



# **Aeratsia WWTP Rehabilitation**

TENDER DOCUMENT

**VOLUME 3: PART 4 OF CONTRACT - DRAWINGS**

**OCTOBER 1, 2014**

**VTI -International Activities**

**Echirolles**

6 rue de Lorraine  
38432 Echirolles  
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**GENERAL**

DRAWING NUMBER	DISCIPLINE	AREA	DESIGNATION	SIZE	SCALE	STATUS	REVISION
ART-1312155-DD-GEN-000-001	GENERAL	000	LIST OF DRAWINGS	A1	-	DD	0
ART-1312155-DD-MND-000-001	MAIN DRAWINGS	000	LIST OF DRAWINGS	A1	-	DD	0
ART-1312155-DD-ELC-000-001	ELECTRICAL	000	LIST OF DRAWINGS	A1	-	DD	0
ART-1312155-DD-INS-000-001	INSTRUMENTATION	000	LIST OF DRAWINGS	A1	-	DD	0

\_\_\_\_\_ DRAWING NUMBER  
 \_\_\_\_\_ AREA (SEE KEY PLAN AND DRAWING ART-1312155-DD-GEN-000-006)  
 \_\_\_\_\_ DISCIPLINE  
 \_\_\_\_\_ STATUS  
 \_\_\_\_\_ PROJECT NUMBER  
 \_\_\_\_\_ TRANSMITTER

AREA	AREA NAME
000	GENERAL
101	INLET CHAMBER
102	SCREENING
103	GRIT & GREASE REMOVAL TANK
104	FUTURE COAGULATION FLOCCULATION
105	LAMELLAR SEDIMENTATION
106	FUTURE BIOLOGICAL TREATMENT
107	FLOW METERING AND OUTLET PIPE
110	WELL WATER
200	SOLIDS HANDLING
300	ODOUR TREATMENT OF AREA 103-105
400	MAIN SUBSTATION (New)
401	SECONDARY SUBSTATION (15) (Existing)
402	ELECTRICAL ROOM (14) (Existing)

NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
2	Draft DD	CLN	10/2013
1	Final DD	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013

Original paper size : A1 Scale NO SCALE

REPUBLIC OF ARMENIA  
 YEREVAN MUNICIPALITY  
 WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
 DETAILED DESIGN

GENERAL  
 LIST OF DRAWINGS  
 DESIGNATIONS SUMMARY

DATE : \_\_\_\_\_  
 DRAWN : CLN  
 CHECKED : CTF  
 APPROVED : CTF

ART	1312155	DD	GEN	000	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

DRAWING NUMBER	DISCIPLINE	AREA	DESIGNATION	SIZE	SCALE	STATUS	REVISION
ART-1312155-DD-GEN-000-001	GENERAL	000	LIST OF DRAWINGS - DESIGNATIONS SUMMARY	A1	-	DD	0
ART-1312155-DD-GEN-000-002	GENERAL	000	LIST OF DRAWINGS	A1	-	DD	0
ART-1312155-DD-GEN-000-003	GENERAL	000	LIST OF DRAWINGS	A1	-	DD	0
ART-1312155-DD-GEN-000-004	GENERAL	000	LIST OF DRAWINGS - LIST OF GENERAL DRAWINGS	A1	-	DD	0
ART-1312155-DD-GEN-000-010	GENERAL	000	SITE LOCATION	A1	1:20,000	DD	0
ART-1312155-DD-GEN-000-011	GENERAL	000	BUILDING LOCATION AND GENERAL PHASING	A1	1:2,000	DD	0
ART-1312155-DD-GEN-000-012	GENERAL	000	EXISTING BUILDINGS	A1	1:1,000	DD	0
ART-1312155-DD-GEN-000-013	GENERAL	000	BUILDING & AREA DESIGNATIONS	A1	1:1,000	DD	0
ART-1312155-DD-GEN-000-014	GENERAL	000	HYDRAULIC PROFILE - WASTE WATER	A1	- / 1:200	DD	0
ART-1312155-DD-GEN-000-015	GENERAL	000	HYDRAULIC PROFILE - SLUDGE	A1	- / 1:200	DD	0
ART-1312155-DD-GEN-000-016	GENERAL	000	SCHEMATIC WATER TREATMENTPROCESS	A1	-	DD	0
ART-1312155-DD-GEN-000-017	GENERAL	000	SCHEMATIC SLUDGE TREATMENT PROCESS	A1	-	DD	0
ART-1312155-DD-GEN-101-001	GENERAL	101	EXISTING BUILDING - INLET - PLAN VIEW	A1	1:100	DD	0
ART-1312155-DD-GEN-101-002	GENERAL	101	EXISTING BUILDING - INLET - SECTIONS	A1	1:100	DD	0
ART-1312155-DD-GEN-200-001	GENERAL	200	EXISTING BUILDING - SLUDGE BUILDING - PLAN VIEW	A1	1:100	DD	0
ART-1312155-DD-GEN-200-002	GENERAL	200	EXISTING BUILDING - SLUDGE BUILDING - SECTIONS	A1	1:100	DD	0
ART-1312155-DD-GEN-401-001	GENERAL	401	EXISTING BUILDING - SUBSTATION 15 - PLAN VIEW	A1	1:50	DD	0
ART-1312155-DD-GEN-401-002	GENERAL	401	EXISTING BUILDING - SUBSTATION 15- SECTIONS	A1	1:50	DD	0
ART-1312155-DD-GEN-402-001	GENERAL	402	EXISTING BUILDING - ELECTRICAL 14- PLAN VIEW	A1	1:50	DD	0
ART-1312155-DD-GEN-402-002	GENERAL	402	EXISTING BUILDING - ELECTRICAL 14 - SECTIONS	A1	1:50	DD	0



ART-1312155-DD-MND-000-001	MAIN	000	LIST OF DRAWINGS	A1	-	DD	0
ART-1312155-DD-MND-000-100	MAIN	000	SURVEY DRAWING - GENERAL PLAN VIEW	A1	1:750	DD	0
ART-1312155-DD-MND-000-101	MAIN	000	SURVEY DRAWING - PLAN VIEW 101	A1	1:250	DD	0
ART-1312155-DD-MND-000-102	MAIN	000	SURVEY DRAWING - PLAN VIEW 102	A1	1:250	DD	0
ART-1312155-DD-MND-000-103	MAIN	000	SURVEY DRAWING - PLAN VIEW 103	A1	1:250	DD	0
ART-1312155-DD-MND-000-104	MAIN	000	SURVEY DRAWING - PLAN VIEW 104	A1	1:250	DD	0
ART-1312155-DD-MND-000-105	MAIN	000	SURVEY DRAWING - PLAN VIEW 105	A1	1:250	DD	0
ART-1312155-DD-MND-000-106	MAIN	000	SURVEY DRAWING - PLAN VIEW 106	A1	1:250	DD	0
ART-1312155-DD-MND-000-200	MAIN	000	DEMOLITION DWG - GENERAL PLAN VIEW	A1	1:750	DD	0
ART-1312155-DD-MND-000-300	MAIN	000	ROADS DWG - GENERAL PLAN VIEW	A1	1:750	DD	0
ART-1312155-DD-MND-000-301	MAIN	000	ROADS DWG - TYPICAL SECTION	A1	1:50	DD	0
ART-1312155-DD-MND-000-400	MAIN	000	UTILITIES DWG - GENERAL PLAN VIEW	A1	1:750	DD	0
ART-1312155-DD-MND-000-401	MAIN	000	UTILITIES DWG - GENERAL PLAN VIEW zone 1	A1	1:250	DD	0
ART-1312155-DD-MND-000-402	MAIN	000	UTILITIES DWG - GENERAL PLAN VIEW zone 2	A1	1:250	DD	0
ART-1312155-DD-MND-000-403	MAIN	000	UTILITIES DWG - GENERAL SERVICE WATER	A1	1:400	DD	0
ART-1312155-DD-MND-000-404	MAIN	000	UTILITIES DWG - GENERAL SLUDGE AND FOUL WATER	A1	1:400	DD	0
ART-1312155-DD-MND-101-000	MAIN	101	INLET / COARSE SCREENS - PLAN VIEW AREA 101-102	A1	1:50	DD	0
ART-1312155-DD-MND-101-001	MAIN	101	INLET / COARSE SCREENS - AREA 101 - PLAN VIEW	A1	1:50	DD	0
ART-1312155-DD-MND-101-101	MAIN	101	INLET / COARSE SCREENS - SECTIONS 1&2	A1	1:50	DD	0
ART-1312155-DD-MND-101-102	MAIN	102	INLET / COARSE SCREENS - SECTIONS 14-15	A1	1:50	DD	0
ART-1312155-DD-MND-101-103	MAIN	103	INLET / COARSE SCREENS - SECTIONS 12	A1	1:50	DD	0
ART-1312155-DD-MND-102-001	MAIN	102	FINE SCREENS - AREA 102 -PLAN VIEW	A1	1:50	DD	0
ART-1312155-DD-MND-102-101	MAIN	102	FINE SCREENS - SECTIONS 1 & 2	A1	1:50	DD	0
ART-1312155-DD-MND-102-102	MAIN	102	FINE SCREENS - SECTIONS 1 1	A1	1:50	DD	0
ART-1312155-DD-MND-103-001	MAIN	103	GRIT AND GREASE REMOVAL - AREA 103 - PLAN VIEW	A1	1:150	DD	0
ART-1312155-DD-MND-103-002	MAIN	103	GRIT AND GREASE REMOVAL - SECTION A	A1	1:100	DD	0
ART-1312155-DD-MND-103-003	MAIN	103	GRIT AND GREASE REMOVAL - SECTION B	A1	1:100	DD	0
ART-1312155-DD-MND-103-101	MAIN	103	GRIT AND GREASE REMOVAL - SECTIONS 1 & 2	A1	1:100	DD	0
ART-1312155-DD-MND-103-102	MAIN	103	GRIT AND GREASE REMOVAL - SECTIONS 3 & 4	A1	1:100	DD	0
ART-1312155-DD-MND-103-103	MAIN	103	GRIT AND GREASE REMOVAL - SECTION 5	A1	1:100	DD	0
ART-1312155-DD-MND-103-104	MAIN	103	GRIT AND GREASE REMOVAL - SECTION 10 & 12	A1	1:100	DD	0
ART-1312155-DD-MND-103-105	MAIN	103	GRIT AND GREASE REMOVAL - SECTION 11 & 13	A1	1:50	DD	0
ART-1312155-DD-MND-105-001	MAIN	105	PRIMARY SETTLING TANK - PLAN VIEW	A1	1:100	DD	0
ART-1312155-DD-MND-105-002	MAIN	105	PRIMARY SETTLING TANK - PLAN A	A1	1:100	DD	0
ART-1312155-DD-MND-105-003	MAIN	105	PRIMARY SETTLING TANK - PLAN B	A1	1:100	DD	0
ART-1312155-DD-MND-105-004	MAIN	105	PRIMARY SETTLING TANK - PLAN C	A1	1:100	DD	0

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**YEREVAN MUNICIPALITY**  
**WATER & SEWERAGE BOARD**

**REHABILITATION OF AERATSIA WWTP**  
**DETAILED DESIGN**  
**GENERAL DRAWINGS**  
GENERAL  
LIST OF DRAWINGS  
LIST OF GENERAL DRAWINGS

		DATE :	
		DRAWN :	FVR
		CHECKED :	CTF
		APPROVED :	CTF

ART	1312155	DD	GEN	000	002	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

ART-1312155-DD-MND-105-101	MAIN	105	PRIMARY SETTLING TANK - S 1&2	A1	1:100	DD	0
ART-1312155-DD-MND-105-102	MAIN	105	PRIMARY SETTLING TANK - S 3,4&5	A1	1:100	DD	0
ART-1312155-DD-MND-105-103	MAIN	105	PRIMARY SETTLING TANK - S 10&11	A1	1:100	DD	0
ART-1312155-DD-MND-105-104	MAIN	105	PRIMARY SETTLING TANK - S 12&13	A1	1:100	DD	0
ART-1312155-DD-MND-107-001	MAIN	107	DISCHARGE - PLAN VIEW	A1	1:50	DD	0
ART-1312155-DD-MND-107-101	MAIN	107	DISCHARGE - SECTION AND PLAN VIEW Outlet chamber	A1	1:50	DD	0
ART-1312155-DD-MND-107-102	MAIN	107	DISCHARGE - SECTION AND PLAN VIEW Outlet chamber collection	A1	1:50	DD	0
ART-1312155-DD-MND-110-001	MAIN	110	SERVICE WATER AND SUBSTATION	A1	1:50	DD	0
ART-1312155-DD-MND-200-001	MAIN	200	SLUDGE BUILDING - PLAN A	A1	1:100	DD	0
ART-1312155-DD-MND-200-002	MAIN	200	SLUDGE BUILDING - PLAN B	A1	1:100	DD	0
ART-1312155-DD-MND-200-101	MAIN	200	SLUDGE BUILDING - S 1,2 1 3	A1	1:100	DD	0
ART-1312155-DD-MND-200-102	MAIN	200	SLUDGE BUILDING - S 11 & 12	A1	1:100	DD	0

DRAWING NUMBER	DISCIPLINE	AREA	DESIGNATION	SIZE	SCALE	STATUS	REVISION
ART-1312155-DD-ELC-000-001	ELECTRICAL	000	LIST OF DRAWINGS	A1	-	DD	0
ART-1312155-DD-ELC-000-002	ELECTRICAL	000	CONTROL SYSTEM BLOCK DIAGRAM	A1	-	DD	0
ART-1312155-DD-ELC-000-100	ELECTRICAL	000	GENERAL PLAN VIEW	A1	1:750	DD	0
ART-1312155-DD-INS-000-001	INSTRUMENTATION	000	LIST OF DRAWINGS	A1	-	DD	0
ART-1312155-DD-INS-000-002	INSTRUMENTATION	000	LEGEND 1/2	A1	-	DD	0
ART-1312155-DD-INS-000-003	INSTRUMENTATION	000	LEGEND 2/2	A1	-	DD	0
ART-1312155-DD-INS-000-003	INSTRUMENTATION	001	EQUIPMENT LIST	A1	-	DD	0
ART-1312155-DD-INS-101-001	INSTRUMENTATION	101	INLET AND COARSE SCREENS	A1	-	DD	0
ART-1312155-DD-INS-102-001	INSTRUMENTATION	102	FINE SCREENS	A1	-	DD	0
ART-1312155-DD-INS-103-001	INSTRUMENTATION	103	GRIT TANKS 1&2	A1	-	DD	0
ART-1312155-DD-INS-103-002	INSTRUMENTATION	103	GRIT TANKS 3&4	A1	-	DD	0
ART-1312155-DD-INS-103-003	INSTRUMENTATION	103	GRIT TANK FOUL WATER PIT	A1	-	DD	0
ART-1312155-DD-INS-103-004	INSTRUMENTATION	103	GRIT TREATMENT	A1	-	DD	0
ART-1312155-DD-INS-103-005	INSTRUMENTATION	103	GREASE TREATMENT	A1	-	DD	0
ART-1312155-DD-INS-105-001	INSTRUMENTATION	105	PRIMARY TANK SETTLING	A1	-	DD	0
ART-1312155-DD-INS-105-002	INSTRUMENTATION	105	SLUDGE EXTRACTION	A1	-	DD	0
ART-1312155-DD-INS-105-003	INSTRUMENTATION	105	SLUDGE STORAGE	A1	-	DD	0
ART-1312155-DD-INS-105-004	INSTRUMENTATION	105	DECANTED WATER PIT	A1	-	DD	0
ART-1312155-DD-INS-107-001	INSTRUMENTATION	107	FLOW METERING AND OUTLET PIPE	A1	-	DD	0
ART-1312155-DD-INS-110-001	INSTRUMENTATION	110	WELL WATER	A1	-	DD	0
ART-1312155-DD-INS-200-001	INSTRUMENTATION	201	SLUDGE CONDITIONNING	A1	-	DD	0
ART-1312155-DD-INS-201-001	INSTRUMENTATION	202	DEWATERING	A1	-	DD	0
ART-1312155-DD-INS-202-001	INSTRUMENTATION	203	SLUDGE LIMING	A1	-	DD	0
ART-1312155-DD-INS-203-001	INSTRUMENTATION	204	DEWATERED SLUDGE STORAGE	A1	-	DD	0
ART-1312155-DD-INS-204-001	INSTRUMENTATION	205	FOUL WATER PIT	A1	-	DD	0
ART-1312155-DD-INS-300-001	INSTRUMENTATION	300	ODOUR TREATMENT	A1	-	DD	0
ART-1312155-DD-CW-000-001	CIVIL WORKS DRAWINGS	000	LIST OF DRAWINGS		-	DD	0
ART-1312155-DD-CW-101-000	CIVIL WORKS DRAWINGS	101&102	PLAN VIEW-Fine screening/coarse screening	A3	1/100	DD	0
ART-1312155-DD-CW-103-001	CIVIL WORKS DRAWINGS	103	PLAN VIEW-Grit and grease removal tank	A3	1/150	DD	0
ART-1312155-DD-CW-105-001	CIVIL WORKS DRAWINGS	105	PLAN VIEW-PRIMARY SETTLING TANK	A3	1/100	DD	0
ART-1312155-DD-CW-107-001	CIVIL WORKS DRAWINGS	107	PLAN VIEW - Discharge	A3	1/50	DD	0
ART-1312155-DD-CW-107-101	CIVIL WORKS DRAWINGS	107	PLAN VIEW - Effluent collection chamber	A3	1/50	DD	0
ART-1312155-DD-CW-107-102	CIVIL WORKS DRAWINGS	107	PLAN VIEW - Outlet connection chamber	A3	1/50	DD	0
ART-1312155-DD-CW-110-001	CIVIL WORKS DRAWINGS	110	PLAN VIEW AND SECTION	A3	1/50	DD	0
ART-1312155-DD-CW-200-001	CIVIL WORKS DRAWINGS	200	PLAN VIEW - Sludge handling	A3	1/100	DD	0
ART-1312155-DD-CW-200-101	CIVIL WORKS DRAWINGS	200	SECTIONS 1 & 11 - Sludge handling	A3	1/100	DD	0
ART-1312155-DD-CW-402-101	CIVIL WORKS DRAWINGS	402	EXISTING-Secondary substation plan view & section	A3	1/100	DD	0



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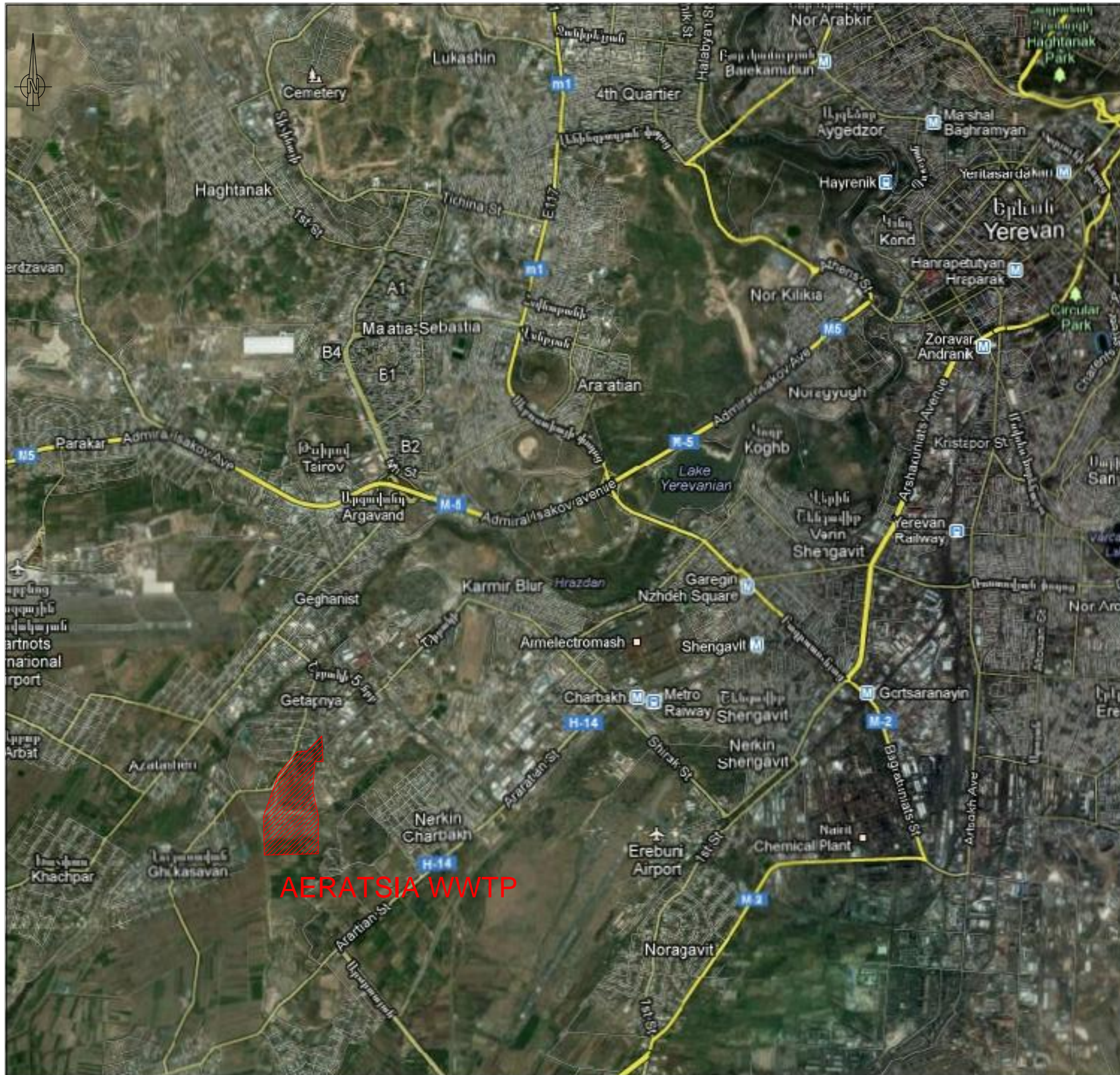
**REPUBLIC OF ARMENIA**  
**YEREVAN MUNICIPALITY**  
**WATER & SEWERAGE BOARD**

**REHABILITATION OF AERATSIA WWTP**  
**DETAILED DESIGN**

**GENERAL DRAWINGS**  
GENERAL  
LIST OF DRAWINGS  
LIST OF GENERAL DRAWINGS

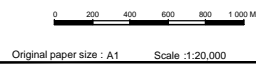
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		DRAWN :	FVR
		CHECKED :	CTF
		APPROVED :	CTF

ART	1312155	DD	GEN	000	003	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



**AERATSIA WWTW**

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REHABILITATION OF AERATSIA WWTW

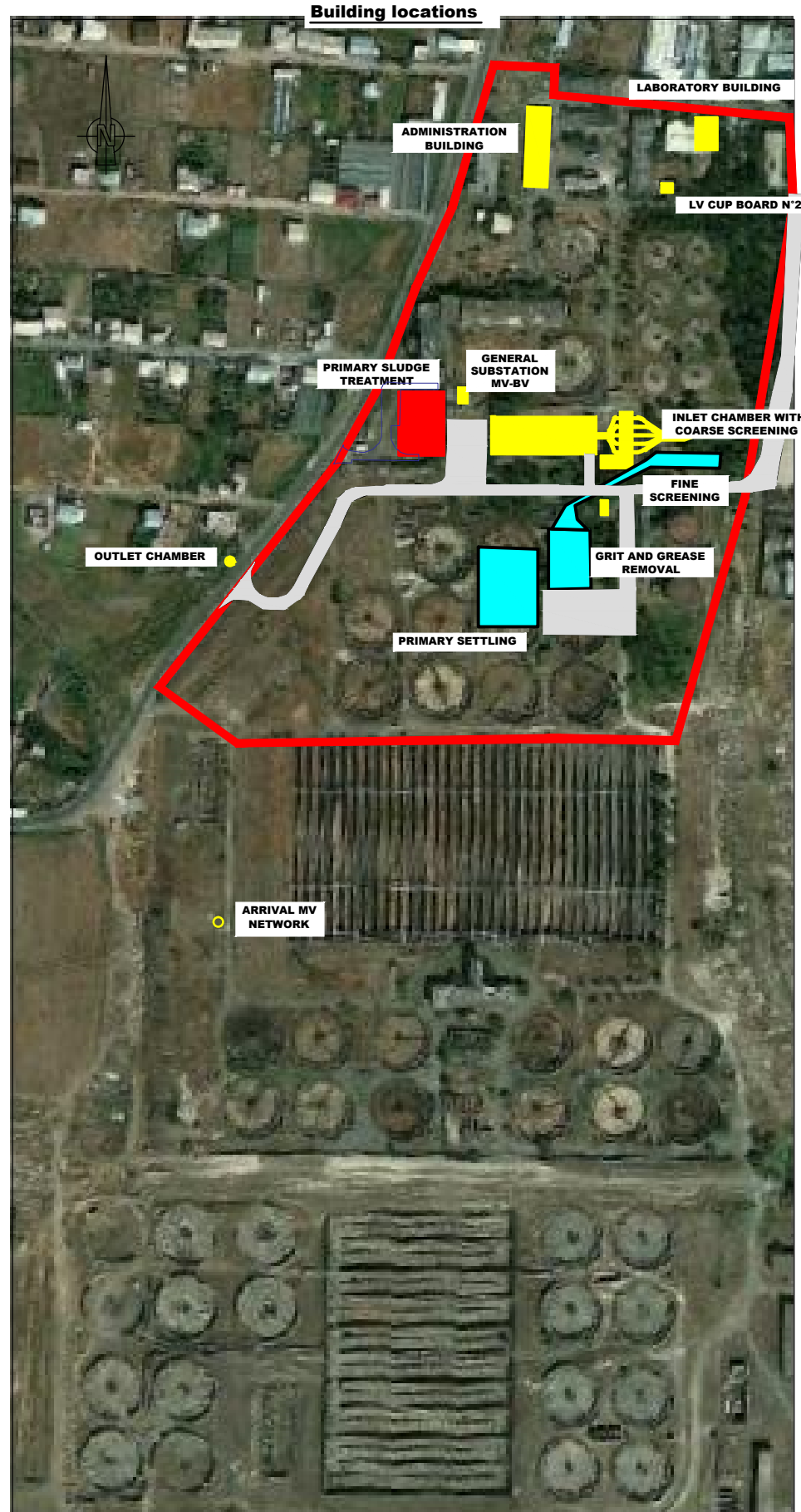
DETAILED DESIGN

GENERAL DRAWINGS

GENERAL  
 SITE LOCATION

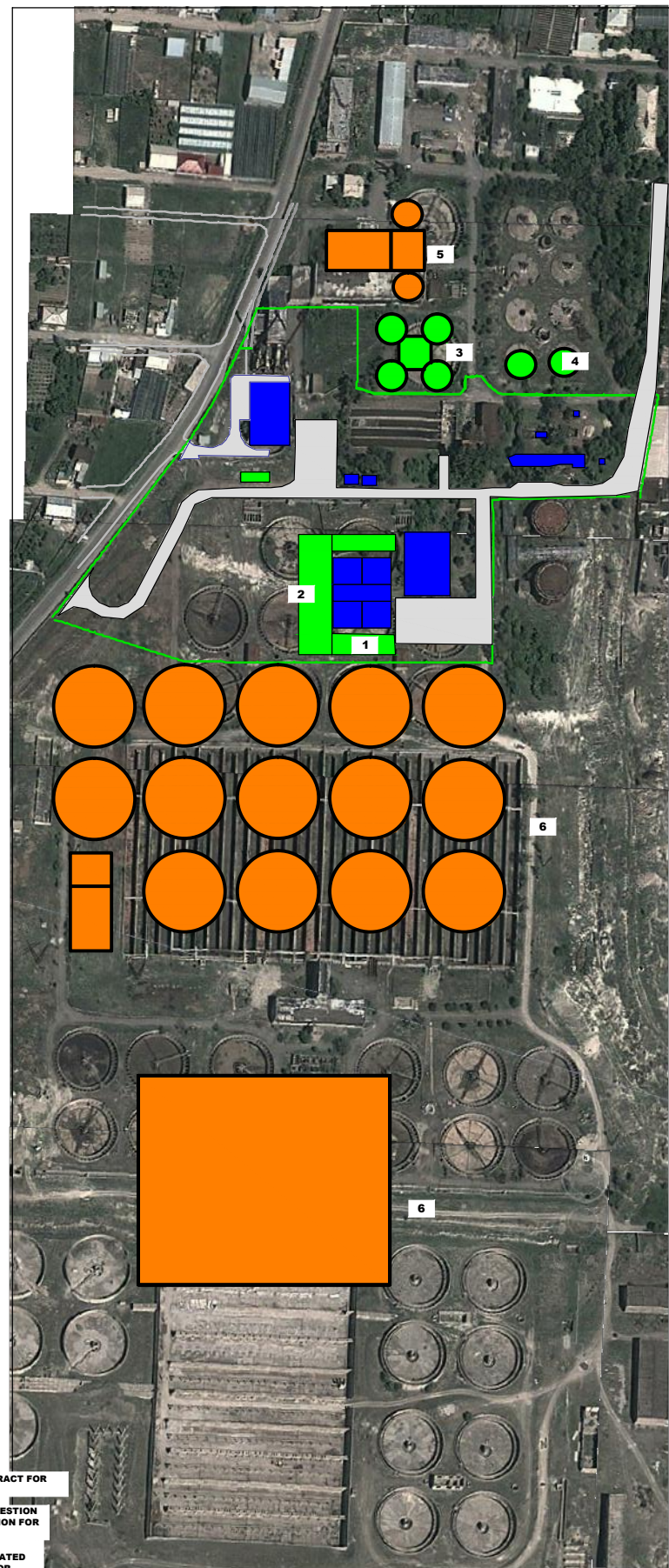
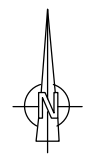
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	CHECKED :	CTF
	APPROVED :	CTF

ARI	1312155	DD	CEN	000	010	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



**LEGEND :**

- EXISTING BUILDING
- REHABILITATION OF WORKS
- NEW WORKS
- ROADS



**LEGEND :**

- PHASE 1 : ACTUAL CONTRACT FOR 2025
- PHASE 2 : BIOSOLIDS DIGESTION AND BIOGAS VALORISATION FOR 2025
- PHASE 3 : BIOLOGICAL TREATMENT WITH ACTIVATED SLUDGE TECHNOLOGY FOR 2050 FLOWS
- ROADS

**LEGEND:**

1. Chemical coagulation to enhance primary sedimentation.
2. New primary sedimentation tank.
3. Sludge anaerobic digestion.
4. Gas storage.
5. Sludge digestion and handling.
6. Biological treatment

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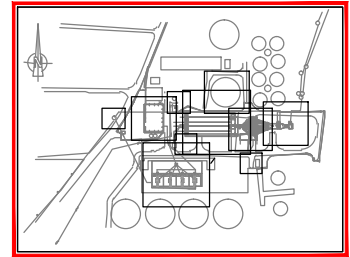
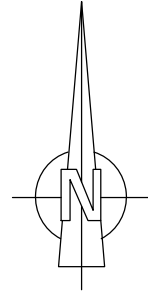
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Original paper size : A1 Scale : 1:2,000

REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

DETAILED DESIGN  
GENERAL DRAWINGS  
GENERAL  
Building location and general phasing

DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

ART	1:12:1	DF	GFN	CHD	GT1	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

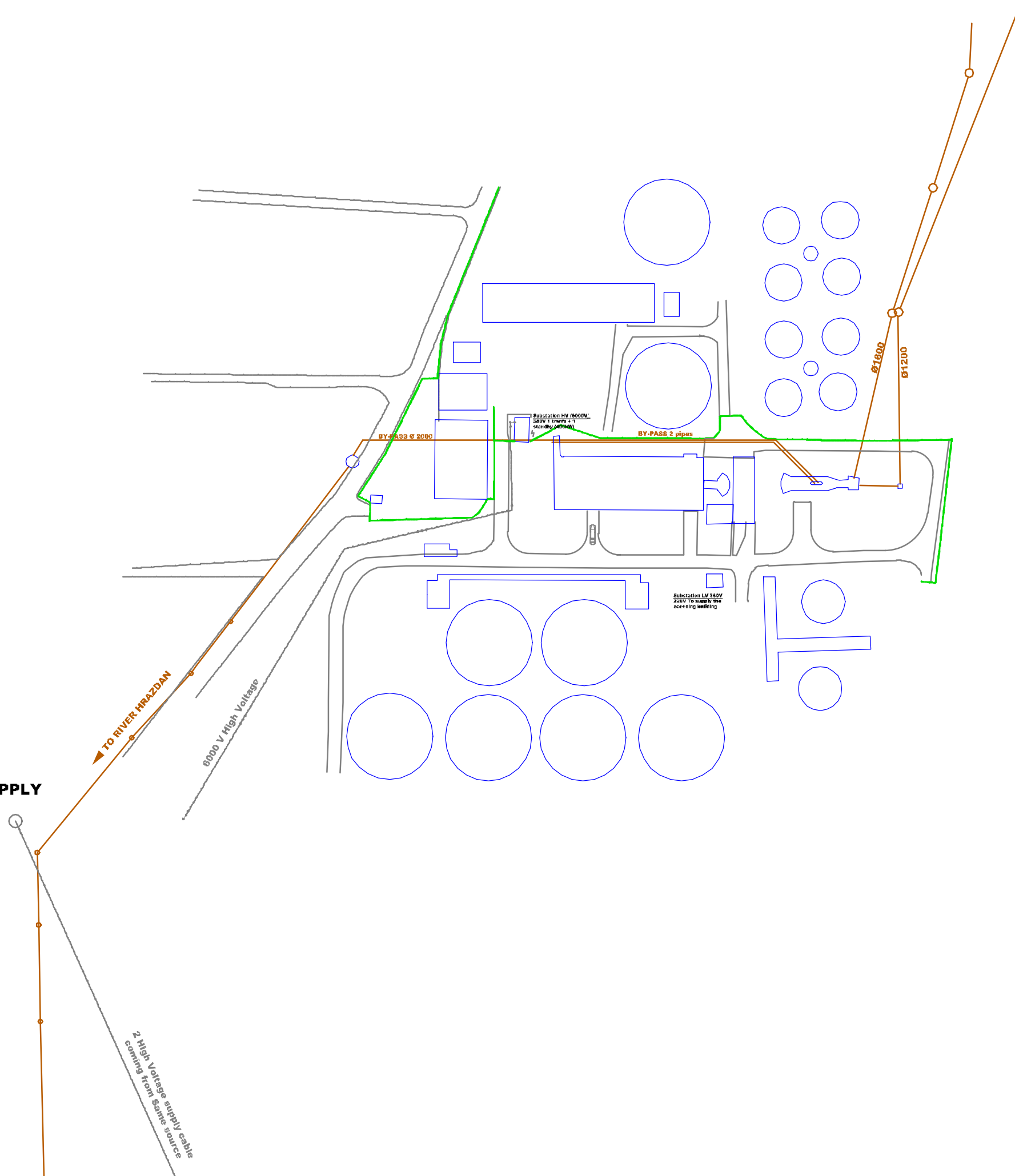


**KEY PLAN** AREA 000

**LEGEND :**

- EXISTING PIPE AND CHANNEL
- MV POWER SUPPLY
- FENCING

**MV POWER SUPPLY**



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DETAILED DESIGN

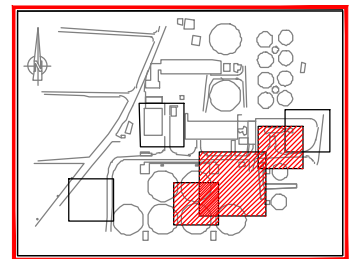
GENERAL DRAWINGS

GENERAL  
EXISTING BUILDINGS



DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

ART	1312155	DL	CEN	000	012	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



**KEY PLAN** AREA 000

**LEGEND :**

- ALPHATED ROAD
  - EXISTING BUILDING TO BE REHABILITATED
  - NEW BUILDING
  - 01 INLET CHAMBER AREA - 101
  - 02 INLET BY-PASS AREA - 101
  - 03 COARSE SCREENING AREA - 102
  - 04 FINE SCREENING AREA - 102
  - 05 GRIT AND GREASE REMOVAL TANKS AREA - 103
  - 06 GREASE PIT and GRIT SKIPS AREA - 103
  - 07 FLOW MEASUREMENT AREA - 103
  - 08 PRIMARY SETTLING TANKS AREA - 105
  - 09 OUTLET CHAMBER AREA - 107
  - 10 PRIMARY SLUDGE PUMPING STATION AREA - 105
  - 11 SLUDGE DEWATERING UNIT AREA - 200
  - 12 LIME STORAGE SILOS AREA - 200
  - 13 SLUDGE STORAGE AREA - 200
  - 14 ELECTRICAL ROOM AREA - 402
  - 15 SECONDARY SUBSTATION AREA - 401
  - 16 ARTESIAN WELL AREA - 402
  - 17 ODOR TREATMENT AREA - 105
  - 18 MAIN SUBSTATION AREA - 400
  - 19 SERVICE WATER AREA - 110
- Existing Fence (remains in place)  
 Chicken wire fence  
 New wall

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 YEREVAN MUNICIPALITY  
 WATER & SEWERAGE BOARD

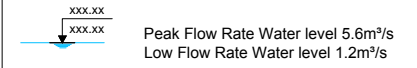
**REHABILITATION OF AERATSIA WWTP**  
**DETAILED DESIGN**  
**GENERAL DRAWINGS**  
 GENERAL  
 BUILDING & AREA DESIGNATIONS  
 PHASE 1

DATE : \_\_\_\_\_  
 DRAWN : FVR  
 CHECKED : CTF  
 APPROVED : CTF

ARI	1312155	DL3	CEN	000	013	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

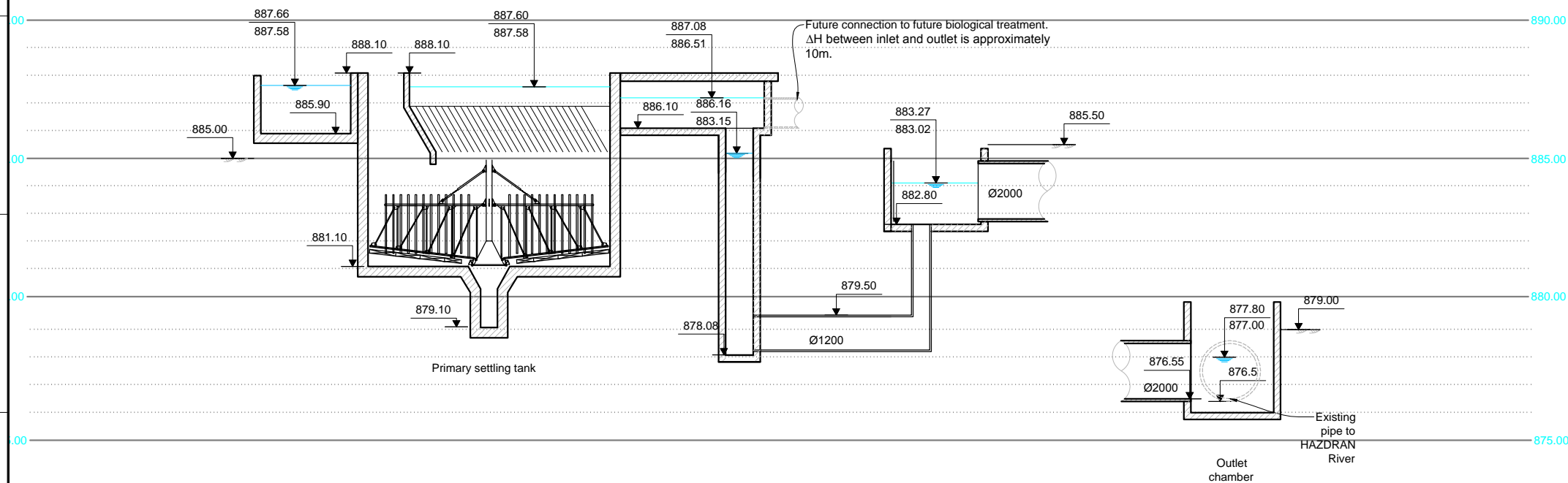
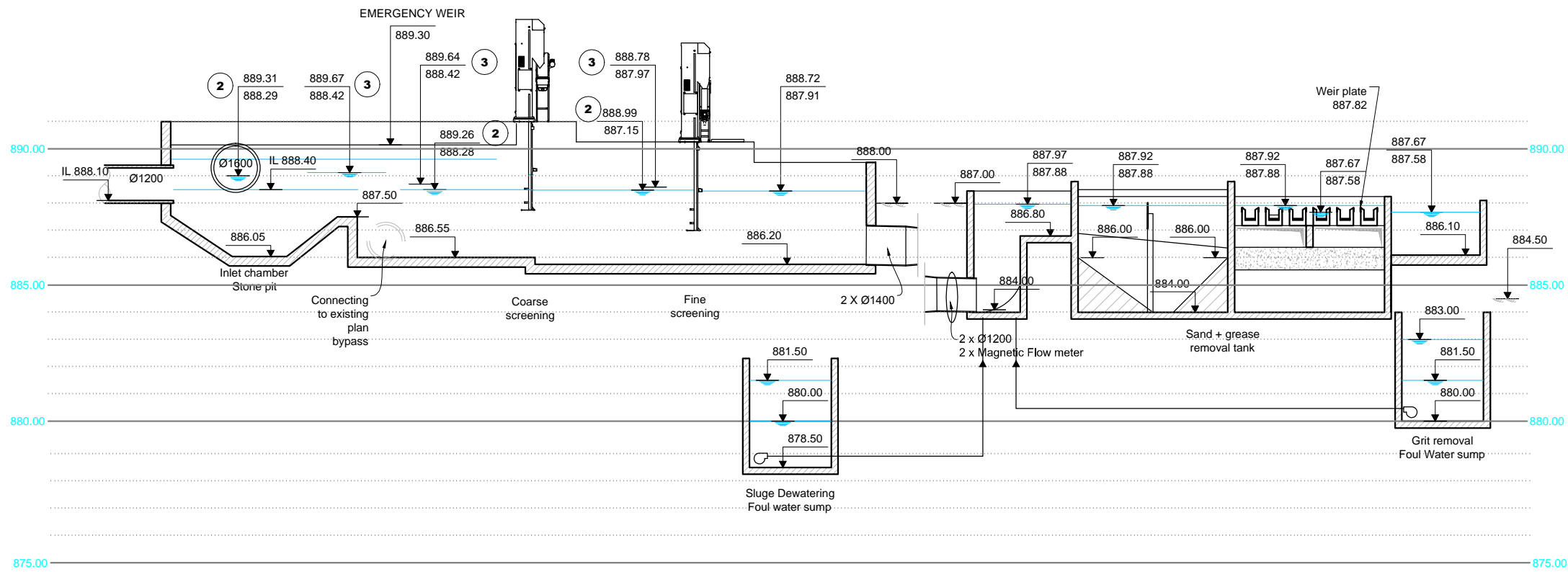
Designed by : GFTY Drawn by : FVR Verified by : CTF  
 ART-1312155-DD-GEN-000-013\_Rev0\_14-01-131.dwg

**LEGEND :**



**NOTE :**

- ① Water level when screens are clean (no number indicated)
- ② Water level when screens are 50% clogged
- ③ Water level when emergency bypass weir is activated  
By pass weir elevation = 889.14



3	Tender Detail Design	CLN	31/01/2014
2	Final DD	CLN	10/2013
1	Draft DD	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013
NO.	REVISIONS	BY	DATE

Original paper size : A1 Scale :x=NO SCALE - Y=1:200

REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

GENERAL DRAWINGS  
GENERAL  
HYDRAULIC PROFILE  
WASTE WATER

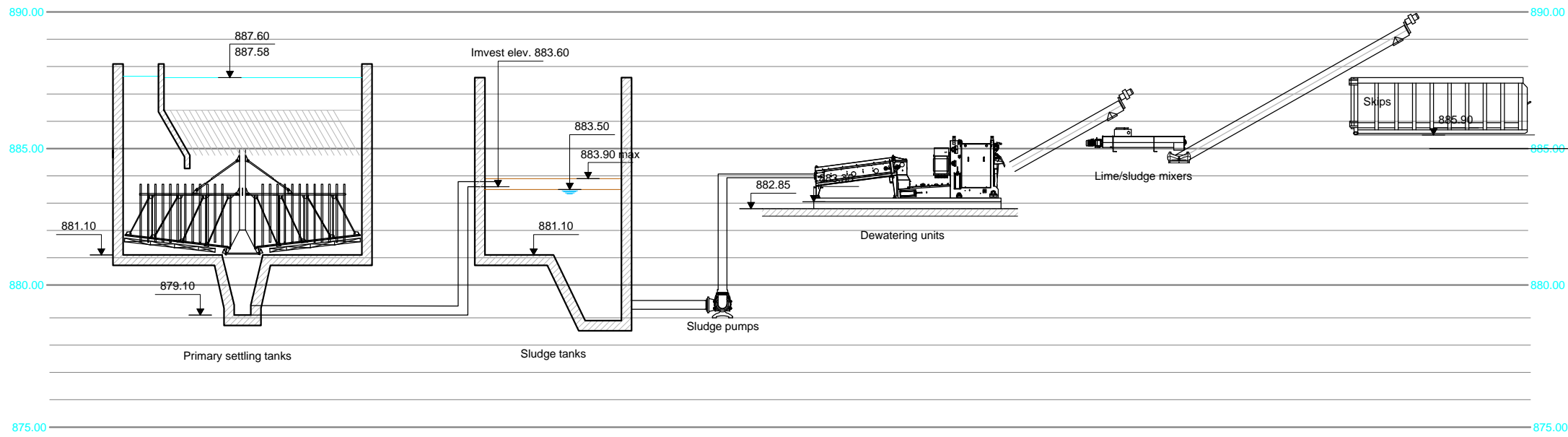


DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

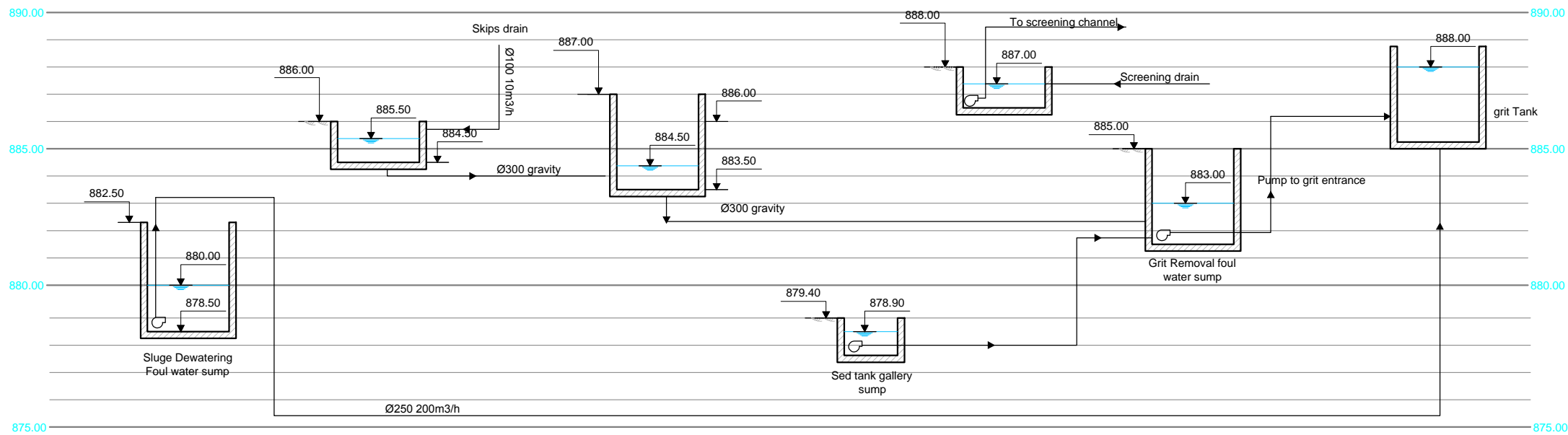
ART	1312155	DD	GEN	000	O14	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

**LEGEND :**

889.62  
 SLUDGE LEVEL



**SLUDGE**



**FOUL WATER**

NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
2	Final DD	CLN	10/2013
1	Draft DD	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013

Original paper size : A1 Scale :x=NO SCALE - Y=1:200

REPUBLIC OF ARMENIA  
 YEREVAN MUNICIPALITY  
 WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP

DETAILED DESIGN

GENERAL DRAWINGS

GENERAL

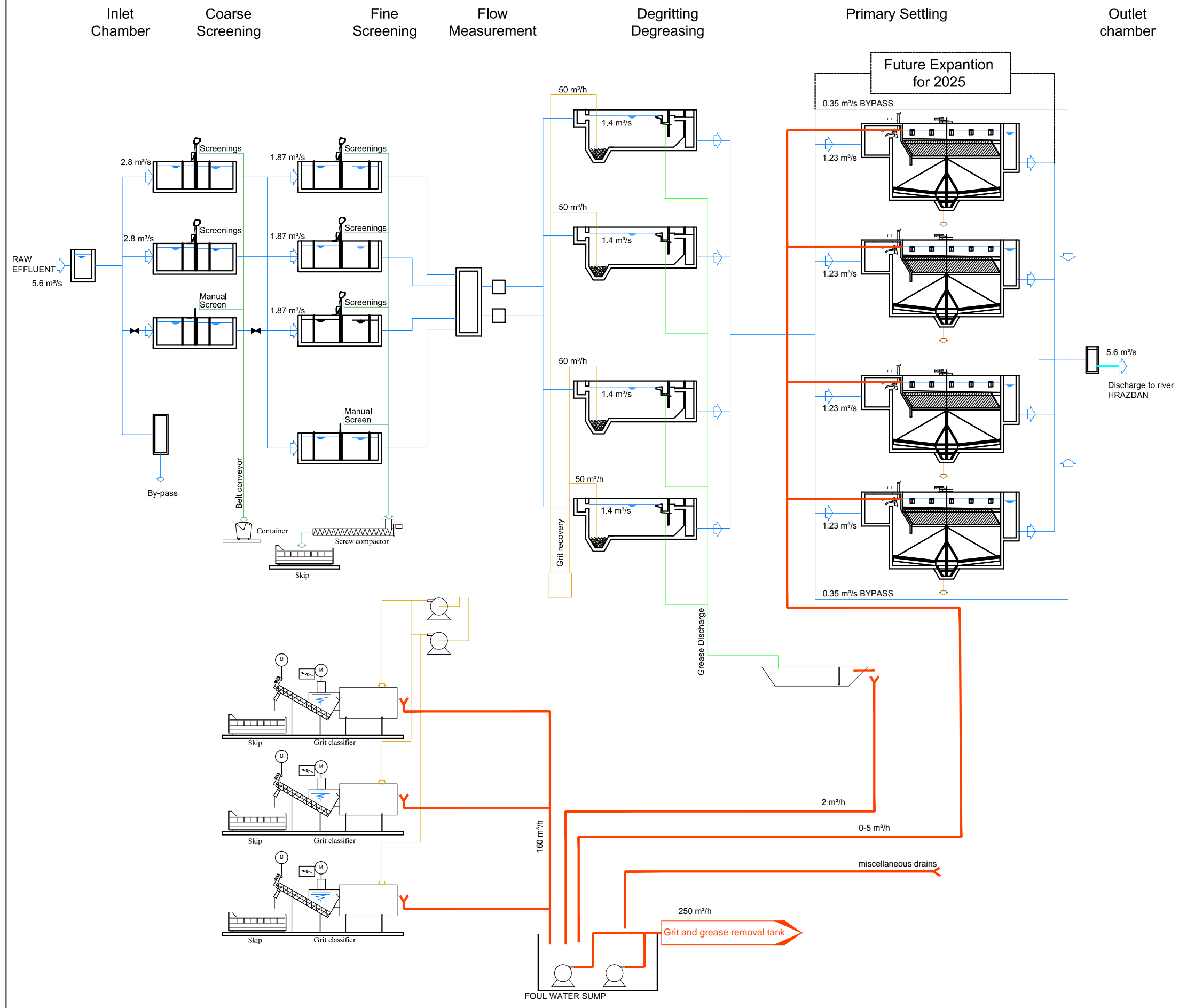
HYDRAULIC PROFILE

SLUDGE / FOUL WATER



DATE :  
 DRAWN : FVR  
 CHECKED : CTF  
 APPROVED : CTF

ART	1312155	DD	GEN	000	015	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX



**LEGEND:**  
 Qmax 2015 = 4.9 m³/s  
 Qmax 2025 = 5.6 m³/s

NO.	REVISIONS	BY	DATE
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1	Draft DD	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013

Original paper size : A1 Scale :x=NO SCALE - Y=1:200



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 YEREVAN MUNICIPALITY  
 WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
 DETAILED DESIGN

GENERAL DRAWINGS

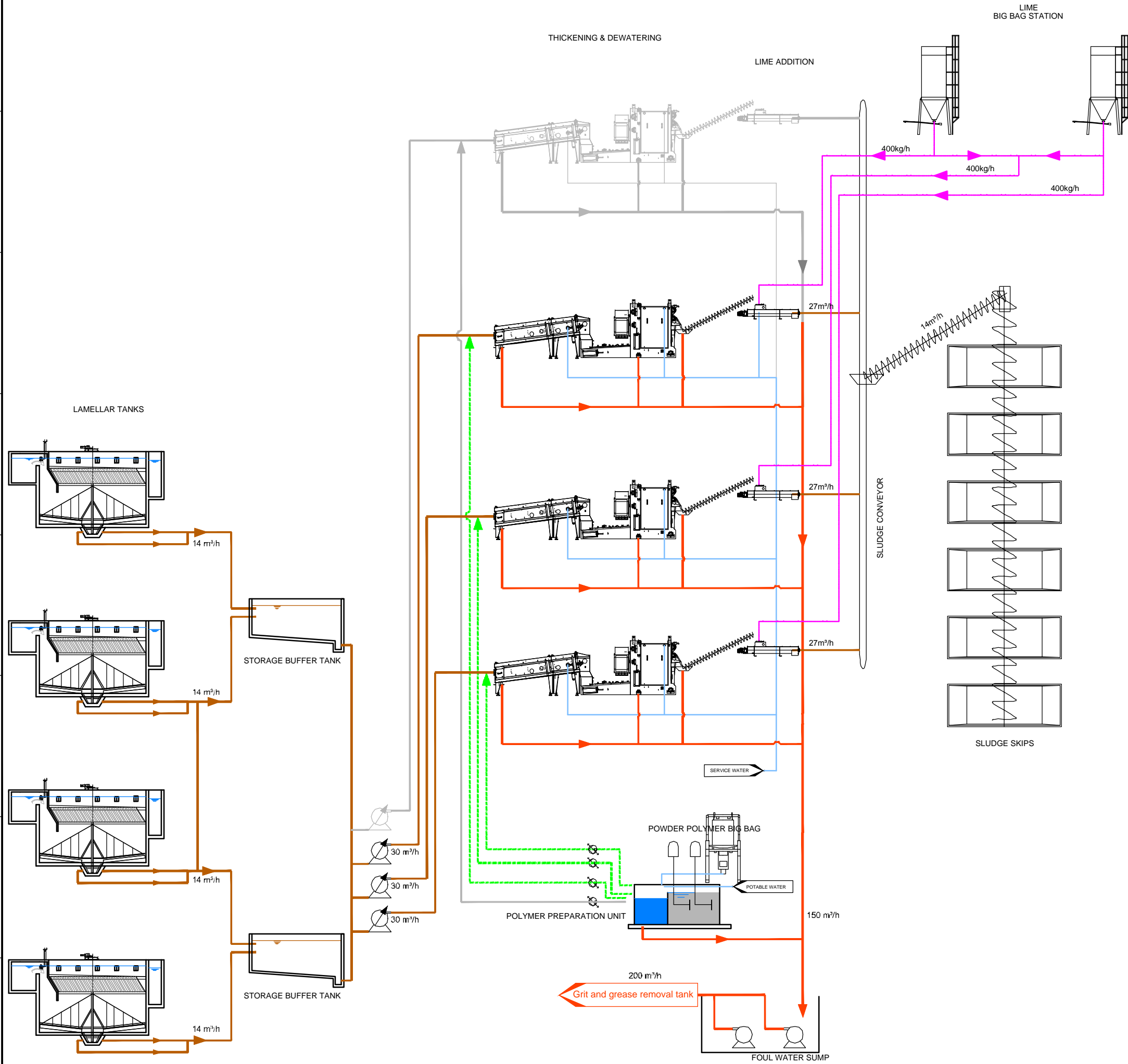
GENERAL  
 SCHEMATIC WATER TREATMENT PROCESS



DATE :  
 DRAWN : FVR  
 CHECKED : CTF  
 APPROVED : CTF

ART	1312155	DD	GEN	000	016	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

Designed by : GFY Drawn by : FVR Verified by : CTF  
 ART-1312155-DD-GEN-000-016 Rev0\_14-01-31.dwg



NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
2	Final DD	CLN	10/2013
1	Draft DD	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013

Original paper size : A1 Scale : NO SCALE

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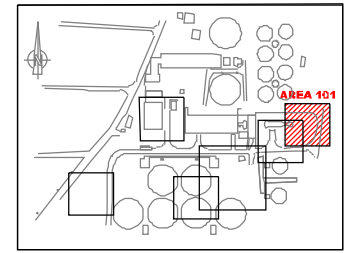
REHABILITATION OF AERATSIA WWTP  
 DETAILED DESIGN

GENERAL DRAWINGS  
 GENERAL  
 SCHEMATIC SLUDGE TREATMENT PROCESS

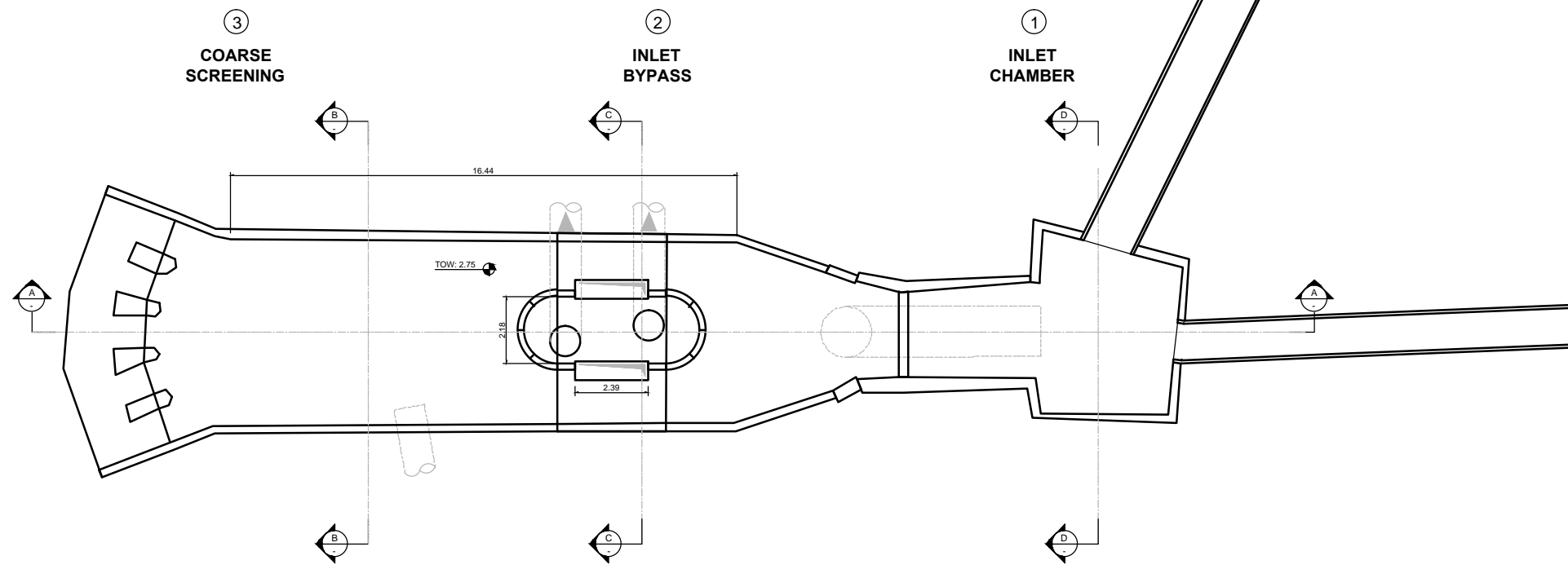
DATE :  
 DRAWN : FVR  
 CHECKED : CTF  
 APPROVED : CTF

ART	1312155	DL3	CEN	000	017	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

Designed by : GFY Drawn by : FVR Verified by : CTF  
 ART-1312155-DD-GEN-000-017\_Rev0\_14-01-131.dwg



**KEY PLAN**



NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
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1	Draft DD	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013



REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP

DETAILED DESIGN

GENERAL DRAWINGS

AREA 101

EXISTING

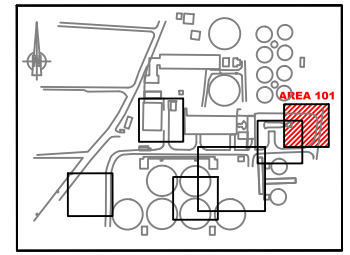
INLET CHAMBER AND BYPASS

PLAN VIEW

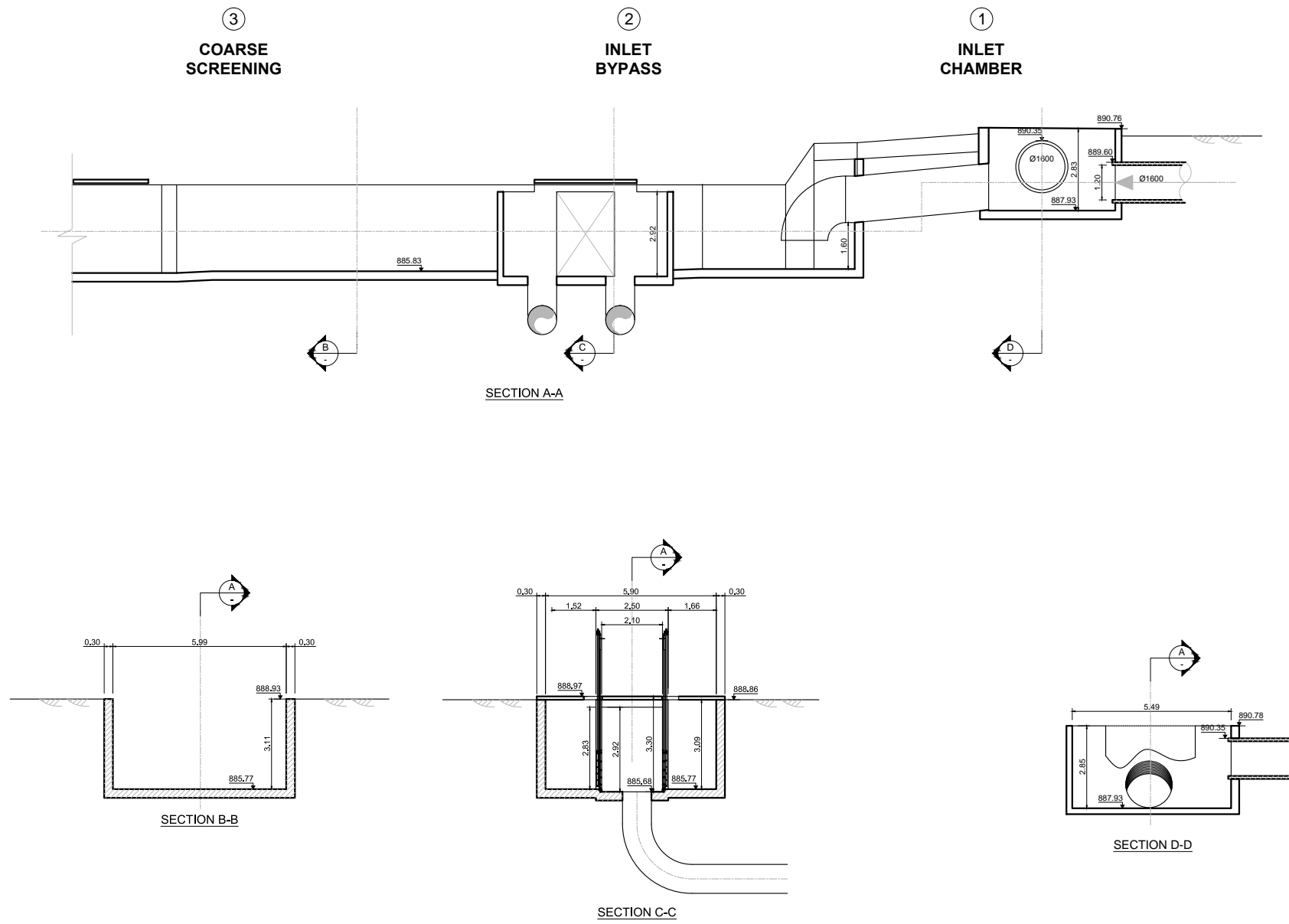


DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

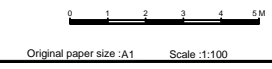
ARI	1312155	DL3	CEN	101	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



KEY PLAN



3	Tender Detail Design	CLN	31/01/2014
2	Final DD	CLN	10/2013
1	Draft DD	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013
NO.	REVISIONS	BY	DATE



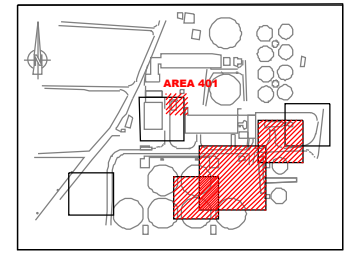
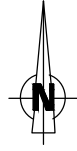
REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

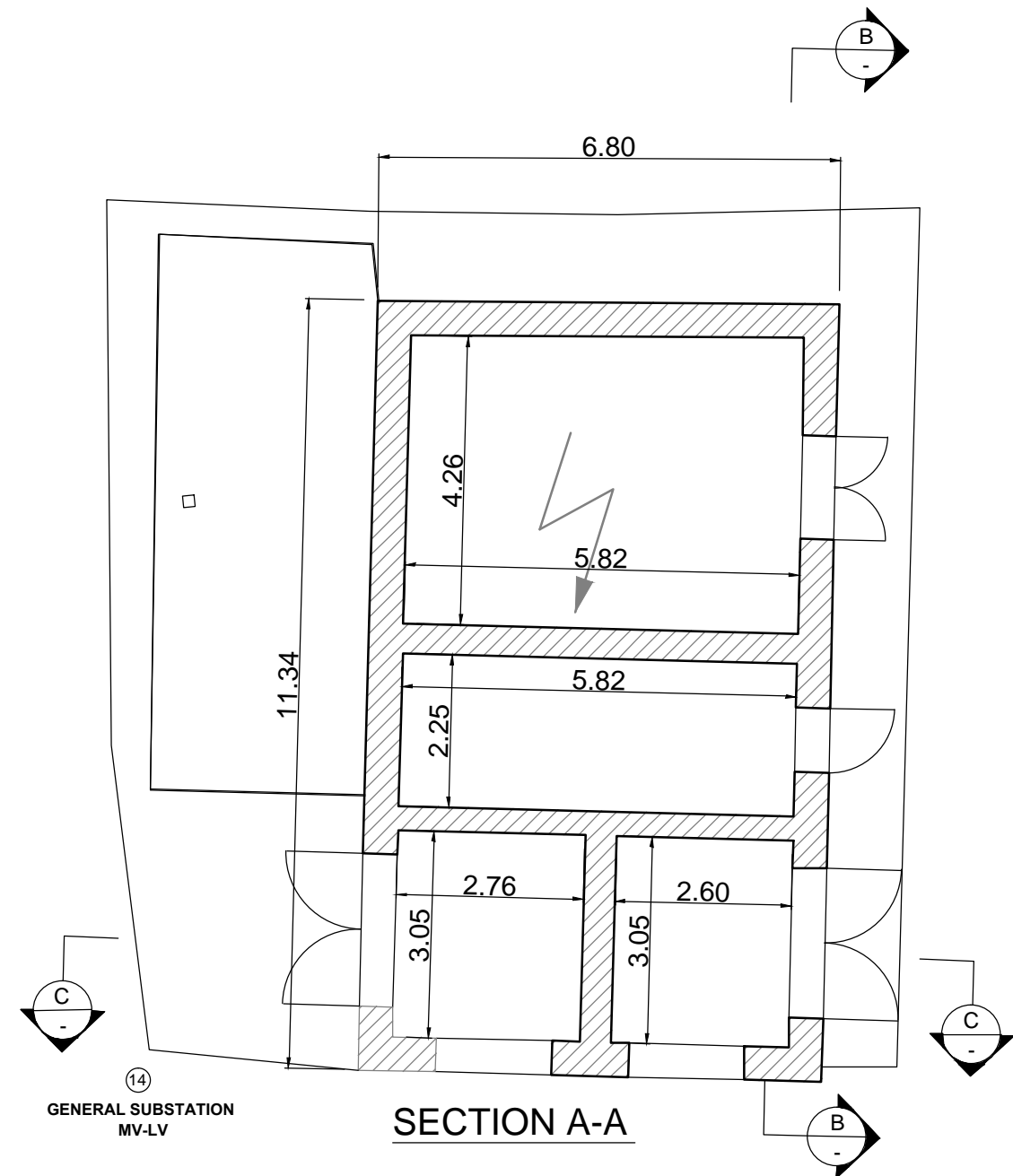
GENERAL DRAWINGS  
AREA 101  
EXISTING  
INLET CHAMBER AND BYPASS  
SECTIONS

	DATE :	
	DRAWN :	FVR
	CHECKED :	CTF
	APPROVED :	CTF

ART	1312155	DD	GEN	101	002	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



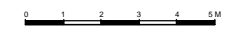
**KEY PLAN**



**GENERAL SUBSTATION  
MV-LV**

**SECTION A-A**

NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
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1	Draft DD	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013



Original paper size : A1 Scale : 1:50

REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP

DETAILED DESIGN

GENERAL DRAWINGS

AREA 401

EXISTING

SECONDARY SUBSTATION (15)

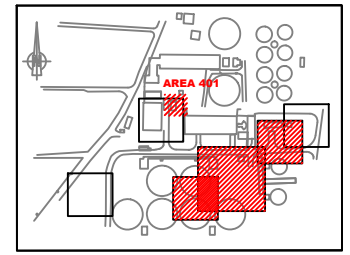
PLAN VIEW



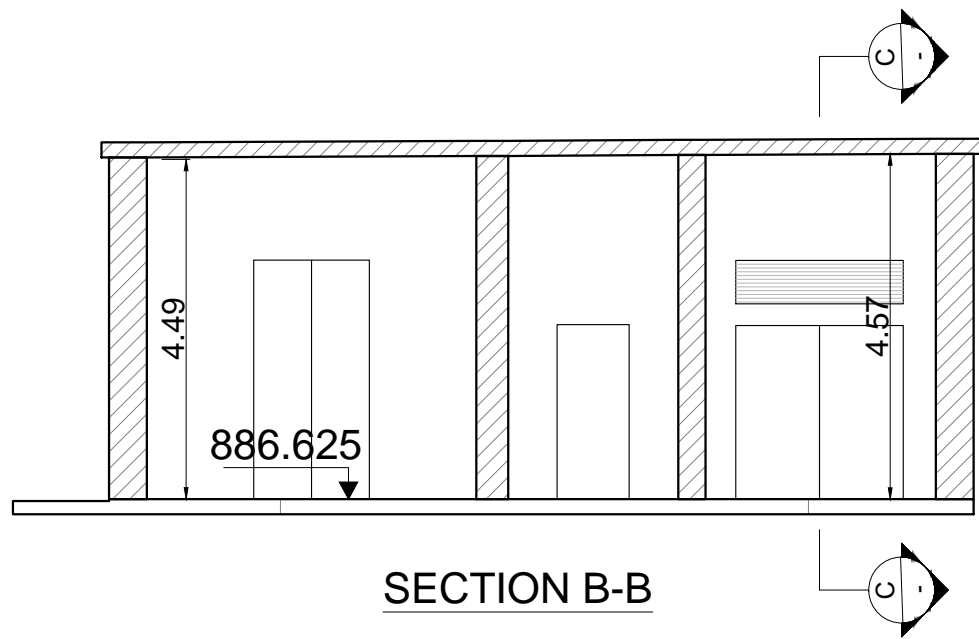
DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

ARI	1312155	DL3	CEN	101	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

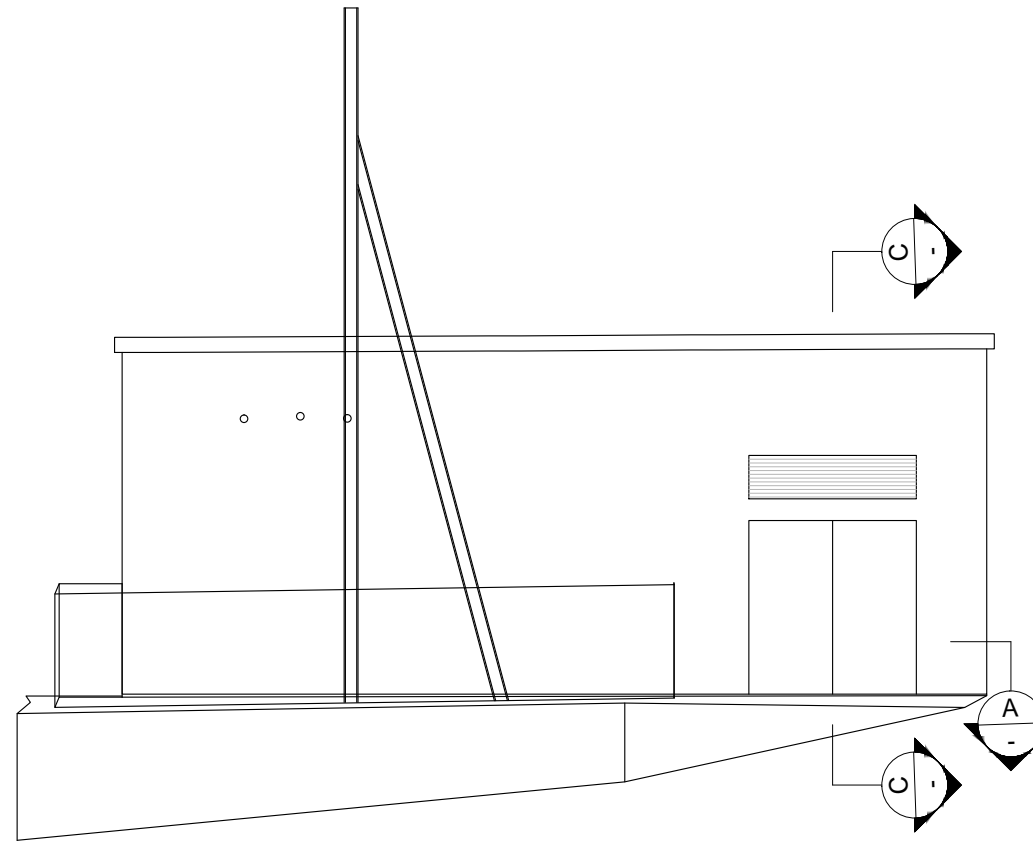
Designed by : GY Drawn by : FVR Verified by : CTF  
ART-1312155-DD-GEN-001\_Rev0\_14-01-31.dwg



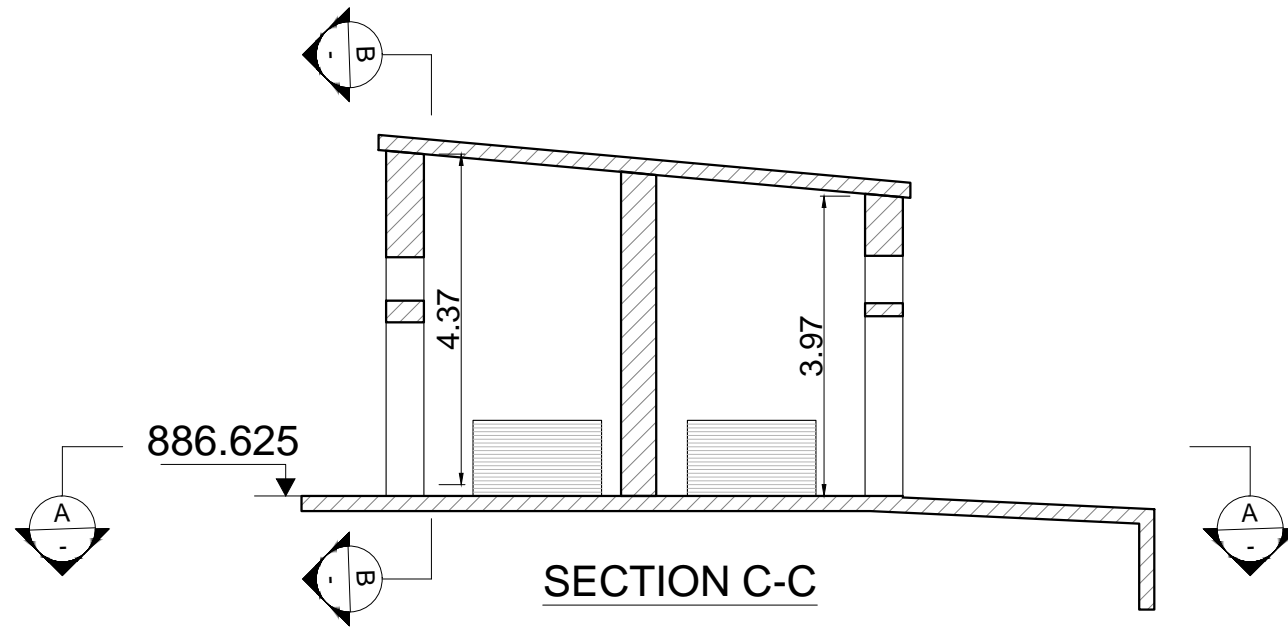
**KEY PLAN**



**SECTION B-B**

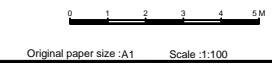


**West Elevation**



**SECTION C-C**

NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
2	Final DD	CLN	10/2013
1	Draft DD	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013



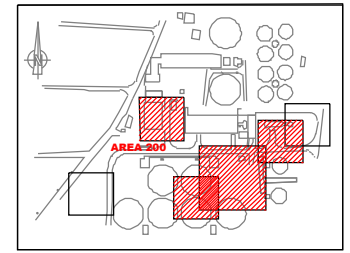
REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

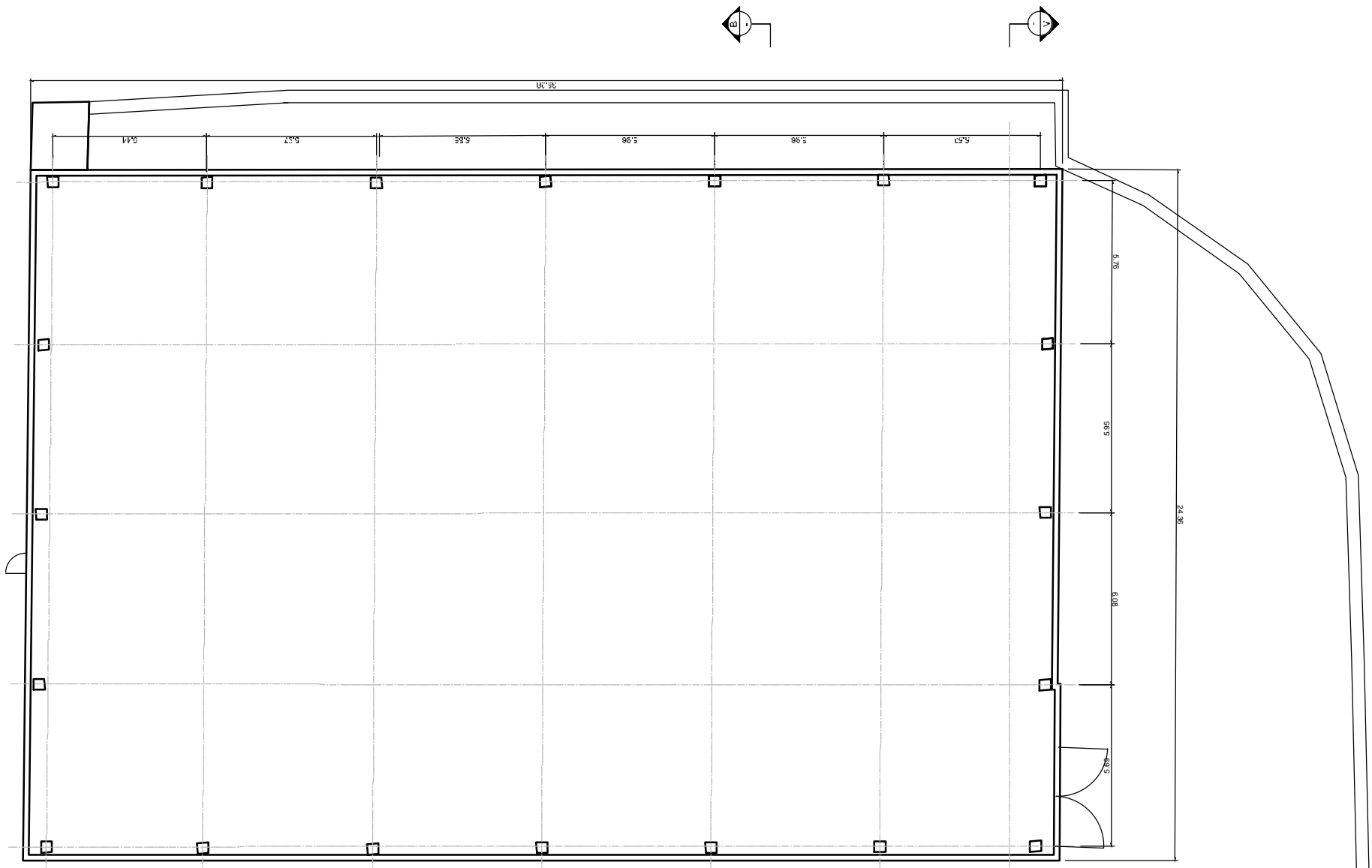
GENERAL DRAWINGS  
AREA 401  
EXISTING  
SECONDARY SUBSTATION (15)  
SECTIONS

	DATE :	
	DRAWN :	FVR
	CHECKED :	CTF
	APPROVED :	CTF

ART	1312155	DD	GEN	401	002	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



**KEY PLAN**



NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
2	Final DD	CLN	10/2013
1	Draft DD	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013



Original paper size : A1 Scale :1:100

**REPUBLIC OF ARMENIA**  
**YEREVAN MUNICIPALITY**  
**WATER & SEWERAGE BOARD**

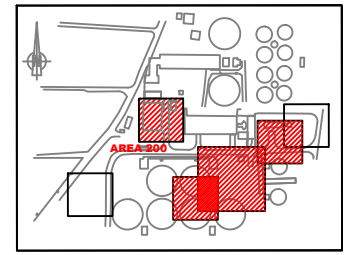
**REHABILITATION OF AERATSIA WWTP**  
**DETAILED DESIGN**

**GENERAL DRAWINGS**  
 AREA 200  
 EXISTING  
 Sludge dewatering units / Lime storage silos / Sludge storage  
 PLAN VIEW

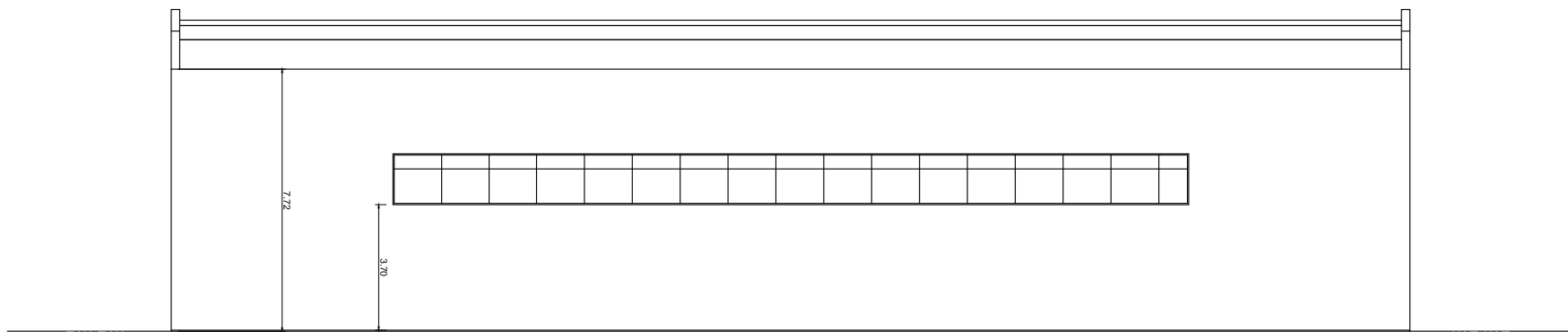
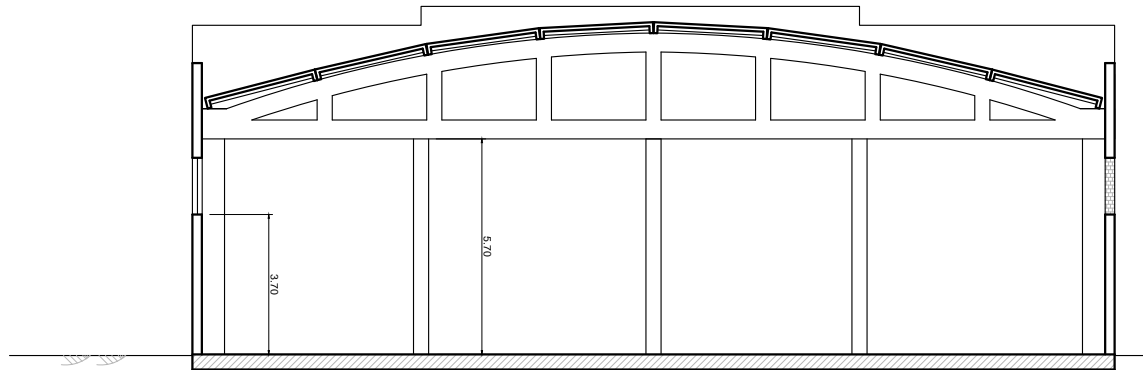
<b>ARTELIA</b>	<b>JINJ Ltd.</b>	DATE :	
		DRAWN :	FVR
		CHECKED :	CTF
		APPROVED :	CTF

ART	1312155	DL3	CEN	200	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

Designed by : GY Drawn by : FVR Verified by : CTF  
 ART-1312155-DD-GEN-200-001\_Rev0\_14-01-131.dwg

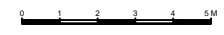


**KEY PLAN**



**WEST ELEVATION**

NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
2	Final DD	CLN	10/2013
1	Draft DD	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013



Original paper size :A1 Scale :1:100

REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

GENERAL DRAWINGS

AREA 200

EXISTING

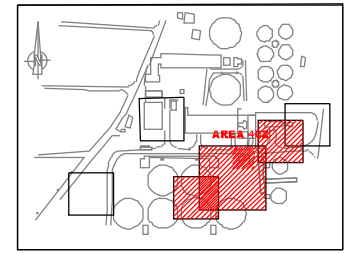
Sludge dewatering units / Lime storage silos / Sludge storage

SECTIONS

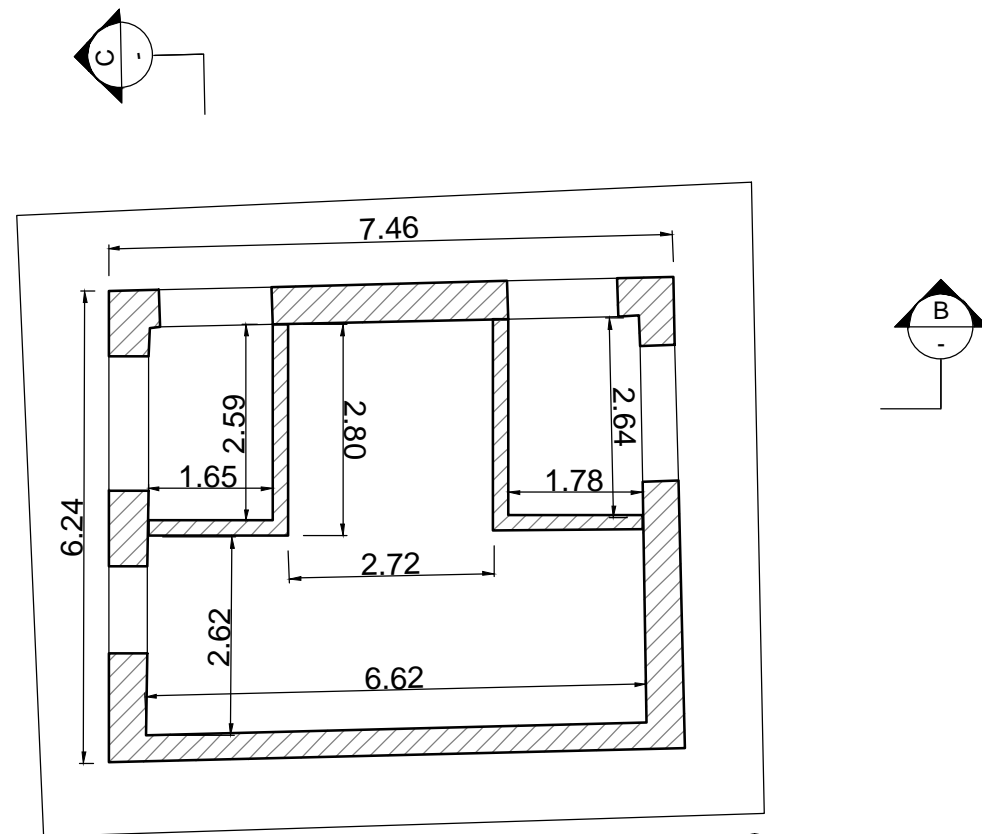


DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

ART	1312155	DD	GEN	200	002	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



**KEY PLAN**



**SECTION A-A** <sup>15</sup> ELECTRICAL LV CUP BOARD N°1

NO.	REVISIONS	BY	DATE
3		CLN	31/01/2014
2	Final DD	CLN	10/2013
1	Draft DD	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013



Original paper size : A1 Scale : 1:50

REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP

DETAILED DESIGN

GENERAL DRAWINGS

AREA 402

EXISTING

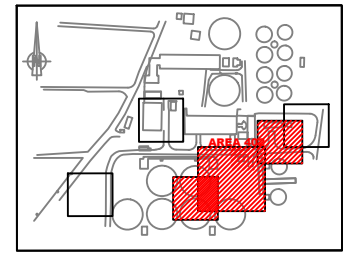
SECONDARY SUBSTATION (14)

PLAN VIEW

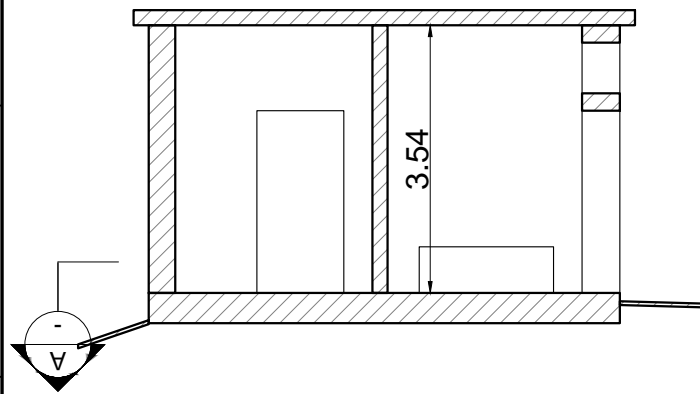


DATE : \_\_\_\_\_  
 DRAWN : FVR  
 CHECKED : CTF  
 APPROVED : CTF

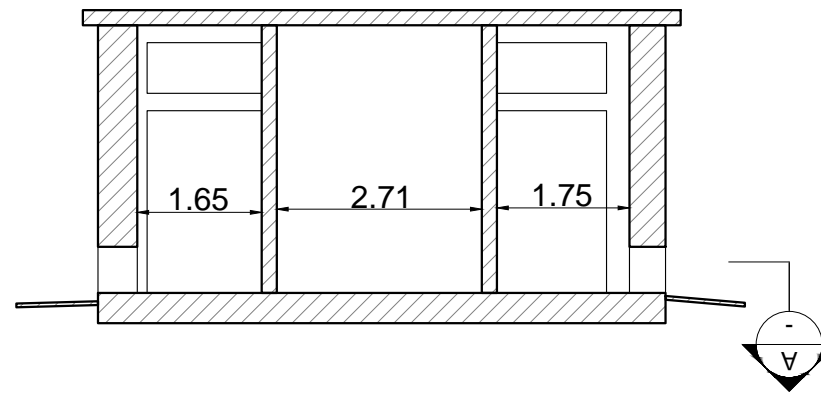
ARI	1312155	LD	CEN	102	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



**KEY PLAN**

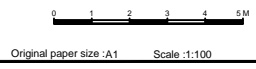


**SECTION C-C**



**SECTION B-B**

NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
2	Final DD	CLN	10/2013
1	Draft DD	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013



REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

GENERAL DRAWINGS  
AREA 402  
EXISTING  
SECONDARY SUBSTATION (14)  
SECTIONS



DATE : \_\_\_\_\_  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

ART	1312155	DD	GEN	402	002	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

# MAIN DRAWINGS

DRAWING NUMBER	DISCIPLINE	AREA	DESIGNATION	SIZE	SCALE	STATUS	REVISION
ART-1312155-DD-MND-000-001	MAIN	000	LIST OF DRAWINGS	A1	-	DD	0
ART-1312155-DD-MND-000-100	MAIN	000	SURVEY DRAWING - GENERAL PLAN VIEW	A1	1:750	DD	0
ART-1312155-DD-MND-000-101	MAIN	000	SURVEY DRAWING - PLAN VIEW 101	A1	1:250	DD	0
ART-1312155-DD-MND-000-102	MAIN	000	SURVEY DRAWING - PLAN VIEW 102	A1	1:250	DD	0
ART-1312155-DD-MND-000-103	MAIN	000	SURVEY DRAWING - PLAN VIEW 103	A1	1:250	DD	0
ART-1312155-DD-MND-000-104	MAIN	000	SURVEY DRAWING - PLAN VIEW 104	A1	1:250	DD	0
ART-1312155-DD-MND-000-105	MAIN	000	SURVEY DRAWING - PLAN VIEW 105	A1	1:250	DD	0
ART-1312155-DD-MND-000-106	MAIN	000	SURVEY DRAWING - PLAN VIEW 106	A1	1:250	DD	0
ART-1312155-DD-MND-000-200	MAIN	000	DEMOLITION DWG - GENERAL PLAN VIEW	A1	1:750	DD	0
ART-1312155-DD-MND-000-300	MAIN	000	ROADS DWG - GENERAL PLAN VIEW	A1	1:750	DD	0
ART-1312155-DD-MND-000-301	MAIN	000	ROADS DWG - TYPICAL SECTION	A1	1:50	DD	0
ART-1312155-DD-MND-000-400	MAIN	000	UTILITIES DWG - GENERAL PLAN VIEW	A1	1:750	DD	0
ART-1312155-DD-MND-000-401	MAIN	000	UTILITIES DWG - GENERAL PLAN VIEW zone 1	A1	1:250	DD	0
ART-1312155-DD-MND-000-402	MAIN	000	UTILITIES DWG - GENERAL PLAN VIEW zone 2	A1	1:250	DD	0
ART-1312155-DD-MND-000-403	MAIN	000	UTILITIES DWG - GENERAL SERVICE WATER	A1	1:400	DD	0
ART-1312155-DD-MND-000-404	MAIN	000	UTILITIES DWG - GENERAL SLUDGE AND FOUL WATER	A1	1:400	DD	0
ART-1312155-DD-MND-101-000	MAIN	101	INLET / COARSE SCREENS - PLAN VIEW AREA 101-102	A1	1:50	DD	0
ART-1312155-DD-MND-101-001	MAIN	101	INLET / COARSE SCREENS - AREA 101 - PLAN VIEW	A1	1:50	DD	0
ART-1312155-DD-MND-101-101	MAIN	101	INLET / COARSE SCREENS - SECTIONS 1&2	A1	1:50	DD	0
ART-1312155-DD-MND-101-102	MAIN	102	INLET / COARSE SCREENS - SECTIONS 14-15	A1	1:50	DD	0
ART-1312155-DD-MND-101-103	MAIN	103	INLET / COARSE SCREENS - SECTIONS 12	A1	1:50	DD	0
ART-1312155-DD-MND-102-001	MAIN	102	FINE SCREENS - AREA 102 - PLAN VIEW	A1	1:50	DD	0
ART-1312155-DD-MND-102-101	MAIN	102	FINE SCREENS - SECTIONS 1 & 2	A1	1:50	DD	0
ART-1312155-DD-MND-102-102	MAIN	102	FINE SCREENS - SECTIONS 1 1	A1	1:50	DD	0
ART-1312155-DD-MND-103-001	MAIN	103	GRIT AND GREASE REMOVAL - AREA 103 - PLAN VIEW	A1	1:150	DD	0
ART-1312155-DD-MND-103-002	MAIN	103	GRIT AND GREASE REMOVAL - SECTION A	A1	1:100	DD	0
ART-1312155-DD-MND-103-003	MAIN	103	GRIT AND GREASE REMOVAL - SECTION B	A1	1:100	DD	0
ART-1312155-DD-MND-103-101	MAIN	103	GRIT AND GREASE REMOVAL - SECTIONS 1 & 2	A1	1:100	DD	0
ART-1312155-DD-MND-103-102	MAIN	103	GRIT AND GREASE REMOVAL - SECTIONS 3 & 4	A1	1:100	DD	0
ART-1312155-DD-MND-103-103	MAIN	103	GRIT AND GREASE REMOVAL - SECTION 5	A1	1:100	DD	0
ART-1312155-DD-MND-103-104	MAIN	103	GRIT AND GREASE REMOVAL - SECTION 10 & 12	A1	1:100	DD	0
ART-1312155-DD-MND-103-105	MAIN	103	GRIT AND GREASE REMOVAL - SECTION 11 & 13	A1	1:50	DD	0
ART-1312155-DD-MND-105-001	MAIN	105	PRIMARY SETTLING TANK - PLAN VIEW	A1	1:100	DD	0
ART-1312155-DD-MND-105-002	MAIN	105	PRIMARY SETTLING TANK - PLAN A	A1	1:100	DD	0
ART-1312155-DD-MND-105-003	MAIN	105	PRIMARY SETTLING TANK - PLAN B	A1	1:100	DD	0
ART-1312155-DD-MND-105-004	MAIN	105	PRIMARY SETTLING TANK - PLAN C	A1	1:100	DD	0
ART-1312155-DD-MND-105-101	MAIN	105	PRIMARY SETTLING TANK - S 1&2	A1	1:100	DD	0
ART-1312155-DD-MND-105-102	MAIN	105	PRIMARY SETTLING TANK - S 3,4&5	A1	1:100	DD	0
ART-1312155-DD-MND-105-103	MAIN	105	PRIMARY SETTLING TANK - S 10&11	A1	1:100	DD	0
ART-1312155-DD-MND-105-104	MAIN	105	PRIMARY SETTLING TANK - S 12&13	A1	1:100	DD	0
ART-1312155-DD-MND-107-001	MAIN	107	DISCHARGE - PLAN VIEW	A1	1:50	DD	0
ART-1312155-DD-MND-107-101	MAIN	107	DISCHARGE - SECTION AND PLAN VIEW Outlet chamber	A1	1:50	DD	0
ART-1312155-DD-MND-107-102	MAIN	107	DISCHARGE - SECTION AND PLAN VIEW Outlet chamber collection	A1	1:50	DD	0
ART-1312155-DD-MND-110-001	MAIN	110	SERVICE WATER AND SUBSTATION	A1	1:50	DD	0
ART-1312155-DD-MND-200-001	MAIN	200	SLUDGE BUILDING - PLAN A	A1	1:100	DD	0
ART-1312155-DD-MND-200-002	MAIN	200	SLUDGE BUILDING - PLAN B	A1	1:100	DD	0
ART-1312155-DD-MND-200-101	MAIN	200	SLUDGE BUILDING - S 1,2 1 3	A1	1:100	DD	0
ART-1312155-DD-MND-200-102	MAIN	200	SLUDGE BUILDING - S 11 & 12	A1	1:100	DD	0

3	Tender Detail Design	CLN	31/01/2014
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0	FIRST ISSUE	FVR	06/2013
NO.	REVISIONS	BY	DATE

Original paper size : Scale NO SCALE

REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP

DETAILED DESIGN

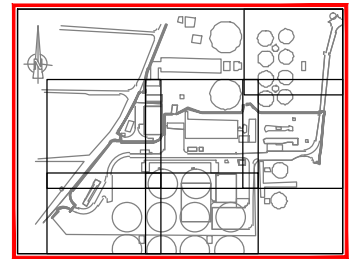
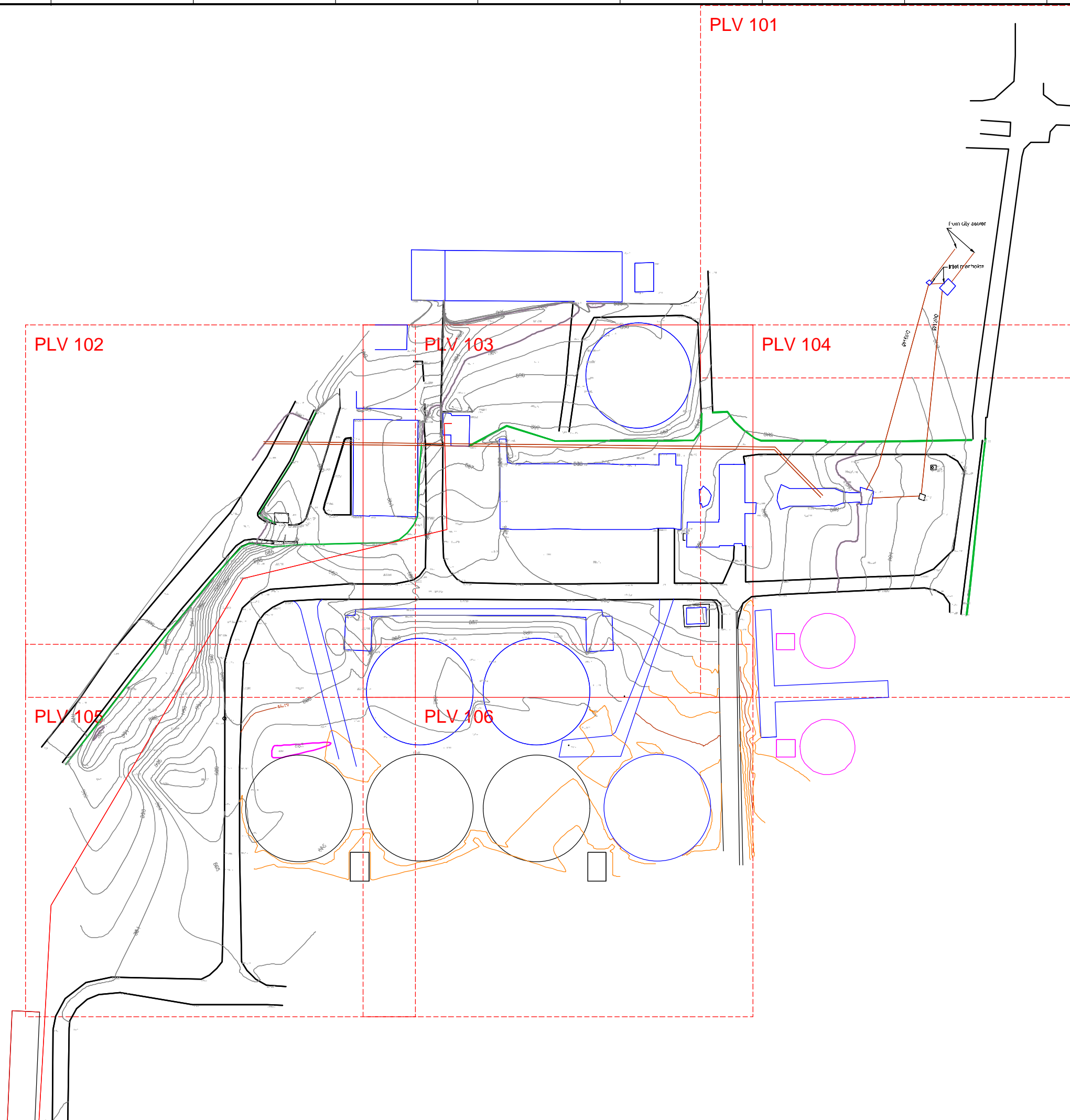
MAIN DRAWINGS

GENERAL  
LIST OF DRAWINGS



DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

ART	1312155	DD	MND	000	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



**KEY PLAN**

**LEGEND:**

- Wall
- Buildings or tanks
- Contour lines
- Plan View (PLV XXX)

NO.	REVISIONS	BY	DATE
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1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013



Original paper size : Scale :1:750

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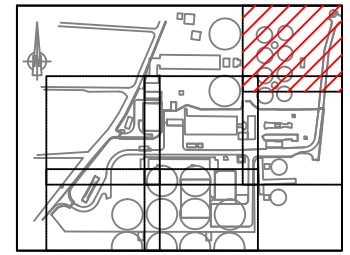
REHABILITATION OF AERATSIA WWTTP  
DETAILED DESIGN

MAIN DRAWINGS  
GENERAL  
SURVEY DRAWING  
GENERAL PLAN VIEW



DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

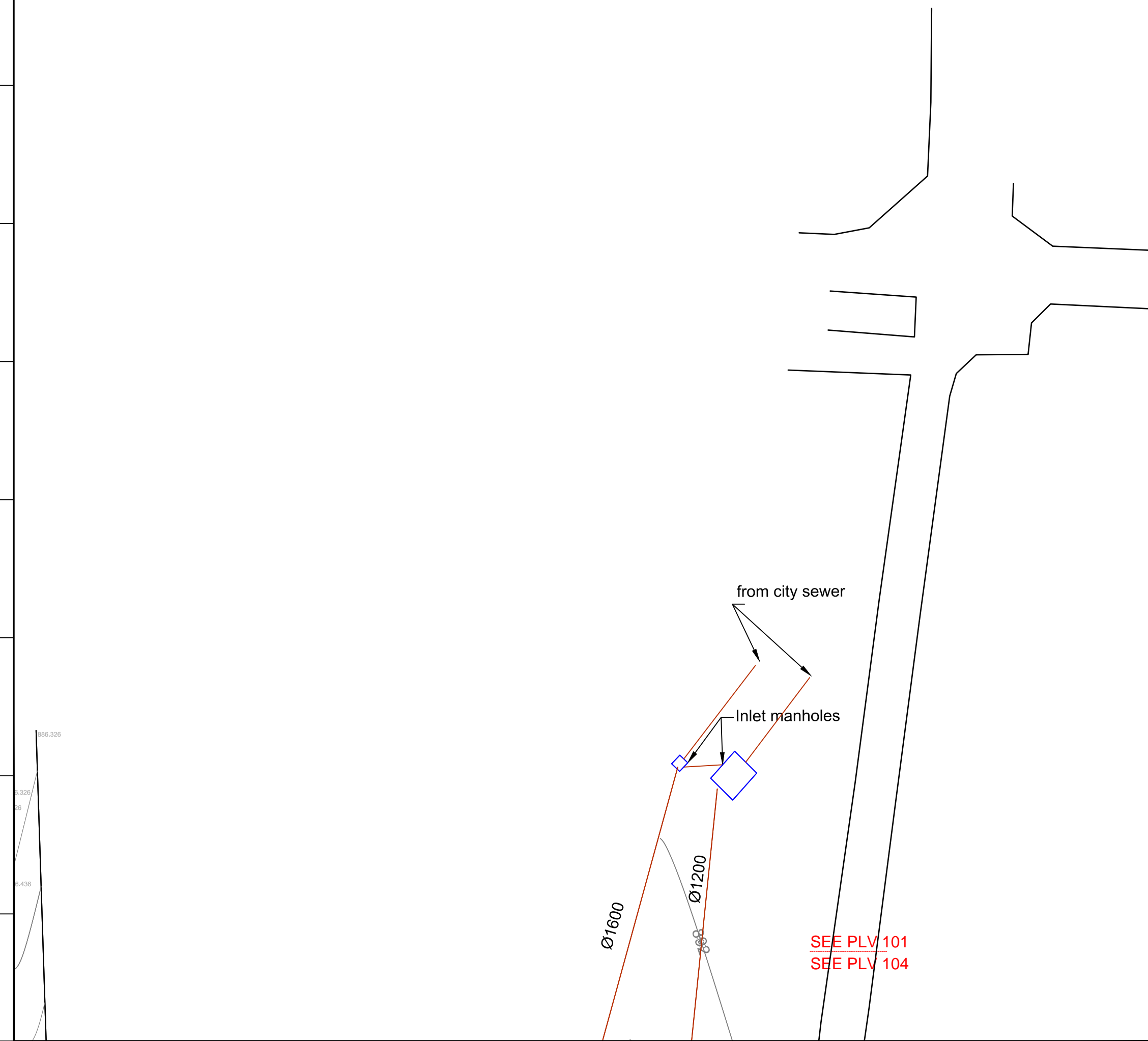
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TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



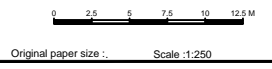
**KEY PLAN**

**LEGEND:**

- Wall
- Buildings
- Contour lines
- - - Meshline  
See Plan View (PLV XXX)



3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	DHE	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013
NO.	REVISIONS	BY	DATE



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**REHABILITATION OF AERATSIA WWTP**  
**DETAILED DESIGN**

**MAIN DRAWINGS**  
 GENERAL  
 SURVEY DRAWING  
 PLAN VIEW 101

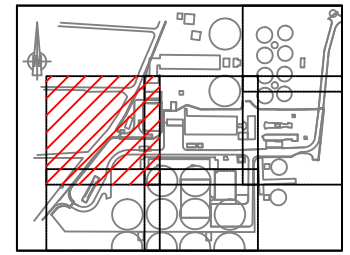
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	CHECKED :	CTF
	APPROVED :	CTF

ART	1312155	DD	MND	000	101	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

Designed by : GFY Drawn by : FVR Verified by : CTF  
 ART-1312155-DD-MND-000-101-Rev0-14-01-31.dwg

886.326  
 6.326  
 26  
 6.436

SEE PLV 101  
 SEE PLV 104

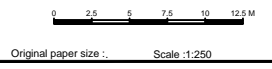


**KEY PLAN**

**LEGEND:**

- Wall
- Buildings or tanks
- Contour lines
- - - Meshline
- - - See Plan View (PLV XXX)

3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	DHE	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013
NO.	REVISIONS	BY	DATE



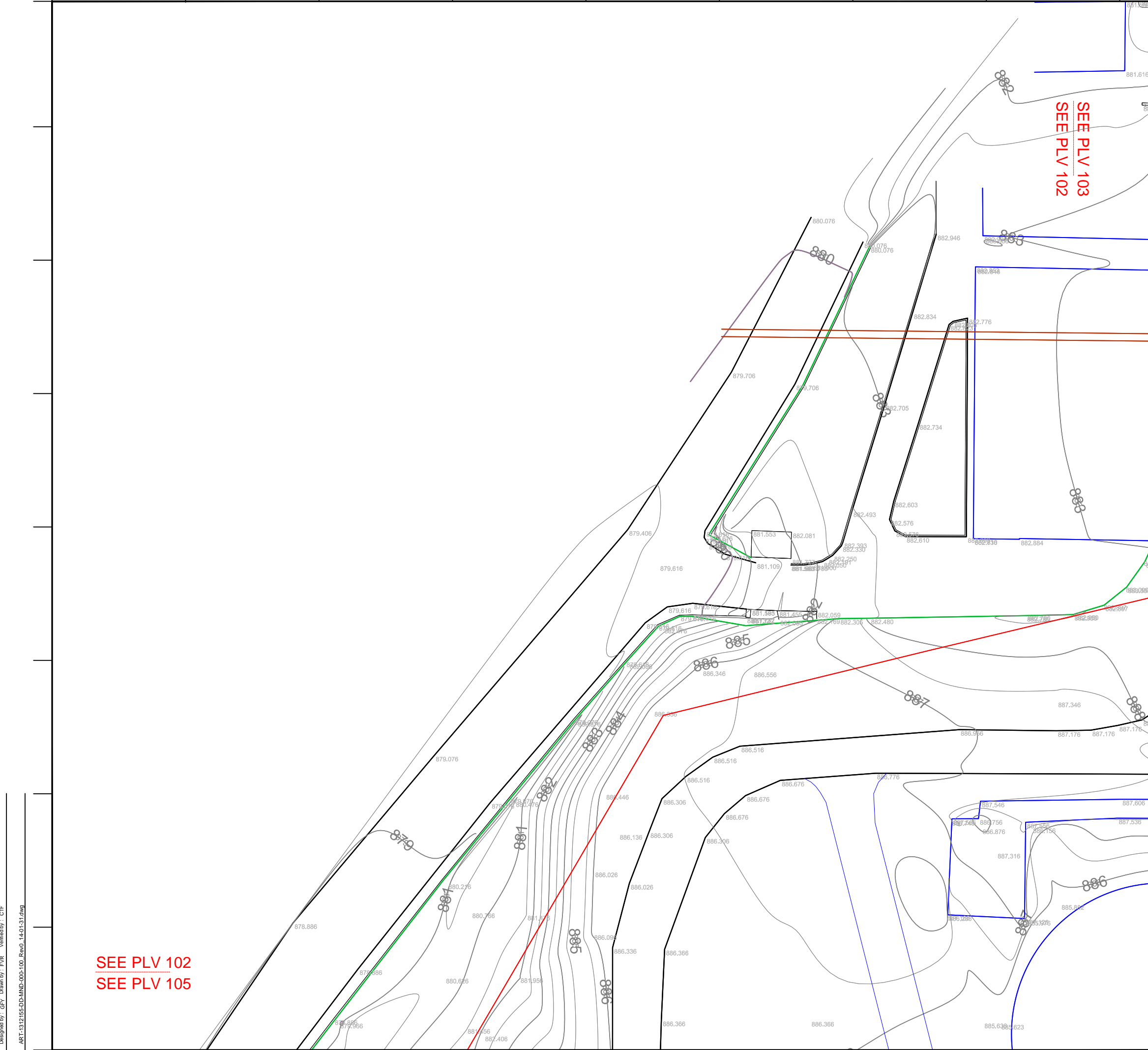
**REPUBLIC OF ARMENIA**  
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**WATER & SEWERAGE BOARD**

**REHABILITATION OF AERATSIA WWTP**  
**DETAILED DESIGN**

**MAIN DRAWINGS**  
 GENERAL  
 SURVEY DRAWING  
 PLAN VIEW 102

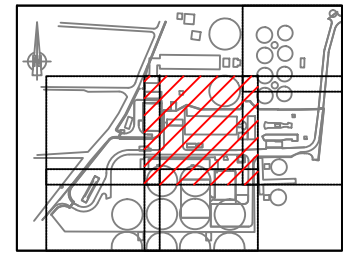
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	APPROVED :	CTF

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TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX



SEE PLV 102  
 SEE PLV 105

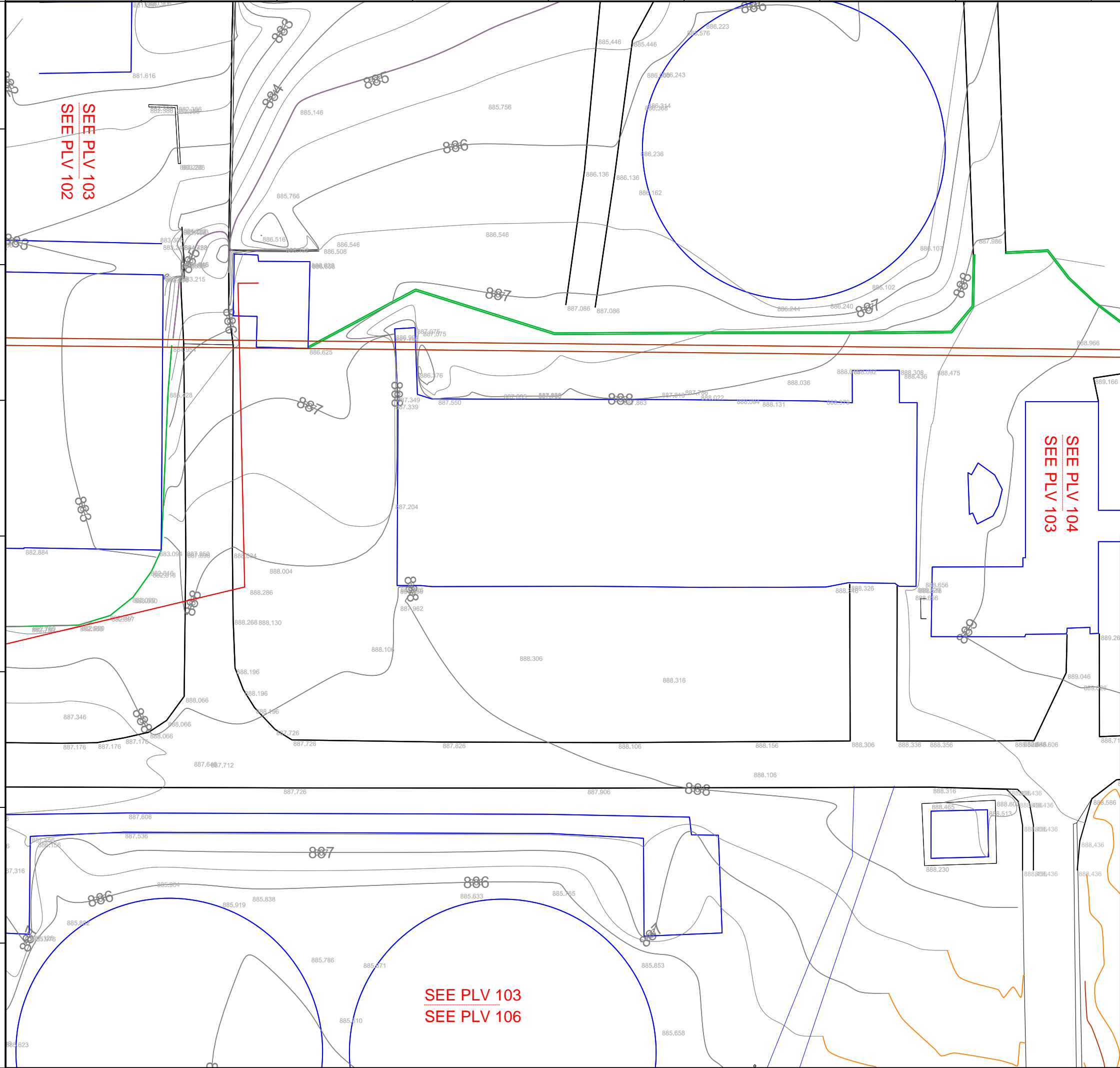
SEE PLV 103  
 SEE PLV 102



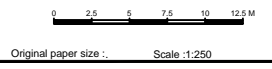
**KEY PLAN**

**LEGEND:**

- Wall
- Buildings or tanks
- Contour lines
- - - Meshline
- See Plan View (PLV XXX)



3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	DHE	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013
NO.	REVISIONS	BY	DATE



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YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD**

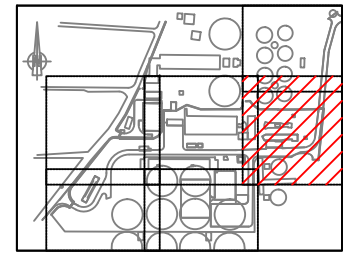
**REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN**

**MAIN DRAWINGS  
GENERAL  
SURVEY DRAWING  
PLAN VIEW 103**

	DATE :	
	DRAWN :	FVR
	CHECKED :	CTF
	APPROVED :	CTF

ART	1312155	DD	MND	000	103	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

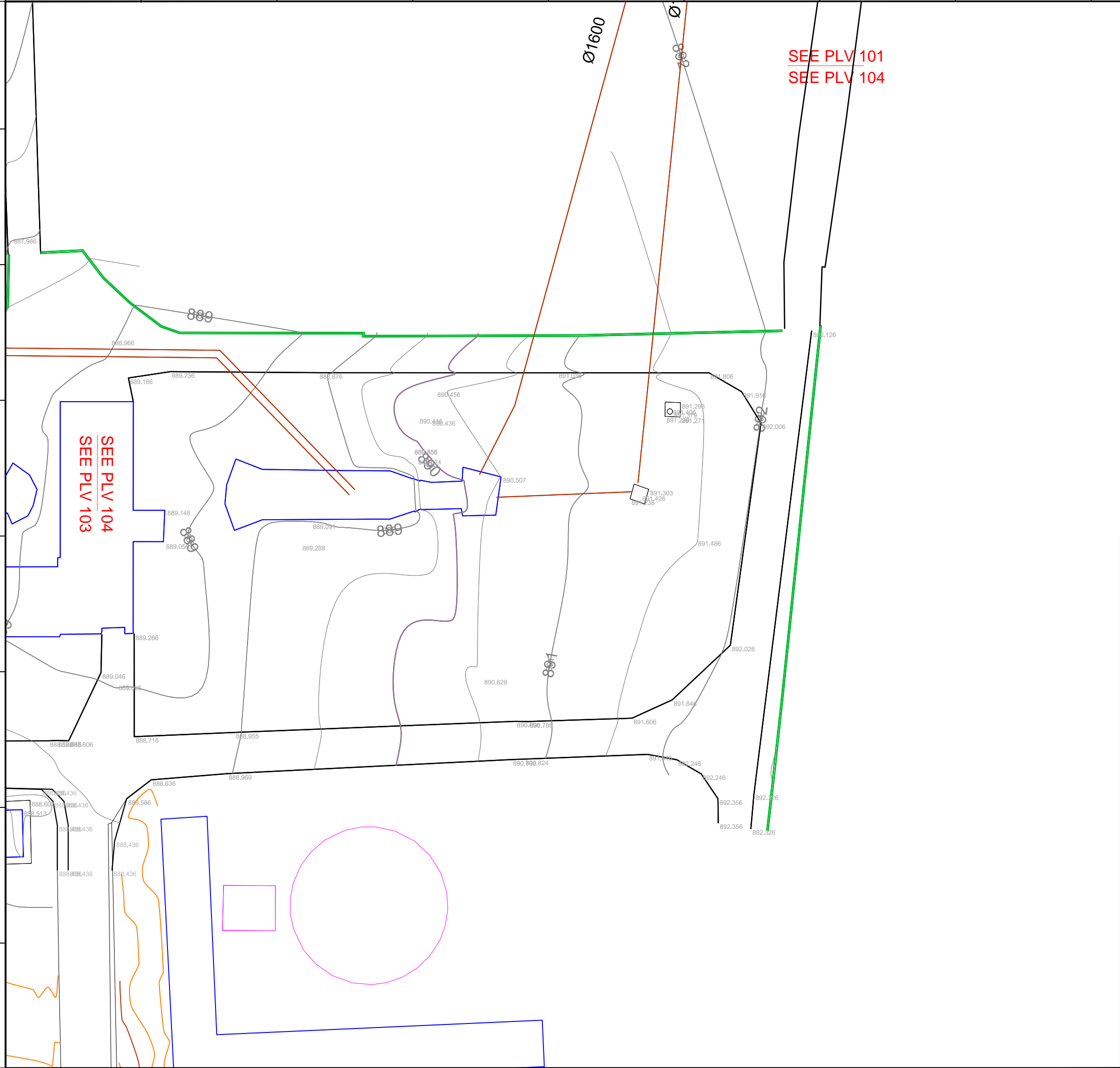
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 ART-1312155-DD-MND-000-100-Rev0-14-01-31.dwg



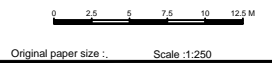
**KEY PLAN**

**LEGEND:**

- Wall
- Buildings or tanks
- Contour lines
- - - Meshline  
See Plan View (PLV XXX)



NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	DHE	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013



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**WATER & SEWERAGE BOARD**

**Draft Detailed Design**  
**DETAILED DESIGN**

**MAIN DRAWINGS**  
**GENERAL**  
**SURVEY DRAWING**  
**PLAN VIEW 104**

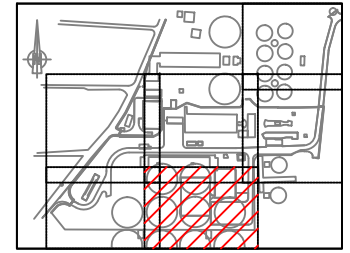
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	CHECKED :	CTF
	APPROVED :	CTF

ART	1312155	DD	MND	000	104	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



SEE PLV 103  
SEE PLV 106

SEE PLV 106  
SEE PLV 105

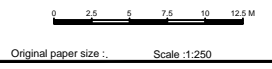


KEY PLAN

LEGEND:

- Wall
- Buildings or tanks
- Contour lines
- - - Meshline  
See Plan View (PLV XXX)

3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	DHE	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013
NO.	REVISIONS	BY	DATE



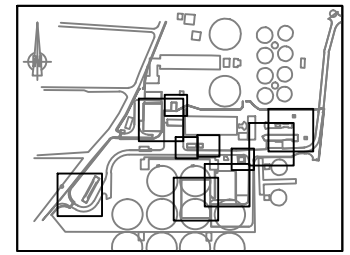
REPUBLIC OF ARMENIA  
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REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS  
GENERAL  
SURVEY DRAWING  
PLAN VIEW 106

	DATE :	
	DRAWN :	FVR
	CHECKED :	CTF
	APPROVED :	CTF

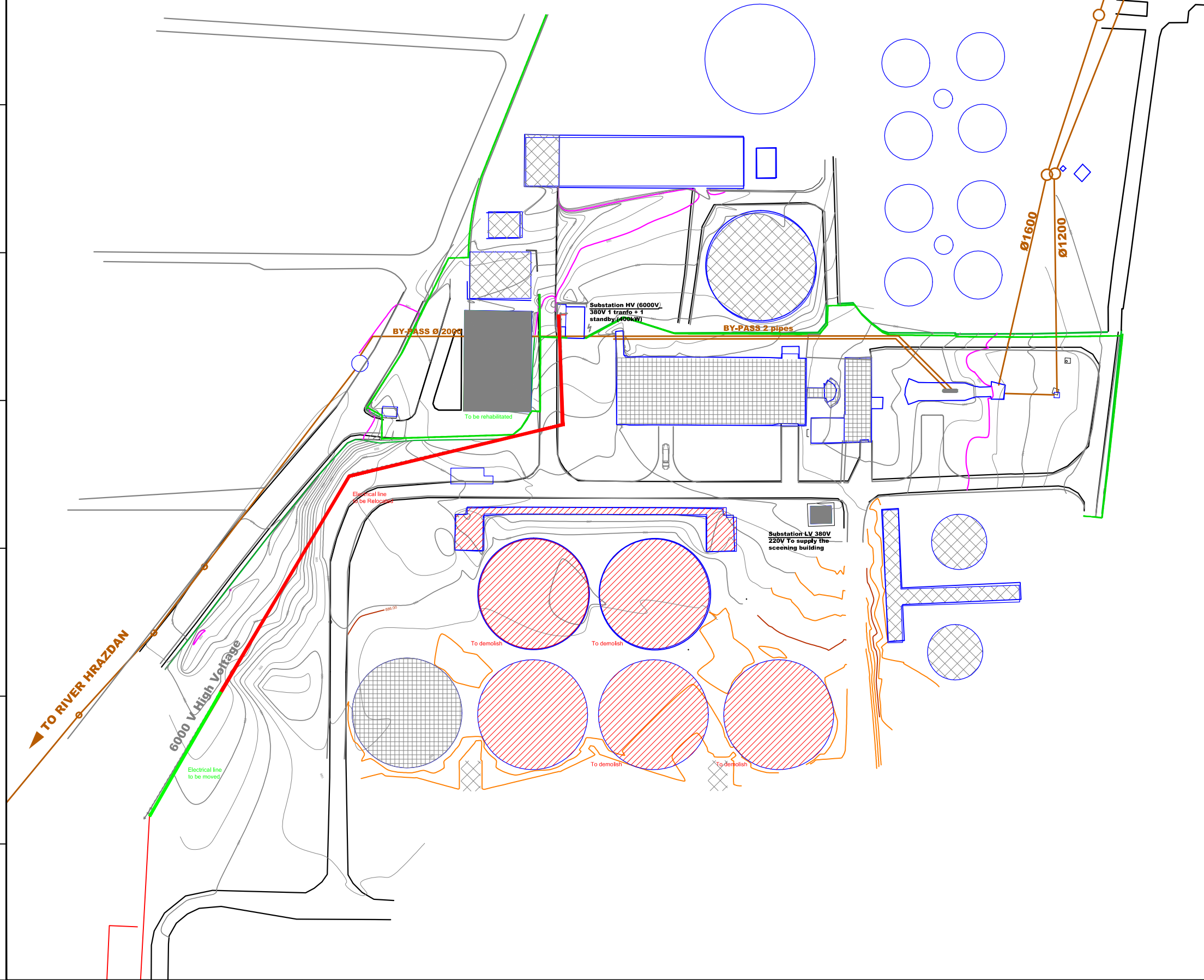
ART	1312155	DD	MND	000	106	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



KEY PLAN

LEGEND :

- EXISTING PIPE AND CHANNEL
- MV POWER SUPPLY
- FENCING
- EXISTING BUILDING TO BE REABILITATED
- EXISTING BUILDING DEMOLISHED BY THE CONTRACTOR
- EXISTING BUILDING OPTIONALLY DEMOLISHED AFTER THE PROJECT
- EXISTING BUILDING TO BE DEMOLISHED AFTER NEW CONSTRUCTION IS COMPLETED OPTIONALLY



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0	FIRST ISSUE	FVR	06/2013
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REHABILITATION OF AERATSIA WWTP

DETAILED DESIGN

MAIN DRAWINGS

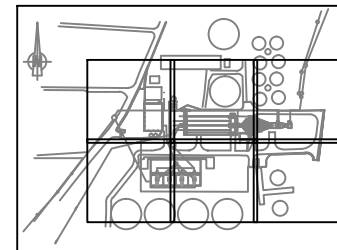
GENERAL

DEMOLITION DRAWING

GENERAL PLAN VIEW

	DATE :	
	DRAWN :	FVR
	CHECKED :	CTF
	APPROVED :	CTF

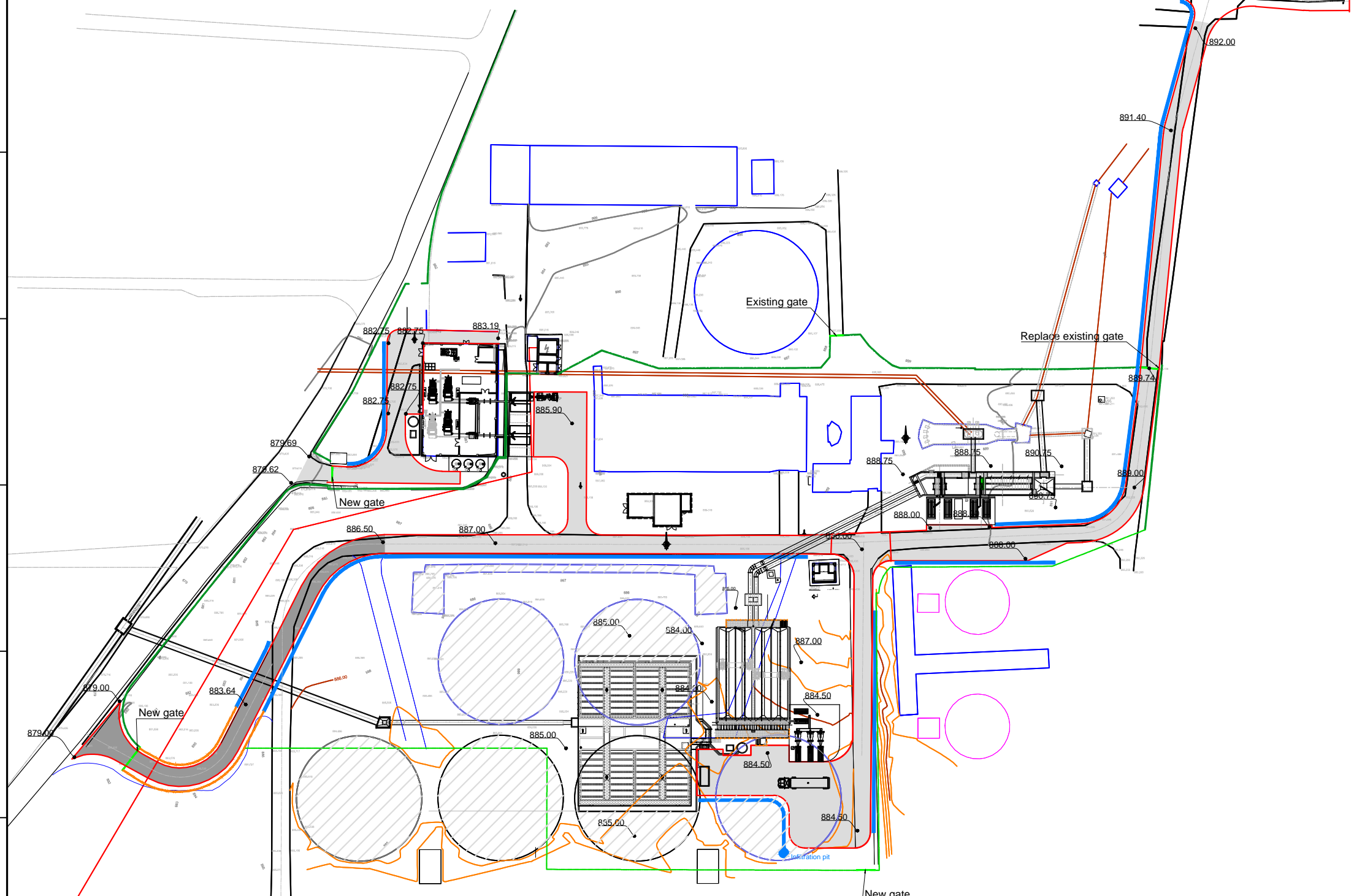
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TRANSMITTER	PROJECT-NUMBER	PHASE	DIC/LINE	AREA	NUMBER	INDEX



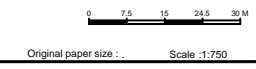
**KEY PLAN**

**LEGEND:**

- Road Type 1
- Road Type 2
- These areas shall be backfilled after demolition such that a regular slope is formed between works and natural ground elevation.
- Cut-off drains
- Gate
- Existing Fence (remains in place)
- Chicken wire fence
- New wall



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NO.	REVISIONS	BY	DATE



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**REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN**

**MAIN DRAWINGS**  
GENERAL  
ROADS  
GENERAL PLAN VIEW

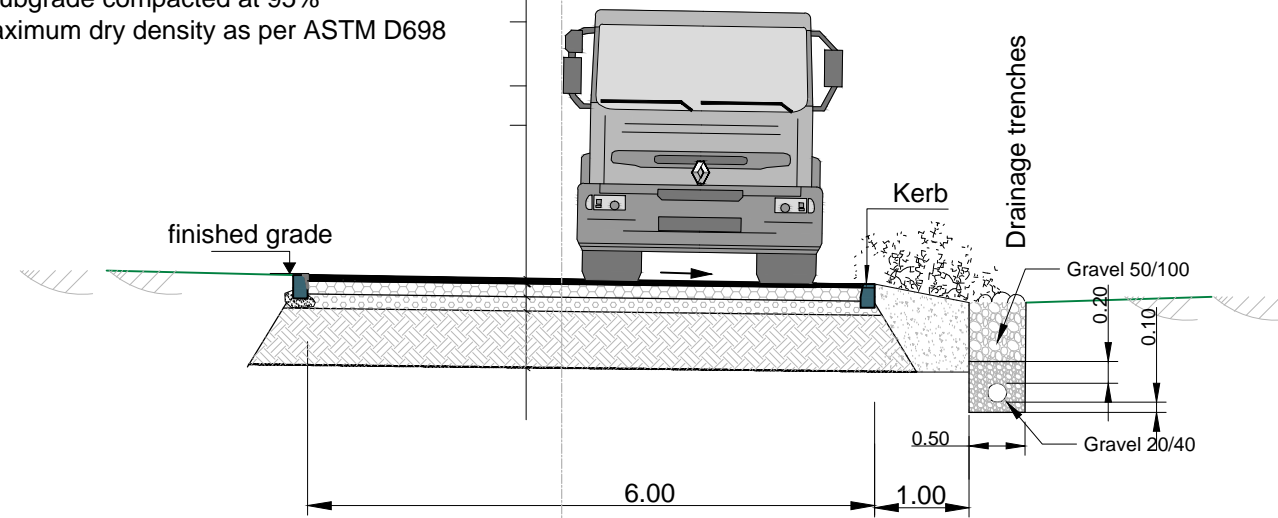
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	DRAWN :	FVR
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TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

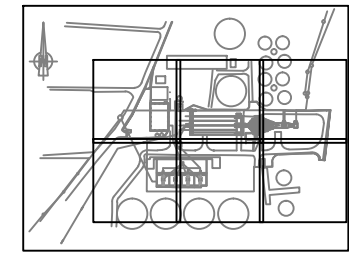
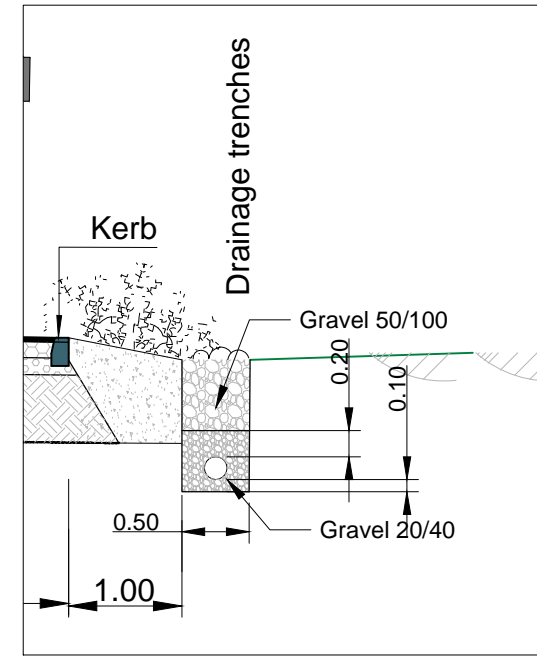
Designed by : GFT Drawn by : FVR Verified by : CTF  
\_ART-1312155-DD-MND-000-300\_Raw0\_14-01-31.dwg

Asphalt concrete wearing course 6cm  
 Tack coat  
 Base course 0.20m  
 Subbase course 0.30m  
 Natural subgrade compacted at 95%  
 of the maximum dry density as per ASTM D698

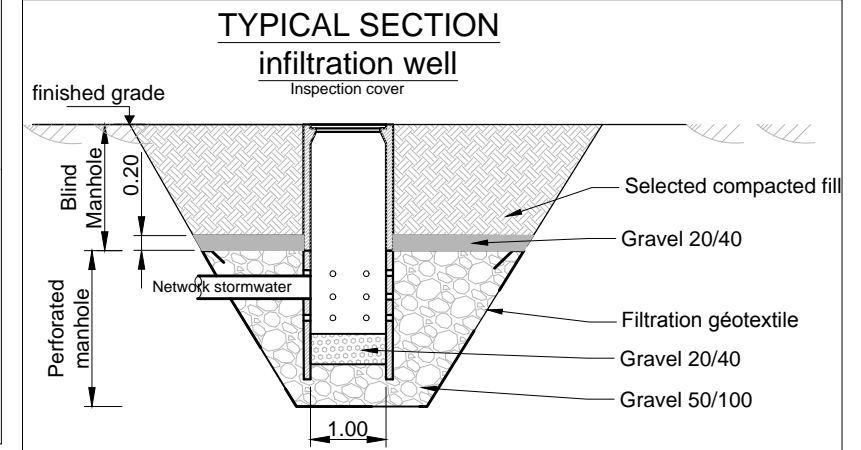
### TYPICAL SECTION OF ROAD Type 1



### TYPICAL DRAINAGE TRENCH 1/100 th

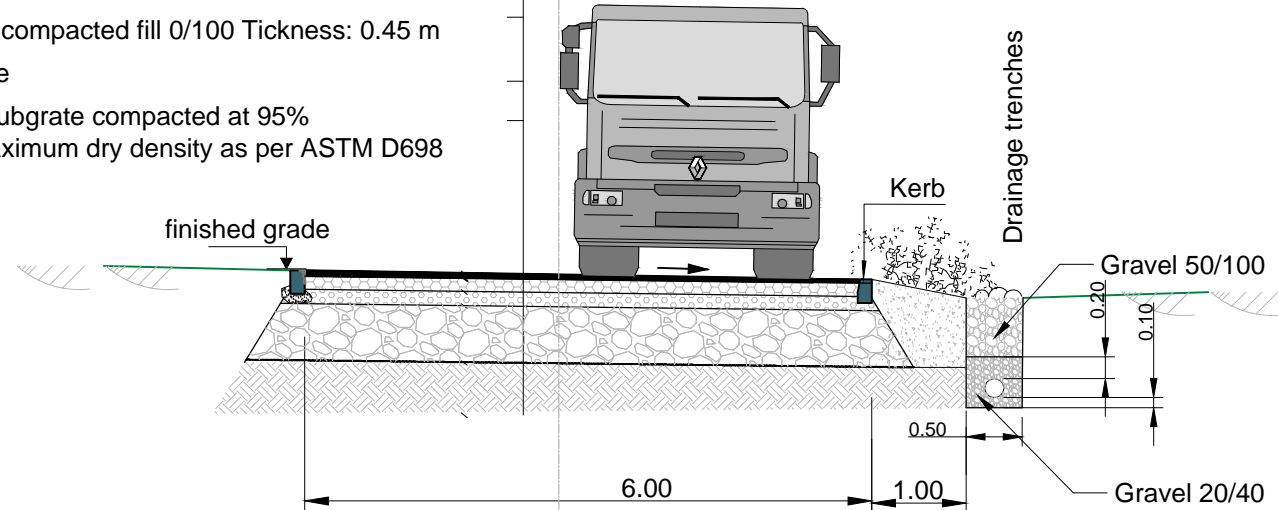


KEY PLAN

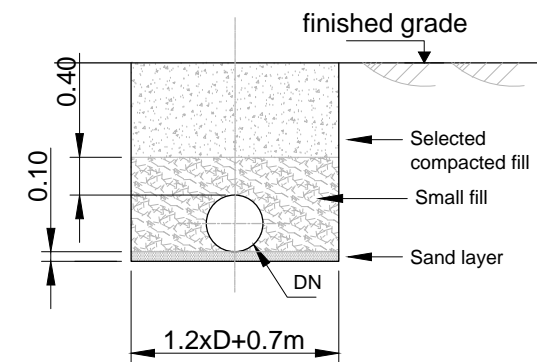


Asphalt concrete wearing course 6cm  
 Tack coat  
 Base course 0.20m  
 Subbase course 0.30m  
 Selected compacted fill 0/100 Thickness: 0.45 m  
 Geotextile  
 Natural subgrade compacted at 95%  
 of the maximum dry density as per ASTM D698

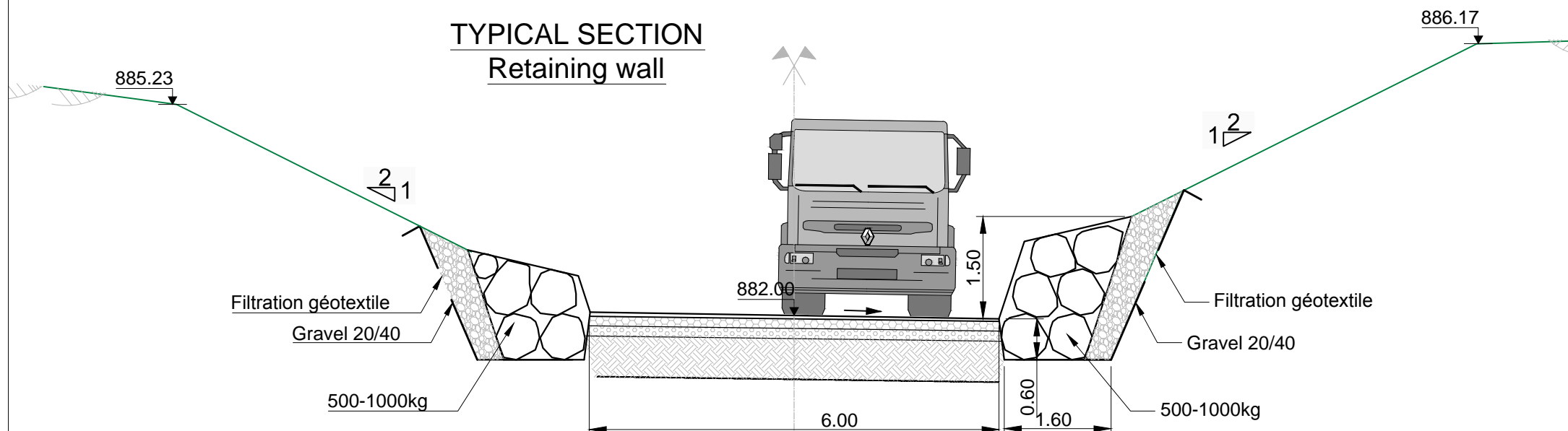
### TYPICAL SECTION OF ROAD Type 2



### TYPICAL SECTION Trench



### TYPICAL SECTION Retaining wall



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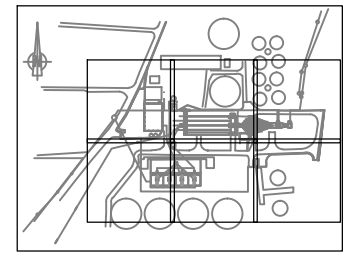
REHABILITATION OF AERATSIA WWTP  
 DETAILED DESIGN

MAIN DRAWINGS  
 GENERAL  
 ROADS  
 TYPICAL SECTIONS



DATE :  
 DRAWN : FVR  
 CHECKED : CTF  
 APPROVED : CTF

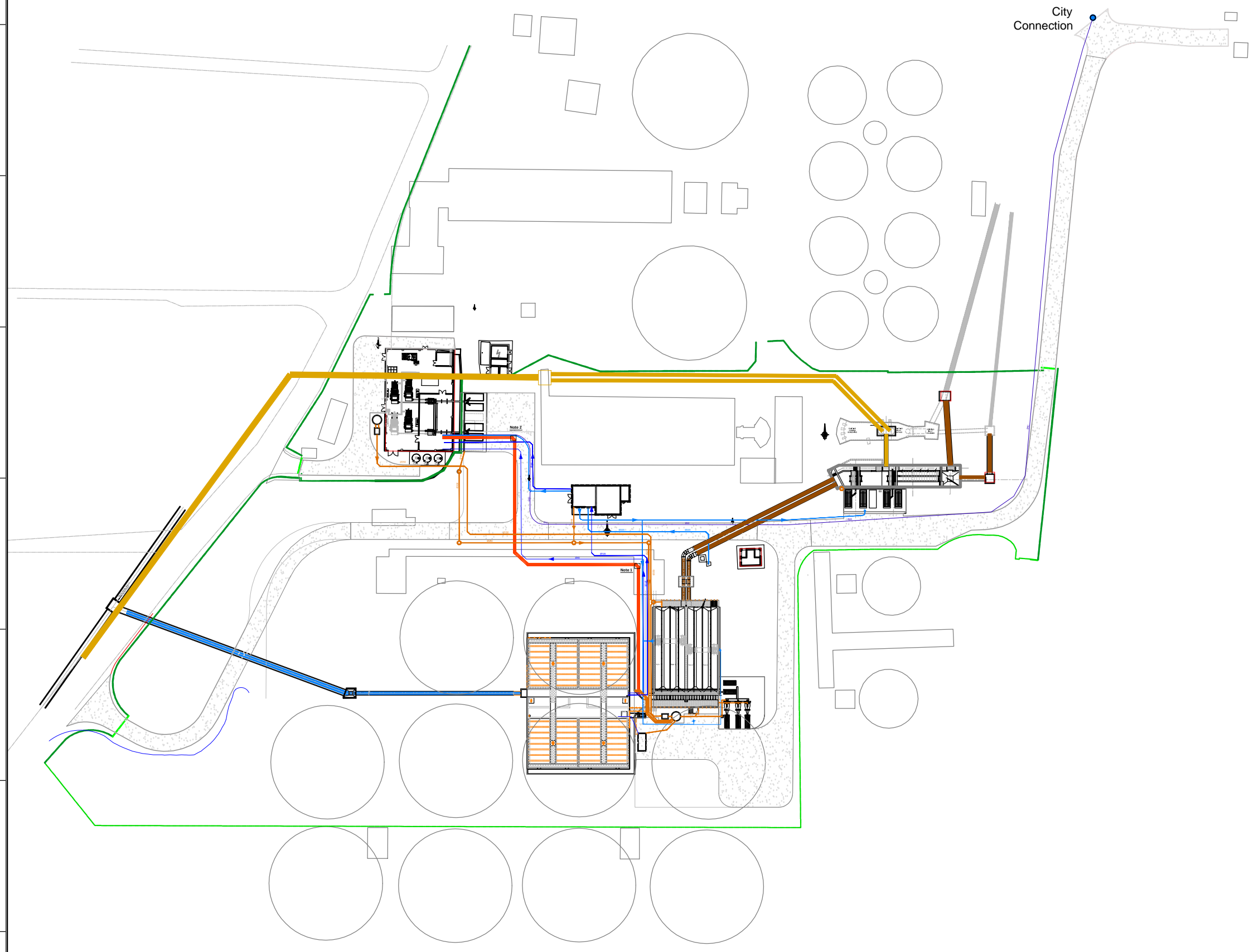
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TRANSMITTER	PROJECT-NUMBER	PHASE	DIC-LINE	AREA	NUMBER	INDEX



**KEY PLAN**

**LEGEND:**

- Waste water
- By-pass
- Sludge
- Decanted water
- Drinking Water
- Water from artesian well/water supply network
- Foul water
  
- - - MV Network burried
- - - LV Network burried
- - - Existing MV Network Aerial



NO.	REVISIONS	BY	DATE
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0	FIRST ISSUE	FVR	06/2013



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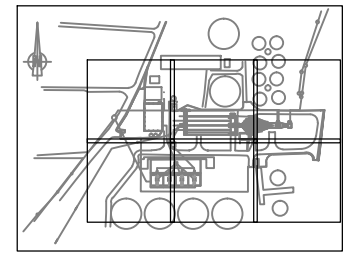
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REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS  
GENERAL  
UTILITIES  
GENERAL PLAN VIEW

DATE :	
DRAWN :	FVR
CHECKED :	CTF
APPROVED :	CTF

ART	1312155	DD	MND	000	400	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DIC/LINE	AREA	NUMBER	INDEX



**KEY PLAN**

**Note 1:** Provide Manhole for access to the sludge pipes for a future connection to sludge digestion.

**Note 2:** Provide Manhole for access to the sludge pipes for a future connection from the sludge digestion

**LEGEND:**

- Waste water
- By-pass
- Sludge
- Air
- Decanted water
- Water from artesian well/water supply network
- Foul water

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0	FIRST ISSUE	FVR	06/2013
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WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS

GENERAL

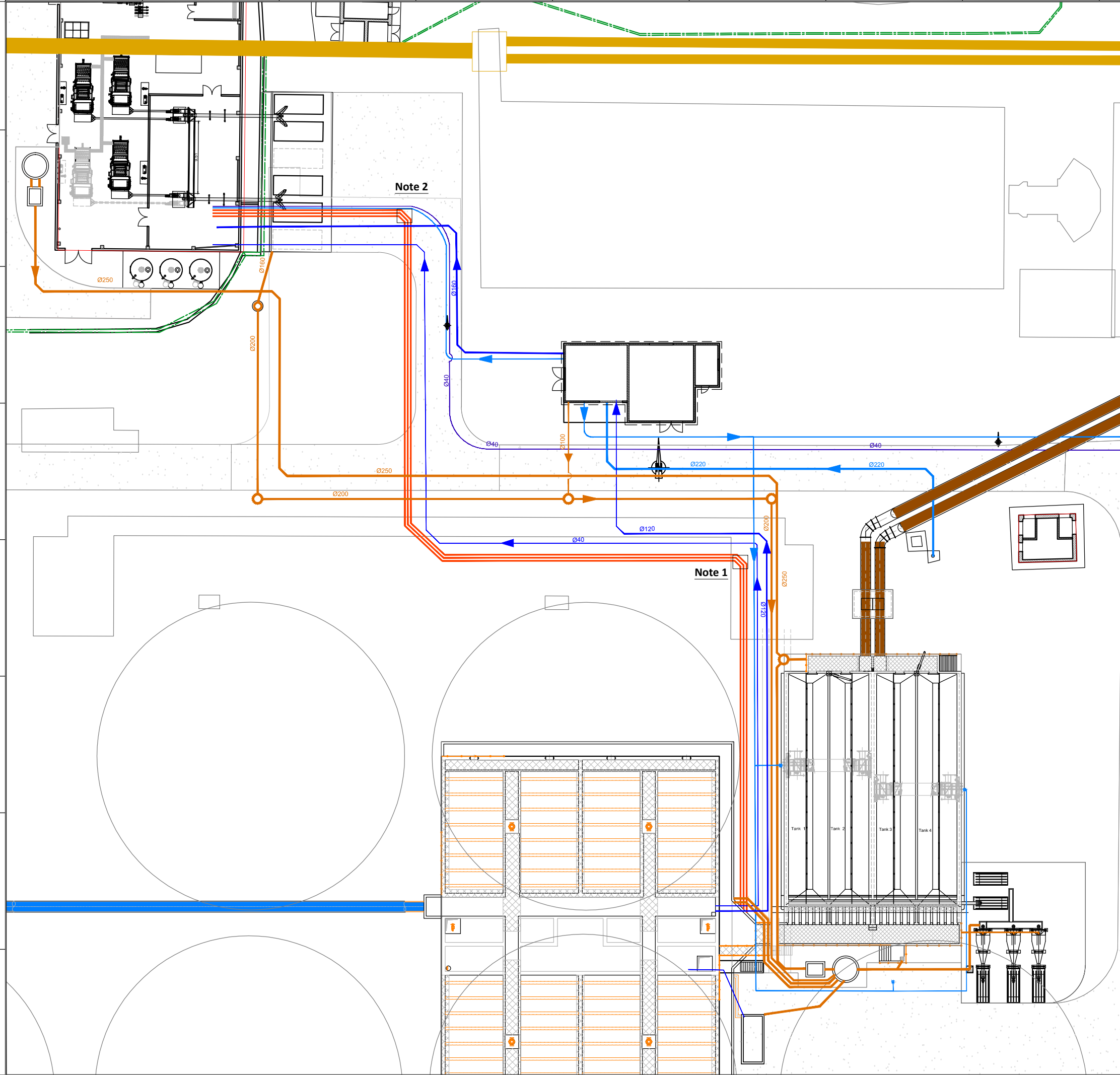
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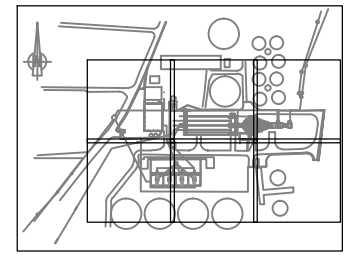
GENERAL PLAN VIEW



DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

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TRANSMITTER	PROJECT-NUMBER	PHASE	DICLIPLINE	AREA	NUMBER	INDEX





**KEY PLAN**

**Note 1:** Provide Manhole for access to the sludge pipes for a future connection to sludge digestion.

**LEGEND:**

- Waste water
- By-pass
- Sludge
- Air
- Decanted water
- Water from artesian well/water supply network
- Foul water
- Drainage

3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	DHE	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013
NO.	REVISIONS	BY	DATE



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YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

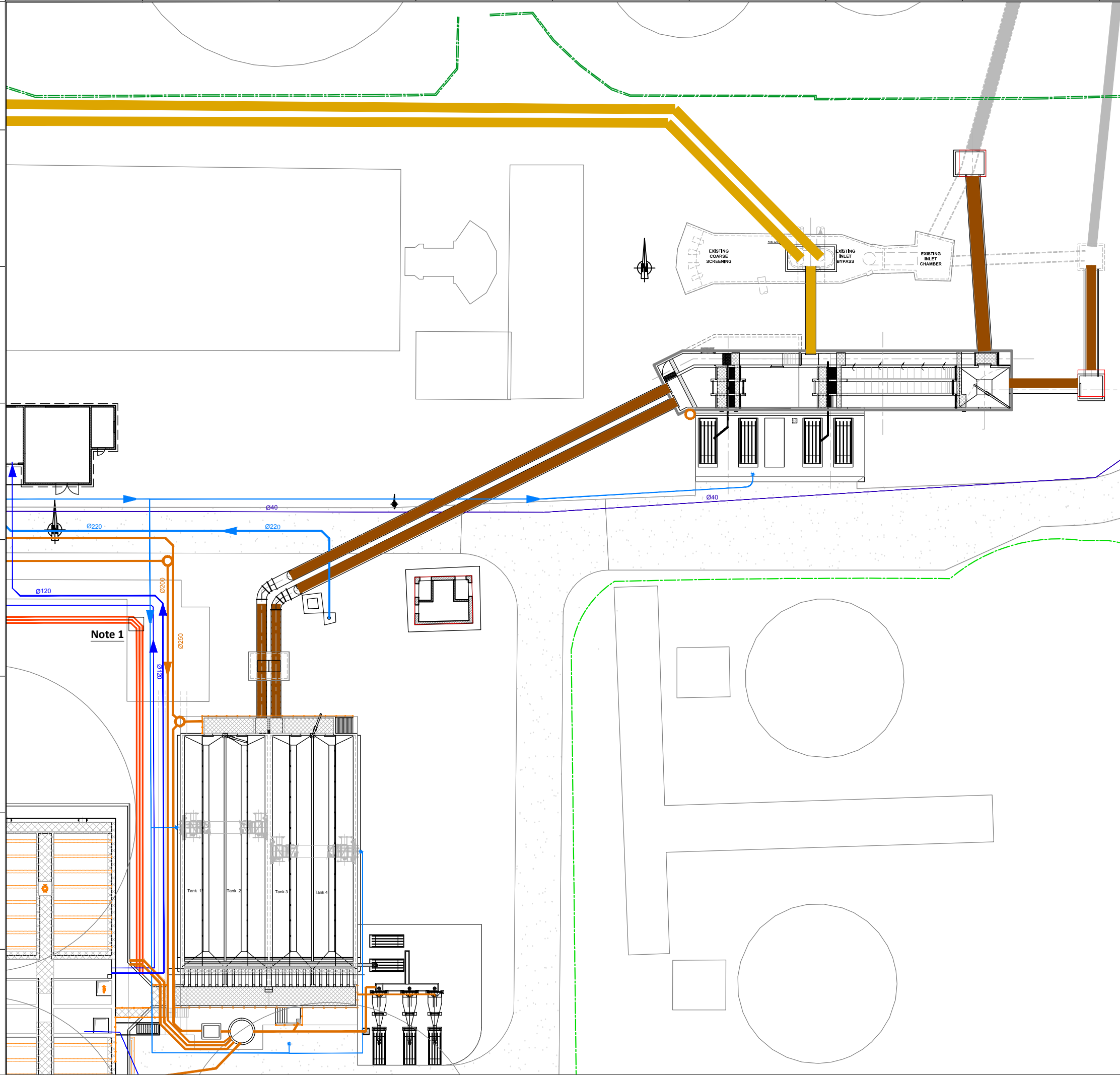
REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS  
GENERAL  
UTILITIES zone 2  
GENERAL PLAN VIEW



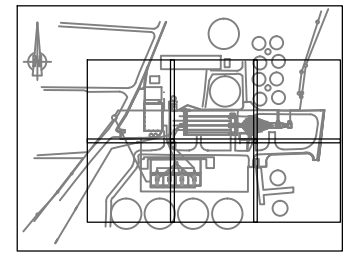
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TRANSMITTER	PROJECT-NUMBER	PHASE	DICPLINE	AREA	NUMBER	INDEX

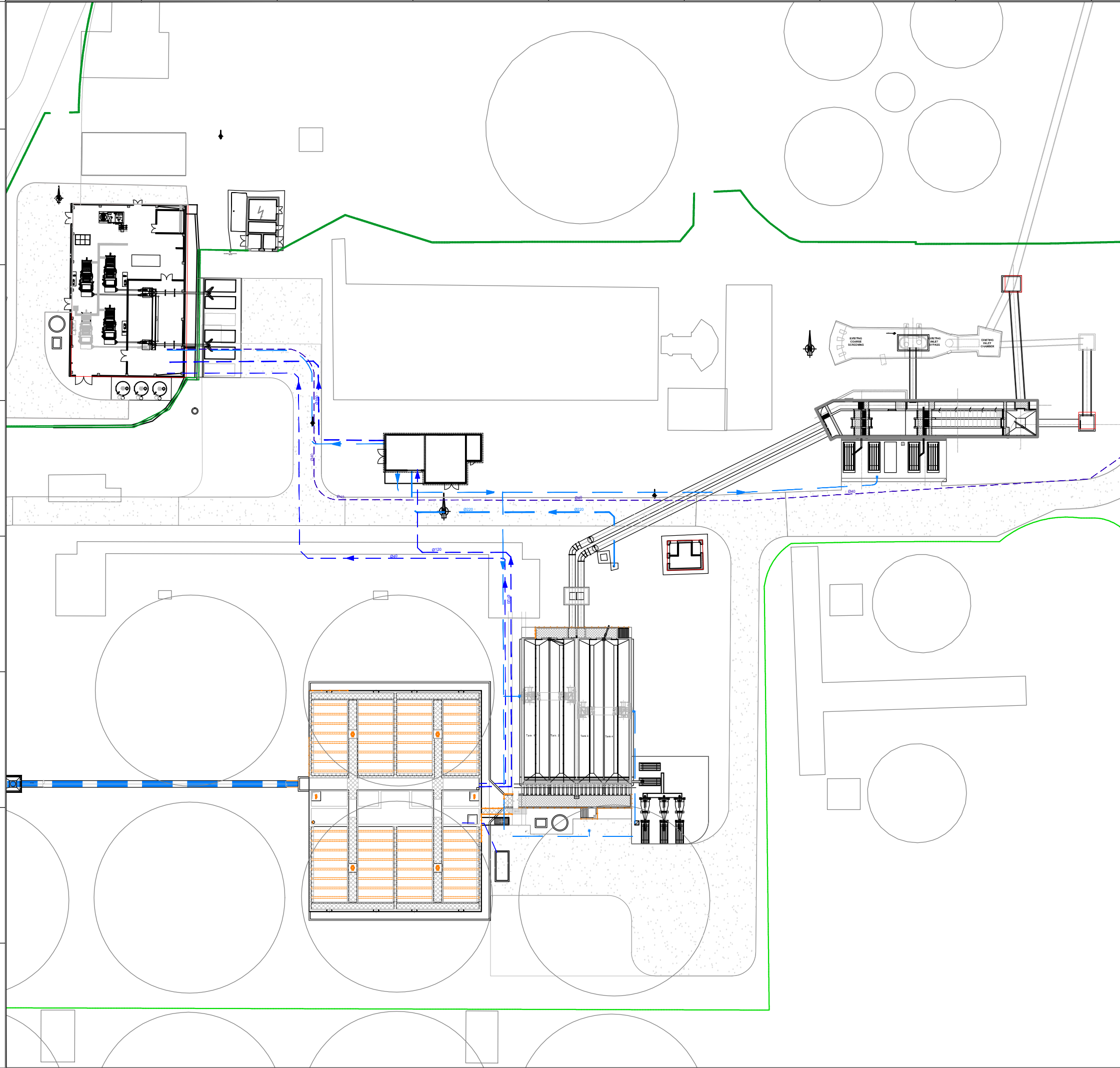


**Note 1**

Designed by : GFY Drawn by : FVR Verified by : CTF  
 ART-1312155-DD-MND-000-000\_Rev0\_14-01-23.dwg



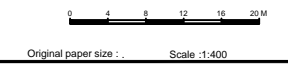
**KEY PLAN**



**LEGEND:**

- Decanted water
- Water from artesian well/water supply network
- Drinking water (city supply)

3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	DHE	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013
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YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

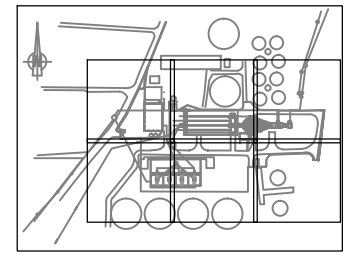
MAIN DRAWINGS  
GENERAL  
SERVICE WATER  
GENERAL PLAN VIEW



DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

ART	1312155	DD	MND	000	403	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

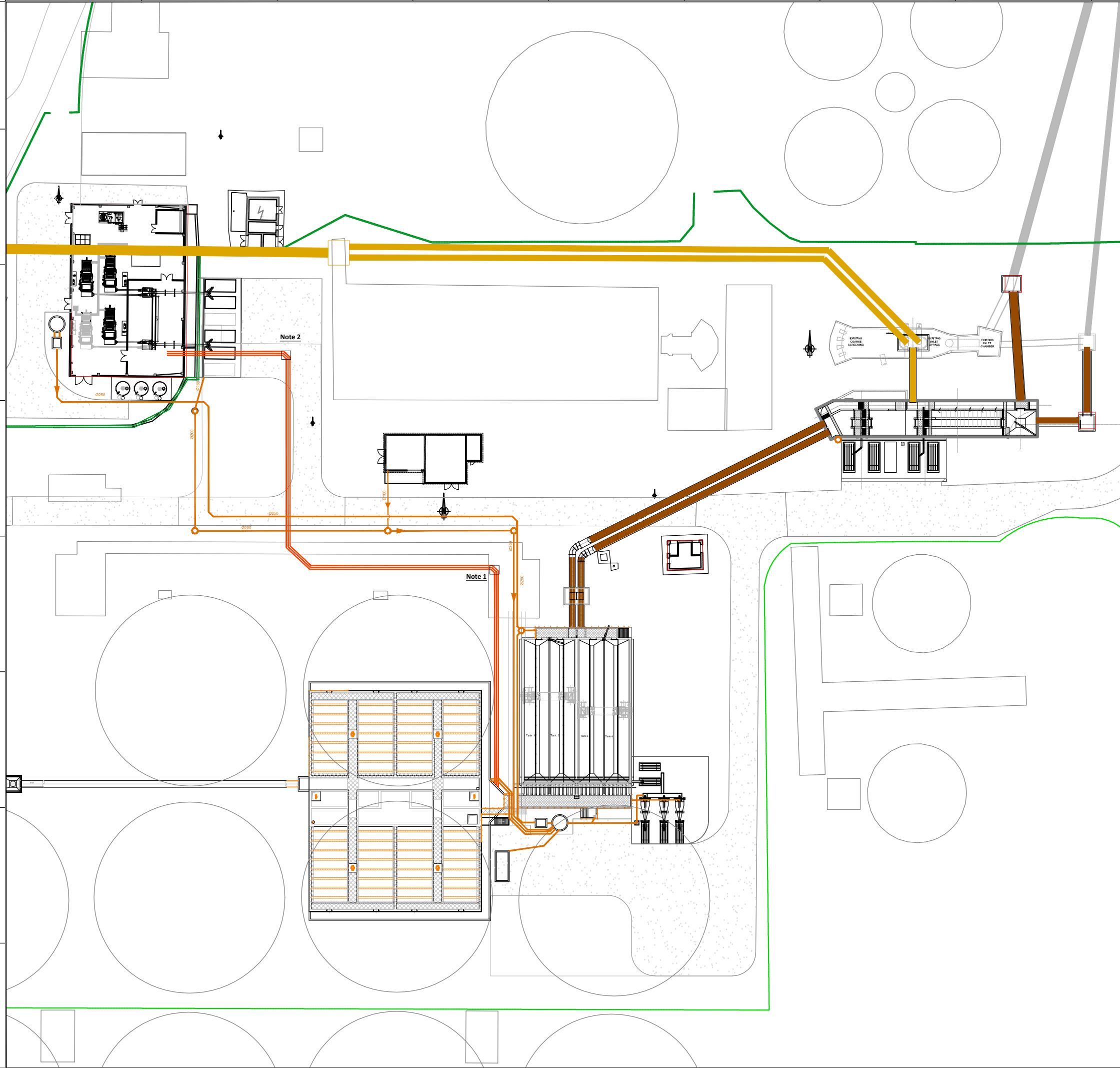
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\_ART-1312155-DD-MND-000-000\_Rev0\_14-01-23.dwg



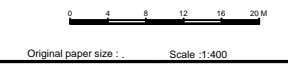
**KEY PLAN**

**LEGEND:**

- Waste water
- By-pass
- Sludge
- Foul water



3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	DHE	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013
NO.	REVISIONS	BY	DATE



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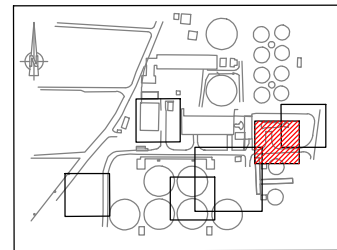
REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS  
GENERAL  
SLUDGE AND FOUL WATER  
GENERAL PLAN VIEW



DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

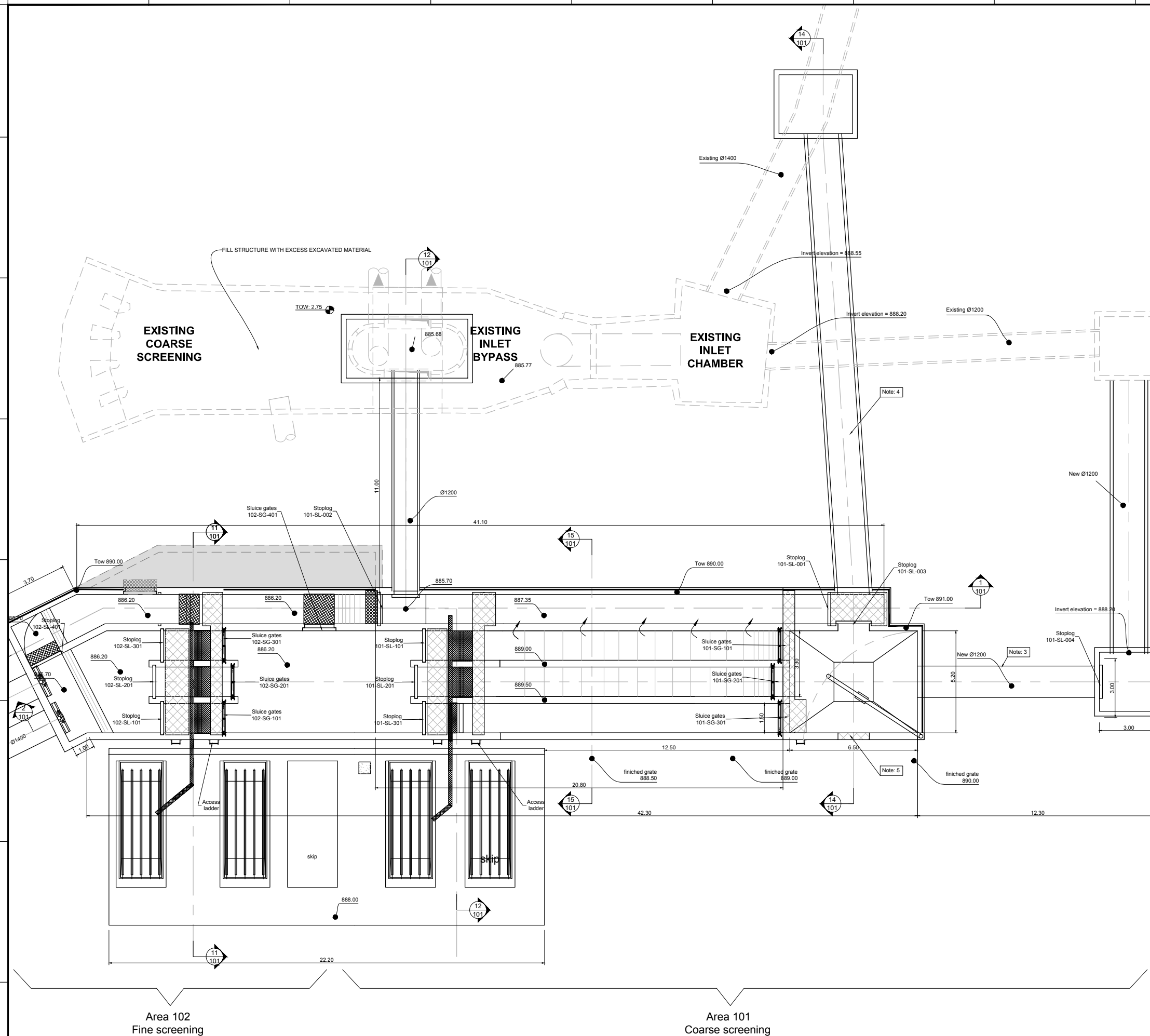
ART	1312155	DD	MND	000	404	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICPLINE	AREA	NUMBER	INDEX



**KEY PLAN**

**NOTES :**

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 2 In the future the capacity of the screening facility may be extended with one additional coarse screen and one additional fine screen. Contractor shall submit in shop drawings the structural details which will allow for a cost effective future extension.
- 3 New 1600 mm pipeline to be connected to existing manhole where existing 1200 mm pipe connects.
- 4 New 1600 mm pipeline to be connected to a new chamber build over the existing 1400 mm pipe to divert the flow to the new inlet chamber.
- 5 Provide for future Ø1000 connection at invert elevation 888.10 masl.
- 6 Dimensions of the channels can be adjusted in order to allow adaptation to the chosen equipment



4	Addition of note n°6	AJN	29/09/2014
3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	CLN	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013
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REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS

AREA 101 and 102

PLAN VIEW

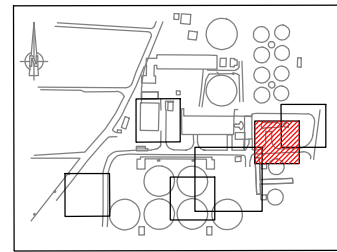
Future Inlet Chamber / Inlet Chamber / Inlet By-pass / Coarse screening



DATE :  
DRAWN : CLN  
CHECKED : CTF  
APPROVED : CTF

ART	1312155	MND	101	000	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER INDEX

Designed by : GFY Drawn by : FVR Verified by : CTF  
ART-1312155-DD-MND-101-001\_Rev0\_14-01-31.dwg

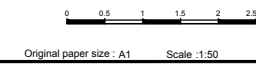


**KEY PLAN**

**NOTES :**

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 2 In the future the capacity of the screening facility may be extended with one additional coarse screen and one additional fine screen. Contractor shall submit in shop drawings the structural details which will allow for a cost effective future extension.
- 3 This wall is to be knocked out in the future, if one additional screen needs to be installed.
- 4 This wall is an emergency overflow weir. The wall shall be built with a TOW elevation at 889,00 masl. The weir level shall be adjustable by the mean of a metal plate attached to the wall. The contractor shall submit the details of the weir plate and its support system on the shop drawings. The weir plate shall be installed for an initial weir elevation of 889,14 masl, with an adjustability of - 10 cm and + 10 cm.
- 5 Structural calculations shall account for a normally empty emergency bypass channel and normally empty bypass screen channel.
- 6 Structural design shall account for hoist weight, and cantilever effect of lifting 500kg objects.
- 7 Dimensions of the channels can be adjusted in order to allow adaptation to the chosen equipment

4	Addition of note n°7	AJN	29/09/2014
3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	CLN	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013
NO.	REVISIONS	BY	DATE

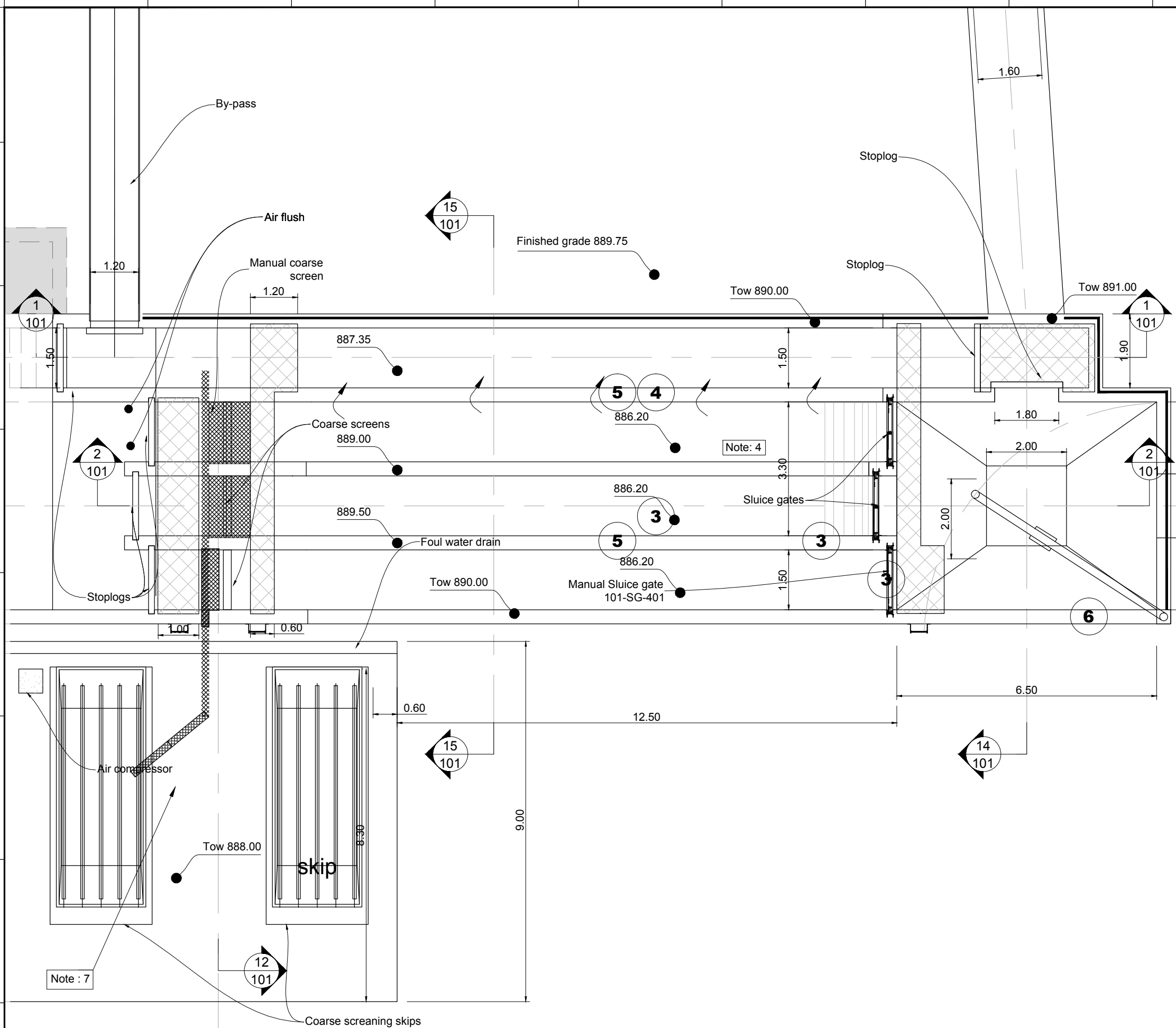


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REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN  
MAIN DRAWINGS  
AREA 101  
PLAN VIEW  
Future Inlet Chamber / Inlet Chamber / Inlet By-pass / Coarse screening

	DATE :	
	DRAWN :	FVR
	CHECKED :	CTF
	APPROVED :	CTF

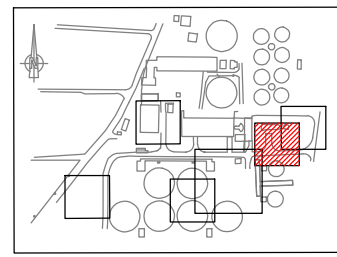
ART	1312155	MND	101	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER INDEX



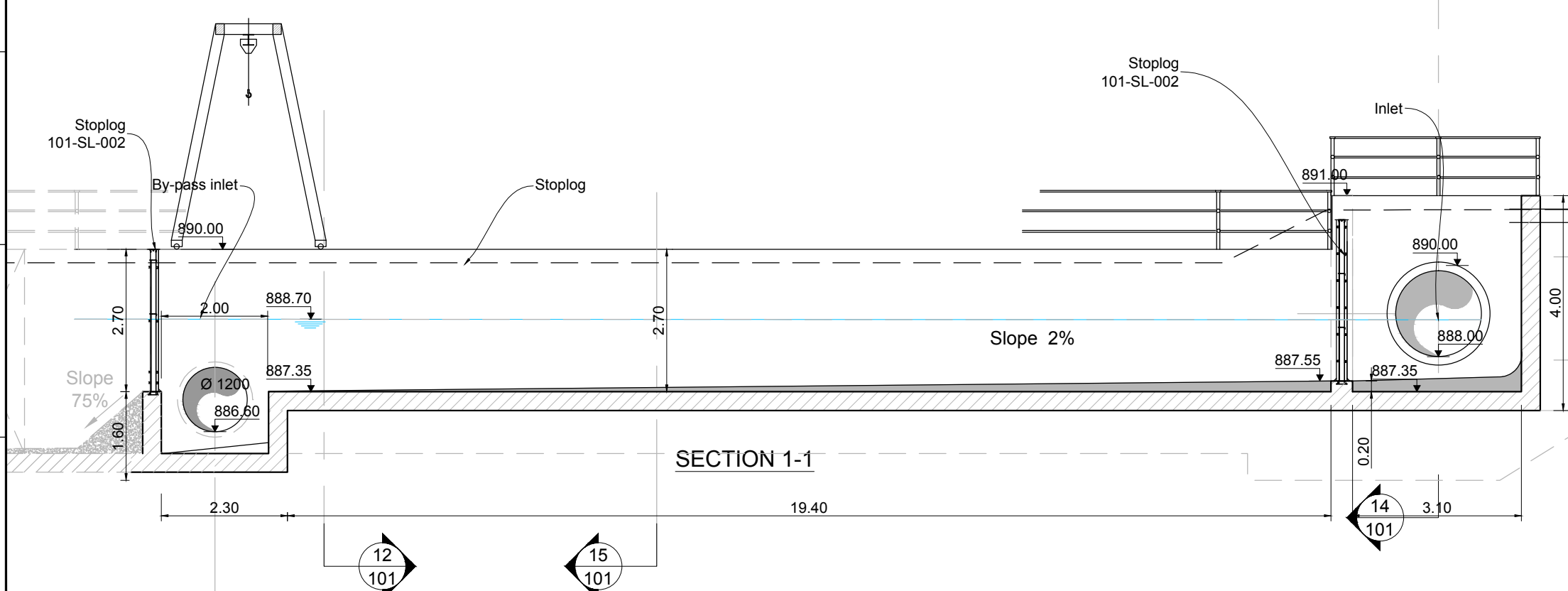
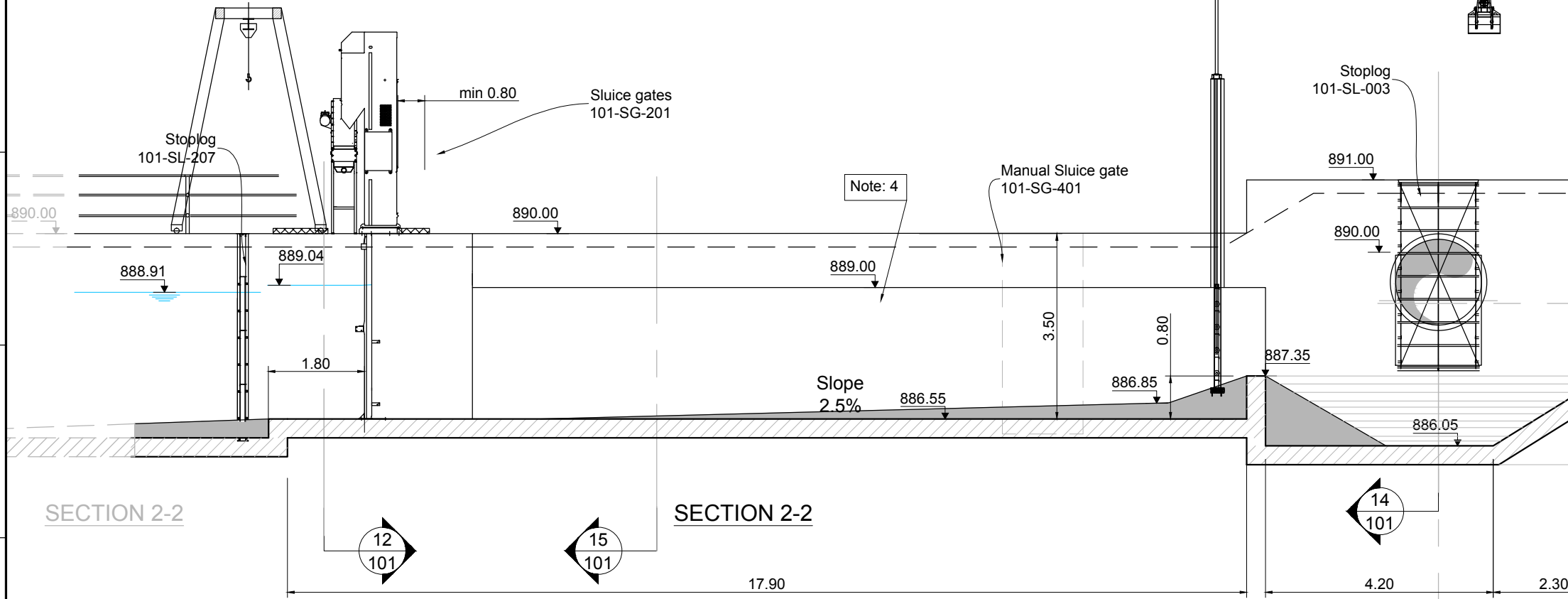
Designed by : GFY Drawn by : FVR Verified by : CTF  
 ART-1312155-DD-MND-101-001\_Rev0\_14-01-31.dwg

**NOTE :**

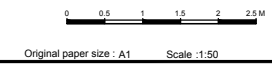
- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 2 This wall is an emergency overflow weir. The wall shall be built with a TOW elevation at 889,00 masl. The weir level shall be adjustable by the mean of a metal plate attached to the wall. The contractor shall submit the details of the weir plate and its support system on the shop drawings. The weir plate shall be installed for an initial weir elevation of 889,14 masl, with an adjustability of - 10 cm and + 10 cm.
- 3 Dimensions of the channels can be adjusted in order to allow adaptation to the chosen equipment



**KEY PLAN**





4	Addition of note n°3	AJN	29/09/2014
3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	CLN	10/2013
1	Draft Detailed Design	FVR	07/2013
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NO.	REVISIONS	BY	DATE



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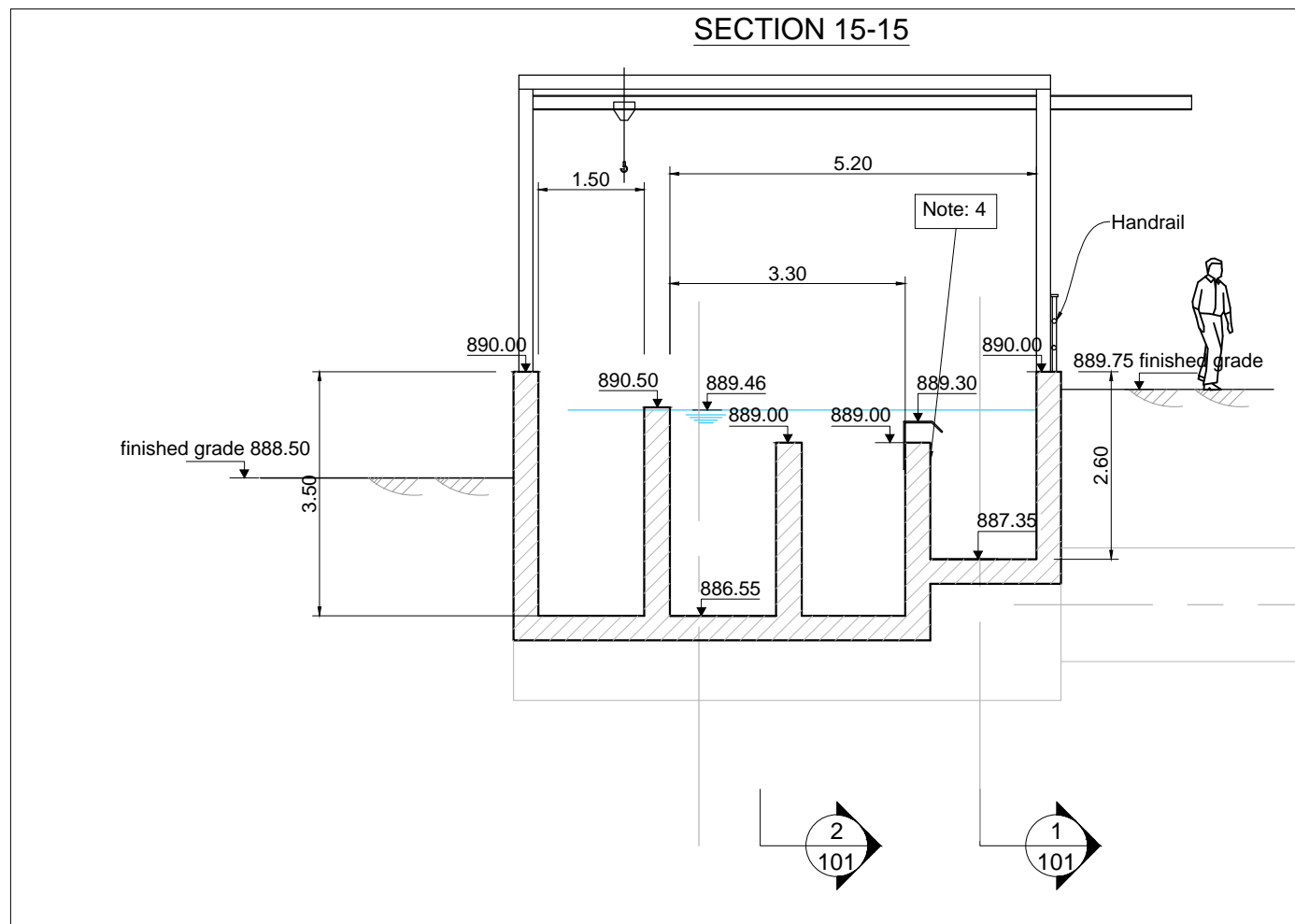
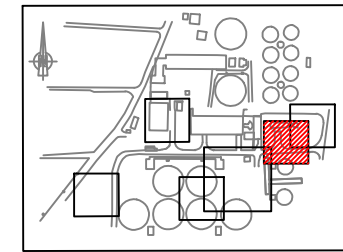
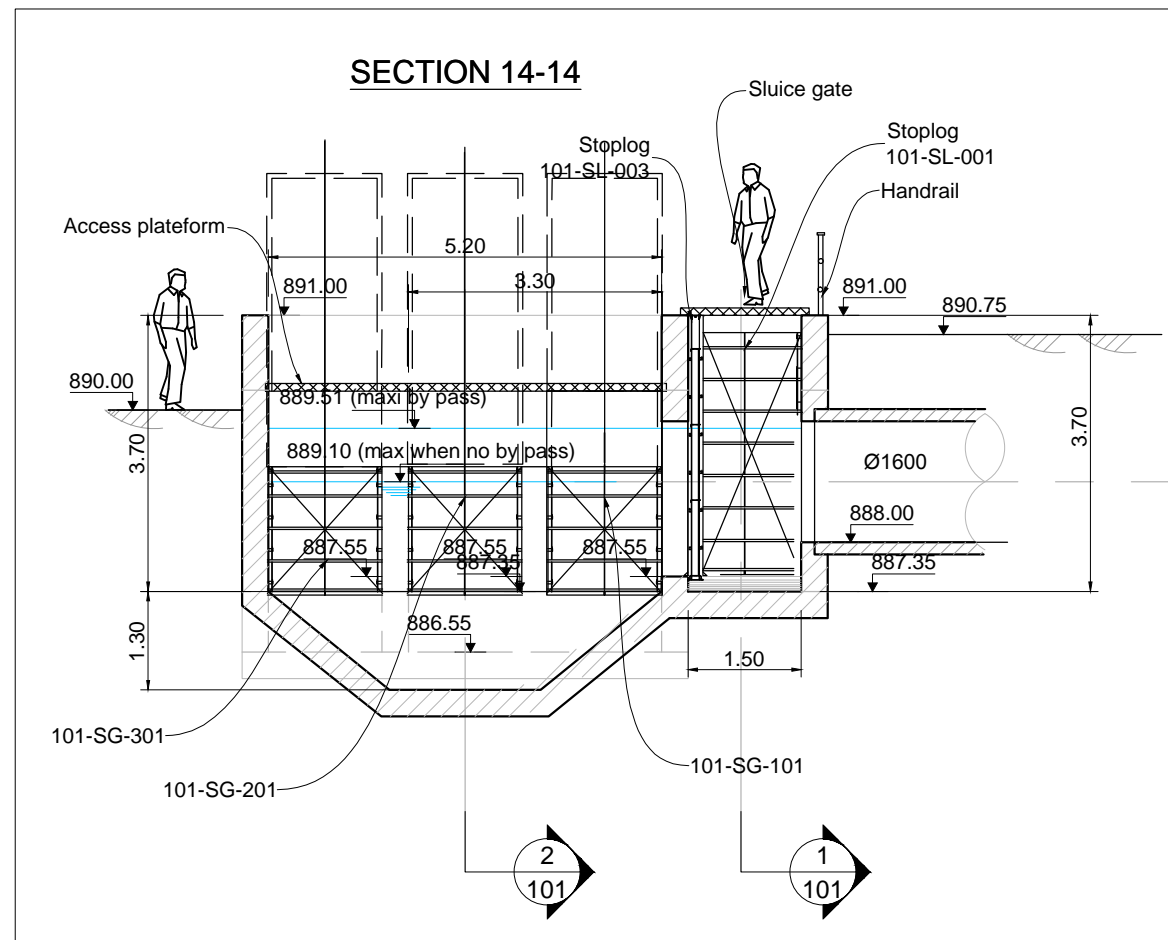
**REHABILITATION OF AERATSIA WWTP**  
**DETAILED DESIGN**  
**MAIN DRAWINGS**  
AREA 101  
SECTIONS  
Future Inlet Chamber / Inlet Chamber / Inlet By-pass / Coarse screening

DATE: \_\_\_\_\_  
DRAWN: FVR  
CHECKED: CTF  
APPROVED: CTF

ART	1312155	MND	101	101	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER
					INDEX

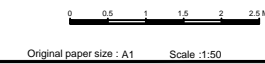
Designed by: GFY Drawn by: FVR Verified by: CTF  
ART-1312155-DD-MND-101-001\_Rev0\_14-01-31.dwg



**NOTES :**

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 4 This wall is an emergency overflow weir. The wall shall be built with a TOW elevation at 889.00 masl. The weir level shall be adjustable by the mean of a metal plate attached to the wall. The contractor shall submit the details of the weir plate and its support system on the shop drawings. The weir plate shall be installed for an initial weir elevation of 889.14 masl, with an adjustability of - 10 cm and + 10 cm.

NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	CLN	10/21/03
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013



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WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS

AREA 101

SECTIONS 14 - 15

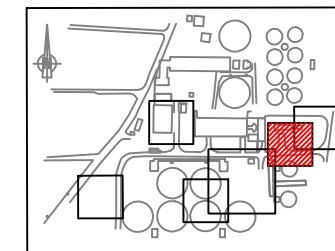
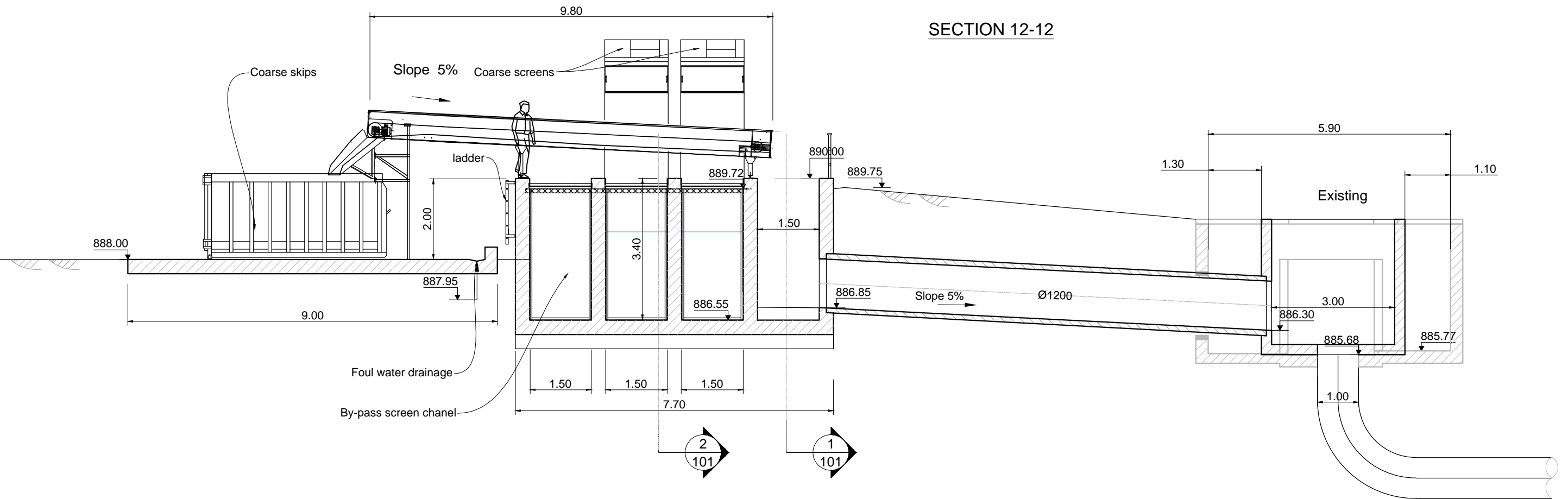
Future Inlet Chamber / Inlet Chamber / Inlet By-pass / Coarse screening



DATE : \_\_\_\_\_  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

ART	1312155	MND	101	102	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICPLINE	AREA	NUMBER
					INDEX

SECTION 12-12

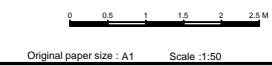


KEY PLAN

NOTES :

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.

3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	CLN	10/2013
1	Draft Detailed Design	FVR	07/2013
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WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP

DETAILED DESIGN

MAIN DRAWINGS

AREA 101

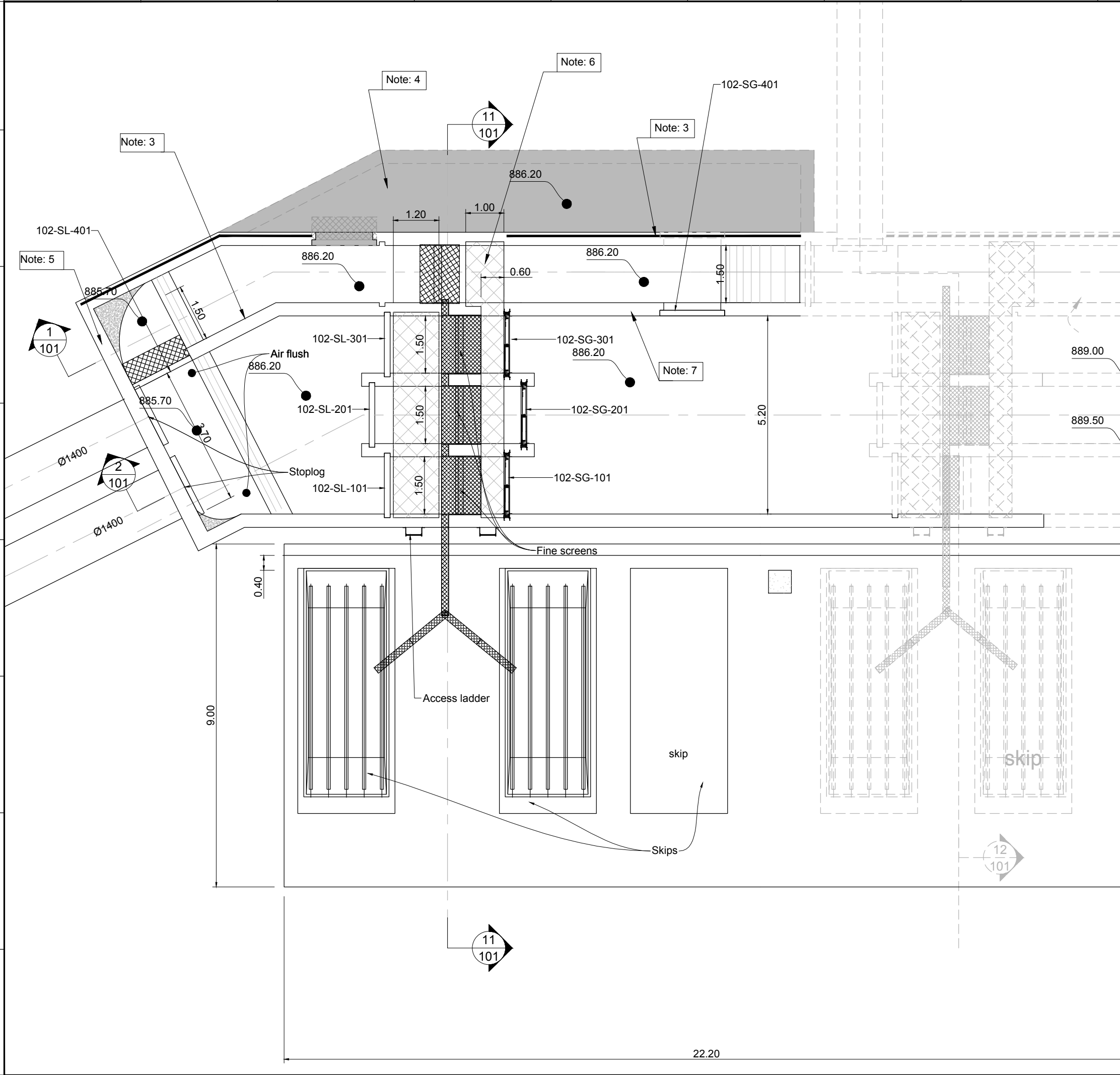
SECTIONS 12

Future Inlet Chamber / Inlet Chamber / Inlet By-pass / Coarse screening



DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

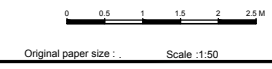
ART	1312155	MND	101	103	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER
					INDEX



**NOTE :**

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 2 In the future the capacity of the screening facility may be extended with one additional coarse screen and one additional fine screen. Contractor shall submit in shop drawings the structural details which will allow for a cost effective future extension.
- 3 This wall is to be knocked out in the future, if one additional screen needs to be installed.
- 4 This Structure is indicated as future extension. The contractor shall provide necessary provisions for the construction of the indicated bypass channel in the future. The contractor shall provide for a future opening as indicated for a stoplog to isolate the future bypass channel. Contractor to provide details in the shop drawings.
- 5 The contractor shall provide the necessary provisions for the future construction of a channel replacing the two 1400 mm pipes to accommodate higher flows.
- 6 access to maintenance platform closed off by two poles and a chain link fence. No handrails to be provided on the platform itself.
- 7 Structural calculation shall account for a normally empty emergency bypass channel and normally empty bypass screen channel.
- 8 Dimensions of the channels can be adjusted in order to allow adaptation to the chosen equipment

4	Addition of note n°8	AJN	29/09/2014
3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	DHE	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013
NO.	REVISIONS	BY	DATE



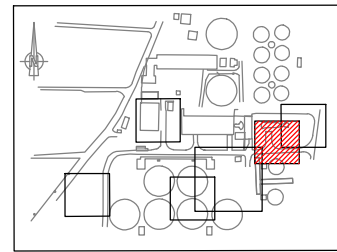
**REPUBLIC OF ARMENIA**  
**YEREVAN MUNICIPALITY**  
**WATER & SEWERAGE BOARD**

**REHABILITATION OF AERATSIA WWTP**  
**DETAILED DESIGN**

**MAIN DRAWINGS**  
 AREA 102  
 PLAN VIEW  
 Fine screening building

	DATE : _____
	DRAWN : FVR
	CHECKED : CTF
	APPROVED : CTF

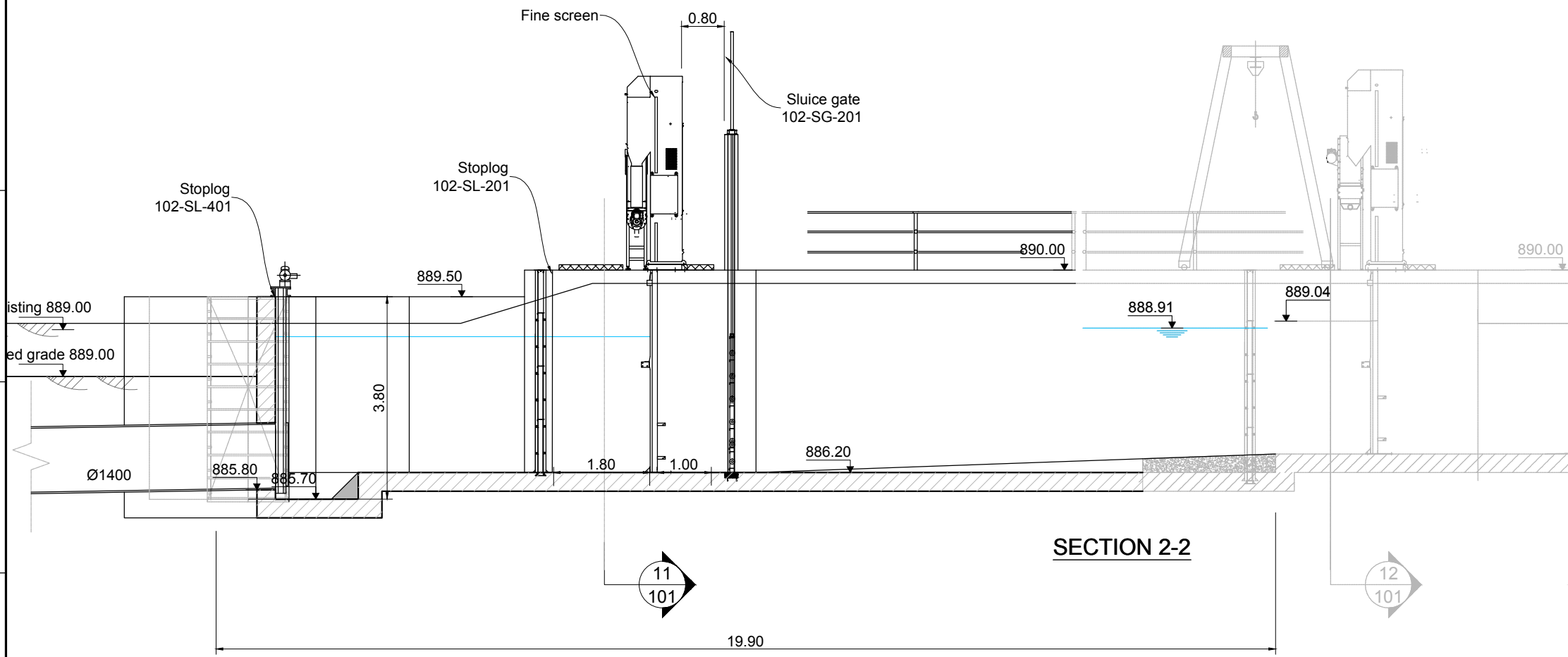
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TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



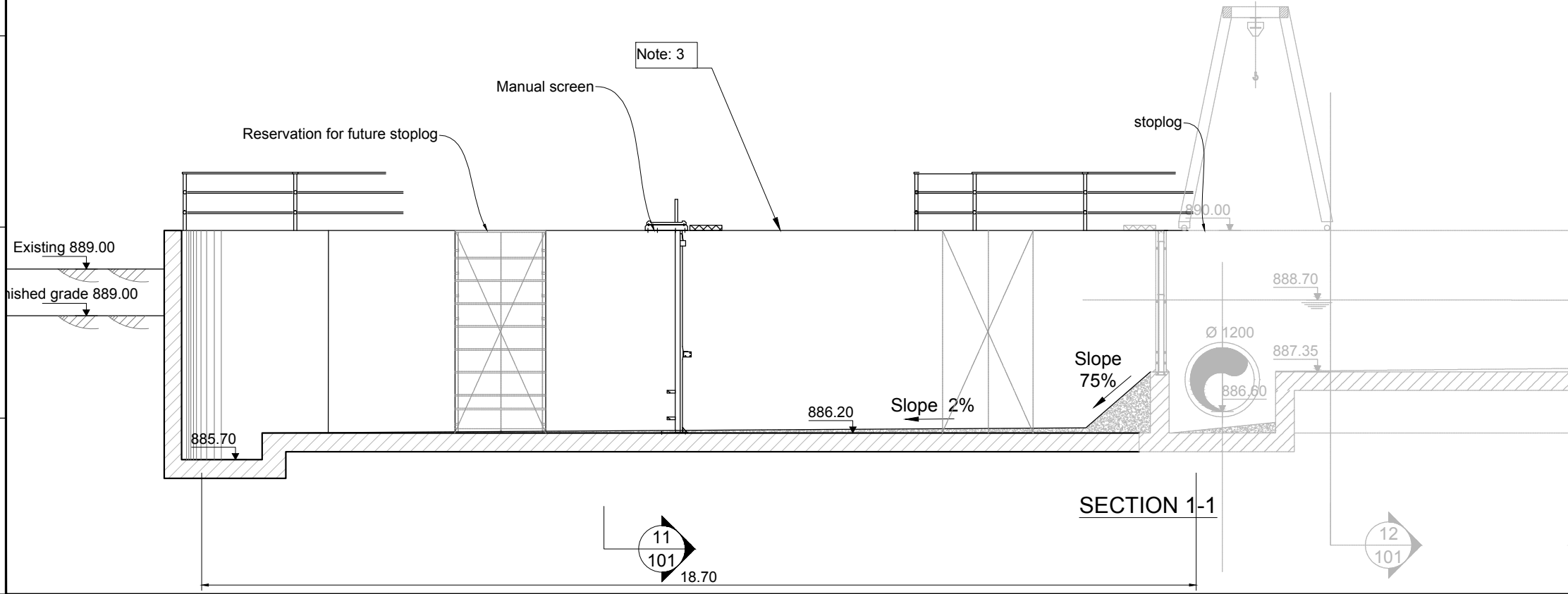
**KEY PLAN**

**NOTE :**

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 2 In the future the capacity of the screening facility may be extended with one additional coarse screen and one additional fine screen. Contractor shall submit in shop drawings the structural details which will allow for a cost effective future extension.
- 3 This wall is to be knocked out in the future, if one additional screen needs to be installed.
- 4 Dimensions of the channels can be adjusted in order to allow adaptation to the chosen equipment

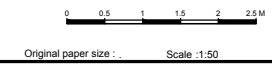


**SECTION 2-2**



**SECTION 1-1**

4	Addition of note n°4	AJN	29/09/2014
3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	DHE	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013
NO.	REVISIONS	BY	DATE



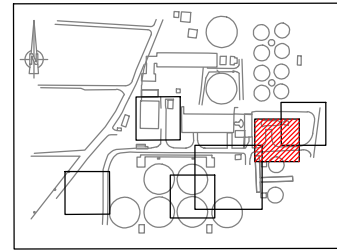
REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTW  
DETAILED DESIGN

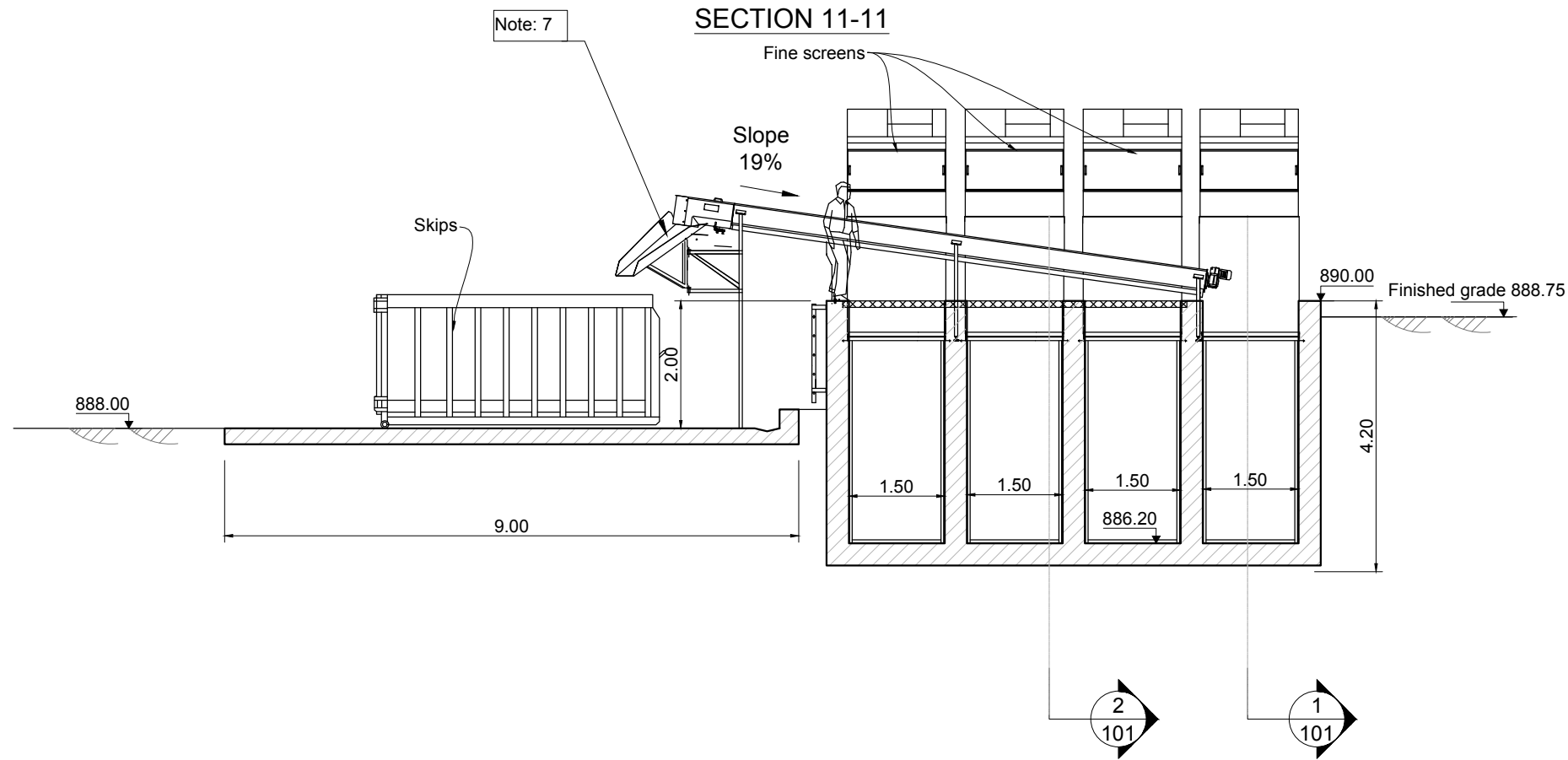
MAIN DRAWINGS  
AREA 102  
SECTIONS 1 & 2  
Fine screening building

DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

ART	1312155	DD	MND	102	101	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



**KEY PLAN**



Note: 7

**SECTION 11-11**

Fine screens

Slope  
19%

Skips

890.00

Finished grade 888.75

888.00

2.00

4.20

9.00

1.50

1.50

1.50

1.50

2  
101

1  
101

**NOTE :**

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 2 Dimensions of the channels can be adjusted in order to allow adaptation to the chosen equipment

4	Addition of note n°2	AJN	29/09/2014
3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	DHE	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013
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Original paper size : . Scale :1:50

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REHABILITATION OF AERATSIA WWTP

DETAILED DESIGN

MAIN DRAWINGS

AREA 102

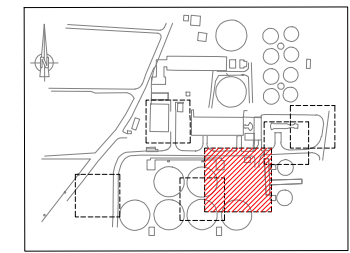
SECTION 11

Fine screening building

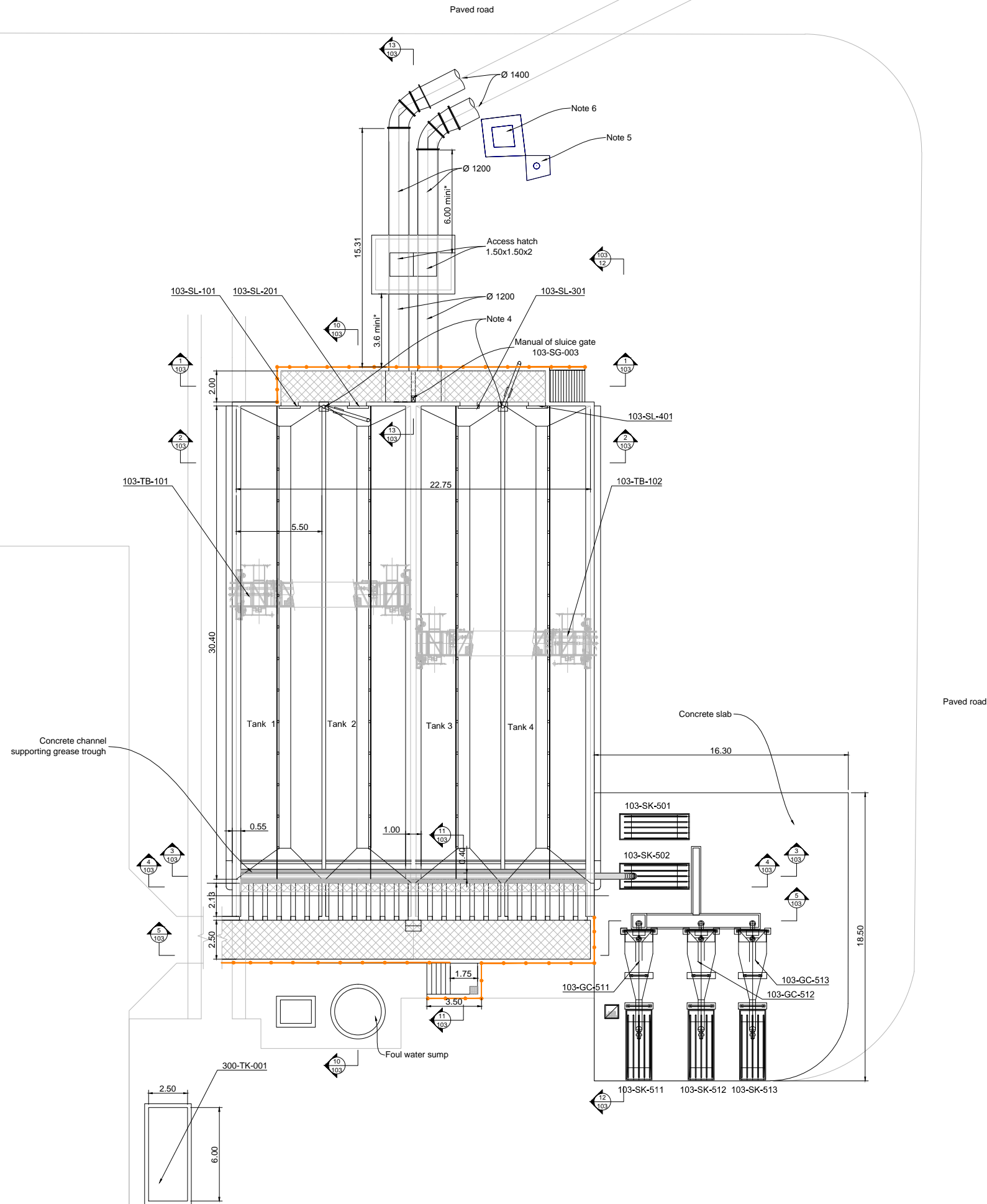


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DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

ART	1312155	DD	MND	102	102	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



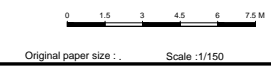
**KEY PLAN**



**NOTE :**

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 2 All pipes installed outside shall be heat traced and insulated.
- 3 In the future the capacity of the grit removal facility may be higher than the current design flow. The overflow weir trough elevation may be lowered by 5 cm to accommodate future higher flows and the maximum water level in the tanks may increase by 2 cm.
- 4 A gallows with a manual crank set lifting hoist shall be provided to lift the stop log closing the entrance to each tank. It shall be installed on the wall and have the capacity to lift a minimum of 500 kg. Two gallows shall be installed, each between two tanks.
- 5 Existing Artesian well (40 m deep) shall be protected during construction.
- 6 Valve chamber of artesian well used for lanscape irrigation. Contractor shall relocated the valve chamber and add a new connection to the service water storage.

3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	DHE	oct-13
1	Draft Detailed Design	FVR	07/2013
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YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS

AREA 103

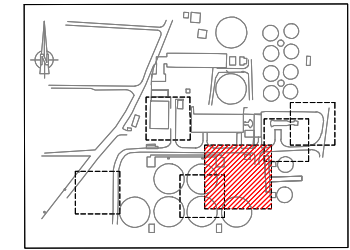
PLAN VIEW

Grit and grease removal tank



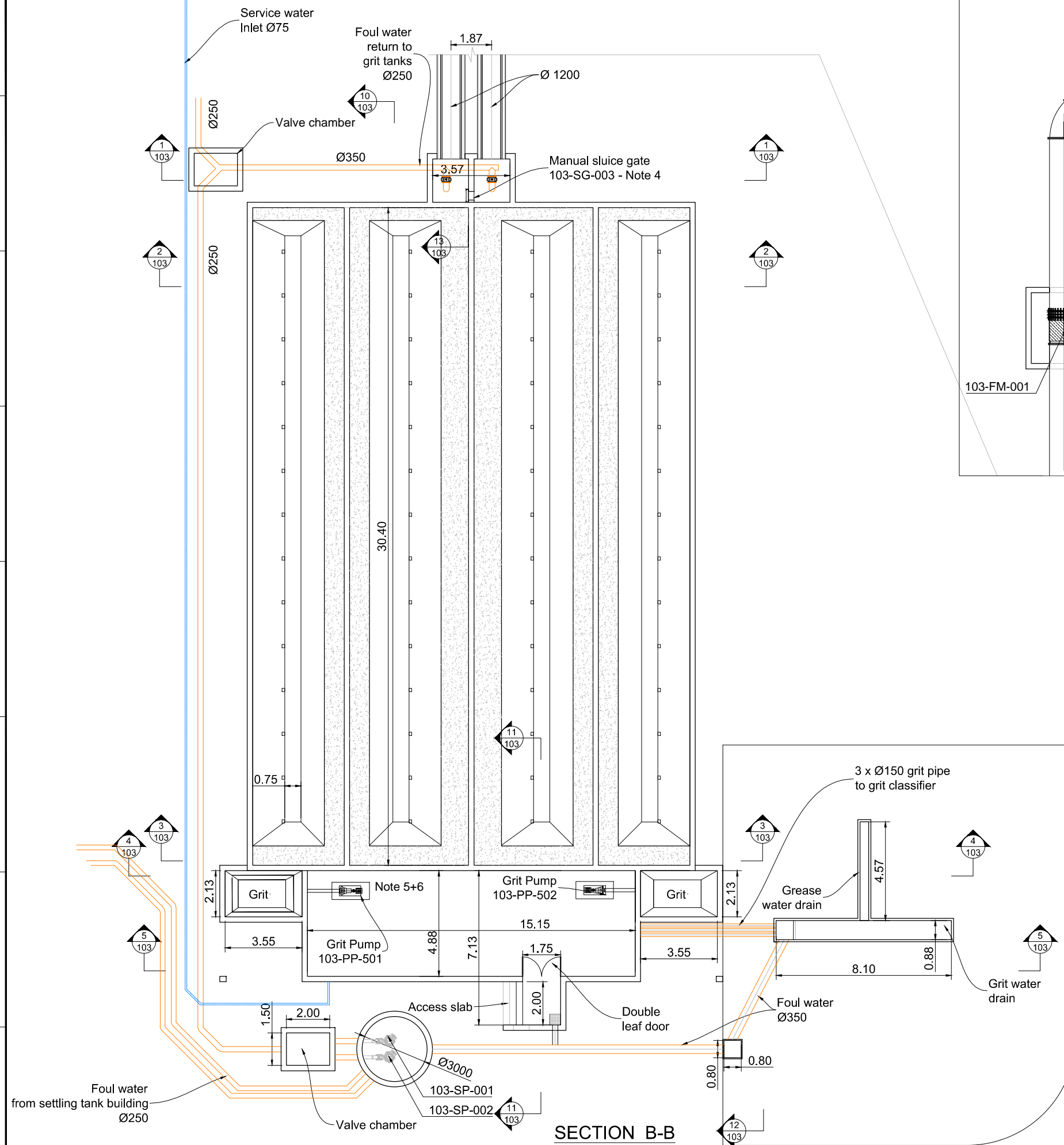
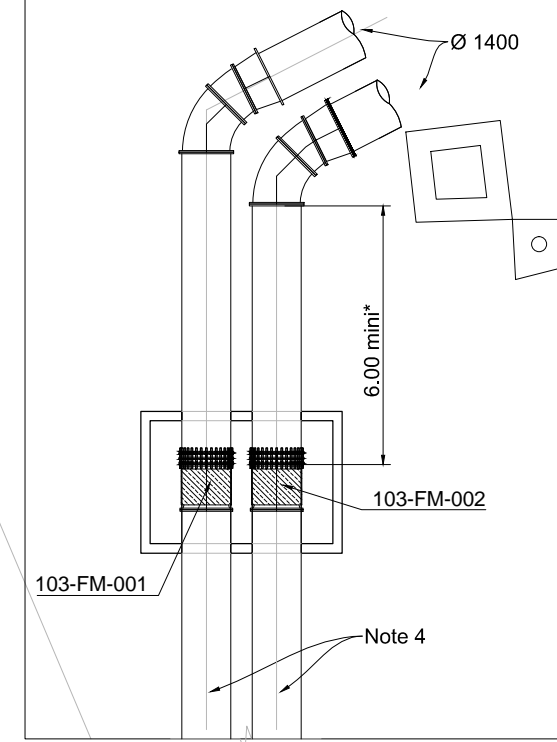
DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

ART	1312155	DD	MND	103	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

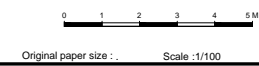


**NOTE :**

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 2 All pipes installed outside shall be heat traced and insulated.
- 3 In the future the capacity of the grit removal facility may be higher than the current design flow. The overflow weir trough elevation may be lowered by 5 cm to accommodate future higher flows and the maximum water level in the tanks may increase by 2 cm.
- 4 A manual sluice gate shall be installed on each side of the separation wall to allow the isolation of half of the works for maintenance purposes. The wall shall be constructed with a 40 cm x 40 cm opening. The bottom of the opening shall be at elevation 885.00. The opening shall be flush with the wall of the distribution channel.
- 5 The Contractor shall provide air intake louvers located at each side of the grit pump room to allow for natural air circulation.
- 6 Grit pipes within the grit pump room shall be installed by the Contractor in accordance with P&ID drawing No. INS-103-004 in this set.



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2	Final Detailed Design	DHE	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013



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YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS

AREA 103

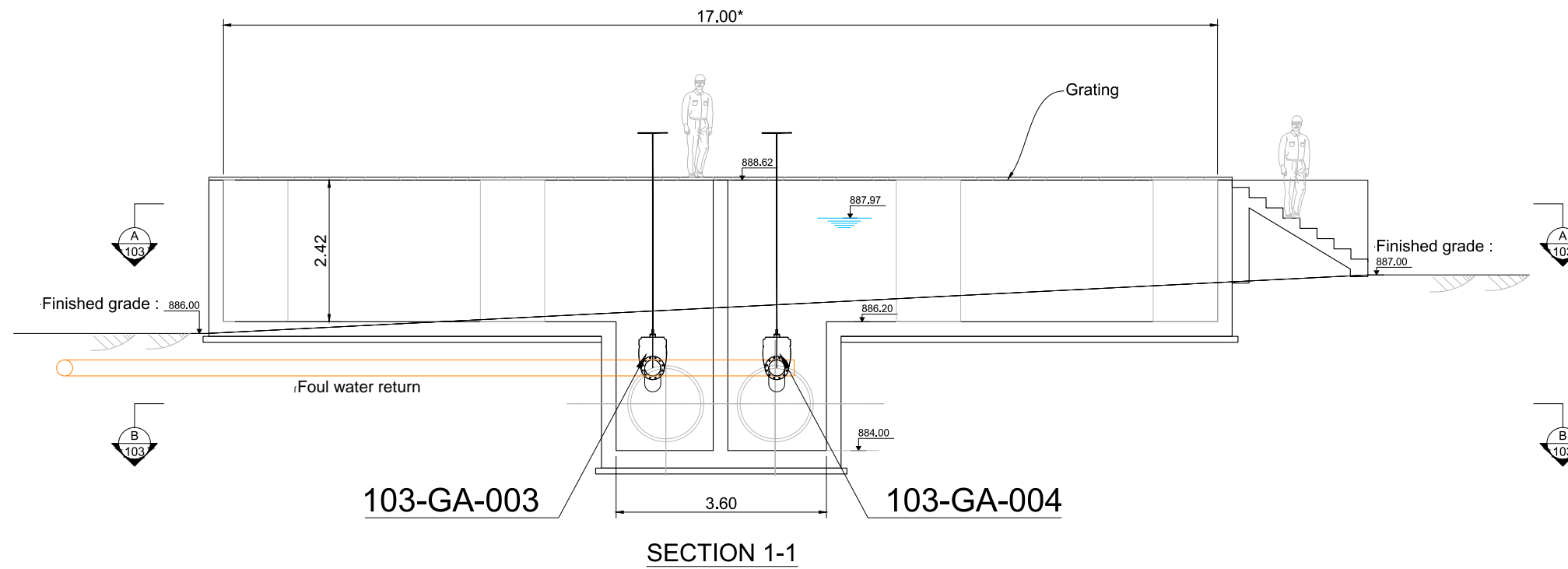
SECTION B-B

Grit and grease removal tank

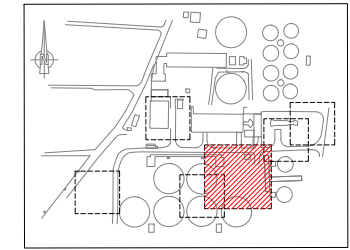


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APPROVED : CTF

ART	1312155	DD	MND	103	003	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



SECTION 1-1

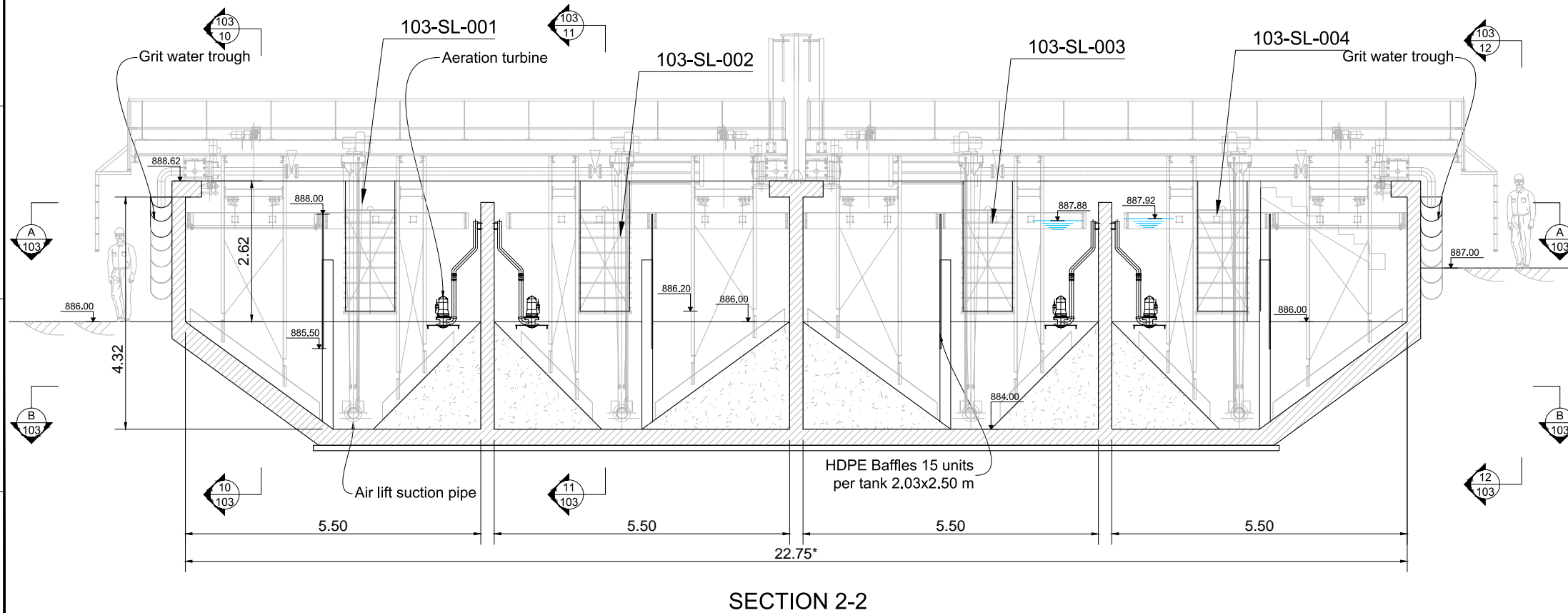


KEY PLAN

**NOTE :**

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 2 All pipes installed outside shall be heat traced and insulated.
- 3 In the future the capacity of the grit removal facility may be higher than the current design flow. The overflow weir trough elevation may be lowered by 5 cm to accommodate future higher flows and the maximum water level in the tanks may increase by 2 cm.
- 4 The grease scraper shall scrape the surface over the entire width excepted for the space required for the aeration turbine air intake pipe.
- 5 The traveling bridge shall be designed so that 1) an operator can stand on it while it moves; 2) the operator can stop it at any point for cleaning or aeration turbine maintenance; 3) the operator can attach a service water hose at the end of the bridge, so that it can be connected to a hose bib on the side of the tank when the bridge is travelling.
- 6 The Contractor shall provide a service water hose bib connection on each side of the tank, located approximately in the middle of the length.

\*Dimension to be adjusted by contractor.



SECTION 2-2

NO.	REVISIONS	BY	DATE
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REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS

AREA 103

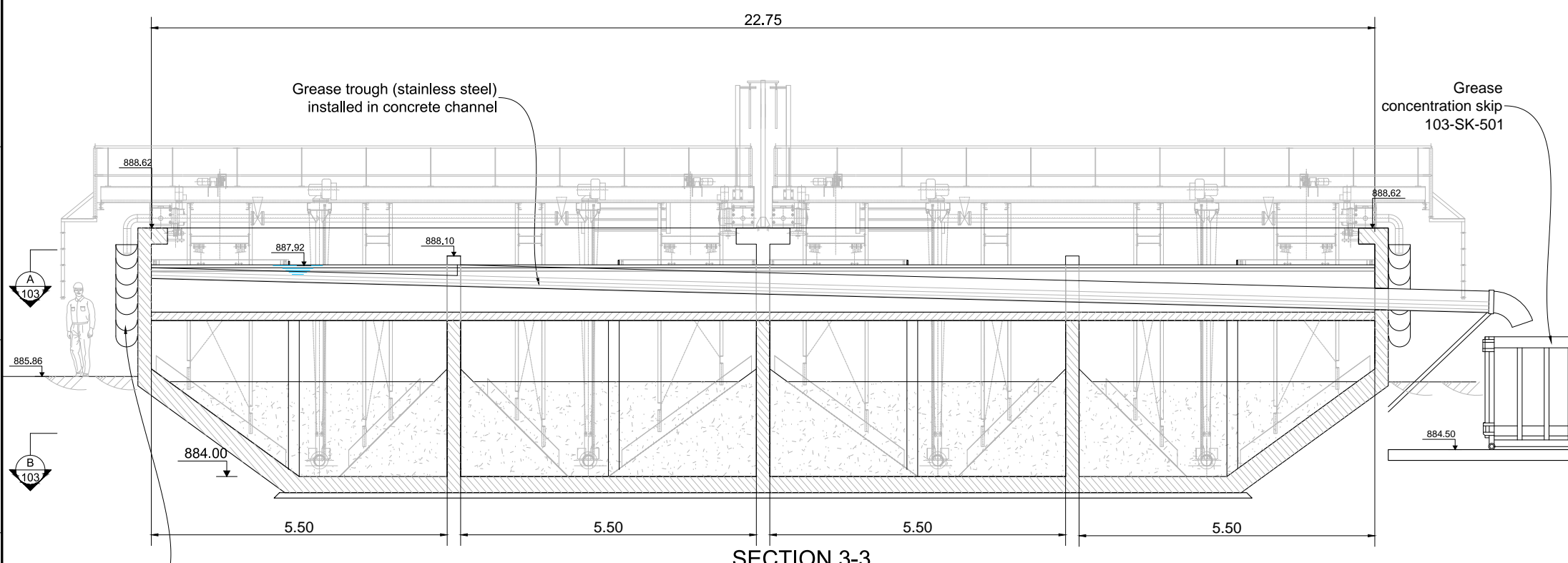
SECTIONS 1 & 2

Grit and grease removal tank



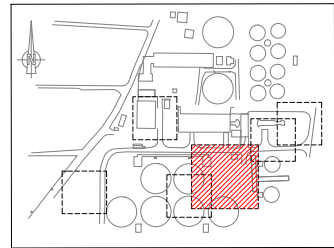
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ART	1312155	DD	MND	103	101	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



SECTION 3-3

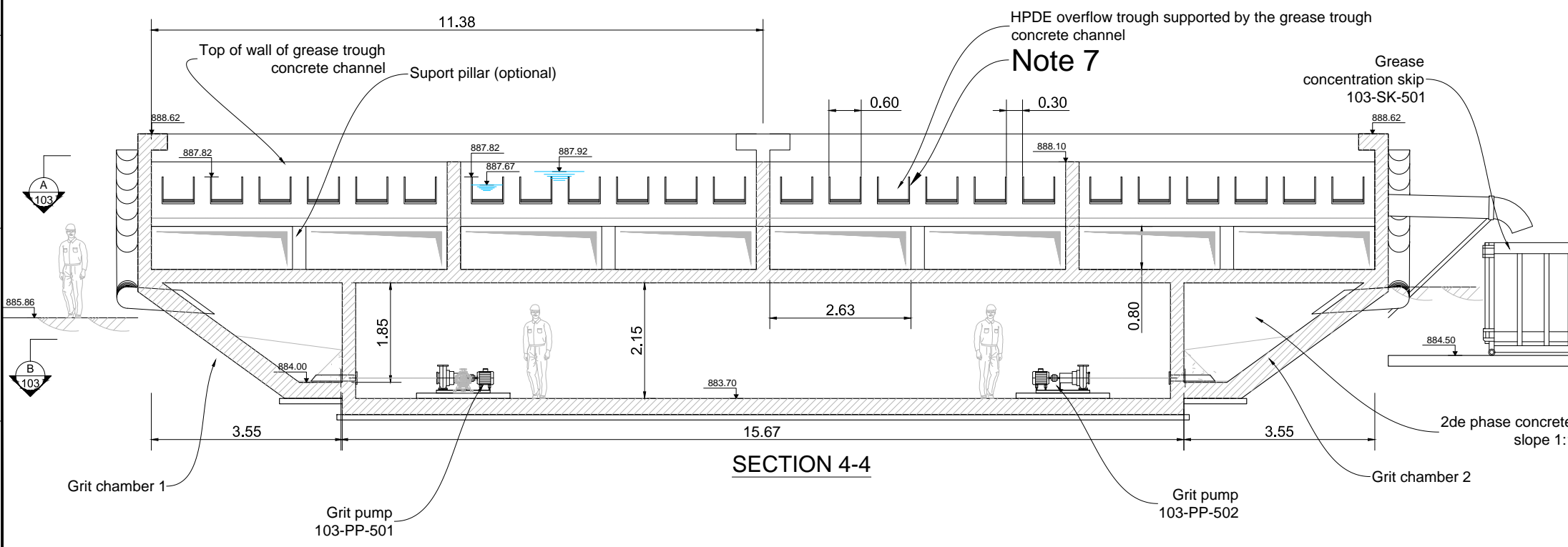
Provide drain to foul water sump



KEY PLAN

NOTE :

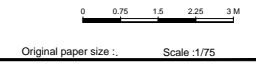
- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
  - 2 All pipes installed outside shall be heat traced and insulated.
  - 3 In the future the capacity of the grit removal facility may be higher than the current design flow. The overflow weir trough elevation may be lowered by 5 cm to accommodate future higher flows and the maximum water level in the tanks may increase by 2 cm.
  - 4 Grit pipes within the grit pump room shall be installed by the Contractor in accordance with P&ID drawing No. INS-103-004 in this set.
  - 5 The Grease collection trough shall be heat traced.
  - 6 The Contractor shall provide air intake louvers located at each side of the grit pump room. An exhaust fan shall be installed on south wall.
  - 7 The Contractor shall provide air intake louvers located at each side of the grit pump room. An exhaust fan shall be installed on south wall.
- Each of the 6 overflow weirs per tank shall be fabricated as one single piece to ensure alignment of the top section serving as weir. Alignment tolerance shall be +/- 0.1%. The shape may be adapted to facilitate stacking during transport, but the total weir length shall be respected (2.13 m x 12 weirs per tank).



SECTION 4-4

HPDE overflow trough supported by the grease trough concrete channel  
**Note 7**

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2	Final Detailed Design	DHE	10/2013
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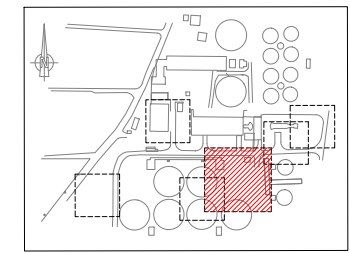
REPUBLIC OF ARMENIA  
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REHABILITATION OF AERATSIA WWTP  
 DETAILED DESIGN

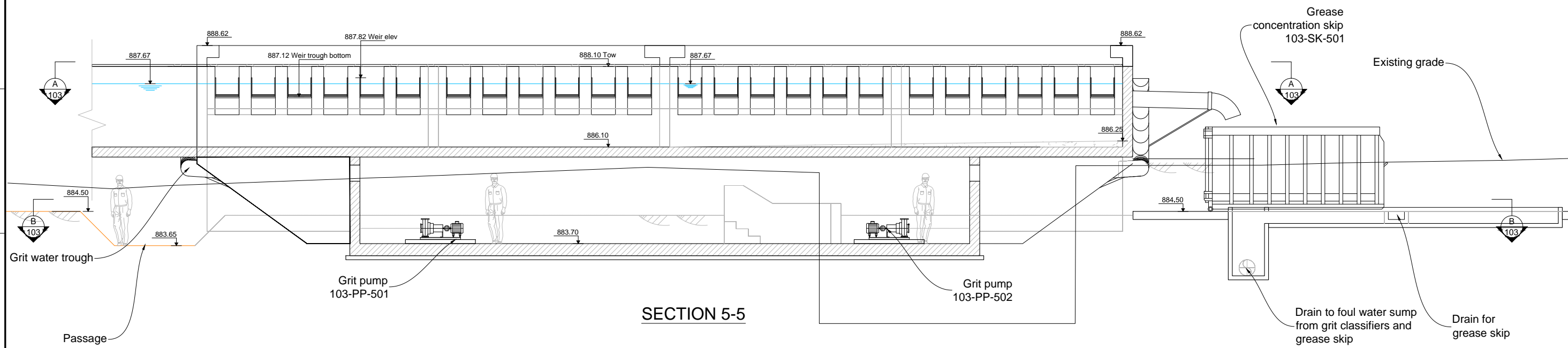
MAIN DRAWINGS  
 AREA 103  
 SECTIONS 3 to5  
 Grit and grease removal tank

	DATE :	
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	APPROVED :	CTF

ART	1312155	DD	MND	103	102	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

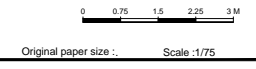


**KEY PLAN**



**SECTION 5-5**

3	Tender Detail Design	CLN	31/01/2014
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1	Draft Detailed Design	FVR	07/2013
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REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

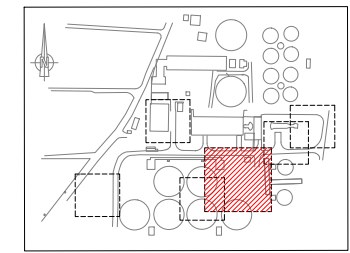
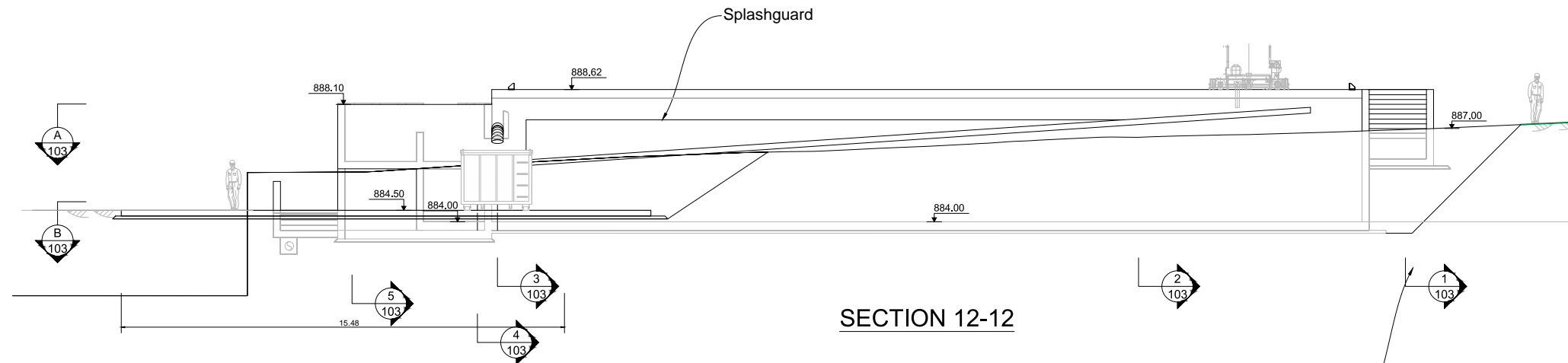
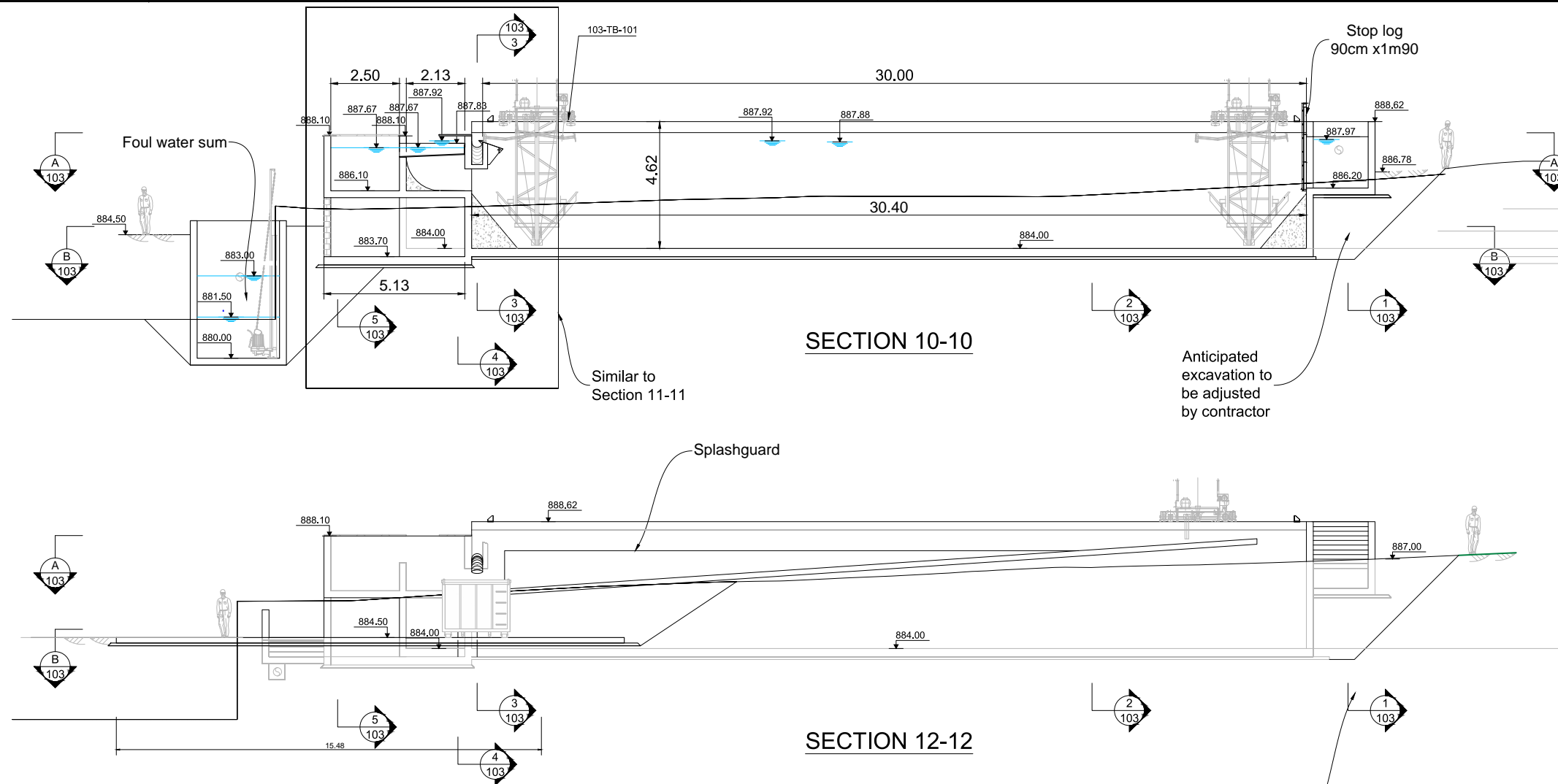
MAIN DRAWINGS  
AREA 103  
SECTIONS 3 to5  
Grit and grease removal tank

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		DRAWN :	FVR
		CHECKED :	CTF
		APPROVED :	CTF

ART	1312155	DD	MND	103	103	0
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**NOTE :**

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 2 All pipes installed outside shall be heat traced and insulated.
- 3 In the future the capacity of the grit removal facility may be higher than the current design flow. The overflow weir trough elevation may be lowered by 5 cm to accommodate future higher flows and the maximum water level in the tanks may increase by 2 cm.
- 4 Grit pipes within the grit pump room shall be installed by the Contractor in accordance with P&ID drawing No. INS-103-004 in this set.
- 5 The Grease collection trough shall be heat traced.
- 6 The Contractor shall provide air intake louvers located at each side of the grit pump room to allow for natural air circulation.



KEY PLAN

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 2 All pipes installed outside shall be heat traced.
- 3 In the future the capacity of the grit removal facility may be higher than the current design flow. The overflow weir trough elevation may be lowered by 5 cm to accommodate future higher flows and the maximum water level in the tanks may increase by 2 cm.

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REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS

AREA 103

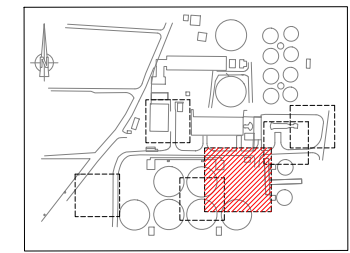
SECTIONS 10 & 12

Grit and grease removal tank



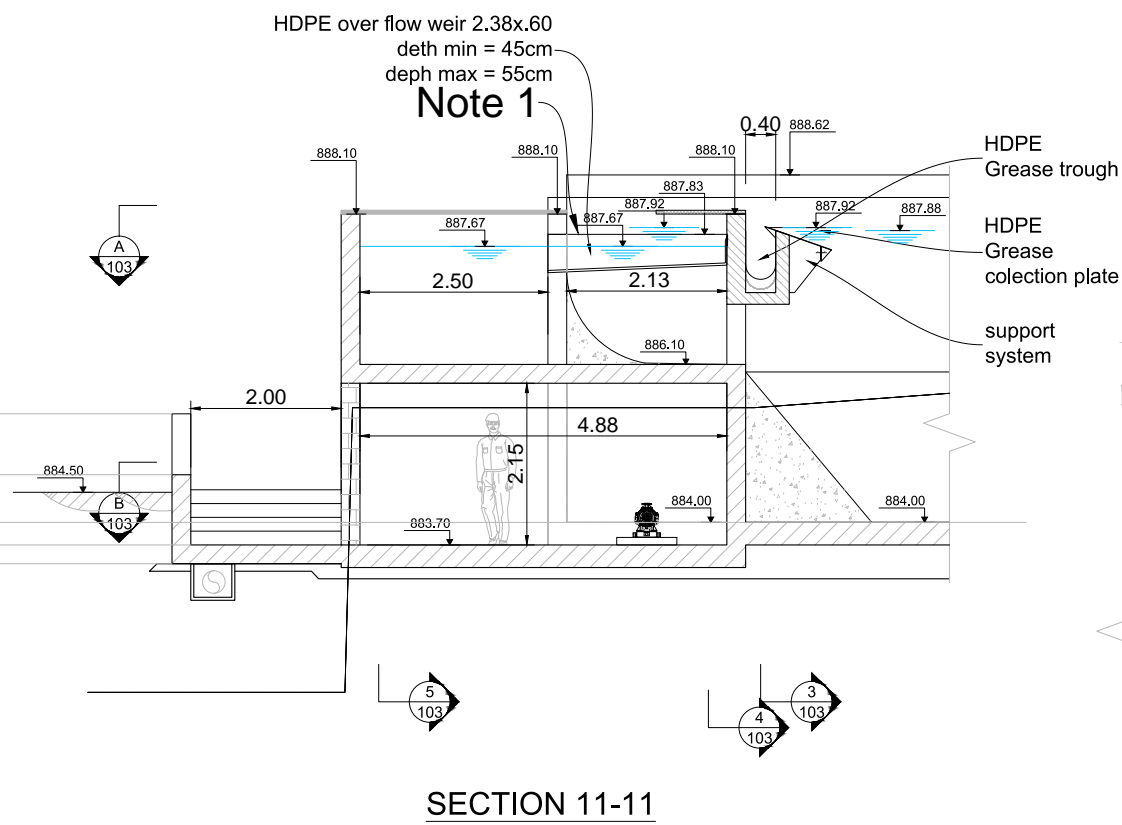
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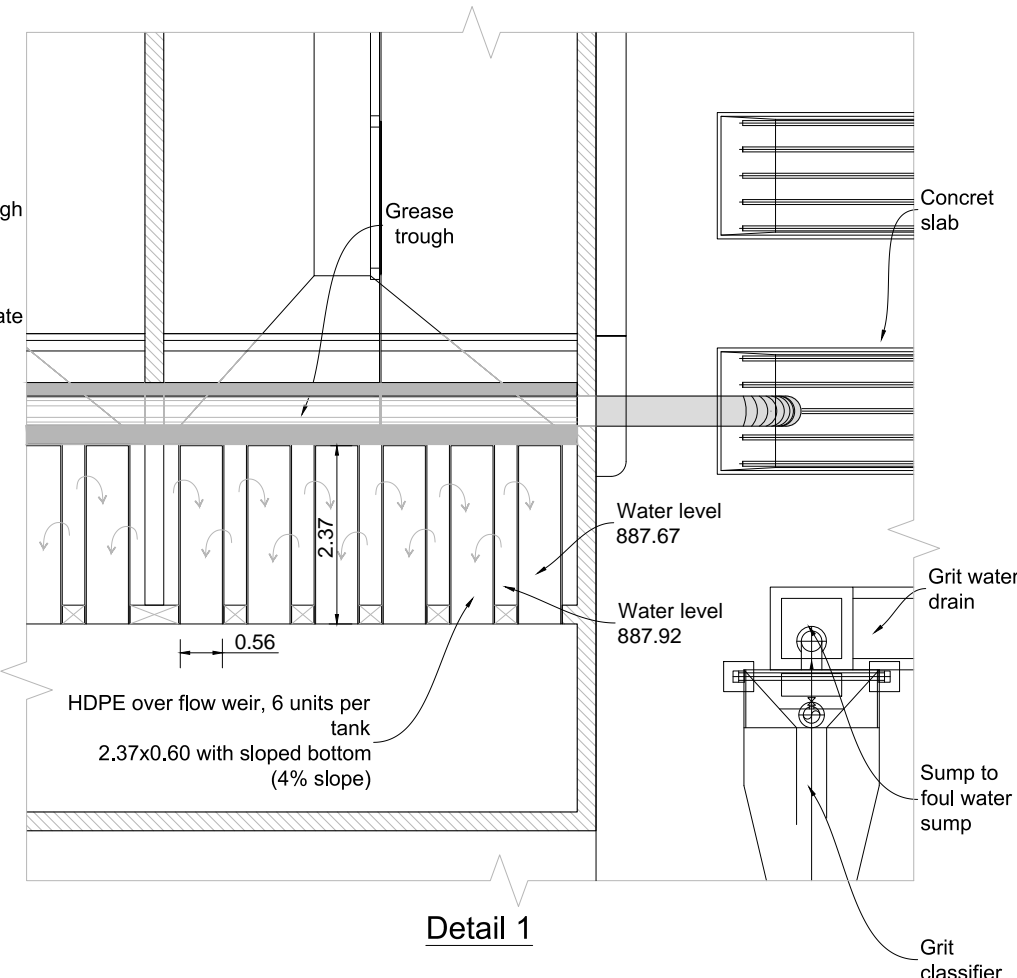


**KEY PLAN**

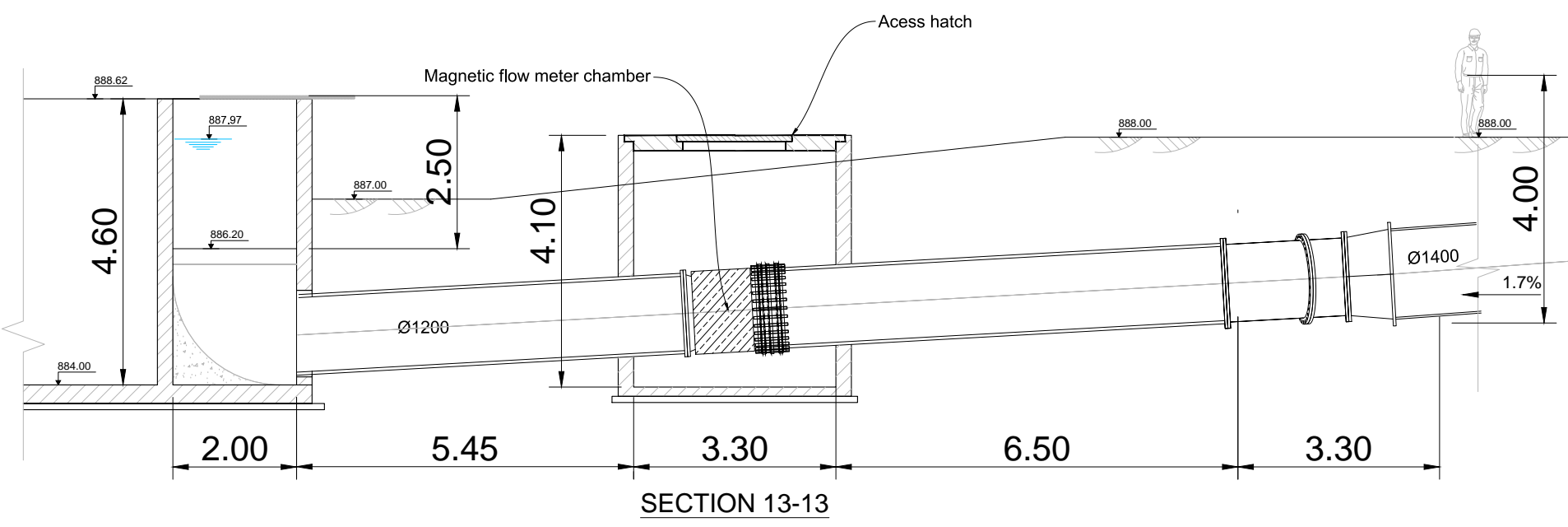
1 Each of the 6 overflow weirs per tank shall be fabricated as one single piece to ensure alignment of the top section serving as weir. Alignment tolerance shall be +/- 0.1%. The shape may be adapted to facilitate stacking during transport, but the total weir length shall be respected (2.13 m x 12 weirs per tank).



**SECTION 11-11**

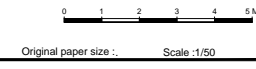


**Detail 1**



**SECTION 13-13**

3	Tender Detail Design	CLN	31/01/2014
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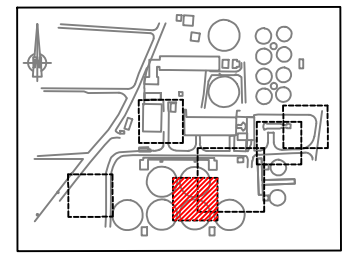
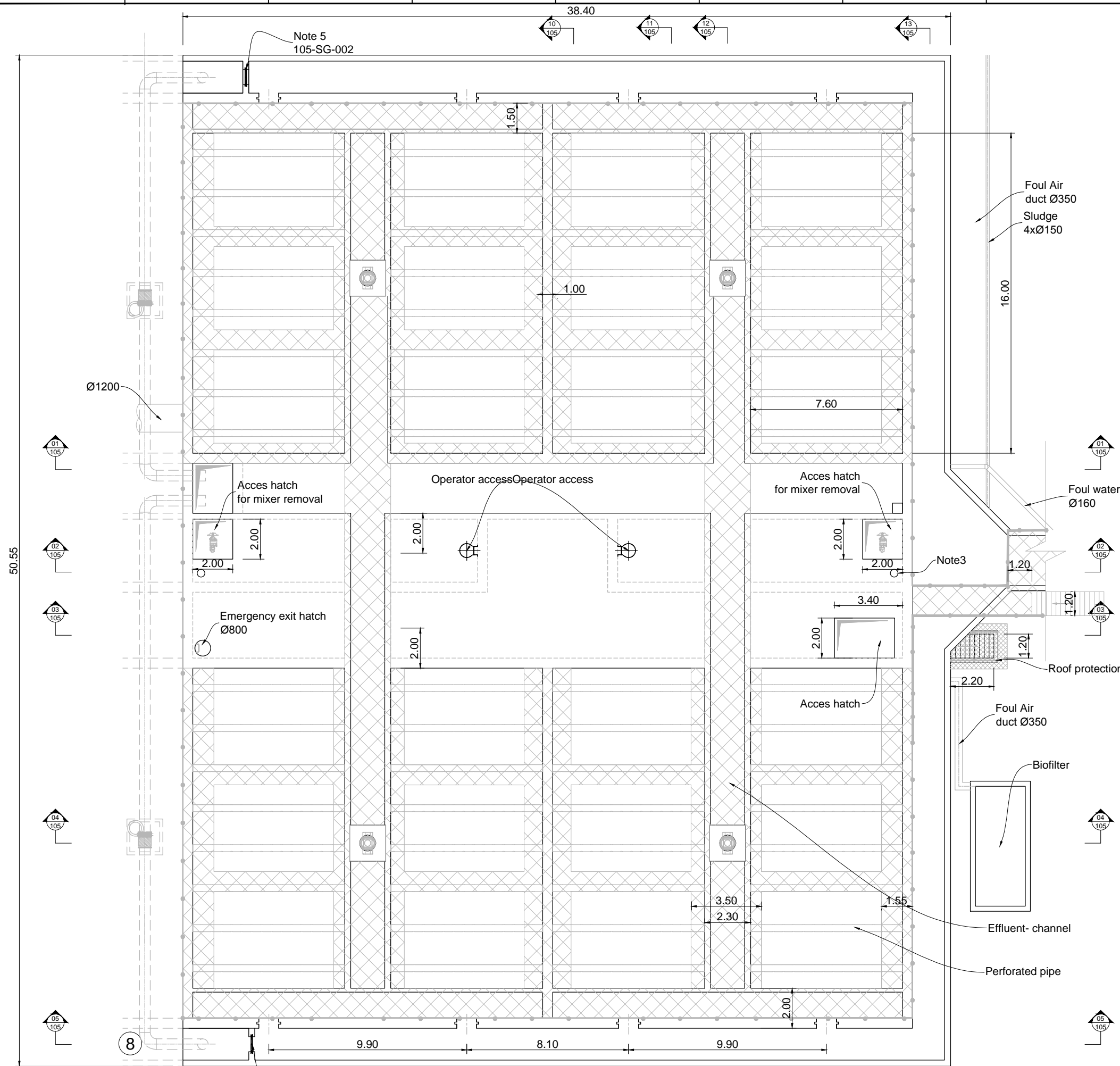
REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS

AREA 103  
SECTIONS 11 & 13 and detail 1  
Grit and grease removal tank

DATE: \_\_\_\_\_  
DRAWN: FVR  
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ART	1312155	DD	MND	103	105	0
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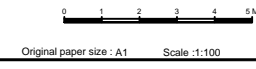


**KEY PLAN**

**NOTE :**

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 2 In phase 2, the lamellar tanks may be extended with two cells and one central gallery with sludge storage. Contractor shall submit in shop drawings the structural details which will allow for a cost effective future extension.
- 3 Fresh air intake. Contractor to submit detail in shop drawings.
- 4 Access shall be on both sides of the lamellas in order to allow cleaning at a maximum distance of 3meters.
- 5 The sluice gates 105-SG-001 and -002 shall be automatically opened to bypass the sedimentation tanks in case flows higher than 4.9 m<sup>3</sup>/s are treated in the screening and grit removal.
- 6 At each stop log location, the Contractor shall provide a fixing plate for the temporary installation of a mobile jib crane for lifting or placing the stop log leaf.

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REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS  
AREA 105  
PRIMARY SETTLING TANK  
PLAN VIEW

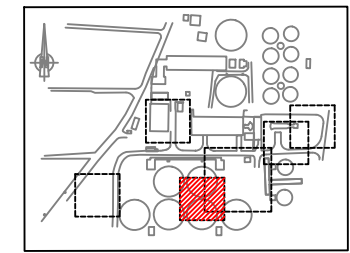


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APPROVED : CTF

ART	1312155	DD	MND	105	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

**FUTURE PRIMARY SETTLING TANK**  
Note 5 105-SG-001  
**PLAN VIEW**

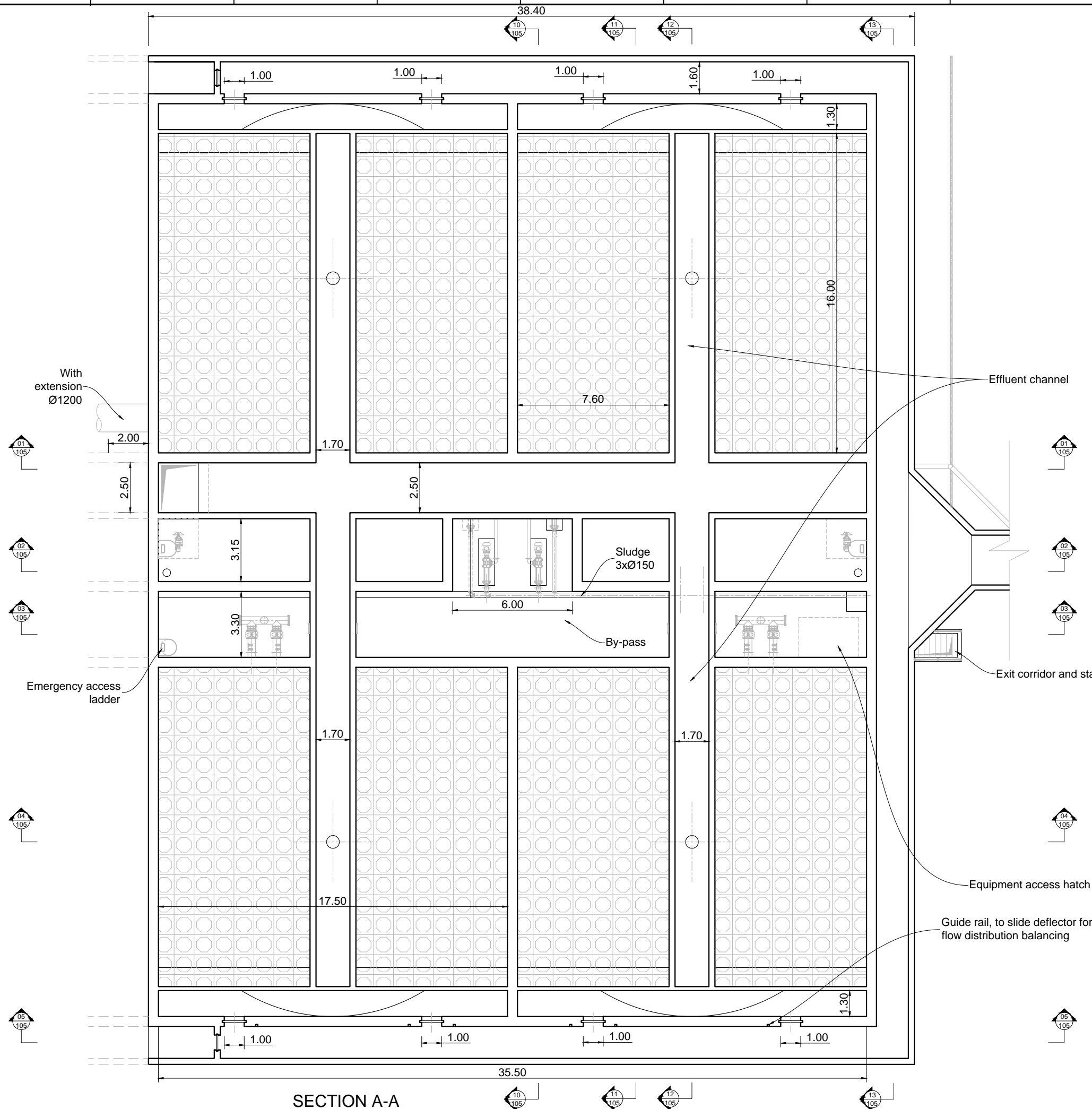
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**KEY PLAN**

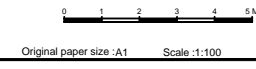
**NOTE :**

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 2 In phase 2, the lamellar tanks may be extended with two cells and one central gallery with sludge storage. Contractor shall submit in shop drawings the structural details which will allow for a cost effective future extension.
- 3 Fresh air intake. Contractor to submit detail in shop drawings.
- 4 Contractor shall provide where indicated. Contractor shall provide set of deflector plates = 4 units 15cm wide and 1m60 high and 4 units 25cm wide and 1m60 high. Deflector plates shall be equipped with lifting ring.



**SECTION A-A**

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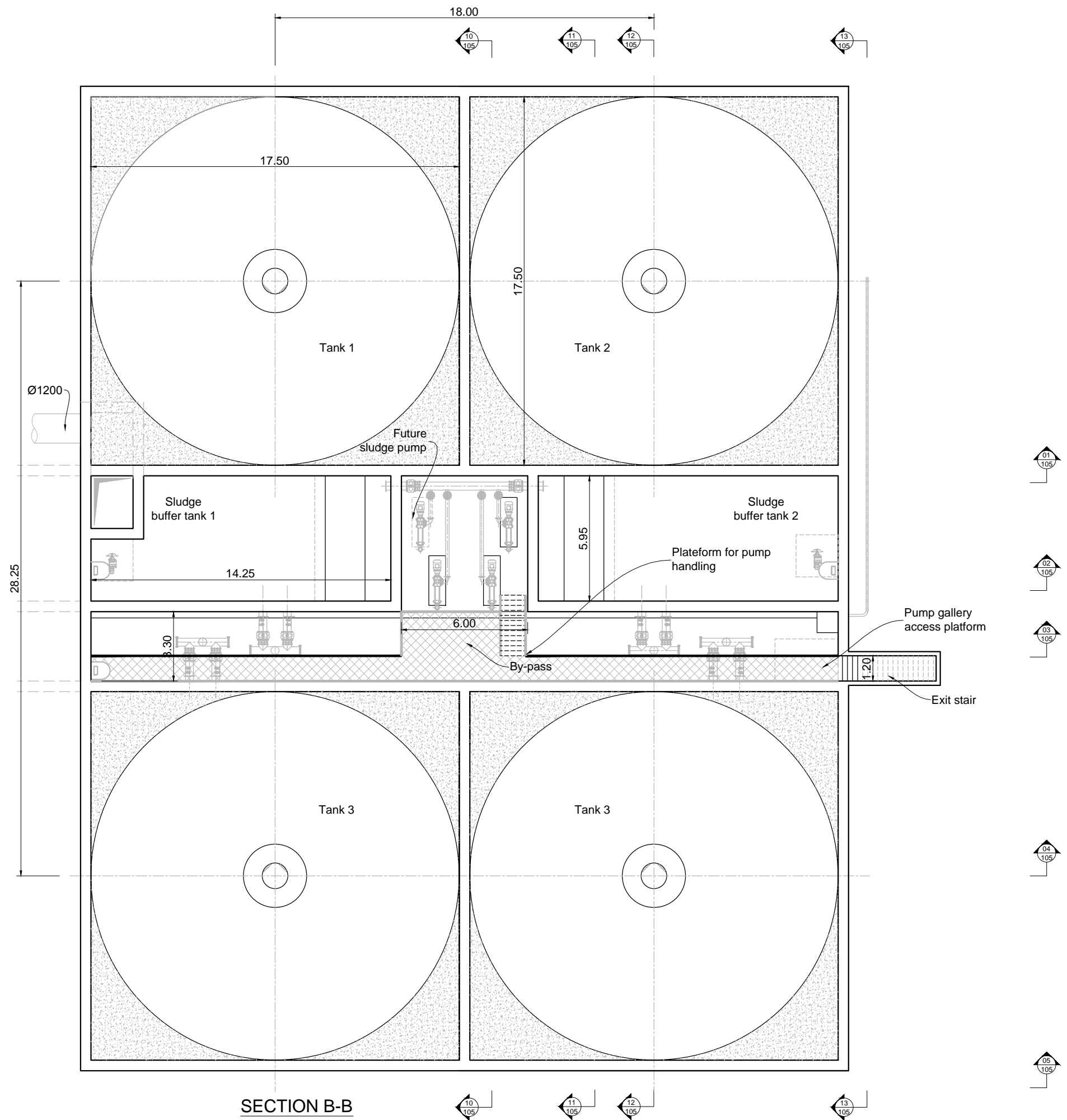
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DETAILED DESIGN

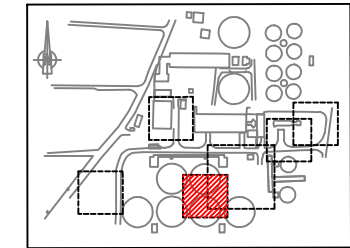
MAIN DRAWINGS  
AREA 105  
PRIMARY SETTLING TANK  
SECTIONS A

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	APPROVED :	CTF

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SECTION B-B

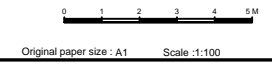


KEY PLAN

**NOTE :**

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 2 In phase 2, the lamellar tanks may be extended with two cells and one central gallery with sludge storage. Contractor shall submit in shop drawings the structural details which will allow for a cost effective future extension.
- 3 Blind flange shall be provided for cleaning purpose. A connection to a temporary flexible hose shall be provided to allow sludge extraction from 3 lamellar tank when one storage is out of service for maintenance
- 4 note 4 : All interior piping shall be provided by the Contractor in Accordance with the P&IDs. The Contractor shall submit shop drawing showing all interior piping.

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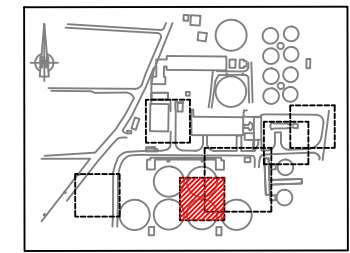
REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS  
AREA 105  
PRIMARY SETTLING TANK  
SECTION B




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 APPROVED : CTF

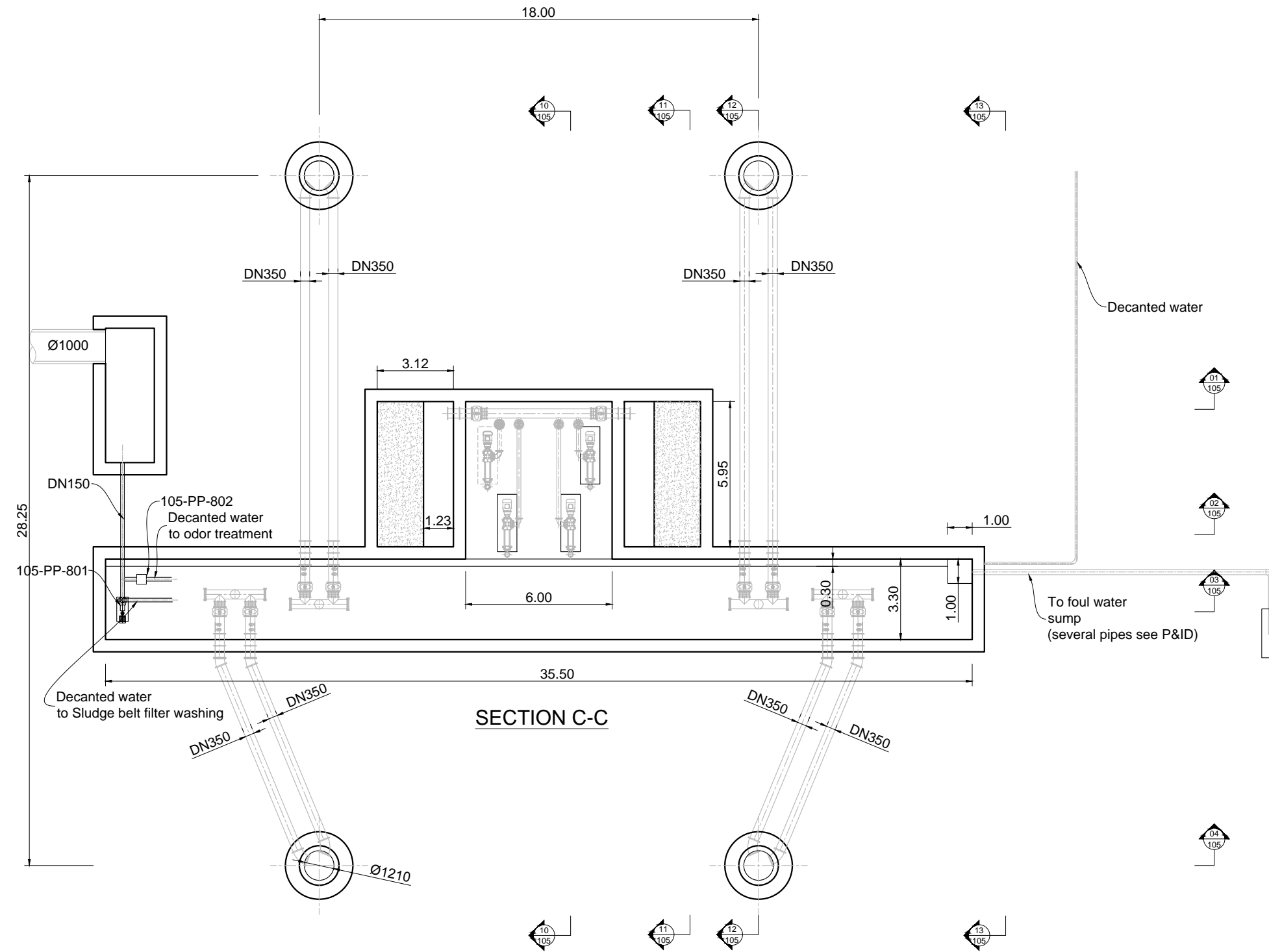
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**KEY PLAN**

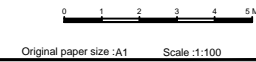
**NOTE :**

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 2 In phase 2, the lamellar tanks may be extended with two cells and one central gallery with sludge storage. Contractor shall submit in shop drawings the structural details which will allow for a cost effective future extension.
- 3 All interior piping shall be provided by the Contractor in Accordance with the P&IDs. The Contractor shall submit shop drawing showing all interior piping.



**SECTION C-C**

3	Tender Detail Design	CLN	31/01/2014
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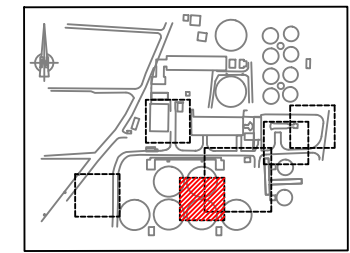
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WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTW  
DETAILED DESIGN

MAIN DRAWINGS  
AREA 105  
PRIMARY SETTLING TANK  
SECTION C

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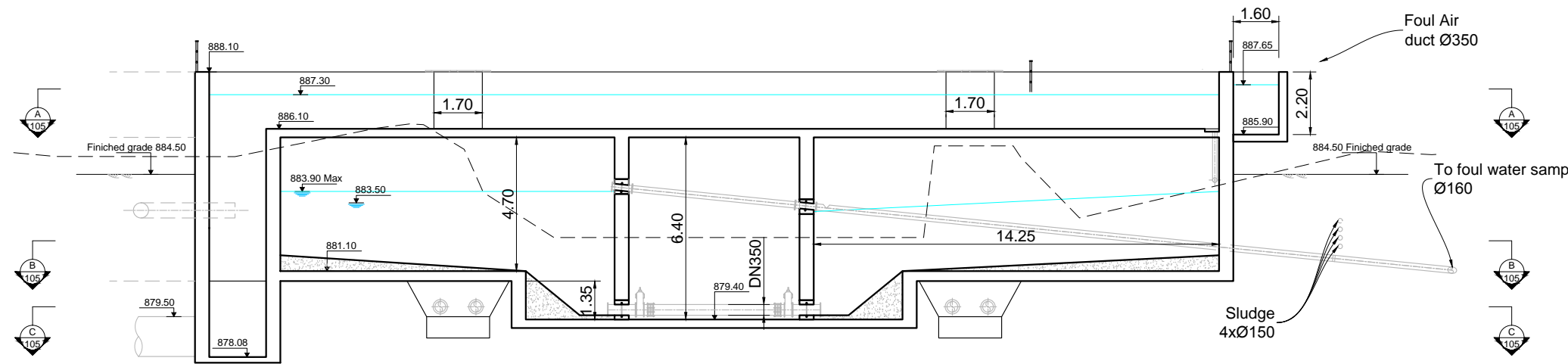
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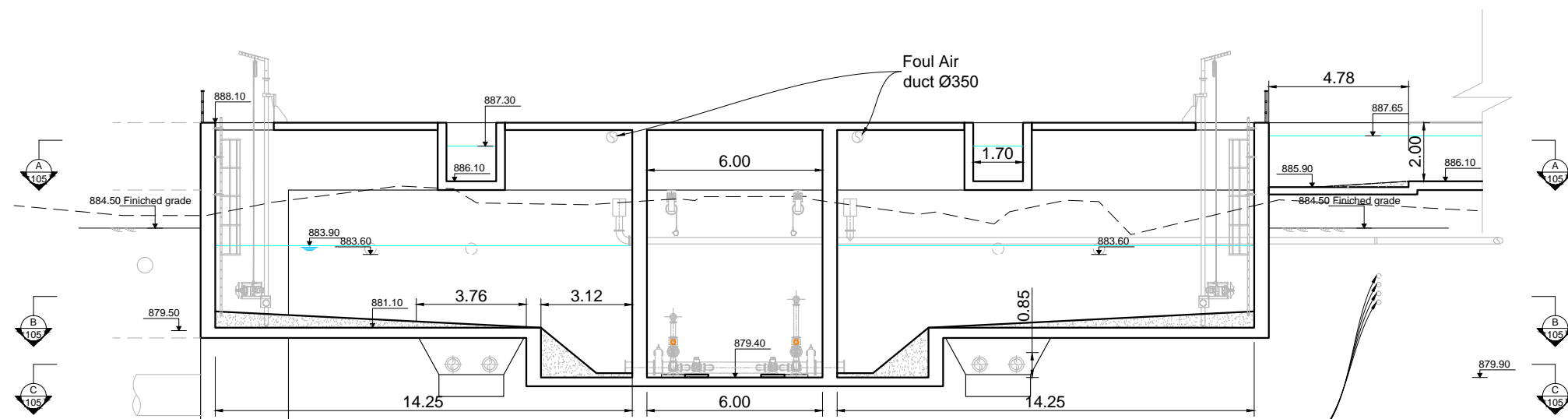
**KEY PLAN**

**NOTE :**

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 2 In phase 2, the lamellar tanks may be extended with two cells and one central gallery which will allow for a cost effective future extension.
- 3 The effluent pipe shall be installed to allow for the construction of the future lamellar tank extension without damage and without service interruption. Contractor to adjust pipe depth as necessary to meet this constraint. Contractor shall provide details on shop drawings of the pipe bed for the 20 m where the pipe will be under the future extension.
- 4 The overflow standpipe diameter shall be 350 mm and connect to the foul water pipe with an eccentric reduction 350 mm to 150 mm on the horizontal section. The invert of the 350 mm and 150 mm pipes shall be at the same elevation.



**SECTION 01-01**



**SECTION 02-02**

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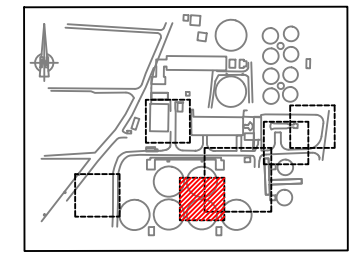
REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS  
AREA 105  
PRIMARY SETTLING TANK  
SECTIONS 01 & 02

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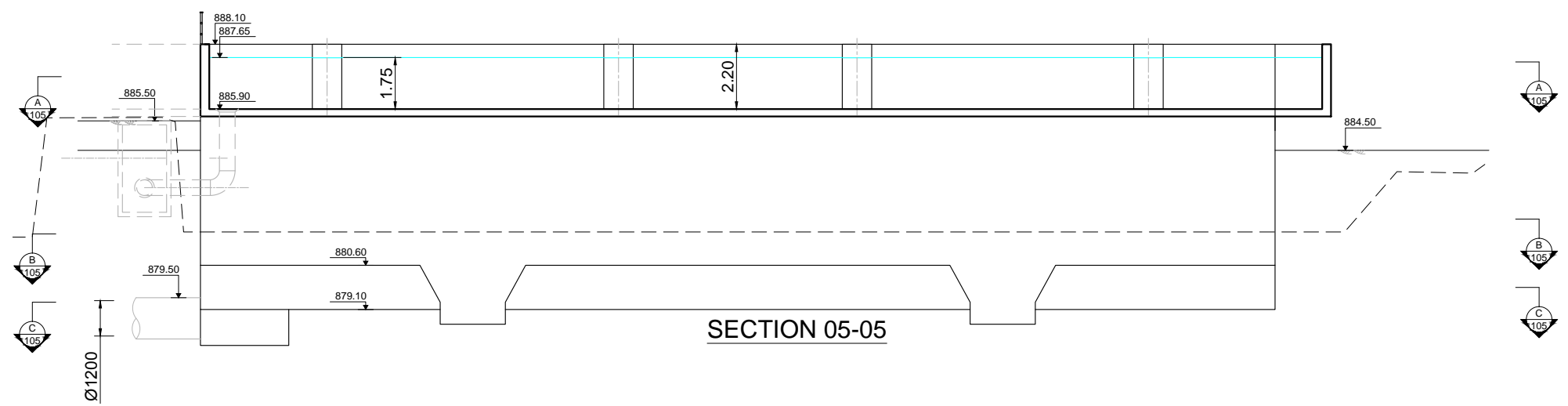
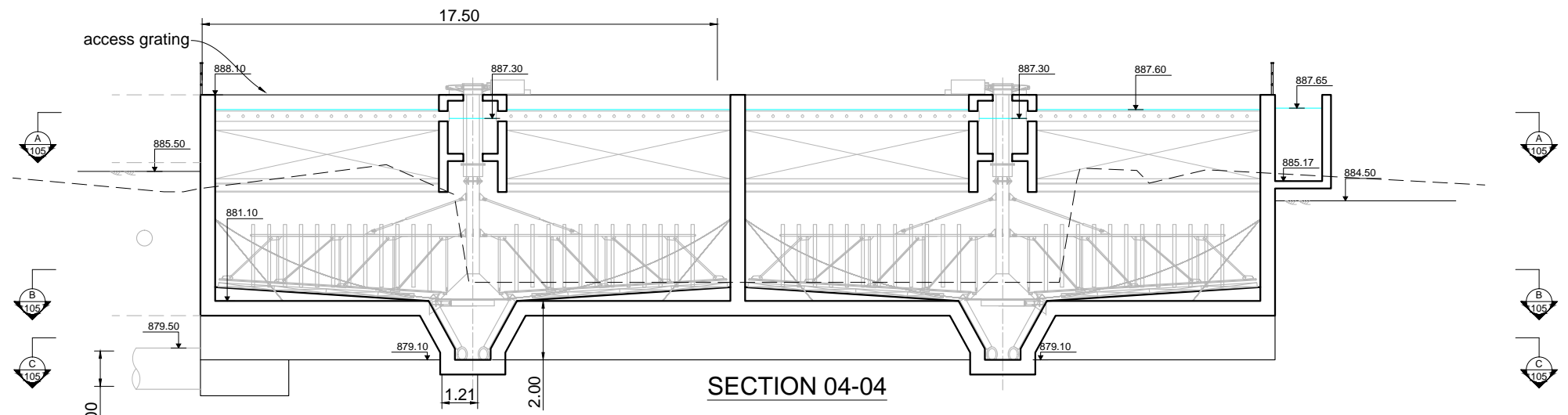
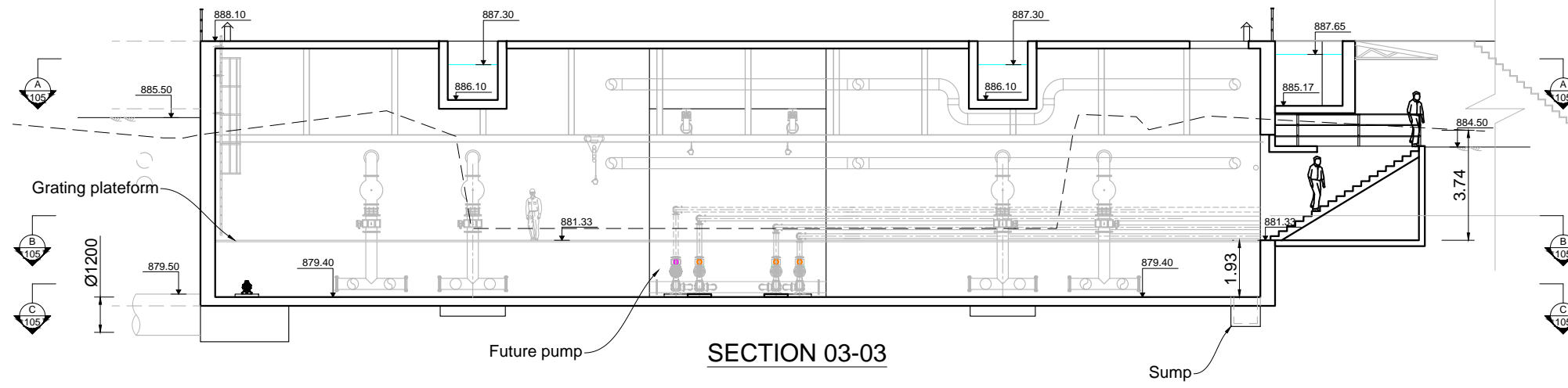
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TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



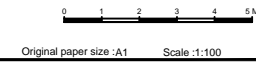
**KEY PLAN**

**NOTE :**

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 2 In phase 2, the lamellar tanks may be extended with two cells and one central gallery with sludge storage. Contractor shall submit in shop drawings the structural details which will allow for a cost effective future extension.
- 3 The sludge scraper is suspended to the effluent channel. The weight of the scraper mechanism, including motor, is 4 500 kg. The details of the support system shall be submitted by the Contractor in the shop drawings.



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0	FIRST ISSUE	FVR	06/2013
NO.	REVISIONS	BY	DATE



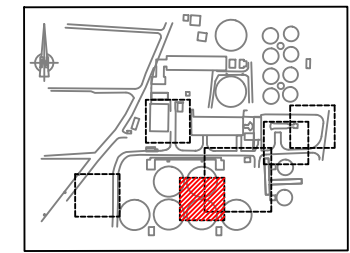
REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTW  
DETAILED DESIGN

MAIN DRAWINGS  
AREA 105  
PRIMARY SETTLING TANK  
SECTIONS 03, 04 & 05

DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

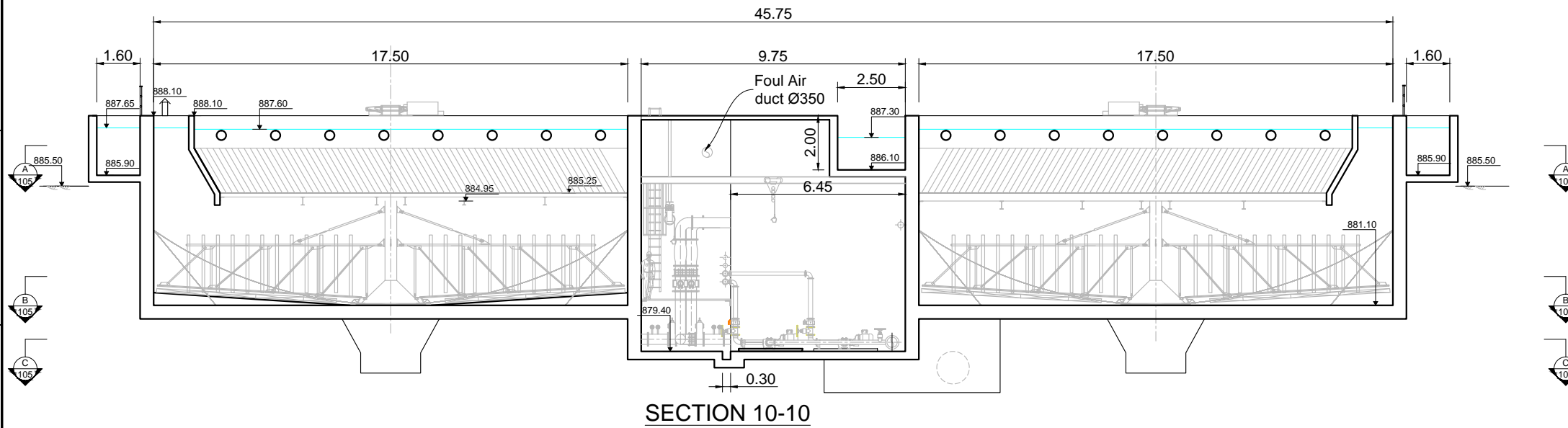
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TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



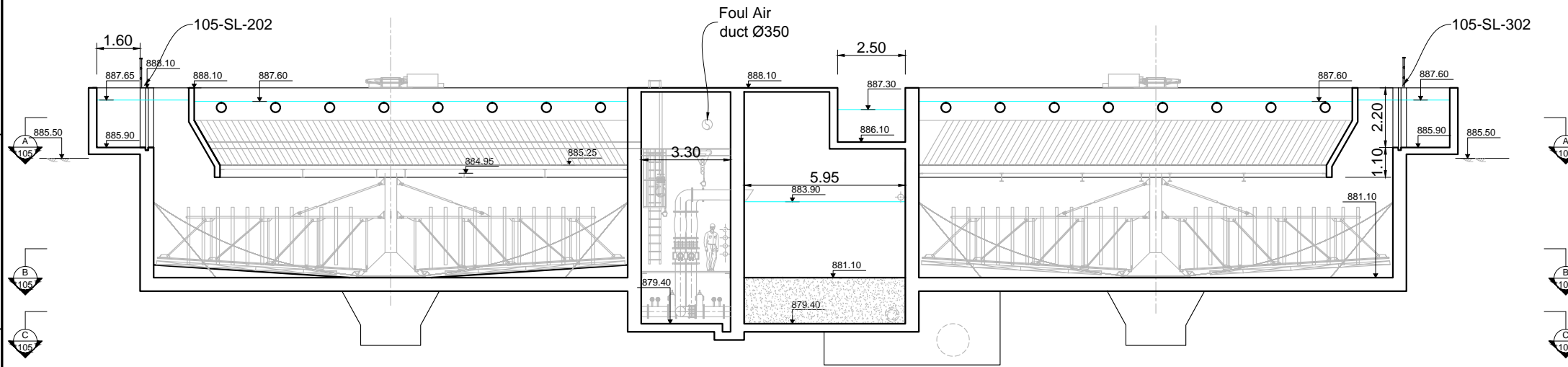
**KEY PLAN**

**NOTE :**

- 1 All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- 2 In phase 2, the lamellar tanks may be extended with two cells and one central gallery with sludge storage. Contractor shall submit in shop drawings the structural details which will allow for a cost effective future extension.
- 3 ND 400 Perforated pipes shall be installed for decanted effluent collection. Contractor shall provide details of shape and support system on the shop drawings  
The holes of the perforated pipes shall be 20 cm below the maximum water surface, in order to prevent clogging in case of lasting freezing conditions, during which a sheet of ice may form on the surface of the lamellar tanks. The Contractor may propose a different solution for collecting decanted water.
- 4 Contractor shall provide details of lamellas support system on the shop drawings. Estimated lamella weight is 65 kg/m<sup>2</sup>. The anchoring system shall support 2 times the lamella weight to account for sludge attached to the lamellas. Contractor to indicate exact supported weight on shop drawings.
- 5 Walkway provided with a chain link fence as safeguard. poles for fence every 1.5m.



**SECTION 10-10**



**SECTION 11-11**

NO.	REVISIONS	BY	DATE
3	Tender Detail Design		31/01/2013
2	Final Detailed Design	DHE	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013



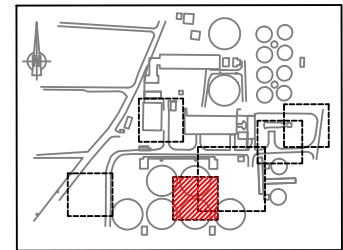
REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS  
AREA 105  
PRIMARY SETTLING TANK  
SECTIONS 10 & 11

	DATE :	
	DRAWN :	FVR
	CHECKED :	CTF
	APPROVED :	CTF

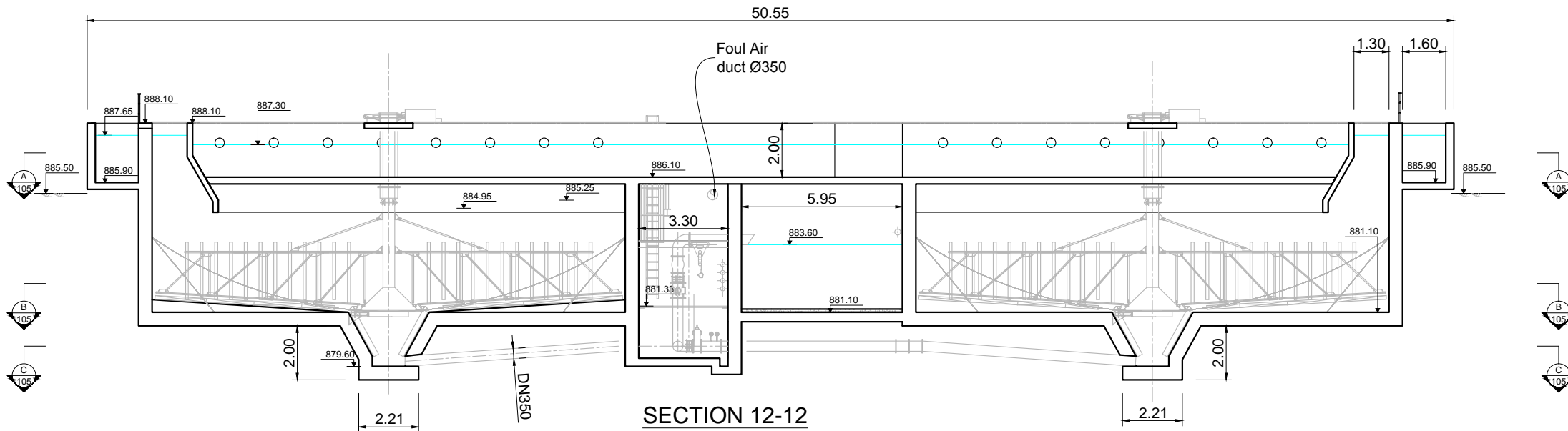
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TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



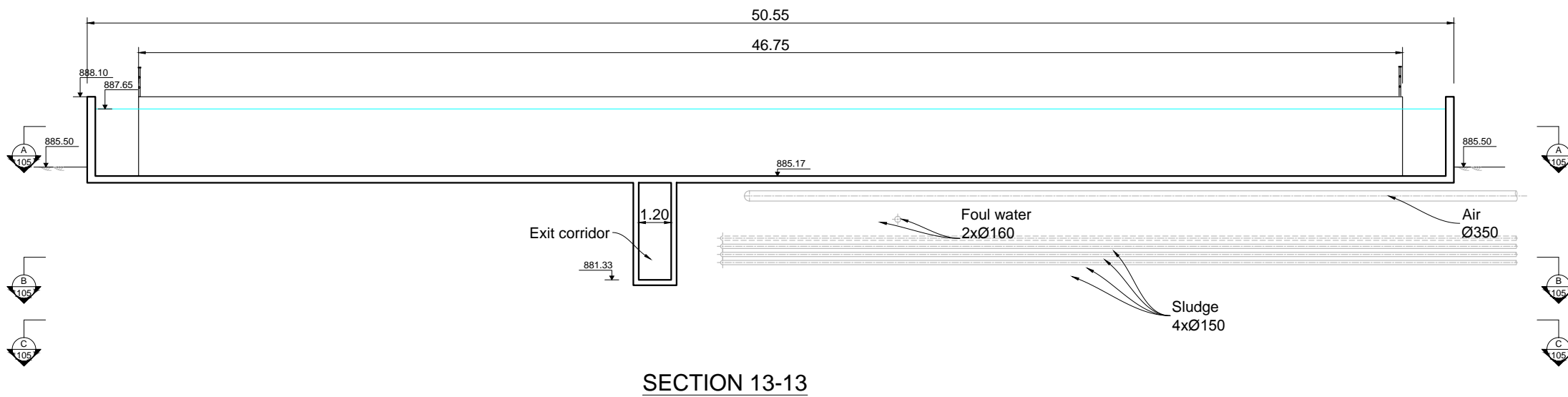
**KEY PLAN**

**NOTE :**

- ① All dimensions indicated are interior dimensions, based on process requirements. Contractor to adjust overall dimensions if wall thickness is changed on the shop drawings.
- ② In phase 2, the lamellar tanks may be extended with two cells and one central gallery with sludge storage. Contractor shall submit in shop drawings the structural details which will allow for a cost effective future extension.

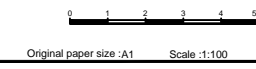


**SECTION 12-12**



**SECTION 13-13**

NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	DHE	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013



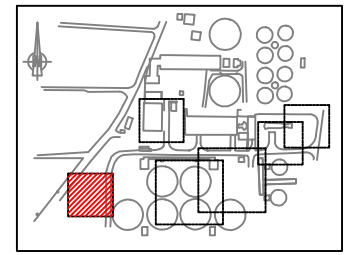
REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

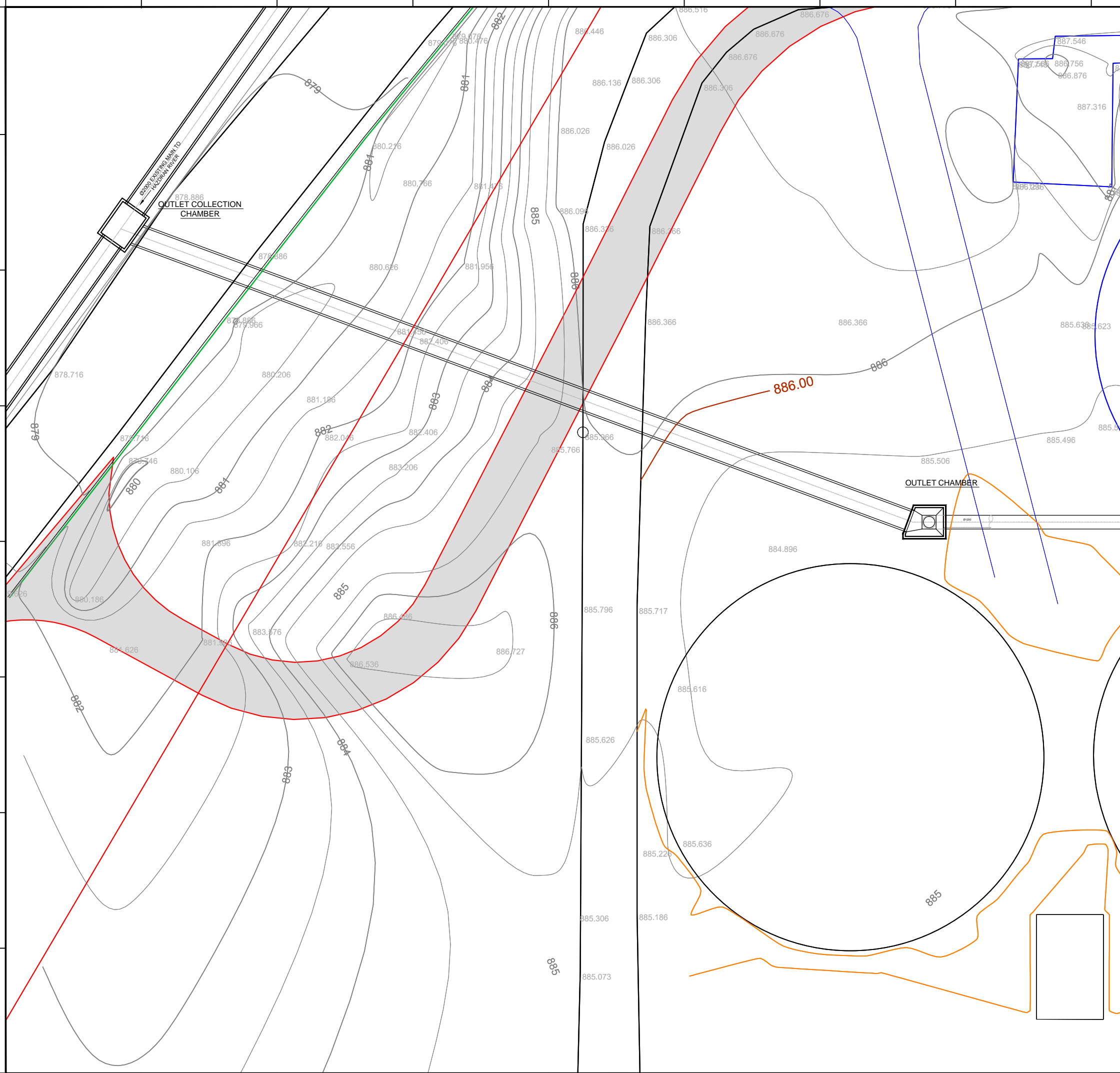
MAIN DRAWINGS  
AREA 105  
PRIMARY SETTLING TANK  
SECTIONS 12 & 13

	DATE :	
	DRAWN :	FVR
	CHECKED :	CTF
	APPROVED :	CTF

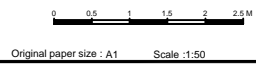
ART	1312155	DD	MND	105	104	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICILINE	AREA	NUMBER	INDEX



**KEY PLAN**



3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	DHE	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013
NO.	REVISIONS	BY	DATE



**REPUBLIC OF ARMENIA**  
**YEREVAN MUNICIPALITY**  
**WATER & SEWERAGE BOARD**

**REHABILITATION OF AERATSIA WWTP**  
**DETAILED DESIGN**

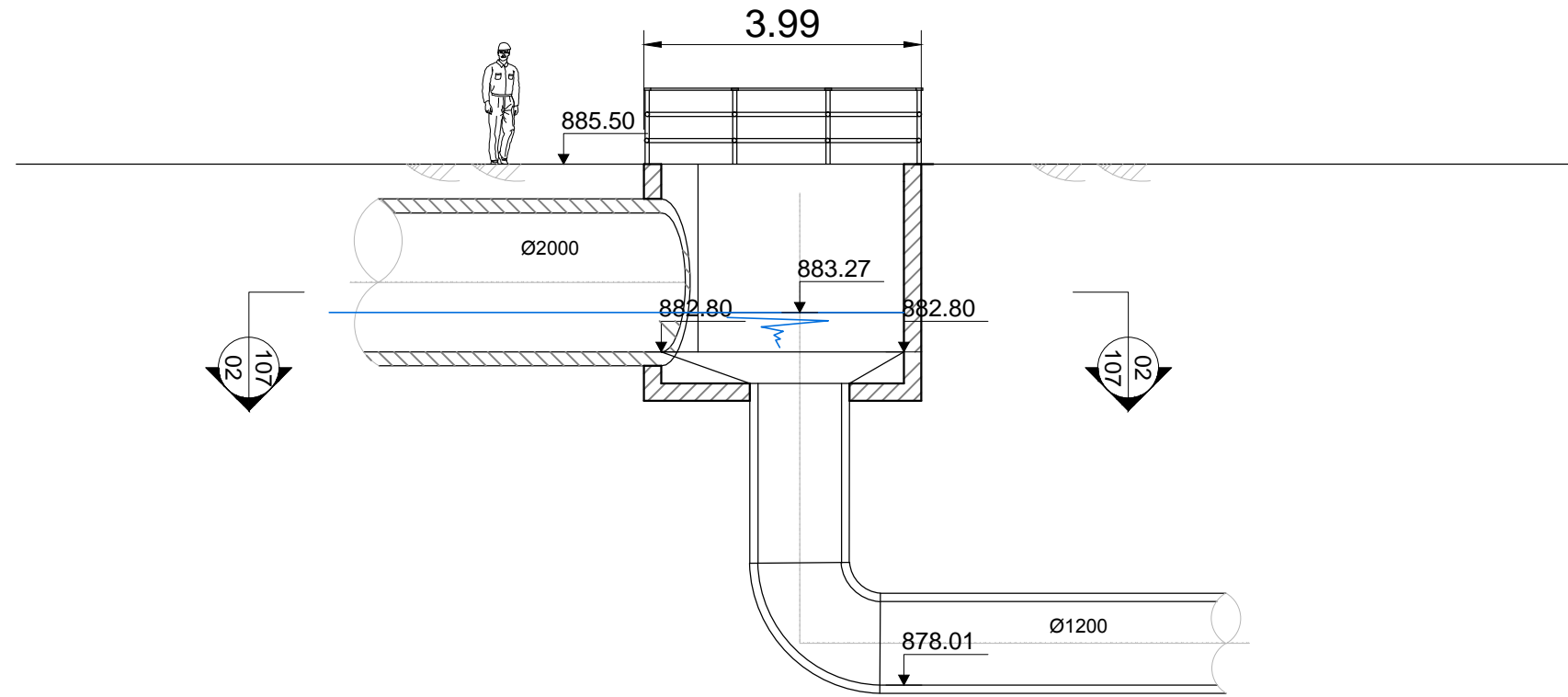
**MAIN DRAWINGS**  
 AREA 107  
 PLAN VIEW  
 DISCHARGE

	DATE: _____
	DRAWN: FVR
	CHECKED: CTF
	APPROVED: CTF

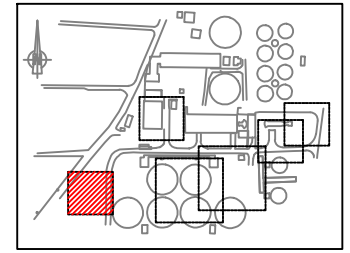
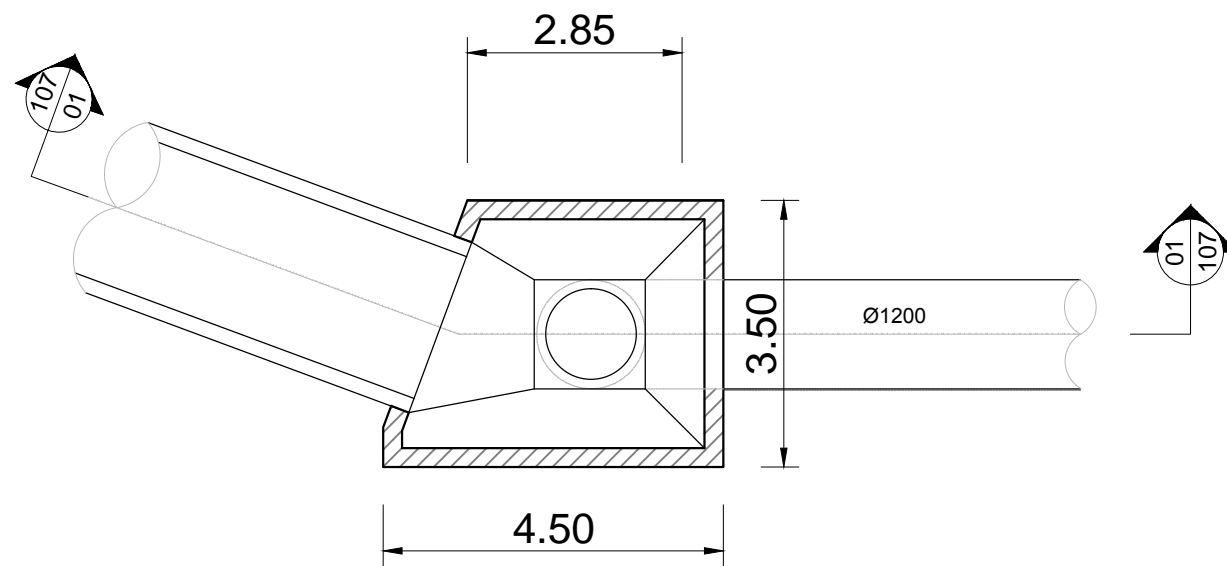
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TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

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# SECTION 01-01

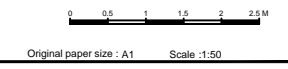


# SECTION 02-02



KEY PLAN

NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	CLN	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013



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YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP

DETAILED DESIGN

MAIN DRAWINGS

AREA 107

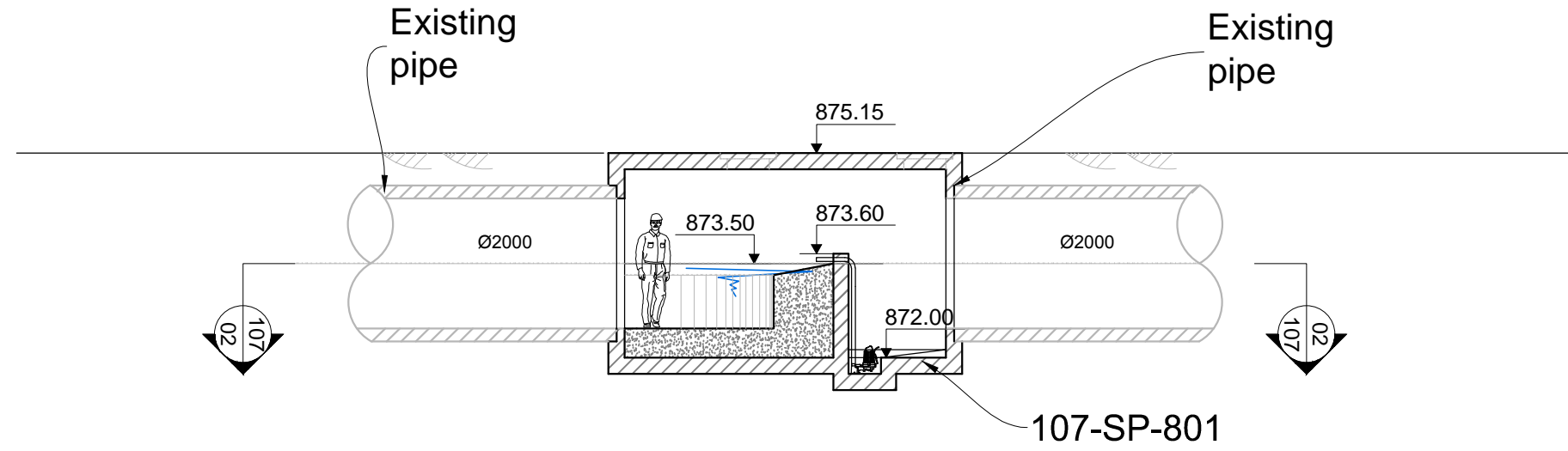
SECTION AND PLAN VIEW

Outlet chamber

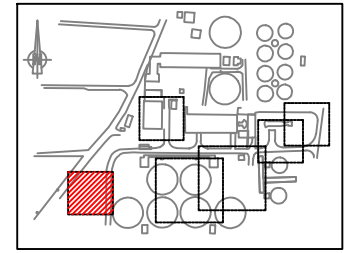
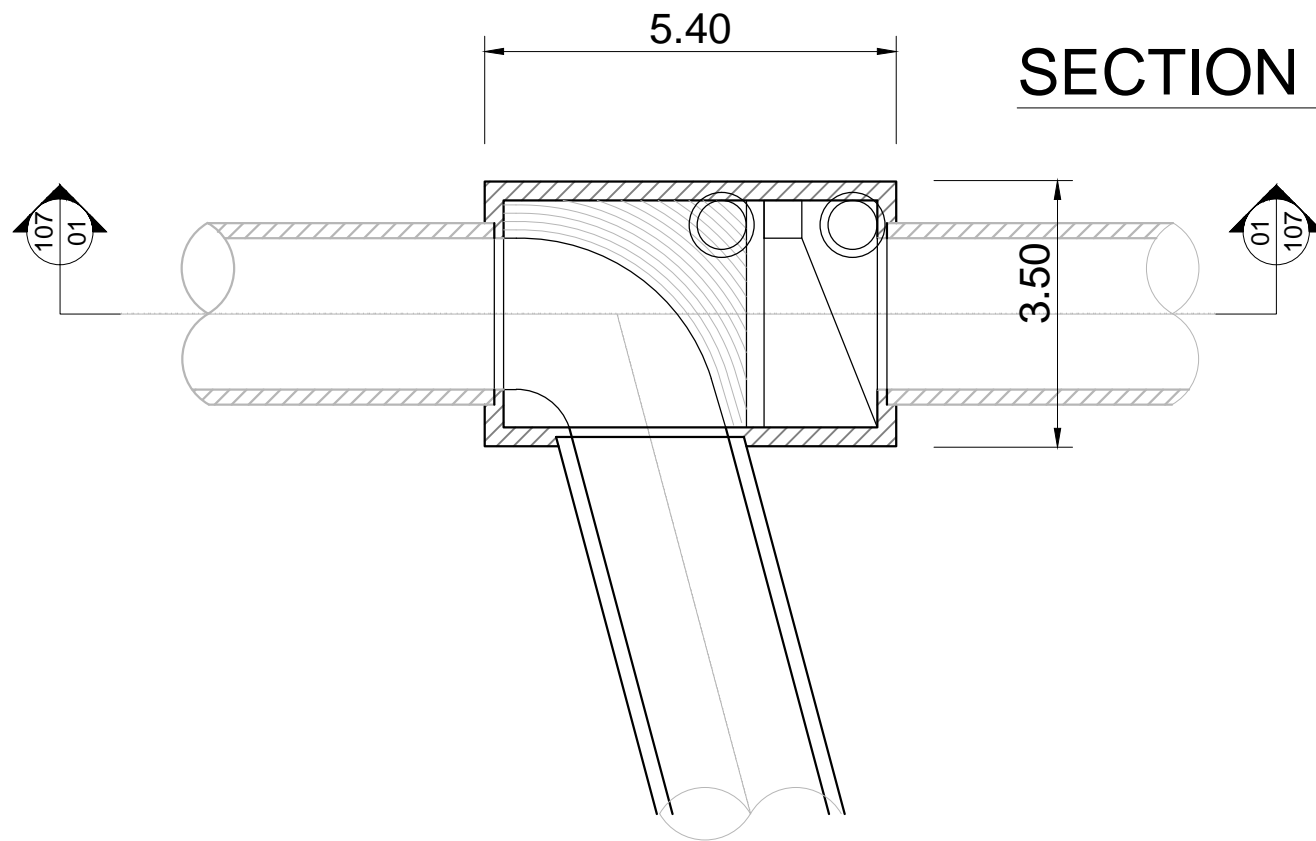
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APPROVED :	CTF

ART	1312155	DD	MND	107	101	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

# SECTION 01-01

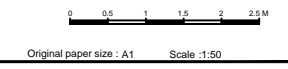


# SECTION 02-02



KEY PLAN

NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	CLN	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013



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YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP

DETAILED DESIGN

MAIN DRAWINGS

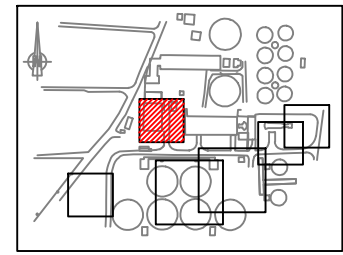
AREA 107

SECTION AND PLAN VIEW

Outlet connection chamber

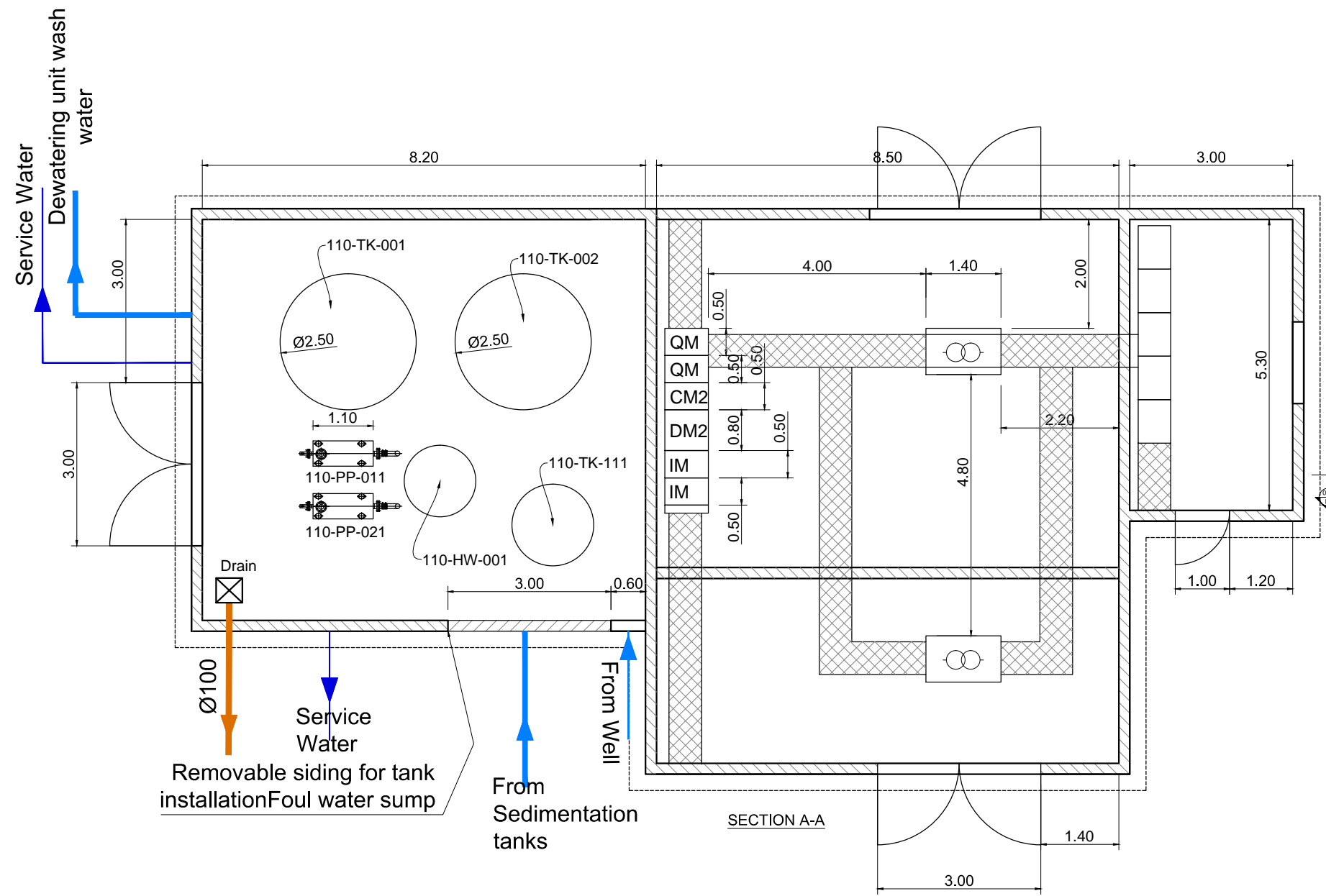
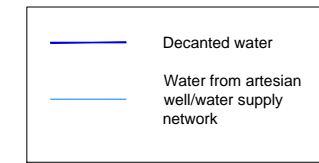
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ART	1312155	DD	MND	107	102	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



**KEY PLAN**

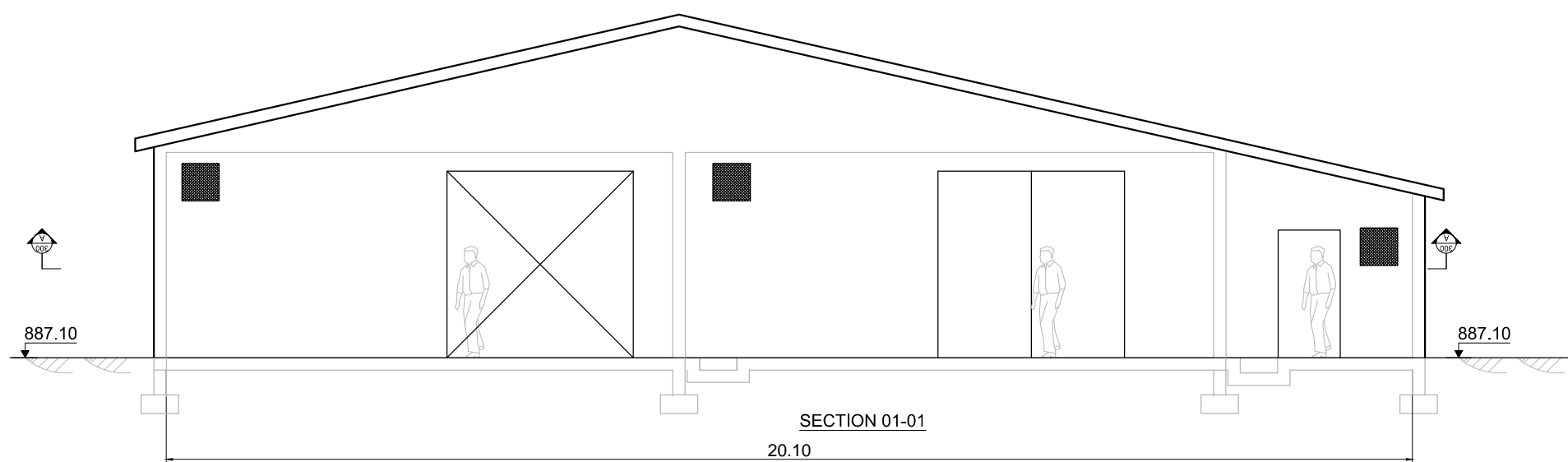
**LEGEND :**



Removable siding for tank installation  
Foul water sump

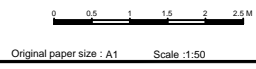
From Sedimentation tanks

From Well



**SECTION 01-01**  
20.10

NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
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1	Draft Detailed Design	FVR	07/2013
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YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS

AREA 110

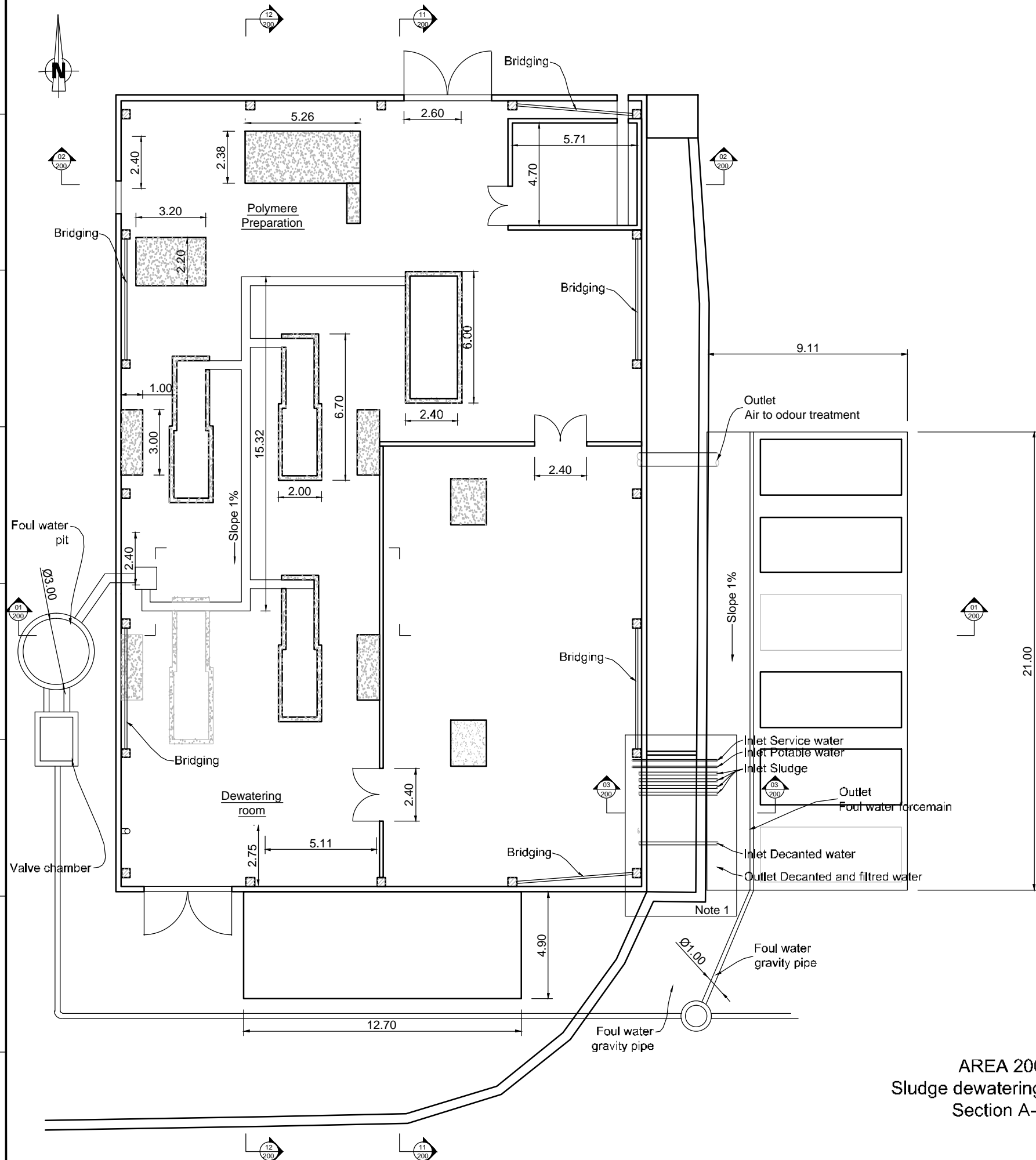
PLAN VIEW AND SECTION

Service water and new substation

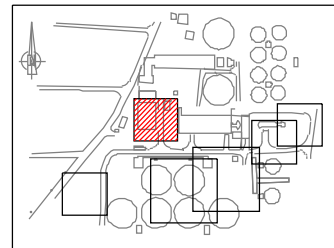


DATE :  
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CHECKED : CTF  
APPROVED : CTF

ART	1312155	DD	MND	110	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



AREA 200  
Sludge dewatering building  
Section A-A

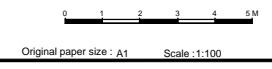


KEY PLAN

**NOTE :**

- 1 The following pipe penetrations from the yard piping to the solids handling building shall be provided by the Contractor:
  - Drinking water (from City supply)
  - Service water (well water)
  - Washwater for dewatering equipment
  - Decanted water for odor treatment
  - 3 primary sludge pipes
 The Contractor shall provide shop drawings with the invert elevation and plan view of pipe penetrations in the building.
- 2 All interior piping shall be provided by the Contractor in Accordance with the P&IDs. The Contractor shall submit shop drawing showing all interior piping.

3	Tender Detail Design	CLN	31/01/2014
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1	Draft Detailed Design	FVR	07/2013
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REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS

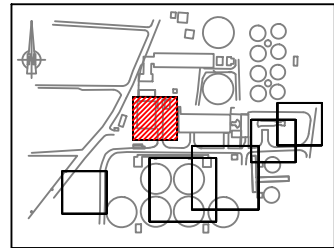
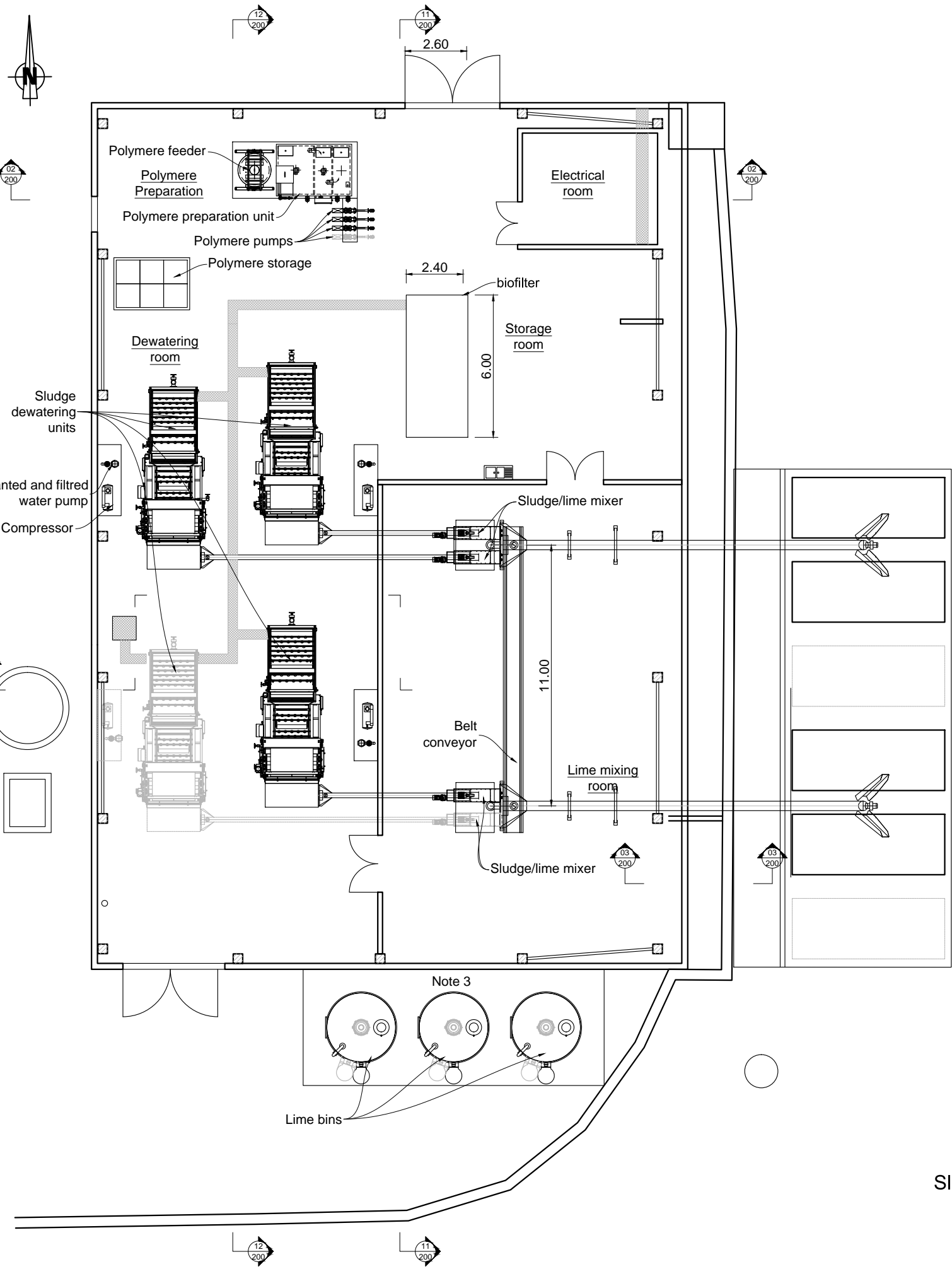
AREA 200  
PLAN VIEW A-A

Sludge dewatering units / Lime storage silos / Sludge storage



DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

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TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

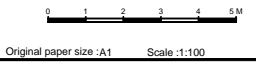


**KEY PLAN**

**NOTE :**

- 1 The following pipe penetrations from the yard piping to the solids handling building shall be provided by the Contractor:
  - Drinking water (from City supply)
  - Service water (well water)
  - Washwater for dewatering equipment
  - Decanted water for odor treatment
  - 3 primary sludge pipes
 The Contractor shall provide shop drawings with the invert elevation and plan view of pipe penetrations in the building.
- 2 All interior piping shall be provided by the Contractor in Accordance with the P&IDs. The Contractor shall submit shop drawing showing all interior piping.
- 3 Contractor shall provide shop drawings showing the lime dosing screws and the lime conveyors, including all support systems.

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WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS

AREA 200

PLAN VIEW B-B

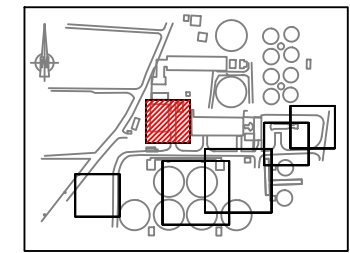
Sludge dewatering units / Lime storage silos / Sludge storage



DATE :  
DRAWN : FVR  
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TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

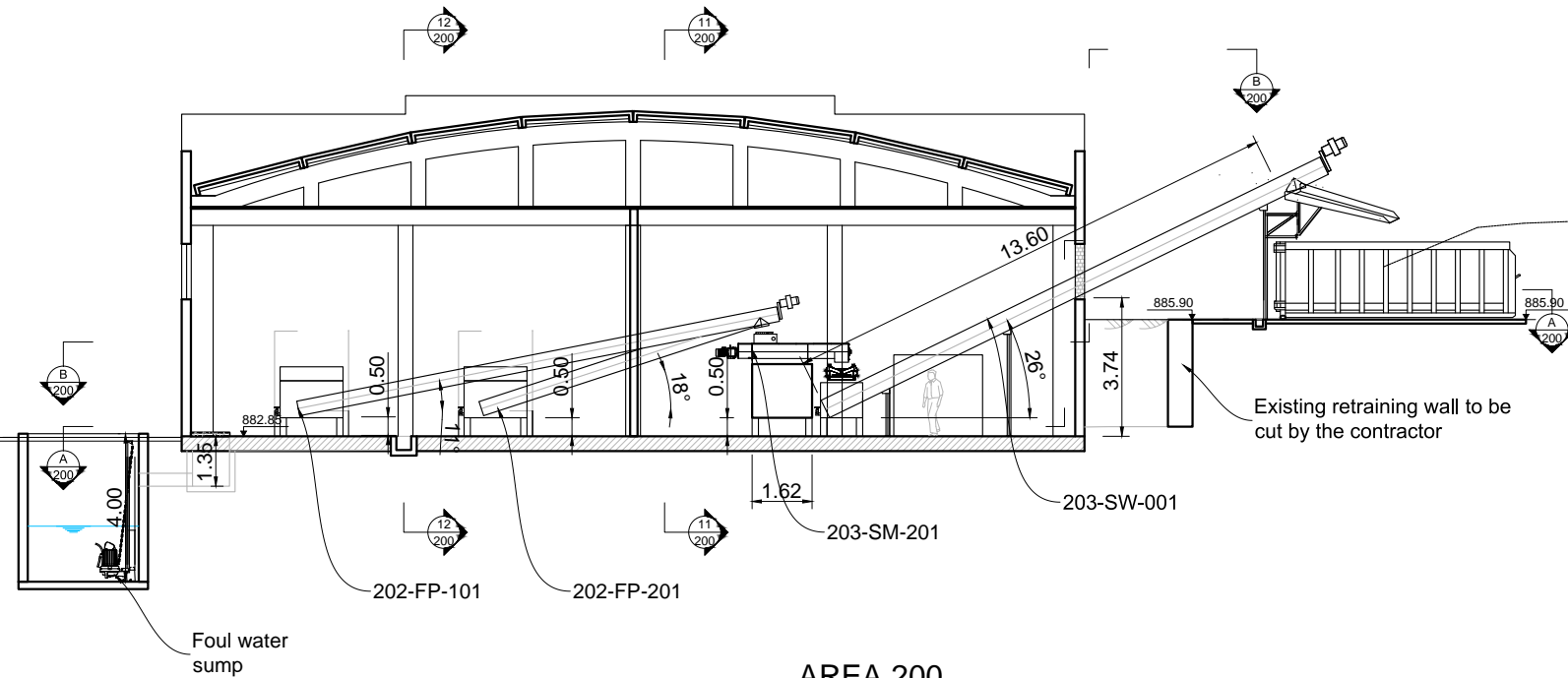
AREA 200  
Sludge dewatering building  
Section B-B



KEY PLAN

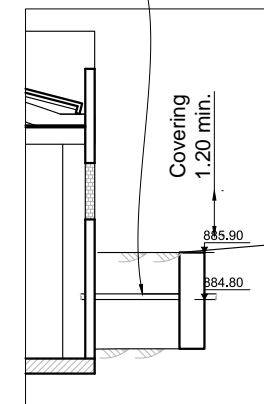
**NOTE :**

- ① The following pipe penetrations from the yard piping to the solids handling building shall be provided by the Contractor:
- Drinking water (from City supply)
  - Service water (well water)
  - Washwater for dewatering equipment
  - Decanted water for odor treatment
  - 3 primary sludge pipes
- The Contractor shall provide shop drawings with the invert elevation and plan view of pipe penetrations in the building.

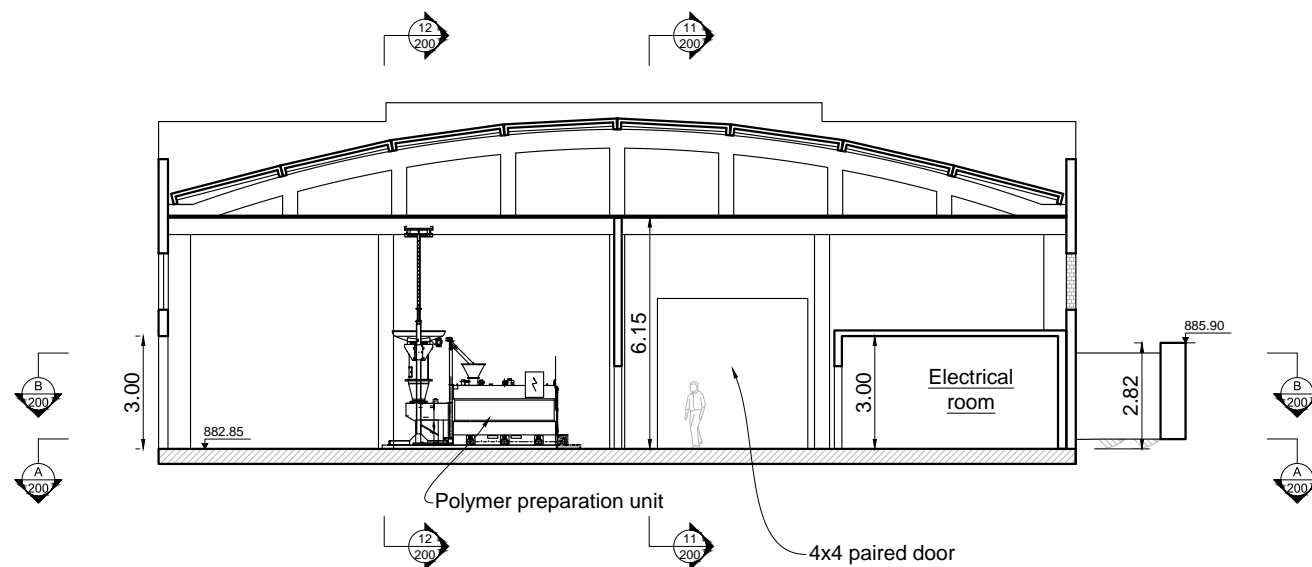


AREA 200  
Sludge dewatering building  
Section 01-01

Miscellaneous piping  
entering the building  
Note1



AREA 200  
Sludge dewatering building  
Section 03-03



AREA 200  
Sludge dewatering building  
Section 02-02

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REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

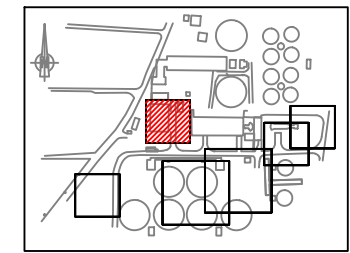
MAIN DRAWINGS

AREA 200  
SECTIONS 1, 2 & 3

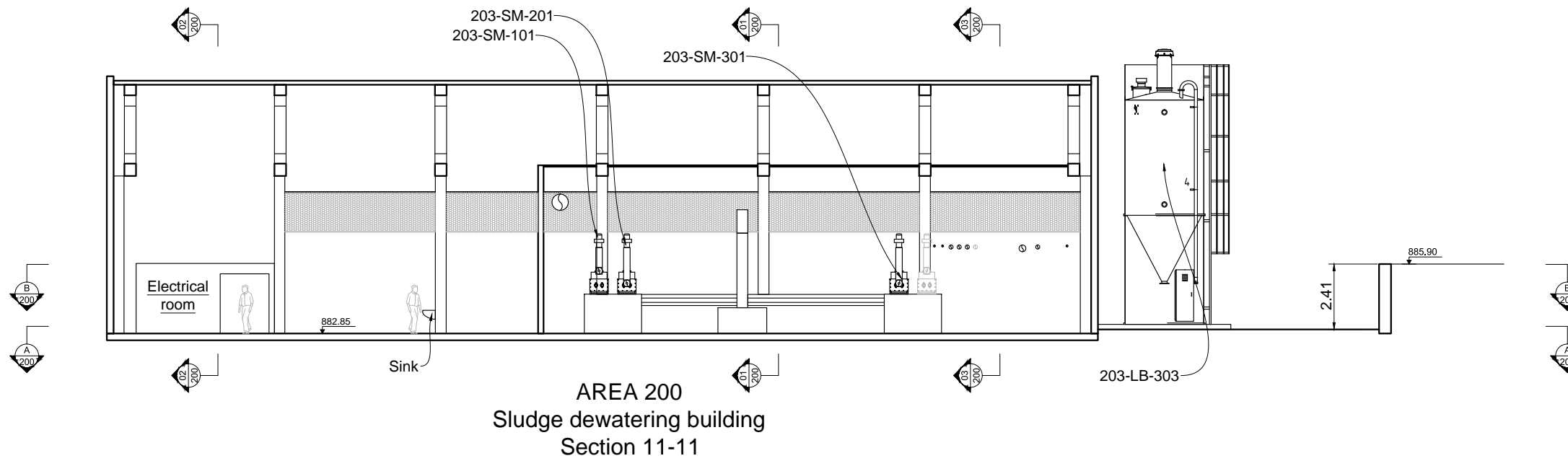
Sludge dewatering units / Lime storage silos / Sludge storage

	DATE :	
	DRAWN :	FVR
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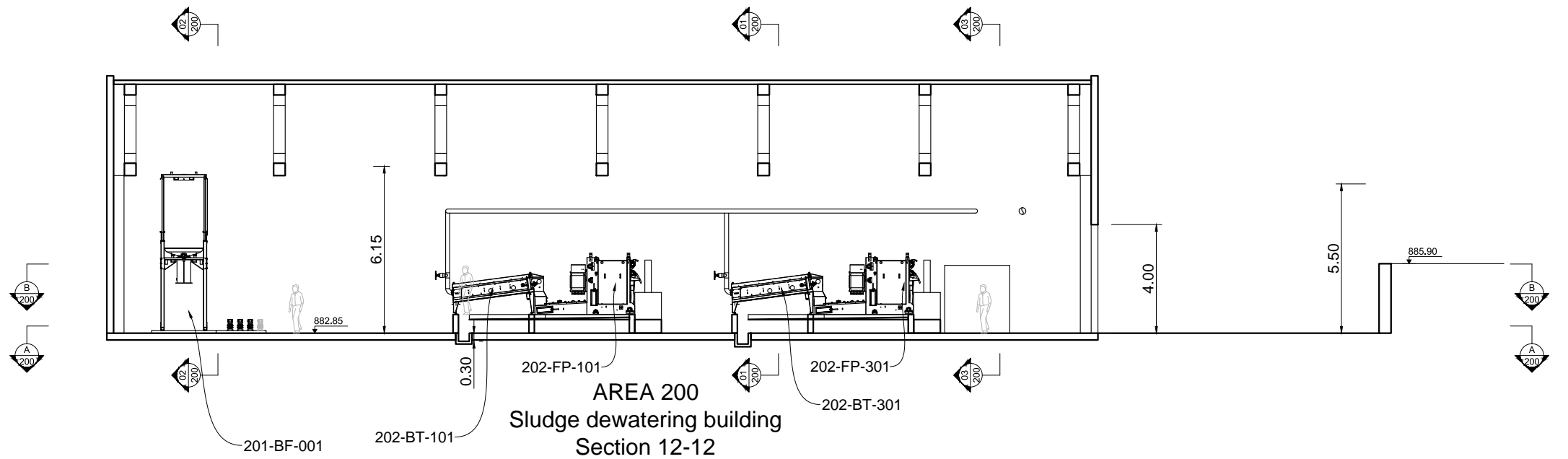
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TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



KEY PLAN



AREA 200  
Sludge dewatering building  
Section 11-11



AREA 200  
Sludge dewatering building  
Section 12-12

3	Tender Detail Design	CLN	31/01/2014
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1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013
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Original paper size :A1 Scale :1:100

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WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

MAIN DRAWINGS

AREA 200

SECTIONS 11 & 12

Sludge dewatering units / Lime storage silos / Sludge storage

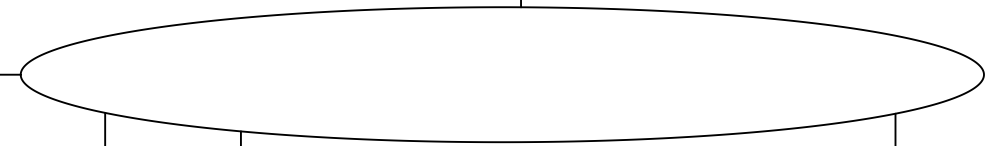
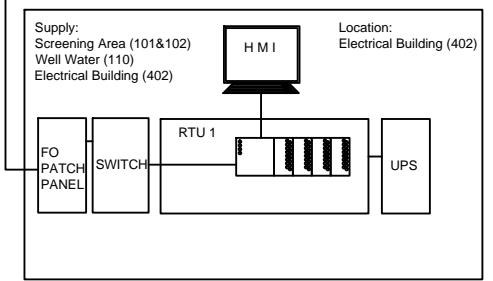
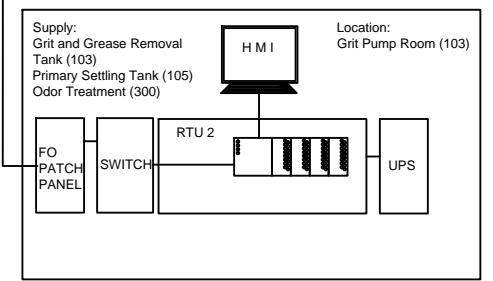
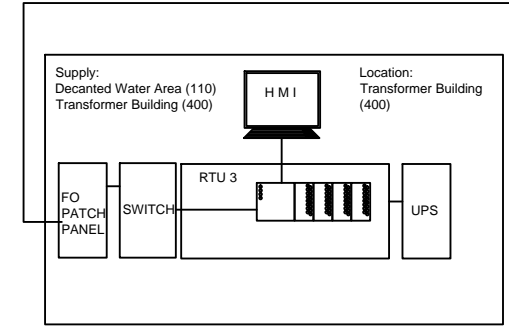
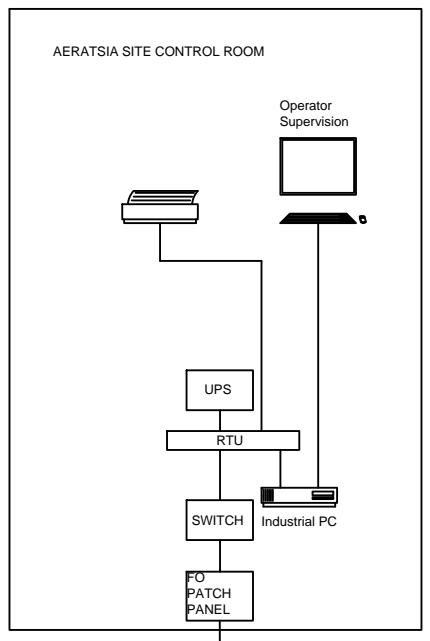
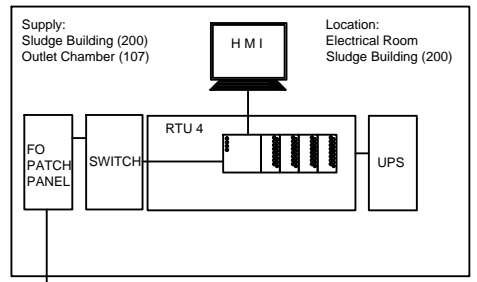


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ART	1312155	DD	MND	200	102	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

**ELECTRICAL**





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2	Final Detailed Design	CLN	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013

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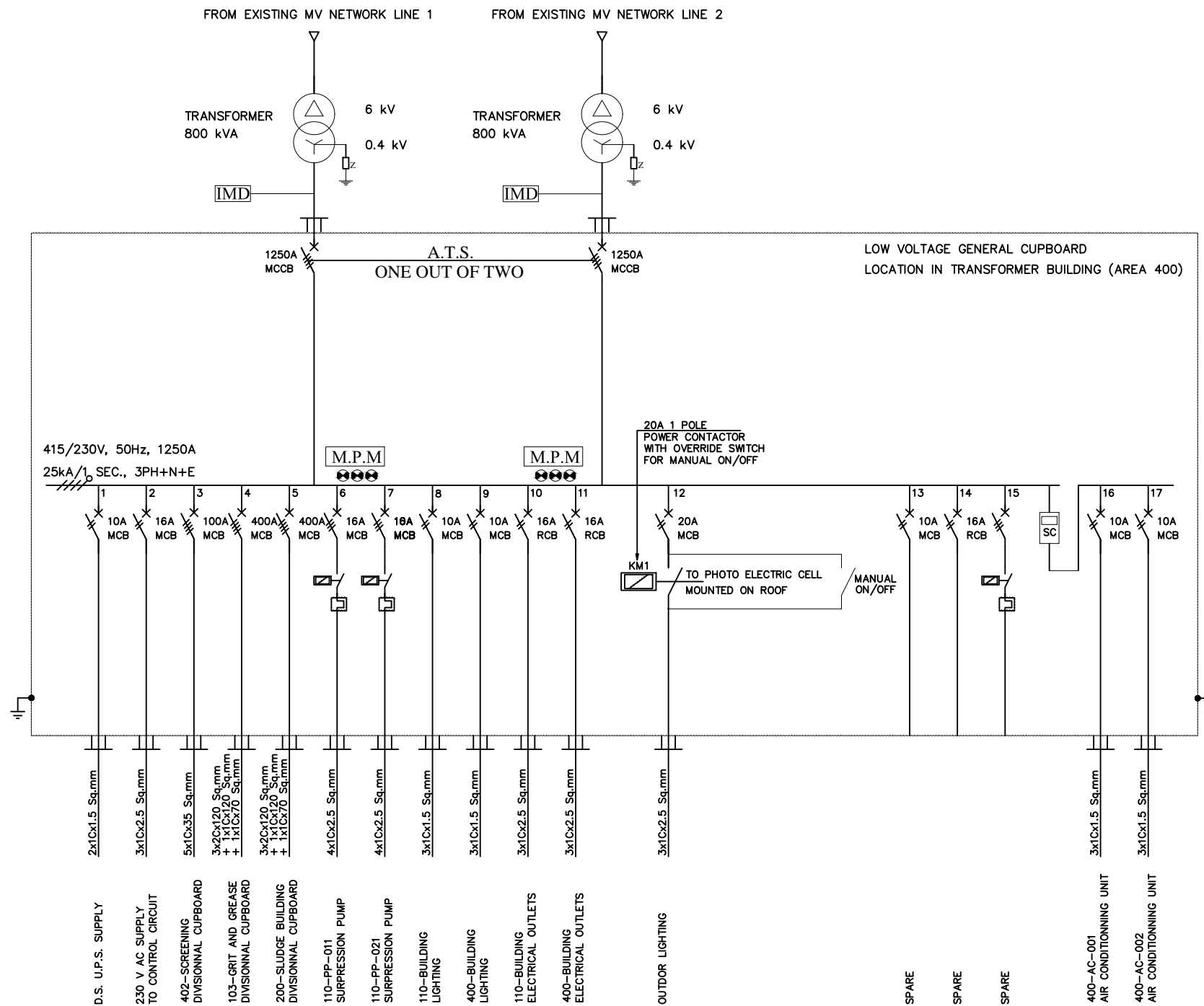
REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

ELECTRICAL DRAWINGS  
CONTROL / COMMAND  
CONTROL SYSTEM BLOCK DIAGRAM

DATE :	31/01/2014
DRAWN :	FBT
CHECKED :	FBT
APPROVED :	CTF

ART	1312155	DD	ELC	000	002	0
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LEGEND	
ELECTRIC PROTECTION	
SYMBOL	DESIGNATION
	TRANSFORMER
	INDICATOR LAMP
	MULTI-POLE METER
	ISULATION MONITORING DEVICE
	3-POLES CIRCUIT BREAKER
	2-POLES CIRCUIT BREAKER
	1-POLES CIRCUIT BREAKER
	CONTACTOR
	THERMAL OVERLOAD RELAY
	CABLE GLAND
	MOLDED CASE CIRCUIT BREAKER
	RESIDUAL CURRENT DEVICE
	MINIATURE CIRCUIT BREAKER

NO.	REVISIONS	BY	DATE
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1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013

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REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

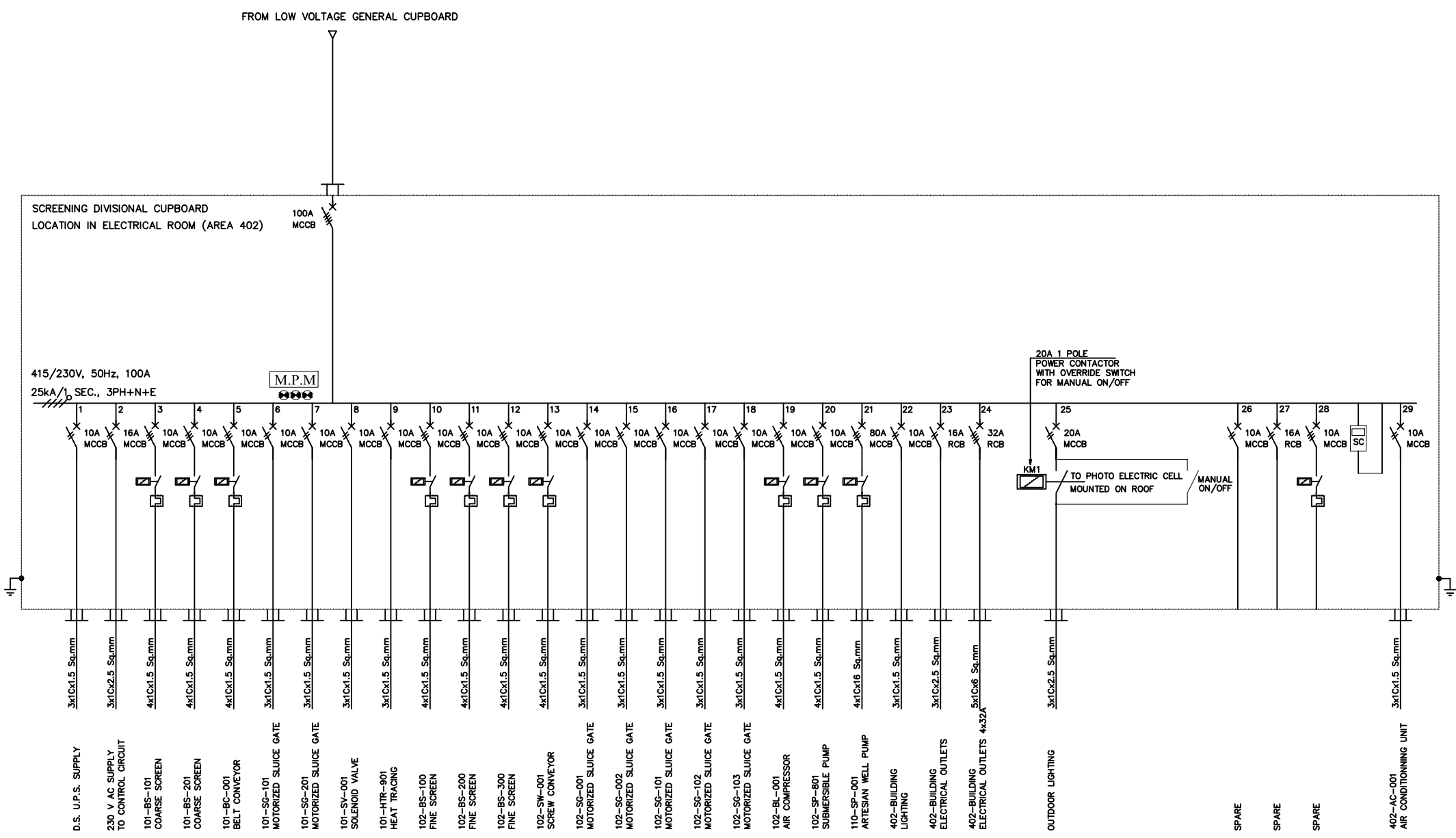
REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

ELECTRICAL DRAWINGS  
SINGLE LINE DIAGRAM  
LOW VOLTAGE GENERAL CUPBOARD

	DATE :	31/01/2014
	DRAWN :	FBT
	CHECKED :	FBT
	APPROVED :	CTF

ART	1312155	DD	ELC	000	003	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

Designed by : FBT Drawn by : FBT Verified by : CTF  
 SGA-RT-1312155-DD-ELC-000-004\_Rev0 14-01-31.dwg



LEGEND	
ELECTRIC PROTECTION	
SYMBOL	DESIGNATION
	TRANSFORMER
	INDICATION LAMP
	MULTI POLE METER
	ISULATION MONITORING DEVICE
	1 POLES CIRCUIT BREAKER
	2 POLES CIRCUIT BREAKER
	3 POLES CIRCUIT BREAKER
	CONTACTOR
	THERMAL OVERLOAD RELAY
	CABLE GLAND
<b>MCCB</b>	MOULDED CASE CIRCUIT BREAKER
<b>RCB</b>	RESIDUAL CURRENT DEVICE
<b>MCB</b>	MINIATURE CIRCUIT BREAKER

NO.	REVISIONS	BY	DATE
3	Tender Detail Design	FBT	31/01/2014
2	Final Detailed Design	CLN	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013

Original paper size :A1 Scale :NO SCALE

**REPUBLIC OF ARMENIA**  
**YEREVAN MUNICIPALITY**  
**WATER & SEWERAGE BOARD**

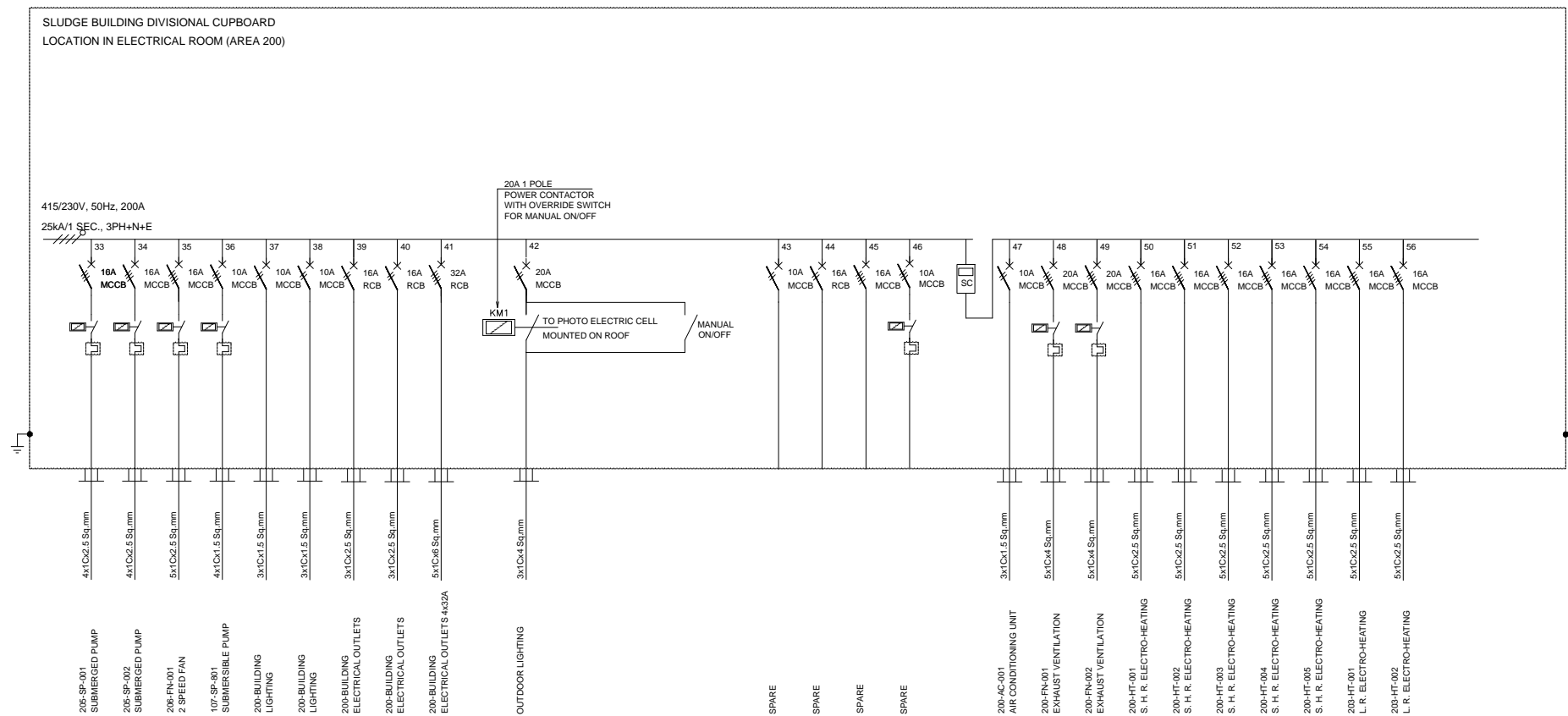
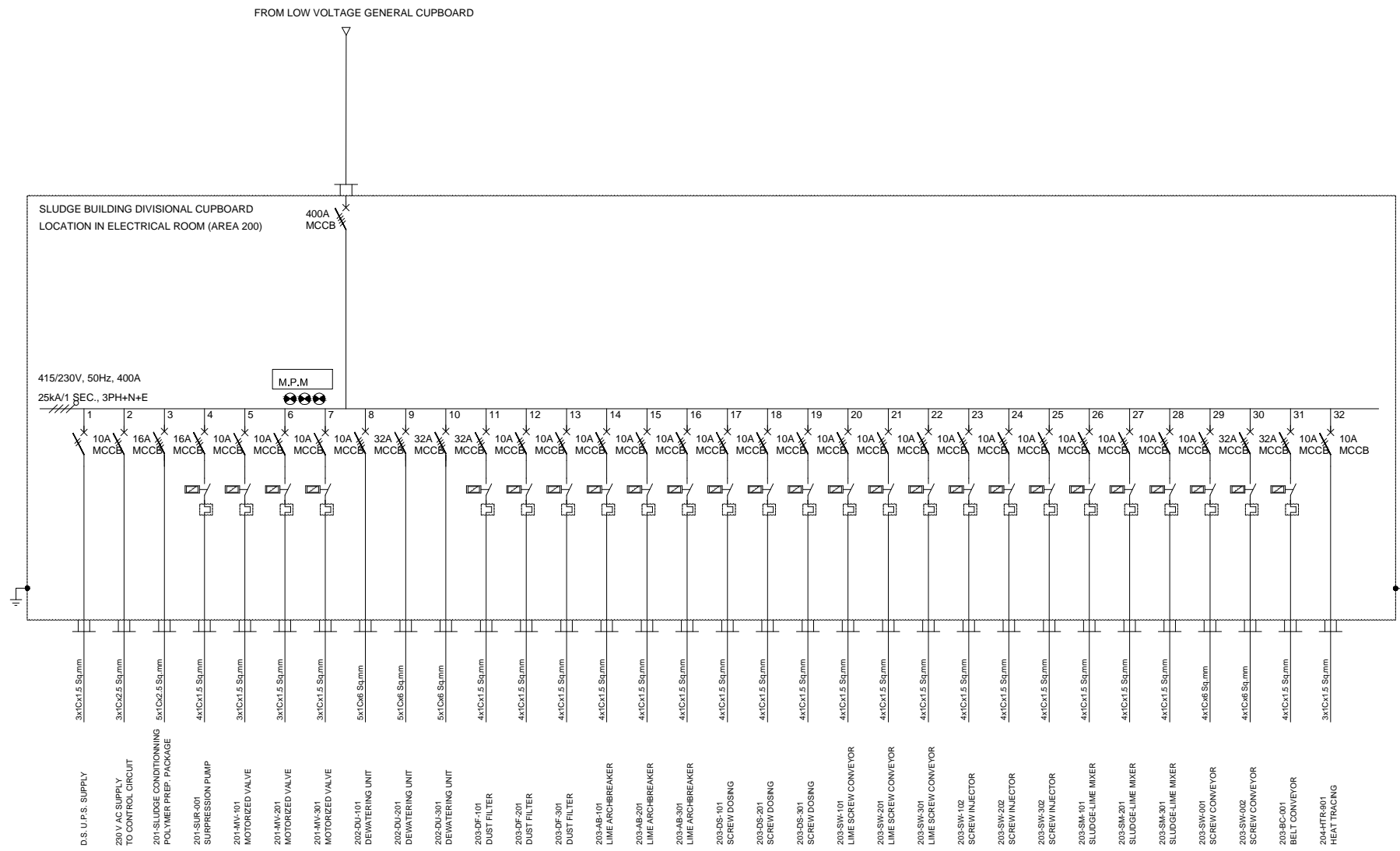
**REHABILITATION OF AERATSIA WWTP**  
**DETAILED DESIGN**

**ELECTRICAL DRAWINGS**  
 SINGLE LINE DIAGRAM  
 SCREENING DIVISIONAL CUPBOARD

DATE : 31/01/2014  
 DRAWN : FBT  
 CHECKED : FBT  
 APPROVED : CTF

ART	1312155	DD	ELC	000	004	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX





LEGEND	
ELECTRIC PROTECTION	
SYMBOL	DESIGNATION
	TRANSFORMER
	INDICATION LAMP
	MULTI POWER METER
	ISULATION MONITORING DEVICE
	2 POLES CIRCUIT BREAKER
	3 POLES CIRCUIT BREAKER
	4 POLES CIRCUIT BREAKER
	CONTACTOR
	TERMINAL OVERLOAD RELAY
	CABLE GLAND
	MOULDED CASE CIRCUIT BREAKER
	RESIDUAL CURRENT DEVICE
	MINIATURE CIRCUIT BREAKER

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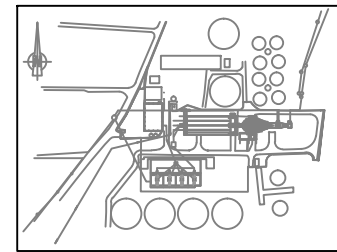
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REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN  
ELECTRICAL DRAWINGS  
SINGLE LINE DIAGRAM  
SLUDGE BUILDING DIVISIONAL CUPBOARD

DATE : 31/01/2014  
DRAWN : FBT  
CHECKED : FBT  
APPROVED : CTF

ART	1312155	DD	ELC	000	006	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX



**KEY PLAN**

**LEGEND:**

- MV Network
- LV Network
- Existing MV Network

Existing MV network  
to be settled out

Pillar to be moved

MV network  
moved

3	Tender Detail Design	FBT	31-01-2014
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Original paper size : A1 Scale :1:750

REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP

DETAILED DESIGN

ELECTRICAL DRAWINGS

ELECTRICAL NETWORK

GENERAL PLAN VIEW



DATE : 31-01-2014

DRAWN : FBT

CHECKED : FBT

APPROVED : CTF

ART	1312155	DD	ELC	000	100	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

# **INSTRUMENTATION**

DRAWING NUMBER	DISCIPLINE	AREA	DESIGNATION	SIZE	SCALE	STATUS	REVISION
ART-1312155-DD-INS-000-001	INSTRUMENTATION	000	LIST OF DRAWINGS	A1	-	DD	0
ART-1312155-DD-INS-000-002	INSTRUMENTATION	000	LEGEND 1/2	A1	-	DD	0
ART-1312155-DD-INS-000-003	INSTRUMENTATION	000	LEGEND 2/2	A1	-	DD	0
ART-1312155-DD-INS-000-004	INSTRUMENTATION	000	EQUIPMENT SCHEDULE	A3		DD	0
ART-1312155-DD-INS-000-005	INSTRUMENTATION	000	EQUIPMENT SCHEDULE	A3		DD	0
ART-1312155-DD-INS-000-006	INSTRUMENTATION	000	EQUIPMENT SCHEDULE	A3		DD	0
ART-1312155-DD-INS-000-007	INSTRUMENTATION	000	EQUIPMENT SCHEDULE	A3		DD	0
ART-1312155-DD-INS-000-008	INSTRUMENTATION	000	EQUIPMENT SCHEDULE	A3		DD	0
ART-1312155-DD-INS-000-009	INSTRUMENTATION	000	EQUIPMENT SCHEDULE	A3		DD	0
ART-1312155-DD-INS-000-010	INSTRUMENTATION	000	EQUIPMENT SCHEDULE	A3		DD	0
ART-1312155-DD-INS-101-001	INSTRUMENTATION	101	INLET AND COARSE SCREENS	A1	-	DD	0
ART-1312155-DD-INS-102-001	INSTRUMENTATION	102	FINE SCREENS	A1	-	DD	0
ART-1312155-DD-INS-103-001	INSTRUMENTATION	103	GRIT TANKS 1&2	A1	-	DD	0
ART-1312155-DD-INS-103-002	INSTRUMENTATION	103	GRIT TANKS 3&4	A1	-	DD	0
ART-1312155-DD-INS-103-003	INSTRUMENTATION	103	GRIT TANK FOUL WATER PIT	A1	-	DD	0
ART-1312155-DD-INS-103-004	INSTRUMENTATION	103	GRIT TREATMENT	A1	-	DD	0
ART-1312155-DD-INS-103-005	INSTRUMENTATION	103	FLOW MEASUREMENT	A1	-	DD	0
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ART-1312155-DD-INS-105-002	INSTRUMENTATION	105	SLUDGE EXTRACTION	A1	-	DD	0
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ART-1312155-DD-INS-105-004	INSTRUMENTATION	105	DECANTED WATER PUMP	A1	-	DD	0
ART-1312155-DD-INS-107-001	INSTRUMENTATION	107	FLOW METERING AND OUTLET PIPE	A1	-	DD	0
ART-1312155-DD-INS-110-001	INSTRUMENTATION	110	WELL WATER	A1	-	DD	0
ART-1312155-DD-INS-200-001	INSTRUMENTATION	201	SLUDGE CONDITIONING	A1	-	DD	0
ART-1312155-DD-INS-201-001	INSTRUMENTATION	202	DEWATERING	A1	-	DD	0
ART-1312155-DD-INS-202-001	INSTRUMENTATION	203	SLUDGE LIMING	A1	-	DD	0
ART-1312155-DD-INS-203-001	INSTRUMENTATION	204	DEWATERED SLUDGE STORAGE	A1	-	DD	0
ART-1312155-DD-INS-204-001	INSTRUMENTATION	205	FOUL WATER PIT	A1	-	DD	0
ART-1312155-DD-INS-300-001	INSTRUMENTATION	300	ODOUR TREATMENT	A1	-	DD	0



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




















































REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

Draft DD  
DETAILED DESIGN

INSTRUMENTATION DRAWINGS  
GENERAL  
LIST OF DRAWINGS

	DATE : _____
	DRAWN : FVR
	CHECKED : CTF
	APPROVED : CTF

ART	1312155	DD	INS	000	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

Block name	Block	Designation	Block name	Block	Designation	Block name	Block	Designation
ART_AB		Arch breaker	ART_FM		Flow meter (venturi)	ART_LV		LV cupboard
ART_AI		Air-intake on pressure pipe	ART_FN		Fan	ART_MF		Magnetic Flow meter
ART_AV		Variable air volume damper	ART_FP		Belt filter press	ART_MM		Manometre
ART_BC		Belt conveyor	ART_FT		Filter	ART_MV		Motorised valve
ART_BF		Bag feeder	ART_FX		PressFlexible coupling	ART_MX		Mixer
ART_BFL		Blind Flange	ART_GA		Gate valve	ART_NZ		Air Nozzle
ART_BL		Blower / Air Compressor	ART_GC		Grit Classifier	ART_OF		Over Flow
ART_BM		Manual Bar screen	ART_GD		Gas detector	ART_PC		Progressive cavity Pump
ART_BM		Manual Bar screen fine	ART_GP		Grit pit	ART_PF		Pikets Fence
ART_BS		Bar screen	ART_GR		Grabing hoist	ART_PP		Centrifugal Pump
ART_BT		Gravity belt thickner	ART_GV		Globe Valve	ART_PR		Pressure regulator
ART_BV		Ball valve	ART_HO		Standing hoist	ART_PV		Pinch valve closed - 3 way
ART_BW		Ball check valve	ART_HTR		Electrical Resistor heat tracing	ART_RC		Reducer
ART_CP		Compressor	ART_HT		Electrical Resistor Electro heater	ART_RV		Pressure relief valve
ART_CV		Check valve	ART_IM		Immersed mixer	ART_SBL		Sludge basket level
ART_DF		Dust filter	ART_LB		Lime storage silo	ART_SC		Silencer
ART_DS		Dosung Screw	ART_LM		Lime mixer	ART_SG		Sluice gate
ART_FL		Float Level Sensor	ART_LS		Capacitiv Level Sensor			

**NOTE :**

- ① All non-burried pipes with intermittent service, such as service water pipes, shall be heat traced to prevent freezing, even if not indicated on the P&IDS.

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REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

Draft DD

DETAILED DESIGN

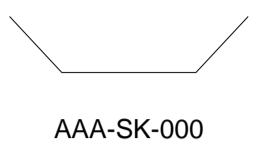

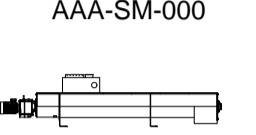
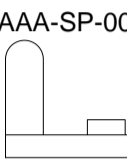
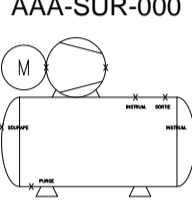
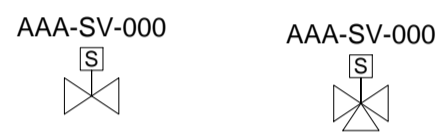
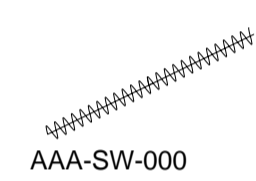
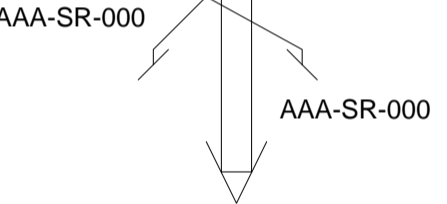
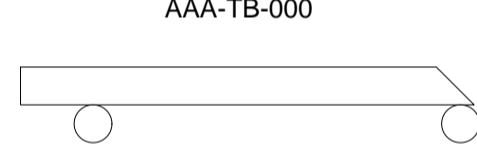
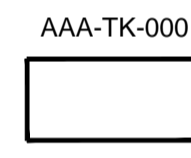
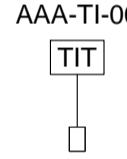

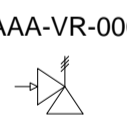
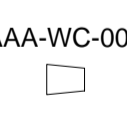
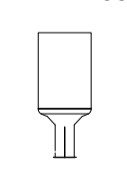
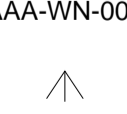

INSTRUMENTATION DRAWINGS

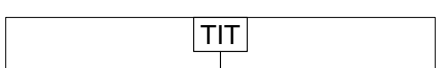
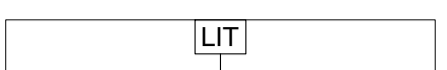

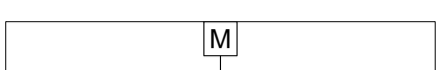

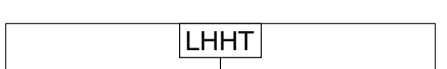
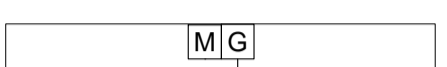
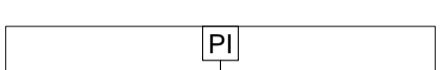












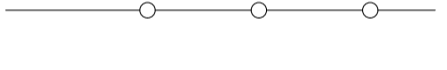

GENERAL  
P&ID LEGEND



DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

ART	1312155	DD	INS	000	002	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

Block name	Block	Designation
ART_SK	 AAA-SK-000	Skip
ART_SL	 AAA-SL-001	Stoplog
ART_SM	 AAA-SM-000	Sludge/lime mixer
ART_SP	 AAA-SP-000	Submersible Pump
ART_SUR	 AAA-SUR-000	Surpression Pump With vessel
ART_SV	 AAA-SV-000	Solenoid valve
ART_SW	 AAA-SW-000	Screw
ART_SR	 AAA-SR-000	Screen
ART_TB	 AAA-TB-000	Travelling bridge
ART_WN	 AAA-TK-000	Tank
ART_TI	 AAA-TI-001	Temperature Sensor
ART_UF	 AAA-UF-000	Ultrasonic Flow Element
ART_VR	 AAA-VR-000	Vacuum relief valve
ART_WC	 AAA-WC-000	Water Connection
ART_WH	 AAA-WH-000	Water hammer tank
ART_WN	 AAA-WN-000	Water Nozzle
ART_WR	 AAA-WR-000	Weir

	TEMPERATURE INDICATION TRANSMITED
	LEVEL INDICATION TRANSMITED
	LEVEL HIGH TRANSMITED
	Motorized
	Level Low Transmitted
	Level High High Transmitted
	Motor with Gear (Manual variator)
	Pressure Information
	Variable Frequency Drive
	Flow Indicator
	?
	Foul Water
	Waste Water
	Sand
	Air
	Foul Air
	Potable water
	Grease
	Sludge
	Oversize
	Polymer
	Decanted water

Fluid	In building	Burried pipe
Waste water	-	Ductil Iron
Decanted water	-	Ductil Iron
Foul Drain water	Ductil Iron	Ductil Iron
Grease	PVC	Ductil Iron
Sand	Ductil Iron	Ductil Iron
Chemicals	HDPE	HDPE
Liquid sludge	Stainless Steel	Ductil Iron
Foul air	Aluminium or PVC	-
Compressed air	PVC	-
Well water	HDPE	HDPE
Drinking water	HDPE	HDPE

**NOTE :**

1 All non-burried pipes with intermittent service, such as service water pipes, shall be heat traced to prevent freezing, even if not indicated on the P&IDs.

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REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

Draft DD

DETAILED DESIGN

INSTRUMENTATION DRAWINGS

GENERAL  
P&ID LEGEND



DATE :  
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ART	1312155	DD	INS	000	003	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

AREA	BUILDING	TYPE	N°	Type	Service	Capacity / Dimensions	Design Pressure/ head	Power			Comments
								kW	V	I	
<b>101</b>	<b>Inlet / Bypass / Coarse screening</b>										
	Inlet / Bypass / Coarse screening	GR	001	101-GR-001	Grabing Hoist	large debris	500 kg				Manual Hoist
101		BS	101	101-BS-101	Automatic Coarse Screen 40 mm	raw wastewater	11 500 m3/h		0,55		Automatic cleaning
101		BS	201	101-BS-201	Automatic Coarse Screen 40 mm	raw wastewater	11 500 m3/h		0,55		Automatic cleaning
101		BS	301	101-BS-301	Manual Bar Screen 40 mm	raw wastewater	1m50 wide x 3m45 high				Manual standby
101		BC	001	101-BC-001	Belt conveyor with distributor in 2 skips	coarse screenings	9,8 m long		2,2		
101		SG	101	101-SG-101	Motorized Sluice Gate	raw wastewater	1.50 m x 2,65 m - Channel height: 2,65m		0,1		Motorized
101		SG	201	101-SG-201	Motorized Sluice Gate	raw wastewater	1.50 m x 2,65 m - Channel height: 2,65m		0,1		Motorized
101		SG	301	101-SG-301	Sluice Gate with Manual Crankset	raw wastewater	1.50 m x 2,65 m - Channel height: 2,65m				Manual Crankset
101		SL	001	101-SL-001	Stop Log frame and plate	raw wastewater	1m 50 wide x 3m 15 high frame and 1,5 m x 2m 90 plate with lifting ring				
101		SL	002	101-SL-002	Stop Log frame and plate	raw wastewater	1m 50 wide x 2m70 high frame and 1,5 m x 1m 90 plate with lifting ring				
101		SL	003	101-SL-003	Stop Log frame and plate	raw wastewater	1m 80 wide x 3m 45 high frame and 1,8 m x 3m plate with lifting ring				
101		SL	004	101-SL-004	Stop Log frame only	raw wastewater	1m 50 wide x 3m 45 high frame; interchangeable 1,5 m x 3m plate				
101		SL	101	101-SL-101	Stop Log frame only	raw wastewater	1m 50 wide x 3m 45 high frame; interchangeable 1,5 m x 3m plate				
101		SL	201	101-SL-201	Stop Log frame only	raw wastewater	1m 50 wide x 3m 45 high frame; interchangeable 1,5 m x 3m plate				
101		SL	301	101-SL-301	Stop Log frame only	raw wastewater	1m 50 wide x 3m 45 high frame; interchangeable 1,5 m x 3m plate				
101		SK	001	101-SK-001	skip with cover	coarse screenings	25 m³				
101		SK	002	101-SK-002	skip with cover	coarse screenings	25 m³				
101		NZ	001	101-NZ-001	Air Nozzle flush	compressed air	1.5 l/s				
101		NZ	002	101-NZ-002	Air Nozzle flush	compressed air	1.5 l/s				
101		SV	001	101-SV-001	Solenoid Valve	compressed air	3 l/s		0,1		
101		HTR	901	101-HTR-901	Heat Tracing on service water exposed piping	service water			0,3		
101		BV	901	101-BV-901	Ball Valve	service water	ND20				
101		WC	901	101-WC-901	Hose bib	service water	ND20				
101	Instruments	FL	001	101-FL-001	Float level	raw wastewater	position: 889,75 masl				maximum level indicator to data log
101		TI	001	101-TI-001	Temperature sensor	raw wastewater					
101		UF	001	101-UF-001	Ultrasonic level sensor	raw wastewater					
<b>102</b>	<b>Fine Screening</b>										
102		BS	100	102-BS-100	Automatic Fine Screen 10 mm	raw wastewater	6 800 m3/h		0,55		Automatic cleaning
102		BS	200	102-BS-200	Automatic Fine Screen 10 mm	raw wastewater	6 800 m3/h		0,55		Automatic cleaning
102		BS	300	102-BS-300	Automatic Fine Screen 10 mm	raw wastewater	6 800 m3/h		0,55		Automatic cleaning
102		BS	400	102-BS-400	Manual bar screen 20 mm	raw wastewater	1m50 wide x 3m70 high				Manual standby
102		SW	001	102-SW-001	Screw conveyor and compactor	fine screenings	9 m long		1,5		
102		SG	101	102-SG-101	Motorized Sluice Gate	raw wastewater	1.50 m x 3,0 m - Channel height: 3,70m		0,1		Motorized
102		SG	201	102-SG-201	Motorized Sluice Gate	raw wastewater	1.50 m x 3,0 m - Channel height: 3,70m		0,1		Motorized
102		SG	301	102-SG-301	Motorized Sluice Gate	raw wastewater	1.50 m x 3,0 m - Channel height: 3,70m		0,1		Motorized
102		SG	401	102-SG-401	Manual Crankset Sluice Gate	raw wastewater	1.50 m x 3,0 m - Channel height: 3,70m				Manual Crankset
102		SG	001	102-SG-001	Motorized Sluice Gate	Raw wastewater	1m50 wide x 1m50 high - Diameter pipe 1400		0,1		Motorized
102		SG	002	102-SG-002	Motorized Sluice Gate	Raw wastewater	1m50 wide x 1m50 high - Diameter pipe 1400		0,1		Motorized
102		SL	101	102-SL-101	Stop Log frame only	raw wastewater	1m 50 wide x 3m 70 high frame				
102		SL	201	102-SL-201	Stop Log frame and plate	raw wastewater	1m 50 wide x 3m70 high frame and 1,5 m x 3m15 plate with lifting ring				
102		SL	301	102-SL-301	Stop Log frame and plate	raw wastewater	1m 50 wide x 3m70 high frame and 1,5 m x 3m15 plate with lifting ring				
102		SL	401	102-SL-401	Stop Log frame and plate	raw wastewater	1m 50 wide x 3m70 high frame and 1,5 m x 3m15 plate with lifting ring				
102		SK	001	102-SK-001	skip with cover	fine screenings	25 m³				
102		SK	002	102-SK-002	skip with cover	fine screenings	25 m³				
102		BL	001	102-BL-001	Air Compressor	air	3 l/s free air delivery	8 bar	2,2		
102		NZ	001	102-NZ-001	Air Nozzle flush	compressed air	1.5 l/s				
102		NZ	002	102-NZ-002	Air Nozzle flush	compressed air	1.5 l/s				
102		SV	001	102-SV-001	Solenoid Valve	compressed air	3 l/s				
102		SV	002	102-SV-002	Solenoid Valve	compressed air	3 l/s				
102		SV	901	102-SV-901	Solenoid Valve	service water	ND20				
102		SV	902	102-SV-902	Solenoid Valve	service water	ND20				for automatic purge controled
102		SP	801	102-SP-801	Submersible pump drainage sump	Foul water	20 m3/h ; 3 m TDH		0,75		
102	Instruments	UF	001	102-UF-001	Float level sensor	raw wastewater					
102		TI	001	102-TI-001	Ultrasonic level sensor	raw wastewater					
102		UF	002	102-UF-002	Temperature sensor	raw wastewater					
102		UF	001	102-UF-001	Ultrasonic level sensor	raw wastewater					

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REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

Draft DD  
DETAILED DESIGN

INSTRUMENTATION DRAWINGS  
GENERAL  
Equipment Schedule

DATE :	
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ART	1312155	DD	INS	000	004	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

103 GG removal tank						
103	SL	101	103-SL-101	Stop Log frame and plate	Raw wastewater	0m90 wide x 1m90 high frame with 0,9 m wide x 1,6 m high plate with lifting ring
103	SL	201	103-SL-201	Stop Log frame and plate	Raw wastewater	0m90 wide x 1m90 high frame with 0,9 m wide x 1,6 m high plate with lifting ring
103	SL	301	103-SL-301	Stop Log frame and plate	Raw wastewater	0m90 wide x 1m90 high frame with 0,9 m wide x 1,6 m high plate with lifting ring
103	SL	401	103-SL-401	Stop Log frame and plate	Raw wastewater	0m90 wide x 1m90 high frame with 0,9 m wide x 1,6 m high plate with lifting ring
103	SG	003	103-SG-003	Manual Crankset Sluice Gate	Raw wastewater	0m40 wide x 0m40 high
103	PP	501	103-PP-501	Grit pump	Grit	100 m3/h ; vortex type
103	PP	502	103-PP-502	Grit Pump	Grit	100 m3/h ; vortex type
103	PP	503	103-PP-503	Grit Pump	Grit	100 m3/h ; vortex type
103						standby - no installed
103	BL	101	103-BL-101	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	102	103-BL-102	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	103	103-BL-103	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	104	103-BL-104	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	105	103-BL-105	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	106	103-BL-106	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	107	103-BL-107	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	108	103-BL-108	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	201	103-BL-201	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	202	103-BL-202	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	203	103-BL-203	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	204	103-BL-204	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	205	103-BL-205	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	206	103-BL-206	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	207	103-BL-207	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	208	103-BL-208	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	301	103-BL-301	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	302	103-BL-302	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	303	103-BL-303	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	304	103-BL-304	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	305	103-BL-305	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	306	103-BL-306	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	307	103-BL-307	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	308	103-BL-308	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	401	103-BL-401	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	402	103-BL-402	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	403	103-BL-403	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	404	103-BL-404	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	405	103-BL-405	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	406	103-BL-406	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	407	103-BL-407	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	408	103-BL-408	Submerged Air Turbine	Air	720 Nm3/h max at 250 mbar
103	BL	501	103-BL-501	Air Lift Compressor	Air	55 m3/h
103	BL	502	103-BL-502	Air Lift Compressor	Air	55 m3/h
103	TB	101	103-TB-101	Traveling Bridge	-	12 m wide
103	TB	401	103-TB-401	Traveling Bridge	-	12 m wide
103	SR	101	103-SR-101	Bottom Scraper (two parts in each side of the baffle)	Raw wastewater	
103	SR	201	103-SR-201	Bottom Scraper (two parts in each side of the baffle)	Raw wastewater	
103	SR	301	103-SR-301	Bottom Scraper (two parts in each side of the baffle)	Raw wastewater	
103	SR	401	103-SR-401	Bottom Scraper (two parts in each side of the baffle)	Raw wastewater	
103	SR	102	103-SR-102	Surface Scraper (two parts in each side of the baffle)	Grease and water	0,18
103	SR	202	103-SR-202	Surface Scraper (two parts in each side of the baffle)	Grease and water	0,18
103	SR	302	103-SR-302	Surface Scraper (two parts in each side of the baffle)	Grease and water	0,18
103	SR	402	103-SR-402	Surface Scraper (two parts in each side of the baffle)	Grease and water	0,18
103	GC	511	103-GC-511	Grit Classifier	Grit	100 m3/h
103	GC	512	103-GC-512	Grit Classifier	Grit	100 m3/h
103	GC	513	103-GC-513	Grit Classifier	Grit	100 m3/h
103	SK	501	103-SK-501	Grease concentration skip with cover	Grease and water	25 m3
103	SK	502	103-SK-502	Grease concentration skip with cover	Grease and water	25 m3
103	SK	511	103-SK-511	Grit skip with cover	Grit	25 m3
103	SK	512	103-SK-512	Grit skip with cover	Grit	25 m3
103	SK	513	103-SK-513	Grit skip with cover	Grit	25 m3
103	SP	001	103-SP-001	Pump Submersible	Foul water	250 m3/h
103	SP	002	103-SP-002	Pump Submersible	Foul water	250 m3/h
103	BV	101	103-BV-101	Ball Valve	Air	55 m3/h
103	BV	201	103-BV-201	Ball Valve	Air	55 m3/h
103	BV	301	103-BV-301	Ball Valve	Air	55 m3/h
103	BV	401	103-BV-401	Ball Valve	Air	55 m3/h

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**WATER & SEWERAGE BOARD**

**Draft DD**  
**DETAILED DESIGN**

**INSTRUMENTATION DRAWINGS**

GENERAL  
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ART	1312155	DD	INS	000	005	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX





202 Sludge dewatering										
202	BT	101	202-BT-101	Gravity belt thickener	primary sludge	belt width 2m;28 m3/h		2,75		flocculator+thickner+belt filer
202	BT	201	202-BT-201	Gravity belt thickener	primary sludge	belt width 2m;28 m3/h		2,75		flocculator+thickner+belt filer
202	BT	301	202-BT-301	Gravity belt thickener	primary sludge	belt width 2m;28 m3/h		2,75		flocculator+thickner+belt filer
202	FP	101	202-FP-101	Belt Filter press (combined with Gravity Belt)	primary sludge	belt width 2m; 1000 kg SS/h				combined with thickener
202	FP	201	202-FP-201	Belt Filter press (combined with Gravity Belt)	primary sludge	belt width 2m; 1000 kg SS/h				combined with thickener
202	FP	301	202-FP-301	Belt Filter press (combined with Gravity Belt)	primary sludge	belt width 2m; 1000 kg SS/h				combined with thickener
202	PP	101	202-PP-101	Wash water pump	Decanted water	18 m3/h	5 to 7 bars	11		
202	PP	201	202-PP-201	Wash water pump	Decanted water	18 m3/h		11		
202	PP	301	202-PP-301	Wash water pump	Decanted water	18 m3/h		11		
202	CP	101	202-CP-101	Belt Filter press Air compressor	primary sludge	7 m3/h,	5 to 7 bars	1,5		
202	CP	201	202-CP-201	Belt Filter press Air compressor	primary sludge	7 m3/h,		1,5		
202	CP	301	202-CP-301	Belt Filter press Air compressor	primary sludge	7 m3/h,		1,5		
202	SW	101	202-SW-101	Screw conveyor	primary sludge	5 wet t/h;8 m; Ø 328 mm		3,5		
202	SW	201	202-SW-201	Screw conveyor	primary sludge	5 wet t/h;8 m; Ø 328 mm		3,5		
202	SW	301	202-SW-301	Screw conveyor	primary sludge	5 wet t/h;13 m; Ø 328 mm		3,5		
202	Instruments	FL	101	202-FL-101	Blockage Level sensor	dewatered primary sludge				
202	Instruments	FL	201	202-FL-201	Blockage Level sensor	dewatered primary sludge				
202	Instruments	FL	301	202-FL-301	Blockage Level sensor	dewatered primary sludge				
202	Instruments	GDS	001	202-GDS-001	Gas detector H2S	ambient air				
202	Instruments	GDS	002	202-GDS-002	Gas detector H2S	ambient air				
202	Instruments	GND	001	202-GND-001	Gas detector NH3	ambient air				
202	Instruments	GND	002	202-GND-002	Gas detector NH3	ambient air				
203 Sludge liming										
203	DF	101	203-DF-101	lime storage dust filter	lime			0,2		
203	DF	201	203-DF-201	lime storage dust filter	lime			0,2		
203	DF	301	203-DF-301	lime storage dust filter	lime			0,2		
203	LB	101	203-LB-101	lime storage silo	lime	useful volume: 50 m3				
203	LB	201	203-LB-201	lime storage silo	lime	useful volume: 50 m3				
203	LB	301	203-LB-301	lime storage silo	lime	useful volume: 50 m3				
203	AB	101	203-AB-101	lime archbreaker	lime	100 to 500 kg/h ; Ø 2 m		0,55		
203	AB	201	203-AB-201	lime archbreaker	lime	100 to 500 kg/h ; Ø 2 m		0,55		
203	AB	301	203-AB-301	lime archbreaker	lime	100 to 500 kg/h ; Ø 2 m		0,55		
203	DS	101	203-DS-101	screw dosing	lime	100 to 500 kg/h , Ø 70 mm		1,1		
203	DS	201	203-DS-201	screw dosing	lime	100 to 500 kg/h , Ø 70 mm		1,1		
203	DS	301	203-DS-301	screw dosing	lime	100 to 500 kg/h , Ø 70 mm		1,1		
203	SW	101	203-SW-101	lime screw conveyor	lime	100 to 500 kg/h ,5m , Ø 80mm		1,1		
203	SW	201	203-SW-201	lime screw conveyor	lime	100 to 500 kg/h ,8.50m , Ø 80mm		2,2		
203	SW	301	203-SW-301	lime screw conveyor	lime	100 to 500 kg/h ,5m , Ø 80mm		1,1		
203	SW	102	203-SW-102	screw injector	lime	100 to 500 kg/h ,1m, Ø 80mm		0,75		
203	SW	202	203-SW-202	screw injector	lime	100 to 500 kg/h ,1m, Ø 80mm		0,75		
203	SW	302	203-SW-302	screw injector	lime	100 to 500 kg/h ,1m, Ø 80mm		0,75		
203	SM	101	203-SM-101	Sludge-lime mixer	lime-sludge	sludge 4.5 m3/h; lime:0.6 m3/h		2,2		
203	SM	201	203-SM-201	Sludge-lime mixer	lime-sludge	sludge 4.5 m3/h; lime:0.6 m3/h		2,2		
203	SM	301	203-SM-301	Sludge-lime mixer	lime-sludge	sludge 4.5 m3/h; lime:0.6 m3/h		2,2		
203	SW	001	203-SW-001	skip feeding screw conveyor	limed sludge	20 wet t/h; 15 m long		15		
203	SW	002	203-SW-002	skip feeding screw conveyor	limed sludge	20 wet t/h; 15 m long		15		
203	BC	001	203-BC-001	Stand-by belt conveyor(between SW-001 &002)	limed sludge	10 wet t/h; 7 m		2,2		
203	HT	001	203-HT-001	Liming room Electroheating	ambient air	delta T= 10 °C		6		
203	HT	002	203-HT-002	Liming room Electroheating	ambient air	delta T= 10 °C		6		
203	Instruments	FL	101	203-FL-101	Blockage Level sensor	limed sludge				
203	Instruments	FL	201	203-FL-201	Blockage Level sensor	limed sludge				
203	Instruments	FL	301	203-FL-301	Blockage Level sensor	limed sludge				
203	Instruments	GDS	001	203-GDS-001	Gas detector H2S	ambient air				
203	Instruments	GND	001	203-GND-001	Gas detector NH3	ambient air				
204 Sludge storage										
204	SK	001	204-SK-001	dewatered sludge skip	limed sludge	25 m3				
204	SK	002	204-SK-002	dewatered sludge skip	limed sludge	25 m3				
204	SK	003	204-SK-003	dewatered sludge skip	limed sludge	25 m3				
204	SK	004	204-SK-004	dewatered sludge skip	limed sludge	25 m3				
204	SK	005	204-SK-005	dewatered sludge skip	limed sludge	25 m3				
204	SK	006	204-SK-006	dewatered sludge skip	limed sludge	25 m3				
204	HTR	901	204-HTR-901	Heat Tracing to sludge skips area	well water	ND 20		0,3		

**NOTE :**

- 1 All non-buried pipes with intermittent service, such as service water pipes, shall be heat traced to prevent freezing, even if not indicated on the P&IDS.

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**YEREVAN MUNICIPALITY**  
**WATER & SEWERAGE BOARD**

**Draft DD**  
**DETAILED DESIGN**

**INSTRUMENTATION DRAWINGS**

**GENERAL**  
**Equipment Schedule**

		DATE :	
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		APPROVED :	CTF

ART	1312155	DD	INS	000	008	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

205 Sludge building foul water pit											
205	SP	001	205-SP-001	Submerged sump pump	Foul water	200 m3/h; 10 m TDH				10	
205	SP	002	205-SP-002	Submerged sump pump	Foul water	200 m3/h; 10 m TDH				10	
205	LS	001	205-LS-001	Capacitive level sensor	Foul water						
205	FL	001	205-FL-001	Float level sensor	Foul water						
205	FL	002	205-FL-002	Float level sensor	Foul water						
206 Odor Control - Sludge Building											
206	AV	001	206-AV-001	Air Regulating Valve for dewatering Unit 1	Foul air	ND40				Manual adjustment	
206	AV	002	206-AV-002	Air Regulating Valve for dewatering Unit 2	Foul air	ND40				Manual adjustment	
206	AV	003	206-AV-003	Air Regulating Valve for dewatering Unit 3	Foul air	ND40				Manual adjustment	
206	AV	004	206-AV-004	Air Regulating Valve for liming room	Foul air	ND400				Manual adjustment	
206	AV	005	206-AV-005	Air Regulating Valve for foul water pit	Foul air	ND80				Manual adjustment	
206	CV	001	206-CV-001	Air Check Valve	Foul air	ND 400					
206	CV	002	206-CV-002	Air Check Valve	Foul air	ND 400					
206	FN	001	206-FN-001	2 speed Fan	Foul air	ND 400, 8600 and 2800 m3/h	1000 Pa		11	400	1500 tr/min max speed
206	PI	001	206-PI-001	Pressure gauge	Foul air	installed on ND 400					
206	TK	001	206-TK-001	Biofilter with air diffusion and water sprinkler systems	Foul air	8600 m3/h, 550 m/h air flow speed	Media bed 1,05 m deep				
300 Odor Control for Sludge storage (105) and foul water sump (103)											
300	AV	001	300-AV-001	Air Regulating Valve for sludge storage 1	Foul air	ND250				Manual adjustment	
300	AV	002	300-AV-002	Air Regulating Valve for sludge storage 2	Foul air	ND250				Manual adjustment	
300	AV	003	300-AV-003	Air Regulating Valve for foul water pit	Foul air	ND80				Manual adjustment	
300	CV	001	300-CV-001	Air Check Valve	Foul air	ND 300					
300	CV	002	300-CV-002	Air Check Valve	Foul air	ND 300					
300	FN	001	300-FN-001	2 speed Fan	Foul air	ND 300, 3100 and 2100 m3/h	1000 Pa		4	400	1500 tr/min max speed
300	HT	001	300-HT-001	Heater	Foul air	2100 m3/h	Delta T = 10 °C		12	400	to maintain air at 25 oC
300	PI	001	300-PI-001	Pressure gauge	Foul air	installed on ND 300					
300	TK	001	300-TK-001	Biofilter with Thermal insulataion and air diffusion and water sprinkler systems	Foul air	3100 m3/h, 550 m/h air flow speed	Media bed 1,05 m deep				
300	HTR	901	300-HTR-901	Heat Tracing to biofilter	Decanted water	ND 40			0,5		
Service Water											
Decanted Water											
105	PP	801	105-PP-801	Decanted water Pump to sludge dewatering washing	decanted water	45 m3/h, 3 Bar TDH			7,5		covers the needs of two dewatering line in operation
105	PP	811	105-PP-811	Decanted water Pump to odor treatment	decanted water	4 m3/h, 6 Bar TDH			1,5		
105	Instruments	PI	801	105-PI-801	Pressure Gauge	decanted water	0- 10 Bar; ND 120				
105	Instruments	PI	811	105-PI-811	Pressure Gauge	decanted water	0- 10 Bar; ND 40				
105	BV		105-BV-801	Ball Valve	decanted water	ND120					
105	BV		105-BV-802	Ball Valve	decanted water	ND120					
105	BV		105-BV-803	Ball Valve	decanted water	ND120					
105	BV		105-BV-804	Ball Valve	decanted water	ND120					
105	BV		105-BV-805	Ball Valve	decanted water	ND120					
105	BV		105-BV-806	Ball Valve	decanted water	ND120					
105	CV		105-CV-801	Check valve	decanted water	ND120					
105	CV		105-CV-804	Check valve	decanted water	ND120					
105	CV		105-CV-806	Check valve	decanted water	ND120					
105	FT		105-FT-801	Particule filter with manual backwash	decanted water	45 m3/h, 30 m TDH					
105	FT		105-FT-802	Particule filter with manual backwash	decanted water	45 m3/h, 30 m TDH					
105	FT		105-FT-811	Particule filter with manual backwash	decanted water	4 m3/h, 30 m TDH					
105	FT		105-FT-812	Particule filter with manual backwash	decanted water	4 m3/h, 30 m TDH					
105	SV	811	105-SV-811	Solenoid Valve	decanted water	ND40					
105	SV	812	105-SV-812	Solenoid Valve	decanted water	ND40					
110	TK		110-TK-111	Fiberglass water tank	decanted water	7,5 m3					
110	Instruments	FL	001	110-FL-001	Float Level Sensor Low	decanted water					
110	Instruments	FL	002	110-FL-002	Float Level Sensor High	decanted water					
110	Instruments	FL	003	110-FL-003	Float Level Sensor High High	decanted water					
110	BV		110-BV-111	Ball Valve	decanted water	ND120					
Well water											
110	TK	001	110-TK-001	Fiberglass water tank	well water	7,5 m3					
110	TK	002	110-TK-002	Fiberglass water tank	well water	7,5 m3					
110	Instruments	FL	101	110-FL-101	Float Level Sensor Low	well water					
110	Instruments	FL	102	110-FL-102	Float Level Sensor High	well water					
110	Instruments	FL	103	110-FL-103	Float Level Sensor High High	well water					
110	Instruments	FL	201	110-FL-201	Float Level Sensor Low	well water					
110	Instruments	FL	202	110-FL-202	Float Level Sensor High	well water					
110	Instruments	FL	203	110-FL-203	Float Level Sensor High High	well water					

**NOTE :**

- 1 All non-buried pipes with intermittent service, such as service water pipes, shall be heat traced to prevent freezing, even if not indicated on the P&IDS.

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REPUBLIC OF ARMENIA  
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WATER & SEWERAGE BOARD

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DETAILED DESIGN

INSTRUMENTATION DRAWINGS

GENERAL  
Equipment Schedule



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ART	1312155	DD	INS	000	009	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

110	SP	001	110-SP-001	Existing artesian well pump	well water	160 m3, 45 m	45	EXISTING
110	BV	001	110-BV-001	Ball Valve on HDPE pipe	well water	ND 220		
110	BV	002	110-BV-002	Ball Valve on HDPE pipe	well water	ND 220		
110	BF	002	110-BF-002	Ball Valve on HDPE pipe	well water	ND 220		Blind Flange
110	HW	001	110-HW-001	Waterhammer Tank	well water	6 bar, 15 m3/h		
110	PP	011	110-PP-011	Surpression pump	well water	6 bar, 15 m3/h	5	package equipment with
110	PP	021	110-PP-021	Surpression pump	well water	6 bar, 15 m3/h	5	hydraupnematic tank
<b>400 Substation Room</b>								
400	AC	001	400-AC-001	Air conditioning unit Room 1	ambient air	100 m3/h, 10°C cooling	1	
400	AC	002	400-AC-002	Air conditioning unit Room 2	ambient air	100 m3/h, 10°C cooling	1	
<b>402 Electrical Room (for areas 101-102)</b>								
402	AC	001	402-AC-001	Air conditioning unit	ambient air	100 m3/h, 10°C cooling	1	

**NOTE :**

- 1 All non-buried pipes with intermittent service, such as service water pipes, shall be heat traced to prevent freezing, even if not indicated on the P&IDS.

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INSTRUMENTATION DRAWINGS

GENERAL

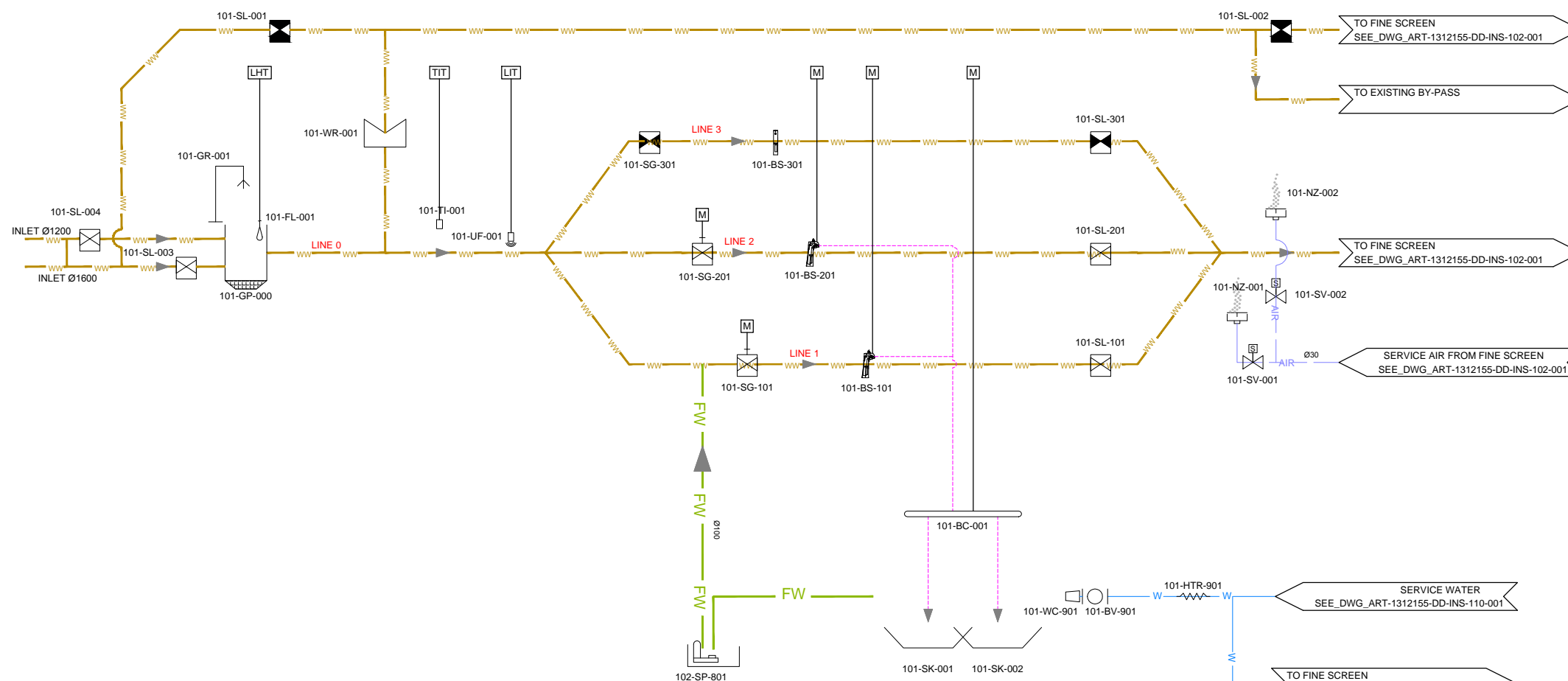
Equipment Schedule



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ART	1312155	DD	INS	000	010	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

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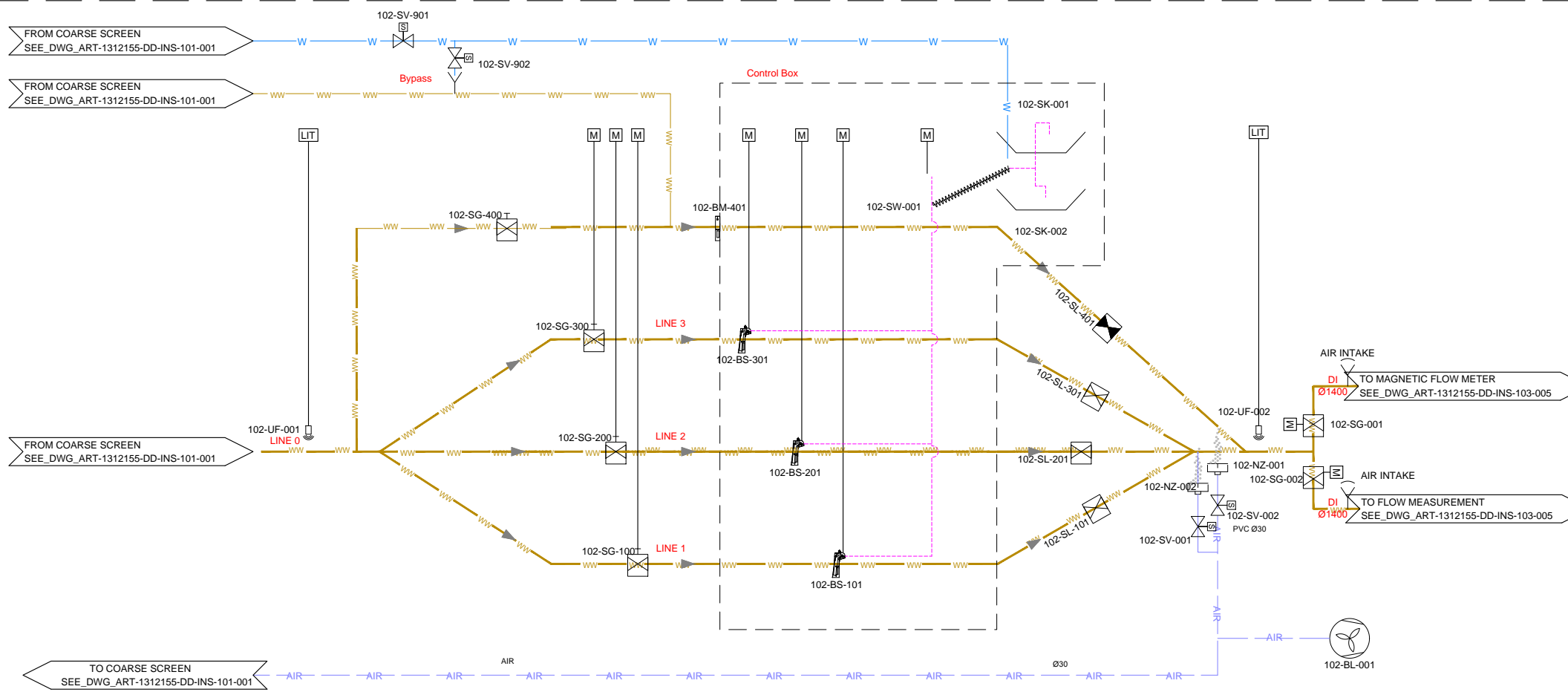
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 AREA 101  
 INLET & COARSE SCREENS  
 P&ID

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ART	1312155	DD	INS	101	001	0
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**NOTE :**

A ND20 Air intake pipe shall be installed on the crown of the ND1400 pipe to allow air in when drained.  
The ND20 air intake shall be protected by the wall of the screening channel



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INSTRUMENTATION DRAWINGS  
AREA 102  
FINE SCREENS  
P&ID



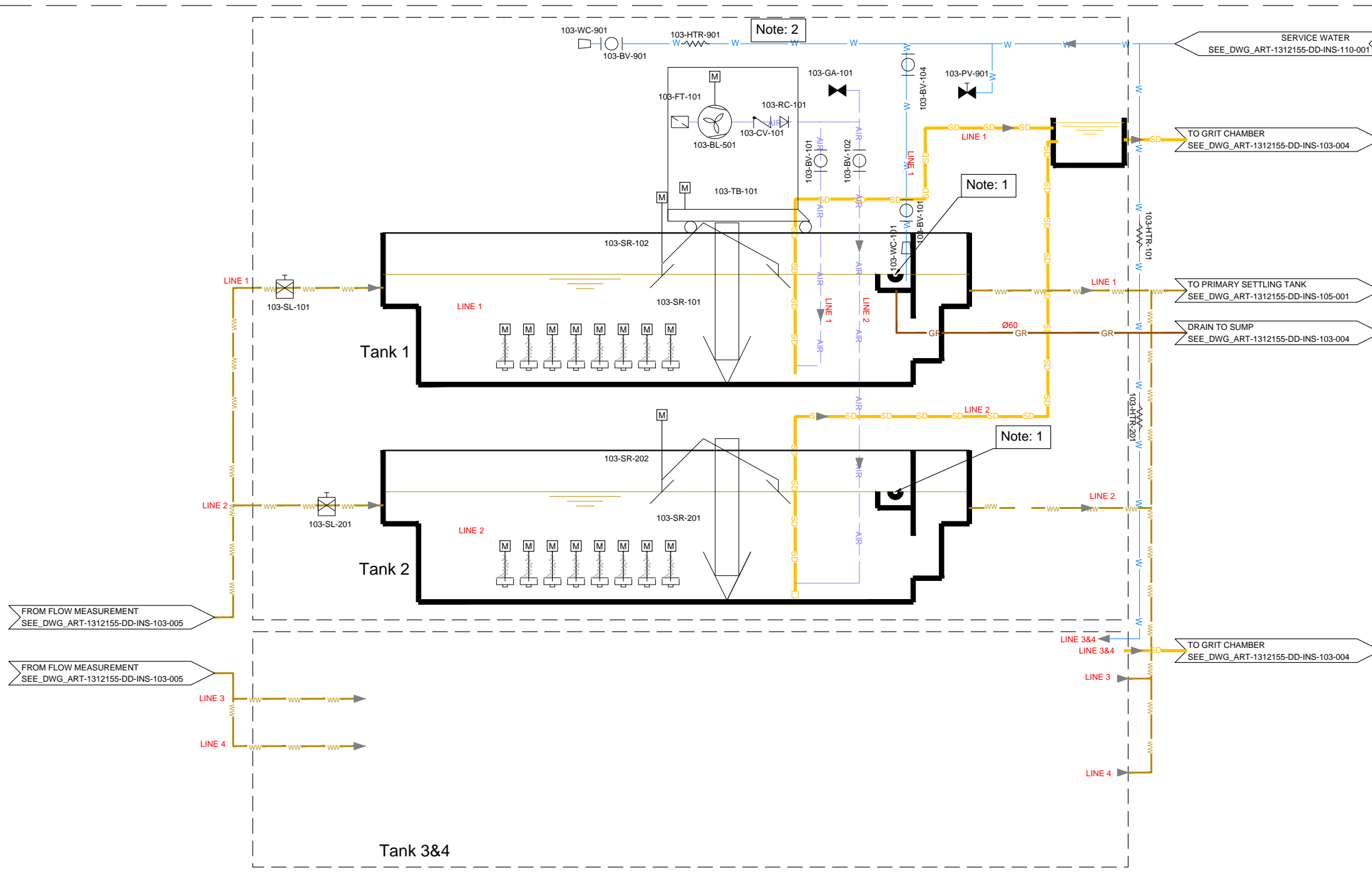
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ART	1312155	DD	INS	102	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

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**NOTE :**

- 1 The grease trough shall be equipped with heat tracing.
- 2 All pipes installed outside shall be equipped with heat tracing.



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INSTRUMENTATION DRAWINGS  
AREA 103  
GRIT TANKS 1&2  
P&ID

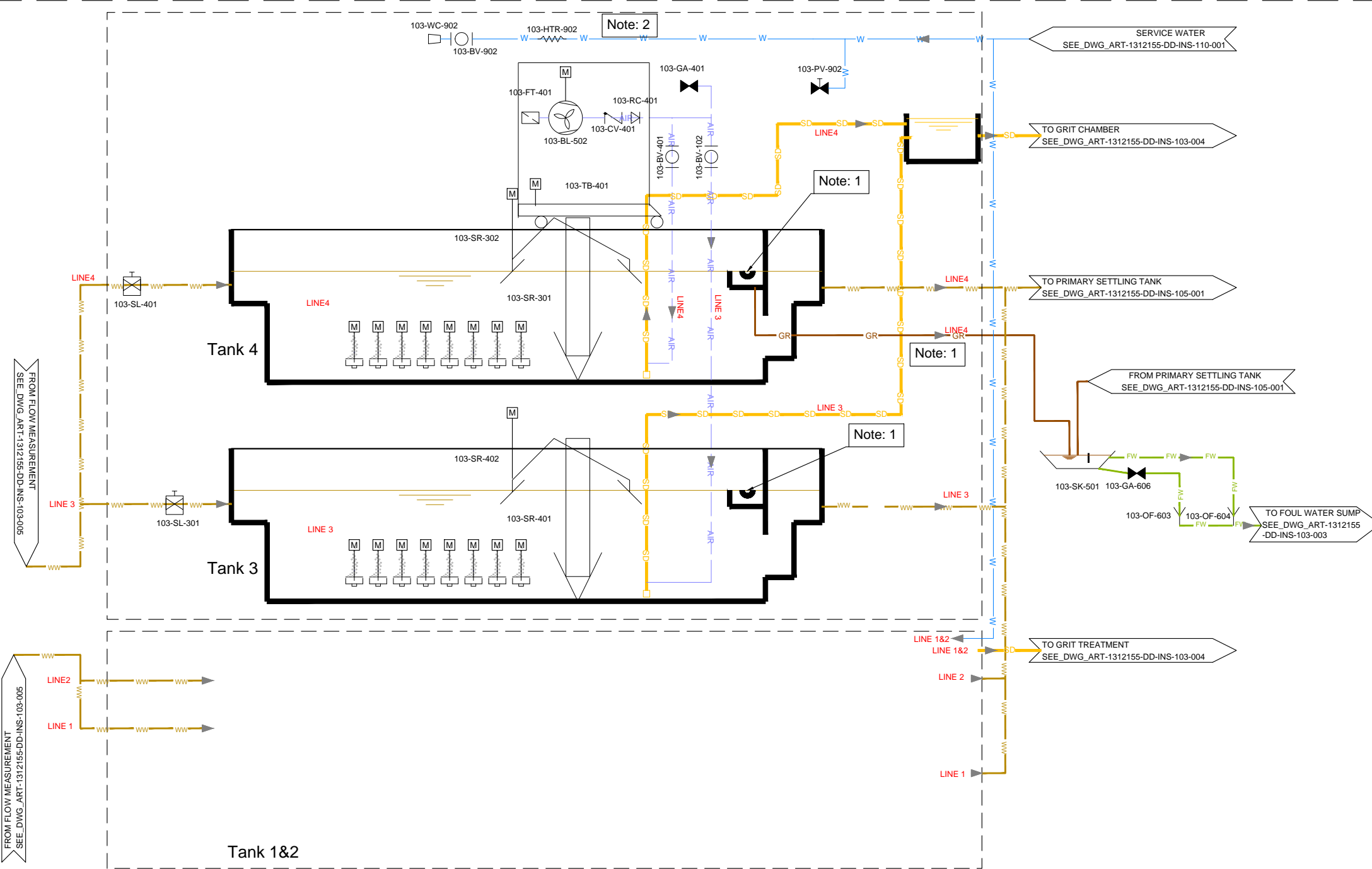



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ART	1312155	DD	INS	103	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

**NOTE :**

- ① The grease trough shall be equipped with heat tracing.
- ② All pipes installed outside shall be equipped with heat tracing.



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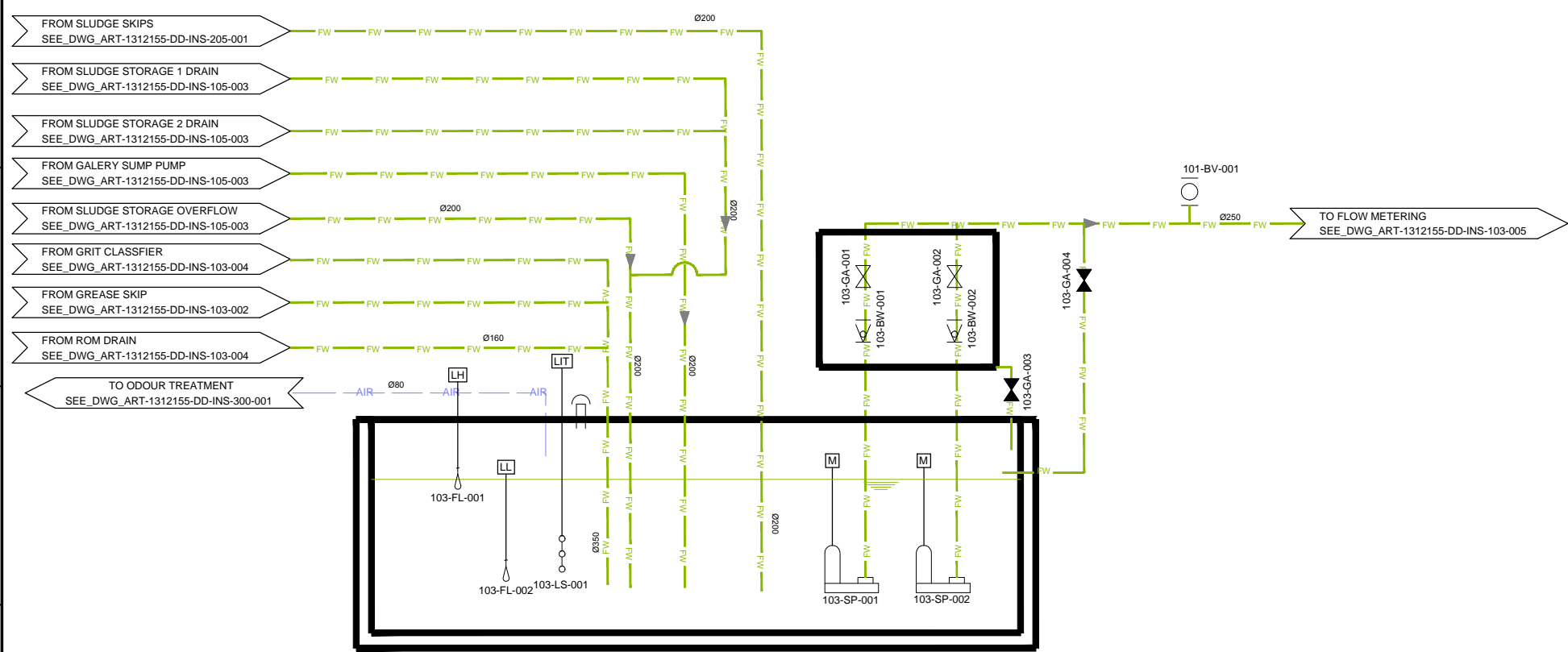
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DETAILED DESIGN  
INSTRUMENTATION DRAWINGS  
AREA 103  
GRIT TANKS 3&4  
P&ID



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ART	1312155	DD	INS	103	002	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

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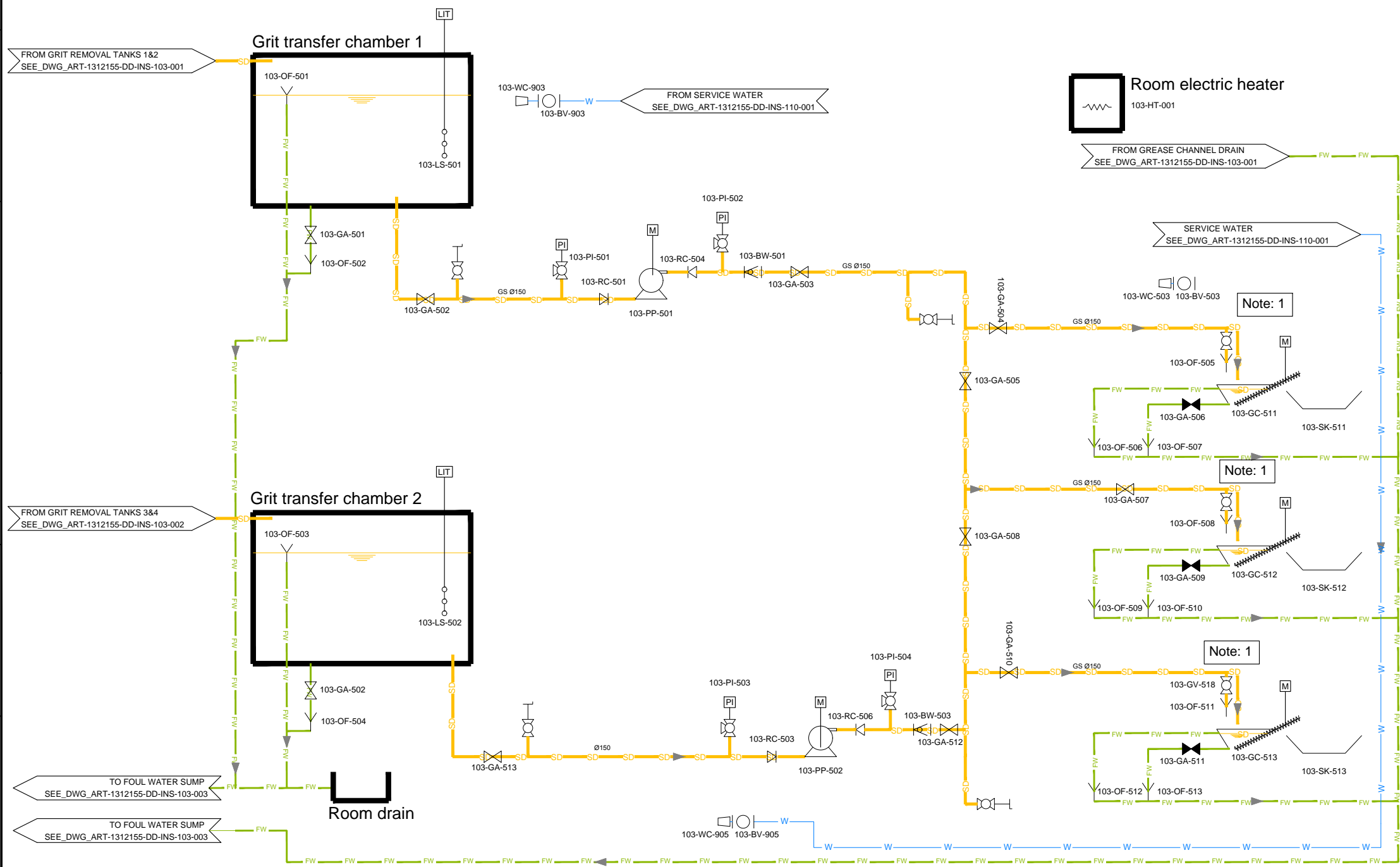
INSTRUMENTATION DRAWINGS  
 AREA 103  
 GRIT TANK FOUL WATER PIT  
 P&ID

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ART	1312155	DD	INS	103	003	0
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**NOTE :**

- 1 Pipe exposed to ambient air shall be insulated and equipped with heat tracing



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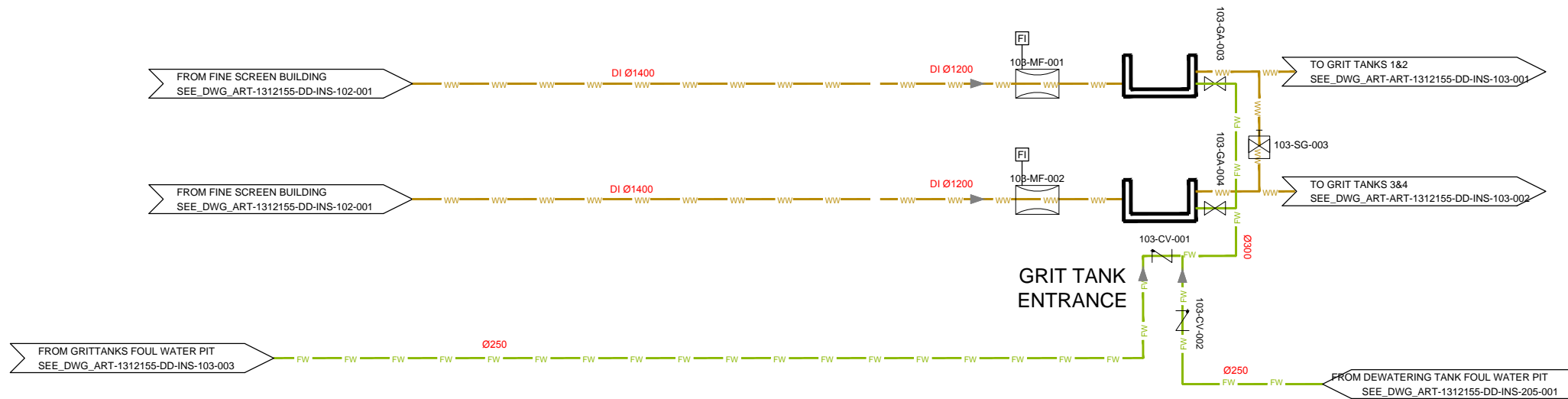
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INSTRUMENTATION DRAWINGS  
AREA 103  
GRIT TREATMENT  
P&ID

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ART	1312155	DD	INS	103	004	0
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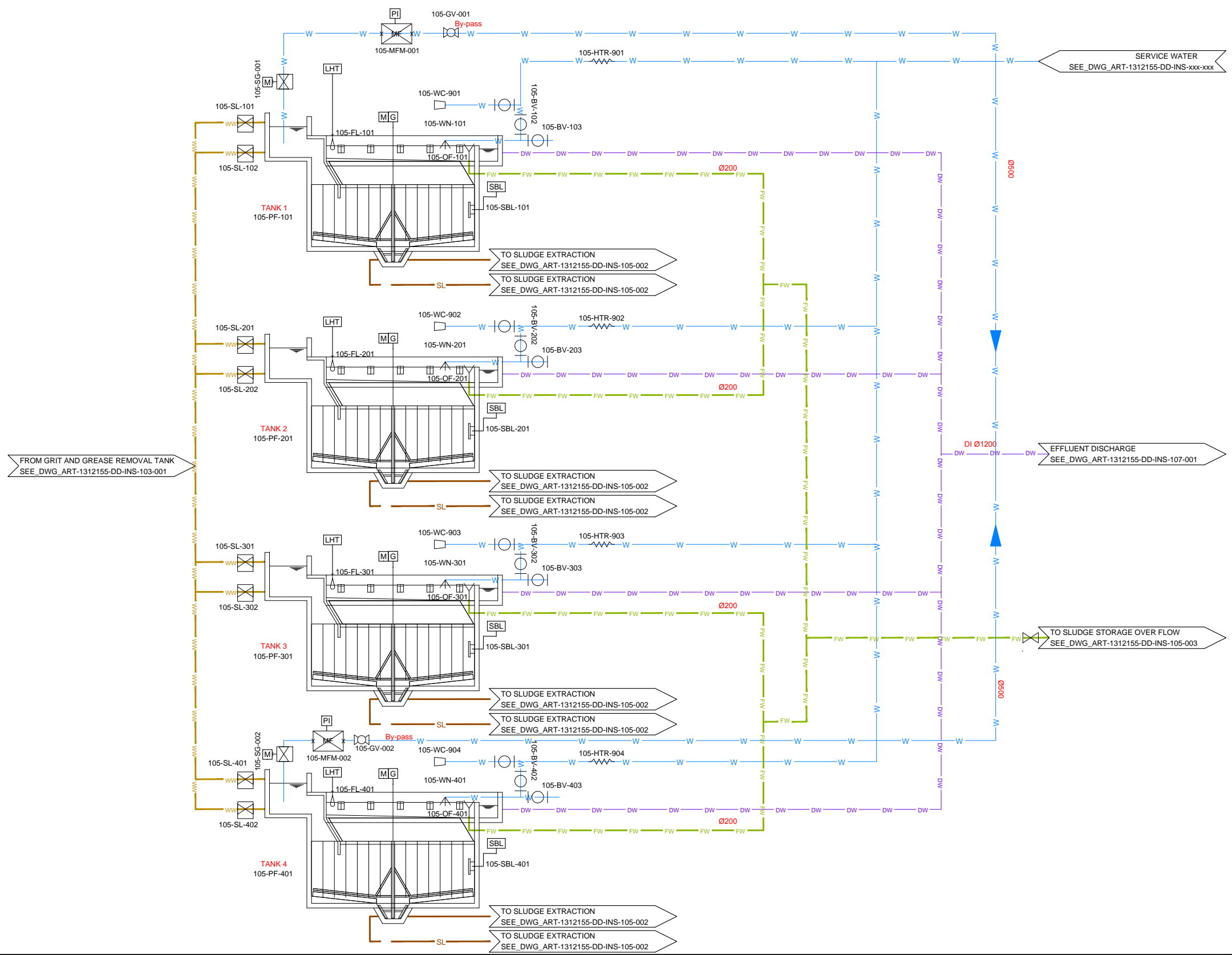
INSTRUMENTATION DRAWINGS

AREA 103  
FLOW MEASUREMENT  
P&ID



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INSTRUMENTATION DRAWINGS  
AREA 105  
PRIMARY SETTLING TANK  
P&ID

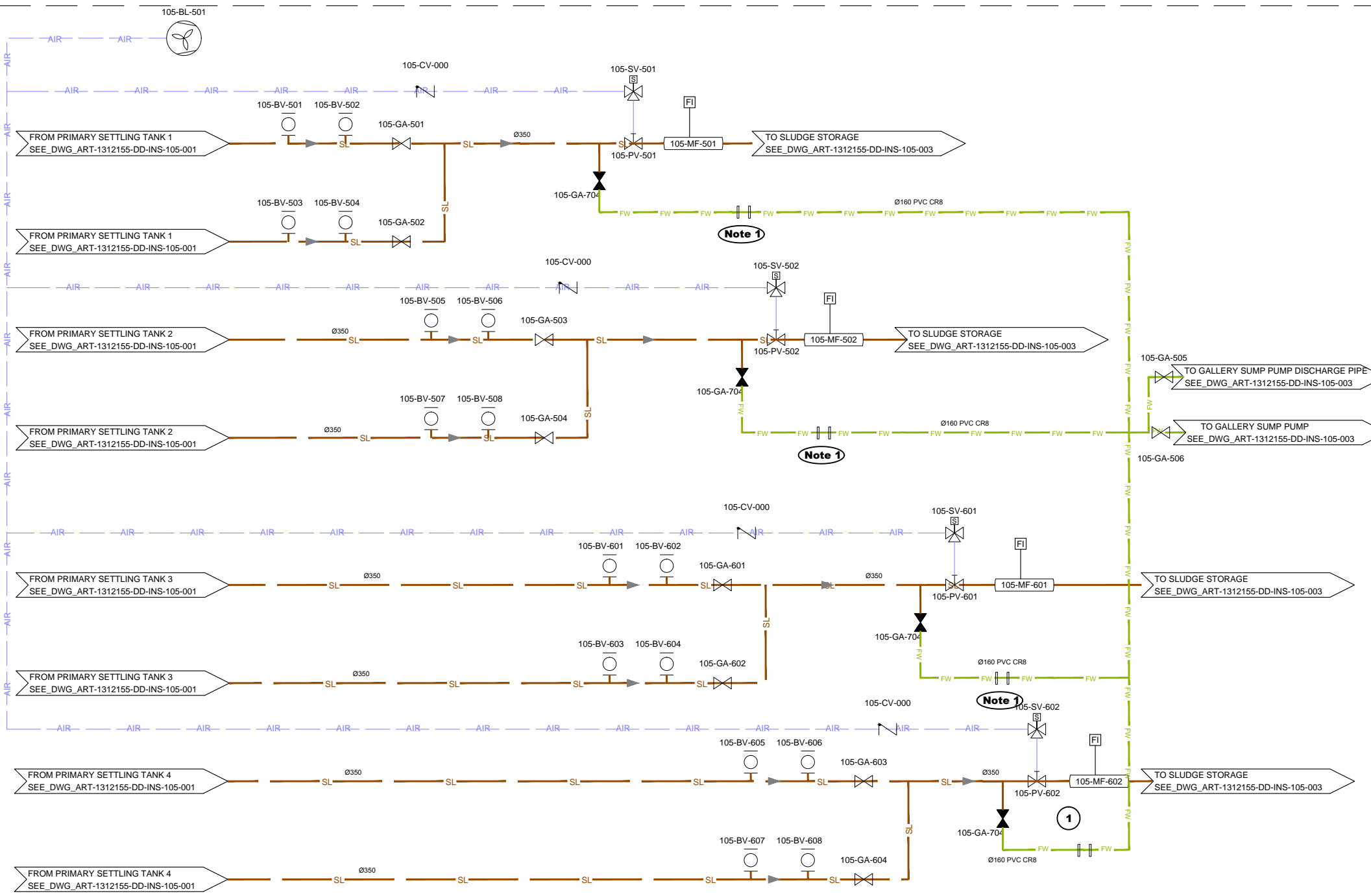


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ART	1312155	DD	INS	105	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

**NOTE :**

- ① Provide flange connection for tempory installation of a rental pump for tank drainage for maintenace events.



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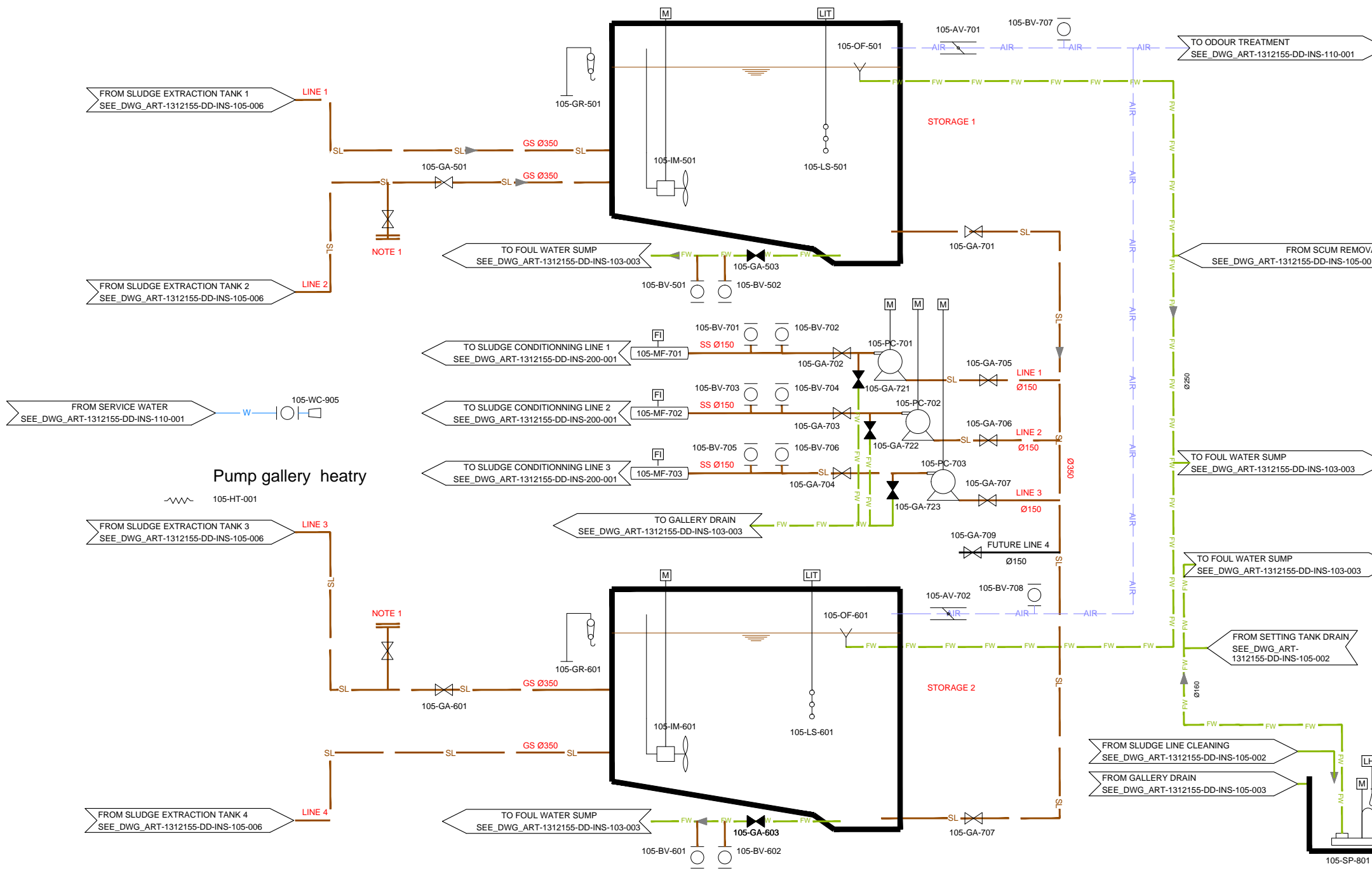
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AREA 105  
SLUDGE EXTRACTION  
P&ID

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	APPROVED :	CTF

ART	1312155	DD	INS	105	002	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

**NOTE :**

- 1 Blind flange connection for temporary installation of a flexible hose connection to direct the sludge from Tank 2 (or 3) to Storage 2 (or 1), during storage maintenance events



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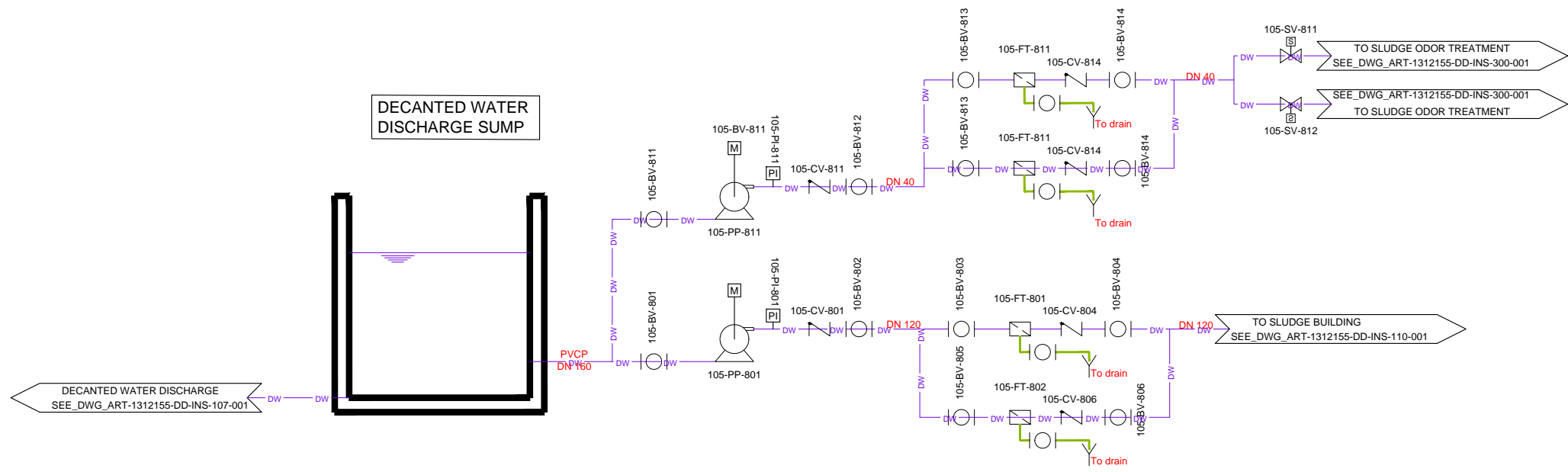
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INSTRUMENTATION DRAWINGS  
AREA 105  
SLUDGE STORAGE  
P&ID

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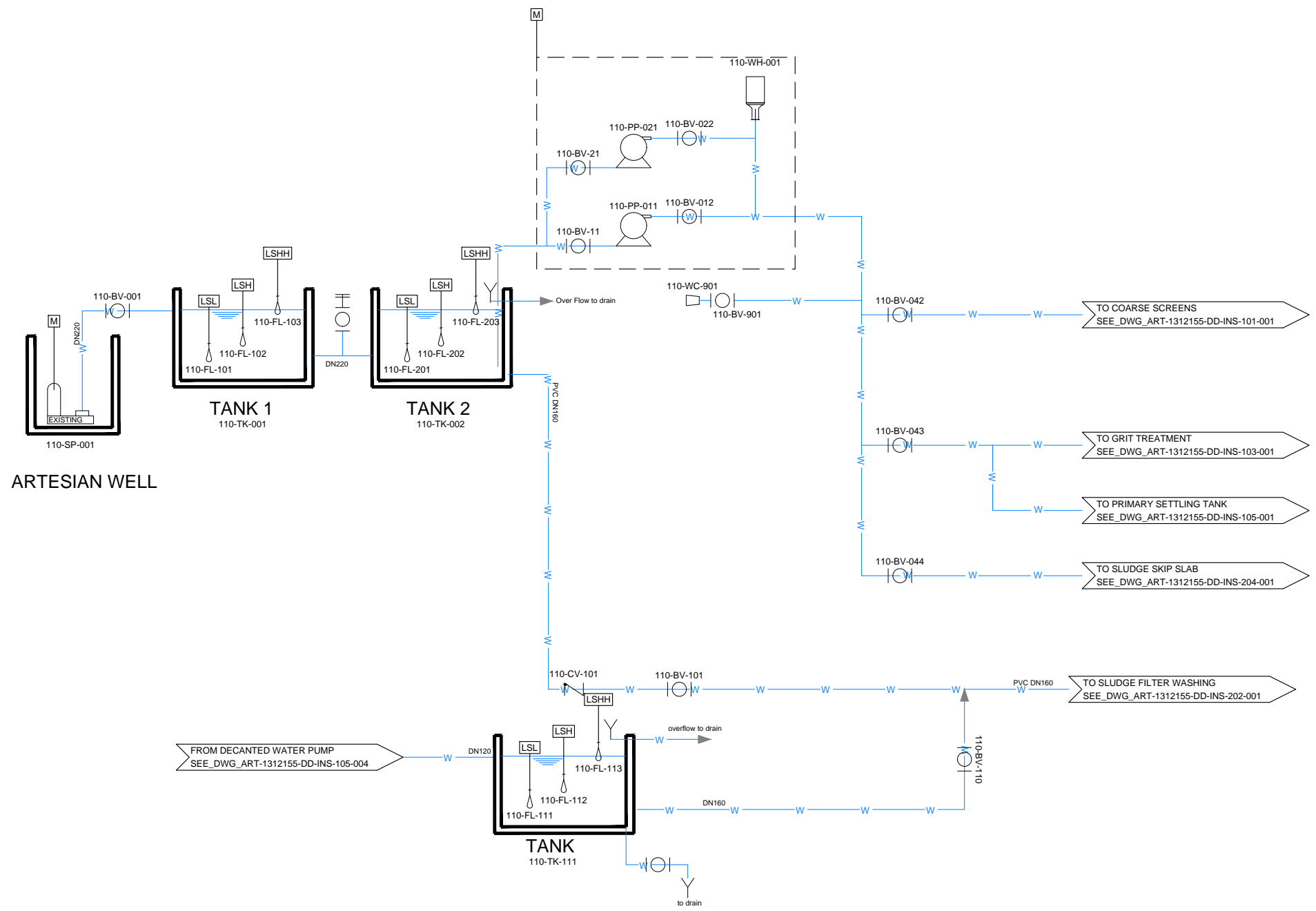
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**YEREVAN MUNICIPALITY**  
**WATER & SEWERAGE BOARD**

**Draft DD**  
**DETAILED DESIGN**

**INSTRUMENTATION DRAWINGS**  
 AREA 105  
 DECANTED WATER FOR SERVICE WATER  
 P&ID

	DATE :	
	DRAWN :	FVR
	CHECKED :	CTF
	APPROVED :	CTF

ART	1312155	DD	INS	105	004	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX



NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	CLN	09/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013

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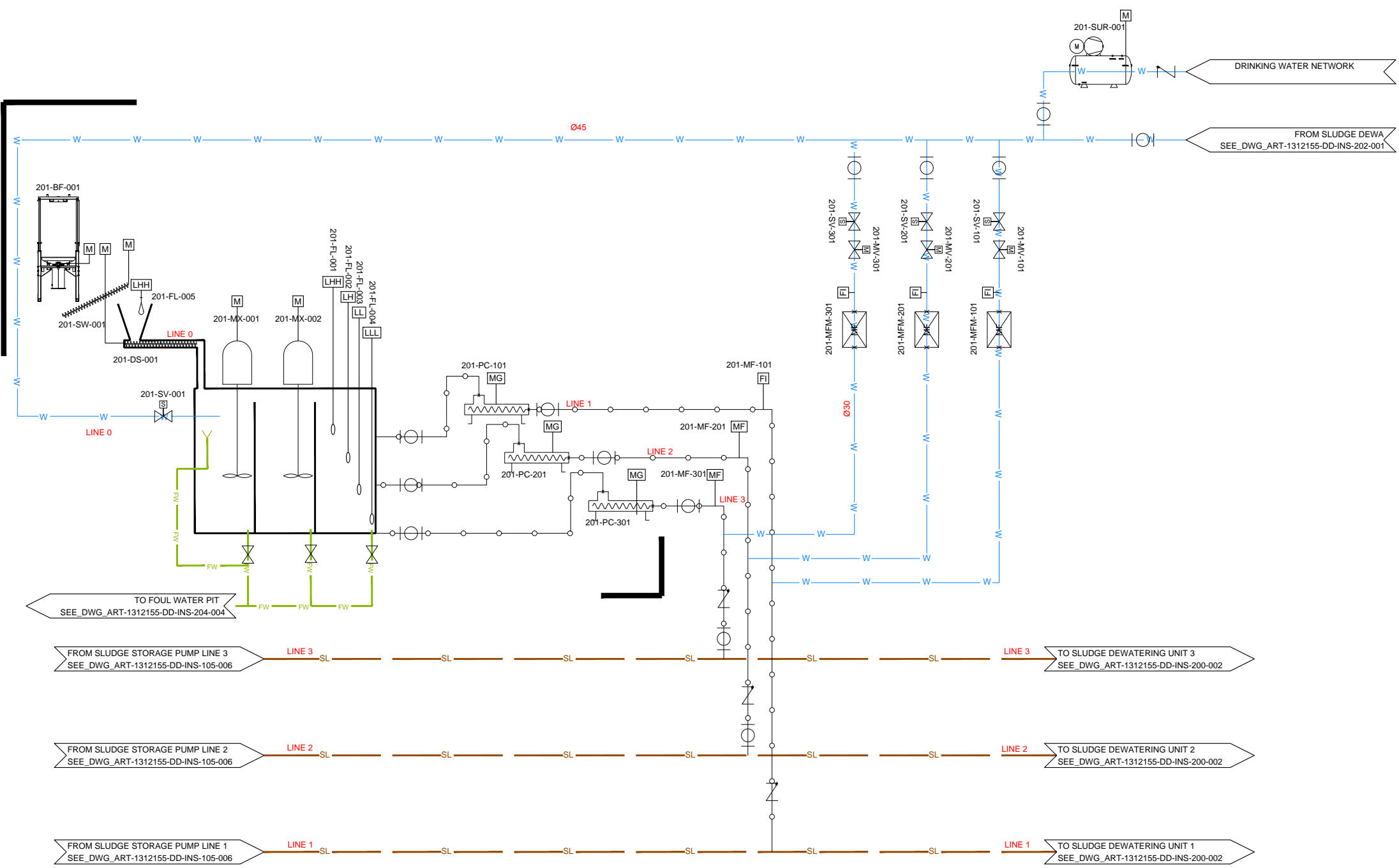
**REPUBLIC OF ARMENIA**  
**YEREVAN MUNICIPALITY**  
**WATER & SEWERAGE BOARD**

**Draft DD**  
**DETAILED DESIGN**

**INSTRUMENTATION DRAWINGS**  
 AREA 110  
 WELL WATER  
 P&ID

	DATE :	
	DRAWN :	FVR
	CHECKED :	CTF
	APPROVED :	CTF

ART	1312155	DD	INS	110	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX





NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	CLN	09/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013

Original paper size :A1 Scale :x=NO SCALE - Y=1:200

**REPUBLIC OF ARMENIA**  
**YEREVAN MUNICIPALITY**  
**WATER & SEWERAGE BOARD**

**Draft DD**  
**DETAILED DESIGN**

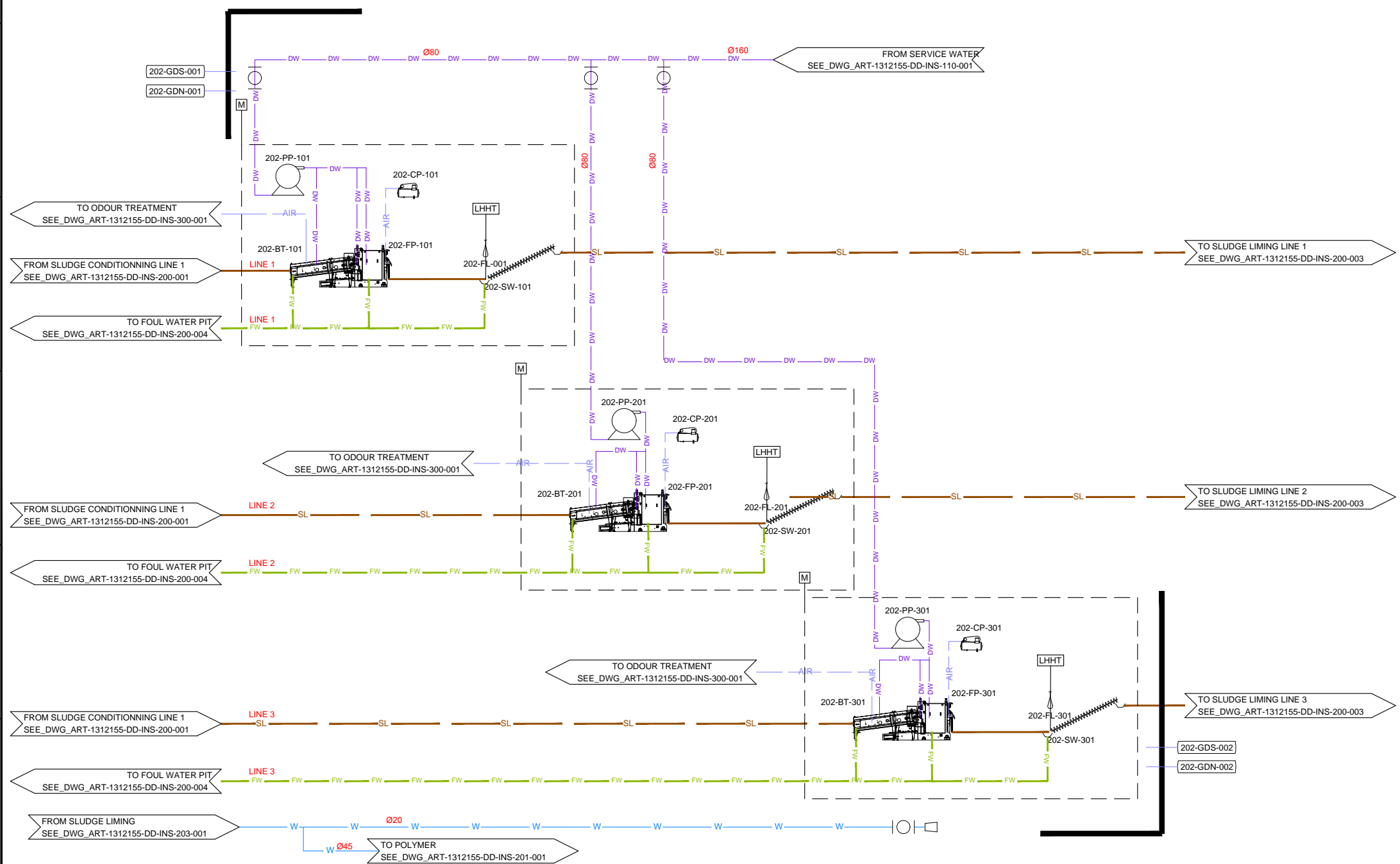
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 AREA 201  
 POLYMER PREPARATION  
 P&ID

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	DRAWN :	FVR
	CHECKED :	CTF
	APPROVED :	CTF

ART	1312155	DD	INS	201	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

Designed by : GFY Drawn by : FVR Verified by : CTF  
 ART-1312155-DD-INS-xxx-xxx-Rev0\_14-01-17.dwg

Designed by : GFY Drawn by : FVR Verified by : CTF  
ART-1312155-DD-INS-xxx-xxx-Rev0\_14-01-17.dwg



NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	CLN	09/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013

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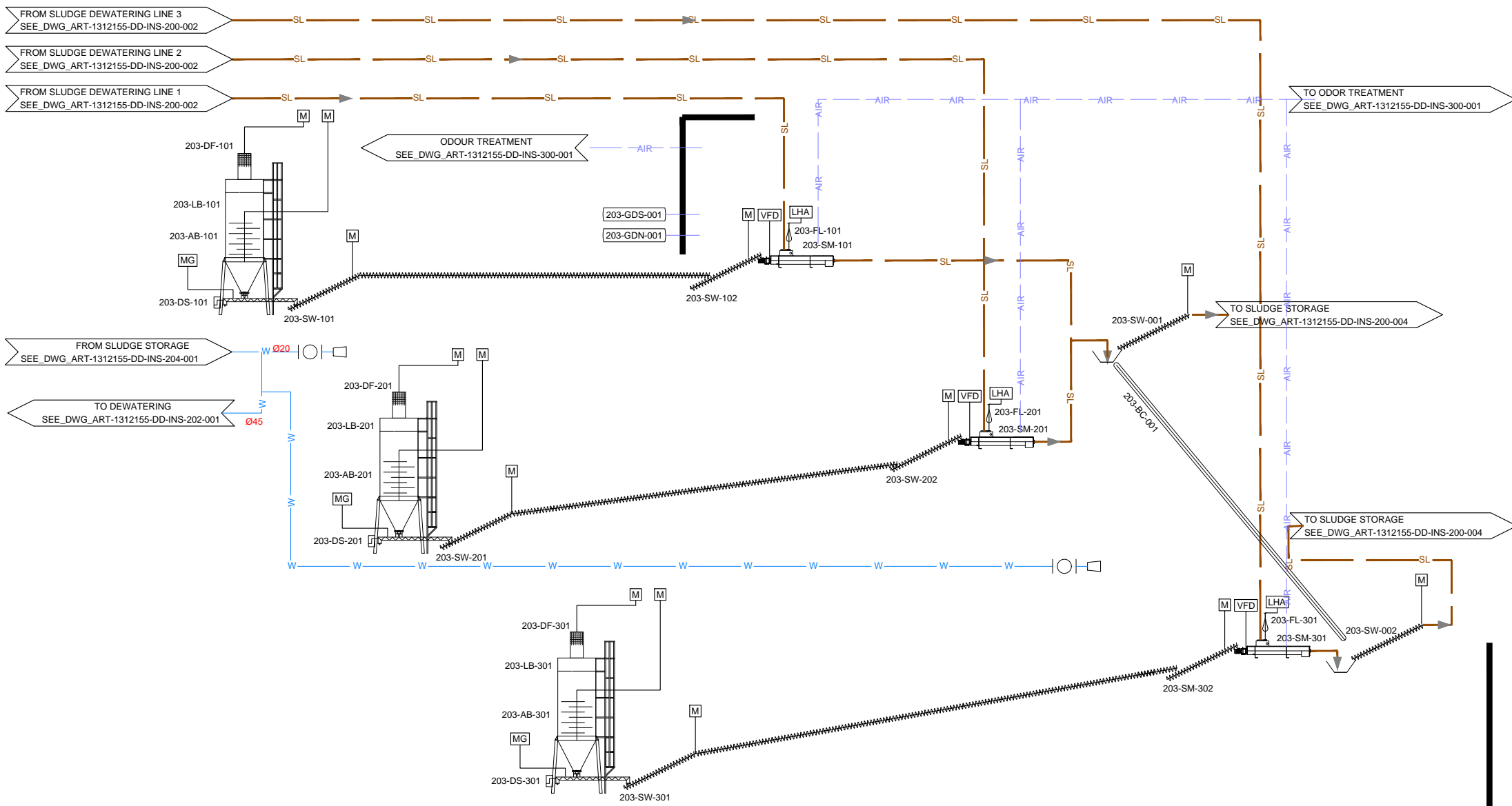
REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

Draft DD  
DETAILED DESIGN

INSTRUMENTATION DRAWINGS  
AREA 202  
DEWATERING  
P&ID

	DATE :	
	DRAWN :	FVR
	CHECKED :	CTF
	APPROVED :	CTF

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TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



NO.	REVISIONS	BY	DATE
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2	Final Detailed Design	CLN	09/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013

Original paper size :A1 Scale :x=NO SCALE - Y=1:200

REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

Draft DD  
DETAILED DESIGN

INSTRUMENTATION DRAWINGS

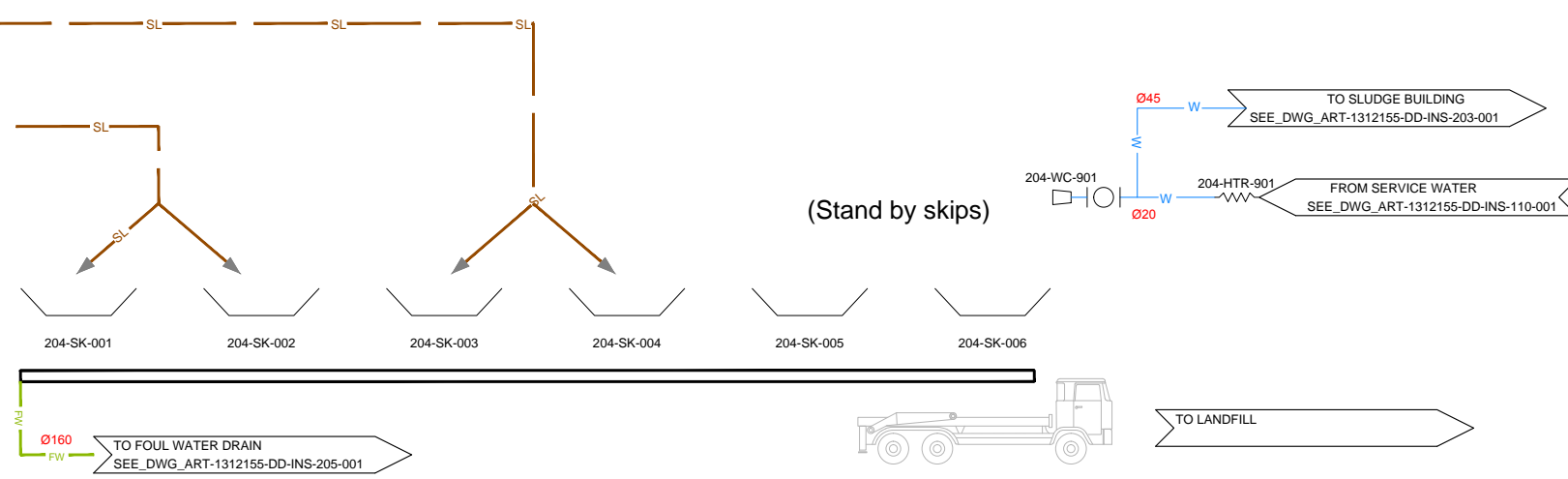
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SLUDGE LIMING  
P&ID

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	CHECKED :	CTF
	APPROVED :	CTF

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TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

FROM SLUDGE LIMING  
SEE\_DWG\_ART-1312155-DD-INS-200-002

FROM SLUDGE LIMING  
SEE\_DWG\_ART-1312155-DD-INS-200-002





NO.	REVISIONS	BY	DATE
3	Tender Detail Design	CLN	31/01/2014
2	Final Detailed Design	CLN	09/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013

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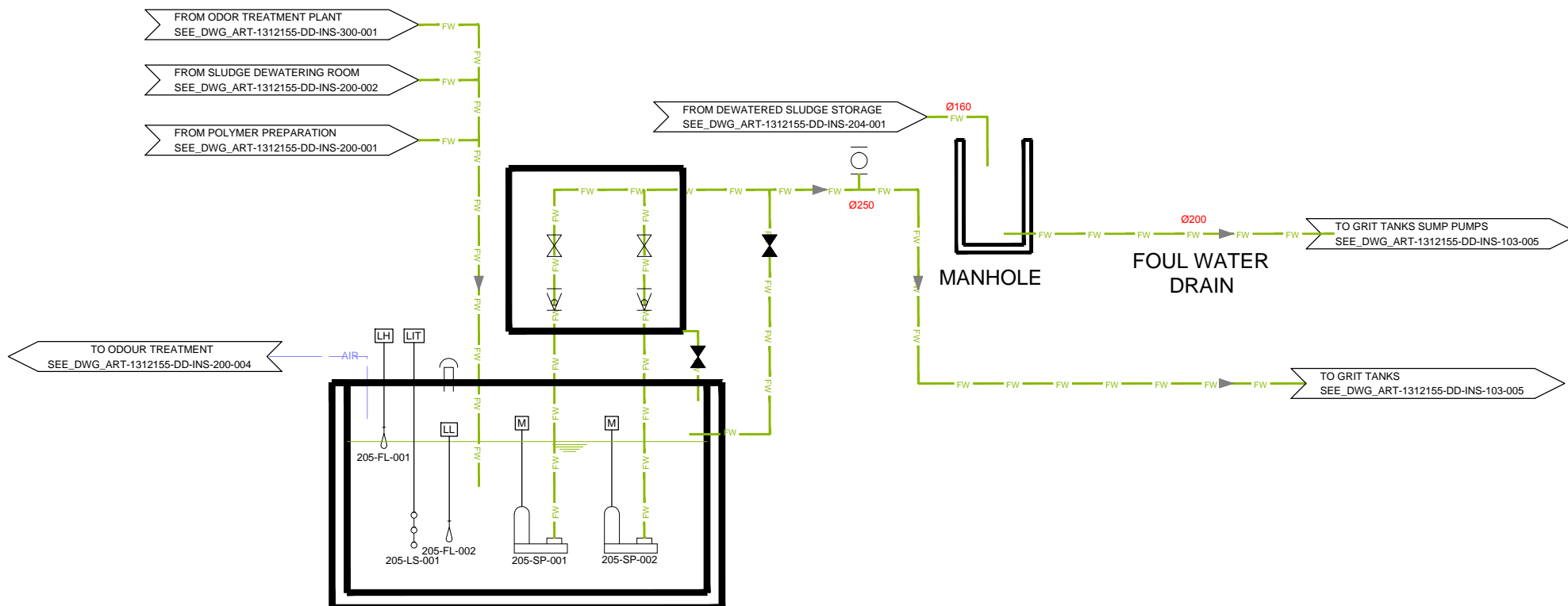
REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

Draft DD  
DETAILED DESIGN

INSTRUMENTATION DRAWINGS  
AREA 204  
DEWATERED SLUDGE STORAGE  
P&ID

 	DATE :	
	DRAWN :	FVR
	CHECKED :	CTF
	APPROVED :	CTF



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TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX



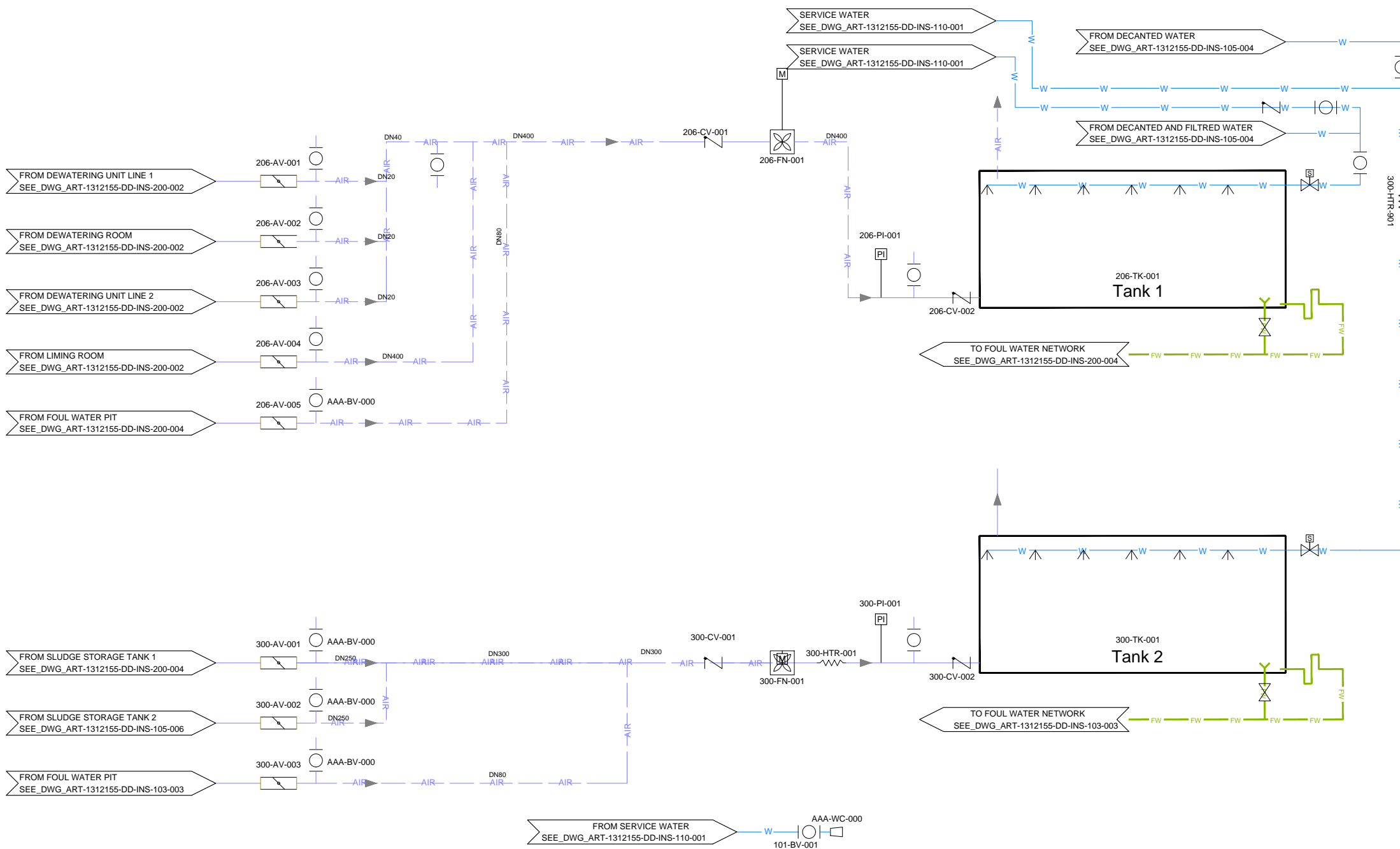
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0	FIRST ISSUE	FVR	01/06/2013

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REPUBLIC OF ARMENIA  
 YEREVAN MUNICIPALITY  
 WATER & SEWERAGE BOARD  
  
 Draft DD  
 DETAILED DESIGN  
 INSTRUMENTATION DRAWINGS  
 AREA 205  
 SLUDGE BUILDING FOUL WATER PIT  
 P&ID

 	DATE :	
	DRAWN :	FVR
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	APPROVED :	CTF

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TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



NO.	REVISIONS	BY	DATE
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2	Final Detailed Design	CLN	09/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013

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REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

Draft DD  
DETAILED DESIGN

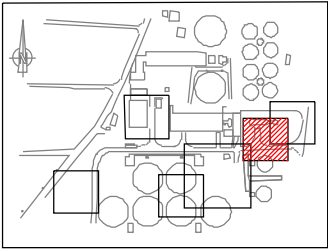
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AREA 300  
ODOUR TREATMENT  
P&ID

DATE :	
DRAWN :	FVR
CHECKED :	CTF
APPROVED :	CTF

ART	1312155	DD	INS	300	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

# CIVIL WORKS DRAWINGS

DRAWING NUMBER	DISCIPLINE	AREA	DESIGNATION	SIZE	SCALE	STATUS	REVISION
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ART-1312155-DD-CW-101-000	CIVIL WORKS DRAWINGS	101&102	PLAN VIEW-Fine screening/coarse screening	A3	1/100	DD	0
ART-1312155-DD-CW-103-001	CIVIL WORKS DRAWINGS	103	PLAN VIEW-Grit and grease removal tank	A3	1/150	DD	0
ART-1312155-DD-CW-105-001	CIVIL WORKS DRAWINGS	105	PLAN VIEW-PRIMARY SETTLING TANK	A3	1/100	DD	0
ART-1312155-DD-CW-107-001	CIVIL WORKS DRAWINGS	107	PLAN VIEW - Discharge	A3	1/50	DD	0
ART-1312155-DD-CW-107-101	CIVIL WORKS DRAWINGS	107	PLAN VIEW - Effluent collection chamber	A3	1/50	DD	0
ART-1312155-DD-CW-107-102	CIVIL WORKS DRAWINGS	107	PLAN VIEW - Outlet connection chamber	A3	1/50	DD	0
ART-1312155-DD-CW-110-001	CIVIL WORKS DRAWINGS	110	PLAN VIEW AND SECTION	A3	1/50	DD	0
ART-1312155-DD-CW-200-001	CIVIL WORKS DRAWINGS	200	PLAN VIEW - Sludge handling	A3	1/100	DD	0
ART-1312155-DD-CW-200-101	CIVIL WORKS DRAWINGS	200	SECTIONS 1 & 11 - Sludge handling	A3	1/100	DD	0
ART-1312155-DD-CW-402-101	CIVIL WORKS DRAWINGS	402	EXISTING-Secondary substation plan view & section	A3	1/100	DD	0



**KEY PLAN**

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3	Tender Detail Design	CLN	31/01/2014
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Original paper size : A1 Scale :

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REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

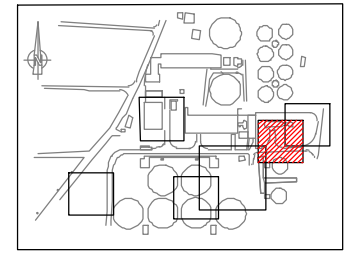
CIVIL WORKS DRAWINGS

List of drawing



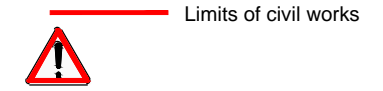

DATE : \_\_\_\_\_  
 DRAWN : CLN  
 CHECKED : CTF  
 APPROVED : CTF

ART	1312155	DD	CW	000	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



**KEY PLAN**

**NOTE :**



— Limits of civil works

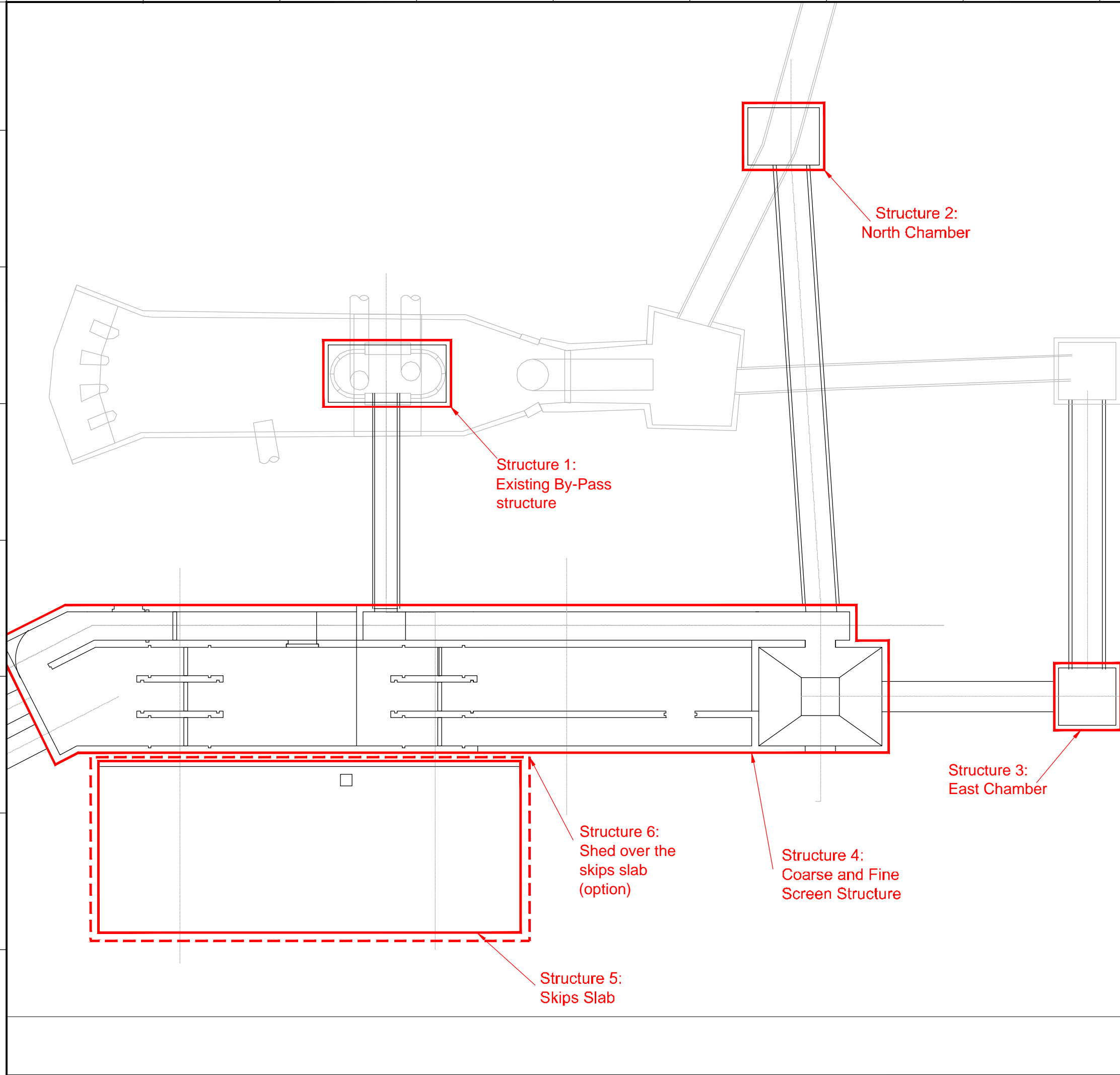
The bottom slab of the screening channel shall be raised as follows:

- From 886.05 to 886.55 masl in the coarse screening channel
- From 885.70 to 886.2 masl in the fine screening channel

The bottom slab shall remain at 885.70 masl, at a minimum 1 meter prior to the connection to the two ND1400 pipes connection to the Grit Tanks.

The bypass weir elevation shall be set at 889.30 masl. The Top of Wall (TOW) of the bypass weir wall shall be at 889.00 with an adjustable weir plate set at 889.30 masl, which shall be adjustable at -25 cm to +10 cm from the afore mentioned set elevation.

All other TOW elevations shall remain as shown on the drawings.



2	Final Detailed Design	CLN	10/2013
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Original paper size : A1 Scale :1:100



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**REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN**

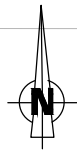
**MAIN DRAWINGS**

AREA 101 and 102  
PLAN VIEW LIMITS OF CIVIL WORKS  
Future Inlet Chamber / Inlet Chamber / Inlet By-pass / Coarse screening

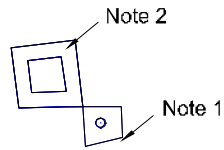


DATE :	
DRAWN :	CLN
CHECKED :	CTF
APPROVED :	CTF

ARI	1312155		CVV	101	000	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

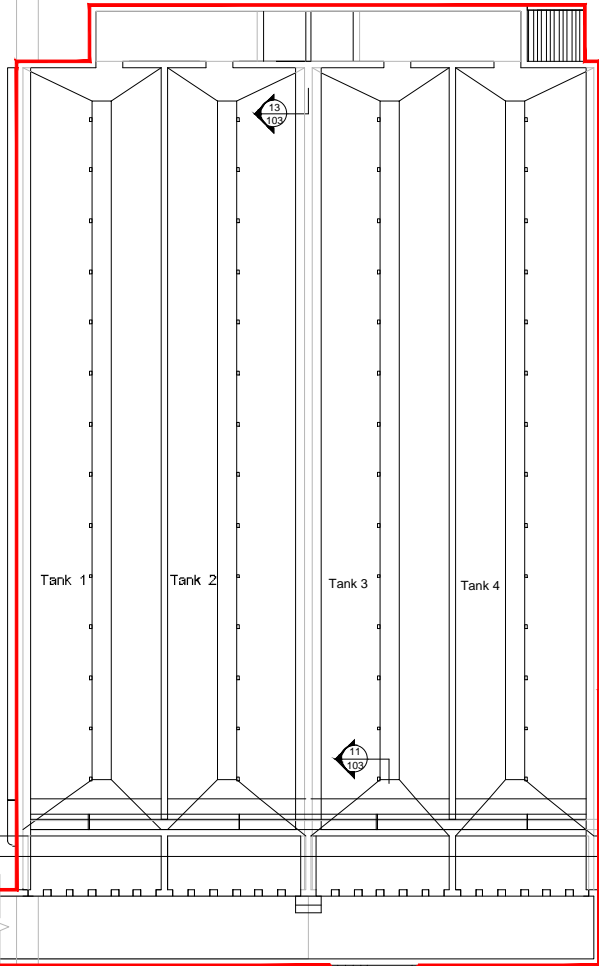


Paved road



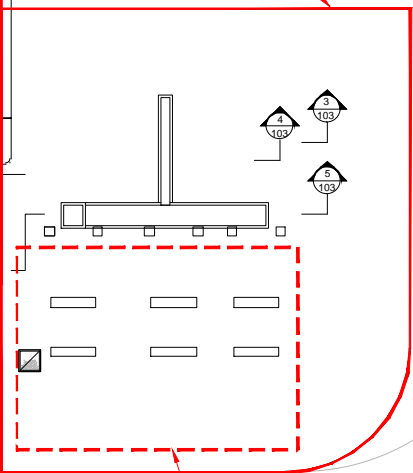
Structure 1:  
Maggmeter  
chamber

103-SL-101



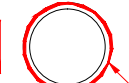
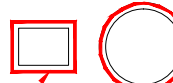
Structure 2:  
Grit & Grease  
Removal Tank

Structure 3:  
Skips slab

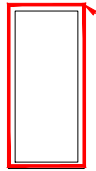


Structure 5:  
Valve Chamber

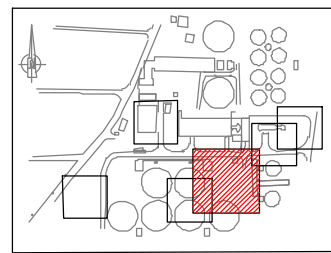
Structure 4:  
Foul Water Sump



Structure 6:  
Odor Treatment (biofilters)  
Slab



Structure 7:  
Shed over the grit skips  
(option)



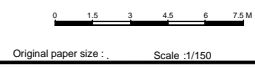
KEY PLAN

**NOTE :**

— Limits of civil works

- ① Existing Artesian well (40 m deep) shall be protected during construction.
- ② Valve chamber of artesian well used for landscape irrigation. Contractor shall relocated the valve chamber and add a new connection to the service water storage.

NO.	REVISIONS	BY	DATE
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WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

CIVIL WORKS DRAWINGS

AREA 103

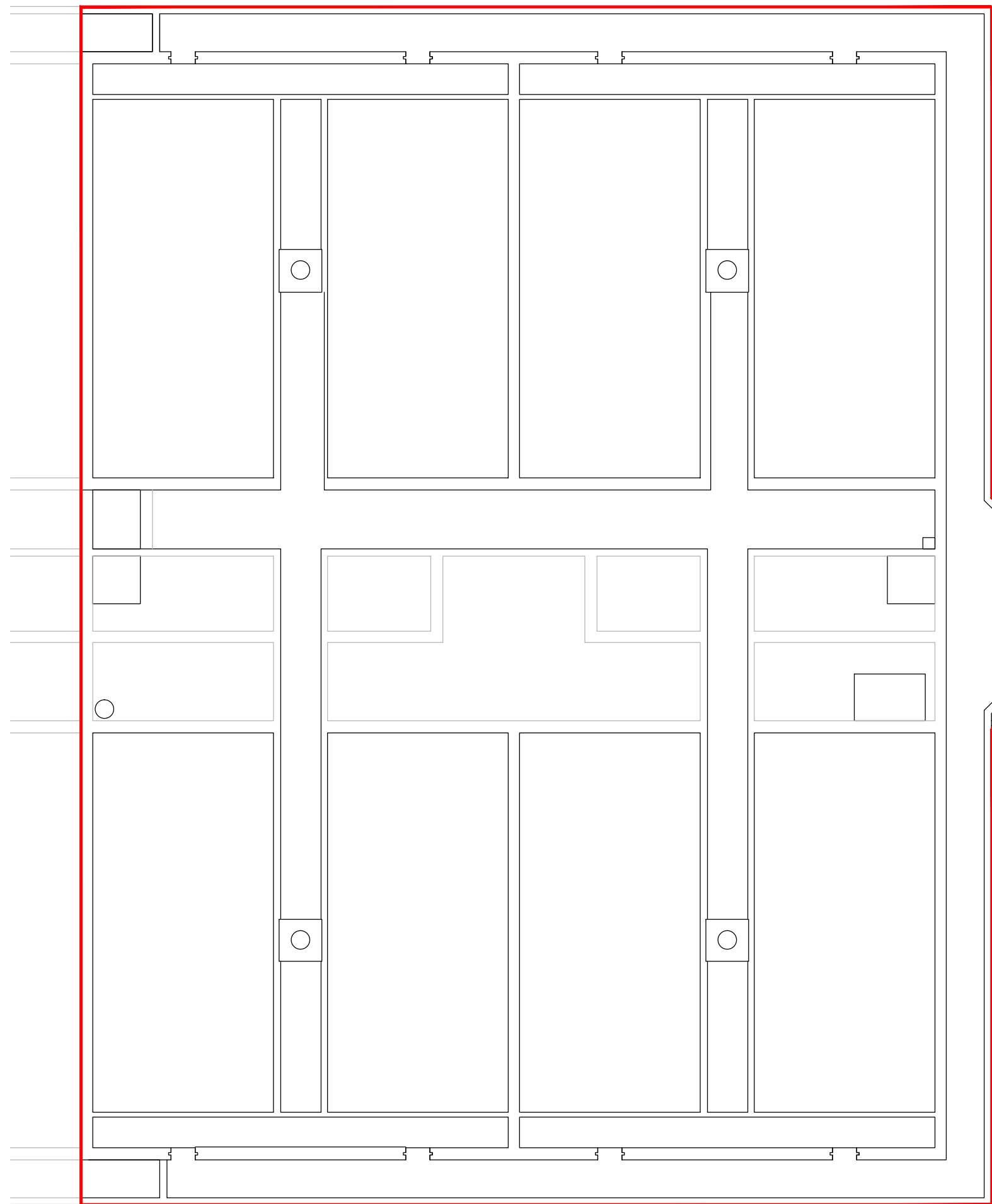
PLAN VIEW

Grit and grease removal tank

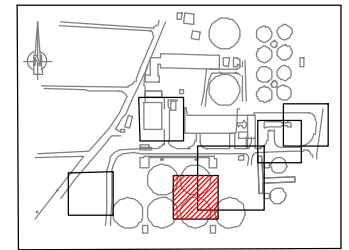


DATE : \_\_\_\_\_  
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 CHECKED : CTF  
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AKI	1312162	1312	CSVV	103A	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



Primary sedimentation tanks

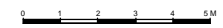


KEY PLAN

**NOTE :**

— Limits of civil works

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REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

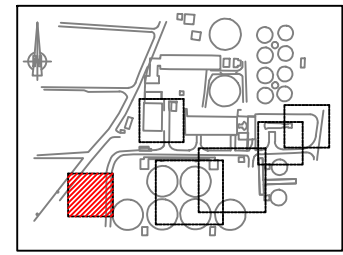
CIVIL WORKS DRAWINGS

AREA 105  
PRIMARY SETTLING TANK



DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

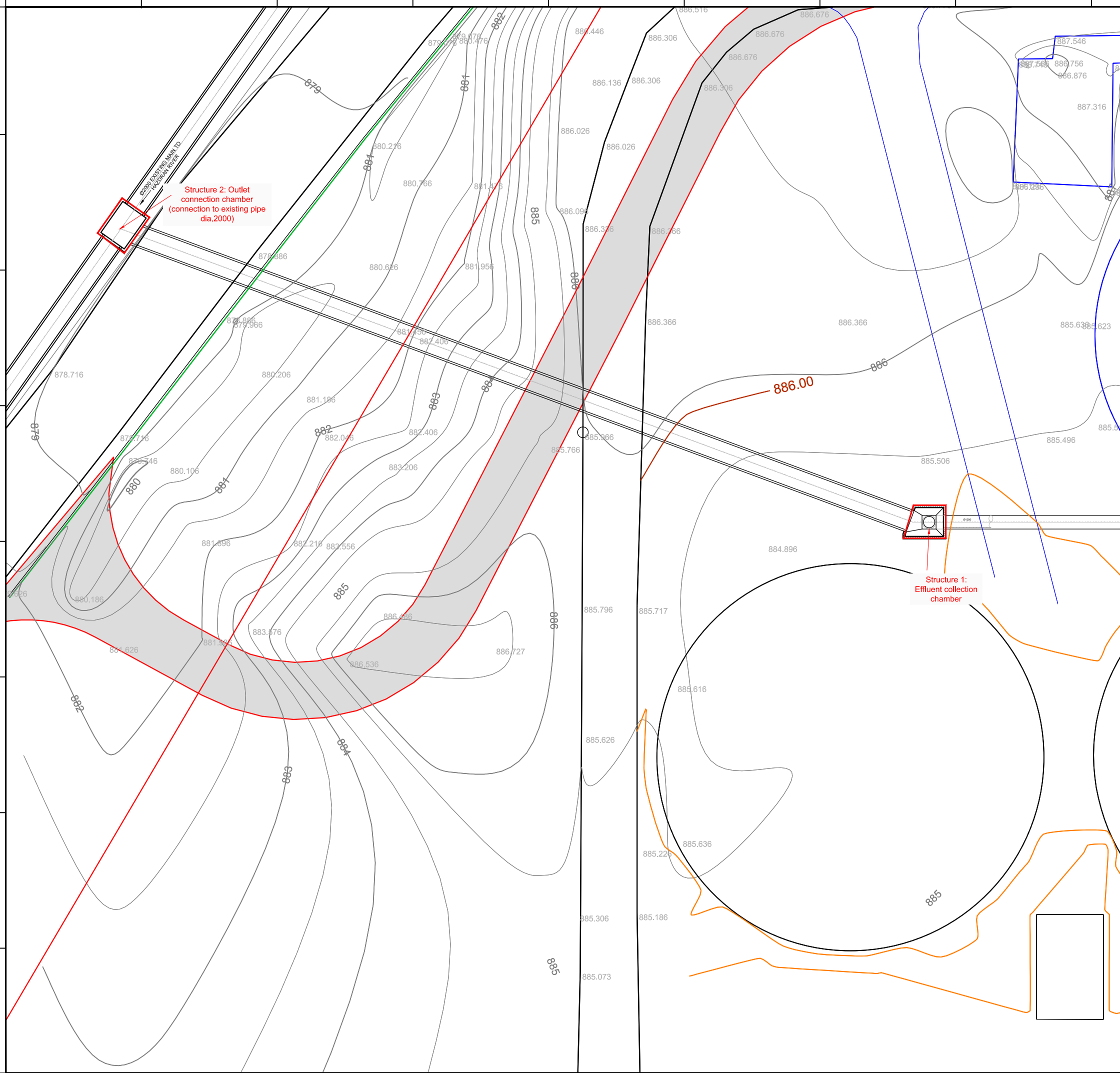
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TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX



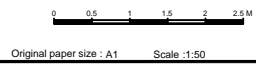
**KEY PLAN**

**LEGEND :**

Limits of civil works



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0	FIRST ISSUE	FVR	06/2013



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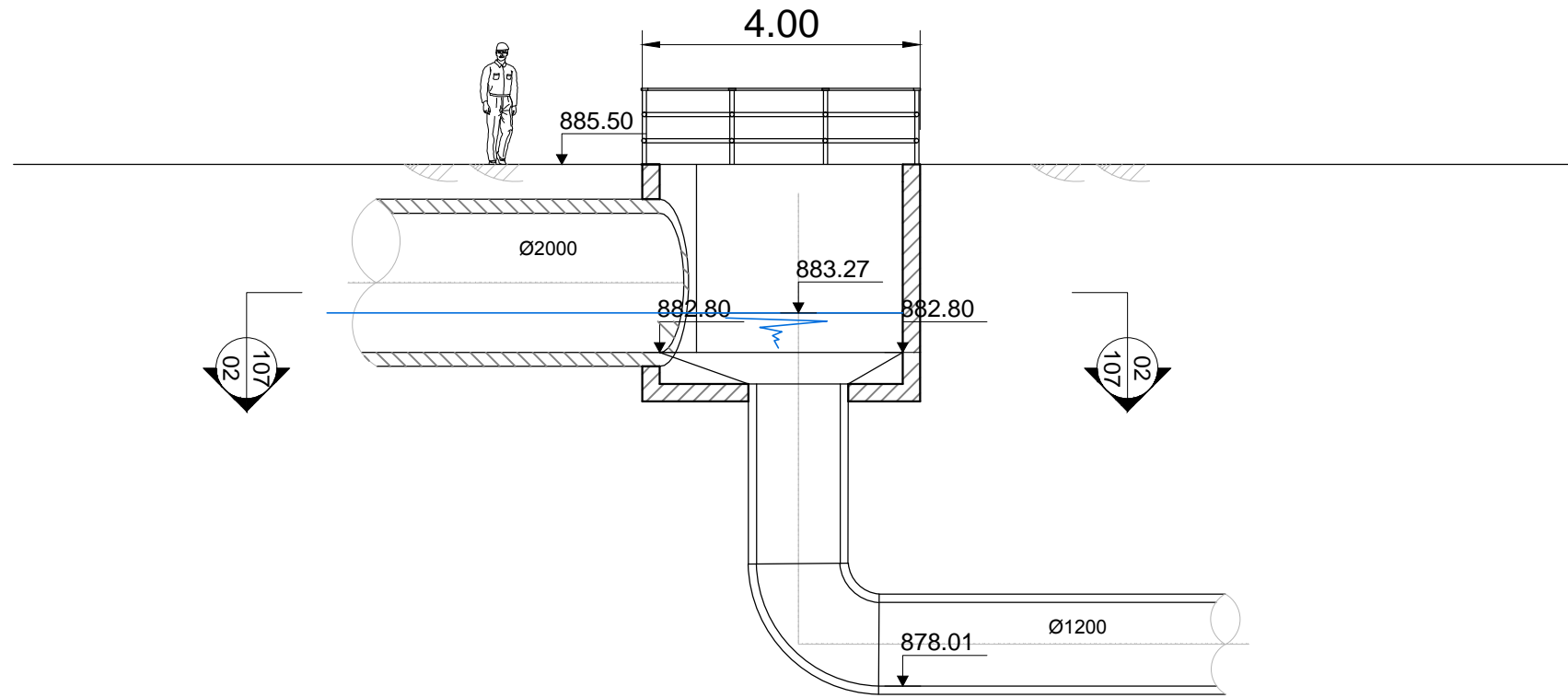
REHABILITATION OF AERATSIA WWTP  
 DETAILED DESIGN

CIVIL WORKS DRAWINGS  
 AREA 107  
 PLAN VIEW  
 DISCHARGE

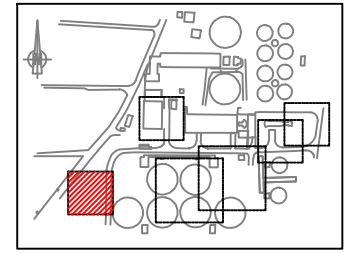
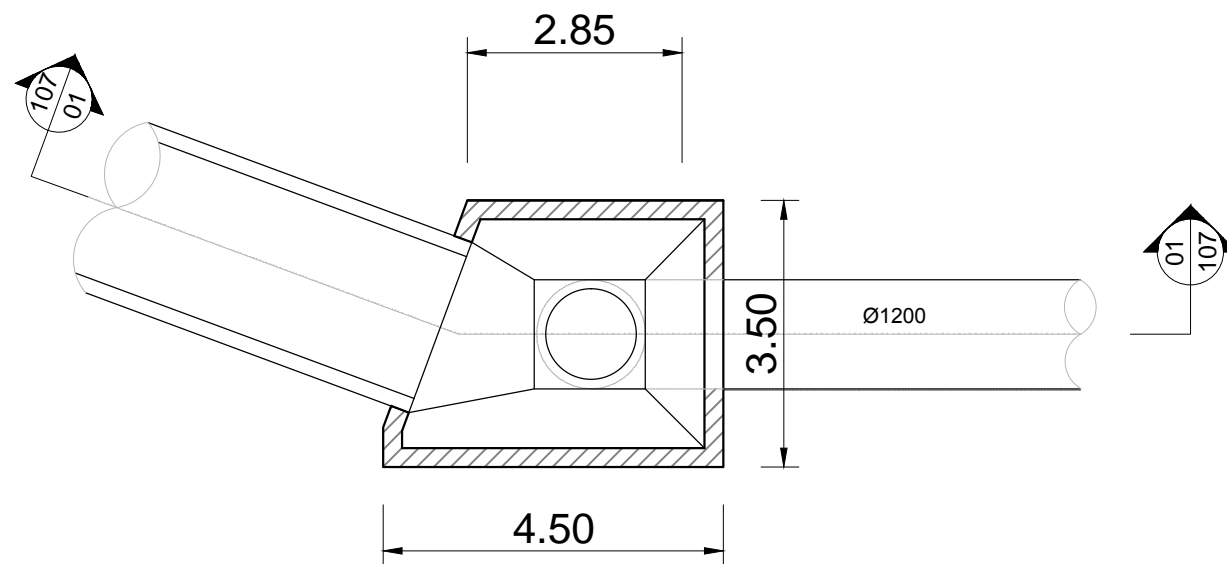
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TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

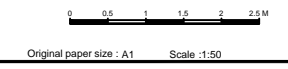
# SECTION 01-01



# SECTION 02-02



NO.	REVISIONS	BY	DATE
2	Final Detailed Design	CLN	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013



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REHABILITATION OF AERATSIA WWTP

DETAILED DESIGN

CIVIL WORKS DRAWINGS

AREA 107

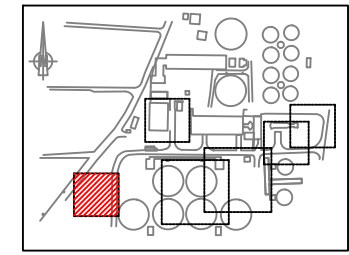
SECTIONS

Effluent collection chamber

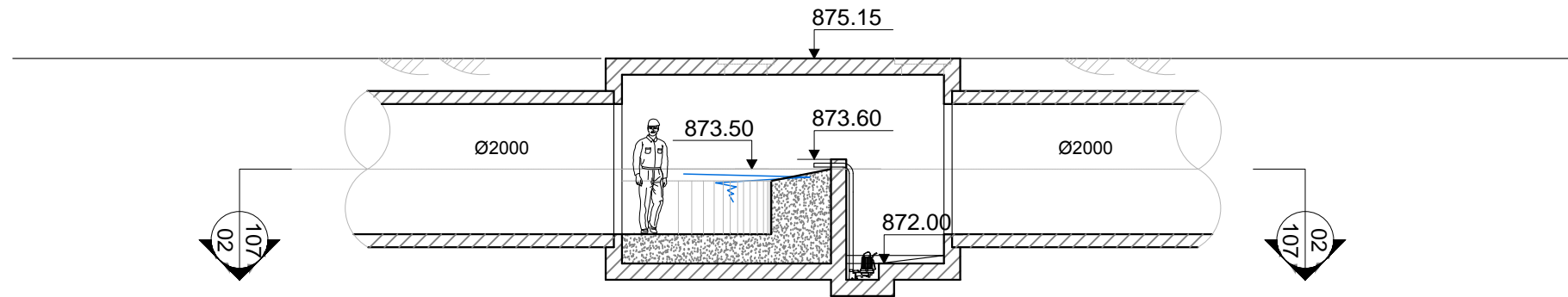
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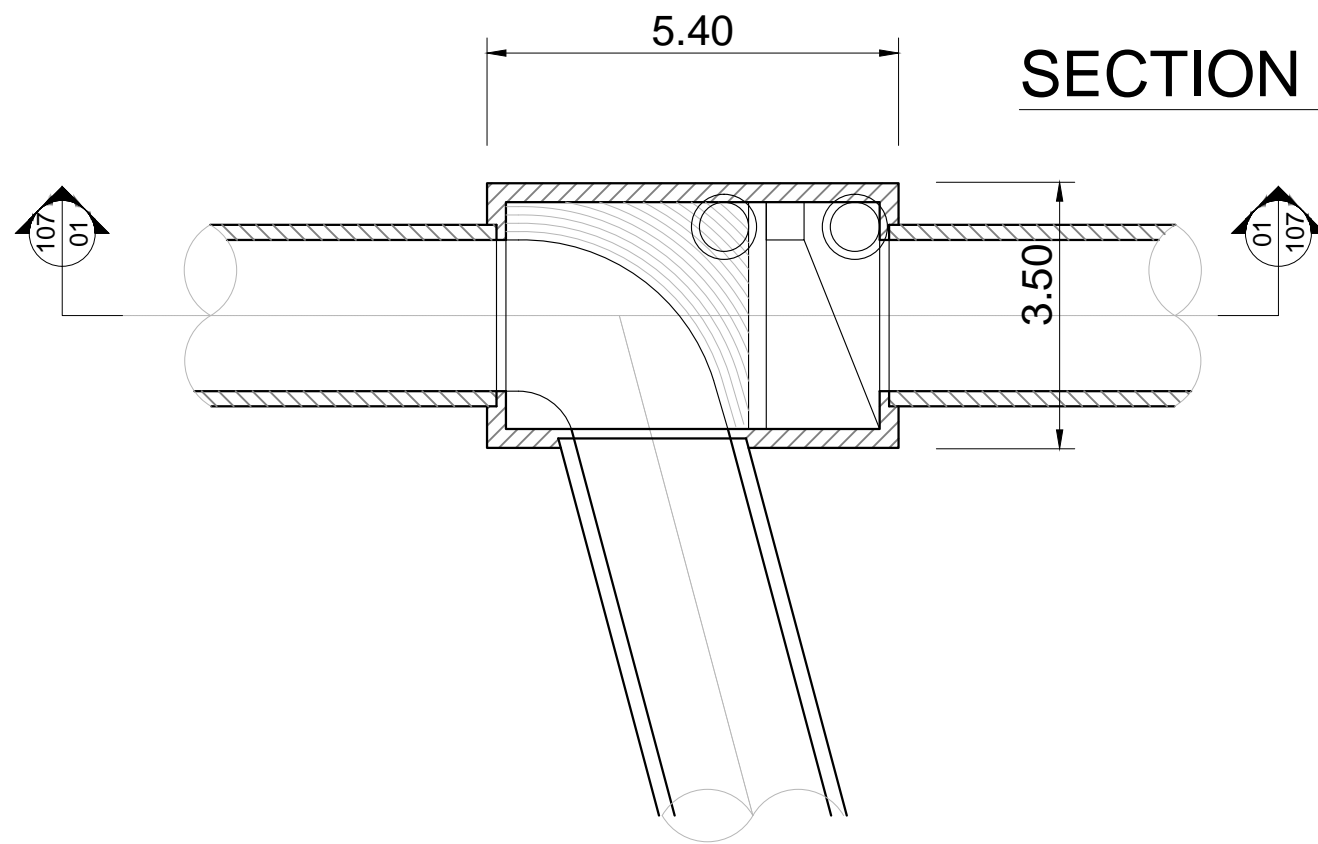
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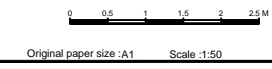
KEY PLAN



# SECTION 02-02



NO.	REVISIONS	BY	DATE
2	Final Detailed Design	CLN	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013



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YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

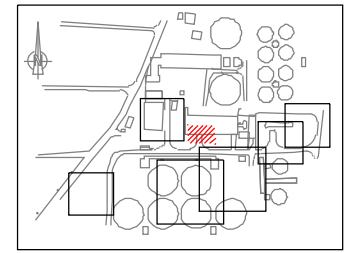
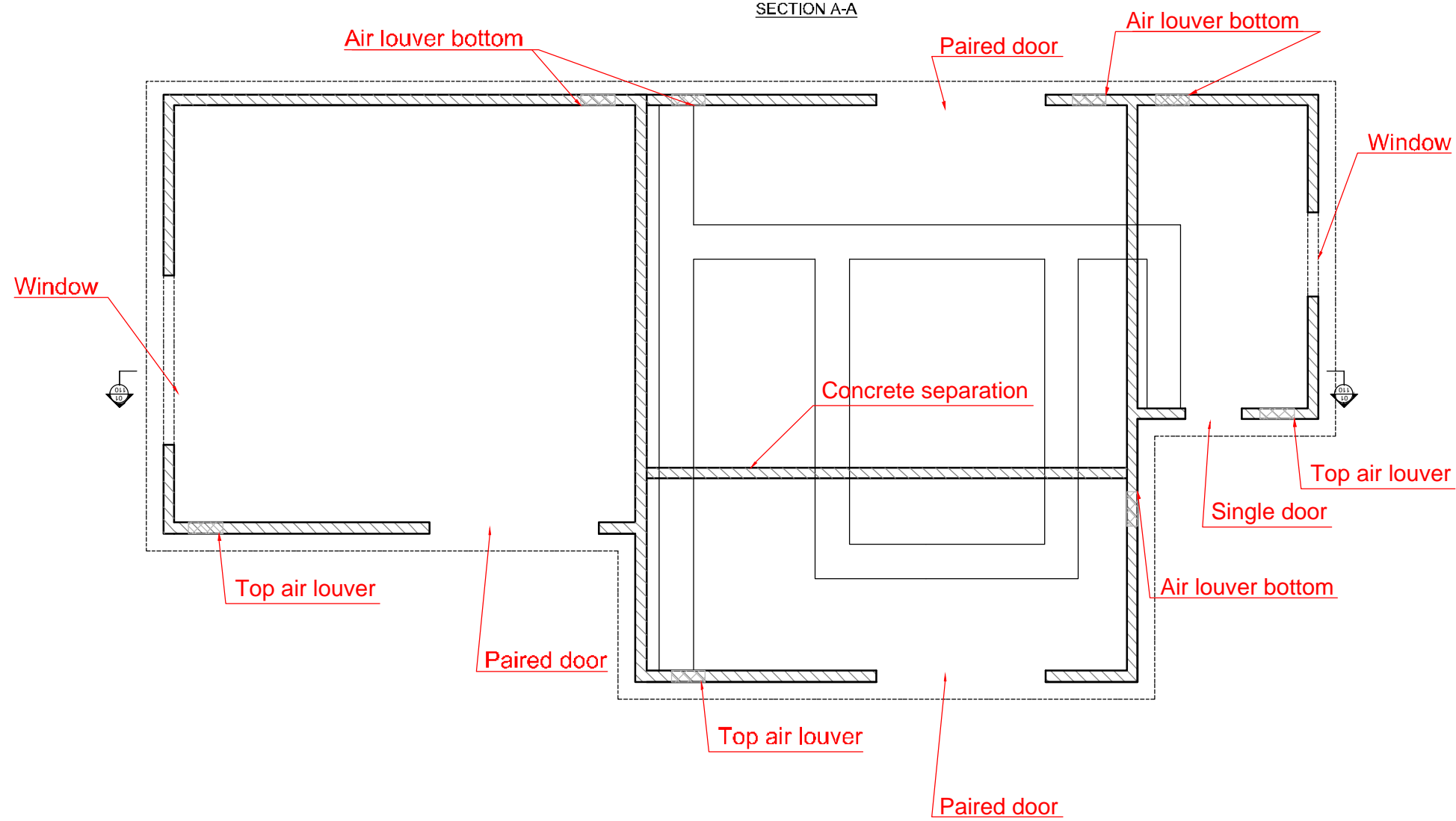
CIVIL WORKS DRAWINGS  
AREA 107  
SECTIONS  
Outlet connection chamber

	DATE :	
	DRAWN :	FVR
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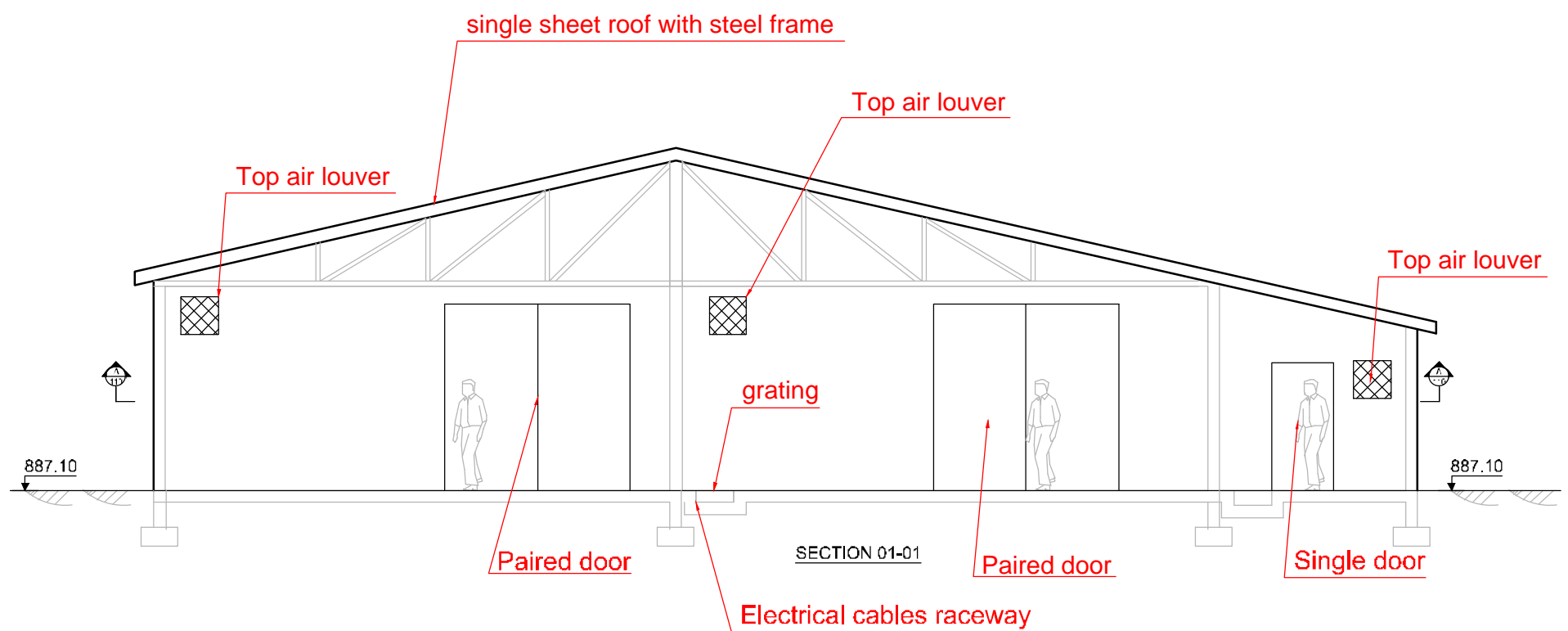
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TRANSMITTER	PROJECT-NUMBER	PHASE	DICIPLINE	AREA	NUMBER	INDEX

# Service Water and New Substation Room

SECTION A-A



KEY PLAN



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1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013



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 WATER & SEWERAGE BOARD

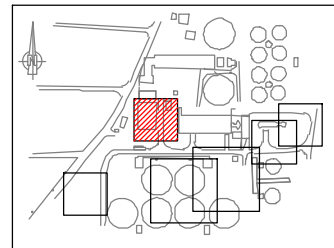
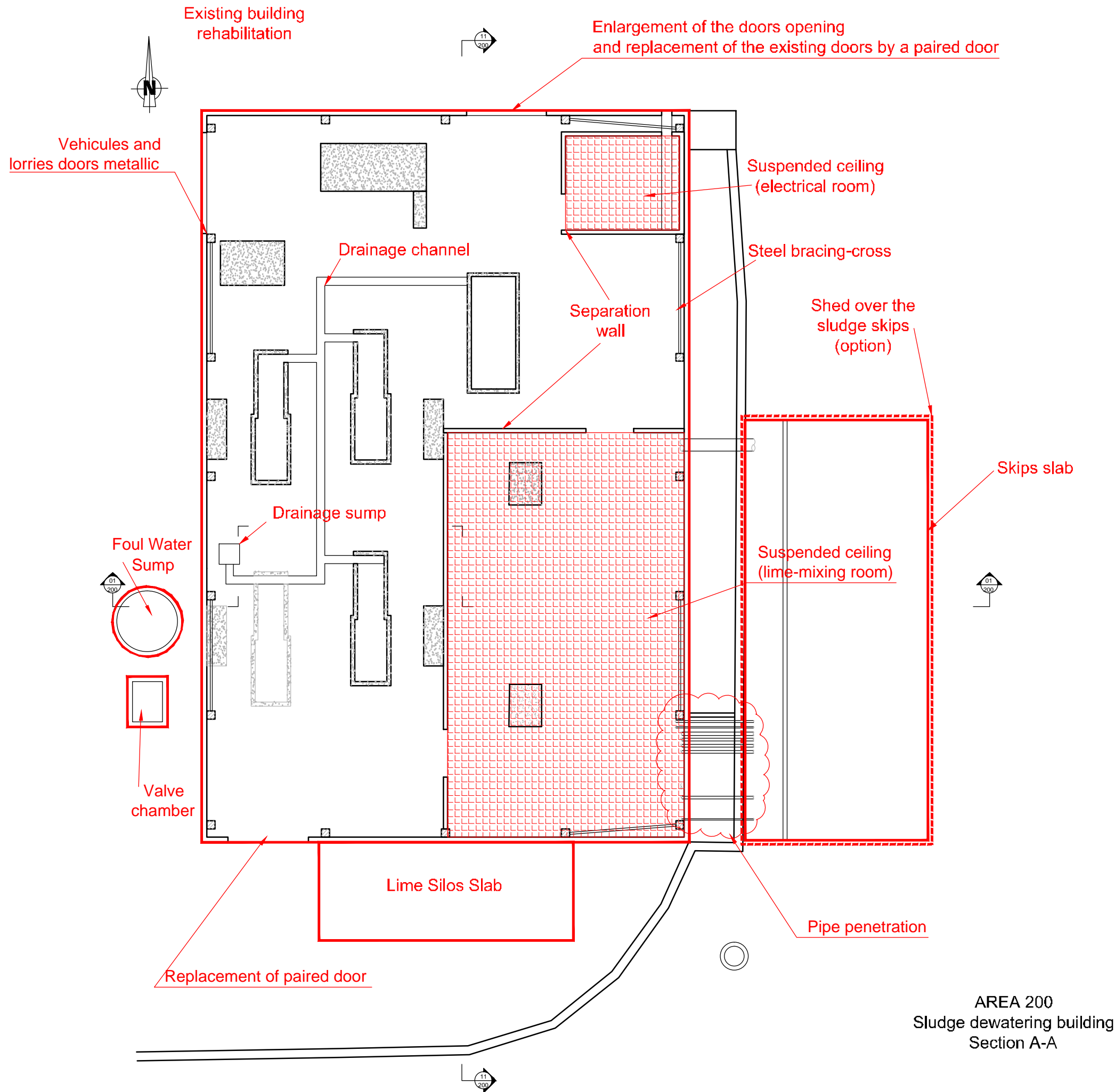
REHABILITATION OF AERATSIA WWTP  
 DETAILED DESIGN

CIVIL WORKS DRAWINGS  
 AREA 110  
 PLAN VIEW AND SECTION

DATE :	
DRAWN :	FVR
CHECKED :	CTF
APPROVED :	CTF

ARI	1312155	110	CVV	110	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

Designed by : GGY Drawn by : FVR Verified by : CTF  
 ART-1312155-DD-CV-110-001\_Rev0\_14-01-2013.dwg

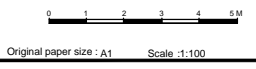


KEY PLAN

LEGEND :

- Limits of civil works
- Equipment pads

NO.	REVISIONS	BY	DATE
2	Final Detailed Design	DHE	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013



Original paper size : A1 Scale : 1:100

REPUBLIC OF ARMENIA  
YEREVAN MUNICIPALITY  
WATER & SEWERAGE BOARD

REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

CIVIL WORKS DRAWINGS

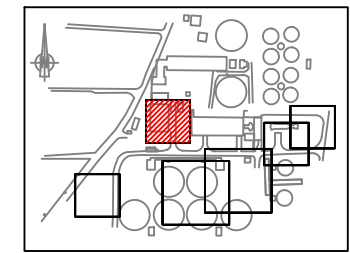
AREA 200  
PLAN VIEW  
Sludge handling



DATE :  
DRAWN : FVR  
CHECKED : CTF  
APPROVED : CTF

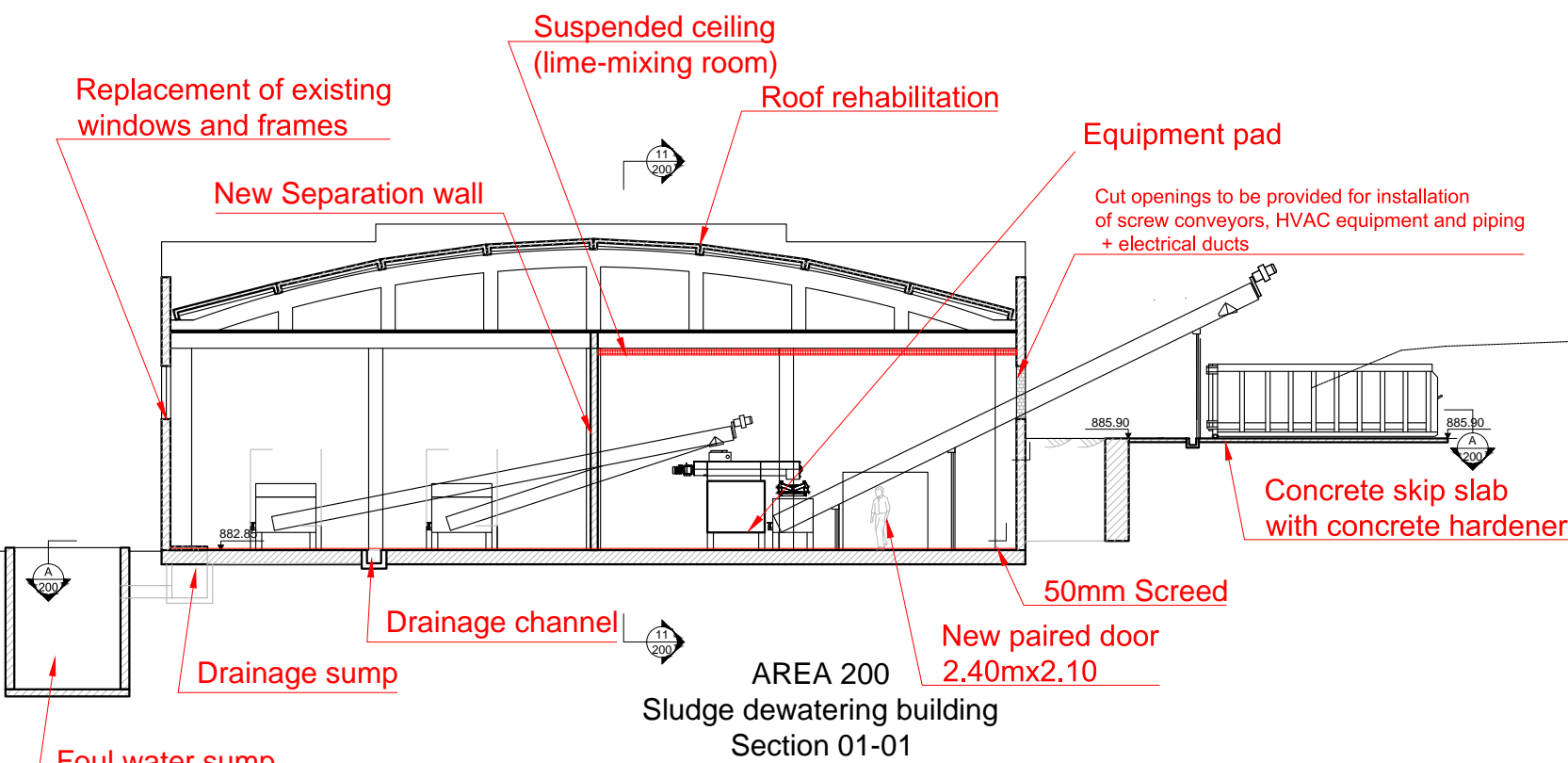
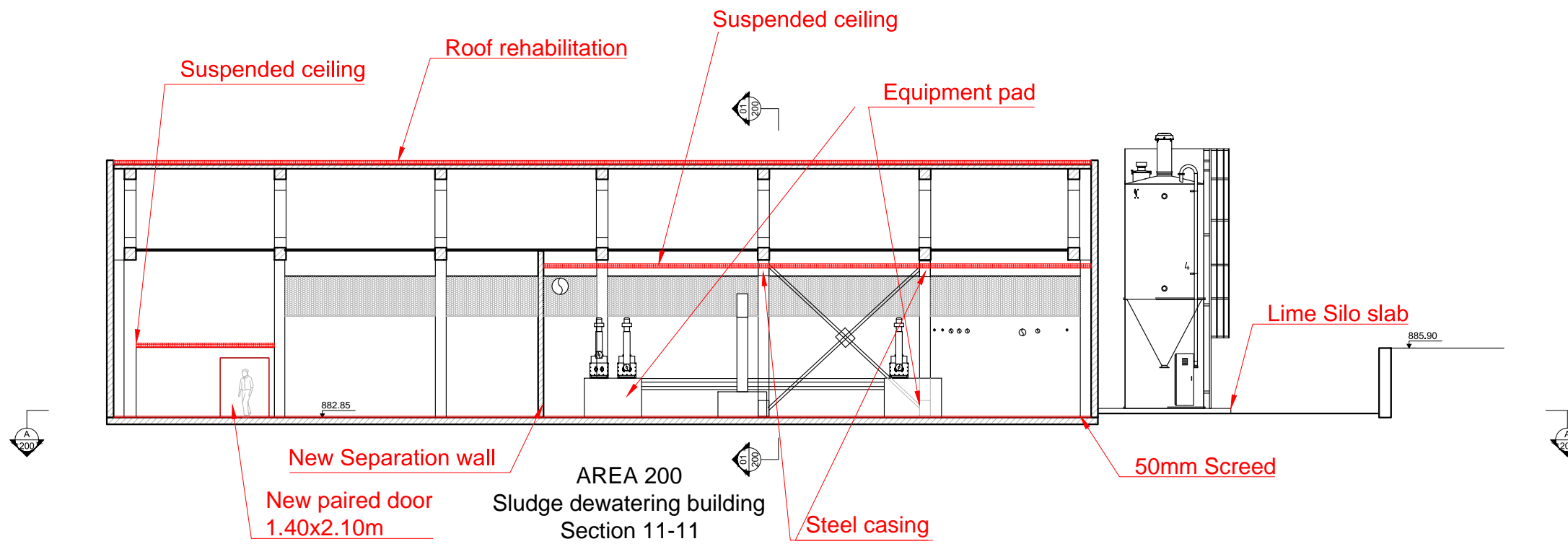
ART	1:12:16	132	CVV	200	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

AREA 200  
Sludge dewatering building  
Section A-A

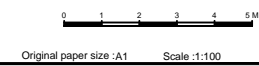


KEY PLAN

LEGEND :



NO.	REVISIONS	BY	DATE
2	Final Detailed Design	DHE	10/2013
1	Draft Detailed Design	FVR	07/2013
0	FIRST ISSUE	FVR	06/2013



REPUBLIC OF ARMENIA  
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WATER & SEWERAGE BOARD

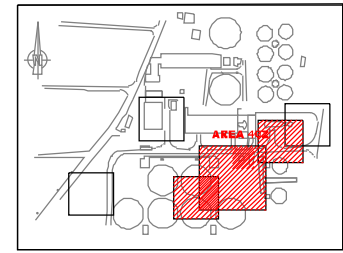
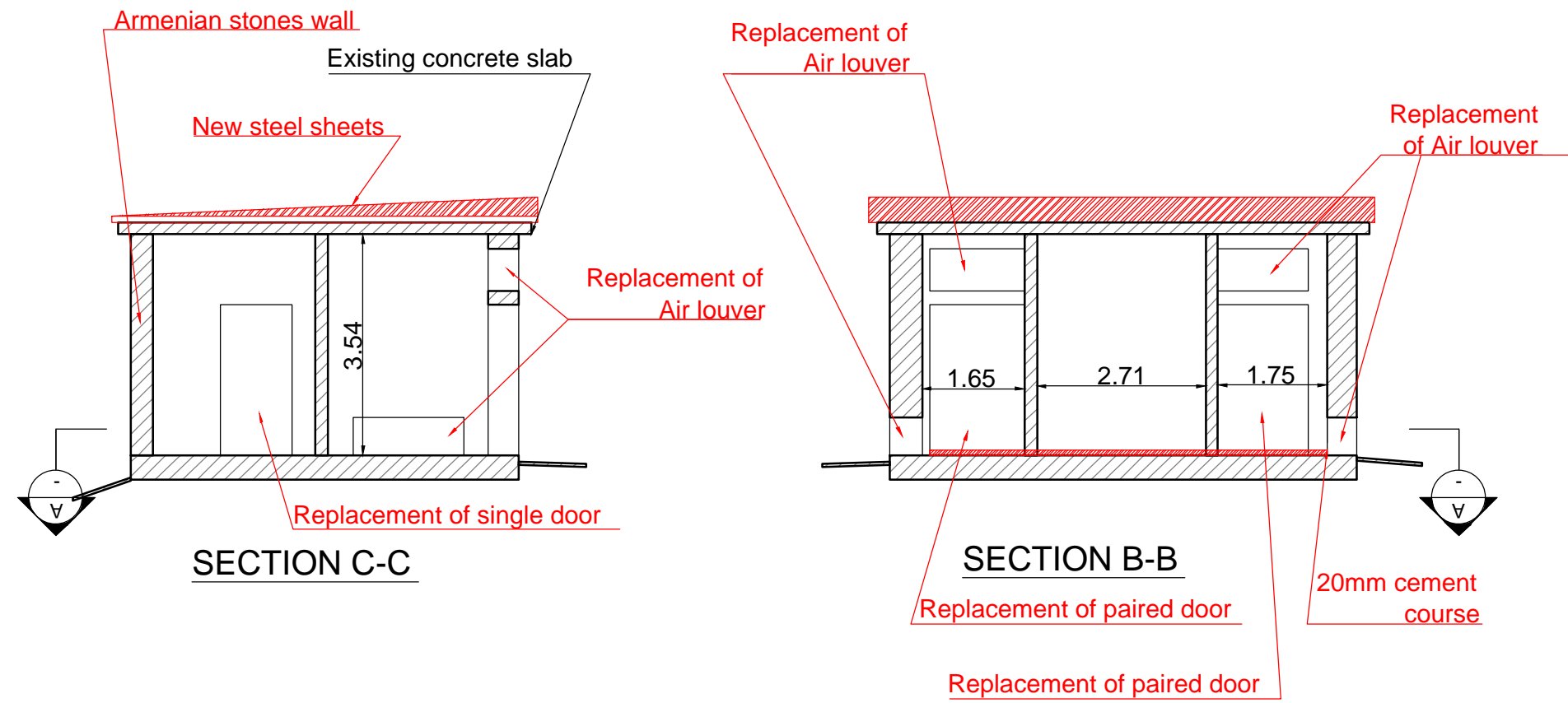
REHABILITATION OF AERATSIA WWTP  
DETAILED DESIGN

CIVIL WORKS DRAWINGS

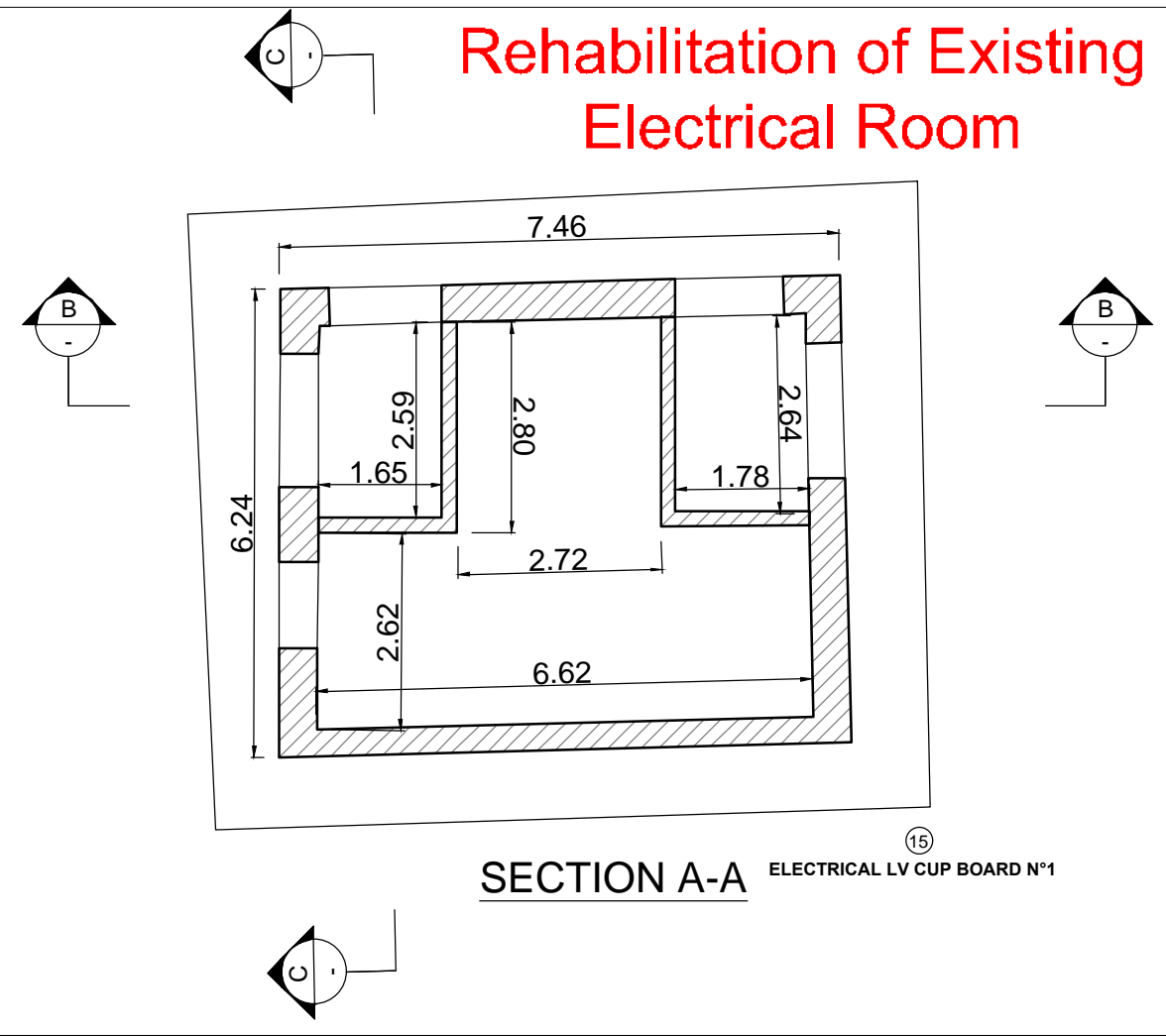
AREA 200  
SECTIONS 1 & 11  
Sludge Handling

	DATE :	
	DRAWN :	FVR
	CHECKED :	CTF
	APPROVED :	CTF

ART	1312155	DD	CW	200	101	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX

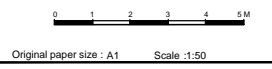


## Rehabilitation of Existing Electrical Room



**SECTION A-A** ELECTRICAL LV CUP BOARD N°1

NO.	REVISIONS	BY	DATE
2	Final DD	CLN	10/2013
1	Draft DD	FVR	07/2013
0	FIRST ISSUE	FVR	01/06/2013



REPUBLIC OF ARMENIA  
 YEREVAN MUNICIPALITY  
 WATER & SEWERAGE BOARD

DETAILED DESIGN  
 CIVIL WORKS DRAWINGS  
 AREA 402  
 EXISTING  
 SECONDARY SUBSTATION (14)  
 PLAN VIEW & SECTION

<b>ARTELIA</b>	<b>JINJ Ltd.</b>	DATE :	
		DRAWN :	FVR
		CHECKED :	CTF
		APPROVED :	CTF

ART	1312155	LDL	CVV	102	001	0
TRANSMITTER	PROJECT-NUMBER	PHASE	DISCIPLINE	AREA	NUMBER	INDEX