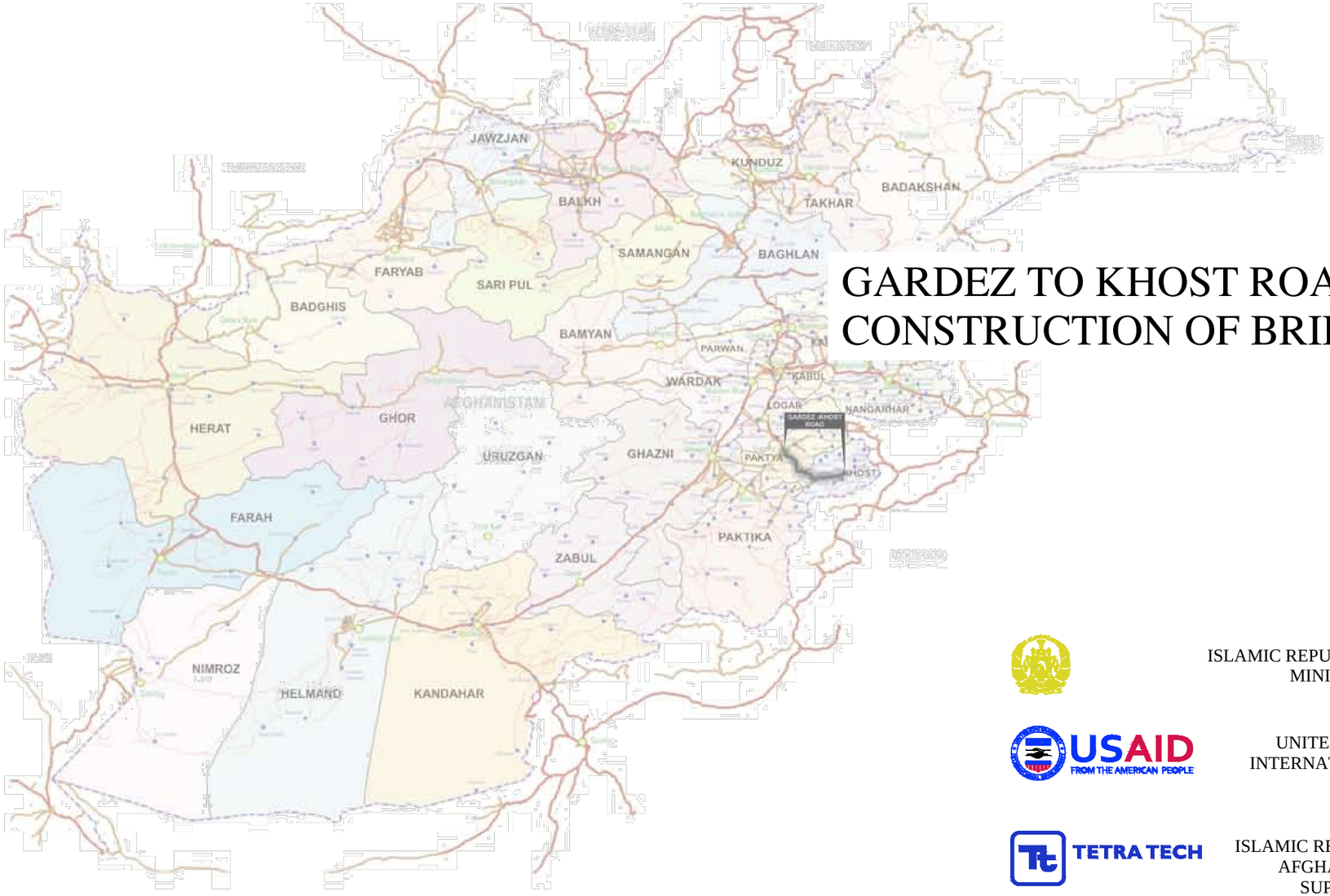

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9

ISLAMIC REPUBLIC OF AFGHANISTAN
MINISTRY OF PUBLIC WORK

UNITED STATES AGENCY FOR
INTERNATIONAL DEVELOPMENT

PROVIDED BY:
ISLAMIC REPUBLIC AFGHANISTAN
AFGHANISTAN ENGINEERING
SUPPORT PROGRAM (AESP)

FINAL DESIGN SUBMITTAL
MARCH 28, 2014

INDEX OF DRAWINGS – GARDEZ TO KHOST ROAD – BRIDGE NO. 9

DRAWING REF. NUMBER	CAD FILENAME	ISSUE DATE	ISSUE STATUS	DRAWING TITLE	DRAWING REF. NUMBER	CAD FILENAME	ISSUE DATE	ISSUE STATUS	DRAWING TITLE
				GENERAL					
G–000	LT0077–G–000	03/28/14	REV 0	COVER SHEET					
G–001	LT0077–G–001	03/28/14	REV 0	INDEX OF DRAWINGS					
				CIVIL					
C–001	LT0077–C–001	03/28/14	REV 0	GENERAL NOTES					
C–002	LT0077–C–002	03/28/14	REV 0	LEGEND AND ABBREVIATIONS					
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C–104	LT0077–C–104	03/28/14	REV 0	GRADING PLAN					
C–201	LT0077–C–201	03/28/14	REV 0	ROADWAY PROFILE STA 49+840 TO STA 50+260					
C–301	LT0077–C–301	03/28/14	REV 0	TYPICAL ROADWAY CROSS–SECTIONS – SHEET 1 OF 2					
C–302	LT0077–C–302	03/28/14	REV 0	TYPICAL ROADWAY CROSS–SECTIONS – SHEET 2 OF 2					
C–501	LT0077–C–501	03/28/14	REV 0	GUARDWALL, SLOPE PROTECTION AND APPROACH TRANSITION DETAILS					
C–502	LT0077–C–502	03/28/14	REV 0	SIGN AND PAVEMENT MARKING DETAILS					
C–701	LT0077–C–701	03/28/14	REV 0	ROADWAY CROSS SECTIONS STA 49+860 – STA 49+960					
C–702	LT0077–C–702	03/28/14	REV 0	ROADWAY CROSS SECTIONS STA 49+980 – STA 50+000					
C–703	LT0077–C–703	03/28/14	REV 0	ROADWAY CROSS SECTIONS STA 50+020 – STA 50+060					
C–704	LT0077–C–704	03/28/14	REV 0	ROADWAY CROSS SECTIONS STA 50+080 – STA 50+120					
C–705	LT0077–C–705	03/28/14	REV 0	ROADWAY CROSS SECTIONS STA 50+140 – STA 50+200					
C–706	LT0077–C–706	03/28/14	REV 0	ROADWAY CROSS SECTIONS STA 50+220 – STA 50+260					
				STRUCTURAL					
S–001	LT0077–S–001	03/28/14	REV 0	GENERAL NOTES AND ABBREVIATIONS					
S–101	LT0077–S–101	03/28/14	REV 0	BRIDGE GENERAL PLAN AND ELEVATION					
S–102	LT0077–S–102	03/28/14	REV 0	CONCRETE MATTRESS PLAN					
S–501	LT0077–S–501	03/28/14	REV 0	ABUTMENT DETAILS – SHEET 1 OF 4					
S–502	LT0077–S–502	03/28/14	REV 0	ABUTMENT DETAILS – SHEET 2 OF 4					
S–503	LT0077–S–503	03/28/14	REV 0	ABUTMENT DETAILS – SHEET 3 OF 4					
S–504	LT0077–S–504	03/28/14	REV 0	ABUTMENT DETAILS – SHEET 4 OF 4					
S–505	LT0077–S–505	03/28/14	REV 0	WINGWALL DETAILS					
S–506	LT0077–S–506	03/28/14	REV 0	PIER DETAILS – SHEET 1 OF 4					
S–507	LT0077–S–507	03/28/14	REV 0	PIER DETAILS – SHEET 2 OF 4					
S–508	LT0077–S–508	03/28/14	REV 0	PIER DETAILS – SHEET 3 OF 4					
S–509	LT0077–S–509	03/28/14	REV 0	PIER DETAILS – SHEET 4 OF 4					
S–510	LT0077–S–510	03/28/14	REV 0	SUPERSTRUCTURE CROSS–SECTION					
S–511	LT0077–S–511	03/28/14	REV 0	FRAMING PLAN					
S–512	LT0077–S–512	03/28/14	REV 0	BEAM DETAILS					
S–513	LT0077–S–513	03/28/14	REV 0	DECK, BARRIER DETAILS					
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S–517	LT0077–S–517	03/28/14	REV 0	JOINT DETAILS – SHEET 2 OF 2					
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ISLAMIC REPUBLIC OF AFGHANISTAN
AND
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

TETRA TECH

AFGHANISTAN ENGINEERING SUPPORT PROGRAM

AESP

PROJECT TITLE:

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:

INDEX OF DRAWINGS

DESIGNED BY:	DATE:
PJB	03–28–2014
DRAWN BY:	SUBMITTED BY:
PJB	TETRA TECH
CHECKED BY:	CAD FILE NAME:
PDC	LT0077–G–001

NOTE: A3 SIZE REDUCED TO HALF SCALE.

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A	30% DESIGN SUBMITTAL	11/08/13	APL

DRAWING REFERENCE NUMBER:

LT0077
G–001

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GENERAL NOTES:

1. EXISTING CONDITIONS INFORMATION IS BASED ON SURVEY PERFORMED IN JANUARY 2014 BY GEOTECHNIQUE.
2. REFERENCED UTM DATUM IS WGS 84/UTM 42N AND IS NOT TIED INTO THE CONSTRUCTION SITE CONTROLS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE BRIDGE 9 SURVEY WITH CONSTRUCTION AREA HORIZONTAL AND VERTICAL CONTROLS.
3. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND ADJUST WORK PLAN AND CONSTRUCTION ACCORDINGLY. COORDINATE ALL ADJUSTMENTS WITH ENGINEER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
4. IN CASE OF CONFLICT IN THE CONSTRUCTION DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD.
5. ALL ELEVATIONS ARE IN METERS UNLESS NOTED OTHERWISE.
6. EXISTING SURVEY MONUMENT, CONTROL POINTS AND STAKES, DISTURBED OR DESTROYED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE REPLACED OR RESTORED TO THEIR ORIGINAL CONDITION.
7. PROPOSED GRADING SHALL SLOPE UNIFORMLY BETWEEN CONTOURS AND SPOT ELEVATIONS SHOWN.
8. NO STRUCTURE SHALL BE BACKFILLED PRIOR TO THE ENGINEER'S REPRESENTATIVE'S APPROVAL.
9. 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.
10. RECOMMENDED CONSTRUCTION WORKS MAY VARY AS DIRECTED BY THE ENGINEER BASED ON ACTUAL SITE CONDITIONS.
11. THROUGHOUT CONSTRUCTION, CONTRACTOR TO MAINTAIN A TEMPORARY CROSSING FOR TRAFFIC. CONTRACTOR TO COORDINATE AND SUBMIT TRAFFIC MANAGEMENT PLAN TO USAID FOR REVIEW.
12. CONTRACTOR TO NOTE STATION EQUATIONS AT PROJECT LIMITS TO TIE THE BASELINE OF CONSTRUCTION TO THE BASELINE AS DEFINED BY THE LOUIS BERGER GROUP FOR THE CORRIDOR.
13. PROPOSED ROADWAY STRIPING SHALL BE COORDINATED WITH USAID BASED ON STRIPING ON THE GARDEZ TO KHOST ROAD PHASE 4.

SITE PREPARATION NOTES:

1. 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.
2. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND MAINTAIN A TEMPORARY BYPASS TO ALLOW THROUGH TRAFFIC IN BOTH DIRECTIONS THROUGHOUT THE BRIDGE CONSTRUCTION PERIOD.
3. HAY BALES, SILT FENCE, OR OTHER EROSION CONTROL MEASURES SHALL BE PLACED AT THE TOE OF SLOPE (BOTTOM OF SLOPE). SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION
4. CONTRACTOR SHALL ENSURE THAT ALL EXISTING CONCRETE AND ASPHALT PAVING AND SLABS HAVE BEEN SAWCUT, REMOVED, AND DISPOSED OF PROPERLY TO THE LIMITS AS SHOWN ON THE DRAWINGS.
5. CONSTRUCTION DEBRIS, INCLUDING BROKEN PAVEMENT, SHALL BE TRANSPORTED TO OFFSITE DISPOSAL AREA IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS AND IN ACCORDANCE WITH THE CONTRACT.
6. CONTRACTOR TO COORDINATE LIMITS OF CLEARING AND GRUBBING WITH THE LOCAL AUTHORITIES.

EROSION CONTROL NOTES:

1. CONTRACTOR SHALL PROTECT ALL STOCKPILES FROM EROSION AND RUNOFF DURING CONSTRUCTION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ANY SEDIMENT OR DEBRIS FROM MAIN ROADWAYS AS RESULT OF CONSTRUCTION ACTIVITIES.
3. CONTRACTOR SHALL PREVENT EROSION FROM THE PROJECT SITE AREA DUE TO CONSTRUCTION ACTIVITIES.

NOTE: A3 SIZE REDUCED TO HALF SCALE.

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AFGHANISTAN ENGINEERING SUPPORT PROGRAM

AESP

PROJECT TITLE:

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:

GENERAL NOTES

DESIGNED BY:	DATE:
ANF	03-28-2014
DRAWN BY:	SUBMITTED BY:
SCJ	TETRA TECH
CHECKED BY:	CAD FILE NAME:
JKM	LT0077-C-001

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C-001

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LEGEND

PROPOSED	DESCRIPTION	EXISTING
	BENCHMARK	
	BENCHMARK OR BORING	
	BOX CULVERT	
	BUILDING	
	COMPACTED CRUSHED STONE	
	CONCRETE	
	CONTROL POINT	
	EDGE OF SHOULDER	
	GUARDWALL	
	LIMIT OF CHANNEL	
	LIMIT OF ROAD	
	LIMITS OF WORK	
30.00	MAJOR CONTOUR	30.00
30.50	MINOR CONTOUR	30.50
	PIPE CULVERT	
	RIPRAP	
	SIGN	
	SLOPE ARROW	
733.00	SPOT GRADE	
	TEMPORARY BRIDGE	
	TREE	

ABBREVIATIONS

BLDG	BUILDING
B	BORE HOLE
BM	BENCHMARK
BVCE	BEGINNING VERTICAL CURVE ELEVATION
BVCS	BEGINNING VERTICAL CURVE STATION
CONC	CONCRETE
CP	CONTROL POINT
DIA	DIAMETER
DW-1	SIGN DESIGNATION
DW-6i	SIGN DESIGNATION
EL	ELEVATION
ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
EOS	EDGE OF SHOULDER
EVCE	ENDING VERTICAL CURVE ELEVATION
EVCS	ENDING VERTICAL CURVE STATION
ETW	EXISTING TRAVELED WAY
EXIST	EXISTING
EXP	EXPANSION
H	HEIGHT
INV	INVERT
KG	KILOGRAM
kPa	KILOPASCALS
L	LITER
LBG	LOUIS BERGER GROUP
M	METER
M^3	CUBIC METER
mm	MILLIMETER
MAX	MAXIMUM
MIN	MINIMUM
MISC	MISCELLANEOUS
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PI	POINT OF INTERSECTION
PROP	PROPOSED
PT	POINT OF TANGENT
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCBC	REINFORCED CONCRETE BOX CULVERT
R&D	REMOVE & DISPOSE
RI-I	SIGN DESIGNATION
REM	REMOVE
RET	RETAIN
SCH	SCHEDULE
STA	STATION
TOC	TOP OF CONCRETE
TP	TEST PIT
TYP	TYPICAL
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
W/	WITH

NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
AND
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

TETRA TECH
AFGHANISTAN ENGINEERING SUPPORT PROGRAM
AESP

PROJECT TITLE:
GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:
LEGEND AND ABBREVIATIONS

DESIGNED BY: ANF	DATE: 03-28-2014
DRAWN BY: ANF	SUBMITTED BY: TETRA TECH
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LT0077
C-002

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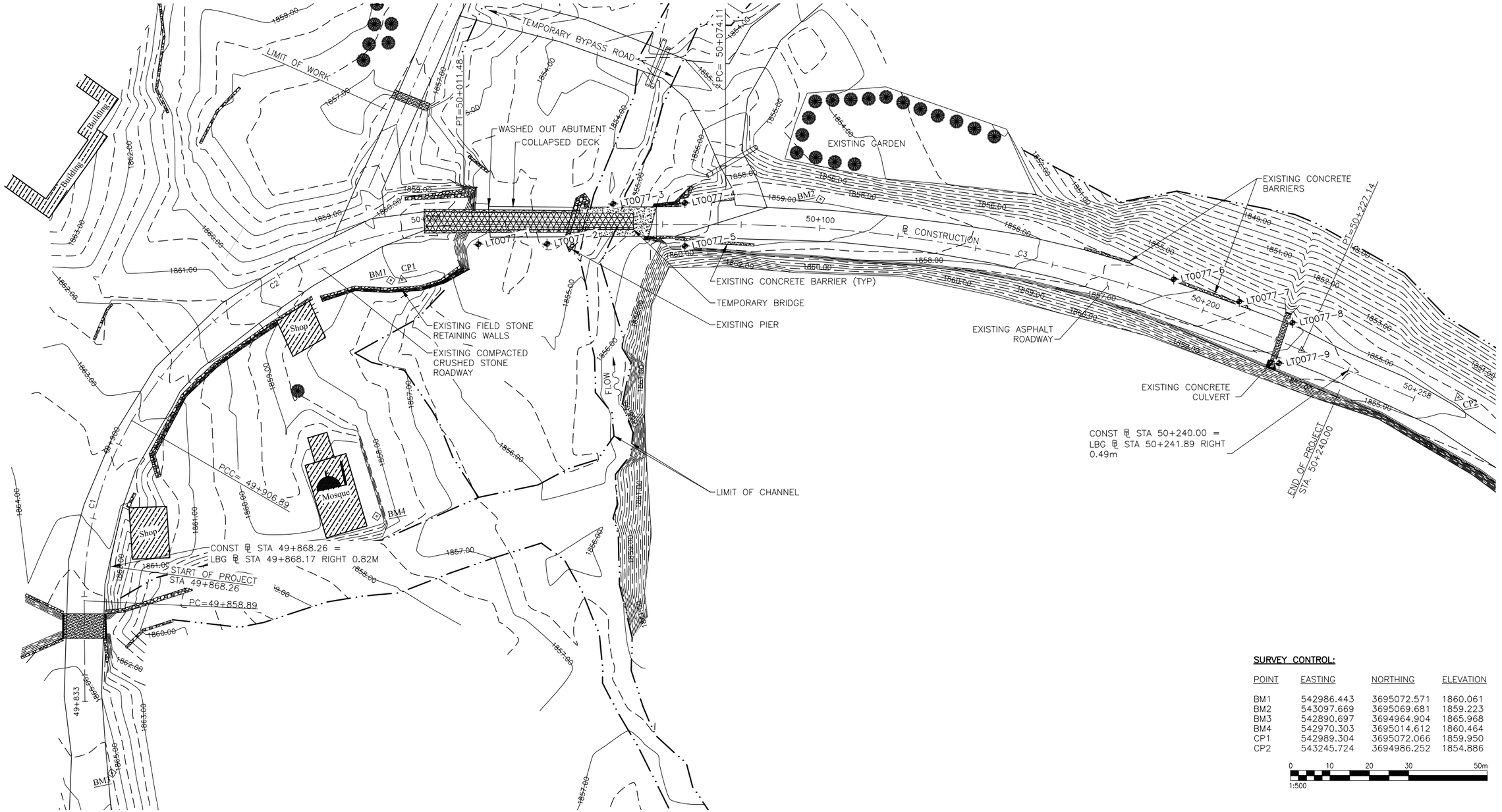

SURVEY CONTROL:

POINT	EASTING	NORTHING	ELEVATION
BM1	542986.443	3695072.571	1860.061
BM2	543097.669	3695069.681	1859.223
BM3	542890.697	3694964.904	1865.968
BM4	542970.303	3695014.612	1860.464
CP1	542989.304	3695072.066	1859.950
CP2	543245.724	3694986.252	1854.886

0 10 20 30 50m
1:500

N

NOTE: A3 SIZE REDUCED TO HALF SCALE.

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TETRA TECH

AFGHANISTAN ENGINEERING SUPPORT PROGRAM

A E S P

PROJECT TITLE:

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:

EXISTING CONDITONS PLAN

DESIGNED BY:	DATE:
ANF	03-28-2014
DRAWN BY:	SUBMITTED BY:
SCJ	TETRA TECH
CHECKED BY:	CAD FILE NAME:
JKM	LT0077-C-101

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LT0077
C-101

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LIMIT OF WORK

TEMPORARY BYPASS ROAD

PT=50+011.48

PC= 50+074.11

R&D SLOPE PROTECTION
STA 49+995.68
TO STA 50+011.93

R&D SLOPE PROTECTION
STA 50+057.72 TO STA
50+067.88, LEFT

RETAIN EXISTING
GARDEN

R&D CONC. BARRIER
STA 50+063.51 TO STA 50+078.02, LEFT

R&D CONCRETE BARRIER
STA 50+166.80 TO STA 50+178.66

R&D CONCRETE BARRIER
STA 50+192.42 TO STA 50+210.32

RETAIN EXISTING 1.4m X 2.0m RCBC
STA 50+220.30 TO STA 50+221.75

FULL-DEPTH
SAWCUT EXISTING
PAVEMENT

50+100

℄ CONSTRUCTION

C3

C2

C1

BM1

CP1

BM2

BM3

BM4

CP2

Shop

Mosque

Building

FLOW

50+200

PT=50+227.14

50+258

R&D CONC. BARRIER
STA 50+059.60 TO STA 50+083.40, RIGHT

R&D SLOPE PROTECTION
STA 50+055.14 TO STA 50+063.15, RIGHT

R&D EXISTING ASPHALT PAVEMENT
TO STATION 50+240.00

R&D EXISTING TEMPORARY
SUPERSTRUCTURE, ABUTMENTS, EXISTING
BRIDGE SPANS, AND PIER IN THEIR ENTIRETY

RETAIN EXISTING RETAINING WALL
STA 49+895.90 TO STA 50+008.02

49+900

PCC= 49+906.89

CONST ℄ STA 50+240.00 =
LBG ℄ STA 50+241.89 RIGHT 0.49m

END OF PROJECT
STA. 50+240.00

CONST ℄ STA 49+868.26 =
LBG ℄ STA 49+868.17 0.82M RT

START OF PROJECT
STA 49+868.26

PC=49+858.89

RETAIN EXISTING 3.5m X 3.5m RCBC
STA 48+849.32 TO STA 49+855.59

49+833

0 10 20 30 50m
1:500

N

NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
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INTERNATIONAL DEVELOPMENT

TETRA TECH

AFGHANISTAN ENGINEERING
SUPPORT PROGRAM

AESP

PROJECT TITLE:

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:

DEMOLITION PLAN

DESIGNED BY:	DATE:
ANF	03-28-2014
DRAWN BY:	SUBMITTED BY:
ANF	TETRA TECH
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JKM	LT0077-C-102

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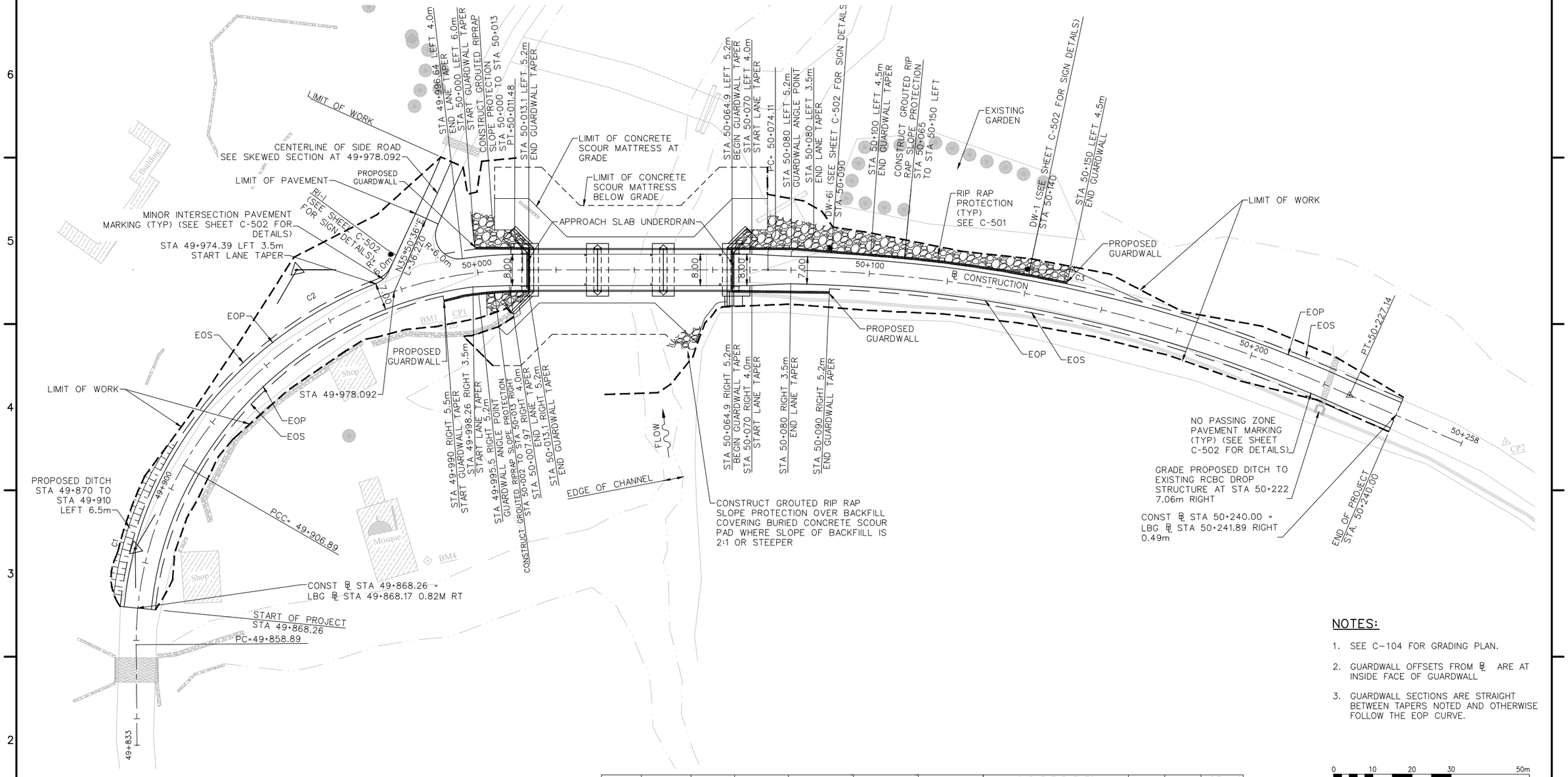

CURVE #	PI STA.	DISTANCE	AZUMUTH DD-MM-SS	NORTHING	EASTING	DEFLECTION	CURVE ELEMENTS T	R	LC	E	V (KPH)	SUPER E (%)	WIDENING
C1	49+883.48	50.219	11-39-51	3695033.3537	542898.0000	30-33-32 RT	24.587	90	48.002	3.298	50	–	–
C2	49+964.54	82.236	42-13-23	3695094.2525	542953.2642	59-55-36 RT	57.650	100	104.592	15.427	50	7.6	–
C3	50+151.80	197.968	102-08-59	3695052.5872	543146.7975	24-21-23 RT	77.690	360	153.035	8.288	50	4	–
		108.810	126-30-21										

PROPOSED ALIGNMENT IS BASED ON THE DETAILED ENGINEERING DESIGN OF GARDEZ-KHOST ROAD REHABILITATION PROJECT, DATED JUNE 2010 AND PREPARED BY LBG/BV. SEE DESIGN ANALYSIS REPORT FOR MORE INFORMATION.

NOTES:

1. SEE C-104 FOR GRADING PLAN.
2. GUARDWALL OFFSETS FROM ℄ ARE AT INSIDE FACE OF GUARDWALL
3. GUARDWALL SECTIONS ARE STRAIGHT BETWEEN TAPERS NOTED AND OTHERWISE FOLLOW THE EOP CURVE.

0 10 20 30 50m
1:500

N

NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN AND UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

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SHEET CONTENTS:

ROADWAY PLAN
STA 49+800 TO STA 50+260

DESIGNED BY: ANF	DATE: 03-28-2014
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DRAWING REFERENCE NUMBER:
LT0077
C-103

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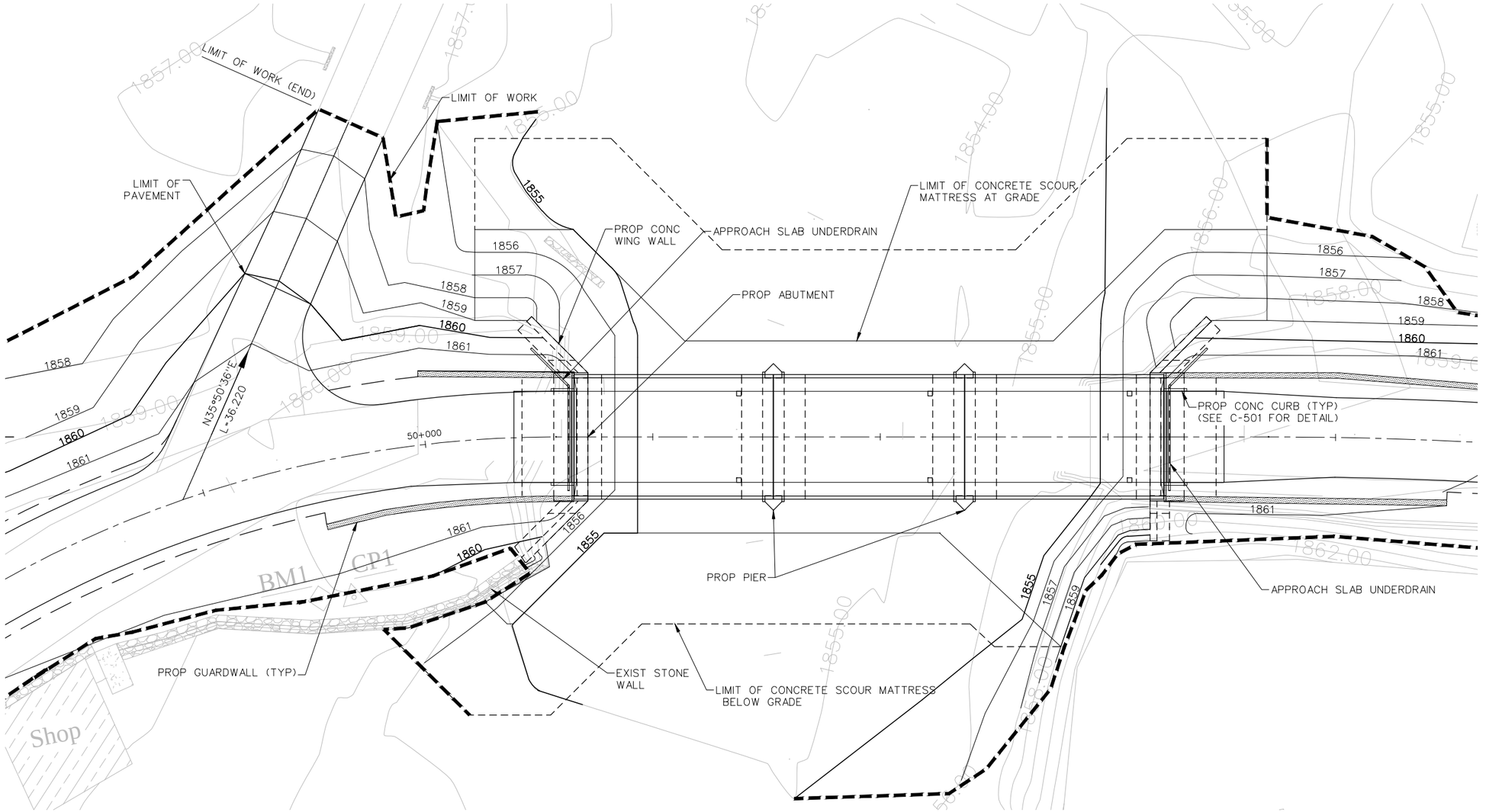

NOTES:

1. SEE ROADWAY CROSS SECTIONS FOR GRADING OUTSIDE THE LIMITS SHOWN ON THIS PLAN.
2. SEE SHEET C-103 FOR LIMITS OF GROUTED RIPRAP ON THE APPROACHES.
3. PROPOSED RIPRAP AT WING WALLS NOT SHOWN FOR CLARITY.
4. SEE S-101 FOR BRIDGE DIMENSIONS.

0 5 10 15 25m
1:250

N

NOTE: A3 SIZE REDUCED TO HALF SCALE.

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AFGHANISTAN ENGINEERING SUPPORT PROGRAM

A E S P

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GARDEZ TO KHOST ROAD
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WO.LT.0077

SHEET CONTENTS:

GRADING PLAN

DESIGNED BY:	DATE:
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TRW	TETRA TECH
CHECKED BY:	CAD FILE NAME:
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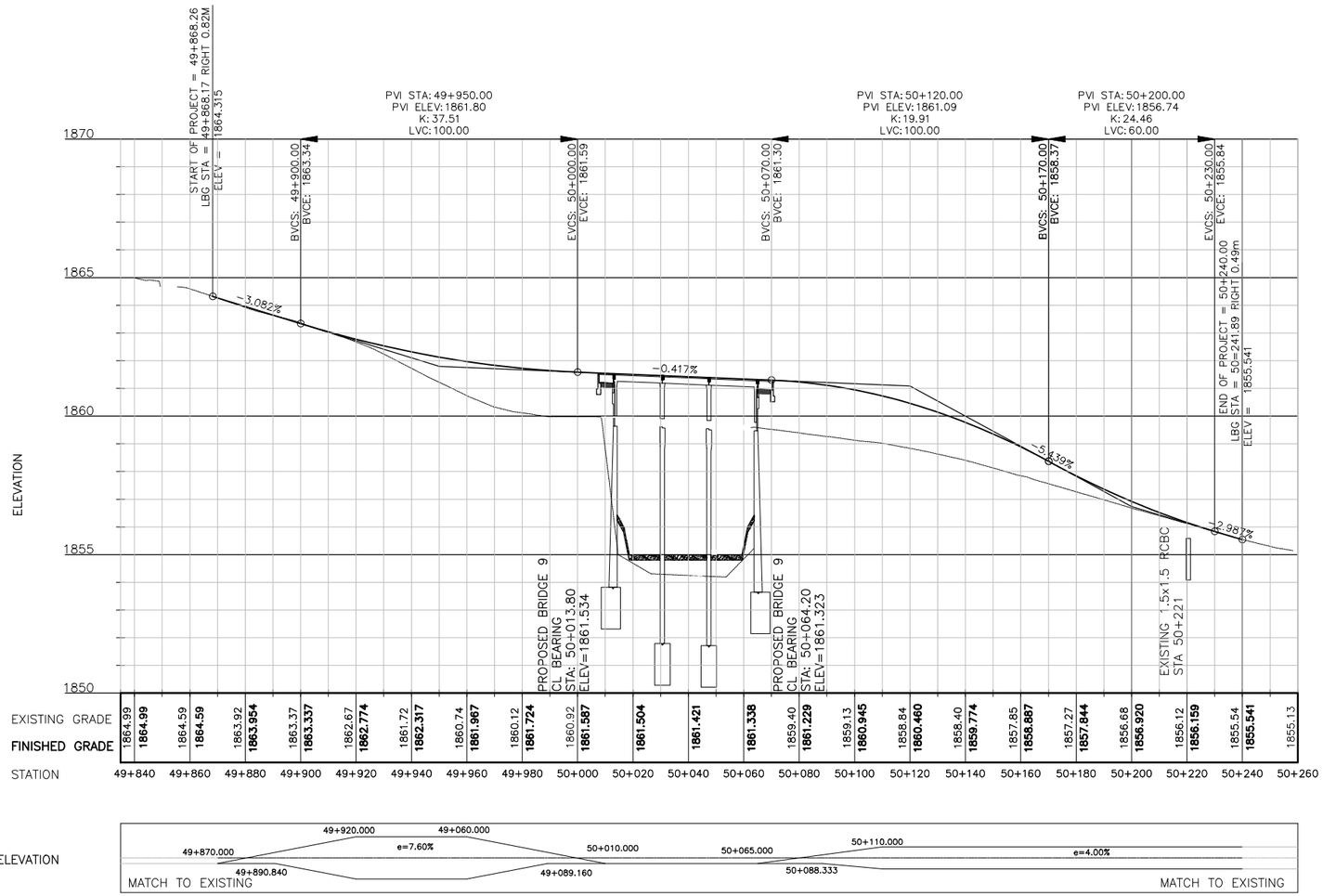
C-104



ROADWAY PROFILE

HORIZ. SCALE 1:1000
VERTICAL SCALE 1:100

HORIZONTAL SCALE 1:1000
0 200 400 600 1000m
0 20 40 60 100m
VERTICAL SCALE 1:100

NOTE: A3 SIZE REDUCED TO HALF SCALE.

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SUPPORT PROGRAM

AESP

PROJECT TITLE:

GARDEZ TO KHOST ROAD
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WO.LT.0077

SHEET CONTENTS:

ROADWAY PROFILE
STA 49+840 TO STA 50+260

DESIGNED BY:	DATE:
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LT0077
C-201

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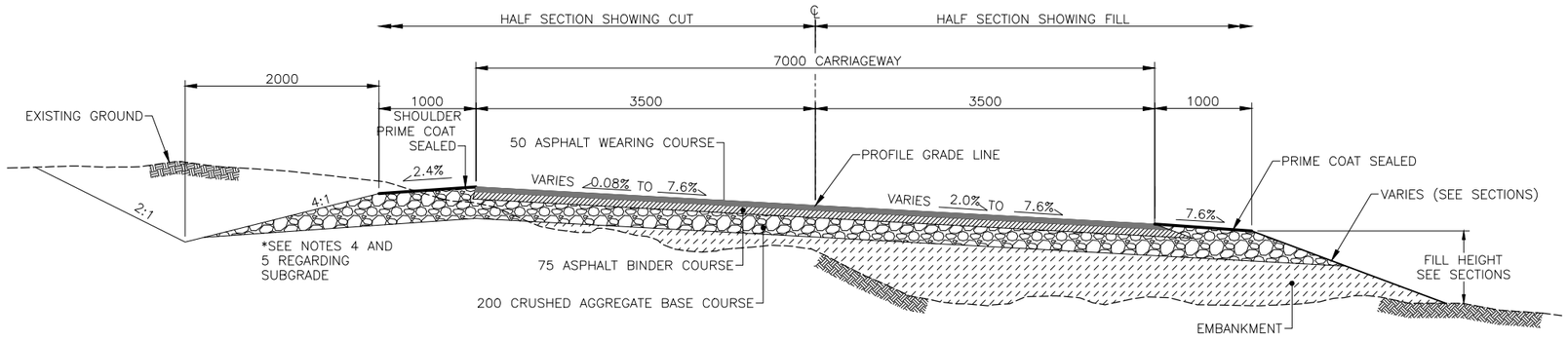
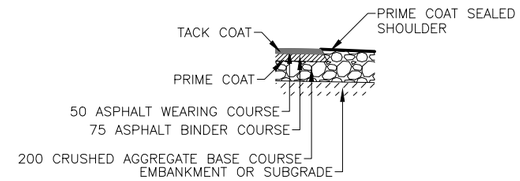
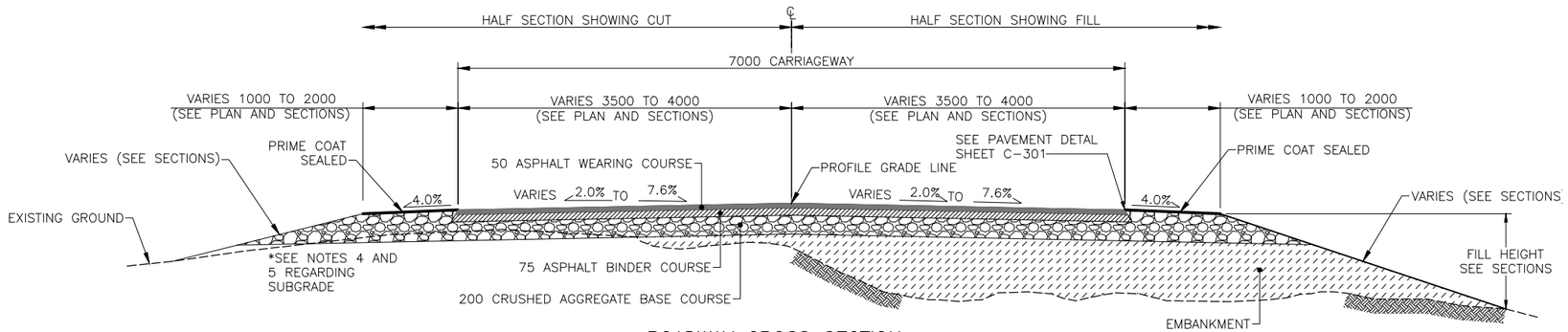


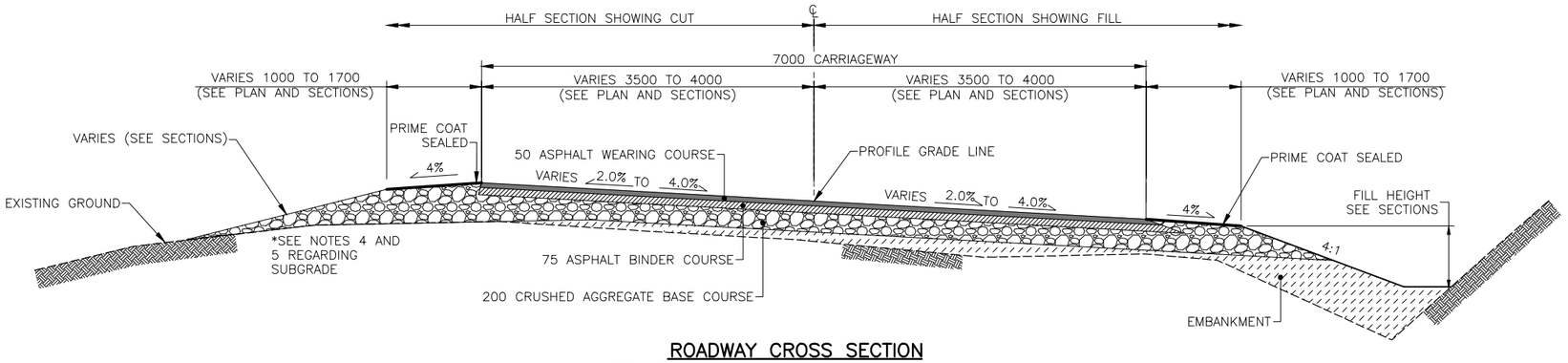
ROADWAY CROSS SECTION
STA 49+868.260 TO STA 49+920.000
SCALE 1:30



PAVEMENT DETAIL
SCALE 1:20



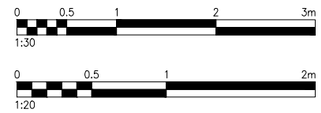
ROADWAY CROSS SECTION
STA 49+920.000 TO STA 50+013.060
SCALE 1:30



ROADWAY CROSS SECTION
STA 50+064.900 TO STA 50+240.000
SCALE 1:30

NOTES:

1. THE SUPERELEVATION RATE (e) IS SHOWN ON SHEET C-201 FOR EACH HORIZONTAL CURVE.
2. UNSUITABLE MATERIALS SHALL BE REMOVED AS DIRECTED BY THE ENGINEER AND SHALL BE REPLACED WITH SUITABLE BACKFILL MATERIALS.
3. THE CONTRACTOR MAY SECURE APPROVAL FROM THE ENGINEER TO FLATTEN CUT SLOPES TO OBTAIN ADDITIONAL EMBANKMENT MATERIAL.
4. EXPOSED SUBGRADE SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM MODIFIED PROCTOR DENSITY IN ACCORDANCE WITH AASHTO T180-95.
5. ON SECTIONS WITH ROCK SUBGRADE (CUT), EXCAVATE 150mm BELOW SUBGRADE AND REPLACE WITH SELECT TOPPING MATERIAL OR WITH OTHER SUITABLE MATERIAL.



UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.
NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
AND
UNITED STATES AGENCY FOR
INTERNATIONAL DEVELOPMENT

TETRA TECH

AFGHANISTAN ENGINEERING
SUPPORT PROGRAM

AESP

PROJECT TITLE:

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

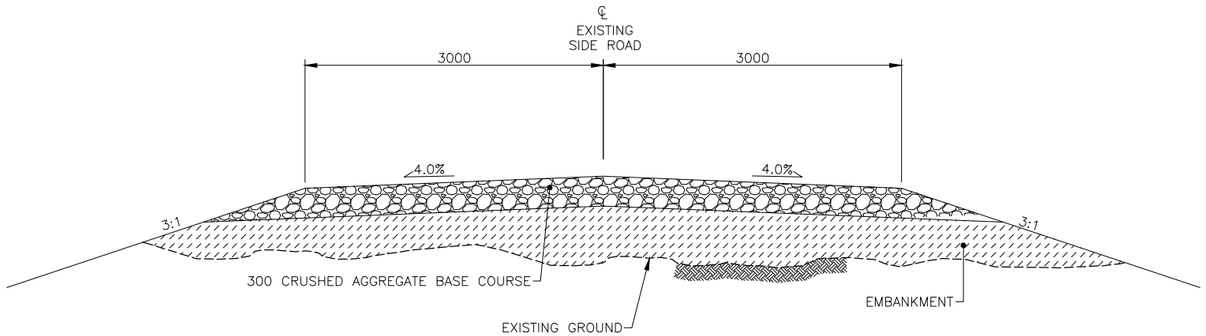
SHEET CONTENTS:

TYPICAL ROADWAY
CROSS-SECTIONS
SHEET 1 OF 2

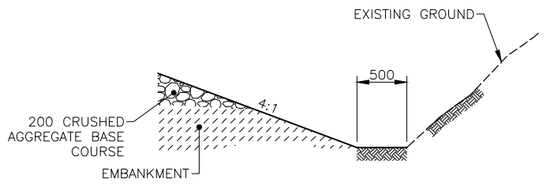
DESIGNED BY:	DATE:
ANF	03-28-2014
DRAWN BY:	SUBMITTED BY:
ANF	TETRA TECH
CHECKED BY:	CAD FILE NAME:
JKM	LT0077-C-301

SYMB	SUBMITTAL/REVISION DESCRIPTION	DATE	APR
0	FINAL DESIGN SUBMITTAL	03/28/14	APL
A	30% DESIGN SUBMITTAL	11/08/13	APL

DRAWING REFERENCE NUMBER:
LT0077
C-301



TYPICAL SIDE ROAD CROSS SECTION
SCALE 1:30



DITCH IN FILL SECTION
(SEE SECTIONS)
SCALE 1:30

0 0.5 1 2 3m
1:30

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.
NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
AND
UNITED STATES AGENCY FOR
INTERNATIONAL DEVELOPMENT

TETRA TECH
AFGHANISTAN ENGINEERING
SUPPORT PROGRAM
AESP

PROJECT TITLE:
GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

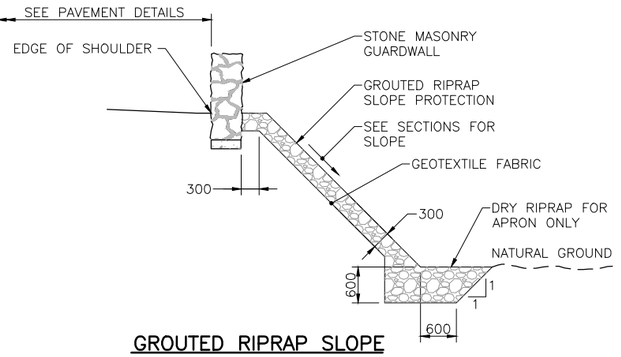
SHEET CONTENTS:
TYPICAL ROADWAY
CROSS-SECTIONS
SHEET 2 OF 2

DESIGNED BY:	DATE:
ANF	03-28-2014
DRAWN BY:	SUBMITTED BY:
ANF	TETRA TECH
CHECKED BY:	CAD FILE NAME:
JKM	LT0077-C-302

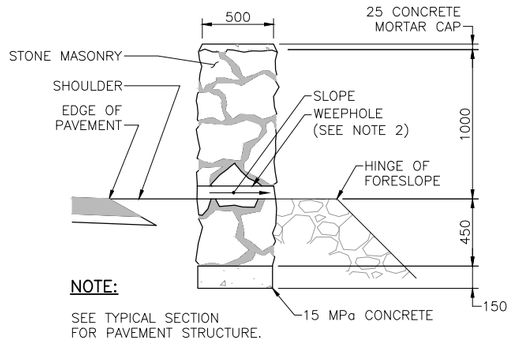
SYMB	SUBMITTAL/REVISION DESCRIPTION	DATE	APR
0	FINAL DESIGN SUBMITTAL	03/28/14	APL

DRAWING REFERENCE NUMBER:
LT0077
C-302

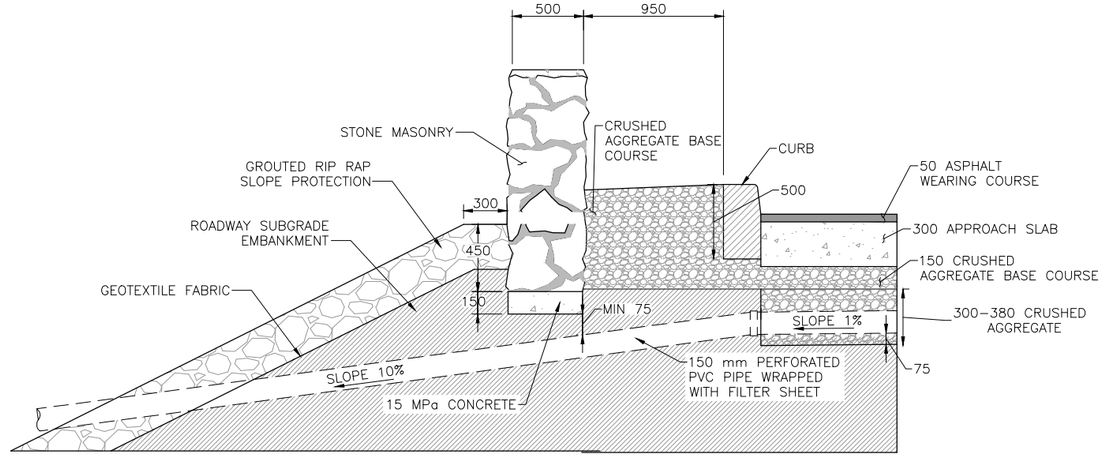
P:\1298\127-1298-12001-LT0077\CAD\SheetFiles\05_Civil\LT0077-C-302.dwg 3/28/2014 3:32:49 PM Barrett, Patrick



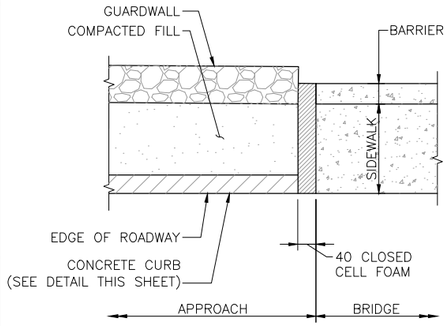
GROUTED RIPRAP SLOPE PROTECTION DETAIL
NTS



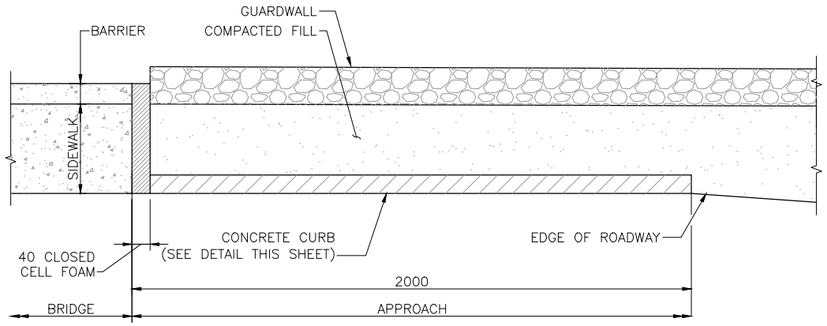
STONE MASONRY GUARDWALL
NTS



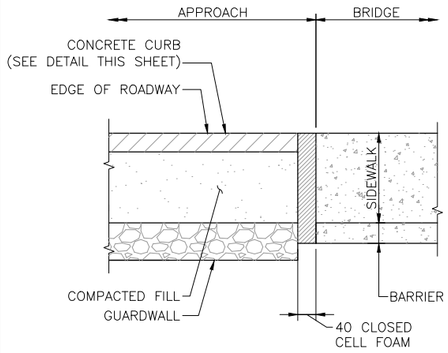
APPROACH SLAB UNDERDRAIN OUTLET
NTS



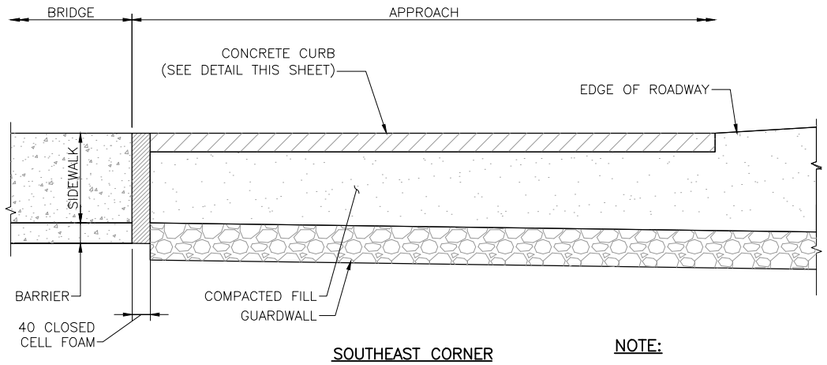
NORTHWEST CORNER



NORTHEAST CORNER



SOUTHWEST CORNER

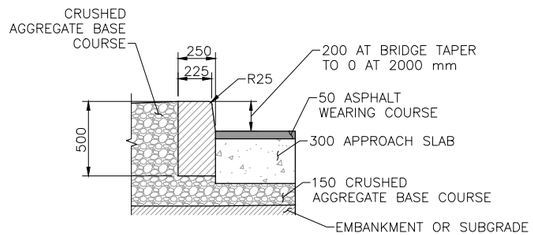


SOUTHEAST CORNER

APPROACH TRANSITIONS
NTS

NOTE:

FOR GEOMETRY, INCLUDING TAPER LENGTHS, SEE SHEET C–103.



CONCRETE CURB DETAIL
NTS

NOTES:

1. CEMENTED STONE MASONRY WALL SHALL BE CONSTRUCTED ON COMPACTED GROUND.
2. PLACE 100ø WEEP HOLES AT 5 METERS ON CENTER (MAXIMUM) ALONG GUARDWALLS.

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

NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
AND
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

TETRA TECH
AFGHANISTAN ENGINEERING SUPPORT PROGRAM
AESP

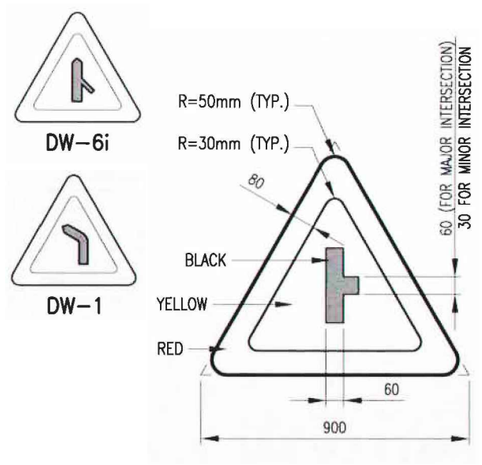
PROJECT TITLE:
GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

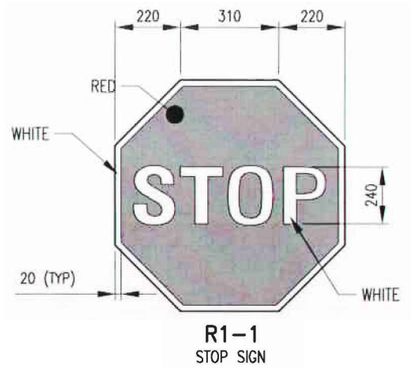
SHEET CONTENTS:
GUARDWALL
SLOPE PROTECTION AND
APPROACH TRANSITION DETAILS

DESIGNED BY: ANF	DATE: 03–28–2014
DRAWN BY: SCJ	SUBMITTED BY: TETRA TECH
CHECKED BY: JKM	CAD FILE NAME: LT0077–C–501

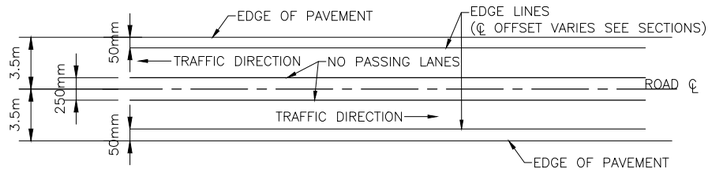
SYMB	SUBMITTAL/REVISION DESCRIPTION	DATE	APR
0	FINAL DESIGN SUBMITTAL	03/28/14	APL
A	30% DESIGN SUBMITTAL	11/08/13	APL

DRAWING REFERENCE NUMBER:
LT0077
C–501

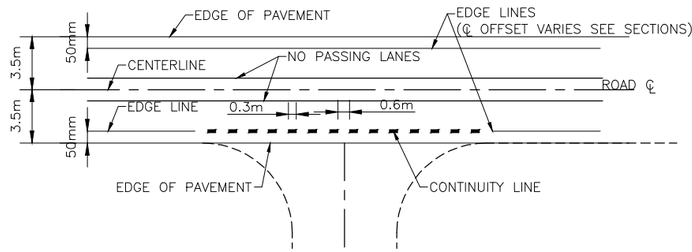




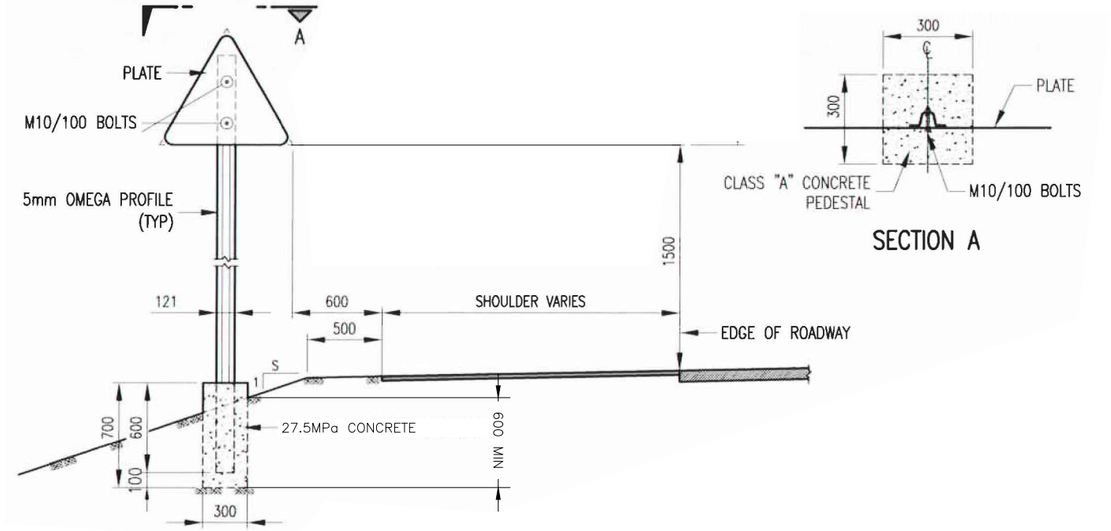
SIGN DETAILS
NTS



NO PASSING ZONES PAVEMENT MARKING (BOTH DIRECTIONS)



MINOR INTERSECTION PAVEMENT MARKING



SECTION A

SIGN INSTALLATION DETAILS
NTS

ROAD PAVEMENT MARKING DESCRIPTION	
NO PASSING LANE	SOLID WHITE LINE, 100mm WIDTH
EDGE LINE	SOLID WHITE LINE, 100mm WIDTH
CONTINUITY LINE (MINOR INTERSECTING ROAD)	INTERMITTENT LINES, 0.3m LONG, 0.6m GAP, 100mm WIDTH

PAVEMENT MARKING DETAILS
NTS

NOTES:

1. ROAD SIGNS SHOULD CONFORM WITH THE 1968 UNITED NATIONS' VIENNA CONVENTION ON ROAD SIGNS AND SIGNALS, AMENDED IN NOVEMBER 1995.
2. ROAD SIGNS SHALL BE MOUNTED FACING THE DIRECTION OF TRAFFIC FLOW AT AN ANGLE THAT GIVES A HIGH LEVEL OF REFLECTIVITY BUT WITHOUT GLARE, USUALLY TO THE RIGHT SIDE OF THE ROAD.
3. TRIANGULAR SIGNS SHALL BE EQUILATERAL WITH 900mm LENGTH, THE SYMBOL SHALL BE BLACK ON YELLOW BACKGROUND WITH 80mm RED BORDER
4. SIGN LOCATION MAY VARY AS DIRECTED BY THE ENGINEER TO SUIT SITE CONDITIONS.
5. REFER TO PLAN FOR LOCATION AND PLACEMENT OF TRAFFIC SIGNS.
6. NO PASSING ZONE PAVEMENT MARKING SHOULD BE USED WITHIN THE LIMITS OF THE PROJECT

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.
NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
AND
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

TETRA TECH
AFGHANISTAN ENGINEERING SUPPORT PROGRAM
AESP

PROJECT TITLE:
GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:
SIGN AND
PAVEMENT MARKING DETAILS

DESIGNED BY:	DATE:
ANF	03–28–2014
DRAWN BY:	SUBMITTED BY:
SCJ	TETRA TECH
CHECKED BY:	CAD FILE NAME:
JKM	LT0077–C–502

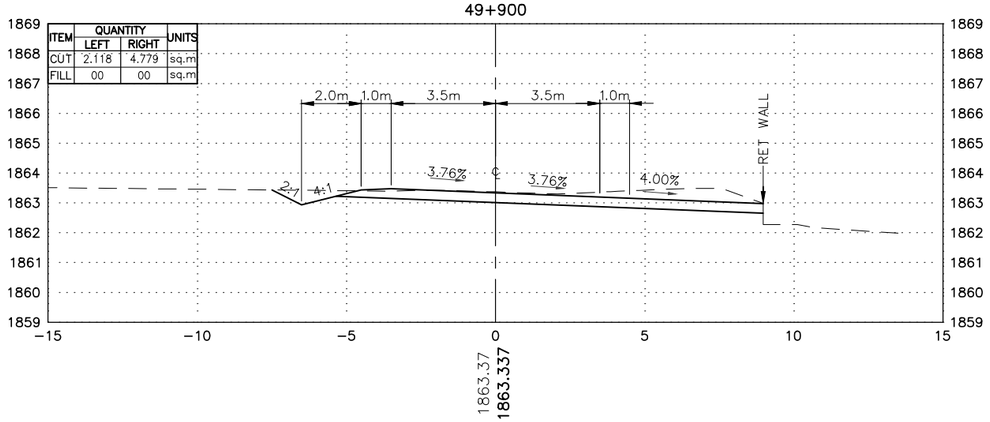
SYMB	SUBMITTAL/REVISION DESCRIPTION	DATE	APR
0	FINAL DESIGN SUBMITTAL	03/28/14	APL

DRAWING REFERENCE NUMBER:
LT0077
C–502

P:\1298\127–1298–12001–LT0077\CAD\SheetFiles\05_Civil\LT0077–C–502.dwg 3/28/2014 3:33:14 PM Barrett, Patrick

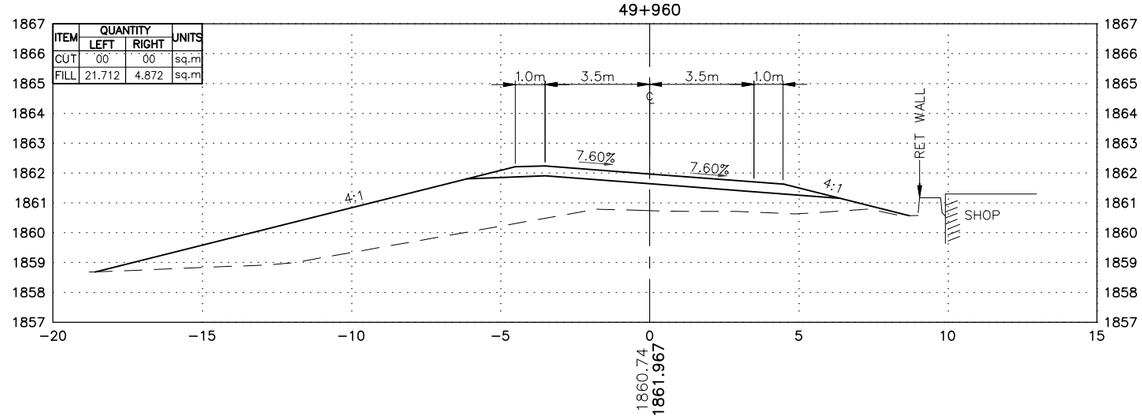
49+900

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT	2.118	4.779	sq.m
FILL	00	00	sq.m



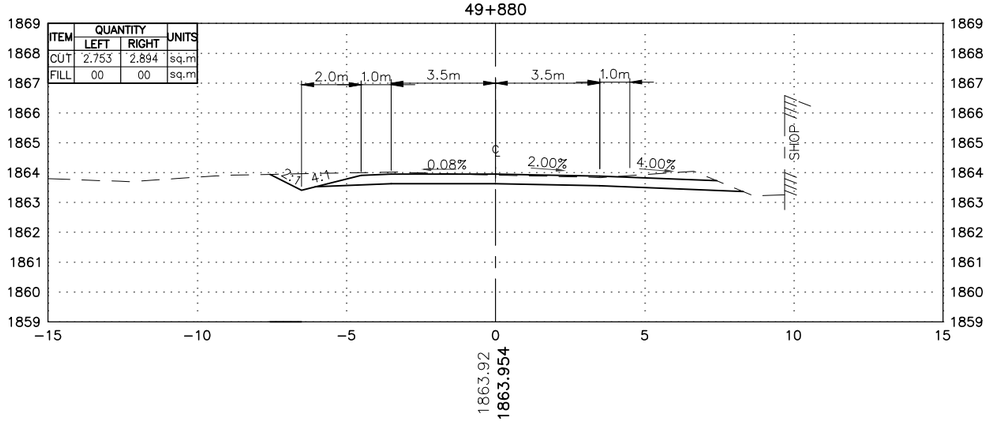
49+960

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT	00	00	sq.m
FILL	21.712	4.872	sq.m



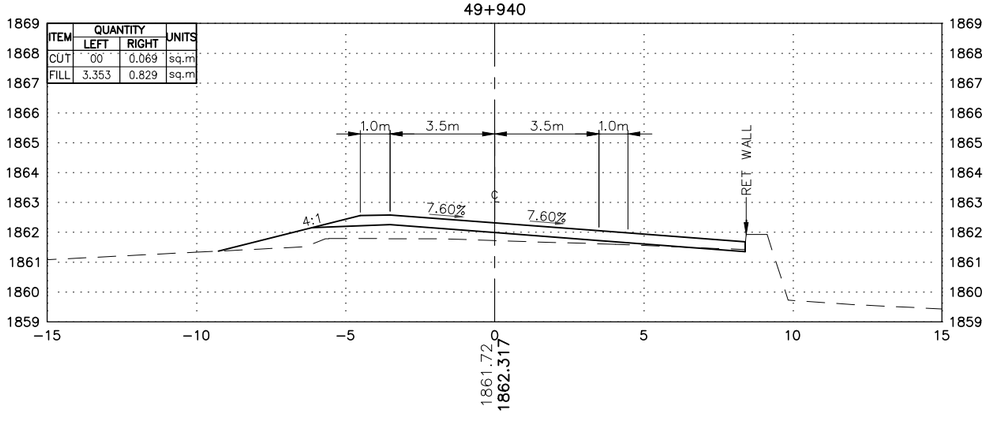
49+880

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT	2.753	2.894	sq.m
FILL	00	00	sq.m



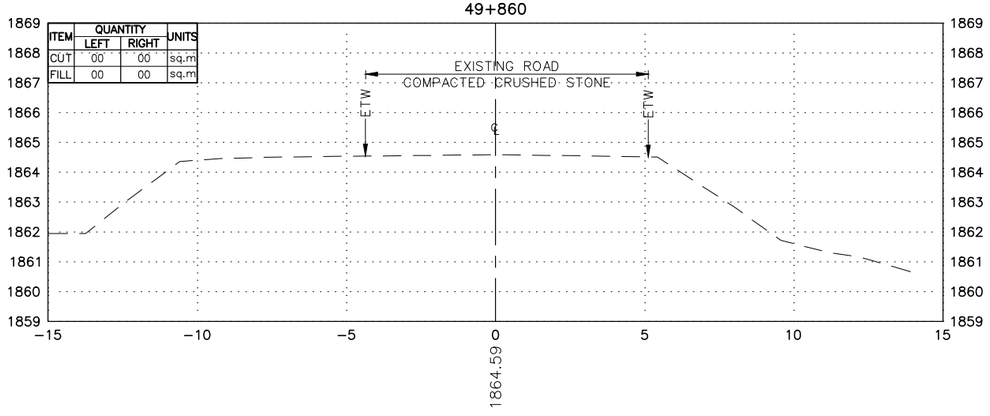
49+940

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT	00	0.069	sq.m
FILL	3.353	0.829	sq.m



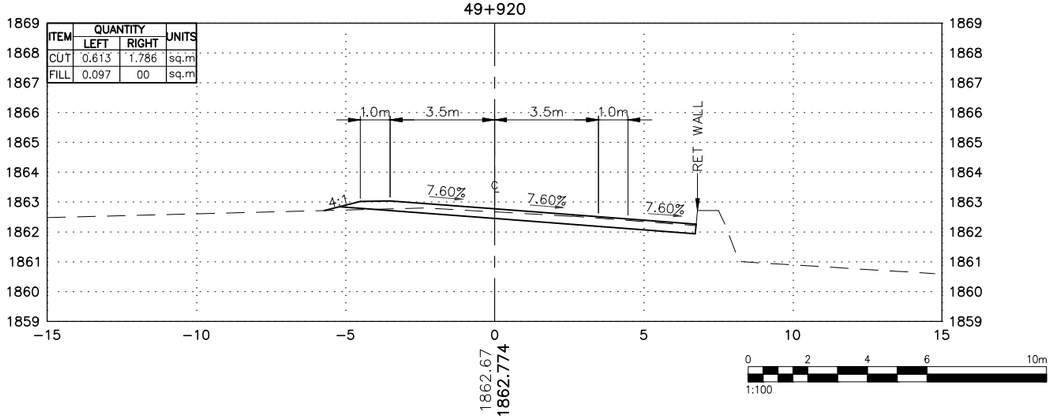
49+860

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT	00	00	sq.m
FILL	00	00	sq.m



49+920

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT	0.613	1.786	sq.m
FILL	0.097	00	sq.m



NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
AND
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

TETRA TECH

AFGHANISTAN ENGINEERING SUPPORT PROGRAM

A E S P

PROJECT TITLE:

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:

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

DESIGNED BY:	DATE:
ANF	03-28-2014
DRAWN BY:	SUBMITTED BY:
ANF	TETRA TECH
CHECKED BY:	CAD FILE NAME:
JKM	LT0077-C-701

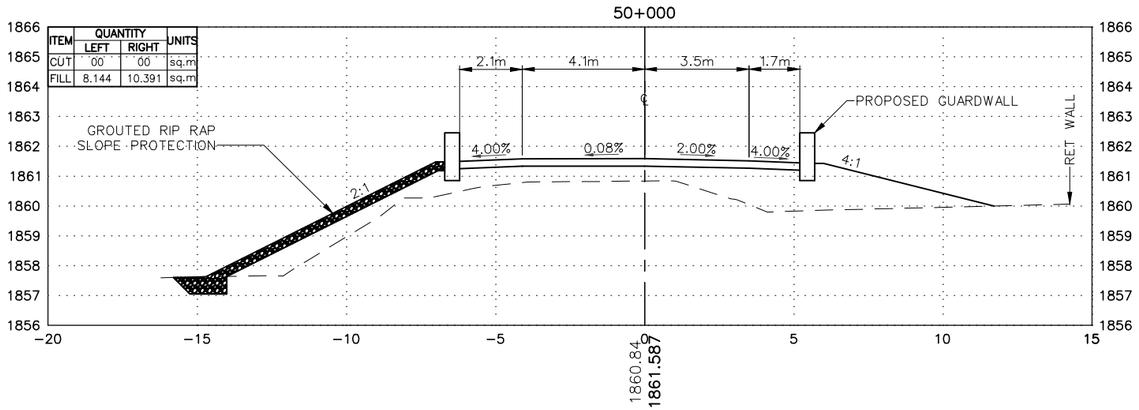
SYMB	SUBMITTAL/REVISION DESCRIPTION	DATE	APR
0	FINAL DESIGN SUBMITTAL	03/28/14	APL
A	30% DESIGN SUBMITTAL	11/08/13	APL

DRAWING REFERENCE NUMBER:

LT0077
C-701

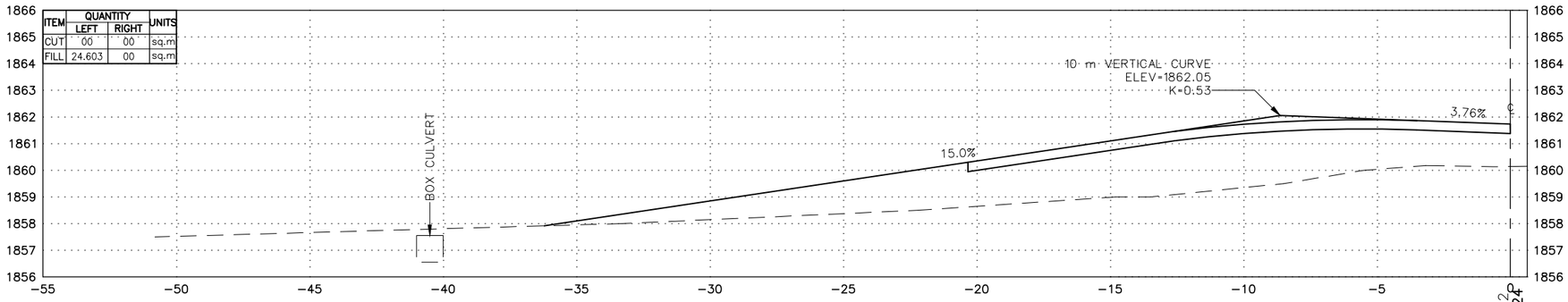
50+000

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT	00	00	sq.m
FILL	8.144	10.391	sq.m



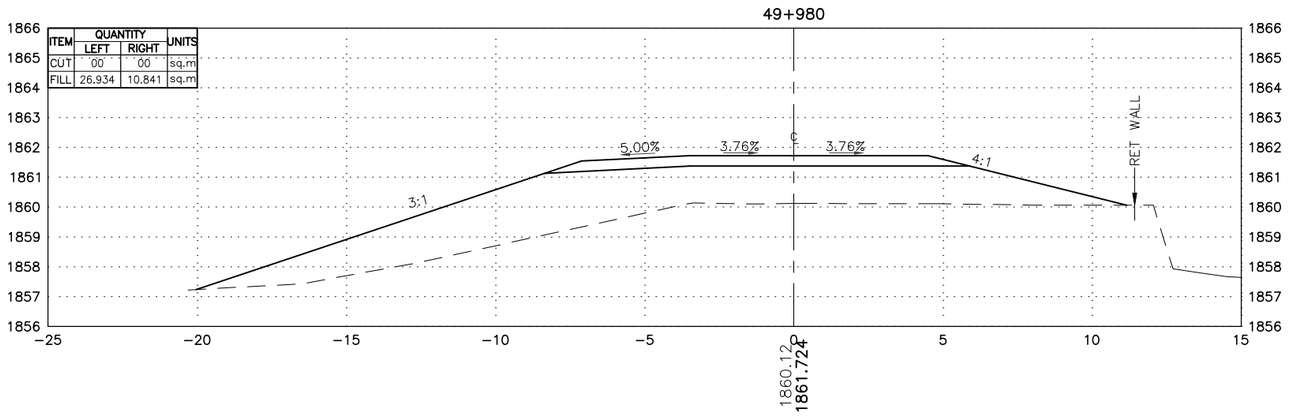
49+978.092 SKEWED TO CL OF EXISTING SIDE ROAD (PROPOSED SIDE ROAD TIE–IN)

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT	00	00	sq.m
FILL	24.603	00	sq.m



49+980

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT	00	00	sq.m
FILL	26.934	10.841	sq.m



0 2 4 6 10m
1:100

NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
AND
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

TETRA TECH

AFGHANISTAN ENGINEERING SUPPORT PROGRAM

AESP

PROJECT TITLE:

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:

ROADWAY CROSS SECTIONS
STA 49+980 – STA 50+000

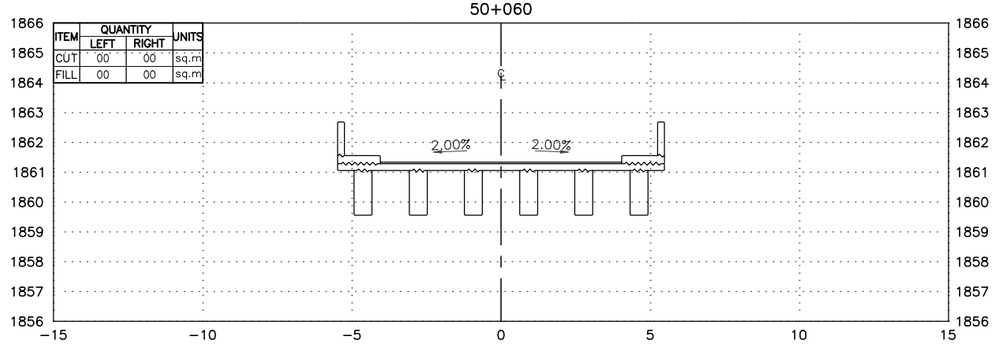
DESIGNED BY: ANF	DATE: 03–28–2014
DRAWN BY: ANF	SUBMITTED BY: TETRA TECH
CHECKED BY: JKM	CAD FILE NAME: LT0077–C–702

SYMB	SUBMITTAL/REVISION DESCRIPTION	DATE	APR
0	FINAL DESIGN SUBMITTAL	03/28/14	APL
A	30% DESIGN SUBMITTAL	11/08/13	APL

DRAWING REFERENCE NUMBER:
LT0077
C–702

50+060

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT	00	00	sq.m
FILL	00	00	sq.m



1861.338

50+040

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
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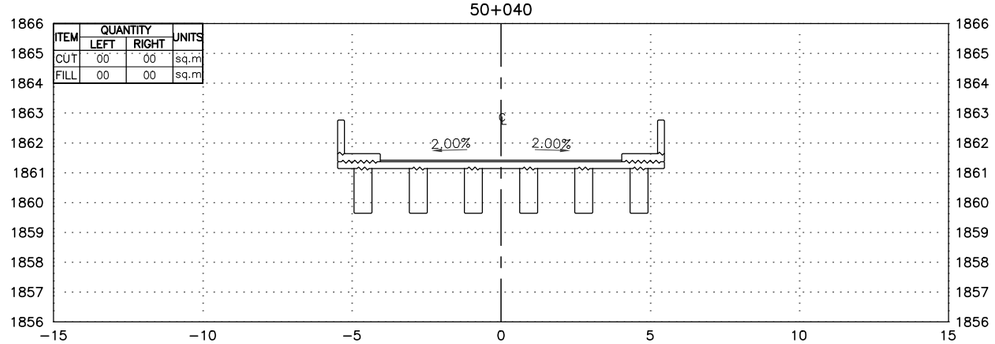
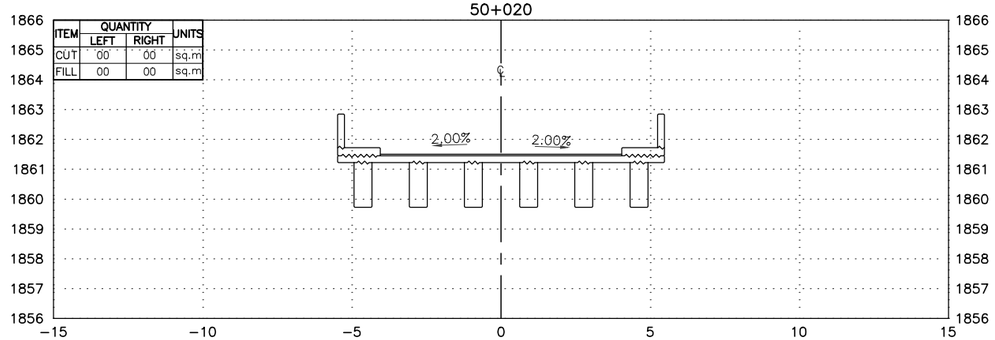
FILL	00	00	sq.m



1861.421

50+020

ITEM	QUANTITY LEFT	QUANTITY RIGHT	UNITS
CUT	00	00	sq.m
FILL	00	00	sq.m



1861.504

0 2 4 6 10m
1:100

NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
AND
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

TETRA TECH

AFGHANISTAN ENGINEERING SUPPORT PROGRAM

AESP

PROJECT TITLE:

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:

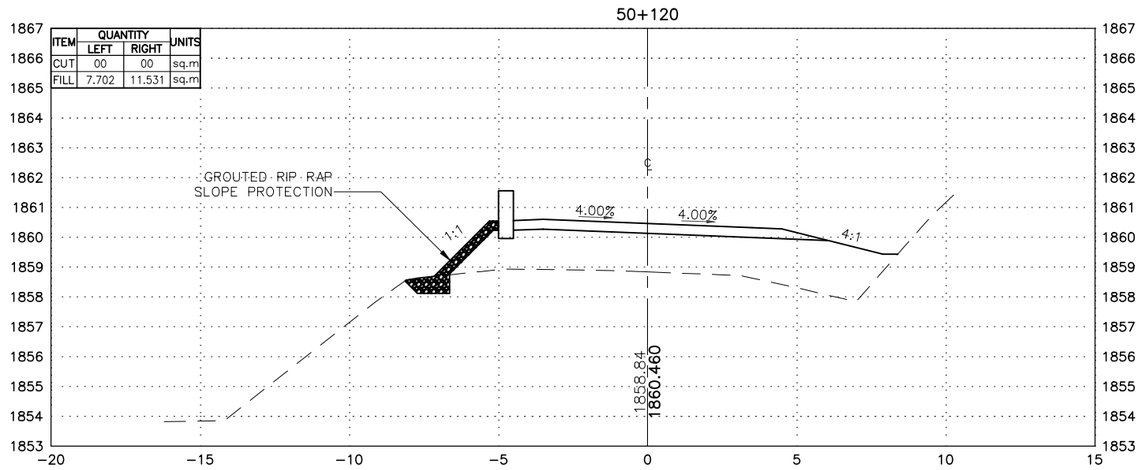
ROADWAY CROSS SECTIONS
STA 50+020 – STA 50+060

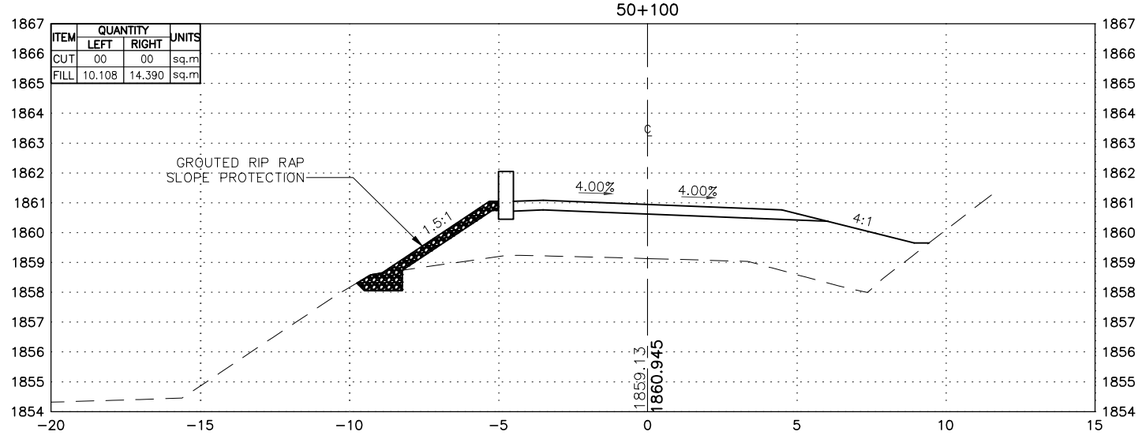
DESIGNED BY:	DATE:
ANF	03-28-2014
DRAWN BY:	SUBMITTED BY:
ANF	TETRA TECH
CHECKED BY:	CAD FILE NAME:
JKM	LT0077-C-703

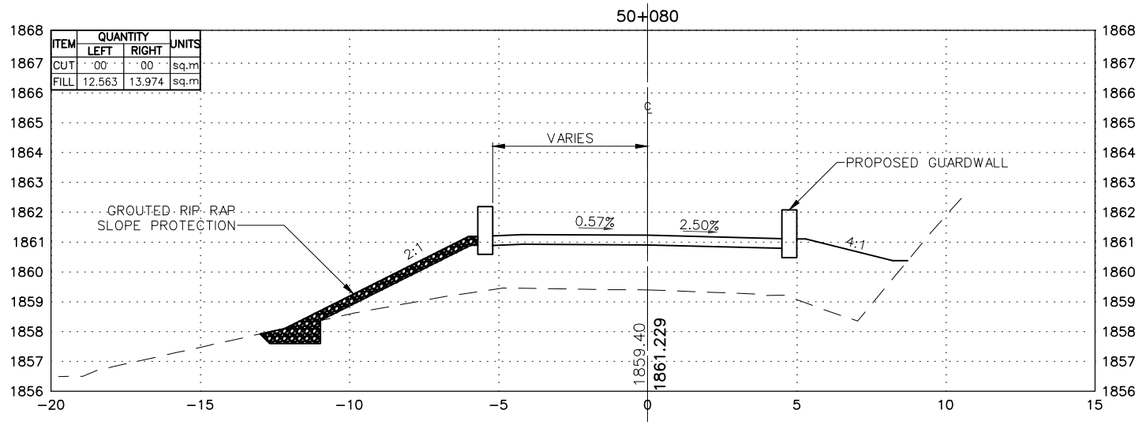
SYMB	SUBMITTAL/REVISION DESCRIPTION	DATE	APR
0	FINAL DESIGN SUBMITTAL	03/28/14	APL
A	30% DESIGN SUBMITTAL	11/08/13	APL

DRAWING REFERENCE NUMBER:

LT0077
C-703







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NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
AND
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

TETRA TECH

AFGHANISTAN ENGINEERING SUPPORT PROGRAM

AESP

PROJECT TITLE:

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:

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

DESIGNED BY:	DATE:
ANF	03-28-2014
DRAWN BY:	SUBMITTED BY:
ANF	TETRA TECH
CHECKED BY:	CAD FILE NAME:
JKM	LT0077-C-704

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C-704

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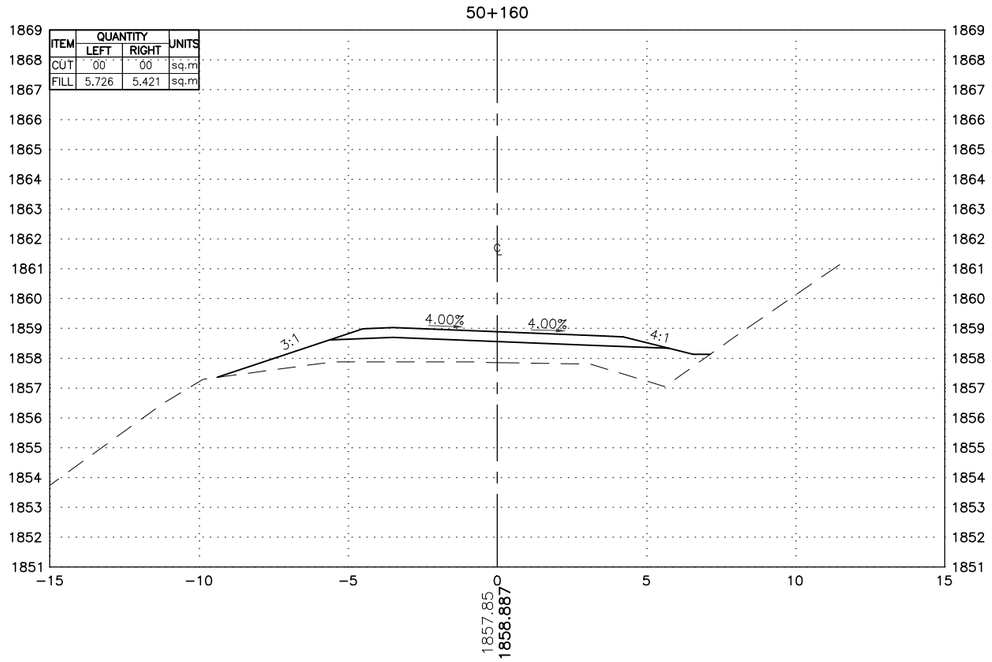

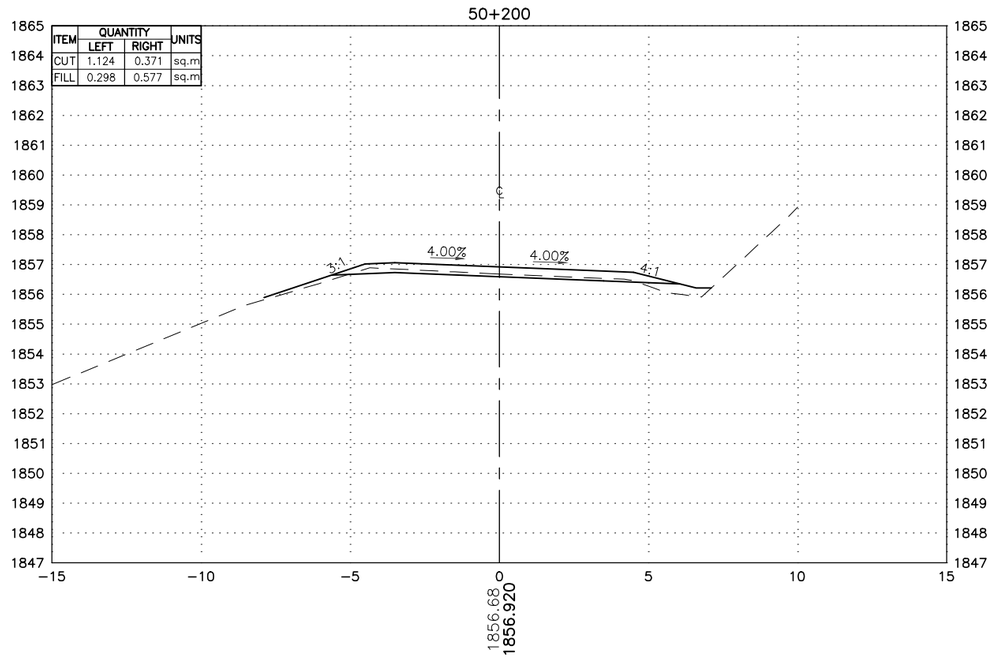

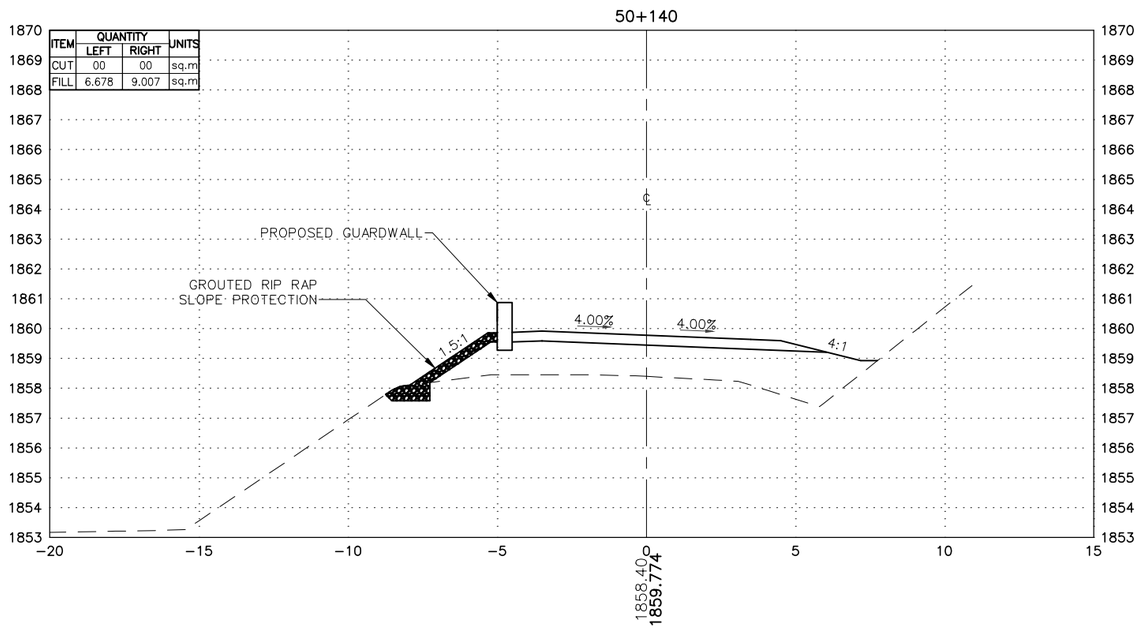

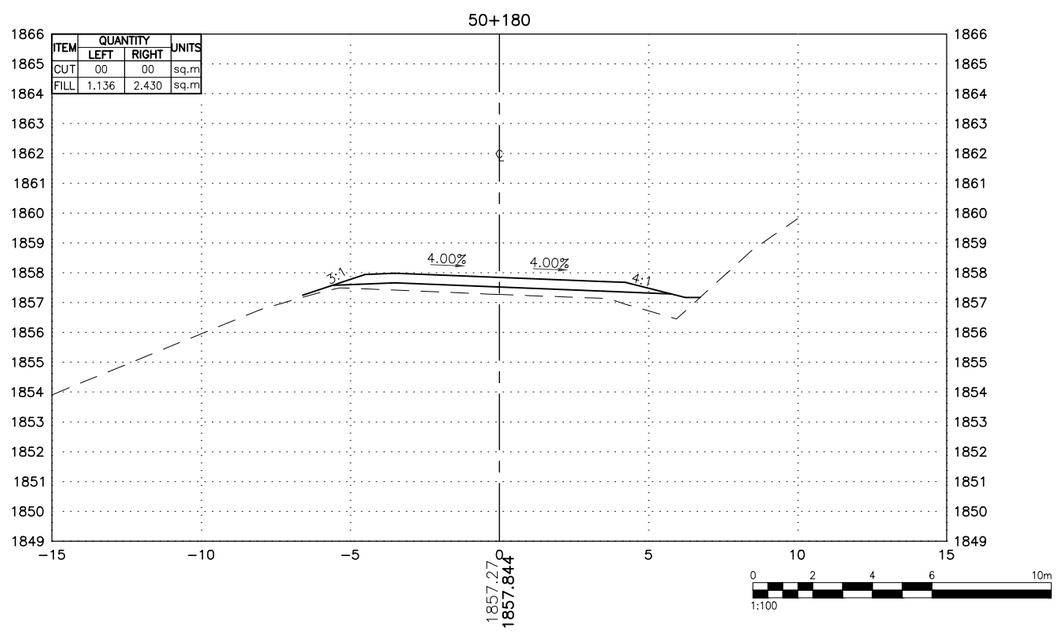

NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
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TETRA TECH

AFGHANISTAN ENGINEERING SUPPORT PROGRAM

AESP

PROJECT TITLE:

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:

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

DESIGNED BY:	DATE:
ANF	03–28–2014
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C–705

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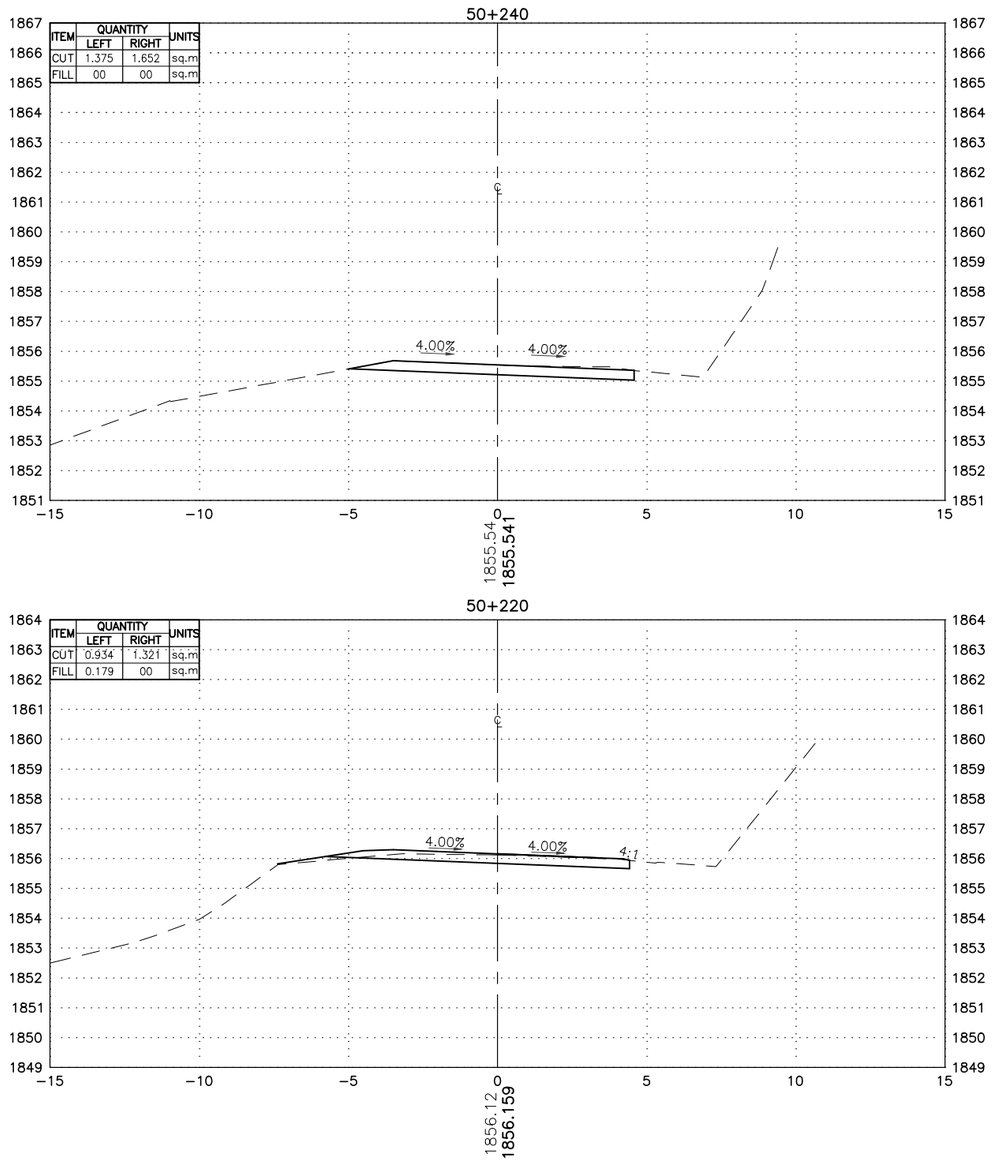

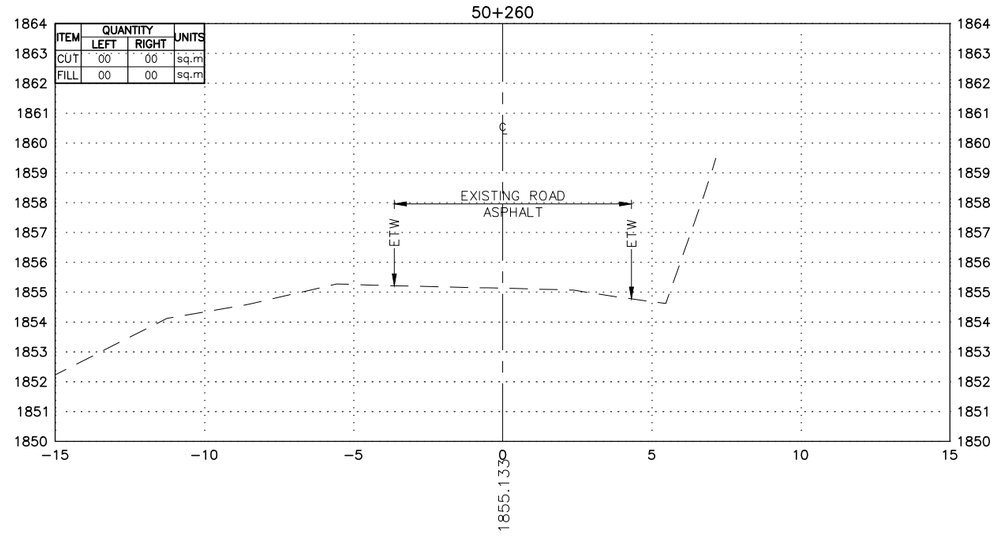

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NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
AND
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TETRA TECH

AFGHANISTAN ENGINEERING SUPPORT PROGRAM

AESP

PROJECT TITLE:

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:

ROADWAY CROSS SECTIONS
STA 50+220 – STA 50+260

DESIGNED BY:	DATE:
ANF	03-28-2014
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DRAWING REFERENCE NUMBER:
LT0077
C-706

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GENERAL NOTES:

1. PROPOSED BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH 2012 SPECIFICATIONS OF AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS WITH CURRENT INTERIM SPECIFICATIONS (AASHTO).
2. 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.
3. FINAL DESIGN PREPARED BASED ON THE FOLLOWING ASSUMED HYDRAULIC DATA.

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

FINAL HYDRAULIC ANALYSIS PREPARED BY TETRA TECH SHOWED THAT THE FOUNDATION DESIGN IS NOT ADEQUATE WITHOUT SCOUR PROTECTION, SO THE FINAL DESIGN INCLUDES A SCOUR MATTRESS FOR PROTECTION.

4. CONTRACTOR SHALL INFORM USAID OF ALL DISCREPANCIES BETWEEN DRAWINGS PRIOR TO INITIATION OF ANY WORK.
5. 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 = 0.64g
   Si = 0.47g
   SDC = D
   PGA = 0.29g (20% EXCEEDANCE WITHIN 50 YEARS)

FOUNDATION NOTES:

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

   UNIT WEIGHT OF SOIL = 18.1 kN/m^3 [115 PCF]
   ALLOWABLE AVERAGE BEARING CAPACITY 3.98 kg/cm^2 [8150 PSF]
   FRICTION ANGLE = 31°
   COEFF. OF FRICTION FOR SLIDING = 0.58
   Ko = 0.49
   Ka = 0.32
   Kp = 3.13

   TETRA TECH HAS VERIFIED THAT THE FINAL GEOTECHNICAL PARAMETERS PREPARED BY TETRA TECH DO NOT REQUIRE ANY CHANGES TO THE FOUNDATION DESIGNS. SEE DESIGN ANALYSIS FOR ADDITIONAL INFORMATION.

2. FOOTING AND SCOUR MATTRESS SUBGRADE PREPARATION SHALL BE PERFORMED IN THE DRY.
3. BASED ON THE GEOTECHNICAL INVESTIGATION PERFORMED IN JANUARY 2014, GROUNDWATER WAS ENCOUNTERED IN THE BORINGS APPROXIMATELY 0.35m BELOW THE CHANNEL BED AND APPROXIMATELY 5.35m BELOW THE ROADWAY. CONTRACTOR SHALL NOTE THAT GROUNDWATER LEVELS FLUCTUATE WITH SEASONAL CLIMATIC VARIATIONS.
4. DEPENDING ON WHEN CONSTRUCTION IS PERFORMED, DEWATERING, AND COFFERDAMS MAY BE REQUIRED TO CONTROL OR DIVERT THE GROUNDWATER FOR THE SUBSTRUCTURE AND/OR SCOUR MATTRESS CONSTRUCTION. CONTRACTOR SHALL SUBMIT A DEWATERING PLAN TO USAID FOR REVIEW. SEE SPECIFICATION SECTION 31 52 13 FOR ADDITIONAL INFORMATION.
5. ALL UNSUITABLE MATERIAL SHALL BE REMOVED WITHIN THE LIMIT OF THE FOUNDATIONS AS DIRECTED BY USAID.

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.

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'.

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

ABBREVIATIONS:

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

NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
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UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

TETRA TECH

AFGHANISTAN ENGINEERING SUPPORT PROGRAM
AESP

PROJECT TITLE:
GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:
GENERAL NOTES
AND ABBREVIATIONS

DESIGNED BY:	DATE:
ALH	03-28-2014
DRAWN BY:	SUBMITTED BY:
AC	TETRA TECH
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SAM	LT0077-S-001

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0	FINAL DESIGN SUBMITTAL	03/28/14	APL
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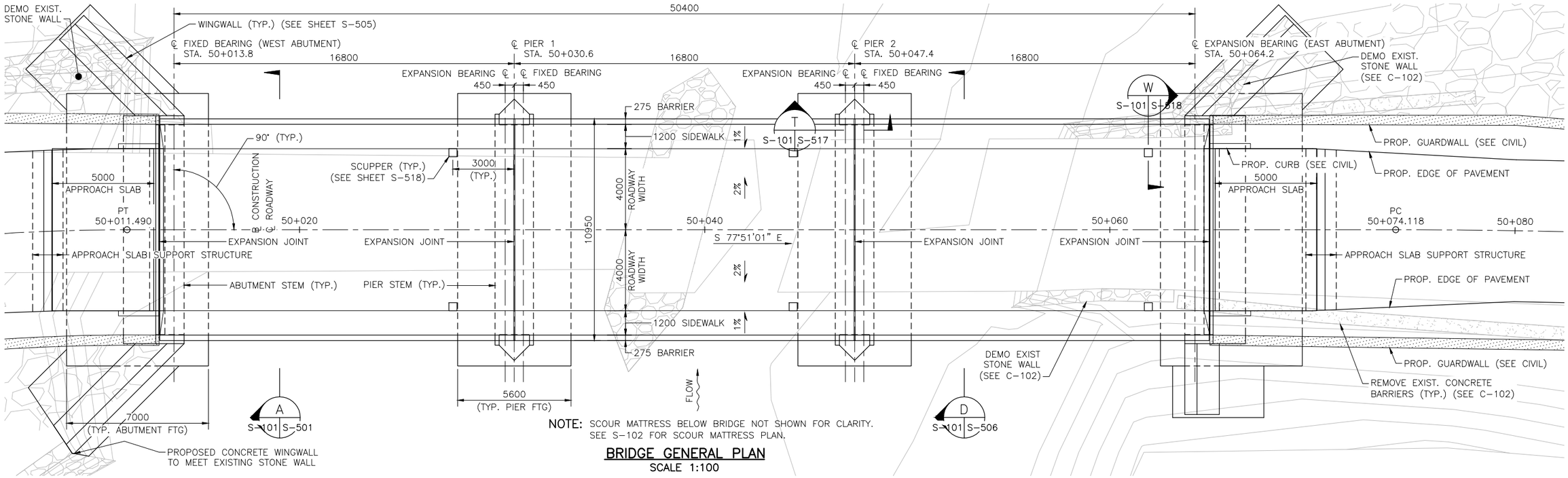
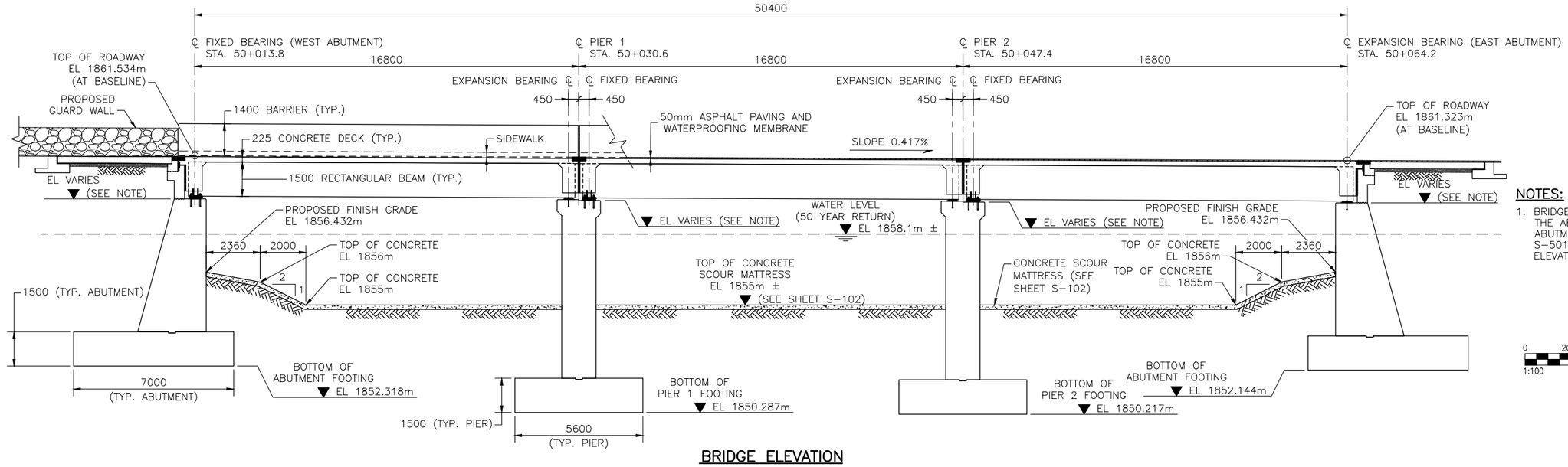


NOTE: SCOUR MATTRESS BELOW BRIDGE NOT SHOWN FOR CLARITY. SEE S-102 FOR SCOUR MATTRESS PLAN.

BRIDGE GENERAL PLAN
SCALE 1:100



BRIDGE ELEVATION
SCALE 1:100

NOTES:

1. BRIDGE SEAT ELEVATION VARIES ACROSS THE ABUTMENT & PIER WIDTHS. SEE ABUTMENT & PIER ELEVATIONS ON SHEETS S-501 AND S-506 FOR BRIDGE SEAT ELEVATIONS.

0 2000 4000 6000 10000mm
1:100

N

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.
NOTE: A3 SIZE REDUCED TO HALF SCALE.

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AFGHANISTAN ENGINEERING SUPPORT PROGRAM

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GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:
BRIDGE GENERAL PLAN AND ELEVATION

DESIGNED BY:	DATE:
ALH	03-28-2014
DRAWN BY:	SUBMITTED BY:
AC	TETRA TECH
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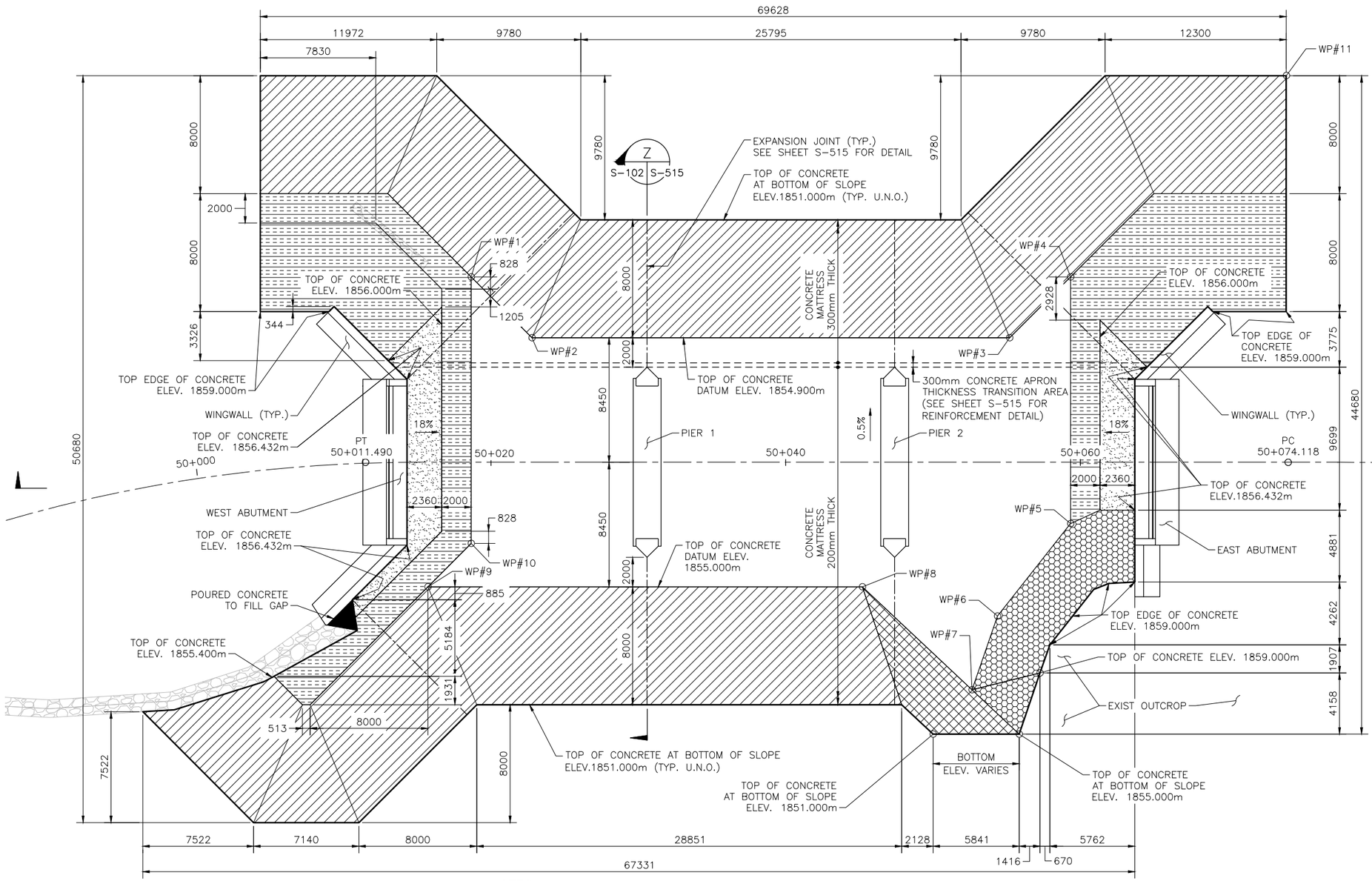
LT0077
S-101



CONCRETE MATTRESS WORKING POINTS			
WP	STA.	OFFSET	ELEV.
WP#1	50+18.660	12.579 LT	1584.887
WP#2	50+22.799	8.450 LT	1854.900
WP#3	50+55.211	8.450 LT	1854.900
WP#4	50+59.336	12.575 LT	1854.887
WP#5	50+59.336	4.161 RT	1854.929
WP#6	50+24.386	10.429 RT	1854.898
WP#7	50+52.647	15.438 RT	1854.873
WP#8	50+45.210	8.450 RT	1854.900
WP#9	50+15.718	8.450 RT	1854.900
WP#10	50+21.340	5.508 RT	1852.922
WP#11	50+73.978	26.23 LT	1851.000

SEE BRIDGE ELEVATION
ON SHEET S-101

LEGEND (APPROXIMATE SLOPES)

- 2:1 SLOPE (BELOW CHANNEL)
- 1:1 SLOPE (BELOW CHANNEL)
- 2:1 SLOPE (ABOVE CHANNEL)
- 1:1 SLOPE (ABOVE CHANNEL)
- RELATIVELY FLAT AREA. SLOPE TO PROMOTE DRAINAGE AS NOTED
- 18% SLOPE TO FACE OF ABUTMENTS/WINGWALLS
- EXPANSION JOINT SEE SHEET S-515 FOR DETAILS

0 3000 6000 9000 15000mm
1:150

N

NOTES:

1. ALL ELEVATIONS NOTED ARE ALONG THE TOP OF CONCRETE MATTRESS.
2. EXPANSION JOINTS TO BE PROVIDED IN SCOUR MATTRESS AS INDICATED. CONSTRUCTION JOINTS ARE OPTIONAL, AS REQUIRED FOR CONSTRUCTION. SEE SHEET S-515 FOR JOINT DETAILS.
3. SEE SHEET S-515 FOR CONCRETE MATTRESS REINFORCEMENT DETAILS.

CONCRETE MATTRESS LAYOUT PLAN

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.
NOTE: A3 SIZE REDUCED TO HALF SCALE.

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TETRA TECH
AFGHANISTAN ENGINEERING SUPPORT PROGRAM
AESP

PROJECT TITLE:
GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:
CONCRETE MATTRESS PLAN

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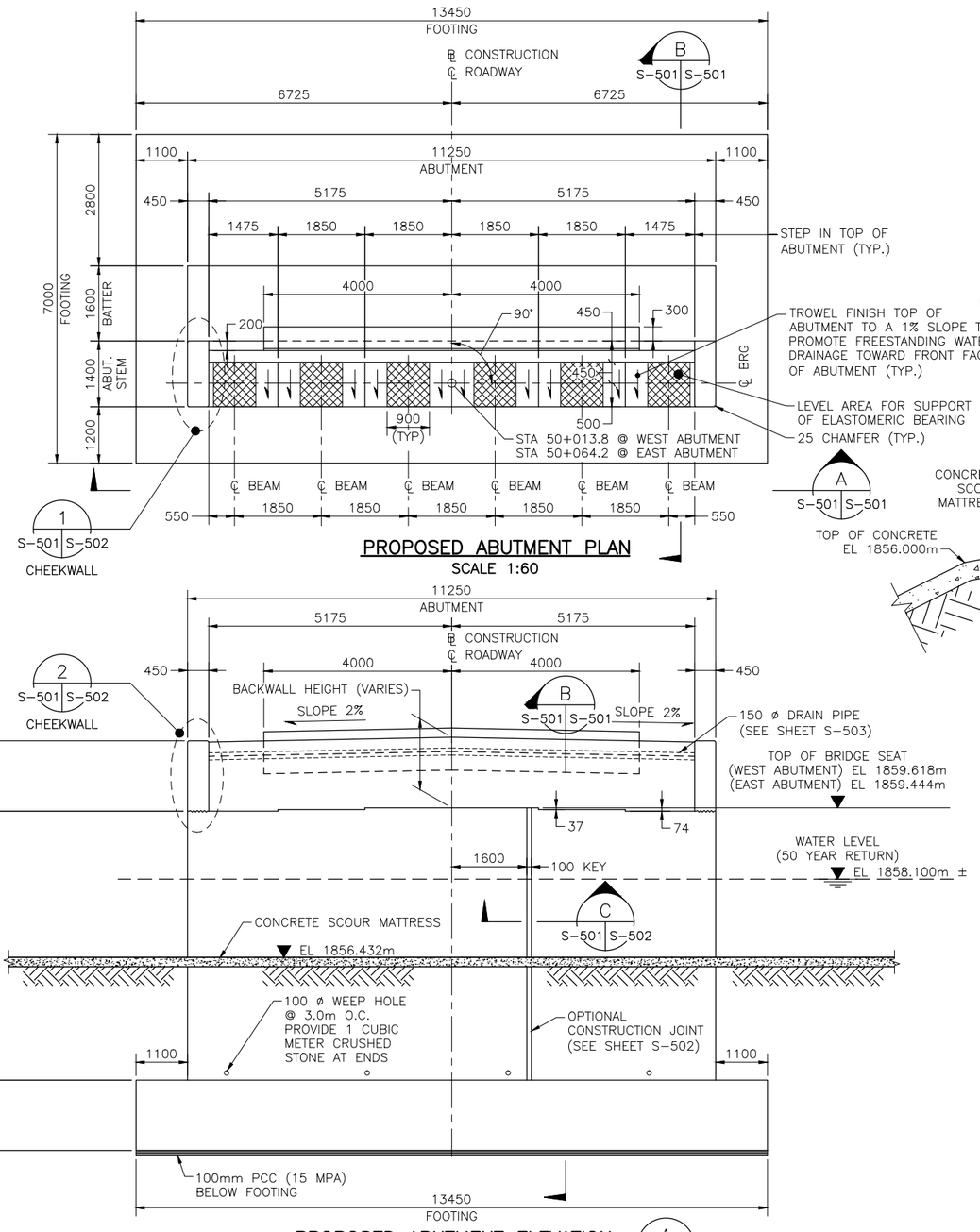
S-102



UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.
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ISLAMIC REPUBLIC OF AFGHANISTAN
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AFGHANISTAN ENGINEERING SUPPORT PROGRAM

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PROJECT TITLE:

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:

ABUTMENT DETAILS
SHEET 1 OF 4

DESIGNED BY:	DATE:
ALH	03-28-2014
DRAWN BY:	SUBMITTED BY:
AC	TETRA TECH
CHECKED BY:	CAD FILE NAME:
SAM	LT0077-S-501

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0	FINAL DESIGN SUBMITTAL	03/28/14	APL
A	30% DESIGN SUBMITTAL	11/08/13	APL

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S-501

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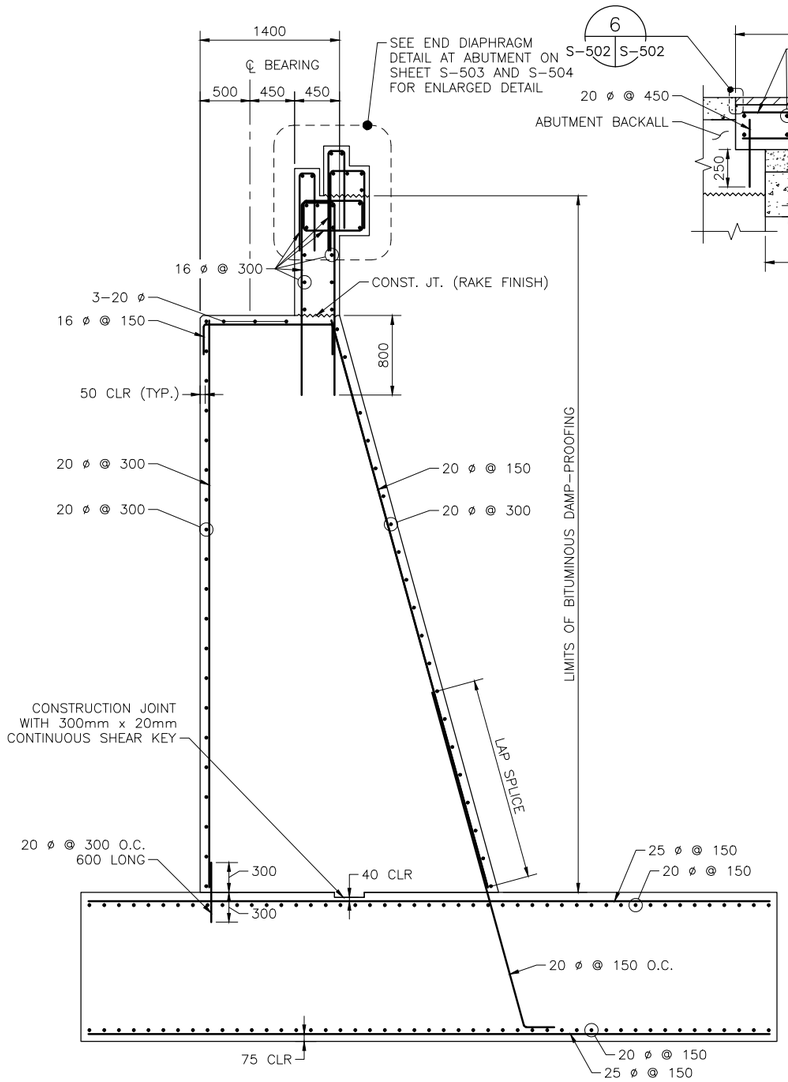
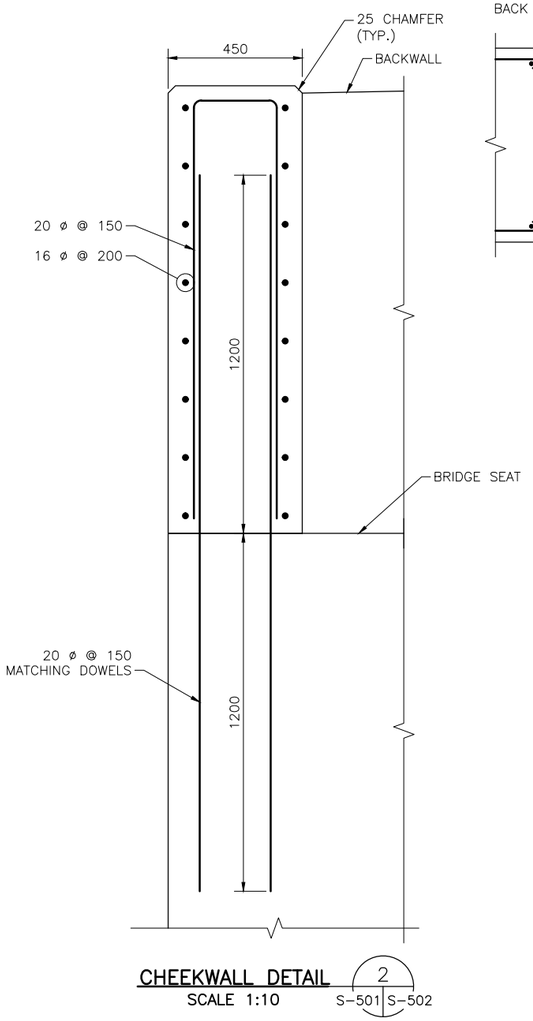


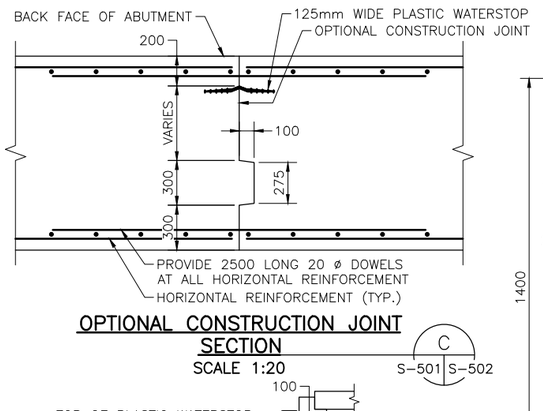
ABUTMENT REINFORCEMENT DETAIL
SCALE 1:30

125mm WATERSTOP
SCALE 1:2

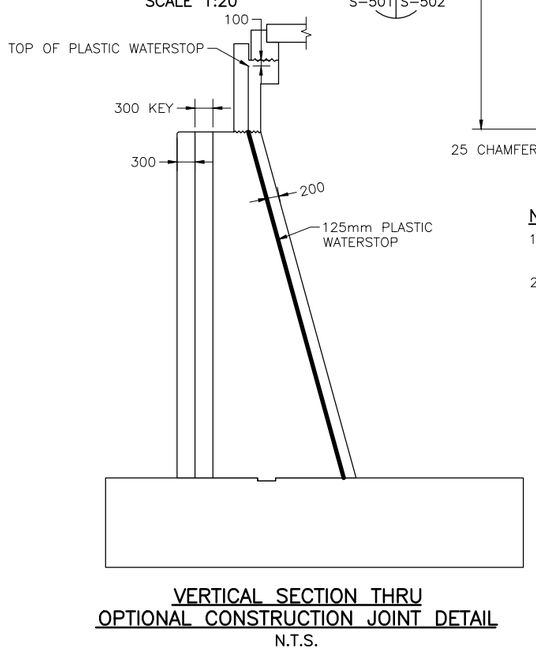
250mm WATERSTOP
SCALE 1:2



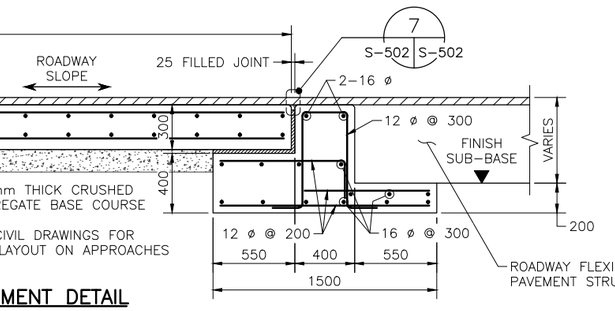
CHEEKWALL DETAIL (2)
SCALE 1:10 — S-501 | S-502



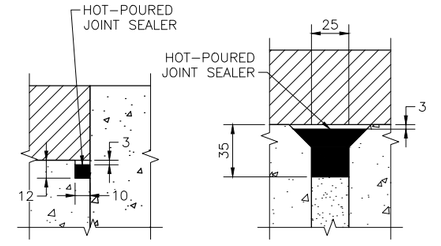
OPTIONAL CONSTRUCTION JOINT SECTION
SCALE 1:20 — C — S-501 | S-502



VERTICAL SECTION THRU OPTIONAL CONSTRUCTION JOINT DETAIL
N.T.S.

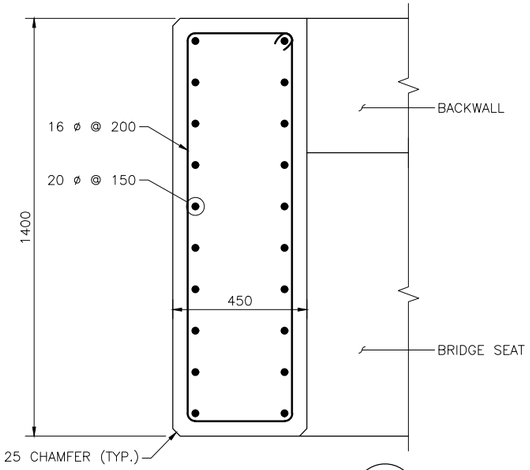


APPROACH SLAB REINFORCEMENT DETAIL
SCALE 1:20



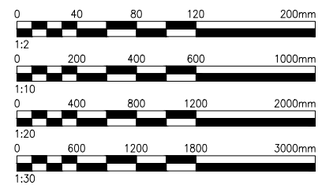
DETAIL 6
SCALE 1:2 — S-502 | S-502

DETAIL 7
SCALE 1:2 — S-502 | S-502



CHEEKWALL DETAIL (1)
SCALE 1:10 — S-501 | S-502

NOTES:
1. ELEVATIONS ON TOP OF THE CURTAIN WALLS ARE ALONG THE CENTERLINE OF BEARING OF ABUTMENTS.
2. CONCRETE BEARING SURFACES SHALL BE PREPARED IN ACCORDANCE WITH THE SPECIFICATIONS. AREAS BETWEEN SHALL HAVE A CLEAN RAKED FINISH.



UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.
NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
AND
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TETRA TECH

AFGHANISTAN ENGINEERING SUPPORT PROGRAM

AESP

PROJECT TITLE:
GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:
ABUTMENT DETAILS
SHEET 2 OF 4

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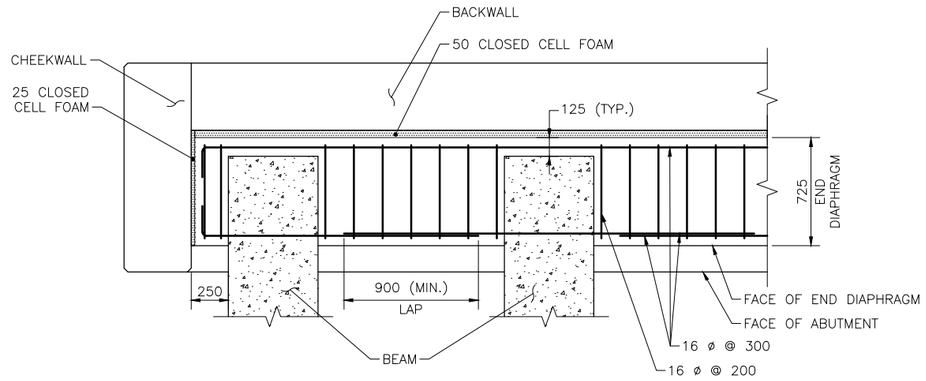
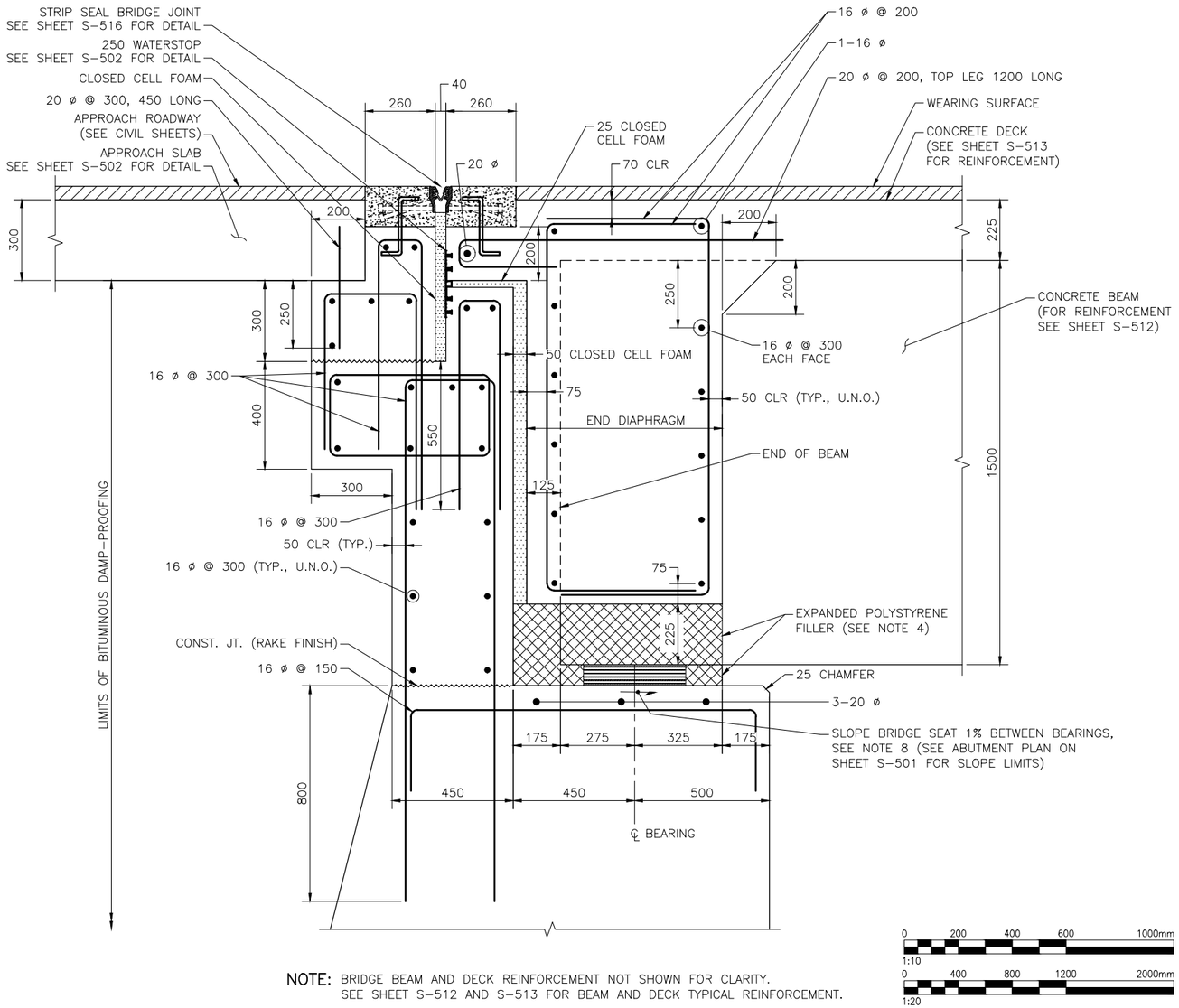


NOTE: FOR END DIAPHRAGM ELEVATION, SEE SHEET S–510.

ABUTMENT END DIAPHRAGM PLAN
SCALE 1:20

NOTES:

1. TOP OF BACKWALL SHALL BE TROWELED SMOOTH PARALLEL TO THE PROFILE GRADE.
2. CURTAIN WALL CONCRETE MUST BE PLACED AND SUFFICIENTLY CURED PRIOR TO PLACING THE END DIAPHRAGM CONCRETE.
3. THE END DIAPHRAGM CONCRETE SHALL BE PLACED MONOLITHICALLY WITH THE DECK.
4. PRIOR TO PLACING THE END DIAPHRAGM CONCRETE, CLOSED CELL FOAM OF THE SPECIFIED THICKNESS SHALL BE ATTACHED WITH ADHESIVE TO ALL SURFACES OF THE POURED END DIAPHRAGM AND CURTAIN WALLS AS SHOWN ON THE PLANS. EXPANDED POLYSTYRENE FILLER SHALL BE PLACED UNDER THE BEAM AND THE BOTTOM OF THE END DIAPHRAGM SHALL BE FORMED AS SPECIFIED. THE CONTRACTOR SHALL INSURE THAT END DIAPHRAGM CONCRETE NOT COME IN DIRECT CONTACT WITH ABUTMENT CONCRETE.
5. AFTER THE END DIAPHRAGM CONCRETE HAS CURED SUFFICIENTLY, PLACE THE APPROACH SLAB CONCRETE AND REMAINDER OF BACKWALL CONCRETE. THE BACKWALL TROUGH WILL BE FORMED WITH CLOSED CELL FOAM AND CARE SHALL BE TAKEN TO INSURE THAT CONCRETE DOES NOT ENTER THE TROUGH SUMP.
6. COVER THE BACKWALL TROUGH OPENING SECURELY TO KEEP DEBRIS OUT UNTIL READY TO INSTALL THE STRIP SEAL JOINT.
7. TOP OF APPROACH SLAB SHELF SHALL BE TROWELED SMOOTH AND HAVE 2 LAYERS OF TAR PAPER APPLIED PRIOR TO THE PLACEMENT OF APPROACH SLAB CONCRETE.
8. BEARINGS SHALL BE PLACED ON FLAT SURFACES. BETWEEN THE BEARING LOCATIONS, THE TOP OF CONCRETE BRIDGE SEAT SHALL BE SLOPED TOWARD THE FACE OF THE ABUTMENT 1% TO PROMOTE ANY FREESTANDING WATER TO DRAIN AWAY FROM THE BEARINGS. SEE PROPOSED ABUTMENT PLAN SHEET S–501 FOR SLOPE LIMIT.



NOTE: BRIDGE BEAM AND DECK REINFORCEMENT NOT SHOWN FOR CLARITY. SEE SHEET S–512 AND S–513 FOR BEAM AND DECK TYPICAL REINFORCEMENT.

0 200 400 600 1000mm
1:10
0 400 800 1200 2000mm
1:20

END DIAPHRAGM DETAIL AT ABUTMENT – ROADWAY SECTION
SCALE 1:10

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.
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AFGHANISTAN ENGINEERING SUPPORT PROGRAM
AESP

PROJECT TITLE:
GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:
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SHEET 3 OF 4

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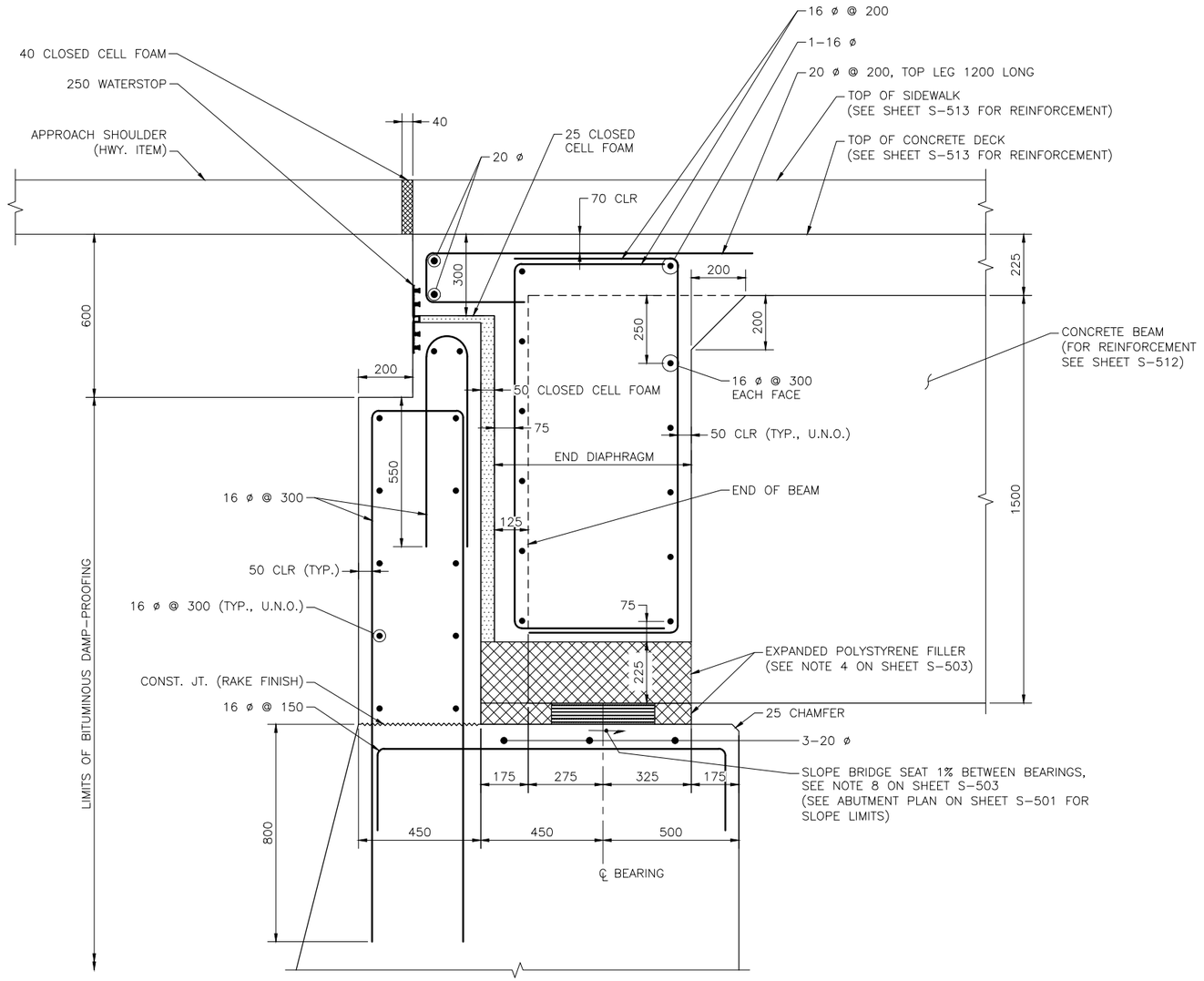

NOTE: BRIDGE BEAM, DECK AND SIDEWALK SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.
SEE SHEET S–512 AND S–513 FOR BEAM, DECK AND SIDEWALK SLAB TYPICAL REINFORCEMENT.

0 200 400 600 1000mm
1:10

END DIAPHRAGM DETAIL AT ABUTMENT – SIDEWALK SECTION

SCALE 1:10

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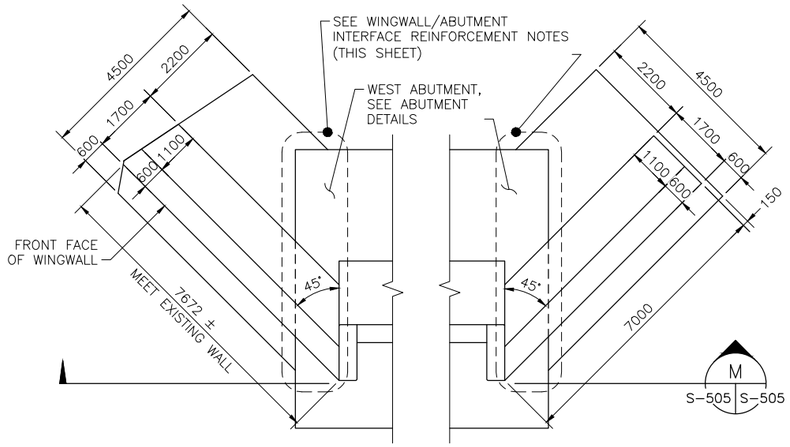
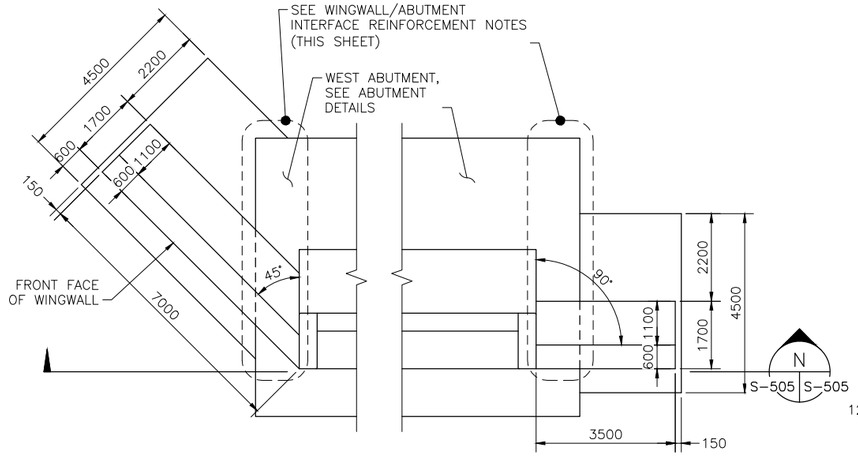


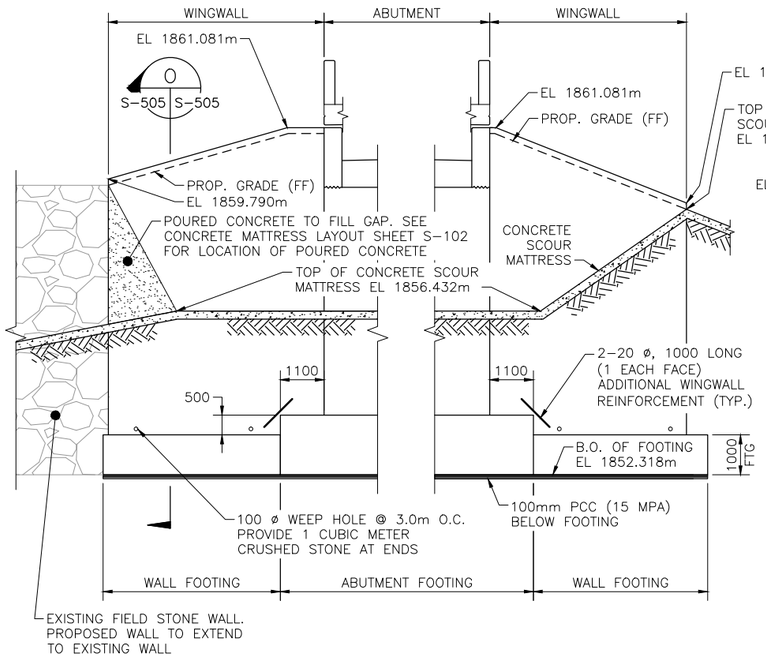
SOUTHWEST WINGWALL PLAN
SCALE 1:75

NORTHWEST WINGWALL PLAN
SCALE 1:75



NORTHEAST WINGWALL PLAN
SCALE 1:75

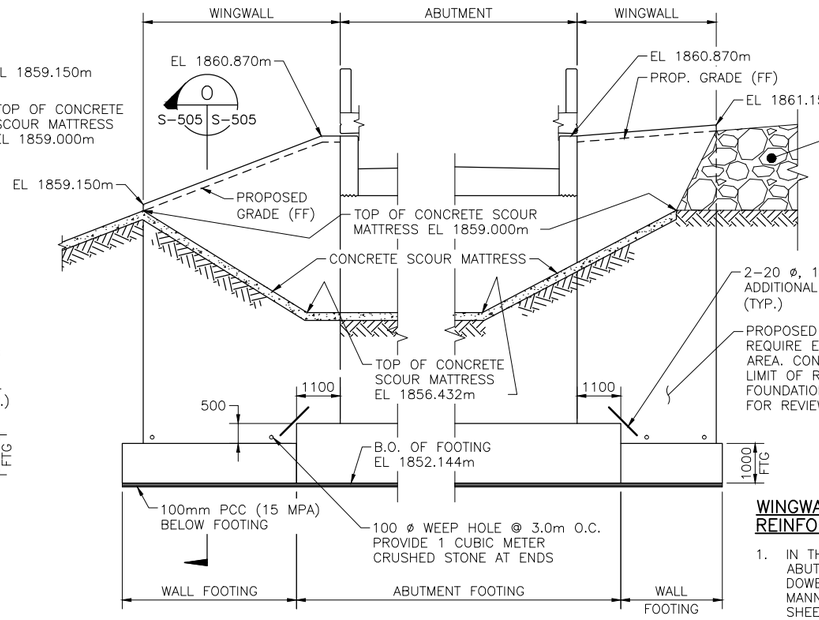
SOUTHEAST WINGWALL PLAN
SCALE 1:75



SOUTHWEST NORTHWEST

WEST ABUTMENT WINGWALL ELEVATION
SCALE 1:75

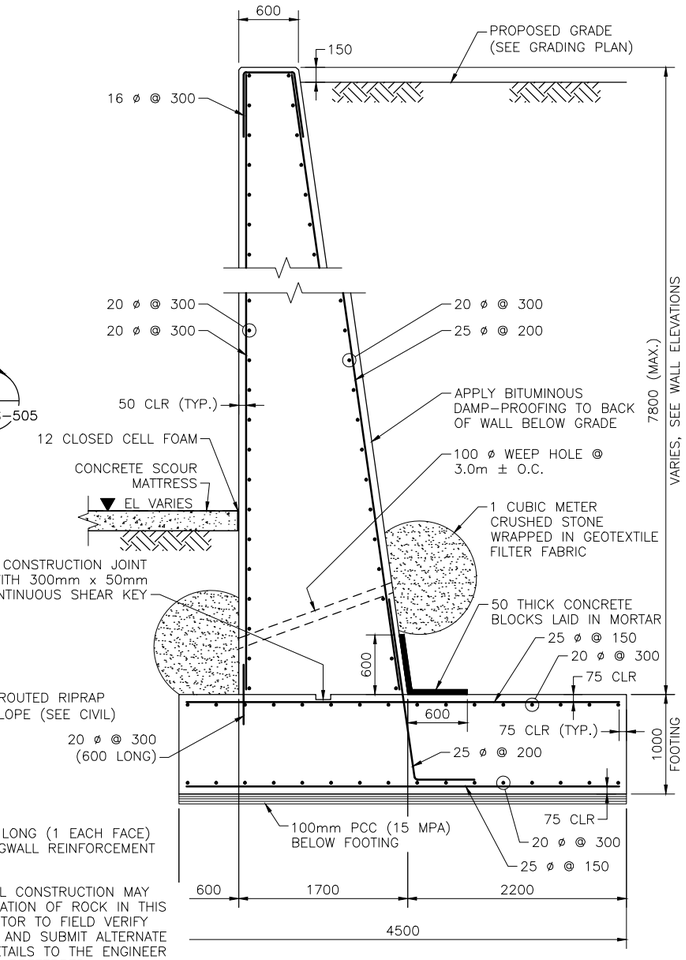
M
S-505 S-505



NORTHEAST SOUTHEAST

EAST ABUTMENT WINGWALL ELEVATION
SCALE 1:75

N
S-505 S-505



PROPOSED WINGWALL SECTION
SCALE 1:30

O
S-505 S-505

WINGWALL/ABUTMENT INTERFACE REINFORCEMENT NOTES:

1. IN THE AREA WHERE THE WINGWALL STEM OVERLAPS THE ABUTMENT FOOTING, THE WINGWALL STEM SHALL BE DOWELED AT ITS BASE INTO THE ABUTMENT FOOTING IN A MANNER SIMILAR TO THAT SHOWN IN SECTION O THIS SHEET.
2. THE WINGWALL STEM SHALL BE CAST AGAINST THE ABUTMENT STEM WALL WITH NO REBARS CROSSING THE COLD JOINT BETWEEN THE TWO STEM WALLS.
3. WINGWALL FOOTING LONGITUDINAL REINFORCEMENT SHALL HAVE MATCHING 20 ø DOWELS AT ITS INTERFACE WITH THE ABUTMENT FOOTING. THESE DOWELS SHALL EXTEND 1200mm INSIDE THE ABUTMENT FOOTING AND SHALL LAP WITH THE WINGWALL FOOTING LONGITUDINAL REBARS.

0 600 1200 1800 3000mm
1:30
0 1500 3000 4500 7500mm
1:75

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ISLAMIC REPUBLIC OF AFGHANISTAN
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TETRA TECH

AFGHANISTAN ENGINEERING SUPPORT PROGRAM

AESP

PROJECT TITLE:
GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:
WINGWALL DETAILS

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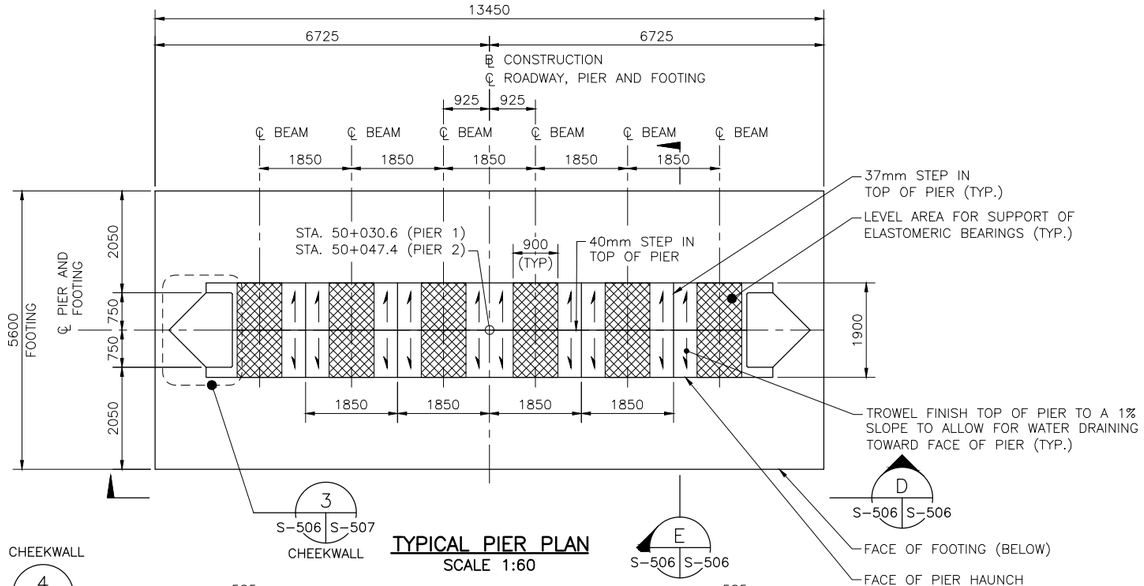
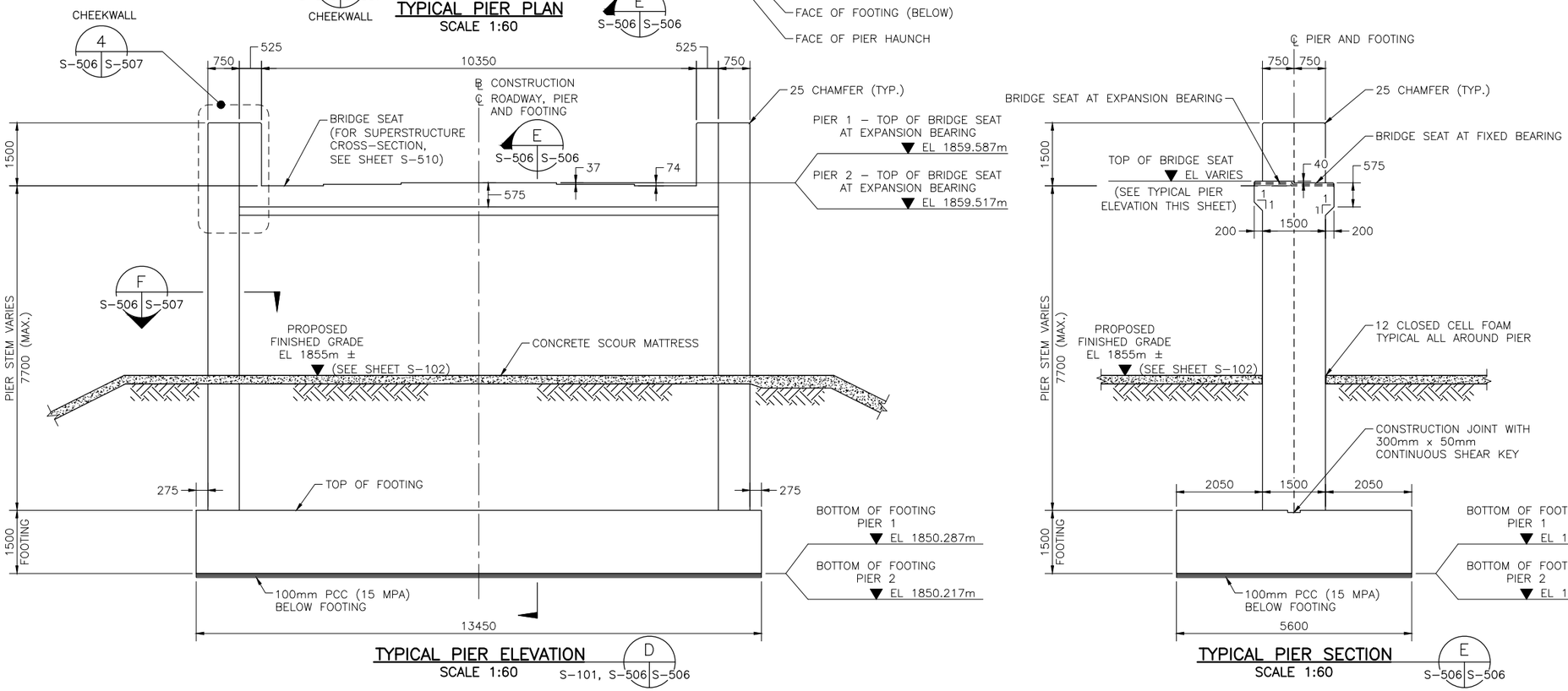


TYPICAL PIER PLAN
SCALE 1:60



TYPICAL PIER ELEVATION
SCALE 1:60

D
S-101, S-506 S-506

TYPICAL PIER SECTION
SCALE 1:60

E
S-506 S-506

0 1200 2400 3600 6000mm
1:60

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AFGHANISTAN ENGINEERING
SUPPORT PROGRAM

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PROJECT TITLE:

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:

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SHEET 1 OF 4

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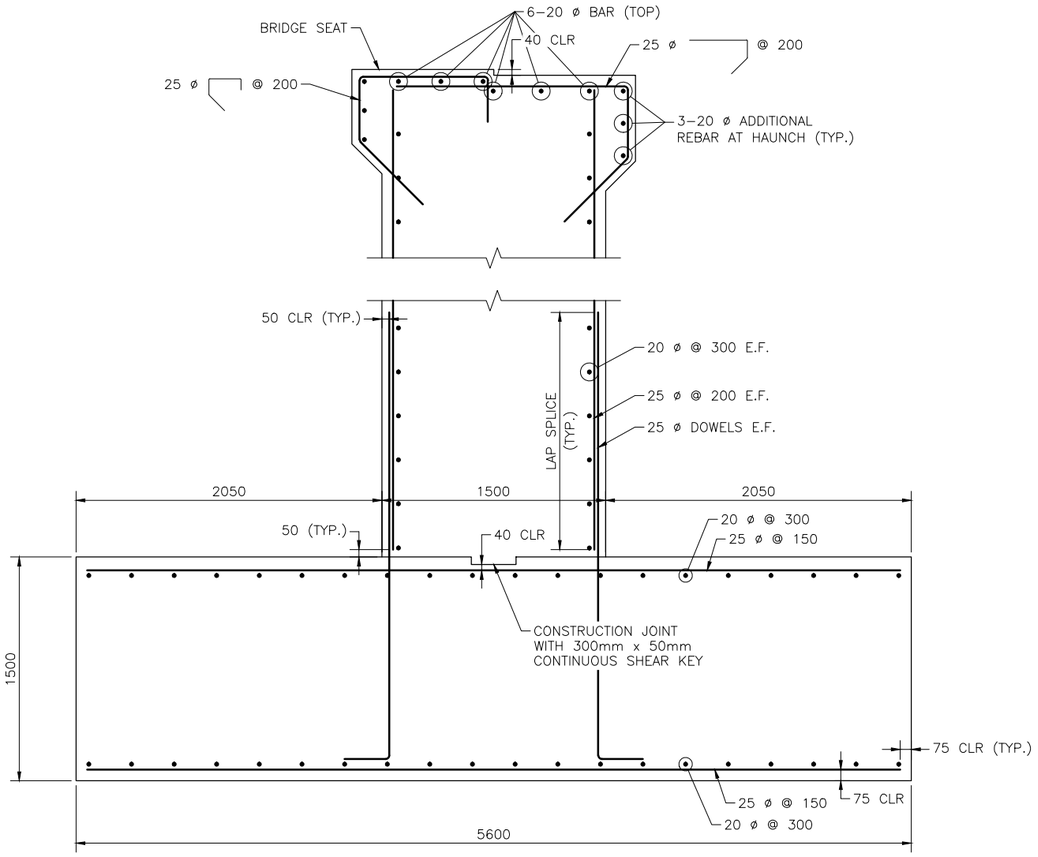
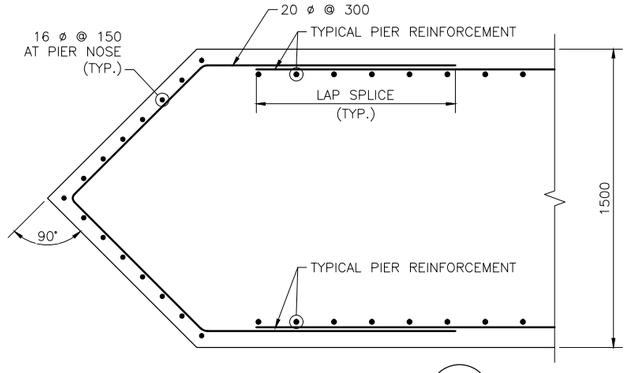
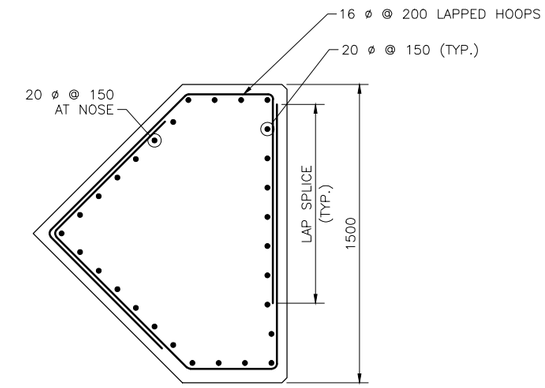
LT0077
S-506



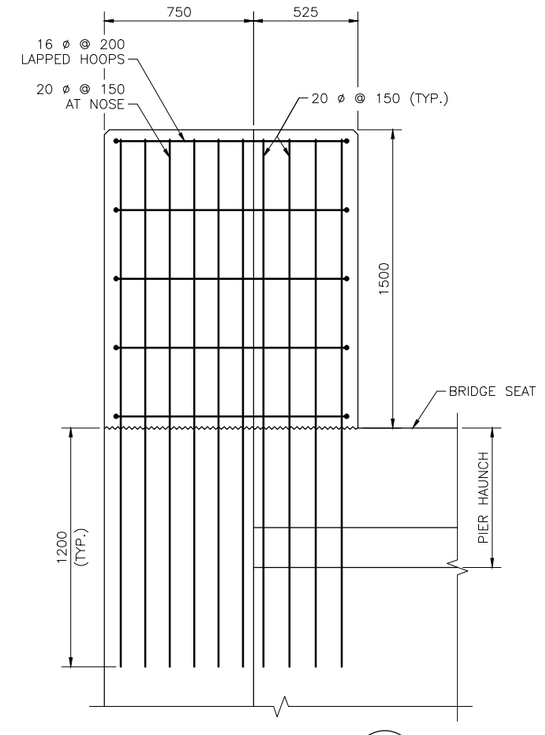
TYPICAL PIER REINFORCEMENT
SCALE 1:20



SECTION
SCALE 1:15 — F — S–506 | S–507



CHEEKWALL DETAIL
SCALE 1:15 — 3 — S–506 | S–507



CHEEKWALL DETAIL
SCALE 1:15 — 4 — S–506 | S–507

0 300 600 900 1500mm
1:15
0 400 800 1200 2000mm
1:20

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AFGHANISTAN ENGINEERING SUPPORT PROGRAM

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PROJECT TITLE:
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WO.LT.0077

SHEET CONTENTS:
PIER DETAILS
SHEET 2 OF 4

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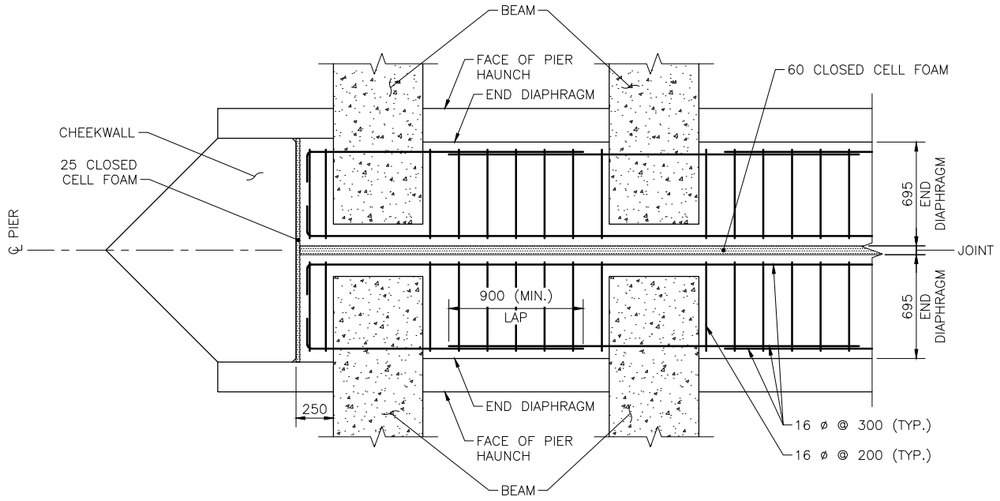
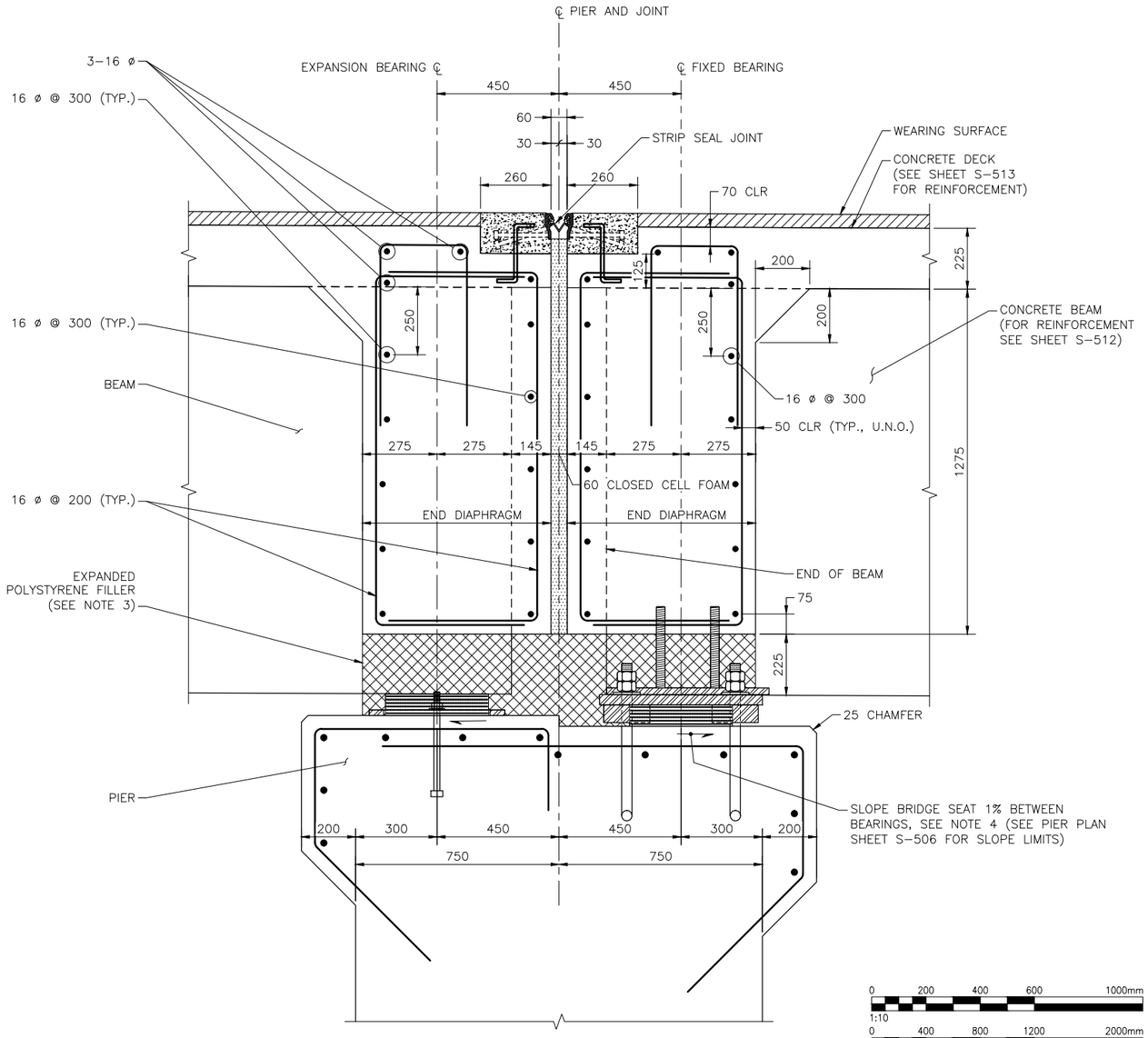


NOTE: FOR END DIAPHRAGM ELEVATION, SEE SHEET S–510.

PIER END DIAPHRAGM PLAN
SCALE 1:20



NOTE: BRIDGE BEAMS AND DECK SLAB REINFORCEMENT NOT SHOWN FOR CLARITY. SEE SHEET S–512 AND S–513 FOR BEAM AND DECK SLAB REINFORCEMENT DETAILS.

END DIAPHRAGM DETAIL AT PIER – ROADWAY SECTION
SCALE 1:10

NOTES:

1. CURTAIN WALL CONCRETE MUST BE PLACED AND SUFFICIENTLY CURED PRIOR TO PLACING THE END DIAPHRAGM CONCRETE.
2. THE END DIAPHRAGM CONCRETE SHALL BE PLACED MONOLITHICALLY WITH THE DECK.
3. PRIOR TO PLACING THE END DIAPHRAGM CONCRETE FOR THE ADJACENT SPAN, CLOSED CELL FOAM OF THE SPECIFIED THICKNESS SHALL BE ATTACHED WITH ADHESIVE TO ALL SURFACES OF THE POURED END DIAPHRAGM AND CURTAIN WALLS AS SHOWN ON THE PLANS. EXPANDED POLYSTYRENE FILLER SHALL BE PLACED UNDER THE BEAM AND THE BOTTOM OF THE END DIAPHRAGM SHALL BE FORMED AS SPECIFIED. THE CONTRACTOR SHALL INSURE THAT END DIAPHRAGM CONCRETE NOT COME IN DIRECT CONTACT WITH THE PIER CONCRETE.
4. BEARINGS SHALL BE PLACED ON FLAT SURFACES BETWEEN THE BEARING LOCATIONS, THE TOP OF CONCRETE BRIDGE SEAT SHALL BE SLOPED TOWARD THE FACE OF THE PIER 1% TO PROMOTE ANY FREESTANDING WATER TO DRAIN AWAY FROM THE BEARINGS. SEE TYPICAL PIER PLAN SHEET S–506 FOR SLOPE LIMITS.

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.
NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
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AFGHANISTAN ENGINEERING SUPPORT PROGRAM
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WO.LT.0077

SHEET CONTENTS:
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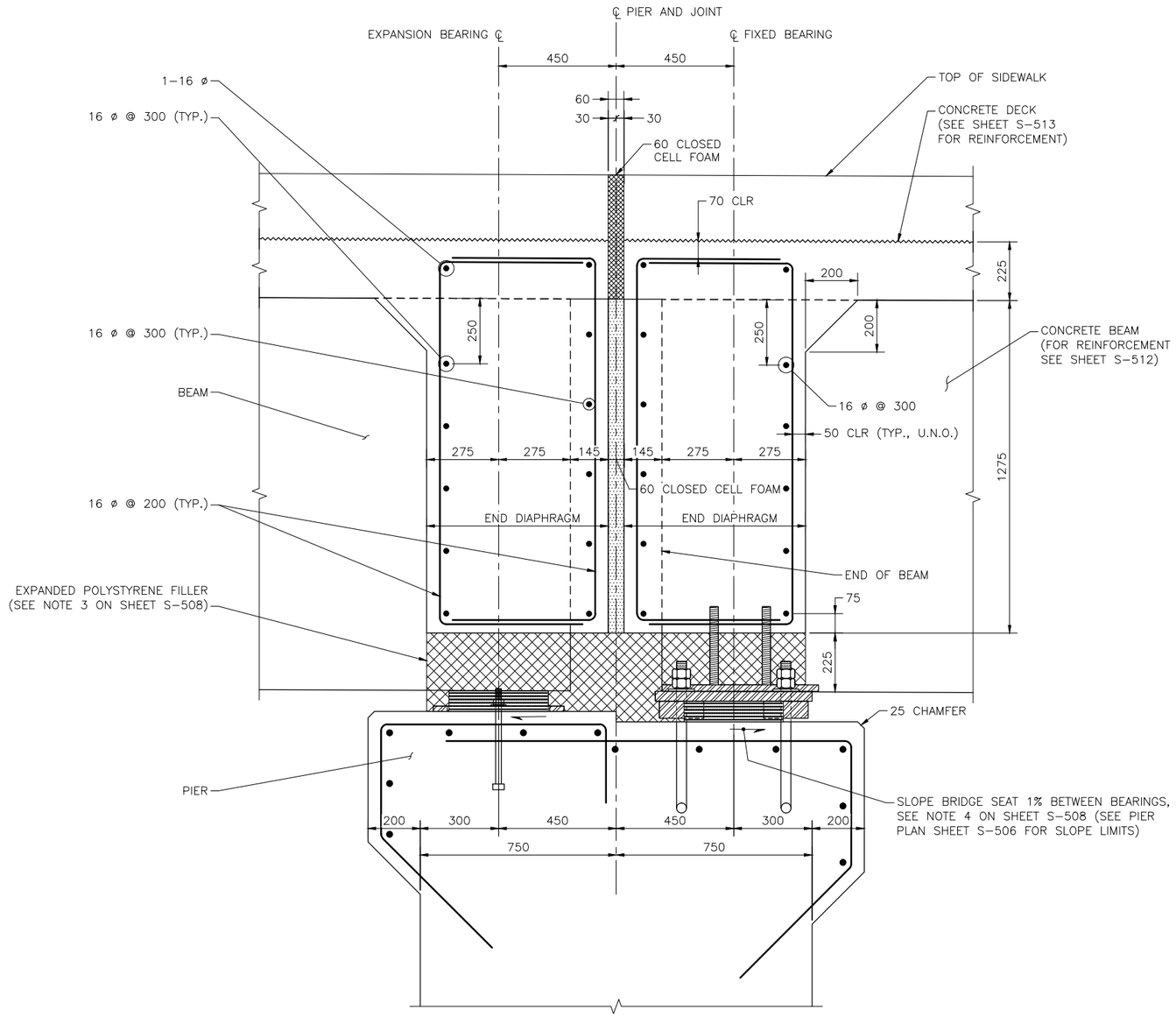

NOTE: BRIDGE BEAMS, DECK SLAB AND SIDEWALK REINFORCEMENT NOT SHOWN FOR CLARITY.
SEE SHEET S–512 AND S–513 FOR BEAM, DECK SLAB AND SIDEWALK REINFORCEMENT DETAILS.

0 200 400 600 1000mm
1:10

END DIAPHRAGM DETAIL AT PIER – SIDEWALK SECTION

SCALE 1:10

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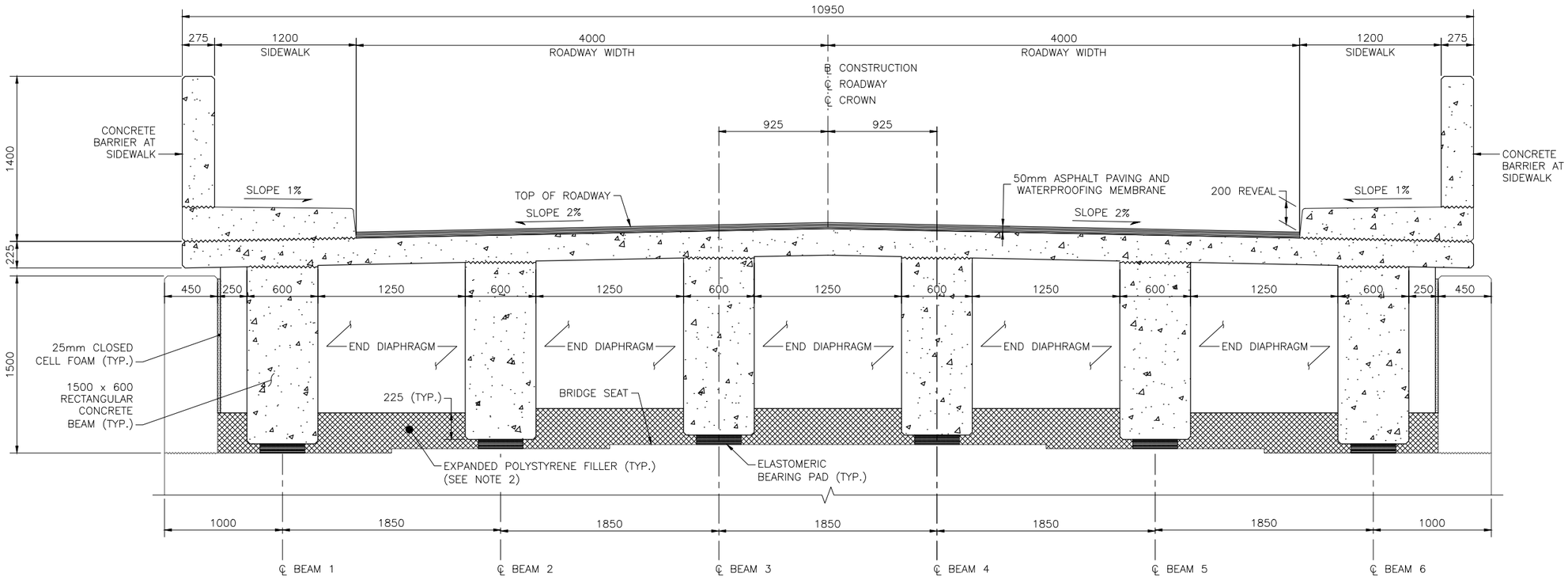

NOTES:

1. SUPERSTRUCTURE CROSS-SECTION SHOWN AT ABUTMENT WITH EXPANSION BEARINGS. CONDITION AT FIXED ABUTMENT AND PIERS WITH FIXED AND EXPANSION BEARINGS SIMILAR.
2. EXPANDED POLYSTYRENE FILLER TO BE USED BELOW THE BEAMS AND END DIAPHRAGMS TO FACILITATE FORMING THEM. CROSS-SECTIONS THROUGH THE POLYSTYRENE FILLER ARE SHOWN ON S-503 AND S-504 FOR THE ABUTMENTS AND S-508 AND S-509 FOR PIERS.

SUPERSTRUCTURE CROSS-SECTION

SCALE 1:20

0 400 800 1200 2000mm
1:20

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SHEET CONTENTS:
SUPERSTRUCTURE CROSS-SECTION

DESIGNED BY:	DATE:
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AC	TETRA TECH
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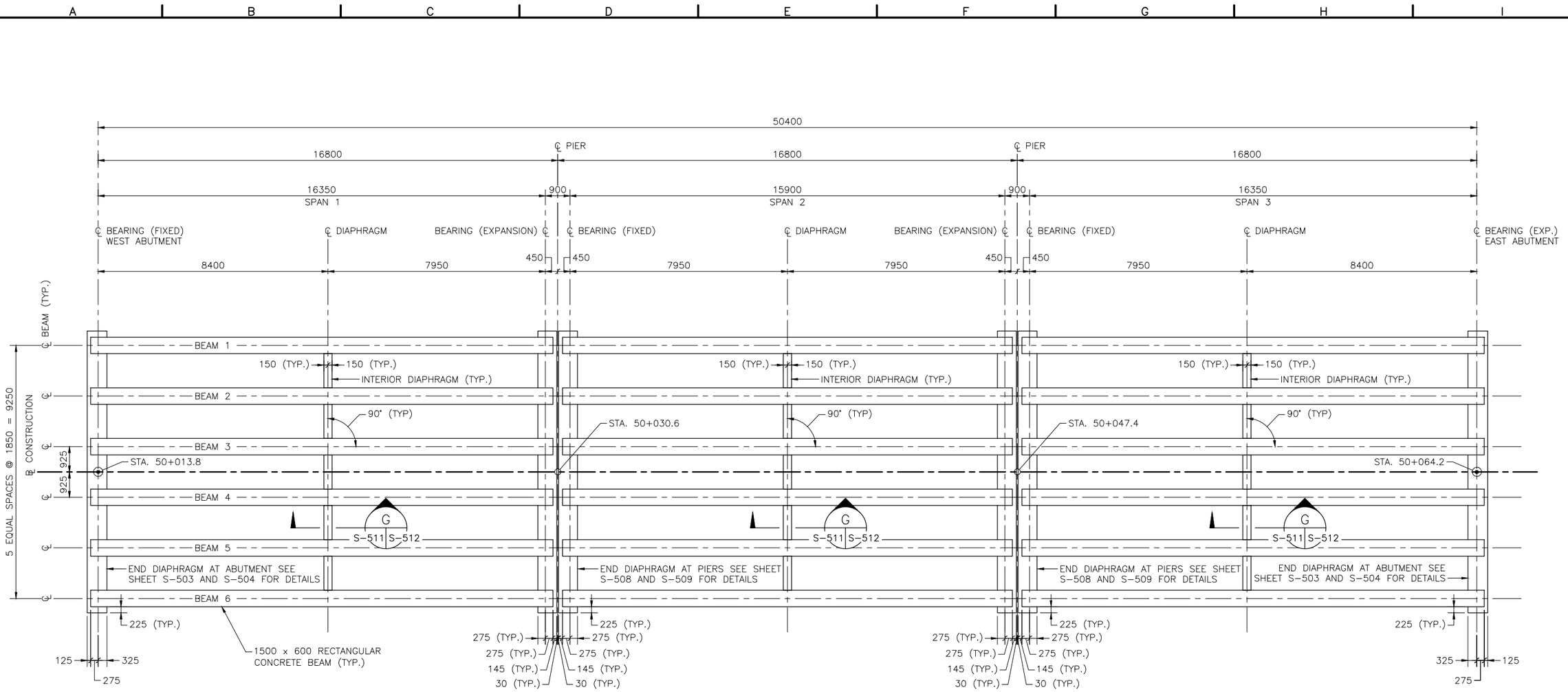

END SPAN INTERIOR SPAN END SPAN

FRAMING PLAN
SCALE 1:75

0 1500 3000 4500 7500mm
1:75

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.
NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
AND
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

TETRA TECH
AFGHANISTAN ENGINEERING SUPPORT PROGRAM
AESP

PROJECT TITLE:
GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:
FRAMING PLAN

DESIGNED BY:	DATE:
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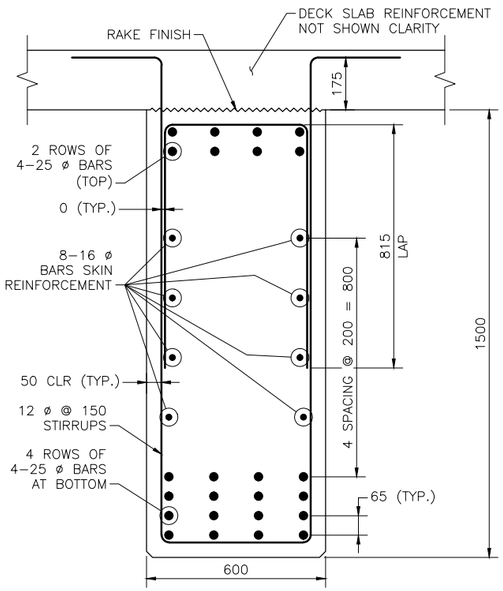
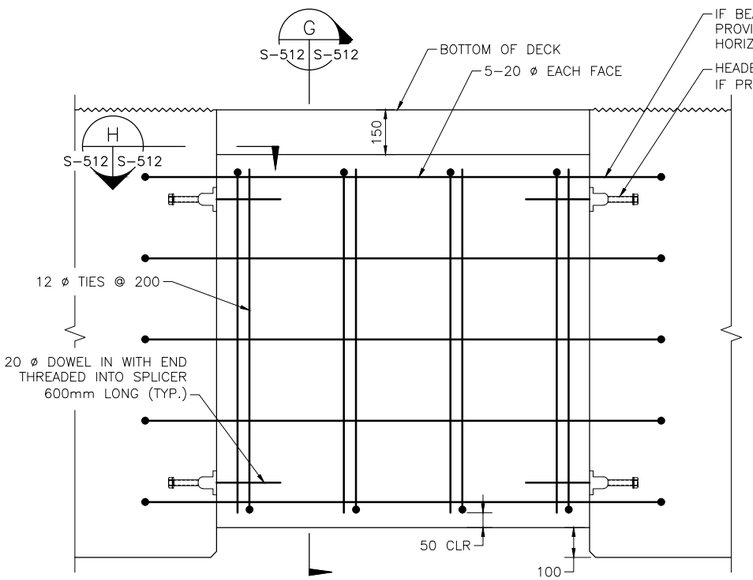
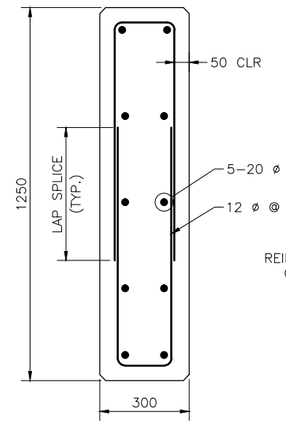


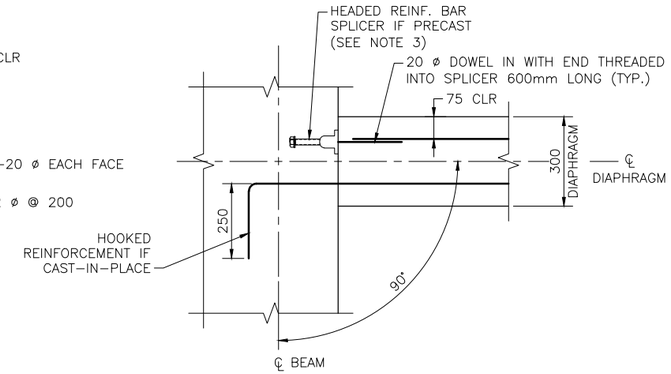
TYPICAL BEAM REINFORCEMENT
SCALE 1:10



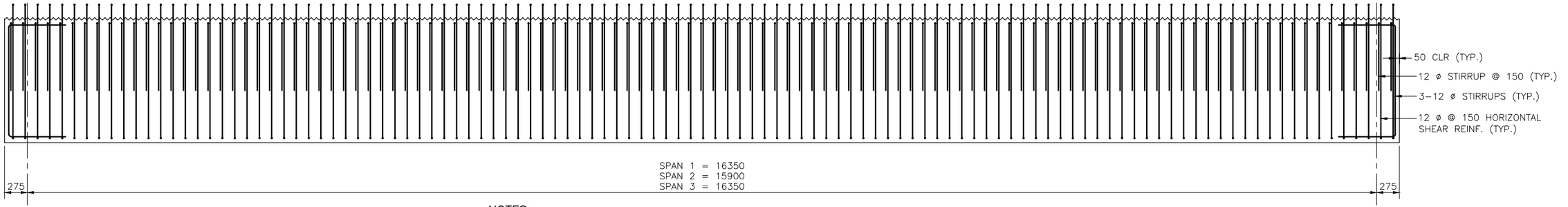
INTERIOR DIAPHRAGM
SCALE 1:10



SECTION G
SCALE 1:10 S–511, S–512 S–512



SECTION H
SCALE 1:10 S–512 S–512



NOTES:

1. LONGITUDINAL BEAM REINFORCEMENT, SLAB REINFORCEMENT AND DIAPHRAGM REINFORCEMENT NOT SHOWN FOR CLARITY.
2. SEE TYPICAL BEAM REINFORCEMENT DETAIL (THIS SHEET) FOR LONGITUDINAL BEAM REINFORCEMENT.
3. SEE SHEETS S–503, S–504, S–508 AND S–509 FOR END DIAPHRAGM REINFORCEMENT.
4. SEE THIS SHEET FOR INTERIOR DIAPHRAGM REINFORCEMENT.
5. SEE SHEET S–513 FOR DECK SLAB REINFORCEMENT.

BEAM TYPICAL SHEAR REINFORCEMENT
SCALE 1:25

NOTES:

1. THE TOP OF ALL BEAMS SHALL BE GIVEN A RAKED FINISH (6mm AMPLITUDE) ACROSS THE WIDTH (PERPENDICULAR TO THE BEAM'S AXIS).
2. IF THE BEAMS ARE PRECAST, THE FABRICATOR IS FULLY RESPONSIBLE FOR THE DESIGN OF THE LIFTING DEVICES WHICH SHALL BE ADEQUATE FOR THE SAFETY FACTORS REQUIRED BY THE ERECTION PROCEDURE.
3. IF BEAMS ARE PRECAST, HEADED REINFORCEMENT BAR SPLICERS SHALL BE CAST INTO THE PRECAST BEAMS BY THE FABRICATOR. THEY SHALL BE EMBEDDED AS REQUIRED TO PROVIDE A MINIMUM ULTIMATE TENSILE CAPACITY OF 80 kN SPECIFIED BY THE MANUFACTURER.

0 200 400 600 1000mm
1:10
0 500 1000 1500 2500mm
1:25

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.
NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
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TETRA TECH
AFGHANISTAN ENGINEERING SUPPORT PROGRAM
AESP

PROJECT TITLE:
GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:
BEAM DETAILS

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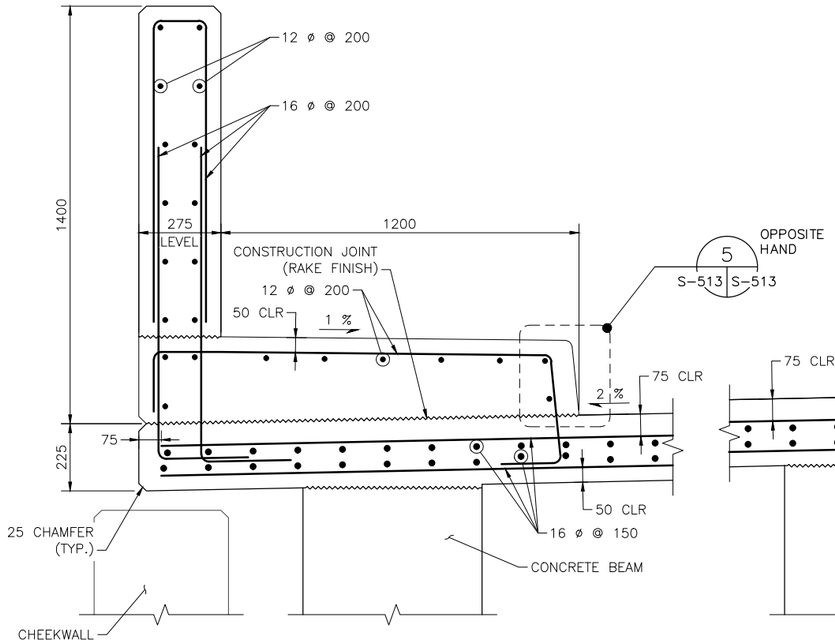
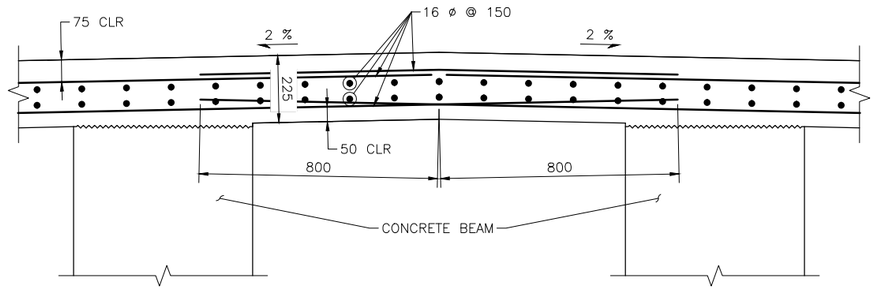
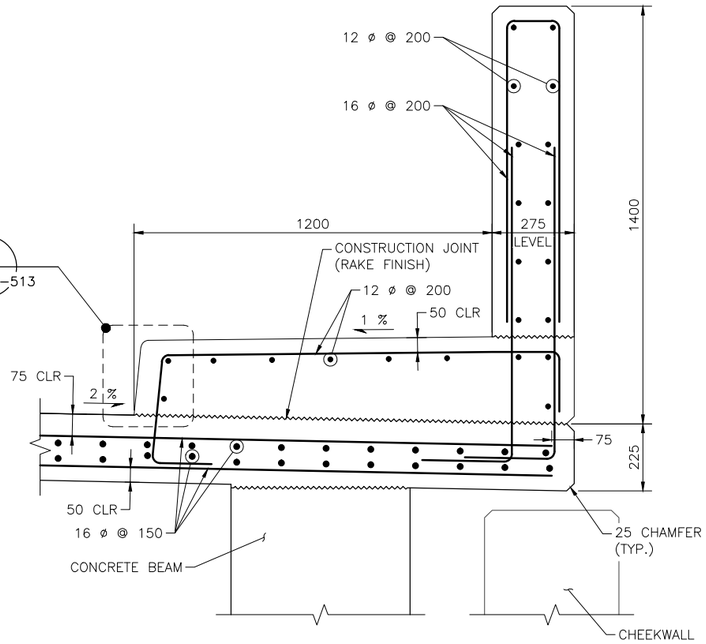


SECTION THRU SIDEWALK
SCALE 1:10



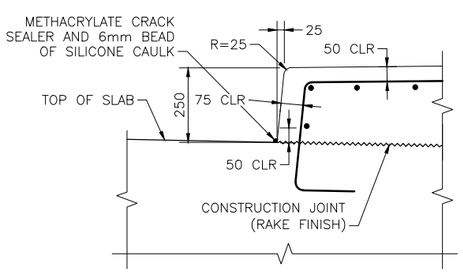
SECTION THRU DECK
SCALE 1:10



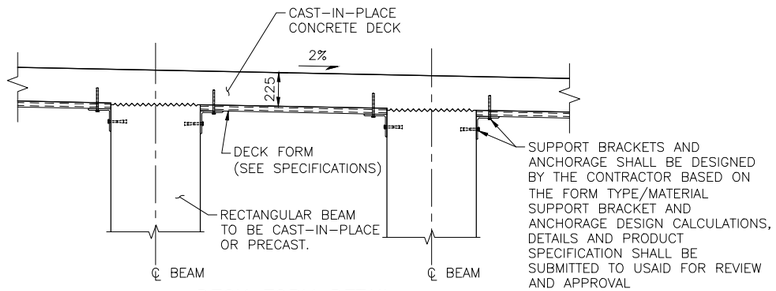
SECTION THRU SIDEWALK
SCALE 1:10

NOTES:

1. LONGITUDINAL REINFORCEMENT SHALL BE PLACED PARALLEL TO THE ℄ OF CONSTRUCTION. MAIN REINFORCEMENT SHALL BE PLACED PERPENDICULAR TO THE ℄ OF CONSTRUCTION.
2. SUPPORT DEVICES SHALL BE SPACED @ 1200mm O.C. MAXIMUM.
3. THE FINISHED SURFACE OF THE BRIDGE DECK SHALL BE SMOOTH.
4. TOP LAYER OF MAIN REINFORCEMENT SHALL BE LAPPED IN THE CENTER OF A BAY, AND THE BOTTOM LAYER OF MAIN REINFORCEMENT SHALL BE LAPPED OVER A BEAM. ALL LAPS IN THE MAIN REINFORCEMENT SHALL BE STAGGERED. SEE GENERAL NOTES FOR LAP SPLICE LENGTHS, SHEET S-001.
5. BRIDGE DECK SLAB FOR EACH SPAN SHALL BE PLACED IN ONE CONTINUOUS OPERATION WITH THE APPROVAL USAID PROVIDED THAT THE INTIAL SET (Fc = 500 PSI) OF ALL CONCRETE DOES NOT OCCUR UNTIL AFTER THE COMPLETION OF THE PLACEMENT. AN APPROVED RETARDER SHALL BE USED, WHEN NECESSARY, TO RETAIN THE WORKABILITY OF THE CONCRETE.
6. THE SURFACE OF THE PREVIOUSLY CAST CONCRETE SHALL BE BLAST CLEANED, ROUGHENED, WETTED WITH CLEAN WATER, AND THEN FLUSHED WITH A MORTAR COMPOSED OF EQUAL PARTS OF THE CEMENT AND SAND SPECIFIED FOR THE NEW CONCRETE, BEFORE NEW CONCRETE IS PLACED ADJACENT THERETO. NEW CONCRETE SHALL BE PLACED BEFORE MORTAR HAS TAKEN INTIAL SET.
7. IN LIEU OF THE MORTAR, AN EPOXY ADHESIVE SUITABLE FOR BONDING FRESH CONCRETE TO HARDENED CONCRETE FOR LOAD BEARING APPLICATIONS MAY BE USED. THE EPOXY ADHESIVE SHALL CONFORM TO AASHTO M 235 TYPE V AND SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
8. MECHANICAL DOWEL BAR SPLICERS SHALL BE USED WHERE USE OF LAP SPLICES IS NOT FEASIBLE.



CURB DETAIL
SCALE 1:10 — 5 — S-513 S-513



DECK FORM DETAIL
SCALE 1:20

NOTES:

1. METHACRYLATE CRACK SEALER SHALL BE APPLIED AFTER SIDEWALK OR SAFETY CURB/BARRIER CURING PERIOD IS COMPLETE AND IN ACCORDANCE WITH REQUIREMENTS OF MANUFACTURER AND STANDARD SPECIFICATIONS.
2. BEFORE SEALING, THE CONCRETE AT THE INTERFACE OF DECK AND CURB SHALL BE SWEPT CLEAN AND BLOWN OFF USING OIL FREE COMPRESSED AIR IMMEDIATELY PRIOR TO APPLYING SEALER.
3. APPLY 6mm HIGH BEAD OF SILICONE CAULKING COMPOUND ABOUT 6mm FROM THE FACE OF CURB.
4. METHACRYLATE SHALL THEN BE POURED INTO THE 6mm WIDE GAP BETWEEN THE FACE OF CURB AND THE BEAD OF CAULK.

0 200 400 600 1000mm
1:10
0 400 800 1200 2000mm
1:20

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TETRA TECH
AFGHANISTAN ENGINEERING
SUPPORT PROGRAM
AESP

PROJECT TITLE:
GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:
DECK, BARRIER DETAILS

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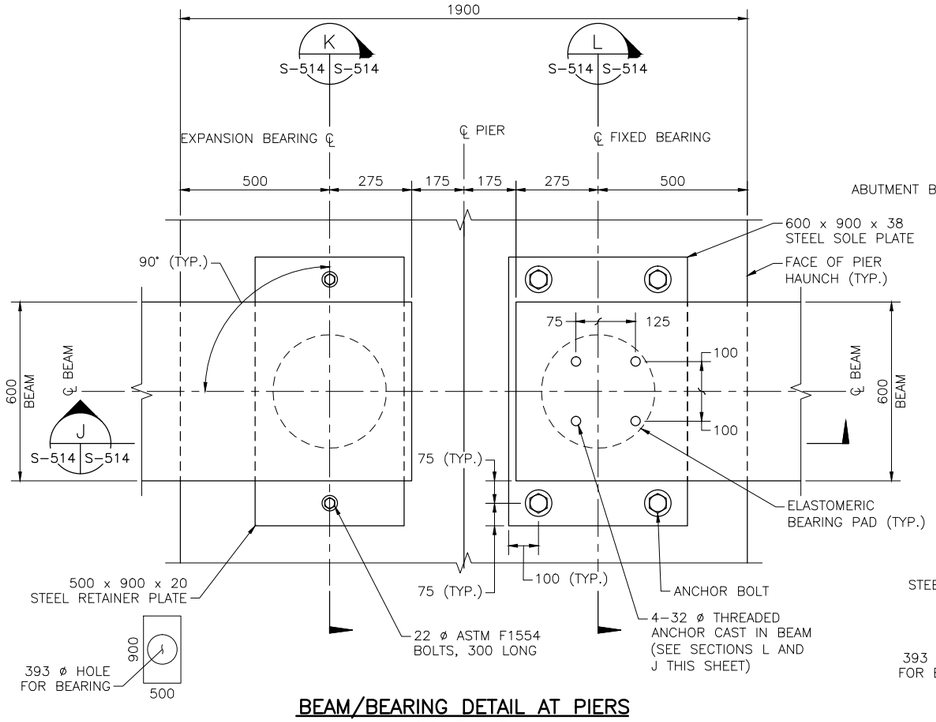
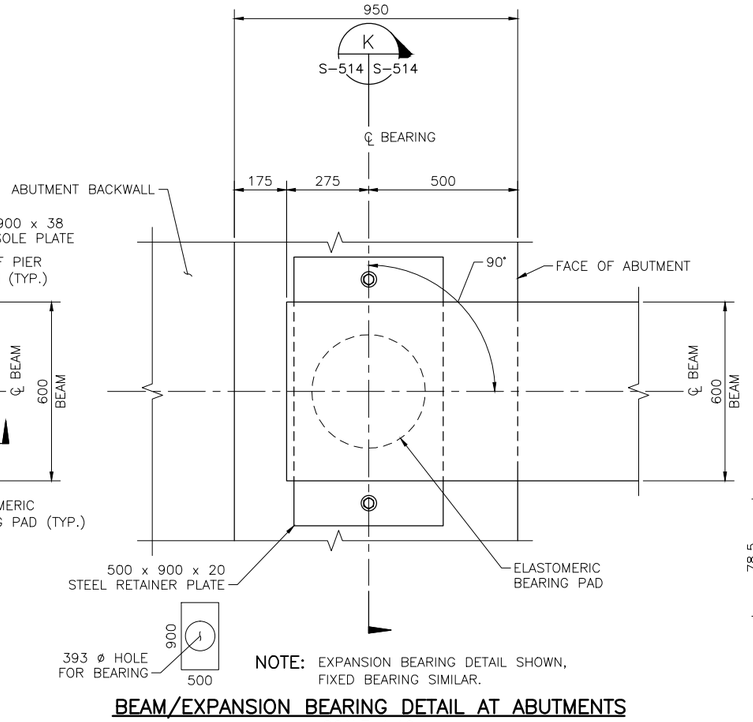


BEAM/BEARING DETAIL AT PIERS
SCALE 1:10

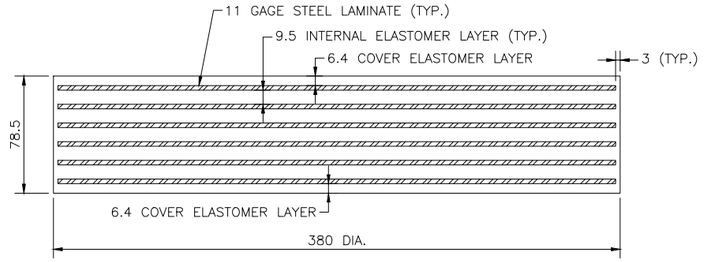


NOTE: EXPANSION BEARING DETAIL SHOWN, FIXED BEARING SIMILAR.

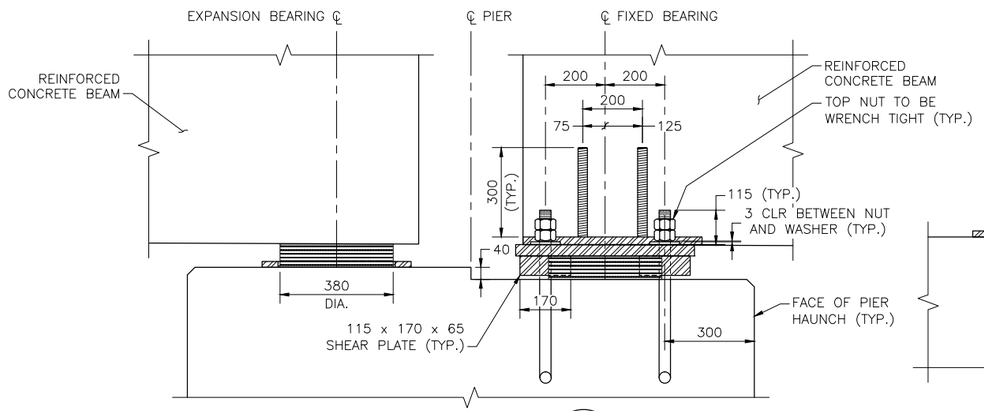
BEAM/EXPANSION BEARING DETAIL AT ABUTMENTS
SCALE 1:10

BEARING NOTES:

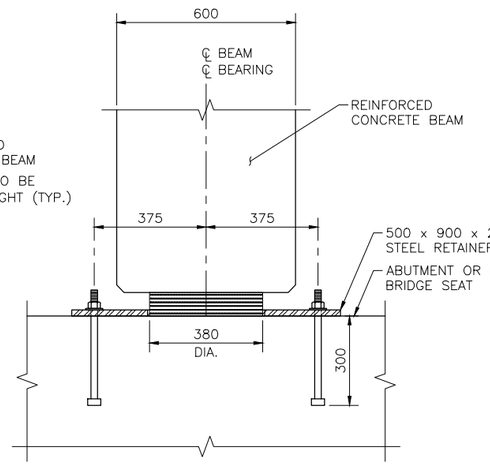
1. ELASTOMER SHALL HAVE A HARDNESS OF 60 DUROMETER.
2. STEEL LAMINATES SHALL CONFORM TO ASTM A 1011 GRADE 36 OR HIGHER.
3. THE COMPRESSIVE DESIGN LOAD ON THE BEARING PAD 151.4K KIPS. THE COMPRESSIVE DESIGN STRESS IS THE RESULT OF DIVIDING THE COMPRESSIVE DESIGN LOAD BY THE AREA OF THE PAD AND IS EQUAL TO 0.614 KSI.
4. EACH SPAN SHALL HAVE A FIXED BEARING AT THE SOUTH END AND AN EXPANSION BEARING AT THE NORTH END.



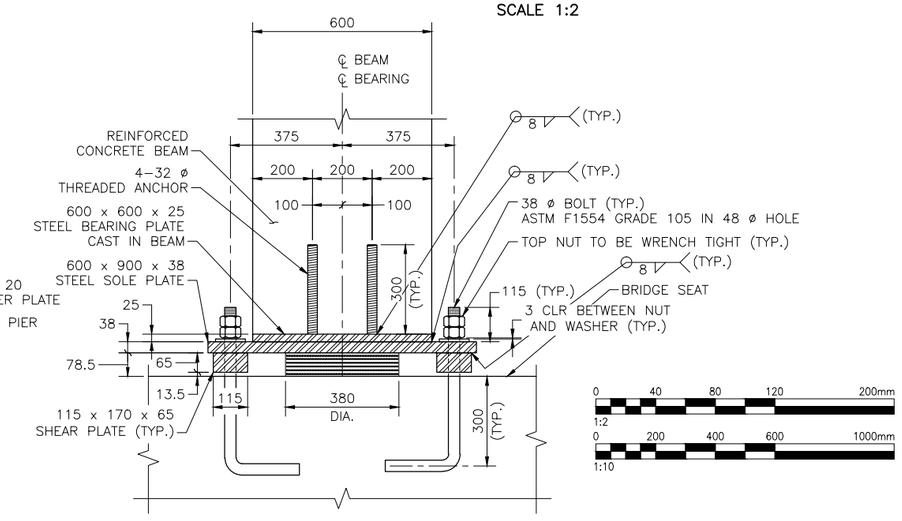
ELASTOMERIC BEARING PAD DETAIL
SCALE 1:2



SECTION J
SCALE 1:10 S-514 S-514



BEAM/EXPANSION BEARING SECTION K
SCALE 1:10 S-514 S-514



BEAM/FIXED BEARING SECTION L
SCALE 1:10 S-514 S-514

UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.
NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
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TETRA TECH

AFGHANISTAN ENGINEERING
SUPPORT PROGRAM

AESP

PROJECT TITLE:

GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:

BEARING DETAILS

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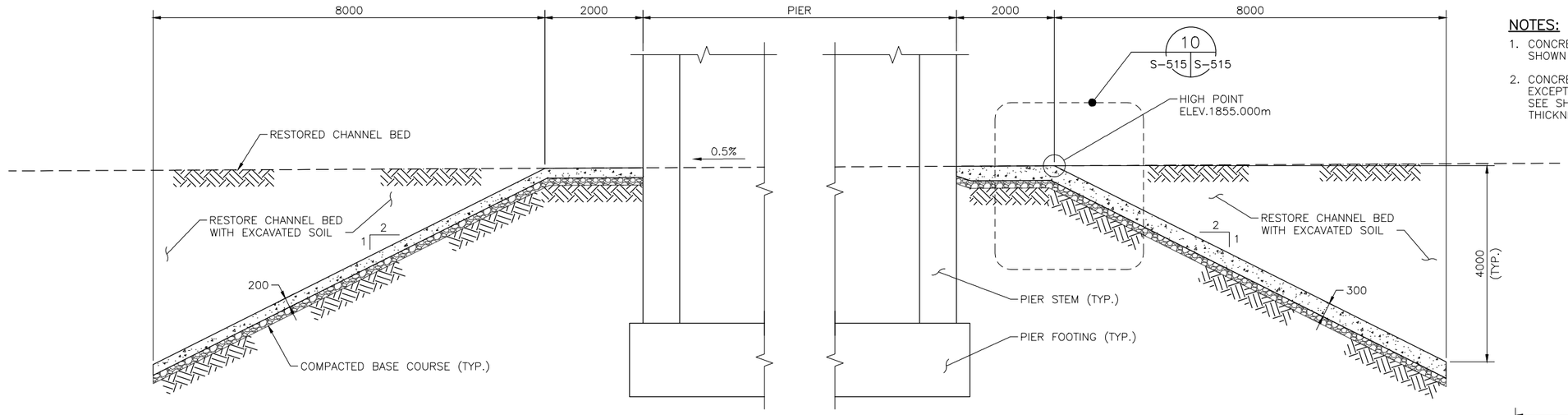
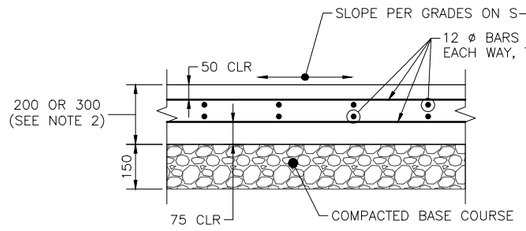


SCOUR MATTRESS SECTION
SCALE 1:50

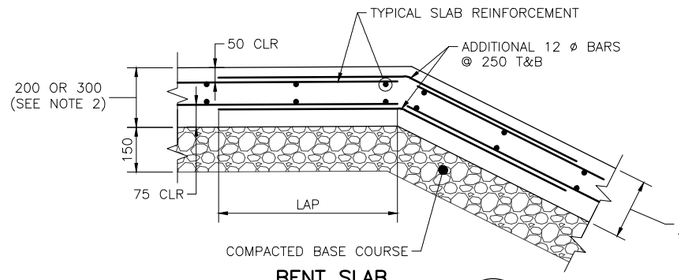
Z
S-102 S-515

NOTES:

1. CONCRETE MATTRESS SHALL BE SLOPED TO GRADES AS SHOWN ON SHEET S-102.
2. CONCRETE MATTRESS IS GENERALLY 200mm THICK, EXCEPT AT DOWNSTREAM END WHICH IS 300mm THICK. SEE SHEET S-102 FOR LIMITS OF VARIABLE SLAB THICKNESS.

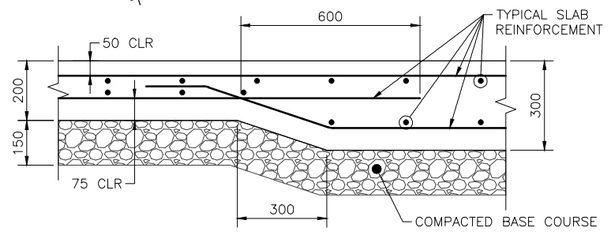


TYPICAL SLAB REINFORCEMENT
SCALE 1:10

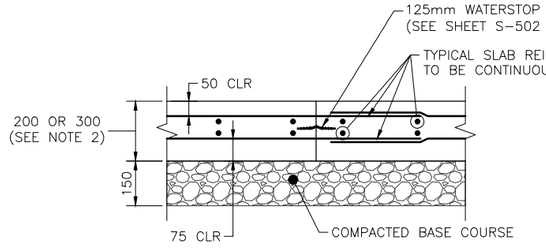


BENT SLAB REINFORCEMENT DETAIL
SCALE 1:10

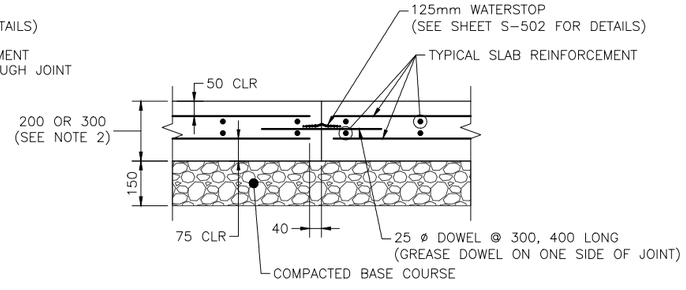
10
S-515 S-515



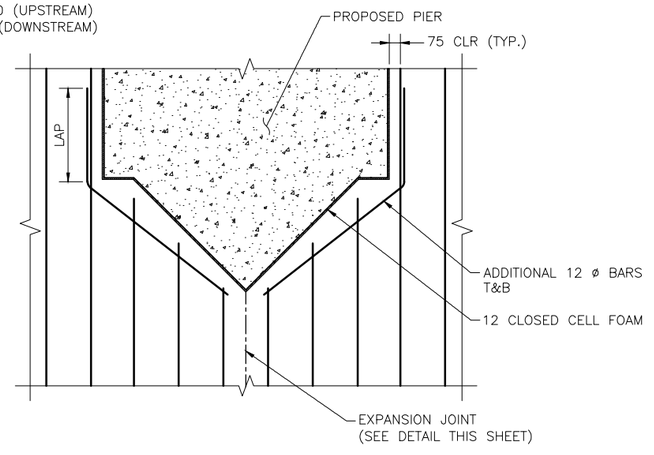
SLAB THICKNESS TRANSITION REINFORCEMENT DETAIL
SCALE 1:10



CONSTRUCTION JOINT DETAIL
SCALE 1:10



EXPANSION JOINT DETAIL
SCALE 1:10



ADDITIONAL REINFORCEMENT AT PIER NOSE
SCALE 1:20

0 200 400 600 1000mm
1:10
0 400 800 1200 2000mm
1:20
0 1000 2000 3000 5000mm
1:50

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AFGHANISTAN ENGINEERING SUPPORT PROGRAM
AESP

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GARDEZ TO KHOST ROAD
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SHEET CONTENTS:
CONCRETE MATTRESS DETAILS

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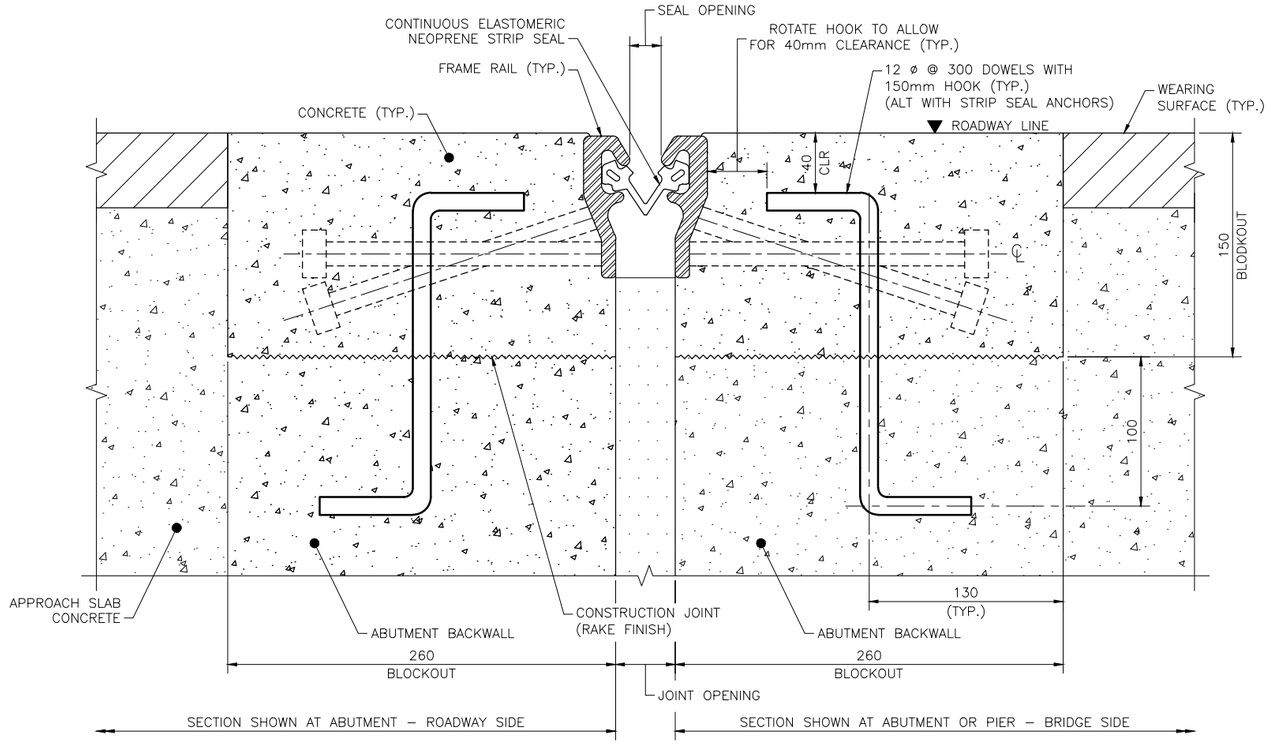
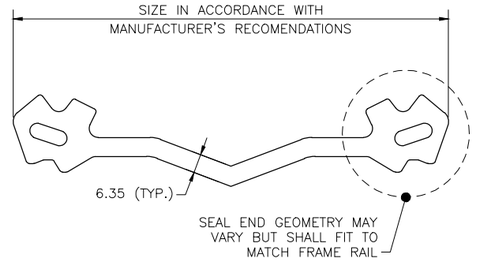


EXPANSION JOINT SECTION

SCALE 1:2

V
S–517 S–516



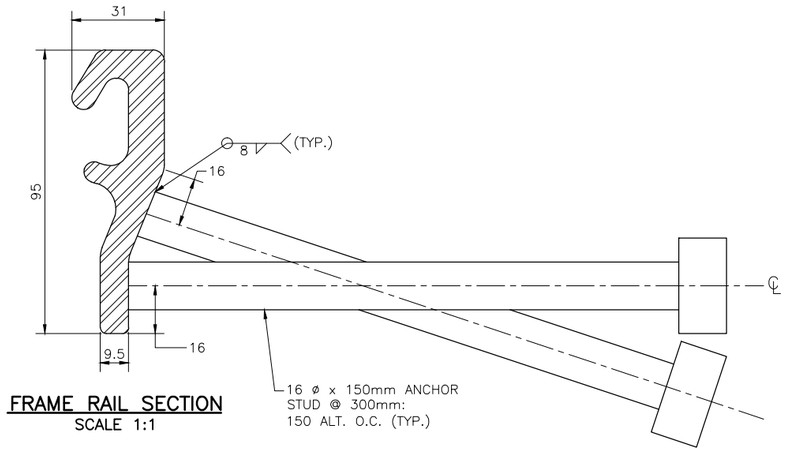
STRIP SEAL SECTION

SCALE 1:1

NOTES:

1. SEE SPECIFICATION SECTION 07 95 66 FOR STRIP SEAL JOINT MATERIAL AND INSTALLATION REQUIREMENTS.
2. BLOCKOUT SHOWN IS BASED ON FRAME RAIL AND ANCHORS SHOWN. BLOCKOUT TO BE MODIFIED AS REQUIRED FOR APPROVED STRIP SEAL JOINT SYSTEM.
3. CONTRACTOR TO SUBMIT PLAN TO TEMPORARILY SUPPORT THE JOINT DURING PLACEMENT OF THE CONCRETE WITHIN BLOCKOUT.
4. THE DETAILS SHOWN HERE ARE INTENDED AS A GENERAL GUIDE FOR A TYPICAL GLANDULAR TYPE STRIP SEAL JOINT SYSTEM. SHOP DRAWINGS WHICH INCLUDE DETAILS OF THE GLAND SHAPE, STEEL EXTRUSION SHAPE, WELDING PROCEDURE SPECIFICATIONS, ANCHOR ARRANGEMENT, TEMPERATURE CORRECTION REQUIREMENTS, AND TEMPORARY SUPPORT DETAILS SHALL BE SUBMITTED FOR APPROVAL OF THE ENGINEER ACCORDING TO THE STANDARD SPECIFICATIONS.
5. ALL STRUCTURAL STEEL COMPONENTS SHALL CONFORM TO ASTM A36M GRADE 36. AFTER THE COMPLETION OF ALL WELDING OPERATIONS STEEL PLATE ASSEMBLIES SHALL BE HOT–DIP GALVANIZED.
6. BLOCKOUT SHALL BE SANDBLASTED, CLEANED WITH COMPRESSED OIL LESS AIR, AND PRIMED WITH BONDING COMPOUND PRIOR TO CASTING CONCRETE WITHIN BLOCKOUT.
7. NEOPRENE STRIP SEAL SHALL BE BONDED TO STEEL EXTRUSION WITH APPROVED ADHESIVE.
8. INSTALL CONTINUOUS NEOPRENE STRIP SEAL IN THE FIELD. SPLICING OF SEAL IS NOT PERMITTED.
9. NO WELDING OF PORTIONS OF STEEL EXTRUSIONS IN DIRECT CONTACT WITH NEOPRENE SEAL SHALL BE PERMITTED.

INSTALLATION DATA FOR BRIDGE EXPANSION JOINTS AT 20°C				
LOCATION	JOINT OPENING AT 20°C, (mm)	MINIMUM JOINT OPENING (mm)	MAXIMUM JOINT OPENING (mm)	ADJUSTMENT PER 10°C (mm)
ABUTMENTS	40	34	53	1.7
PIERS	60	54	73	1.7



FRAME RAIL SECTION

SCALE 1:1

0 20 40 60 100mm
1:1
0 40 80 120 200mm
1:2

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SHEET CONTENTS:
JOINT DETAILS
SHEET 1 OF 2

DESIGNED BY:	DATE:
ALH	03–28–2014
DRAWN BY:	SUBMITTED BY:
AC	TETRA TECH
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SAM	LT0077–S–516

SYMB	SUBMITTAL/REVISION DESCRIPTION	DATE	APR
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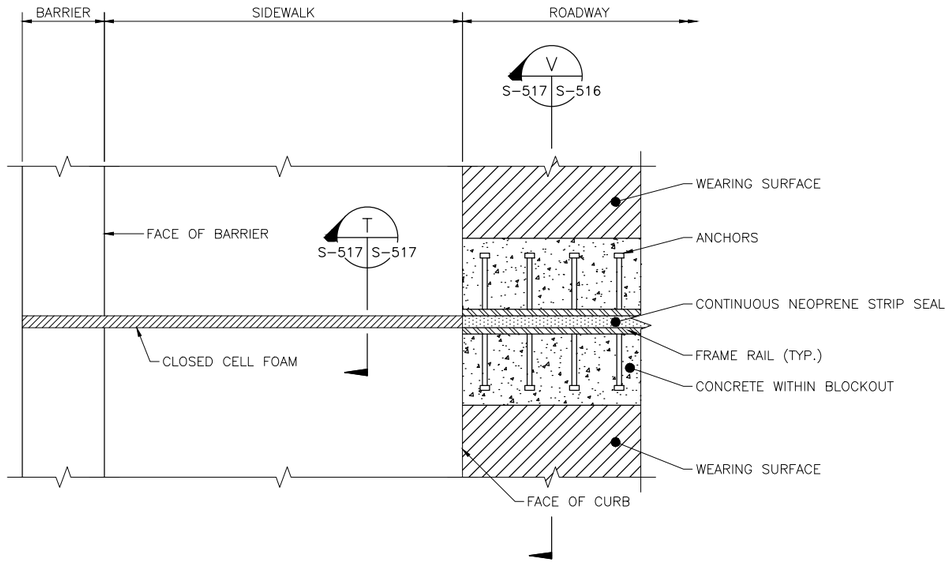
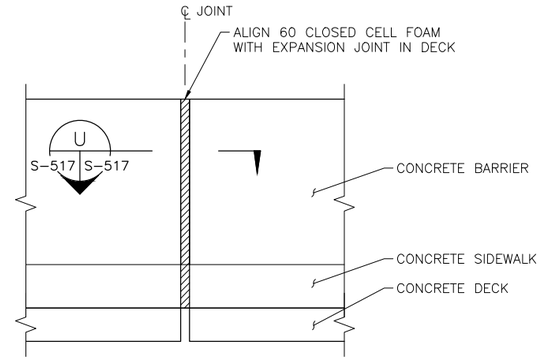


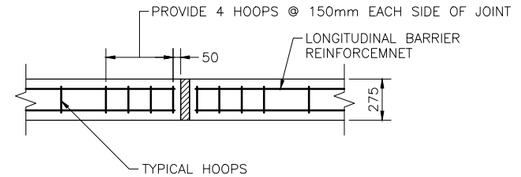
NOTE: SECTION SHOWN AT PIERS. SECTION AT ABUTMENT SIMILAR.

STRIP SEAL JOINT AT SIDEWALK
PLAN
SCALE 1:10



NOTE: SECTION SHOWN AT PIERS. SECTION AT ABUTMENT SIMILAR.

SECTION
SCALE 1:20



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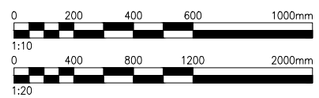
SCALE 1:20



UNLESS OTHERWISE NOTED, ALL LINEAR DIMENSIONS SHOWN ARE IN MILLIMETERS.
NOTE: A3 SIZE REDUCED TO HALF SCALE.

ISLAMIC REPUBLIC OF AFGHANISTAN
AND
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

AFGHANISTAN ENGINEERING SUPPORT PROGRAM
TETRA TECH
AESP

PROJECT TITLE:
GARDEZ TO KHOST ROAD
CONSTRUCTION OF BRIDGE NO. 9
WO.LT.0077

SHEET CONTENTS:
JOINT DETAILS
SHEET 2 OF 2

DESIGNED BY:	DATE:
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DRAWN BY:	SUBMITTED BY:
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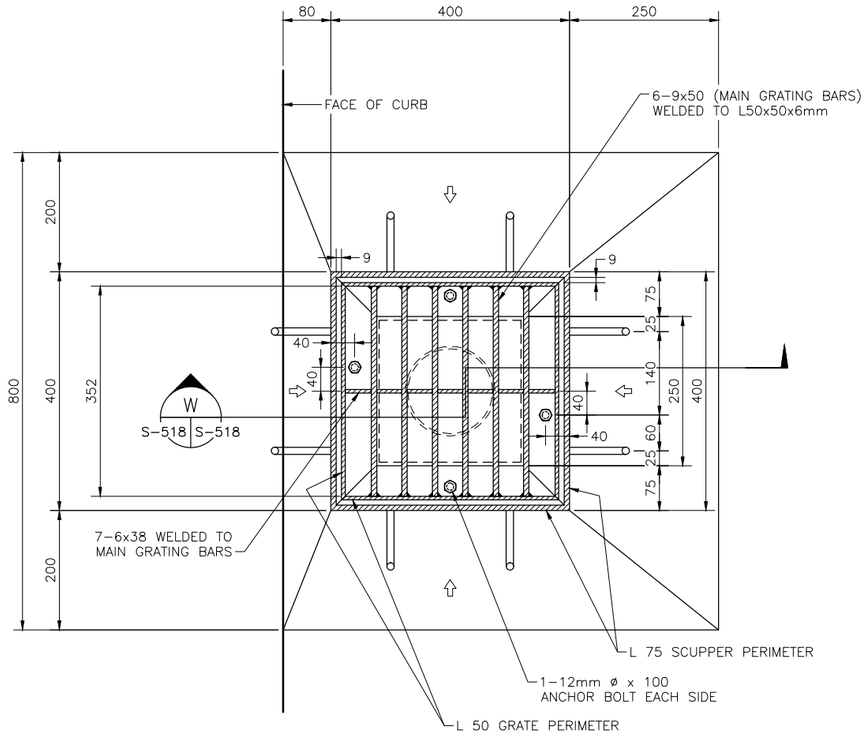
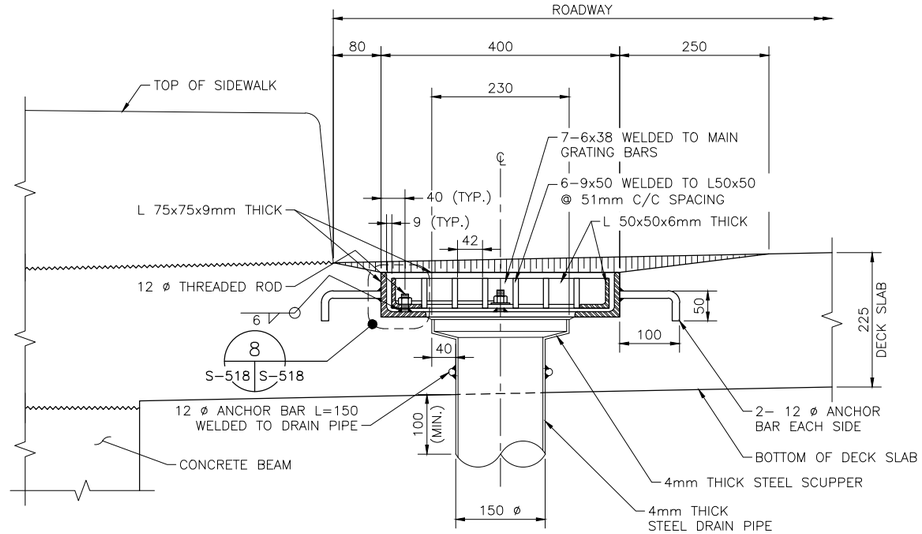
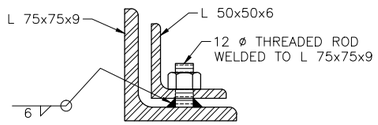


GRATING PLAN
SCALE 1:5



SECTION
SCALE 1:5 W S–101, S–518 S–518



DETAIL 8
SCALE 1:2 S–518 S–518

NOTES:

1. GRATE AND ITS FRAME SHALL BE ASTM A36M GRADE 250 STEEL OR EQUIVALENT.
2. WELDING PROCESS SHALL BE IN ACCORDANCE WITH AWS D1.1.
3. WELDMENT SHALL BE 6mm FILLET WELD UNLESS OTHERWISE INDICATED.
4. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 OR EQUIVALENT.
5. DRAIN PIPES SHALL CONFORM TO ASTM A36 GRADE 32 WITH MINIMUM THICKNESS OF 4mm.
6. ALL STEEL ELEMENTS INCLUDING PIPES SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A123.

0 100 200 300 500mm
1:5

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AFGHANISTAN ENGINEERING SUPPORT PROGRAM
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SHEET CONTENTS:
SCUPPER DETAILS

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