

Inventory Sheet for River/Channel

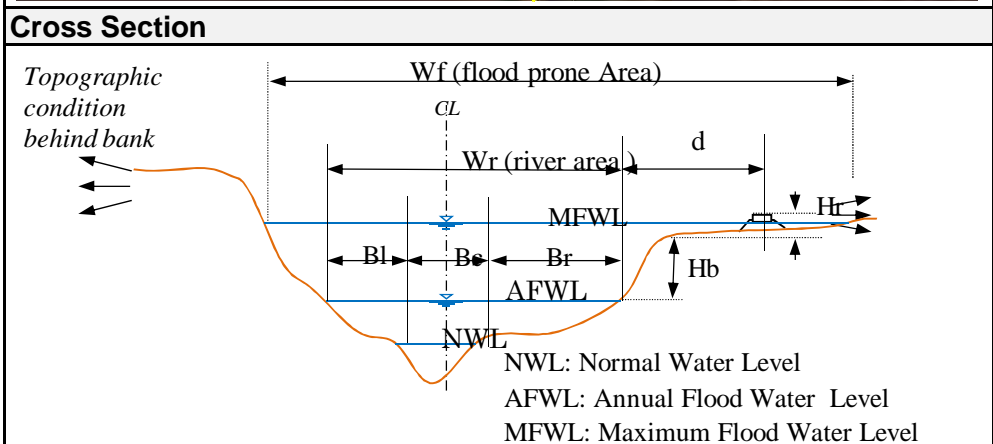
Station: From KM305 to KM306 **Sheet No.: CH- KM 305**

1. General			
1-1	Name of Inspector	T. Kawaguchi ,, Hussein , Abiud	
1-2	Organization of Inspector	River Group D	
1-3	Date/Time of Inspection	Dec. 4, 2014	
1-4	Location	Lat	6° 43' 38" 05"
1-5		Long	36° 50' 33" 85"

2. Characteristics of Physical Condition of River Channel			
2-1	Length of Objective Area		
2-2	Nos. of River Facility		1 Bridge
2-3	River Channel Alignment		Meandering , Water Hit Area
2-4	River Cross Section		Compound Section
2-5	River Width		Wf: m, Wr: m Bl: m, Bc: 128 m, Br: m
2-6	Riverbed Slope		
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hl: 3 m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10	Vegetation		
2-11		Estimated Flow Velocity	normal: m/s, flood m/s
2-12	Characteristic of environmental condition of river channel		Riverside forests, Sandbar, Pool, shoal, fishes, etc
2-13	Land Use		none
2-14	Soil Type		
2-15	Topography		left: ← , right →
2-16	Structures/Houses, road		none
2-17	Location of Railway		d = 40 m

2-18	Damaged Record, if any (year/month)	The bridge of right side tributary had been broken by flood in 2010. The bridge had been rebuilt.
2-19	Reason of	
2-20	Pattern of Riverbed	

Photo Upstream	Photo Downstream



Inventory Sheet for River/Channel

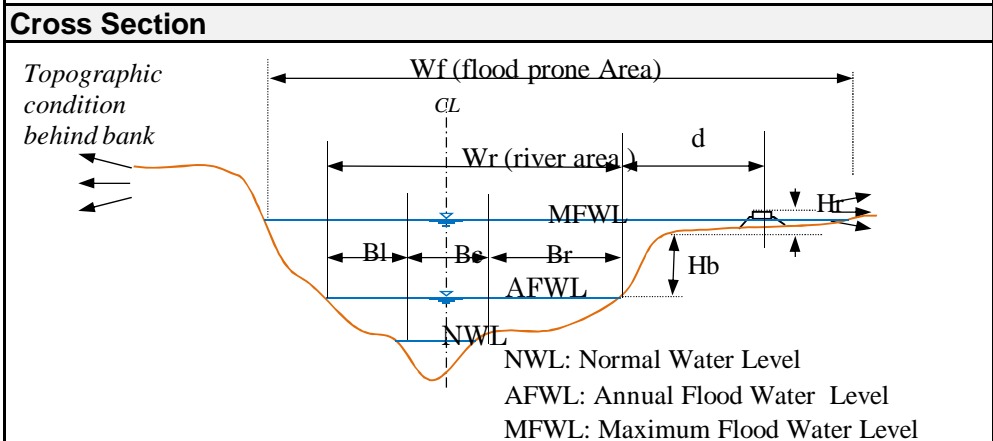
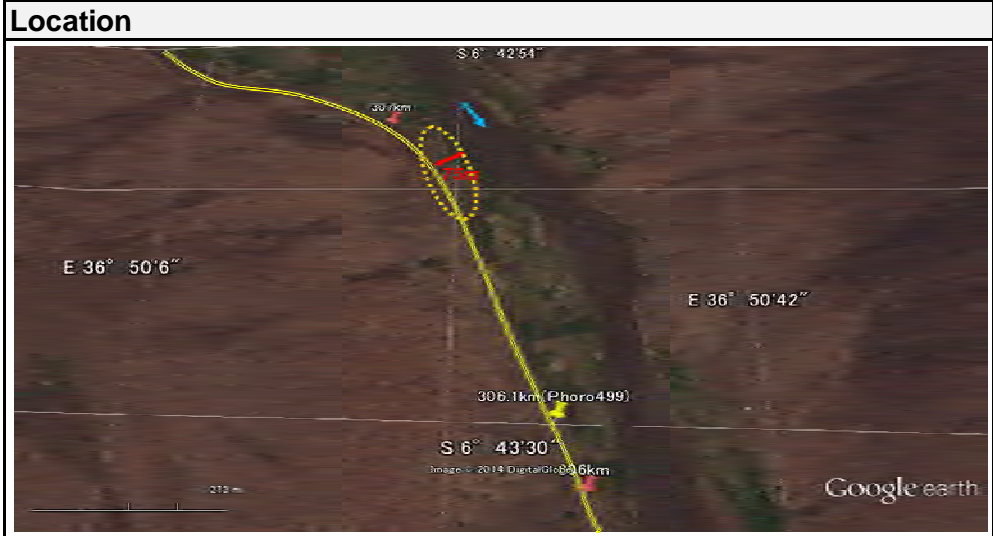
Station: From KM306 to KM307 **Sheet No.: CH- KM 306**

1. General			
1-1	Name of Inspector	T. Kawaguchi ,, Hussein , Abiud	
1-2	Organization of Inspector	River Group D	
1-3	Date/Time of Inspection	Dec. 4, 2014	
1-4	Location	Lat	6° 43' 05" 07"
1-5		Long	36° 50' 24" 49"

2. Characteristics of Physical Condition of River Channel			
2-1	Length of Objective Area		
2-2	Nos. of River Facility		
2-3	River Channel Alignment		Meandering , Water Hit Area
2-4	River Cross Section		Compound Section
2-5	River Width	Wf: m, Wr: m	Bl: m, Bc: 112 m, Br: m
2-6	Riverbed Slope		
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hl: 3 m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10	River Bank	Vegetation	
2-11		Estimated Flow Velocity	normal: m/s, flood m/s
2-12	Characteristic of environmental condition of river channel		Riverside forests, Sandbar, Pool, shoal, fishes, etc
2-13	Land Use		none
2-14	Soil Type		
2-15	Topography		left: ← , right →
2-16	Structures/Houses, road		none
2-17	Location of Railway		d = 75 m

2-18	Damaged Record, if any (year/month)	
2-19	Reason of	
2-20	Pattern of Riverbed	

Photo Upstream	Photo Downstream



Inventory Sheet for River/Channel

Station: From KM307 to 308 **Sheet No.: CH- KM 307**

1. General			
1-1	Name of Inspector	T. Kawaguchi ,, Hussein , Abiud	
1-2	Organization of Inspector	River Group D	
1-3	Date/Time of Inspection	Dec. 4, 2014	
1-4	Location	Lat	6° 42' 59" 86'''
1-5		Long	36° 50' 22" 87'''

2. Characteristics of Physical Condition of River Channel

2-1	Length of Objective Area		
2-2	Nos. of River Facility		
2-3	River Channel Alignment	Meandering , Water Hit Area	
2-4	River Cross Section	Compound Section	
2-5	River Width	Wf: m, Wr: m Bl: m, Bc: 77 m, Br: m	
2-6	Riverbed Slope		
2-7	Riverbed Material	Material	
2-8	River Bank	Bank Height	Hl: 3 m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10		Vegetation	
2-11	Estimated Flow Velocity	normal: m/s, flood m/s	
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc	
2-13	Land Use	none	
2-14	Soil Type		
2-15	Topography	left: ← , right →	
2-16	Structures/Houses, road	none	
2-17	Location of Railway	d = 130 m	

2-18	Damaged Record, if any (year/month)	
2-19	Reason of	
2-20	Pattern of Riverbed	

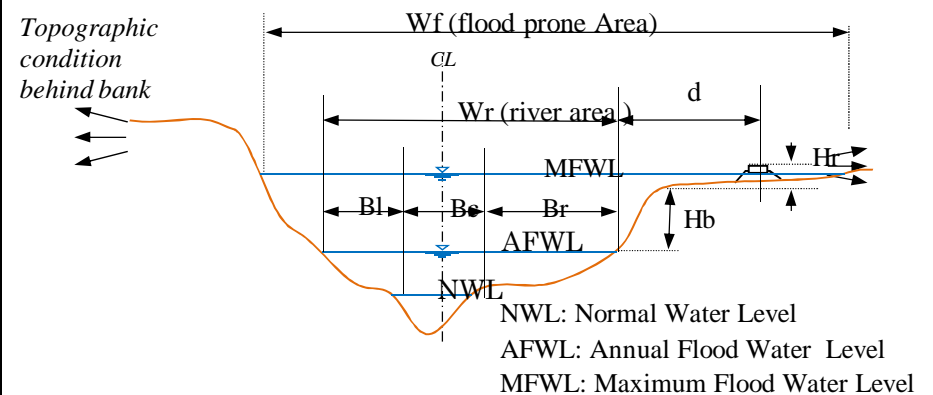
Photo Upstream

Photo Downstream

Location



Cross Section



Inventory Sheet for River/Channel

Station: From KM308-KM309 **Sheet No.: CH-308**

1. General			
1-1	Name of Inspector	T.Fukuda, Mr. Kido, Mr. Philipo	
1-2	Organization of Inspector	Team B	
1-3	Date/Time of Inspection	Dec. 4, 2014 1027	
1-4	Location	Lat	06° 42' 26.1"
1-5		Long	36° 49' 43.0"

2. Characteristics of Physical Condition of River Channel

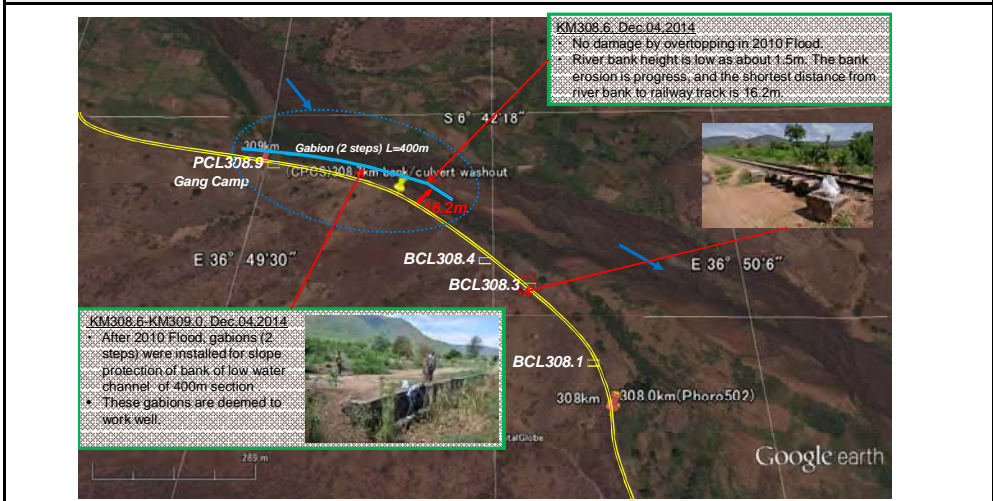
2-1	Length of Objective Area	L=400m, Km308.5-Km308.9	
2-2	Nos. of River	Gabion 2steps	
2-3	River Channel Alignment	Straight, water hit area	
2-4	River Cross Section	compund	
2-5	River Width	Wf: m, Wr: approx.150m	
		Bl: m, Bc: m, Br: m	
2-6	Riverbed Slope	Gentle	
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hb: 1.5-2.5 m, Hr=1.1m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10		Vegetation	Grass & trees
2-11	Estimated Flow Velocity	normal: 0.5 m/s, flood	m/s
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc	
2-13	Land Use	Cultivation of onion	
2-14	Soil Type	Black	
2-15	Topography	left: ← ,right →	
2-16	Structures/Houses, road	none	
2-17	Location of Railway	d= 16.2m@Km308.6	

2-18	Damaged Record, if any (year/month)	After damaged by 2010 flood, 2 steps of gabions were constructed.	
2-19	Reason of	Bank erosion	
2-20	Pattern of Riverbed	Rising of riverbed in long distance	

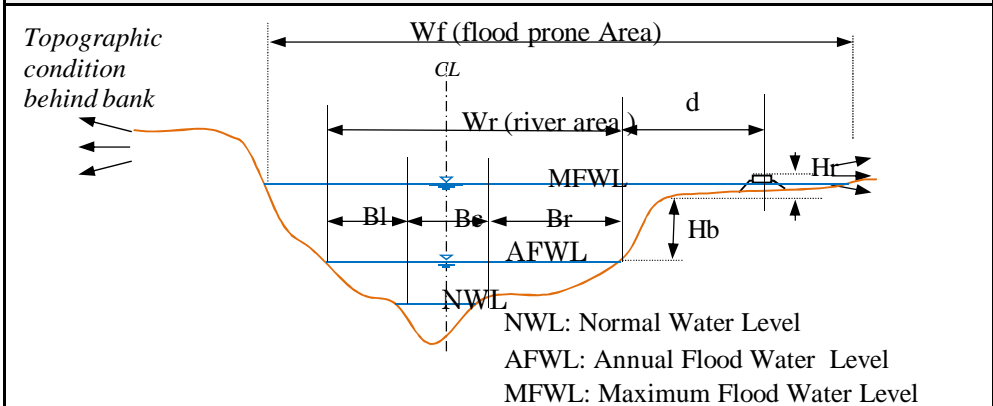
Photo Upstream **Photo Downstream**



Location



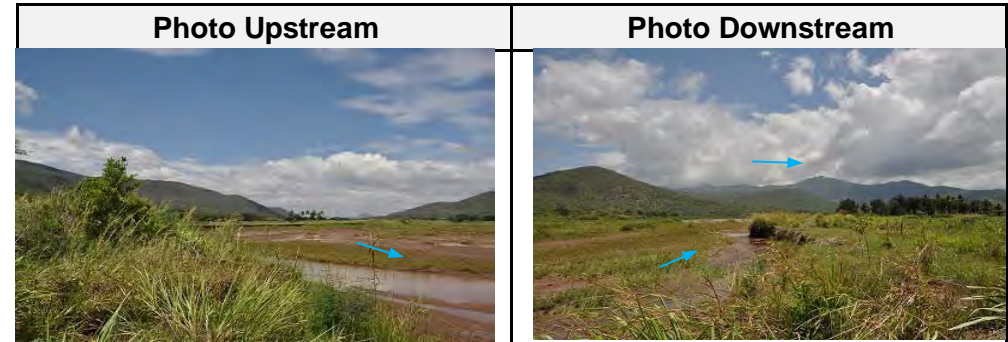
Cross Section



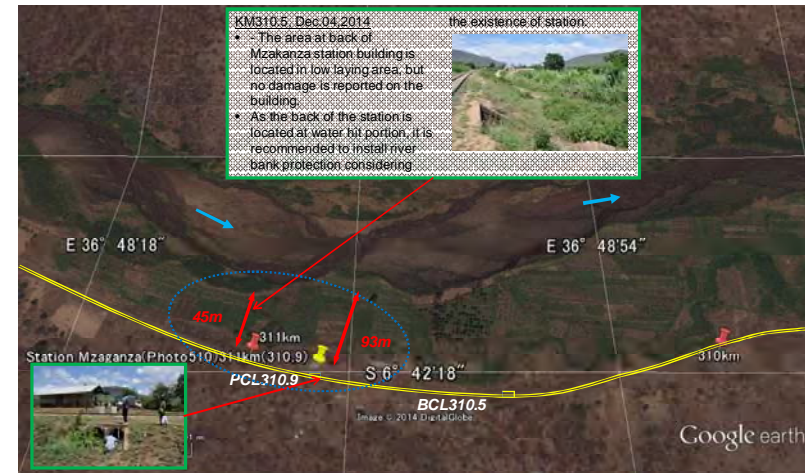
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Inventory Sheet for River/Channel

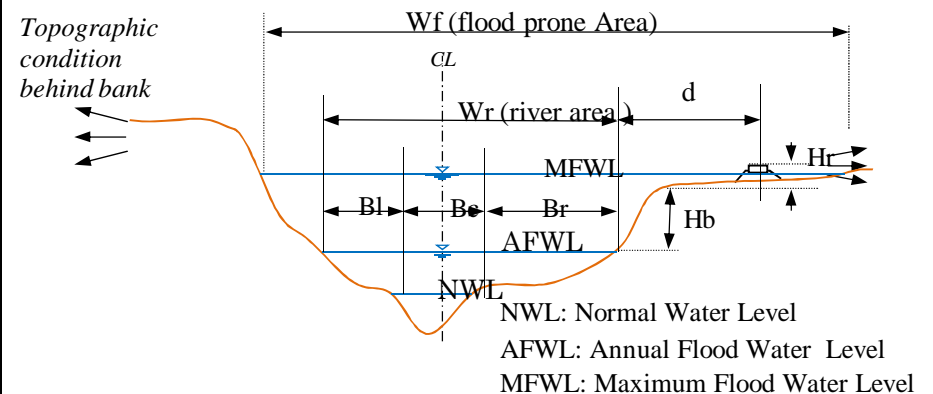
Station: From KM310.9		Sheet No.: CH-310
1. General		
1-1	Name of Inspector	T.Fukuda, Mr. Kido, Mr. Philipo
1-2	Organization of Inspector	Team B
1-3	Date/Time of Inspection	Dec. 4, 2014 1140
1-4	Location	Lat
1-5		Long
2. Characteristics of Physical Condition of River Channel		
2-1	Length of Objective Area	L=200m, KM310.9-311.1
2-2	Nos. of River	None
2-3	River Channel Alignment	Straight, water hit area
2-4	River Cross Section	Compound section
2-5	River Width	Wf: m, Wr: m Bl: m, Bc: m, Br: m
2-6	Riverbed Slope	Gentle
2-7	Riverbed Material	Material: Sand
2-8	River Bank	Bank Height: HI: 1.3-4.3 m
2-9		Side Slope: SI: 1v: 3.0, Sr: 1v:
2-10	Vegetation	Grass
2-11	Estimated Flow Velocity	normal: m/s, flood m/s
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc
2-13	Land Use	Cultivation of onion
2-14	Soil Type	Black
2-15	Topography	left: ←, right: →
2-16	Structures/Houses, road	Station & residential houses
2-17	Location of Railway	d= 21m@Km312.4
2-18	Damaged Record, if any (year/month)	Bank erosion is progressive, but no serious flood damage is reported.
2-19		Reason of
2-20	Pattern of Riverbed	Rising of riverbed in long distance



Location



Cross Section



Inventory Sheet for River/Channel

Station: From KM312.8 to 313.3 **Sheet No.: CH-312.8**

1. General			
1-1	Name of Inspector	T.Fukuda, Mr. Kido, Mr. Philipo	
1-2	Organization of Inspector	Team B	
1-3	Date/Time of Inspection	Dec. 4, 2014 1310	
1-4	Location	Lat	06° 42' 00.0" to 59.6"
1-5		Long	36° 47' 31.1" to 28.8"

2. Characteristics of Physical Condition of River Channel

2-1	Length of Objective Area	5--m, Km312.8-313.3	
2-2	Nos. of River	Gabion(2 steps), Culvert (2 nos.)	
2-3	River Channel Alignment	Meandering, water hit aera	
2-4	River Cross Section		
2-5	River Width	Wf: m, Wr: m	
		Bl: m, Bc: m, Br:3.0 m	
2-6	Riverbed Slope	Gentle	
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hl: m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10		Vegetation	none
2-11	Estimated Flow Velocity	normal: m/s, flood	m/s
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc	
2-13	Land Use	none	
2-14	Soil Type		
2-15	Topography	left: ← ,right →	
2-16	Structures/Houses, road		
2-17	Location of Railway		

2-18	Damaged Record, if any (year/month)	Gabions (2 steps) are installed for bank protection of low water channel in the 500m section and at outlet of culvert.
2-19	Reason of	
2-20	Pattern of Riverbed	

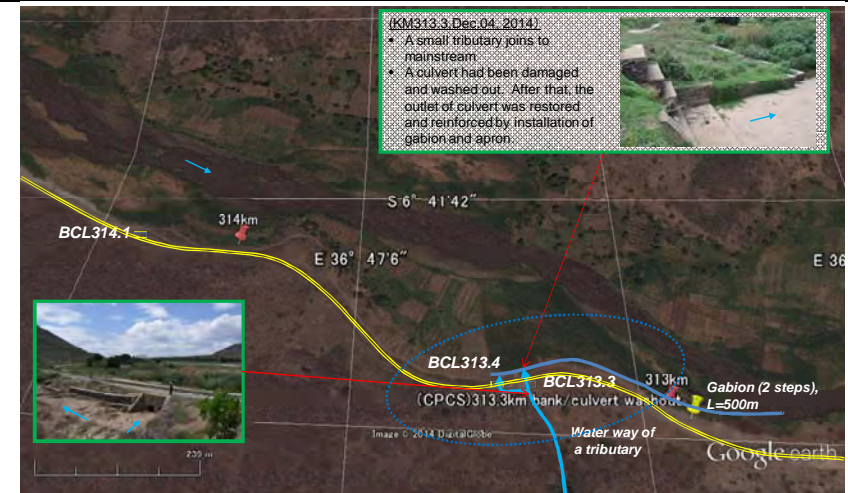
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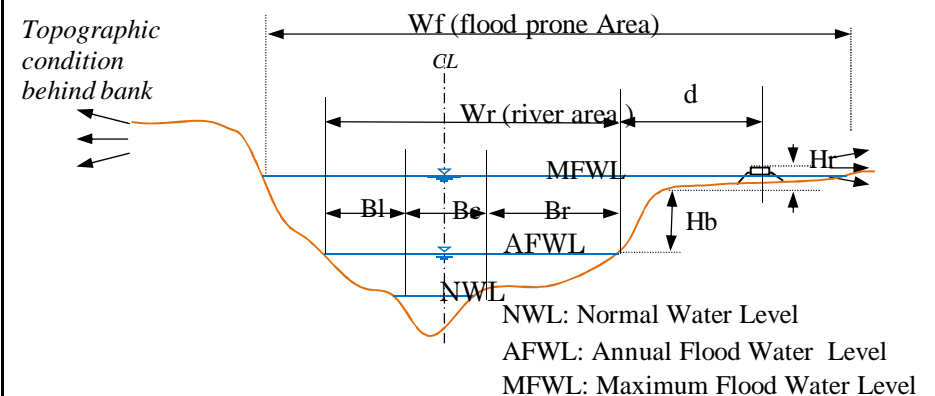
Photo Downstream



Location



Cross Section



Inventory Sheet for River/Channel

Station: From KM314.3		Sheet No.: CH-314.3	
1. General			
1-1	Name of Inspector	T.Fukuda, Mr. Kido, Mr. Philipo	
1-2	Organization of Inspector	Team B	
1-3	Date/Time of Inspection	Dec. 4, 2014 1410	
1-4	Location	Lat	06° 41' 44.0"
1-5		Long	36° 46' 47.1"
2. Characteristics of Physical Condition of River Channel			
2-1	Length of Objective Area		
2-2	Nos. of River		
2-3	River Channel Alignment	Straight, water hit area	
2-4	River Cross Section	Compound section	
2-5	River Width	Wf: approx.500m, Wr: m	
2-6	Riverbed Slope	Bl: m, Bc: m, Br: 100m	
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hr: 1.4m, Hb=3.0m
2-9		Side Slope	Sl: 1v: 2.0, Sr: 1v:
2-10		Vegetation	grass
2-11	Estimated Flow Velocity	normal: m/s, flood	m/s
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc	
2-13	Land Use	none	
2-14	Soil Type	black	
2-15	Topography	left: ←, right: →	
2-16	Structures/Houses, road	none	
2-17	Location of Railway	d=19m@Km314.3	
2-18	Damaged Record, if any (year/month)	none	
2-19		Reason of	
2-20		Pattern of Riverbed	Local sediment deposition

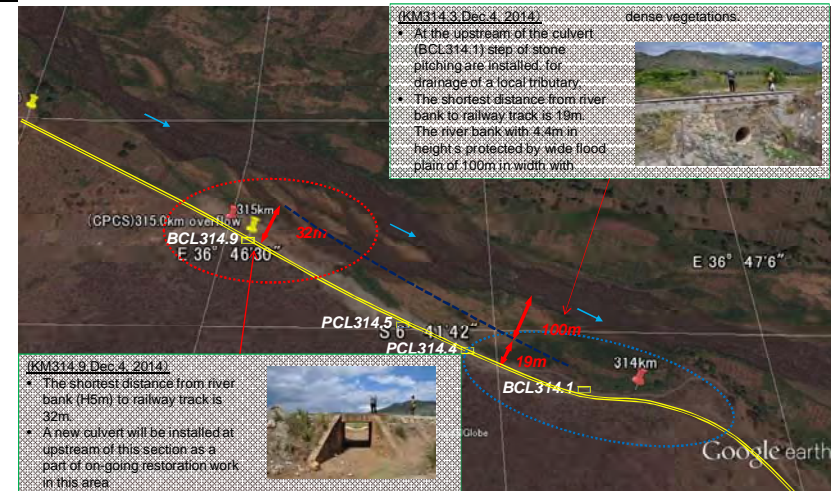
Photo Upstream



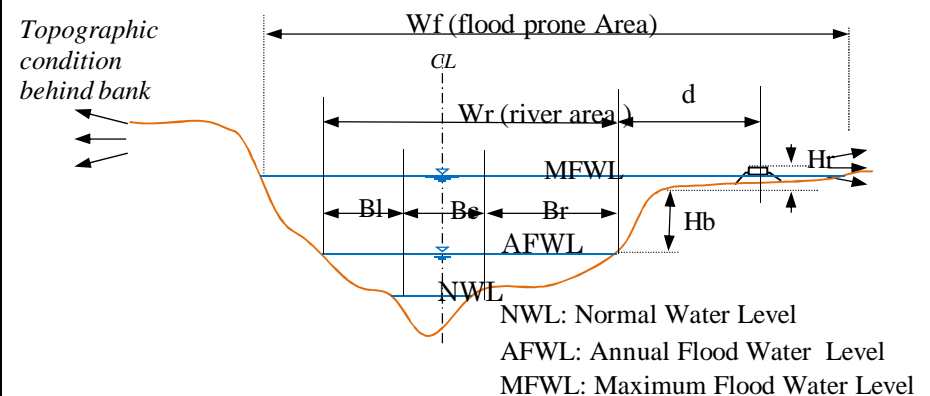
Photo Downstream



Location

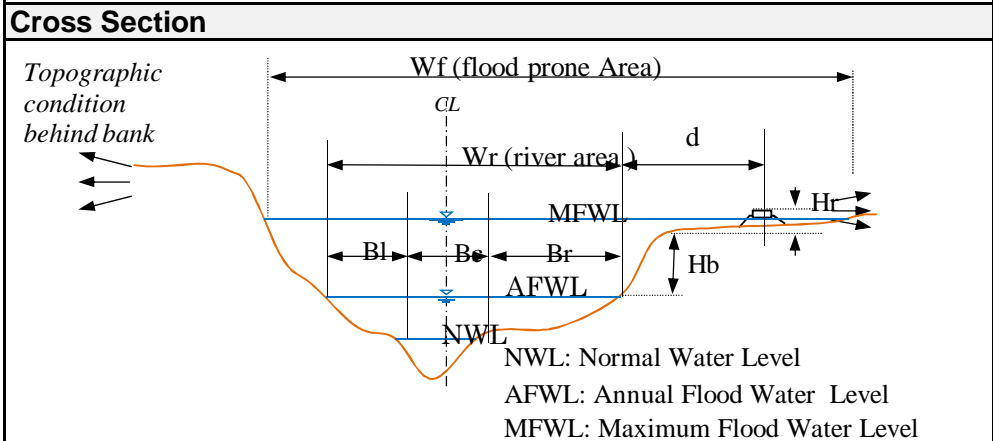
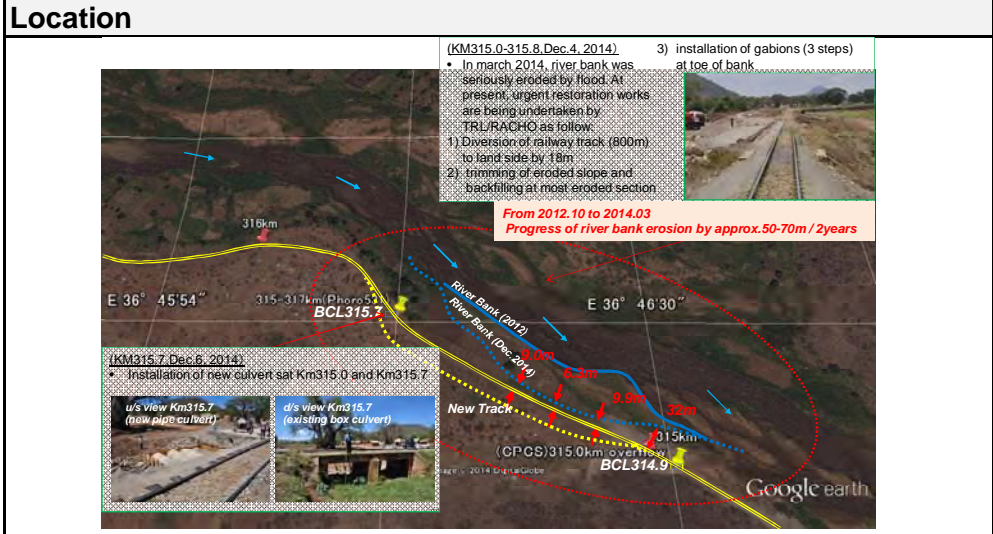
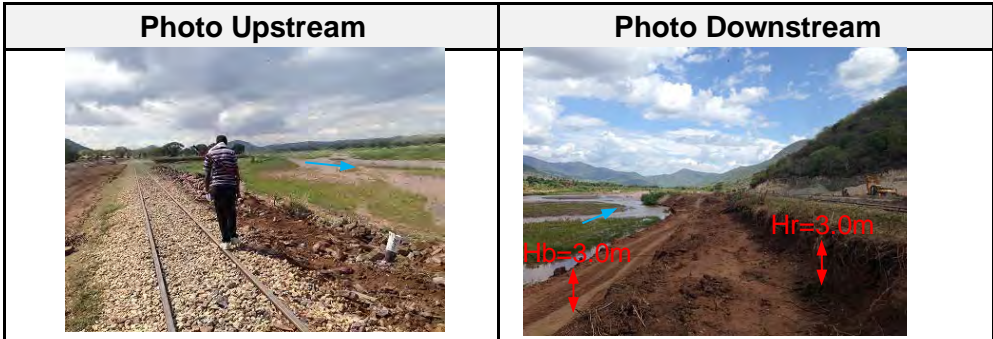


Cross Section



Inventory Sheet for River/Channel

Station: From KM315 to KM316		Sheet No.: CH-315
1. General		
1-1	Name of Inspector	T.Fukuda, Mr. Kido, Mr. Philipo
1-2	Organization of Inspector	Team B
1-3	Date/Time of Inspection	Dec. 4, 2014
1-4	Location	Lat
1-5		Long
2. Characteristics of Physical Condition of River Channel		
2-1	Length of Objective Area	800m, Km315.0-315.8
2-2	Nos. of River	Culvert (1)
2-3	River Channel Alignment	meandering
2-4	River Cross Section	Compound section
2-5	River Width	Wf: m, Wr: m Bl: m, Bc: m, Br: m
2-6	Riverbed Slope	Gentle
2-7	Riverbed Material	Material: Sand
2-8	River Bank	Bank Height: Hr: 3 m, Hb: 3 m
2-9		Side Slope: Sl: 1v: 2 , Sr: 1v:
2-10		Vegetation: grass
2-11	Estimated Flow Velocity	normal: 0.6 m/s, flood m/s
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc
2-13	Land Use	none
2-14	Soil Type	laterite
2-15	Topography	left: ← , right →
2-16	Structures/Houses, road	none
2-17	Location of Railway	d=32m@KM315.0, 6.3m@Km315.2
2-18	Damaged Record, if any (year/month)	Previously damaged. In march 2014, river bank was seriously eroded by flood. At present, urgent restoration works with diversion are being undertaken by TRL/RACHO.
2-19		Reason of
2-20	Pattern of Riverbed	Rising of riverbed in long distance



Inventory Sheet for River/Channel

Station: From KM325 to KM326 **Sheet No.: CH- KM 325**

1. General			
1-1	Name of Inspector	T. Kawaguchi ,, Hussein , Abiud	
1-2	Organization of Inspector	River Group D	
1-3	Date/Time of Inspection	Dec. 3, 2014	
1-4	Location	Lat	6° 38' 31" 90'''
1-5		Long	36° 42' 39" 37 '''

2. Characteristics of Physical Condition of River Channel

2-1	Length of Objective Area		
2-2	Nos. of River Facility	2 culverts	
2-3	River Channel Alignment	Meandering , Water Hit Area	
2-4	River Cross Section	Compound section	
2-5	River Width	Wf: m, Wr: m	Bl: m, Bc: 35 m, Br: m
2-6	Riverbed Slope		
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hl: 3 m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10	Vegetation		
2-11	Estimated Flow Velocity	normal: m/s, flood	m/s
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc	
2-13	Land Use	none	
2-14	Soil Type		
2-15	Topography	left: ← , right →	
2-16	Structures/Houses, road	Residence	
2-17	Location of Railway	d = 600 m	

2-18	Damaged Record, if any (year/month)		
2-19	Reason of		
2-20	Pattern of Riverbed		

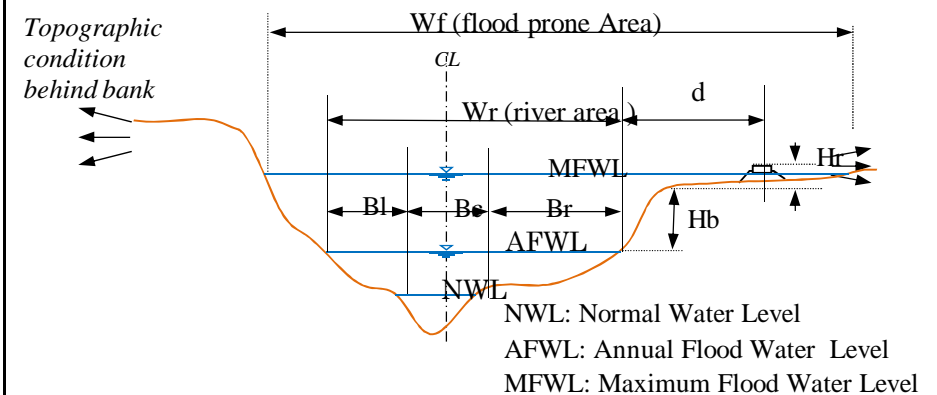
Photo Upstream

Photo Downstream

Location



Cross Section



Inventory Sheet for River/Channel

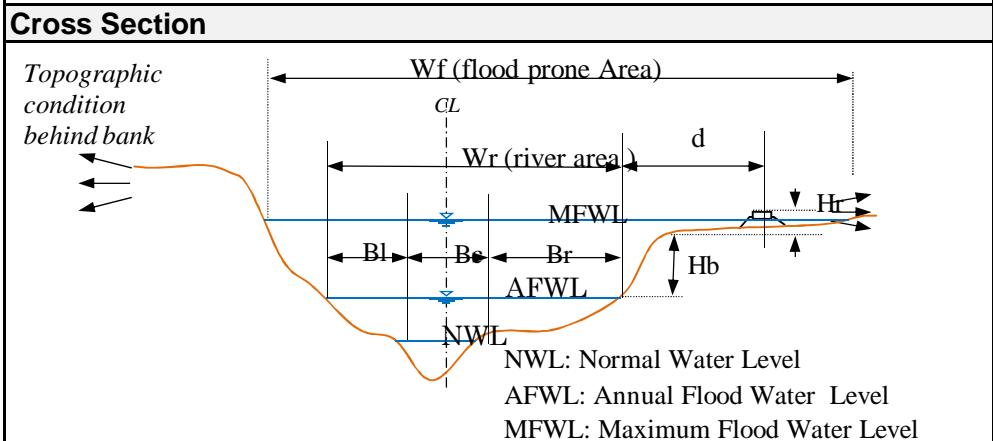
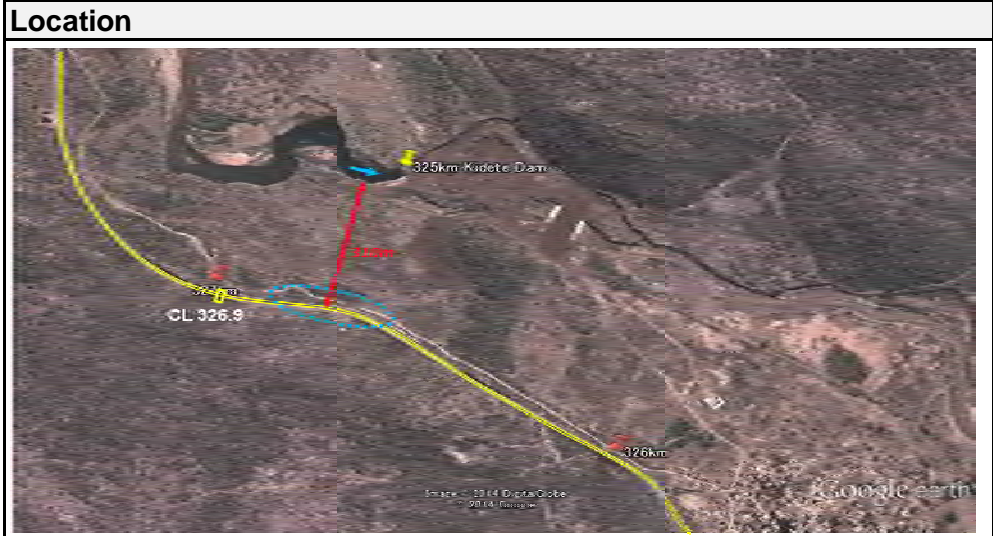
Station: From KM326 to KM327 **Sheet No.: CH- KM 326**

1. General			
1-1	Name of Inspector	T. Kawaguchi ,, Hussein , Abiud	
1-2	Organization of Inspector	River Group D	
1-3	Date/Time of Inspection	Dec. 3, 2014	
1-4	Location	Lat	6° 38' 11" 84'''
1-5		Long	36° 41' 58" 76'''

2. Characteristics of Physical Condition of River Channel			
2-1	Length of Objective Area		
2-2	Nos. of River Facility 1 culvert		
2-3	River Channel Alignment Meandering , Water Hit Area		
2-4	River Cross Section Compound Section		
2-5	River Width	Wf: m, Wr: m	Bl: m, Bc: 68 m, Br: m
2-6	Riverbed Slope		
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hl: 3 m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10	Vegetation		
2-11	Estimated Flow Velocity	normal: m/s, flood	m/s
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc	
2-13	Land Use	none	
2-14	Soil Type		
2-15	Topography	left: ← , right →	
2-16	Structures/Houses, road	none	
2-17	Location of Railway	d = 310	

2-18	Damaged Record, if any (year/month)	
2-19	Reason of	
2-20	Pattern of Riverbed	

Photo Upstream	Photo Downstream



Inventory Sheet for River/Channel

Station: From KM327 to KM328 **Sheet No.: CH- KM 327**

1. General			
1-1	Name of Inspector	T. Kawaguchi ,, Hussein , Abiud	
1-2	Organization of Inspector	River Group D	
1-3	Date/Time of Inspection	Dec. 3, 2014	
1-4	Location	Lat	6° 37' 53" 90'''
1-5		Long	36° 41' 40" 94'''

2. Characteristics of Physical Condition of River Channel

2-1	Length of Objective Area		
2-2	Nos. of River Facility	2 culverts	
2-3	River Channel Alignment	Meandering , Water Hit area	
2-4	River Cross Section	Compound section	
2-5	River Width	Wf: m, Wr: m Bl: m, Bc: 50 m, Br: m	
2-6	Riverbed Slope		
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hl: 8 m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10		Vegetation	
2-11	Estimated Flow Velocity	normal: m/s, flood m/s	
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc	
2-13	Land Use	none	
2-14	Soil Type		
2-15	Topography	left: ← , right →	
2-16	Structures/Houses, road	none	
2-17	Location of Railway	d = 60 m	

2-18	Damaged Record, if any (year/month)	Notable riverbank corrosion has been occurred at 327.95 km point of the water colliding front. About 50m corrosion has been advancing during two years and a half between present
2-19	Reason of	Bank Erosion
2-20	Pattern of Riverbed	

Photo Upstream



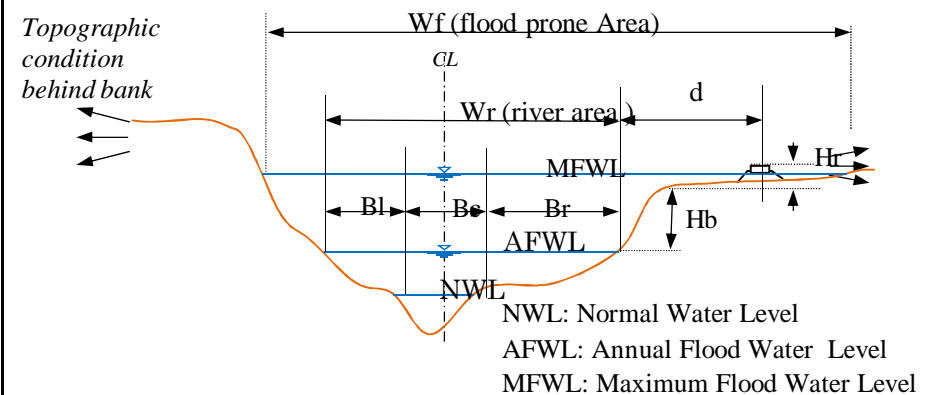
Photo Downstream



Location



Cross Section



Inventory Sheet for River/Channel

Station: From KM328 to KM329 **Sheet No.: CH- KM 328**

1. General			
1-1	Name of Inspector	T. Kawaguchi ,, Hussein , Abiud	
1-2	Organization of Inspector	River Group D	
1-3	Date/Time of Inspection	Dec. 3, 2014	
1-4	Location	Lat	6° 37' 32" 48'''
1-5		Long	36° 41' 33" 46'''

2. Characteristics of Physical Condition of River Channel			
2-1	Length of Objective Area		
2-2	Nos. of River Facility	1 culvert	
2-3	River Channel Alignment	Meandering , Water Hit Area	
2-4	River Cross Section	Compound Section	
2-5	River Width	Wf: m, Wr: m	
		Bl: m, Bc: 58 m, Br: m	
2-6	Riverbed Slope		
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hl: 3 m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10		Vegetation	
2-11	Estimated Flow Velocity	normal: m/s, flood m/s	
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc	
2-13	Land Use	none	
2-14	Soil Type		
2-15	Topography	left: ← , right →	
2-16	Structures/Houses, road	none	
2-17	Location of Railway	d = 110 m	

2-18	Damaged Record, if any (year/month)	
2-19	Reason of	
2-20	Pattern of Riverbed	

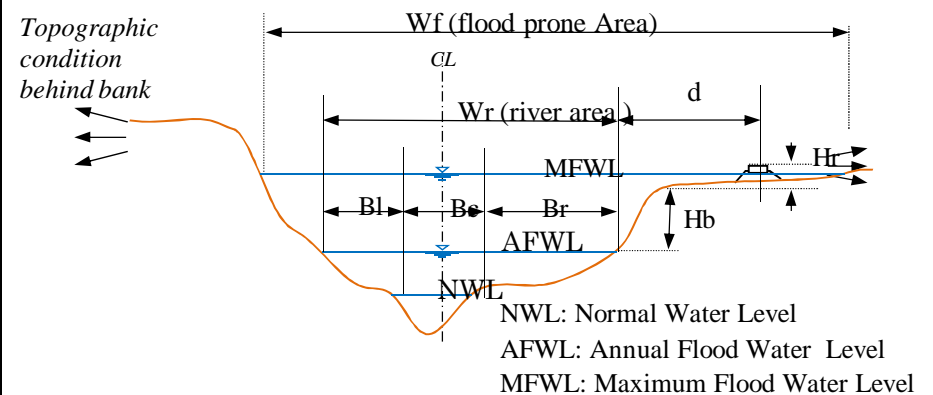
Photo Upstream

Photo Downstream

Location



Cross Section



Inventory Sheet for River/Channel

Station: From KM329 to KM330 **Sheet No.: CH- KM 329**

1. General			
1-1	Name of Inspector	T. Kawaguchi, Hussein, Abiud	
1-2	Organization of Inspector	River Group D	
1-3	Date/Time of Inspection	Dec. 3, 2014	
1-4	Location	Lat	6° 37' 20" 29"
1-5		Long	36° 40' 47" 79"

2. Characteristics of Physical Condition of River Channel

2-1	Length of Objective Area	
2-2	Nos. of River Facility	
2-3	River Channel Alignment	Meandering , Water Hit Area
2-4	River Cross Section	Compound section
2-5	River Width	Wf: m, Wr: m Bl: m, Bc: 20 m, Br: m
2-6	Riverbed Slope	
2-7	Riverbed Material	Material Sand
2-8	River Bank	Bank Height HI: 2.5 m
2-9		Side Slope SI: 1v: , Sr: 1v:
2-10	Vegetation	
2-11	Estimated Flow Velocity	normal: m/s, flood m/s
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc
2-13	Land Use	none
2-14	Soil Type	
2-15	Topography	left: ← , right →
2-16	Structures/Houses, road	none
2-17	Location of Railway	d = 22m

2-18	Damaged Record, if any (year/month)	
2-19	Reason of	
2-20	Pattern of Riverbed	

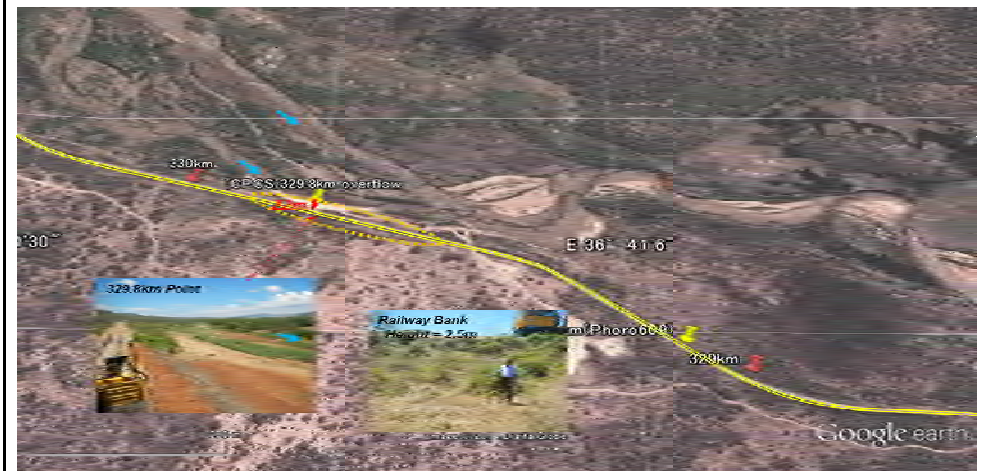
Photo Upstream



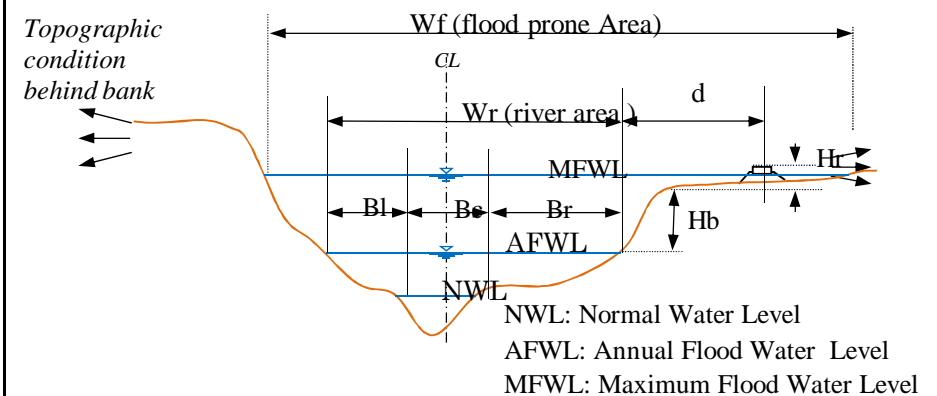
Photo Downstream



Location



Cross Section



Inventory Sheet for River/Channel

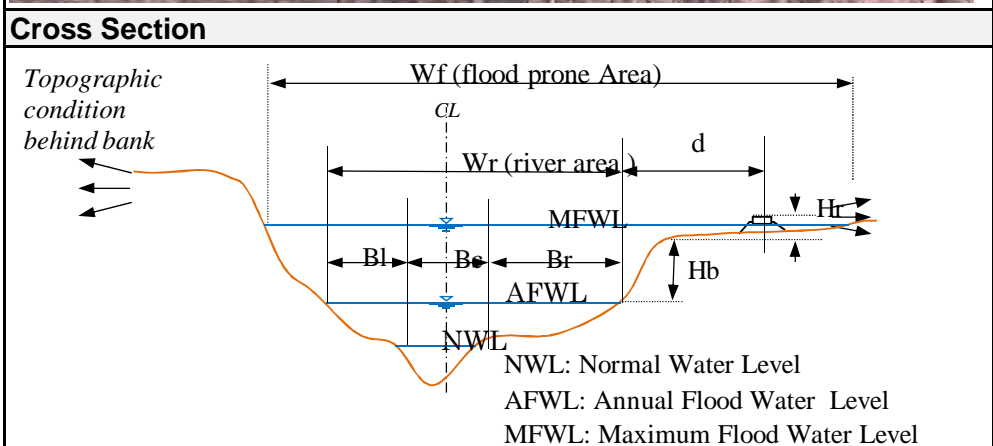
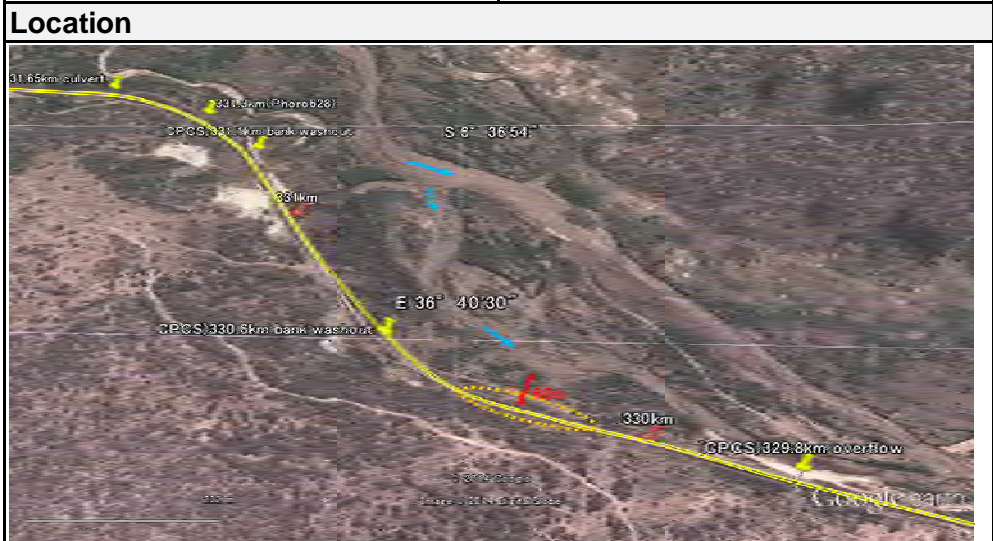
Station: From KM330 to KM331 **Sheet No.: CH- KM 330**

1. General			
1-1	Name of Inspector	T. Kawaguchi ,, Hussein , Abiud	
1-2	Organization of Inspector	River Group D	
1-3	Date/Time of Inspection	Dec. 3, 2014	
1-4	Location	Lat	6° 37' 13" 79"
1-5		Long	36° 40' 34" 60"

2. Characteristics of Physical Condition of River Channel			
2-1	Length of Objective Area		
2-2	Nos. of River Facility		
2-3	River Channel Alignment		
2-4	River Cross Section		
2-5	River Width	Wf: m, Wr: m Bl: m, Bc: 47 m, Br: m	
2-6	Riverbed Slope		
2-7	Riverbed Material	Material	
2-8	River Bank	Bank Height	Hl: 3 m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10	Vegetation		
2-11	Estimated Flow Velocity	normal: m/s, flood m/s	
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc	
2-13	Land Use	none	
2-14	Soil Type		
2-15	Topography	left: ← , right →	
2-16	Structures/Houses, road	none	
2-17	Location of Railway		

2-18	Damaged Record, if any (year/month)	
2-19	Reason of	
2-20	Pattern of Riverbed	

Photo Upstream	Photo Downstream



Inventory Sheet for River/Channel

Station: From KM331 to KM332 **Sheet No.: CH- KM 331**

1. General			
1-1	Name of Inspector	T. Kawaguchi ,, Hussein , Abiud	
1-2	Organization of Inspector	River Group D	
1-3	Date/Time of Inspection	Dec. 3, 2014	
1-4	Location	Lat	6° 36' 48" 50'''
1-5		Long	36° 40' 05" 68'''

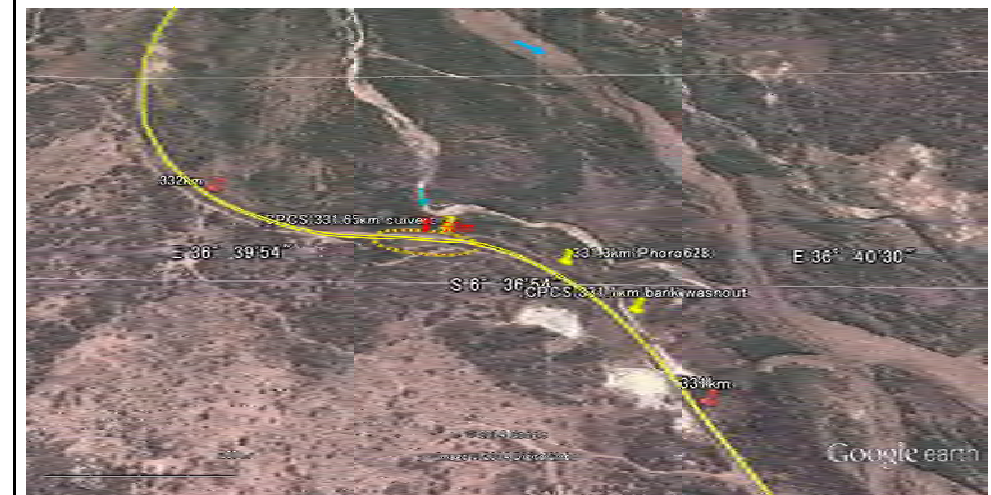
2. Characteristics of Physical Condition of River Channel			
2-1	Length of Objective Area		
2-2	Nos. of River Facility		
2-3	River Channel Alignment	Meandering , Water Hit Area	
2-4	River Cross Section	Compound section	
2-5	River Width	Wf: m, Wr: m	
		Bl: m, Bc: 18 m, Br: m	
2-6	Riverbed Slope		
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hl: 3 m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10	Vegetation		
2-11	Estimated Flow Velocity	normal: m/s, flood	m/s
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc	
2-13	Land Use	none	
2-14	Soil Type		
2-15	Topography	left: ← , right →	
2-16	Structures/Houses, road	none	
2-17	Location of Railway	d = 50 m	

2-18	Damaged Record, if any (year/month)		
2-19	Reason of		
2-20	Pattern of Riverbed		

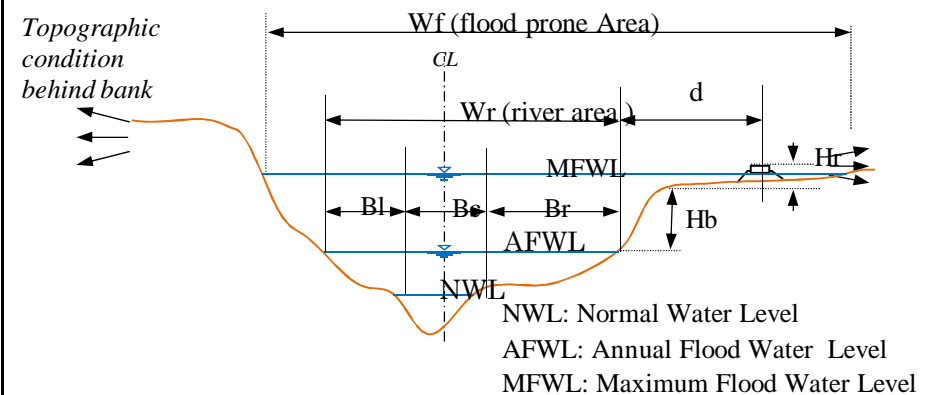
Photo Upstream

Photo Downstream

Location



Cross Section



Inventory Sheet for River/Channel

Station: From KM332 to KM333 **Sheet No.: CH- KM 332**

1. General			
1-1	Name of Inspector	T. Kawaguchi ,, Hussein , Abiud	
1-2	Organization of Inspector	River Group D	
1-3	Date/Time of Inspection	Dec. 3, 2014	
1-4	Location	Lat	6° 36' 17" 68'''
1-5		Long	36° 39' 50" 00'''

2. Characteristics of Physical Condition of River Channel			
2-1	Length of Objective Area		
2-2	Nos. of River Facility		
2-3	River Channel Alignment	Meandering , Water Hit Area	
2-4	River Cross Section	Compound Section	
2-5	River Width	Wf: m, Wr: m	
		Bl: m, Bc: 30 m, Br: m	
2-6	Riverbed Slope		
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hl: 3 m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10		Vegetation	
2-11	Estimated Flow Velocity	normal: m/s, flood m/s	
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc	
2-13	Land Use	Cultivation	
2-14	Soil Type		
2-15	Topography	left: ← , right →	
2-16	Structures/Houses, road	none	
2-17	Location of Railway	d = 80 m	

2-18	Damaged Record, if any (year/month)	
2-19	Reason of	
2-20	Pattern of Riverbed	

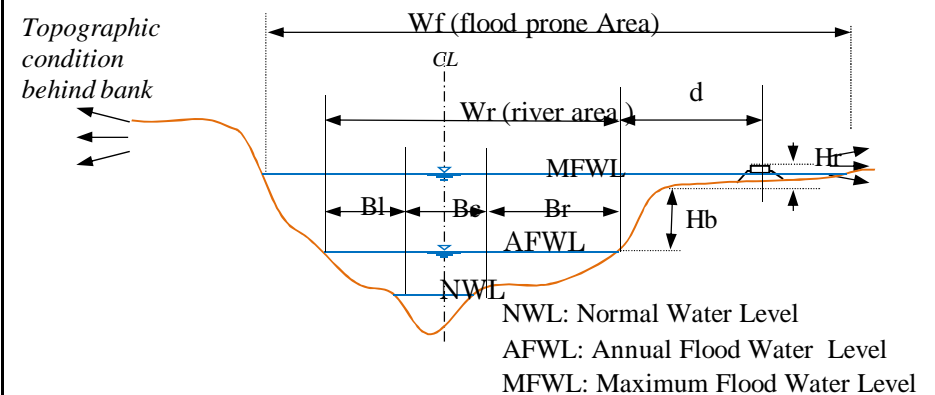
Photo Upstream

Photo Downstream

Location



Cross Section



Inventory Sheet for River/Channel

Station: From KM337 to KM338 **Sheet No.: CH-337**

1. General			
1-1	Name of Inspector		T.Fukuda, Mr. Kido, Mr. Philipo
1-2	Organization of Inspector		Team B
1-3	Date/Time of Inspection		Dec. 2, 2014 14:00
1-4	Location	Lat	06° 34' 37.60"
1-5		Long	36° 38' 43.2"

2. Characteristics of Physical Condition of River Channel			
2-1	Length of Objective Area		500m (Km337.2-337.7)
2-2	Nos. of River		None
2-3	River Channel Alignment		meandering, water hit area
2-4	River Cross Section		compound section
2-5	River Width		Wf: m, Wr: approx. 200 m Bl: m, Bc: 50 m, Br: 0 m
2-6	Riverbed Slope		Gentle (i=1/xxx)
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hb: 3.0 m, Hr=1.5m
2-9		Side Slope	Sl: 1v: , Sr: 1v: (vertical)
2-10		Vegetation	none
2-11		Estimated Flow Velocity	normal: m/s, flood m/s
2-12	Characteristic of environmental condition of river channel		Riverside forests, <u>Sandbar</u> , Pool, shoal, fishes, etc
2-13	Land Use		none
2-14	Soil Type		Laterite
2-15	Topography		left: ← , right →
2-16	Structures/Houses, road		none
2-17	Location of Railway		d= 18 m@337.5

2-18	Damaged Record, if any (year/month)	Frequently damaged in the past, and diversions of track were carried out many times. 2014: bank erosion
2-19	Reason of	<u>Bank erosion</u> , Overflow, Sliding,
2-20	Pattern of Riverbed	Rising of riverbed in long distance

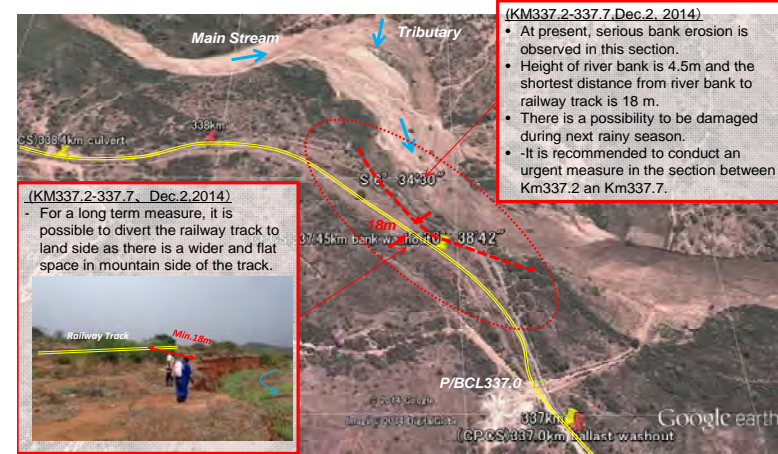
Photo Upstream



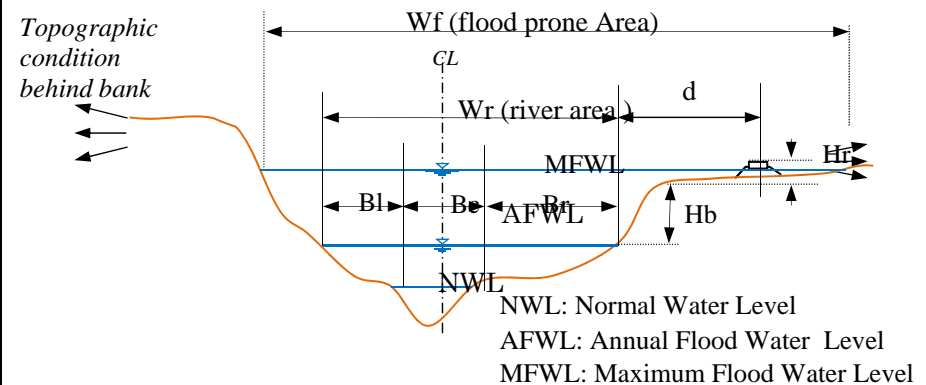
Photo Downstream



Location



Cross Section



Inventory Sheet for River/Channel

Station: From KM344.8 **Sheet No.: CH-344.8**

1. General			
1-1	Name of Inspector	T.Fukuda, Mr. Kido, Mr. Philipo	
1-2	Organization of Inspector	Team B	
1-3	Date/Time of Inspection	Dec. 3, 2014 1255	
1-4	Location	Lat	06° 35' 33.8" - 36.3"
1-5		Long	36° 39' 44.0" - 51.3"

2. Characteristics of Physical Condition of River Channel

2-1	Length of Objective Area	300m, a Guide dike	
2-2	Nos. of River	none	
2-3	River Channel Alignment	meandering	
2-4	River Cross Section	compound section	
2-5	River Width	Wf: m, Wr: approx.300 m	
		Bl: m, Bc:50 m, Br: m	
2-6	Riverbed Slope	Gentle	
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hb:2.5 m
2-9		Side Slope	Sl: 1v: , Sr: 1v: (vertical)
2-10		Vegetation	Grass
2-11	Estimated Flow Velocity	normal: m/s, flood	m/s
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc	
2-13	Land Use	none	
2-14	Soil Type	Red	
2-15	Topography	left: ← ,right →	
2-16	Structures/Houses, road	none	
2-17	Location of Railway	d=116m	

2-18	Damaged Record, if any (year/month)	none	
2-19	Reason of	Bank erosion	
2-20	Pattern of Riverbed	Rising of riverbed in long distance	

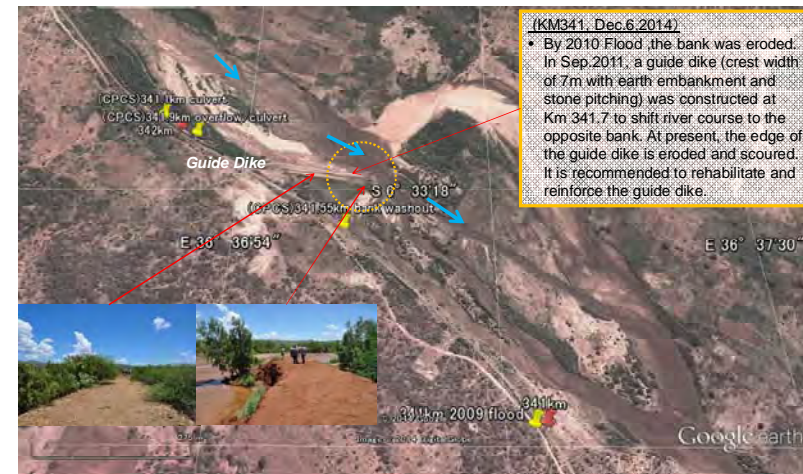
Photo Upstream



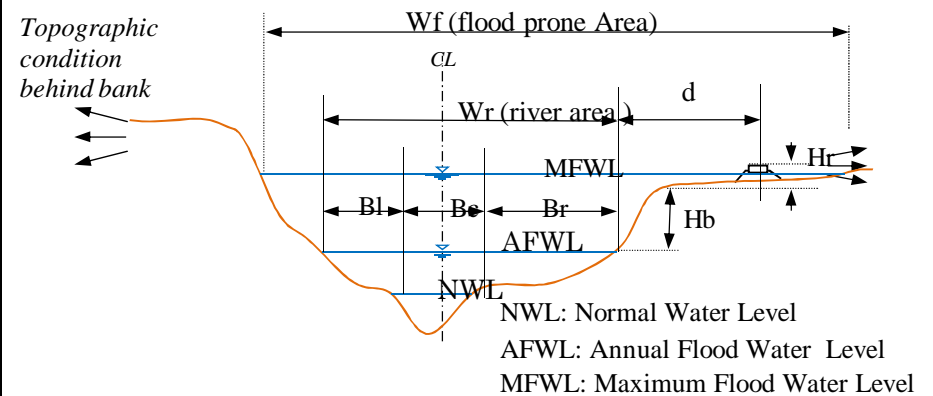
Photo Downstream



Location



Cross Section



Inventory Sheet for River/Channel

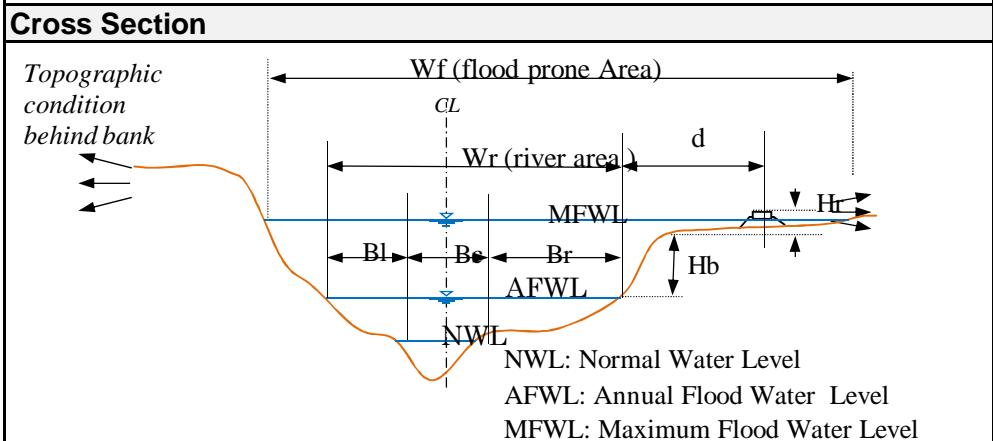
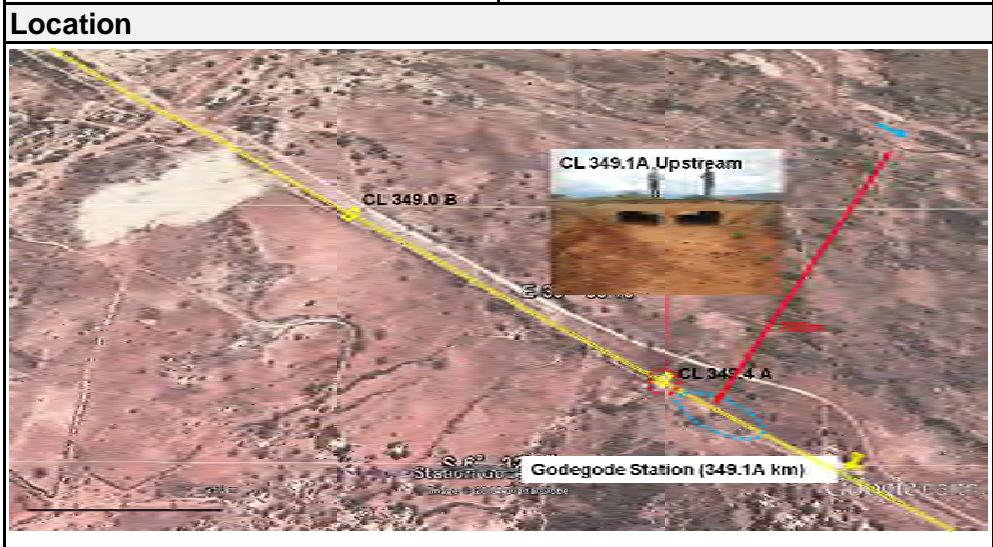
Station: From KM349.1A to KM349.9B **Sheet No.: CH- 349.1A**

1. General			
1-1	Name of Inspector	T. Kawaguchi ,, Hussein , Abiud	
1-2	Organization of Inspector	River Group D	
1-3	Date/Time of Inspection	Dec. 2, 2014	
1-4	Location	Lat	6° 31' 42" 42'''
1-5		Long	36° 33' 37" 84'''

2. Characteristics of Physical Condition of River Channel			
2-1	Length of Objective Area		
2-2	Nos. of River Facility		2 culverts
2-3	River Channel Alignment		Meandering , Water Hit Area
2-4	River Cross Section		Compound Section
2-5	River Width		Wf: m, Wr: m Bl: m, Bc: 41 m, Br: m
2-6	Riverbed Slope		
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hl: 3 m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10	River Bank	Vegetation	
2-11		Estimated Flow Velocity	normal: m/s, flood m/s
2-12	Characteristic of environmental condition of river channel		Riverside forests, Sandbar, Pool, shoal, fishes, etc
2-13	Land Use		Cultivation
2-14	Soil Type		
2-15	Topography		left: ← , right →
2-16	Structures/Houses, road		none
2-17	Location of Railway		d = 700 m

2-18	Damaged Record, if any (year/month)	
2-19	Reason of	
2-20	Pattern of Riverbed	

Photo Upstream	Photo Downstream



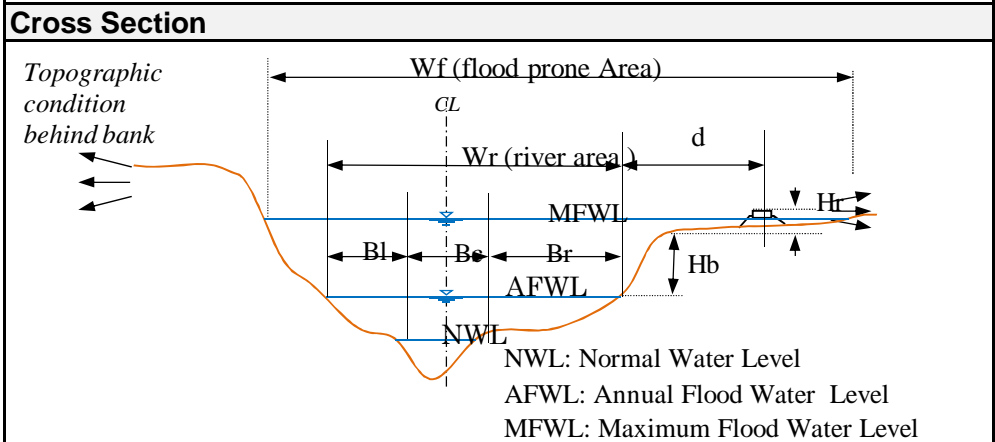
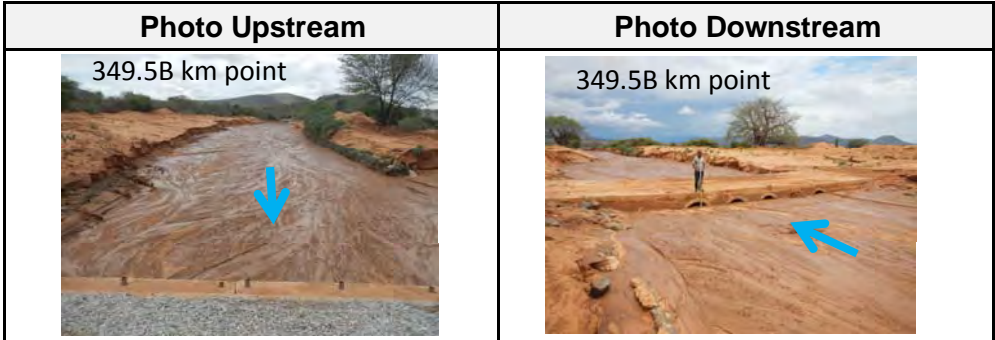
Inventory Sheet for River/Channel

Station: From KM349.4B to KM349.9B Sheet No.: CH- KM 349.4B

1. General			
1-1	Name of Inspector	T. Kawaguchi , Hussein , Abiud	
1-2	Organization of Inspector	River Group D	
1-3	Date/Time of Inspection	Dec. 2, 2014	
1-4	Location	Lat	6° 31' 32" 63'''
1-5		Long	36° 33' 24" 88'''

2. Characteristics of Physical Condition of River Channel			
2-1	Length of Objective Area		
2-2	Nos. of River Facility	6 culverts	
2-3	River Channel Alignment	Meandering , Water Hit Area	
2-4	River Cross Section	Compound Section	
2-5	River Width	Wf: m, Wr: m	Bl: m, Bc: 154 m, Br: m
2-6	Riverbed Slope		
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hl: 3 m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10		Vegetation	
2-11	Estimated Flow Velocity	normal: m/s, flood	m/s
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc	
2-13	Land Use	none	
2-14	Soil Type		
2-15	Topography	left: ← , right →	
2-16	Structures/Houses, road	Cultivation	
2-17	Location of Railway	d = 800 m	

2-18	Damaged Record, if any (year/month)	Culverts of the railroad have been deposited by the sediment in the tributary MASUWALA RIVER, and river flow prevention has been occurred . The railroad bank has been scored by the	
2-19	Reason of	Flood flow overtopped railway track	
2-20	Pattern of Riverbed		



Inventory Sheet for River/Channel

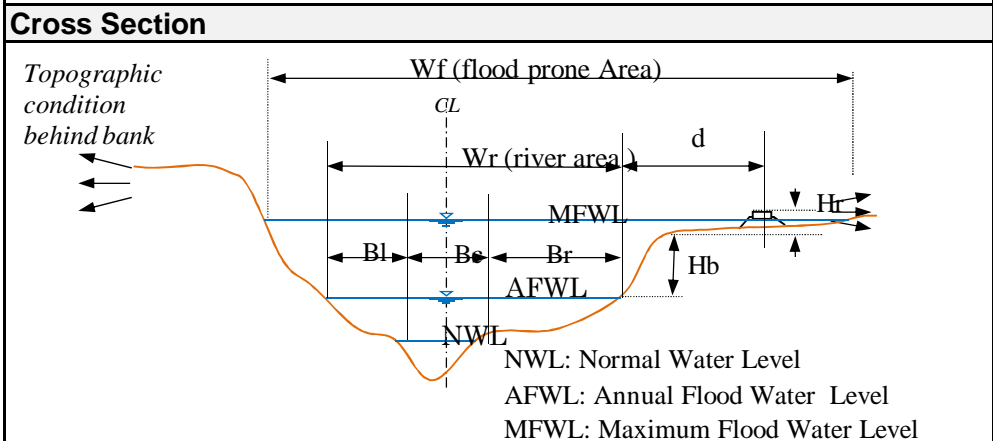
Station: From KM 349.9B - KM 349.9C Sheet No.: CH- KM 349.9B

1. General			
1-1	Name of Inspector	T. Kawaguchi ,, Hussein , Abiud	
1-2	Organization of Inspector	River Group D	
1-3	Date/Time of Inspection	Dec. 2, 2014	
1-4	Location	Lat	6° 31' 32" 63'''
1-5		Long	36° 33' 24" 88'''

2. Characteristics of Physical Condition of River Channel			
2-1	Length of Objective Area		
2-2	Nos. of River Facility		
2-3	River Channel Alignment Meandering , Water Hit Area		
2-4	River Cross Section Compound section		
2-5	River Width	Wf: m, Wr: m Bl: m, Bc: 72 m, Br: m	
2-6	Riverbed Slope		
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hl: 3 m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10	River Bank	Vegetation	
2-11		Estimated Flow Velocity	normal: m/s, flood m/s
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc	
2-13	Land Use none		
2-14	Soil Type		
2-15	Topography left: ← , right →		
2-16	Structures/Houses, road none		
2-17	Location of Railway d = 40 m		

2-18	Damaged Record, if any (year/month)	
2-19	Reason of	
2-20	Pattern of Riverbed	

Photo Upstream	Photo Downstream



Inventory Sheet for River/Channel

Station: From KM349.9C to KM350 **Sheet No.: CH- KM 349.9C**

1. General			
1-1	Name of Inspector	T. Kawaguchi ,, Hussein , Abiud	
1-2	Organization of Inspector	River Group D	
1-3	Date/Time of Inspection	Dec. 2, 2014	
1-4	Location	Lat	6° 31' 01" 94'''
1-5		Long	36° 32' 07" 81'''

2. Characteristics of Physical Condition of River Channel			
2-1	Length of Objective Area		
2-2	Nos. of River Facility		
2-3	River Channel Alignment		Meandering , Water height Area
2-4	River Cross Section		
2-5	River Width	Wf: m, Wr: m Bl: m, Bc: 51 m, Br: m	
2-6	Riverbed Slope		
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hl: 3 m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10	River Bank	Vegetation	
2-11		Estimated Flow Velocity	normal: m/s, flood m/s
2-12	Characteristic of environmental condition of river channel		Riverside forests, Sandbar, Pool, shoal, fishes, etc
2-13	Land Use		none
2-14	Soil Type		
2-15	Topography		left: ← , right →
2-16	Structures/Houses, road		none
2-17	Location of Railway		d = 150 m

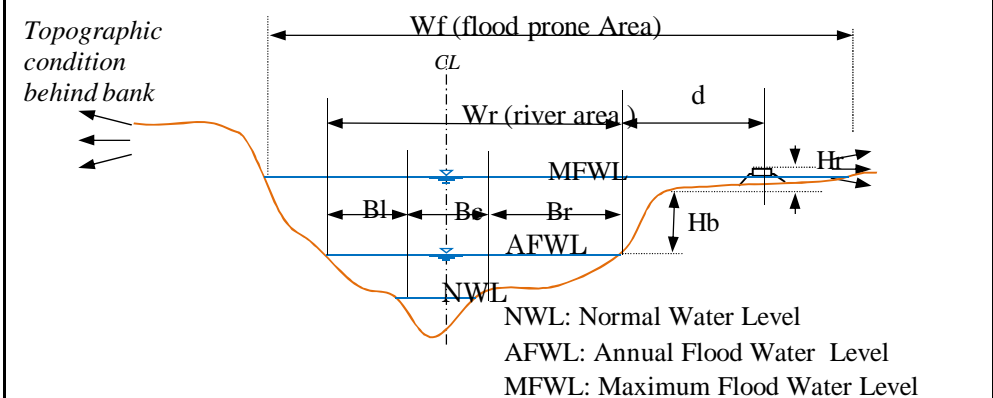
2-18	Damaged Record, if any (year/month)	
2-19	Reason of	
2-20	Pattern of Riverbed	

Photo Upstream	Photo Downstream

Location



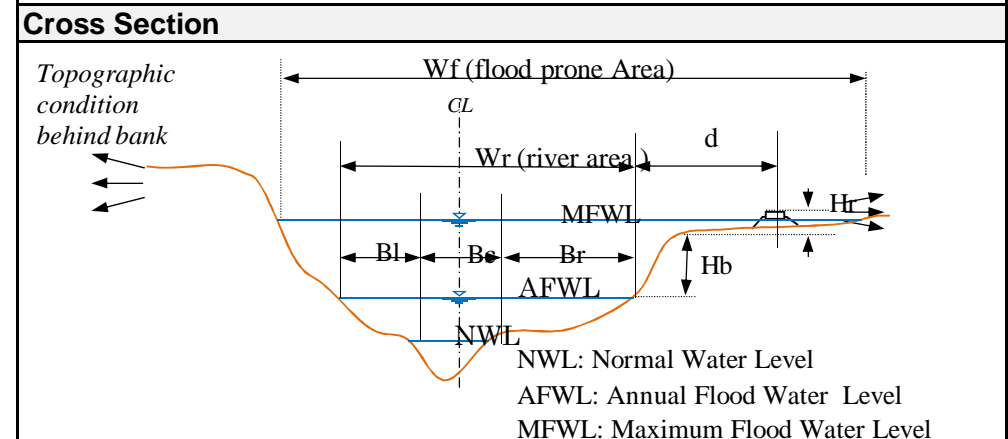
Cross Section



Inventory Sheet for River/Channel

Station: From KM350 to KM351		Sheet No.: CH- KM 350	
1. General			
1-1	Name of Inspector	T. Kawaguchi ,, Hussein , Abiud	
1-2	Organization of Inspector	River Group D	
1-3	Date/Time of Inspection	Dec. 2, 2014	
1-4	Location	Lat	6° 30' 45" 41'''
1-5		Long	36° 31' 47" 41'''
2. Characteristics of Physical Condition of River Channel			
2-1	Length of Objective Area		
2-2	Nos. of River Facility		
2-3	River Channel Alignment		Meandering , Water Hit Area
2-4	River Cross Section		Compound section
2-5	River Width	Wf: m, Wr: m	Bl: m, Bc: 33 m, Br: m
2-6	Riverbed Slope		
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hl: 3 m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10	Vegetation		
2-11	Estimated Flow Velocity		normal: m/s, flood m/s
2-12	Characteristic of environmental condition of river channel		Riverside forests, Sandbar, Pool, shoal, fishes, etc
2-13	Land Use		none
2-14	Soil Type		
2-15	Topography		left: ← , right →
2-16	Structures/Houses, road		none
2-17	Location of Railway		d = 280 m
2-18	Damaged Record, if any (year/month)		
2-19		Reason of	
2-20		Pattern of Riverbed	

Photo Upstream	Photo Downstream



Inventory Sheet for River/Channel

Station: From KM351 to KM352 **Sheet No.: CH- KM 351**

1. General			
1-1	Name of Inspector	T. Kawaguchi ,, Hussein , Abiud	
1-2	Organization of Inspector	River Group D	
1-3	Date/Time of Inspection	Dec. 2, 2014	
1-4	Location	Lat	6° 30' 23" 11'''
1-5		Long	36° 31' 21" 22'''

2. Characteristics of Physical Condition of River Channel			
2-1	Length of Objective Area		
2-2	Nos. of River		
2-3	River Channel Alignment		Meandering , Water Hit Area
2-4	River Cross Section		Compound section
2-5	River Width		Wf: m, Wr: m Bl: m, Bc: 34 m, Br: m
2-6	Riverbed Slope		
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hl: 3 m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10	River Bank	Vegetation	
2-11		Estimated Flow Velocity	normal: m/s, flood m/s
2-12	Characteristic of environmental condition of river channel		Riverside forests, Sandbar, Pool, shoal, fishes, etc
2-13	Land Use		none
2-14	Soil Type		
2-15	Topography		left: ← , right →
2-16	Structures/Houses, road		none
2-17	Location of Railway		d = 390

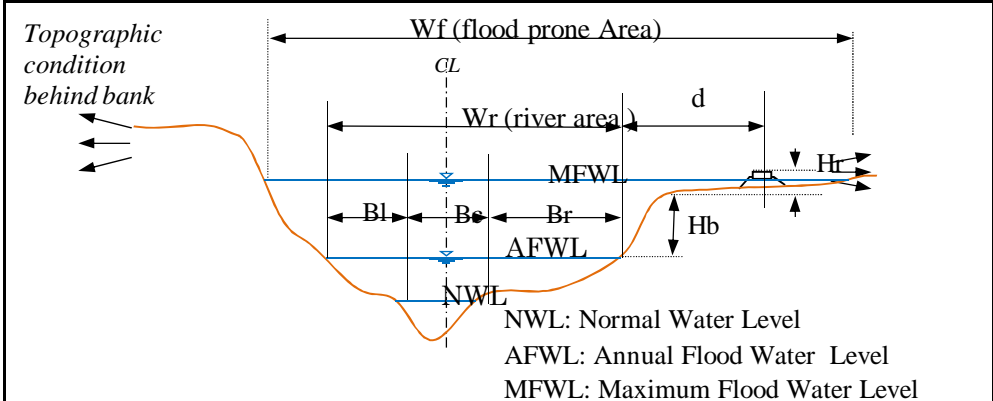
2-18	Damaged Record, if any (year/month)	
2-19	Reason of	
2-20	Pattern of Riverbed	

Photo Upstream	Photo Downstream

Location



Cross Section



Inventory Sheet for River/Channel

Station: From KM355.1		Sheet No.: CH-355.1	
1. General			
1-1	Name of Inspector	T.Fukuda, Mr. Kido, Mr. Philipo	
1-2	Organization of Inspector	Team B	
1-3	Date/Time of Inspection	Dec. 2, 2014 1325	
1-4	Location	Lat	
1-5		Long	
2. Characteristics of Physical Condition of River Channel			
2-1	Length of Objective Area	KM354.9-355.2	
2-2	Nos. of River	Gabion, culvert (1), bridge(1)	
2-3	River Channel Alignment	Straight, water hit area	
2-4	River Cross Section	compond	
2-5	River Width	Wf: m, Wr:300-600 m	
		Bl: m, Bc: m, Br: m	
2-6	Riverbed Slope	Gentle	
2-7	Riverbed Material	Material	Sand
2-8	River Bank	Bank Height	Hb: 4.0 - 5.3m
2-9		Side Slope	Sl: 1v: , Sr: 1v:
2-10		Vegetation	none
2-11	Estimated Flow Velocity	normal: 0 m/s, flood	m/s
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc	
2-13	Land Use	none	
2-14	Soil Type	yellow color soil	
2-15	Topography	left: ← ,right →	
2-16	Structures/Houses, road	none	
2-17	Location of Railway	d=22mpkm355.1	
2-18	Damaged Record, if any (year/month)	After 2010 flood, gabion were insatalled. Boulders are delivered from Gulwe, and sands are extracte neare site.	
2-19	Reason of	Bank erosion & overflow	
2-20	Pattern of Riverbed		

Photo Upstream



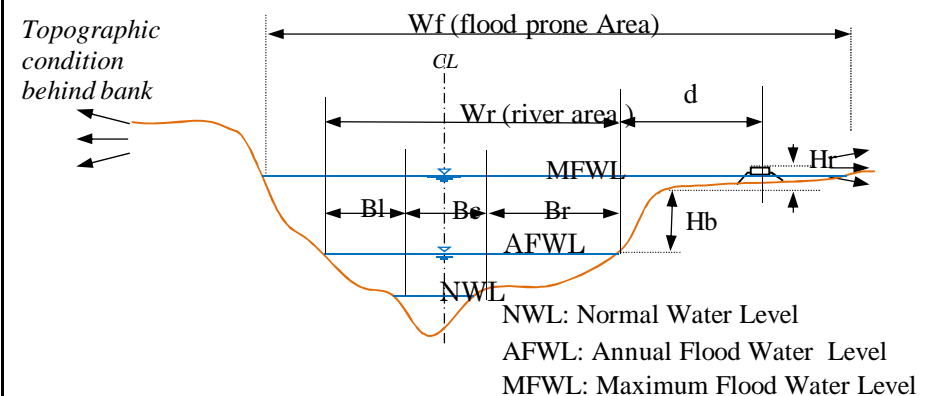
Photo Downstream



Location



Cross Section



Inventory Sheet for River/Channel

Station: KM355.2 (conf. Kidivo)		Sheet No.: CH-355.2
1. General		
1-1	Name of Inspector	T. Fukuda, Mr. Kido, Mr. Philipo
1-2	Organization of Inspector	Team B
1-3	Date/Time of Inspection	Dec. 2, 2014
1-4	Location	Lat
1-5		Long
2. Characteristics of Physical Condition of River Channel		
2-1	Length of Objective Area	300m, Km355.2-Km355.5
2-2	Nos. of River	
2-3	River Channel Alignment	Straight
2-4	River Cross Section	
2-5	River Width	Wf: m, Wr: m Bl: m, Bc: m, Br: m
2-6	Riverbed Slope	Gentle
2-7	Riverbed Material	Material: Sand
2-8	River Bank	Bank Height: Hl: m
2-9		Side Slope: Sl: 1v: , Sr: 1v:
2-10	Vegetation	Tall grass
2-11	Estimated Flow Velocity	normal: m/s, flood: m/s
2-12	Characteristic of environmental condition of river channel	Riverside forests, Sandbar, Pool, shoal, fishes, etc
2-13	Land Use	none
2-14	Soil Type	Laterite
2-15	Topography	left: ← , right: →
2-16	Structures/Houses, road	none
2-17	Location of Railway	d=28.6m@ Km355.2
2-18	Damaged Record, if any (year/month)	Steel sheet pile and gabion (3 steps) are installed for protection of left and right banks of outlet channel at confluence of Kidivo River.
2-19		Reason of
2-20	Pattern of Riverbed	siltation at confluence

