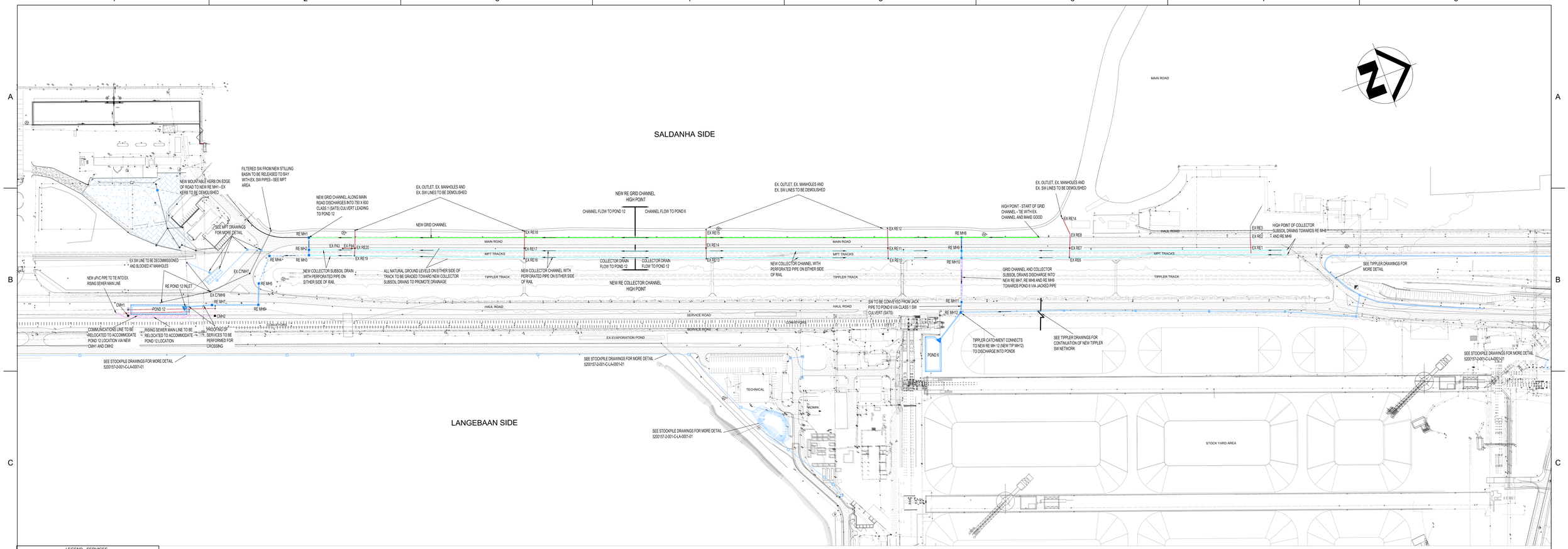
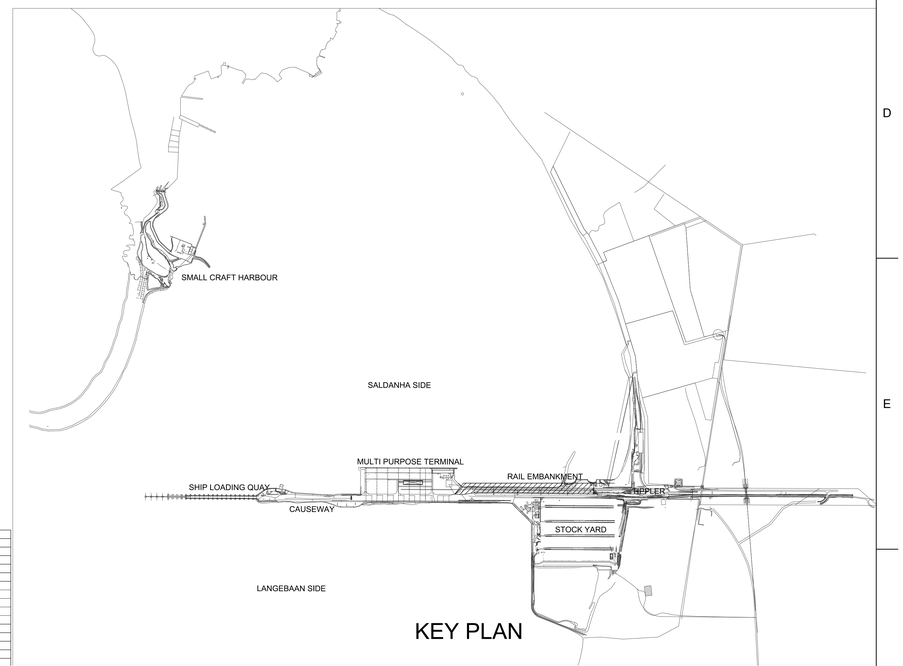


RAIL EMBANKMENT GENERAL LAYOUT
SCALE 1:1500



KEY PLAN

BENCHMARK NAME	Y	X	Z	TYPE
PN02_S1	-93475.257	3654091.162	5.692	Pillar Beacon
PN04_S1	-94375.598	3652758.626	11.637	Pillar Beacon
PN06_S1	-94350.064	3655384.385	4.526	Pillar Beacon
PN05_S1	-94121.326	3654507.768	11.216	Pillar Beacon
2DD2R_S1	-97921.795	3653141.330	5.446	Town Survey Mark
B1	-93956.668	3653064.208	6.915	Drill Hole in Concrete
B2	-93748.380	3653393.098	3.313	12mm Round Iron Peg
B3	-93899.392	3653764.514	2.997	12mm Round Iron Peg
B4	-94009.972	3654037.881	2.839	12mm Round Iron Peg
B5	-94140.158	3654428.016	3.055	12mm Round Iron Peg
B6	-94380.974	3654714.558	3.666	Roof Nail in Concrete
B7	-94254.497	3655014.636	3.380	12mm Round Iron Peg
B8	-93929.949	3654396.752	4.241	12mm Round Iron Peg
B9	-93195.652	3653381.885	3.673	12mm Round Iron Peg
B10	-93431.837	3653281.361	3.484	12mm Round Iron Peg

LEGEND - SERVICES

PROPOSED	EXISTING	DESCRIPTION
		STORMWATER MANHOLE/ PIPE
		SEWER MANHOLE / PIPE
		PROPOSED STORMWATER PIPE - 100 D GRID INLET
		EFFLUENT MANHOLE / PIPE
		RAIL LINE
		COMMUNICATION MANHOLE/DUCTS
		ELECTRICAL MANHOLE/DUCTS
		WATERMAIN
		FENCE
		CATCHMENTS BOUNDARY
		EXISTING OIL LINE
		NEW STORMWATER IN ADJACENT PROJECT AREAS
		RELOCATED SERVICE
		DEMOLISH EXISTING SERVICE
		ASPHALT ROAD
		EARTH BANKS
R01 3.42 T01		HEIGHT AND SETTING OUT COORDINATE ID • R - RAIL EMBANKMENT • M - MULTI PURPOSE TERMINAL • S - STOCKPILE • C - CAUSEWAY • T - TIPPLER
B2		BENCHMARK
		PROPOSED STORMWATER CULVERT (SATS) AND MANHOLE
		PIPE JACKING
		PROPOSED TRAPEZOIDAL CHANNEL
		PROPOSED GRID CHANNEL
		PROPOSED MOUNTABLE KERB
		PROPOSED SUBSOIL COLLECTOR DRAIN (SCD)
		PROPOSED POND
		NEW BLOCK PAVEMENT

ABBREVIATIONS
BH = BANKHALE
ELP = ELECTRICAL LIGHT POLE
HWL = HIGH WAVE LIGHT
EX = EXISTING
MH = MENCH HAWKS
SW = STORMWATER
SCD = SUBSOIL DRAIN COLLECTOR
SP = SPIT LIGHT
FH = FIRE HYDRANT
V = WATER MAIN VALVE

GENERAL NOTES:-

1. THE CONTRACTOR WILL BE DEEMED TO HAVE INSPECTED THE SITE AND BE IN AGREEMENT WITH THE WORKS REQUIRED AS PER THE TENDER DOCUMENTS, UNLESS ALTERNATIVE PROPOSALS WITH COST IMPLICATIONS ARE RECEIVED TOGETHER WITH THE TENDER DOCUMENTS. ALTERNATIVE PROPOSALS SUBMITTED DURING CONSTRUCTION SHALL BE ON A DESIGN AND CONSTRUCT BASIS, WITH THE DESIGN AT CONTRACTOR'S EXPENSE.
2. VARIATIONS DEEMED NECESSARY BY THE CONTRACTOR SHALL BE FORWARDED TO THE PROJECT MANAGER IN WRITING FOR APPROVAL BEFORE ANY CONSTRUCTION BASED ON THE VARIATION COMMENCES.
3. SERVICES SHOWN ON DRAWING ARE KNOWN OR SOURCED FROM EXISTING DRAWINGS. THE CONTRACTOR MUST ENSURE THAT ALL SERVICES THAT INTERSECT OR RUN ALONGSIDE THE PROPOSED WORKS ARE LOCATED BEFORE CONSTRUCTION COMMENCES. ANY CLASHES SHALL BE REPORTED TO THE PROJECT MANAGER IN WRITING. THE CONTRACTOR SHALL BE HELD LIABLE FOR ANY DAMAGES TO EXISTING SERVICES DUE TO NEGLIGENCE.
4. ALL EXISTING PIPES AND MANHOLES INCORPORATED INTO THE NEW SYSTEM SHALL HAVE DEFECTS RECTIFIED TO COMPLY TO STANDARDS FOR NEW WORKS.
5. DIMENSIONS SHOWN ON DRAWINGS SHALL TAKE PREFERENCE OVER DIMENSIONS SCALED.
6. ALL LEVELS AND DIMENSIONS SHALL BE CHECKED BEFORE ANY WORK COMMENCES. FAILURE TO DO SO SHALL DEEM THE CONTRACTOR LIABLE FOR ANY WORK REQUIRED TO RECTIFY ERRORS AS A RESULT OF THE FAILURE TO CHECK THE LEVELS AND DIMENSIONS.
7. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS, UNLESS OTHERWISE INDICATED
8. THE LATEST REVISION OF SANS SPECIFICATIONS SHALL APPLY. ALL WORK SHALL BE DONE IN ACCORDANCE WITH RELEVANT SANS SPECIFICATIONS, UNLESS OTHERWISE INDICATED.
9. ALL LENGTHS SHOWN ARE APPROXIMATE AND SHALL BE CONFIRMED ON SITE BY CONTRACTOR.

STORMWATER NOTES:-

1. TRENCHES FOR PIPES TO BE EXCAVATED AND BACKFILLED IN ACCORDANCE WITH THE REQUIREMENT OF SANS 1200 DB - PIPE TRENCHES.
2. ALL RIGID CONCRETE PIPES SHALL HAVE CLASS B BEDDING UNLESS STATED OTHERWISE.
3. FOR STORMWATER PIPES SHALL BE SPIGOT & SOCKET CLASS 100D (SANS 677).
4. ALL CONCRETE PIPE JOINTS TO BE WRAPPED WITH 'A2 BIDIM' (NONWOVEN,CONTINUOUS FILAMENT,NEEDLE PUNCHED, POLYESTER,GEOTEXTILE) MIN. WIDTH TO BE 750mm FOR PIPES 300Ø TO 600Ø.
5. NB. ALL MANHOLE COVERS TO SUIT CROSSFALL OF FINISHED PAVING .
6. ON COMPLETION, THE INSTALLATION SHALL BE TESTED TO THE ENGINEER'S SPECIFICATION.
7. THE CONTRACTOR SHALL SUBMIT A FULL SET OF AS-BUILT DRAWINGS UPON COMPLETION OF THE INSTALLATION.
8. ALL EXISTING STORMWATER PIPES, MANHOLES, CHANNELS AND ANY OTHER STORMWATER INFRASTRUCTURE TO BE CLEANED AND CLEARED OF ALL DEBRIS BEFORE ANY WORK COMMENCES. ALL DAMAGED EXISTING STORMWATER INFRASTRUCTURE SHALL BE REINSTATED TO ORIGINAL CONDITION.
9. ANY DISCREPANCIES IN LEVELS AND SETTING OUT DATA TO BE QUERIED WITH THE ENGINEER PRIOR TO COMMENCEMENT OF ANY WORK.
10. ALL EXISTING STORMWATER PIPES ARE CONCRETE UNLESS STATED OTHERWISE.
11. WHERE MINIMUM COVER OF 1000mm FOR OPERATIONAL AREAS & 600mm FOR NON OPERATIONAL AREA CANNOT BE ACHIEVED. CONCRETE ENCASEMENT IS REQUIRED AS PER THE DETAIL DRAWINGS.

EARTHWORKS:-

1. ANY DISCREPANCIES IN LEVELS AND SETTING OUT DATA TO BE QUERIED WITH THE ENGINEER PRIOR TO COMMENCEMENT OF ANY WORK.
2. ALL WORKMANSHIP TO BE IN ACCORDANCE WITH SANS 1200 PART D : EARTHWORKS AND THE RELEVANT PROJECT SPECIFICATIONS AS INCLUDED IN THE CONTRACT.
3. BEFORE PLACING ANY FILL MATERIAL, THE EXISTING GROUND SURFACE MUST BE CLEARED AND GRUBBED OF ALL VEGETATION AND ORGANIC MATTER.
4. UNLESS OTHERWISE INDICATED, ALL BANK BATTERS TO BE : 1:1.5 CUT AND 1:2 FILL
5. THE UNCOMPLICATED THICKNESS OF FILL LAYERS SHALL NOT EXCEED 300mm
6. LOCATE ALL EXISTING SERVICES IN AREA PRIOR TO ANY CONSTRUCTION TAKING PLACE.
7. THE CONTRACTOR IS TO TAKE DEWATERING AND ENCOUNTERING BEDROCK INTO ACCOUNT IN ACCORDANCE TO THE TRUE NATURE AND EXTENT OF THE WORKS. SEE WORKS INFORMATION FOR MORE DETAIL.

CONSTRUCTION & REHABILITATION ACTIVITIES FOR STORMWATER SYSTEM :-

1. REMOVE ALL DUST & CAKED MATERIAL FROM SURFACE & SUB-SURFACE DRAINAGE SYSTEMS.
2. REPAIR EROSION RUNNELS & RE-SHAPE ALL HARD STANDING AREAS TO ENSURE DRAINAGE TOWARDS THE DETENTION POND.
3. PIPES, CULVERTS, MANHOLES & CHANNELS NEED TO BE CLEANED REGULARLY AS SYSTEM IS BLOCKED & MANHOLES ARE SILTED UP.
4. LENGTHS OF PIPES, NUMBER OF CULVERTS & MANHOLES CLEARLY SHOWN IN LONGITUDINAL SECTION FOR QUANTIFYING.
5. CLEAN OUT ALL SLABS & DRYING BEDS.
6. RE-SHAPE ALL HARD STANDING AREAS TO ENSURE DRAINAGE AWAY FROM THE ROADS TOWARDS THE STORMWATER POND.
7. LOW POINTS TO BE REPAIRED WITH A MINIMUM OF 150 mm G2 LAYER COMPACTED TO 95 % MOD-AASHTO.

CONSTRUCTION & REHABILITATION ACTIVITIES FOR POND 6 AND POND 12:-

1. FOR RESPECTIVE POND DETAIL REFER TO DRAWING 5200157-2-001-C-OE-0002-01.
2. CLEAR ALL GRUB & VEGETATION.
3. COMPACT TO 90 % MOD AASHTO.
4. REPAIR & REINSTATE ALL DOWN CHUTES IF APPLICABLE.
5. PLACE STONE PITCHING ENERGY DISSIPATORS AT OUTLET OF CULVERTS & DOWN CHUTES.
6. DETENTION POND TO BE CONSTRUCTED TO NEW APPROVED LAYERWORKS.
7. PLEASE SEE 5200157-2-001-C-OE-0003-01 FOR POND 6 AND POND 12 LAYERWORKS.
8. STEEL BOLLARDS (QUANTITY 40) TO BE PLACED AROUND POND 12:
   - 8.1. 6mm THICK MILD STEEL
   - 8.2. 150mm N DIAMETER
   - 8.3. AT LEAST 900mm ABOVE GROUND
   - 8.4. REMOVABLE TO ALLOW ACCESS FOR MAINTENANCE (PERMANENT METAL GROUND SOCKET ANCHORED IN A CONCRETE FOUNDATION)
   - 8.5. 40MPa PLAIN CONCRETE FOUNDATION OF 400mm X 400mm X 450mm DEEP - MIN COVER OF 50mm
   - 8.6. PAINTED IN REFLECTIVE YELLOW PAINT

DRAWING NO.	REFERENCE
5200157-2-001-C-LA-0003-01	RAIL EMBANKMENT - STORMWATER RAIL EMBANKMENT GENERAL LAYOUT
5200157-2-001-C-LA-0003-02	RAIL EMBANKMENT - STORMWATER RAIL EMBANKMENT LAYOUT 1:500 SHEET 1 OF 3
5200157-2-001-C-LA-0003-03	RAIL EMBANKMENT - STORMWATER RAIL EMBANKMENT LAYOUT 1:500 SHEET 2 OF 3
5200157-2-001-C-LA-0003-04	RAIL EMBANKMENT - STORMWATER RAIL EMBANKMENT LAYOUT 1:500 SHEET 3 OF 3
5200157-2-001-C-SE-0003-01	RAIL EMBANKMENT - RAIL EMBANKMENT LONGSECTION SHEET 1 OF 6
5200157-2-001-C-SE-0003-02	RAIL EMBANKMENT - RAIL EMBANKMENT LONGSECTION SHEET 2 OF 6
5200157-2-001-C-SE-0003-03	RAIL EMBANKMENT - RAIL EMBANKMENT LONGSECTION SHEET 3 OF 6
5200157-2-001-C-SE-0003-04	RAIL EMBANKMENT - RAIL EMBANKMENT LONGSECTION SHEET 4 OF 6
5200157-2-001-C-SE-0003-05	RAIL EMBANKMENT - RAIL EMBANKMENT LONGSECTION SHEET 5 OF 6
5200157-2-001-C-SE-0003-06	RAIL EMBANKMENT - RAIL EMBANKMENT LONGSECTION SHEET 6 OF 6
5200157-2-001-C-DE-0003-01	RAIL EMBANKMENT - POND 12 AND POND 6 CROSS SECTION DETAIL
5200157-2-001-C-DE-0002-02	TYPICAL GRID CHANNEL, MOUNTABLE KERB, SUBSOIL COLLECTOR DRAIN (SCD) AND TRAPEZOIDAL CHANNEL DETAIL

REFERENCE DRAWINGS

NOTES:
a. MEASUREMENTS ARE BASED ON METRIC SYSTEM.
b. ALL LEVELS ARE IN METERS TO MEAN SEA LEVELS (MSL)
c. DO NOT SCALE DRAWING - ONLY DIMENSIONS SHOWN TO BE USED.
d. THE CONTRACTOR SHALL VERIFY ALL SERVICES OR CONDITIONS ON THE SITE AND NOTIFY THE ENGINEERING OF ANY VARIATIONS FROM DIMENSIONS BEFORE CONSTRUCTION.

NO.	DESCRIPTION	BY	CHKD	APPD	DATE
00	ISSUED FOR CONSTRUCTION	RM	HvdW	RN	03/08/2023
0B	ISSUED FOR CLIENT APPROVAL	RM	HvdW	RN	24/04/2023
0A	ISSUED FOR CLIENT APPROVAL	RM	HvdW	RN	01/07/2022

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CONTRACTOR / CONSULTANT	TITLE	NAME	SIGN	DATE

OPERATING DIVISIONS	TITLE	NAME	SIGN	DATE

PR.ENG. / PR.TECH./PR. ARCH	NAME	R. NAIDOO	DATE
	SIGNATURE		03 08 23
	REG. NUMBER	201070216	
	SCALE :	AS SHOWN	A0

TRANSNET PORT TERMINALS	TITLE	NAME	SIGN	DATE
	DRAWN	RM		03 08 23
	CHECKED	HvdW		03 08 23
	DESIGNED	RM		03 08 23
	CHECKED	HvdW		03 08 23

Transnet Port Terminals

TRANSNET

PORT OF SALDANHA

SALDANHA PORT - STORMWATER RAIL EMBANKMENT LAYOUT AND KEY PLAN

PROJECT NUMBER	OD	FBS	DIS	TYPE	DRAWING NO.	SHEET	REV	ID
5200157-2-001	C	LA	0003	01	00	RM		