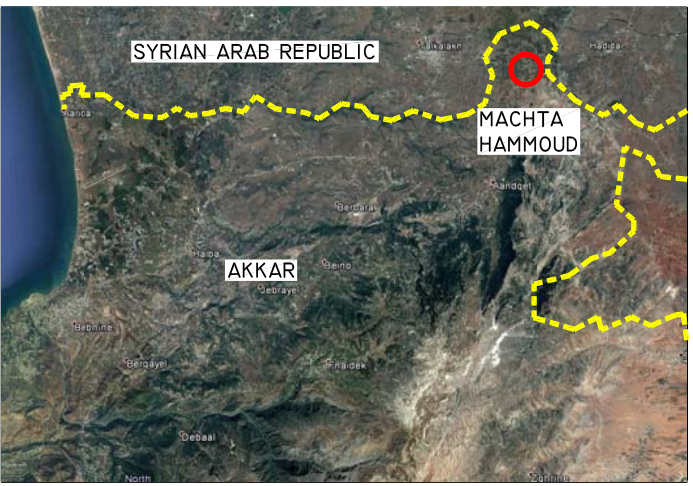
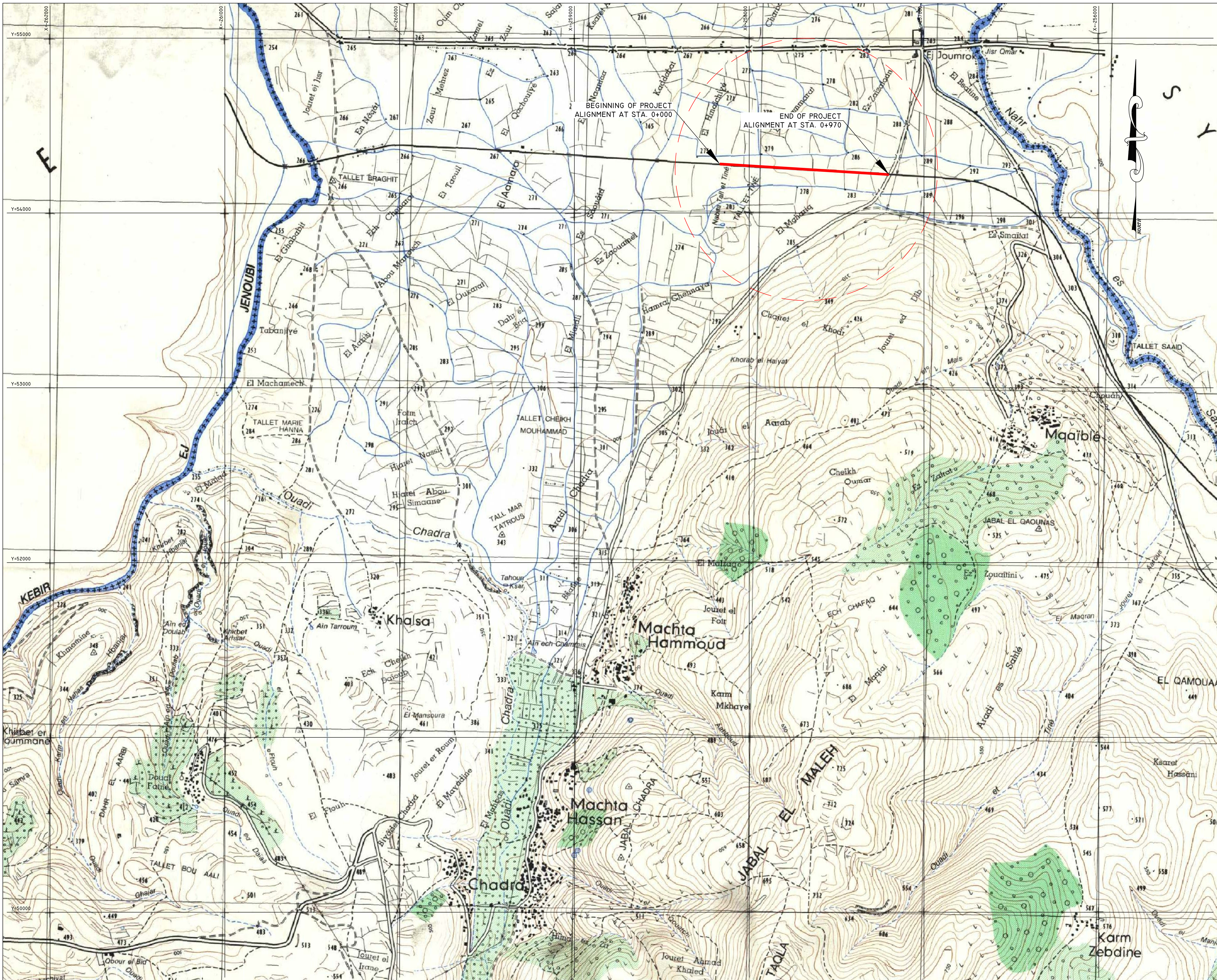




KEY PLAN

UNITED NATIONS DEVELOPMENT PROGRAMME
SOCIAL AND LOCAL DEVELOPMENT PROGRAMME
NORTH LEBANON
P.O. BOX: 11-3216, BEIRUT - LEBANON
TEL: +961 1 962491
WEB: WWW.UNDP.ORG

PROGRAMME:
LEBANESE HOST COMMUNITIES
SUPPORT PROGRAMME
SUPPORT TO INTEGRATED SERVICE
PROVISION AT THE LOCAL LEVEL

PROJECT NAME:
REHABILITATION OF AGRICULTURAL ROADS IN
MACHTA HAMMOUD, NORTH LEBANON

NOTES:
1. ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE
INDICATED.
2. COORDINATES AND ELEVATIONS ARE TIED TO THE
NATIONAL DATUM OF LEBANON.

LEGEND:
PROJECT ALIGNMENT

REV	BY	DATE	DESCRIPTION	APP.
3				
2	M.S.	22/03/2017	UPDATED SUBMITTAL	A.S.
1	M.S.	05/03/2017	UPDATED SUBMITTAL	A.S.
PROJECT NBR.	I602A			
PROJECT PHASE	TENDER			
DISCIPLINE	CIVIL ENGINEERING			
SECTOR	ROADS			
DESIGNED	M.S.			
DRAWN	N.A.			
CHECKED	L.E.			
APPROVED	A.S.			
DATE	01-FEB-2017			
SCALE	1/10,000			
SHEET SIZE	A1			

GENERAL DRAWINGS
LOCATION PLAN

I 602A - TCR - GEN - 003 - R02
Project Nbr. Phase Disc. Ssr. Type Nbr. Revision



KEY PLAN

UNITED NATIONS DEVELOPMENT PROGRAMME
SOCIAL AND LOCAL DEVELOPMENT PROGRAMME
NORTH LEBANON
P.O.BOX: 11-3216, BEIRUT - LEBANON
TEL: +961 1 962491
WEB: WWW.UNDP.ORG

PROGRAMME:
LEBANESE HOST COMMUNITIES
SUPPORT PROGRAMME
SUPPORT TO INTEGRATED SERVICE
PROVISION AT THE LOCAL LEVEL

PROJECT NAME:
REHABILITATION OF AGRICULTURAL ROADS IN
MACHTA HAMMOUD, NORTH LEBANON

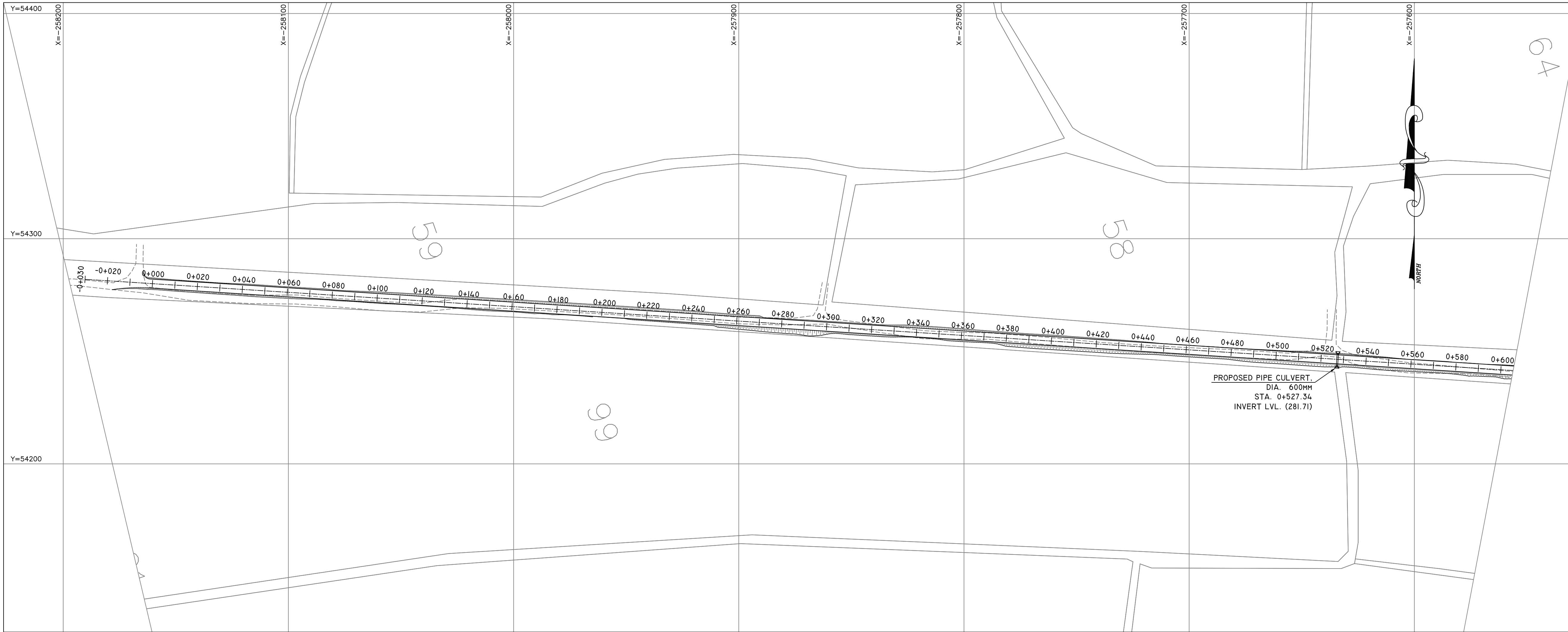
- NOTES:
1. ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE INDICATED.
 2. COORDINATES AND ELEVATIONS ARE TIED TO THE NATIONAL DATUM OF LEBANON.
 3. EXISTING GRADE LEVELS HAVE BEEN ADOPTED FROM SURVEYS CARRIED IN FEBRUARY 2017.

- LEGEND:
- CONTOUR LINES AND ELEVATIONS
 - EXISTING ROAD LIMITS
 - ROAD ALIGNMENT
 - EARTH CANAL
 - CONCRETE CANAL/CULVERT
 - RAILWAY TRACKS
 - EXISTING FENCE
 - EXISTING BUILDING/STRUCTURE
 - PLOT LIMIT AND NUMBER
 - PLOT DESIGNATED AS PUBLIC DOMAIN
 - EXISTING SEWER MANHOLE
 - EXISTING ELECTRICAL POLE

3				
2	M.S.	22/03/2017	UPDATED SUBMITTAL	A.S.
1	M.S.	05/03/2017	UPDATED SUBMITTAL	A.S.
REV	BY	DATE	DESCRIPTION	APP.
PROJECT NBR.			I602A	
PROJECT PHASE			TENDER	
DISCIPLINE			CIVIL ENGINEERING	
SECTOR			ROADS	
DESIGNED			M.S.	
DRAWN			N.A.	
CHECKED			L.E.	
APPROVED			A.S.	
DATE			01-FEB-2017	
SCALE			1/1000	
SHEET SIZE			A1	

DRAWING:
TOPOGRAPHY PLANS
MACHTA HAMMOUD, ROAD 01
STA. 0+000 TO STA. 0+970

I 6 0 2 A - T C R - T O P - 1 0 1 - R 0 2
Project Nbr. Phase Disc. Sqr. Type Nbr. Revision



KEY PLAN



UNITED NATIONS DEVELOPMENT PROGRAMME
SOCIAL AND LOCAL DEVELOPMENT PROGRAMME
NORTH LEBANON
P.O.BOX: 11-3216, BEIRUT - LEBANON
TEL: +961 1 962491
WEB: WWW.UNDP.ORG

PROGRAMME:



LEBANESE HOST COMMUNITIES
SUPPORT PROGRAMME
SUPPORT TO INTEGRATED SERVICE
PROVISION AT THE LOCAL LEVEL

PROJECT NAME:

REHABILITATION OF AGRICULTURAL ROADS IN
MACHTA HAMMOUD, NORTH LEBANON

NOTES:

1. ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE INDICATED.
2. COORDINATES AND ELEVATIONS ARE TIED TO THE NATIONAL DATUM OF LEBANON.
3. EXISTING GRADE LEVELS HAVE BEEN ADOPTED FROM SURVEYS CARRIED IN NOVEMBER 2016. THE DATA WAS CORRECT AT THE TIME IT WAS TAKEN.
4. PROJECT LEVELS SHOWN ON PROFILES REPRESENT TOP LEVEL OF FINISHED ROAD SURFACE.
5. FOR CONSTRUCTION DETAILS, REFER TO DWGS: 1602A-TCR-DET-401 THRU 405.

LEGEND:

EXISTING TOPOGRAPHIC ELEMENTS

----- EXISTING ROAD LIMITS

EXISTING BUILDING

PROPOSED PLAN ELEMENTS & ABBREVIATIONS

--- ROAD ALIGNMENT

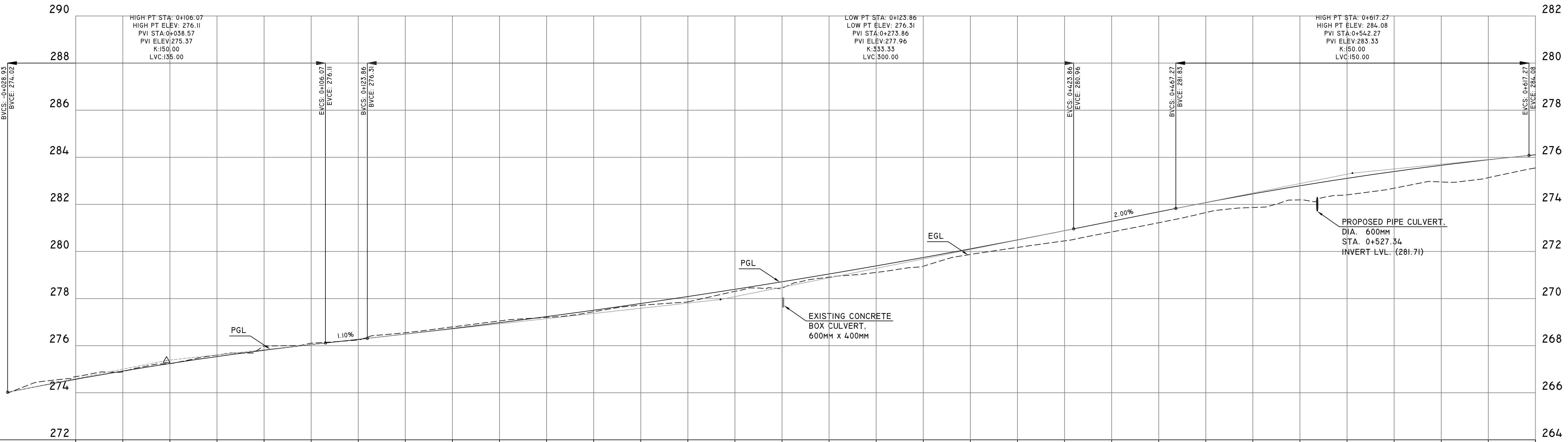
PC POINT OF CURVATURE
PT POINT OF TANGENCY
R RADIUS OF CURVE
L LENGTH

PROFILE ELEMENTS & ABBREVIATIONS

----- PROJECT GRADE LEVEL

----- EXISTING GRADE LEVEL

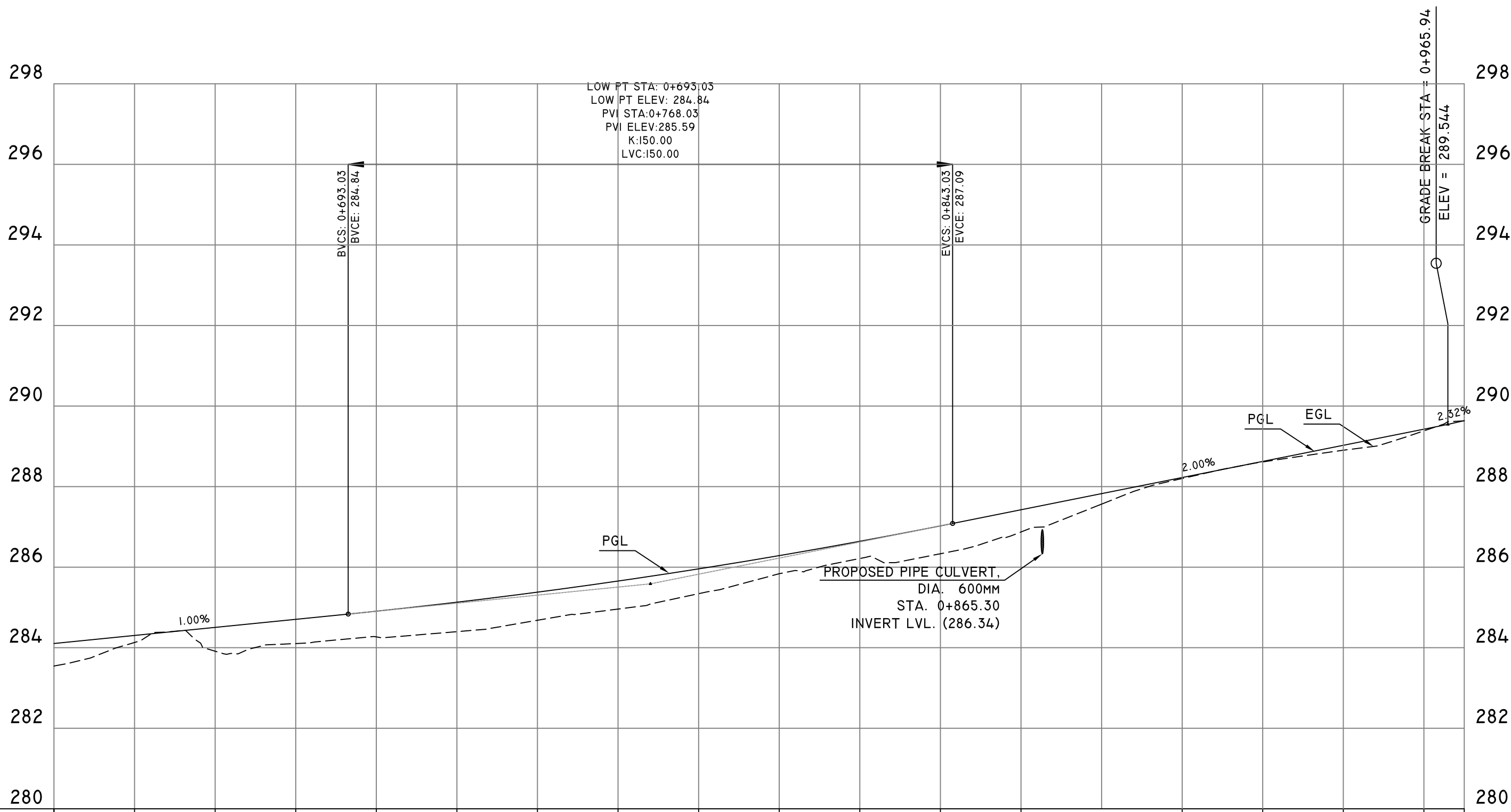
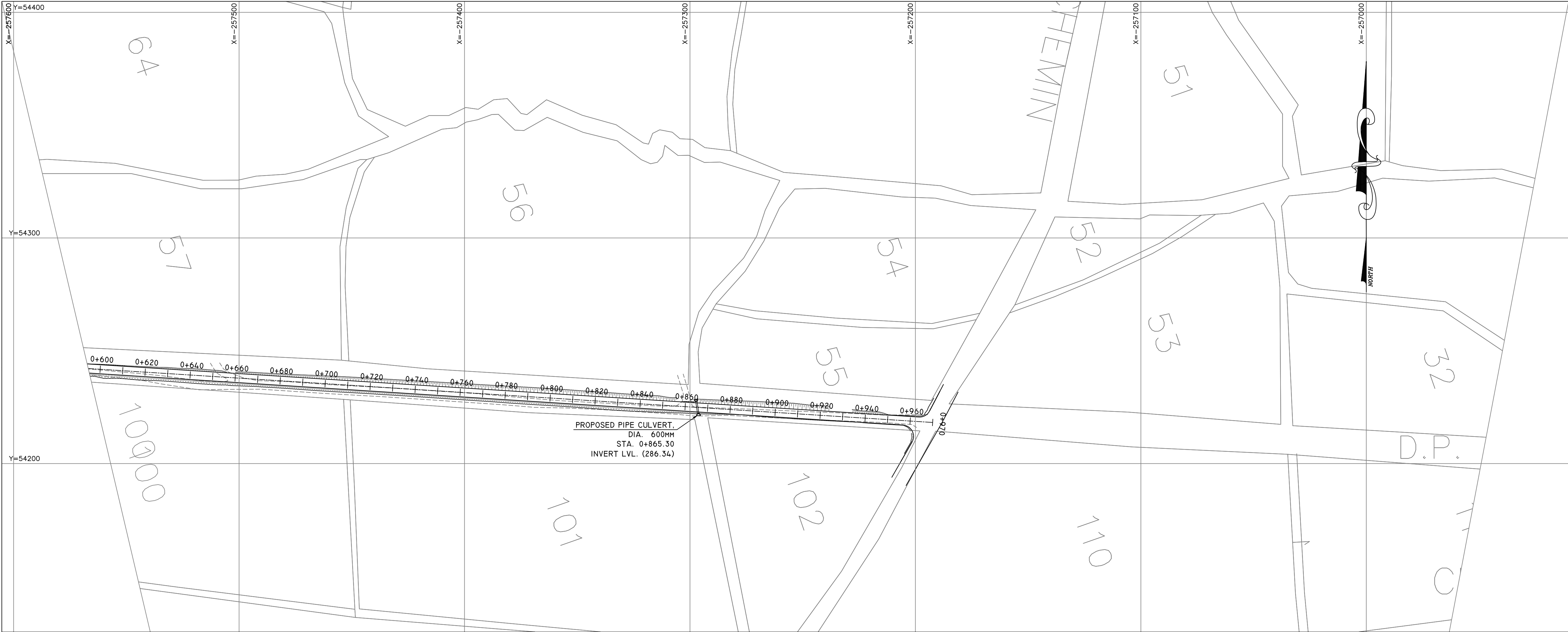
ST. LINE STRAIGHT LINE
A.D. ALGEBRAIC DIFFERENCE
ELEV ELEVATION
K COEFFICIENT OF CURVATURE
PVI POINT OF VERTICAL INTERSECTION
STA STATION
LVC LENGTH OF VERTICAL CURVE
BVCE BEGINNING OF VERTICAL CURVE ELEVATION
BVCS BEGINNING OF VERTICAL CURVE STATION
EVCE END OF VERTICAL CURVE STATION
EVCS END OF VERTICAL CURVE ELEVATION



ELEVATIONS	274.68 274.573 274.90 274.921 275.25 275.242 275.60 275.537 275.98 275.805 276.10 276.046 276.24 276.268 276.55 276.492 276.80 276.727 277.05 276.975 277.20 277.235 277.44 277.506 277.72 277.790 277.86 278.086 278.31 278.393 277.82 278.713 278.91 279.045 279.11 279.388 279.37 279.744 279.87 280.12 280.17 280.491 280.45 280.883 280.83 281.283 281.22 281.683 281.65 282.078 281.87 282.447 282.19 282.790 282.40 283.07 282.69 283.396 282.95 283.659 283.14 283.896 283.55 284.106
STATIONS	0+000 0+020 0+040 0+060 0+080 0+100 0+120 0+140 0+160 0+180 0+200 0+220 0+240 0+260 0+280 0+300 0+320 0+340 0+360 0+380 0+400 0+420 0+440 0+460 0+480 0+500 0+520 0+540 0+560 0+580 0+600 0+620
HORIZONTAL GEOMETRY	ST. LINE L=620.00
SUPERELEVATION	-2.00%

PLANS & PROFILES
MACHTA HAMMOUD, ROAD 01
STA. 0+000 TO STA. 0+620

1602A-TCR-PLP-201-R02
Project Nbr. Phase Disc. Sqr. Type Nbr. Revision



ELEVATIONS	283.55	284.106	284.13	284.306	283.91	284.506	284.10	284.706	284.27	284.907	284.40	285.130	284.68	285.379	284.96	285.655	285.34	285.958	285.84	286.287	286.21	286.643	286.33	287.026	286.87	287.425	287.57	287.825	288.20	288.225	288.61	288.625	288.90	289.025	289.38	289.425	289.63	289.638		
STATIONS	0+620		0+640		0+660		0+680		0+700		0+720		0+740		0+760		0+780		0+800		0+820		0+840		0+860		0+880		0+900		0+920		0+940		0+960		0+970			
HORIZONTAL GEOMETRY	ST. LINE L=350.00																																							
SUPERELEVATION	-----																																							
	-2.00%																																							



KEY PLAN



UNITED NATIONS DEVELOPMENT PROGRAMME
SOCIAL AND LOCAL DEVELOPMENT PROGRAMME
NORTH LEBANON
P.O.BOX: 11-3216, BEIRUT - LEBANON
TEL: +961 1 962491
WEB: WWW.UNDP.ORG

PROGRAMME:



LEBANESE HOST COMMUNITIES
SUPPORT PROGRAMME
SUPPORT TO INTEGRATED SERVICE
PROVISION AT THE LOCAL LEVEL

PROJECT NAME:

REHABILITATION OF AGRICULTURAL ROADS IN
MACHTA HAMMOUD, NORTH LEBANON

NOTES:

- ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE INDICATED.
- COORDINATES AND ELEVATIONS ARE TIED TO THE NATIONAL DATUM OF LEBANON.
- EXISTING GRADE LEVELS HAVE BEEN ADOPTED FROM SURVEYS CARRIED IN NOVEMBER 2016. THE DATA WAS CORRECT AT THE TIME IT WAS TAKEN.
- PROJECT LEVELS SHOWN ON PROFILES REPRESENT TOP LEVEL OF FINISHED ROAD SURFACE.
- FOR CONSTRUCTION DETAILS, REFER TO DWGS: 1602A-TCR-DET-401 THRU 405.

LEGEND:

EXISTING TOPOGRAPHIC ELEMENTS

----- EXISTING ROAD LIMITS

EXISTING BUILDING

PROPOSED
PLAN ELEMENTS & ABBREVIATIONS

----- ROAD ALIGNMENT

PC POINT OF CURVATURE
PT POINT OF TANGENCY
R RADIUS OF CURVE
L LENGTH



PROFILE ELEMENTS & ABBREVIATIONS

----- PROJECT GRADE LEVEL
----- EXISTING GRADE LEVEL

ST. LINE STRAIGHT LINE
A.D. ALGEBRAIC DIFFERENCE
ELEV ELEVATION
K COEFFICIENT OF CURVATURE
PVI POINT OF VERTICAL INTERSECTION
STA STATION
LVC LENGTH OF VERTICAL CURVE
BVCE BEGINNING OF VERTICAL CURVE ELEVATION
BVCS BEGINNING OF VERTICAL CURVE STATION
EVCE END OF VERTICAL CURVE ELEVATION
EVCS END OF VERTICAL CURVE STATION

3					
2	M.S.	22/03/2017	UPDATED SUBMITTAL	A.S.	
1	M.S.	05/03/2017	UPDATED SUBMITTAL	A.S.	

REV	BY	DATE	DESCRIPTION	APP.
-----	----	------	-------------	------

PROJECT NBR. I602A

PROJECT PHASE TENDER

DISCIPLINE CIVIL ENGINEERING

SECTOR ROADS

DESIGNED M.S.

DRAWN N.A.

CHECKED L.E.

APPROVED A.S.

DATE 01-FEB-2017

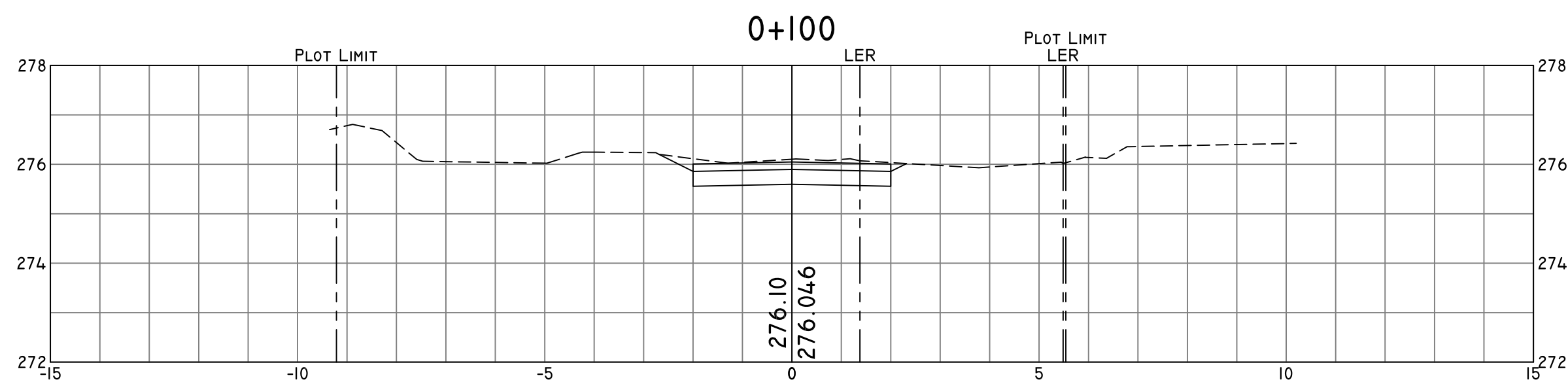
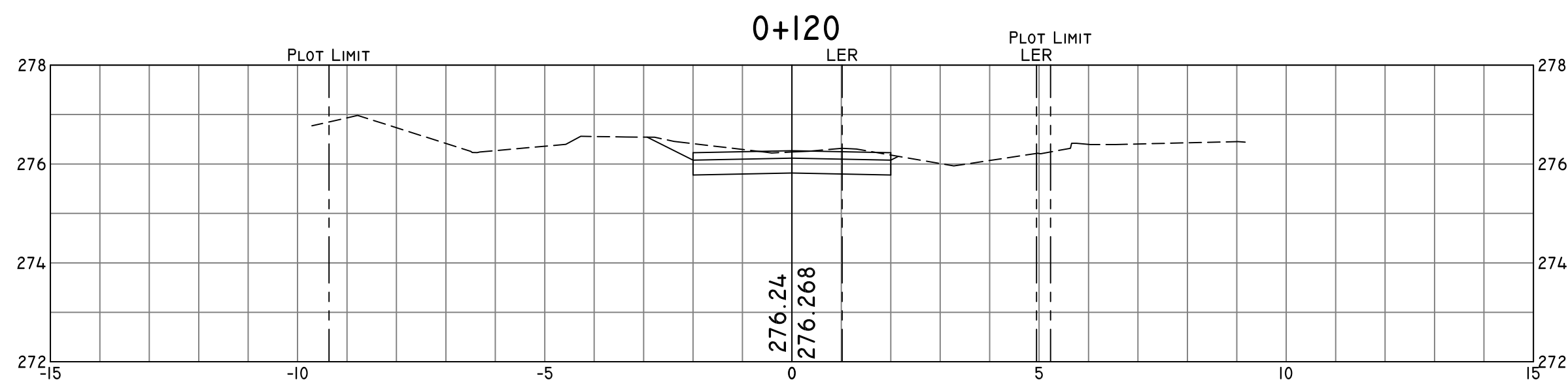
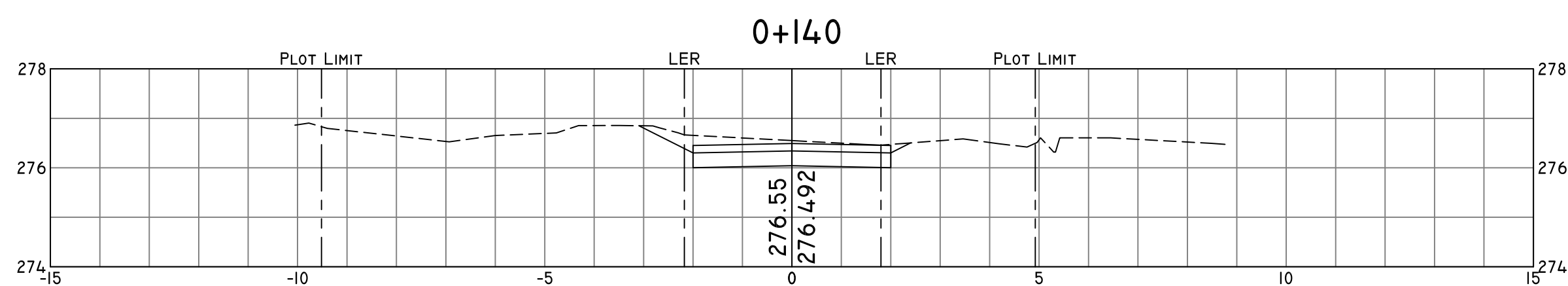
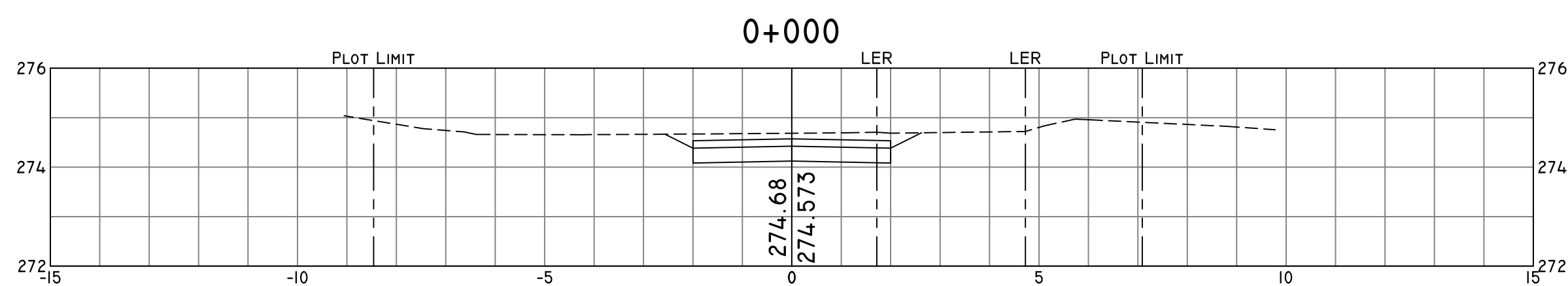
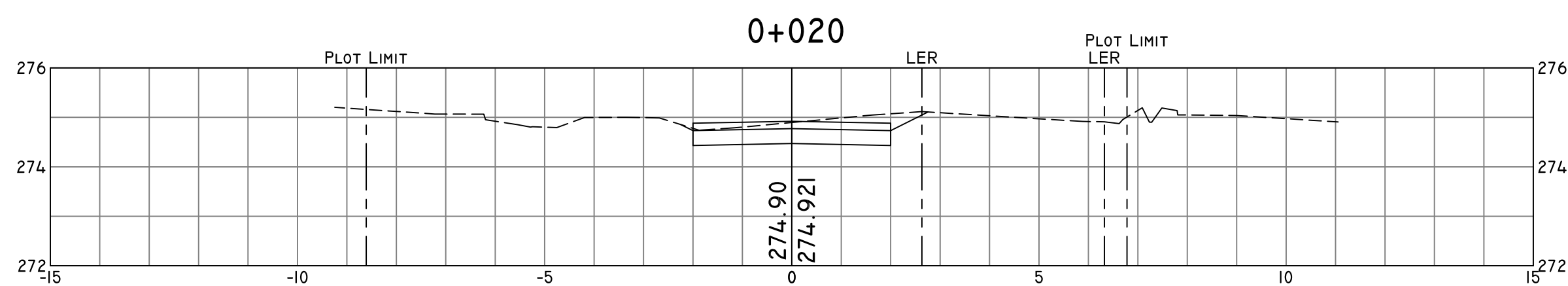
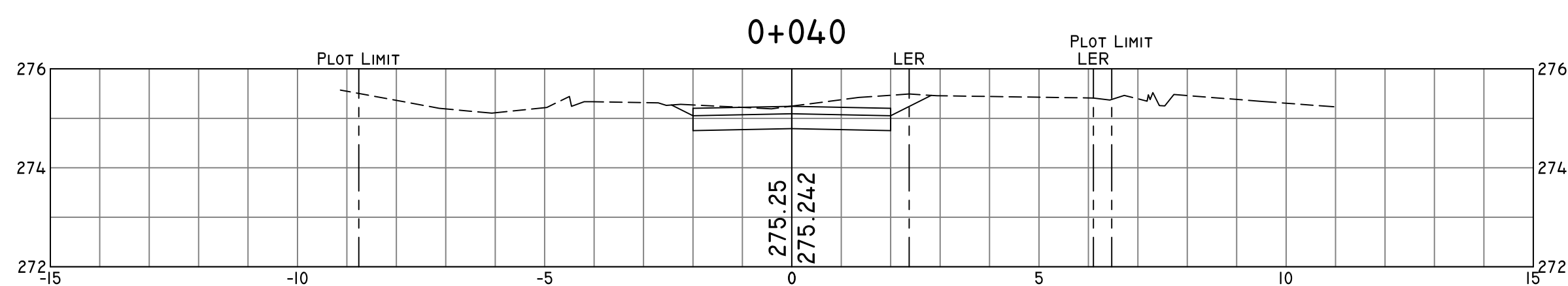
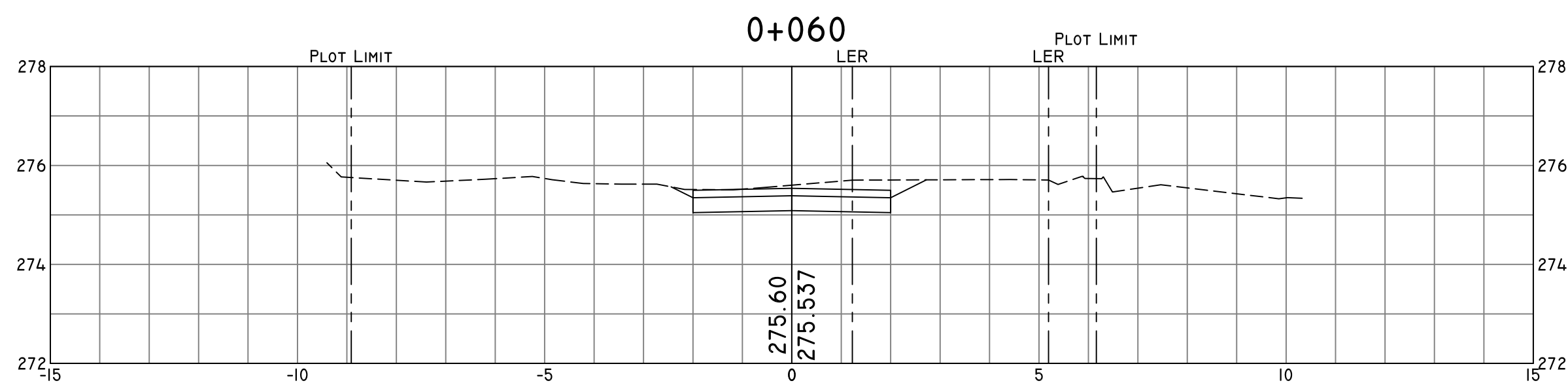
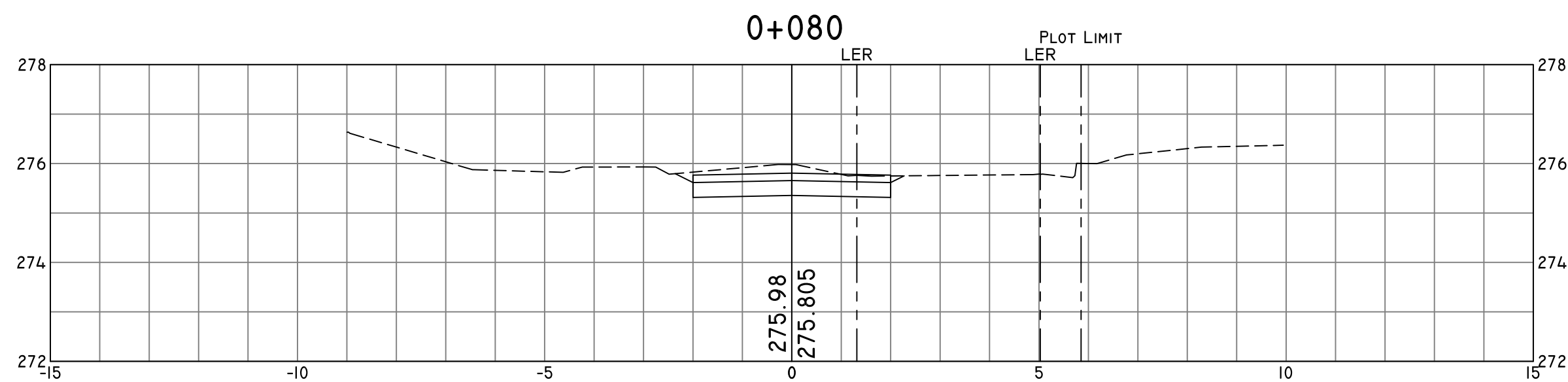
SCALE VERT: 1/100, HORZ: 1/1000

SHEET SIZE A1

DRAWING:

PLANS & PROFILES
MACHTA HAMMOUD, ROAD 01
STA. 0+620 TO STA. 0+970

I 6 0 2 A - T C R - P L P - 2 0 2 - R 0 2						
Project Nbr.	Phase	Disc.	Scfr.	Type	Nbr.	Revision



KEY PLAN



UNITED NATIONS DEVELOPMENT PROGRAMME
SOCIAL AND LOCAL DEVELOPMENT PROGRAMME
NORTH LEBANON

P.O.BOX: 11-3216, BEIRUT - LEBANON
TEL: +961 1 962491
WEB: WWW.UNDP.ORG

PROGRAMME:



LEBANESE HOST COMMUNITIES
SUPPORT PROGRAMME
SUPPORT TO INTEGRATED SERVICE
PROVISION AT THE LOCAL LEVEL

PROJECT NAME:

REHABILITATION OF AGRICULTURAL ROADS IN
MACHTA HAMMOUD, NORTH LEBANON

NOTES:

1. ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE INDICATED.
2. EXISTING GRADE LEVELS WERE ADOPTED FROM TOPOGRAPHICAL SURVEYS CARRIED IN DECEMBER 2016.
3. PROJECT LEVELS SHOWN ON SECTIONS REPRESENT TOP LEVEL OF FINISHED ROAD SURFACE.
4. CUT SLOPES RANGE BETWEEN (1 H, 1 V) TO (1 H, 3 V), AS PER SITE CONDITIONS. CONTRACTOR SHOULD VERIFY ON SITE AND GET ENGINEER'S APPROVAL PRIOR TO CONSTRUCTION.
5. FOR CONSTRUCTION DETAILS, REFER TO DWGS: 1602A-TCR-DET-401 THRU 405.
6. PASSING BAYS SHALL BE PROVIDED FOR, BY THE CONTRACTOR, WHERE POSSIBLE. GENERALLY, A BAY SHALL BE PROVIDED EVERY 300 METERS BUT AS TERRAIN CONDITIONS AREN'T USUALLY FAVORABLE, THE MOST ECONOMIC AND PRACTICAL LOCATION SHOULD BE CHOSEN SUCH AS WHERE EXISTING ROAD IS WIDE ENOUGH OR AT TRANSITIONS BETWEEN CUT AND FILL. THE BAY SHALL BE MINIMUM 15 METERS IN LENGTH, INCLUDING TAPERS.
7. THE CONTRACTOR SHALL PREPARE DETAILED SHOP DRAWINGS FOR ALL ROAD CONNECTIONS (EXISTING ACCESS TO ADJOINING PLOTS, ENTRANCES TO EXISTING HOUSES AND DRIVEWAYS), ANY EXISTING UTILITIES OR CULVERTS THAT WILL NEED RELOCATION AND CARRY OUT ALL REQUIRED WORKS TO PROVIDE PROPER SERVICEABILITY, ALL AS DIRECTED AND APPROVED BY THE ENGINEER.

LEGEND:

- EXISTING GRADE
- PROPOSED ROAD SECTION
- LER LIMIT OF EXISTING ROAD
- PLOT LIMIT CADASTRAL LIMIT OF EDGING PLOTS

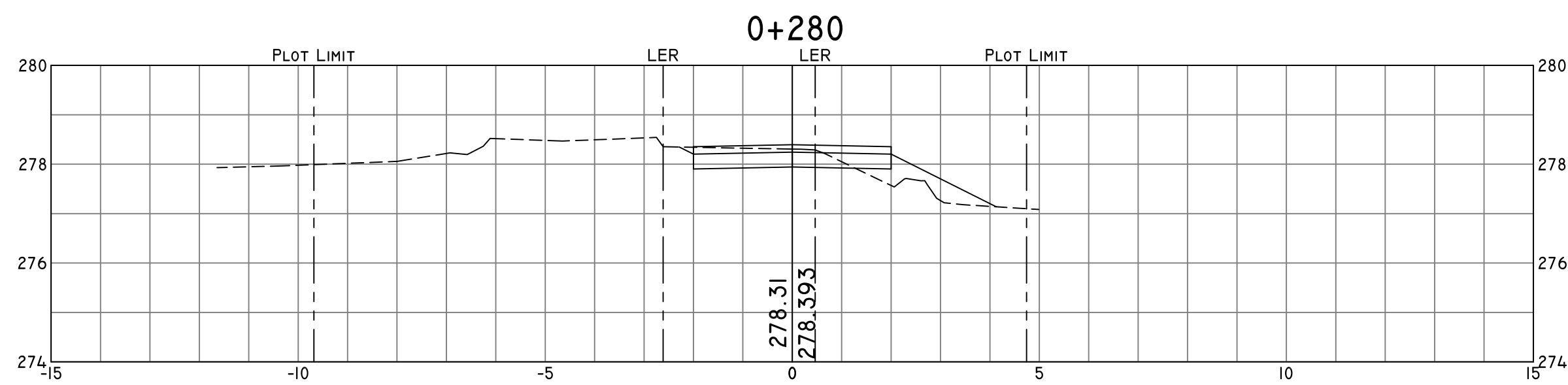
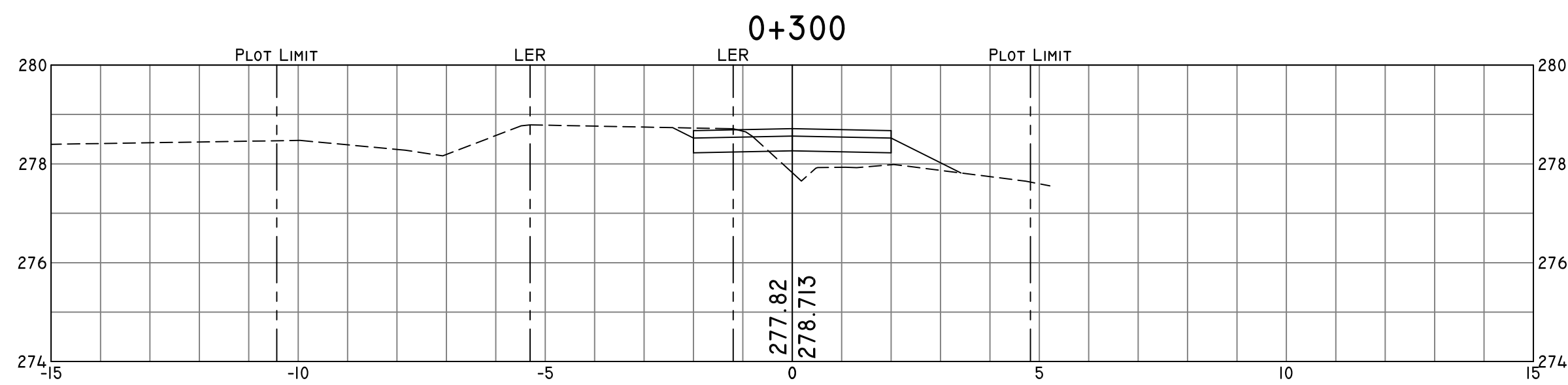
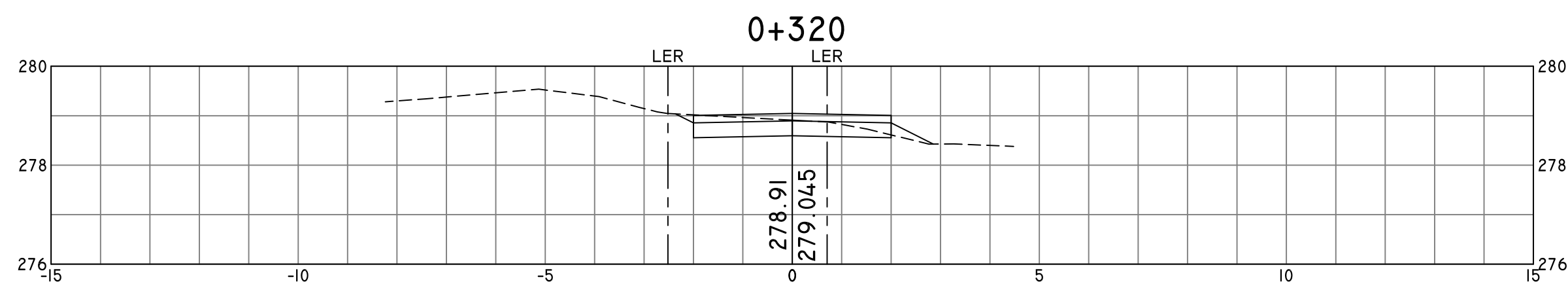
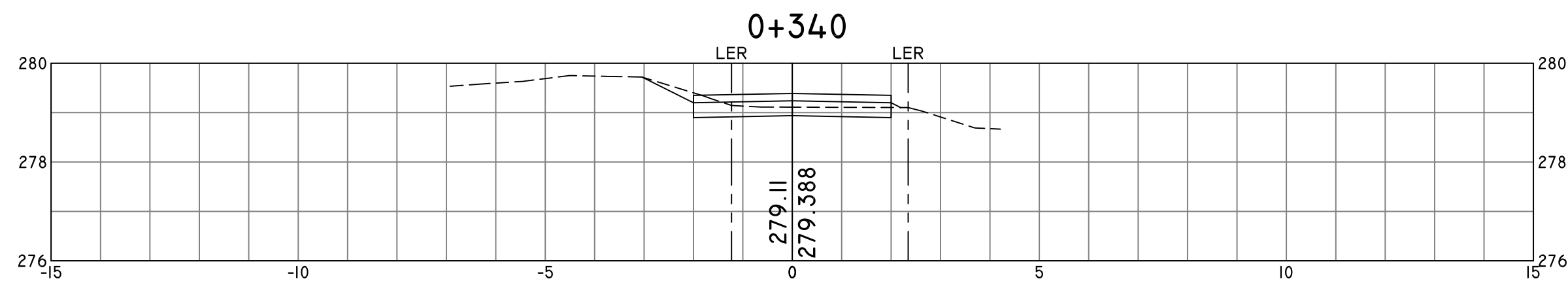
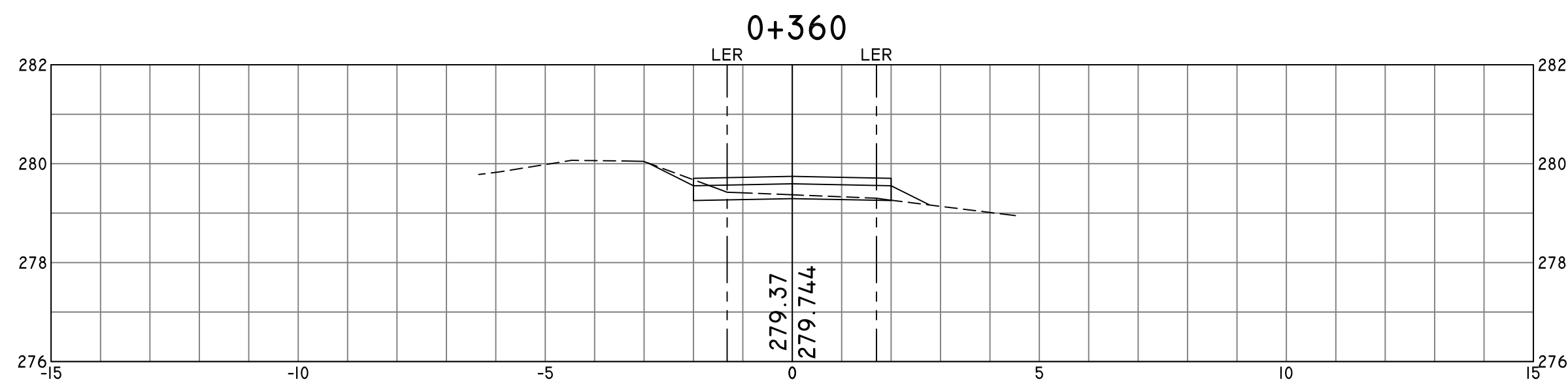
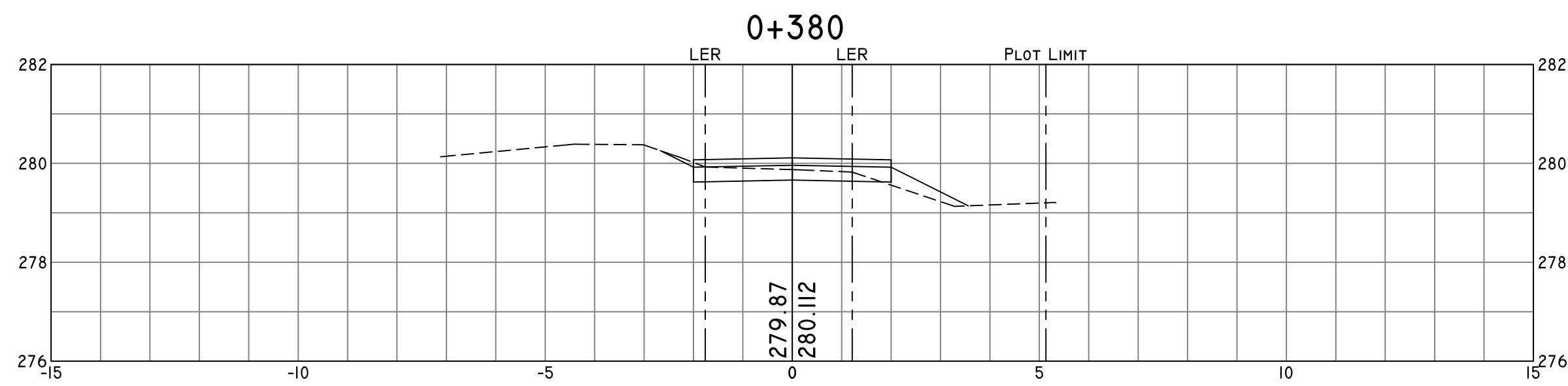
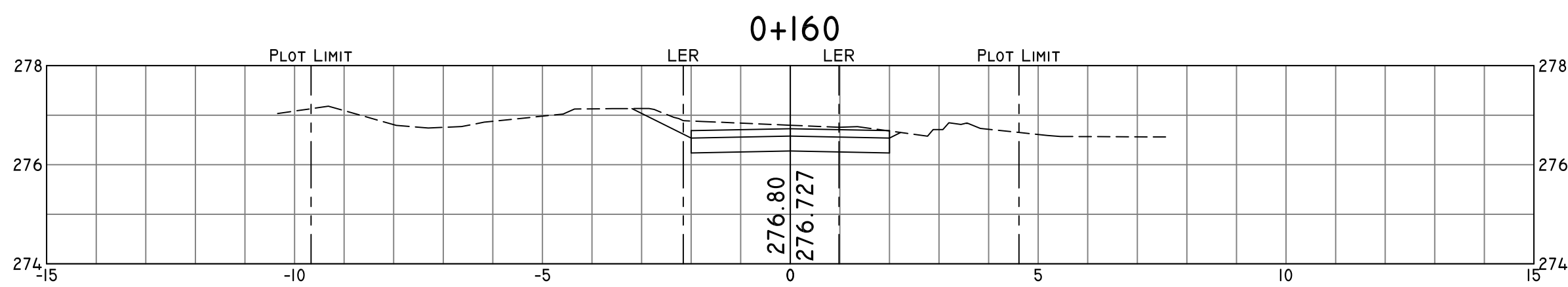
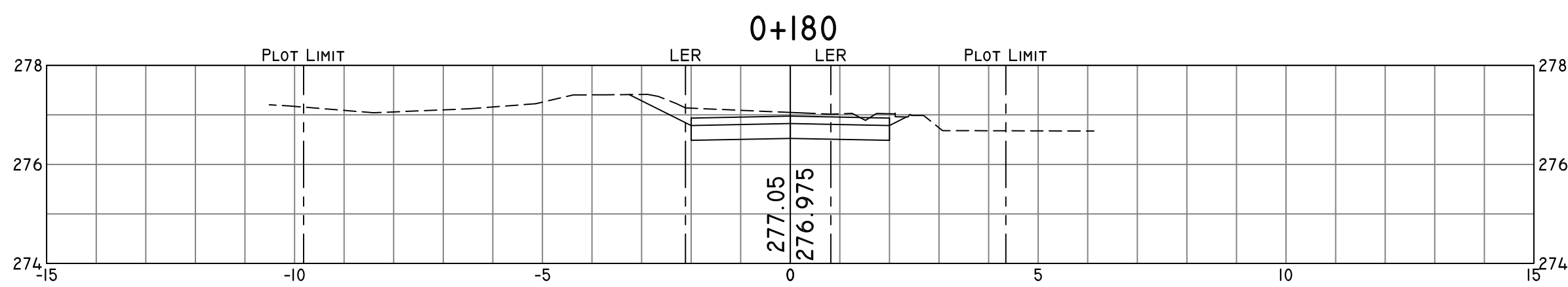
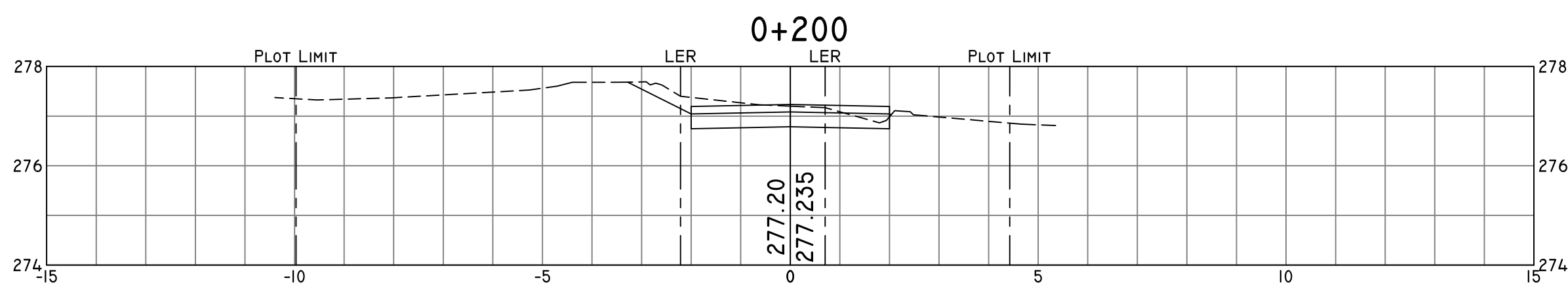
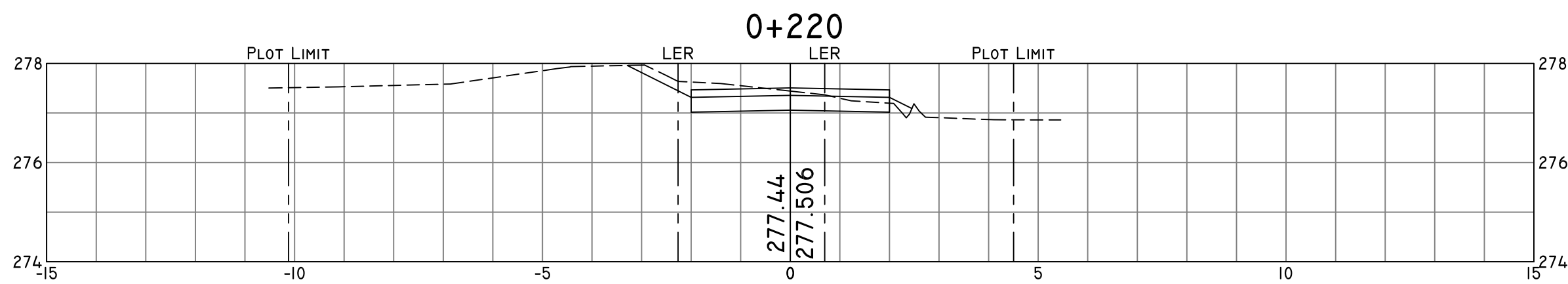
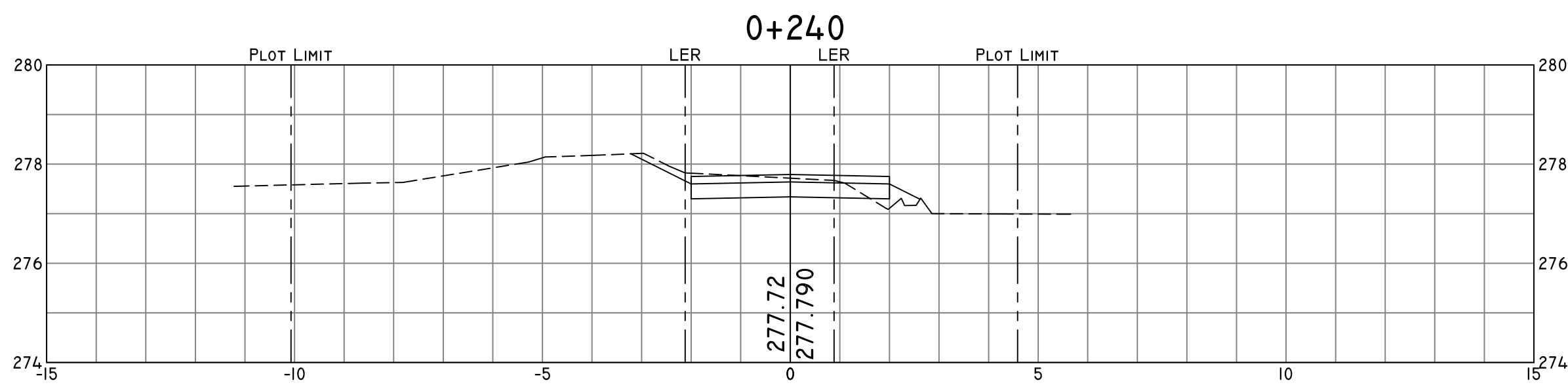
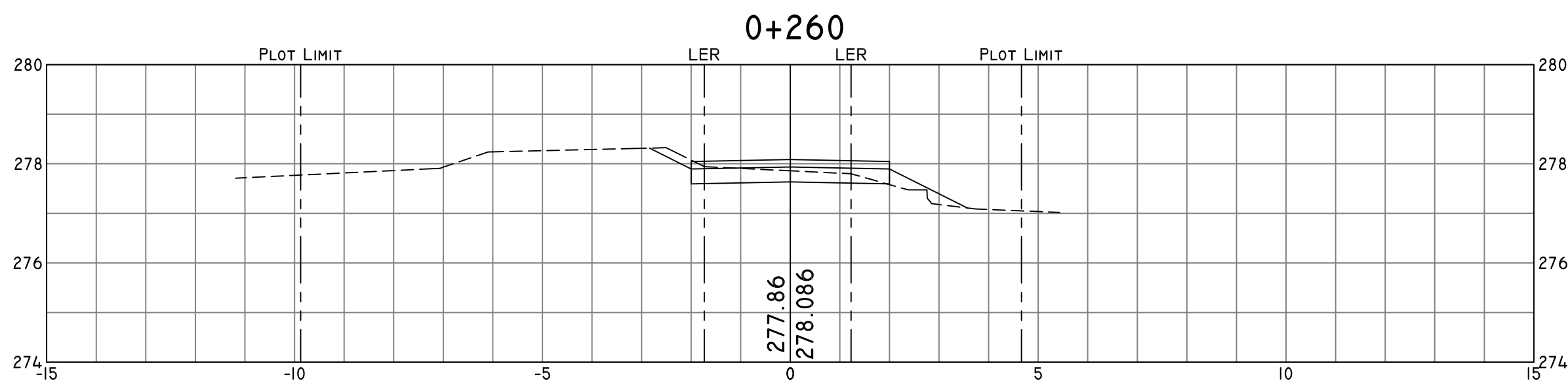
REV	BY	DATE	DESCRIPTION	APP.
3				
2	M.S.	22/03/2017	UPDATED SUBMITTAL	A.S.
1	M.S.	05/03/2017	UPDATED SUBMITTAL	A.S.

PROJECT NBR.	I602A
PROJECT PHASE	TENDER
DISCIPLINE	CIVIL ENGINEERING
SECTOR	ROADS
DESIGNED	M.S.
DRAWN	N.A.
CHECKED	L.E.
APPROVED	A.S.
DATE	01-FEB-2017
SCALE	1/100
SHEET SIZE	A1

DRAWING:

CROSS SECTIONS
MACHTA HAMMOUD, ROAD 01
STA. 0+000 TO STA. 0+140

I 6 0 2 A - T C R - X S C - 3 0 1 - R 0 2						
Project Nbr.	Phase	Disc.	Scr.	Type	Nbr.	Revision



KEY PLAN



UNITED NATIONS DEVELOPMENT PROGRAMME
SOCIAL AND LOCAL DEVELOPMENT PROGRAMME
NORTH LEBANON

P.O.BOX: 11-3216, BEIRUT - LEBANON
TEL: +961 1 962491
WEB: WWW.UNDP.ORG

PROGRAMME:



LEBANESE HOST COMMUNITIES
SUPPORT PROGRAMME
SUPPORT TO INTEGRATED SERVICE
PROVISION AT THE LOCAL LEVEL

PROJECT NAME:

REHABILITATION OF AGRICULTURAL ROADS IN
MACHTA HAMMOUD, NORTH LEBANON

NOTES:

- ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE INDICATED.
- EXISTING GRADE LEVELS WERE ADOPTED FROM TOPOGRAPHICAL SURVEYS CARRIED IN DECEMBER 2016.
- PROJECT LEVELS SHOWN ON SECTIONS REPRESENT TOP LEVEL OF FINISHED ROAD SURFACE.
- CUT SLOPES RANGE BETWEEN (1 H, 1 V) TO (1 H, 3 V), AS PER SITE CONDITIONS. CONTRACTOR SHOULD VERIFY ON SITE AND GET ENGINEER'S APPROVAL PRIOR TO CONSTRUCTION.
- FOR CONSTRUCTION DETAILS, REFER TO DWGS: 1602A-TCR-DET-401 THRU 405.
- PASSING BAYS SHALL BE PROVIDED FOR, BY THE CONTRACTOR, WHERE POSSIBLE. GENERALLY, A BAY SHALL BE PROVIDED EVERY 300 METERS BUT AS TERRAIN CONDITIONS AREN'T USUALLY FAVORABLE, THE MOST ECONOMIC AND PRACTICAL LOCATION SHOULD BE CHOSEN SUCH AS WHERE EXISTING ROAD IS WIDE ENOUGH OR AT TRANSITIONS BETWEEN CUT AND FILL. THE BAY SHALL BE MINIMUM 15 METERS IN LENGTH, INCLUDING TAPERS.
- THE CONTRACTOR SHALL PREPARE DETAILED SHOP DRAWINGS FOR ALL ROAD CONNECTIONS (EXISTING ACCESS TO ADJOINING PLOTS, ENTRANCES TO EXISTING HOUSES AND DRIVEWAYS), ANY EXISTING UTILITIES OR CULVERTS THAT WILL NEED RELOCATION AND CARRY OUT ALL REQUIRED WORKS TO PROVIDE PROPER SERVICEABILITY, ALL AS DIRECTED AND APPROVED BY THE ENGINEER.

LEGEND:

- EXISTING GRADE
- PROPOSED ROAD SECTION
- LER LIMIT OF EXISTING ROAD
- PLOT LIMIT CADASTRAL LIMIT OF EDGING PLOTS

REV	BY	DATE	DESCRIPTION	APP.
3				
2	M.S.	22/03/2017	UPDATED SUBMITTAL	A.S.
1	M.S.	05/03/2017	UPDATED SUBMITTAL	A.S.

PROJECT NBR.	I602A
PROJECT PHASE	TENDER
DISCIPLINE	CIVIL ENGINEERING
SECTOR	ROADS
DESIGNED	M.S.
DRAWN	N.A.
CHECKED	L.E.
APPROVED	A.S.
DATE	01-FEB-2017
SCALE	1/100
SHEET SIZE	A1

DRAWING:

CROSS SECTIONS
MACHTA HAMMOUD, ROAD 01
STA. 0+160 TO STA. 0+380

Project Nbr.	Phase	Disc.	Size	Type	Nbr.	Revision
I 6 0 2 A - T C R - X S C - 3 0 2 - R 0 2						