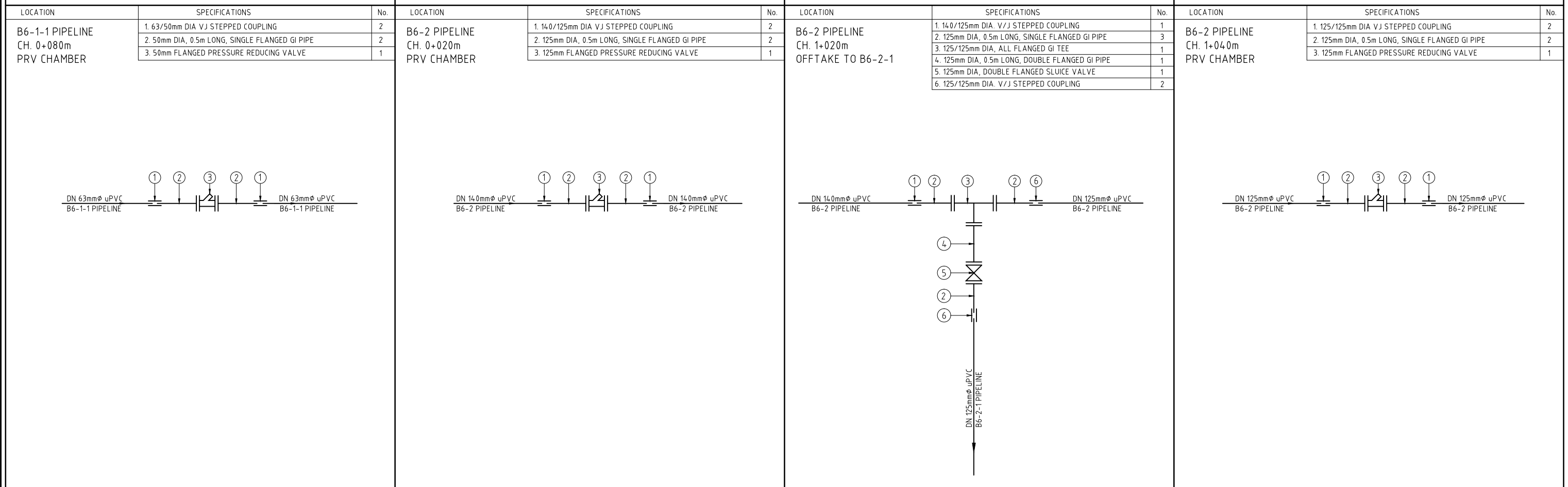
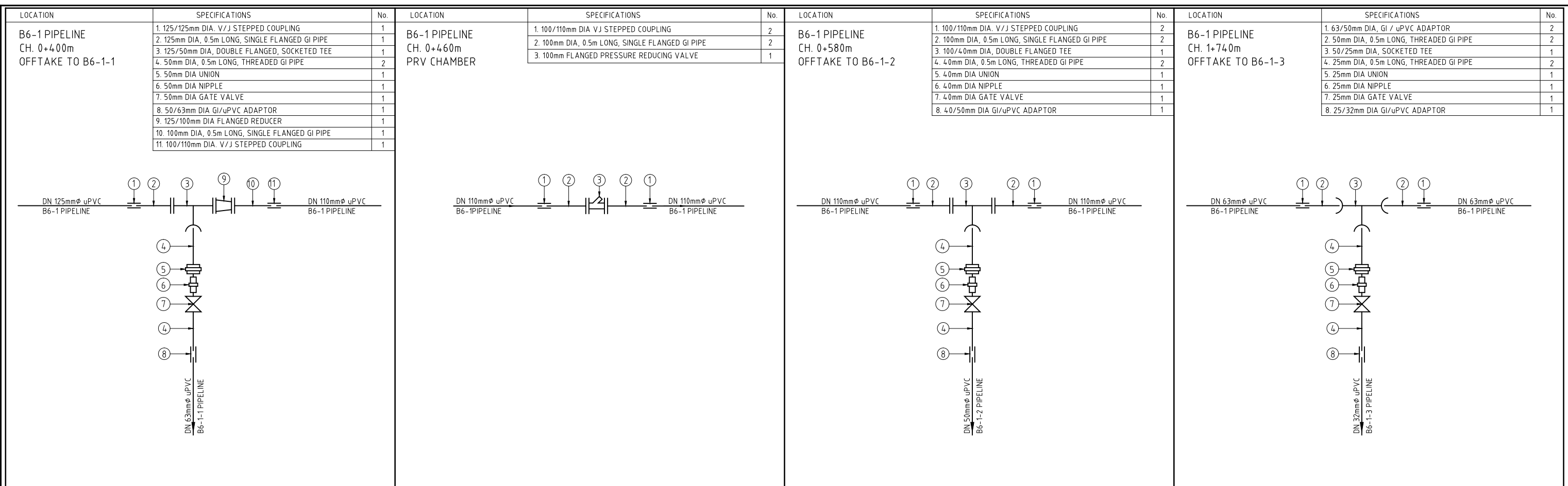
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

DISTRIBUTION B5  
JUNCTIONS FITTING DETAILS

SHEET 3 OF 3

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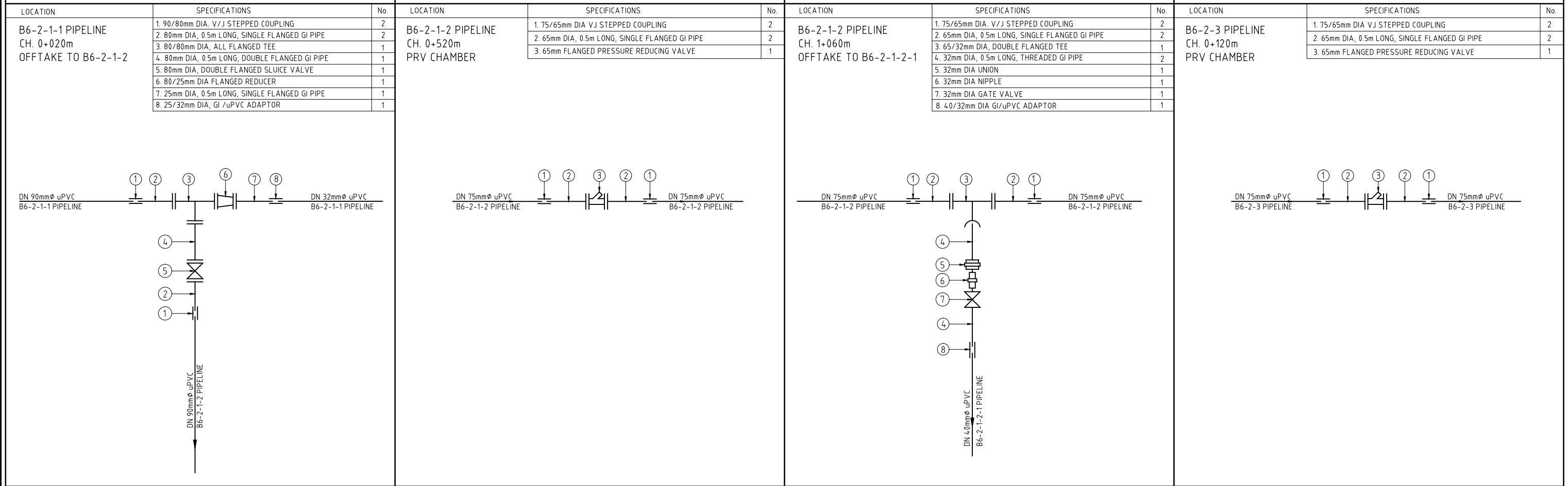
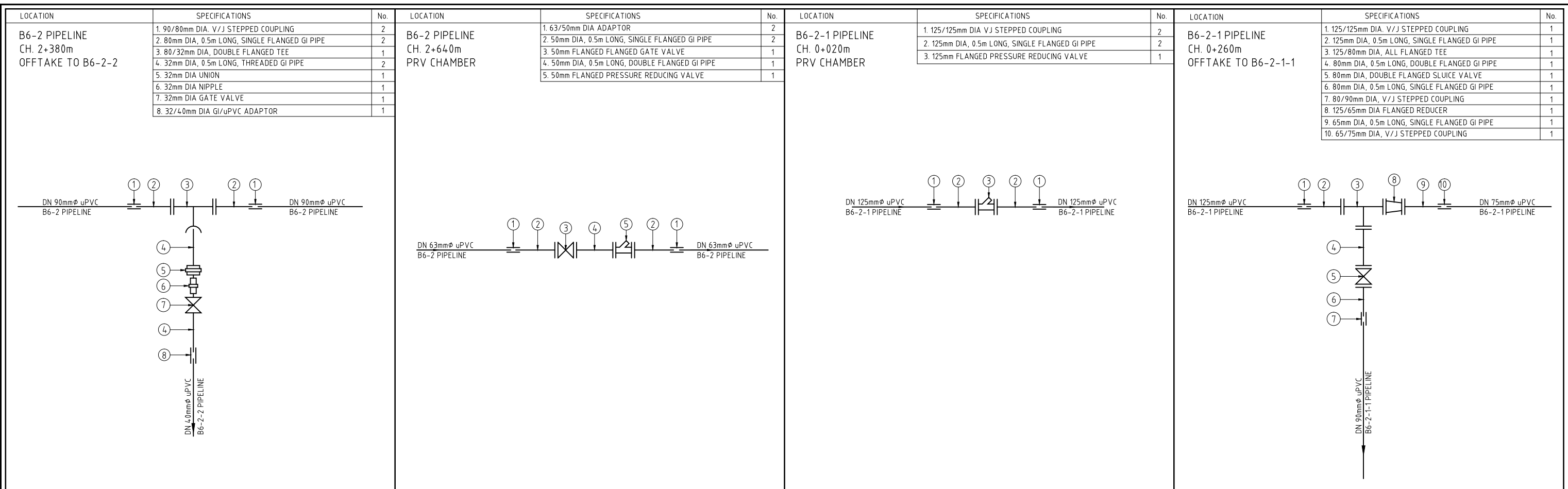
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

DISTRIBUTION B6  
JUNCTIONS FITTING DETAILS

SHEET 1 OF 5

Date:	JULY 2014	JOB No.	000811
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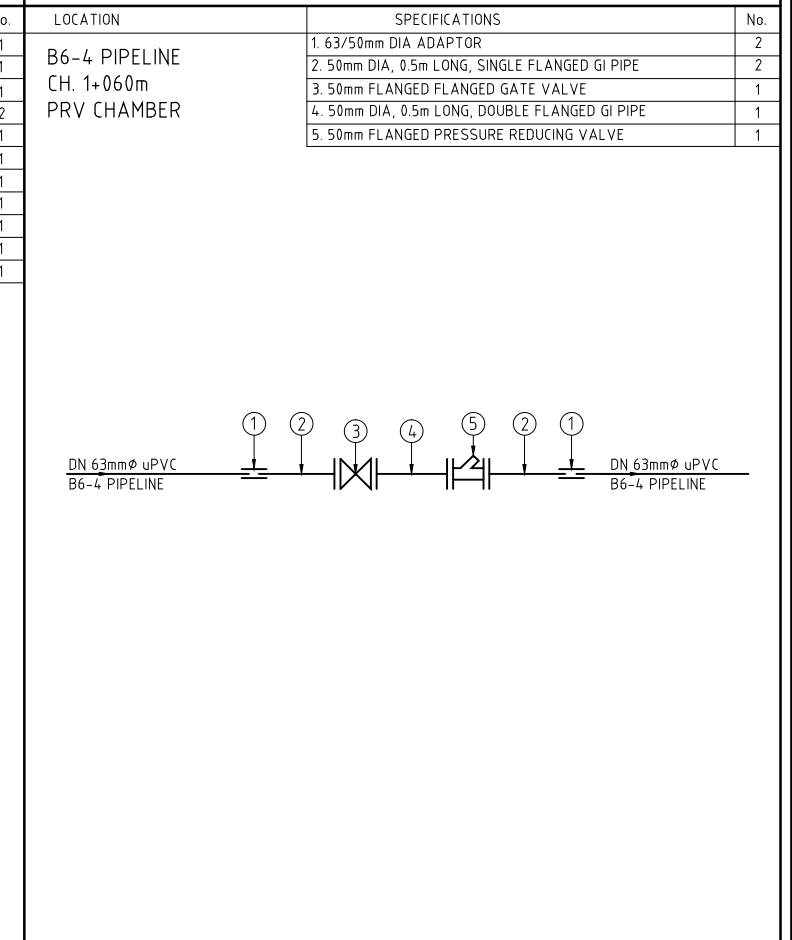
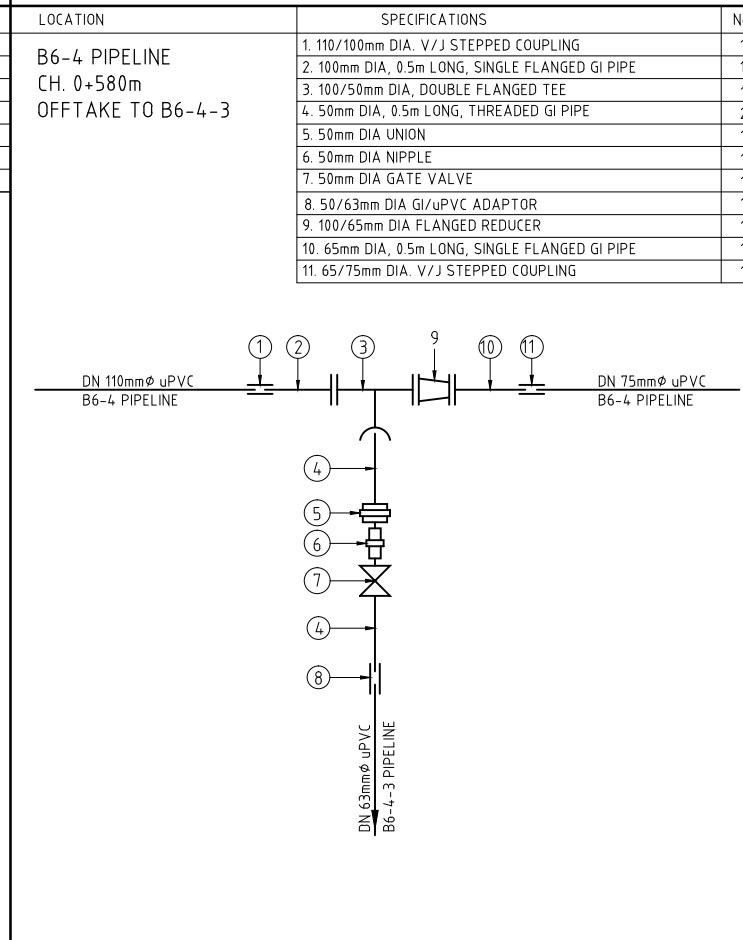
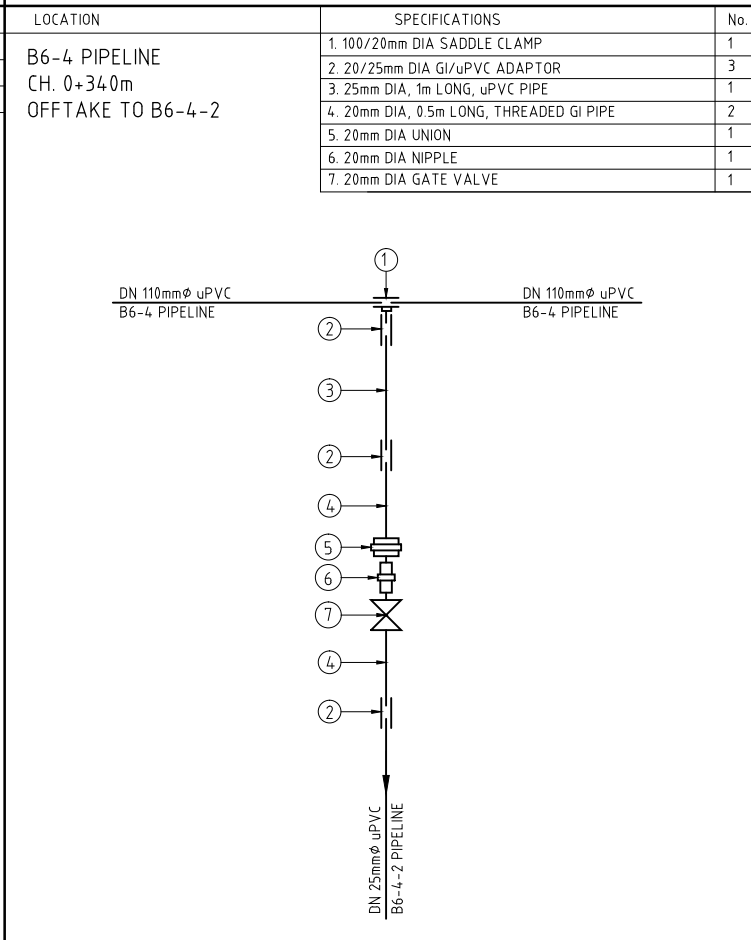
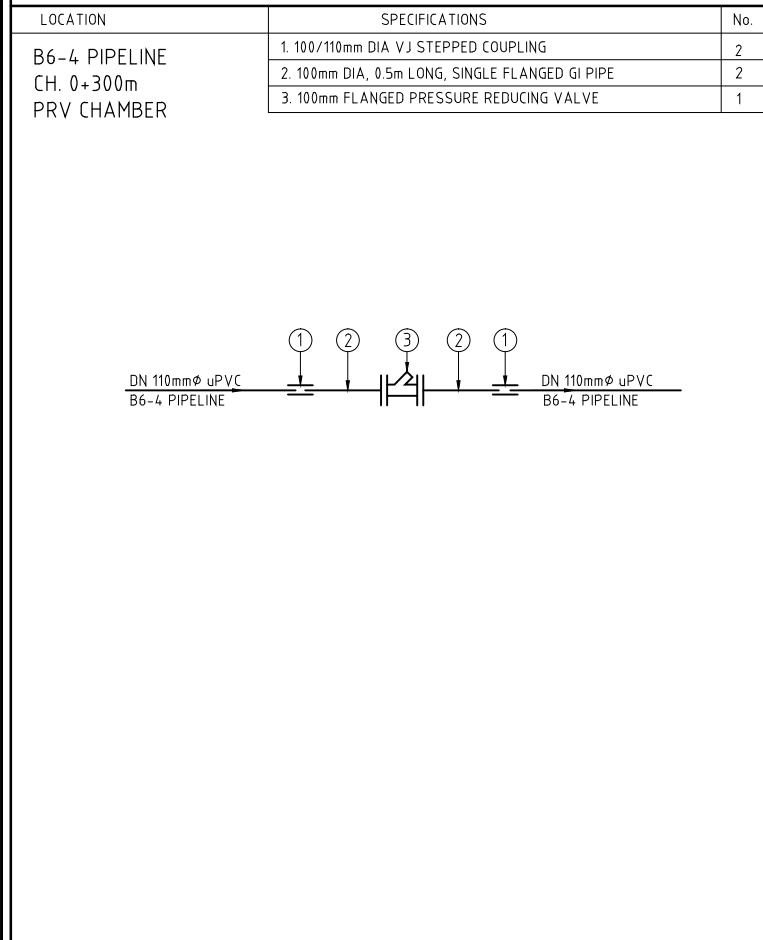
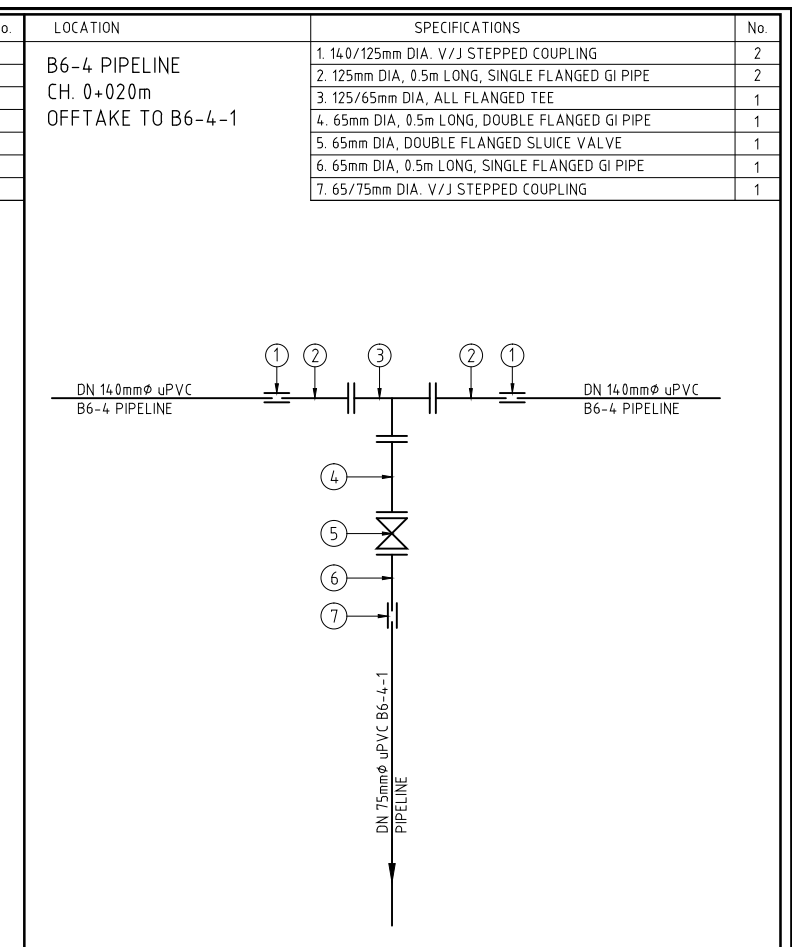
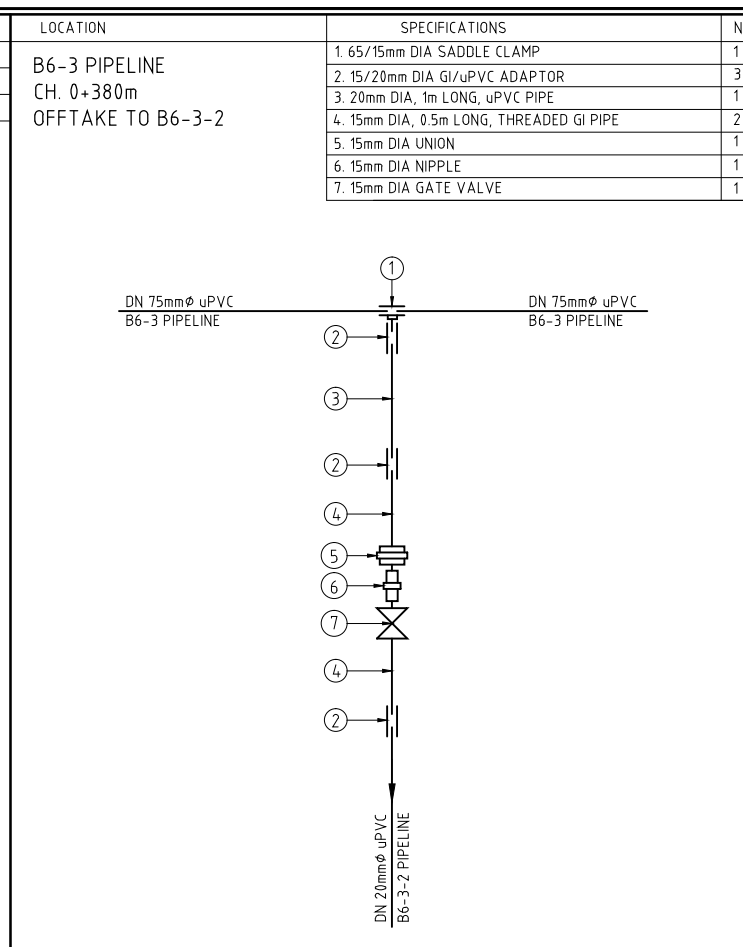
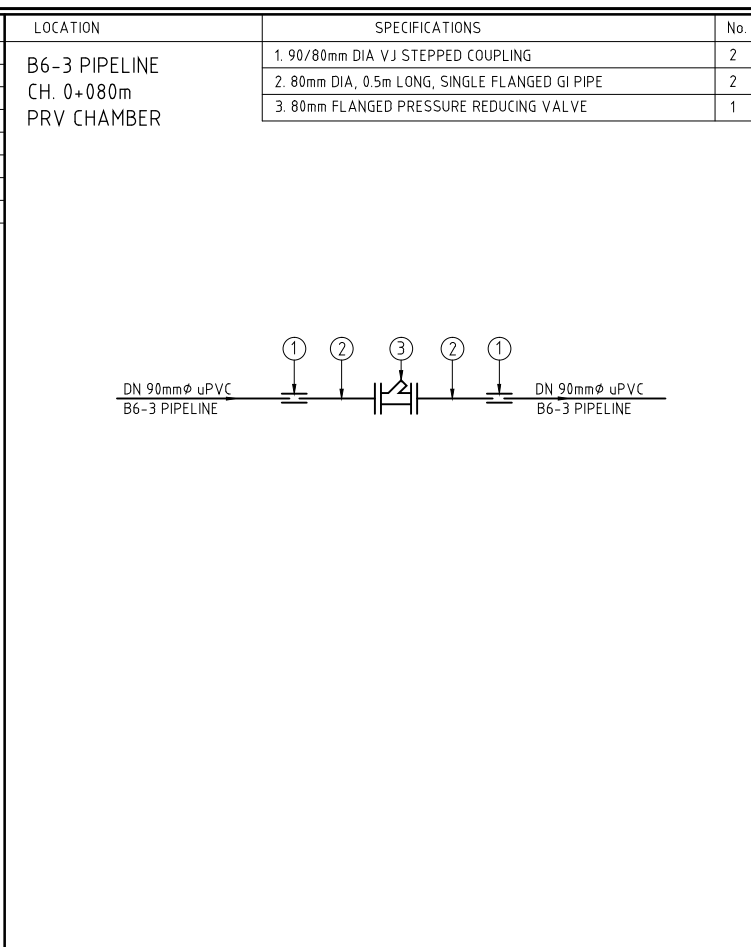
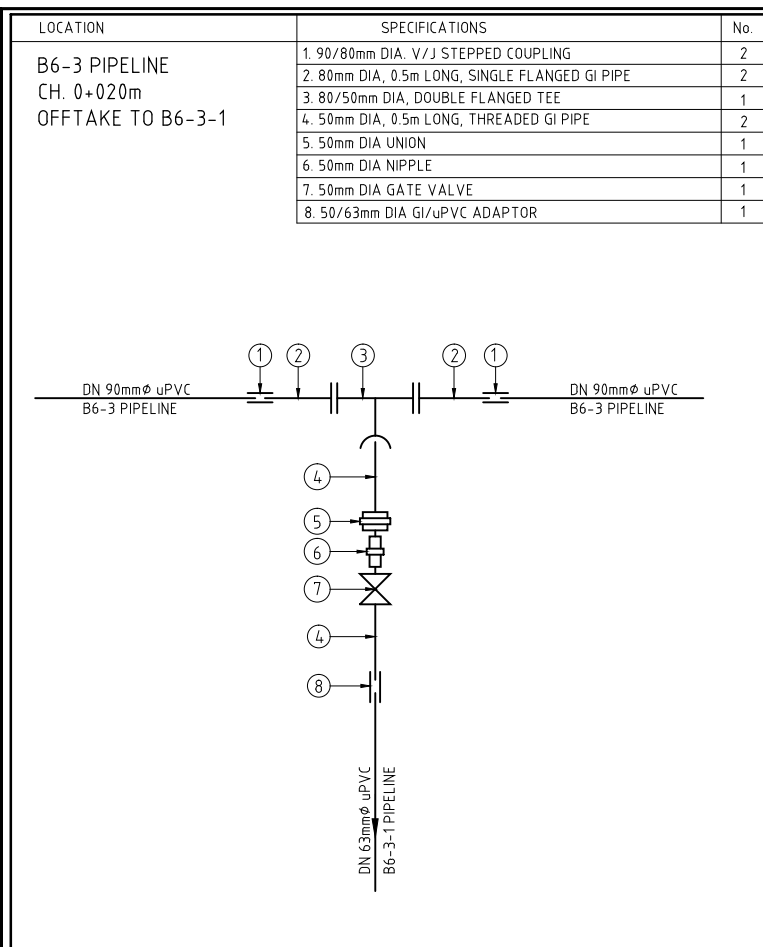
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

DISTRIBUTION B6  
JUNCTIONS FITTING DETAILS

SHEET 2 OF 5

Date:	JULY 2014	JOB No.	000811
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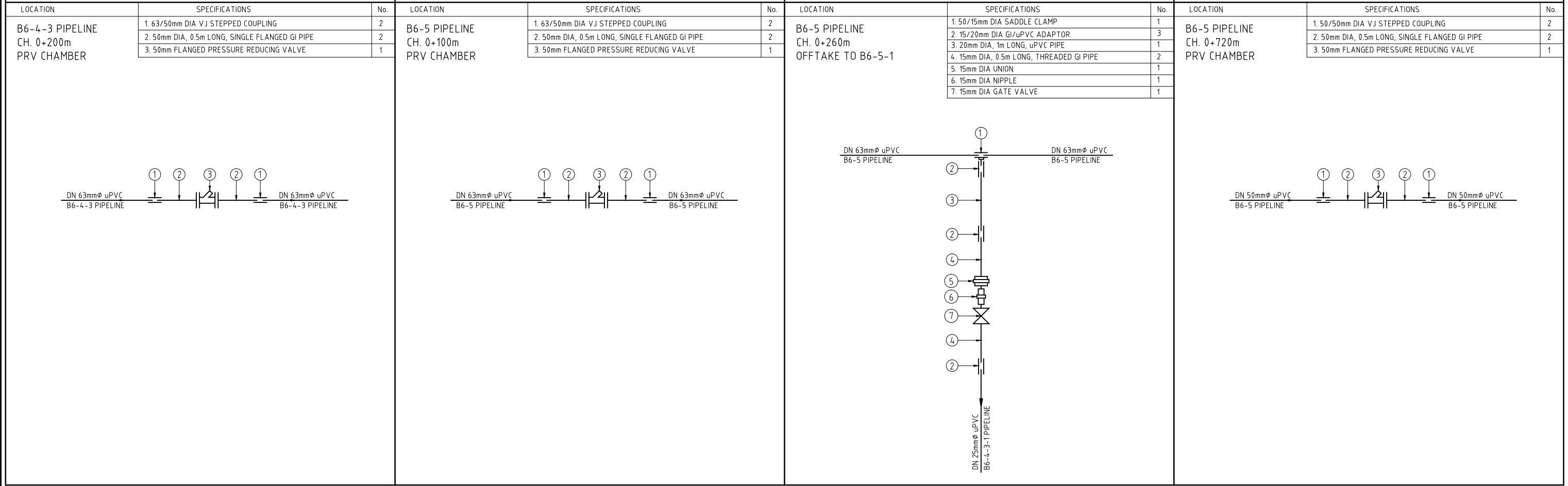
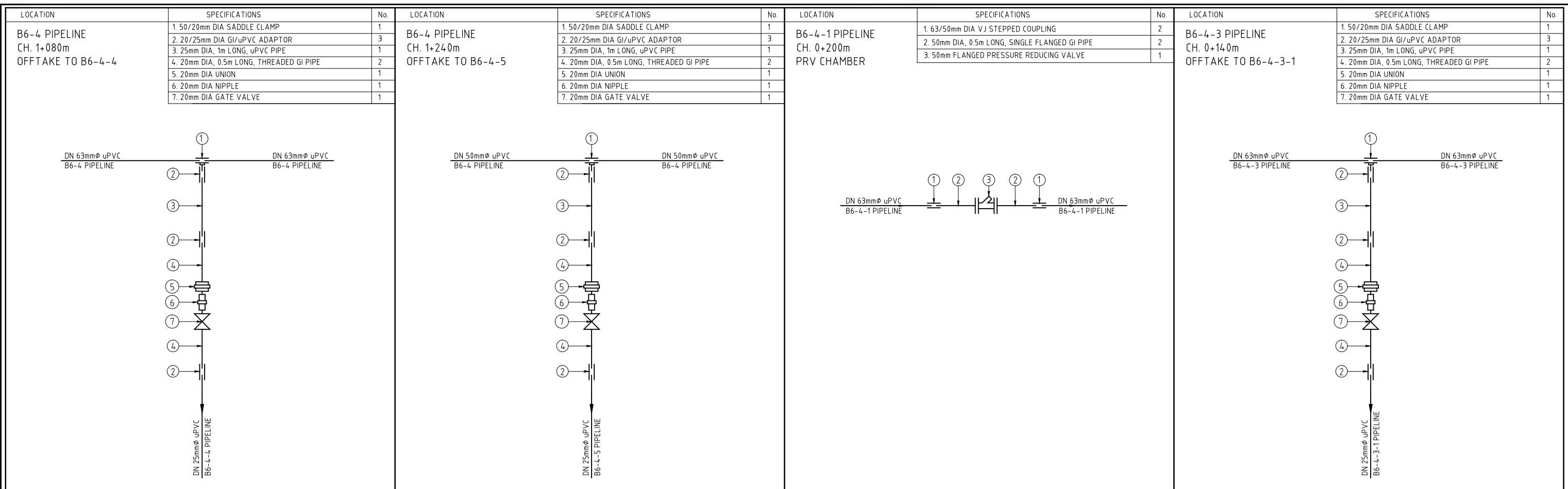
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

DISTRIBUTION B6  
JUNCTIONS FITTING DETAILS

SHEET 3 OF 5

Date:	JULY 2014	JOB No.	000811
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DRG TITLE

DISTRIBUTION B6  
JUNCTIONS FITTING DETAILS

SHEET 4 OF 5

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LOCATION	SPECIFICATIONS	No.
B6-6 PIPELINE CH. 0+220m PRV CHAMBER	1. 63/50mm DIA VJ STEPPED COUPLING	2
	2. 50mm DIA, 0.5m LONG, SINGLE FLANGED GI PIPE	2
	3. 50mm FLANGED PRESSURE REDUCING VALVE	1

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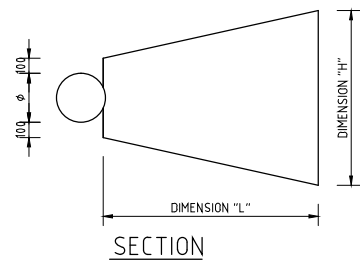
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

DISTRIBUTION B6 JUNCTIONS FITTING DETAILS

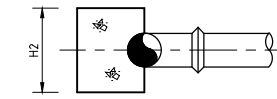
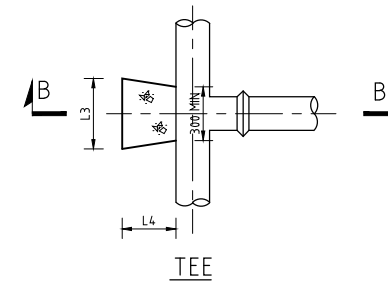
SHEET 5 OF 5

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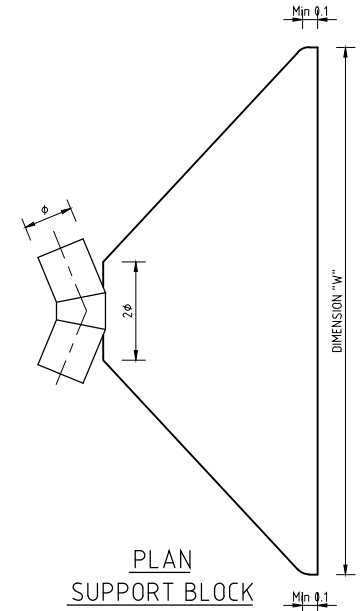


PIPELINE DIAMETER D (mm)	W1 (mm)	A1 (mm)
63	100	300
90	300	300
110	350	500
160	450	500

GATE VALVE THRUST BLOCK DIMENSIONS

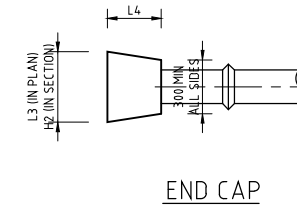


SECTION B-B



NOMINAL BORE (mm)	110	160	200	250	300	400	500	600
11.25° BEND	L (m)	0.30	0.30	0.30	0.30	0.30	0.30	0.30
	W (m)	0.30	0.30	0.30	0.38	0.38	0.48	0.60
	H (m)	0.33	0.48	0.60	0.97	0.97	1.22	1.52
22.5° BEND	L (m)	0.30	0.30	0.30	0.30	0.30	0.30	0.30
	W (m)	0.30	0.34	0.42	0.52	0.68	0.85	1.07
	H (m)	0.33	0.48	0.60	0.75	0.97	1.22	1.52
45° BEND	L (m)	0.30	0.30	0.30	0.30	0.30	0.35	0.44
	W (m)	0.41	0.60	0.75	0.93	1.21	1.52	1.90
	H (m)	0.33	0.48	0.60	0.75	0.97	1.22	1.52
90° BEND	L (m)	0.30	0.34	0.42	0.53	0.68	0.86	1.07
	W (m)	0.68	1.00	1.24	1.56	2.02	2.53	3.16
	H (m)	0.33	0.48	0.60	0.75	0.97	1.22	1.52

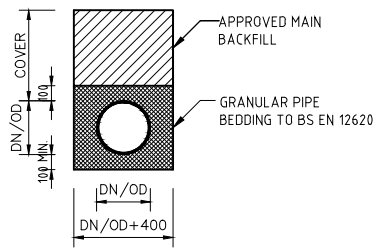
SUPPORT BLOCK SCHEDULE OF DIMENSIONS



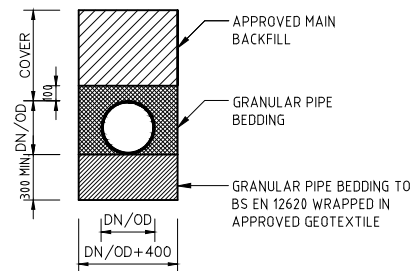
END CAP

NOMINAL BORE (mm)	110	160	200	250	300	400	500	600
H2 (m)	0.33	0.48	0.60	0.75	0.97	1.22	1.52	1.83
L3 (m)	0.50	0.72	0.90	1.13	1.46	1.83	2.29	2.74
L4 (m)	0.30	0.30	0.34	0.43	0.55	0.69	0.87	1.04

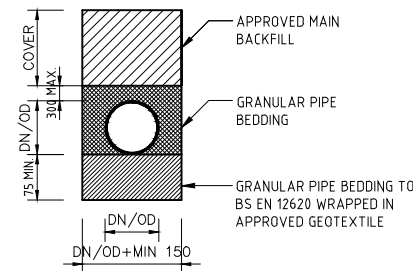
THRUST BLOCK FOR TEES AND END CAPS  
FINAL DIMENSIONS TO BE CONFIRMED ON SITE BY THE ENGINEER.



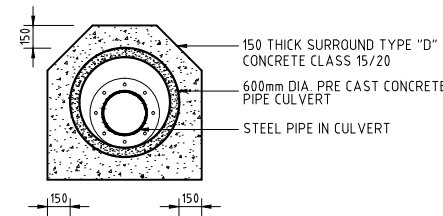
PIPE LAID IN NORMAL & ROCK CONDITIONS  
1:25 ( AT A1), 1:50 (AT A3)



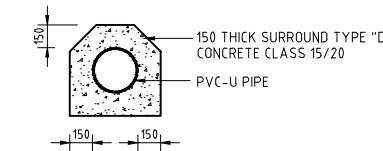
uPVC PIPE LAID ON SOFT TRENCH BOTTOM uPVC  
1:25 ( AT A1), 1:50 (AT A3)



GRP PIPE LAID ON SOFT TRENCH BOTTOM uPVC  
1:25 ( AT A1), 1:50 (AT A3)



STEEL PIPE CROSSING ON MAJOR ROADS  
1:25 ( AT A1), 1:50 (AT A3)



PVC-U PIPE CROSSING ON MINOR ROADS  
1:25 ( AT A1), 1:50 (AT A3)

NOTES  
PIPE TRENCHES DESIGNED IN ACCORDANCE WITH THE NATIONAL ANNEX TO BS EN 1295-1:1998.  
MODULUS OF NATIVE SOIL ASSUMED TO BE:  
7 MPa FOR TRENCHES IN NORMAL SOILS  
2 MPa CROSSING SWAMPY GROUND.  
TRENCHES DESIGNED FOR:  
BACKFILL LOADS:  
SURCHARGE FOR MINOR ROADS;  
INTERNAL PRESSURES 80 kPa BELOW ATMOSPHERIC (EXCEPT WHERE SUCH PRESSURES CANNOT OCCUR IN THE SYSTEM)  
THE DESIGN PRESSURE IN THE PIPE UNDER ZERO FLOW CONDITIONS.  
BEDDING MATERIALS AND THE REQUIRED DEGREES OF COMPACTION ARE SHOWN ON THE RELEVANT PIPE LONGITUDINAL SECTIONS.

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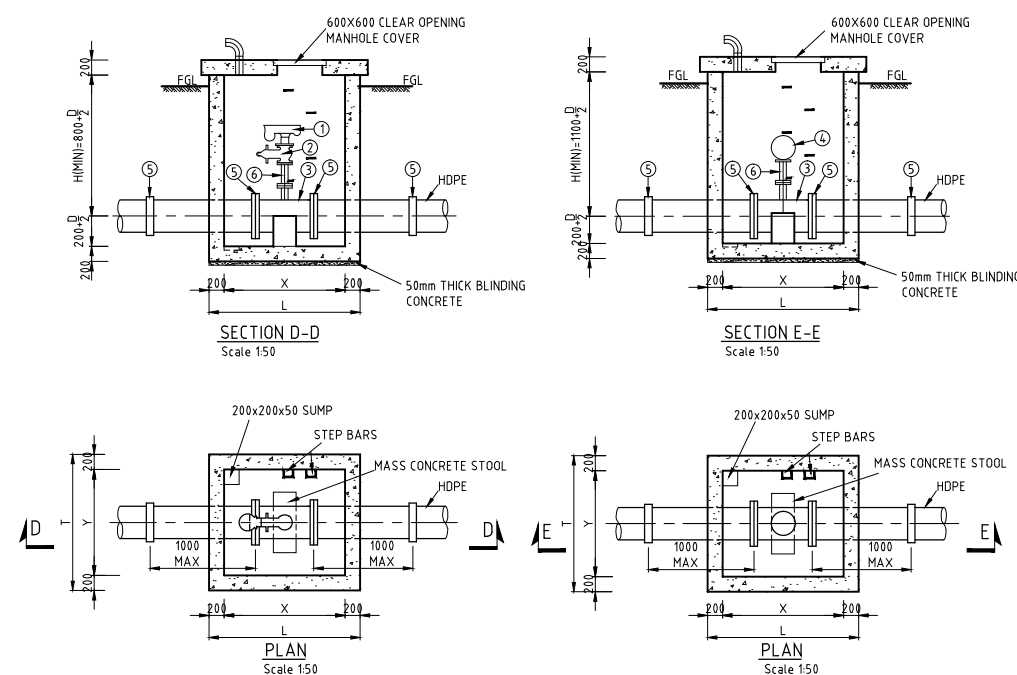
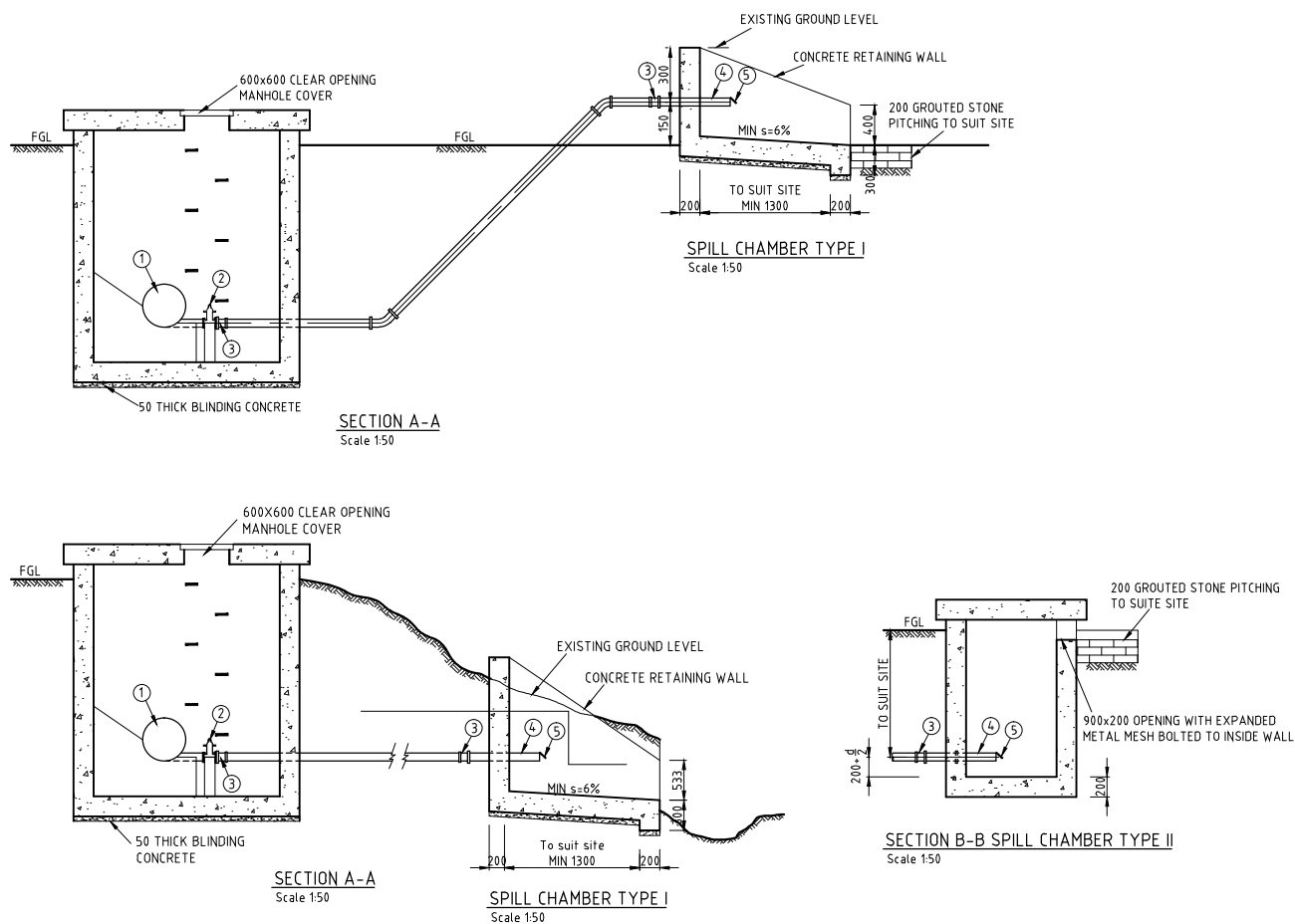
PROJECT  
SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE  
TYPICAL PIPELINE FACILITIES  
THRUST AND SUPPORT BLOCKS AND PIPE BEDDING DETAILS

Date:	JULY 2014	JOB No.	000811
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**NOTES**

1. BLINDING CONCRETE CLASS C10
2. MASS CONCRETE THRUST BLOCKS AND STOOLS CLASS C20
3. STRUCTURAL REINFORCED CONCRETE CLASS C25
4. WHERE THE BRANCH DIAMETER OF TEES IN FIRE HYDRANT IS NOT 80mm, A REDUCING FLANGE IS USED
5. PRECAST CONCRETE CHAMBER ROOF SLABS TO HAVE A MAXIMUM MASS OF 1500KG FOR EASE OF REMOVAL AND PROVIDED WITH SUITABLE LIFTING EYES
6. THE FLOOR SLAB TO HAVE A SLOPE OF 1% TOWARDS THE SUMP SO THAT ANY LEAKING WATER CAN DRAIN IN THE SUMP
7. SPILL CHAMBER TYPE I USED WHERE THE WASHOUT PIPE LED HORIZONTALLY TO THE SURFACE WITHIN 4.0m OF THE VALVE CHAMBER. SPILL CHAMBER TYPE II USED WHERE THE WASHOUT PIPE COULD NOT BE BROUGHT TO THE SURFACE WITHIN 4.0m.
8. ALL FITTINGS IN THE CHAMBERS TO BE STEEL FITTINGS.

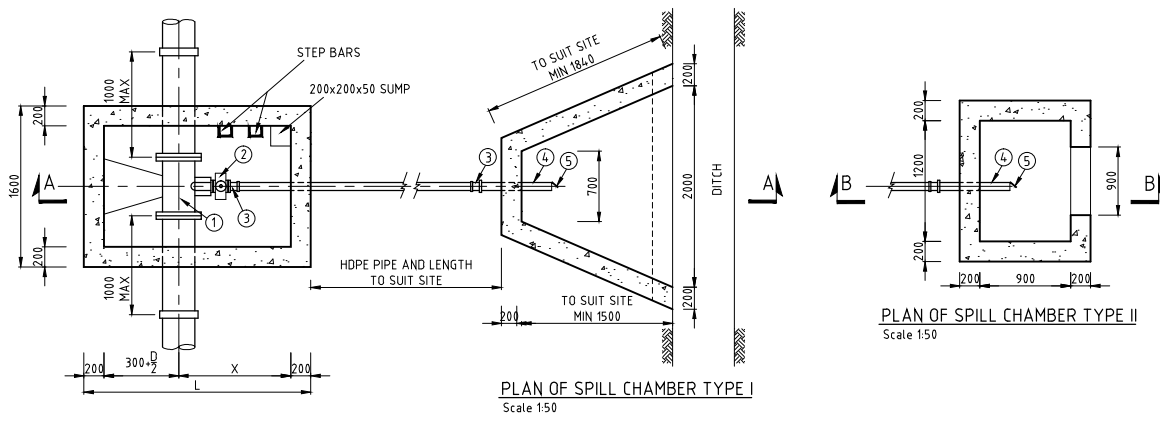


**AIR VALVES**

- ① DOUBLE ORIFICE AIR VALVE
- ② FLANGED GATE VALVE (50mm)
- ③ FLANGED BRANCH TEE
- ④ SMALL ORIFICE SINGLE AIR VALVE WITH ISOLATING COCK AND DN 25 THREADED BRANCH
- ⑤ HDPE / STEEL STEPPED COUPLING
- ⑥ DOUBLE FLANGED PIPE PIECE 50φ mm

DN	80	100	150	200	250	300	350	400	450	500	600	700	800	900	1000
X	1000	1000	1000	1000	1100	1100	1100	1200	1200	1200	1300	1300	1400	1400	1400
L	1400	1400	1400	1400	1500	1500	1500	1500	1600	1600	1600	1700	1700	1800	1800
Y	800	800	800	1000	1000	1000	1000	1200	1200	1200	1400	1400	1600	1600	1800
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**DIMENSIONS FOR DOUBLE & SINGLE AIR VALVES**

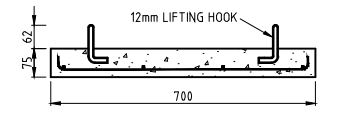


**WASHOUT**

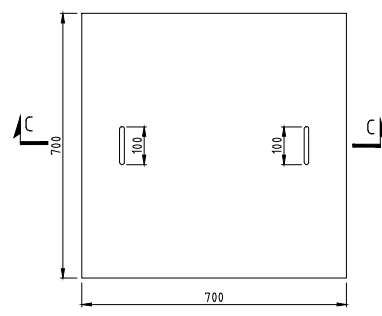
- ① LEVEL INVERT SCOUR TEE WITH FLANGED BRANCH.
- ② FLANGED GATE VALVE
- ③ FLANGE ADAPTOR TO SUIT HDPE PIPE
- ④ DOUBLE FLANGED SPIGOT WITH PADDLE FLANGE 600mm LONG
- ⑤ CI FLANGED FLAP VALVE

MAIN LINE DN	80	100	150	200	250	300	350	400	450	500	600	700	800	900	1000
X	660	650	725	700	775	850	825	800	1175	1150	1200	1350	1400	1750	1800
L	1400	1400	1500	1500	1600	1700	1700	1700	2100	2100	2200	2400	2500	2900	3000
WASHOUT DN	80	80	80	80	80	80	100	100	100	100	100	200	200	200	200

**DIMENSIONS FOR TYPICAL WASHOUT**



**SECTION C-C**  
Scale 1:10



**PLAN**  
Scale 1:10  
**CHAMBER COVER**

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

**CONSULTANT**

**GIBB Africa**  
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P O Box 30020, NAIROBI 00100, KENYA  
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Website: www.gibbafrika.com

**CLIENT**

REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

**PROJECT**

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

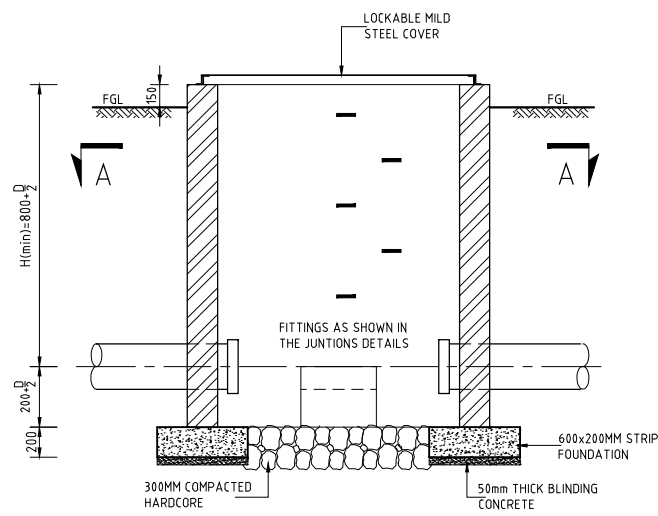
KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**

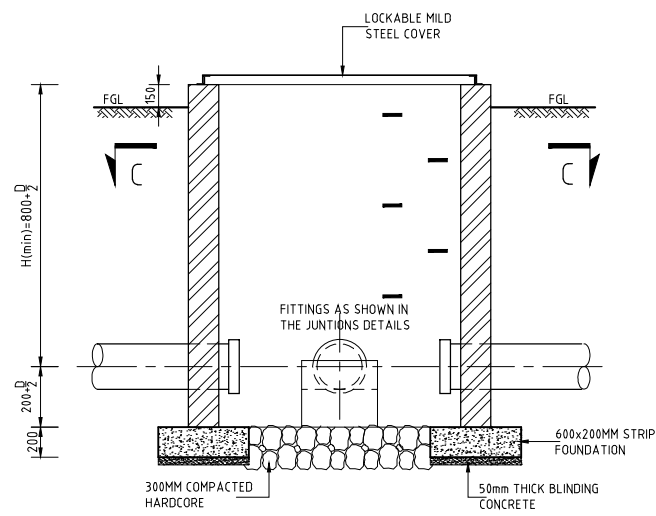
TYPICAL PIPELINE FACILITIES

WASHOUT AND AIR VALVES CHAMBER DETAILS

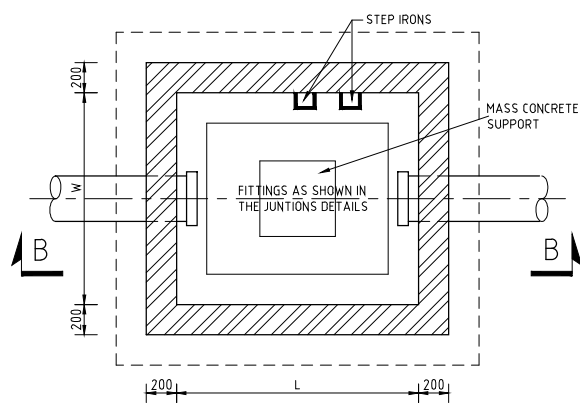
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Designed:	BM	Cad Filename	00811.cad
Drawn:	SNK	Checked:	JON
Approved:	MBN	DRG No.	SHDP/KKIS/DD/702
Scale:	AS SHOWN	REV	O



SECTION B-B  
SCALE 1/25

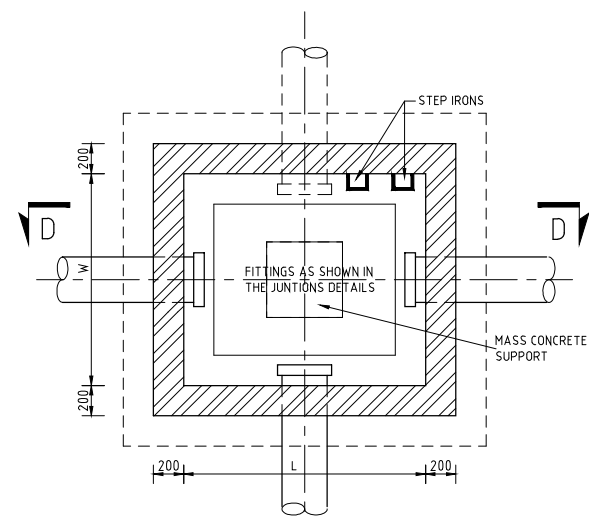


SECTION D-D  
SCALE 1/25



SECTIONAL PLAN A-A  
SCALE 1/25

SECTION VALVE CHAMBER (TYPE I)



SECTIONAL PLAN C-C  
SCALE 1/25

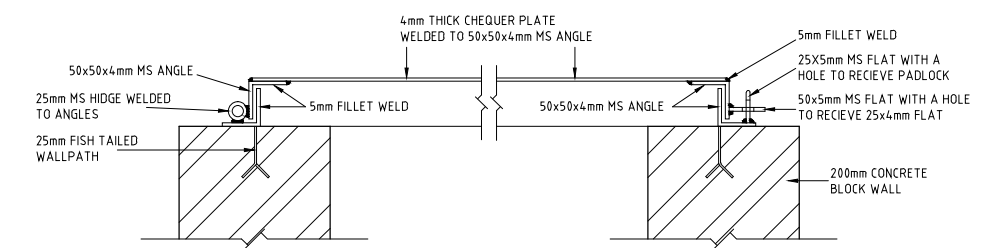
OFFTAKE AND SECTION VALVE CHAMBER (TYPE II)

DIMENSIONS FOR CHAMBER VALVE CHAMBERS

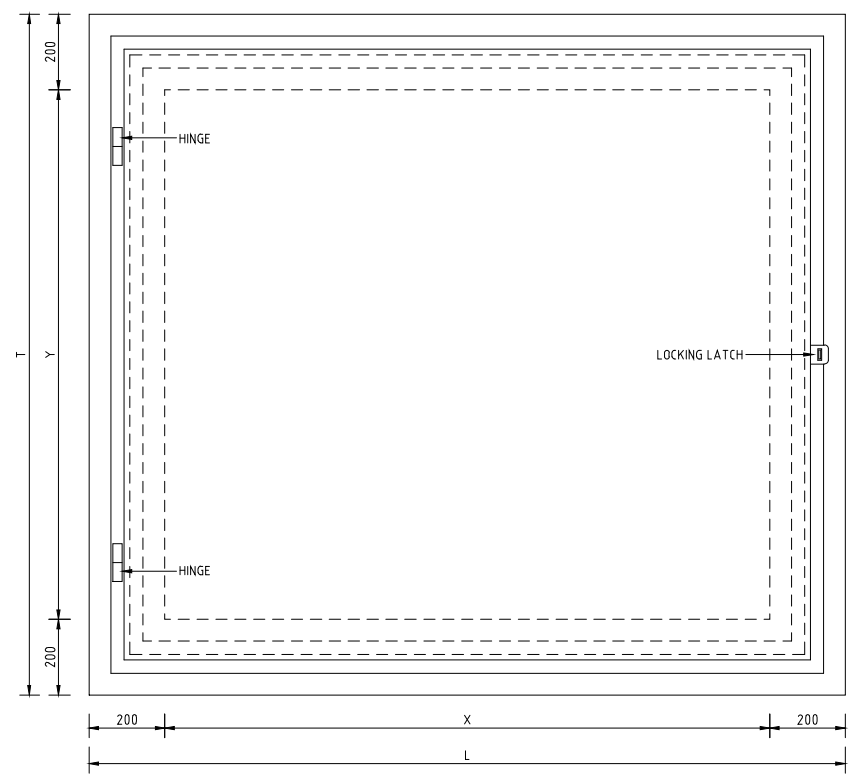
SIZE(mm)			LINE	JUNCTION	TYPE	NO.
L	W	H				

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED
2. MASS CONCRETE CLASS C15 IN STRIP FOOTING
3. BLINDING CONCRETE CLASS C10
4. ALL THE FITTINGS IN THE CHAMBERS ARE TO BE ASSEMBLED AS SPECIFIED IN THE JUNCTION DETAILS DRAWINGS



SECTION E-E  
SCALE 1/5



COVER PLAN  
SCALE 1/5  
MS COVER PLATE

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

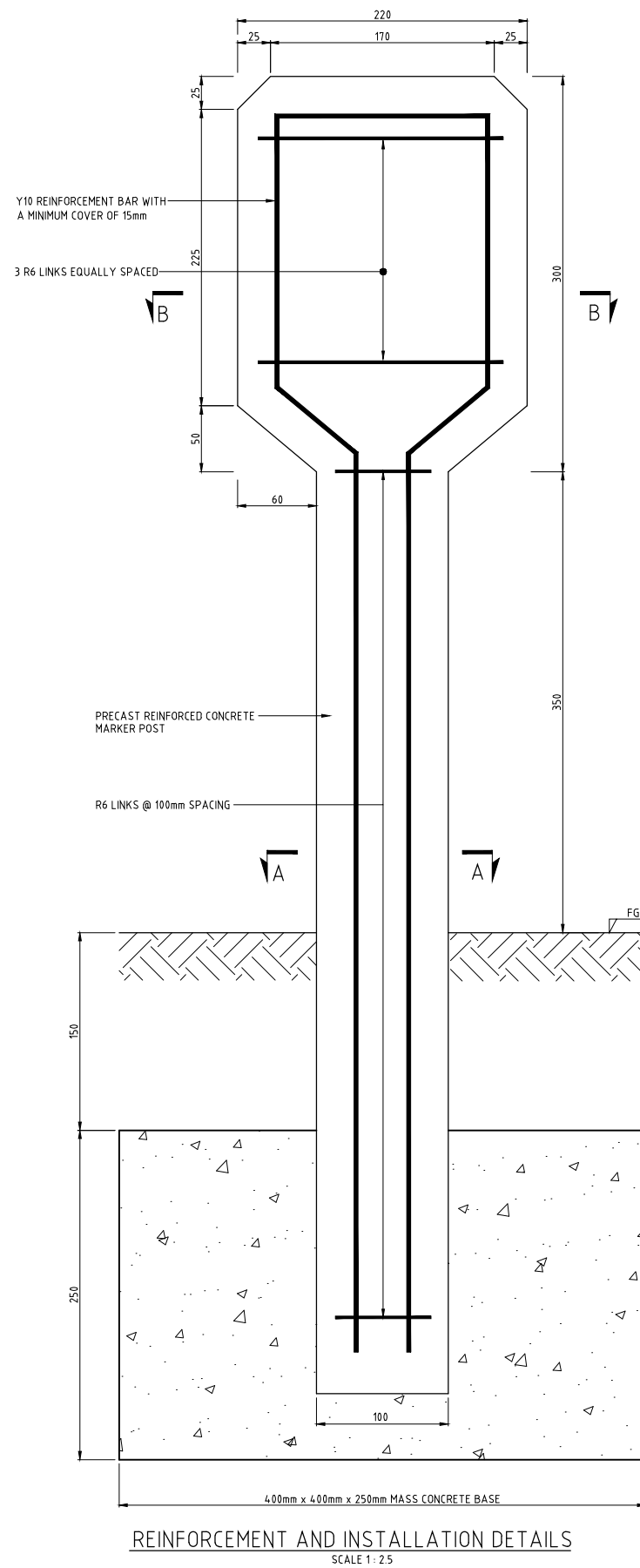
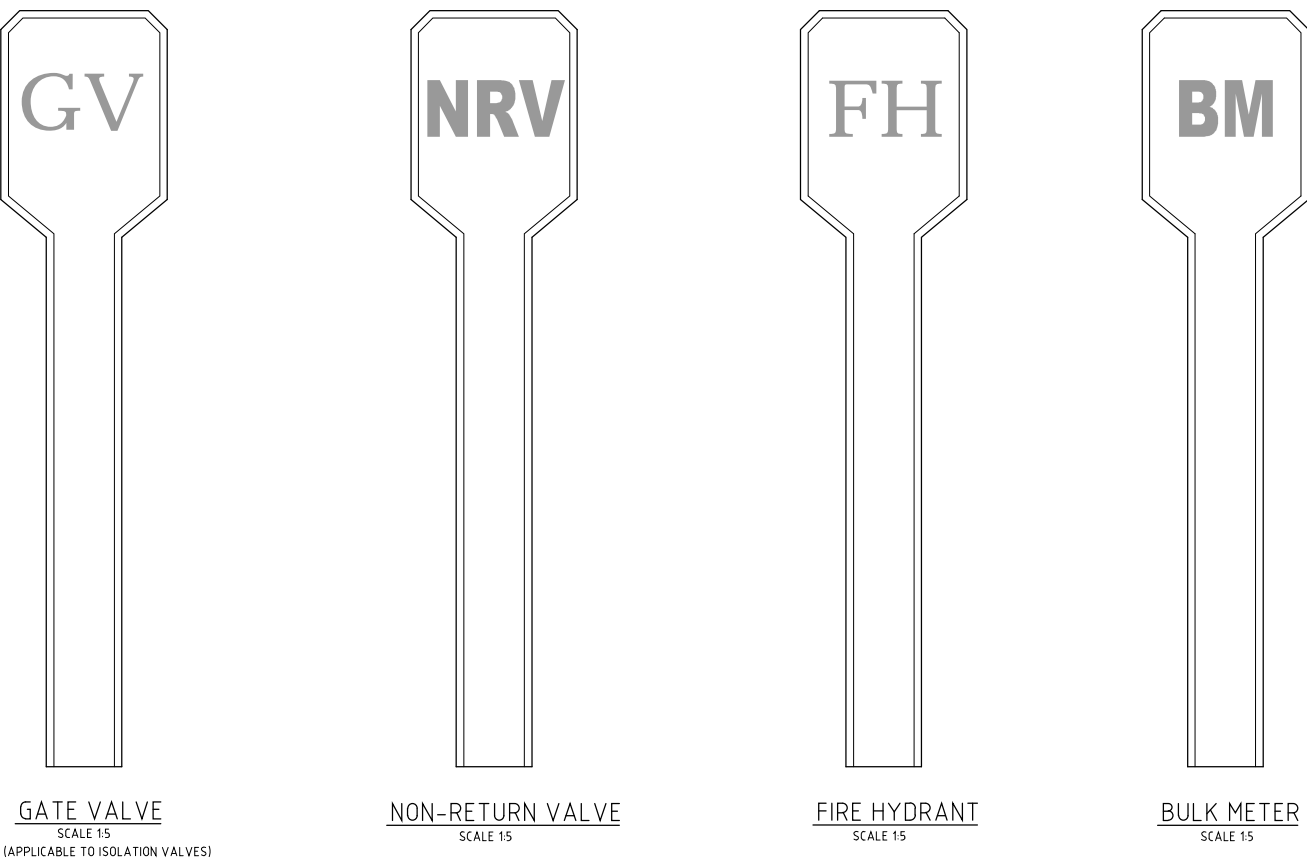
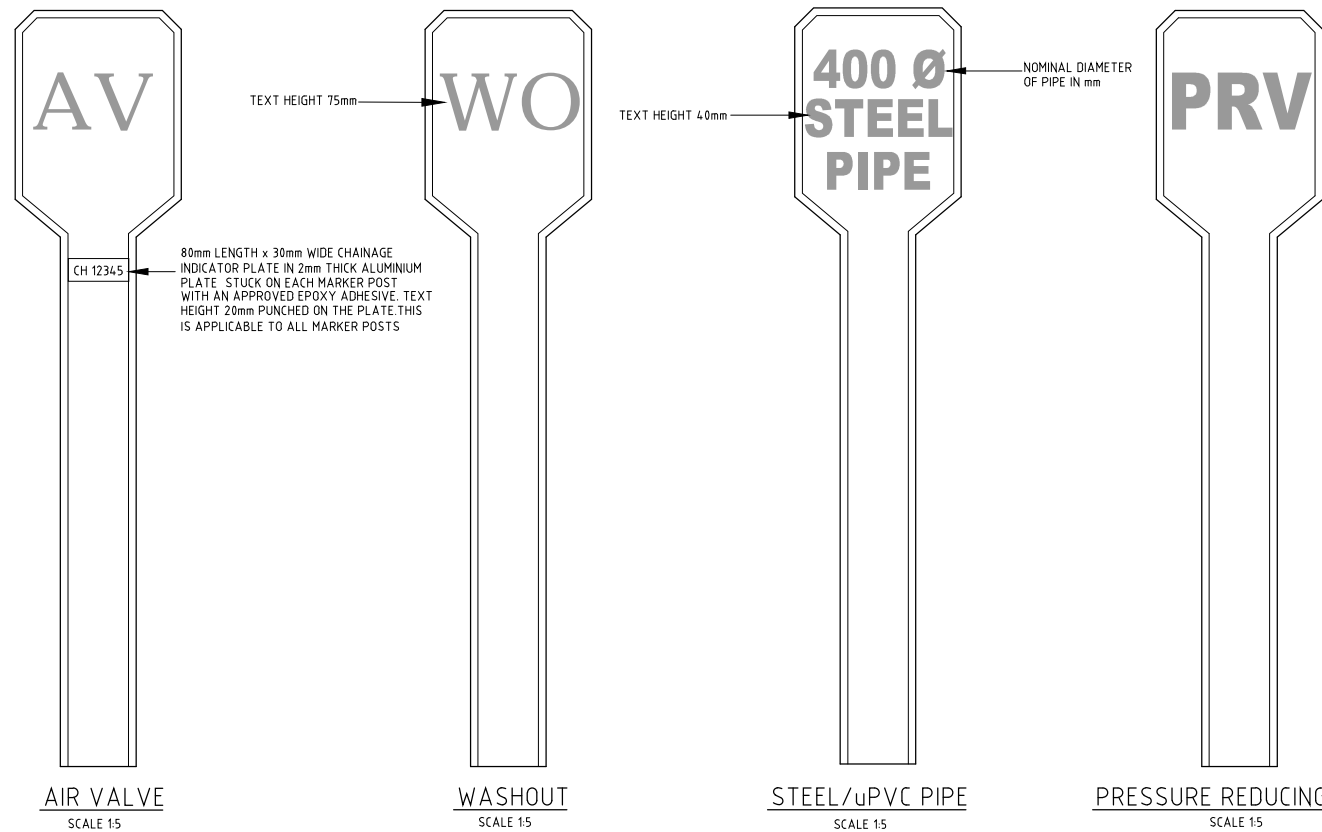
CONSULTANT  
**GIBB Africa**  
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GIBB AFRICA LIMITED  
P O Box 30020, NAIROBI 00100, KENYA  
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CLIENT  
  
REPUBLIC OF KENYA  
MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

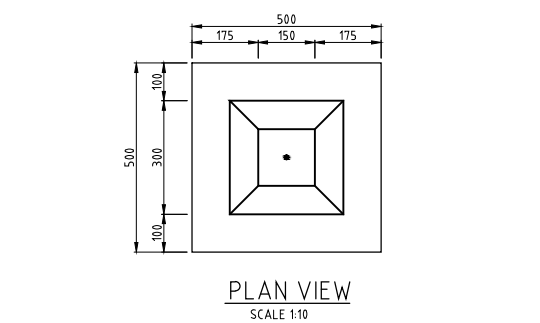
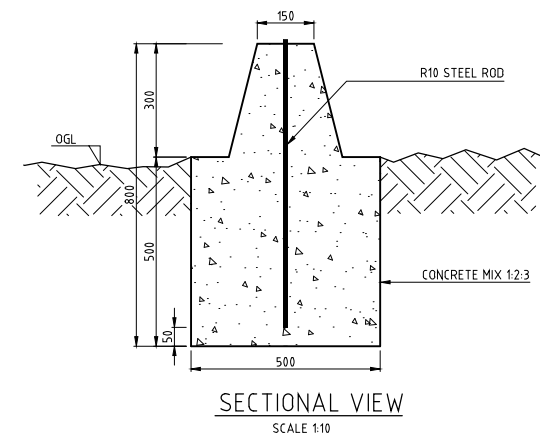
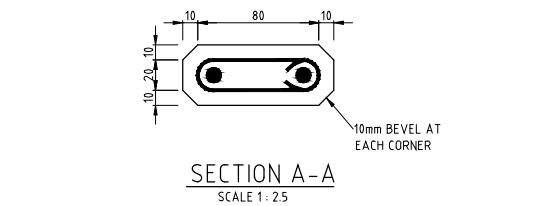
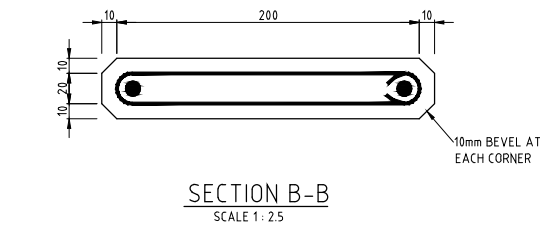
PROJECT  
SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE  
TYPICAL PIPELINE FACILITIES  
SECTION VALVE CHAMBER DETAILS

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	SNK	DRG No.	SHDP/KKIS/DD/703
Checked:	JON	REV	O
Approved:	MBN		
Scale:	AS SHOWN (AT A1)		



- NOTES**
1. MARKER POST POSITIONS TO BE AGREED WITH THE ENGINEER PRIOR TO INSTALLATION.
  2. CONTRACTOR TO CAST SAMPLE FOR APPROVAL FOR EACH TYPE OF POST THAT IS REQUIRED FOR THIS CONTRACT.
  3. ENGRAVED LETTERS TO BE PAINTED WITH ONE APPROPRIATE UNDERCOAT AND TWO COATS OF WATER-BLUE GLOSS PAINT.



**COMBINED TRIANGULATION & BENCHMARK BEACONS**

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

**CONSULTANT**

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REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

**PROJECT**

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

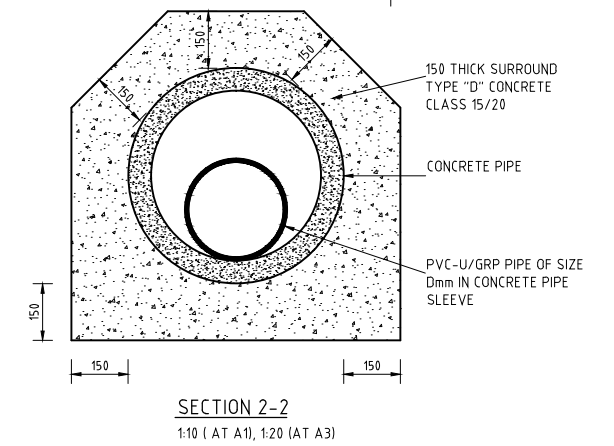
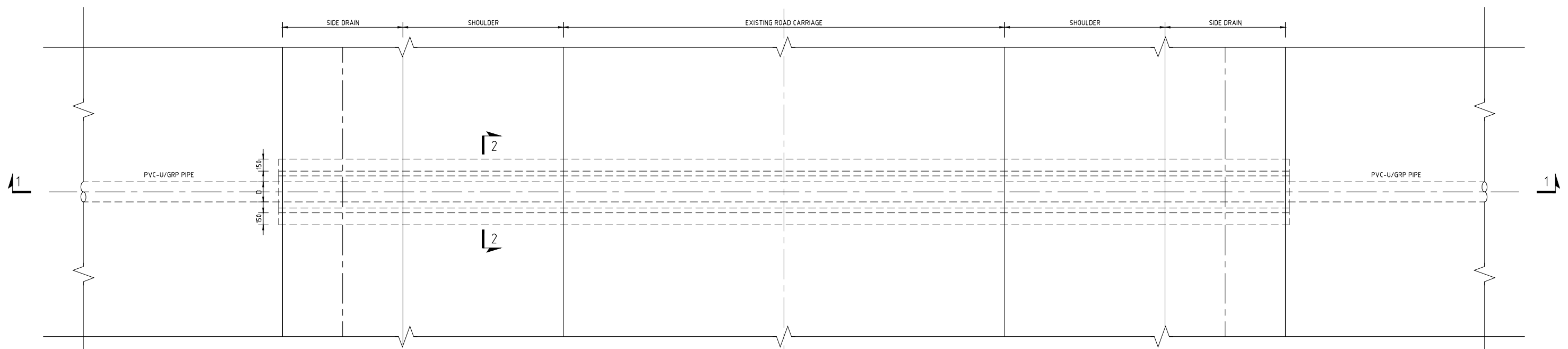
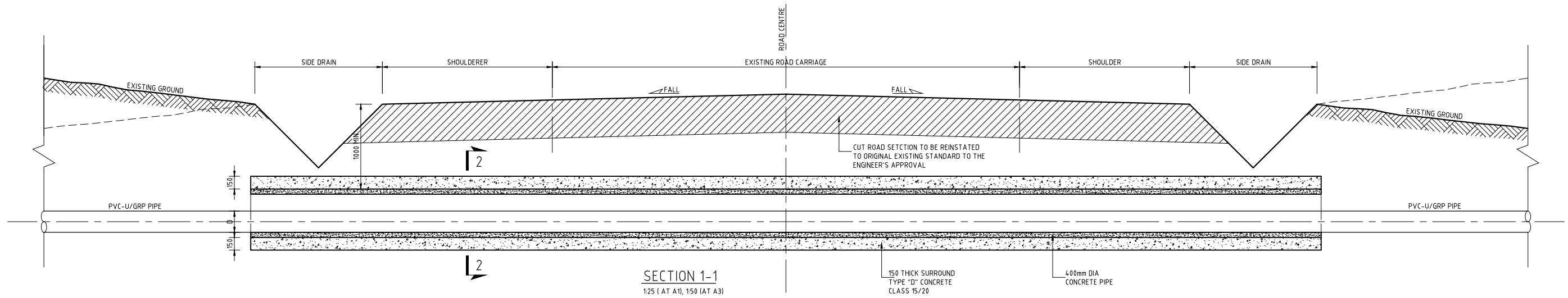
KIRUMI KIAMUJARI IRRIGATION SCHEME

**DRG TITLE**

TYPICAL PIPELINE FACILITIES


PIPELINE MARKER POSTS AND BENCHMARK DETAILS

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG No.	KKIS/DD/704
Checked:	JON	REV	O
Approved:	MBN	Scale:	AS SHOWN



REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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 Website: www.gibbafrika.com

CLIENT  
  
 REPUBLIC OF KENYA  
 MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT  
 SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
 KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE  
 TYPICAL ROAD CROSSING DETAILS

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG No.	KKIS/DD/705
Checked:	JON	REV	O
Approved:	MBN	Scale:	AS SHOWN

GOK  
LOGO

THE GOVERNMENT OF THE REPUBLIC OF KENYA  
IN COLLABORATION WITH  
AFRICAN DEVELOPMENT BANK

AfDB  
LOGO

WHITE LETTERS  
GREEN BACKGROUND

---

**PROGRAM:** SMALLSCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)  
**PROJECT:** CONSTRUCTION OF KIRUMI KIA MUJARI IRRIGATION PROJECT

BLUE LETTERS  
WHITE BACKGROUND

---

**FUNDED BY:** REPUBLIC OF KENYA / AFRICAN DEVELOPMENT BANK

BLUE LETTERS  
WHITE BACKGROUND

---

**CLIENT:** MINISTRY OF AGRICULTURE , LIVESTOCK AND FISHERIES

BLUE LETTERS  
WHITE BACKGROUND

---

**IMPLEMENTING AGENCY:** STATE DEPARTMENT OF AGRICULTURE

BLUE LETTERS  
WHITE BACKGROUND

---

**EXCECUTING AGENCY:** PROJECT CORDINATION UNIT  
P. O. BOX 30027-00100 NAIROBI, KENYA

BLUE LETTERS  
WHITE BACKGROUND

---

**CONSULTANT:** GIBB AFRICA LTD  
P. O. BOX 30020-00100 NAIROBI, KENYA

GIBB  
LOGO

BLUE LETTERS  
WHITE BACKGROUND

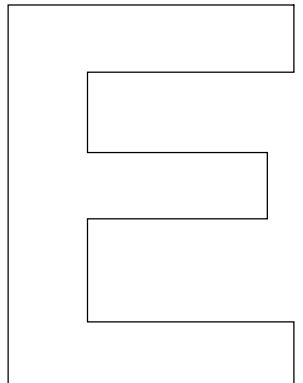
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**CONTRACTOR:** CONTRACTOR  
ADDRESS

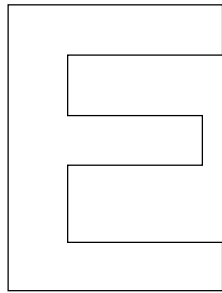
CONTRACTOR  
LOGO

BLUE LETTERS  
WHITE BACKGROUND

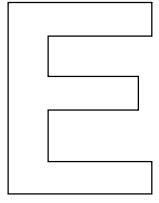
SIGN BOARD - FRONT ELEVATION  
SCALE 1:10



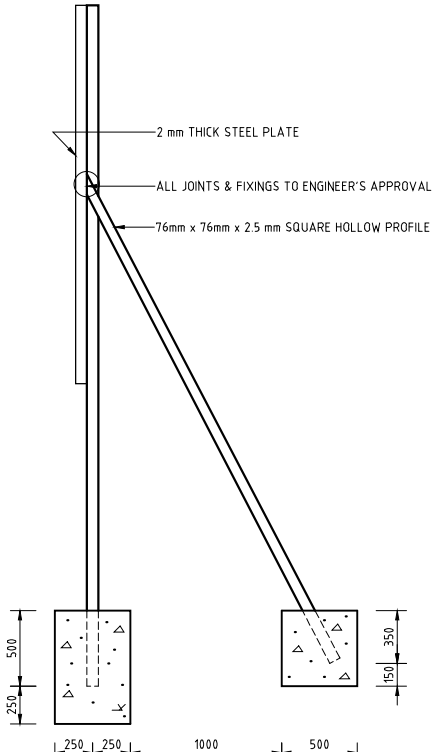
HELvetica MEDIUM 100mm MAIN LETTERS FOR PROJECT NAME  
AND 150mm MAIN LETTERS FOR CLIENT'S NAME



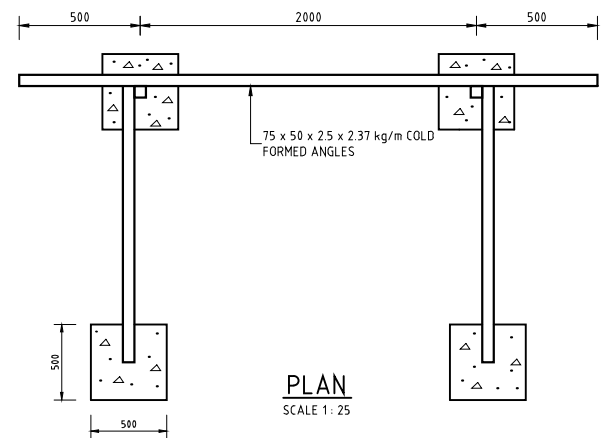
HELvetica MEDIUM 75mm MAIN LETTERS FOR CONSULTANTS AND CONTRACTOR



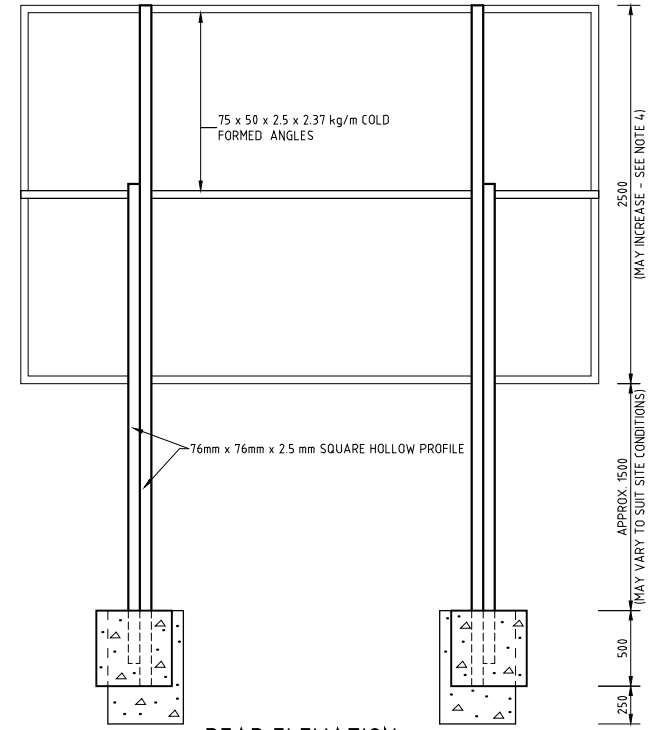
HELvetica MEDIUM 50mm MAIN LETTERS FOR OTHER PROFESSIONAL FIRMS



SIDE ELEVATION  
SCALE 1:25



PLAN  
SCALE 1:25



REAR ELEVATION  
SCALE 1:25

**NOTES**

1. THE LETTERING TYPE TO BE USED IS HELVETICA MEDIUM.
2. THE LETTERING SIZE AND DIMENSIONS ARE AS SHOWN.
3. THE NAME OF THE PROJECT AND CLIENT MAY BE RE-SIZED PROPORTIONATELY IN THE EVENT OF IT BEING TOO LONG.
4. THE HEIGHT OF THE SIGN BOARD MAY VARY DEPENDING ON THE NUMBER OF PROFESSIONAL SERVICES THAT ARE TO BE SHOWN. NOTE THAT ALL THE PROFESSIONAL SERVICES ARE TO BE SHOWN.
5. EMBLEMS/INSIGNIA/COMPANY LOGOS ARE TO BE IN THEIR CORRECT RESPECTIVE COLOURS ON A WHITE BACKGROUND AND ARE TO BE PLACED AS SHOWN.
6. THE METAL FRAME AND SUPPORTS TO BE PAINTED WITH ONE COAT PRIMER AND TWO COATS FINISH PAINT TO THE ENGINEER'S APPROVAL.

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

CONSULTANT

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E-mail: gibb@gibbafrika.com  
Website: www.gibbafrika.com

CLIENT

REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

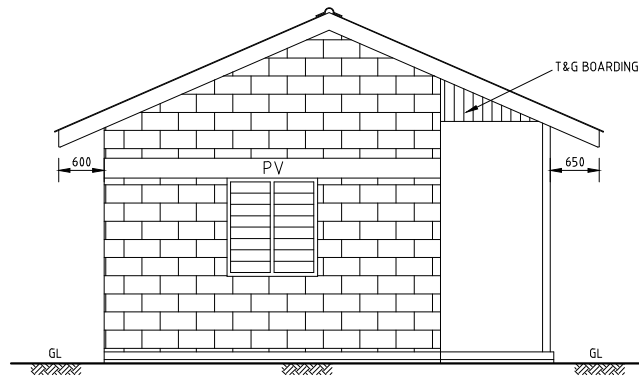
SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

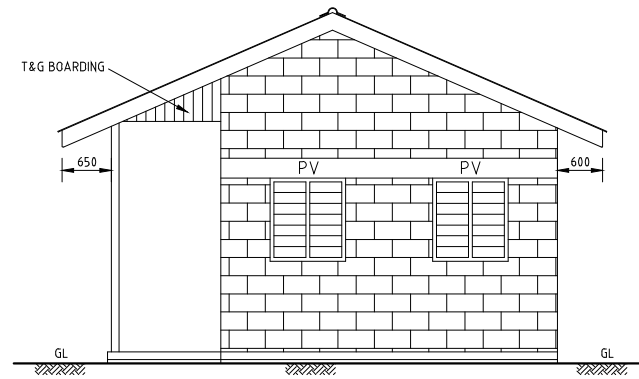
DRG TITLE

PROJECT SIGNBOARD

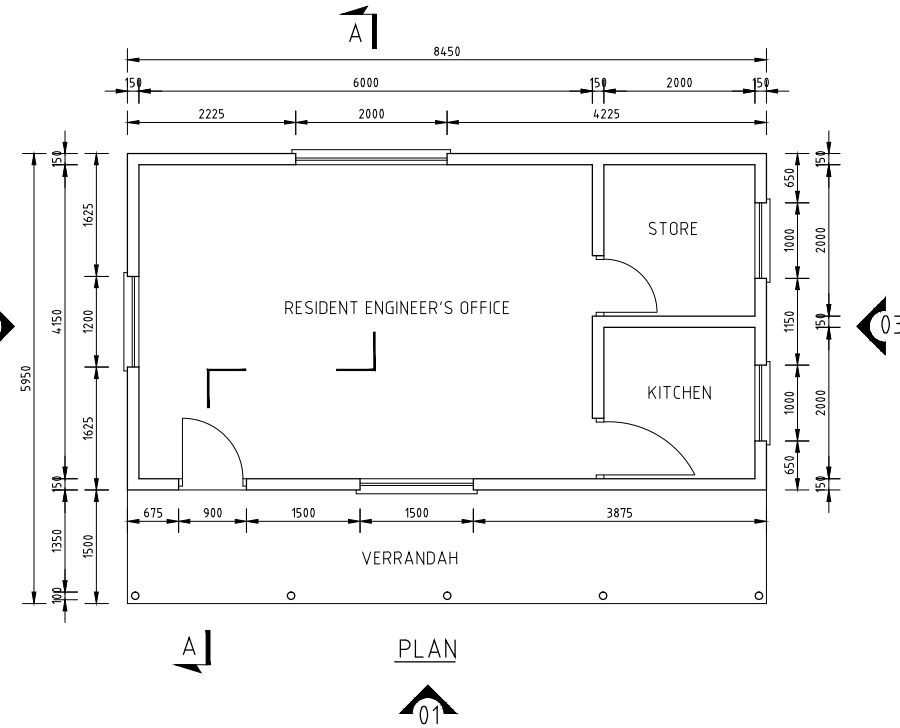
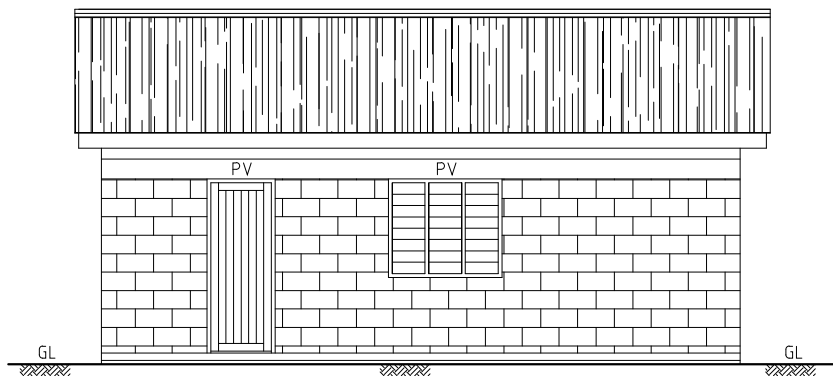
Date:	JULY 2014	JOB No.	000811	REV O
Designed:	BM	Cad Filename	00811.cad	
Drawn:	JKN	DRG No.	KKIS/DD/801	
Checked:	JON	Scale:	AS SHOWN (AT A1)	
Approved:	MBN			



SIDE ELEVATION '02'

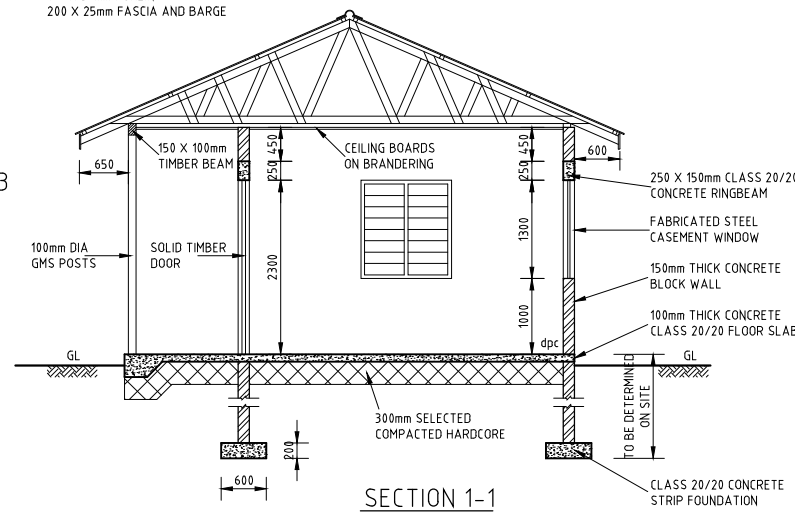


SIDE ELEVATION '03'

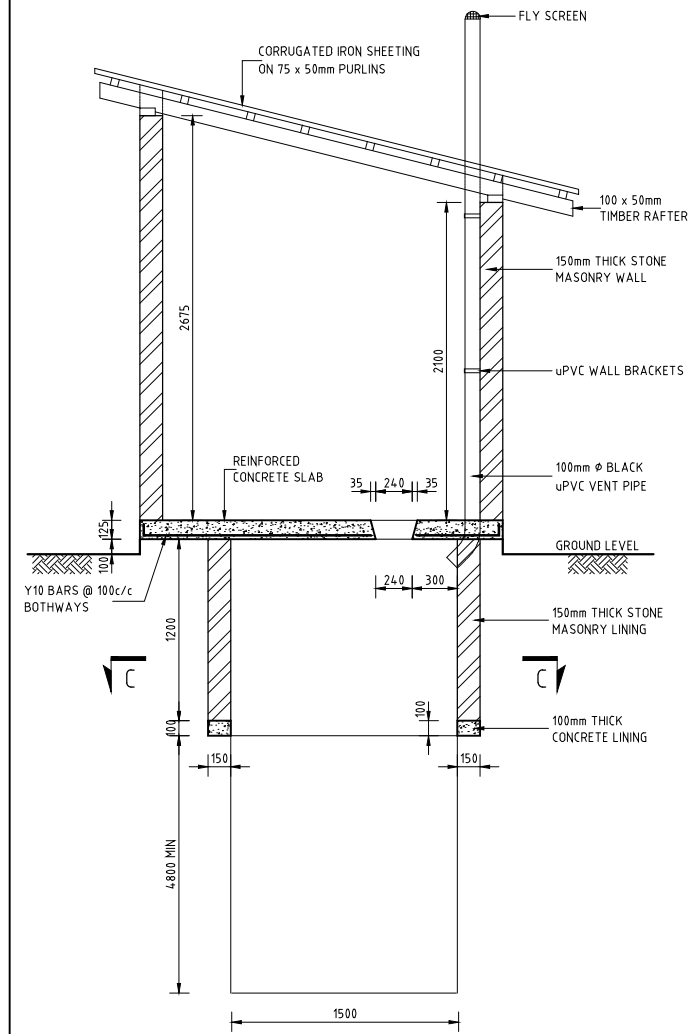


RESIDENT ENGINEER'S OFFICE  
SCALE 1:50

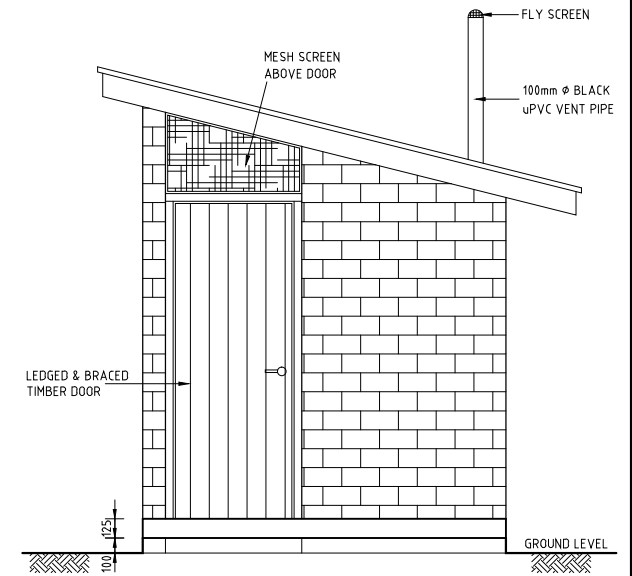
**ROOF CONSTRUCTION**  
GCI SHEETS AT 22.5° PITCH  
100 X 50mm RAFTERS AND TIE BEAMS  
100 X 50mm STRUTTINGS  
100 X 50mm WALL PLATE  
100 X 50mm PURLINS  
200 X 25mm FASCIA AND BARGE



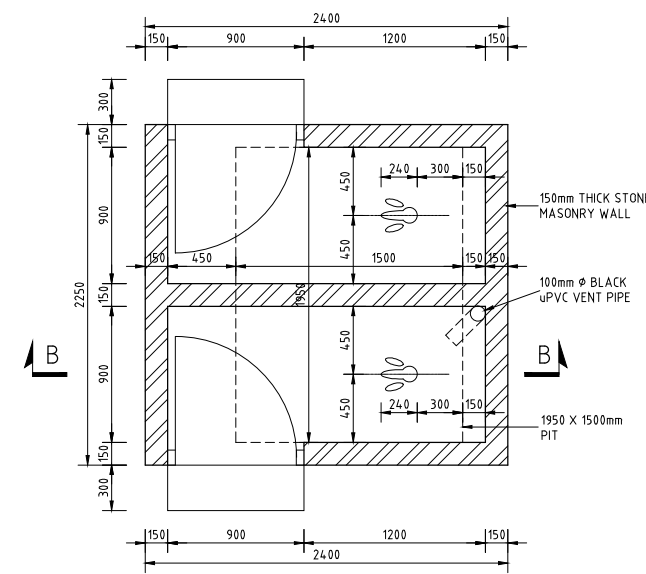
SECTION 1-1



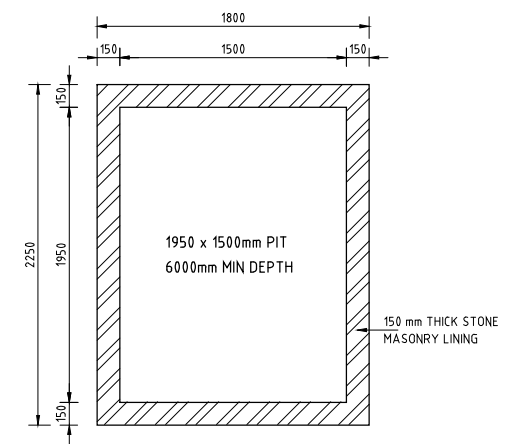
SECTION B-B



ELEVATION 04



SECTIONAL PLAN



SECTION C-C

PIT LATRINE  
SCALE 1:25

REV. No.	DESCRIPTION	DATE	REV. No.	DESCRIPTION	DATE

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Website: www.gibbafrika.com

CLIENT

REPUBLIC OF KENYA

MINISTRY OF AGRICULTURE, LIVESTOCK & FISHERIES

PROJECT

SMALL SCALE HORTICULTURE DEVELOPMENT PROJECT (SHDP)

KIRUMI KIAMUJARI IRRIGATION SCHEME

DRG TITLE

RESIDENT ENGINEER'S SITE OFFICE AND PIT LATRINE

Date:	JULY 2014	JOB No.	000811
Designed:	BM	Cad Filename	00811.cad
Drawn:	JKN	DRG No.	KKIS/DD/802
Checked:	JON	REV	O
Approved:	MBN	Scale:	1:AS SHOWN (AT A1)