

Table 5.3.15 Screening of Environmental Conditions (New Tashkent)

No.	Environmental Item	Description	Evaluation	Remarks
Social Environment				
1	Resettlement	Resettlement due to land occupancy (transfer of rights of residence / land ownership)	[Y][N][?]	There are villages in the vicinity of the project site.
2	Economic Activities	Loss of bases of economic activities, such as land, and change of economic structure)	[Y][N][?]	Ditto
3	Traffic and Public Facilities	Impacts on schools, hospitals and present traffic condition, such as the increase of traffic condition and accidents)	[Y][N][?]	There are highway near the project site.
4	Split of Communities	Community split due to interruption of area traffic	[Y][N][?]	Ditto
5	Cultural Property	Damage to or loss of the value of churches, temples, shrine, archaeological remains or order cultural assets	[Y][N][?]	Unknown
6	Water Rights and Rights of Common	Obstruction of fishing rights, water rights, rights of common	[Y][N][?]	Unknown
7	Public Health Condition	Deterioration of public health and sanitary conditions due to generation of garbage and the increase of vermin	[Y][N][?]	The project site is an agriculture area at present.
8	Waste	Generation of construction and demolition waste, debris and logs	[Y][N][?]	Ditto
9	Hazards(Risk)	Increase in risk of landslides, cave-ins and accidents	[Y][N][?]	There are villages in the vicinity of the project site.
Natural Environment				
10	Topography and Geology	Changes of valuable topography and geology due to excavation or filling work	[Y][N][?]	The project site is an agriculture area at present.
11	Soil Erosion	Topsoil erosion by rainfall after reclamation and vegetation removal	[Y][N][?]	Ditto
12	Ground water	Changes of distribution of ground water by large-scale excavation	[Y][N][?]	Ditto
13	Hydrological Situation	Changes of river discharge and riverbed condition due to landfill and drainage inflow	[Y][N][?]	Ditto
14	Coastal Zone	Coastal erosion and sedimentation due to landfill or change in marine condition	[Y][N][?]	No coastal zone
15	Fauna and Flora	Obstruction of breeding and extinction of species due to change of habitats condition	[Y][N][?]	Unknown
16	Meteorology	Changes of temperature, precipitation, wind, etc. due to large-scale land reclamation and building construction	[Y][N][?]	Ditto
17	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structures	[Y][N][?]	The project site is an agriculture area at present.
Pollution				
18	Air Pollution	Pollution caused by exhaust gas or toxic gas from vehicles and factories	[Y][N][?]	There are villages in the vicinity of the project site.
19	Water Pollution	Pollution by inflow of silt, sand and effluent into rivers and ground water	[Y][N][?]	The project site is an agriculture area at present.
20	Soil Contamination	Contamination of soil by dust and chemicals, such as herbicides	[Y][N][?]	Ditto
21	Noise and Vibration	Noise and vibration generated by vehicles	[Y][N][?]	Ditto
22	Land Subsidence	Deformation of land and land subsidence due to the lowering of ground water table	[Y][N][?]	Ditto
23	Offensive Odor	Generation of exhaust gas and offensive odor by facility construction and operation	[Y][N][?]	Ditto
Overall Evaluation: Either IEE or EIA is necessary for the project implementation? [Y]				

Table 5.3.16 Screening of Environmental Conditions (Tashkent)

No.	Environmental Item	Description	Evaluation	Remarks
Social Environment				
1	Resettlement	Resettlement due to land occupancy (transfer of rights of residence / land ownership)	[Y][N][?]	Improvement of the existing airport.
2	Economic Activities	Loss of bases of economic activities, such as land, and change of economic structure)	[Y][N][?]	Ditto
3	Traffic and Public Facilities	Impacts on schools, hospitals and present traffic condition, such as the increase of traffic condition and accidents)	[Y][N][?]	Unknown, The condition of access road to the airport.
4	Split of Communities	Community split due to interruption of area traffic	[Y][N][?]	Improvement of the existing airport.
5	Cultural Property	Damage to or loss of the value of churches, temples, shrine, archaeological remains or order cultural assets	[Y][N][?]	Ditto
6	Water Rights and Rights of Common	Obstruction of fishing rights, water rights, rights of common	[Y][N][?]	Ditto
7	Public Health Condition	Deterioration of public health and sanitary conditions due to generation of garbage and the increase of vermin	[Y][N][?]	Improvement of the existing airport Waste is treated in the airport.
8	Waste	Generation of construction and demolition waste, debris and logs	[Y][N][?]	Improvement of the existing airport Waste is not so much volume.
9	Hazard(Risk)	Increase in risk of landslides, cave-ins and accidents	[Y][N][?]	There is an urban area at the north-east of the airport.
Natural Environment				
10	Topography and Geology	Changes of valuable topography and geology due to excavation or filling work	[Y][N][?]	Improvement of the existing airport.
11	Soil Erosion	Topsoil erosion by rainfall after reclamation and vegetation removal	[Y][N][?]	Ditto
12	Ground water	Changes of distribution of ground water by large-scale excavation	[Y][N][?]	Ditto
13	Hydrological Situation	Changes of river discharge and riverbed condition due to landfill and drainage inflow	[Y][N][?]	Ditto
14	Coastal Zone	Coastal erosion and sedimentation due to landfill or change in marine condition	[Y][N][?]	No coastal zone.
15	Fauna and Flora	Obstruction of breeding and extinction of species due to change of habitats condition	[Y][N][?]	Improvement of the existing airport.
16	Meteorology	Changes of temperature, precipitation, wind, etc. due to large-scale land reclamation and building construction	[Y][N][?]	Ditto
17	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structures	[Y][N][?]	Ditto
Pollution				
18	Air Pollution	Pollution caused by exhaust gas or toxic gas from vehicles and factories	[Y][N][?]	Unknown, gaseous emission of the aircraft.
19	Water Pollution	Pollution by inflow of silt, sand and effluent into rivers and ground water	[Y][N][?]	The wastewater is treated in the airport.
20	Soil Contamination	Contamination of soil by dust and chemicals, such as herbicides	[Y][N][?]	Ditto
21	Noise and Vibration	Noise and vibration generated by vehicles	[Y][N][?]	There is an urban area at the north-east of the airport.
22	Land Subsidence	Deformation of land and land subsidence due to the lowering of ground water table	[Y][N][?]	Improvement of the existing airport.
23	Offensive Odor	Generation of exhaust gas and offensive odor by facility construction and operation	[Y][N][?]	Ditto
Overall Evaluation: Either JEE or EIA is necessary for the project implementation? [Y]				

Table 5.3.17 Screening of Environmental Conditions (Andizhan)

No.	Environmental Item	Description	Evaluation	Remarks
Social Environment				
1	Resettlement	Resettlement due to land occupancy (transfer of rights of residence / land ownership)	[Y][N][?]	Improvement of the existing airport.
2	Economic Activities	Loss of bases of economic activities, such as land, and change of economic structure)	[Y][N][?]	Ditto
3	Traffic and Public Facilities	Impacts on schools, hospitals and present traffic condition, such as the increase of traffic condition and accidents)	[Y][N][?]	Unknown, The condition of access road to the airport.
4	Split of Communities	Community split due to interruption of area traffic	[Y][N][?]	Improvement of the existing airport.
5	Cultural Property	Damage to or loss of the value of churches, temples, shrine, archaeological remains or order cultural assets	[Y][N][?]	Ditto
6	Water Rights and Rights of Common	Obstruction of fishing rights, water rights, rights of common	[Y][N][?]	Ditto
7	Public Health Condition	Deterioration of public health and sanitary conditions due to generation of garbage and the increase of vermin	[Y][N][?]	Improvement of the existing airport Waste is treated in the airport.
8	Waste	Generation of construction and demolition waste, debris and logs	[Y][N][?]	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	Increase in risk of landslides, cave-ins and accidents	[Y][N][?]	There is an urban area at the north-east of the airport.
Natural Environment				
10	Topography and Geology	Changes of valuable topography and geology due to excavation or filling work	[Y][N][?]	Improvement of the existing airport.
11	Soil Erosion	Topsoil erosion by rainfall after reclamation and vegetation removal	[Y][N][?]	Ditto
12	Ground water	Changes of distribution of ground water by large-scale excavation	[Y][N][?]	Ditto
13	Hydrological Situation	Changes of river discharge and riverbed condition due to landfill and drainage inflow	[Y][N][?]	Ditto
14	Coastal Zone	Coastal erosion and sedimentation due to landfill or change in marine condition	[Y][N][?]	No coastal zone.
15	Fauna and Flora	Obstruction of breeding and extinction of species due to change of habitats condition	[Y][N][?]	Improvement of the existing airport.
16	Meteorology	Changes of temperature, precipitation, wind, etc. due to large-scale land reclamation and building construction	[Y][N][?]	Ditto
17	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structures	[Y][N][?]	Ditto
Pollution				
18	Air Pollution	Pollution caused by exhaust gas or toxic gas from vehicles and factories	[Y][N][?]	Unknown, gaseous emission of the aircraft.
19	Water Pollution	Pollution by inflow of silt, sand and effluent into rivers and ground water	[Y][N][?]	The wastewater is treated in the airport.
20	Soil Contamination	Contamination of soil by dust and chemicals, such as herbicides	[Y][N][?]	Ditto
21	Noise and Vibration	Noise and vibration generated by vehicles	[Y][N][?]	There is an urban area at the north-east of the airport.
22	Land Subsidence	Deformation of land and land subsidence due to the lowering of ground water table	[Y][N][?]	Improvement of the existing airport.
23	Offensive Odor	Generation of exhaust gas and offensive odor by facility construction and operation	[Y][N][?]	Ditto
Overall Evaluation: Either IEE or EIA is necessary for the project implementation? [Y]				

Table 5.3.18 Screening of Environmental Conditions (Namangan)

No.	Environmental Item	Description	Evaluation	Remarks
Social Environment				
1	Resettlement	Resettlement due to land occupancy (transfer of rights of residence / land ownership)	[Y][N][?]	Improvement of the existing airport.
2	Economic Activities	Loss of bases of economic activities, such as land, and change of economic structure)	[Y][N][?]	Ditto
3	Traffic and Public Facilities	Impacts on schools, hospitals and present traffic condition, such as the increase of traffic condition and accidents)	[Y][N][?]	Unknown, The condition of access road to the airport.
4	Split of Communities	Community split due to interruption of area traffic	[Y][N][?]	Improvement of the existing airport.
5	Cultural Property	Damage to or loss of the value of churches, temples, shrine, archaeological remains or order cultural assets	[Y][N][?]	Ditto
6	Water Rights and Rights of Common	Obstruction of fishing rights, water rights, rights of common	[Y][N][?]	Ditto
7	Public Health Condition	Deterioration of public health and sanitary conditions due to generation of garbage and the increase of vermin	[Y][N][?]	Improvement of the existing airport Waste is treated in the airport.
8	Waste	Generation of construction and demolition waste, debris and logs	[Y][N][?]	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	Increase in risk of landslides, cave-ins and accidents	[Y][N][?]	There is an urban area at the western side of airport.
Natural Environment				
10	Topography and Geology	Changes of valuable topography and geology due to excavation or filling work	[Y][N][?]	Improvement of the existing airport.
11	Soil Erosion	Topsoil erosion by rainfall after reclamation and vegetation removal	[Y][N][?]	Ditto
12	Ground water	Changes of distribution of ground water by large-scale excavation	[Y][N][?]	Ditto
13	Hydrological Situation	Changes of river discharge and riverbed condition due to landfill and drainage inflow	[Y][N][?]	Ditto
14	Coastal Zone	Coastal erosion and sedimentation due to landfill or change in marine condition	[Y][N][?]	No coastal zone.
15	Fauna and Flora	Obstruction of breeding and extinction of species due to change of habitats condition	[Y][N][?]	Improvement of the existing airport.
16	Meteorology	Changes of temperature, precipitation, wind, etc. due to large-scale land reclamation and building construction	[Y][N][?]	Ditto
17	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structures	[Y][N][?]	Ditto
Pollution				
18	Air Pollution	Pollution caused by exhaust gas or toxic gas from vehicles and factories	[Y][N][?]	Unknown, gaseous emission of the aircraft.
19	Water Pollution	Pollution by inflow of silt, sand and effluent into rivers and ground water	[Y][N][?]	Improvement of the existing airport.
20	Soil Contamination	Contamination of soil by dust and chemicals, such as herbicides	[Y][N][?]	Ditto
21	Noise and Vibration	Noise and vibration generated by vehicles	[Y][N][?]	There is an urban area on the western side of airport.
22	Land Subsidence	Deformation of land and land subsidence due to the lowering of ground water table	[Y][N][?]	Improvement of the existing airport.
23	Offensive Odor	Generation of exhaust gas and offensive odor by facility construction and operation	[Y][N][?]	Ditto
Overall Evaluation: Either IEE or EIA is necessary for the project implementation? [Y]				

Table 5.3.19 Screening of Environmental Conditions (Fergana)

No.	Environmental Item	Description	Evaluation	Remarks
Social Environment				
1	Resettlement	Resettlement due to land occupancy (transfer of rights of residence / land ownership)	[Y][N][?]	Improvement of the existing airport.
2	Economic Activities	Loss of bases of economic activities, such as land, and change of economic structure)	[Y][N][?]	Ditto
3	Traffic and Public Facilities	Impacts on schools, hospitals and present traffic condition, such as the increase of traffic condition and accidents)	[Y][N][?]	Unknown, The condition of access road to the airport.
4	Split of Communities	Community split due to interruption of area traffic	[Y][N][?]	Improvement of the existing airport.
5	Cultural Property	Damage to or loss of the value of churches, temples, shrine, archaeological remains or order cultural assets	[Y][N][?]	Ditto
6	Water Rights and Rights of Common	Obstruction of fishing rights, water rights, rights of common	[Y][N][?]	Ditto
7	Public Health Condition	Deterioration of public health and sanitary conditions due to generation of garbage and the increase of vermin	[Y][N][?]	Ditto
8	Waste	Generation of construction and demolition waste, debris and logs	[Y][N][?]	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	Increase in risk of landslides, cave-ins and accidents	[Y][N][?]	There are residents at the north of runway.
Natural Environment				
10	Topography and Geology	Changes of valuable topography and geology due to excavation or filling work	[Y][N][?]	Improvement of the existing airport.
11	Soil Erosion	Topsoil erosion by rainfall after reclamation and vegetation removal	[Y][N][?]	Ditto
12	Ground water	Changes of distribution of ground water by large-scale excavation	[Y][N][?]	Ditto
13	Hydrological Situation	Changes of river discharge and riverbed condition due to landfill and drainage inflow	[Y][N][?]	Ditto
14	Coastal Zone	Coastal erosion and sedimentation due to landfill or change in marine condition	[Y][N][?]	No coastal zone.
15	Fauna and Flora	Obstruction of breeding and extinction of species due to change of habitats condition	[Y][N][?]	Improvement of the existing airport.
16	Meteorology	Changes of temperature, precipitation, wind, etc. due to large-scale land reclamation and building construction	[Y][N][?]	Ditto
17	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structures	[Y][N][?]	Ditto
Pollution				
18	Air Pollution	Pollution caused by exhaust gas or toxic gas from vehicles and factories	[Y][N][?]	Unknown, gaseous emission of the aircraft.
19	Water Pollution	Pollution by inflow of silt, sand and effluent into rivers and ground water	[Y][N][?]	The wastewater is treated by the public sewage disposal plant.
20	Soil Contamination	Contamination of soil by dust and chemicals, such as herbicides	[Y][N][?]	The wastewater is treated by the public sewage treatment plant.
21	Noise and Vibration	Noise and vibration generated by vehicles	[Y][N][?]	There is an urban area at the extent area of the runway.
22	Land Subsidence	Deformation of land and land subsidence due to the lowering of ground water table	[Y][N][?]	Improvement of the existing airport.
23	Offensive Odor	Generation of exhaust gas and offensive odor by facility construction and operation	[Y][N][?]	Ditto
Overall Evaluation: Either IEE or EIA is necessary for the project implementation? [Y]				

Table 5.3.20 Screening of Environmental Conditions (Kokand)

No.	Environmental Item	Description	Evaluation	Remarks
Social Environment				
1	Resettlement	Resettlement due to land occupancy (transfer of rights of residence / land ownership)	{Y}{N}{?}	Improvement of the existing airport.
2	Economic Activities	Loss of bases of economic activities, such as land, and change of economic structure)	{Y}{N}{?}	Ditto
3	Traffic and Public Facilities	Impacts on schools, hospitals and present traffic condition, such as the increase of traffic condition and accidents)	{Y}{N}{?}	There are no residents along the access road to the airport.
4	Split of Communities	Community split due to interruption of area traffic	{Y}{N}{?}	Improvement of the existing airport.
5	Cultural Property	Damage to or loss of the value of churches, temples, shrine, archaeological remains or order cultural assets	{Y}{N}{?}	Ditto
6	Water Rights and Rights of Common	Obstruction of fishing rights, water rights, rights of common	{Y}{N}{?}	Ditto
7	Public Health Condition	Deterioration of public health and sanitary conditions due to generation of garbage and the increase of vermin	{Y}{N}{?}	Ditto
8	Waste	Generation of construction and demolition waste, debris and logs	{Y}{N}{?}	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	Increase in risk of landslides, cave-ins and accidents	{Y}{N}{?}	There are no residents at the extent area of runway.
Natural Environment				
10	Topography and Geology	Changes of valuable topography and geology due to excavation or filling work	{Y}{N}{?}	Improvement of the existing airport.
11	Soil Erosion	Topsoil erosion by rainfall after reclamation and vegetation removal	{Y}{N}{?}	Ditto
12	Ground water	Changes of distribution of ground water by large-scale excavation	{Y}{N}{?}	Ditto
13	Hydrological Situation	Changes of river discharge and riverbed condition due to landfill and drainage inflow	{Y}{N}{?}	Ditto
14	Coastal Zone	Coastal erosion and sedimentation due to landfill or change in marine condition	{Y}{N}{?}	No coastal zone.
15	Fauna and Flora	Obstruction of breeding and extinction of species due to change of habitats condition	{Y}{N}{?}	Improvement of the existing airport.
16	Meteorology	Changes of temperature, precipitation, wind, etc. due to large-scale land reclamation and building construction	{Y}{N}{?}	Ditto
17	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structures	{Y}{N}{?}	Ditto
Pollution				
18	Air Pollution	Pollution caused by exhaust gas or toxic gas from vehicles and factories	{Y}{N}{?}	Improvement of the existing airport.
19	Water Pollution	Pollution by inflow of silt, sand and effluent into rivers and ground water	{Y}{N}{?}	Unknown, oil treatment of the aircraft and use of anti-freeze chemicals.
20	Soil Contamination	Contamination of soil by dust and chemicals, such as herbicides	{Y}{N}{?}	Unknown, oil treatment of the aircraft and use of anti-freeze chemicals.
21	Noise and Vibration	Noise and vibration generated by vehicles	{Y}{N}{?}	No residents in the vicinity of the airport.
22	Land Subsidence	Deformation of land and land subsidence due to the lowering of ground water table	{Y}{N}{?}	Improvement of the existing airport.
23	Offensive Odor	Generation of exhaust gas and offensive odor by facility construction and operation	{Y}{N}{?}	Ditto
Overall Evaluation: Either IEE or EIA is necessary for the project implementation? {Y}				

Table 5.3.21 Screening of Environmental Conditions (Samarkand)

No.	Environmental Item	Description	Evaluation	Remarks
Social Environment				
1	Resettlement	Resettlement due to land occupancy (transfer of rights of residence / land ownership)	[Y][N][?]	Improvement of the existing airport.
2	Economic Activities	Loss of bases of economic activities, such as land, and change of economic structure)	[Y][N][?]	Ditto
3	Traffic and Public Facilities	Impacts on schools, hospitals and present traffic condition, such as the increase of traffic condition and accidents)	[Y][N][?]	There are no residents along the access road to the airport.
4	Split of Communities	Community split due to interruption of area traffic	[Y][N][?]	Improvement of the existing airport. There is little traffic on the road.
5	Cultural Property	Damage to or loss of the value of churches, temples, shrine, archaeological remains or order cultural assets	[Y][N][?]	Improvement of the existing airport
6	Water Rights and Rights of Common	Obstruction of fishing rights, water rights, rights of common	[Y][N][?]	Ditto
7	Public Health Condition	Deterioration of public health and sanitary conditions due to generation of garbage and the increase of vermin	[Y][N][?]	Improvement of the existing airport Waste is treated in the airport.
8	Waste	Generation of construction and demolition waste, debris and logs	[Y][N][?]	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	Increase in risk of landslides, cave-ins and accidents	[Y][N][?]	There is vacant land in the vicinity of the airport.
Natural Environment				
10	Topography and Geology	Changes of valuable topography and geology due to excavation or filling work	[Y][N][?]	Improvement of the existing airport.
11	Soil Erosion	Topsoil erosion by rainfall after reclamation and vegetation removal	[Y][N][?]	Ditto
12	Ground water	Changes of distribution of ground water by large-scale excavation	[Y][N][?]	No problems concerning groundwater level.
13	Hydrological Situation	Changes of river discharge and riverbed condition due to landfill and drainage inflow	[Y][N][?]	Improvement of the existing airport.
14	Coastal Zone	Coastal erosion and sedimentation due to landfill or change in marine condition	[Y][N][?]	No coastal zone.
15	Fauna and Flora	Obstruction of breeding and extinction of species due to change of habitats condition	[Y][N][?]	Improvement of the existing airport.
16	Meteorology	Changes of temperature, precipitation, wind, etc. due to large-scale land reclamation and building construction	[Y][N][?]	Ditto
17	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structures	[Y][N][?]	Ditto
Pollution				
18	Air Pollution	Pollution caused by exhaust gas or toxic gas from vehicles and factories	[Y][N][?]	No residents in the vicinity of the airport.
19	Water Pollution	Pollution by inflow of silt, sand and effluent into rivers and ground water	[Y][N][?]	Unknown, Oil treatment of the aircraft.
20	Soil Contamination	Contamination of soil by dust and chemicals, such as herbicides	[Y][N][?]	Unknown, Oil treatment of the aircraft.
21	Noise and Vibration	Noise and vibration generated by vehicles	[Y][N][?]	No residents in the vicinity of the airport.
22	Land Subsidence	Deformation of land and land subsidence due to the lowering of ground water table	[Y][N][?]	Improvement of the existing airport.
23	Offensive Odor	Generation of exhaust gas and offensive odor by facility construction and operation	[Y][N][?]	Ditto
Overall Evaluation: Either IEE or EIA is necessary for the project implementation? {Y}				

Table 5.3.22 Screening of Environmental Conditions (Termez)

No.	Environmental Item	Description	Evaluation	Remarks
Social Environment				
1	Resettlement	Resettlement due to land occupancy (transfer of rights of residence / land ownership)	[Y][N][?]	Improvement of the existing airport.
2	Economic Activities	Loss of bases of economic activities, such as land, and change of economic structure)	[Y][N][?]	Ditto
3	Traffic and Public Facilities	Impacts on schools, hospitals and present traffic condition, such as the increase of traffic condition and accidents)	[Y][N][?]	There are no residents along the access road to the airport.
4	Split of Communities	Community split due to interruption of area traffic	[Y][N][?]	Improvement of the existing airport. There is little traffic on the road.
5	Cultural Property	Damage to or loss of the value of churches, temples, shrine, archaeological remains or order cultural assets	[Y][N][?]	Improvement of the existing airport
6	Water Rights and Rights of Common	Obstruction of fishing rights, water rights, rights of common	[Y][N][?]	Ditto
7	Public Health Condition	Deterioration of public health and sanitary conditions due to generation of garbage and the increase of vermin	[Y][N][?]	Improvement of the existing airport Waste is treated in the airport.
8	Waste	Generation of construction and demolition waste, debris and logs	[Y][N][?]	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	Increase in risk of landslides, cave-ins and accidents	[Y][N][?]	There is vacant land in the vicinity of the airport.
Natural Environment				
10	Topography and Geology	Changes of valuable topography and geology due to excavation or filling work	[Y][N][?]	Improvement of the existing airport.
11	Soil Erosion	Topsoil erosion by rainfall after reclamation and vegetation removal	[Y][N][?]	Ditto
12	Ground water	Changes of distribution of ground water by large-scale excavation	[Y][N][?]	No problems concerning groundwater level.
13	Hydrological Situation	Changes of river discharge and riverbed condition due to landfill and drainage inflow	[Y][N][?]	Improvement of the existing airport.
14	Coastal Zone	Coastal erosion and sedimentation due to landfill or change in marine condition	[Y][N][?]	No coastal zone.
15	Fauna and Flora	Obstruction of breeding and extinction of species due to change of habitats condition	[Y][N][?]	Improvement of the existing airport.
16	Meteorology	Changes of temperature, precipitation, wind, etc. due to large-scale land reclamation and building construction	[Y][N][?]	Ditto
17	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structures	[Y][N][?]	Ditto
Pollution				
18	Air Pollution	Pollution caused by exhaust gas or toxic gas from vehicles and factories	[Y][N][?]	No residents in the vicinity of the airport.
19	Water Pollution	Pollution by inflow of silt, sand and effluent into rivers and ground water	[Y][N][?]	Unknown, Oil treatment of the aircraft.
20	Soil Contamination	Contamination of soil by dust and chemicals, such as herbicides	[Y][N][?]	Unknown, Oil treatment of the aircraft.
21	Noise and Vibration	Noise and vibration generated by vehicles	[Y][N][?]	No residents in the vicinity of the airport.
22	Land Subsidence	Deformation of land and land subsidence due to the lowering of ground water table	[Y][N][?]	Improvement of the existing airport.
23	Offensive Odor	Generation of exhaust gas and offensive odor by facility construction and operation	[Y][N][?]	Ditto
Overall Evaluation: Either IEE or EIA is necessary for the project implementation? [Y]				

Table 5.3.23 Screening of Environmental Conditions (Karshi)

No.	Environmental Item	Description	Evaluation	Remarks
Social Environment				
1	Resettlement	Resettlement due to land occupancy (transfer of rights of residence / land ownership)	[Y][N][?]	Improvement of the existing airport.
2	Economic Activities	Loss of bases of economic activities, such as land, and change of economic structure)	[Y][N][?]	Ditto
3	Traffic and Public Facilities	Impacts on schools, hospitals and present traffic condition, such as the increase of traffic condition and accidents)	[Y][N][?]	There are residents along the access road to the airport.
4	Split of Communities	Community split due to interruption of area traffic	[Y][N][?]	Improvement of the existing airport.
5	Cultural Property	Damage to or loss of the value of churches, temples, shrine, archaeological remains or other cultural assets	[Y][N][?]	Ditto
6	Water Rights and Rights of Common	Obstruction of fishing rights, water rights, rights of common	[Y][N][?]	Ditto
7	Public Health Condition	Deterioration of public health and sanitary conditions due to generation of garbage and the increase of vermin	[Y][N][?]	Improvement of the existing airport Waste is treated in the airport.
8	Waste	Generation of construction and demolition waste, debris and logs	[Y][N][?]	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	Increase in risk of landslides, cave-ins and accidents	[Y][N][?]	There is vacant land in the vicinity of the airport.
Natural Environment				
10	Topography and Geology	Changes of valuable topography and geology due to excavation or filling work	[Y][N][?]	Improvement of the existing airport.
11	Soil Erosion	Topsoil erosion by rainfall after reclamation and vegetation removal	[Y][N][?]	Ditto
12	Ground water	Changes of distribution of ground water by large-scale excavation	[Y][N][?]	Ditto
13	Hydrological Situation	Changes of river discharge and riverbed condition due to landfill and drainage inflow	[Y][N][?]	Ditto
14	Coastal Zone	Coastal erosion and sedimentation due to landfill or change in marine condition	[Y][N][?]	No coastal zone.
15	Fauna and Flora	Obstruction of breeding and extinction of species due to change of habitats condition	[Y][N][?]	Improvement of the existing airport.
16	Meteorology	Changes of temperature, precipitation, wind, etc. due to large-scale land reclamation and building construction	[Y][N][?]	Ditto
17	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structures	[Y][N][?]	Ditto
Pollution				
18	Air Pollution	Pollution caused by exhaust gas or toxic gas from vehicles and factories	[Y][N][?]	There are residents along on the access road to the airport.
19	Water Pollution	Pollution by inflow of silt, sand and effluent into rivers and ground water	[Y][N][?]	Unknown, Oil treatment of the aircraft.
20	Soil Contamination	Contamination of soil by dust and chemicals, such as herbicides	[Y][N][?]	Unknown, Oil treatment of the aircraft.
21	Noise and Vibration	Noise and vibration generated by vehicles	[Y][N][?]	There are residents along on the access road to the airport.
22	Land Subsidence	Deformation of land and land subsidence due to the lowering of ground water table	[Y][N][?]	Improvement of the existing airport.
23	Offensive Odor	Generation of exhaust gas and offensive odor by facility construction and operation	[Y][N][?]	Ditto
Overall Evaluation: Either IEE or EIA is necessary for the project implementation? [Y]				

Table 5.3.24 Screening of Environmental Conditions (Bukhara)

No.	Environmental Item	Description	Evaluation	Remarks
Social Environment				
1	Resettlement	Resettlement due to land occupancy (transfer of rights of residence / land ownership)	[Y][N][?]	Improvement of the existing airport.
2	Economic Activities	Loss of bases of economic activities, such as land, and change of economic structure)	[Y][N][?]	Ditto
3	Traffic and Public Facilities	Impacts on schools, hospitals and present traffic condition, such as the increase of traffic condition and accidents)	[Y][N][?]	There is vacant land along the access road to the airport.
4	Split of Communities	Community split due to interruption of area traffic	[Y][N][?]	Improvement of the existing airport.
5	Cultural Property	Damage to or loss of the value of churches, temples, shrine, archaeological remains or other cultural assets	[Y][N][?]	Ditto
6	Water Rights and Rights of Common	Obstruction of fishing rights, water rights, rights of common	[Y][N][?]	Ditto
7	Public Health Condition	Deterioration of public health and sanitary conditions due to generation of garbage and the increase of vermin	[Y][N][?]	Ditto
8	Waste	Generation of construction and demolition waste, debris and logs	[Y][N][?]	Improvement of the existing airport. Waste is not so much volume.
9	Hazards(Risk)	Increase in risk of landslides, cave-ins and accidents	[Y][N][?]	There are no residents at the extent area of runway.
Natural Environment				
10	Topography and Geology	Changes of valuable topography and geology due to excavation or filling work	[Y][N][?]	Improvement of the existing airport.
11	Soil Erosion	Topsoil erosion by rainfall after reclamation and vegetation removal	[Y][N][?]	Ditto
12	Ground water	Changes of distribution of ground water by large-scale excavation	[Y][N][?]	Ditto
13	Hydrological Situation	Changes of river discharge and riverbed condition due to landfill and drainage inflow	[Y][N][?]	Ditto
14	Coastal Zone	Coastal erosion and sedimentation due to landfill or change in marine condition	[Y][N][?]	No coastal zone.
15	Fauna and Flora	Obstruction of breeding and extinction of species due to change of habitats condition	[Y][N][?]	Improvement of the existing airport.
16	Meteorology	Changes of temperature, precipitation, wind, etc. due to large-scale land reclamation and building construction	[Y][N][?]	Ditto
17	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structures	[Y][N][?]	Ditto
Pollution				
18	Air Pollution	Pollution caused by exhaust gas or toxic gas from vehicles and factories	[Y][N][?]	There are no residents in the vicinity of the airport.
19	Water Pollution	Pollution by inflow of silt, sand and effluent into rivers and ground water	[Y][N][?]	Unknown, Oil treatment of the aircraft.
20	Soil Contamination	Contamination of soil by dust and chemicals, such as herbicides	[Y][N][?]	Unknown, Oil treatment of the aircraft.
21	Noise and Vibration	Noise and vibration generated by vehicles	[Y][N][?]	There are no residents in the vicinity of the airport.
22	Land Subsidence	Deformation of land and land subsidence due to the lowering of ground water table	[Y][N][?]	Improvement of the existing airport.
23	Offensive Odor	Generation of exhaust gas and offensive odor by facility construction and operation	[Y][N][?]	Ditto
Overall Evaluation: Either IEE or EIA is necessary for the project implementation? [Y]				

Table 5.3.25 Screening of Environmental Conditions (Navoi)

No.	Environmental Item	Description	Evaluation	Remarks
Social Environment				
1	Resettlement	Resettlement due to land occupancy (transfer of rights of residence / land ownership)	[Y][N][?]	Improvement of the existing airport.
2	Economic Activities	Loss of bases of economic activities, such as land, and change of economic structure)	[Y][N][?]	Ditto
3	Traffic and Public Facilities	Impacts on schools, hospitals and present traffic condition, such as the increase of traffic condition and accidents)	[Y][N][?]	There is vacant land along the access road to the airport.
4	Split of Communities	Community split due to interruption of area traffic	[Y][N][?]	Improvement of the existing airport.
5	Cultural Property	Damage to or loss of the value of churches, temples, shrine, archaeological remains or order cultural assets	[Y][N][?]	Ditto
6	Water Rights and Rights of Common	Obstruction of fishing rights, water rights, rights of common	[Y][N][?]	Ditto
7	Public Health Condition	Deterioration of public health and sanitary conditions due to generation of garbage and the increase of vermin	[Y][N][?]	Ditto
8	Waste	Generation of construction and demolition waste, debris and logs	[Y][N][?]	Improvement of the existing airport. Waste is not so much volume.
9	Hazards(Risk)	Increase in risk of landslides, cave-ins and accidents	[Y][N][?]	There are no residents at the extent area of runway.
Natural Environment				
10	Topography and Geology	Changes of valuable topography and geology due to excavation or filling work	[Y][N][?]	Improvement of the existing airport.
11	Soil Erosion	Topsoil erosion by rainfall after reclamation and vegetation removal	[Y][N][?]	Ditto
12	Ground water	Changes of distribution of ground water by large-scale excavation	[Y][N][?]	Ditto
13	Hydrological Situation	Changes of river discharge and riverbed condition due to landfill and drainage inflow	[Y][N][?]	Ditto
14	Coastal Zone	Coastal erosion and sedimentation due to landfill or change in marine condition	[Y][N][?]	No coastal zone.
15	Fauna and Flora	Obstruction of breeding and extinction of species due to change of habitats condition	[Y][N][?]	Improvement of the existing airport.
16	Meteorology	Changes of temperature, precipitation, wind, etc. due to large-scale land reclamation and building construction	[Y][N][?]	Ditto
17	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structures	[Y][N][?]	Ditto
Pollution				
18	Air Pollution	Pollution caused by exhaust gas or toxic gas from vehicles and factories	[Y][N][?]	There are no residents in the vicinity of the airport.
19	Water Pollution	Pollution by inflow of silt, sand and effluent into rivers and ground water	[Y][N][?]	Unknown, Oil treatment of the aircraft.
20	Soil Contamination	Contamination of soil by dust and chemicals, such as herbicides	[Y][N][?]	Unknown, Oil treatment of the aircraft.
21	Noise and Vibration	Noise and vibration generated by vehicles	[Y][N][?]	There are no residents in the vicinity of the airport.
22	Land Subsidence	Deformation of land and land subsidence due to the lowering of ground water table	[Y][N][?]	Improvement of the existing airport.
23	Offensive Odor	Generation of exhaust gas and offensive odor by facility construction and operation	[Y][N][?]	Ditto
Overall Evaluation: Either IEE or EIA is necessary for the project implementation? [Y]				

Table 5.3.26 Screening of Environmental Conditions (Urgench)

No.	Environmental Item	Description	Evaluation	Remarks
Social Environment				
1	Resettlement	Resettlement due to land occupancy (transfer of rights of residence / land ownership)	[Y][N][?]	Improvement of the existing airport.
2	Economic Activities	Loss of bases of economic activities, such as land, and change of economic structure)	[Y][N][?]	Ditto
3	Traffic and Public Facilities	Impacts on schools, hospitals and present traffic condition, such as the increase of traffic condition and accidents)	[Y][N][?]	Unknown, The condition of access road to the airport.
4	Split of Communities	Community split due to interruption of area traffic	[Y][N][?]	Improvement of the existing airport.
5	Cultural Property	Damage to or loss of the value of churches, temples, shrine, archaeological remains or order cultural assets	[Y][N][?]	Ditto
6	Water Rights and Rights of Common	Obstruction of fishing rights, water rights, rights of common	[Y][N][?]	Ditto
7	Public Health Condition	Deterioration of public health and sanitary conditions due to generation of garbage and the increase of vermin	[Y][N][?]	Ditto
8	Waste	Generation of construction and demolition waste, debris and logs	[Y][N][?]	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	Increase in risk of landslides, cave-ins and accidents	[Y][N][?]	There are no residents at the extent area of runway.
Natural Environment				
10	Topography and Geology	Changes of valuable topography and geology due to excavation or filling work	[Y][N][?]	Improvement of the existing airport.
11	Soil Erosion	Topsoil erosion by rainfall after reclamation and vegetation removal	[Y][N][?]	Ditto
12	Ground water	Changes of distribution of ground water by large-scale excavation	[Y][N][?]	Ditto
13	Hydrological Situation	Changes of river discharge and riverbed condition due to landfill and drainage inflow	[Y][N][?]	Ditto
14	Coastal Zone	Coastal erosion and sedimentation due to landfill or change in marine condition	[Y][N][?]	No coastal zone.
15	Fauna and Flora	Obstruction of breeding and extinction of species due to change of habitats condition	[Y][N][?]	Improvement of the existing airport.
16	Meteorology	Changes of temperature, precipitation, wind, etc. due to large-scale land reclamation and building construction	[Y][N][?]	Ditto
17	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structures	[Y][N][?]	Ditto
Pollution				
18	Air Pollution	Pollution caused by exhaust gas or toxic gas from vehicles and factories	[Y][N][?]	Unknown, gaseous emission of the aircraft.
19	Water Pollution	Pollution by inflow of silt, sand and effluent into rivers and ground water	[Y][N][?]	Improvement of the existing airport.
20	Soil Contamination	Contamination of soil by dust and chemicals, such as herbicides	[Y][N][?]	Ditto
21	Noise and Vibration	Noise and vibration generated by vehicles	[Y][N][?]	There is an urban area in the vicinity of the airport.
22	Land Subsidence	Deformation of land and land subsidence due to the lowering of ground water table	[Y][N][?]	Improvement of the existing airport.
23	Offensive Odor	Generation of exhaust gas and offensive odor by facility construction and operation	[Y][N][?]	Ditto
Overall Evaluation: Either IEE or EIA is necessary for the project implementation? [Y]				

Table 5.3.27 Screening of Environmental Conditions (Nukus)

No.	Environmental Item	Description	Evaluation	Remarks
Social Environment				
1	Resettlement	Resettlement due to land occupancy (transfer of rights of residence / land ownership)	[Y][N][?]	Improvement of the existing airport.
2	Economic Activities	Loss of bases of economic activities, such as land, and change of economic structure)	[Y][N][?]	Ditto
3	Traffic and Public Facilities	Impacts on schools, hospitals and present traffic condition, such as the increase of traffic condition and accidents)	[Y][N][?]	Unknown, The condition of access road to the airport.
4	Split of Communities	Community split due to interruption of area traffic	[Y][N][?]	Improvement of the existing airport.
5	Cultural Property	Damage to or loss of the value of churches, temples, shrine, archaeological remains or order cultural assets	[Y][N][?]	Ditto
6	Water Rights and Rights of Common	Obstruction of fishing rights, water rights, rights of common	[Y][N][?]	Ditto
7	Public Health Condition	Deterioration of public health and sanitary conditions due to generation of garbage and the increase of vermin	[Y][N][?]	Ditto
8	Waste	Generation of construction and demolition waste, debris and logs	[Y][N][?]	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	Increase in risk of landslides, cave-ins and accidents	[Y][N][?]	There are no residents at the extent area of runway.
Natural Environment				
10	Topography and Geology	Changes of valuable topography and geology due to excavation or filling work	[Y][N][?]	Improvement of the existing airport.
11	Soil Erosion	Topsoil erosion by rainfall after reclamation and vegetation removal	[Y][N][?]	Ditto
12	Ground water	Changes of distribution of ground water by large-scale excavation	[Y][N][?]	Ditto
13	Hydrological Situation	Changes of river discharge and riverbed condition due to landfill and drainage inflow	[Y][N][?]	Ditto
14	Coastal Zone	Coastal erosion and sedimentation due to landfill or change in marine condition	[Y][N][?]	No coastal zone.
15	Fauna and Flora	Obstruction of breeding and extinction of species due to change of habitats condition	[Y][N][?]	Improvement of the existing airport.
16	Meteorology	Changes of temperature, precipitation, wind, etc. due to large-scale land reclamation and building construction	[Y][N][?]	Ditto
17	Landscape	Changes of topography and vegetation due to reclamation. Deterioration of aesthetic harmony by structures	[Y][N][?]	Ditto
Pollution				
18	Air Pollution	Pollution caused by exhaust gas or toxic gas from vehicles and factories	[Y][N][?]	Unknown, gaseous emission of the aircraft.
19	Water Pollution	Pollution by inflow of silt, sand and effluent into rivers and ground water	[Y][N][?]	Improvement of the existing airport.
20	Soil Contamination	Contamination of soil by dust and chemicals, such as herbicides	[Y][N][?]	Ditto
21	Noise and Vibration	Noise and vibration generated by vehicles	[Y][N][?]	There is an urban area in the vicinity of the airport.
22	Land Subsidence	Deformation of land and land subsidence due to the lowering of ground water table	[Y][N][?]	Improvement of the existing airport.
23	Offensive Odor	Generation of exhaust gas and offensive odor by facility construction and operation	[Y][N][?]	Ditto
Overall Evaluation: Either IEE or EIA is necessary for the project implementation? [Y]				

Table 5.3.28 Scoping of Environmental Items (New Tashkent)

No.	Environmental Item	Evaluation	Reason
Social Environment			
1	Resettlement	B	Development of a new airport
2	Economic Activities	B	Ditto
3	Traffic and Public Facilities	B	Ditto.
4	Split of Communities	B	Ditto
5	Cultural Property	C	Data and information is unknown.
6	Water Rights and Rights of Common	C	Data and information is unknown.
7	Public Health Condition	B	Ditto
8	Waste	B	Ditto
9	Hazards(Risk)	B	Ditto
Natural Environment			
10	Topography and Geology	A	Development of a new airport
11	Soil Erosion	A	Ditto
12	Ground water	A	Ditto
13	Hydrological Situation	A	Ditto
14	Coastal Zone	D	No coastal zone.
15	Fauna and Flora	C	Already cultivated land
16	Meteorology	C	Data and information is unknown.
17	Landscape	A	Development of a new airport
Pollution			
18	Air Pollution	C	Development of a new airport. Data and information is unknown.
19	Water Pollution	C	Ditto
20	Soil Contamination	C	Ditto
21	Noise and Vibration	C	Ditto
22	Land Subsidence	C	Ditto
23	Offensive Odor	C	Ditto

Note 1: Evaluation categories:

A: Serious impact is expected.

B: Some impact is expected.

C: Extent of impact is Unknown, (Examination is needed. Impacts may become clear as study progresses.)

D: No impact is expected. IEE/EIA is not necessary.

Note 2: The evaluation should be made with reference to the " Environmental Guide Lines for Infrastructure Projects, Airport, Japan International Cooperation Agency" in 1994.

Table 5.3.29 Scoping of Environmental Items (Tashkent)

No.	Environmental Item	Evaluation	Reason
Social Environment			
1	Resettlement	D	Improvement of the existing airport.
2	Economic Activities	D	Ditto
3	Traffic and Public Facilities	C	Unknown, The condition of the access road to the airport.
4	Split of Communities	D	Improvement of the existing airport.
5	Cultural Property	D	Ditto
6	Water Rights and Rights of Common	D	Ditto
7	Public Health Condition	D	Improvement of the existing airport Waste is treated in the airport.
8	Waste	D	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	B	There is an urban area around the airport.
Natural Environment			
10	Topography and Geology	D	Improvement of the existing airport.
11	Soil Erosion	D	Ditto
12	Ground water	D	Ditto
13	Hydrological Situation	D	Ditto
14	Coastal Zone	D	No coastal zone.
15	Fauna and Flora	D	Improvement of the existing airport.
16	Meteorology	D	Ditto
17	Landscape	D	Ditto
Pollution			
18	Air Pollution	C	Unknown, gaseous emission of the aircraft.
19	Water Pollution	D	The wastewater is treated in the airport.
20	Soil Contamination	D	Ditto
21	Noise and Vibration	B	There is an urban area at the north-east of the airport.
22	Land Subsidence	D	Improvement of the existing airport.
23	Offensive Odor	D	Ditto

Note 1: Evaluation categories:

A: Serious impact is expected.

B: Some impact is expected.

C: Extent of impact is Unknown, (Examination is needed. Impacts may become clear as study progresses.)

D: No impact is expected. IEE/EIA is not necessary.

Note 2: The evaluation should be made with reference to the " Environmental Guide Lines for Infrastructure Projects, Airport, Japan International Cooperation Agency" in 1994.

Table S.3.30 Scoping of Environmental Items (Andizhan)

No.	Environmental Item	Evaluation	Reason
Social Environment			
1	Resettlement	D	Improvement of the existing airport.
2	Economic Activities	D	Ditto
3	Traffic and Public Facilities	C	Unknown, The condition of the access road to the airport.
4	Split of Communities	D	Improvement of the existing airport.
5	Cultural Property	D	Ditto
6	Water Rights and Rights of Common	D	Ditto
7	Public Health Condition	D	Improvement of the existing airport Waste is treated in the airport.
8	Waste	D	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	B	There is an urban area to the north-east of the airport.
Natural Environment			
10	Topography and Geology	D	Improvement of the existing airport.
11	Soil Erosion	D	Ditto
12	Ground water	D	Ditto
13	Hydrological Situation	D	Ditto
14	Coastal Zone	D	No coastal zone.
15	Fauna and Flora	D	Improvement of the existing airport.
16	Meteorology	D	Ditto
17	Landscape	D	Ditto
Pollution			
18	Air Pollution	C	Unknown, gaseous emission of the aircraft.
19	Water Pollution	D	The wastewater is treated in the airport.
20	Soil Contamination	D	Ditto
21	Noise and Vibration	B	There is an urban area at the north-east of the airport.
22	Land Subsidence	D	Improvement of the existing airport
23	Offensive Odor	D	Ditto

Note 1: Evaluation categories:

A: Serious impact is expected.

B: Some impact is expected.

C: Extent of impact is Unknown, (Examination is needed. Impacts may become clear as study progresses.)

D: No impact is expected. IEE/EIA is not necessary.

Note 2: The evaluation should be made with reference to the " Environmental Guide Lines for Infrastructure Projects, Airport, Japan International Cooperation Agency" in 1994.

Table 5.3.31 Scoping of Environmental Items (Namangan)

No.	Environmental Item	Evaluation	Reason
Social Environment			
1	Resettlement	D	Improvement of the existing airport.
2	Economic Activities	D	Ditto
3	Traffic and Public Facilities	C	Unknown. The condition of the access road to the airport.
4	Split of Communities	D	Improvement of the existing airport.
5	Cultural Property	D	Ditto
6	Water Rights and Rights of Common	D	Ditto
7	Public Health Condition	D	Improvement of the existing airport Waste is treated in the airport.
8	Waste	D	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	B	There is an urban area to the western side of airport.
Natural Environment			
10	Topography and Geology	D	Improvement of the existing airport.
11	Soil Erosion	D	Ditto
12	Ground water	D	Ditto
13	Hydrological Situation	D	Ditto
14	Coastal Zone	D	No coastal zone.
15	Fauna and Flora	D	Improvement of the existing airport.
16	Meteorology	D	Ditto
17	Landscape	D	Ditto
Pollution			
18	Air Pollution	C	Unknown, gaseous emission of the aircraft.
19	Water Pollution	D	Improvement of the existing airport.
20	Soil Contamination	D	Ditto
21	Noise and Vibration	B	There is an urban area to the western side of airport.
22	Land Subsidence	D	Improvement of the existing airport.
23	Offensive Odor	D	Ditto

Note 1: Evaluation categories:

- A: Serious impact is expected.
- B: Some impact is expected.
- C: Extent of impact is Unknown, (Examination is needed. Impacts may become clear as study progresses.)
- D: No impact is expected. IEE/EIA is not necessary.

Note 2: The evaluation should be made with reference to the " Environmental Guide Lines for Infrastructure Projects, Airport, Japan International Cooperation Agency" in 1994.

Table 5.3.32 Scoping of Environmental Items (Fergana)

No.	Environmental Item	Evaluation	Reason
Social Environment			
1	Resettlement	D	Improvement of the existing airport.
2	Economic Activities	D	Ditto
3	Traffic and Public Facilities	C	Unknown, The condition of the access road to the airport.
4	Split of Communities	D	Improvement of the existing airport.
5	Cultural Property	D	Ditto
6	Water Rights and Rights of Common	D	Ditto
7	Public Health Condition	D	Ditto
8	Waste	D	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	B	There are residents to the north of the runway.
Natural Environment			
10	Topography and Geology	D	Improvement of the existing airport.
11	Soil Erosion	D	Ditto
12	Ground water	D	Ditto
13	Hydrological Situation	D	Ditto
14	Coastal Zone	D	No coastal zone.
15	Fauna and Flora	D	Improvement of the existing airport.
16	Meteorology	D	Ditto
17	Landscape	D	Ditto
Pollution			
18	Air Pollution	C	Unknown, gaseous emission of the aircraft.
19	Water Pollution	D	The wastewater is treated by the public sewage disposal plant.
20	Soil Contamination	D	The wastewater is treated by the public sewage treatment plant.
21	Noise and Vibration	B	There is an urban area at the extent area of the runway.
22	Land Subsidence	D	Improvement of the existing airport.
23	Offensive Odor	D	Ditto

Note 1: Evaluation categories:

A: Serious impact is expected.

B: Some impact is expected.

C: Extent of impact is Unknown, (Examination is needed. Impacts may become clear as study progresses.)

D: No impact is expected. IEE/EIA is not necessary.

Note 2: The evaluation should be made with reference to the " Environmental Guide Lines for Infrastructure Projects, Airport, Japan International Cooperation Agency" in 1994.

Table 5.3.33 Scoping of Environmental Items (Kokand)

No.	Environmental Item	Evaluation	Reason
Social Environment			
1	Resettlement	D	Improvement of the existing airport.
2	Economic Activities	D	Ditto
3	Traffic and Public Facilities	D	There are no residents along the access road to the airport.
4	Split of Communities	D	Improvement of the existing airport.
5	Cultural Property	D	Ditto
6	Water Rights and Rights of Common	D	Ditto
7	Public Health Condition	D	Ditto
8	Waste	D	Improvement of the existing airport. Waste is not so much volume.
9	Hazards(Risk)	D	There are residents at the extent area of runway.
Natural Environment			
10	Topography and Geology	D	Improvement of the existing airport.
11	Soil Erosion	D	Ditto
12	Ground water	D	Ditto
13	Hydrological Situation	D	Ditto
14	Coastal Zone	D	No coastal zone.
15	Fauna and Flora	D	Improvement of the existing airport.
16	Meteorology	D	Ditto
17	Landscape	D	Ditto
Pollution			
18	Air Pollution	D	Improvement of the existing airport.
19	Water Pollution	C	Unknown, Oil treatment of the aircraft and use of anti-freeze chemicals.
20	Soil Contamination	C	Unknown, Oil treatment of the aircraft and use of anti-freeze chemicals.
21	Noise and Vibration	D	No residents in the vicinity of the airport.
22	Land Subsidence	D	Improvement of the existing airport.
23	Offensive Odor	D	Ditto

Note 1: Evaluation categories:

A: Serious impact is expected.

B: Some impact is expected.

C: Extent of impact is Unknown, (Examination is needed. Impacts may become clear as study progresses.)

D: No impact is expected. IEE/EIA is not necessary.

Note 2: The evaluation should be made with reference to the " Environmental Guide Lines for Infrastructure Projects, Airport, Japan International Cooperation Agency" in 1994.

Table 5.3.34 Scoping of Environmental Items (Samarkand)

No.	Environmental Item	Evaluation	Reason
Social Environment			
1	Resettlement	D	Improvement of the existing airport.
2	Economic Activities	D	Ditto
3	Traffic and Public Facilities	D	There are no residents along the access road to the airport.
4	Split of Communities	D	Improvement of the existing airport. There is little traffic on the road.
5	Cultural Property	D	Improvement of the existing airport.
6	Water Rights and Rights of Common	D	Ditto
7	Public Health Condition	D	Improvement of the existing airport. Waste is treated in the airport.
8	Waste	D	Improvement of the existing airport. Waste is not so much volume.
9	Hazards(Risk)	B	There is resident area in the vicinity of the airport.
Natural Environment			
10	Topography and Geology	D	Improvement of the existing airport.
11	Soil Erosion	D	Ditto
12	Ground water	D	No problems concerning groundwater level.
13	Hydrological Situation	D	Improvement of the existing airport.
14	Coastal Zone	D	No coastal zone.
15	Fauna and Flora	D	Improvement of the existing airport.
16	Meteorology	D	Ditto
17	Landscape	D	Ditto
Pollution			
18	Air Pollution	D	No residents in the vicinity of the airport.
19	Water Pollution	C	Unknown, Oil treatment of the aircraft.
20	Soil Contamination	C	Unknown, Oil treatment of the aircraft.
21	Noise and Vibration	D	No residents in the vicinity of the airport.
22	Land Subsidence	D	Improvement of the existing airport.
23	Offensive Odor	D	Ditto

Note 1: Evaluation categories:

- A: Serious impact is expected.
- B: Some impact is expected.
- C: Extent of impact is Unknown, (Examination is needed. Impacts may become clear as study progresses.)
- D: No impact is expected. IEE/EIA is not necessary.

Note 2: The evaluation should be made with reference to the " Environmental Guide Lines for Infrastructure Projects, Airport, 1, Japan International Cooperation Agency" in 1994.

Table 5.3.35 Scoping of Environmental Items (Termez)

No.	Environmental Item	Evaluation	Reason
Social Environment			
1	Resettlement	D	Improvement of the existing airport.
2	Economic Activities	D	Ditto
3	Traffic and Public Facilities	D	There are no residents along the access road to the airport.
4	Split of Communities	D	Improvement of the existing airport. There is little traffic on the road.
5	Cultural Property	D	Improvement of the existing airport
6	Water Rights and Rights of Common	D	Ditto
7	Public Health Condition	D	Improvement of the existing airport Waste is treated in the airport.
8	Waste	D	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	D	There is vacant land in the vicinity of the airport.
Natural Environment			
10	Topography and Geology	D	Improvement of the existing airport.
11	Soil Erosion	D	Ditto
12	Ground water	D	No problems concerning groundwater level.
13	Hydrological Situation	D	Improvement of the existing airport.
14	Coastal Zone	D	No coastal zone.
15	Fauna and Flora	D	Improvement of the existing airport.
16	Meteorology	D	Ditto
17	Landscape	D	Ditto
Pollution			
18	Air Pollution	D	No residents in the vicinity of the airport.
19	Water Pollution	C	Unknown, Oil treatment of the aircraft.
20	Soil Contamination	C	Unknown, Oil treatment of the aircraft.
21	Noise and Vibration	D	No residents in the vicinity of the airport.
22	Land Subsidence	D	Improvement of the existing airport.
23	Offensive Odor	D	Ditto

Note 1: Evaluation categories:

A: Serious impact is expected.

B: Some impact is expected.

C: Extent of impact is Unknown, (Examination is needed. Impacts may become clear as study progresses.)

D: No impact is expected. IEE/EIA is not necessary.

Note 2: The evaluation should be made with reference to the " Environmental Guide Lines for Infrastructure Projects, Airport, I, Japan International Cooperation Agency" in 1994.

Table 5.3.36 Scoping of Environmental Items (Karshi)

No.	Environmental Item	Evaluation	Reason
Social Environment			
1	Resettlement	D	Improvement of the existing airport.
2	Economic Activities	D	Ditto
3	Traffic and Public Facilities	C	There are residents along the access road to the airport.
4	Split of Communities	D	Improvement of the existing airport.
5	Cultural Property	D	Ditto
6	Water Rights and Rights of Common	D	Ditto
7	Public Health Condition	D	Improvement of the existing airport Waste is treated in the airport.
8	Waste	D	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	D	There is vacant land in the vicinity of the airport.
Natural Environment			
10	Topography and Geology	D	Improvement of the existing airport.
11	Soil Erosion	D	Ditto
12	Ground water	D	Ditto
13	Hydrological Situation	D	Ditto
14	Coastal Zone	D	No coastal zone.
15	Fauna and Flora	D	Improvement of the existing airport.
16	Meteorology	D	Ditto
17	Landscape	D	Ditto
Pollution			
18	Air Pollution	C	There are residents along the access road to the airport.
19	Water Pollution	C	Unknown, Oil treatment of the aircraft.
20	Soil Contamination	C	Unknown, Oil treatment of the aircraft.
21	Noise and Vibration	C	There are residents along the access road to the airport.
22	Land Subsidence	D	Improvement of the existing airport.
23	Offensive Odor	D	Ditto

Note 1: Evaluation categories:

- A: Serious impact is expected.
- B: Some impact is expected.
- C: Extent of impact is Unknown, (Examination is needed. Impacts may become clear as study progresses.)
- D: No impact is expected. IEE/EIA is not necessary.

Note 2: The evaluation should be made with reference to the " Environmental Guide Lines for Infrastructure Projects, Airport, I, Japan International Cooperation Agency" in 1994.

Table 5.3.37 Scoping of Environmental Items (Bukhara)

No.	Environmental Item	Evaluation	Reason
Social Environment			
1	Resettlement	D	Improvement of the existing airport.
2	Economic Activities	D	Ditto
3	Traffic and Public Facilities	D	There is vacant land along the access road to the airport.
4	Split of Communities	D	Improvement of the existing airport.
5	Cultural Property	D	Ditto
6	Water Rights and Rights of Common	D	Ditto
7	Public Health Condition	D	Ditto
8	Waste	D	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	C	There are residents at the extent area of the runway.
Natural Environment			
10	Topography and Geology	D	Improvement of the existing airport.
11	Soil Erosion	D	Ditto
12	Ground water	D	Ditto
13	Hydrological Situation	D	Ditto
14	Coastal Zone	D	No coastal zone.
15	Fauna and Flora	D	Improvement of the existing airport
16	Meteorology	D	Ditto
17	Landscape	D	Ditto
Pollution			
18	Air Pollution	D	There are no residents in the vicinity of the airport
19	Water Pollution	C	Unknown, Oil treatment of the aircraft.
20	Soil Contamination	C	Unknown, Oil treatment of the aircraft.
21	Noise and Vibration	D	There are no residents in the vicinity of the airport.
22	Land Subsidence	D	Improvement of the existing airport.
23	Offensive Odor	D	Ditto

Note 1: Evaluation categories:

A: Serious impact is expected

B: Some impact is expected.

C: Extent of impact is Unknown, (Examination is needed. Impacts may become clear as study progresses)

D: No impact is expected. IEE/EIA is not necessary.

Note 2: The evaluation should be made with reference to the " Environmental Guide Lines for Infrastructure Projects, Airport, I, Japan International Cooperation Agency" in 1994.

Table 5.3.38 Scoping of Environmental Items (Navoi)

No.	Environmental Item	Evaluation	Reason
Social Environment			
1	Resettlement	D	Improvement of the existing airport.
2	Economic Activities	D	Ditto
3	Traffic and Public Facilities	D	There is vacant land along the access road to the airport.
4	Split of Communities	D	Improvement of the existing airport.
5	Cultural Property	D	Ditto
6	Water Rights and Rights of Common	D	Ditto
7	Public Health Condition	D	Ditto
8	Waste	D	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	C	There are residents at the extent area of the runway.
Natural Environment			
10	Topography and Geology	D	Improvement of the existing airport.
11	Soil Erosion	D	Ditto
12	Ground water	D	Ditto
13	Hydrological Situation	D	Ditto
14	Coastal Zone	D	No coastal zone.
15	Fauna and Flora	D	Improvement of the existing airport.
16	Meteorology	D	Ditto
17	Landscape	D	Ditto
Pollution			
18	Air Pollution	D	There are no residents in the vicinity of the airport.
19	Water Pollution	C	Unknown, Oil treatment of the aircraft.
20	Soil Contamination	C	Unknown, Oil treatment of the aircraft.
21	Noise and Vibration	D	There are no residents in the vicinity of the airport.
22	Land Subsidence	D	Improvement of the existing airport.
23	Offensive Odor	D	Ditto

Note 1: Evaluation categories:

A: Serious impact is expected.

B: Some impact is expected.

C: Extent of impact is Unknown, (Examination is needed. Impacts may become clear as study progresses.)

D: No impact is expected. IEE/EIA is not necessary.

Note 2: The evaluation should be made with reference to the " Environmental Guide Lines for Infrastructure Projects, Airport, 1, Japan International Cooperation Agency" in 1994.

Table 5.3.39 Scoping of Environmental Items (Urgench)

No.	Environmental Item	Evaluation	Reason
Social Environment			
1	Resettlement	D	Improvement of the existing airport.
2	Economic Activities	D	Ditto
3	Traffic and Public Facilities	C	Unknown, The condition of the access road to the airport.
4	Split of Communities	D	Improvement of the existing airport.
5	Cultural Property	D	Ditto
6	Water Rights and Rights of Common	D	Ditto
7	Public Health Condition	D	Ditto
8	Waste	D	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	C	There are residents at the extent area of the runway.
Natural Environment			
10	Topography and Geology	D	Improvement of the existing airport.
11	Soil Erosion	D	Ditto
12	Ground water	D	Ditto
13	Hydrological Situation	D	Ditto
14	Coastal Zone	D	No coastal zone.
15	Fauna and Flora	D	Improvement of the existing airport.
16	Meteorology	D	Ditto
17	Landscape	D	Ditto
Pollution			
18	Air Pollution	C	Unknown, gaseous emission of the aircraft.
19	Water Pollution	D	Improvement of the existing airport.
20	Soil Contamination	D	Ditto
21	Noise and Vibration	B	There is an urban area in the vicinity of the airport.
22	Land Subsidence	D	Improvement of the existing airport.
23	Offensive Odor	D	Ditto

Note 1: Evaluation categories:

A: Serious impact is expected

B: Some impact is expected.

C: Extent of impact is Unknown, (Examination is needed. Impacts may become clear as study progresses.)

D: No impact is expected. IEE/EIA is not necessary.

Note 2: The evaluation should be made with reference to the " Environmental Guide Lines for Infrastructure Projects, Airport, I, Japan International Cooperation Agency" in 1994.

Table 5.3.40 Scoping of Environmental Items (Nukus)

No.	Environmental Item	Evaluation	Reason
Social Environment			
1	Resettlement	D	Improvement of the existing airport.
2	Economic Activities	D	Ditto
3	Traffic and Public Facilities	C	Unknown, The condition of the access road to the airport.
4	Split of Communities	D	Improvement of the existing airport.
5	Cultural Property	D	Ditto
6	Water Rights and Rights of Common	D	Ditto
7	Public Health Condition	D	Ditto
8	Waste	D	Improvement of the existing airport Waste is not so much volume.
9	Hazards(Risk)	D	There are no residents at the extent area of the runway.
Natural Environment			
10	Topography and Geology	D	Improvement of the existing airport.
11	Soil Erosion	D	Ditto
12	Ground water	D	Ditto
13	Hydrological Situation	D	Ditto
14	Coastal Zone	D	No coastal zone.
15	Fauna and Flora	D	Improvement of the existing airport.
16	Meteorology	D	Ditto
17	Landscape	D	Ditto
Pollution			
18	Air Pollution	C	Unknown, gaseous emission of the aircraft.
19	Water Pollution	D	Improvement of the existing airport.
20	Soil Contamination	D	Ditto
21	Noise and Vibration	B	There is an urban area in the vicinity of the airport.
22	Land Subsidence	D	Improvement of the existing airport.
23	Offensive Odor	D	Ditto

Note 1: Evaluation categories:

A: Serious impact is expected.

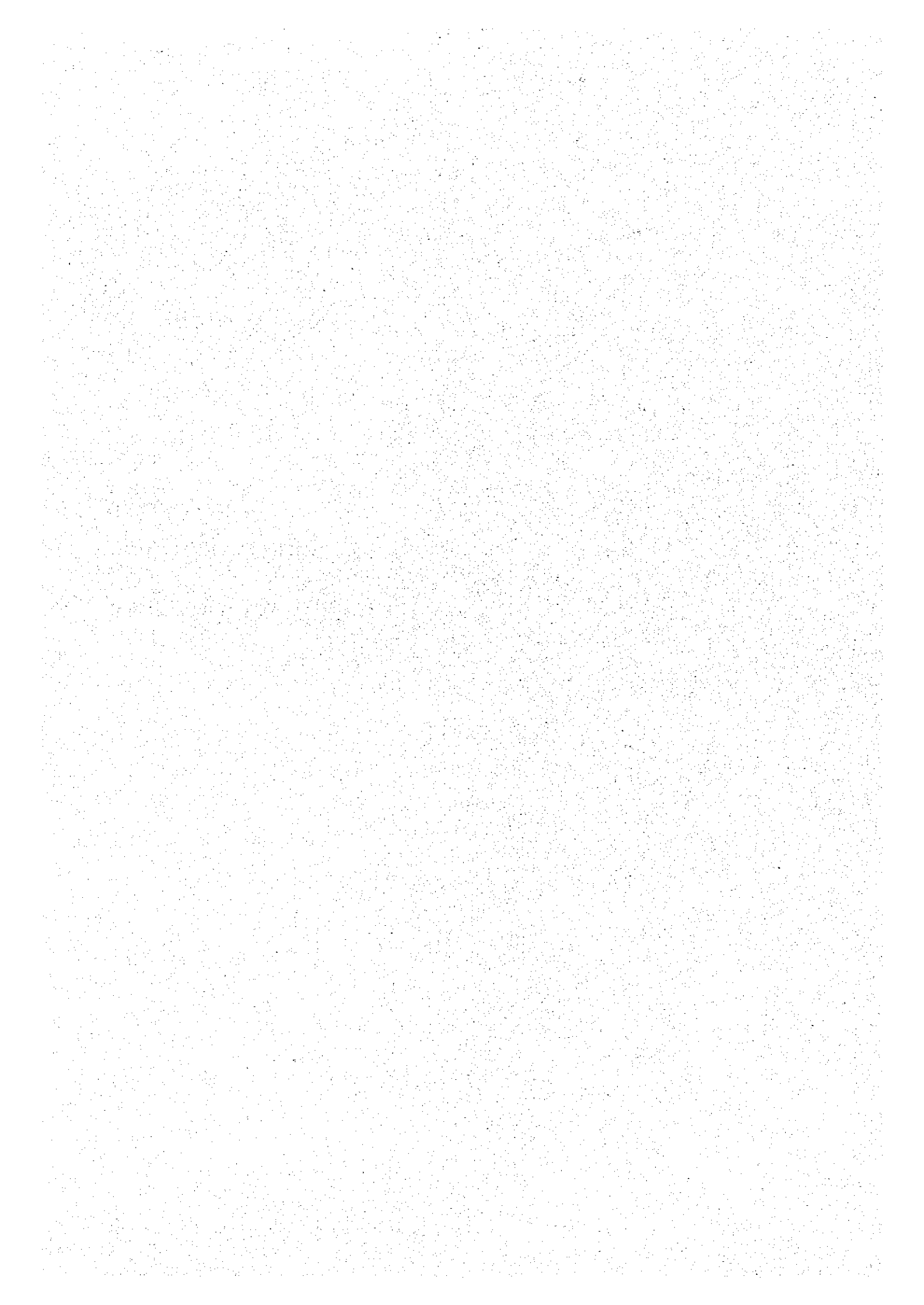
B: Some impact is expected.

C: Extent of impact is Unknown, (Examination is needed. Impacts may become clear as study progresses.)

D: No impact is expected. IEE/EIA is not necessary.

Note 2: The evaluation should be made with reference to the " Environmental Guide Lines for Infrastructure Projects, Airport, I, Japan International Cooperation Agency" in 1994.

CHAPTER 6
PRE-FEASIBILITY STUDIES
FOR
HIGH PRIORITY PROJECTS



CHAPTER 6

PRE-FEASIBILITY STUDIES FOR HIGH PRIORITY PROJECTS

6.1 General

6.1.1 High Priority Projects

Through the master plan study for long-term air transportation development in Chapter 4, developments of 5 airports and Nationwide Air Navigation System were selected as High Priority Projects in order subsequently to facilitate the Pre-feasibility study.

The Pre-feasibility study was conducted on the development of the High Priority Projects to be completed by the year 2005 (except the development of New Tashkent Airport, which will be completed by the year 2010), including preliminary design, cost estimates, environmental impact assessment, and financial and economic analyses. Locations of the projects are shown in Fig. 6.1.1. Selected High Priority Projects, which were agreed by NAC, are as follows:

- Development of the capital airport, i.e. development of the existing Tashkent Airport or New Tashkent Airport;
- Development of local airports including Namangan, Termez and Nukus Airports; and
- Development of Nationwide Air Navigation System.

6.1.2 Target Year for Development

Facility and land requirement analysis was made to provide adequate capacity to cope with demand;

- 5 years for facility;
- 10 years for land area;

after completion of the development, thus targeting the years 2010 for facility development, and 2015 for land acquisition. However, regarding development of the New Tashkent Airport, target year for development and implementation period have been shifted to 5 years later, taking into account the development of the existing international passenger terminal building at Tashkent airport financed by EBRD (European Bank for Rehabilitation and Development).

- Target Year for Development

Facility	Year 2010 (except New Tashkent) Year 2015 (New Tashkent)
Area	Year 2015 (except New Tashkent) Year 2020 (New Tashkent)
- Project Implementation Period

	Present – 2005 (except New Tashkent) Year 2000 – 2010 (New Tashkent)
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6.1.3 Scope of Development

Table 6.1.1 summarizes the forecast demand and facility requirements in the target year for development. Based on the demand forecast and the results of discussions with respective airport organization during the second field survey, the scope of development was established as shown in Table 6.1.2.

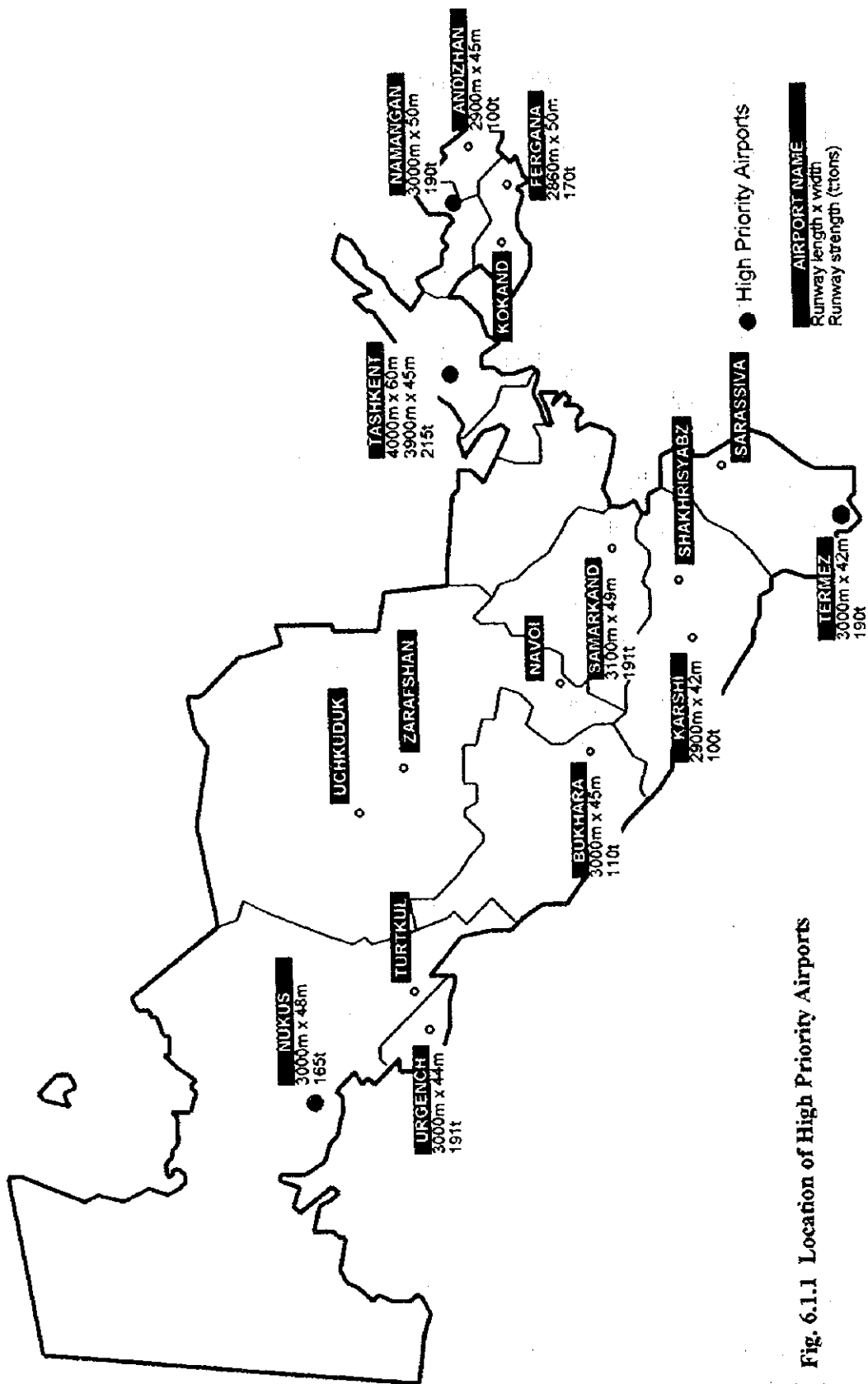


Fig. 6.1.1 Location of High Priority Airports

Table 6.1.1 Summary of Traffic Demand and Facility Requirement

Item		Tashkent (Case-I)	New Tashkent (Case-II)	Namangan	Termez	Nukus
Target Year		2010	2015	2010	2010	2010
Traffic Demand						
Passengers (⁰⁰⁰ /Year)	International	(1,926)	2,388	42	30	30
	CIS & Baltic	(2,138)	2,720	230	148	224
	Domestic	2,158	(698)	698	702	504
	Total	2,158	5,108	970	880	758
		(6,222)	(7,590)			
Cargo (^{000 tons} /Year)	International	55.3	64.6	3.3	0.6	0.6
	CIS & Baltic	21.9	28.6	1.7	1.4	1.3
	Domestic	5.3	(7.3)	1.7	1.8	1.3
	Total	82.5	93.2	6.7	3.8	3.2
			(100.5)			
Aircraft Movement (⁰⁰⁰ /Year)	International	(6.6)	7.8	0.1	0.1	0.1
	CIS & Baltic	(9.7)	11.0	1.0	0.6	0.9
	Domestic	17.8	(18.0)	9.0	6.8	5.7
	Freighter	1.6	1.9	0.1	0.03	0.01
	Total	19.4	20.7	10.2	7.5	6.7
		(35.7)	(38.7)			
Facilities Requirement						
Design Aircraft		B767-300 B747-400	B747-400	B767-300	B767-300	B767-300
Airfield Facilities	Runway Length (m)	4000/3900	4300	3500	3000	3000
	Taxiway		Parallel	-	-	-
	Apron	Domestic	Int'l/CIS	-	-	-
	Area (ha)	8.0	49.1	5.0	3.3	4.2
	Number of Stands	9+Night Stay	34+Maintenance	7	5	6
Terminal Area Facilities	Pax. Terminal (^{000m²})					
	Int'l/CIS	-	27.3	8.4	8.4	8.4
	Domestic	8.4	-	2.5	2.5	2.5
	Cargo Terminal (^{000m²})	8.0	Int'l/CIS 8.7	3.1	1.7	2.1
	C/T & Operation	-	5,700	2,800	2,800	2,800
	A/C Fuel Capacity (kl)	5,500	6,820	350	260	330
Rescue & Fire Fighting	Cat 8	Cat 8	Cat 6	Cat 6	Cat 6	
Car Parking (lots)	1,460	1,460	880	610	870	
Utilities	Power (KVA)	5,990	6,700	1,490	1,140	1,500
	Water (tons/day)	1,040	1,170	290	210	290
	Sewage (tons/day)	1,040	1,170	290	210	290
	Waste (tons/day)	3,050	3,420	880	610	880
Airfield Lighting	Renewal	-	-	REDL etc.	REDL etc.	REDL etc.
	Installation	-	1 Unit	PAIS etc.	PAIS etc.	PAIS etc.
Radio Nav aids	Renewal	VOR/DME	-	I.L.S etc.	I.L.S etc.	I.L.S etc.
	Installation	ASDE	1 Unit	VOR/DME	VOR/DME	VOR/DME

Note: 1: (Figures) in columns of Traffic Demand are not considered in the Facility Requirement for the Pre-feasibility Study.

2: B767-300 is used for pavement design and B747-400 is used for layout plan at Tashkent Airport.

Table 6.1.2 Summary of Development Plan

○ Rehabilitation ● New

Development Item	Tashkent	New Tashkent	Namangan	Termez	Nukus
1. Airfield facilities					
1.1 Runway					
1) Extension of length		●	○		
2) Expansion of width			○	○	○
3) Overlay	○		○	○	○
4) Shoulder	○		○	○	
5) Turning Pad	○		○		
1.2 Runway strip					
1) Overrun		●	○		
2) Earthwork (Expansion Area)			○		
3) Drainage (Expansion Area)			○		
4) Perimeter Road			○	○	
5) Perimeter Fence			○		
1.3 Taxiway					
1) Extension of length		●			
2) Expansion of Width			○	○	○
3) Overlay	○		○	○	○
4) Shoulder	○		○	○	○
1.4 Apron					
1) Expansion		●	○	○	○
2) Overlay	○Dom.		○	○	○
3) Shoulder and Service Road	○Dom.		○	○	○
2. Terminal Facilities					
2.1 Passenger Terminal Building	○Dom.	●Int'l	○Int'l	○Int'l	○Int'l
2.2 Cargo Terminal Building	○	●Int'l	○	○	○
2.3 Tower and Administration Bldg		●	○	○	○
2.4 Fire station		●	○	○	○
2.5 Power station		●	○	○	○
2.6 Road and car park		●	○	○	○
2.7 Aircraft hanger	○	●Int'l	○	○	○
2.8 Utilities		●			
2.9 Fuel supply system	○	●	○	○	○
3. Air Navigation System					
3.1 Radio Nav aids					
1) ILS, MM, OM		●	○	○	○
2) VOR/DME	○	●	●	●	●
3.2 ATC System and Telecomm					
1) Control Tower Facilities, TRDPS		●	●	●	●
2) ASR/SSR, AFTN		●	○	○	○
3) ASDE		●			
3.3 Airfield Lighting System					
1) PALS, SALS, PAPI	●	●	●	●	●
2) REDL, RTHL, TWEL, AFL		●	○	○	○
3) Aerodrome Beacon, Power Supply		●	●	●	●
3.4 Meteorological Observation System					
1) Met. Observation Equipment		●	○	○	○
2) RVR, Ceilometer & Data Collection Ep.		●	●	●	●
3) Weather Radar	●	●			

Note Int'l: International Dom: Domestic

6.1.4 Planning and Design Criteria

(1) Applicable Standards

As mentioned in Chapter 4, airfield facilities such as runways, taxiways, aprons and air navigation facilities in Uzbekistan have been planned and designed based on MAK standards. Recently, NAC has begun to adopt ICAO standards, especially for international airport development projects.

Because the airports selected as high priority projects are expected to serve for international flights, the facility should be developed in accordance with such international standards and practices as the ICAO and IATA.

(2) Design Criteria for Airfield Facilities

Major design criteria related to the airfield facilities for each airport are established as shown in Table 6.1.3 in accordance with ICAO standards.

Table 6.1.3 Design Criteria of Airfield Facilities

Item	Tashkent	New Tashkent	Namangan	Termez	Nukus
Design Aircraft	B 767-300 B 747-400	B 747-400	B 767-300	B 767-300	B 767-300
ICAO Code	4E	4E	4D	4D	4D
Runway	Length	4300 m	4000 m	3500 m	3000 m
	Width	60	60	45	45
	Shoulder width	7,5	7,5	7,5	7,5
Runway Strip	Length	4420 m	4120 m	3620 m	3120 m
	Width	300 m	300 m	300 m	300 m
Taxiway	Width	23 m	23 m	23 m	23 m
	Shoulder width	7,5	10,5	7,5	7,5
Minimum Separation	R/W & R/W	-	310 m	-	-
	R/W & T/W	182,5 m	182,5 m	176 m	176 m
	T/W & Object	47,5 m	47,5 m	40,5 m	40,5 m
Apron	Parking Style	Angled Nose-in Out by Own Power	Nose-in Out by Pusher	Angled Nose- in Out by Own Power	Angled Nose-in Out by Own Power

(3) Design Criteria for Pavement

a) Bearing Strength of Subgrade

The design CBR and K-value for pavement design were assumed by referring to the PCN-value of the existing pavements and results obtained through soil investigation during the second site survey.

b) Pavement Surface Material

In general, two types of pavement, i.e., asphalt concrete and cement concrete pavements are used for airport pavement.

As shown in the Table 6.1.4, asphalt concrete is more advantageous than cement concrete in terms of economy, workability and maintenance. Therefore, asphalt concrete is planned to be used basically for pavement surfaces of the airports.

However, only cement concrete will be applied to the apron pavement of the existing Tashkent and New Tashkent airport, in order to avoid rutting by heavy large jet aircraft such as B 747-400.

Table 6.1.4 Comparison of Bituminous and Cement Concrete Pavement

Item	Asphalt Concrete	Cement Concrete
Thickness	Thick	Thin
Load Bearing Characteristics	Surface may be rutted depending on the load	Can accommodate variety of loads without rutting
Joint	Not needed	Needed between slabs to absorb effects of temperature variation
Weathering	Surface tends to harden and lose cohesion rather quickly	Weathering does not greatly affect the bearing strength
Cost	Cheaper	Expensive
Construction Period	Rather short and suitable for surfacing of extensive areas	Longer
Maintenance and Repair	Easier, because spot repair is possible	Difficult, because it involves breaking up of concrete slabs, and long curing period

c) Required Thickness

Required thickness of new pavement and overlay pavement are calculated in accordance with the Advisory Circular of FAA, AC 150/5320-6C, Airport Pavement Design Evaluation.

Minimum bituminous overlay thickness of 20 cm on rigid pavement, or 8 cm on flexible pavement should be provided as stipulated in FAA Advisory Circular.

6.2 Preliminary Design

6.2.1 Development of Existing Tashkent Airport

(1) Summary Development Plan

In this option, the existing Tashkent Airport should continue to operate as the only Capital Airport. The Capital Airport has been considered as the hub airport for Central Asia, and the Study proposed the long-term development plan up to the year 2020 in Chapter 4 of this report calling for the following requirements to be met:

- airfield and air navigation facilities to satisfy international standards;
- provide comfortable facilities and qualified services suitable for the gateway to Central Asia;
- achieve a comfortable and speedy service grade for transfer (between International and CIS flights, between International and Domestic flights) passengers adequate for international hub airport;
- develop aircraft maintenance facilities suitable to fulfill its role as the base of the aviation industry of the CIS countries with the capability of handling both Russian and western-built aircraft;
- develop air cargo transportation center for the CIS countries.

As the short-term development plan, the scope of the project has been set based on the forecast airport traffic of the target year 2010 taking into account the requirements

mentioned above.

The scope of the project excludes the followings, which are being undertaken by self-finance or to be implemented by EBRD finance for modernization of the international-related facilities:

- Refurbishment of arrival lobby (equipment and interior) being self-financed and to be completed early 1998,
- Rehabilitation of the international passenger building, apron and taxiway to be financed by EBRD (total amount US\$48 million, design period one year from April 1998, construction work to be completed by the year 2000, target year of the development 2015 to 2020).

Tables 6.2.1 and 6.2.2 show planning parameters and summary development plan of this project respectively, and Fig.6.2.1 presents facility layout plan of the year 2010.

Table 6.2.1 Planning Parameters for Target Year 2010 (Existing Tashkent Airport)

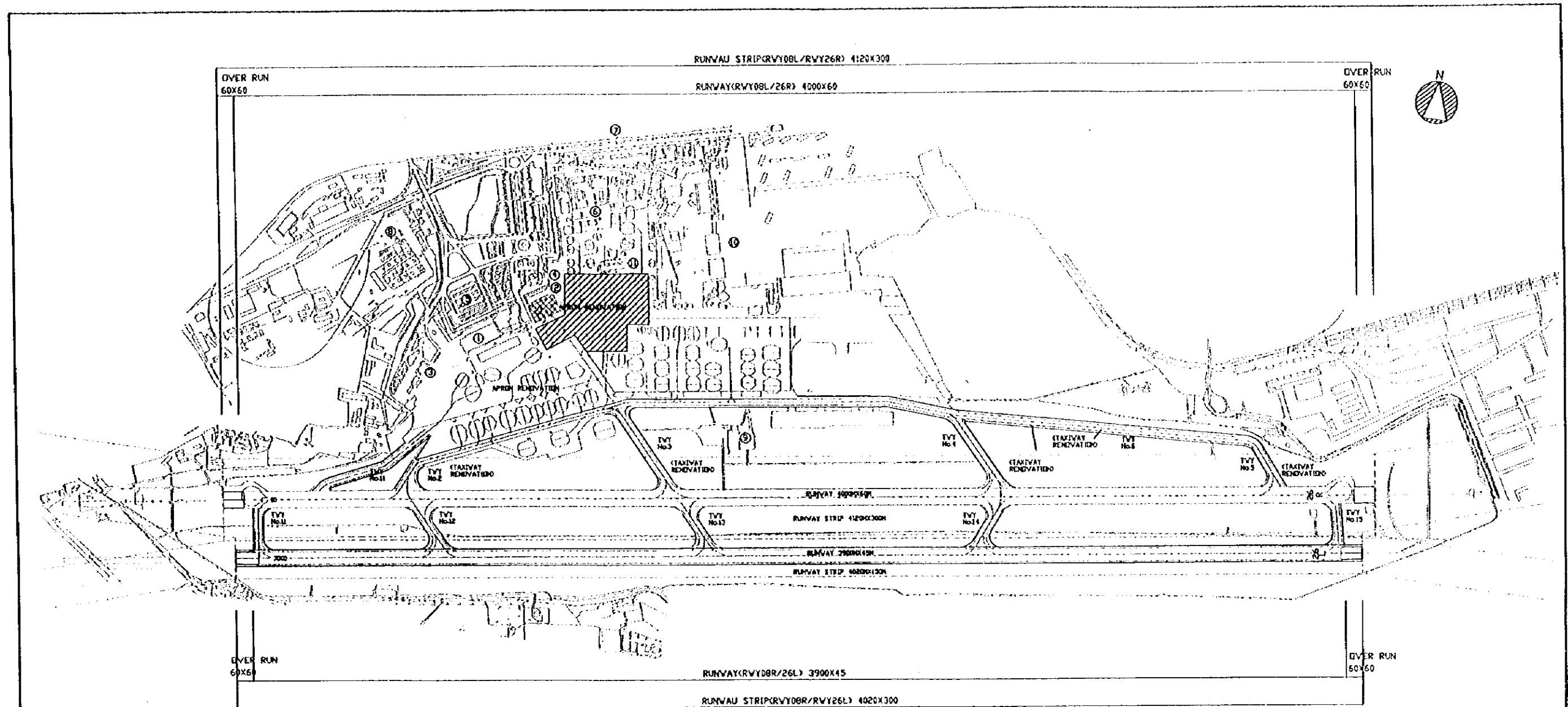
Items		MP	S-JET	M-JET	L-JET	Total
Peak-hour Aircraft Movement	Int'l			4		4
	CIS	0	0	4		4
	Subtotal	0	0	8		8
	Domestic	0	6	2		8
	Total	0	6	10		16
Peak-hour Passenger Movement	Int'l			560		560
	CIS	0	0	560		560
	Subtotal	0	0	1,120		1,120
	Domestic	0	420	280		700
	Total	0	420	1,400		1,820

Note: MP: 50-seater, S-JET:100-seater, M-JET:200-seater, L-JET:350-seater
Load factor:70%

Table 6.2.2 Summary Development Plan of Existing Tashkent Airport

FACILITIES		CONTENTS
Planning Parameters		Passenger Int'l/CIS 2032thousand Dom. 1079 thousand Cargo 41.3thousand
Largest Aircraft		B767(Medium-Jet)
Airfield	Runway	
	Taxiway	(Widen taxiways 1 to 6,11 to 15 to 23m with 7.5m wide shouldrs. Reinforce pavement by overlay.)
	Apron	(Int'l Apron :Improvement of apron under Planning) Domestic Apron : Improvement Area 8.6ha
Terminal	Passenger Bldg.	(Int'l/CIS :Improvement under construction and under planning) Domestic : Expansion of floor space to 8,400m ²
	Cargo Bldg.	Expansion of floor space to 8,000m ²
	Other Facilities	Rescue & Fire Fighting 1,460m ² (CAT.8) Car park 5.1ha (1460 spaces)
Air-Nav.	Airfield Lighting	-
	Radio-Nav. & Telecom.	Install ASDE. Renew VOR/DME.

Note: Items shown in () are to be implemented separately and are excluded from the scope of this project.



Development Plan (Case-1) Tashkent

FACILITIES		CONTENTS
Air Traffic (Yr.2010)		Passenger Int'l/CIS 2037 thousand Dom. 1079 thousand Cargo 41.3 thousand
Max. Aircraft		B767 (Medium-Jet)
Air-field	Runway	RWY 08R/26L Improvement Shoulder 7.5m wide Both Runway Pavement overlay
	Taxiway	No 1-6, 11-15 Widen up to width 23m with 7.5m shoulder Pavement overlay
	Apron	Int'l Apron: Improvement of apron under Planning Domestic Apron: Improvement Area 8.6ha
Terminal	Passenger Bldg.	Int'l/CIS Improvement under Construction and under Planning Domestic: Expansion up to 3,400m ²
	Cargo Bldg.	2,000m ²
	Other Facilities	Rescue & Fire Fighting 1,460m (CAT B) Carparking 5.1ha (1460 lots)
Air-Nav	Airfield Lighting	New ASDE
	Radio-Nav. & Telecom.	Renewal VOR/DME

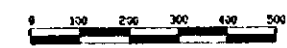


Fig.6.2.1 Tashkent Airport Development Plan (2005)

TERMINAL AREA			
1	Int'l Passenger Terminal Building	8	Fuel Tank Farm
2	Dom. Passenger Terminal Building	9	Fire Station
3	VIP Building	10	Aircraft Maintenance Area
4	Control Tower and Operation	11	Aircraft Maintenance Office
5	Car Park		
6	Cargo Handling Area		
7	Administration Area		

AIRPORT DATA			
Airport Name	Tashkent	Elevation	431m
Class	I	Reference Temperature	29°C
Province	Tashkent	Runway	4000mx60m
Main City	Tashkent		3900mx45m
Distance from city	6km south	Direction (True north)	N 82° E
Reference Point	N 41° 15' 24"	Instrument Runway	08L/08R/26R
Coordinates	E069° 16' 24"	ILS Category	CAT-II

The Republic of Uzbekistan National Air Company "Uzbekistan Hayo Yullari"			
The Study for The Air Transportation Development in The Republic of Uzbekistan			
Airport	Tashkent Airport		
Drawing Title	Airport Layout Plan (Year 2010)		
Date		Scale	

(2) Preliminary Design and Scope of the Project

a) Airfield Facilities

Among the airfield facility improvement shown in **Table 6.2.1**, rehabilitation of taxiways and international apron is to be carried out on the basis of an EBRD financed project and, so that only domestic apron improvement is included in the scope of this project.

Existing apron capacity is adequate to cater for the demand of the target year 2010, yet, the existing pavement of the domestic aprons No.1 through No.3 needs to be reinforced by phased demolition and reconstruction of cement concrete.

b) Passenger Terminal Building

The international passenger terminal building will be developed so as to be capable of accommodating forecast traffic volume around 2015 to 2020 on the basis of an EBRD financed project, so that this is excluded from the scope of this project. The domestic passenger terminal building requires a total floor area of 8,400 m² in order to cater for the forecast traffic of the target year 2010, 5,480 m² more compared to the existing floor area of 2,920 m².

Required floor area of each principal element of the domestic passenger building has been calculated as shown in **Table 6.2.3** based on the formulae and space ratio of each element employed in the Feasibility Study Report for Three Local Airports in Uzbekistan. Detailed calculation sheets are attached in the Appendix. The existing domestic passenger building lacks arrival facilities, which need to be developed for the benefit of passenger and visitors. It is preferable to expand the existing domestic passenger building southward (toward the airside), based on the following reasons:

- the landside (north side) is occupied by a car park, bus stop and old domestic passenger building,
- the east side is occupied by an administration building and a control tower,
- the west side is used as a corridor connecting airside and landside,
- the south side (airside) can be used for the expansion after planned relocation of the aircraft parking stands.

One (1) level passenger-processing concept has been adopted considering the following:

- there is ample apron area and relocation of parking stands is acceptable,
- nose-in/push-out aircraft parking concept is not achievable and therefore aircraft embarkation/disembarkation by ramp bus is inevitable even in the future.

Flows of both departure and arrival passengers in the terminal building after completion of expansion will be as follows;

- **Departure Passenger**
Check-in – Security Check – Departure Lounge – Ramp Bus – Embarkation
- **Arrival Passenger**
Disembarkation – Ramp Bus – Baggage Claim – Arrival Lobby

Expansion of the domestic passenger building needs to be made in the manner shown in **Table 6.2.4**, in order to maintain operation of the building:

- construct the expansion area by assuring adequate separation from the existing one so as to keep the existing building operational (Phase 1),
- after completion of the expansion, transfer the building function to the expanded area, and demolish a part of the existing one to build corridor connecting the expanded and existing buildings (Phase 2),
- convert the existing lobby to office, shop and restaurant premises (Phase 3),
- completion of expansion work (Phase 4).

Expansion plan of the domestic passenger terminal building is shown in Fig.6.2.2.

Table 6.2.3 Space Requirement of Principal Element of Domestic Passenger Building

Principal Element	Required Floor Area(m ²)	
	Expansion	Total Area
1. Check-in lobby	440 (14)	660
2. Check-in counter area (number of check-in positions) (length of check-in counter)	50 (2) 4 positions 16 m	90 4 positions 16 m
3. Departure lobby	440 (14)	660
4. Security & passport check area (number of check units)	180 (6) 3 units	280 3 units
5. Departure lounge	520 (16)	750
6. Baggage claim area (number of claim conveyors)	600 (19) 2 units	890 2 units
7. Arrival lobby	230 (7)	330
8. Baggage make-up area	360 (11)	520
9. Baggage break-down area	360 (11)	520
Total Passenger-Related Facilities	3,189(100%)	4,700 (56%)
10 Airlines office, VIP Room		670 (8)
11 Concession		1,600 (19)
12.Others		1,430 (17)
Total others		3,700 (44%)
Grand Total		8,400 (100%)

c) Other Terminal Facilities

Cargo terminal building and car park need to be expanded in order to cater for the forecast demand of the target year 2010 while the other facilities don't need expanding.

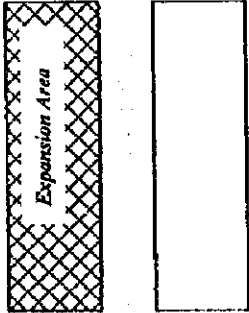
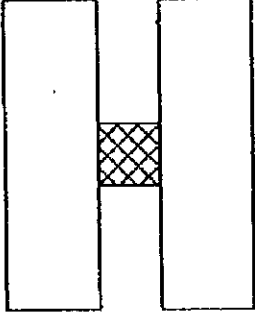
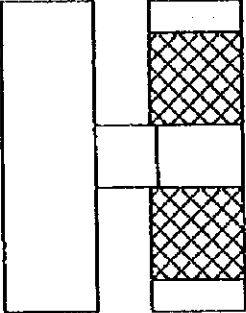
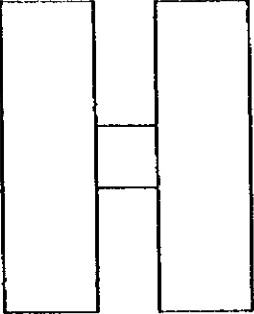
Terminal area layout plan is shown in Fig.6.2.3.

(3) Air Navigation Aids

Following facilities should be installed or renewed in order to meet the requirements of the year 2010 as described in Chapter 4 of this report:

- renewal of VOR/DME,
- installation of new Airport Surface Detection Equipment(ASDE),
- renewal of weather radar.

Table 6.2.4 Phasing Plan for Expansion of the Existing Domestic Passenger Terminal Building

Phase I	Phase II	Phase III	Phase IV
<p>Expansion Area</p>  <p>Existing Area</p> <p>Provide adequate separation between expansion and existing areas so as to maintain the existing one operational.</p>	<p>Expansion Area</p>  <p>Existing Area</p> <p>After completion of the expansion area, transfer the building's function from the existing to the expanded building. Demolish a part of existing area to build a corridor connecting the expanded and existing areas.</p>	<p>Expansion Area</p>  <p>Conversion of lobby to office, shop and restaurant premises</p> <p>Existing Area</p> <p>Convert the existing lobby to office, shop and restaurant premises.</p>	<p>Expansion Area</p>  <p>Existing Area</p> <p>Completion of expansion work.</p>

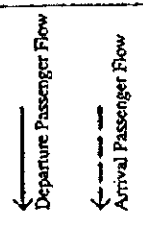
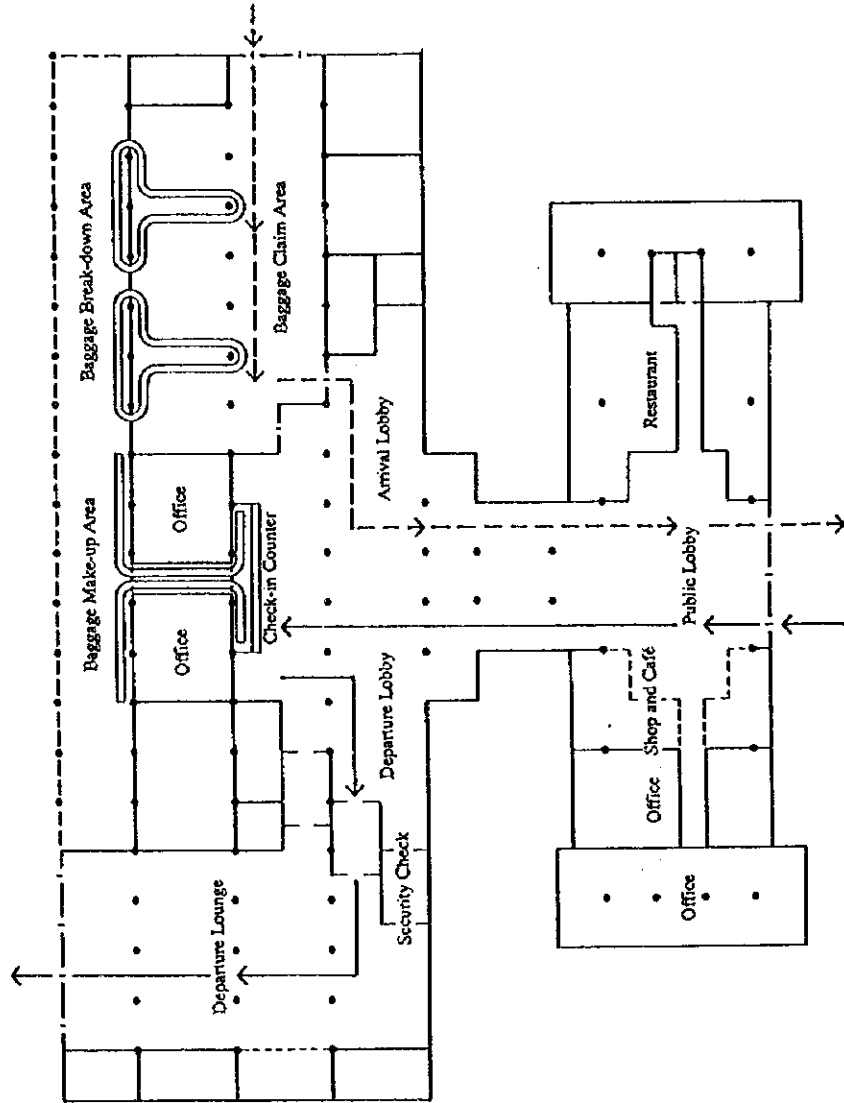


Fig.6.2.2 Development Plan of Domestic Passenger Terminal Building (1st Floor)



Existing Tashkent Airport Domestic Passenger Terminal Building

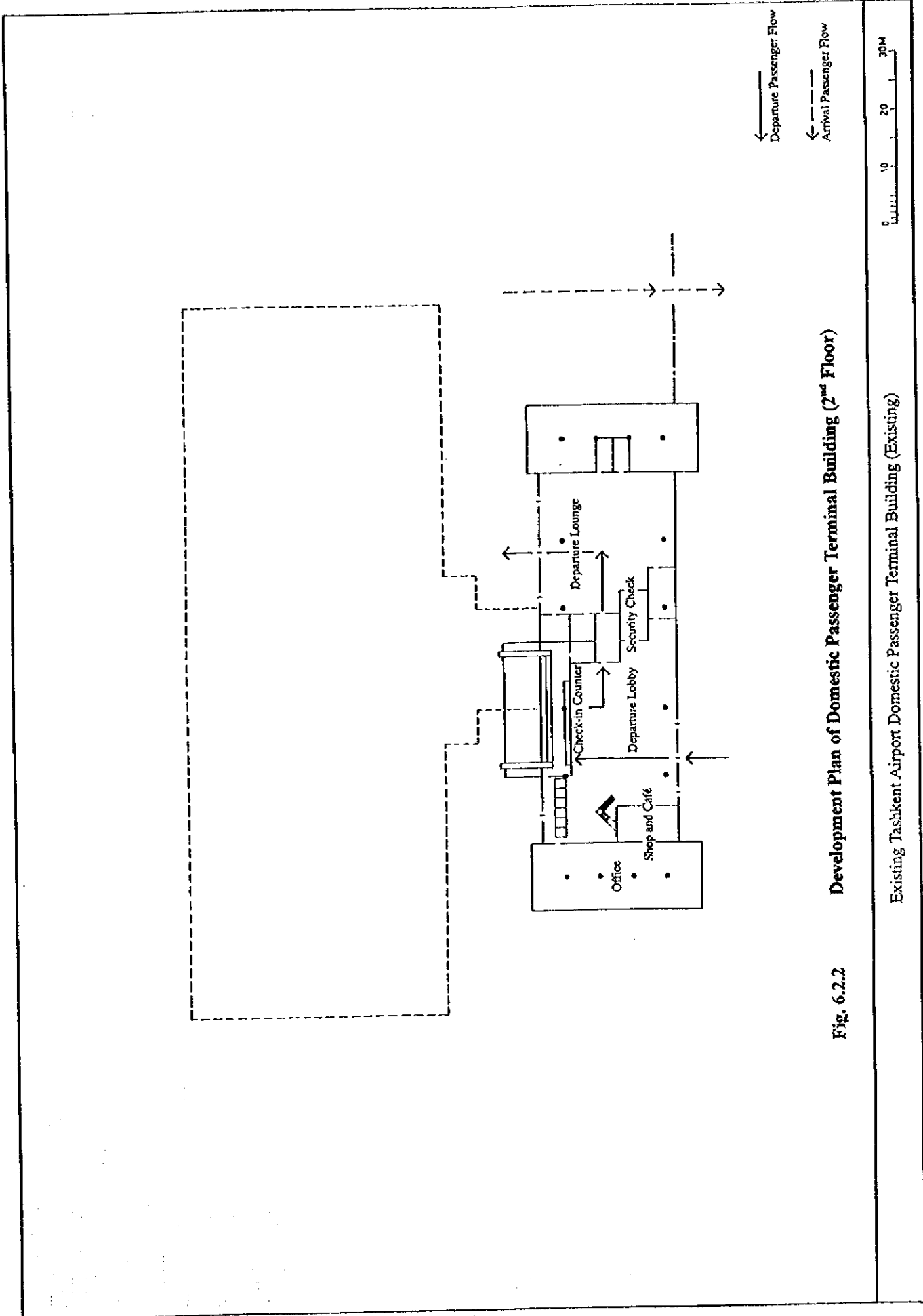
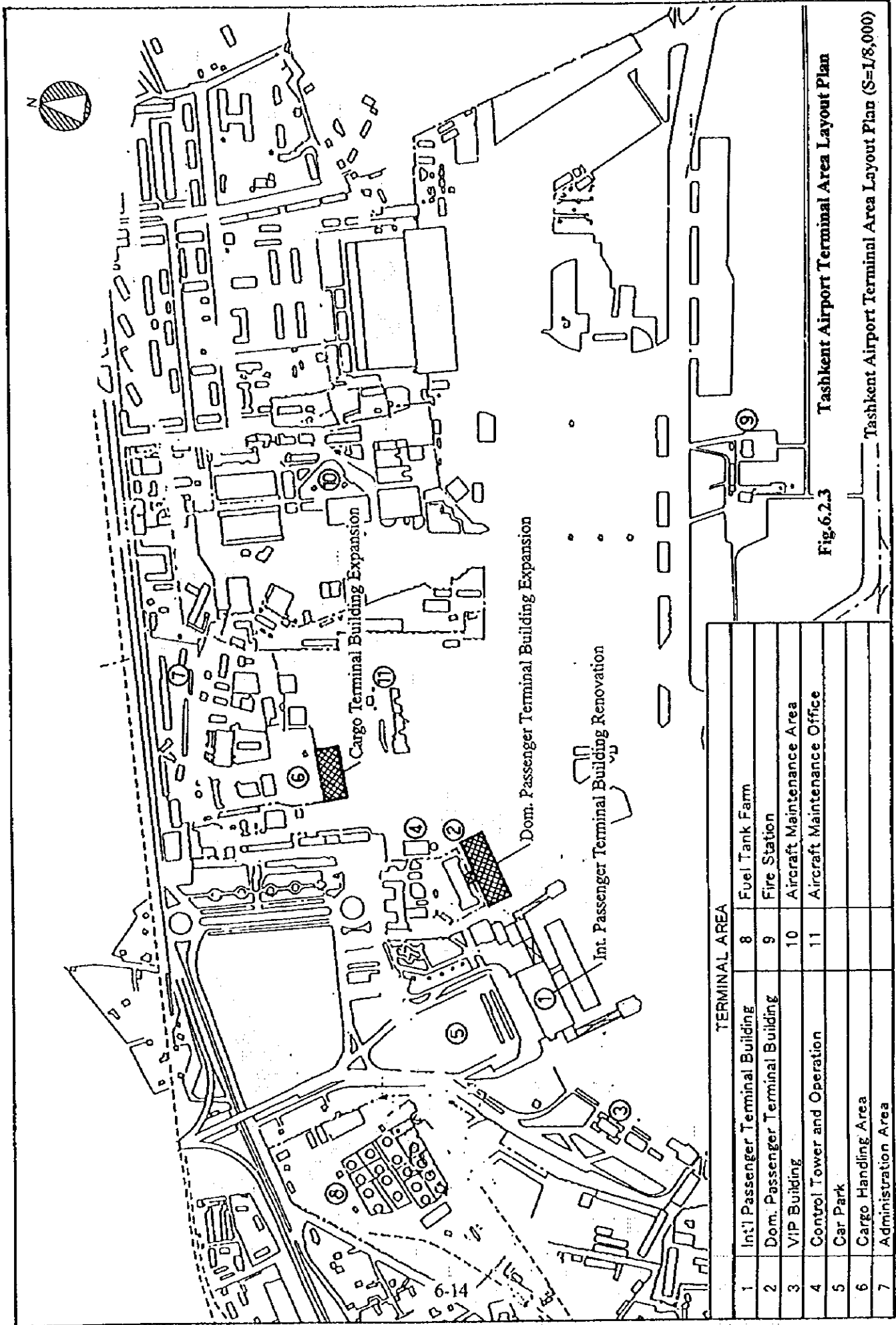


Fig. 6.2.2 Development Plan of Domestic Passenger Terminal Building (2nd Floor)

Existing Tashkent Airport Domestic Passenger Terminal Building (Existing)



TERMINAL AREA	
1	Int'l Passenger Terminal Building
2	Dom. Passenger Terminal Building
3	VIP Building
4	Control Tower and Operation
5	Car Park
6	Cargo Handling Area
7	Administration Area
8	Fuel Tank Farm
9	Fire Station
10	Aircraft Maintenance Area
11	Aircraft Maintenance Office

Fig.6.2.3 Tashkent Airport Terminal Area Layout Plan

Tashkent Airport Terminal Area Layout Plan (S=1/8,000)

6.2.2 Development of New Tashkent Airport

(1) Summary Development Plan of New Tashkent Airport

The development of the existing Tashkent Airport entails some problems as shown below:

- increase of aircraft noise pollution on residential area;
- impediment to Tashkent City development due to occupation of large area by the airport; and
- difficulty in expanding the existing Tashkent Airport due to geographical constraint.

These problems may prevent the existing Tashkent Airport from playing its role as the hub airport of the Central Asia.

Construction of New Tashkent Airport has been discussed hereunder as an alternative solution to the development of the existing airport.

The new airport also needs to meet the same requirements as the hub airport specified for the existing Tashkent Airport. However, in order to minimize initial investment, only one 4,300m long runway is included in the scope of the project, securing the future possibility of constructing a second close-parallel runway.

Attention has also been paid to land use of the terminal area in order to provide adequate space for the future relocation of aircraft maintenance facilities from the existing airport.

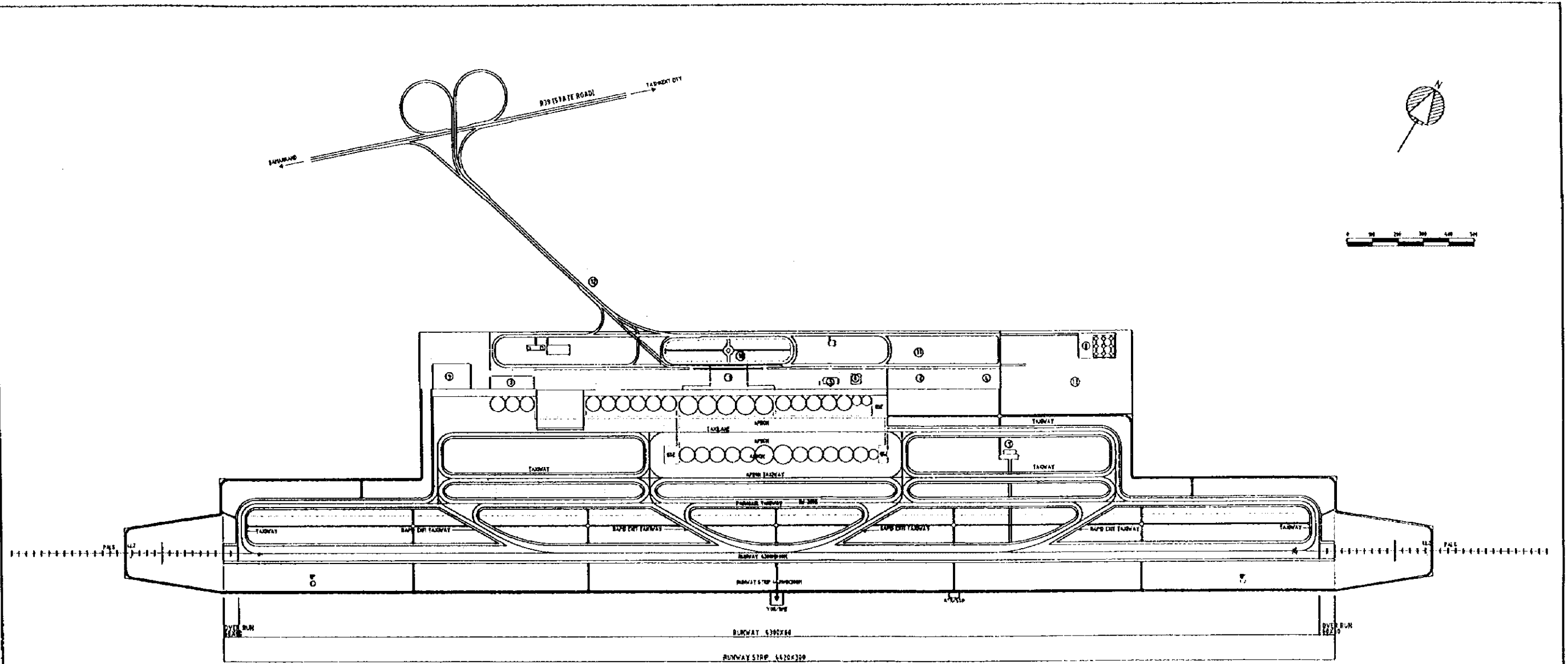
Development of the New Tashkent Airport is to be made in accordance with the functional distribution of capital airports shown in Table 4.5.9 of Chapter 4, and construction of the following facilities are included in the short-term development plan of this project:

- airfield facilities such as runway, taxiway and apron,
- international and CIS related passenger and cargo facilities,
- administration facilities.

Taking into consideration the period required for further study, design and construction of airport and its related infrastructure, as well as the development schedule of the rehabilitation of the existing airport financed by EBRD, the target year and implementation schedule of the New Tashkent Airport have been set as shown below:

- construction period: approx. 10 years from the year 2000,
- opening date: year 2010
- target year for facility development: year 2015,

Based on the facility requirements shown in Table 4.5.7(2), the summary development plan of the New Tashkent Airport has been determined as shown in Table 6.2.5, and the airport layout plan is shown in Fig.6.2.4.



FACILITY REQUIREMENTS

FACILITIES	CONTENTS
Air Traffic (Yr. 2015)	Passenger 3,800 thousand (Int'l/CIS) Cargo 4.7 thousand (Int'l/CIS)
Max. Aircraft	B747(Large-Jet)
Airport Area	390ha
Runway	Length 4300m Width 60m
Taxiway	1 Full Parallel, 2 Apron Taxiway, 4 Rapid Exit, 2 Exit
Apron	Large-Jet 7, Medium-Jet 21, Small-Jet/Mini-Plane 3
Passenger	Total 31
Others	Cargo Medium-Jet 3, Maintenance Apron
Terminal	International/CIS 27,400m ²
Passenger Bldg.	International/CIS 8,700m ²
Cargo Bldg.	Operation & Control Tower 5,700m ²
Others	Aircraft Fuel Supply 6,820x114,300m ²
Air-Nav	Rescue & Fire Fighting 900m ² (CAT 8)
Airfield Lighting	Car parking 7ha (2,020 lots)
Radio-Nav. & Telecom.	AIS, SFL, PAPI, RCL, RWL, TWT, AFL, H.S. VOR/DME, NDB, ASR/SSR, ASDE

Fig.6.2.4

New Tashkent Airport Development Plan (2010)

TERMINAL AREA			
1	International Passenger Terminal Bldg	8	Fuel Tank Farm
2	(Domestic Passenger Terminal Bldg)	9	Hanger
3	International Cargo Terminal Bldg.	10	International Car Park
4	(Domestic Cargo Terminal Building)	11	(Domestic Car Park)
5	Operation and Control Tower	12	Access Road
6	Power Station	13	Dormitory, Operation Center etc.
7	Fire and Rescue Station		() constructed at 2nd stage

AIRPORT DATA			
Airport Name	New Tashkent	Elevation (Rwy Center)	338m
Airport Classification	I	Reference Temperature	(29°C)
Province	Tashkent	Runway	4300mx60m
Main City	Tashkent	Direction (True north)	N 58.7° E
Distance from city	45km south-west	Instrument Runway	06/24
Reference Point	N41° 02'	I.L.S. Category	CAT-II
Coordinates	E68° 54'		

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The Study for The Air Transportation Development in The Republic of Uzbekistan	
Airport	New Tashkent Airport
Drawing Title	Airport Layout Plan (Year 2015)
Date	Scale

Table 6.2.5 Summary Development Plan of New Tashkent Airport

FACILITIES		CONTENTS
Air Traffic (Yr.2015)		Passenger 3,800 thousand (Int'UCIS) Cargo 4.7 thousand (Int'UCIS)
Largest Aircraft		B747(Large-Jet)
Airport Area		390ha
Airfield	Runway	Length 4300m Width 60m
	Taxiway	One full parallel and two apron taxiways plus four rapid exit and two exit taxiways
	Apron and aircraft parking	For Pax : L-Jet 7, M-Jet 21, S-Jet/MP 3, Total 31 For Cargo : M-Jet 3 Maintenance Apron
Terminal	Passenger Bldg.	International/CIS 27,400m ²
	Cargo Bldg.	International/CIS 8,700m ²
	Others	Operation & Control Tower 5,700m ² Aircraft Fuel Supply 6,820kl 14,300m ² Rescue & Fire Fighting 900m ² (CAT.8) Car park 7ha (2,020 spaces)
Nav aids	Airfield Lighting	ALS, SFL, PAPI, RCL, RWL, TWL, AFL
	Radio-Nav. & Telecom.	ILS, VOR/DME, NDB, ASR/SSR, ASDE

(2) Location and Orientation of Runway

Location of the New Tashkent Airport has been provided by NAC as a given condition as shown below:

- 45 km to the southwest of the City of Tashkent,
- Neighboring cities and towns;

adjacent cities and towns : Komsomal, Mevazor, Birlik, Bolshevik
east to the site : Kibihev, Kushilik
west to the site : Sutchilar, Charvadar
others : Hilyich, Pakhta, Abdulla artikov

Location and orientation of the runway has been determined as shown in Fig.6.2.5 considering the following:

- Environmental impact;
avoid aircraft noise impact and risk of aircraft accident in neighboring residential areas,
- Economical development;
provide adequate separation from surrounding roads and structures in order to minimize cost of land preparation, diversion of roads and removal of obstacles,
- Adequate usability factor;
result of preliminary wind analysis shows that usability factor of more than 99 % in case of 12 kt (6 m/s) cross wind component is achievable in the proposed runway orientation. The site is surrounded by three rivers with possibility of fog formation, however, so that further study needs to be made based on weather observation at the site.
- Location of site : Approx. Lat. N41° 01.5', Lon. E68° 53.5'
- Runway Orientation : Approx. N58.7° E

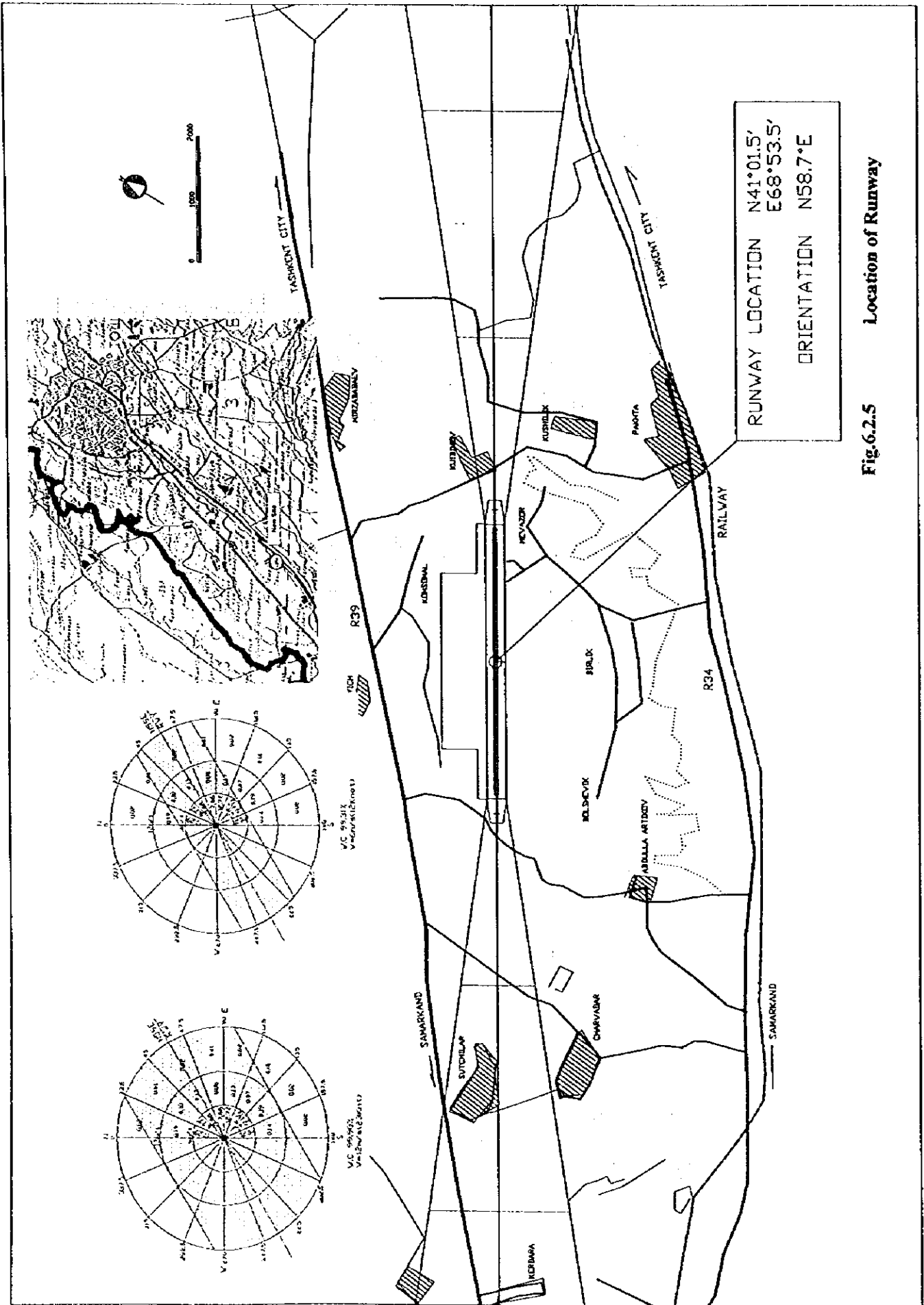


Fig. 6.2.5 Location of Runway

(3) Site Conditions

a) Geography

The average ground elevation of the site is 340 m ranging from 325 m at the lowest to 355 m at the highest. The ground moderately declines from northwest (terminal side) to southeast (runway side) at an average slope of 1.2 % from a height of 350 m to 300 m.

The runway should therefore be built on fill area and the terminal area on cut ground. The highest point is in the west part of the terminal area with a downhill gradient from there to Route 39 (about 1 km).

There is a main water channel running across the site that irrigates the cotton fields in the area through feeder channels.

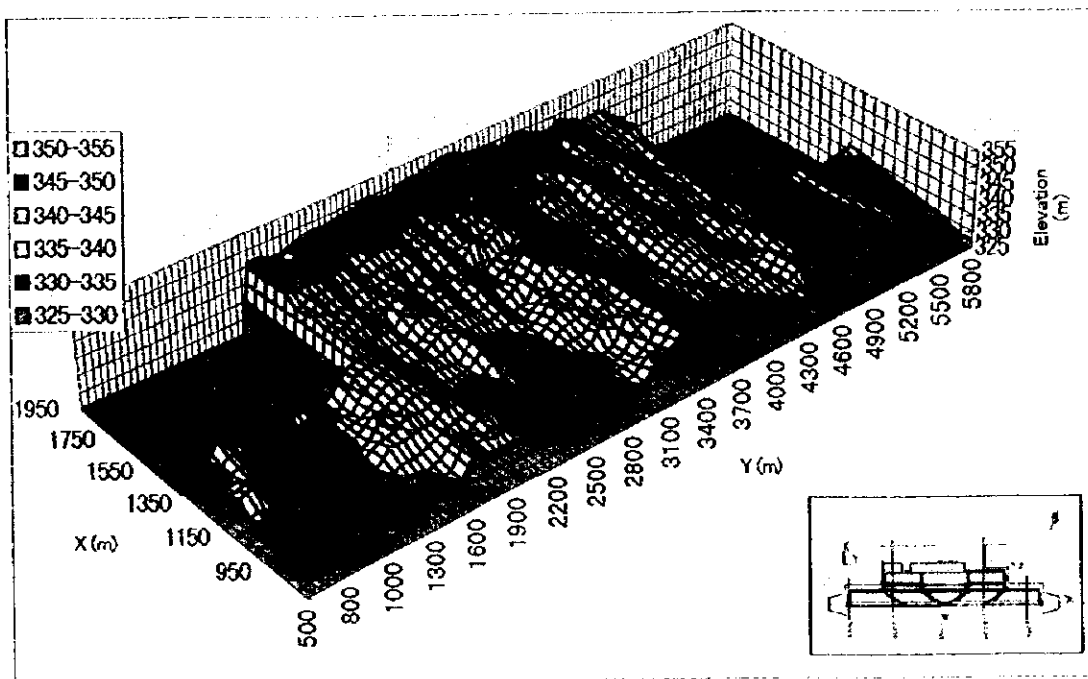


Fig. 6.2.6 Geographical Feature of the Site

b) Geological Conditions

According to the results of soil investigation, the soil in the proposed site area for the construction of the new airport consists mainly of sandy loam that is fairly well consolidated with an N value of around 10, and a CBR value of around 4%. The thickness of these deposits is expected to be approximately 60cm above the coarse round gravel layers.

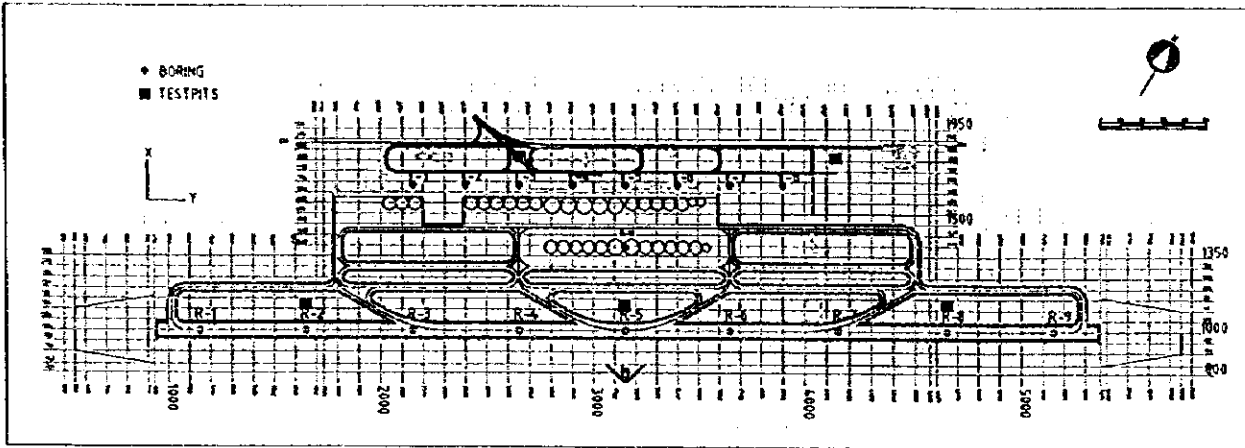


Fig. 6.2.7 Location of Geological Investigation

c) Land Use

Most of the site is cotton field, and there is Navoi village consisting of fifteen (15) houses in and adjacent to the site. There are also cotton fields and farmer houses near the site.

d) Diversion of Water Channels and Power Cable Lines

There are approximately ten (10) water channels in and adjacent to the site running from north to south, which need to be diverted when building the new airport. There are 35 KV power cable lines running across or adjacent to the site (four across the site, one adjacent and may infringe approach/transitional surface) which also need to be diverted.

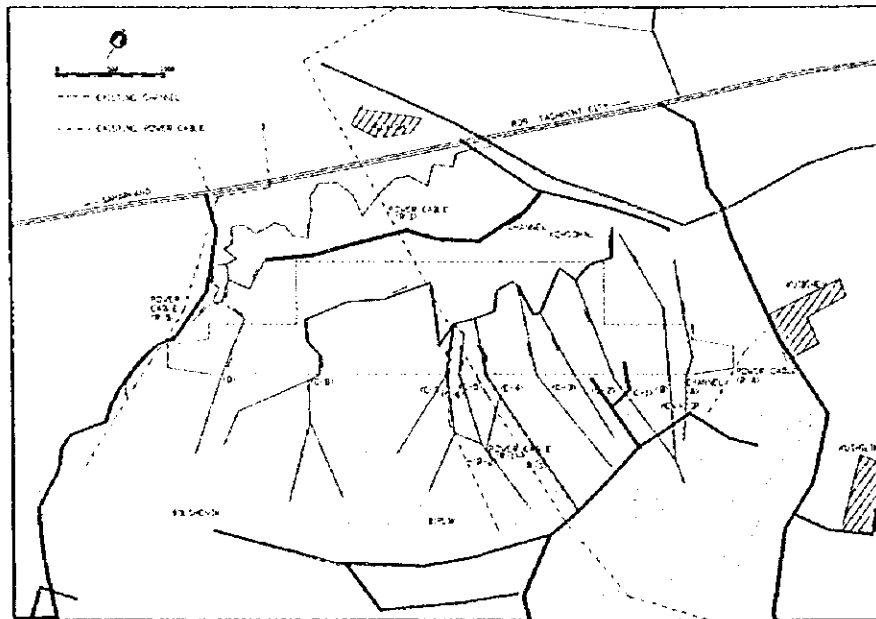


Fig. 6.2.8 Existing Power Cables and Channels

(4) Land Preparation Plan

a) Typical Cross Section

t) Longitudinal Profile of Runway Center Line

Longitudinal profile of the runway centerline has been determined considering the following:

- Minimize volume of embankment ;
the runway is to be located on fill area and average elevation needs to be set as low as possible,
- Avoid infringement of approach surface ;
there are roads and power cable lines (ground level of approx. 340 m) in southwest of the runway, and elevation of the southwest end of the runway needs to be 335 m to 340 m so that the road and power cable lines should not infringe on the approach surface,
- Provide adequate vertical separation between the diverted underground channel and the runway. Some of the water channels running across the site need to be diverted by underground tunnels, and elevation of the northeast end of the runway should be approx. 345 m to 350 m so that adequate vertical separation between the structure of the tunnels and runway can be secured.
- Runway slope:
No.0~No.32 (3200m) Level (EI.=338m)
No.32~No.43(1100m) +0.7%

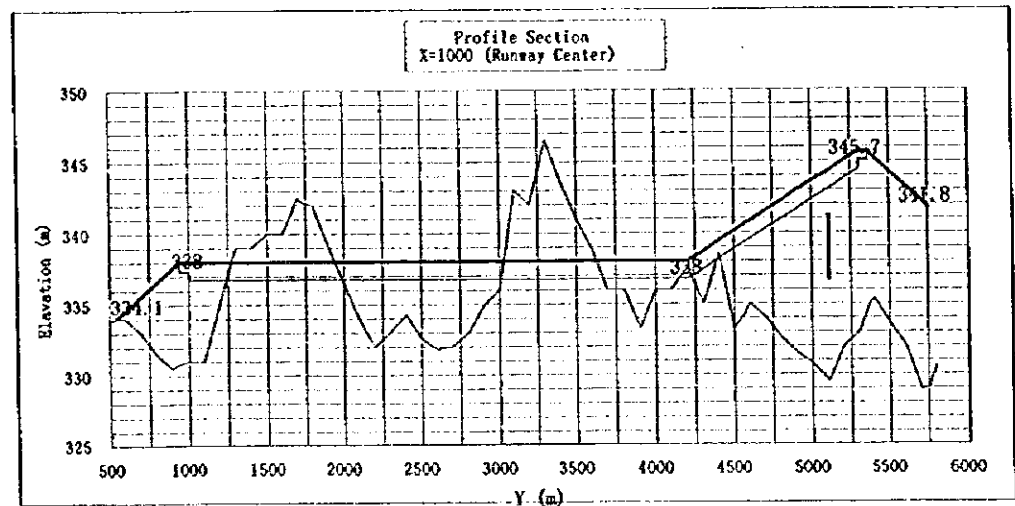


Fig. 6.2.9

Profile of Runway Center

2) Typical Cross Section

Typical cross sections have been set so that volume of earth works is minimized as shown in Fig.6.2.10.

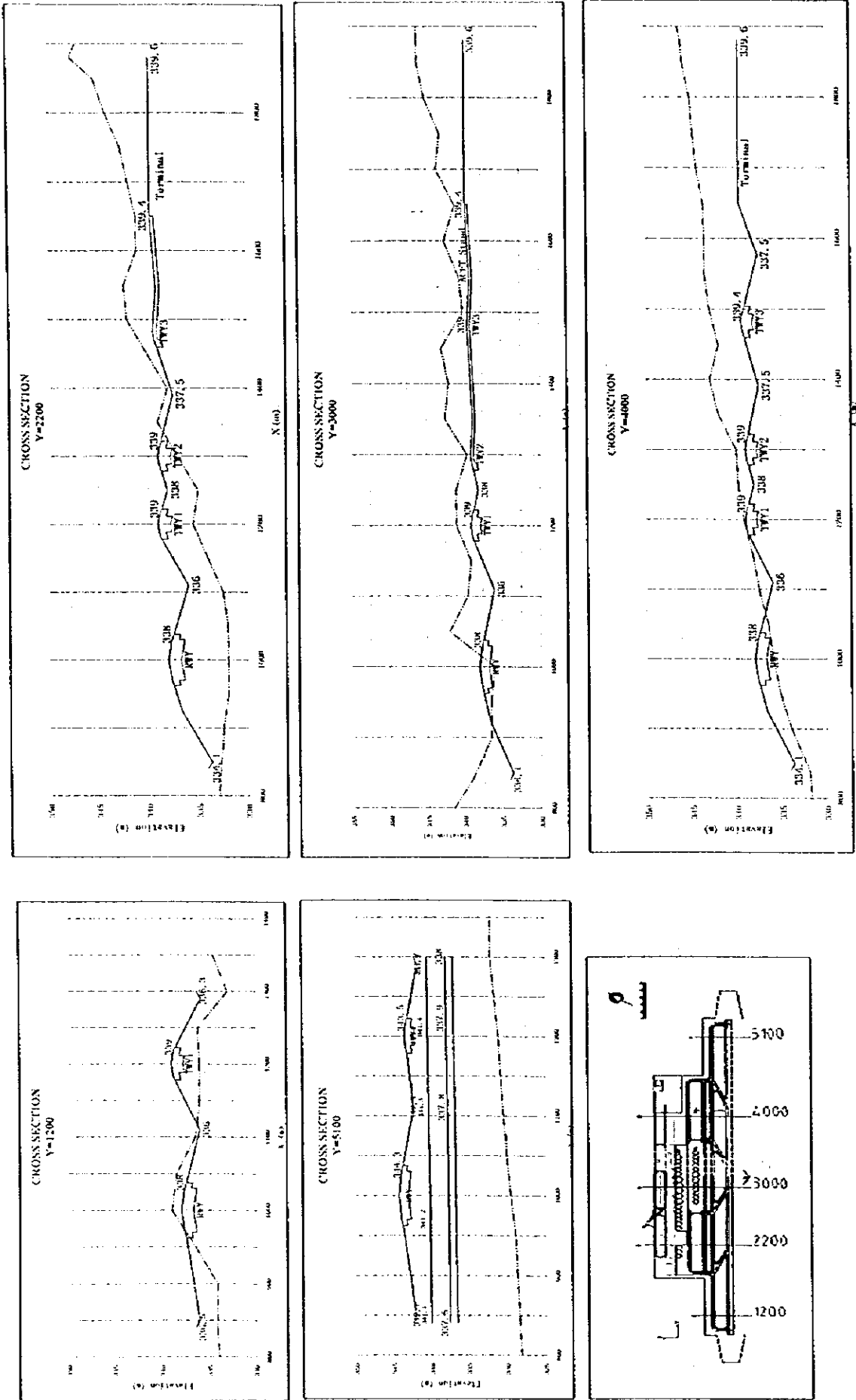


Fig.6.2.10 Typical Cross Section

b) Planned Elevation and Volume of Earth Work

The result of the preliminary study show that the cut and fill earthwork volume can be balanced at an approximate elevation of 335 m to 340 m, as shown in Fig.6.2.11.

For the purpose of this pre-feasibility study, planned elevation of the center of the runway has been set at 338 m, achieving a balanced volume of earthwork within the site as shown below:

- Fill volume: 7,500,000 m³,
- Cut volume: 7,900,000 m³ (converted to fill by equivalency factor of 0.9).

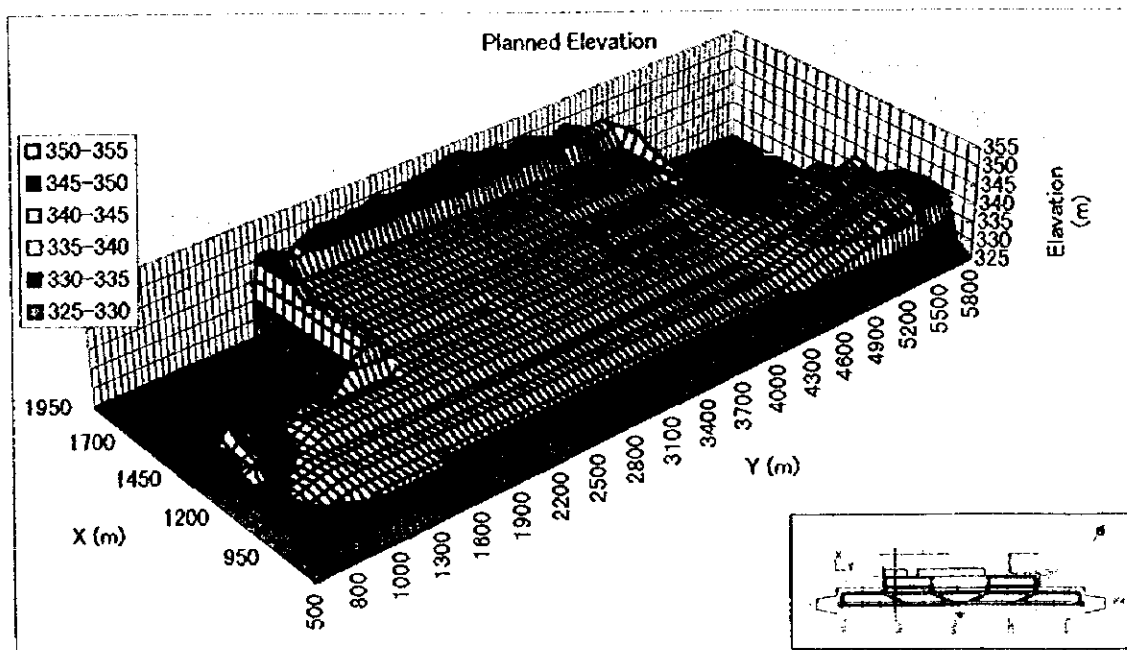


Fig.6.2.11 Planned Elevation

(5) Airfield Facilities

a) Runway

The orientation of the runway (06-24) has been selected as it best meets the site condition as described in (2) of this subsection.

The dimension of the runway will be 4300 m long and 60 m wide with 7.5 m wide shoulder on each side of the runway, so that B747 class aircraft will be able to operate without any operational restrictions.

The pavement structure is shown in Fig. 6.2.12 (1).

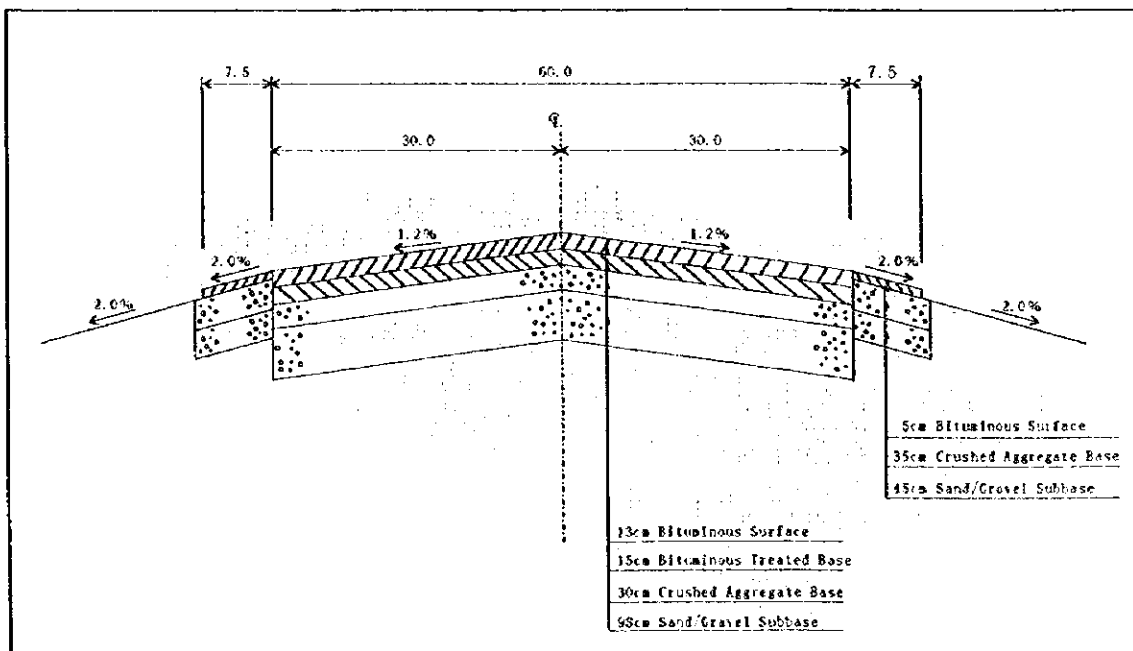


Fig. 6.2.12 (1) Runway Typical Cross Section

b) Runway Strip

The dimension of the runway strip needs to be 4420 m long and 300 m wide, 150 each from the runway center line in accordance with ICAO Annex 14.

On both ends of the runway 60 m long stopways should be provided. A perimeter road and perimeter fence should be provided along the airport boundary.

c) Taxiway

The following taxiway system has been proposed for New Tashkent Airport:

- One (1) parallel taxiway, 23 m wide with 10.5 m shoulder on each side of the taxiway,

- Two (2) straight connection taxiways to the runway, 23 m wide with 10.5 m shoulder on each side of the taxiways,
- Four (4) rapid exit taxiways from the runway, 23 m wide with 10.5 m shoulder on each side of the taxiways.

The pavement structure is referred to in Fig. 6.2.12 (2).

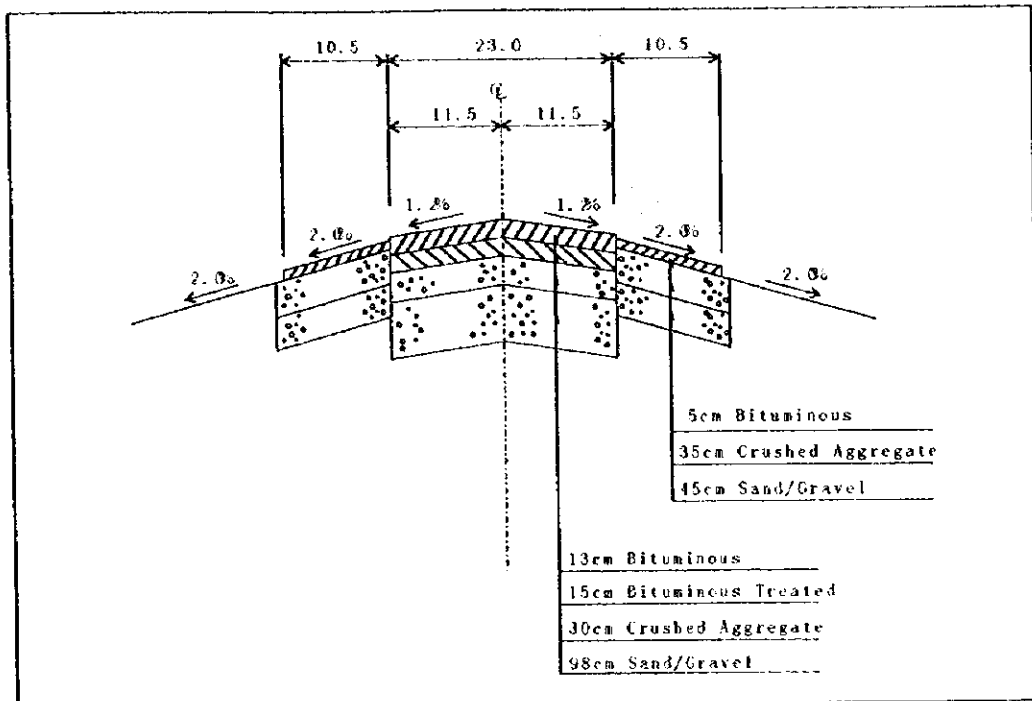


Fig. 6.2.12 (2) Taxiway Typical Cross Section

d) Apron

The following number of aircraft parking stands should be provided in order to meet forecast traffic of the target year 2010:

- 7 stands for L-JET aircraft,
- 21 stands for M-JET aircraft,
- 3 stands for S-JET and MP aircraft,
- 3 stands for freighter aircraft.

In addition to the aircraft parking stands mentioned above, a maintenance apron, which will also be utilized as an overnight apron, needs to be provided.

e) Drainage

Storm water will be discharged to the water channel diverted to the south of the airport boundary, through gullies, open channels and underground pipes properly located inside the airport.

(6) Terminal Area Facilities

As specified in Table 4.5.9 of Chapter 4, international and CIS related passenger

traffic only planned to be handled at the New Tashkent Airport on the opening day.

a) Planning Parameters

Terminal facilities of the New Tashkent Airport need to be developed so as to be capable of accommodating the forecast traffic of the target year 2015.

Table 6.2.6 Planning Parameters for New Tashkent Airport (Year 2015)

Item	Category	MP	S-JET	M-JET	L-JET	Total
Peak-hour aircraft movement	International			2	2	4
	CIS	0	0	4	2	6
	Subtotal	0	0	6	4	10
	Domestic	0	6	2		8
	Total	0	6	8	4	18
Peak-hour passenger movement	International			280	490	770
	CIS	0	0	560	490	1,050
	Subtotal	0	0	840	980	1,820
	Domestic	0	420	280		700
	Total	0	420	1,120	980	2,520

Note MP: 50-seater, S-JET: 100-seater, M-JET: 200-seater, L-JET: 350-seater
Load factor: 70%

b) Space Requirement of Principal Element

Required floor area of the international passenger terminal building is 27,300 m².

Space requirement of each principal element shown in Table 6.2.7.

Table 6.2.7 Space Requirement of International Passenger Building (2015)

Item	Required Floor Area (m ²)	
	Calculated	Provided
1. Check-in lobby	1,140 (11)	1,530
2. Departure customs inspection area (number of customs inspection units)	120 (1) 8 units	140 8 units
3. Check-in counter area (number of check-in positions) (length of check-in counter)	120 (1) 5 positions 40 m	140 5 positions 40 m
4. Departure lobby	1,140 (11)	1,530
5. Departure immigration control area (number of immigration control units)	490 (5) 16 units	700 16 units
6. Security check area (number of security check units)	60 (1) 2 units	130 2 units
7. Departure gate lounge	2,200 (21)	2,920
8. Departure bus lounge	880 (9)	1,250
9. Arrival immigration control area (number of immigration control units)	550 (5) 18 units	700 18 units
10. Baggage claim & customs inspection area (number of claim conveyors) (number of customs inspection units)	1,950 (19) 3 units 15 units	2,640 3 units 15 units
11. Arrival lobby	600 (6)	840
12. Baggage make-up area	540 (5)	700
13. Baggage break-down area	540 (5)	700
Total Passenger-Related Facilities	10,330 (100%)	13,920 (51%)
14. Uzbekistan airways office, VIP room		1,640 (6)
15. Other airlines office		2,180 (8)
16. Customs & Immigration office		820 (3)
17. Concession		4,100 (15)
18. Others		4,640 (17)
Others Total		13,380 (49%)
Grand Total		27,300 (100%)

c) Passenger Terminal Concept

Three passenger terminal concepts, i.e. Linear, Finger Satellite are commonly adopted (see Fig. 6.2.13):

Selection of the terminal concept is made, taking into account the land area available, number of passengers and aircraft parking stands, and among them, the linear terminal concept has been employed for New Tashkent Airport considering the following advantages of the concept:

- easiest and simplest concept for passengers,
- easy aircraft maneuvering,
- most efficient and economical in terms of the apron area required for one aircraft parking stand,
- flexibility to accommodate future expansion.

d) Passenger Processing Level

There are three typical passenger processing level concepts, i.e. single level, one-and-a-half level, tow level, as shown below (see Fig. 6.2.14):

Of these, two-level concept is commonly adopted in major airports in the world, and it has also been adopted in this pre-feasibility study considering the following reasons:

- the existing Tashkent Airport adopts the two level concept,
- to provide an adequate service grade as the gateway airport to Uzbekistan,
- to achieve smooth passenger flow with minimum vertical level changes.

The first floor is to be utilized for arrival passenger processing and the second floor to be utilized for departure processing.

e) Floor Plan of Passenger Terminal Building

Figs. 6.2.16-6.2.18 present floor plans of the international passenger terminal building.

(7) Other Terminal Facilities

The following facilities shall be developed to meet forecast traffic of the target year 2015:

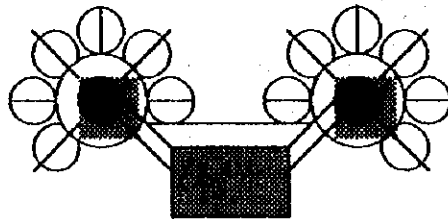
- cargo terminal building,
- car park,
- administration building and control tower,
- electrical substation,
 - rescue and fire fighting facility,
 - aircraft maintenance facility,
 - aircraft fuel supply facility.

(8) Terminal Facilities Layout Plan

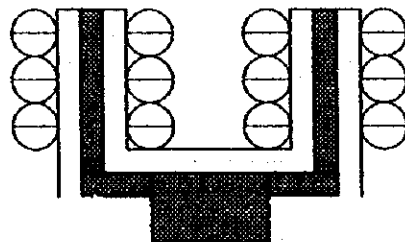
Fig. 6.2.19 shows terminal facilities layout plan of the New Tashkent Airport.



Linear Concept



Satellite Concept

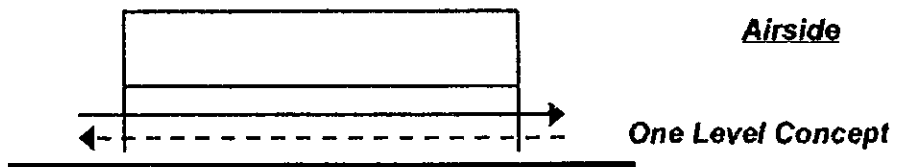


Finger Concept

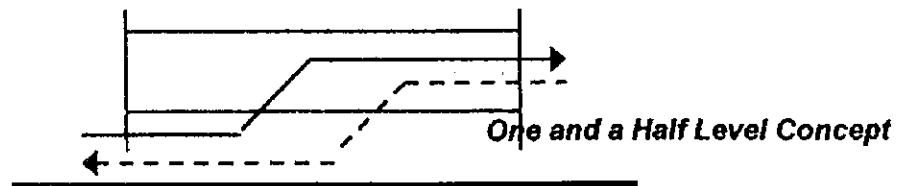
Fig. 6.2.13 Typical Passenger Terminal Concept

Landside

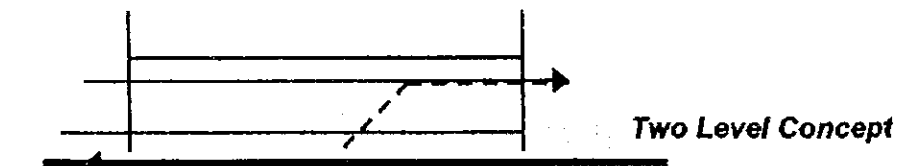
Airside



One Level Concept



One and a Half Level Concept

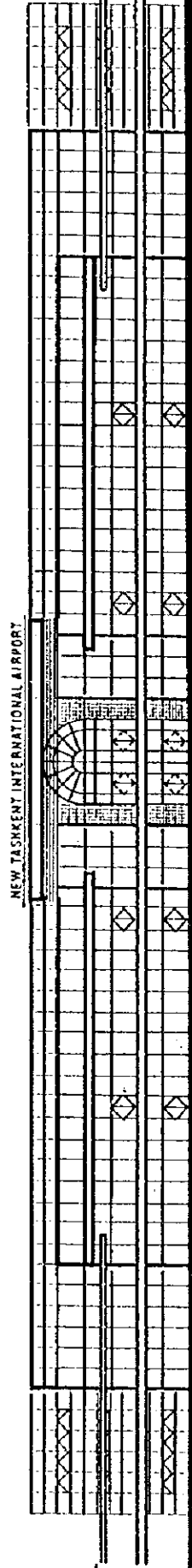


Two Level Concept

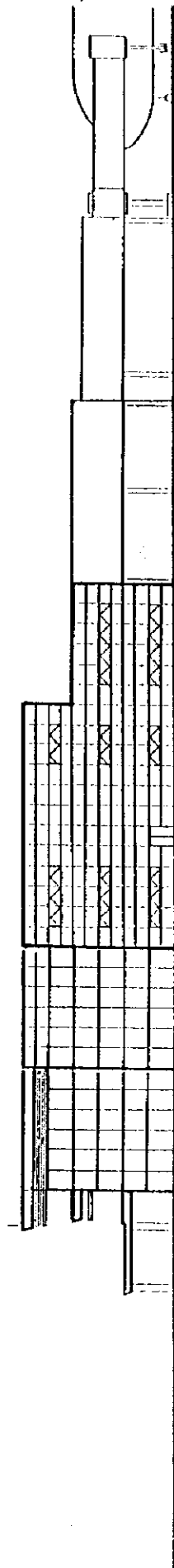
Solid line: Departure

Broken line: Arrival

Fig. 6.2.14 Passenger Processing Level Concept



New Tashkent Airport International Passenger Terminal Building Front Elevation



New Tashkent Airport International Passenger Terminal Building Side Elevation

Fig. 6.2.15 New Tashkent Airport International Passenger Terminal Building Elevation Plan (2015)

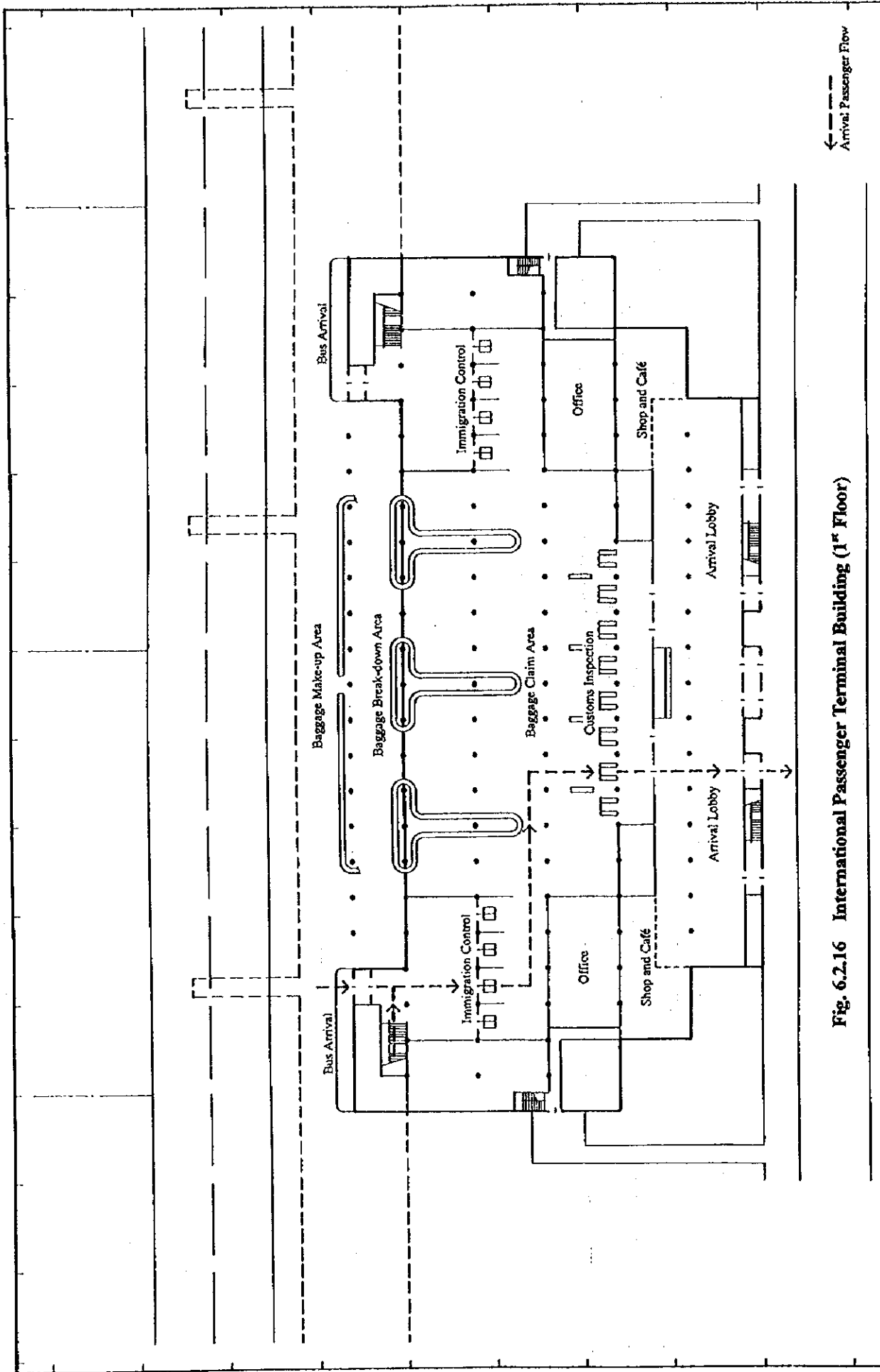


Fig. 6.2.16 International Passenger Terminal Building (1st Floor)

New Tashkent Airport International Passenger Terminal Building 1-st Floor Plan

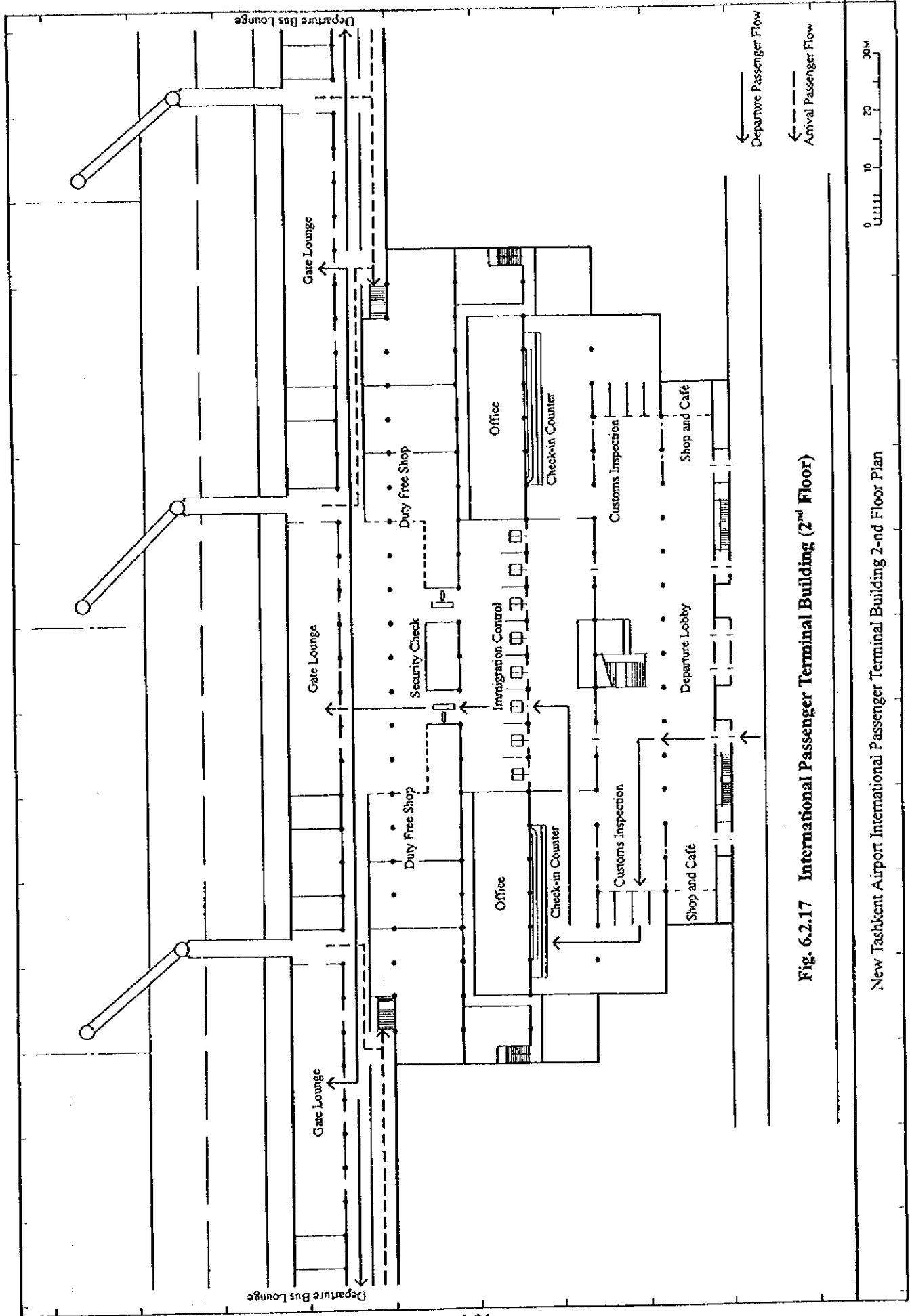


Fig. 6.2.17 International Passenger Terminal Building (2nd Floor)

New Tashkent Airport International Passenger Terminal Building 2-nd Floor Plan

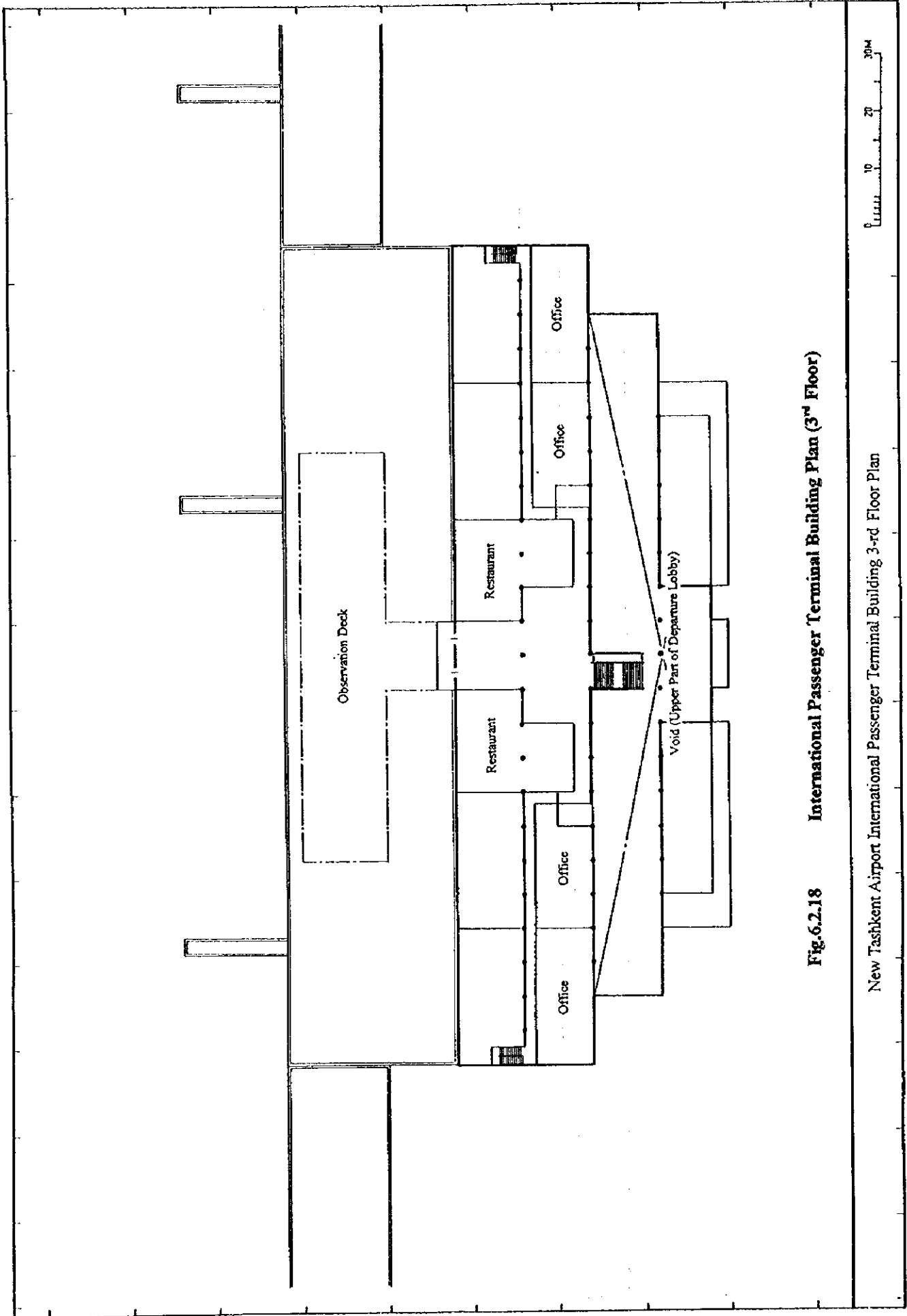
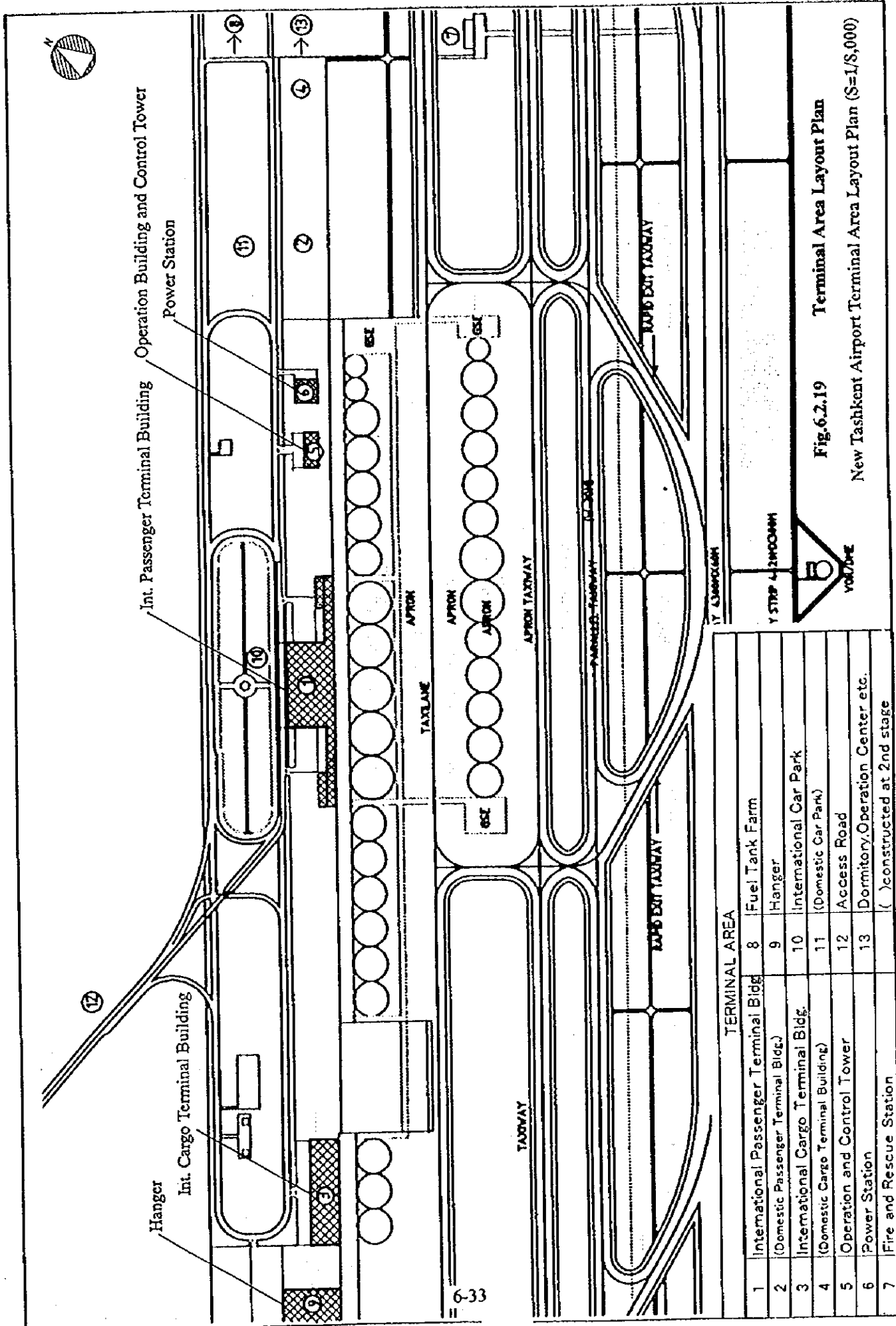


Fig.6.2.18 International Passenger Terminal Building Plan (3rd Floor)

New Tashkent Airport International Passenger Terminal Building 3-rd Floor Plan



TERMINAL AREA	
1	International Passenger Terminal Bldg
2	(Domestic Passenger Terminal Bldg.)
3	International Cargo Terminal Bldg.
4	(Domestic Cargo Terminal Building)
5	Operation and Control Tower
6	Power Station
7	Fire and Rescue Station
8	Fuel Tank Farm
9	Hanger
10	International Car Park
11	(Domestic Car Park)
12	Access Road
13	Dormitory, Operation Center etc.
	() constructed at 2nd stage

Fig. 6.2.19 Terminal Area Layout Plan
New Tashkent Airport Terminal Area Layout Plan (S=1/8,000)

(9) Air Navigation Facilities

According to the master plan prepared in Chapter 4 of this report, the following navigation aids are required to meet the requirements of the target year 2015.

a) Radio Navigation Aids

The following radio navigation aids need to be installed:

- Category II Instrument Landing System (ILS) which meets standards and recommendation of ICAO Annex 10 for both sides of the runway
- Locator Beacon (NDB) for the ILS approach
- VOR/DME for the approach and en-route flight

b) ATC System and Telecommunications

The following ATC system and telecommunication facilities need to be installed:

- New communication control system and ATC consoles;
- Airport Surface Detection Equipment (ASDE);
- Airport Surveillance Radar and Secondary Surveillance Radar (ASR/SSR) which meets both ICAO and CIS standards;
- Terminal Radar Data Processing System (TRDPS);
- Automatic Message Switching System for AFTN.

c) Airfield Lighting System

The following airfield lights and related power supply systems, including back-up engine generator need to be installed:

- Precision Approach Lighting System (PALS) for both sides of the runway;
- Precision Approach Path Indicator (PAPI);
- Runway Edge Lights;
- Runway Threshold Lights;
- Taxiway Edge Lights;
- Apron Flood Lights;
- Aerodrome Beacon;
- Power supply system;

d) Meteorological Observation System

The following meteorological observation system need to be installed:

- Wind direction and speed sensors;
- Air temperature and humidity sensors;
- Barometers;
- RVR and Ceilometer;

- Data Collection and Processing System;
- Weather Data Monitor;
- Weather forecasting equipment;
- Weather radar.

(10) Access Facilities

Forecast number of airport visitors in the year 2015 will be 10 to 15 thousand including 3500 passengers on average day.

Main accesses to the new airport are:

- Ground vehicles (bus, taxi and private car) via Routes 39 and 34;
- Electrified rail.

It is assumed that most of visitors will use ground vehicles for airport access, considering the current preference of visitors for private car, bus and taxi use, as shown below (result of traffic survey on 31 (Sat.) May 1997, see Appendix for detail):

- Bus ; 22 %,
- Taxi ; 22 %,
- Private car ; 52 %,
- Rail ; 3%.

Therefore, for the purpose of this pre-feasibility study, the development of direct rail access is excluded from the scope of this project.

The main access route is R39 (high-grade two-lane road for each way) which is to be connected by 1.5 km long approach road to the new airport as shown in Fig.6.2.20.

Provision of a ramp has been proposed to connect R39 and the approach road so that airport related traffic can be split from the other traffic without difficulty. Location of the ramp has been set to avoid relocation of houses, power cable lines and existing roads.

Visitors using R34 or rail will need to come to the airport on rural roads connecting R34 or rail station to R39, and finally the approach road.

(For reference: hourly traffic on R39 from 13:00 to 14:00 on 5 Dec. 1997)

- to Samarkand : 79 trucks and buses, 128 private cars
- to Tashkent ; 51 trucks and buses, 122 private cars
- total ; 380 vehicles

Note: Peak-hour is during morning and evening.

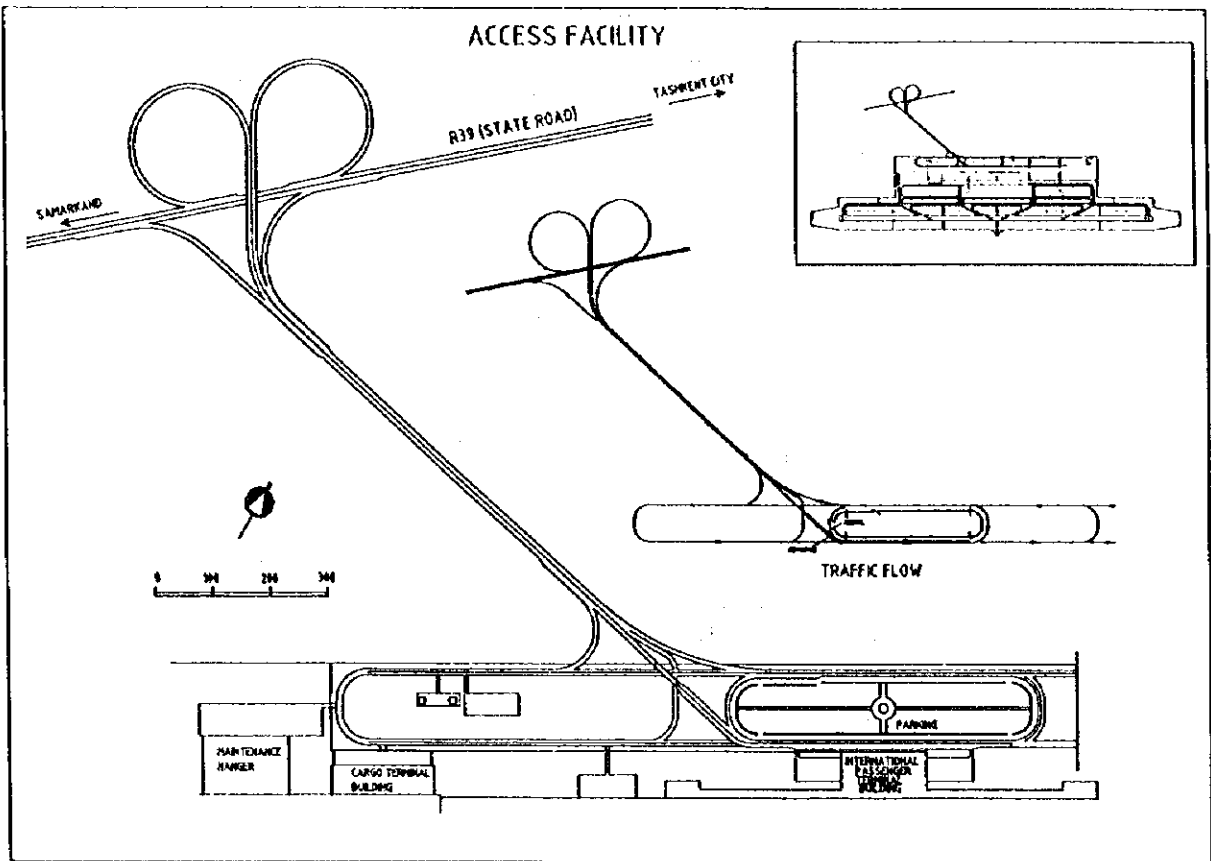


Fig. 6.2.20 Access Roads

(11) Other Facilities related to Airport Development

a) Diversion of Water Channels and Power Cable Lines

Water channels and power cable lines need to be diverted as follows (for symbols used see Fig.6.2.8):

- Water channels ;
 - Routes A and B to run across the northeast side of the airport by underground tunnel,
 - Route C and its nine feeders to run across the northeast side of the airport by underground tunnel,
 - Route D and its feeder to be detoured to the southwest of the airport,
- Power cable lines;
 - R1 to be detoured to the northeast of the airport,
 - R2 and R3 to be connected to detoured R1 to receive power supply,
 - R4 to be detoured,
 - R5 to be diverted by underground facility.

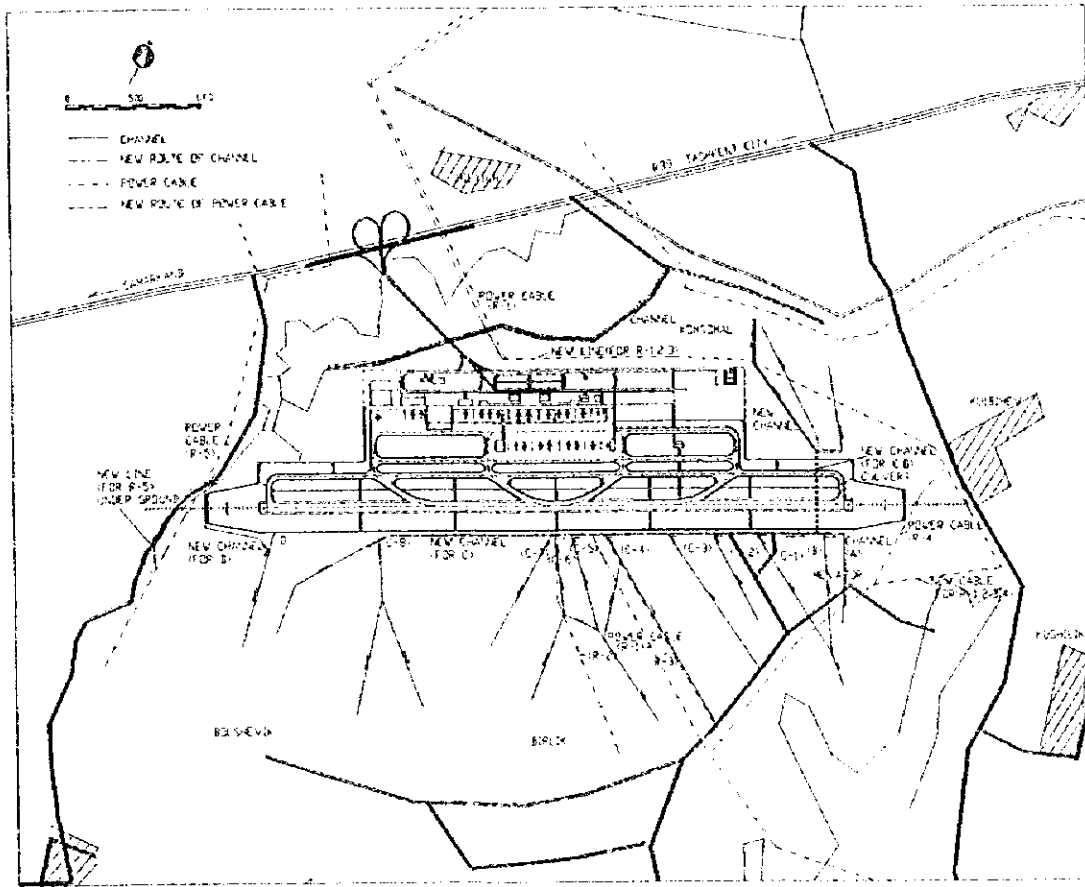


Fig. 6.2.21 Diversion Plan of Water Channels and Power Cable Lines

b) Utility

Following utility facilities need to be provided to the new airport:

- power supply ; 6700 to 7210 kVA (20000 kVA if power for related facilities are to be supplied) will be supplied from neighboring high voltage (220 kV) power cable line via a newly built substation and power line,
- water ; 1170 to 1230 m³ /day to be supplied from surrounding area,
- sewage ; 1170 to 1230 m³ /day to be treated in the new airport and discharged to surrounding rivers,
- Waste; 3.4 to 3.6 t/day to be incinerated in the new airport and/or surrounding area.

c) Others

Some of the employees of the existing airport will need to be relocated to the new airport area, and their housing should be developed in the neighboring area or an

airport-related facility area (approx. 10 ha) within the new airport.

(12) Existing Airport

In the case of this project, the existing airport needs to cater for the international traffic up to the year 2010 and domestic traffic up to the year 2015.

Rehabilitation of the international passenger building (target year 2015 to 2020) is to be made on the basis of an EBRD financed project, so that the development of the domestic passenger building to cater for the traffic up to the year 2015 is required.