

SUMMARY OF SITE INVESTIGATION

1. TOPOGRAPHIC SURVEY

- Location of Bench Marks (Typical Example of Project Bench Marks)
- Location of Bench Marks (Typical Example of Related National Bench Marks)

2. EXISTING STRUCTURE SURVEY

- Existing Bridge Inventory (Typical Example of Investigation Result)
- Existing Culvert Inventory (Typical Example of Investigation Result)

3. SOIL & MATERIAL SURVEY

- Inventory of Quarry Sample (Typical Example of Investigation Result)
- Inventory of Sand Sample (Typical Example of Investigation Result)
- Inventory of Borrow Pit Sample (Typical Example of Investigation Result)
- Inventory of Cutting Area Sample (Typical Example of Investigation Result)
- Inventory of Water Sample (Typical Example of Investigation Result)

4. EXISTING ROAD CONDITION SURVEY

- Summary of Existing Pavement Material Testing
- Existing Pavement Layer Thickness Check
- General Photo of Existing Road at 1km Interval

5. GEOTECHNICAL SURVEY

- Location of Mechanical Boring Investigation
- Result of Boring Investigation (Typical Example of Boring Log Table)

6. TRAFFIC SURVEY

- Summary of Traffic Count (Typical Example of Investigation Result)
- Summary of Traffic OD Survey (Typical Example of Investigation Result)

1. TOPOGRAPHIC SURVEY

- Location of Bench Marks (Typical Example of Project Bench Marks)
- Location of Bench Marks (Typical Example of Related National Bench Marks)

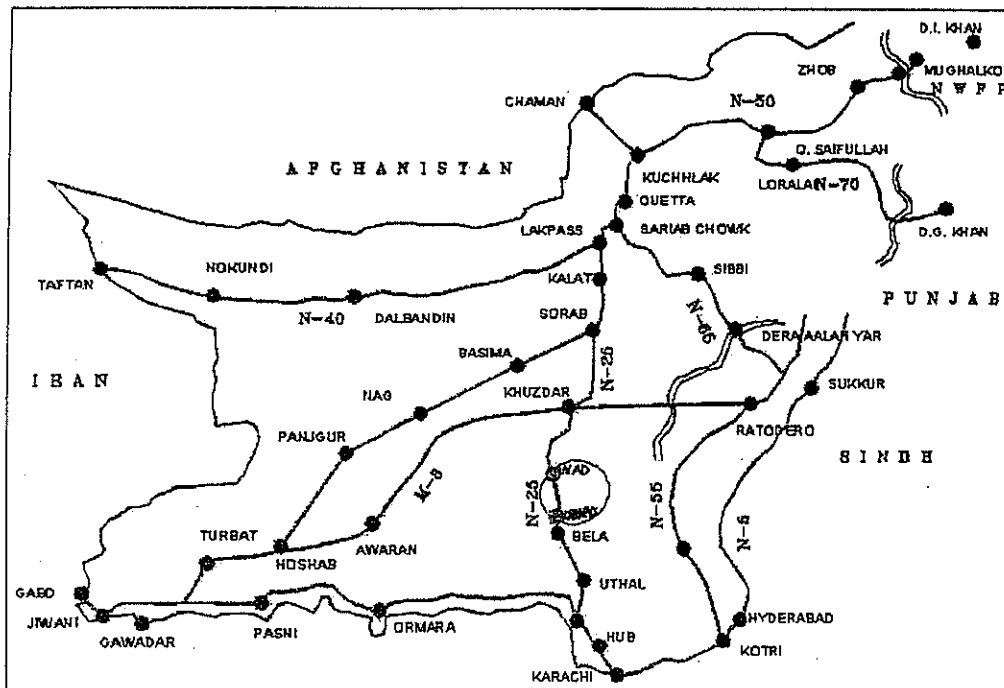
TOPOGRAPHIC SURVEY

ON




THE BASIC DESIGN STUDY ON THE PROJECT




FOR

**IMPROVEMENT OF KARARO – WAD SECTION
OF NATIONAL HIGHWAY N-25
IN THE ISLAMIC REPUBLIC OF PAKISTAN**



JANUARY 2005

Permanent Control Point Description		The B/D Study on The Project for Improvement of Kararo-Wad Section of National Highway N-25 in the Pakistan	
Sketch	<p>No. 1</p> <p>Northing =</p> <p>Easting =</p> <p>Elevation =</p> <p>Local coordinates System (no projective method was adopted)</p> <p>Grid North is approxinmate True North</p> <p>Origin SBM Kararo</p> <p>False Easting = 1,981,964.620 m</p> <p>False Northing = 1,004,199.600 m</p> <p>Scale factor = 1.000000</p> <p>Datum Level is Pakistan National D.L.</p>	Photo (short range view)	
	Photo (middle range view)	Photo (distant view)	 

Permanent Control Point Description		The B/D Study on The Project for Improvement of Kararo-Wad Section of National Highway N-25 in the Pakistan	
Sketch	<p>No. 2</p> <p>Northing =</p> <p>Easting =</p> <p>Elevation =</p> <p>Local coordinates System (no projective method was adopted)</p> <p>Grid North is approxinmate True North</p> <p>Origin SBM Kararo</p> <p>False Easting = 1,981,964.620 m</p> <p>False Northing = 1,004,199.600 m</p> <p>Scale factor = 1.000000</p> <p>Datum Level is Pakistan National D.L.</p>	Photo (short range view)	
	Photo (middle range view)	Photo (distant view)	 

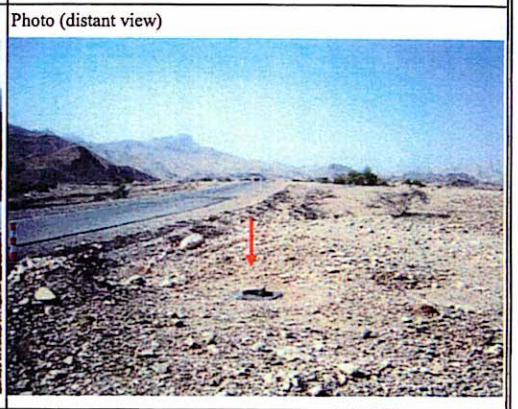
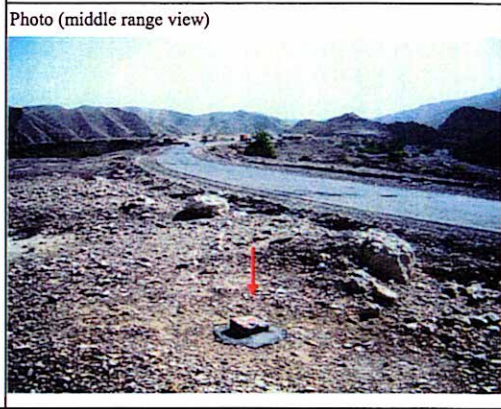
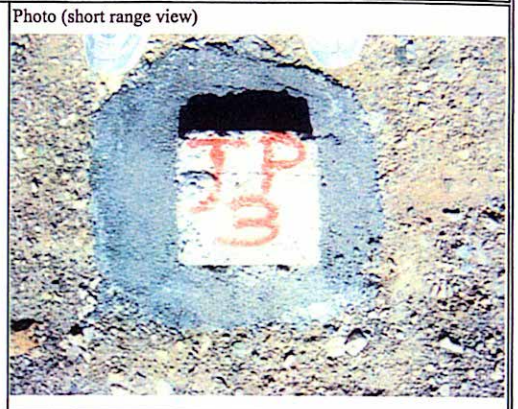
Permanent Control Point Description **The B/D Study on The Project for Improvement of Kararo-Wad Section of National Highway N-25 in the Pakistan**

Sketch

No. 3

Northing =
 Easting =
 Elevation =

Local coordinates System (no projective method was adopted)
 Grid North is approxinmate True North
 Origin SBM Kararo
 False Easting = 1,981,964.620 m
 False Northing = 1,004,199.600 m
 Scale factor = 1.000000
 Datum Level is Pakistan National D.L.



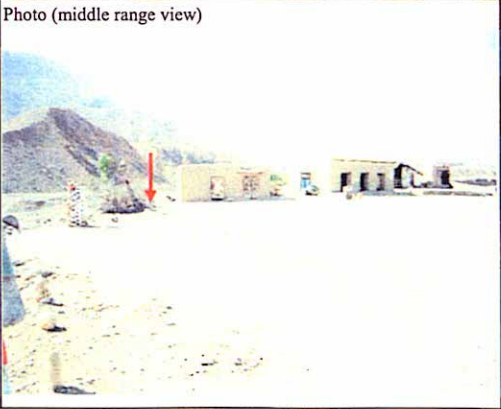
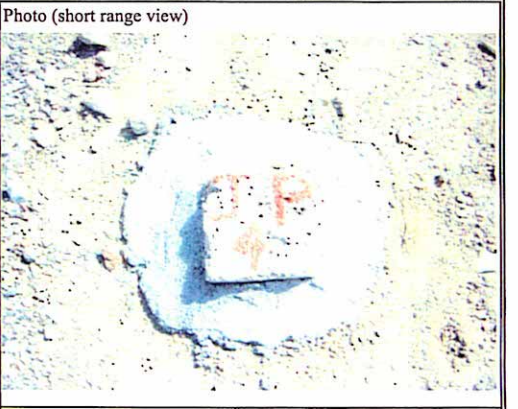
Permanent Control Point Description **The B/D Study on The Project for Improvement of Kararo-Wad Section of National Highway N-26 in the Pakistan**



Sketch

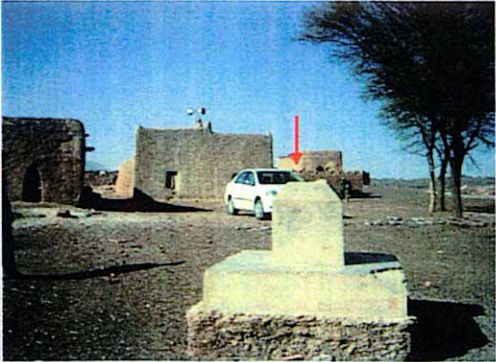

No. 4




Northing =
 Easting =
 Elevation =

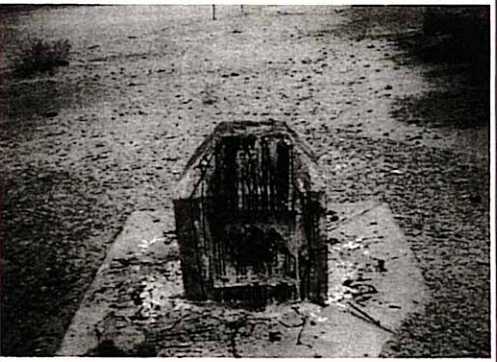


Local coordinates System (no projective method was adopted)
 Grid North is approxinmate True North
 Origin SBM Kararo
 False Easting = 1,981,964.621 m
 False Northing = 1,004,199.601 m
 Scale factor = 2.000000
 Datum Level is Pakistan National D.L.



Permanent Control Point Description		The B/D Study on The Project for Improvement of Kararo-Wad Section of National Highway N-61 in the Pakistan	
Sketch	<p>SBM Kararo</p> <p>Northing =</p> <p>Easting =</p> <p>Elevation =</p> <p>Local coordinates System (no projective method was adopted)</p> <p>Grid North is approxinmate True North</p> <p>Origin SBM Kararo</p> <p>False Easting = 1,981,964.656 m</p> <p>False Northing = 1,004,199.636 m</p> <p>Scale factor = 37.000000</p> <p>Datum Level is Pakistan National D.L.</p>	Photo (short range view)	
		<p>Photo (middle range view)</p> 	<p>Photo (distant view)</p> 

Permanent Control Point Description		The B/D Study on The Project for Improvement of Kararo-Wad Section of National Highway N-62 in the Pakistan	
Sketch	<p>SBM Alikoh</p> <p>Northing =</p> <p>Easting =</p> <p>Elevation =</p> <p>Local coordinates System (no projective method was adopted)</p> <p>Grid North is approxinmate True North</p> <p>Origin SBM Kararo</p> <p>False Easting = 1,981,964.657 m</p> <p>False Northing = 1,004,199.637 m</p> <p>Scale factor = 38.000000</p> <p>Datum Level is Pakistan National D.L.</p>	Photo (short range view)	
		<p>Photo (middle range view)</p> 	<p>Photo (distant view)</p> 

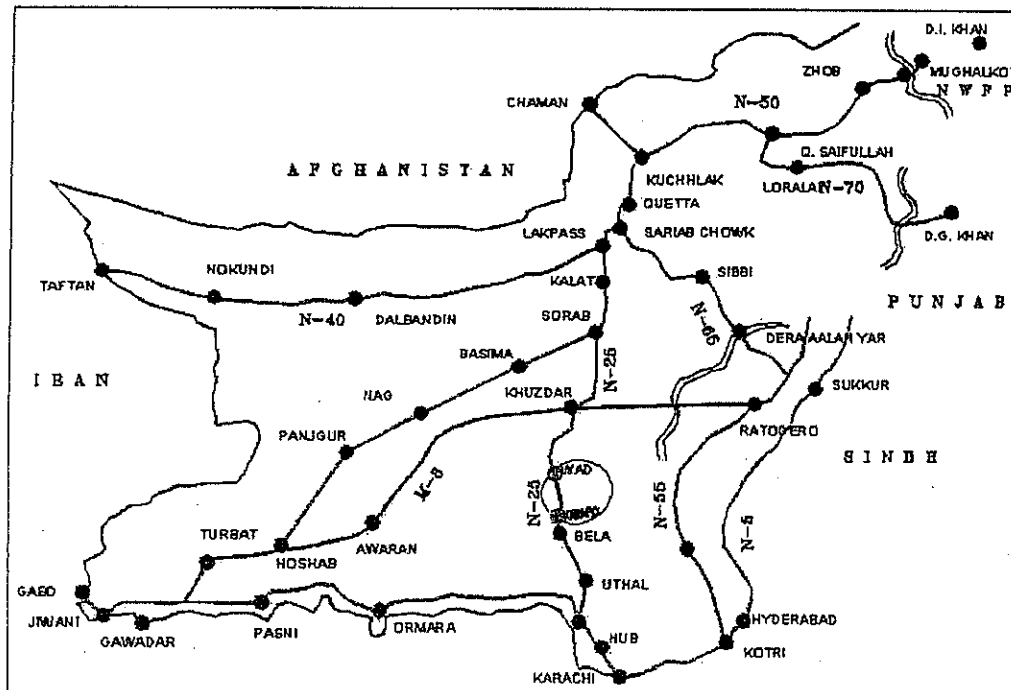
Permanent Control Point Description		The B/D Study on The Project for Improvement of Kararo-Wad Section of National Highway N-64 in the Pakistan	
Sketch	SBM Darakala	Photo (short range view)	
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	Easting =		
	Elevation =		
Local coordinates System (no projective method was adopted)			
	Grid North is approximate True North	Photo (middle range view)	
	Origin SBM Kararo		
	False Easting = 1,981,964.659 m		
	False Northing = 1,004,199.639 m		
	Scale factor = 40.000000		
	Datum Level is Pakistan National D.L.	Photo (distant view)	
			

Permanent Control Point Description		The B/D Study on The Project for Improvement of Kararo-Wad Section of National Highway N-65 in the Pakistan	
Sketch	SBM Wadh	Photo (short range view)	
	Northing =		
	Easting =		
	Elevation =		
Local coordinates System (no projective method was adopted)			
	Grid North is approximate True North	Photo (middle range view)	
	Origin SBM Kararo		
	False Easting = 1,981,964.660 m		
	False Northing = 1,004,199.640 m		
	Scale factor = 41.000000		
	Datum Level is Pakistan National D.L.	Photo (distant view)	
			

2. EXISTING STRUCTURE SURVEY

- Existing Bridge Inventory (Typical Example of Investigation Result)
- Existing Culvert Inventory (Typical Example of Investigation Result)

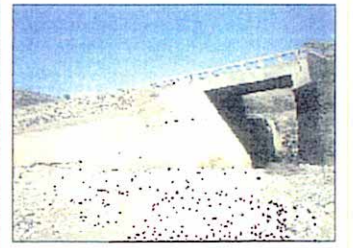
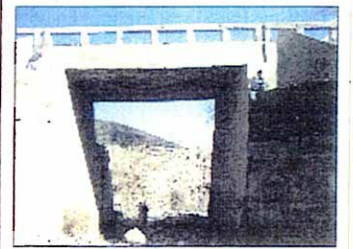
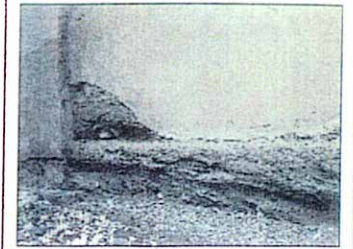
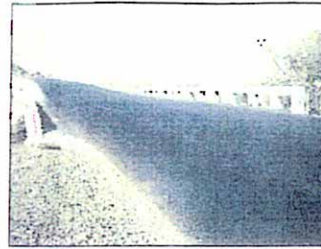
EXISTING STRUCTURES SURVEY (BRIDGES)
ON
THE BASIC DESIGN STUDY ON THE PROJECT
FOR
IMPROVEMENT OF KARARO – WAD SECTION
OF NATIONAL HIGHWAY N-25
IN THE ISLAMIC REPUBLIC OF PAKISTAN



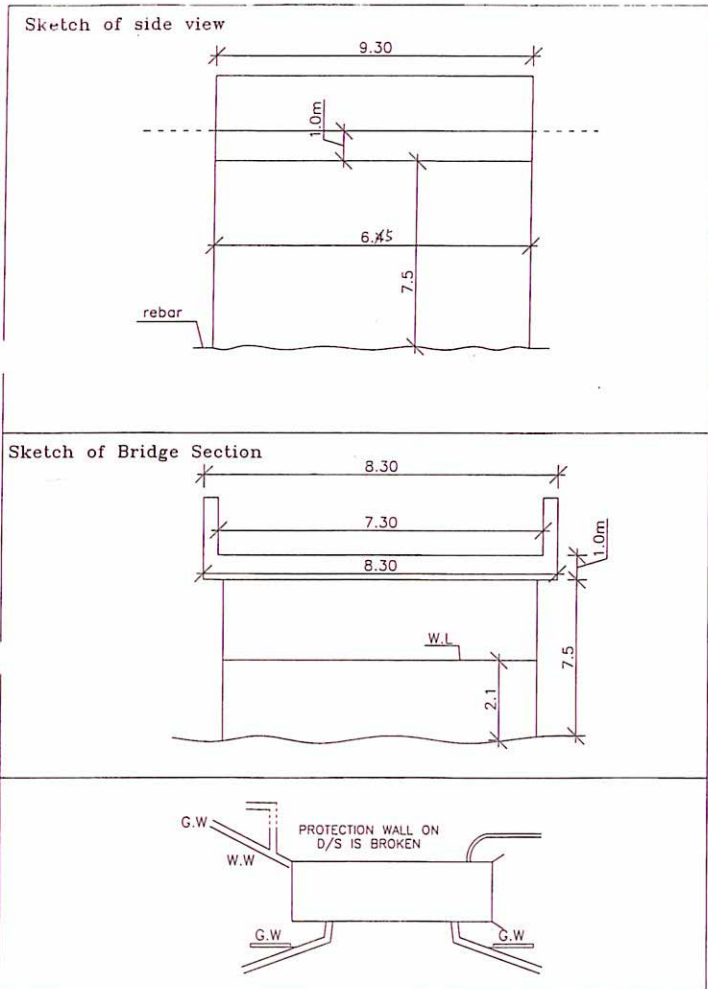
JANUARY 2005

DATE SHEET FOR BRIDGE (1/2)

Bridge Name: Bridge No. 1					
Distance: Km from Karachi, River Name:					
Identified No.: -	Station No.: I+964				
Type of Bridge: Slab Bridge	Year of Built: 1960				
Number of Lane: 2	Availability of detour: No / Yes (0.2 Km from Bridge)				
Bridge Length: 01 Span @ 6.5 m = 6.5 m	Skew: 90 degree				
Bridge Width: 7.3 m (Carriageway), - m (Sidewalk), 7.3 m (Total)					
Maximum Flood Level: - m (above / under) the bridge surface					
Bridge Conditions (G: good, C: Cracked, P: Partly lack, R: Re-bar Exposed, B: Broken, S: Scored, E: Eroded, V: Vegetated)					
Extent and Degree (X: Serious Condition, M: Moderate Condition, O: Sound Condition)					
Surface:	Carriageway (Asphalt Pavement / Concrete Pavement), Damage (G)				
	Sidewalk (Asphalt Pavement / Concrete Pavement), Damage (No Side Walk)				
Deck Slab:	RC Slab / Damage (C,M)				
Girder	Type: RC / Other (-)	Abutment:	Type: RC		
	Damage:	Left G1 (-)	Damage:	Karao A1 (G)	
		G2 (-)		Wad A2 (G)	
		G3 (-)	Pier:	Type: RC / Other (-)	
		G4 (-)		Damage:	Karao P1 (-)
		G5 (-)			P2 (-)
		Right G6 (-)			P3 (-)
	Cross Beam:	Type: RC / Other (-)		P4 (-)	
		Damage:	Karao Side B1 (-)		P5 (-)
			B2 (-)		P6 (-)
			B3 (-)		Wad P7 (-)
			B4 (-)	Wing Wall:	Type: RC
			B5 (-)		Damage:
			B6 (-)		Wad Side (G)
B7 (-)			Hand Rail:	Type: RC	
B8 (-)				Damage:	Left Side (C,O)
B9 (-)				Right Side (C,O)	
B10 (-)	Revetment:		Type: RC		
B11 (-)		Damage:	Karao Side (S,M) (Up / Downstream)		
B12 (-)			Wad Side (S,M) (Up / Downstream)		
B13 (-)		Rever Bank:	Damage:	Karao Side (G) (Up / Downstream)	
B14 (-)			Wad Side (G) (Up / Downstream)		
B15 (-)					
Utility Line: None / Electric/Water / Gas / Telecommunication / Optical fiber / Others (None)					
Attached Photos (General view, Side view (Left and Right), Defects, Damages, etc..)					



BRIDGE NO:1 (STATION NO: I+964)

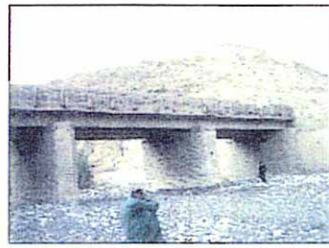
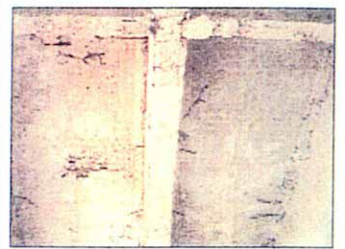
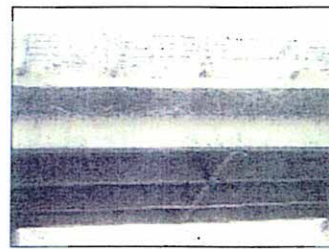


BRIDGE AT CHAINAGE 01+820

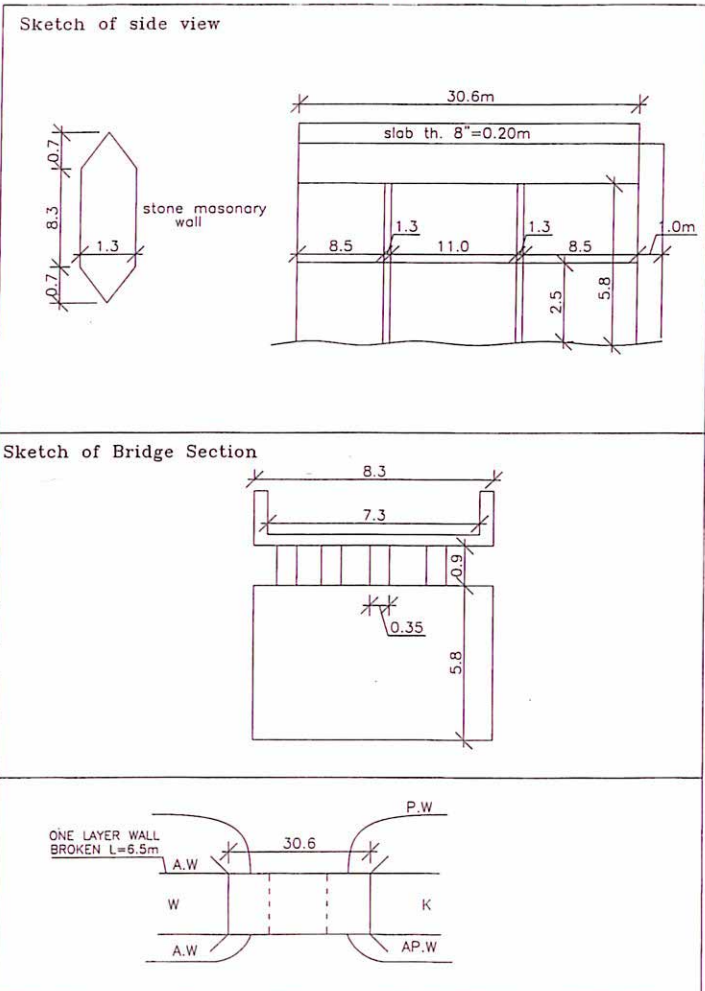


DATE SHEET FOR BRIDGE (1/2)

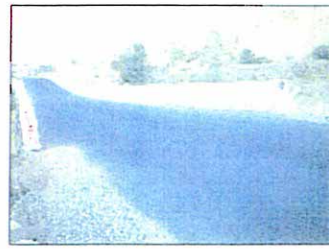
Bridge Name: Bridge No. 2			
Distance: Km from Karachi, River Name: Jani Nadi			
Identified No.: -	Station No.: 3+625		
Type of Bridge: RC Grider	Year of Built: 1960		
Number of Lane: -	Availability of detour: No / Yes (No Km from Bridge)		
Bridge Length: 03 Span, 9.15m + 12.3m + 9.15m = 30.6 m	Skew: 90 degree		
Bridge Width: 7.3 m (Carriageway), - m (Sidewalk), 7.3 m (Total)			
Maximum Flood Level: - m (above / under) the bridge surface			
Bridge Conditions (G: good, C: Cracked, P: Partly lack, R: Re-bar Exposed, B: Broken, S: Scored, E: Eroded, V: Vegetated)			
Extent and Degree (X: Serious Condition, M: Moderate Condition, O: Sound Condition)			
Surface: Carriageway (Asphalt Pavement / Concrete Pavement), Damage (G)			
Sidewalk (Asphalt Pavement / Concrete Pavement), Damage (No Side Walk)			
Deck Slab: RC Slab, Damage (C,M)			
Girder	Type: RC	Abutment: Type: S.M	
	Damage: Left G1 (C,M)	Damage: Karao A1 (P,M)	
	G2 (C,M)	Wad A2 (P,M)	
	G3 (C,M)	Pier: Top Face Broken Weep Holes in Middle	
	G4 (C,M)		Type: S.M
	G5 (-)		Damage: Karao P1 (B,M)
	Right G6 (-)		P2 (B,M)
			P3 (-)
			P4 (-)
			P5 (-)
			P6 (-)
			Wad P7 (-)
Cross Beam:	Type: RC / Other (R.C)		
Damage: Kararo Side B1 (C,M)			
B2 (C,M)			
B3 (C,M)			
B4 (C,M)	Wing Wall: Type: RC		
B5 (C,M)	Damage: Karao Side (G)		
B6 (C,M)	Wad Side (G)		
B7 (C,M)			
B8 (C,M)	Hand Rail: Type: RC / Other (S.M)		
B9 (C,M)	Damage: Left Side (B,M)		
B10 (-)	Right Side (G)		
B11 (-)			
B12 (-)	Revetment: Type: RC		
B13 (-)	Damage: Karao Side (C,O) (Up / Downstream)		
B14 (-)	Wad Side (C,O) (Up / Downstream)		
B15 (-)	Rever Bank: Damage: Karao Side (G) (Up / Downstream)		
Wad Side B15 (-)	Wad Side (G) (Up / Downstream)		
Utility Line: None / Electric/Water / Gas / Telecommunication / Optical fiber / Others (None)			
Attached Photos (General view, Side view (Left and Right), Defects, Damages, etc..)			



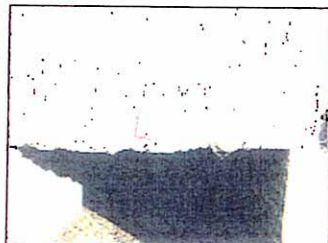
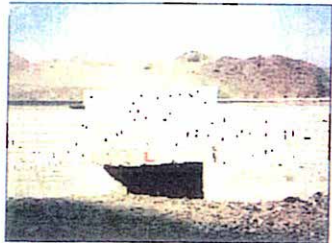
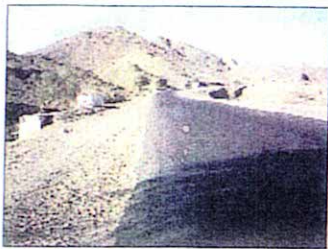
BRIDGE NO:2 (STATION NO: 3+625)



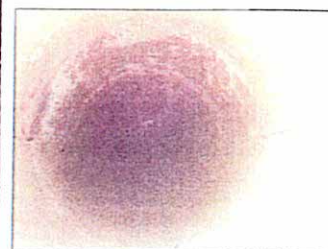
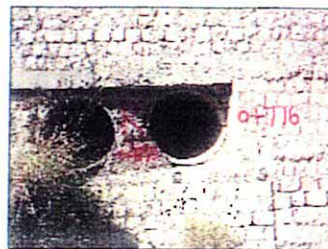
BRIDGE AT CHAINAGE 03+625



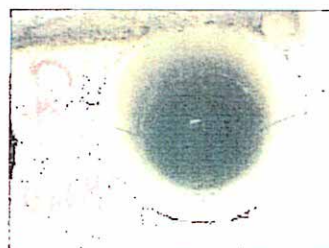
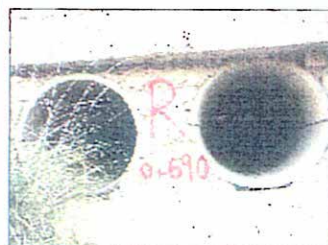
CULVERT AT CHAINAGE 00+115



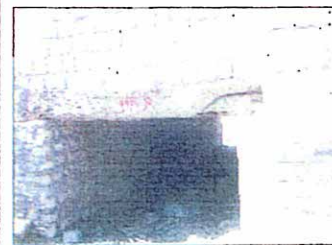
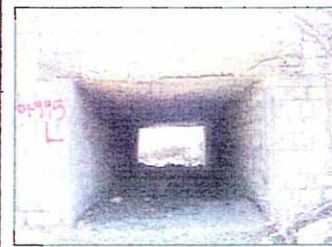
CULVERT AT CHAINAGE 00+776



CULVERT AT CHAINAGE 00+690



CULVERT AT CHAINAGE 00+995



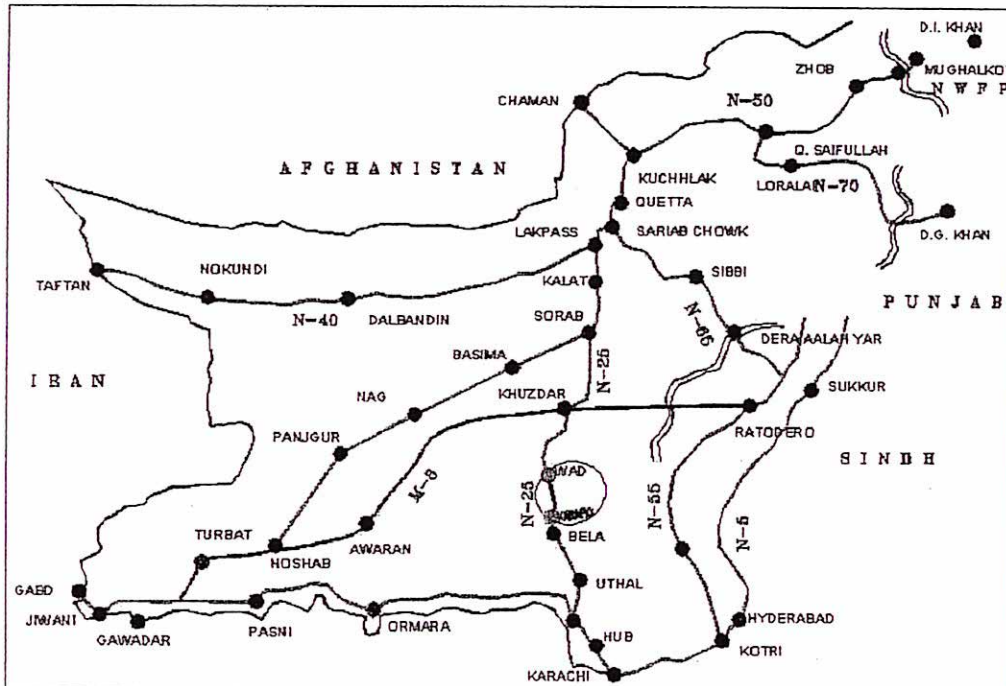
EXISTING STRUCTURES SURVEY (CULVERTS)

ON

THE BASIC DESIGN STUDY ON THE PROJECT

FOR

**IMPROVEMENT OF KARARO – WAD SECTION
OF NATIONAL HIGHWAY N-25
IN THE ISLAMIC REPUBLIC OF PAKISTAN**



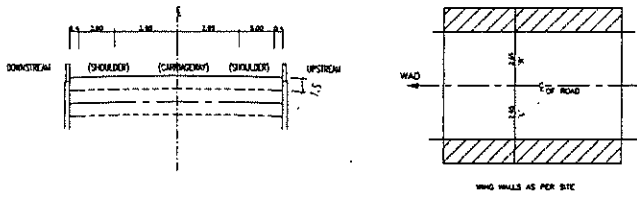
JANUARY 2005

CONDITION SURVEY OF STRUCTURES
(CULVERTS)
Inventory Forms

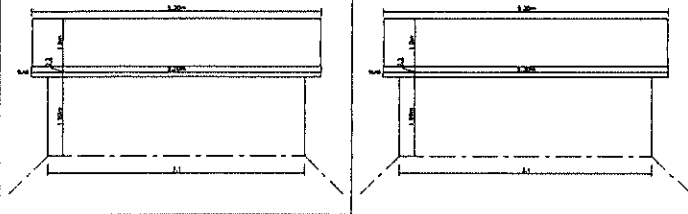
DATA SHEET FOR CULVERT (1/1)

Distance :	km from Karachi, River Name :
Identified No. :	Station No. : 00+115
Type of Culvert : Box/Pipe/Other: (SAR)	Year of Built : OVER 20 YEARS
Road Width : 5.30 m(Carriageway), 2.80 m(Sidewalk), 13.1 m(Total)	
Number of Cell : 01	Skew : 90 degree
Size of Culvert : Inner: 2.10 m x 1.90 m, Thickness: top: 0.40 m, Vertical:, Bottom:, Total Width : 21.20 m	
Length : From inlet to outlet : 21.2 m	Earth covering :
Maximum Flood Level :	
Culvert Conditions: (G: Good, C: Cracked, P: Partly lack, R: Re-bar exposed, B: Broken, S: Scored, E: Eroded, V: Vegetated) Extent and Degree: (X: Serious Condition, M: Moderate Condition, S: Sound Condition)	
Headwall : Type : RC / Steel / Other (SM) Damage : Upstream (00%) , Downstream (00%)	
Inlet : Type : RC / Steel / Other (RC) Damage : (PM) 90%	
Outlet : Type : RC / Stone / None / Other (SM) Damage : (00%)	
Erosion : Damage : None / Upstream (50) , Downstream (50)	
Net Opening : 100% , Sedimentation : None / Yes (YES m from the top of inner)	
Hydraulic capacity: Inadequate / Adequate	
Frequent of flood: No-flooding / Once a year / Frequent (once year)	
Attached Photos (General View, Inlet, Outlet, Defects, Damages, etc..)	

Sketch of Side View



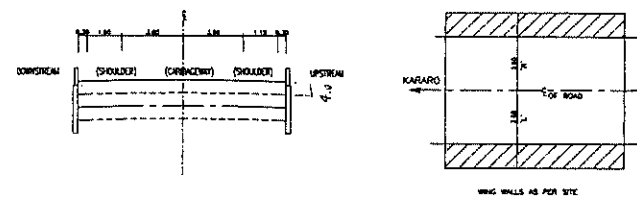
Sketch of Inlet and Outlet



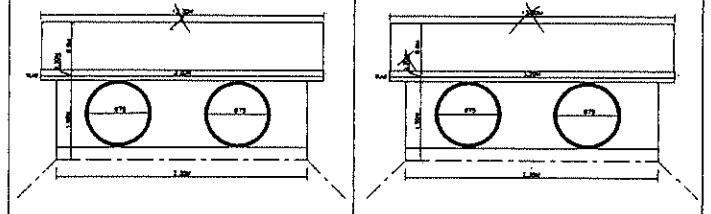
DATA SHEET FOR CULVERT (1/1)

Distance :	km from Karachi, River Name :
Identified No. :	Station No. : 00+775
Type of Culvert : Box/Pipe/Other: (PG)	Year of Built : OVER 20 YEARS
Road Width : 6.20 m(Carriageway), 3.05 m(Sidewalk), 9.25 m(Total)	
Number of Cell : 01	Skew : 92 degree
Size of Culvert : Inner: 2.30 m x 1.90 m, Thickness: top: 0.30 m, Vertical:, Bottom: 0.30 m, Total Width : 9.55 m	
Length : From inlet to outlet : 22.7 m	Earth covering : 4 m
Maximum Flood Level :	
Culvert Conditions: (G: Good, C: Cracked, P: Partly lack, R: Re-bar exposed, B: Broken, S: Scored, E: Eroded, V: Vegetated) Extent and Degree: (X: Serious Condition, M: Moderate Condition, S: Sound Condition)	
Headwall : Type : RC / Steel / Other (RC) Damage : Upstream (00%) , Downstream (00%)	
Inlet : Type : RC / Steel / Other (RC) Damage : (G) 80%	
Outlet : Type : RC / Stone / None / Other (RC) Damage : (00%)	
Erosion : Damage : None / Upstream (50) , Downstream (50)	
Net Opening : 90% , Sedimentation : None / Yes (YES m from the top of inner)	
Hydraulic capacity: Inadequate / Adequate	
Frequent of flood: No-flooding / Once a year / Frequent (once year)	
Attached Photos (General View, Inlet, Outlet, Defects, Damages, etc..)	

Sketch of Side View



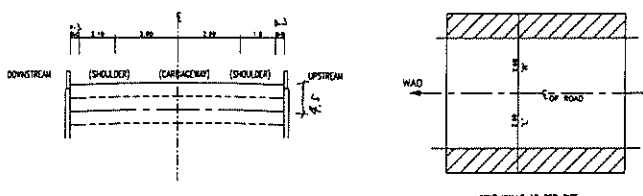
Sketch of Inlet and Outlet



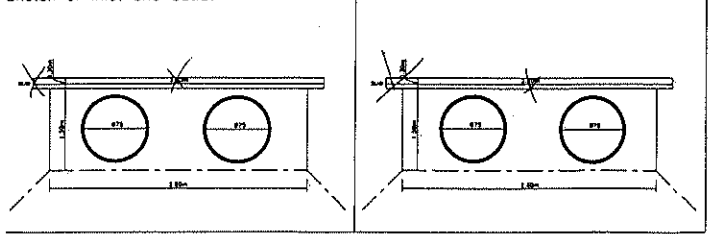
DATA SHEET FOR CULVERT (1/1)

Distance :	km from Karachi, River Name :
Identified No. :	Station No. : 00+590
Type of Culvert : Box/Pipe/Other: (PIPE)	Year of Built : OVER 20 YEARS
Road Width : 3.20 m(Carriageway), 3.10 m(Sidewalk), 8.30 m(Total)	
Number of Cell : 01	Skew : 90 degree
Size of Culvert : Inner: 2.80 m x 1.5 m, Thickness: top: 0.30 m, Vertical:, Bottom:, Total Width : 8.90 m	
Length : From inlet to outlet : 8.90 m	Earth covering :
Maximum Flood Level :	
Culvert Conditions: (G: Good, C: Cracked, P: Partly lack, R: Re-bar exposed, B: Broken, S: Scored, E: Eroded, V: Vegetated) Extent and Degree: (X: Serious Condition, M: Moderate Condition, S: Sound Condition)	
Headwall : Type : RC / Steel / Other (RC) Damage : Upstream (00%) , Downstream (00%)	
Inlet : Type : RC / Stone / None / Other (RC) Damage : (B) 50%	
Outlet : Type : RC / Stone / None / Other (RC) Damage : (100%)	
Erosion : Damage : None / Upstream (50) , Downstream (50)	
Net Opening : 50% , Sedimentation : None / Yes (YES m from the top of inner)	
Hydraulic capacity: Inadequate / Adequate	
Frequent of flood: No-flooding / Once a year / Frequent (once year)	
Attached Photos (General View, Inlet, Outlet, Defects, Damages, etc..)	

Sketch of Side View



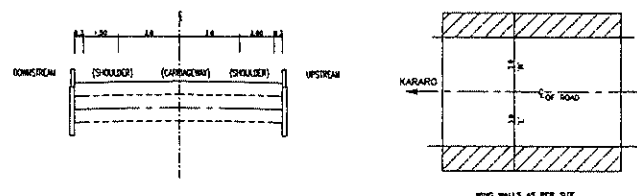
Sketch of Inlet and Outlet



DATA SHEET FOR CULVERT (1/1)

Distance :	km from Karachi, River Name :
Identified No. :	Station No. : 00+995
Type of Culvert : Box/Pipe/Other: (BRICK)	Year of Built : OVER 20 YEARS
Road Width : 5.0 m(Carriageway), 4.1 m(Sidewalk), 9.1 m(Total)	
Number of Cell : 01	Skew : 90 degree
Size of Culvert : Inner: 3.80 m x 2.80 m, Thickness: top: 1.45 m, Vertical:, Bottom: 0.3 m, Total Width : 10.1 m	
Length : From inlet to outlet : 10.1 m	Earth covering : 0.5 m
Maximum Flood Level :	
Culvert Conditions: (G: Good, C: Cracked, P: Partly lack, R: Re-bar exposed, B: Broken, S: Scored, E: Eroded, V: Vegetated) Extent and Degree: (X: Serious Condition, M: Moderate Condition, S: Sound Condition)	
Headwall : Type : RC / Steel / Other (BRICK) Damage : Upstream (00%) , Downstream (00%)	
Inlet : Type : RC / Steel / Other (RC) Damage : (R) 90%	
Outlet : Type : RC / Stone / None / Other (SM) Damage : (G) 90%	
Erosion : Damage : None / Upstream (70) , Downstream (50)	
Net Opening : 90% , Sedimentation : None / Yes (YES m from the top of inner)	
Hydraulic capacity: Inadequate / Adequate	
Frequent of flood: No-flooding / Once a year / Frequent (once year)	
Attached Photos (General View, Inlet, Outlet, Defects, Damages, etc..)	

Sketch of Side View



Sketch of Inlet and Outlet

