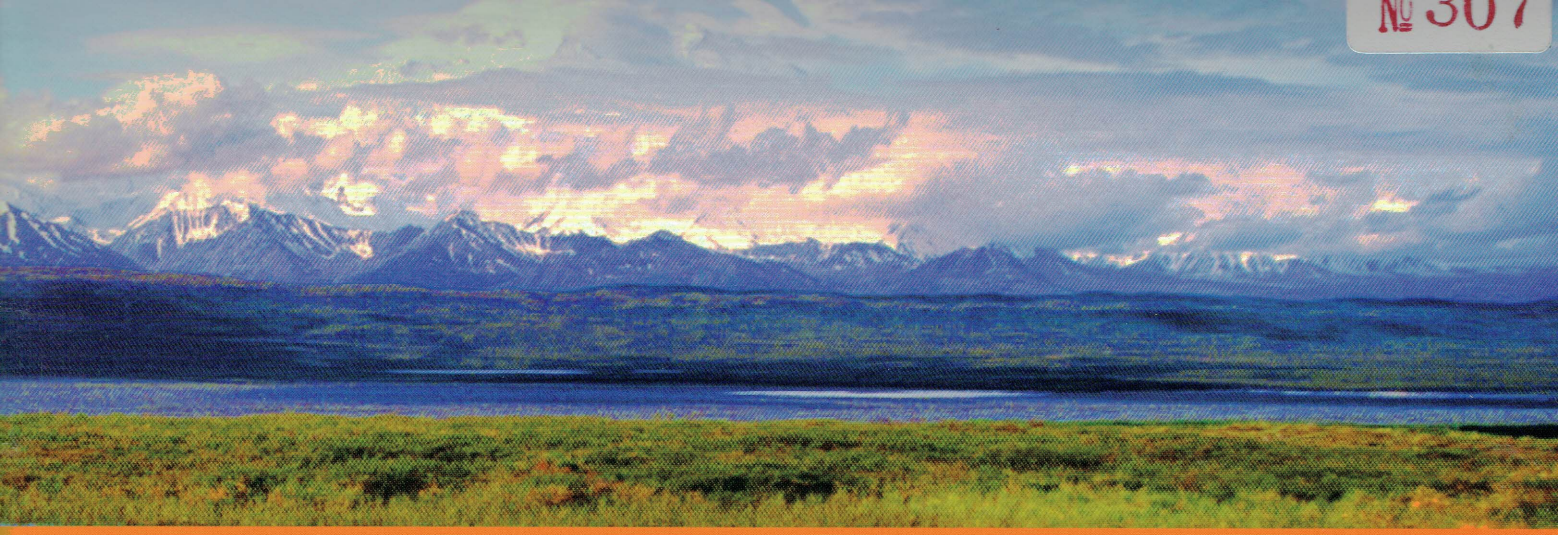

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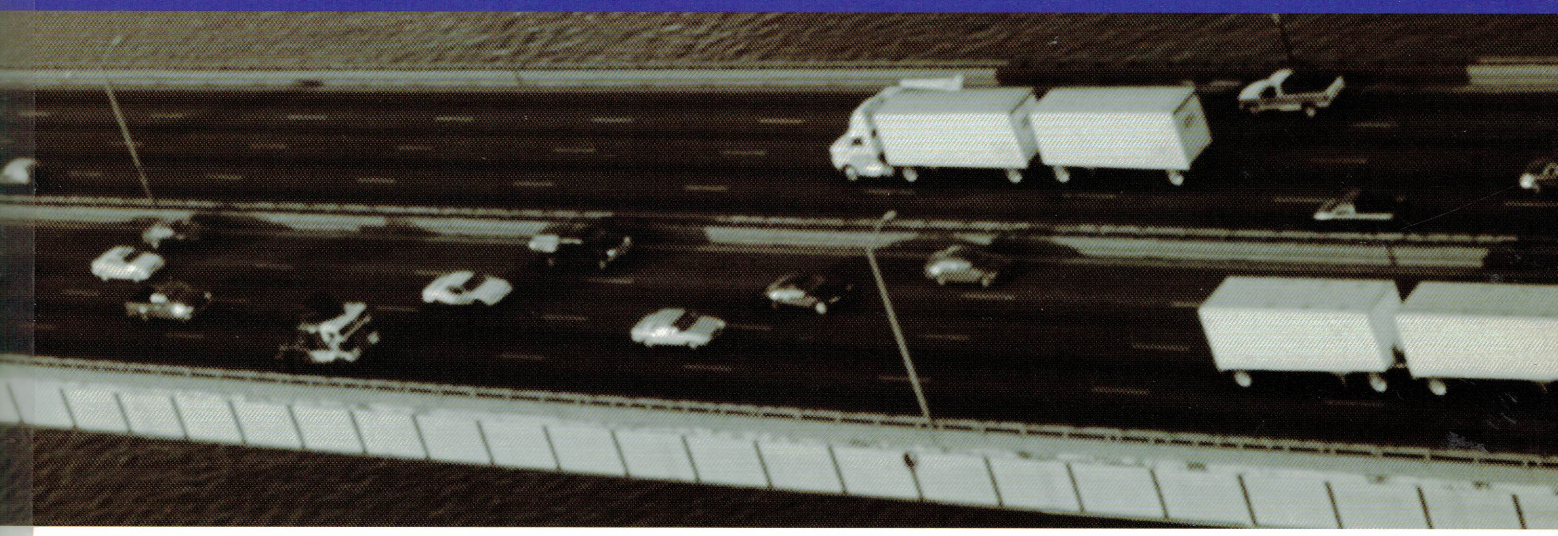


特定非営利活動法人 日韓トンネル研究会

Invitation to the Japan-Korea Tunnel

1.History of the Japan-Korea Tunnel Project.
2.Comparison of the Giant Underwater Tunnel Project.
3.Present Situation of the Japan-Korea Tunnel Project.
4.Future of the Japan-Korea Tunnel Project.

1. History of the Japan-Korea Tunnel Project.

Summer 1940 "Cross Continental Cannonball Plan" has announced by the Ministry of Railroad, the Great Japan Empire.

July 1980 "The Framework of Euroasia Driveway" has launched by the K.K. Obayashi-gumi.

Nov. 1981 "The Framework of the International Highway" has announced at the 10th International Convention of Unification for Science. (Seoul)

April 1982 The International Highway Construction Enterprise was found.

May 1983 The Japan-Korea Tunnel Research Institute was found.

July 1983 TheJapan-Korea Tunnel Research Institute, Kyushu Branch was found.

December 1985 Japan-Korea Joint Convention with reporting session. (Seoul)

October 1986 The ground-braking ceremony for begin construction and excavation research was placed at Nagoya, Chinzei-cho, Saga prefecture.

October 1986 International Highway Research Institute was found. (Seoul)

October 1086 International Highway Research Institute, Pusan Branch was found.

May 1990 President of Korea has referred regarding the Japan-Korea Tunnel project at the congressional speech in Japan.

March 1992 Japan-Korea Tunnel Technological Research Institute was found. (Seoul)

June 1992 The 1st International Symposium between Japan-Korea-China was

held. (Tokyo, Kyushu)

November 1992 Chinese National Planning Committee, Transportation Department has visited Japan. (Tokyo, Kyushu)

March 1993 China Route of International Highway Project has taken as the national project of the People's Republic of China.

June 1993 The 2nd International Symposium between Japan-Korea-China was held. (Tokyo, Kyushu)

November 1993 The 1st Japan-Korea Exchange Meeting for Tunnel Technology. (Seoul)

November 1994 The 3rd International Symposium between Japan-Korea-China was held. (Tokyo, Kyushu)

November 1995 The 2nd Japan-Korea Exchange Meeting for Tunnel Technology. (Seoul)

May 1996 Construction and Transportation department affiliates from the Republic of Korea have visited Japan for field inspection. (Nagoya, Saga Prefecture)

August 1996 Japan-Korea Tunnel Project was presented during diplomatic study session of Liberal Democratic Party. (Head Quarter of the Liberal Democratic Party)

June 1999 Report regarding the Japan-Korea was made to the congressmen and affiliates of Republic of Korea. (Seoul)

September 1999 Field inspection was made by the Mayor of Busan, the fellow city and its party. (Nagoya, Saga Prefecture)

December 1999 The 3rd Japan-Korea Exchange Meeting for Tunnel Technology. (Seoul)

May 2000 Korean public broadcasting corporation (KBS) has televised nationally

on the Japan-Korea Tunnel Project.

August 2000 Korean cultural broadcasting corporation (MBC) has taken and televised, that the Japan-Korea Tunnel Project as a lead story of the NEWS.

September 2000 Japan-Korea Tunnel Program was highly recognized by Dae-Jung Kim, the president of the Republic of Korea and Yoshirou Mori, the prime minister of Japan at dinner meeting of the Japan-Korea summit. (Japan)

October 2000 President Dae-Jung Kim has introduced framework of the Japan-Korea Tunnel Project at the Summit Conference for Asia and Europe (ASEM). Prime Minister Yoshirou Mori has sent an acclamation. (Seoul)

December 2000 Japan-Korea Tunnel Project was broadcasted by the NHK Nagasaki station as a one of the project, which Nagasaki prefecture will face in 21st century.

February 2001 Japan-Korea Tunnel Project was presented at the Japan-Korea federation assembly of the congressmen. (Seoul)

April 2002 Korean government has announced that of the initiation of "Adequacy investigation of the Japan-Korea Tunnel Project".

August 2002 Japan-Korea Tunnel Project was presented during the 2nd tunnel technology discussion at the tunnel commission of the Korean civil engineering institute. (Seoul)

September 2002 Congressmen of Liberal Democratic Party has visited Kyongsun-namdo, Kojae-do and Tsushima for field inspection.

November 2002 Japan-Korea Tunnel Project was addressed at the tunnel meeting of Japan and Korea, held by Asian Association.

February 2003 Japan-Korea Tunnel Project was mentioned at the discussion after the presidential inauguration between Prime Minister Koizumi and President Dae-Woo Noh.

March 2003 Framework of the Japan-Korea underwater tunnel project was announced by Liberal Democratic Party with a catchword of "Dream of Nation founding".

April 2003 Ministry of National Land and Transportation has announced "National founding ideas for 100 years". The proposal includes Japan-Korea Tunnel Project was introduced with Asian interrelated traffic web.

April 2003 Japan-Korea Tunnel Project was addressed to the Eurasia cloisters research committee at the Japan macro engineering institute.

May 2003 Newspaper for West Japan has reported, that Korean construction and transportation department will conclude the examination for "Adequacy investigation of the Japan-Korea Tunnel Project" by June.

June 2003 President Dae-Woo Noh has mentioned about Japan-Korea Tunnel Project during congressional speech in Japan.

June 2003 Japan-Korea Tunnel Project was reported as an adequate project that is technically possible, at the diplomatic meeting of Liberal Democratic Party.

July 2003 Busan cultural Broadcasting Corporation of Korea (MBCTV) has visited the Kyushu, and also held an interview with officials of the project.

August 2003 Exhibition was made to the "Civil Expo 2003" organized by Korean civil engineering institution.

December 2003 Officer of the subject institution had an interview with the Kyushu Asahi Broadcasting Corporation.

February 2004 Subject institution was officially certified by government as a NPO of Japan-Korea Tunnel Research Institution.

2. Comparison of the Giant Underwater Tunnel Project. (Excerpt from macro project case study)

Standard Condition

	Seikan Tunnel	British-French Channel Tunnel	Japan-Korea Tunnel
Construction motif	Touyamaru-Safety	Historical background, formation of the EC/EU	Historical background, sense of identity among countries of North East Asia
Tunnel extension	Length 35k850 Seabed 23k300 1 Country	Length 51k000 Seabed 38k098 Between 2 countries	A- Route (231km) Kyushu-Iki 28km Iki-Tsushima 51km Tsushima-Korea 61km B- Route (217km) Kyushu-Iki 28km Iki-Tsushima 49km Tsushima-Korea 64km C- Route (209km) Kyushu-Iki 28km Iki-Tsushima 51km Tsushima-Korea 49km Between 2 countries
Principle of the technological use	The longest underwater tunnel in the world, developed by its own technology, unprecedented.	Use of existing technology. (Seikan Tunnel to be the example)	Use of the existing technology, which was used at the time of constructing the Seikan Tunnel.
Safety	Development:	Necessity to obtain	Necessity to obtain

	Domestic rail road, fixed point observation by Fire Committee.	permission from the committee (IGC) of both countries. Non-fixed point observation. (This will actually become the fixed point observation.) 1 institution, signal, control, carriage, countermeasure to the terrorism.	permission from the committee (IGC) of both countries. 1 institution, signal, control, carriage, countermeasure to the terrorism.
Cost	Depends on technological capability. Otherwise practically same as previous calculation.	Double the amount of former allocation. Construction→ Long transportation period. Corporate structure – Technological gap.	Rationalize the investment method. Technological development. Train technicians.
Capital	Capital investment from the government.	Capital from private enterprise. Loan.	Combination of 2 previous plans?
Return fund	Loss from railroad settlement enterprise.	Income from carrier – (transportation maintenance fee + interest + dividend) = Return from net profit.	Return from the net profit after the freeze period.
Business body	Country = Japan railroad construction public corporation.	Private enterprise = Euro Tunnel. Parent company exists in both countries of Britain and France, just as a form.	Depends on the funding situation.
Managing body	Domestic railroad =	EuroTunnel	Depends on

	JR Hokkaido.	Corporation. Partially lending out to the domestic railroad.	managing body.

Natural Condition

	Seikan Tunnel	British-French Channel Tunnel	Japan-Korea Tunnel
Topography:			
Seabed length	28km	38km	A Route 145km B Route 141km C Route 128km
Maximum depth	140km	60m (Borneo shoal exist in halfway = 5m)	A Route 155km B Route 160km C Route 220km
Current	Strong	Weak	Medium
Geology			
Ground activity	Plate (Expansion, pressure)	Almost none.	Few (West coast of Tsushima)
Era	New Tertiary Period.	The Cretaceous	pleistocene– old tertiary period – igneous rocks.
Rift	Large amount.	Very small amount.	Small but overall transformation with stratum may be seen.
Rock	Hard → Soft	Medium	Hard → Soft
Lining:			
Plain curve	6,500m	4,000m	Over 8000m
Inclination	12%	11%	Maglev or Shinkansen.
Transportation	Combination of Shinkansen +	Shinkansen Crossover the	Shinkansen or Maglev

	existing railroad line. (standard measurement)	middle of tunnel.	Inter-space seabed base.
Tunnel cross section Primary tunnel Service tunnel Pilot Tunnel	 1 double track line. 1 line. 1 line.	 2 single track lines. 1 line. None	 N/A 1 line. None.

Effect, Forecast

	Seikan Tunnel	British-French Channel Tunnel	Korea-Japan Tunnel
	New development form, Small number of surrounding population. Technological development form (cost reduction). Necessity to use both Shinkansen and car train (shuttle). Stimulation needed more for International rather than domestic transaction. (Britain, France, Northern Europe, Gibraltar and Alps).	Practical form, competition between other organizations. (heliport, aircraft) Part of important express transportation. Model shift. Northern Europe – Denmark, Sweden, Germany. Environment	Practical form, competition between other organizations. Part of the Asia railroad transit (model shift). "Shinkansenize" China. Environment.

Future

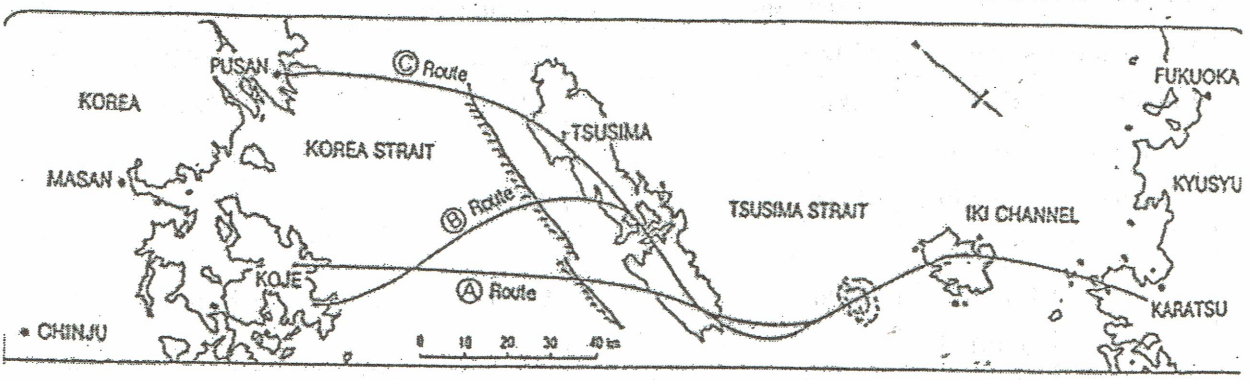
	Seikan Tunnel	British-French Channel Tunnel	World
	Create Asian web, Japan-Korea Tunnel,	Crossing over the Alps, 3 route-model shift.	Gibraltar channel Bering channel World

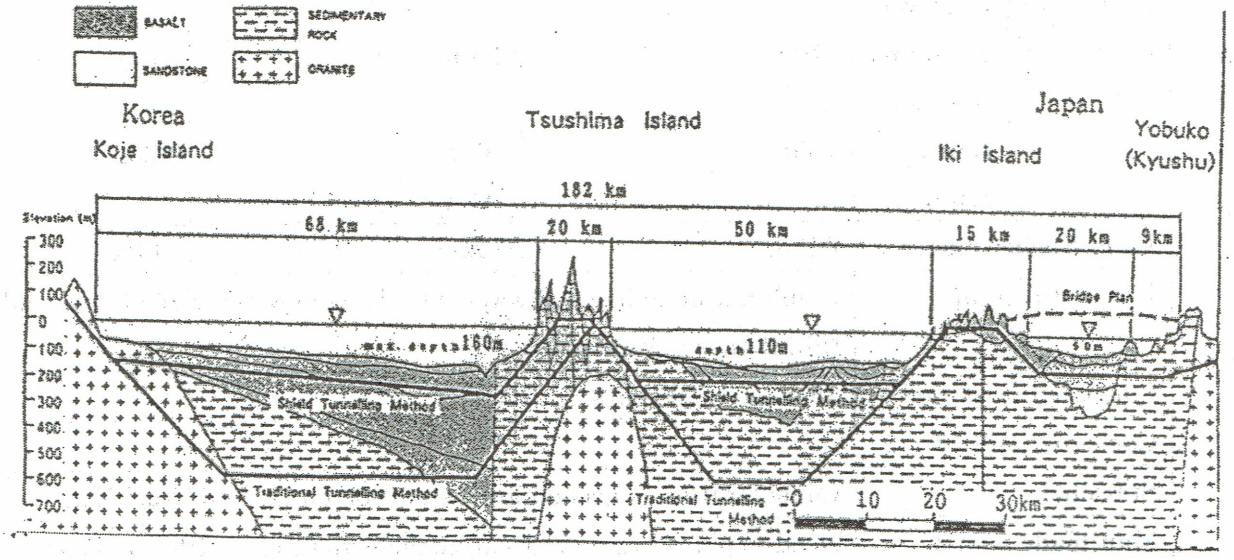
	Soya-Mamiya channel, Kainan island-young-tsu canal, Malacca channel, Sunda channel Himalaya base in east, Liao-dong peninsula.	Bosporus channel.	transportation system (WTS). International railroad transportation system. (Include: pipeline, electricity, communication, water)

Summary layout/proceeding plan

		A Route	B Route	C Route
Line route		Karatsu~Iki~Tsushima ~Kojae-do	Karatsu~Iki~Tsushima ~Kojae-do	Karatsu~Iki~Tsushima ~Pusan
Extension distance		209km	217km	231km
Below seabed distance	Iki waterway	28km	28km	28km
	Tsushima channel	51km	49km	51km
	Korea channel	66km	64km	49km
Maximum depth of water.	Iki waterway	55m	55m	55m
	Tsushima channel	110m	110m	10m
	Korea channel	155m	160m	220m
Land surface distance		64km	76km	103km
Usage direction		Combination of below 3 ways: Shinkansen,Maglev, road, railroad (Shinkansen, Maglev).		
Construction period		15 years – 20 years.		
Construction cost				
Station		Consideration is needed for the station on Iki and Tsushima.		
Man-made island		Need to place in every 20km, considering the ventilation vent.		

Summary plan for the route





3.Current situation of the Japan-Korea Tunnel Project.

It was vast amount of investigative work, which we have done up until today. We have spent 3 years to organize and re-analyze the existing available data. Those are as follows: 37 socio-economical related works, 67 topographical and geographical related works, 24 design and construction works, 28 environmental related works. Please refer to the below for the brief summary.

Source organized for existing data. Classified report.

1st section	Socio-economical related issue	37 issues.
2nd section	Topographical and geographical related issue	67 issues
3rd section	Design and construction related issue	24 issues
4th section	Environmental related issue	28 issues

調査一覧　１・３・４部会

第１部会　社会経済関連　３７件

1-0101-00	日韓トンネル研究プロジェクト 第１次基本構想予備調査分析報告書	83.03
1-0102-00	事例研究「青函トンネル」調査報告書	85.03
1-0103-00	日韓トンネル関連地域開発整備計画	85.05
1-0104-00	西日本の大規模プロジェクトに関する基礎調査	86.03
1-0105-00	華北横断高速道路の経済検討報告書	88.06
1-0106-00	中国東北部東西横断高速道路建設計画 第１次予備調査報告書	89.08
1-0107-00	中国東北部東西横断高速道路建設計画 第２次予備調査報告書	90.07
1-0108-00	アジア高速道路網最適投資計画の評価のための経済効果計測（PART1）	—
1-0151-00	日韓トンネルにおける経済評価	84.04
1-0201-00	昭和58年度中間報告会資料	84.01
1-0202-00	昭和59年度　各部会報告資料	85.05
1-0203-00	昭和60年度　研究報告資料	86.02
1-0204-00	昭和60年度　研究調査報告集	86.05
1-0205-00	昭和61年度　研究調査報告集	87.05
1-0206-00	昭和62年度　研究調査報告集	88.05
1-0207-00	昭和63年度　研究調査報告集	89.05
1-0208-00	平成元年度　研究調査報告集	90.05
1-0209-00	平成２年度　研究調査報告集	91.06
1-0251-00	一年の活動報告	82.11
1-0252-00	一年の活動報告	83.11
1-0301-00	日韓トンネル研究(NO.1)	84.05
1-0302-00	日韓トンネル研究(NO.2)	85.03
1-0303-00	日韓トンネル研究(NO.3)	85.12
1-0304-00	日韓トンネル研究(NO.4)	86.02
1-0305-00	日韓トンネル研究(NO.5)	86.08
1-0306-00	日韓トンネル研究(NO.6)	87.03
1-0307-00	日韓トンネル研究(NO.7)	87.12
1-0308-00	日韓トンネル研究(NO.8)	88.10
1-0309-00	日韓トンネル研究(NO.9)	89.05
1-0310-00	日韓トンネル研究(NO.10)	90.09
1-0311-00	日韓トンネル研究(NO.11)	91.05
1-0312-00	日韓トンネル研究(NO.12)	92.04
1-0313-00	日韓トンネル研究(NO.13)	93.05
1-0314-00	日韓トンネル研究(NO.14)	94.05
1-0315-00	日韓トンネル研究(NO.15)	95.05
1-0316-00	日韓トンネル研究(NO.16)	00.02
1-0351-00	本郷路縮刷版	84.04

第３部会　設計施工関連　２４件

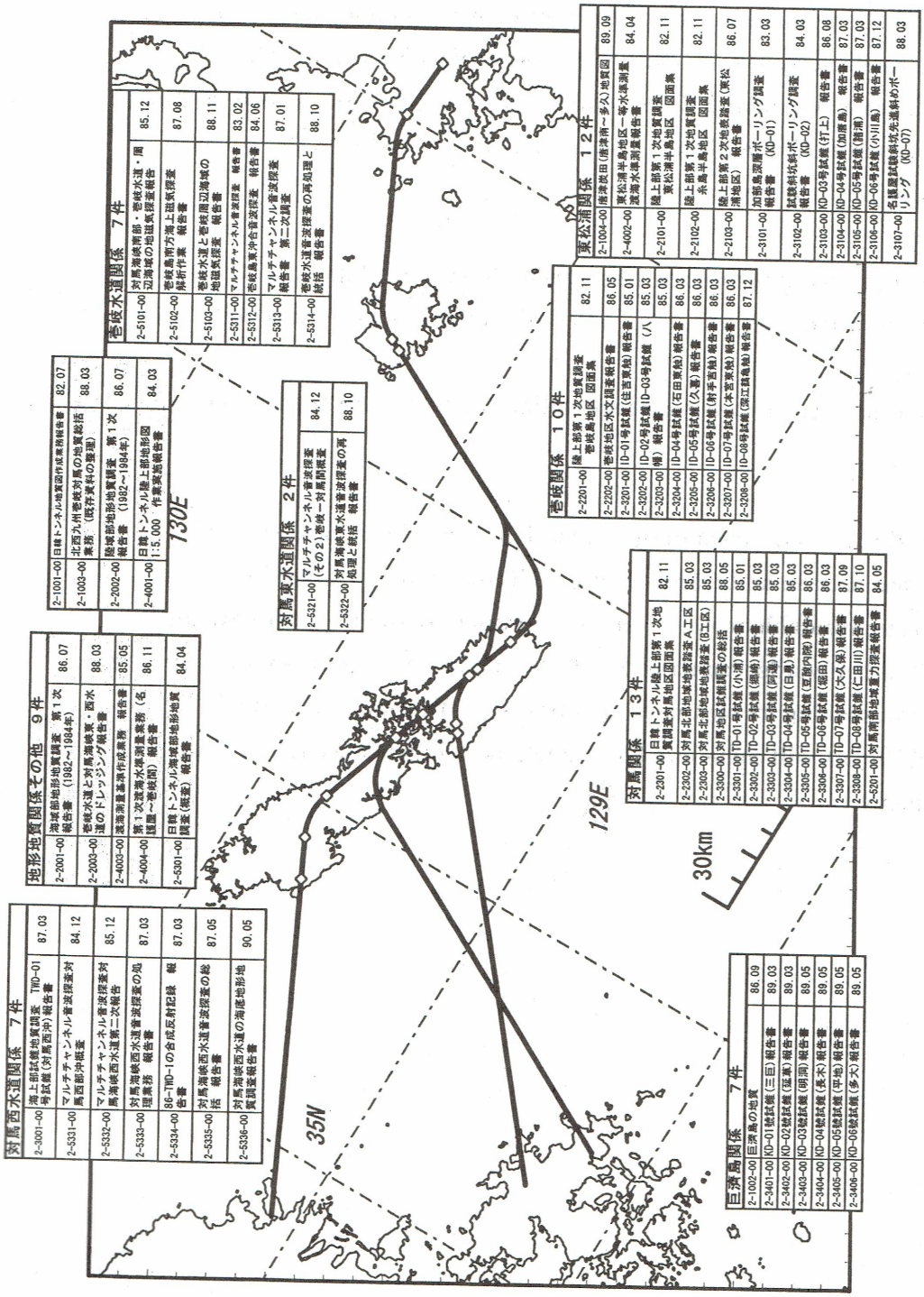
3-1001-00	路線設計施工計画概略検討　第１次報告書	86.07
3-1002-00	路線設計施工計画概略検討　第２次報告書	91.03
3-1003-00	第３部会調査研究総括報告書　（1983年5月～1991年3月）	92.03
3-1101-00	昭和59年度日韓トンネル計画設計報告書	85.03
3-1102-00	日韓トンネル人工島計画　概略検討報告書	85.03
3-1103-00	日韓トンネル対馬調査立坑　設計・施工計画書	85.09
3-1104-00	昭和60年度　超長大トンネル防災設備予備検討　報告概要書	86.04
3-1105-00	昭和60年度　日韓海底トンネル施工計画概略検討　報告書	86.05
3-1106-00	昭和61年度　道路トンネル計画に関する調査(その１)　報告書	87.05
3-1201-00	沈埋トンネル案調査　報告書	85.04
3-1202-00	沈埋トンネル案調査(その２)　報告書	88.05
3-1203-00	昭和62年度　日韓トンネル計画沈埋トンネル概略施工検討　報告書	88.07
3-1301-00	道路換気計画に関する調査　報告書	85.04
3-1302-00	昭和60年度　道路換気計画に関する調査(その２)　報告書	86.04
3-1401-00	昭和62年度　日韓ﾄﾝﾈﾙ施工のための注入工法に関する研究(その１)　-既往文献調査-	88.03
3-1402-00	昭和63年度　日韓ﾄﾝﾈﾙ施工のための注入工法に関する研究(その２)　－ＡＥ計測を利用した注入効果確認実験－	89.05
3-1403-00	平成元年度　日韓ﾄﾝﾈﾙ施工のための注入工法に関する研究(その３)　－ＡＥ計測を利用した注入効果確認実験－	90.06
3-1501-00	昭和59年度　呼子～壱岐間橋梁一般図作成　報告書	85.04
3-1502-00	昭和60年度　呼子～壱岐間橋梁一般図作成(その２)　報告書	86.05
3-1503-00	昭和61年度　呼子～壱岐間橋梁計画業務委託その３　報告書	87.05
3-2001-00	名護屋調査斜坑工事計画書　第一部	84.12
3-2002-00	昭和62年名護屋調査斜坑第一期工事　報告書	87.09
3-2003-00	名護屋調査斜坑第二期工事施工計画書（案）	—
3-2004-00	第２期工事　切羽写真	89.08

第４部会　環境関連　２８件

4-0001-00	日韓トンネル建設に伴う資料収集調査報告書	84.02
4-0002-00	日韓トンネル海域部環境調査報告書	84.03
4-0003-00	昭和58年度　工事中の影響小委員会報告書	84.05
4-0004-00	昭和59年度　工事中の影響小委員会報告書	85.03
4-0005-00	昭和59年度 海域環境小委員会報告書 －東松浦半島～対馬の海域環境－	85.03
4-0006-00	昭和59年度　調査研究中間報告書	85.05
4-0007-00	昭和60年度　調査研究中間報告書	86.07
4-0008-00	気象衛星NOAA熱赤外画像による対馬海峡近海の海況変動調査　報告書	86.08
4-0009-00	浅茅湾の多目的開発を目的とする生態系調査(冬季調査)報告書	86.08
4-0010-00	クロマグロ養殖研究視察報告書	86.08
4-0011-00	総合気象観測システム　名護屋観測所完成図書	87.03
4-0012-00	日韓トンネル海域環境調査第１次報告書	87.07
4-0013-00	名護屋浦・呼子海域環境調査報告書 （流動・水温・塩分編）	87.07
4-0014-00	名護屋浦・呼子海域環境調査報告書 （水質・底質・生物編）	87.07
4-0015-00	名護屋浦・呼子海域冬期環境調査報告書	87.07
4-0016-00	浅茅湾の多目的開発を目的とする生態系調査(夏季調査)報告書	87.08
4-0017-00	対馬浅茅湾における漁業実態および漁獲物調査　報告書	88.09
4-0018-00	日食と気象の変化に関する記録	87.09
4-0019-00	1987年活動報告(自然・社会)環境調査	88.01
4-0020-00	クロマグロ養殖の基礎調査報告書	88.01
4-0021-00	真珠養殖場の生態系調査　付着生物	88.09
4-0022-00	対馬浅茅湾のさかな	89.01
4-0023-00	対馬海峡海象・気象データ表示システム	89.03
4-0024-00	対馬海峡周辺海域の海上風及び波浪調査報告書	90.03
4-0025-00	水温計による環境調査	90.03
4-0026-00	対馬海峡における人工島・ﾄﾝﾈﾙ関連施設およびその周辺の生態系調査報告書	90.04
4-0027-00	多久～東松浦半島気象環境調査　報告書	90.07
4-0028-00	第４部会調査研究総括報告書（1983年5月～1991年3月）	91.07

Research list for 1st, 3rd and 4th section.

Research list for 2nd section.



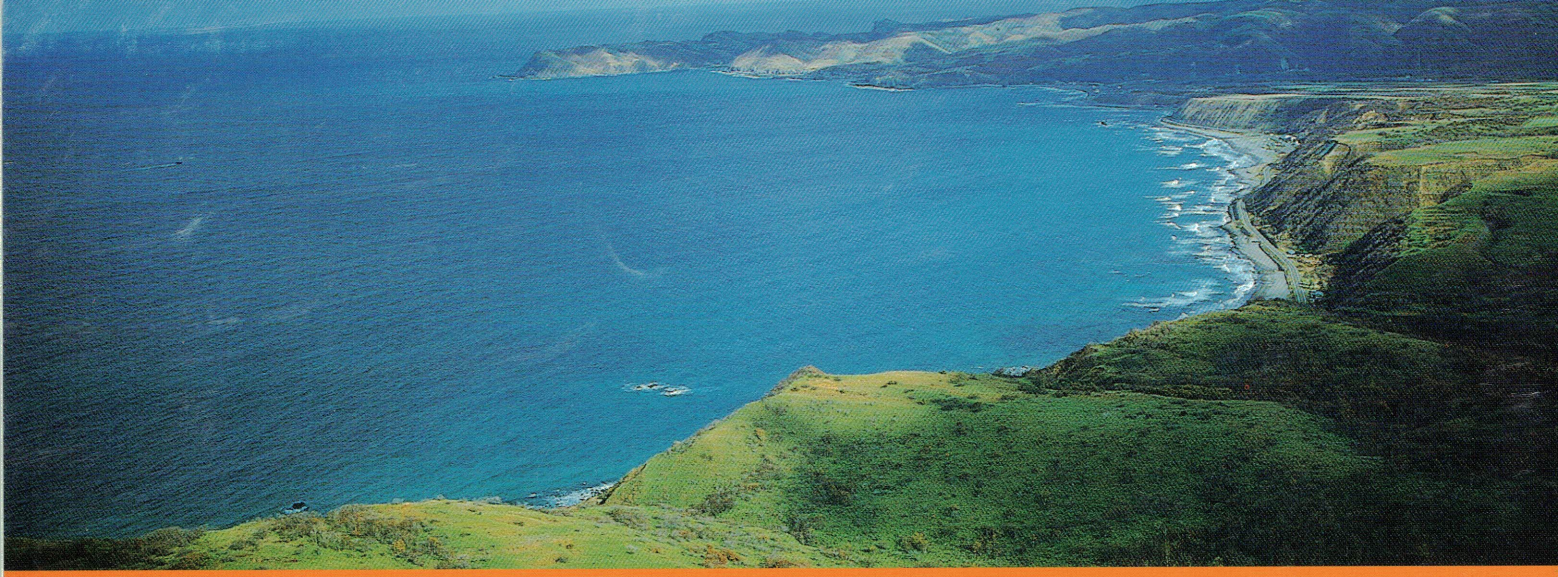
調査一覧　第２部会

4.Future of the Japan-Korea Tunnel Project

It is inevitable to avoid various obstacles, in order for the Japan-Korea Tunnel Project to come in true. Though it is possible technologically, numbers of problems remain as follows: Construction funds, foreseeable profit, willingness of countries in both governments and citizens of Japan and Korea, opinions and/or objections which may be raised from countries such as China, Russia and U.S.A. and Following is the proposal for the possible solution to the above raised issues.

Proposal1, Promotion of the collaborative work between Korea and Japan.
Proposal2, Diversify operational base to create effective environment for research institutions.
Proposal3, Share the information, in terms of spreading the fact about the tunnel project.

We are now living in the world of economic globalization. In various field such as information, capital transaction and transportation will likely to be unified in most advanced form. It is unavoidable to shift from own national realm to multi-national realm to survive. In other words, countries need to transform themselves into larger communal, rather than seeking its own national interest. We believe that this Japan-Korea Tunnel Project will come into have much more importance in the main stream of world economy.



NON-PROFIT FOUNDATION
THE JAPAN-KOREA TUNNEL RESEARCH INSTITUTE