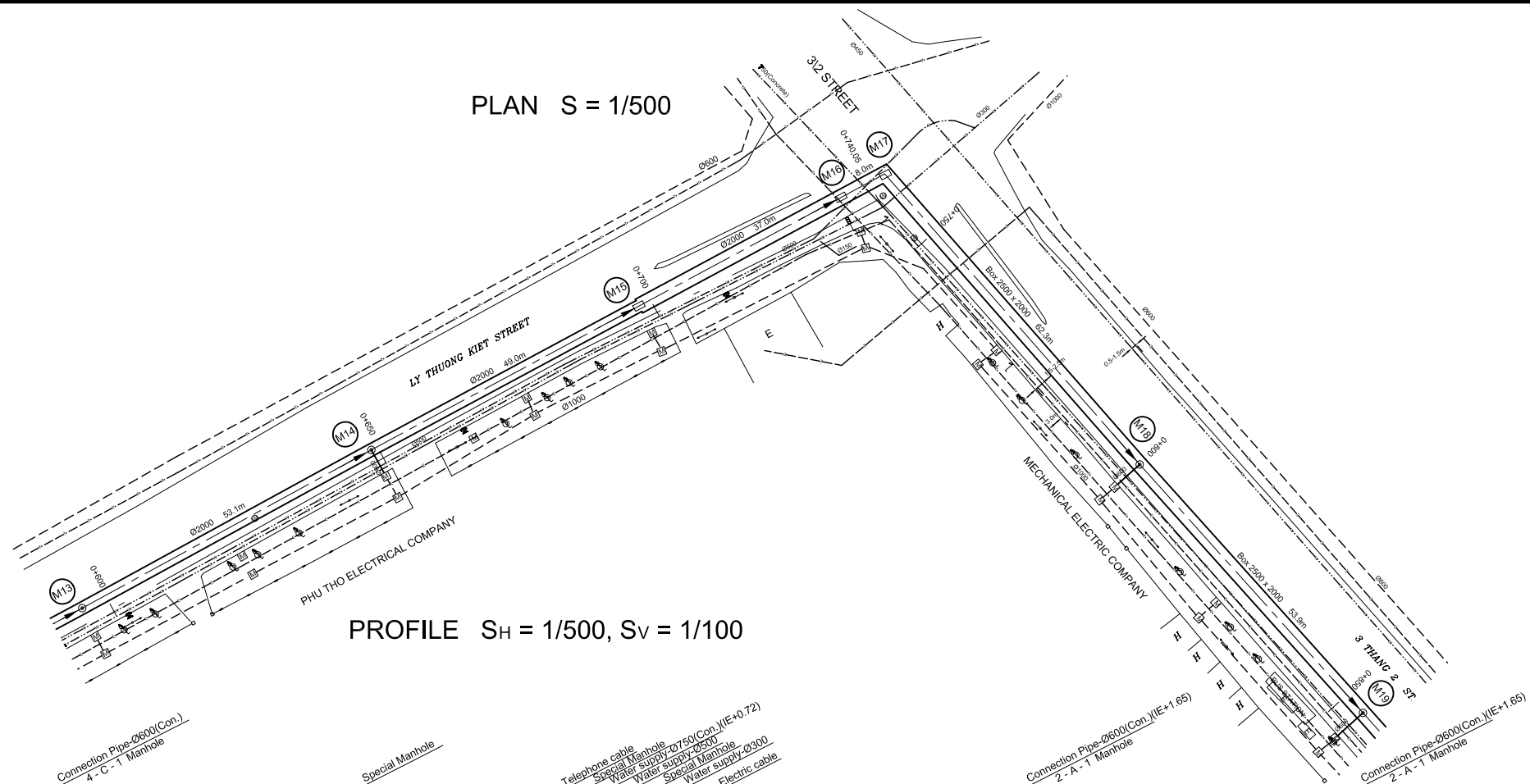
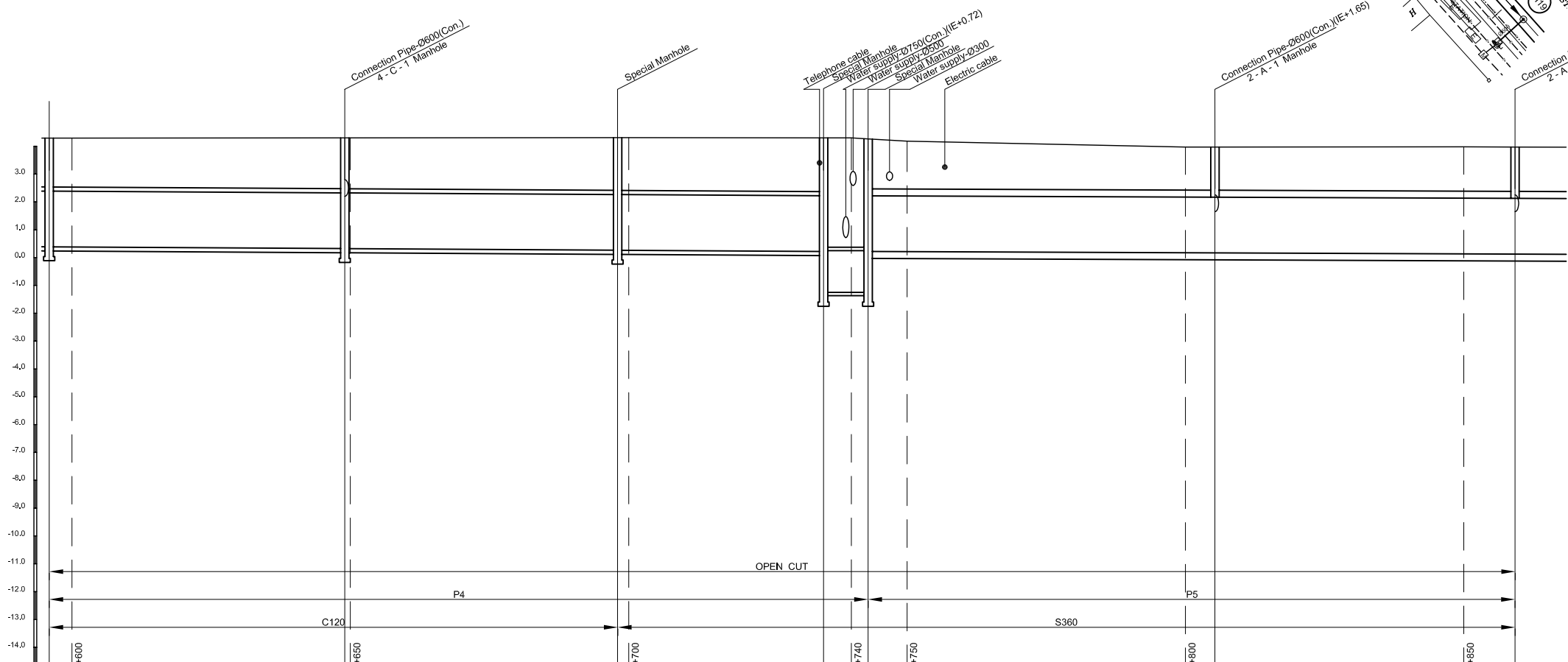


PLAN S = 1/500

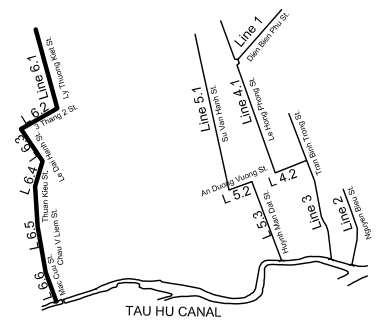


PROFILE S<sub>H</sub> = 1/500, S<sub>V</sub> = 1/100



| Manhole Number                | M13   | M14   | M15   | M16   | M17   | M18             | M19             |
|-------------------------------|-------|-------|-------|-------|-------|-----------------|-----------------|
| Diameter (mm)                 |       | Ø2000 | Ø2000 | Ø2000 | Ø1500 | Box 2500 x 2000 | Box 2500 x 2000 |
| Gradient (%)                  |       | 1.20  | 1.20  | 1.20  | 1.00  | 0.80            | 0.80            |
| Length (m)                    |       | 53.1  | 49.0  | 37.0  | 8.0   | 62.3            | 53.9            |
| Existing Ground Elevation (m) | 4.29  | 4.30  | 4.31  | 4.30  | 4.30  | 3.97            | 3.98            |
| Earth Covering (m)            | 1.76  | 1.83  | 1.90  | 1.83  | 3.89  | 1.55            | 1.59            |
| Invert Elevation (m)          | 0.38  | 0.32  | 0.26  | 0.22  | -1.25 | 0.17            | 0.14            |
| Total Accumulation Length (m) | 595.9 | 649.0 | 698.0 | 735.0 | 740.0 | 800.0           | 850.0           |

KEYMAP



LEGEND

- Sewer Line
- Sewer Line
- Planned Sewer
- Existing Sewer
- Telephone Cable
- Electric Cable
- Water Pipe
- Outlet Without Flap Gate
- Outlet With Flap Gate
- Manhole
- Special Manhole
- Diversion Chamber
- Diversion Chamber with Manhole
- Existing Manhole
- Existing Inlet
- Telephone Cable Inspection Chamber
- Electric Cable Inspection Chamber
- Fire Hydrant
- S4 - Area to be Required for Shaft
- Sewer Connected from The Right Side
- Sewer Connected from The Left Side

| NO. | DATE | DESCRIPTIONS | BY | APRO. |
|-----|------|--------------|----|-------|
|     |      |              |    |       |

REVISIONS

PROJECT MANAGEMENT UNIT FOR  
HO CHI MINH CITY  
WATER ENVIRONMENT IMPROVEMENT

THE DETAILED DESIGN ON HO CHI MINH CITY  
WATER ENVIRONMENT IMPROVEMENT PROJECT  
IN THE SOCIALIST REPUBLIC OF VIET NAM

PACKAGE D  
EXISTING COMBINED SEWER IMPROVEMENT

PLAN AND PROFILE  
ECSI - LINE 6.1 - 6.2 (3)

SCALE : As Shown

JICA JAPAN INTERNATIONAL COOPERATION  
AGENCY ( JICA )

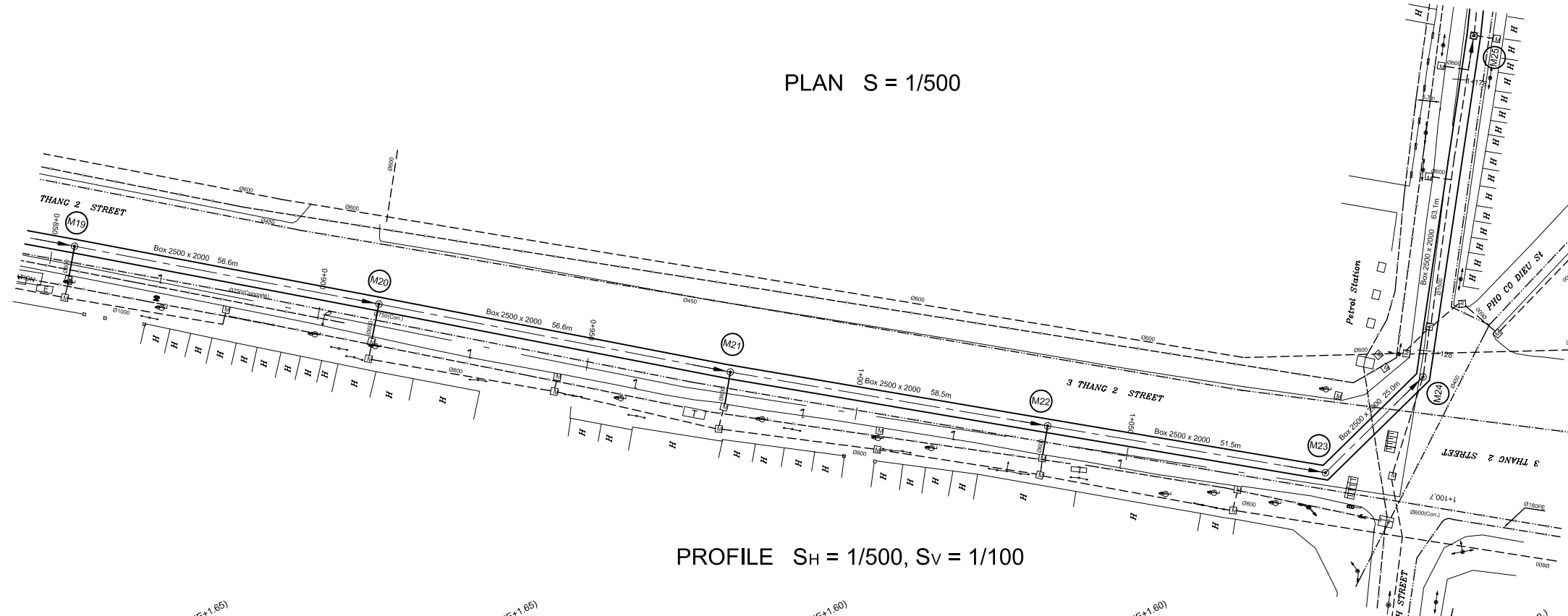
PACIFIC CONSULTANTS INTERNATIONAL

DESIGNED  
KATSUKI TAKAOKI

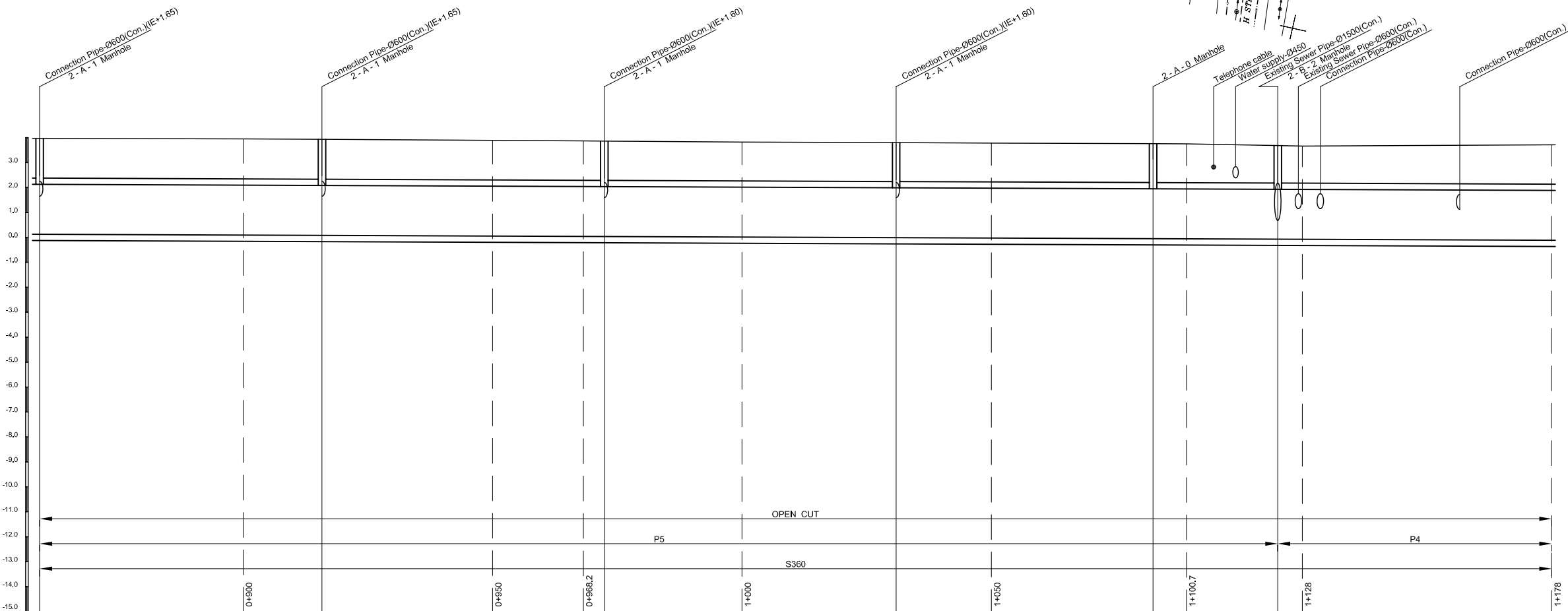
CHECKED  
KONDO MASAMI

DATE : JUNE 2001 DWG. No. PD - ECSI - 229

PLAN S = 1/500

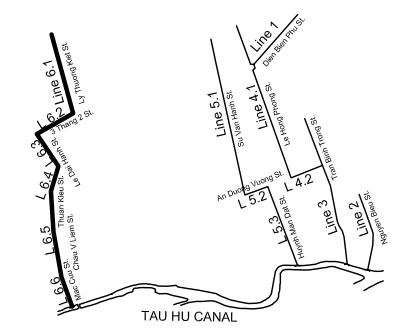


PROFILE S<sub>H</sub> = 1/500, S<sub>V</sub> = 1/100



|                               |                 |       |                 |       |                 |       |                 |        |                 |        |                 |        |        |        |
|-------------------------------|-----------------|-------|-----------------|-------|-----------------|-------|-----------------|--------|-----------------|--------|-----------------|--------|--------|--------|
| Manhole Number                | M19             |       | M20             |       | M21             |       | M22             |        | M23             |        | M24             |        |        |        |
| Diameter (mm)                 | Box 2500 x 2000 |       | Box 2500 x 2000 |       | Box 2500 x 2000 |       | Box 2500 x 2000 |        | Box 2500 x 2000 |        | Box 2500 x 2000 |        |        |        |
| Gradient (‰)                  | 0.80            |       | 0.80            |       | 0.80            |       | 0.80            |        | 0.80            |        | 0.80            |        |        |        |
| Length (m)                    | 56.6            |       | 56.6            |       | 58.5            |       | 51.5            |        | 25.0            |        | 63.1            |        |        |        |
| Existing Ground Elevation (m) | 3.97            | 3.95  | 3.93            | 3.89  | 3.87            | 3.86  | 3.82            | 3.80   | 3.78            | 3.76   | 3.75            | 3.68   | 3.66   | 3.71   |
| Earth Covering (m)            | 1.59            |       | 1.80            |       | 1.57            |       | 1.56            |        | 1.56            |        | 1.50            |        | 3.66   |        |
| Invert Elevation (m)          | 0.13            | 0.09  | 0.08            | 0.05  | 0.04            | 0.04  | 0.02            | -0.01  | -0.03           | -0.05  | -0.05           | -0.07  | -0.07  | -0.12  |
| Total Accumulation Length (m) | 859.2           | 900.0 | 915.6           | 950.0 | 968.2           | 972.4 | 1000.0          | 1030.9 | 1050.0          | 1082.4 | 1089.1          | 1107.4 | 1112.3 | 1162.3 |

KEYMAP



LEGEND

- Sewer Line
- Planned Sewer
- Existing Sewer
- Telephone Cable
- Electric Cable
- Water Pipe
- Outlet Without Flap Gate
- Outlet With Flap Gate
- Manhole
- Special Manhole
- Diversion Chamber
- Diversion Chamber with Manhole
- Existing Manhole
- Existing Inlet
- Telephone Cable Inspection Chamber
- Electric Cable Inspection Chamber
- Fire Hydrant
- S4 - Area to be Required for Shaft
- Sewer Connected from The Right Side
- Sewer Connected from The Left Side

| NO. | DATE | DESCRIPTIONS | BY | APRO. |
|-----|------|--------------|----|-------|
|-----|------|--------------|----|-------|

REVISIONS

PROJECT MANAGEMENT UNIT FOR  
HO CHI MINH CITY  
WATER ENVIRONMENT IMPROVEMENT

THE DETAILED DESIGN ON HO CHI MINH CITY  
WATER ENVIRONMENT IMPROVEMENT PROJECT  
IN THE SOCIALIST REPUBLIC OF VIET NAM

PACKAGE D  
EXISTING COMBINED SEWER IMPROVEMENT

PLAN AND PROFILE  
ECSI - LINE 6.2 - 6.3 (4)

SCALE : As Shown

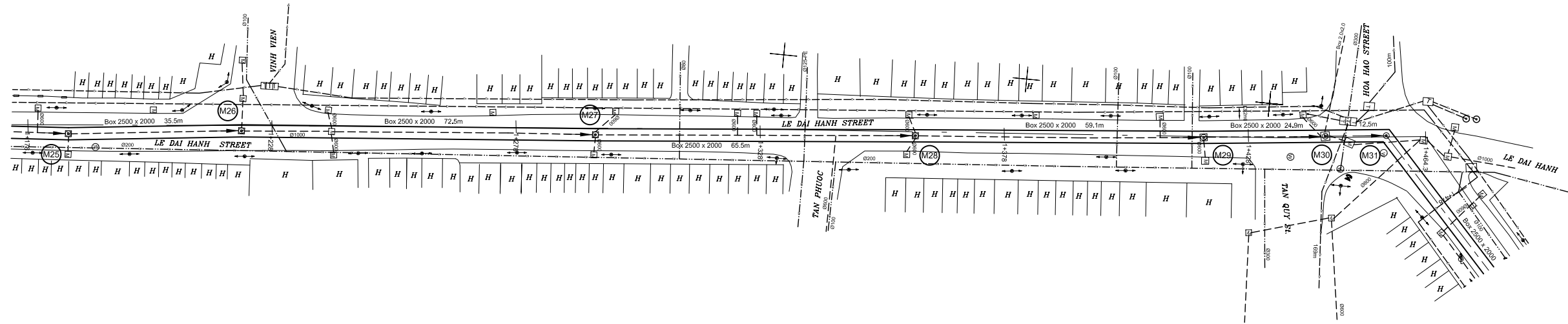
JICA JAPAN INTERNATIONAL COOPERATION AGENCY ( JICA )

PACIFIC CONSULTANTS INTERNATIONAL

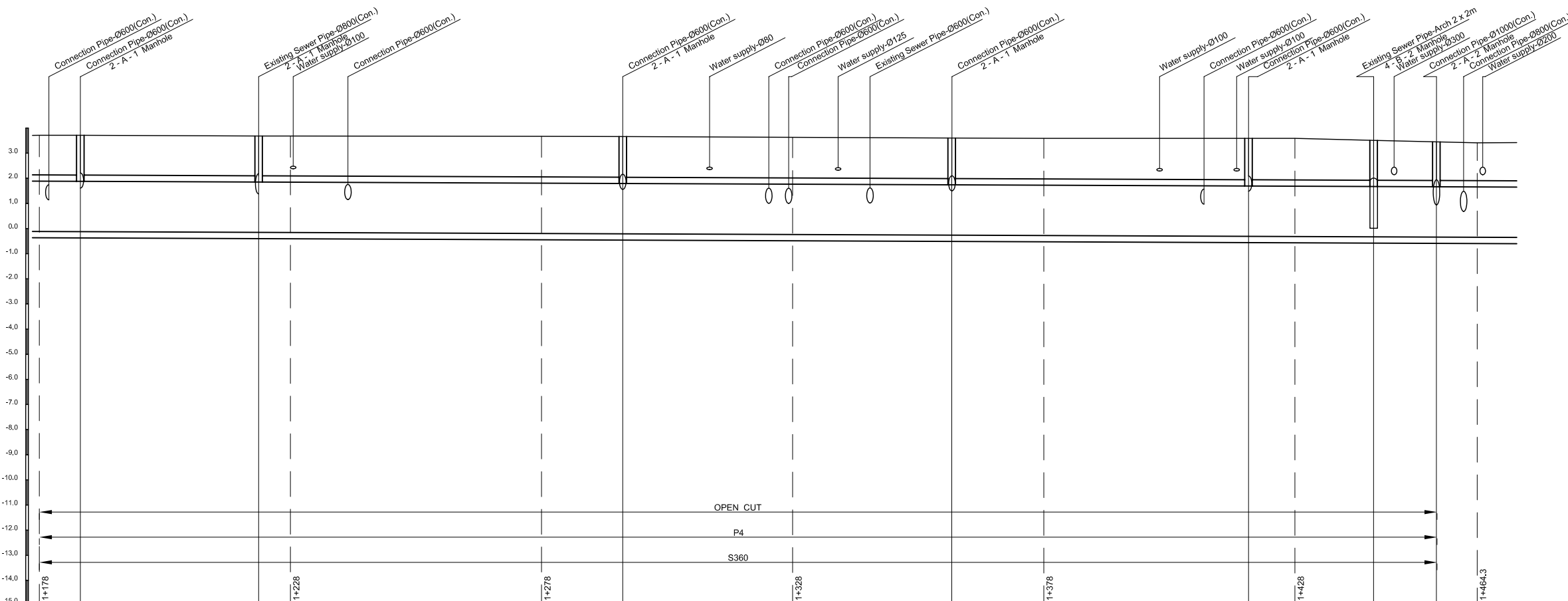
DESIGNED: KATSUKI TAKAOKI  
CHECKED: KONDO MASAMI

DATE : JUNE 2001 DWG. No. PD - ECSI - 230

PLAN S = 1/500

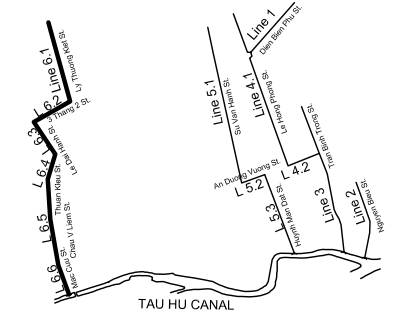


PROFILE S<sub>H</sub> = 1/500, S<sub>V</sub> = 1/100



| Manhole Number                | M25             | M26    | M27             | M28    | M29             | M30    | M31             |
|-------------------------------|-----------------|--------|-----------------|--------|-----------------|--------|-----------------|
| Diameter (mm)                 | Box 2500 x 2000 |        | Box 2500 x 2000 |        | Box 2500 x 2000 |        | Box 2500 x 2000 |
| Gradient (%)                  | 0.80            |        | 0.80            |        | 0.80            |        | 0.80            |
| Length (m)                    | 35.5            | 72.5   | 65.5            | 59.1   | 24.9            | 12.5   |                 |
| Existing Ground Elevation (m) | 3.71            | 3.68   | 3.67            | 3.66   | 3.63            | 3.60   | 3.59            |
| Earth Covering (m)            | 1.59            | 1.56   | 1.62            | 1.61   | 1.65            | 1.59   | 1.54            |
| Invert Elevation (m)          | -0.12           | -0.15  | -0.19           | -0.21  | -0.24           | -0.26  | -0.28           |
| Total Accumulation Length (m) | 1162.3          | 1170.5 | 1206.0          | 1212.3 | 1276.5          | 1344.0 | 1362.3          |

KEYMAP

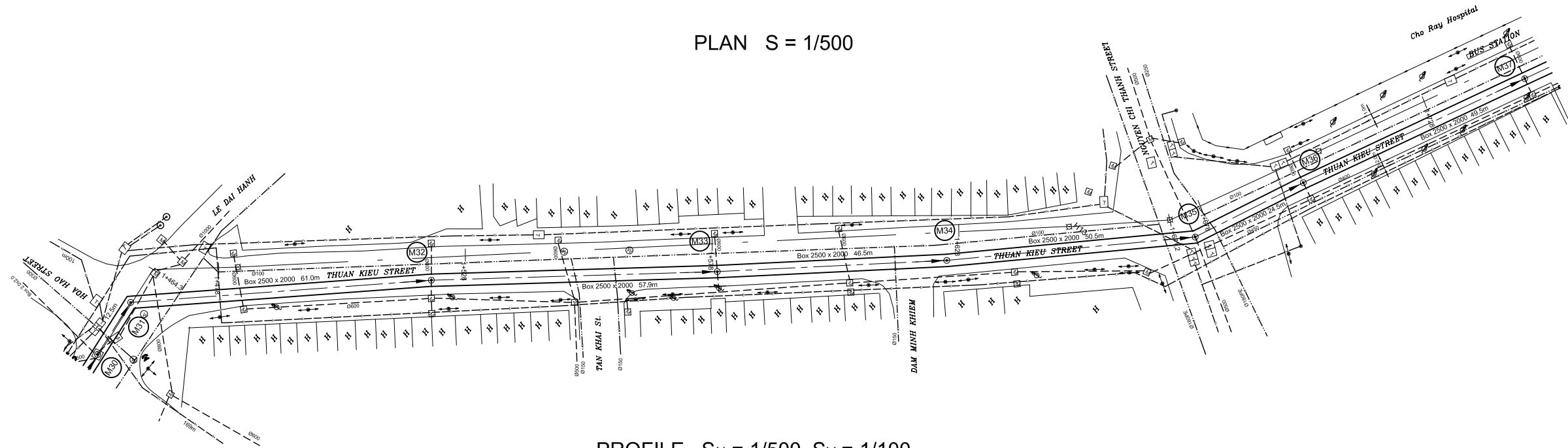


LEGEND

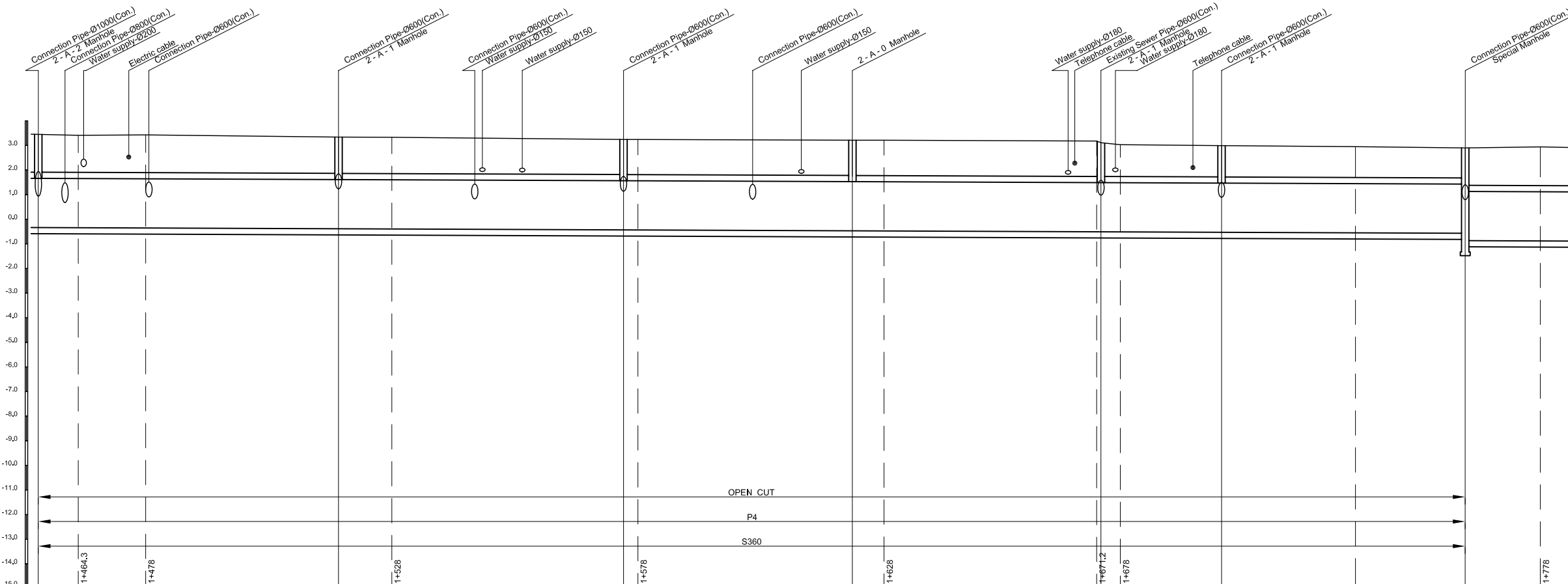
- Sewer Line
- Sewer Line
- Planned Sewer
- Existing Sewer
- Telephone Cable
- Electric Cable
- Water Pipe
- Outlet Without Flap Gate
- Outlet With Flap Gate
- Manhole
- Special Manhole
- Diversion Chamber
- Diversion Chamber with Manhole
- Existing Manhole
- Existing Inlet
- Telephone Cable Inspection Chamber
- Electric Cable Inspection Chamber
- Fire Hydrant
- S4 - Area to be Required for Shaft
- Sewer Connected from The Right Side
- Sewer Connected from The Left Side

| NO.   | DATE | DESCRIPTIONS             | BY | APRO. |
|---|------|--------------------------|----|-------|
| REVISIONS   |      |                          |    |       |
| PROJECT MANAGEMENT UNIT FOR<br>HO CHI MINH CITY<br>WATER ENVIRONMENT IMPROVEMENT  |      |                          |    |       |
| THE DETAILED DESIGN ON HO CHI MINH CITY<br>WATER ENVIRONMENT IMPROVEMENT PROJECT<br>IN THE SOCIALIST REPUBLIC OF VIET NAM |      |                          |    |       |
| PACKAGE D<br>EXISTING COMBINED SEWER IMPROVEMENT  |      |                          |    |       |
| <b>PLAN AND PROFILE</b><br><b>ECSI - LINE 6.3 (5)</b>   |      |                          |    |       |
| SCALE : As Shown  |      |                          |    |       |
| JAPAN INTERNATIONAL COOPERATION AGENCY ( JICA )   |      |                          |    |       |
| PACIFIC CONSULTANTS INTERNATIONAL   |      |                          |    |       |
| DESIGNED<br>KATSUKI TAKAOKI   |      | CHECKED<br>KONDO MASAMI  |    |       |
| DATE : JUNE 2001  |      | DWG. No. PD - ECSI - 231 |    |       |

PLAN S = 1/500

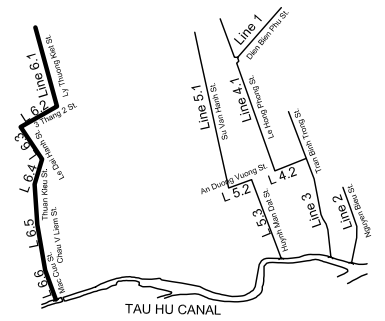


PROFILE S<sub>H</sub> = 1/500, S<sub>V</sub> = 1/100



| Manhole Number                | M31    |                 | M32    |        | M33             |        | M34    |                 | M35    |        | M36             |        | M37    |        |        |        |
|-------------------------------|--------|-----------------|--------|--------|-----------------|--------|--------|-----------------|--------|--------|-----------------|--------|--------|--------|--------|--------|
| Diameter (mm)                 | Ø      | Box 2500 x 2000 |        | Ø      | Box 2500 x 2000 |        | Ø      | Box 2500 x 2000 |        | Ø      | Box 2500 x 2000 |        | Ø      |        |        |        |
| Gradient (%)                  |        | 0.80            |        |        | 0.80            |        |        | 0.80            |        |        | 0.80            |        |        |        |        |        |
| Length (m)                    |        | 61.0            |        |        | 57.9            |        |        | 46.5            |        |        | 50.5            |        |        |        |        |        |
| Existing Ground Elevation (m) | 3.45   | 3.41            | 3.43   | 3.34   | 3.33            | 3.24   | 3.24   | 3.21            | 3.21   | 3.18   | 3.11            | 3.03   | 2.99   | 2.95   | 2.90   | 2.94   |
| Earth Covering (m)            | 1.54   |                 |        | 1.48   |                 |        | 1.42   |                 |        | 1.43   |                 |        | 1.27   |        | 1.22   | 2.94   |
| Invert Elevation (m)          | -0.34  | -0.35           | -0.36  | -0.39  | -0.40           | -0.43  | -0.43  | -0.47           | -0.47  | -0.51  | -0.51           | -0.51  | -0.53  | -0.55  | -0.57  | -0.87  |
| Total Accumulation Length (m) | 1440.5 | 1448.6          | 1462.3 | 1501.5 | 1512.3          | 1559.4 | 1562.3 | 1605.9          | 1612.3 | 1655.5 | 1656.4          | 1660.3 | 1680.9 | 1708.1 | 1730.4 | 1745.7 |

KEYMAP



LEGEND

- Sewer Line
- Sewer Line
- Planned Sewer
- Existing Sewer
- Telephone Cable
- Electric Cable
- Water Pipe
- Outlet Without Flap Gate
- Outlet With Flap Gate
- Manhole
- Special Manhole
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| NO. | DATE | DESCRIPTIONS | BY | APRO. |
|-----|------|--------------|----|-------|
|-----|------|--------------|----|-------|

REVISIONS

PROJECT MANAGEMENT UNIT FOR  
HO CHI MINH CITY  
WATER ENVIRONMENT IMPROVEMENT

THE DETAILED DESIGN ON HO CHI MINH CITY  
WATER ENVIRONMENT IMPROVEMENT PROJECT  
IN THE SOCIALIST REPUBLIC OF VIET NAM

PACKAGE D  
EXISTING COMBINED SEWER IMPROVEMENT

PLAN AND PROFILE  
ECSI - LINE 6.4 (6)

SCALE : As Shown

JICA JAPAN INTERNATIONAL COOPERATION  
AGENCY ( JICA )

PACIFIC CONSULTANTS INTERNATIONAL

DESIGNED KATSUKI TAKAOKI  
CHECKED KONDO MASAMI

DATE : JUNE 2001 DWG. No. PD - ECSI - 232