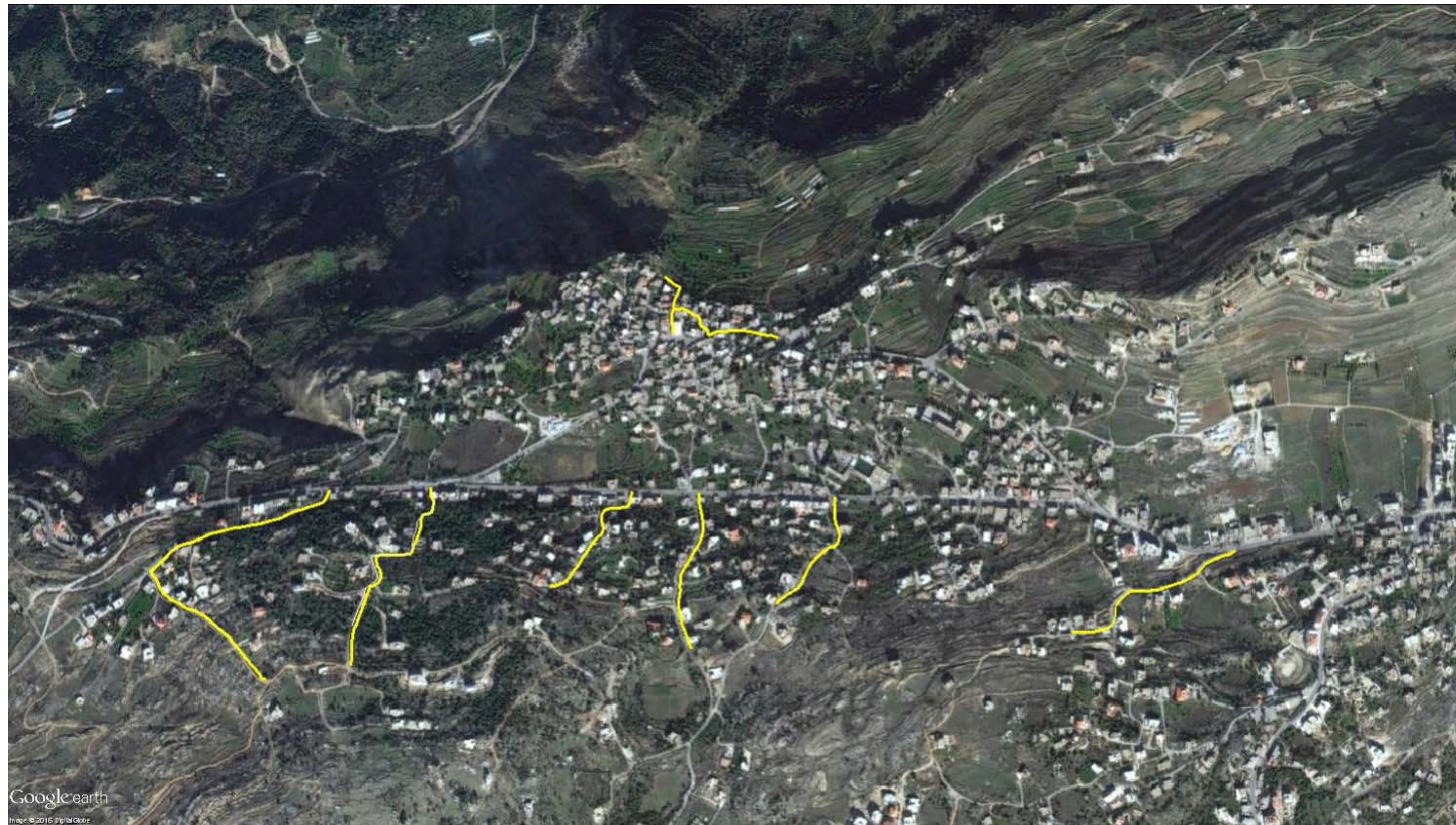




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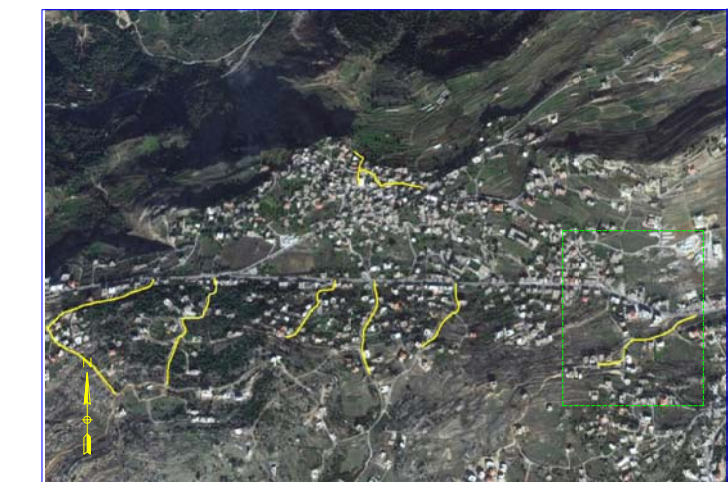
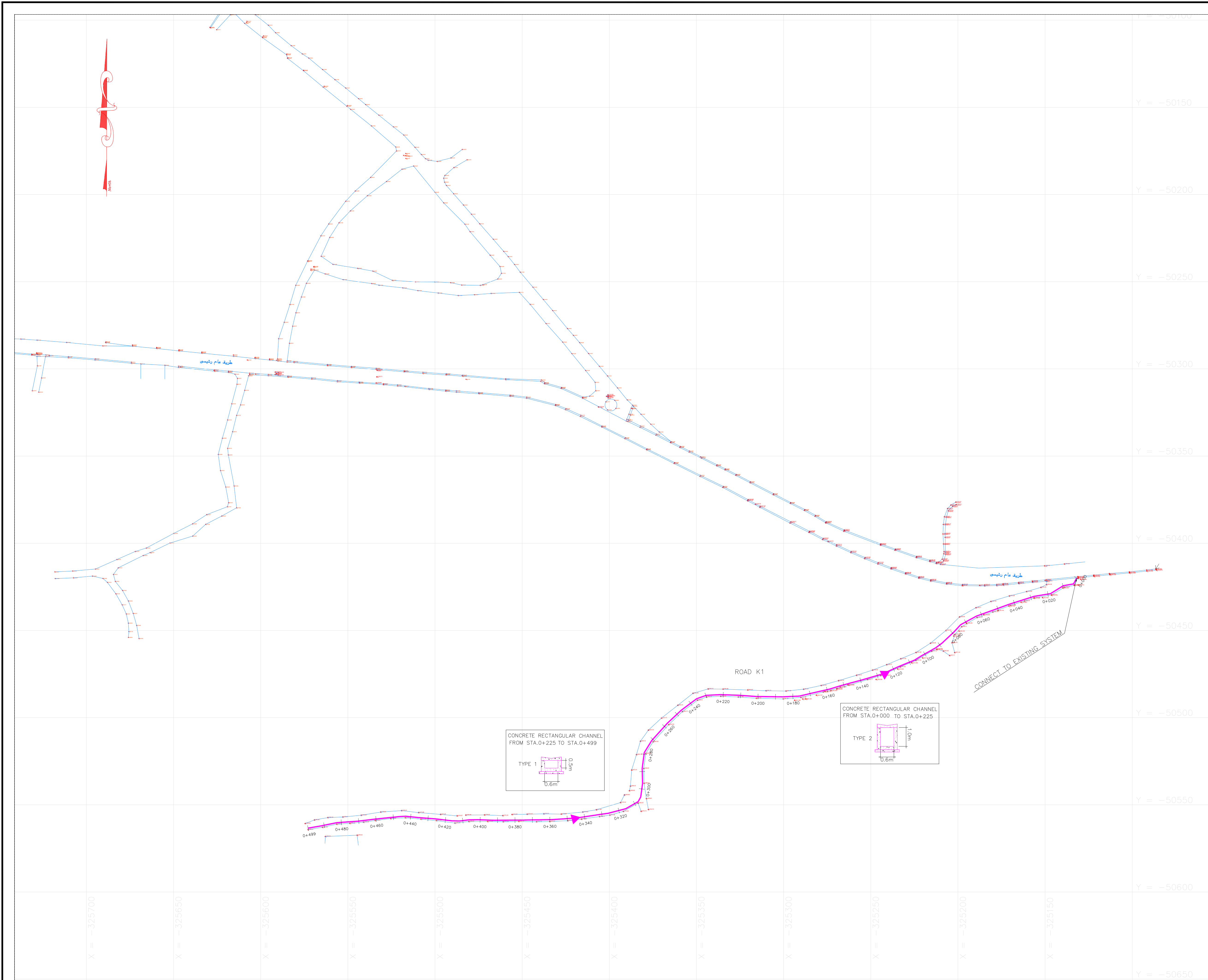
United Nation Development Programme Social and Local Development Programme



KFAR NABRAKH MUNICIPALITY KFAR NABRAKH STORMWATER DRAINAGE SYSTEM

Part 1

TENDER DRAWINGS
SUBMITTED ON 24/1/17



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PROGRAMME: Lebanese Host Communities Support Programme
Support to Integrated Service Provision at the Local Level

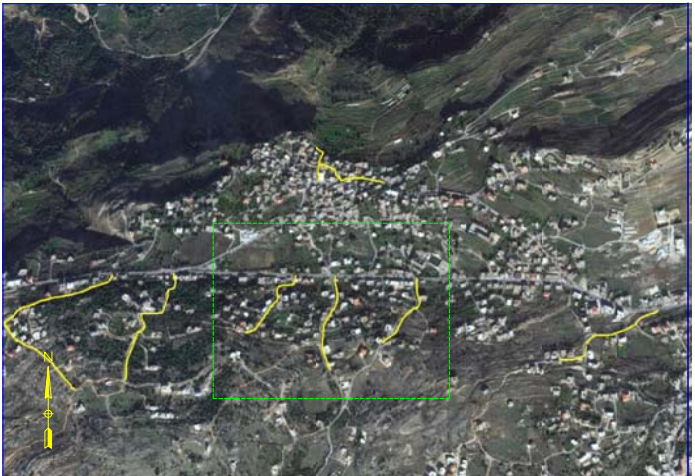
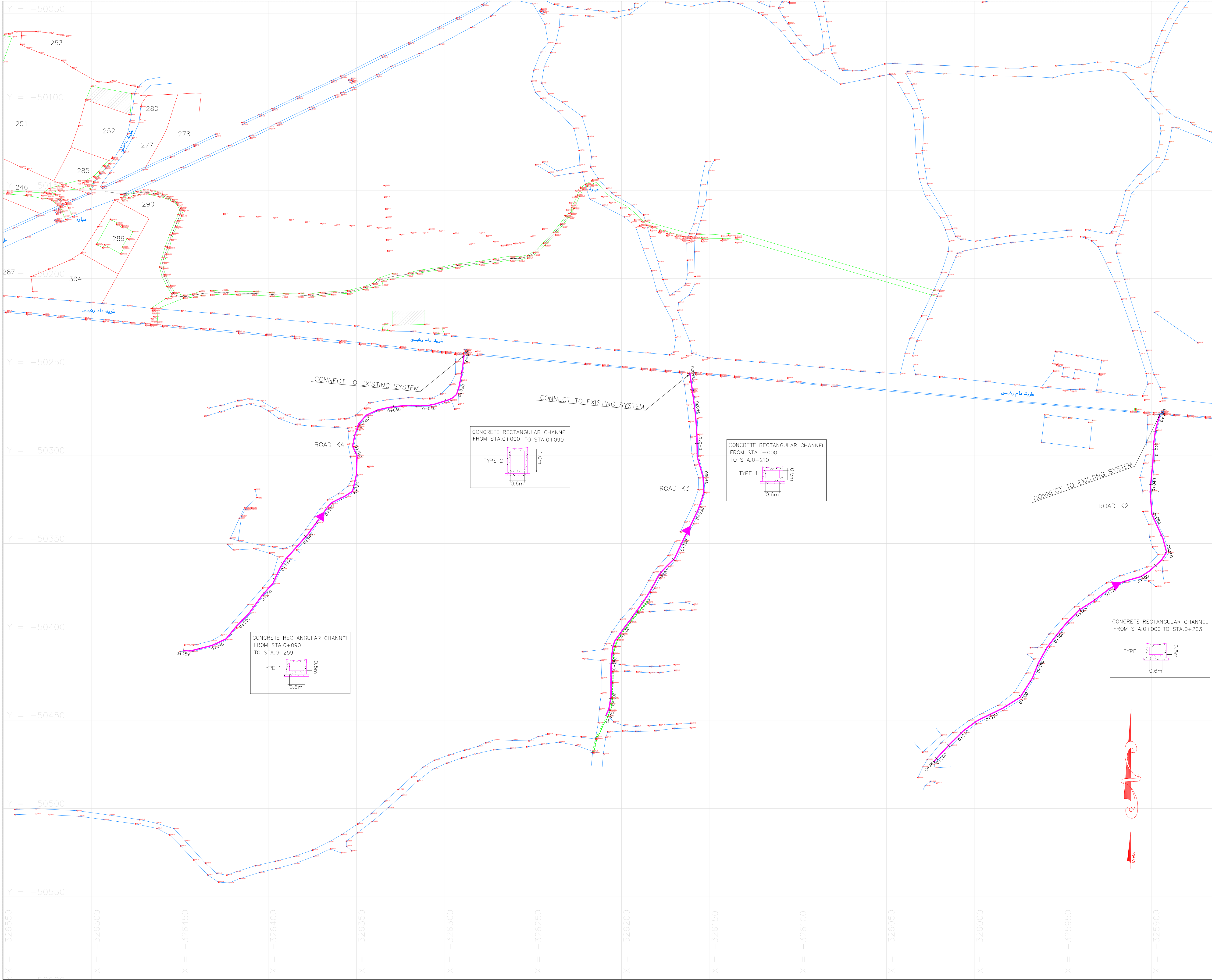
PROJECT NAME: KFAFNABRAKH STORMWATER DRAINAGE SYSTEM

LEGEND

CONCRETE CHANNEL WITH FLOW DIRECTION

- NOTES
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0	--	--	GENERAL REVISION	--
REV	BY	Date	Description	Appr.
PROJECT NBR.		LB1701		
PROJECT PHASE		TENDER		
DISCIPLINE		CIVIL ENGINEERING		
SECTOR		-		
BUILDING		-		
DESIGNED		A.H.		
DRAWN		A.H.		
CHECKED		A.H.		
APPROVED		A.H.		
DATE		7/1/2017		
SCALE		1/1000		
SHEET SIZE		A1		
Title				
TOPOGRAPHIC SURVEY DATA & STORMWATER LAYOUT PLAN ROAD K1				
LB1701-KN-SD-001-REV 0				
LB1701	TENDER	DWG	KN-SD-001	0



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PROGRAMME: Lebanese Host Communities Support Programme
Support to Integrated Service Provision at the Local Level

PROJECT NAME: KFARNABRAKH STORMWATER DRAINAGE SYSTEM

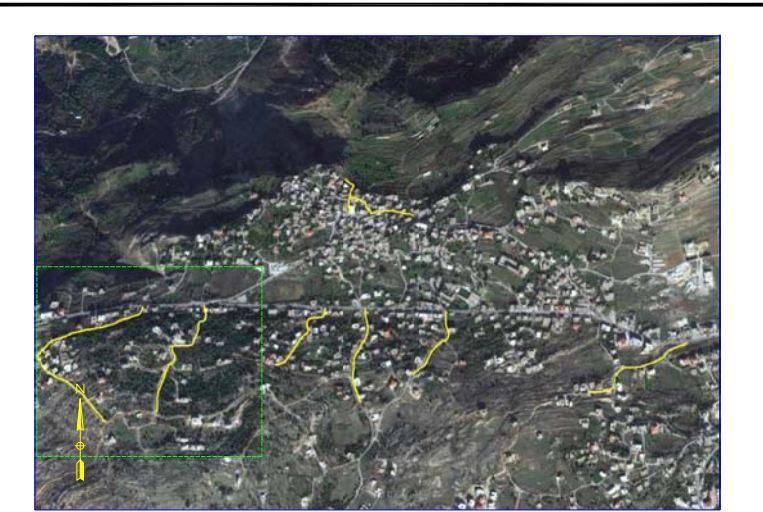
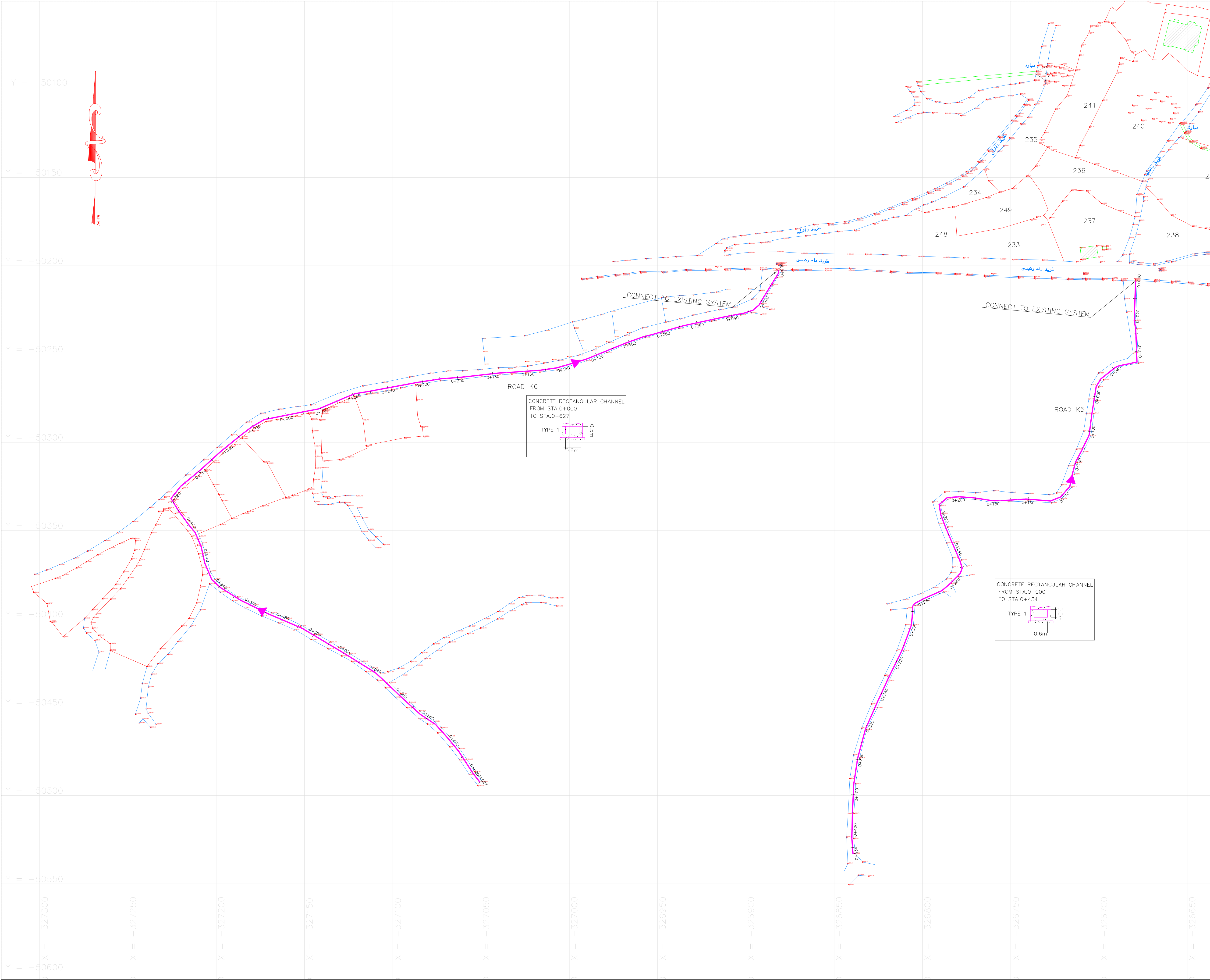
- LEGEND
- CONCRETE CHANNEL WITH FLOW DIRECTION
 - EXISTING CONCRETE RECTANGULAR CHANNEL

- NOTES
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0	--	--	GENERAL REVISION	--
REV	BY	Date	Description	Appr.
PROJECT NBR.		LB1701		
PROJECT PHASE		TENDER		
DISCIPLINE		CIVIL ENGINEERING		
SECTOR		-		
BUILDING		-		
DESIGNED		A.H.		
DRAWN		A.H.		
CHECKED		A.H.		
APPROVED		A.H.		
DATE		7/1/2017		
SCALE		1/1000		
SHEET SIZE		A1		

Title
TOPOGRAPHIC SURVEY DATA
&
STORMWATER LAYOUT PLAN
ROADS K2, K3, K4

LB1701-KN-SD-002-REV 0



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PROGRAMME: Lebanese Host Communities Support Programme
Support to Integrated Service Provision at the Local Level

PROJECT NAME: KFAFNABRAKH STORMWATER DRAINAGE SYSTEM

LEGEND

CONCRETE CHANNEL WITH FLOW DIRECTION

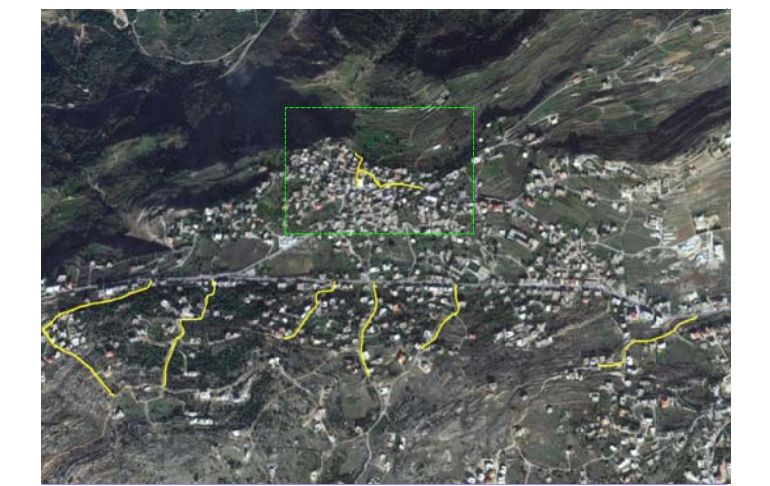
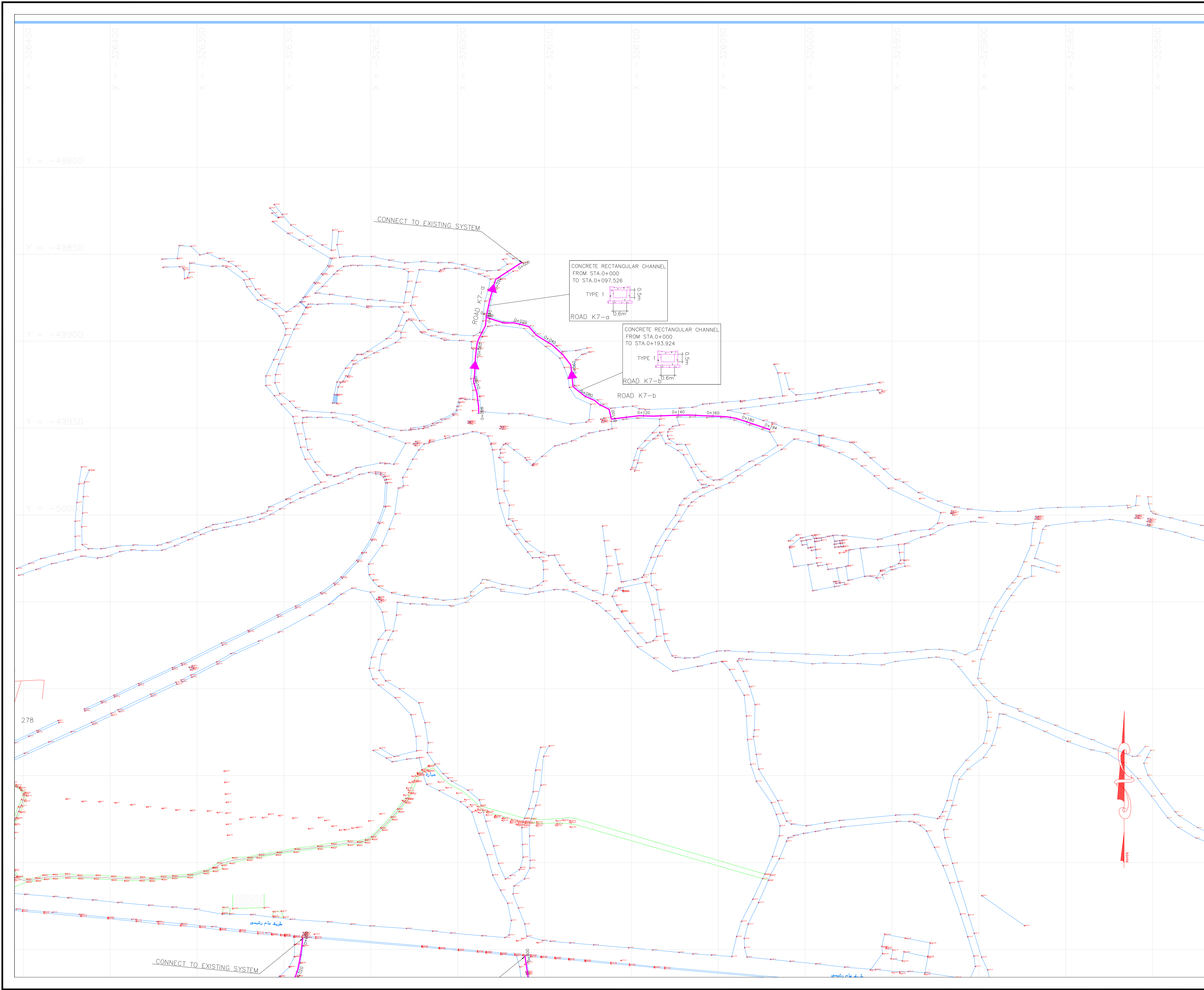
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0	--	--	GENERAL REVISION	--
REV	BY	Date	Description	Appr.
PROJECT NBR.		LB1701		
PROJECT PHASE		TENDER		
DISCIPLINE		CIVIL ENGINEERING		
SECTOR		-		
BUILDING		-		
DESIGNED		A.H.		
DRAWN		A.H.		
CHECKED		A.H.		
APPROVED		A.H.		
DATE		7/1/2017		
SCALE		1/1000		
SHEET SIZE		A1		

Title
TOPOGRAPHIC SURVEY DATA
&
STORMWATER LAYOUT PLAN
ROADS K5 & K6

LB1701-KN-SD-003-REV 0

LB1701 || TENDER || DWG || KN-SD-003 || 0



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PROGRAMME:
Lebanese Host Communities
Support Programme
Support to Integrated Service
Provision at the Local Level

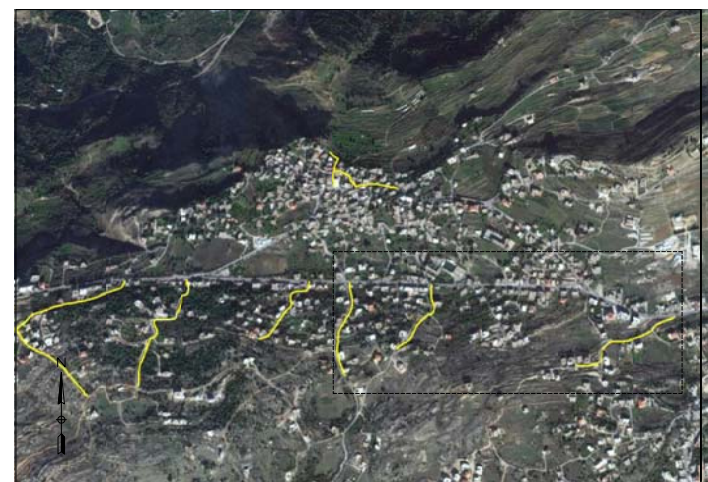
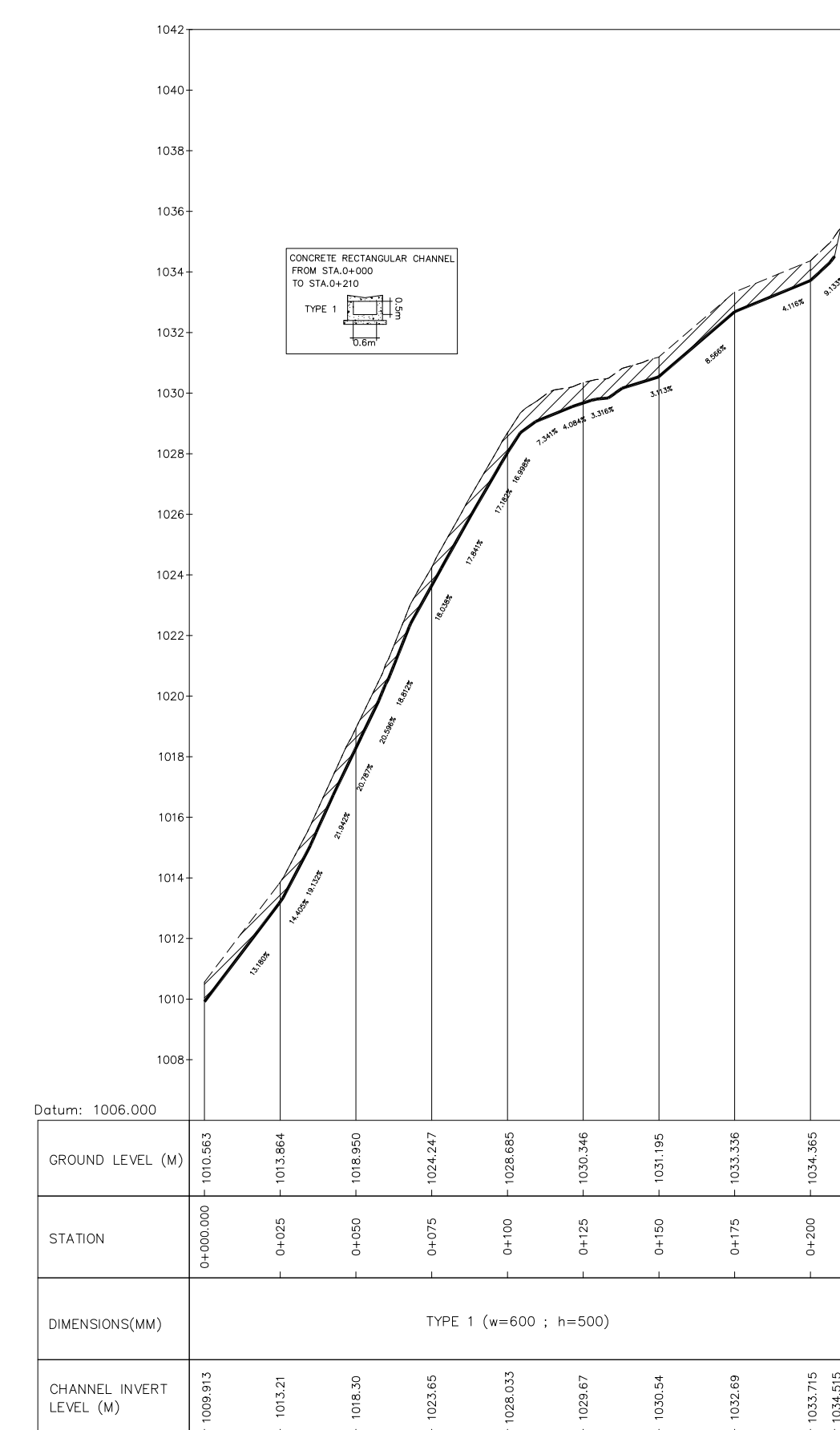
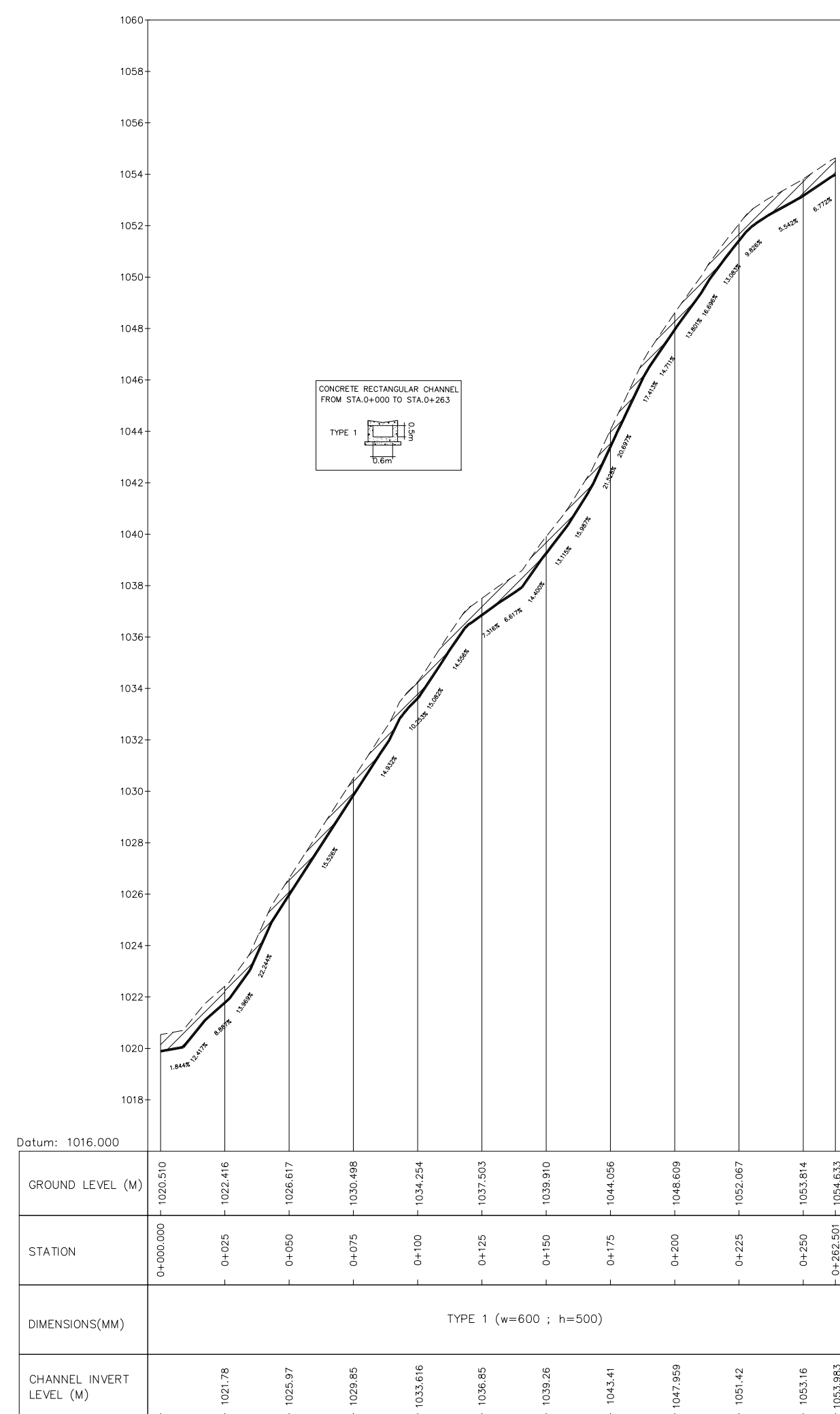
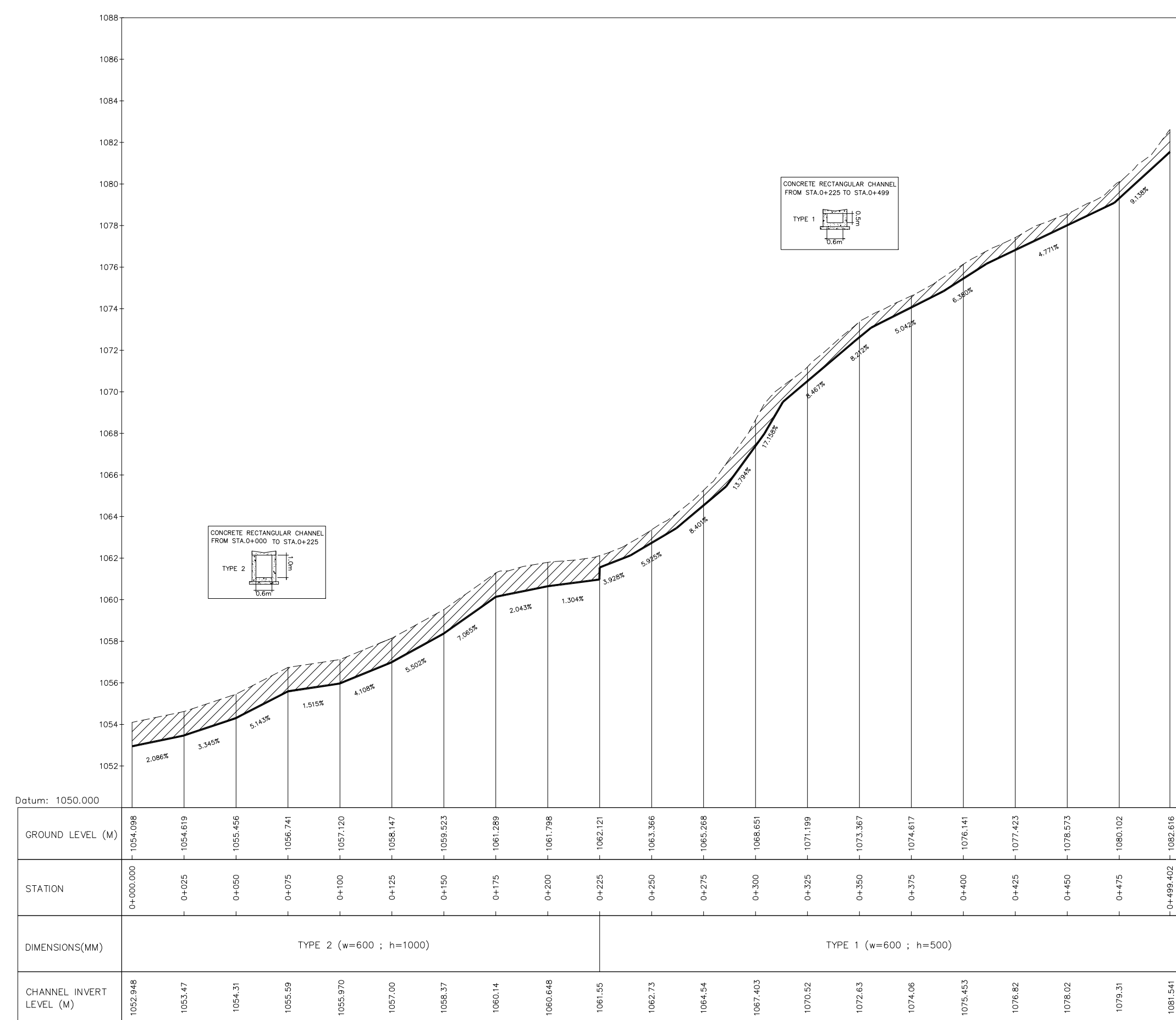
PROJECT NAME:
KFARNABRAKH STORMWATER DRAINAGE SYSTEM

LEGEND

 CONCRETE CHANNEL WITH FLOW DIRECTION

- NOTES
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0	--	--	GENERAL REVISION	--
REV	BY	Date	Description	Appr.
PROJECT NBR.			LB1701	
PROJECT PHASE			TENDER	
DISCIPLINE			CIVIL ENGINEERING	
SECTOR			-	
BUILDING			-	
DESIGNED			A.H.	
DRAWN			A.H.	
CHECKED			A.H.	
APPROVED			A.H.	
DATE			7/1/2017	
SCALE			1/1000	
SHEET SIZE			A1	
Title				
TOPOGRAPHIC SURVEY DATA & STORMWATER LAYOUT PLAN ROAD K7				
LB1701-KN-SD-004-REV 0				
LB1701	TENDER	DWG	KN-SD-004	0



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PROJECT NAME:
KFARNABRAKH STORMWATER
DRAINAGE SYSTEM

LEGEND

CONCRETE CHANNEL

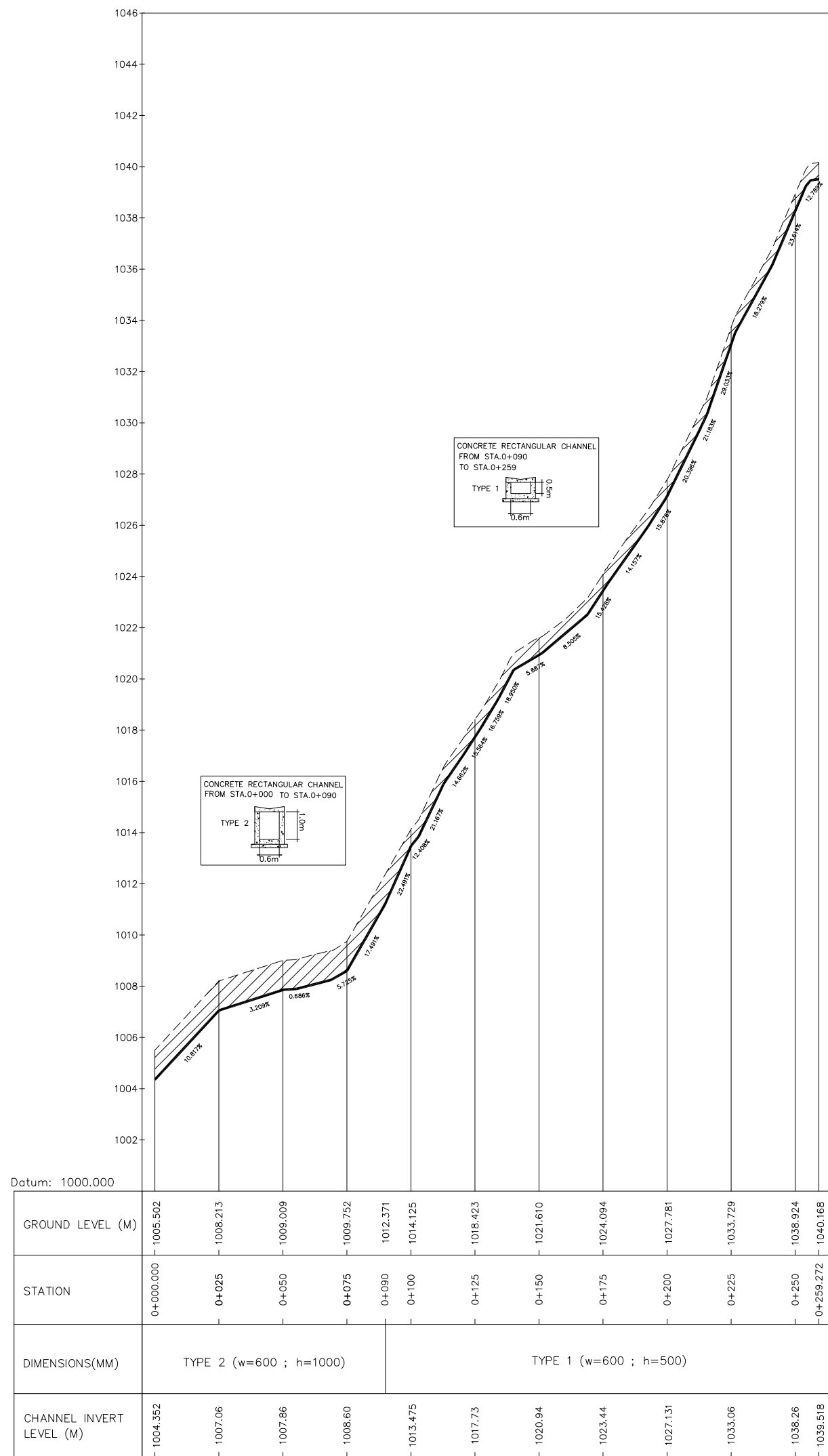
NATURAL GROUND LEVEL

NOTES

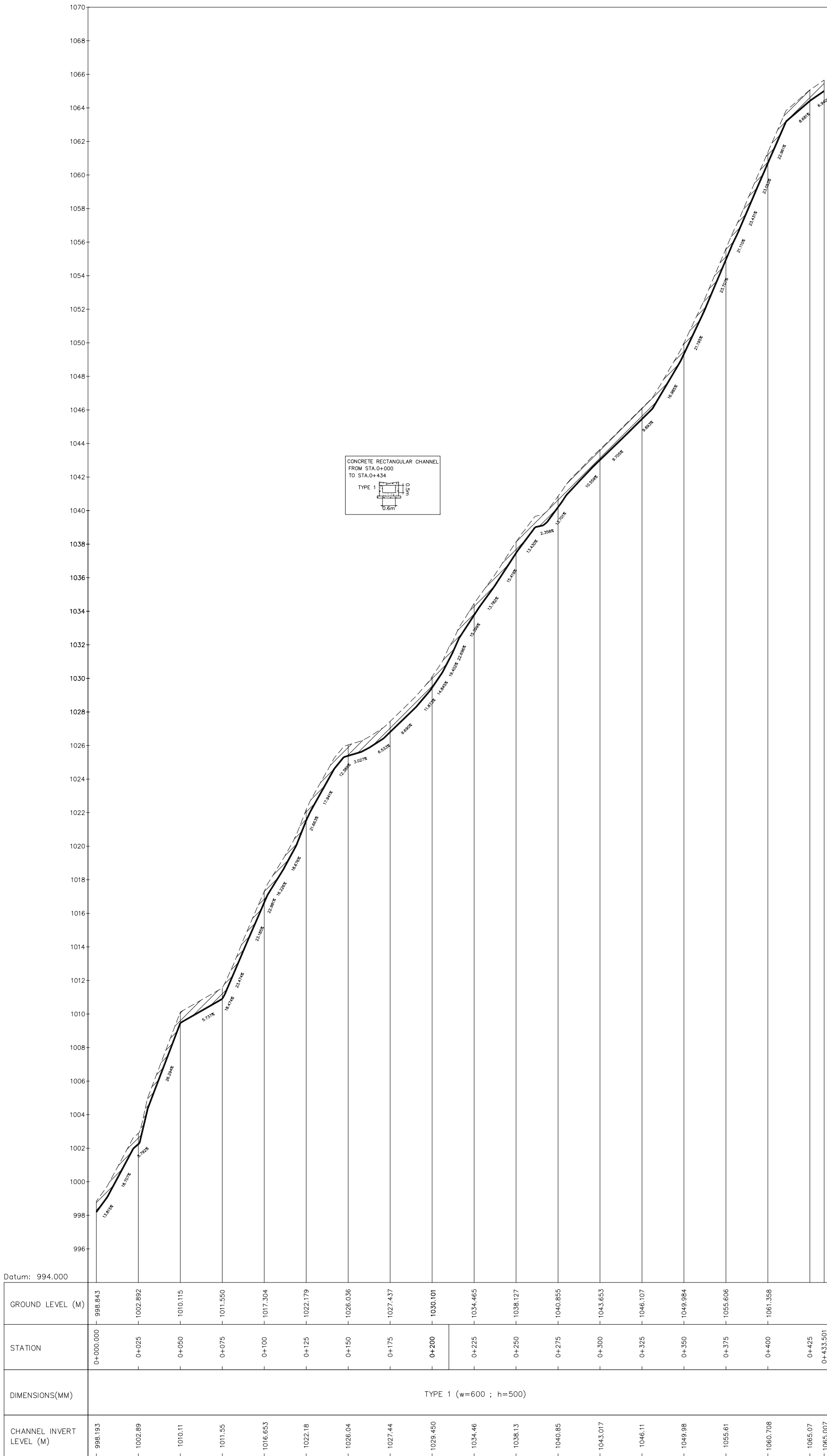
1. THIS DRAWING MUST BE READ IN CONJUNCTION WITH ALL OTHER ENGINEERING DRAWINGS.
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PROJECT NBR.			LB1701		
PROJECT PHASE			TENDER		
DISCIPLINE			CIVIL ENGINEERING		
SECTOR			-		
BUILDING			-		
DESIGNED			A.H.		
DRAWN			A.H.		
CHECKED			A.H.		
APPROVED			A.H.		
DATE			7/1/2017		
SCALE			H = 1/1000 V = 1/100		
SHEET SIZE			A1		
Title					

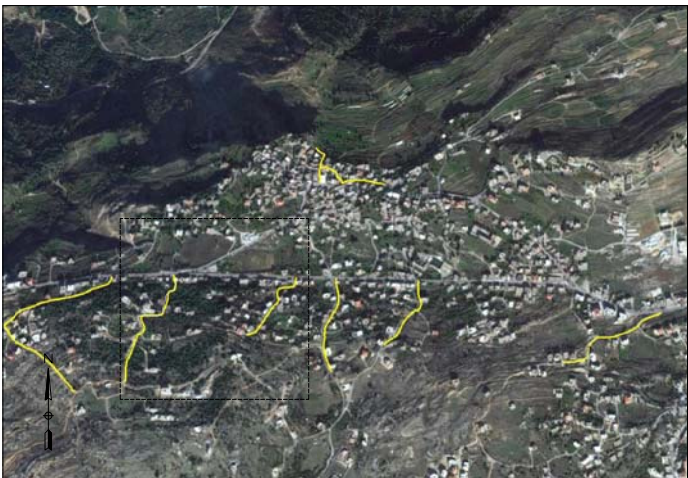
LB1701-KN-SD-005-REV 0



PROFILE K4



PROFILE K5



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Tel: 961 1 962491

PROGRAMME: Lebanese Host Communities
Support Programme
Support to Integrated Service
Provision at the Local Level

PROJECT NAME:
KFARNABRAKH STORMWATER
DRAINAGE SYSTEM

LEGEND

CONCRETE CHANNEL

NATURAL GROUND LEVEL

NOTES

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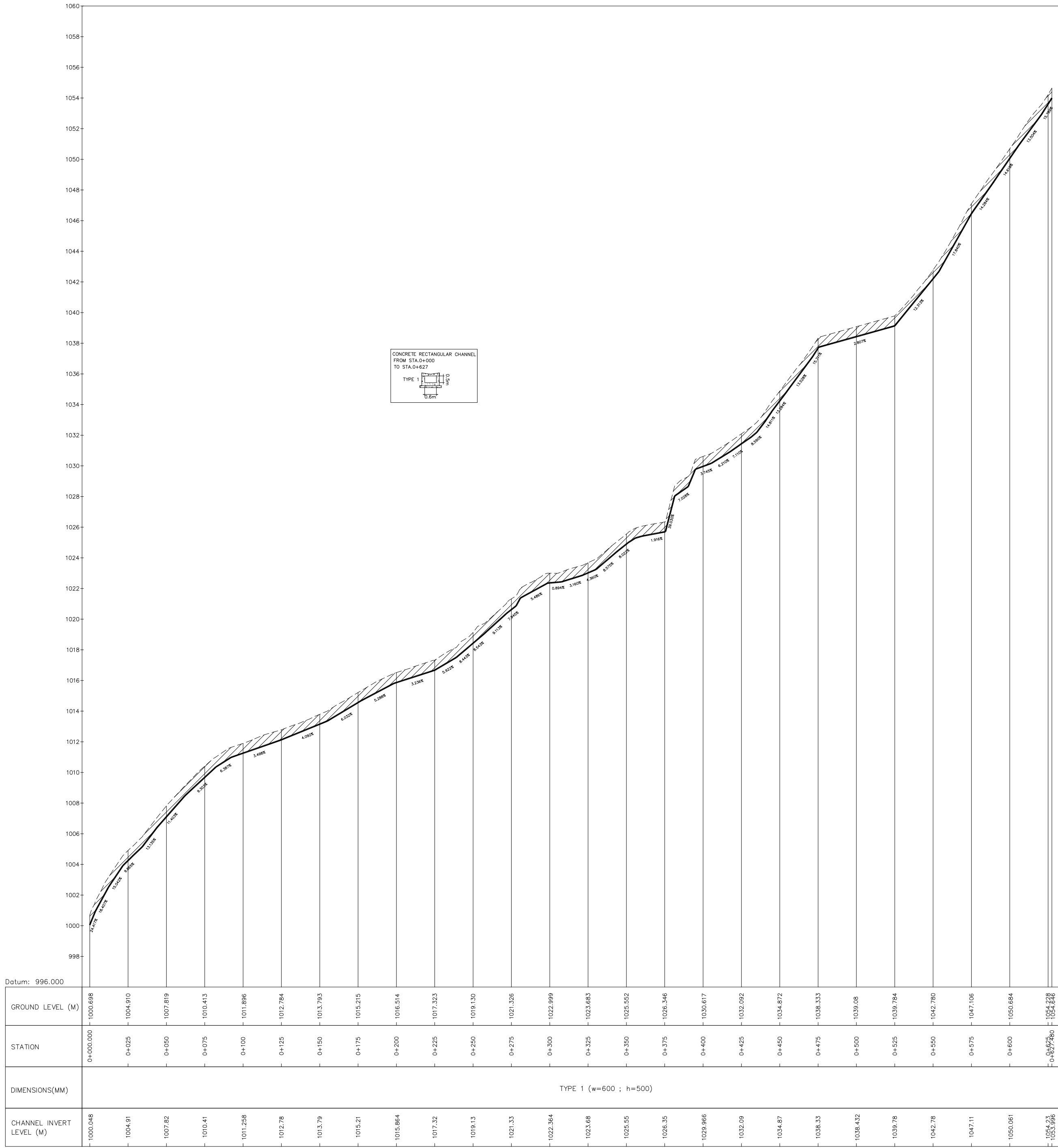
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PROJECT PHASE			TENDER	
DISCIPLINE			CIVIL ENGINEERING	
SECTOR			-	
BUILDING			-	
DESIGNED			A.H.	
DRAWN			A.H.	
CHECKED			A.H.	
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DATE			7/1/2017	
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Title

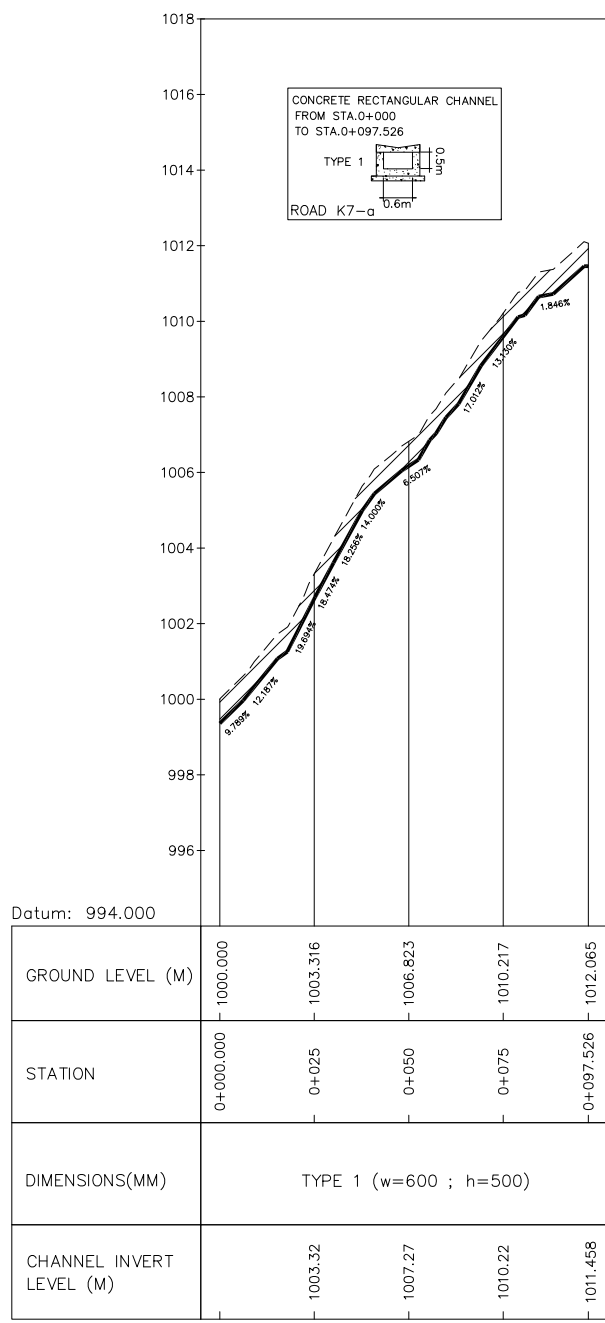
STORMWATER PROFILE
ROADS K4 & K5

LB1701-KN-SD-006-REV 0

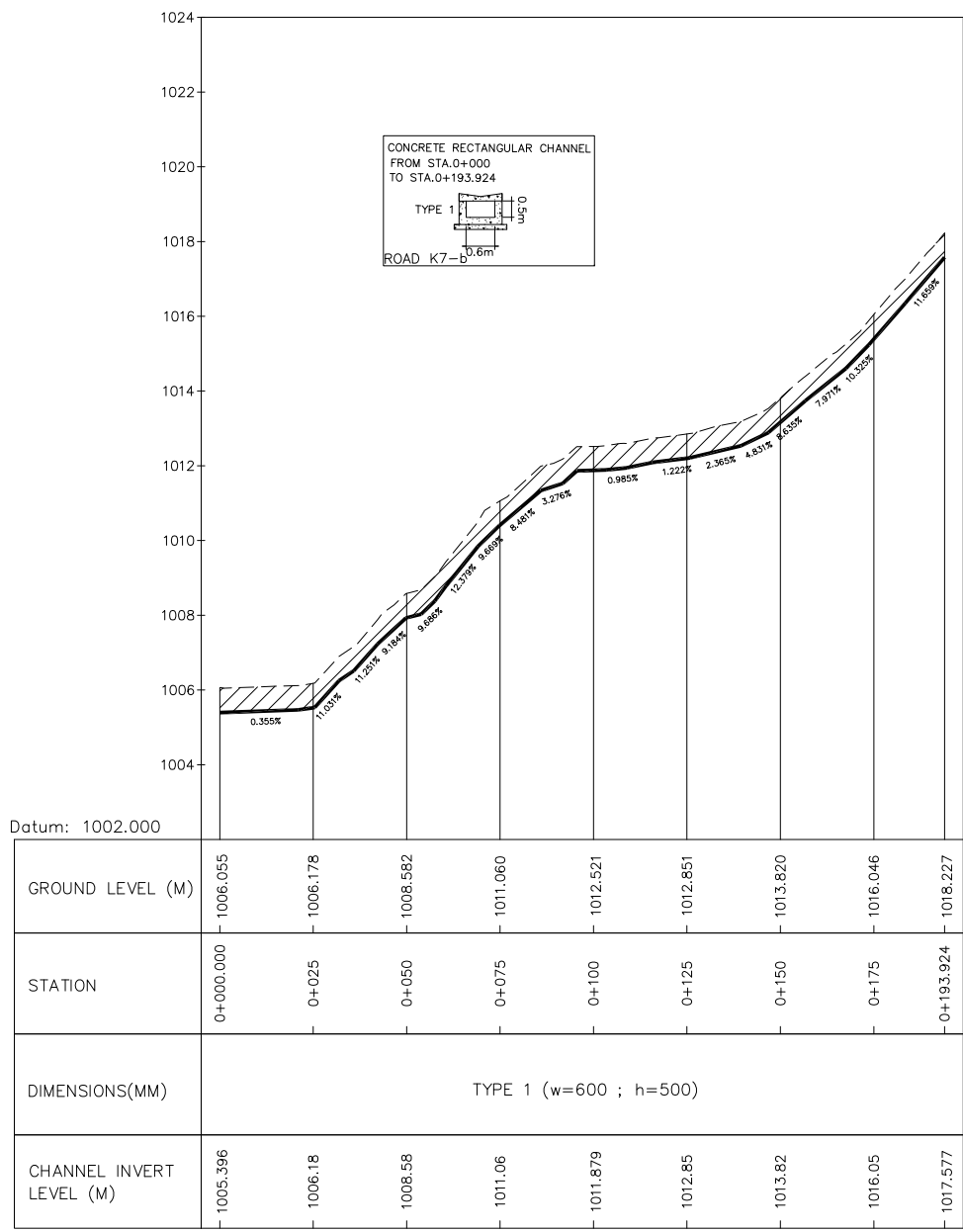
LB1701	TENDER	DWG	KN-SD-006	0
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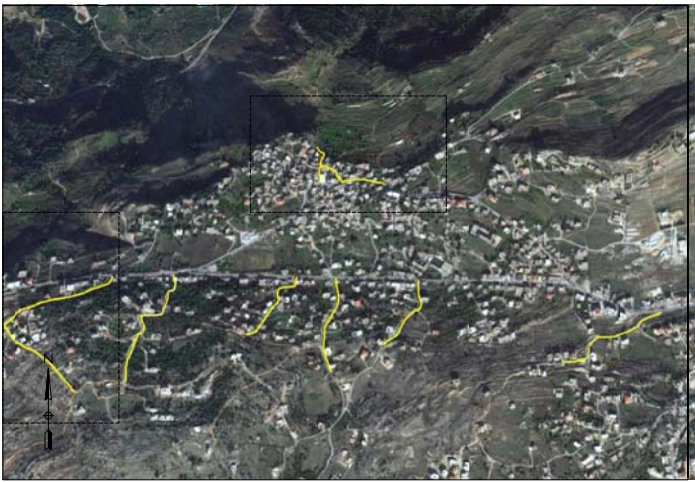
PROFILE K6



PROFILE K7a



PROFILE K7b



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PROGRAMME: Lebanese Host Communities Support Programme
Support to Integrated Service Provision at the Local Level

PROJECT NAME: KFARNABRAKH STORMWATER DRAINAGE SYSTEM

LEGEND

CONCRETE CHANNEL

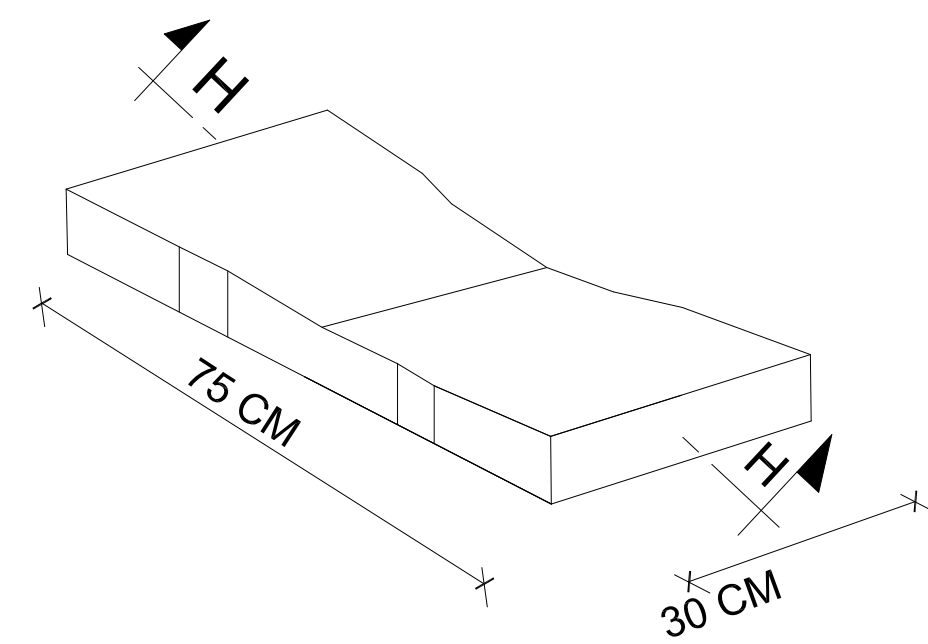
NATURAL GROUND LEVEL

- NOTES
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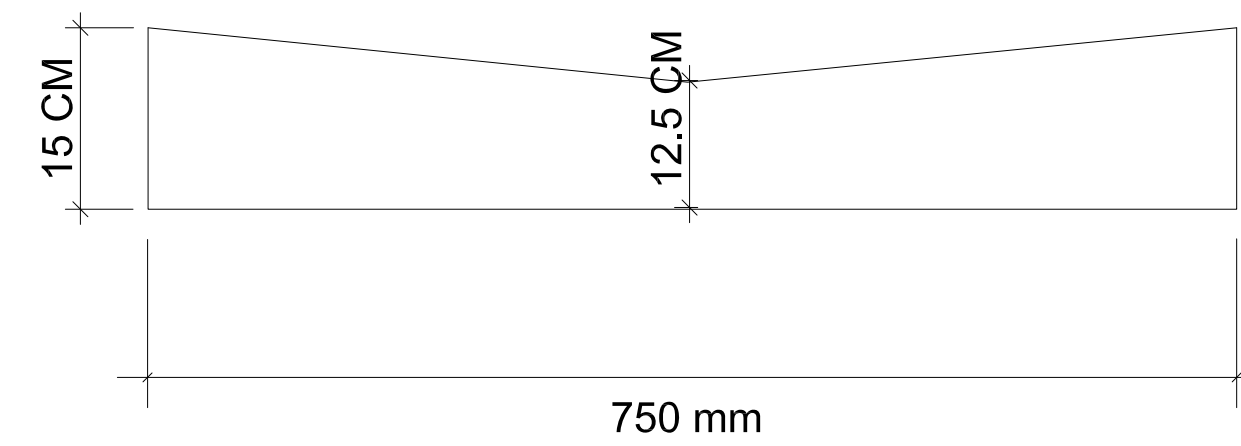
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REV	BY	Date		Description	Appr.
PROJECT NBR.				LB1701	
PROJECT PHASE				TENDER	
DISCIPLINE				CIVIL ENGINEERING	
SECTOR				-	
BUILDING				-	
DESIGNED				A.H.	
DRAWN				A.H.	
CHECKED				A.H.	
APPROVED				A.H.	
DATE				7/1/2017	
SCALE				H= 1/1000 V=1/100	
SHEET SIZE				A1	
Title					

STORMWATER PROFILE
ROADS K6 & K7

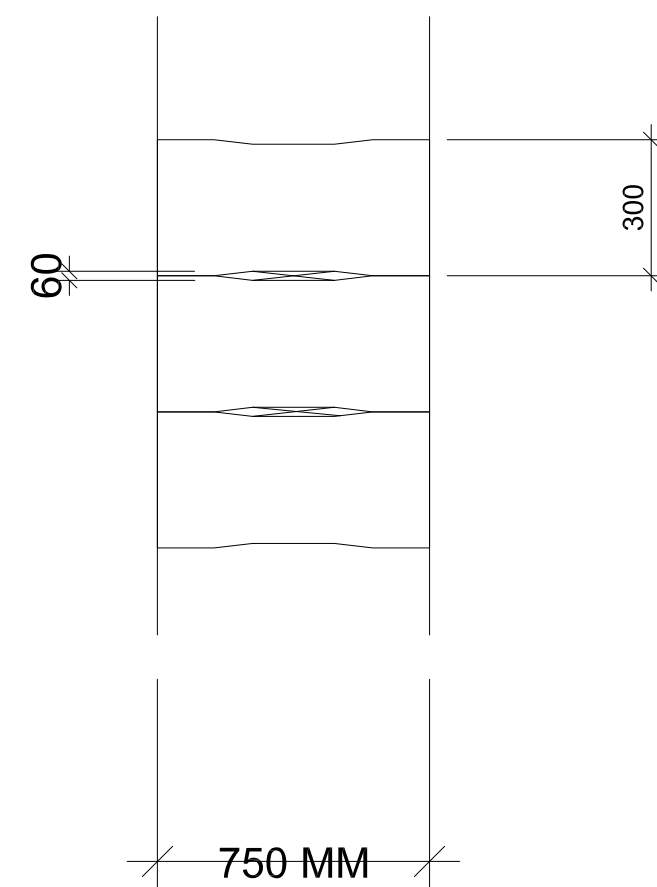
LB1701-KN-SD-007-REV 0



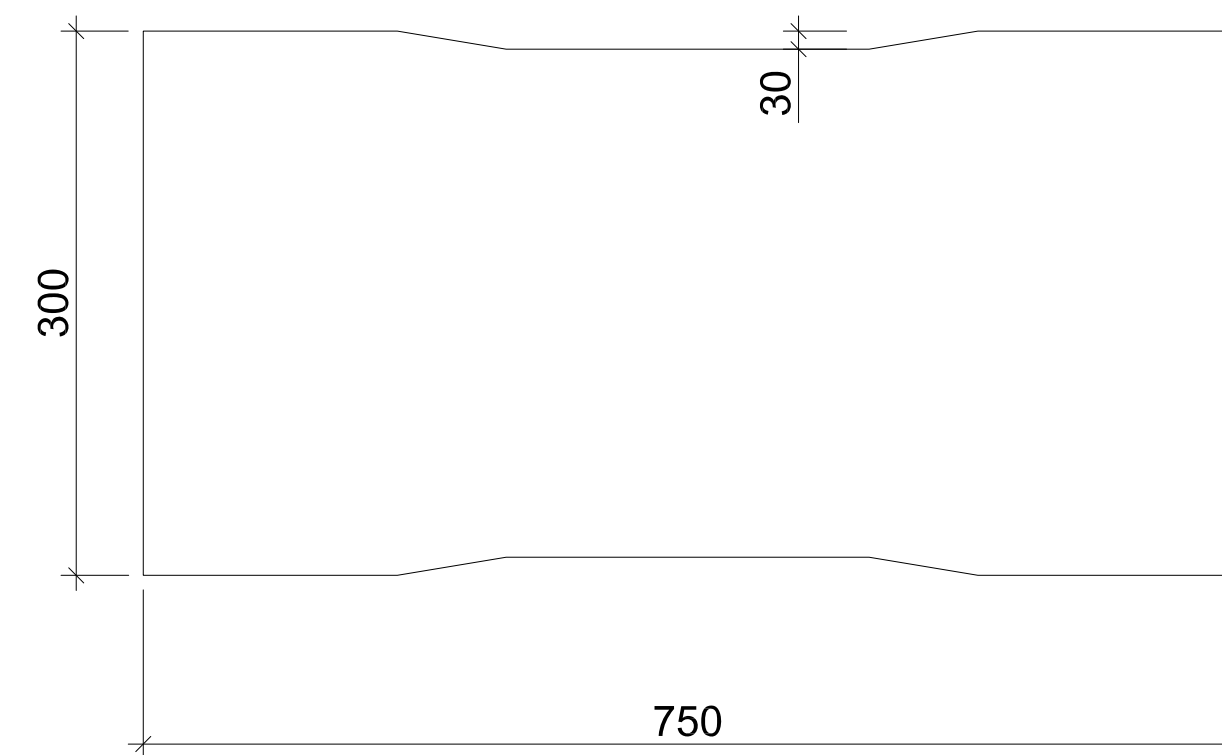
THREE DIMENSIONAL VIEW



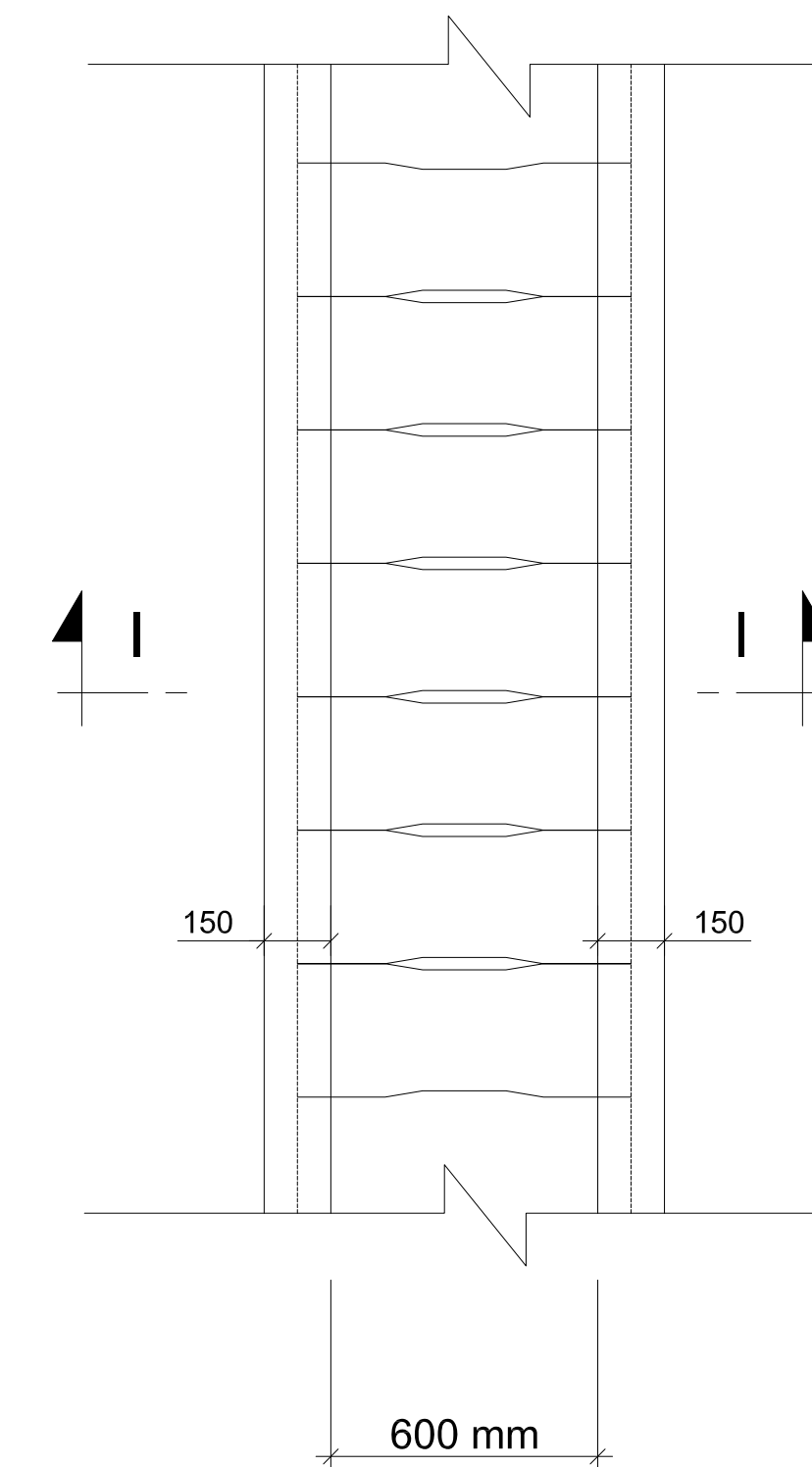
SECTION H-H



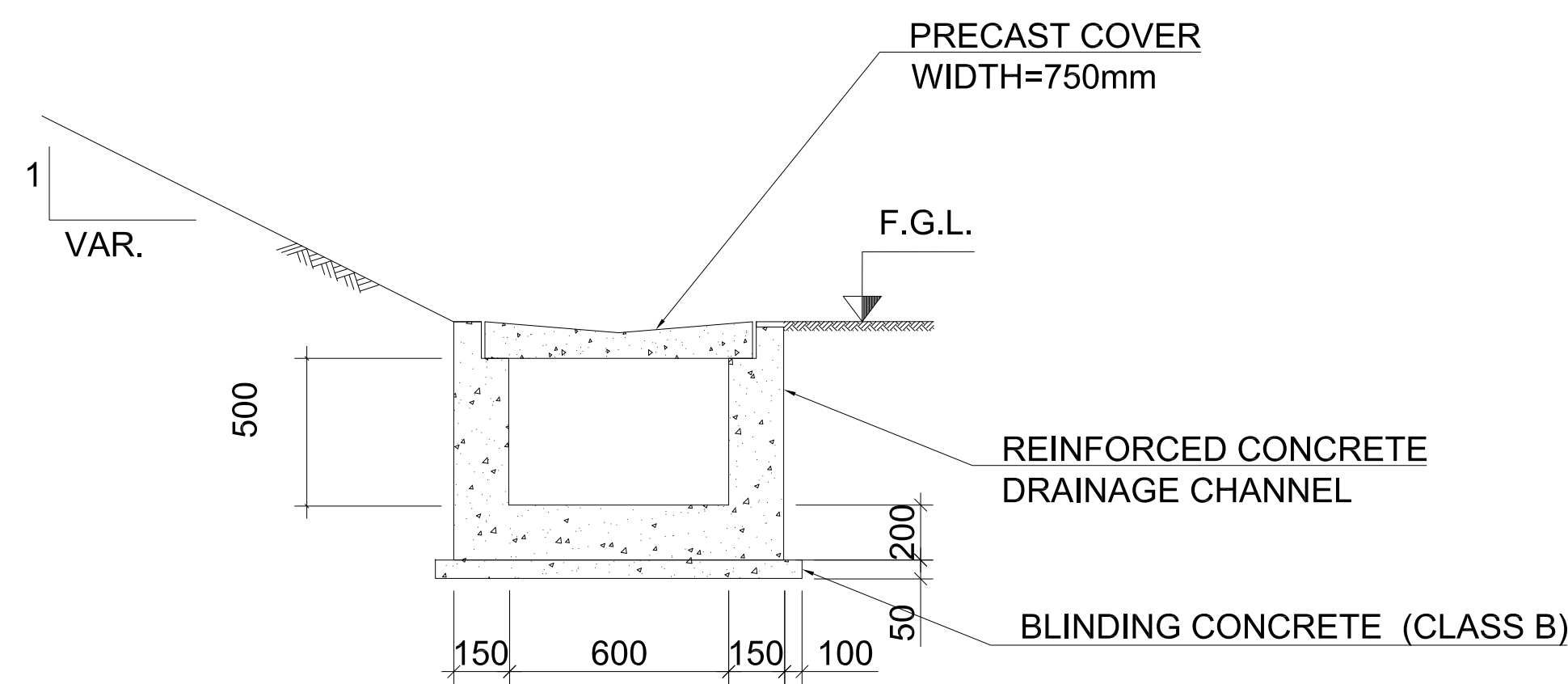
PARTIAL PLAN OF
PRECAST COVERS



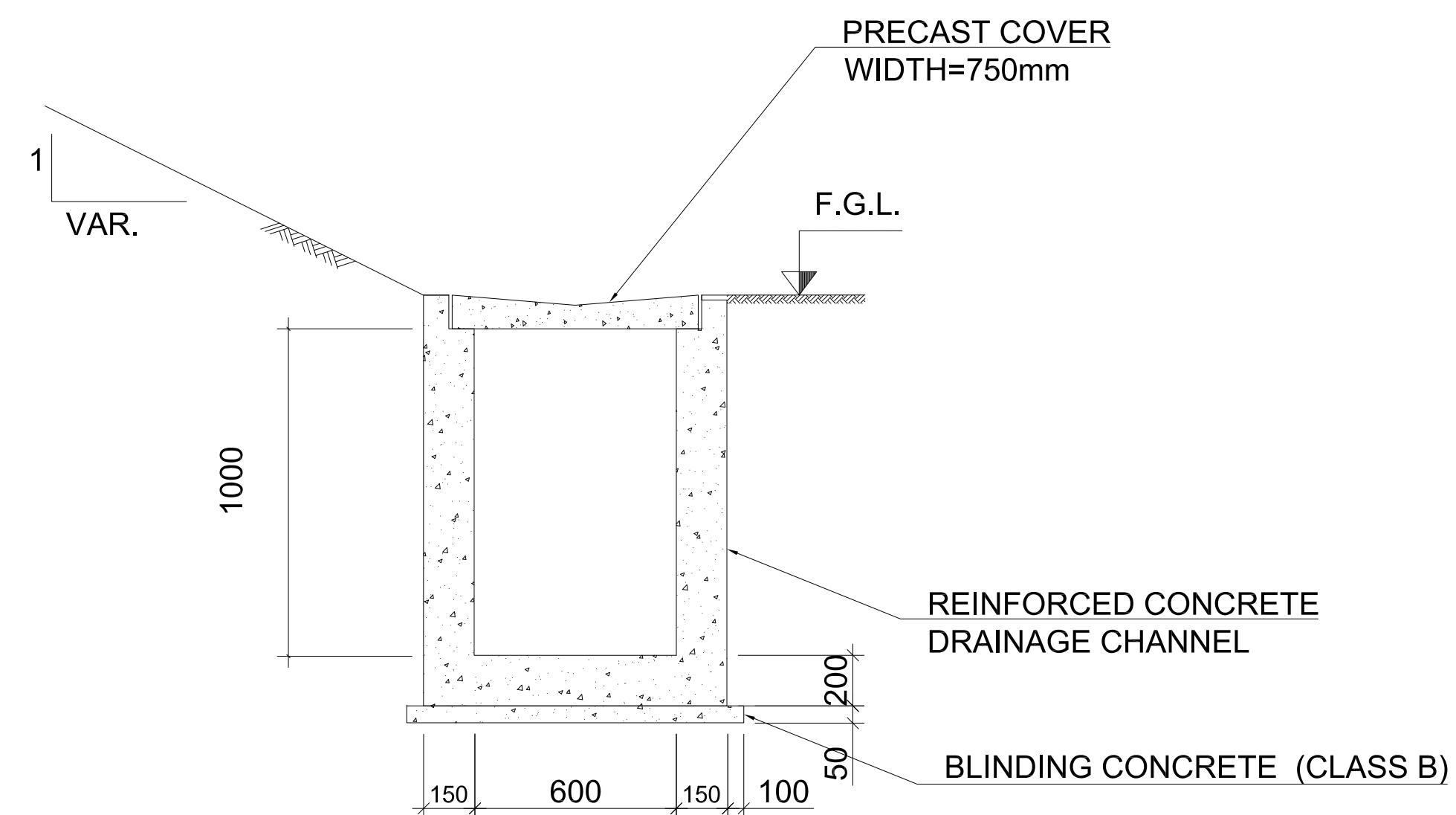
PLAN VIEW
PRECAST COVER DETAILS



CHANNEL PARTIAL PLAN



SECTION I-I
TYPE 1 CHANNEL



SECTION I-I
TYPE 2 CHANNEL

CHANNEL AND COVER DETAILS



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Tel: 961 1 962491

PROGRAMME: Lebanese Host Communities
Support Programme
Support to Integrated Service
Provision at the Local Level

PROJECT NAME:
KFARNABRAKH STORMWATER
DRAINAGE SYSTEM

NOTES

- 1- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
- 2- ALL DETAILS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- 3- FOR STRUCTURAL DETAILS REFER TO DRAWING LB1701-KN-SD-009-REV 0

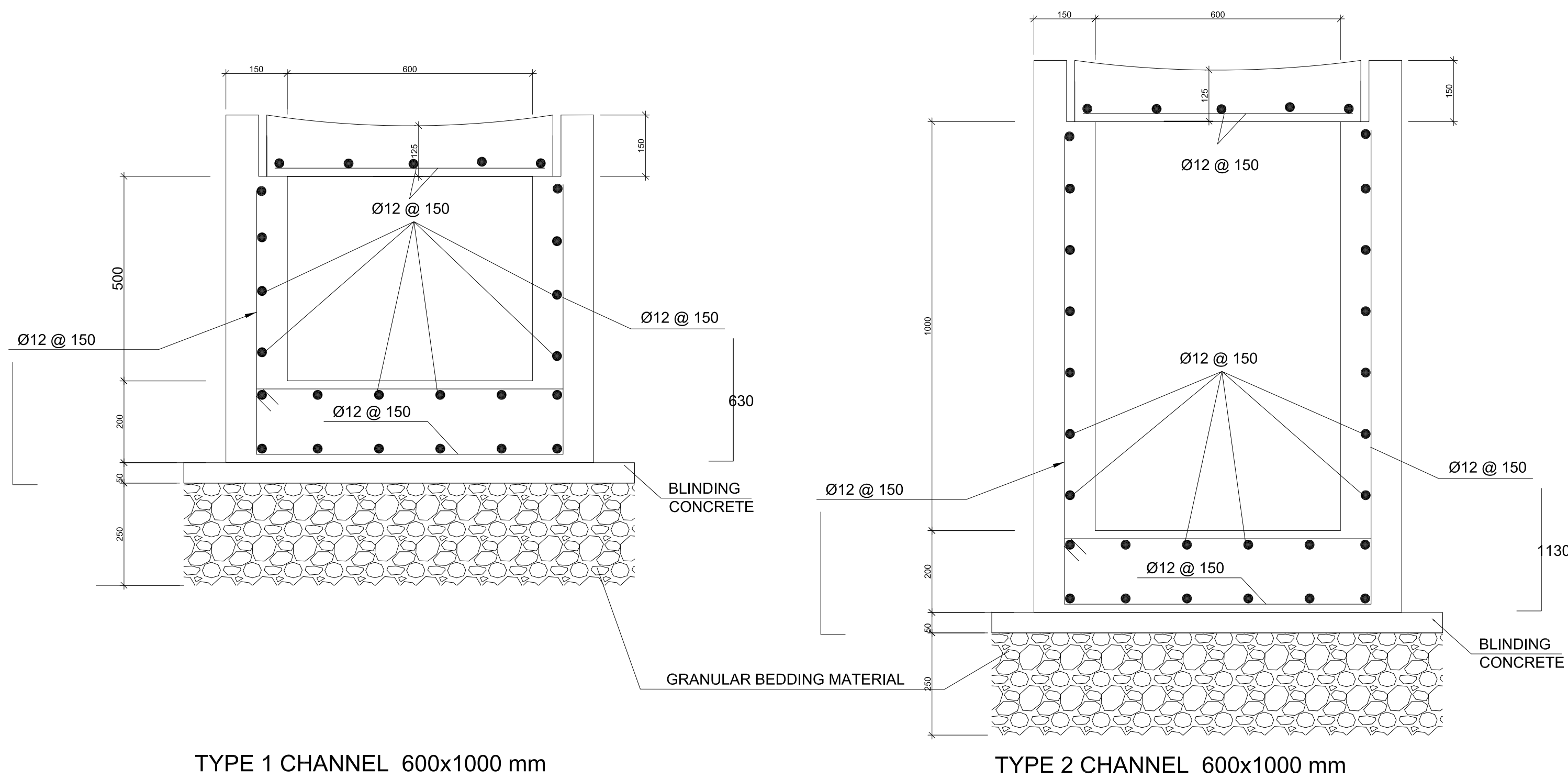
REV	BY	Date	Description	Appr.
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PROJECT NBR.			LB1701	
PROJECT PHASE			TENDER	
DISCIPLINE			CIVIL ENGINEERING	
SECTOR			-	
BUILDING			-	
DESIGNED			A.H.	
DRAWN			A.H.	
CHECKED			A.H.	
APPROVED			A.H.	
DATE			7/1/2017	
SCALE			N.T.S.	
SHEET SIZE			A1	

Title

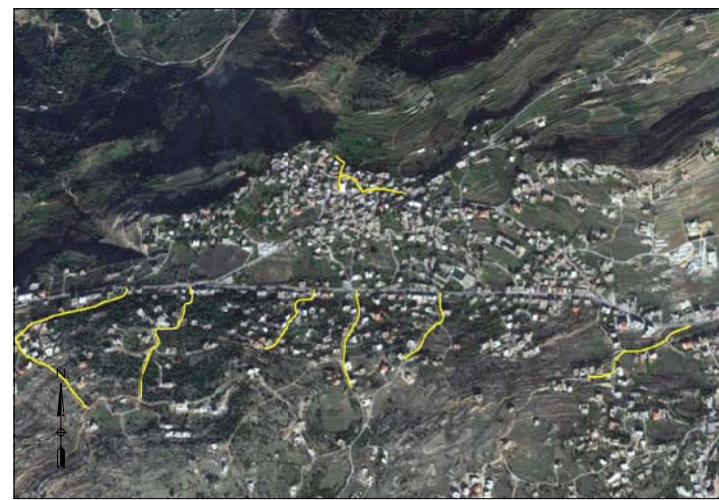
STORMWATER TYPICAL DETAILS

LB1701-KN-SD-008-REV 0

LB1701 | TENDER | DWG | KN-SD-008 | 0



REINFORCEMENT FOR TYPICAL STORMWATER CHANNELS



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Tel: 961 1 962491

PROGRAMME: Lebanese Host Communities Support Programme
Support to Integrated Service Provision at the Local Level

PROJECT NAME: KFARNABRAKH STORMWATER DRAINAGE SYSTEM

NOTES

- 1- ALL COVERS TO BE SUPPORTED BY SIZED STAY RODS WHEN IN NORMALLY OPEN POSITION, 100° FROM HORIZONTAL.
- 2- HINGES ON COVERS TO ALLOW FOR COVER TO REST ON FINISHED GROUND LEVEL.
- 3- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED.
- 4- ALL DETAILS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- 5- SELECTED BACKFILL SHOULD BE COHESIONLESS MATERIAL FREE OF ORGANIC MATTER AND FREE OF GRAVEL GREATER THAN 10cm.
- 6- CONCRETE COVER MUST BE AT LEAST 5 CM
- 7- LAP SPLICE LENGTH=50 STEEL BAR DIAMETER
- 8- REINFORCING STEEL SHALL BE GRADE 60
- 9- CLASS A CONCRETE SHALL BE USED FOR STRUCTURAL ELEMENTS AND CLASS B CONCRETE FOR BLINDING CONCRETE

0	--	--	GENERAL REVISION	--
REV	BY	Date	Description	Appr.
PROJECT NBR:			LB1701	
PROJECT PHASE			TENDER	
DISCIPLINE			CIVIL ENGINEERING	
SECTOR			-	
BUILDING			-	
DESIGNED			A.H.	
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CHECKED			A.H.	
APPROVED			A.H.	
DATE			7/1/2017	
SCALE			N.T.S.	
SHEET SIZE			A1	

Title

TYPICAL CHANNELS RC DETAILS

LB1701-KN-SD-009-REV 0