ISLAMIC REPUBLIC OF AFGHANISTAN
AFGHANISTAN ENGINEERING SUPPORT PROGRAM (AESP)

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9

KHOST, AFGHANISTAN
DATE: NOVEMBER 08, 2013

NOT FOR CONSTRUCTION

30% DESIGN

SYMB	SUBMITTAL/REVISION DESCRIPTION	DATE	APR
A	30% DESIGN SUBMITTAL	11/08/13	APL

DESIGNED BY: SCJ
DATE: 11-08-2013
DRAWN BY: SCJ
SUBMITTED BY: TETRA TECH
CHECKED BY: PDC
CAD FILE NAME: LT0077-G-001

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GARDEZ TO KHOST ROAD CONSTRUCTION OF BRIDGE NO. 9

COVER SHEET

SHEET REFERENCE NUMBER:
LT0077
G-001

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BRIDGE CONSTRUCTION PROJECT
KHOST, AFGHANISTAN

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SHEET REFERENCE NUMBER	ISSUE STATUS	DATE OF ISSUE	DRAWING TITLE

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30% DESIGN

SYMB	SUBMITTAL/REVISION	DESCRIPTION	DATE	APR
A	30% DESIGN	SUBMITTAL	11/08/13	APL

DESIGNED BY: SCJ
DATE: 11-08-2013
DRAWN BY: SCJ
SUBMITTED BY: TETRA TECH
CHECKED BY: PDC
CAD FILE NAME: LT0077-G-002

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GARDEZ TO KHOST ROAD CONSTRUCTION OF BRIDGE NO. 9

INDEX OF DRAWINGS

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SHEET REFERENCE NUMBER: LT0077 G-002

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GENERAL NOTES:

1. PROPOSED BRIDGE DESIGN HAS BEEN DESIGNED IN ACCORDANCE WITH 2012 SPECIFICATIONS OF AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS WITH CURRENT INTERIM SPECIFICATIONS (AASHTO).
2. FIELD SURVEY, GEOTECHNICAL INVESTIGATION AND FULL HYDRAULIC ANALYSIS HAVE NOT BEEN PERFORMED. 30% DESIGN IS BASED ON ASSUMED VALUES TO BE VERIFIED IN THE NEXT DESIGN PHASE.
3. ALL DIMENSIONS AND CONDITIONS MUST BE VERIFIED BY CONTRACTOR IN THE FIELD AND ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF USAID BEFORE PROCEEDING WITH THE AFFECTED PORTION OF THE WORK.
4. RESULTS OF THE PRELIMINARY HYDRAULIC ANALYSIS PROVIDED BY USAID. DATA PROVIDED IS AS FOLLOWS:

WATERSHED AREA:	237.87 km^2
DESIGN FREQUENCY:	50 YEAR STORM
DESIGN DISCHARGE:	534.7 m^3/s
DESIGN VELOCITY:	3.13 M/S
DESIGN WATER ELEVATION:	1858.95m
FLOOD DATA:	UNKNOWN
SCOUR DEPTH AT ABUTMENTS:	2.21 m
SCOUR DEPTH AT PIERS:	3.45 m

5. CONTRACTOR SHALL INFORM USAID OF ALL DISCREPANCIES BETWEEN DRAWINGS PRIOR TO INITIATION OF ANY WORK.
6. CONTRACTOR SHALL IMMEDIATELY NOTIFY USAID WHEN, IN THE COURSE OF CONSTRUCTION, CONDITIONS ARE UNCOVERED WHICH ARE UNANTICIPATED OR OTHERWISE APPEAR TO PRESENT A DANGEROUS CONDITION.

DESIGN LOADS:

ALL LOADS IN ACCORDANCE WITH AASHTO 2012.

1. DEAD LOADS: SELF WEIGHT
2. LIVE LOADS: HL-93
3. LONGITUDINAL FORCE: 5% OF LIVE LOAD
4. SEISMIC DESIGN:
   Ss = 0.67g
   Si = 0.26g
   SPC = B
   PGA = 0.29g (20% EXCEEDANCE WITHIN 50 YEARS)

FOUNDATION NOTES:

1. THE FOLLOWING GEOTECHNICAL PARAMETERS WERE ASSUMED AND USED FOR THIS PRELIMINARY DESIGN OF THE PROPOSED PIERS AND ABUTMENTS:

   UNIT WEIGHT OF SOIL = 18.1 kN/m^3 [115 PCF]
   ALLOWABLE AVERAGE BEARING CAPACITY FOR PIER FOUNDATIONS
   = 4.07 kg/cm^2 [8350 PSF]
   ALLOWABLE AVERAGE BEARING CAPACITY FOR ABUTMENT FOUNDATIONS
   = 4.07 kg/cm^2 [8350 PSF]
   FRICTION ANGLE = 30°
   COEFF. OF FRICTION FOR SLIDING = 0.50
   Ko = 0.5
   Ka = 0.409
   Kp = 2.44

2. CONTRACTOR SHALL VERIFY ACTUAL SUBSURFACE CONDITIONS MEET THE ASSUMED GEOTECHNICAL DESIGN PARAMETERS.
3. FOOTING SUBGRADE PREPARATION SHALL BE PERFORMED IN THE DRY. CONTROL OF WATER AND DEWATERING WILL BE REQUIRED FOR THE SUBSTRUCTURE CONSTRUCTION. CONTRACTOR SHALL SUBMIT A DEWATERING PLAN TO USAID FOR REVIEW.
4. ALL UNSUITABLE MATERIAL SHALL BE REMOVED WITHIN THE LIMIT OF THE FOUNDATIONS AS DIRECTED BY USAID.

ABBREVIATIONS:

ADD'L	ADDITIONAL	MFR.	MANUFACTURER
ALT.	ALTERNATE	MAX	MAXIMUM
℄	BASELINE	MIN.	MINIMUM
BOT	BOTTOM	NO.	NUMBER
B.O.	BOTTOM OF	O.C.	ON CENTER
CLR	CLEAR	U.N.O.	UNLESS NOTED OTHERWISE
CONT	CONTINUOUS	OPN'G	OPENING
COORD	COORDIANTE	PL	PLATE
CTR.	CENTER	PROP.	PROPOSED
DIA.	DIAMETER	PSF	POUNDS PER SQUARE FOOT
DWG	DRAWING	RCBC	REINFORCED CONCRETE BOX CULVERT
E.F.	EACH FACE	REINF	REINFORCING
EL.	ELEVATION	SIM	SIMILAR
EQ	EQUAL	SQ	SQUARE
E.W.	EACH WAY	STD	STANDARD
EXIST	EXISTING	STRUCT	STRUCTURAL
FDN	FOUNDATION	T&B	TOP AND BOTTOM
FIN. GR.	FINISHED GRADE	T.O.	TOP OF
FTG	FOOTING	TYP.	TYPICAL
INFO	INFORMATION	U.N.O.	UNLESS NOTED OTHERWISE
JT	JOINT	VERT.	VERTICAL
℄	CENTERLINE	VIF	VERIFY IN FIELD

SPLICE NOTES:

1. THE SPLICE LENGTHS IN THE TABLE BELOW ARE BASED ON NORMAL WEIGHT CONCRETE, UNCOATED BARS, CLEAR SPACING NOT LESS THAN FOUR BAR DIAMETERS, AND CLEAR COVER NOT LESS THAN 40mm.
2. WHERE SPACING BETWEEN BARS IS LESS THAN FOUR BAR DIAMETERS, OR CLEAR COVER IS LESS THAN TWO BAR DIAMETERS, INCREASE SPLICE LENGTHS SHOWN BY 50%.
3. HORIZONTAL BARS WITH MORE THAN 300mm OF CONCRETE CAST BELOW THE BARS AS DEFINED BY A.C.I. 318. WHERE HORIZONTAL WALL REINFORCEMENT IS UNIFORMLY SPACED IN A VERTICAL PLANE AT 300mm MAXIMUM SPACING, LENGTHS MAY BE AS FOR 'OTHER BARS'.
4. FOR EPOXY COATED BARS, MULTIPLY THE VALUES IN THE TABLE BELOW BY 1.5.

MINIMUM RE-BAR SPLICE LENGTHS mm
fy = 4218kg/cm^2 f'c = 27.5MPa

BAR SIZE ø mm	TOP BARS	OTHER BARS
12	815	635
16	1016	788
20	1590	1220
22	1755	1350
25	2037	1567

CAST IN PLACE CONCRETE:

1. CONCRETE WORK SHALL CONFORM TO:
   ACI 301-10 - SPECIFICATIONS FOR STRUCTURAL CONCRETE.
   ACI 318-11 - BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY.
2. CONCRETE SHALL HAVE A MINIMUM CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS, F'C = 27.5 MPa (4000 PSI). THE MAXIMUM WATER-CEMENT RATIO OF 0.45 (BY WEIGHT).
3. CONCRETE SHALL BE CONTROLLED NORMAL WEIGHT CONCRETE, PROPORTIONED, MIXED AND PLACED UNDER THE SUPERVISION OF AN APPROVED QUALITY CONTROL ENGINEER.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING:
   (A) CONCRETE PLACED AGAINST THE EARTH 75mm
   (B) SIDES OF FOOTINGS, WALLS, PIERS
   18 ø BAR AND LARGER 50mm
   16 ø BAR AND SMALLER 40mm
5. CHAMFER EXPOSED EDGES 25mm U.N.O.
6. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615/A615M, GRADE 413 [60]. SEE SPLICE TABLE FOR LAP LENGTHS. MINIMUM YIELD STRENGTH FY = 4218 kg/cm^2 [60,000 PSI].
7. DO NOT WELD OR BEND REINFORCEMENT IN FIELD UNLESS SPECIFICALLY SHOWN OR APPROVED BY ENGINEER.
8. REINFORCING BARS EXTEND 12 BAR DIAMETERS BUT NOT LESS THAN 300mm BEYOND BEND U.N.O.
9. NO BARS SHALL BE CUT OR OMITTED IN THE FIELD BECAUSE OF SLEEVES, DUCT OPENINGS OR RECESSES. BARS MAY BE MOVED ASIDE WITHOUT CHANGE IN LEVEL WITH THE APPROVAL OF THE QUALITY CONTROL ENGINEER.
10. REINFORCEMENT STEEL SHALL BE CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS. ALL CONSTRUCTION JOINTS SHALL BE KEYED U.N.O.
11. WHERE VERTICAL CONSTRUCTION JOINTS ARE NOT SHOWN, OR WHEN ALTERNATE LOCATIONS ARE PROPOSED, DRAWINGS SHOWING LOCATION OF CONSTRUCTION JOINTS AND CONCRETE PLACING SEQUENCE SHALL BE SUBMITTED TO USAID FOR APPROVAL PRIOR TO PREPARATION OF THE REINFORCEMENT SHOP DRAWINGS. CONCRETE SHALL BE PLACED WITHOUT HORIZONTAL CONSTRUCTION JOINTS U.N.O.
12. ALL KEYS SHALL BE 50mm BY 100mm NOMINAL U.N.O.
13. DETAILING, FABRICATION, AND ERECTION OF REINFORCEMENT SHALL CONFORM TO ACI 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, ACI 315 DETAILS AND DETAILING OF CONCRETE REINFORCEMENT, AND CRSI MANUAL OF STANDARD PRACTICE.
14. CONTRACTOR SHALL COORDINATE LOCATIONS OF SLEEVES, INSERTS, ETC. WITH CONCRETE CONSTRUCTION. NO PIPES SHALL PASS THROUGH CONCRETE WITHOUT THE PERMISSION OF USAID. CONDUIT AND OTHER EMBEDDED ITEMS SHALL BE CLEAN AND FREE OF OIL AND OTHER FOREIGN MATTER SUCH AS LOOSE COATINGS OR RUST, PAINT AND SCALE.
15. PROVIDE ALL NECESSARY CHAIRS, CHAIR BARS, SPACERS, ETC., WIRED SECURELY TO HOLD REINFORCEMENT IN POSITION. THESE ACCESSORIES SHALL BE PLASTIC BOOTED WHERE CONCRETE IS TO BE EXPOSED TO WEATHER OR MOISTURE. WIRE TIES SHALL BE 16 GAUGE (1.5mm) OR HEAVIER BLACK ANNEALED STEEL WIRE.
16. REINFORCEMENT SHALL BE STORED OFF THE GROUND ON PLATFORMS, SKIDS OR OTHER SUPPORTS.
17. ALL EXPOSED SUPERSTRUCTURE CONCRETE SURFACES SHALL BE SEALED IN ACCORDANCE WITH THE SPECIFICATIONS.

30% DESIGN

SYMB	SUBMITTAL/REVISION DESCRIPTION	DATE	APL
A	30% DESIGN SUBMITTAL	11/08/13	APL

DESIGNED BY: ALH
DATE: 11-08-2013
DRAWN BY: SCJ
SUBMITTED BY: TETRA TECH
CHECKED BY: SAM
CAD FILE NAME: LT0077-G-003

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GARDEZ TO KHOST ROAD CONSTRUCTION OF BRIDGE NO. 9

GENERAL NOTES AND ABBREVIATIONS

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SHEET REFERENCE NUMBER: LT0077 G-003

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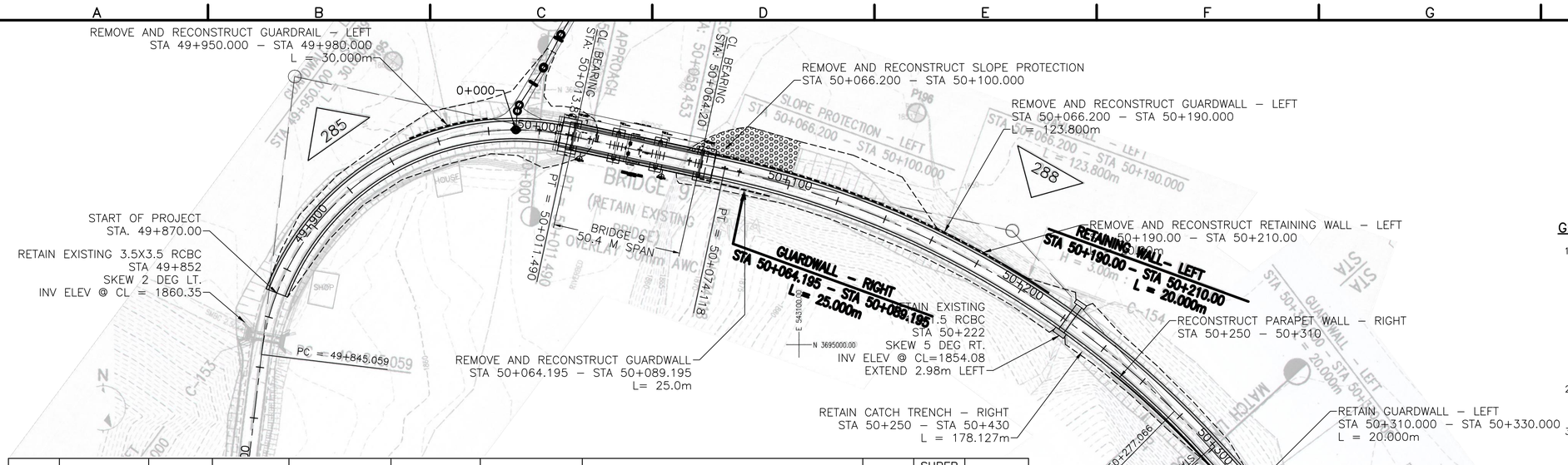
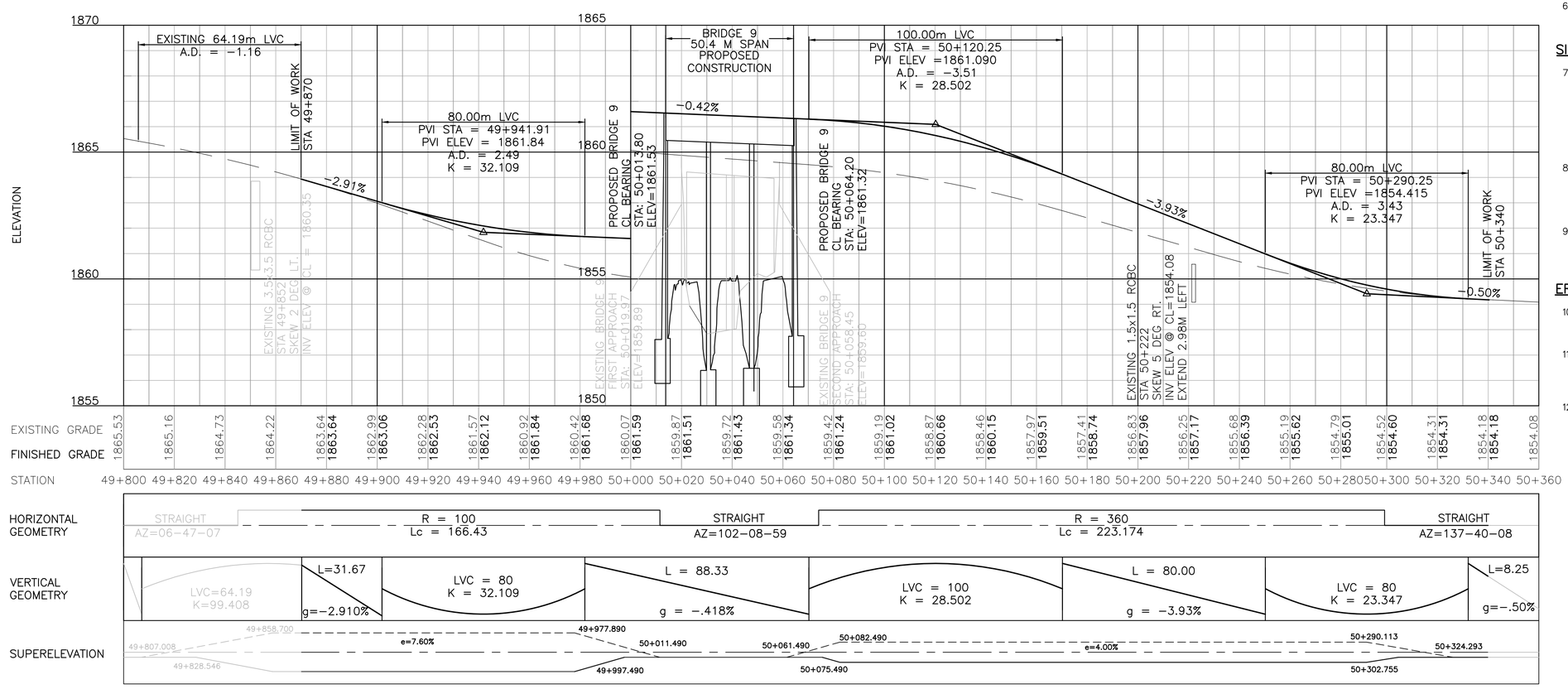


PI NO.	PI STA.	DISTANCE	AZIMUTH DD–MM–SS	NORTHING	EASTING	DEFLECTION	CURVE ELEMENTS T	R	LC	E	V (KPH)	SUPER E (%)	WIDENING (M)
		228.215	06–47–07										
285	49+727.532			3 695 105.232	542 902.265	95–21–29 RT	109.8180	100	166.4310	48.5260	50	7.6000	–
		287.749	102–08–59										
288	50+189.422			3 695 044.671	543 183.568	35–31–09 RT	115.3040	360	223.1740	18.0140	50	4	–
		230.995	137–40–08										



GENERAL NOTES:

1. TOPOGRAPHIC SURVEY SHOWN ON THE DESIGN DRAWINGS IS COMPILED FROM DATA PROVIDED BY THE AFGHANISTAN INFRASTRUCTURE AND REHABILITATION PROGRAM (AIRP) BY LBG/B&V JOINT VENTURE DATED JUNE 2010 . EXISTING CONDITIONS MAY VARY FROM THOSE SHOWN IN THE PLANS. SURVEY WILL PERFORMED IN THE NEXT DESIGN PHASE. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND ADJUST WORK PLAN AND CONSTRUCTION ACCORDINGLY. COORDINATE ALL ADJUSTMENTS WITH ENGINEER OF RECORD PRIOR TO CONSTRUCTIONS.
2. IN CASE OF CONFLICT IN THE CONSTRUCTION DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD.
3. SLOPES, INVERT ELEVATIONS AND CULVERT LOCATIONS ARE SUBJECT FOR VERIFICATION ON SITE. ADJUSTMENTS, UPON APPROVAL OF THE ENGINEER, SHALL BE MADE WHERE APPROPRIATE TO SUIT ACTUAL SITE CONDITIONS.
4. CONTRACTOR SHALL SUBMIT DETAILED SHOP DRAWINGS SHOWING QUANTITIES FOR EACH ITEM OF WORKS PRIOR TO CONSTRUCTION WORKS, WHICH INCLUDES PROPOSED SLOPE PROTECTION WORKS FOR THE ENGINEER'S REVIEW AND APPROVAL.
5. RECOMMENDED CONSTRUCTION WORKS MAY VARY AS DIRECTED BY THE ENGINEER BASED ON ACTUAL SITE CONDITIONS.
6. CLEAN AND DESILT CULVERT OPENINGS INCLUDING REMOVAL OF VEGETATION.

SITE PREPARATION NOTES:

7. ALL UTILITIES/OBSTRUCTIONS/SYSTEMS MAY NOT BE SHOWN. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL UTILITIES/OBSTRUCTIONS/SYSTEMS WHETHER SHOWN OR NOT SHOWN. DIG PERMITS, IF NECESSARY, SHALL BE COORDINATED WITH THE APPROPRIATE AUTHORITIES.
8. CONTRACTOR SHALL ENSURE THAT ALL EXISTING CONCRETE AND ASPHALT PAVING AND SLABS HAVE BEEN SAWCUT AND REMOVED ALONG WITH ASSOCIATED AGGREGATE BASE TO THE LIMITS AS SHOWN ON THE DRAWINGS.
9. CONSTRUCTION DEBRIS, INCLUDING BROKEN PAVEMENT, SHALL BE TRANSPORTED TO OFFSITE DISPOSAL AREA IN COORDINATION WITH THE APPROPRIATE AUTHORITIES.

EROSION CONTROL NOTES:

10. CONTRACTOR SHALL PROTECT ALL STOCKPILES FROM EROSION AND RUNOFF DURING CONSTRUCTION.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVABLE OF ANY SEDIMENT OR DEBRIS FROM MAIN ROADWAYS AS RESULT OF CONSTRUCTION ACTIVITIES.
12. CONTRACTOR SHALL PROVIDE SILT FENCE, AS NECESSARY TO PREVENT EROSION FROM THE PROJECT SITE AREA DUE TO CONSTRUCTION ACTIVITIES. THE SILT FENCE SHALL BE INSPECTED PRIOR TO AND AFTER SIGNIFICANT STORM EVENTS.

HORIZONTAL SCALE 1:1000
0 20 40 60 100m
0 2 4 6 10m
VERTICAL SCALE 1:100

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30% DESIGN

SYMB	SUBMITTAL/REVISION DESCRIPTION	DATE	APR
A	30% DESIGN SUBMITTAL	11/08/13	APL

DESIGNED BY: RLT
DRAWN BY: RLT
CHECKED BY: JKM
DATE: 11-08-2013
SUBMITTED BY: TETRA TECH
CAD FILE NAME: LT0077-C-101

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GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9

PLAN AND PROFILE
STA 49+800 TO STA 50+360

SHEET REFERENCE NUMBER:
LT0077 C–101

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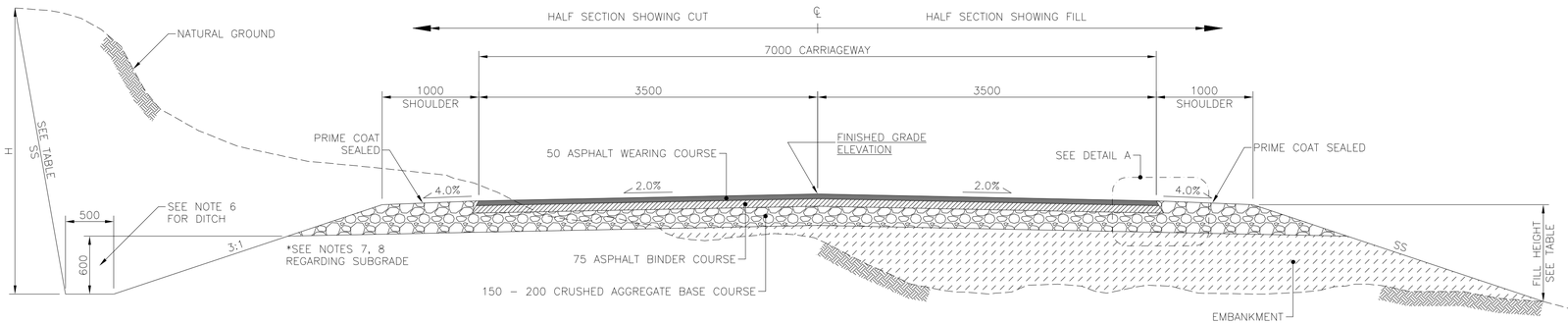
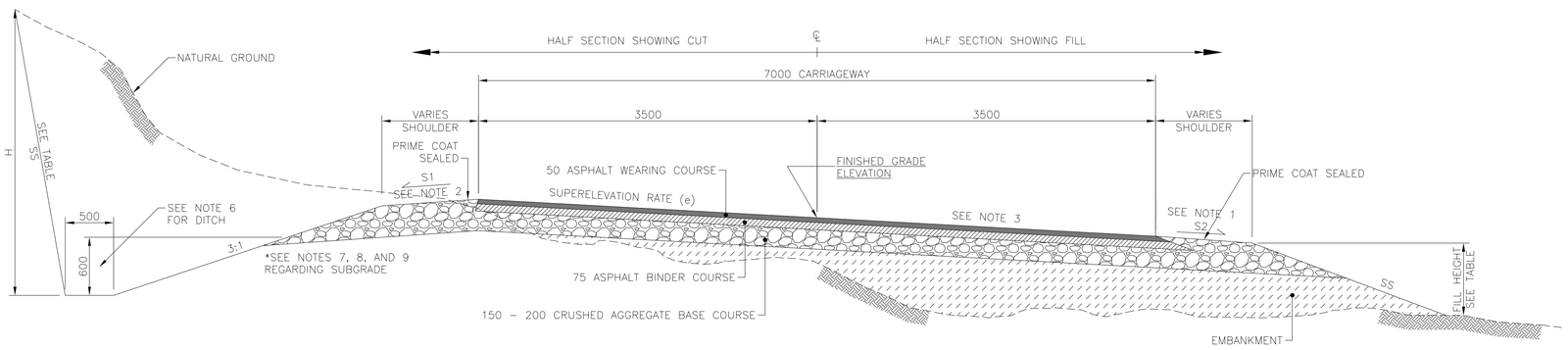


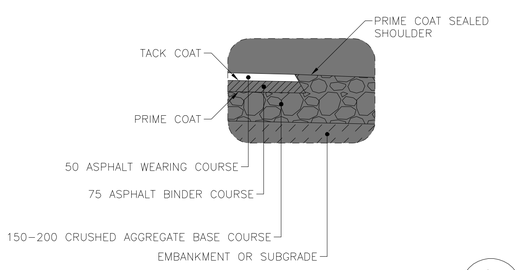
TYPICAL ROADWAY CROSS SECTION - MOUNTAINOUS SECTION
SCALE 1:30

NOTES:

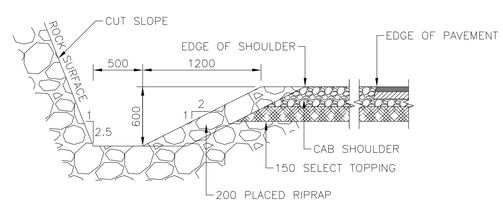
1. THE INNER SHOULDER SLOPE FOR SUPERELEVATED ROADWAY SECTION EQUALS NORMAL SLOPE OF 4% OR AT SUPERELEVATION RATE (e) IF (e) IS GREATER THAN 4%.
2. THE OUTER SHOULDER SLOPE FOR SUPERELEVATED ROADWAY SECTION EQUALS NORMAL SLOPE OF 4% IF SUPERELEVATION RATE (e) IS LESS THAN OR EQUAL TO 6%. WHERE THE SUPERELEVATION RATE (e) IS GREATER THAN 6%, SLOPE OF THE SHOULDER IS 10% MINUS (e).
3. THE SUPERELEVATION RATE (e) IS SHOWN ON THE CONSTRUCTION DRAWING FOR EACH HORIZONTAL CURVE.
4. UNSUITABLE MATERIALS SHALL BE REMOVED AS DIRECTED BY THE ENGINEER AND SHALL BE REPLACED WITH SUITABLE BACKFILL MATERIALS.
5. THE CONTRACTOR MAY SECURE APPROVAL FROM THE ENGINEER TO FLATTEN CUT SLOPES TO OBTAIN ADDITIONAL EMBANKMENT MATERIAL.
6. CONSTRUCT STONE MASONRY LINED DITCH WHERE THE LONGITUDINAL PROFILE OF ROAD IS 4.0% OR GREATER, OR AS DIRECTED BY THE ENGINEER. ON ROCK CUTS, DITCH SHOULD BE SHAPED AS LINED DITCH OR CATCH TRENCH.
7. EXPOSED SUBGRADE SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM MODIFIED PROCTOR DENSITY IN ACCORDANCE WITH AASHTO T180–95.
8. ON SECTIONS WITH ROCK SUBGRADE (CUT), EXCAVATE 150mm BELOW SUBGRADE AND REPLACE WITH SELECT TOPPING MATERIAL OR WITH OTHER SUITABLE MATERIAL.



TYPICAL SUPERELEVATED ROADWAY CROSS SECTION
SCALE 1:30



PAVEMENT DETAIL A
SCALE 1:20
C-501 C-501



DITCH AT ROCKY AREA
SCALE 1:30

TABLE OF CUT AND FILL SLOPES	
HEIGHT	SLOPES
FOR FILL ≤ 3.0m	3.0 H : 1.0 V
FOR FILL ≥ 3.0m	2.0 H : 1.0 V
FOR CUT ≤ 2.0m	1.5 H : 1.0 V (COMMON MATERIAL)
FOR CUT ≥ 2.0m	1.0 H : 1.5 V (COMMON MATERIAL)
FOR ROCK CUT	1.0 H : 2.5 V (ROCK MATERIAL)

0 0.5 1 2m
1:20
0 0.5 1 2 3m
1:30

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SYMB	SUBMITTAL/REVISION	DESCRIPTION	DATE	APR
A	30%	DESIGN SUBMITTAL	11/08/13	APL

DESIGNED BY: RLT
DRAWN BY: TRW
CHECKED BY: JKM
DATE: 11-08-2013
SUBMITTED BY: TETRA TECH
CAD FILE NAME: LT0077-C-501

USAID FROM THE AMERICAN PEOPLE

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TYPICAL ROADWAY CROSS-SECTIONS

SHEET REFERENCE NUMBER:
LT0077
C-501

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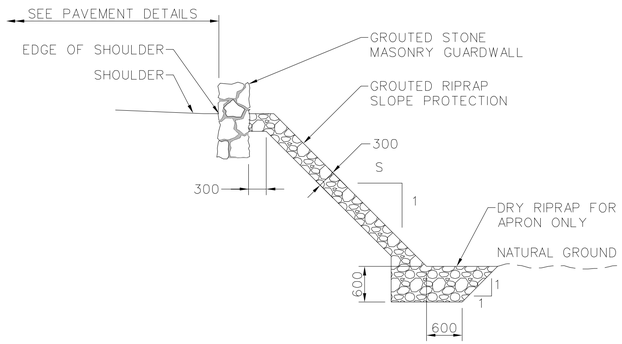
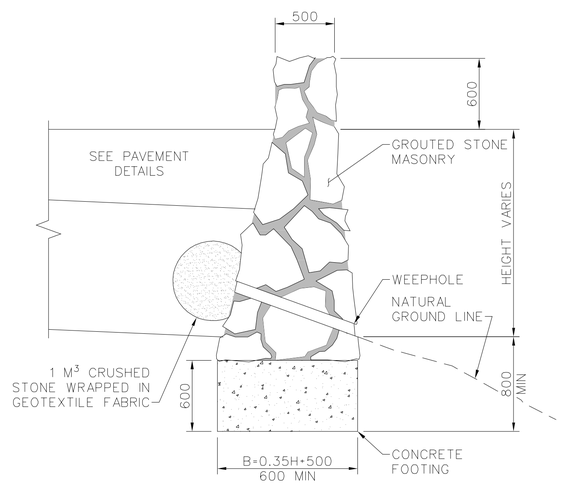
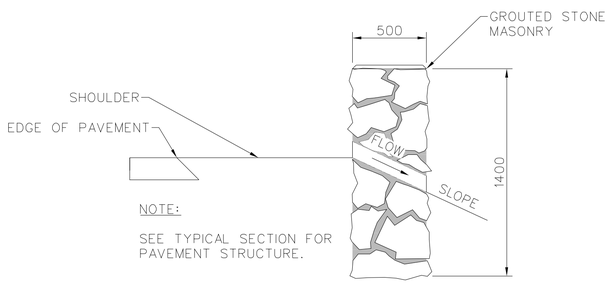


GROUTED RIPRAP SLOPE PROTECTION DETAILS
NTS



STONE MASONRY RETAINING WALL ON FILL
NTS



NOTE:

SEE TYPICAL SECTION FOR PAVEMENT STRUCTURE.

STONE MASONRY GUARDWALL WITH CONCRETE FOUNDATION
NTS

NOTES:

1. STONE MASONRY RETAINING WALL SHALL BE CONSTRUCTED ON STABLE OR COMPACTED GROUND.
2. FOR GUARDWALLS, PLACE WEEP HOLES AT THE LOWEST POINTS FIRST WHERE FREE OUTLETS CAN BE OBTAINED.
3. FOR RETAINING WALLS, PLACE WEEPHOLES AT A MAXIMUM OF 3 MM ON CENTER.

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.

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A	30% DESIGN SUBMITTAL		11/08/13	APL

DESIGNED BY: RLT
DATE: 11-08-2013
DRAWN BY: SCJ
SUBMITTED BY: TETRA TECH
CHECKED BY: JKM
CAD FILE NAME: LT0077-C-503

USAID FROM THE AMERICAN PEOPLE

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RETAINING WALL AND SLOPE PROTECTION DETAILS

SHEET REFERENCE NUMBER:
LT0077
C-503

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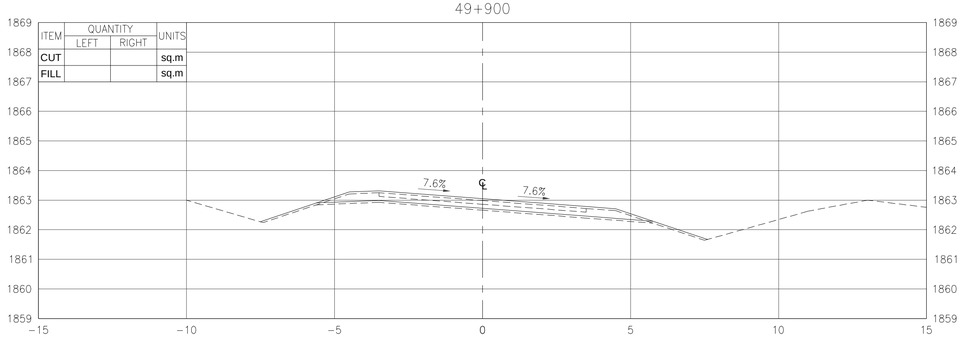
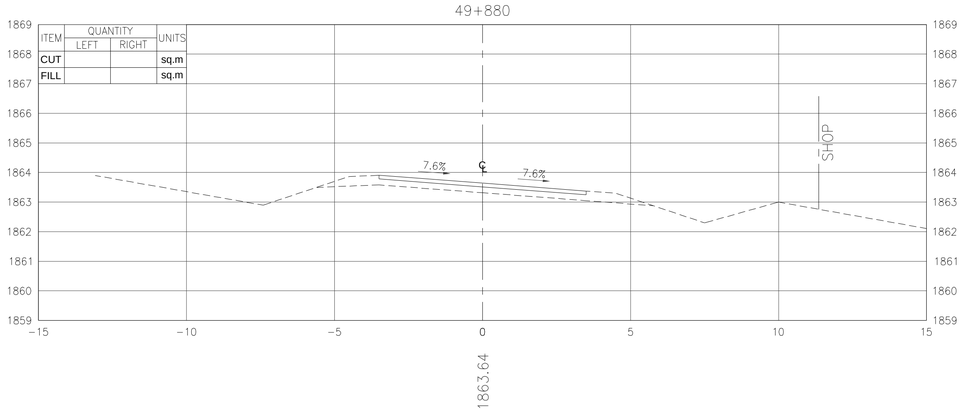
49+900

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



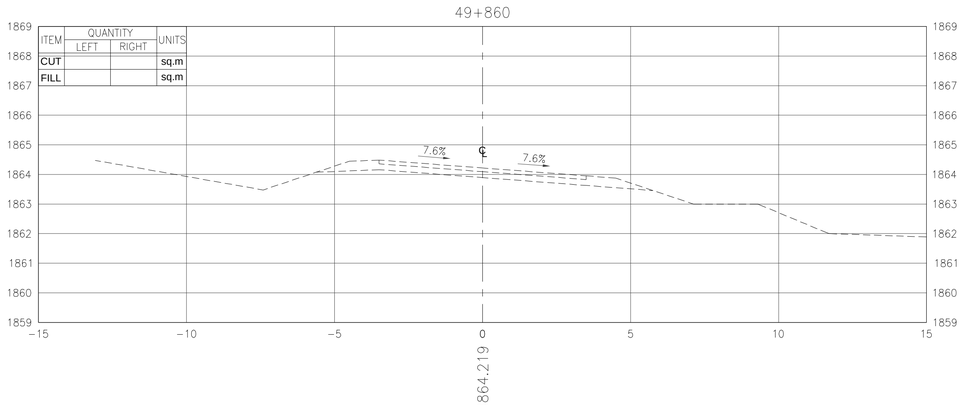
49+880

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



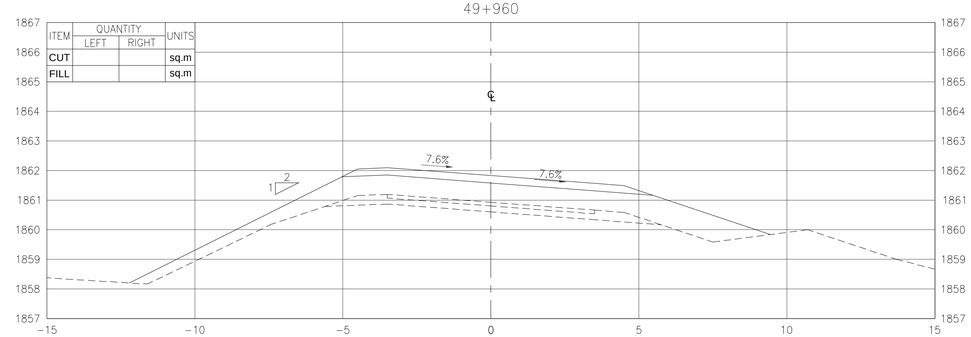
49+860

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



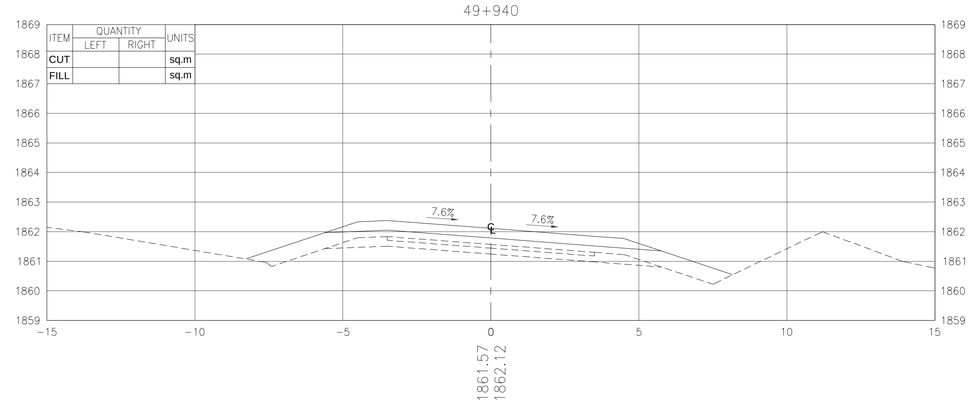
49+960

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



49+940

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



49+920

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN METERS.

NOT FOR CONSTRUCTION

30% DESIGN

SYMB	SUBMITTAL/REVISION DESCRIPTION	DATE	APR
A	30% DESIGN SUBMITTAL	11/08/13	APL

DESIGNED BY: RLT
DATE: 11-08-2013
DRAWN BY: RLT
SUBMITTED BY: TETRA TECH
CHECKED BY: JKM
CAD FILE NAME: LT0077-C-701

USAID FROM THE AMERICAN PEOPLE

AESP

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9

ROADWAY CROSS SECTIONS
STA 49+860 – STA 49+960

SHEET REFERENCE NUMBER:
LT0077
C-701

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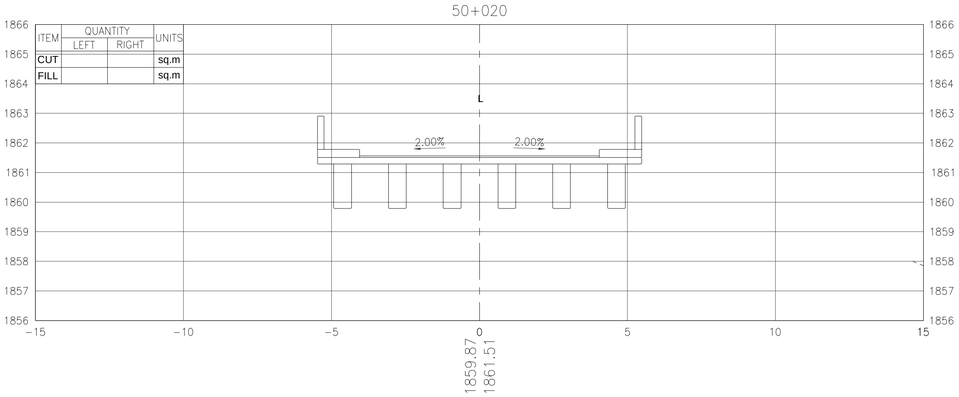
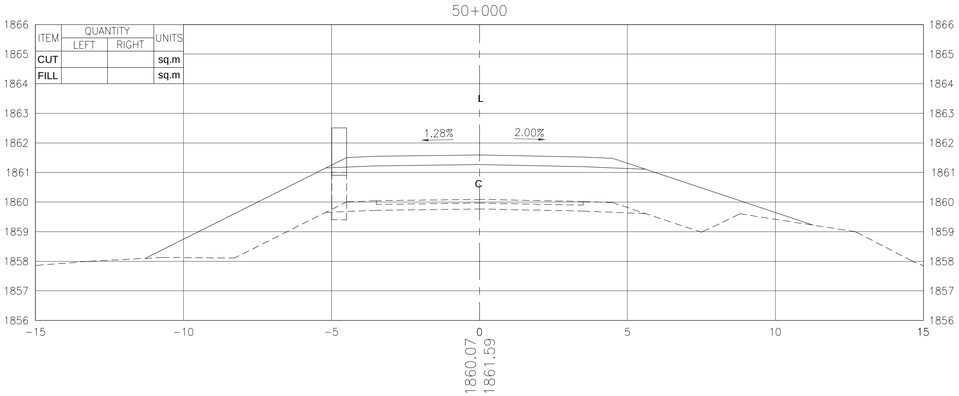
50+020

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



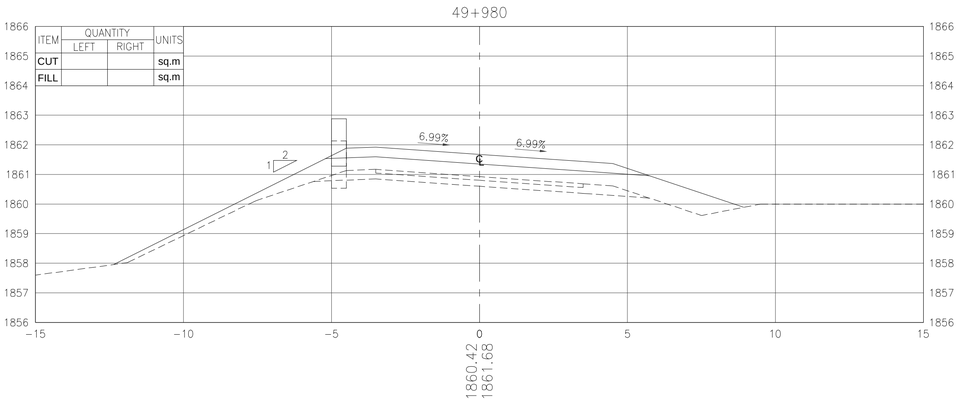
50+000

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



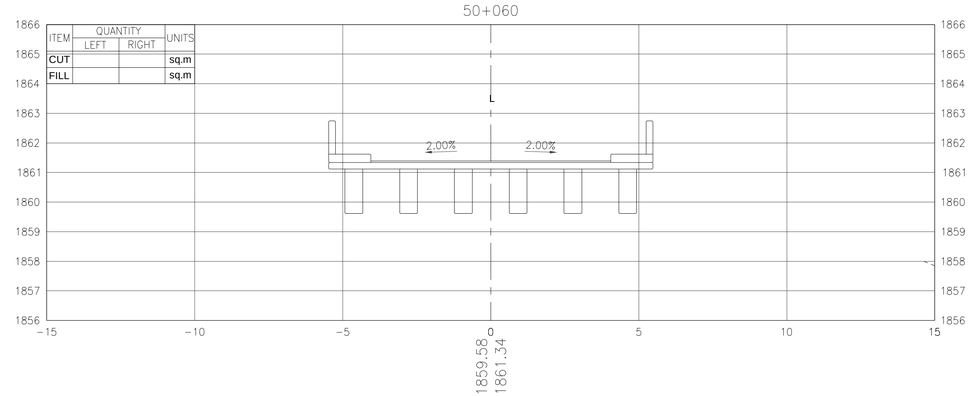
49+980

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



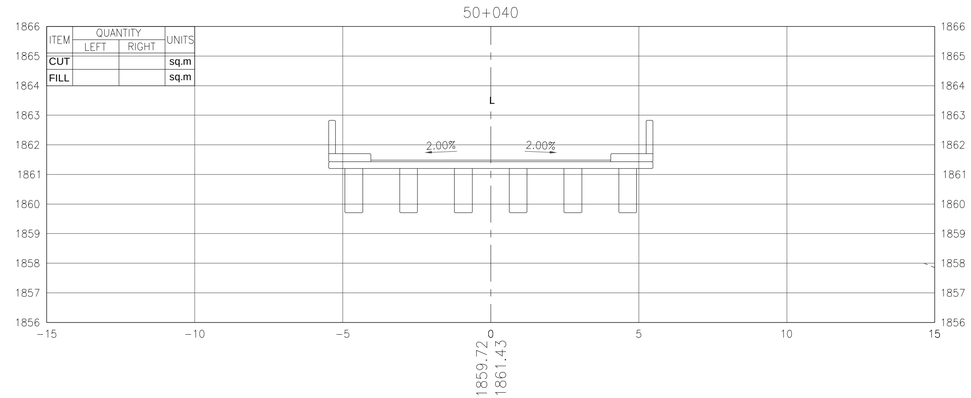
50+060

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



50+040

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



0 2 4 6 10m
1:100

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN METERS.

NOT FOR CONSTRUCTION

30% DESIGN

SYMB	SUBMITTAL/REVISION DESCRIPTION	DATE	APR
A	30% DESIGN SUBMITTAL	11/08/13	APL

DESIGNED BY: RLT
DATE: 11-08-2013
DRAWN BY: RLT
SUBMITTED BY: TETRA TECH
CHECKED BY: JKM
CAD FILE NAME: LT0077-C-702

USAID FROM THE AMERICAN PEOPLE

AESP

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9

ROADWAY CROSS SECTIONS
STA 49+980 – STA 50+060

SHEET REFERENCE NUMBER:
LT0077
C-702

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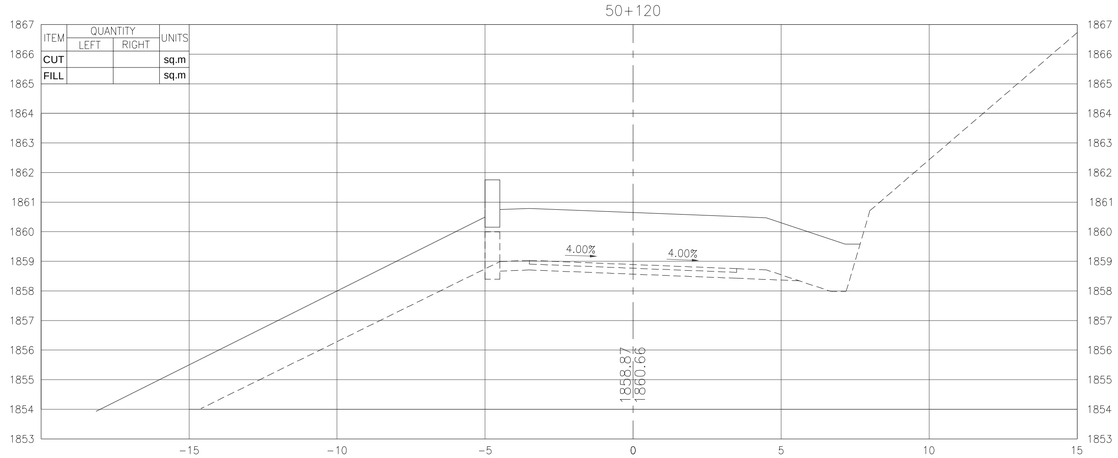
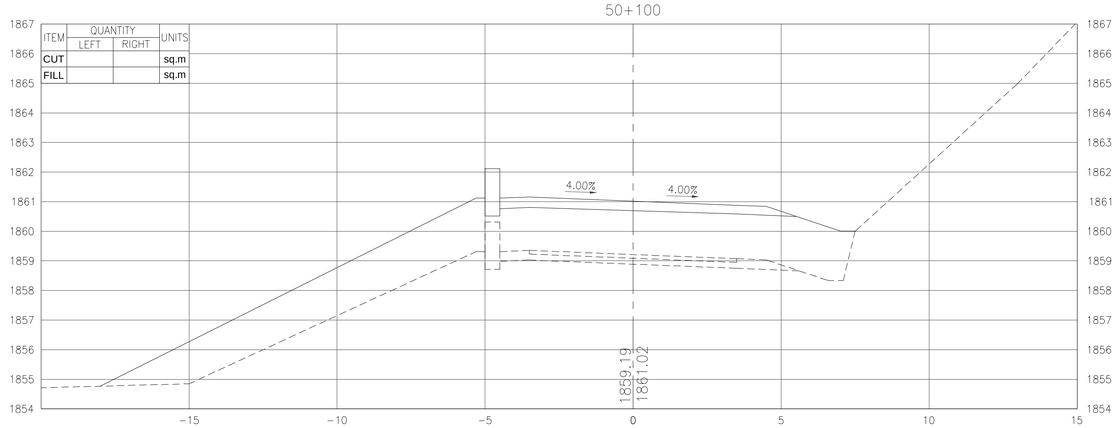
50+120

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



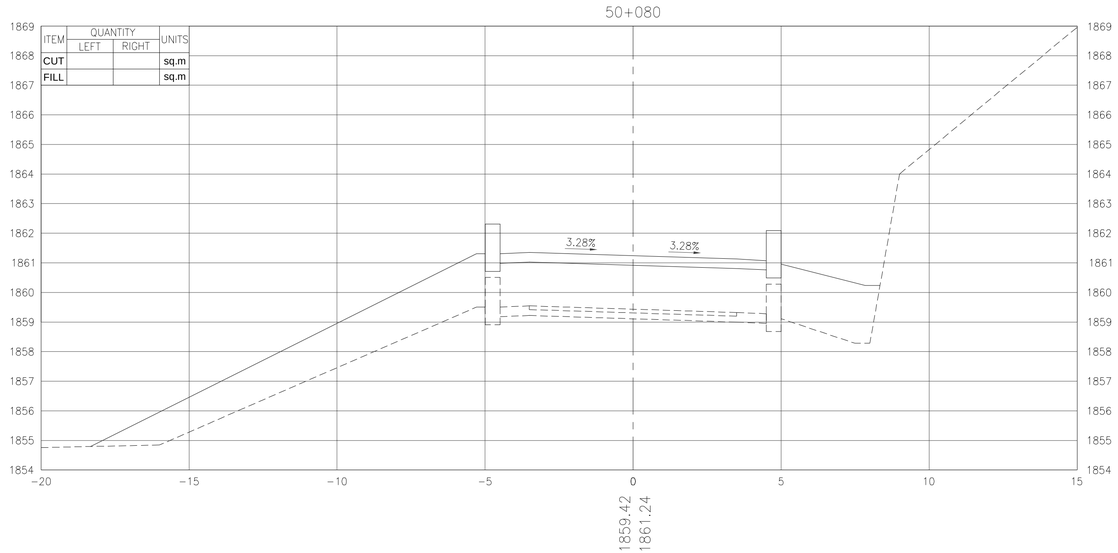
50+100

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



50+080

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



0 2 4 6 10m
1:100

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN METERS.

NOT FOR CONSTRUCTION

30% DESIGN

SYMB	SUBMITTAL/REVISION DESCRIPTION	DATE	APR
A	30% DESIGN SUBMITTAL	11/08/13	APL

DESIGNED BY: RLT
DATE: 11-08-2013
DRAWN BY: RLT
SUBMITTED BY: TETRA TECH
CHECKED BY: JKM
CAD FILE NAME: LT0077-C-703

USAID FROM THE AMERICAN PEOPLE

AESP

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9

ROADWAY CROSS SECTIONS
STA 50+080 – STA 50+120

SHEET REFERENCE NUMBER:
LT0077
C-703

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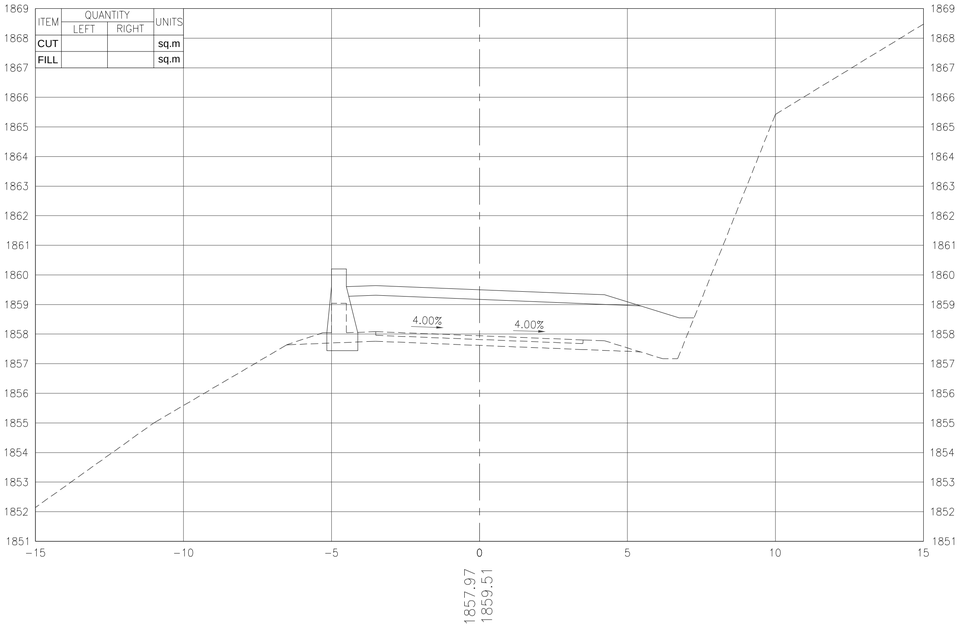
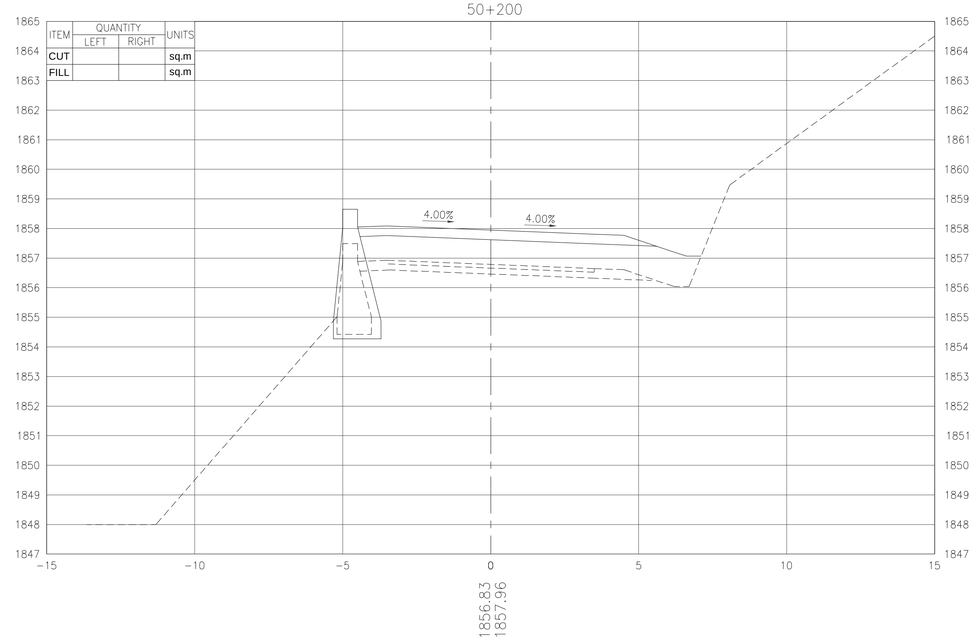
50+160

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



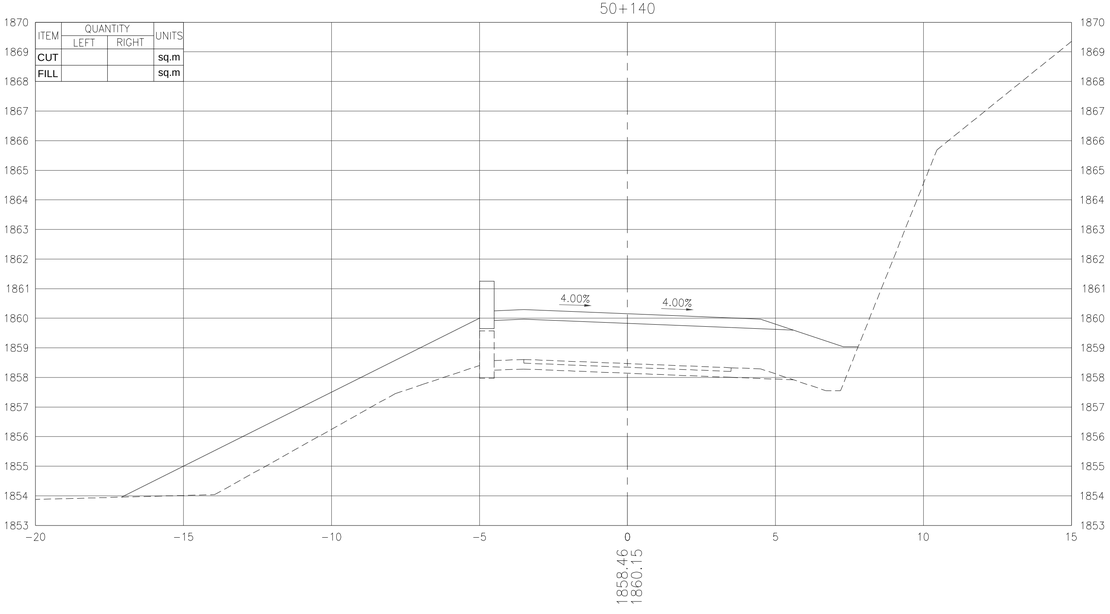
50+200

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



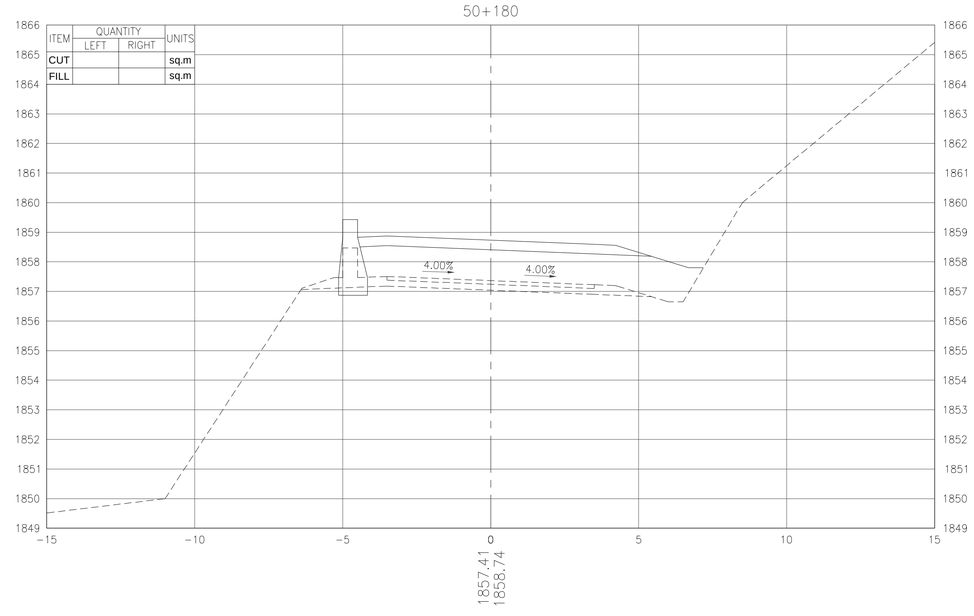
50+140

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



50+180

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



0 2 4 6 10m
1:100

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN METERS.

NOT FOR CONSTRUCTION

30% DESIGN

SYMB	SUBMITTAL/REVISION	DESCRIPTION	DATE	APR
A	30% DESIGN	SUBMITTAL	11/08/13	APL

DESIGNED BY: RLT
DATE: 11-08-2013
DRAWN BY: RLT
SUBMITTED BY: TETRA TECH
CHECKED BY: JKM
CAD FILE NAME: LT0077-C-704

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AESP

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9

ROADWAY CROSS SECTIONS
STA 50+140 – STA 50+200

SHEET REFERENCE NUMBER:
LT0077
C-704

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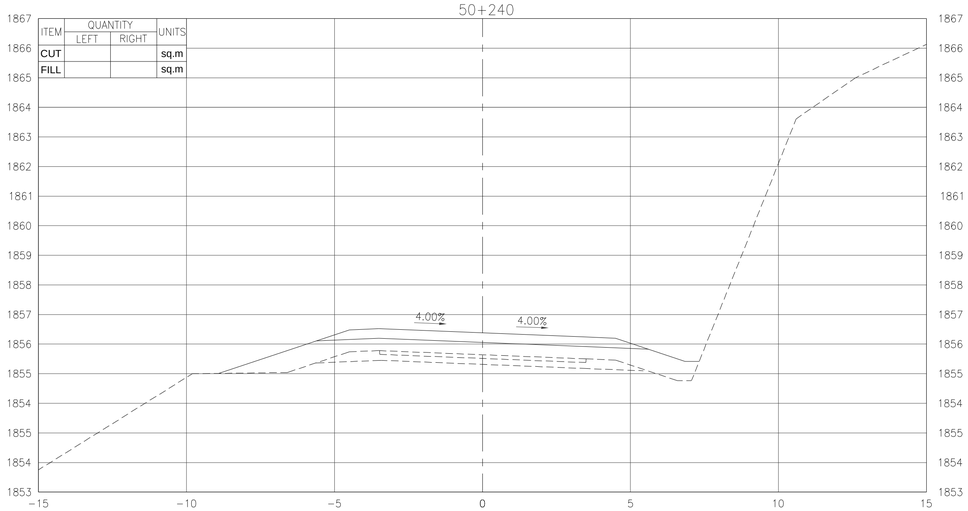
50+240

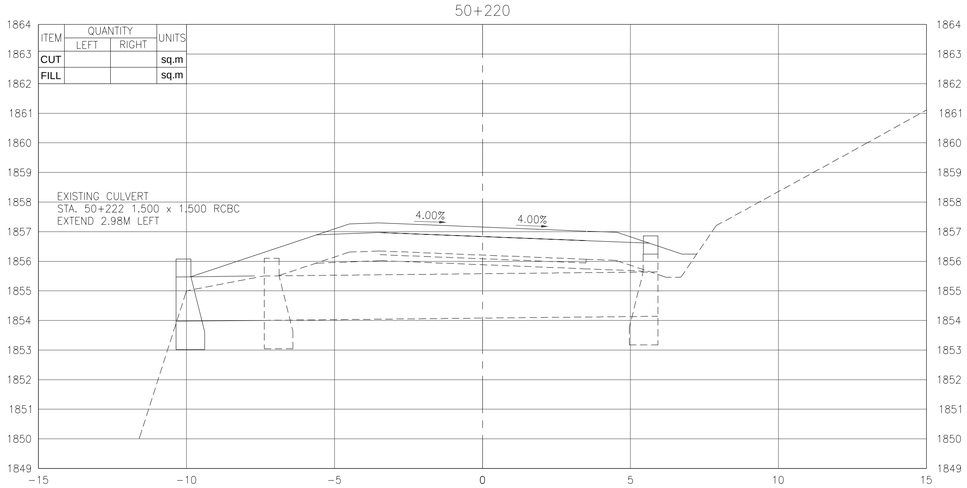
ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



1855.68
1856.39

50+220

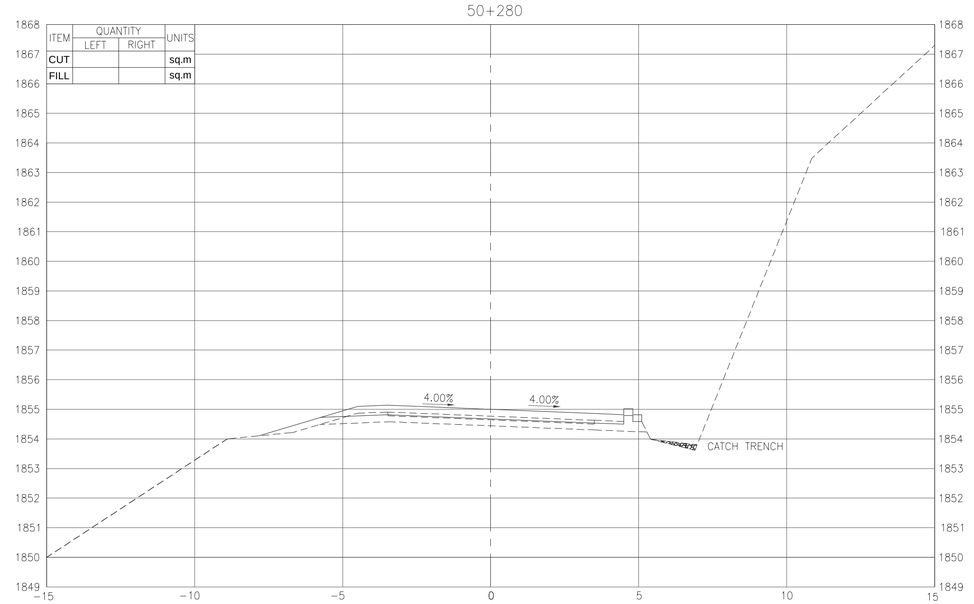
ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



1856.25
1857.17

50+280

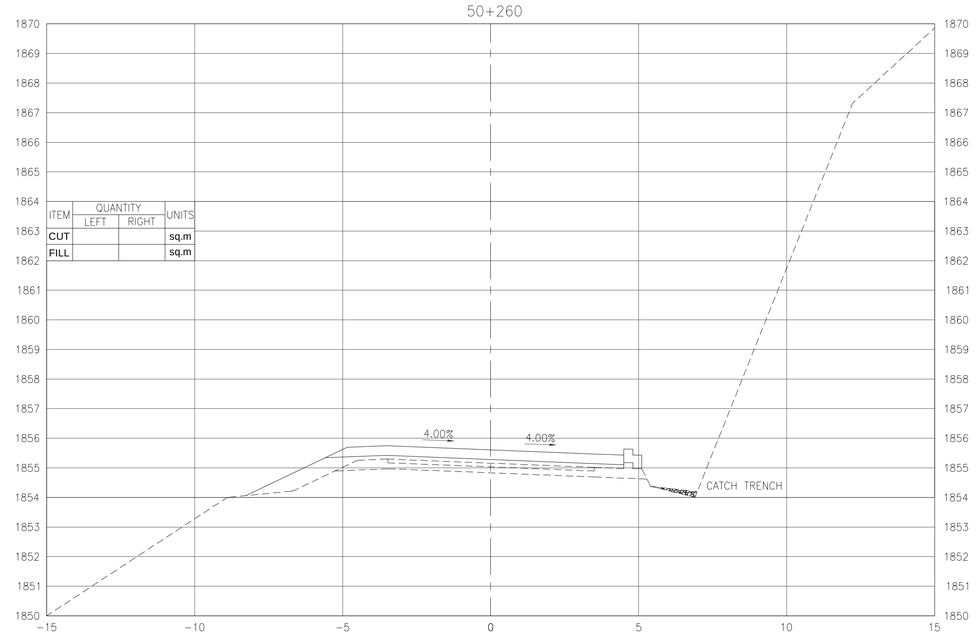
ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



1854.79
1855.01

50+260

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



1855.19
1855.62

0 2 4 6 10m
1:100

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN METERS.

NOT FOR CONSTRUCTION

30% DESIGN

SYMB	SUBMITTAL/REVISION	DESCRIPTION	DATE	APR
A	30% DESIGN SUBMITTAL		11/08/13	APL

DESIGNED BY: RLT
DATE: 11-08-2013
DRAWN BY: RLT
SUBMITTED BY: TETRA TECH
CHECKED BY: JKM
CAD FILE NAME: LT0077-C-705

USAID FROM THE AMERICAN PEOPLE

AESP

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9

ROADWAY CROSS SECTIONS
STA 50+220 - STA 50+280

SHEET REFERENCE NUMBER:
LT0077
C-705

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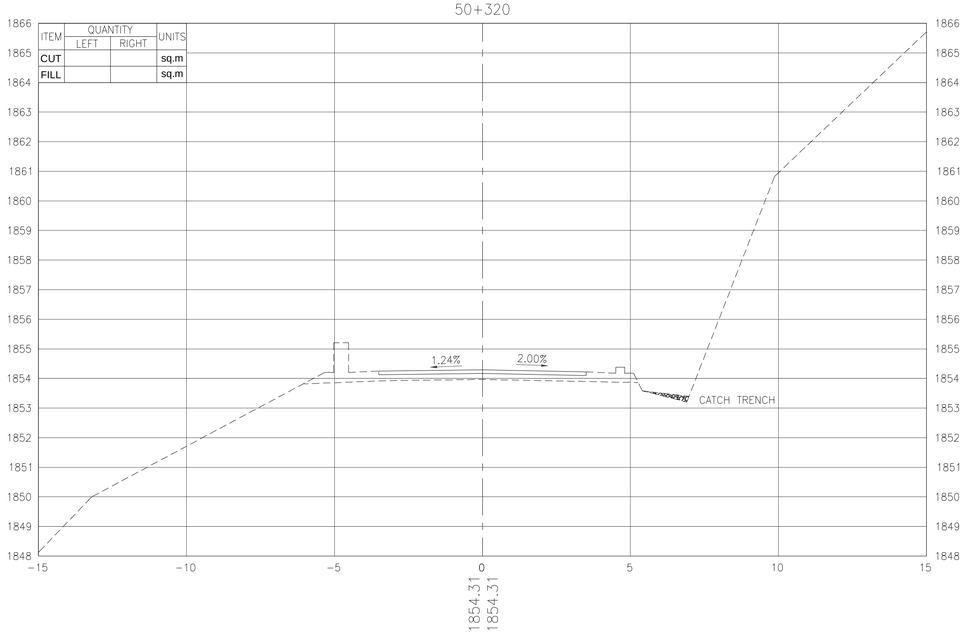
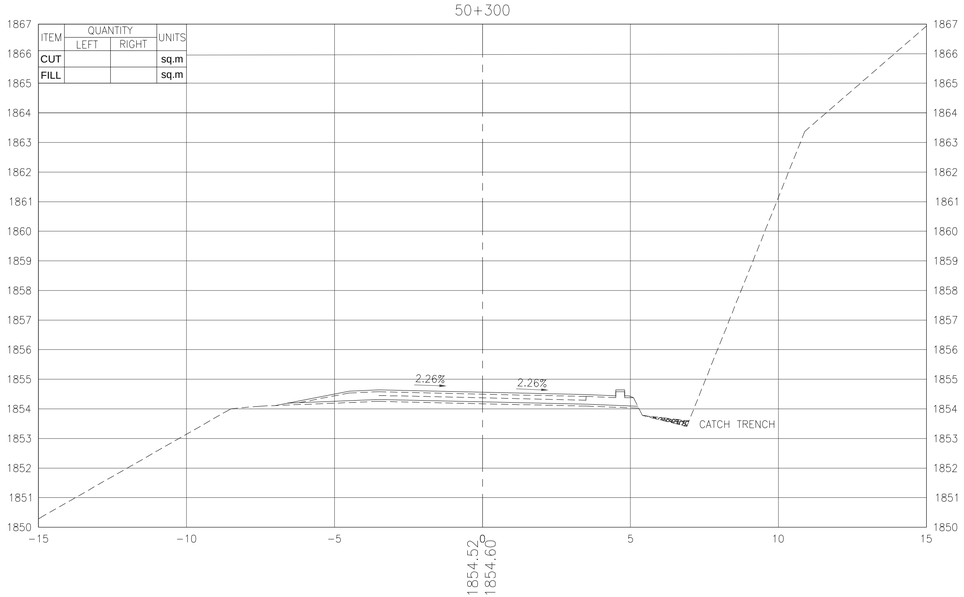
50+320

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



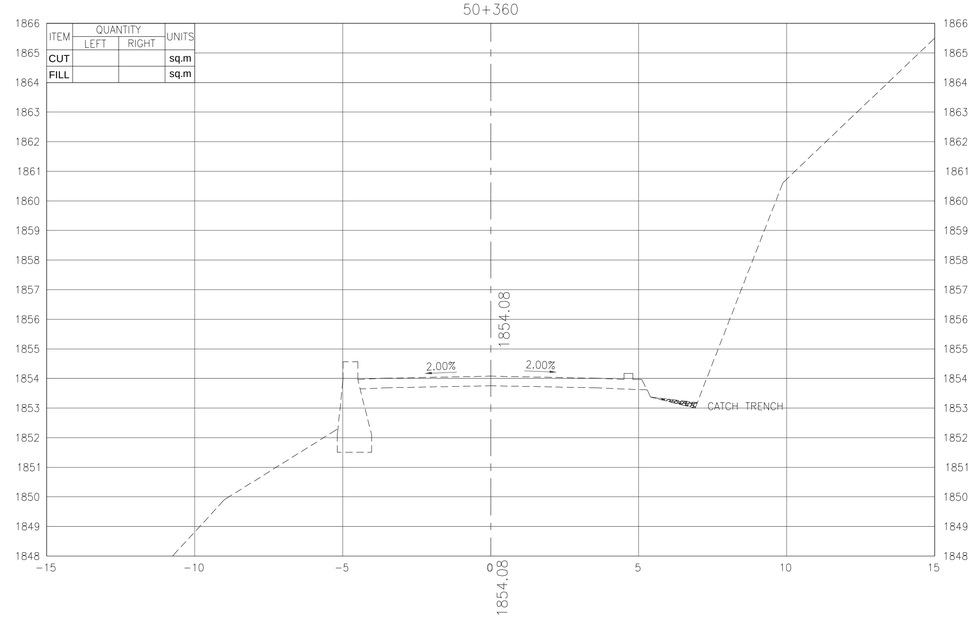
50+300

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



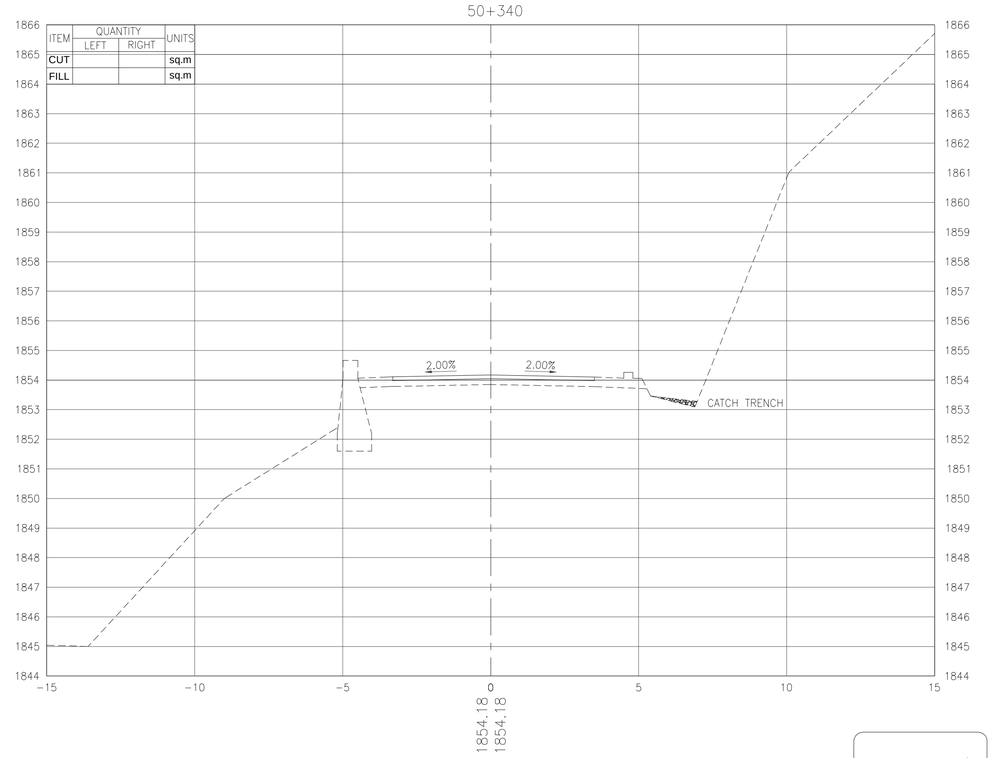
50+360

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



50+340

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT			sq.m
FILL			sq.m



0 2 4 6 10m
1:100

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN METERS.

NOT FOR CONSTRUCTION

30% DESIGN

SYMB	SUBMITTAL/REVISION	DESCRIPTION	DATE	APR
A	30% DESIGN	SUBMITTAL	11/08/13	APL

DESIGNED BY: RLT
DATE: 11-08-2013
DRAWN BY: RLT
SUBMITTED BY: TETRA TECH
CHECKED BY: JKM
CAD FILE NAME: LT0077-C-706

USAID FROM THE AMERICAN PEOPLE

AESP

GARDEZ TO KHOST ROAD CONSTRUCTION OF BRIDGE NO. 9

ROADWAY CROSS SECTIONS
STA 50+300 – STA 50+340

SHEET REFERENCE NUMBER:
LT0077
C-706

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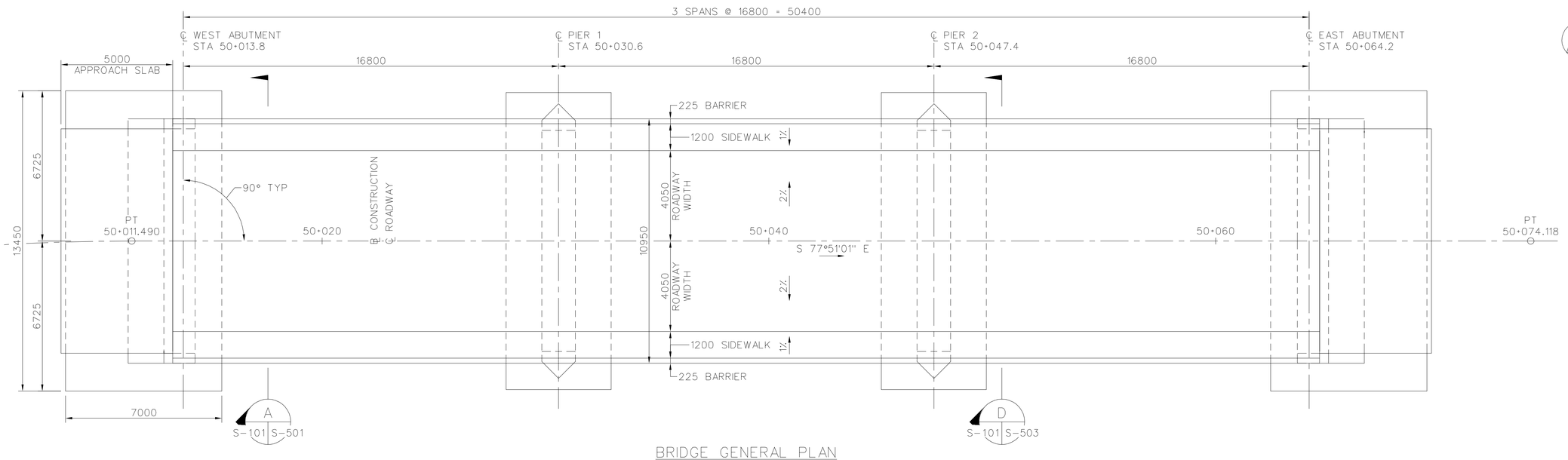
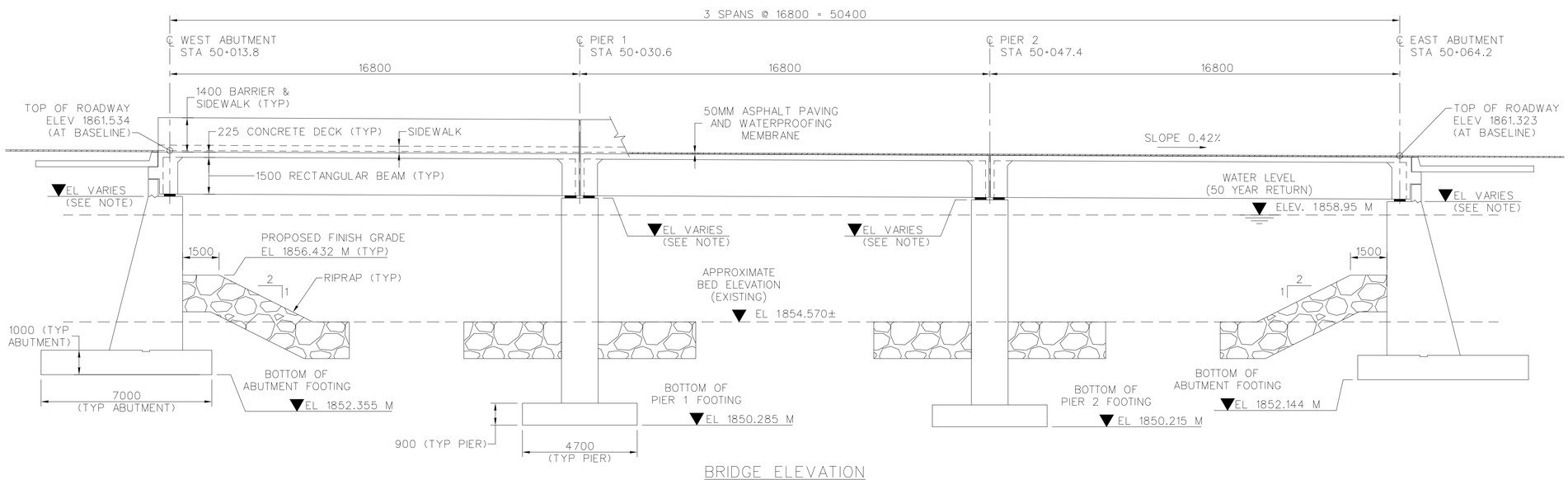


BRIDGE GENERAL PLAN
SCALE 1:100



BRIDGE ELEVATION
SCALE 1:100

NOTE:

BRIDGE SEAT ELEVATION VARIES ACROSS THE ABUTMENT & PIER WIDTHS. SEE ABUTMENT & PIER ELEVATIONS ON SHEETS S-501 AND S-503 FOR BRIDGE SEAT ELEVATIONS.

0 2000 4000 6000 10000mm
1:100

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.

NOT FOR CONSTRUCTION

30% DESIGN

SYMB	SUBMITTAL/REVISION DESCRIPTION	DATE	APR
A	30% DESIGN SUBMITTAL	11/08/13	APL

DESIGNED BY: ALH
DATE: 11-08-2013
DRAWN BY: SCJ
SUBMITTED BY: TETRA TECH
CHECKED BY: SAM
CAD FILE NAME: LT0077-S-101

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AESP

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9

BRIDGE GENERAL PLAN
AND ELEVATION

SHEET REFERENCE NUMBER:
LT0077
S-101

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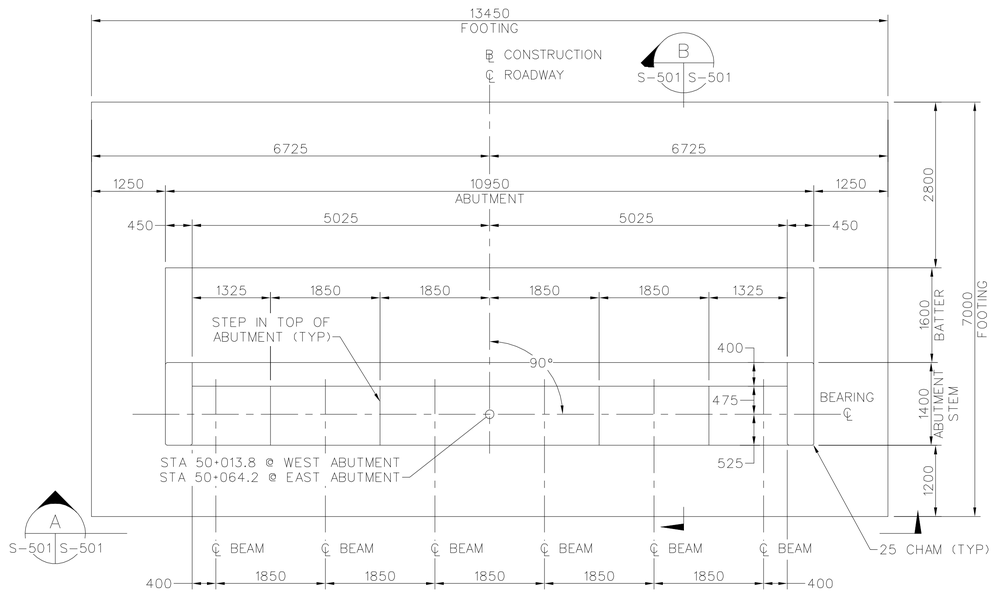
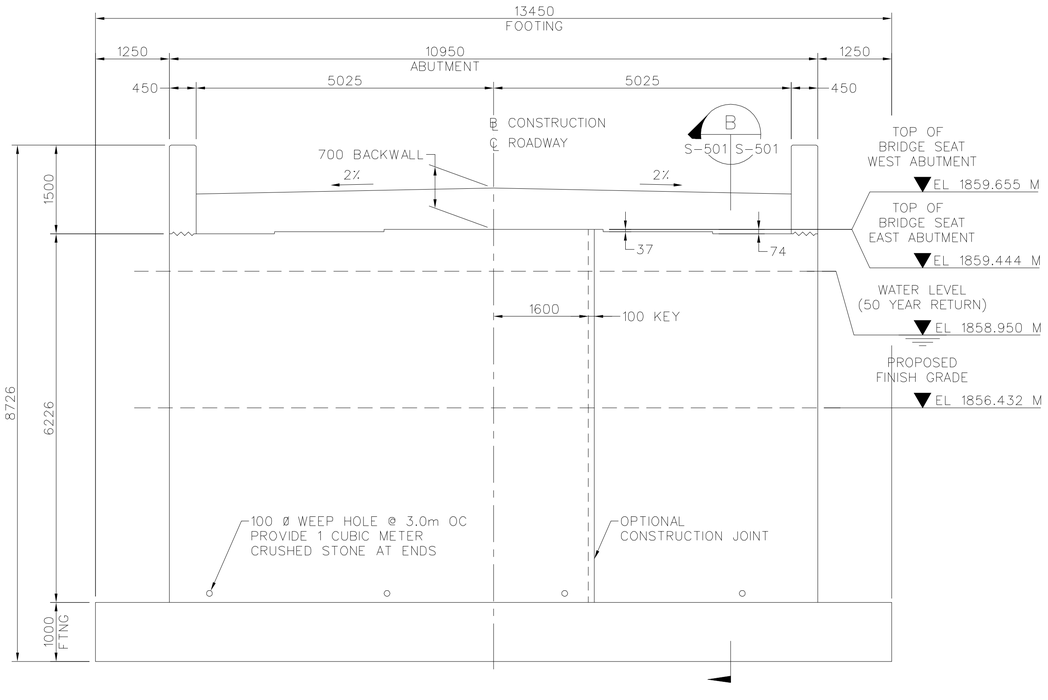
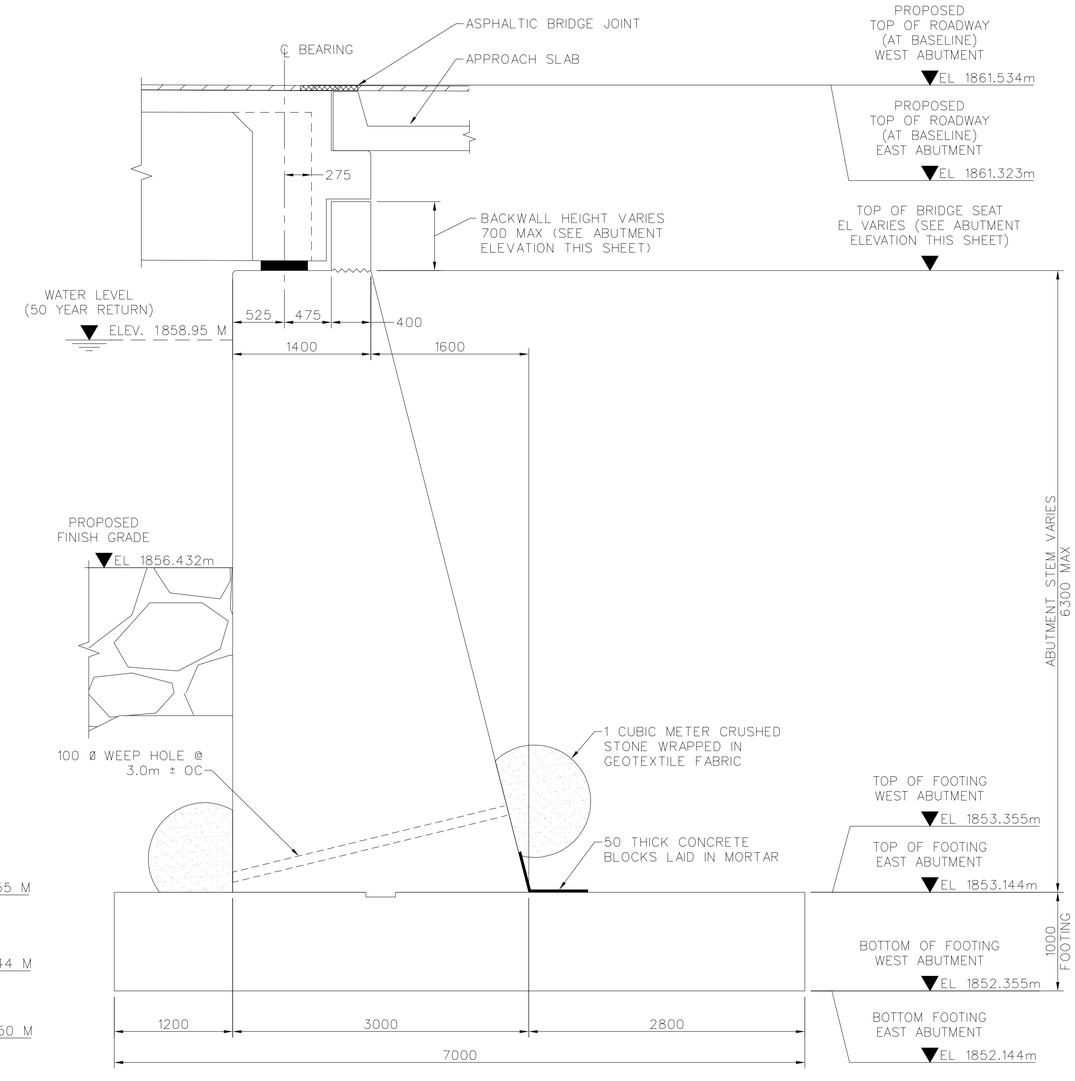


PROPOSED ABUTMENT PLAN
SCALE 1:50



PROPOSED ABUTMENT ELEVATION
SCALE 1:50
A
S-101, S-501 S-501



PROPOSED ABUTMENT SECTION
SCALE 1:30
B
S-501 S-501

0 1000 2000 3000 5000mm
1:50
0 600 1200 1800 3000mm
1:30

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.

NOT FOR CONSTRUCTION

30% DESIGN

SYMB	SUBMITTAL/REVISION DESCRIPTION	DATE	APR
A	30% DESIGN SUBMITTAL	11/08/13	APL

DESIGNED BY: ALH
DRAWN BY: SCJ
CHECKED BY: SAM
DATE: 11-08-2013
SUBMITTED BY: TETRA TECH
CAD FILE NAME: LT0077-S-501

USAID FROM THE AMERICAN PEOPLE

AESP

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9

ABUTMENT DETAILS

SHEET REFERENCE NUMBER:
LT0077
S-501

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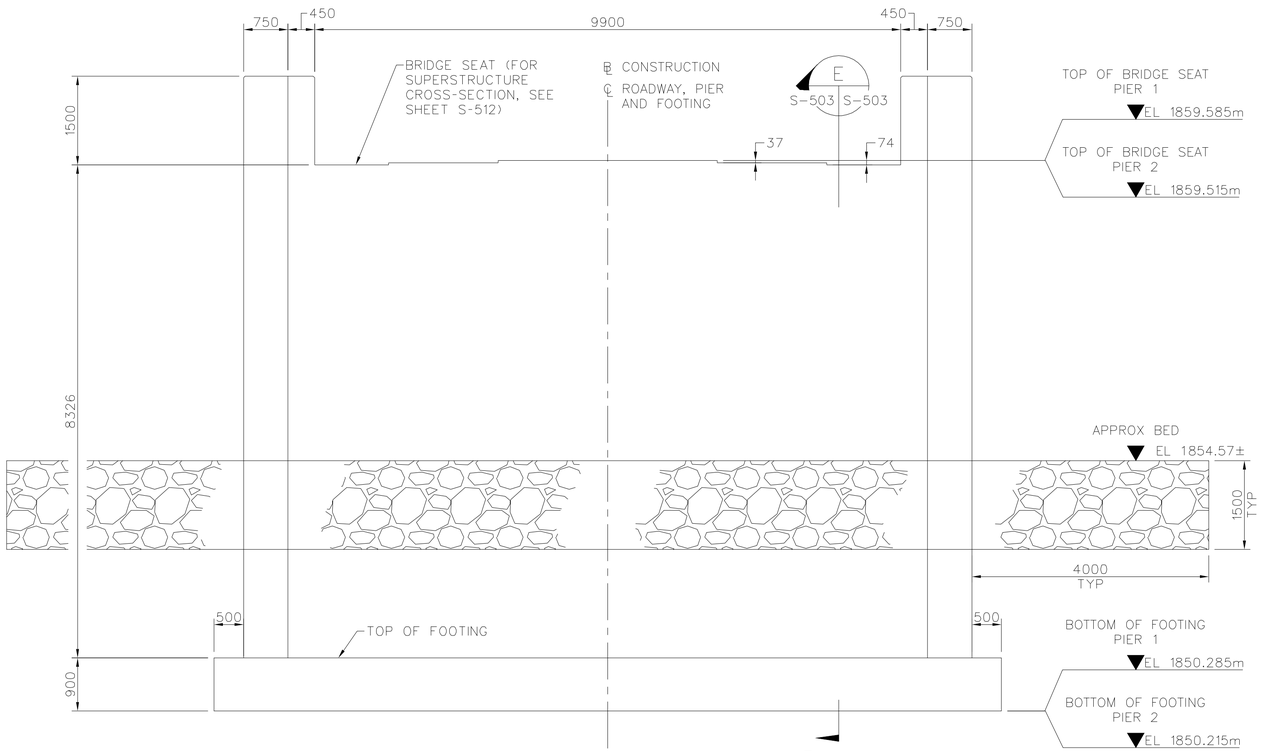
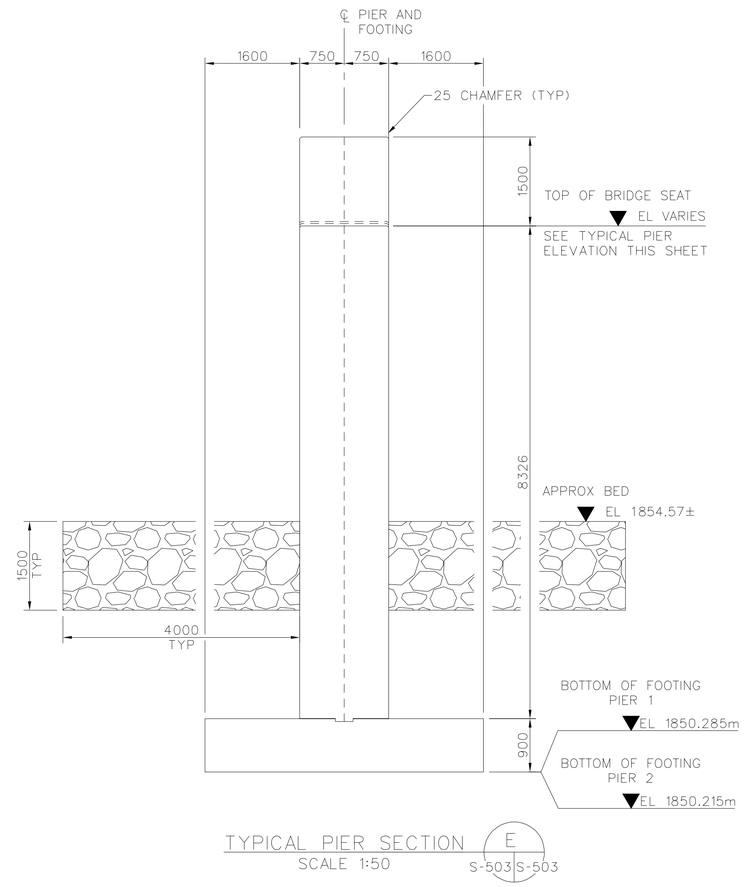
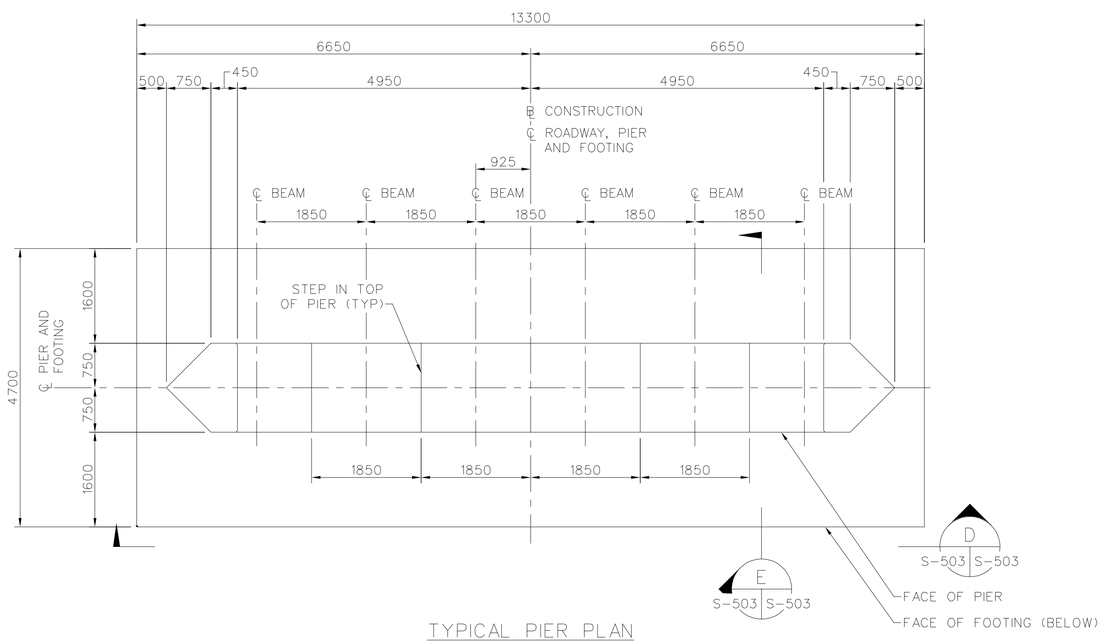


TYPICAL PIER ELEVATION
SCALE 1:50
D
S-101, S-503 S-503



TYPICAL PIER SECTION
SCALE 1:50
E
S-503 S-503



TYPICAL PIER PLAN
SCALE 1:50

0 1000 2000 3000 5000mm
1:50

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.

NOT FOR CONSTRUCTION

30% DESIGN

SYMB	SUBMITTAL/REVISION DESCRIPTION	DATE	APR
A	30% DESIGN SUBMITTAL	11/08/13	APL

DESIGNED BY: ALH
DATE: 11-08-2013
DRAWN BY: SCJ
SUBMITTED BY: TETRA TECH
CHECKED BY: SAM
CAD FILE NAME: LT0077-S-503

USAID FROM THE AMERICAN PEOPLE
AESP

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9

PIER DETAILS

SHEET REFERENCE NUMBER:
LT0077
S-503

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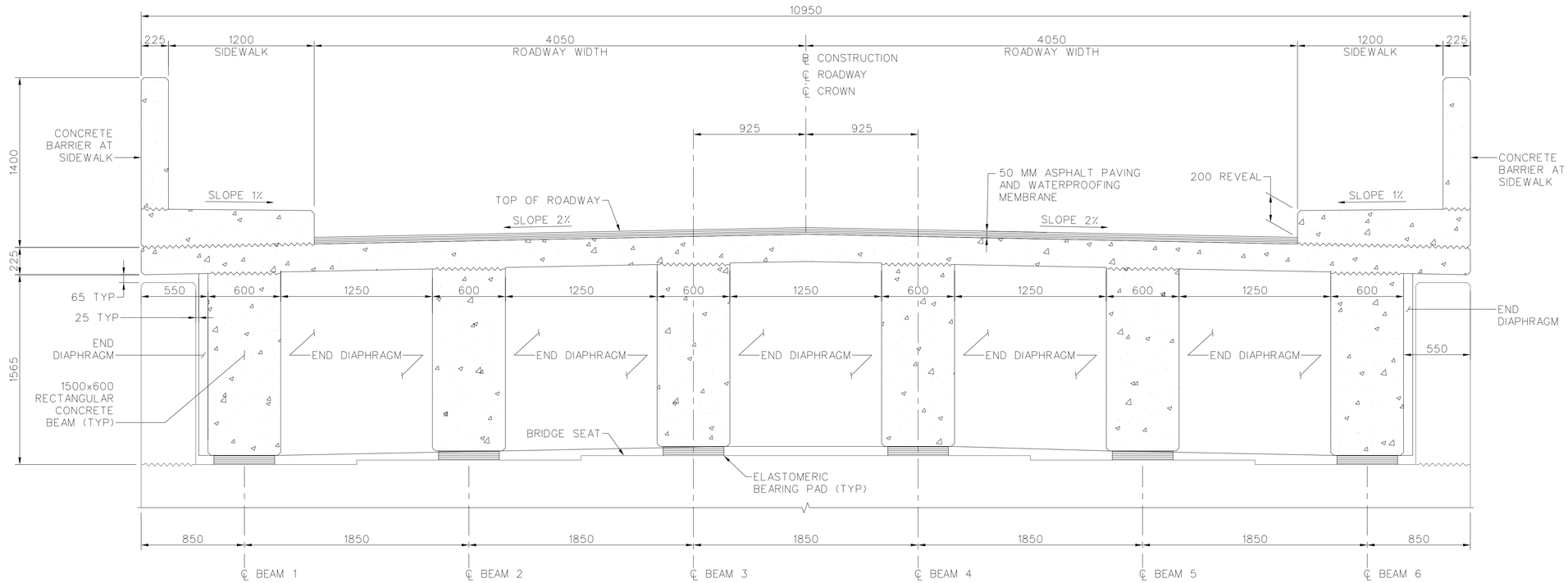

SUPERSTRUCTURE CROSS-SECTION
SCALE 1:20

NOTE:

BRIDGE COSS SECTION BASED ON ADJACENT BRIDGE NO. 90 ON THE SAME ROADWAY.

0 400 800 1200 2000mm
1:20

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.

NOT FOR CONSTRUCTION

30% DESIGN

SYMB	SUBMITTAL/REVISION DESCRIPTION	DATE	
A	30% DESIGN SUBMITTAL	11/08/13	APL

DESIGNED BY: ALH
DATE: 11-08-2013
DRAWN BY: SCJ
SUBMITTED BY: TETRA TECH
CHECKED BY: SAM
CAD FILE NAME: LT0077-S-512

USAID FROM THE AMERICAN PEOPLE

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GARDEZ TO KHOST ROAD CONSTRUCTION OF BRIDGE NO. 9

SUPERSTRUCTURE CROSS-SECTION

SHEET REFERENCE NUMBER:
LT0077
S-512

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