


## **FIRE FIGHTING SYSTEM**

<b>QUANTITY CALCULATION COVER SHEET</b>								
<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province			<b>Project Code</b>	JC1N004/2N001			
<b>Work Section Title</b>	<b>Fire Fighting System</b>			<b>Pay Item No. (BOQ)</b>	4A02			
<b>Quantity Item</b>	<b>Outdoor Hydraulic FF Equipment</b>			<b>Unit</b>	No.			
<b>Calculation Procedure Applied</b>								
Quantity Calculation was divided per type of equipment and counted per number.								
<b>References, Calculation Base and Revisions</b>								
Drawings N <sup>o</sup> :    UT-02-002 UT-02-010 UT-02-011 UT-02-012								
Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	H. Igula	02/07/12	6	S. Endo	12 July, 02	ST	16 July 02	
1								
2								
3								

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union	Calc. File No.																															
<b>Section</b>	UTILITY WORK	Calc. Index No.																															
<b>Subject</b>	Outdoor Hydraulic Fire Fighting Equipment	Page No.	2/6 Rev.																														
			References/																														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Pay Item</th> <th rowspan="2">Description</th> <th colspan="2">Quantity</th> </tr> <tr> <th>Count</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>4A02</td> <td><b>OUTDOOR HYDRAULIC FIRE FIGHTING EQUIPMENT</b></td> <td></td> <td></td> </tr> <tr> <td>4A0201</td> <td>Gate Valve, cast iron, flanged, 75 mm</td> <td style="text-align: center;">5</td> <td style="text-align: center;">5</td> </tr> <tr> <td>4A0202</td> <td>Angle Valve, bronze, threaded, 63 mm</td> <td style="text-align: center;">28</td> <td style="text-align: center;">28</td> </tr> <tr> <td>4A0203</td> <td>Meter, cast iron, flanged, 63 mm</td> <td style="text-align: center;">4</td> <td style="text-align: center;">4</td> </tr> <tr> <td>4A0204</td> <td>Fire Monitor, bronze, flanged, 75 mm</td> <td style="text-align: center;">6</td> <td style="text-align: center;">6</td> </tr> <tr> <td>4A0205</td> <td>Standing Hydrant</td> <td style="text-align: center;">6</td> <td style="text-align: center;">6</td> </tr> </tbody> </table>				Pay Item	Description	Quantity		Count	Total	4A02	<b>OUTDOOR HYDRAULIC FIRE FIGHTING EQUIPMENT</b>			4A0201	Gate Valve, cast iron, flanged, 75 mm	5	5	4A0202	Angle Valve, bronze, threaded, 63 mm	28	28	4A0203	Meter, cast iron, flanged, 63 mm	4	4	4A0204	Fire Monitor, bronze, flanged, 75 mm	6	6	4A0205	Standing Hydrant	6	6
Pay Item	Description	Quantity																															
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4A0202	Angle Valve, bronze, threaded, 63 mm	28	28																														
4A0203	Meter, cast iron, flanged, 63 mm	4	4																														
4A0204	Fire Monitor, bronze, flanged, 75 mm	6	6																														
4A0205	Standing Hydrant	6	6																														
		Prepared by	Checked by																														
		H. Iwata	S. Endo																														
		02/09/12	12 July 02																														



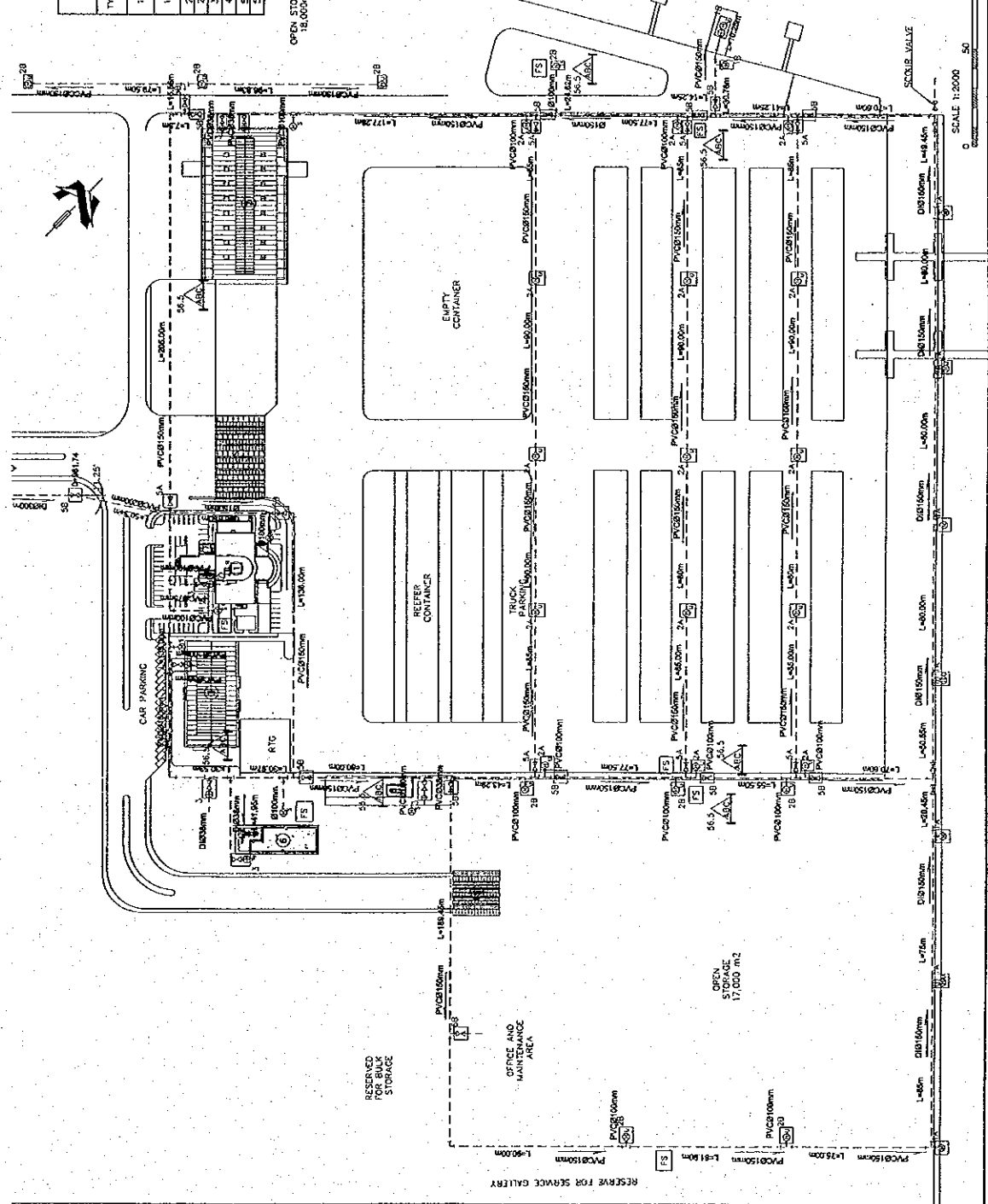
Project	Detailed Design on Port Reactivation Project in La Union Province of the Republic of El Salvador	Calc. File No.
Section	UTILITY WORK	Calc. Index No.
Subject	OUTDOOR HYDRAULIC FIRE FIGHTING EQUIPMENT	Page No. 3/6

TYPE	CONTENTS	CAST IRON COVERS / CHARGE-COVERS
1A	FIRE MONITOR AND GATE VALVE OR HYDRANT AND METER	30 TON.
1B	FIRE MONITOR AND GATE VALVE OR HYDRANT AND METER	30 TON.
2A	UNDERGROUND HYDRANT	30 TON.
2B	UNDERGROUND HYDRANT	15 TON.
3	VALVE AND METER FOR BUILDINGS	5 TON.
4	UNDERGROUND FAUCET	5 TON.
5A	WATER SUPPLY GATE VALVE	30 TON.
5B	WATER SUPPLY GATE VALVE	15 TON.

- (BUILDING LIST)
- ① ADMINISTRATION BUILDING
  - ② CONTAINER FREIGHT STATION
  - ③ MAINTENANCE AND REPAIR SHOP
  - ④ CONTAINER GATE
  - ⑤ CARGO GATE
  - ⑥ POWER SUPPLY STATION
  - ⑦ PARKING SHEDS
  - ⑧ FUEL STATION

- (SYMBOLS)
- ⊕ METER
  - ⊖ MONITOR
  - ⊙ HYDRANT
  - ⊗ VALVE
  - △ ABC CLASS DRY CHEMICAL WHEELED EXTINGUISHER
  - FS FIRE STATION CABINET
  - ⊖ INLET FOR FIRE FIGHTING

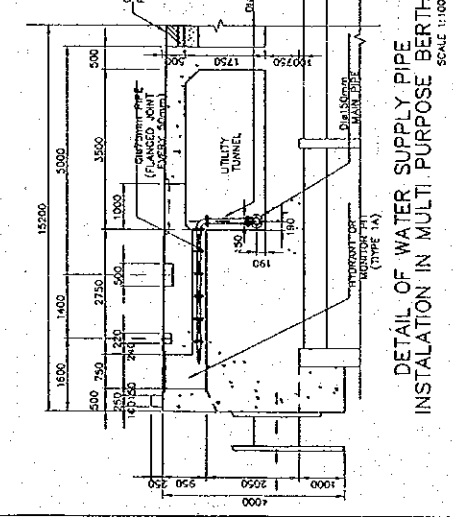
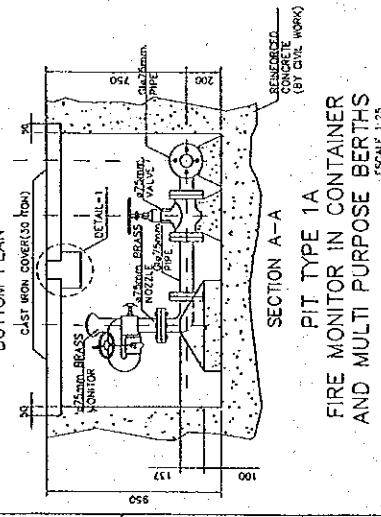
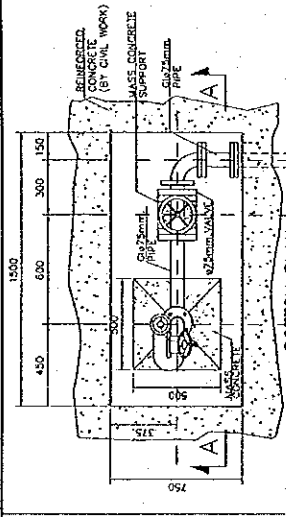
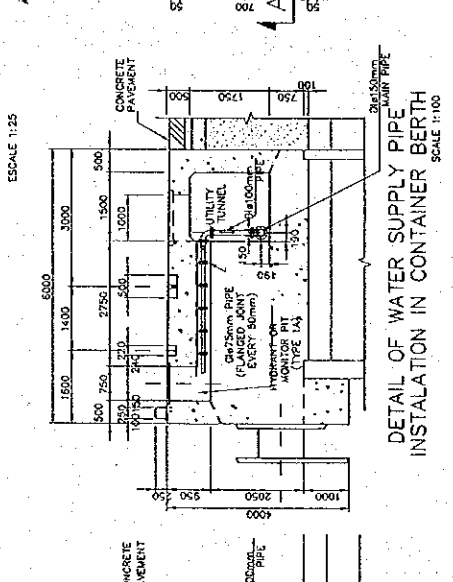
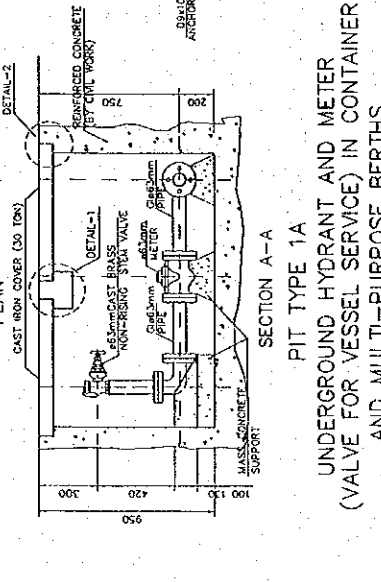
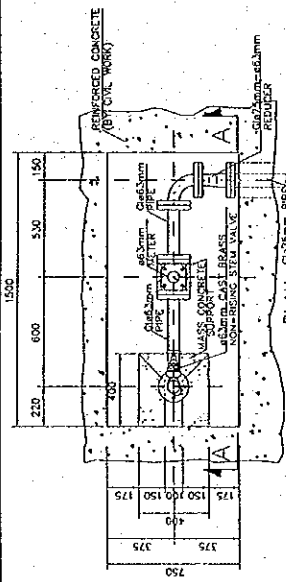
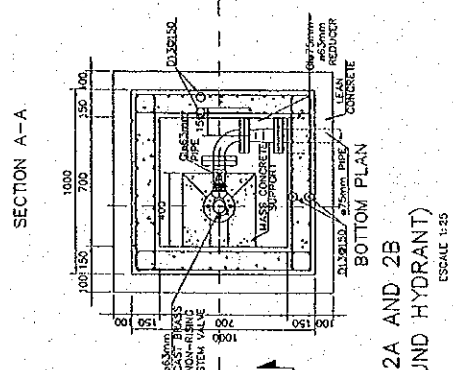
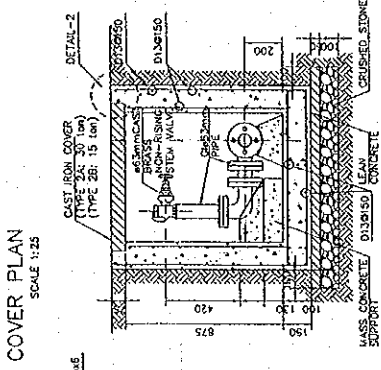
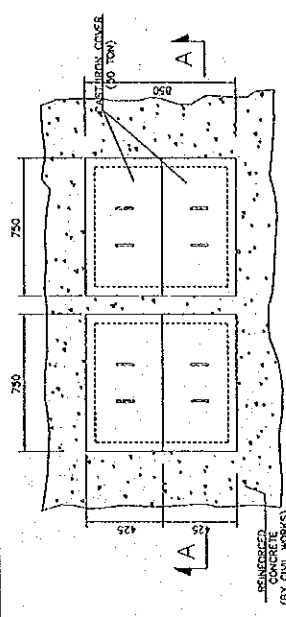
- (LEGEND) \*
- C CHARGE
  - U UNDERGROUND HYDRANT
  - S STAND TYPE HYDRANT
  - DI DUCTILE IRON PIPE
  - PVC POLYVINYL CHLORIDE PIPE
  - L LENGTH OF PIPE LINE



Prepared by	H. Iwata	02/07/12	Checked by	S. Endo	12 July, 2012
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Project	Detailed Design on Port Reactivation Project in La Union Province of the Republic of El Salvador	Calc. File No.
Section:	UTILITY WORK	Calc. Index No.
Subject:	OUTDOOR HYDRAULIC FIRE FIGHTING EQUIPMENT	Page No. 4/6



PIT TYPE 1A  
UNDERGROUND HYDRANT AND METER  
(VALVE FOR VESSEL SERVICE) IN CONTAINER  
AND MULTI-PURPOSE BERTHS  
SCALE 1:25

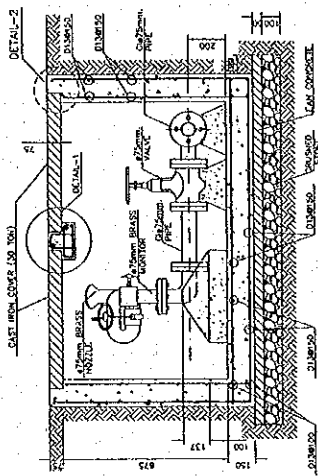
PIT TYPE 1A  
FIRE MONITOR IN CONTAINER  
AND MULTI-PURPOSE BERTHS  
SCALE 1:25

PIT TYPE 2A AND 2B  
(UNDERGROUND HYDRANT)  
SCALE 1:25

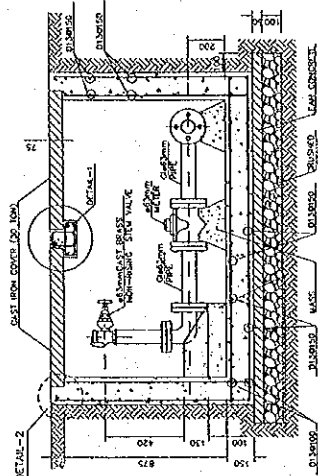
Prepared by	H. Iruka	02/02/12	Checked by	N. Endo	12 July, 02
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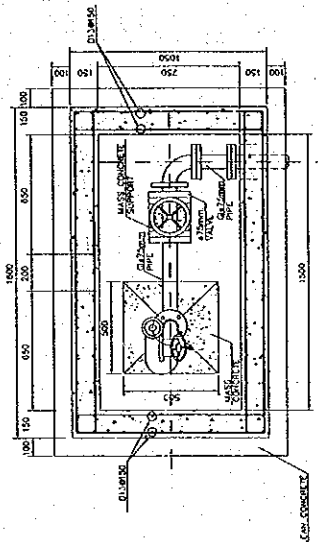
Project	Detailed Design on Port Reactivation Project in La Union Province of the Republic of El Salvador	Calc. File N°	
Section:	UTILITY WORK	Calc. Index N°	
Subject:	OUTDOOR HYDRAULIC FIRE FIGHTING EQUIPMENT	Page N°	5/6



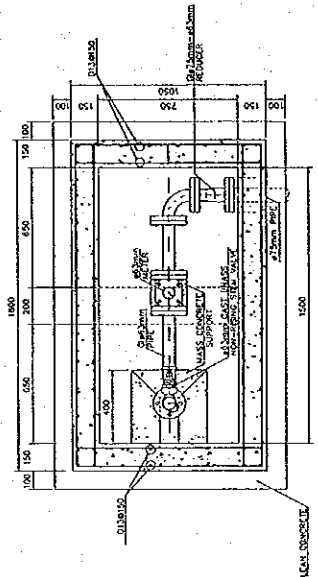
SECTION A-A  
SCALE 1:20



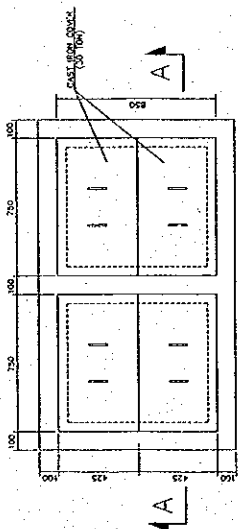
SECTION A-A  
SCALE 1:20



BOTTOM PLAN  
SCALE 1:20



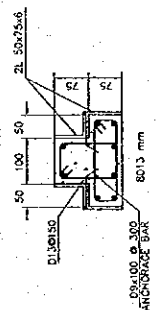
BOTTOM PLAN  
SCALE 1:20



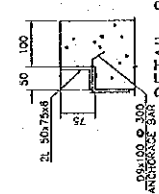
COVER PLAN  
SCALE 1:20

PIT TYPE 1B  
(FIRE MONITOR AND GATE  
VALVE IN PASSENGER BERTH)

PIT TYPE 1B  
(FIRE MONITOR AND GATE  
VALVE IN PASSENGER BERTH)



DETAIL-1  
SCALE 1:10



DETAIL-2  
SCALE 1:10

Prepared by	H. Iruka	02/07/12	Checked by	J. Sado	12 July, 02
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<b>QUANTITY CALCULATION COVER SHEET</b>								
<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province			<b>Project Code</b>	JC1N004/2N001			
<b>Work Section Title</b>	<b>Fire Fighting System</b>			<b>Pay Item No. (BOQ)</b>	4A07			
<b>Quantity Item</b>	<b>Fire Extinguishers</b>			<b>Unit</b>	No.			
<b>Calculation Procedure Applied</b>								
<p>Quantity Calculation was divided per extinguisher's area location first and then per type of extinguisher.</p> <p>The quantity of each type of extinguisher was established summarizing the quantity of each type of extinguisher located in each area.</p>								
<b>References, Calculation Base and Revisions</b>								
<p>Drawings N°: UT-02-002            BD-01-071 to 074            BD-02-031            BD-03-031 to 032            BD-04-026            BD-05-022            BD-06-017</p>								
Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	H. Irya	02/07/12	13	S. Endo	12 July, 02	TS	16 July 02	
1								
2								
3								



<b>Project</b>	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
<b>Section</b>	UTILITY WORK	Calc. Index No.	
<b>Subject</b>	Fire Extinguishers	Page No.	2/13 Rev.

Pay Item	Description	Yards	Aim. Bulding	CFS	M&RS	Cargo Gate	Container Gate	Power Station	References/
4A0701	AFFF Foam Extinguisher, 6 liters	0	0	4	4	4	5	0	
4A0702	CO2 Extinguisher, 4.5 Kg	0	18	3	1	6	10	1	
4A0703	CO2 Extinguisher, 7 Kg	0	0	0	0	0	0	5	
4A0704	Dry Chemical Multi Purpose Extinguisher, 4.5 Kg	0	17	1	2	2	2	0	
4A0705	Dry Chemical Multi Purpose Extinguisher, 9 Kg	0	1	11	3	4	5	0	
4A0706	Dry Chemical Multi Purpose Wheeled Extinguisher, 56.7 Kg	7	0	0	0	0	0	0	
4A0707	Wet Chemical Class K Extinguisher	0	5	1	0	0	0	0	

<b>Prepared by</b> A. Iruka	02/09/12	<b>Checked by</b> S. Enda
		12 July 02



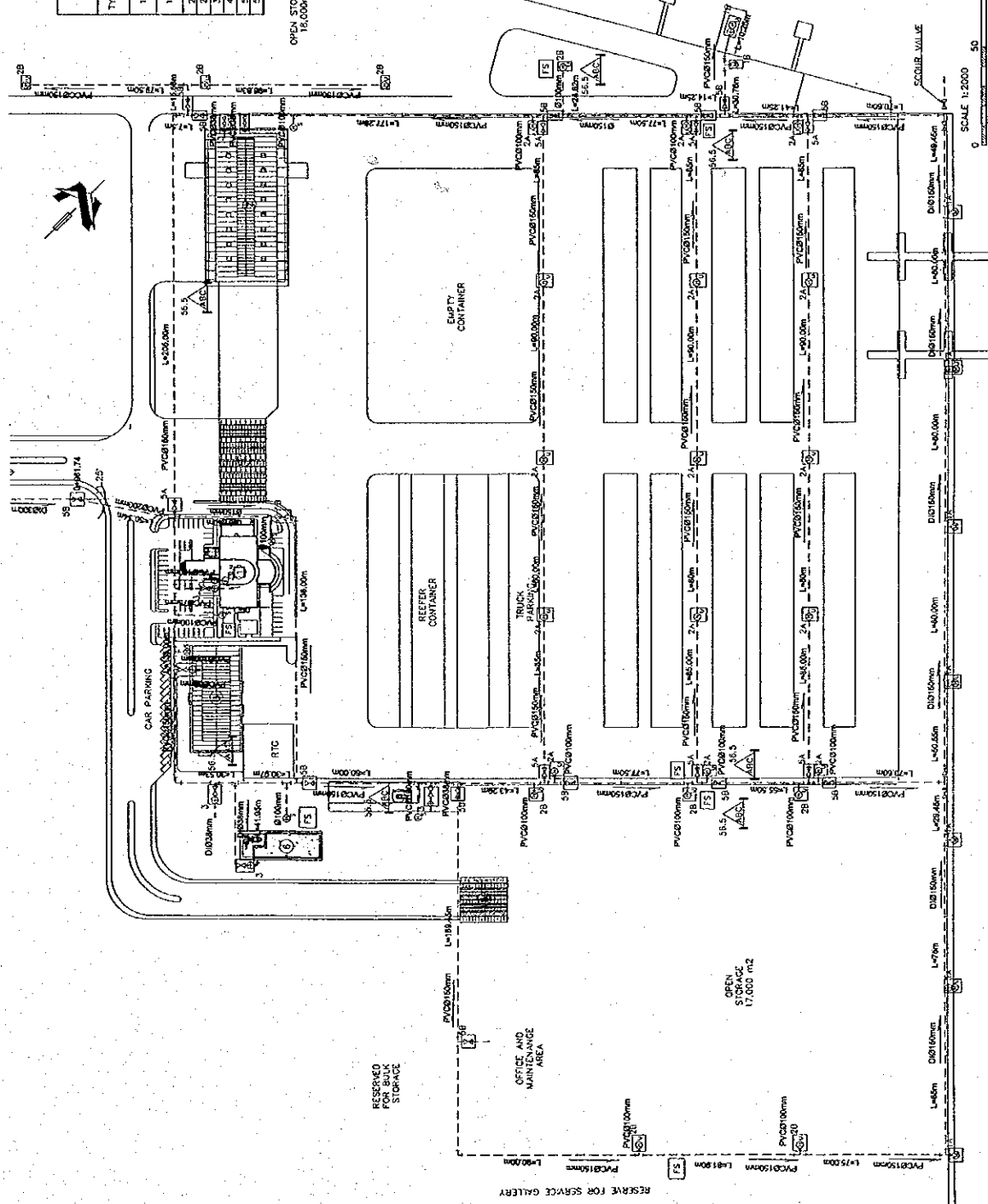
Project:	Detailed Design on Port Reactivation Project in La Union Province of the Republic of El Salvador	Calc. File No.	
Section:	UTILITY WORK	Calc. Index No.	
Subject:	FIRE EXTINGUISHERS	Page No.	3/13

TYPE	CONTENTS	CAST IRON COVERS	SCALE
1A	FIRE MONITOR AND GATE VALVE OR HYDRANT AND METER	30 TON.	
1B	FIRE MONITOR AND GATE VALVE OR HYDRANT AND METER	30 TON.	
2A	UNDERGROUND HYDRANT	15 TON.	
2B	UNDERGROUND HYDRANT	15 TON.	
3	VALVE AND METER FOR BUILDINGS	5 TON.	
4	UNDERGROUND FAUCET	5 TON.	
5A	WATER SUPPLY GATE VALVE	30 TON.	
5B	WATER SUPPLY GATE VALVE	15 TON.	

- (BUILDING LIST)
- 1 ADMINISTRATION BUILDING
  - 2 CONTAINER FREIGHT STATION
  - 3 MAINTENANCE AND REPAIR SHOP
  - 4 CONTAINER GATE
  - 5 CARGO GATE
  - 6 POWER SUPPLY STATION
  - 7 PARKING SHEDS
  - 8 FUEL STATION

- (SYMBOLS)
- METER
  - MONITOR
  - HYDRANT
  - VALVE
  - ABC CLASS DRY CHEMICAL WHEELED EXTINGUISHER
  - FIRE STATION CABINET
  - INLET FOR FIRE FIGHTING

- (LEGEND) \*
- C CHARGE
  - U UNDERGROUND HYDRANT
  - S STAND TYPE HYDRANT
  - D1 DUCTILE IRON PIPE
  - PVC POLYVINYL CHLORIDE PIPE
  - L LENGTH OF PIPE LINE

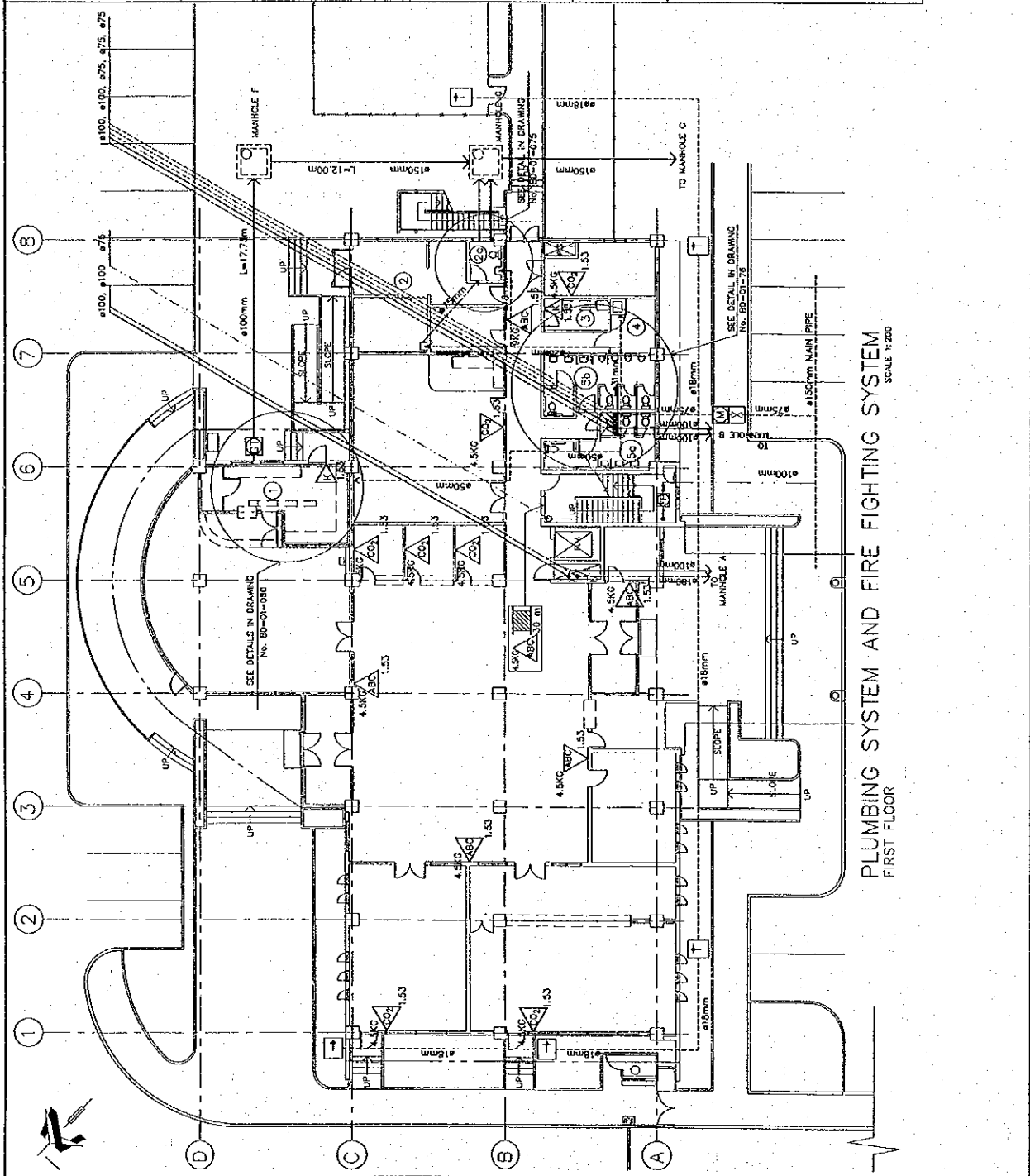


Prepared by	H. Iruka	02/09/12	Checked by	S. Endo	12 July, 02
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Project:	Detailed Design on Port Reactivation Project In La Union Province of the Republic of El Salvador	Calc. File N°:
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Subject:	FIRE EXTINGUISHERS	Page N°. 4/13

<p><b>ROOM LIST</b></p> <ul style="list-style-type: none"> <li>① CAFETERIA'S KITCHEN</li> <li>② FIRST AID ROOM</li> <li>③ FIRST AID LAVATORY</li> <li>④ PANTRY</li> <li>⑤ JANITOR'S ROOM</li> <li>⑥ TOILET (WOMEN)</li> <li>⑦ TOILET (MEN)</li> </ul>	<p><b>PLUMBING SYMBOLS</b></p> <ul style="list-style-type: none"> <li>VERTICAL PIPE DOWN</li> <li>VERTICAL PIPE UP</li> <li>METER INSIDE PIT</li> <li>VALVE INSIDE PIT</li> <li>SHUT OFF VALVE</li> <li>HOSE FAUCET INSIDE PIT</li> <li>CHECK VALVE</li> <li>CLEAN OUT</li> <li>FIRE PUMP</li> <li>GREASE TRAP</li> <li>WATER SUPPLY PIPE</li> <li>WASTE DRAINAGE</li> <li>SANITARY DRAINAGE</li> <li>WASTE VENT PIPE</li> <li>SANITARY VENT PIPE</li> <li>FIRE FIGHTING PIPE</li> </ul>	<p><b>NOTES</b></p> <ol style="list-style-type: none"> <li>1) WASTE AND SANITARY DRAINAGE PIPES TO BE PVC</li> <li>2) WATER SUPPLY PIPES TO BE PVC</li> <li>3) FIRE FIGHTING SYSTEM PIPES TO BE GALVANIZED IRON</li> </ol> <p><b>FIRE FIGHTING SYSTEM SYMBOLS</b></p> <ul style="list-style-type: none"> <li>ABC CLASS DRY POWDER EXTINGUISHER</li> <li>BC CLASS CO2 EXTINGUISHER</li> <li>KITCHEN CLASS EXTINGUISHER</li> <li>RECESSED CABINET WITH HOSE RACK AND EXTINGUISHER</li> </ul> <p><b>LEGEND</b></p> <ul style="list-style-type: none"> <li>c CHARGE</li> <li>h PLACEMENT HEIGHT</li> <li>m LENGTH OF HOSE (meters)</li> </ul>
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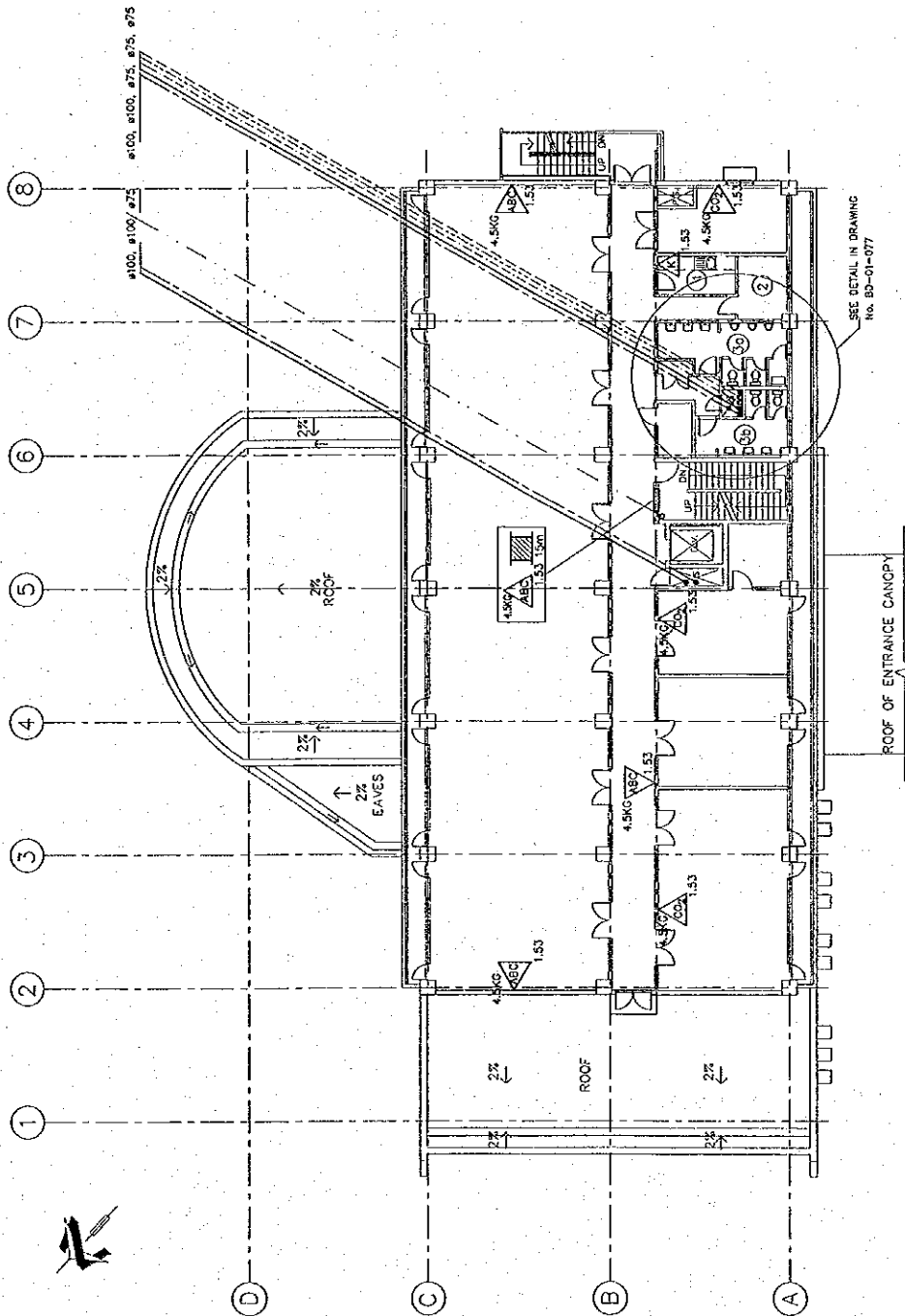


Prepared by	H. Inula	02/07/12	Checked by	S. Endo	12 July 1021
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Project	Detailed Design on Port Reactivation Project In La Union Province of the Republic of El Salvador	Calc. File N°.	
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Subject:	FIRE EXTINGUISHERS	Page N°.	5/13

<p><b>ROOM LIST</b></p> <p>① PANTRY ② JANITOR'S ROOM ③ TOILET (MEN) ④ TOILET (WOMEN) ⑤ MANAGER'S LAVATORY</p>	<p><b>PLUMBING SYMBOLS</b></p> <p>● VERTICAL PIPE DOWN ○ VERTICAL PIPE UP ⊗ METER INSIDE PIT ⊘ VALVE INSIDE PIT ⊚ SHUT OFF VALVE ⊔ HOSE FAUCET INSIDE PIT ⊕ CHECK VALVE ⊖ CLEAN OUT ⊗ FIRE PUMP ⊘ GREASE TRAP --- WATER SUPPLY PIPE --- WASTE DRAINAGE --- SANITARY DRAINAGE --- WASTE VENT PIPE --- SANITARY VENT PIPE --- FIRE FIGHTING PIPE</p>	<p><b>NOTES</b></p> <p>1) WASTE AND SANITARY DRAINAGE PIPES TO BE PVC 2) WATER SUPPLY PIPES TO BE PVC 3) FIRE FIGHTING SYSTEM PIPES TO BE GALVANIZED IRON</p>	<p><b>FIRE FIGHTING SYSTEM SYMBOLS</b></p> <p>ABC CLASS DRY POWDER EXTINGUISHER BC CLASS CO2 EXTINGUISHER KITCHEN CLASS EXTINGUISHER RECESSED CABINET WITH HOSE RACK AND EXTINGUISHER</p> <p><b>LEGEND</b></p> <p>c CHARGE h PLACEMENT HEIGHT m LENGTH OF HOSE (meters)</p>
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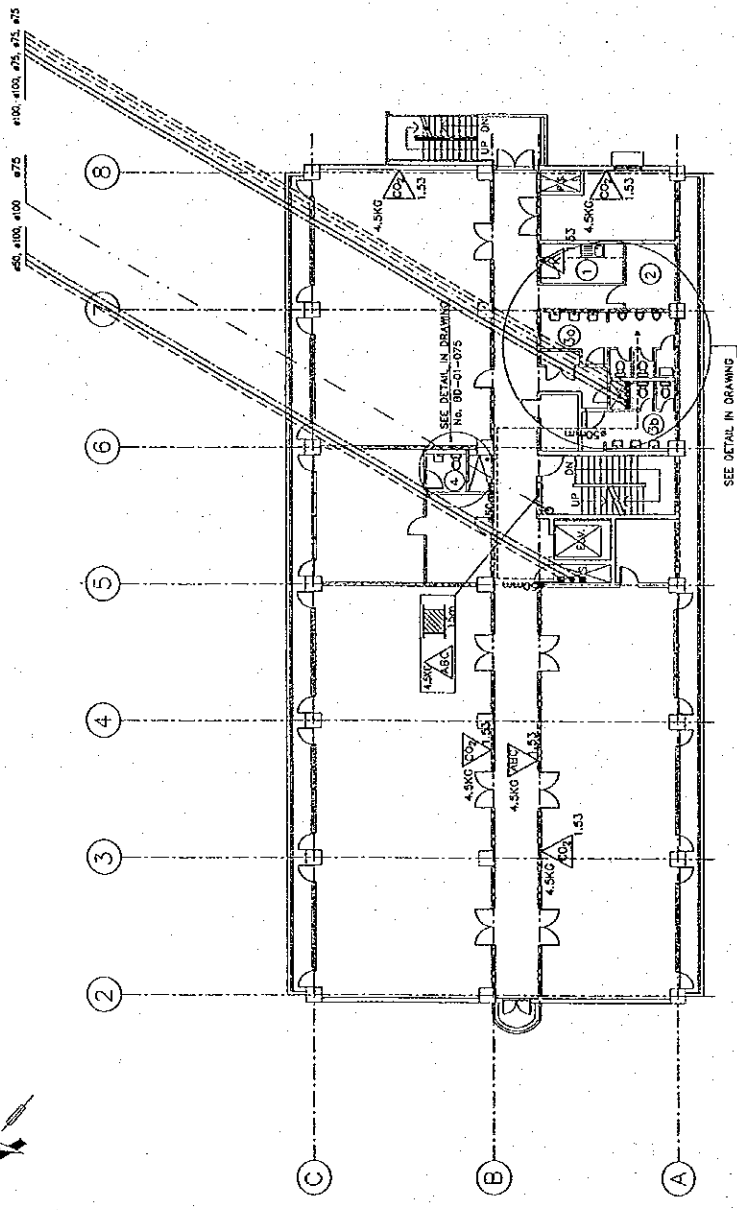
PLUMBING SYSTEM AND FIRE FIGHTING SYSTEM  
SECOND FLOOR  
SCALE 1:200

Prepared by	H. Iruha	02/07/12	Checked by	S. Endo	12 July, 02
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Project	Detailed Design on Port Reactivation Project in La Union Province of the Republic of El Salvador	Calc. File N°	
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Subject:	FIRE EXTINGUISHERS	Page N°	6/13

<b>ROOM LIST</b> ① PANTRY ② JANITOR'S ROOM ③ TOILET (MEN) ④ TOILET (WOMEN) ⑤ MANAGER'S LAVATORY	<b>PLUMBING SYMBOLS</b> VERTICAL PIPE DOWN VERTICAL PIPE UP METER INSIDE PIT VALVE INSIDE PIT SHUT OFF VALVE HOSE FAUCET INSIDE PIT CHECK VALVE CLEAN OUT FIRE PUMP GREASE TRAP  WATER SUPPLY PIPE WASTE DRAINAGE SANITARY DRAINAGE WASTE VENT PIPE SANITARY VENT PIPE FIRE FIGHTING PIPE	<b>NOTES</b> 1) WASTE AND SANITARY DRAINAGE PIPES TO BE PVC 2) WATER SUPPLY PIPES TO BE PVC 3) FIRE FIGHTING SYSTEM PIPES TO BE GALVANIZED IRON	<b>FIRE FIGHTING SYSTEM SYMBOLS</b> ABC CLASS DRY POWDER EXTINGUISHER BC CLASS CO2 EXTINGUISHER KITCHEN CLASS EXTINGUISHER RECESSED CABINET WITH HOSE RACK AND EXTINGUISHER  <b>LEGEND</b> c CHARGE r PLACEMENT HEIGHT m LENGTH OF HOSE (metres)
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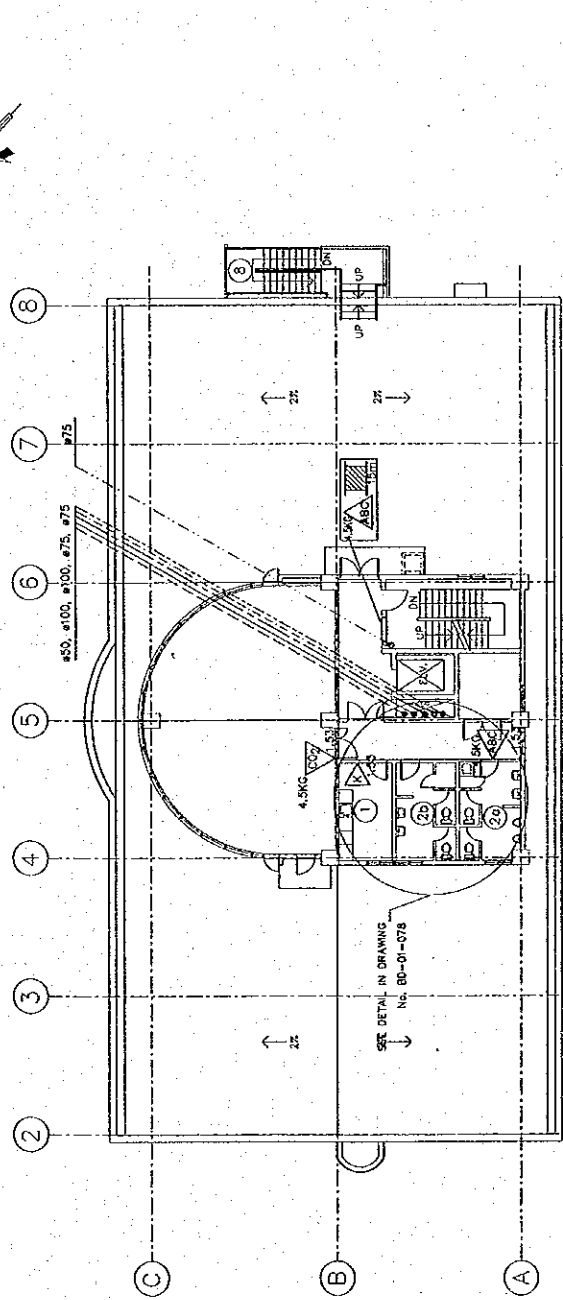
PLUMBING SYSTEM AND FIRE FIGHTING SYSTEM  
 THIRD FLOOR  
 SCALE 1:200

Prepared by	H. Irak	02/07/12	Checked by	S. Endo	12 July, 2012
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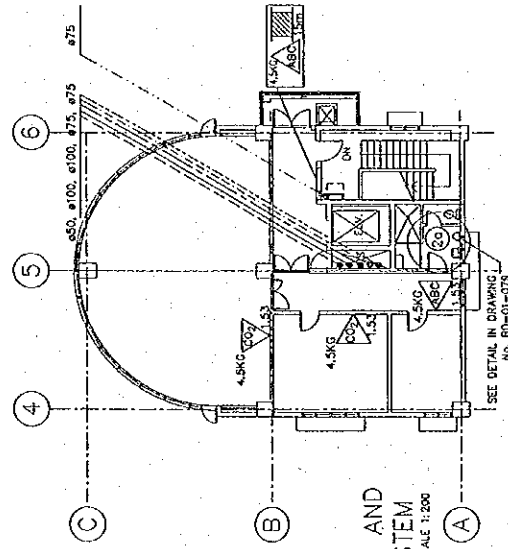


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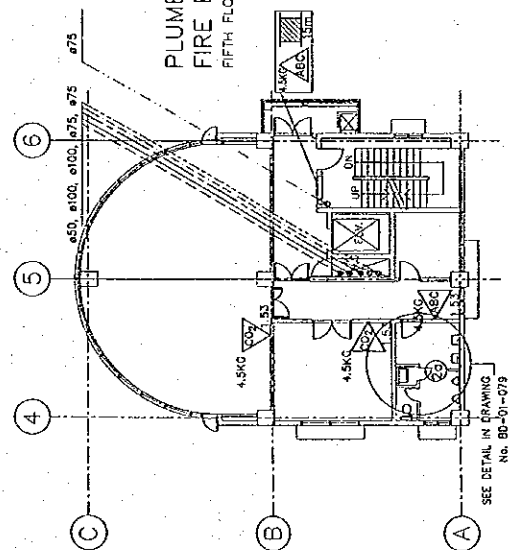
<p>ROOM LIST</p> <p>PANTRY TOILET (MEN) TOILET (WOMEN)</p> <p>① ②a ②b</p>	<p>PLUMBING SYMBOLS</p> <p>VERTICAL PIPE DOWN VERTICAL PIPE UP METER INSIDE PIT VALVE INSIDE PIT SHUT OFF VALVE HOSE FAUCET INSIDE PIT CHECK VALVE CLEAN OUT FIRE PUMP GREASE TRAP</p> <p>WATER SUPPLY PIPE WASTE DRAINAGE SANITARY DRAINAGE WASTE VENT PIPE SANITARY VENT PIPE FIRE FIGHTING PIPE</p>	<p>NOTES</p> <p>1) WASTE AND SANITARY DRAINAGE PIPES TO BE PVC 2) WATER SUPPLY PIPES TO BE PVC 3) FIRE FIGHTING SYSTEM PIPES TO BE GALVANIZED IRON</p> <p>FIRE FIGHTING SYSTEM SYMBOLS</p> <p>ABC CLASS DRY POWDER EXTINGUISHER BC CLASS CO2 EXTINGUISHER KITCHEN CLASS EXTINGUISHER RECESSED CABINET WITH HOSE PACK AND EXTINGUISHER</p> <p>LEGEND</p> <p>c CHARGE h PLACEMENT HEIGHT m LENGTH OF HOSE (meters)</p>
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PLUMBING SYSTEM AND FIRE FIGHTING SYSTEM  
FOURTH FLOOR  
SCALE 1:200



PLUMBING SYSTEM AND FIRE FIGHTING SYSTEM  
FIFTH FLOOR  
SCALE 1:200



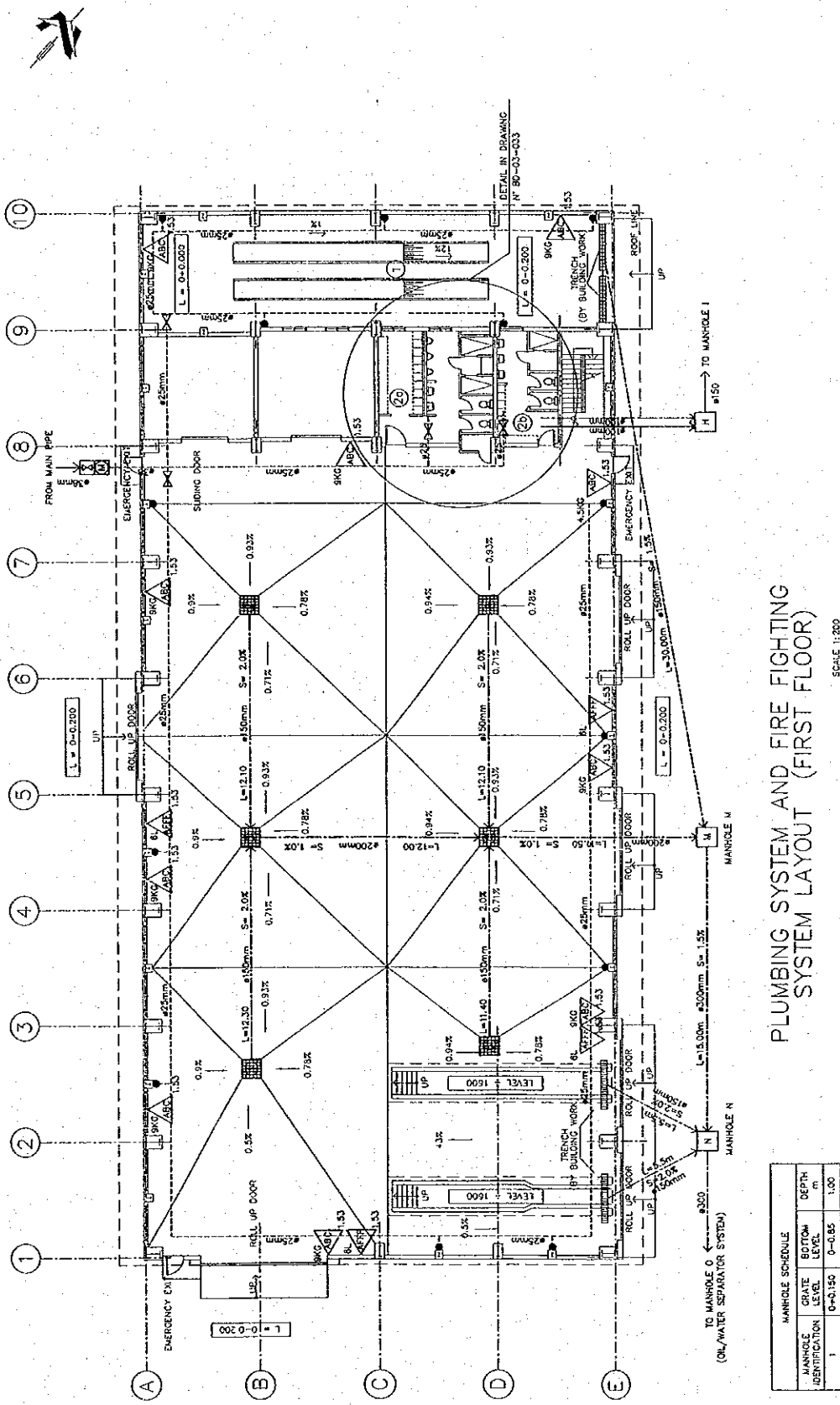
PLUMBING SYSTEM AND FIRE FIGHTING SYSTEM  
SIXTH FLOOR  
SCALE 1:200

Prepared by	H. Irula	02/07/12	Checked by	S. Endo	12 July, 2012
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Project	Detailed Design on Port Reactivation Project In La Union Provinca of the Republic of El Salvador	Calc. File N°.
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Subject:	FIRE EXTINGUISHERS	Page N°. 9/13



PLUMBING SYSTEM AND FIRE FIGHTING SYSTEM LAYOUT (FIRST FLOOR)

SCALE 1:200

<p><b>FIRE FIGHTING SYMBOLS</b></p> <p>ABC (MULTIPURPOSE) DRY POWDER EXTINGUISHER</p> <p>AB CLASS AFF EXTINGUISHER</p> <p>AB CLASS AFF CO2 EXTINGUISHER</p> <p>KITCHEN CLASS EXTINGUISHER</p> <p>LEGEND</p> <p>CHARGE</p> <p>MANHOLE WITH GRATING COVER</p> <p>PLACEMENT HEIGHT</p>	<p><b>PLUMBING SYMBOLS</b></p> <p>VERTICAL PIPE DOWN</p> <p>WATER SUPPLY PIPE</p> <p>WASTE DRAINAGE PIPE</p> <p>SANITARY DRAINAGE PIPE</p> <p>METER INSIDE PIT</p> <p>VALVE INSIDE PIT</p> <p>SHOT OFF VALVE</p> <p>MANHOLE WITH GRATING COVER</p>	<p><b>(ROOM USE)</b></p> <p>WASH UNIT</p> <p>TOILETS (MEN)</p> <p>TOILETS (WOMEN)</p>
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- NOTES
- 1) WASTE AND SANITARY DRAINAGE PIPES TO BE PVC
  - 2) WATER SUPPLY PIPES TO BE PVC
  - 3) FIRE FIGHTING SYSTEM PIPES TO BE GALVANIZED IRON

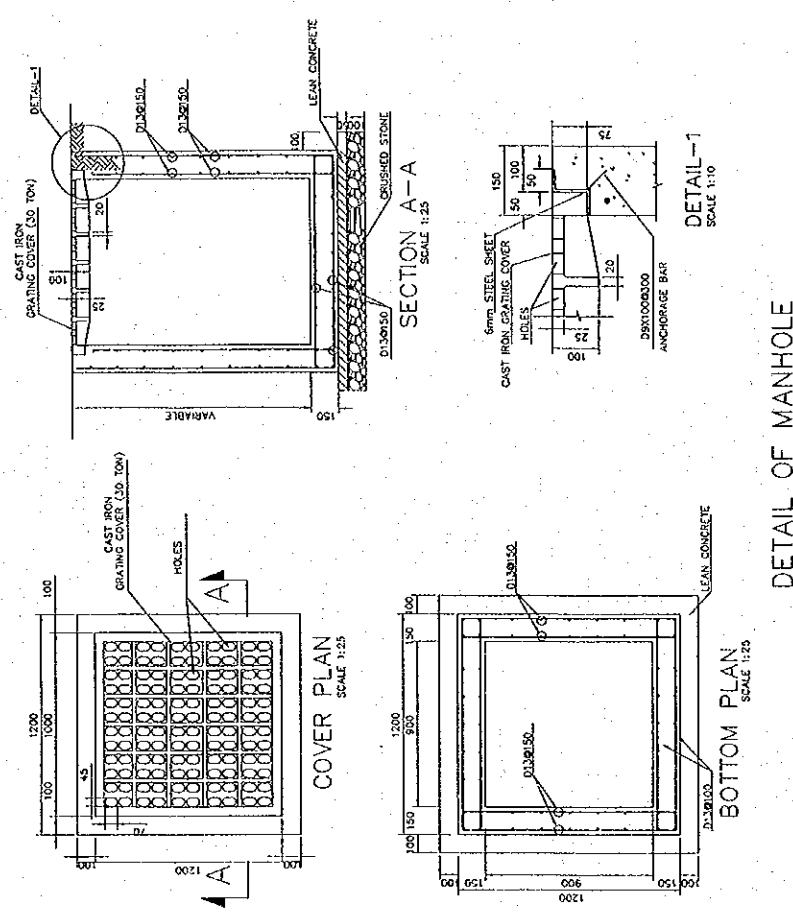
MANHOLE IDENTIFICATION	GRATE LEVEL	BOTTOM LEVEL	DEPTH
1	0+0.150	0-0.85	1.00
2	0+0.150	0-0.85	1.00
3	0+0.150	0-1.25	1.40
4	0+0.150	0-0.85	1.00
5	0+0.150	0-1.40	1.55
6	0+0.150	0-0.85	1.00

Prepared by	H. Irula	02/07/12	Checked by	S. Enola	12 July, 02
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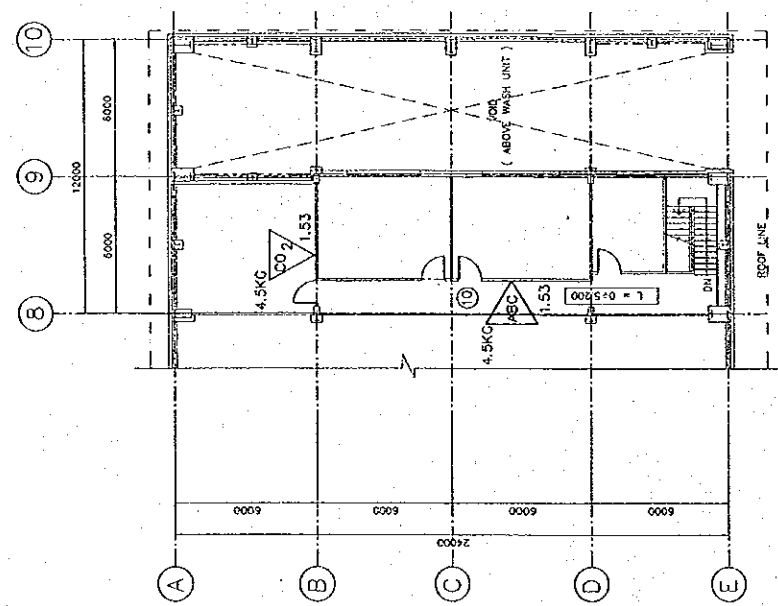




Project	Detailed Design on Port Reactivation Project in La Union Province of the Republic of El Salvador	Calc. File N°.	
Section:	UTILITY WORK	Calc. Index N°.	
Subject:	FIRE EXTINGUISHERS	Page N°.	10/13



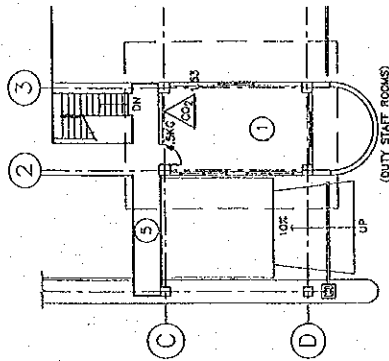
SYMBOLS		LEGEND	
	ABC CLASS DRY POWDER EXTINGUISHER		CHARGE
	BC CLASS CO2 EXTINGUISHER		PLACEMENT HEIGHT



Prepared by	H. Irola	02/07/12	Checked by	S. Sando	12 July, 02
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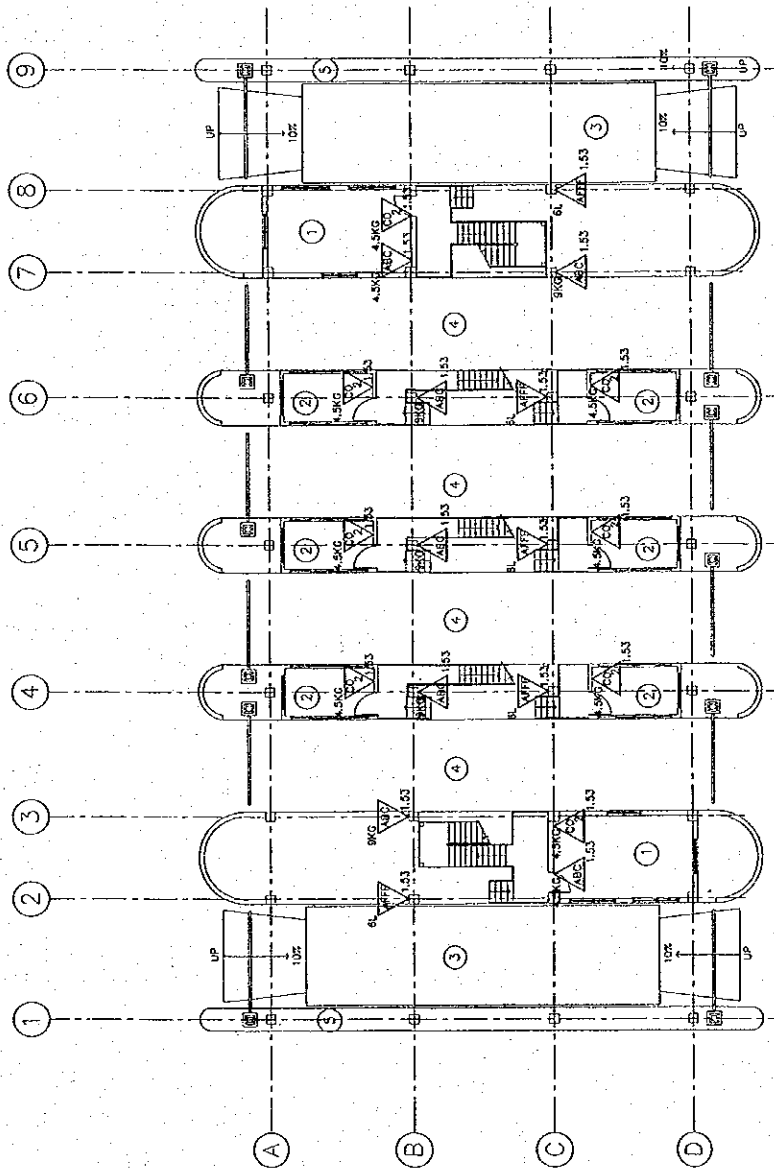


Project	Detailed Design on Port Reactivation Project in La Union Province of the Republic of El Salvador	Calc. File N°.	
Section:	UTILITY WORK	Calc. Index N°.	
Subject:	FIRE EXTINGUISHERS	Page N°.	11/13



FIRE FIGHTING SYSTEM  
SECOND FLOOR  
SCALE 1:200

<p>FIRE FIGHTING SYMBOLS</p>	<p>(ROOM LIST)</p> <p>① WEIGH BRIDGE OFFICE</p> <p>② STORAGE</p> <p>③ WEIGH BRIDGE</p> <p>④ GATE OFFICE</p> <p>⑤ PAVEMENT</p> <p>⑥ SIDE WALK (sidewalk)</p>
	<p>Legend</p> <p>c CHANGE</p> <p>p PLACEMENT HEIGHT</p>

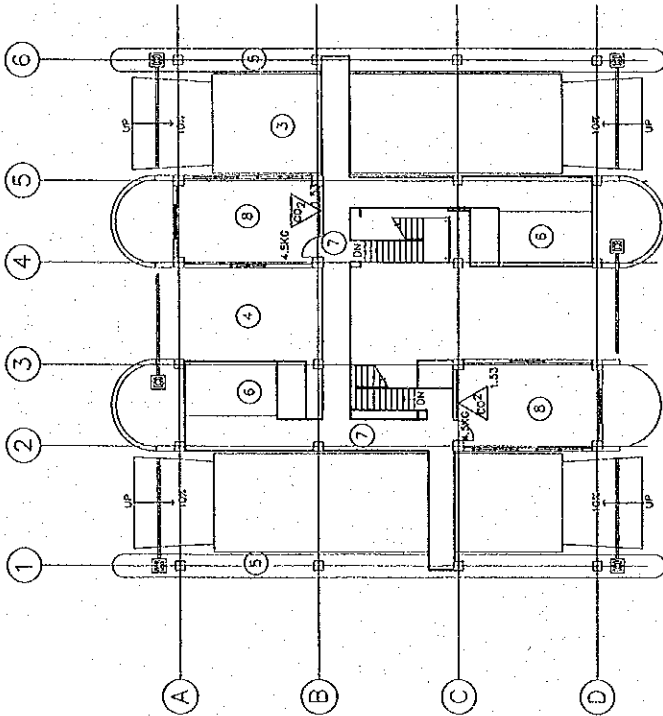


FIRE FIGHTING SYSTEM  
FIRST FLOOR  
SCALE 1:200

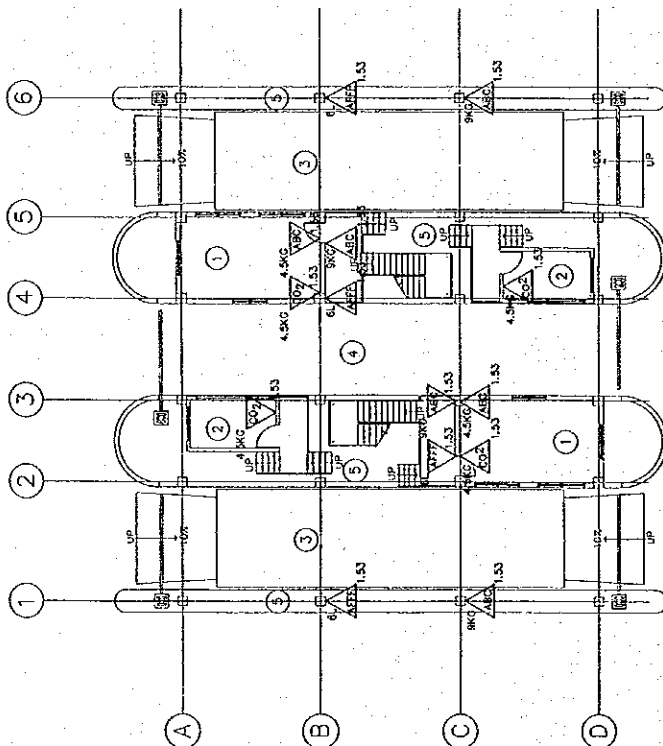
Prepared by	H. Iwata	02/07/12	Checked by	S. Endo	12 July, 2012
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Project	Detailed Design on Port Reactivation Project In La Union Province of the Republic of El Salvador	Calc. File N°	
Section:	UTILITY WORK	Calc. Index N°	
Subject:	FIRE EXTINGUISHERS	Page N°	12/13



FIRE FIGHTING SYSTEM  
SECOND FLOOR  
SCALE 1:200



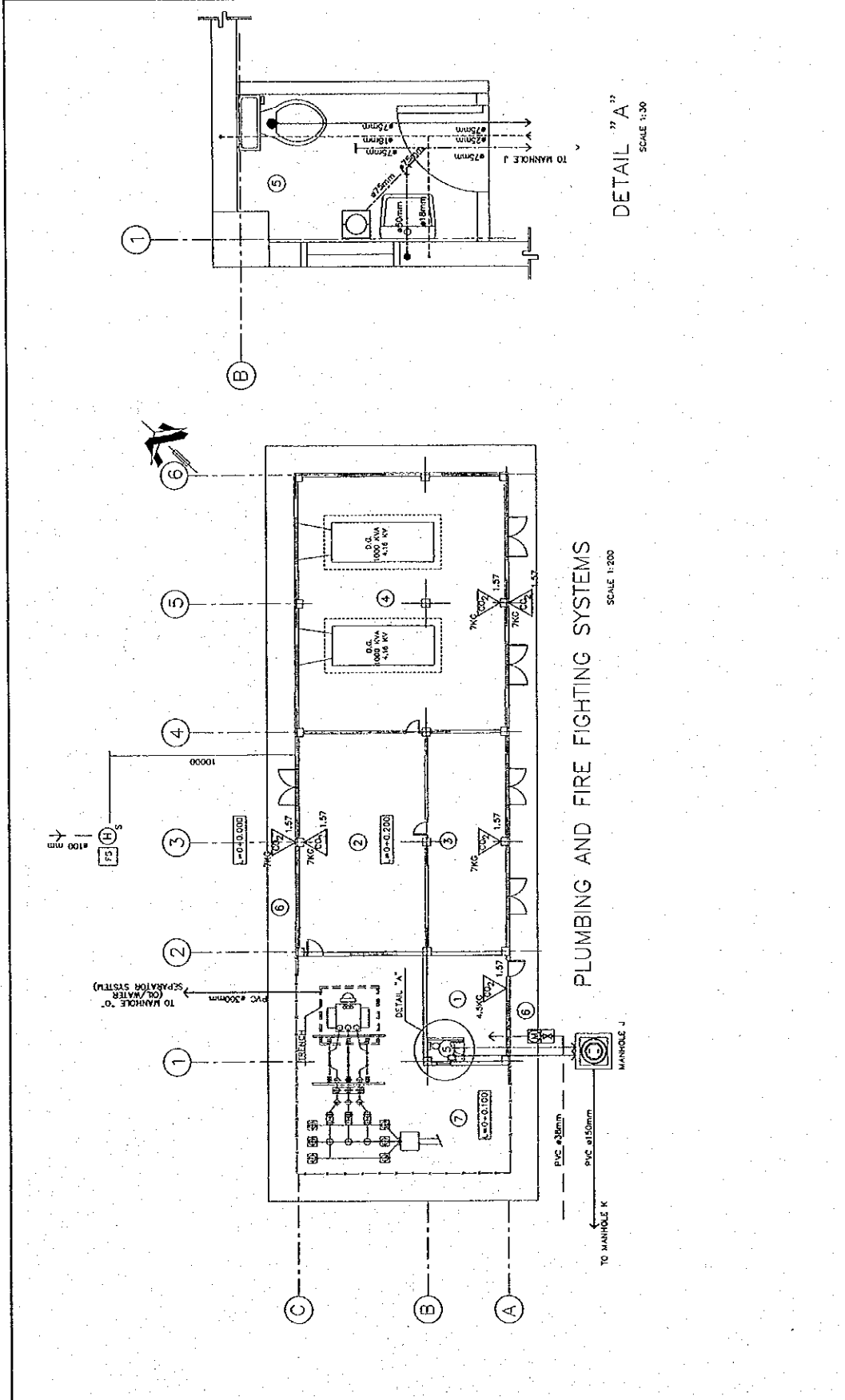
FIRE FIGHTING SYSTEM  
FIRST FLOOR  
SCALE 1:200

<p>FIRE FIGHTING SYMBOLS</p> <p>ABC (MULTIPURPOSE) DRY POWDER EXTINGUISHER</p> <p>AB CLASS A/B EXTINGUISHER</p> <p>ABC CLASS D2 DRY CHEMICAL WHEELED EXTINGUISHER</p> <p>KITCHEN CLASS EXTINGUISHER</p> <p>LEGEND</p> <p>c CHARGE</p> <p>h PLACED/NOT RIGHT</p>	<p>(ROOM LIST)</p> <p>① WEIGH BRIDGE OFFICE</p> <p>② STORAGE</p> <p>③ WEIGH BRIDGE</p> <p>④ GATE OFFICE</p> <p>⑤ PAVEMENT</p> <p>⑥ SIDE WALK (along)</p>
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Prepared by	H. Iru	02/07/12	Checked by	S. Endo	12 July, 02
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Project	Detailed Design on Port Reactivation Project in La Union Province of the Republic of El Salvador	Calc. File N°.
Section:	UTILITY WORK	Calc. Index N°.
Subject:	FIRE EXTINGUISHERS	Page N° 13/13



Prepared by	H. Iruka	02/07/12	Checked by	S. Sando	12 July, 05
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<p><b>PLUMBING SYMBOLS</b></p> <ul style="list-style-type: none"> <li>● VERTICAL PIPE DOWN</li> <li>--- WATER SUPPLY PIPE</li> <li>--- METER INSIDE PIT</li> <li>--- WASTE DRAINAGE PIPE</li> <li>--- VALVE INSIDE PIT</li> <li>--- SANITARY DRAINAGE PIPE</li> <li>□ FLOOR DRAIN</li> </ul>	<p><b>NOTES</b></p> <ol style="list-style-type: none"> <li>1) WASTE AND SANITARY DRAINAGE PIPES TO BE PVC</li> <li>2) WATER SUPPLY PIPES TO BE PVC</li> <li>3) FIRE FIGHTING SYSTEM PIPES TO BE GALVANIZED IRON</li> </ol>	<p><b>FIRE FIGHTING SYMBOLS</b></p> <ul style="list-style-type: none"> <li>△ CO<sub>2</sub></li> <li>○ H<sub>2</sub>O</li> <li>□ FS</li> <li>P LEGEND</li> <li>R WEIGHT IN KGS</li> <li>PLACEMENT HISTORY</li> </ul>	<p><b>(ROOM LIST)</b></p> <ol style="list-style-type: none"> <li>① OFFICE ROOM</li> <li>② SWITCHGEAR ROOM</li> <li>③ TRANSFORMER ROOM</li> <li>④ GENERATOR ROOM</li> <li>⑤ TOILET</li> <li>⑥ SIDEWALK</li> <li>⑦ TRANSFORMER YARD</li> </ol>
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**QUANTITY CALCULATION COVER SHEET**

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province	<b>Project Code</b>	JC1N004/2N001
<b>Work Section Title</b>	<b>Fire Fighting System</b>	<b>Pay Item No. (BOQ)</b>	4A08
<b>Quantity Item</b>	<b>Pits</b>	<b>Unit</b>	No.

**Calculation Procedure Applied**

Quantity Calculation was divided per type of pit and counted per number.

**References, Calculation Base and Revisions**

Drawings N<sup>o</sup>: UT-02-002  
 UT-02-010  
 UT-02-011

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	H. Iryla	02/02/12	5	S. Endo	12 July, 02	PT ST	16 July 02	
1	<i>Ch</i>							
2								
3								

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
<b>Section</b>	UTILITY WORK	Calc. Index No.	
<b>Subject</b>	Pits	Page No.	2/5 Rev.

Pay Item	Description	Quantity	
		Count	Total
4A0800	PITS		
4A0801	Type 1A	7	7
4A0802	Type 1B	2	2
4A0803	Type 2A	15	15
4A0804	Type 2B	9	9

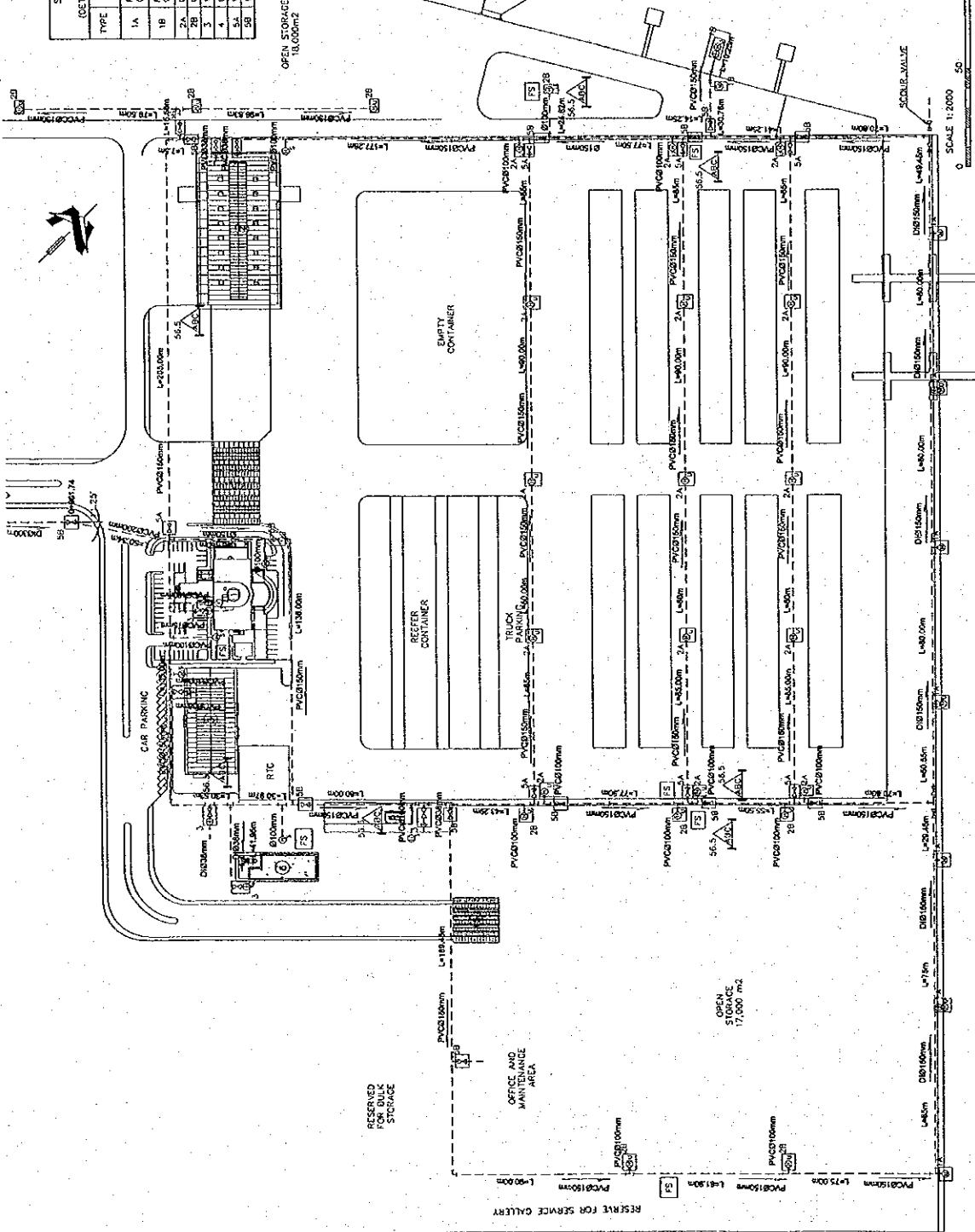
	Prepared by	Checked by	
	H. Iruka	S. Endo	12 July 2012



Project	Detailed Design on Port Reactivation Project In La Union Province of the Republic of El Salvador	Calc. File N°
Section:	UTILITY WORK	Calc. Index N°
Subject:	PITS	Page N° 3/5

SCHEDULE OF PITS FOR WATER SUPPLY AND FIRE FIGHTING SYSTEMS (DETAILS IN DRAWINGS UT-02-09, 0.0, 0.1 AND 0.12)	
TYPE	CONTENTS
1A	FIRE MONITOR AND GATE VALVE OR HYDRANT AND METER
1B	FIRE MONITOR AND GATE VALVE OR HYDRANT AND METER
2A	UNDERGROUND HYDRANT
3	VALVE AND METER FOR BUILDINGS
4	UNDERGROUND PIPES
5A	WATER SUPPLY GATE VALVE
5B	WATER SUPPLY GATE VALVE

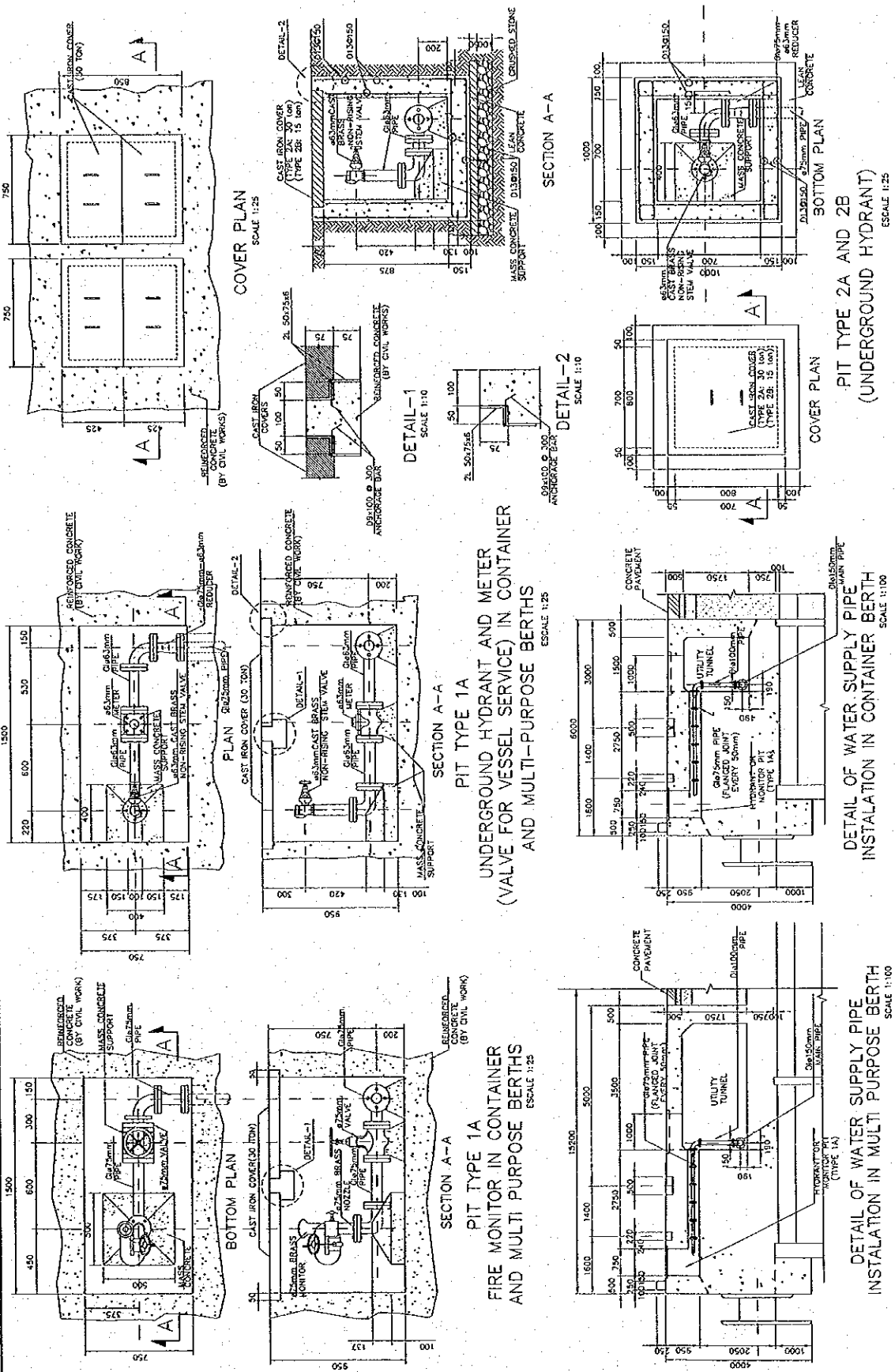
- (BUILDING LIST)
- ① ADMINISTRATION BUILDING
  - ② CONTAINER FREIGHT STATION
  - ③ MAINTENANCE AND REPAIR SHOP
  - ④ CONTAINER GATE
  - ⑤ CARGO GATE
  - ⑥ POWER SUPPLY STATION
  - ⑦ PARKING SHEDS
  - ⑧ FUEL STATION
- (SYMBOLS)
- ⊕ METER
  - ⊖ MONITOR
  - ⊕ HYDRANT
  - ⊕ VALVE
  - ABC CLASS DRY CHEMICAL WHEELED EXTINGUISHER
  - FS FIRE STATION CABINET
  - ⊖ INLET FOR FIRE FIGHTING
- (LEGEND) \*
- C CHARGE
  - U UNDERGROUND HYDRANT
  - S STAND TYPE HYDRANT
  - DI DUCTILE IRON PIPE
  - PVC POLYVINYL CHLORIDE PIPE
  - L LENGTH OF PIPE LINE



Prepared by	H. Iruka	02/07/12	Checked by	S. Endo	12 July, 02
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Project	Detailed Design on Port Reactivation Project in La Union Province of the Republic of El Salvador	Calc. File N°	
Section:	UTILITY WORK	Calc. Index N°	
Subject:	PITS	Page N°	4/5

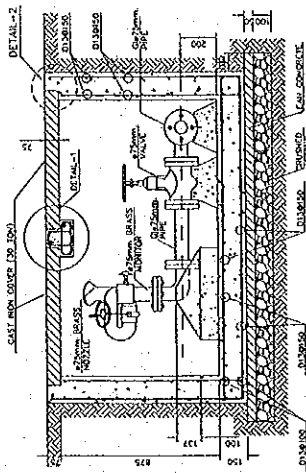


Prepared by	Checked by
H. Inak	S. Endo
02/07/12	12 July, 02

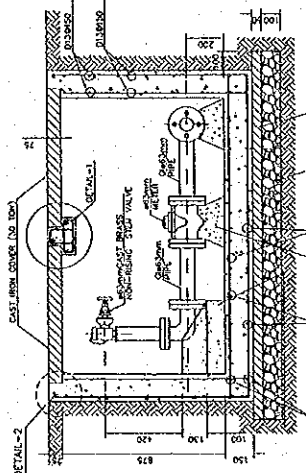




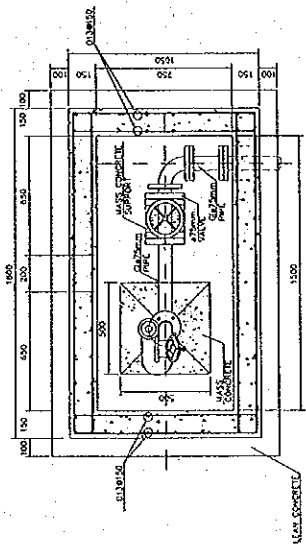
Project	Detailed Design on Port Reactivation Project in La Union Province of the Republic of El Salvador	Calc. File N°	
Section:	UTILITY WORK	Calc. Index N°	
Subject:	PITS	Page N°	5/5



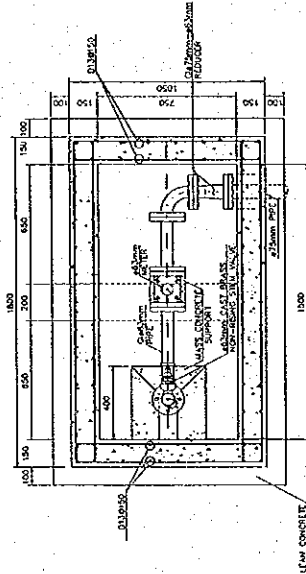
SECTION A-A  
SCALE 1:20



SECTION A-A  
SCALE 1:20



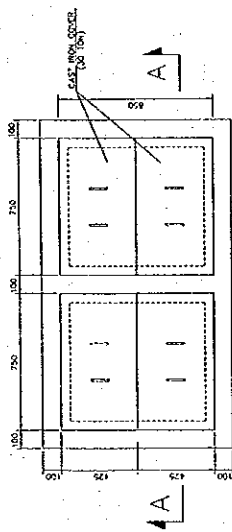
BOTTOM PLAN  
SCALE 1:20



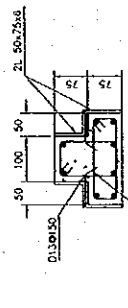
BOTTOM PLAN  
SCALE 1:20

PIT TYPE 1B  
(FIRE MONITOR AND GATE  
VALVE IN PASSENGER BERTH)

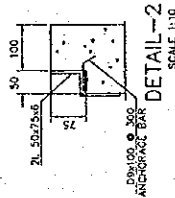
PIT TYPE 1B  
(FIRE MONITOR AND GATE  
VALVE IN PASSENGER BERTH)



COVER PLAN  
SCALE 1:10



DETAIL-1  
SCALE 1:10



DETAIL-2  
SCALE 1:10

Prepared by	H. Iruku	02/07/12	Checked by	S. Endo	12 July, 02
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<b>QUANTITY CALCULATION COVER SHEET</b>								
<b>Project</b>	Detailed Design on Port Reactivation Project in La Unión Province			<b>Project Code</b>	JC1N004/2N001			
<b>Work Section Title</b>	<b>Fire Fighting System</b>			<b>Pay Item No. (BOQ)</b>	4A0801&4A0802			
<b>Quantity Item</b>	<b>Pits (Type-1A and 1B)</b>			<b>Unit</b>	No.			
<b><u>Calculation Procedure Applied</u></b>								
<p>Concrete volume was computed with two decimal for section sectional area and zero decimal for total.</p> <p>The length of reinforcement-bar was computed summarizing all distance of bar.</p> <p>Lean concrete and crushed stone was computed mulplying the area to the thickness of them.</p> <p>Area of form was computed using geometric formula.</p>								
<b><u>References, Calculation Base and Revisions</u></b>								
<p>Drawing Nº      UT-02-011</p>								
Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	H. Iruja	02/07/12	5	S. Endo	12 July, 02	W. Iruja	16 July, 02	
1	<i>[Signature]</i>							
2								
3								

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province	Calc. File No.	
<b>Section</b>	UTILITY WORK	Calc. Index No.	
<b>Subject</b>	Pit Type 1-A	Page No.	2/5 Rev.
			References/
<b>Fire Monitor and Gate Valve or Hydrant and Meter (Type-1A)</b>			
Bottom			
<i>Dimension</i>			
Height		0.075	
		0.875	
		0.150	
<b>Total</b>		<b>1.100</b>	
Width		0.1	
		0.05	
		1.5	
		0.05	
		0.1	
<b>Total</b>		<b>1.800</b>	
B		0.100	
		0.050	
		0.750	
		0.050	
		0.100	
<b>Total</b>		<b>1.050</b>	
Area		1.890 m <sup>2</sup>	
Volume		2.079 m <sup>3</sup>	
<i>Cast Iron Ring</i>		5.60 m	
Cover		2 Nos	
Mass Concrete Support		0.012 m <sup>3</sup>	
		0.006 m <sup>3</sup>	
		0.018 m <sup>3</sup>	
<b>Summary of Quantity for Pit</b>			
Mass Concrete Support		0.018 m <sup>3</sup>	
Cast Iron Ring : L 50x50x6		5.60 m	
Cover (750 x 425 x 75 x 2)		2 nos	
		Prepared by	Checked by
		H. Iruka	S. Endo
		02/07/12	12 July 2012

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province	Calc. File No.	
<b>Section</b>	UTILITY WORK	Calc. Index No.	
<b>Subject</b>	Pit Type 1-B	Page No.	3/5 Rev.
			References/
<b>Fire Monitor and Gate Valve or Hydrant and Meter (Type-1B)</b>			
Bottom	Dimension		
	Height	0.075	
		0.875	
		0.150	
	Total	1.100	
	Width	0.1	
		0.05	
		1.5	
		0.05	
		0.1	
	Total	1.800	
B		0.100	
		0.050	
		0.750	
		0.050	
		0.100	
	Total	1.050	
	Area	1.890 m <sup>2</sup>	
	Volume	2.079 m <sup>3</sup>	
<b>Reinforcement Bar</b>			
	Length	Nos.	Length m/kg Weight (kg)
	1.000	28	28 0.995 27.86
	1.75	28	49 0.995 48.755
	1.05	13	14 0.995 13.93
	0.83	13	11 0.995 10.945
Bottom (1)	1.00	25	25 0.995 24.875
Bottom (2)	1.75	13	23 0.995 23.217
			149.582 kg
<b>Concrete Work</b>			
	<b>Deducted Volume</b>		
	Pipe	75 mm	
		0.0009 m <sup>3</sup>	
	Edge (1)	0.0113 m <sup>3</sup>	
	Edge (2)	0.0113 m <sup>3</sup>	
	Total	0.0234 m <sup>3</sup> (A)	
	<b>Concrete Volume</b>		
	(Side)	0.749 m <sup>3</sup>	
	(Bottom)	0.284 m <sup>3</sup>	
		1.033 m <sup>3</sup> (B)	
	(B)-(A)	1.022 m <sup>3</sup>	
<b>Form Work</b>			
	<b>Deducted Area</b>		
	0.471 m <sup>2</sup>	(C)	
	(Side-Outside)	6.27	
	(Side-Inside)	3.94	
	(Bottom)	1.89	
	Total	12.0975 m <sup>2</sup> (D)	
	(D)-(C)	11.6265 m <sup>2</sup>	
<b>Lean Concrete</b>			
	d	0.05 m	
	Width	0.1 m	
	Concrete Volume	0.125 m <sup>3</sup>	
Prepared by		Checked by	
H. Irada		S. Endo	
		12 July, 2012	

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province	Calc. File No.																																																																																																																																																																																									
<b>Section</b>	UTILITY WORK	Calc. Index No.																																																																																																																																																																																									
<b>Subject</b>	Pit Type 1-B	Page No.	4/5 Rev.																																																																																																																																																																																								
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H. Irola		S. Endo																																																																																																																																																																																									
02/07/12		12 July, 12																																																																																																																																																																																									



### QUANTITY CALCULATION COVER SHEET

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province	<b>Project Code</b>	JC1N004/2N001
<b>Work Section Title</b>	<b>Fire Fighting System</b>	<b>Pay Item No. (BOQ)</b>	4A0803&4A0804
<b>Quantity Item</b>	<b>Pits (Type-2)</b>	<b>Unit</b>	No.

**Calculation Procedure Applied**

Concrete volume was computed with two decimal for section sectional area and zero decimal for total.

The length of reinforcement-bar was computed summarizing all distance of bar.

Lean concrete and crushed stone was computed multiplying the area to the thickness of them.

Area of form was computed using geometric formula.

**References, Calculation Base and Revisions**

Drawing N° UT-02-010

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	H. Iryu	02/07/12	4	N. Endo	12 July 02	HT	16 July 02	
1	<i>[Signature]</i>							
2								
3								

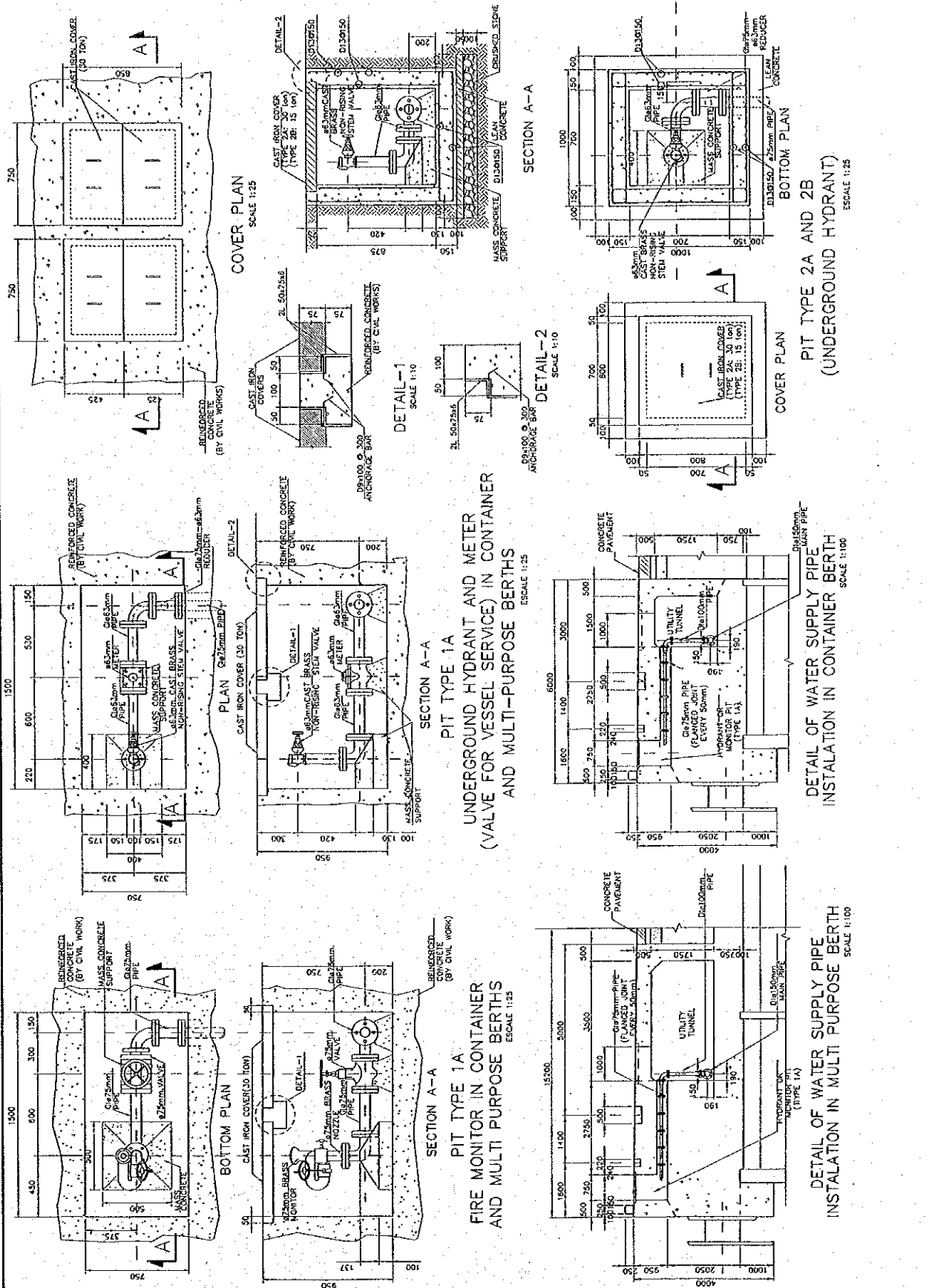
<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province	Calc. File No.	
<b>Section</b>	UTILITY WORK	Calc. Index No.	
<b>Subject</b>	Pit Type 2	Page No.	2/4 Rev.
			References/
<b>Underground Hydrant (Type-2A&amp;2B)</b>			
<b>Bottom</b>	<i>Dimension</i>		
	Height	0.075	
		0.875	
	Total	1.100	
	Width	0.1	
		0.05	
		0.7	
		0.05	
	Total	1.000	
<b>B</b>		0.100	
		0.050	
		0.700	
		0.050	
	Total	1.100	
	Total	1.000	
<b>Area</b>		1.000 m <sup>2</sup>	
<b>Volume</b>		1.100 m <sup>3</sup>	
<b>Reinforcement Bar</b>			
	Length	Nos.	Length m/kg Weight (kg)
Side(1)	0.950	28	26.6 0.995 26.467
Side(2)	0.95	28	26.6 0.995 26.467
	1.05	13	13.3 0.995 13.2335
	0.83	13	10.45 0.995 10.39775
Bottom (1)	0.95	14	13.3 0.995 13.2335
Bottom (2)	0.95	13	12 0.995 11.973
			<b>101.772 kg</b>
<b>Concrete Work</b>			
<b>Deducted Volume</b>			
	Pipe	75 mm	
		0.0009 m <sup>3</sup>	
	Total	0.0009 m <sup>3</sup> (A)	
<b>Concrete Volume</b>			
	(Side)	0.495 m <sup>3</sup>	
	(Bottom)	0.150 m <sup>3</sup>	
	(B) - (A)	0.644 m <sup>3</sup>	
<b>Form Work</b>			
<b>Deducted Area</b>			
		0.471 m <sup>2</sup>	(C)
	(Side-Outside)	4.4	
	(Side-Inside)	2.45	
	(Bottom)	1.00	
	Total	7.85 m <sup>2</sup>	(D)
	(D) - (C)	7.379 m <sup>2</sup>	
<b>Lean Concrete</b>			
	d	0.05 m	
	Width	0.1 m	
	Concrete Volume	0.072 m <sup>3</sup>	
<b>Prepared by</b>		<b>Checked by</b>	
H. Irak		S. Ende	
02/07/12		12 July 2012	



<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province	Calc. File No.	
<b>Section</b>	UTILITY WORK	Calc. Index No.	
<b>Subject</b>	Pit Type 2	Page No.	3/4 Rev.
			References/
<i>Crushed Stone</i>			
	d	0.1 m	
	Volume	0.144 m <sup>3</sup>	
<i>Excavation</i>			
		0.3 m	
		2.113 m <sup>3</sup>	
<i>Backfilling</i>			
		0.797 m <sup>3</sup>	
<i>Cast Iron Ring</i>			
		2.80 m	
<i>Cover</i>			
		1 Nos	
<i>Mass Concrete Support</i>			
		0.012 m <sup>3</sup>	
		0.006 m <sup>3</sup>	
		0.018 m <sup>3</sup>	
<b>Summary of Quantity for Pit</b>			
	<i>Excavation</i>	2.113 m <sup>3</sup>	
	<i>Backfilling</i>	0.797 m <sup>3</sup>	
	<i>Crushed Stone</i>	0.144 m <sup>3</sup>	
	<i>Lean Concrete</i>	0.072 m <sup>3</sup>	
	<i>Raiforcement Bar : Lower (D13)</i>	101.77 kg	
	<i>Form (Lower)</i>	7.379 m <sup>2</sup>	
	<i>Concrete (Lower) : 18N</i>	0.644 m <sup>3</sup>	
	<i>Mass Concrete Support</i>	0.018 m <sup>3</sup>	
	<i>Cast Iron Ring : L 50x50x6</i>	2.80 m	
	<i>Cover (800 x 800 x 75)</i>	1 nos	
Prepared by		Checked by	
H. Irula		S. Edo	
10/07/12		12 July 2012	



Project	Detailed Design on Port Reactivation Project in La Union Province of the Republic of El Salvador	Calc. File N°.	
Section:	UTILITY WORK	Calc. Index N°.	
Subject:	PITS (TYPE-2)	Page N°.	4/4



Prepared by	U. Irujo	02/07/12	Checked by	S. Pado	12 July, 12
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