SEWAGE PUMP STATION STANDARD DRAWINGS
DRAWING INDEX - SHEET 1 OF 2

DRAWING No.	DRAWING TITLE			REV No.
SEQ-SPS-INDEX	SEWAGE PUMP STATION	DRAWING INDEX	SHEET 1 OF 2	C
SEQ-SPS-INDEX	SEWAGE PUMP STATION	DRAWING INDEX	SHEET 2 OF 2	C
SEQ-SPS-1100-1	TYPICAL LOCALITY AND SITE PLAN			A
SEQ-SPS-1100-2	TYPICAL LONGITUDINAL SECTION	OF RISING MAIN		A
SEQ-SPS-1101-1	TYPICAL P & ID DIAGRAM	DUTY - ASSIST OPERATION		A
SEQ-SPS-1101-2	TYPICAL P & ID DIAGRAM	DUTY STANDBY OPERATION		B
SEQ-SPS-1101-3	PUMP AND RISING MAIN DETAILS			A
SEQ-SPS-1101-4	RISING MAIN CONCEPT DESIGN	SECTIONS AND MEAN	HEAD CALCULATIONS	A
SEQ-SPS-1102-1	TYPICAL SITE LAYOUT			A
SEQ-SPS-1102-2	TYPICAL SITE LAYOUT WITH	STORAGE AND BACK-UP POWER		A
SEQ-SPS-1102-3	ALTERNATIVE LAYOUT WITH	STORAGE AND OPTIONAL FLOW-METER		A
SEQ-SPS-1102-4	TYPICAL SITE LAYOUT WITH	PIG INSERTION/EMERGENCY PUMP POINT	AND GRIT COLLECTOR	B
SEQ-SPS-1102-5	LEVEL AND CAPACITIES	INTERACTION DIAGRAM		B
SEQ-SPS-1102-6	ALTERNATIVE LEVEL INTERACTION	DIAGRAM FOR SMALL STATIONS		B
SEQ-SPS-1300-1	TYPICAL 2.4 M WET WELL	GENERAL ARRANGEMENT		B
SEQ-SPS-1300-2	2.4 M WET WELL	SECTION DETAILS		C
SEQ-SPS-1300-3	2.4 M WET WELL	PIPEWORK ARRANGEMENT		C
SEQ-SPS-1300-4	FLOWMETER & SECTION VALVE CHAMBER			B
SEQ-SPS-1300-5	2.4 M WET WELL	STRUCTURAL DETAILS		B
SEQ-SPS-1300-6	LEVEL CONTROL AND	WELL WASHER DETAILS		A
SEQ-SPS-1300-7	2.4M WET WELL	`NOTES SHEET 1 OF 2`		A
SEQ-SPS-1300-8	2.4M WET WELL	NOTES SHEET 2 OF 2		A
SEQ-SPS-1300-9	TYPICAL 1800 DIA LIFT STATION			B
SEQ-SPS-1300-10	TYPICAL 1800 DIA LIFT STATION	SECTIONS		B
SEQ-SPS-1300-11	TYPICAL 1800 DIA LIFT STATION	MISCELLANEOUS DETAILS		B
SEQ-SPS-1300-12	ALTERNATIVE LIFT STATION ARRANGEMENT	INCLUDING STORAGE OPTION		B
SEQ-SPS-1301-1	PUMP WELL GENERAL ARRANGEMENT	PLAN AT TOP SLAB LEVEL		B
SEQ-SPS-1301-2	PUMP WELL GENERAL ARRANGEMENT	PLAN AT HEADER PIPE LEVEL		B
SEQ-SPS-1301-3	PUMP WELL GENERAL ARRANGEMENT	SECTIONAL ELEVATION		B
SEQ-SPS-1301-4	CHAIN SUSPENDED	SUBMERSIBLE PUMP	TYPICAL INSTALLATION	B
SEQ-SPS-1304-0	ALUMINIUM ACCESS COVERS-OPTION 1	DRAWING INDEX AND GENERAL NOTES		C
SEQ-SPS-1304-1	ALUMINIUM ACCESS COVERS-OPTION 1	GENERAL ARRANGEMENT		C
SEQ-SPS-1304-2	ALUMINIUM ACCESS COVERS-OPTION 1	TYPICAL MULTI COVER ARRANGEMENT	AND SECTION DETAILS	C
SEQ-SPS-1304-3	ALUMINIUM ACCESS COVERS-OPTION 1	SECTION AND	HINGE DETAILS	C
SEQ-SPS-1304-4	ALUMINIUM ACCESS COVERS-OPTION 1	COVER SECTION DETAILS		C
SEQ-SPS-1304-5	ALUMINIUM ACCESS COVERS-OPTION 1	LOCK BOX MECHANISM DETAIL		C
SEQ-SPS-1304-6	ALUMINIUM ACCESS COVERS-OPTION 1	GRILLE HINGE DETAILS & SECTIONS		C
SEQ-SPS-1304-7	ALUMINIUM ACCESS COVERS-OPTION 1	CENTRE GRILLE HINGE	DETAILS & SECTIONS	C
SEQ-SPS-1304-8	ALUMINIUM ACCESS COVERS-OPTION 1	MISCELLANEOUS DETAILS		C
SEQ-SPS-1304-9	ALUMINIUM ACCESS COVERS-OPTION 1	RETAINING POST DETAILS		C
SEQ-SPS-1304-10	ALUMINIUM ACCESS COVERS-OPTION 2	NOTES AND PUMP WELL COVER PLAN		B
SEQ-SPS-1304-11	ALUMINIUM ACCESS COVERS-OPTION 2	PUMP WELL FRAME, SAFETY MESH PANELS	AND COVER UNDERSIDE DETAILS	B
SEQ-SPS-1304-12	ALUMINIUM ACCESS COVERS-OPTION 2	PUMP WELL HINGE AND SEAL DETAILS		B
SEQ-SPS-1304-13	ALUMINIUM ACCESS COVERS-OPTION 2	PUMP WELL AND VALVE PIT	LATCH MECHANISM BOX GENERAL ARRANGEMENT	B
SEQ-SPS-1304-14	ALUMINIUM ACCESS COVERS-OPTION 2	PUMP WELL AND VALVE PIT	LATCH MECHANISM BOX DETAILS	B
SEQ-SPS-1304-15	ALUMINIUM ACCESS COVERS-OPTION 2	PUMP WELL AND VALVE PIT	STRIKER PLATE ON FRAME DETAILS	B
SEQ-SPS-1304-16	ALUMINIUM ACCESS COVERS-OPTION 2	VALVE PIT GENERAL ARRANGEMENT		B
SEQ-SPS-1304-17	ALUMINIUM ACCESS COVERS-OPTION 2	VALVE PIT SECTIONS AND DETAILS		B
SEQ-SPS-1304-18	ALUMINIUM ACCESS COVERS-OPTION 3	DRAWING INDEX, NOTES AND LEGEND	SHEET 1 OF 12	A
SEQ-SPS-1304-19	ALUMINIUM ACCESS COVERS-OPTION 3	WET-WELL ACCESS COVERS	OPENING OPTIONS, SHEET 2 OF 12	A
SEQ-SPS-1304-20	ALUMINIUM ACCESS COVERS-OPTION 3	VALVE CHAMBER ACCESS COVERS	OPENING OPTIONS, SHEET 3 OF 12	A
SEQ-SPS-1304-21	ALUMINIUM ACCESS COVERS-OPTION 3	WET-WELL AND VALVE CHAMBER HANDRAILS	ARRANGEMENT OPTIONS, SHEET 4 OF 12	A

REV. No.	DATE	DESCRIPTION	AUTH.
C	03/01/17	NEW DRAWINGS ADDED, REVISION NUMBERS UPDATED.	
B	07/08/14	TITLES CHANGED, UPDATED REVISION NUMBERS	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

SEWAGE PUMP STATION
DRAWING INDEX
SHEET 1 OF 2

CoGC	LCC	RCC	QUU	UW

DRAWING No.
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VERSION
C

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ORG DATE:
1/1/2013

SEWAGE PUMP STATION STANDARD DRAWINGS
DRAWING INDEX - SHEET 2 OF 2

DRAWING No.	DRAWING TITLE			REV No.
SEQ-SPS-1304-22	ALUMINIUM ACCESS COVERS-OPTION 3	WET-WELL ACCESS COVERS	GENERAL ARRANGEMENT PLANS, SHEET 5 OF 12	A
SEQ-SPS-1304-23	ALUMINIUM ACCESS COVERS-OPTION 3	WET-WELL ACCESS COVERS	DETAILS, SHEET 6 OF 12	A
SEQ-SPS-1304-24	ALUMINIUM ACCESS COVERS-OPTION 3	VALVE CHAMBER ACCESS COVERS	GENERAL ARRANGEMENT PLANS-TYPE A, SHEET 7 OF 12	A
SEQ-SPS-1304-25	ALUMINIUM ACCESS COVERS-OPTION 3	VALVE CHAMBER ACCESS COVERS	GENERAL ARRANGEMENT PLANS-TYPE B, SHEET 8 OF 12	A
SEQ-SPS-1304-26	ALUMINIUM ACCESS COVERS-OPTION 3	VALVE CHAMBER ACCESS COVERS	AND SAFETY GRATE DETAILS, SHEET 9 OF 12	A
SEQ-SPS-1304-27	ALUMINIUM ACCESS COVERS-OPTION 3	HANDRAILS AND TOEBOARDS	DETAILS, SHEET 10 OF 12	A
SEQ-SPS-1304-28	ALUMINIUM ACCESS COVERS-OPTION 3	MISCELLANEOUS DETAILS 1 OF 2	SHEET 11 OF 12	A
SEQ-SPS-1304-29	ALUMINIUM ACCESS COVERS-OPTION 3	MISCELLANEOUS DETAILS 2 OF 2	SHEET 12 OF 12	A
SEQ-SPS-1305-1	ALUMINIUM LADDERS			A
SEQ-SPS-1305-2	ALUMINIUM EXTENDABLE	HANDGRIP STANCHION		A
SEQ-SPS-1305-3	ALUMINIUM HANDRAILS			A
SEQ-SPS-1305-4	FABRICATED METALWORK			A
SEQ-SPS-1308-1	RPZ DEVICE	TYPICAL LAYOUT		A
SEQ-SPS-1400-1	GRIT COLLECTOR	MAINTENANCE HOLE	GENERAL ARRANGEMENT	B
SEQ-SPS-1401-1	GRIT COLLECTOR - MAINTENANCE HOLE	BAR SCREEN INSTALLATION	GENERAL ARRANGEMENT	B
SEQ-SPS-1401-2	GRIT COLLECTOR - MAINTENANCE HOLE	INLET PIPE & VALVE	INSTALLATION & DETAILS	B
SEQ-SPS-1402-1	ADDITIONAL STORAGE CHAMBER	GENERAL REQUIREMENTS		C
SEQ-SPS-1405-2	TYPICAL VENT POLE			B
SEQ-SPS-1406-1	RISING MAIN DISCHARGE	TO GRAVITY SEWER		B
SEQ-SPS-1406-2	PREFERRED RISING MAIN DISCHARGE	MANHOLE TO GRAVITY SEWER - 900mm DIA		A
SEQ-SPS-1406-3	ALTERNATIVE RISING MAIN DISCHARGE	MANHOLE TO GRAVITY SEWER - 900mm DIA		A
SEQ-SPS-1406-4	RISING MAIN DISCHARGE MANHOLE	TO GRAVITY SEWER - 1200mm DIA		A
SEQ-SPS-1407-1	POLYETHYLENE LINING	TOP SLAB & WALL	TYPICAL DETAILS	A
SEQ-SPS-1407-2	POLYETHYLENE LINING	WALL PIPE PENETRATION	TYPICAL DETAILS	B
SEQ-SPS-1508-1	SURVEY PLATE, PUMP LABEL PLATE	VALVE SPINDLE ACCESS		B
SEQ-SPS-1508-2	RISING MAIN VALVE MARKING			C
SEQ-SPS-1509-1	GRIT COLLECTOR	MAINTENANCE HOLE	ABOVE GROUND GEARBOX	B
SEQ-SPS-1601-1	TYPICAL PIPE INSTALLATION, SUPPORT AND	TRENCH FILL - RISING MAINS <= DN300		B
SEQ-SPS-1602-1	RISING MAIN	SCOUR / DRAIN ARRANGEMENT		A
SEQ-SPS-1603-1	SCOUR MAINTENANCE HOLE FOR	RISING MAINS DN300 OR SMALLER		A
SEQ-SPS-1604-1	SCOUR MAINTENANCE HOLE FOR	RISING MAINS LARGER THAN DN300		A
SEQ-SPS-1605-1	DN32 AIR BLEED ASSEMBLY FOR OD250	RISING MAINS OR SMALLER		B
SEQ-SPS-1606-1	AUTOMATIC GAS RELEASE VALVES			A
SEQ-SPS-1607-1	CAST IRON VALVE BOX AND COVER			A
SEQ-SPS-1608-1	COMBINATION	EMERGENCY PUMP CONNECTION	AND PIG INSERTION POINT DETAILS	A

REV. No.	DATE	DESCRIPTION	AUTH.
C	03/01/17	NEW DRAWINGS ADDED, REVISION NUMBERS UPDATED.	
B	07/08/14	DRAWING VERSION UPDATED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

SEWAGE PUMP STATION
DRAWING INDEX
SHEET 2 OF 2

CoGC	LCC	RCC	QUU	UW

DRAWING No.
SEQ-SPS-INDEX

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C

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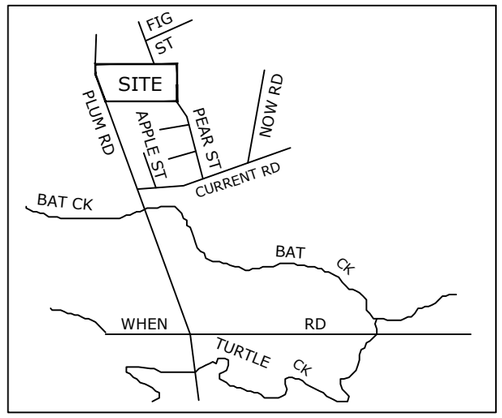
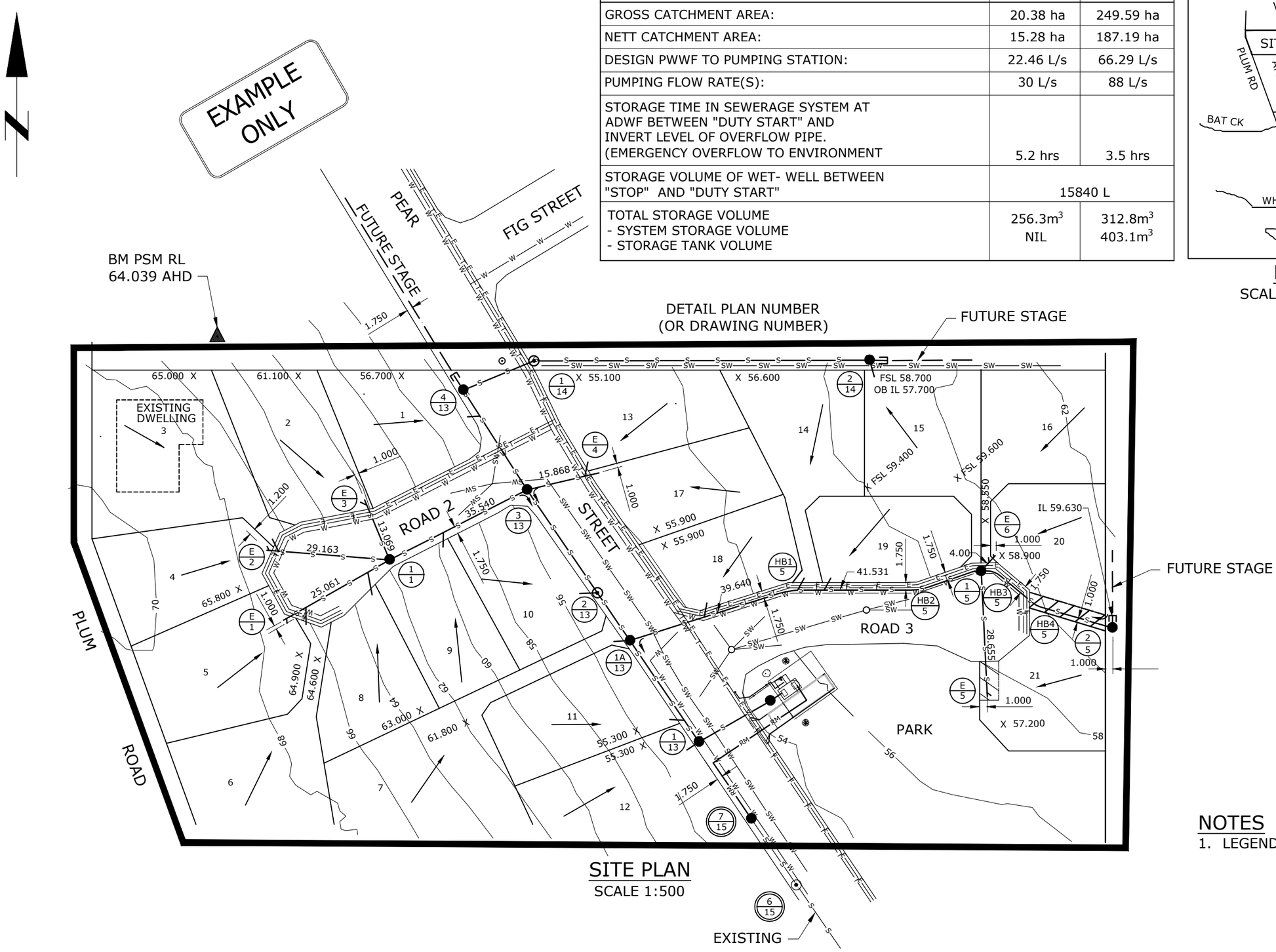
ORG DATE:
1/1/2013

PARAMETER	INITIAL	ULTIMATE
GROSS CATCHMENT AREA:	20.38 ha	249.59 ha
NETT CATCHMENT AREA:	15.28 ha	187.19 ha
DESIGN PWWF TO PUMPING STATION:	22.46 L/s	66.29 L/s
PUMPING FLOW RATE(S):	30 L/s	88 L/s
STORAGE TIME IN SEWERAGE SYSTEM AT ADWF BETWEEN "DUTY START" AND INVERT LEVEL OF OVERFLOW PIPE. (EMERGENCY OVERFLOW TO ENVIRONMENT	5.2 hrs	3.5 hrs
STORAGE VOLUME OF WET- WELL BETWEEN "STOP" AND "DUTY START"	15840 L	
TOTAL STORAGE VOLUME - SYSTEM STORAGE VOLUME - STORAGE TANK VOLUME	256.3m^3 NIL	312.8m^3 403.1m^3



LOCALITY PLAN
SCALE 1:2500 MAP GRID NO. J10



SITE PLAN
SCALE 1:500

NOTES

1. LEGEND - SEE DRAWING SEQ-GEN-1100-1

REV. No.	DATE	DESCRIPTION	AUTH.

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SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL LOCALITY AND SITE PLAN

CoGC	LCC	RCC	QUU	UW

DRAWING No.
SEQ-SPS-1100-1

VERSION
A

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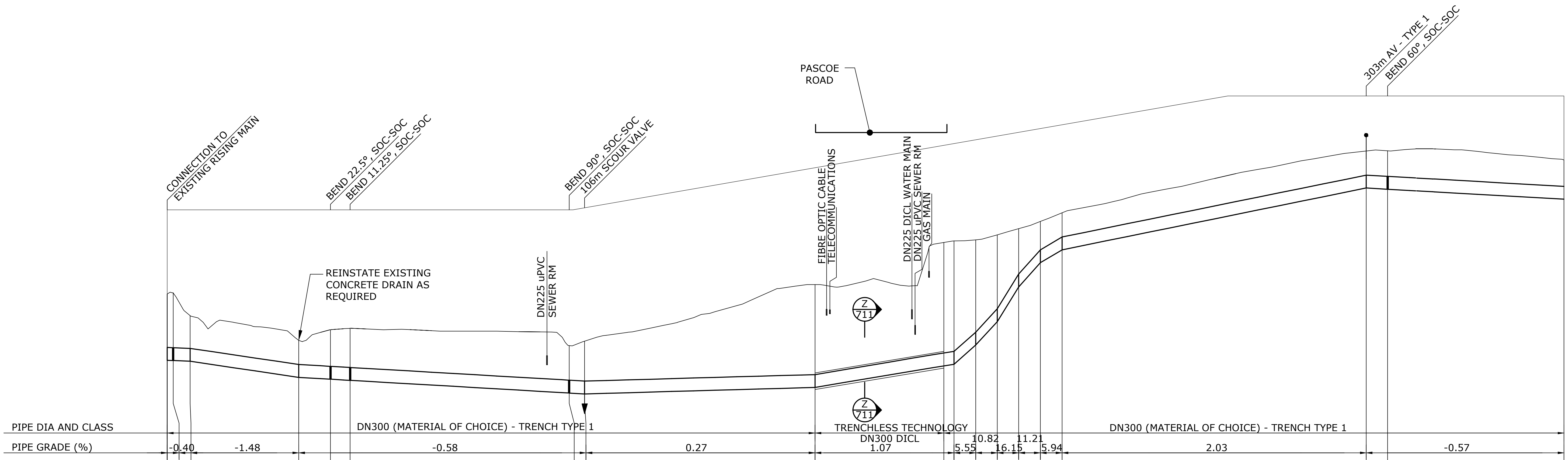
ORG DATE:
1/1/2013



DATUM RL 1.000

DEPTH TO INVERT	1.68	1.71	1.15	0.94	1.25	1.32	1.32	1.40	1.20	1.34	2.602	3.118
INVERT LEVEL	3.839	3.833	3.816	3.408	3.362	3.333	3.312	3.022	3.012	2.990	3.153	3.702
EXISTING NATURAL SURFACE LEVEL	5.516	5.543	4.970	4.344	4.613	4.649	4.633	4.418	4.211	4.325	5.755	6.820
CHAINAGE	0.000	1.500	5.790	33.287	41.319	46.304	50.000	100.000	101.728	105.656	163.96	196.60

DEPTH TO INVERT	3.117	2.66	2.20	1.47	1.04	0.94	1.00	0.97	0.94	0.97	1.01	0.99
INVERT LEVEL	3.739	4.225	4.817	5.694	6.307	6.633	7.110	8.125	8.196	8.165	7.932	7.912
EXISTING NATURAL SURFACE LEVEL	6.856	6.886	7.013	7.168	7.349	7.568	8.113	9.091	9.131	9.135	8.943	8.902
CHAINAGE	199.150	204.641	210.109	215.539	221.005	226.495	250.000	300.000	303.479	308.989	350.000	353.558

LEGEND

GAS VALVE

SCOUR VALVE

NOTE:

AS PER SEQ SEWER CODE, LONGITUDINAL SECTIONS SHALL BE PROVIDED AS DESIGN DRAWINGS AND SUBMITTED AS "AS CONS"

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL LONGITUDINAL SECTION OF RISING MAIN

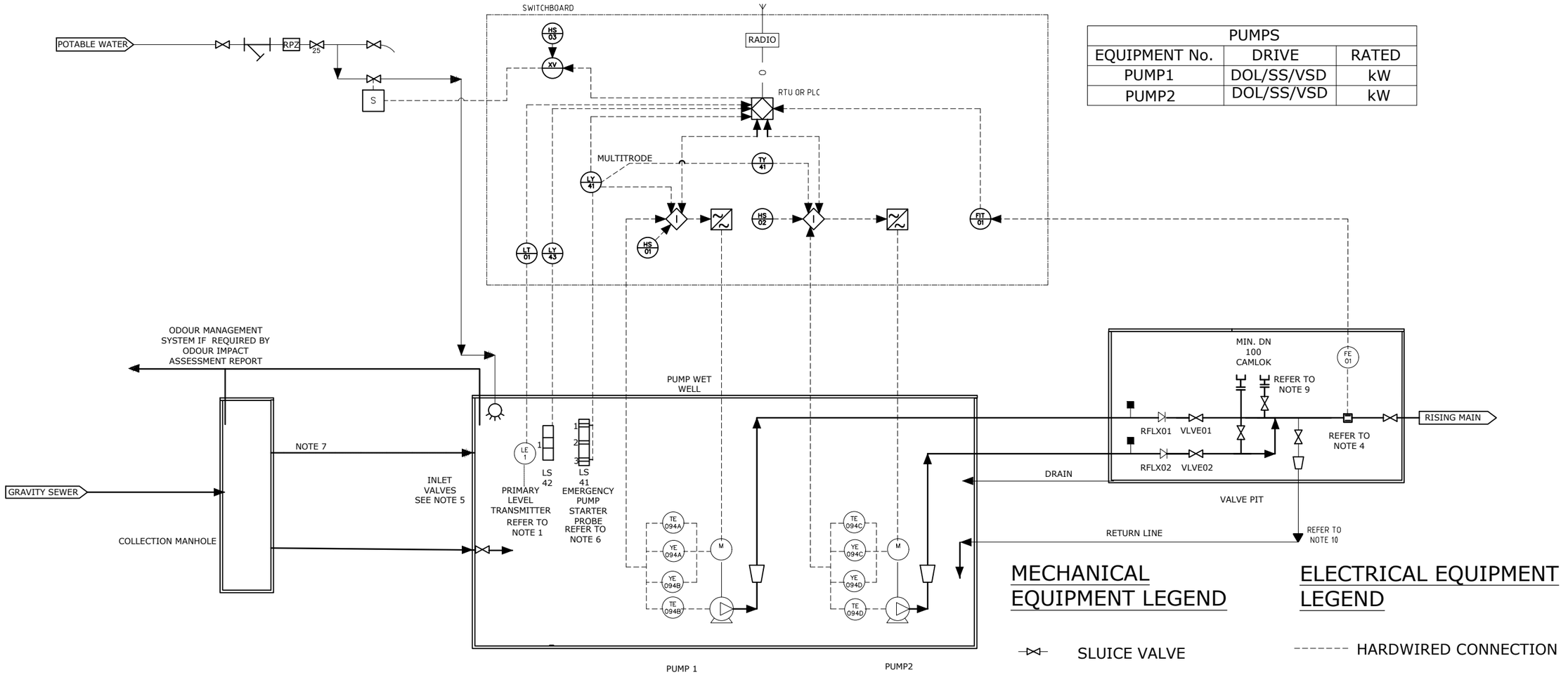
CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1100-2

VERSION A

NOT TO SCALE

ORG DATE: 1/1/2013



PUMPS		
EQUIPMENT No.	DRIVE	RATED
PUMP1	DOL/SS/VSD	kW
PUMP2	DOL/SS/VSD	kW

NOTES:

1. PUMP START/STOP NORMALLY CONTROLLED BY RTU USING LEVEL TRANSMITTER LT 01.
2. UPON HIGH LEVEL (LS 41-1), PUMP START/STOP AUTOMATIC CONTROL IS BYPASSED BY HARD WIRED EMERGENCY/BACK-UP PUMP STARTER CIRCUIT ON MULTITRODE LEVEL CONTROL UNIT.
3. ALL INSTRUMENTS AND ALARM RL'S SHALL BE CONFIRMED BY SEQ-SP.
4. FLOWMETER SHALL BE PROVIDED WHERE REQUIRED BY SEQ-SP, INSTALLATION REQUIREMENTS MAY REQUIRE SEPARATE PIT.
5. INLET VALVES WHERE REQUIRED BY SEQ-SPs.
6. REFER TO TYPICAL EMERGENCY/BACK-UP PUMP STARTER CIRCUIT SCHEMATIC. SEE SEQ-SP ELEC. DWG'S
7. HIGH INLET PIPE WHERE REQUIRED BY SEQ-SP.
8. WELL WASHER SHALL BE PROVIDED WHERE REQUIRED BY SEQ- SP
9. ONE OR TWO CAMLOK CONNECTIONS REQUIRED DEPENDING ON PHYSICAL LAYOUT (REFER TO SEQ-SP DRAWINGS)
10. RETURN LINE MAY BE FROM VALVE PIT OR FROM RISING MAIN. (REFER TO SEQ-SP DRAWINGS)

TAG	LEVEL	RL	COMMENTS
LT1	LSL	NOTE 3	ALL STOP
	LSM	NOTE 3	DUTY START
	LSH	NOTE 3	STANDBY START
	LSHH	NOTE 3	ALARM
LS42	1	NOTE 3	OVERFLOW ALARM
LS 41	1	NOTE 3	EMERG PUMP START/PUMP ALARM
	2	NOTE 3	
	3	NOTE 3	EMERG. PUMP STOP
PUMP 1			
094A	TE		STATOR HIGH TEMP.
094B	TE		PUMP BEARING HIGH TEMP.
094A	YE		JUNCTION BOX SEAL FAIL
094B	YE		STATOR HOUSING SEAL FAIL
PUMP 2			
094C	TE		STATOR HIGH TEMP.
094D	TE		PUMP BEARING HIGH TEMP.
094C	YE		JUNCTION BOX SEAL FAIL
094D	YE		STATOR HOUSING SEAL FAIL

MECHANICAL EQUIPMENT LEGEND

- SLUICE VALVE
- NON-RETURN VALVE
- 'Y' TYPE STRAINER
- ELECTRIC MOTOR
- PUMP
- TAPPING POINT
- REDUCED PRESSURE ZONE BACKFLOW PREVENTION DEVICE
- WELL WASHER

ELECTRICAL EQUIPMENT LEGEND

- HARDWIRED CONNECTION
- COMMUNICATION/SOFTWARE CONNECTION
- DISCRETE INSTRUMENT - FIELD MOUNTED/OPERATOR NOT ACCESSIBLE
- DISCRETE INSTRUMENT - OPERATOR ACCESSIBLE
- RTU - OPERATOR NOT ACCESSIBLE
- LOGIC INTERLOCK (SOFTWARE OR HARDWARE)
- VARIABLE SPEED DRIVE
- SOFT STARTER
- MAGNETIC FLOWMETER

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL P & ID DIAGRAM
DUTY - ASSIST OPERATION

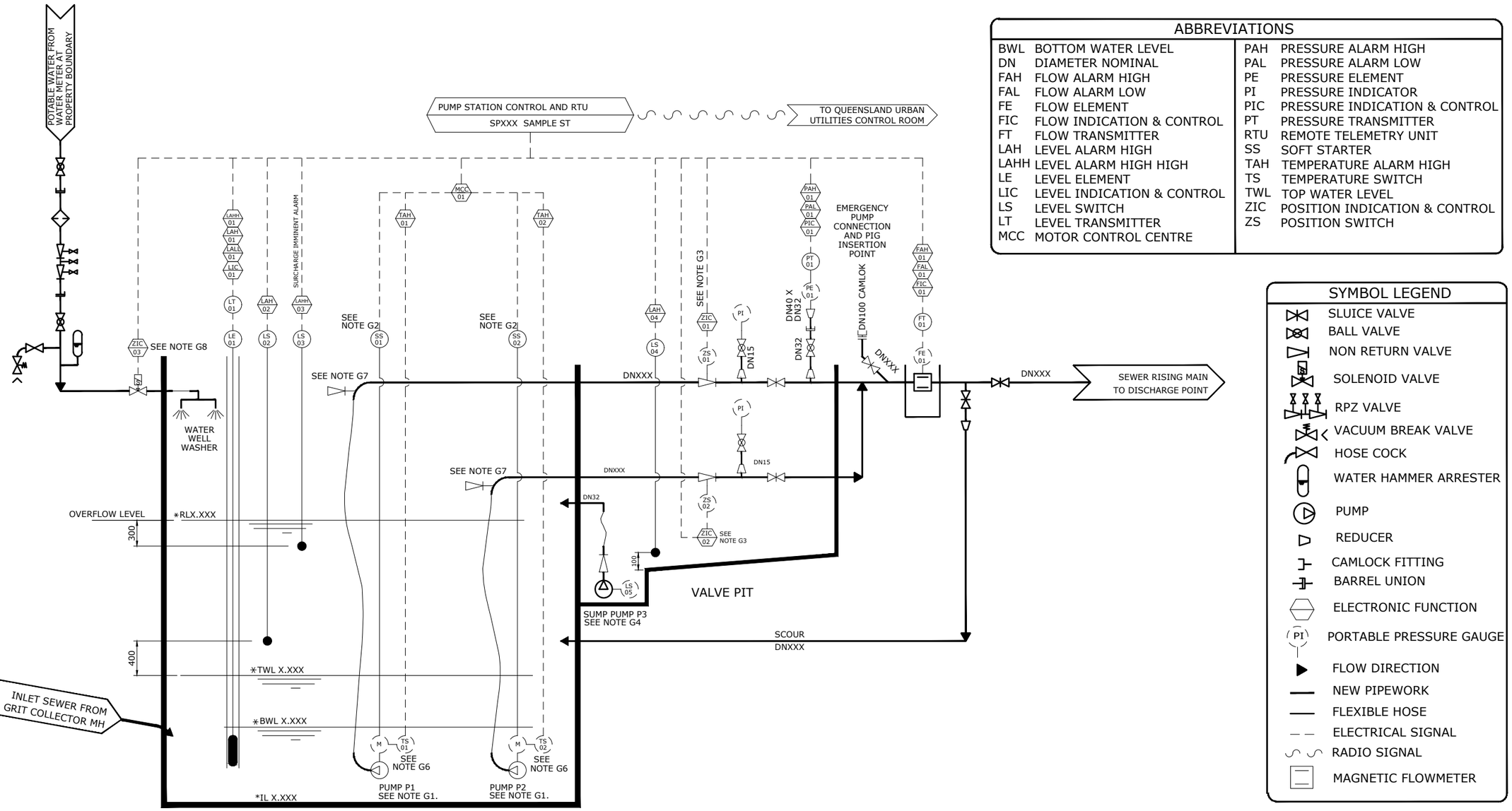
CoGC	LCC	RCC	QUU	UW

DRAWING No.
SEQ-SPS-1101-1

VERSION
A

NOT TO SCALE

ORG DATE:
1/1/2013



ABBREVIATIONS

BWL	BOTTOM WATER LEVEL	PAH	PRESSURE ALARM HIGH
DN	DIAMETER NOMINAL	PAL	PRESSURE ALARM LOW
FAH	FLOW ALARM HIGH	PE	PRESSURE ELEMENT
FAL	FLOW ALARM LOW	PI	PRESSURE INDICATOR
FE	FLOW ELEMENT	PIC	PRESSURE INDICATION & CONTROL
FIC	FLOW INDICATION & CONTROL	PT	PRESSURE TRANSMITTER
FT	FLOW TRANSMITTER	RTU	REMOTE TELEMETRY UNIT
LAH	LEVEL ALARM HIGH	SS	SOFT STARTER
LAHH	LEVEL ALARM HIGH HIGH	TAH	TEMPERATURE ALARM HIGH
LE	LEVEL ELEMENT	TS	TEMPERATURE SWITCH
LIC	LEVEL INDICATION & CONTROL	TWL	TOP WATER LEVEL
LS	LEVEL SWITCH	ZIC	POSITION INDICATION & CONTROL
LT	LEVEL TRANSMITTER	ZS	POSITION SWITCH
MCC	MOTOR CONTROL CENTRE		

SYMBOL LEGEND

- SLUICE VALVE
- BALL VALVE
- NON RETURN VALVE
- SOLENOID VALVE
- RPZ VALVE
- VACUUM BREAK VALVE
- HOSE COCK
- WATER HAMMER ARRESTER
- PUMP
- REDUCER
- CAMLOCK FITTING
- BARREL UNION
- ELECTRONIC FUNCTION
- PORTABLE PRESSURE GAUGE
- FLOW DIRECTION
- NEW PIPEWORK
- FLEXIBLE HOSE
- ELECTRICAL SIGNAL
- RADIO SIGNAL
- MAGNETIC FLOWMETER

NOTES

G1. THE DIAGRAM SHOWN ON THIS DRAWING IS INDICATIVE ONLY. THE DIAGRAM REFLECTS AN INSTALLATION WITH TWO CHAIN SUSPENDED PUMPS. THE PROJECT DRAWINGS MUST INCLUDE A DIAGRAM WHICH CONTAINS ALL INSTRUMENTATION AND PIPE DIAMETERS SPECIFIC TO THAT SITE. THE FULL FUNCTIONALITY OF THE CONTROL SYSTEM IS NOT INDICATED ON THIS DRAWING. TO ACHIEVE STANDARDISATION REFER TO QUEENSLAND URBAN UTILITIES FOR THE DESIGN OF THE SWITCHBOARD, CONTROL SYSTEM AND RTU. THE FUNCTIONALITY MAY VARY AND IS PROJECT DEPENDENT. THIS FUNCTIONALITY IS TO BE APPROVED BY QUEENSLAND URBAN UTILITIES DURING THE PRELIMINARY DESIGN PHASE AND BEFORE FINAL DESIGNS ARE COMPLETED. THE TWO PUMP INSTALLATION SHOWN HERE PROVIDES FOR ONE DUTY PUMP AND ONE EQUAL STANDBY PUMP. THESE PUMPS ARE TO ALTERNATE IN DUTY.

G2. THIS DRAWING SHOWS MOTORS WITH SOFT STARTERS WHICH WILL NORMALLY BE INSTALLED HOWEVER VARIABLE FREQUENCY DRIVES MAY BE INSTALLED IF DIRECTED BY QUEENSLAND URBAN UTILITIES.

G3. THE POSITION SWITCHES SHOWN ON THIS DRAWING ARE TO BE INSTALLED AS DIRECTED BY QUEENSLAND URBAN UTILITIES. THEY ARE GENERALLY NOT INSTALLED ON PUMPS SMALLER THAN 30 kW.

G4. THE SUMP PUMP IN THE VALVE PIT IS INDEPENDENT OF THE PUMP STATION CONTROL AND IS SUPPLIED WITH AN INTERNAL LEVEL SWITCH. THIS LEVEL SWITCH OPERATES OVER AN 80mm RANGE FROM TWL TO BWL. NOTE: FOR SMALL STATIONS(<30L/S CAPACITY) REFER SEQ-SPS-1102-6.

G5. LEVELS SHOWN WITH AN * ARE TO BE SHOWN ON THE PROJECT DRAWING.

G6. THIS DRAWING SHOWS PUMP MOTORS WITH THERMISTER MOTOR PROTECTION. THE PUMPS SELECTED FOR THE INDIVIDUAL PROJECT MAY INCLUDE OTHER MOTOR PROTECTION FAULTS AND THESE ARE TO BE INCLUDED AS DIRECTED BY QUEENSLAND URBAN UTILITIES.

G7. FOR PUMPING STATIONS WITH GUIDE RAIL PUMPS AN AIR BLEED BALL VALVE AND PIPEWORK ARE REQUIRED UPSTREAM OF THE PUMP NON RETURN VALVE IN THE VALVE PIT.
THE DISCHARGE FOR EACH OF THE AIR BLEEDS IS TO PASS INTO THE PUMP WELL THROUGH THE WELL WALL. THE SMALL NON RETURN VALVE ON THE PUMP WELL DISCHARGE BEND AS SHOWN ON THIS DRAWING IS NOT REQUIRED FOR GUIDE RAIL PUMP INSTALLATIONS.

G8. THE POTABLE WATER WELL WASHER IS TO OPERATE ONCE A DAY FOR 10 MINUTES AND IS TO START WHEN THE FIRST PUMP STARTS AFTER MIDNIGHT. FOR PUMPING STATIONS WITH VF DRIVES THAT OPERATE CONTINUOUSLY THE WELL WASHER IS TO RUN FOR 10 MINUTES ONCE A DAY AND IS TO START WHEN THE WELL LEVEL IS AT LOWEST LEVEL.

REV. No.	DATE	DESCRIPTION	AUTH.
B	14/05/14	ADD DRAWING REFERENCE IN NOTE 4	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL P & ID DIAGRAM
DUTY STANDBY OPERATION

~~CoGC~~ ~~LCC~~ ~~RCC~~ QUU ~~UW~~

DRAWING No.
SEQ-SPS-1101-2

VERSION
B

NOT TO SCALE

ORG DATE:
1/1/2013

PUMP DETAILS

NUMBER OF DUTY PUMPS	
NUMBER OF ASSIST PUMPS	
NUMBER OF STANDBY PUMPS	
TOTAL NUMBER OF PUMPS	
PUMP MANUFACTURER	
PUMP MODEL	
PUMP IMPELLER DIAMETER	
IMPELLER TYPE (eg NON-CLOG)	
PUMP MANUFACTURER CURVE NO.	
MOTOR MANUFACTURER	
MOTOR KW RATING	
MOTOR START TYPE (dol,ss,vsd)	
MOTOR VOLTAGE	
MOTOR SPEED AT 50 Hz	
CABLE LENGTH (SEE NOTE 4.)	
DUTY POINT (FLOW & HEAD) (ACTUAL)	l/sec & m
HYDRAULIC EFFICIENCY @ DUTY POINT %	

RISING MAIN DETAILS

PIPE NOMINAL DIAMETER	
PIPE MATERIAL	
PIPE MANUFACTURER	
PIPE INTERNAL DIAMETER mm	
PIPE OUTSIDE DIAMETER mm	
PIPE PN RATING	
VELOCITY AT 50 Hz FROM TWL	
VELOCITY AT MINIMUM Hz FROM BWL	
RISING MAIN VOLUME M^3	
MEAN STATIC HEAD AT ZERO FLOW	
HYDRAULIC TEST PRESSURE kPA	

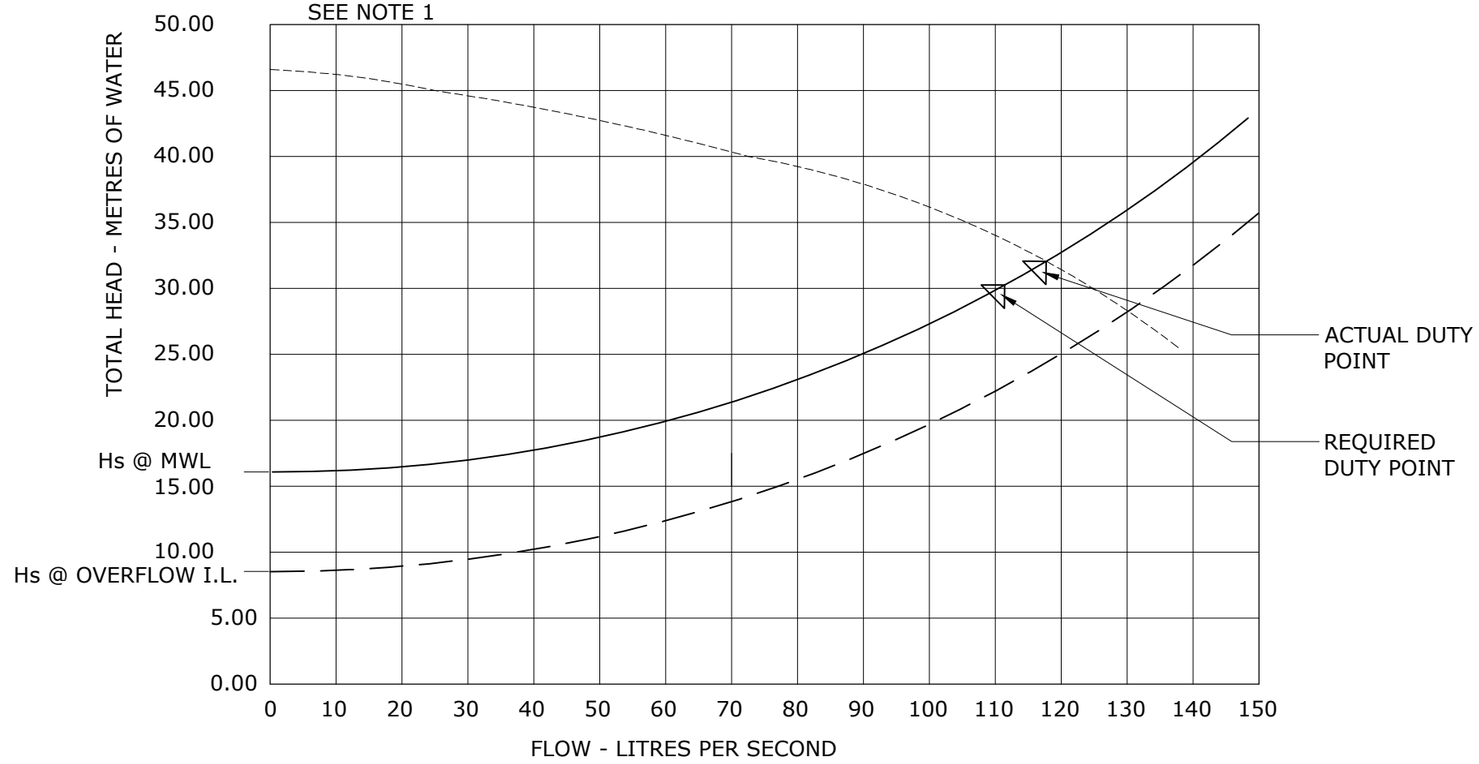
FLOW DETAILS

	FLOW RATE INTO PUMPING STATION L/S	VELOCITY IN RISING MAIN M/S	NUMBER OF PUMP STARTS PER HOUR	RISING MAIN DETENTION TIME. MINUTES
PWWF				
PDWF				
ADWF				

NOTES

1. THE CURVES SHOWN ON THIS DRAWING ARE GIVEN AS A SAMPLE ONLY AND SHOW A STATION WITH ONE DUTY PUMP OPERATING AND AT A SINGLE SPEED. FOR STATIONS WITH MORE THAN ONE DUTY PUMP ADDITIONAL PUMP CURVES ARE REQUIRED FOR EACH ADDITIONAL PUMP RUNNING. FOR INSTALLATIONS WITH VARIABLE SPEED DRIVES PUMP CURVES ARE REQUIRED FOR PUMP SPEED AT 5Hz INCREMENTS FROM 30Hz TO 55Hz.
2. THE PROJECT DRAWING SHALL CONTAIN CURVES WHICH REFLECT THE PUMPS INSTALLED.
3. THE TABLES SHOWN ON THIS DRAWING SHALL BE POPULATED AND INCLUDED IN THE PROJECT DRAWINGS.
4. THE MINIMUM CABLE LENGTH FOR ANY PUMP IS 10 m (15.0m FOR QUU)
5. TWL - TOP WATER LEVEL (AT DUTY PUMP START LEVEL)
   BWL - BOTTOM WATER LEVEL (AT DUTY PUMP STOP LEVEL)
   MWL - MEAN WATER LEVEL (HALF WAY BETWEEN TWL & BWL)
6. MEAN STATIC AND TOTAL MEAN HEAD DEFINED ON DRAWING SEQ-SPS-1101-4.

SPS XXX SAMPLE ST. PUMP STATION
SEE NOTE 1



PUMP CURVE

SYSTEM CURVE AT MWL (TOTAL MEAN HEAD) CURVE WITH FRICTION FACTORS DERIVED AS PER CODE REQUIREMENTS

SYSTEM CURVE AT OVERFLOW LEVEL WITH FRICTION FACTORS DERIVED AS PER CODE REQUIREMENTS

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

PUMP AND RISING MAIN DETAILS

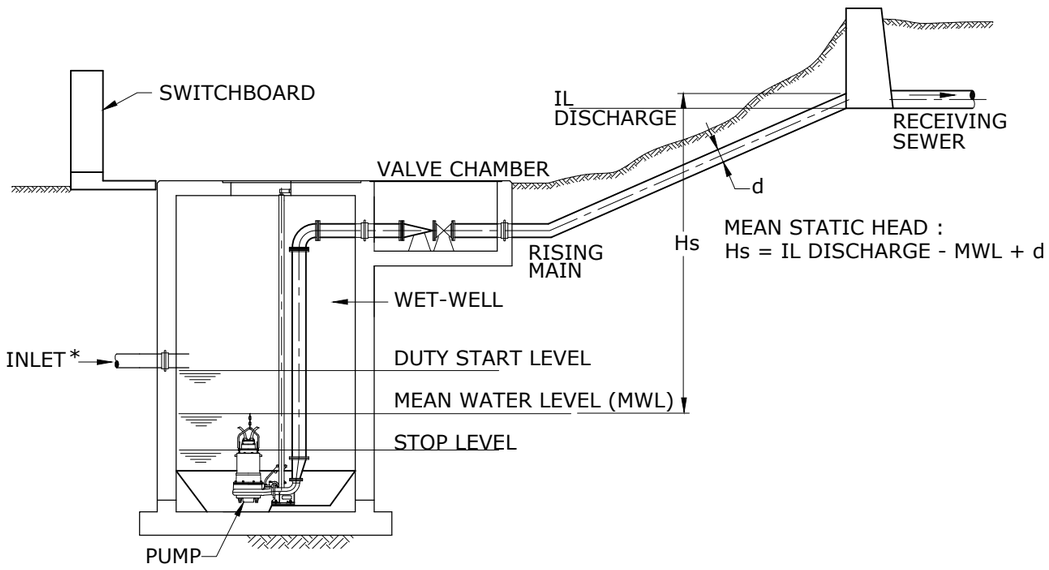
CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1101-3

VERSION A

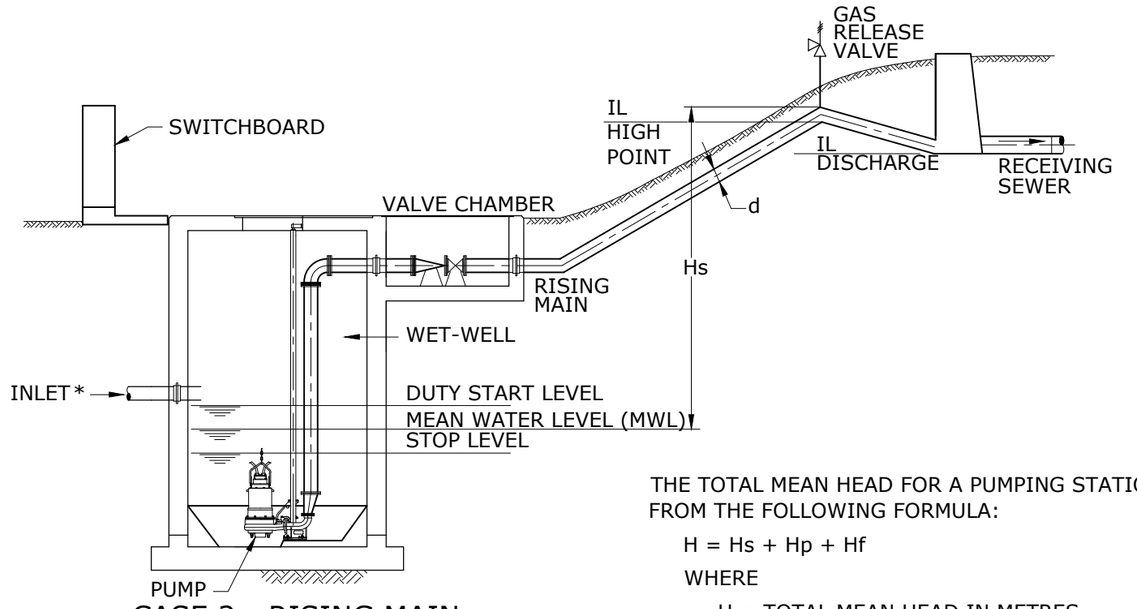
NOT TO SCALE

ORG DATE: 1/1/2013



MEAN STATIC HEAD :
Hs = IL DISCHARGE - MWL + d

CASE 1 - CONTINUOUS RISING MAIN



CASE 2 - RISING MAIN WITH A HIGH POINT

THE TOTAL MEAN HEAD FOR A PUMPING STATION (H) IS DERIVED FROM THE FOLLOWING FORMULA:

H = Hs + Hp + Hf

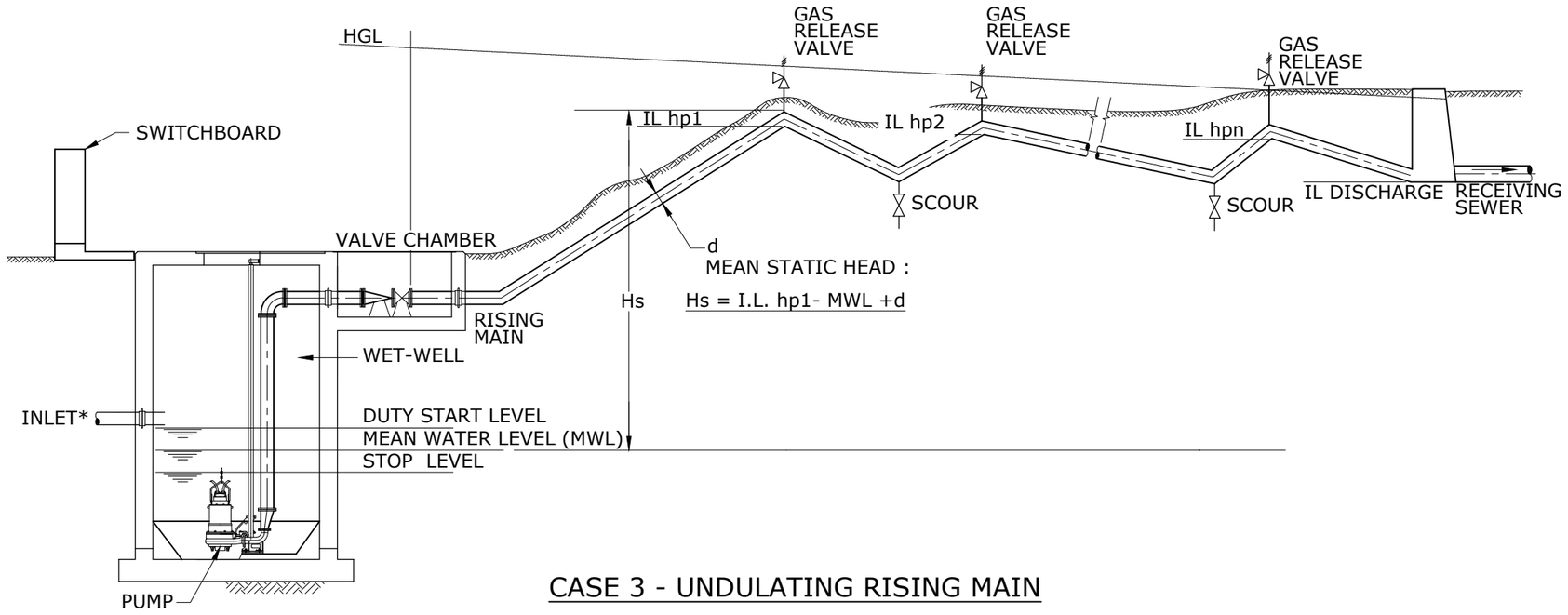
WHERE

H = TOTAL MEAN HEAD IN METRES

Hs = MEAN STATIC HEAD IN METRES

Hp = FRICTION HEAD LOSS OF THE MAIN IN METRES

Hf = TOTAL FRICTION HEAD LOSS OF FITTINGS AND VALVES USED IN PIPEWORK AND RISING MAIN IN METRES



CASE 3 - UNDULATING RISING MAIN

MEAN STATIC HEAD

MEAN STATIC HEAD, Hs = INVERT LEVEL OF THE RISING MAIN AT THE CRITICAL POINT - MEAN OPERATING LEVEL IN WET-WELL + d

WHERE d = RISING MAIN INTERNAL DIAMETER IN METERS.

THE CRITICAL POINT IS THE HIGHEST POINT ON THE RISING MAIN THAT IS ON (TOUCHING) THE HGL.

FOR MOST RISING MAINS, THE CRITICAL POINT IS EITHER AT THE DISCHARGE POINT OR AT THE HIGHEST PHYSICAL POINT ON THE MAIN. FOR UNDULATING MAINS, THE CRITICAL POINT MAY OCCUR AT LOCAL HIGH POINTS BETWEEN THE HIGHEST PHYSICAL POINT ON THE MAIN AND THE DISCHARGE POINT, AND MAY BE DIFFERENT FOR DIFFERENT FLOW RATES.

THE CRITICAL POINT IS DETERMINED BY CALCULATING THE TOTAL MEAN HEAD FOR EACH POTENTIAL CRITICAL POINT- THE HIGHEST VALUE OBTAINED INDICATES THE CRITICAL POINT.

FRICTION HEAD LOSSES ARE ONLY INCLUDED FOR THE SECTION OF MAIN BETWEEN THE PUMP AND THE CRITICAL POINT.

NOTES

1."DUTY START LEVEL" ALSO KNOWN AS "CUT-IN" LEVEL AND TWL.
2. "STOP LEVEL" ALSO KNOWN AS "CUT-OUT" LEVEL AND BWL.

* A HIGH INLET PIPE MAY BE REQUIRED ON SOME SITES

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

RISING MAIN CONCEPT DESIGN
SECTIONS AND MEAN
HEAD CALCULATIONS

CoGC	LCC	RCC	QUU	UW

DRAWING No.
SEQ-SPS-1101-4

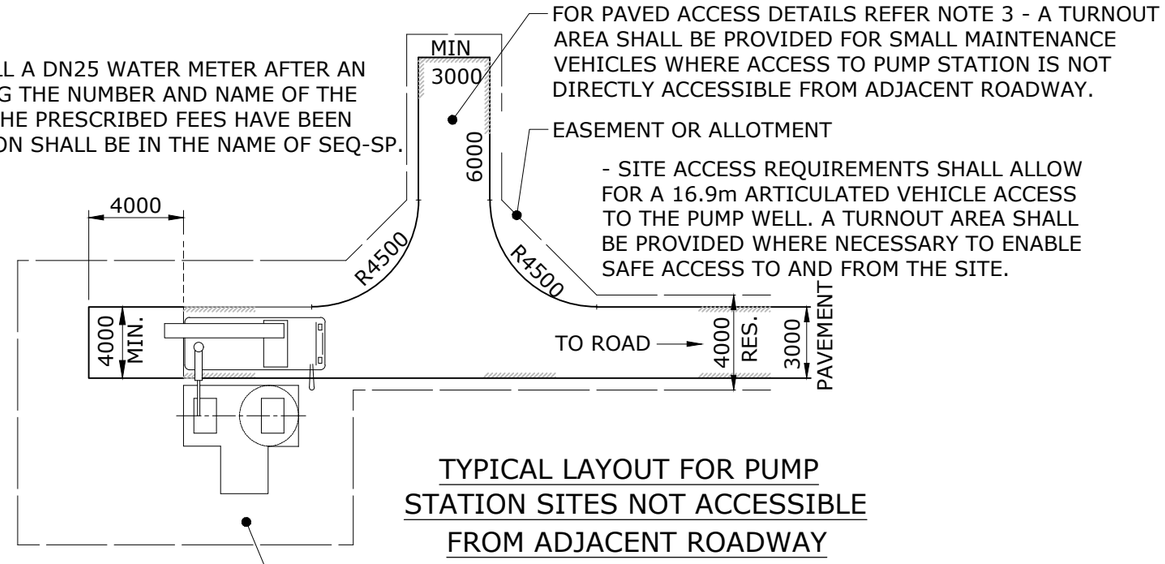
VERSION
A

NOT TO SCALE

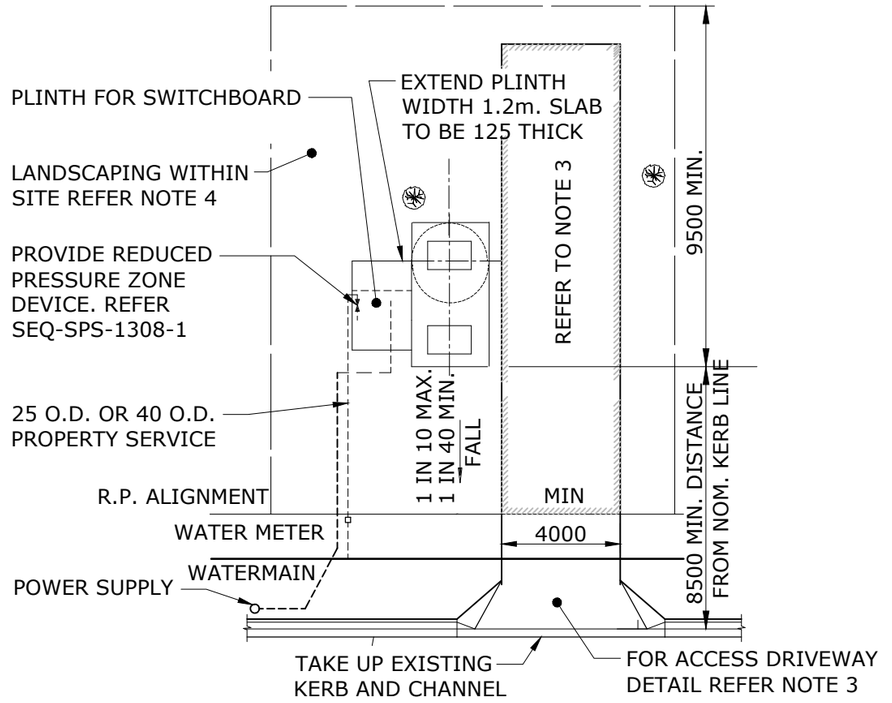
ORG DATE:
1/1/2013

WATER METER

1. SEQ-SP SHALL INSTALL A DN25 WATER METER AFTER AN APPLICATION STATING THE NUMBER AND NAME OF THE PUMP STATION AND THE PRESCRIBED FEES HAVE BEEN PAID. THE APPLICATION SHALL BE IN THE NAME OF SEQ-SP.

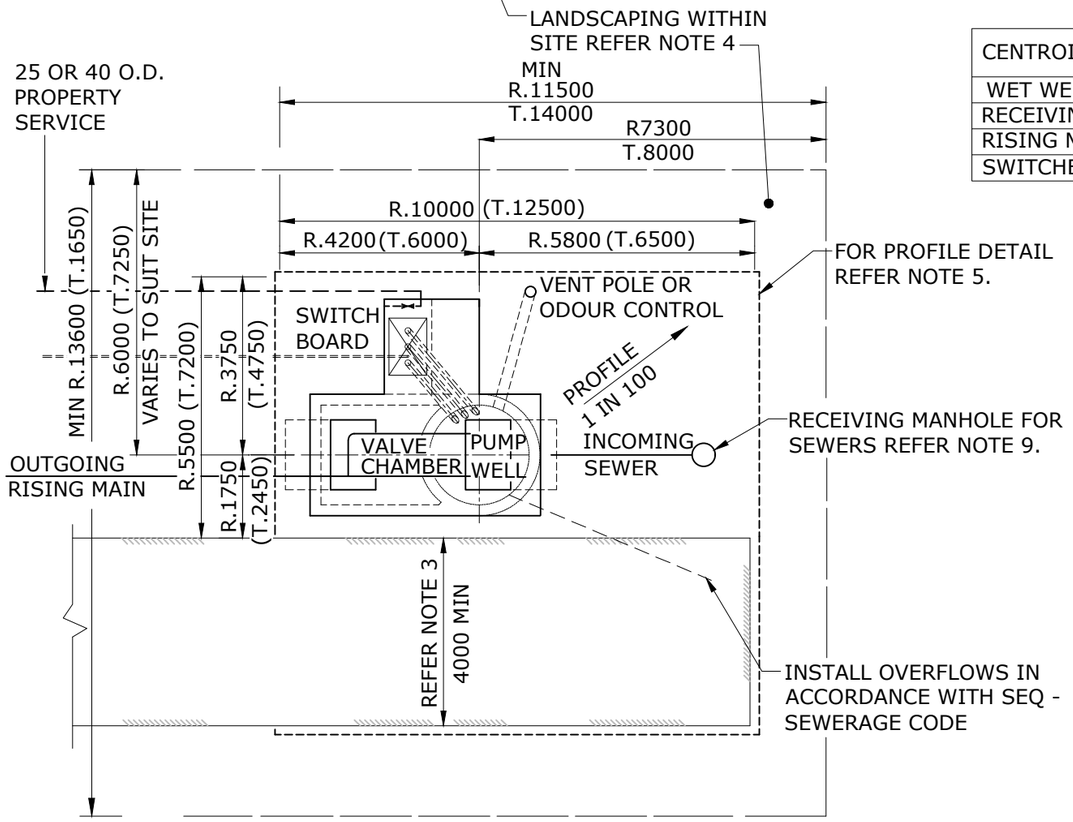


TYPICAL LAYOUT FOR PUMP STATION SITES NOT ACCESSIBLE FROM ADJACENT ROADWAY



TYPICAL LAYOUT FOR PUMP STATION SITES ACCESSIBLE FROM ADJACENT ROADWAY

(SUBJECT TO NOTE 3 (d) REQUIREMENT)



TYPICAL SITE PLAN

MGA CO-ORDINATES

CENTROID OF	X (m)	Y (m)
WET WELL		
RECEIVING MANHOLE		
RISING MAIN VALVE		
SWITCHBOARD		

NOTES: GENERAL

1. THE DETAILS SHOWN ON THIS DRAWING ARE TYPICAL ONLY. THE LOCATION OF ALL ITEMS SHALL BE AS SHOWN ON THE APPROVED DRAWINGS. RETIC = R, TRUNK = T.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH SEQ-SP STANDARD DRAWINGS
3. DRIVEWAY ACCESS TO ALL PUMP AND LIFT STATIONS SHALL BE PROVIDED AS FOLLOWS:
   (a) LONGITUDINAL GRADE SHALL BE MAXIMUM 10%.
   (b) LOCATED SO VEHICULAR TRAFFIC WILL NOT TRAVERSE THE COVERS.
   (c) HEAVY VEHICLE ACCESS DRIVEWAYS SHALL BE REINFORCED CONCRETE.
   (d) IN ACCORDANCE WITH ROAD SAFETY AUDIT PER RELEVANT ROAD AUTHORITY.
4. THE PUMP AND LIFT STATION SITE AREA SHALL BE A MINIMUM OF 250m² OR AS DIRECTED BY THE SEQ-SP. THE SURROUNDS SHALL BE LANDSCAPED WITH SHRUBS AND MULCH. INTERNAL LANDSCAPING -WEED MAT AND MULCH.
5. PUMP STATION PLATFORM SHALL BE PROFILED TO SLOPE1 IN 100 AWAY FROM OPENINGS AND SWITCHBOARD PLINTH & THEN BATTER AT 1 IN 6 (MAX.) TO NATURAL SURFACE.
6. WHERE REQUIRED BY SEQ-SP PROVIDE A 1.8m HIGH PERSON PROOF FENCE AND 4.0m WIDE DOUBLE LEAF LOCKABLE GATE.
7. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
8. ACCESS ROAD SHALL THE SAME FLOOD IMMUNTY CRITERIA AS REQUIRED FOR CONNECTING ROADS.
9. FOR GCCC SITES, FOR > 525 D SEWERS SHALL HAVE A KNIFE GATE VALVE INSTALLED ON THE DOWNSTREAM OUTLET. UNITYWATER HAVE VALVE ON THE INLET TO WELL.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL SITE LAYOUT

CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1102-1

VERSION A

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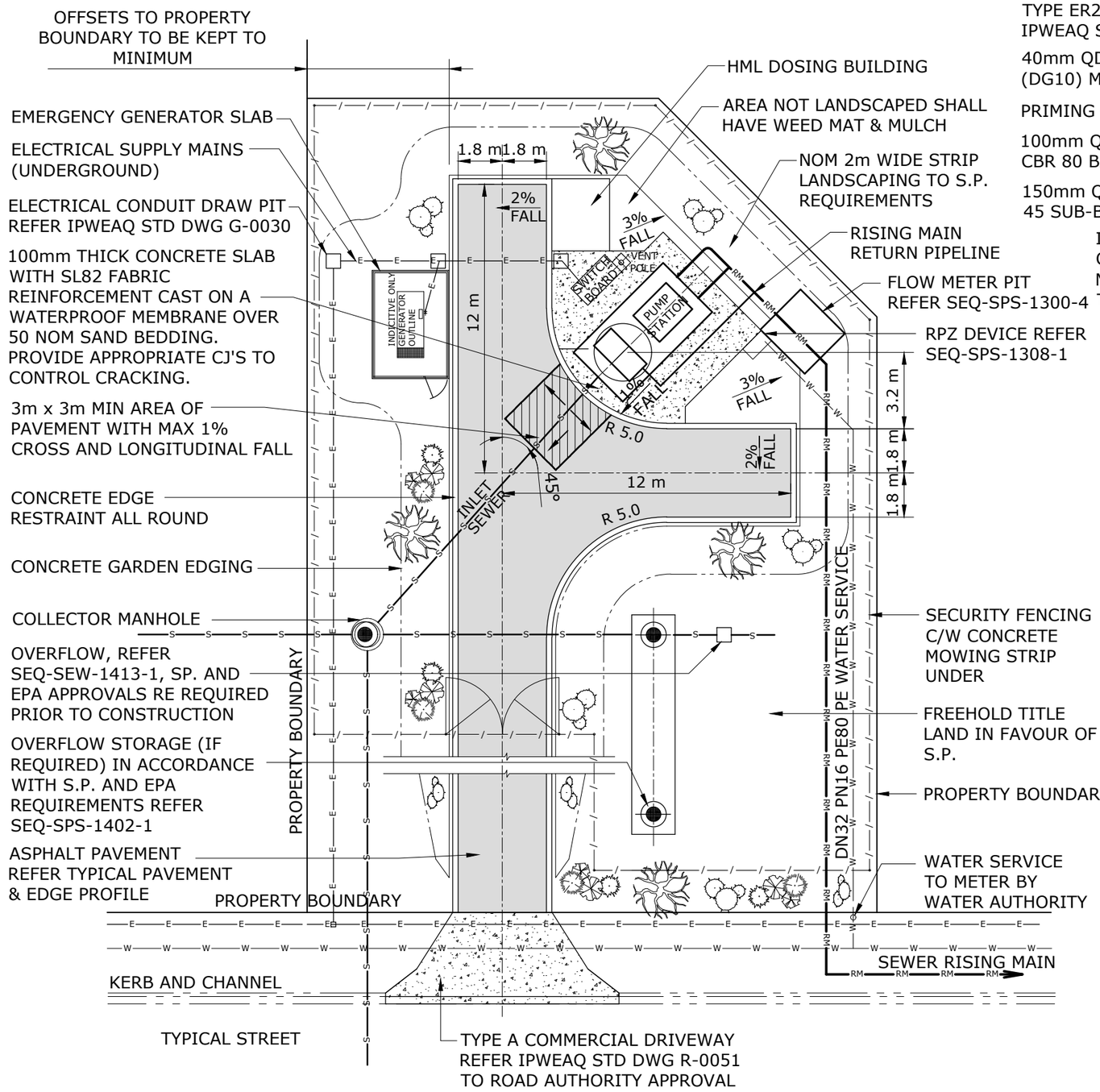
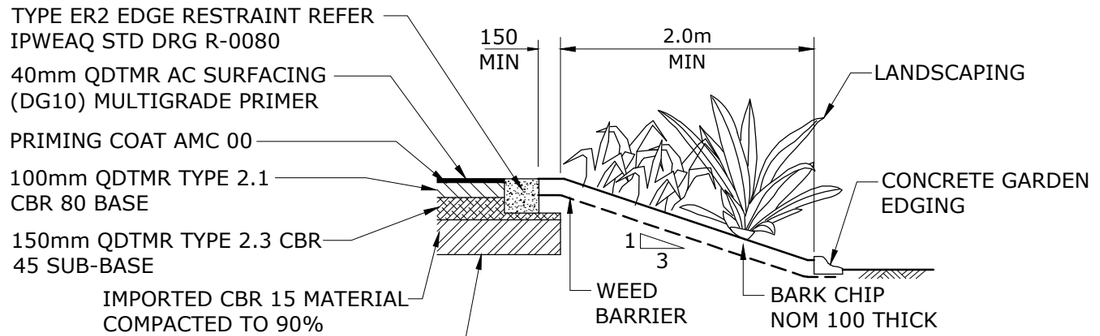
ORG DATE: 1/1/2013



TYPICAL LAYOUT FOR PUMP STATION SITE



TYPICAL PAVEMENT AND EDGE PROFILE FOR AC PAVEMENT

NOT TO SCALE

GENERAL

1. DETAIL SHOWN IN THIS DRAWING IS TYPICAL ONLY. THE LOCATION OF ALL ITEMS WILL BE AS SHOWN ON THE APPROVED DRAWINGS AND READ IN CONJUNCTION WITH SEQ WATER SP SPECIFICATIONS FOR SEWAGE PUMPING STATIONS.
2. SECURITY FENCING INCLUDING 4M WIDE DOUBLE LEAF LOCKABLE GATE -REFER PRODUCTS AND MATERIALS - LIST (CIVIL).
3. SURFACE RUNOFF TO BE ADDRESSED AND MANAGED APPROPRIATELY.
4. DRIVEWAY ACCESS TO ALL PUMP AND LIFT STATIONS SHALL BE IN ACCORDANCE WITH ROAD SAFETY AUDIT PER RELEVANT ROAD AUTHORITY.
5. ROADWAY DIMENSIONS ARE TO CATER FOR TURNING/MANOEVERING OF 8.8m SERVICE VEHICLE.

ELECTRICAL

1. ELECTRICAL SWITCHBOARD TO BE MINIMUM 1.5M FROM EDGE OF ANY OPENING.

ODOUR CONTROL

1. ODOUR CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH THE ODOUR IMPACT ASSESSMENT REPORT.

LANDSCAPING

1. CONSTRUCT CONCRETE CAST IN SITU GARDEN EDGING AT THE BASE OF THE LANDSCAPED AREA. THE LINE AND LEVEL OF THE GARDEN EDGING SHALL BE ESTABLISHED TO THE SATISFACTION OF THE SUPERINTENDENT.
2. SUPPLY AND PLACE WOODCHIP 100MM DEEP OVER AN APPROVED WEED INHIBITING MEDIUM. THE WHOLE AREA SHALL BE CLEARED OF WEEDS AND GRASS PRIOR TO PLACING THE ABOVE MATERIALS.
3. SUPPLY, PLANT AND ESTABLISH TREES AND SHRUBS AS APPROVED. TOPSOIL STRIPPED PRIOR TO CONSTRUCTION SHALL BE REPLACED ON ALL SURFACES NOT PAVED, INCLUDING BATTER SLOPES AND GARDEN BEDS.
4. AREA INSIDE FENCE TO BE FULLY LANDSCAPED WITH LOW MAINTENANCE PLANTS AND NO GRASSED AREAS.

PAVEMENT

1. PAVEMENT SHALL BE DRY AND THOROUGHLY BROOMED BEFORE SURFACING IS UNDERTAKEN.
2. ANY DEPRESSIONS GREATER THAN 25MM SHALL BE TACK COATED AND BROUGHT UP TO THE LEVEL OF THE PAVEMENT.
3. PAVEMENT SHALL COMPLY WITH DMR SPECIFICATION "UNBOUND PAVEMENTS" MRS 11.05
4. ASPHALTIC CONCRETE SHALL COMPLY WITH DMR SPECIFICATION "DENSE GRADED ASPHALT PAVEMENTS" MRS 11.30
5. ALL ACCESS ROADS SHALL HAVE THE SAME FLOOD IMMUNITY CRITERIA AS REQUIRED FOR THE CONNECTING ROAD NETWORK.
6. QDTMR - QUEENSLAND DEPARTMENT OF TRANSPORT AND MAIN ROADS.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL SITE LAYOUT WITH STORAGE AND BACK-UP POWER

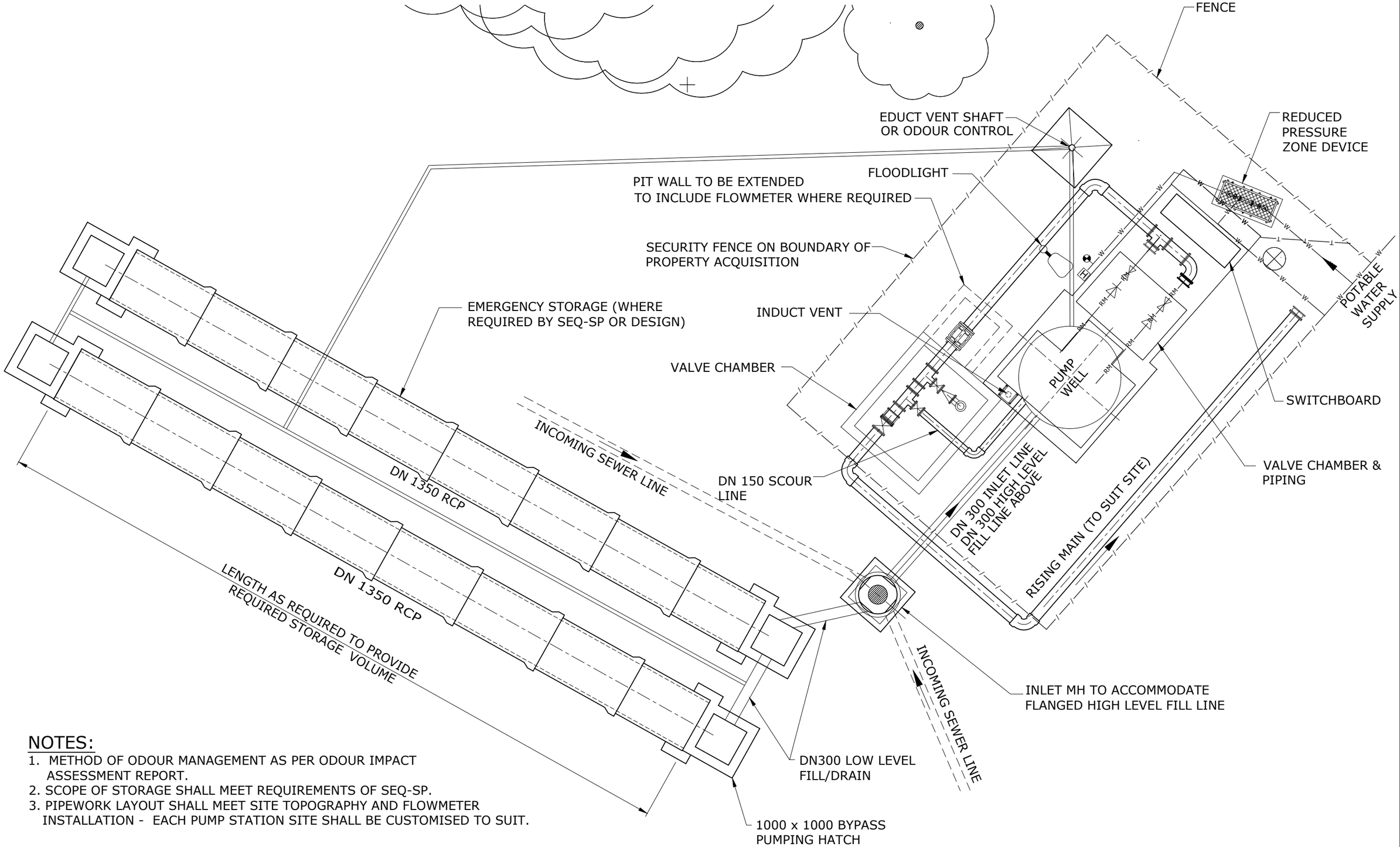
CoGC	LCC	RCC	~~QUU~~	UW

DRAWING No. SEQ-SPS-1102-2

VERSION A

NOT TO SCALE

ORG DATE: 1/1/2013



NOTES:

1. METHOD OF ODOUR MANAGEMENT AS PER ODOUR IMPACT ASSESSMENT REPORT.
2. SCOPE OF STORAGE SHALL MEET REQUIREMENTS OF SEQ-SP.
3. PIPEWORK LAYOUT SHALL MEET SITE TOPOGRAPHY AND FLOWMETER INSTALLATION - EACH PUMP STATION SITE SHALL BE CUSTOMISED TO SUIT.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALTERNATIVE SITE LAYOUT WITH
STORAGE AND OPTIONAL FLOW-METER

CoGC	LCC	RCC	QUU	UW

DRAWING No.

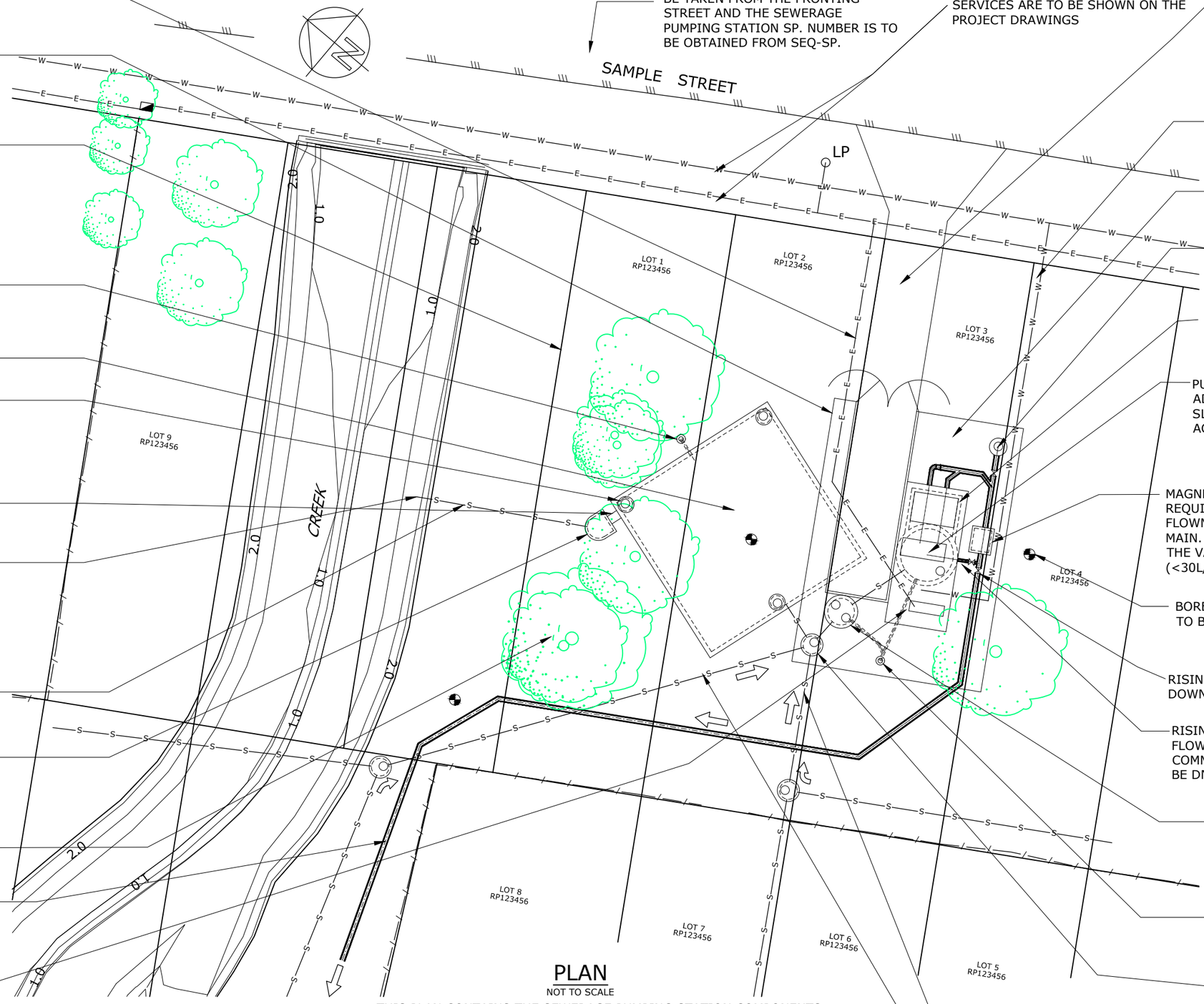
SEQ-SPS-1102-3

VERSION

A

NOT TO SCALE

ORG DATE:
1/1/2013



INCOMING ELECTRICAL SUPPLY TO BE UNDERGROUND

CHAIN WIRE SECURITY FENCE WITH TRUCK ACCESS GATES TO BE INSTALLED ON SITES AS DIRECTED BY SEQ-SPS.

PROPERTY BOUNDARIES TO BE INDICATED ON PROJECT DRAWINGS. THE SEWERAGE PUMPING STATION IS TO BE LOCATED ON FREEHOLD PROPERTY OWNED BY SEQ-SPS. THE PROPERTY DESCRIPTIONS ARE TO BE SHOWN ON THE PROJECT DRAWINGS.

VENT POLE NO. 2 FOR VENTILATION OF EMERGENCY STORAGE CHAMBER.

EMERGENCY STORAGE CHAMBER VOLUME AND SHAPE TO SUIT PROJECT

ACCESS MAINTENANCE HOLES ON EMERGENCY STORAGE CHAMBER. THE NUMBER AND LOCATION TO SUIT PROJECT

CONCRETE BOX CULVERT OVERFLOW

LOCATION AND LEVEL OF OVERFLOW DISCHARGE POINT MUST COMPLY WITH ALL LAWS AND REGULATIONS AND MUST BE ABOVE MAXIMUM HIGH TIDE LEVEL AND ABOVE NORMAL CREEK WATER LEVEL

OVERFLOW OUTLET. TO BE FULLY DETAILED ON PROJECT DRAWINGS

OVERFLOW FLAP VALVE CHAMBER TYPE TO BE INDICATED ON PROJECT DRAWINGS

PROJECT SPECIFIC LANDSCAPING

SEWER RISING MAIN FROM PUMPING STATION. TO BE DETAILED ON PROJECT DRAWINGS

ELECTRICAL SWITCHBOARD TO BE MINIMUM OF 2000mm FROM EDGE OF ANY OPENING. NOTE: A FIELD DISCONNECT BOX IS REQUIRED BETWEEN SWITCHBOARD AND PUMPS FOR PUMPS GREATER THAN 30 kW.

THE PUMPING STATION NAME IS TO BE TAKEN FROM THE FRONTING STREET AND THE SEWERAGE PUMPING STATION SP. NUMBER IS TO BE OBTAINED FROM SEQ-SP.

LOCATION OF ALL EXISTING SERVICES ARE TO BE SHOWN ON THE PROJECT DRAWINGS

CONCRETE ACCESS ROAD WITH 300mm HIGH VERTICAL KERB ADJACENT TO PUMP WELL AND GRIT COLLECTOR MAINTENANCE HOLE. FOR SMALL STATIONS (<30L/S CAPACITY) ALTERNATIVE CONSTRUCTION MAY BE CONSIDERED REFER SEQ-SPS-1102-6.

POTABLE WATER SERVICE FROM WATER METER AT PROPERTY ALIGNMENT

MAINTENANCE FREE SURFACE TREATMENT

COMBINATION EMERGENCY PUMP AND PIG INSERTION POINT. NOTE: TO BE THE SAME DIAMETER AS THE RISING MAIN

VALVE PIT INTEGRAL WITH PUMP WELL. FOR SMALL STATIONS (<30L/S CAPACITY) REFER SEQ-SPS-1102-6.

PUMP WELL WITH VACTOR PIPE COUPLING ADJACENT TO ACCESS ROAD. NOTE: TOP SLAB LEVEL MUST BE 300mm ABOVE ACCESS ROAD LEVEL

MAGNETIC FLOWMETER AND PIT WHERE REQUIRED. NOTE: THE DIAMETER OF THE FLOWMETER TO BE THE SAME AS THE RISING MAIN. NOTE: FLOWMETER PIT IS TO DRAIN TO THE VALVE PIT. NOTE: FOR SMALL STATIONS (<30L/S CAPACITY) REFER SEQ-SPS-1102-6.

BORE HOLE DETAILS AND LOCATIONS ARE TO BE SHOWN ON THE PROJECT DRAWINGS

RISING MAIN ISOLATING VALVE TO BE DOWNSTREAM OF SCOUR

RISING MAIN SCOUR TO BE DOWNSTREAM OF FLOWMETER AND TO BE UTILISED DURING COMMISSIONING. MINIMUM DIAMETER TO BE DN100

GRIT COLLECTOR MAINTENANCE HOLE WITH VACTOR COUPLING ADJACENT TO ACCESS ROAD. NOTE: FOR SMALL STATIONS (<30L/S CAPACITY) REFER SEQ-SPS-1102-6.

VENT POLE NO. 1 FOR VENTILATION OF PUMP WELL AND GRIT COLLECTOR MAINTENANCE HOLE.

DIVERSION MAINTENANCE HOLE. NOTE: MAINTENANCE HOLE TO BE UPSTREAM OF GRIT COLLECTOR ISOLATING VALVE. THIS MAINTENANCE HOLE TO BE Ø 1200 F TYPE OR X TYPE.

INCOMING SEWERS TO BE DETAILED ON PROJECT DRAWINGS

PLAN

NOT TO SCALE

THIS PLAN CONTAINS THE SEWERAGE PUMPING STATION COMPONENTS WHICH MUST BE FULLY DETAILED ON THE PROJECT DRAWINGS. OMITTED FROM THIS DRAWING ARE AN OVERHEAD GANTRY AND AN ELECTRICAL FIELD DISCONNECT BOX WHICH MAY BE REQUIRED ON SOME PUMPING STATIONS.

REV. No.	DATE	DESCRIPTION	AUTH.
B	06/05/14	REARANGE SMALL STATION REFERENCE	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL SITE LAYOUT WITH
PIG INSERTION/EMERGENCY PUMP POINT
AND GRIT COLLECTOR

CoGC | LCC | RCC | QUU | UW

DRAWING No. SEQ-SPS-1102-4

VERSION B

NOT TO SCALE

ORG DATE: 1/1/2013

TABULATION OF PUMP STATION LEVELS

REF.	DESCRIPTION	LEVEL
LEVEL 1	SURFACE LEVEL (ACCESS ROAD)	X.XXX
LEVEL 2	INVERT OF INLET AND OUTLET OF GRIT COLLECTOR MAINTENANCE HOLE	X.XXX
LEVEL 3	INVERT LEVEL OF BASE OF VALVE PIT	X.XXX
LEVEL 4	INVERT LEVEL OF INLET SEWER AT PUMP WELL	X.XXX
LEVEL 5	TOP WATER LEVEL OF PUMP WELL	X.XXX
LEVEL 6	BOTTOM WATER LEVEL OF PUMP WELL	X.XXX
LEVEL 7	INVERT OF PUMP WELL	X.XXX
LEVEL 8	BOTTOM OF BASE SLAB OF PUMP WELL	X.XXX
LEVEL 9	TOP OF ROOF SLAB OF PUMP WELL	X.XXX
LEVEL 10	INVERT LEVEL OF RISING MAIN THROUGH PIT WALL	X.XXX
LEVEL 11	INVERT LEVEL OF GRIT COLLECTOR MAINTENANCE HOLE	X.XXX
LEVEL 12	INVERT LEVEL OF OVERFLOW	X.XXX

NOTE. THIS TABLE IS TO BE COMPLETED AND INCLUDED ON THE PROJECT DRAWING FOR THE LEVEL INTERACTION DIAGRAM

EMERGENCY STORAGE CAPACITIES

CHAMBER	VOLUME m3
PUMP WELL	XX.X
GRIT COLLECTOR MAINTENANCE HOLE	XX.X
DIVERSION MAINTENANCE HOLE	XX.X
EMERGENCY STORAGE CHAMBER	XX.X
RETICULATION SYSTEM	XX.X
TOTAL	XXX.X

PEAK DRY WEATHER FLOW = XX.X L/S TOTAL

EMERGENCY STORAGE TIME AT PEAK DRY WEATHER FLOW = SEE NOTE G5. X HRS. X MIN.

NOTE. THIS TABLE IS TO BE POPULATED AND INCLUDED ON THE PROJECT DRAWING FOR THE LEVEL INTERACTION DIAGRAM

NOTES:

G1. THIS DRAWING IS PROVIDED TO DESIGNERS TO SHOW THE LEVEL RELATIONSHIPS BETWEEN THE VARIOUS COMPONENTS OF A SEWERAGE PUMPING STATION.
THE PROJECT DRAWINGS MUST CONTAIN A LEVEL INTERACTION DIAGRAM. THE PROJECT DRAWING MUST CONTAIN ALL THE INVERT LEVELS AND GRADES OF ALL THE PIPES. ALSO TO BE INCLUDED ARE ALL THE LEVELS OF THE STRUCTURES AND ALL THE WATER LEVELS AS INDICATED ON THIS DRAWING.
THE PROJECT DRAWING IS TO CONTAIN THE TABLES SHOWN ON THIS DRAWING.

G2. ALL PUMPING STATIONS REQUIRE TWO VENT POLES.
VENT POLE NO. 1 IS A COMBINED VENT WHICH VENTS THE PUMP WELL AND THE GRIT COLLECTOR MAINTENANCE HOLE.
VENT POLE NO. 2 VENTS THE EMERGENCY STORAGE CHAMBER.

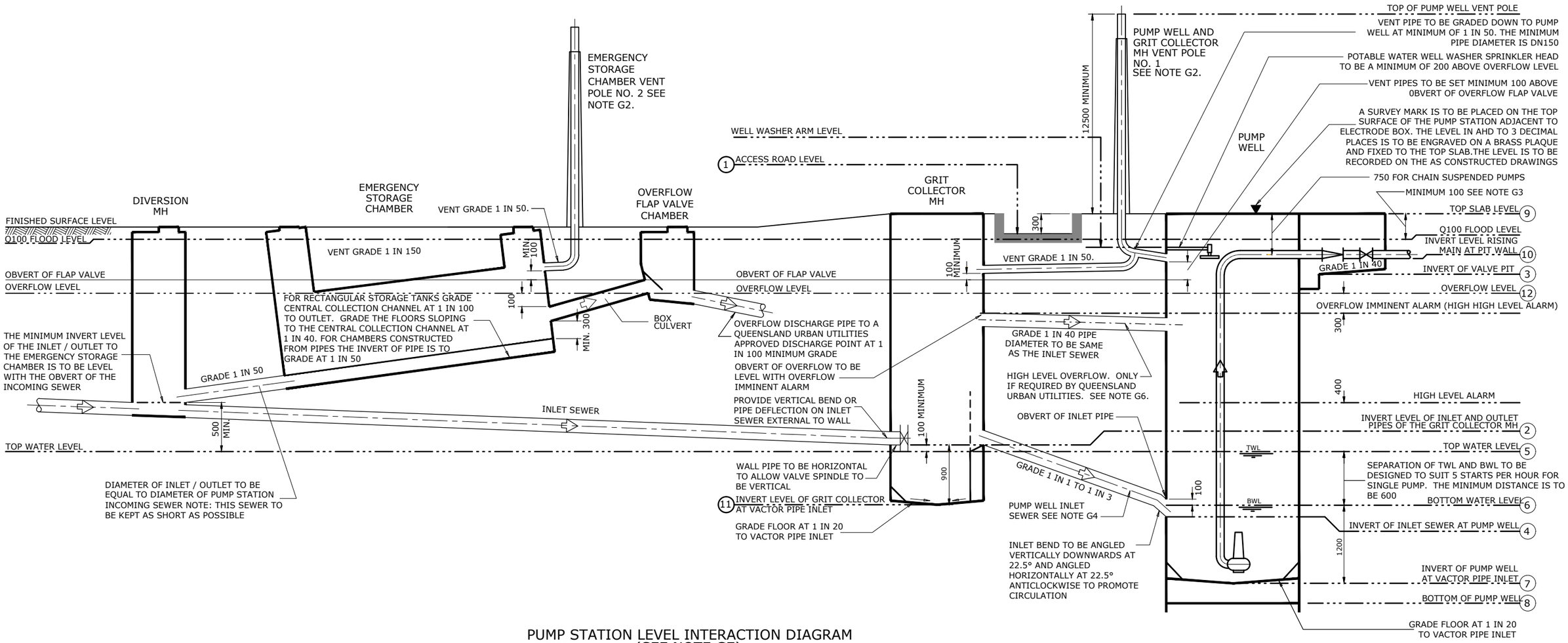
G3 THE LEVELS OF THE TOP SLABS OF THE PUMP WELL, GRIT COLLECTOR, VALVE PIT, FLOWMETER PIT AND SWITCHBOARD FOUNDATION ARE TO BE ABOVE THE Q100 FLOOD LEVEL.

G4 THE INTERNAL DIAMETER OF THE INLET SEWER TO THE PUMP WELL FROM THE GRIT COLLECTOR MAINTENANCE HOLE IS TO BE A MINIMUM OF ID225 AND IS TO BE NO LESS THAN THE INLET SEWER INTO THE GRIT COLLECTOR MAINTENANCE HOLE.

G5. THE MINIMUM TOTAL EMERGENCY STORAGE CAPACITY IS TO BE 3 HOURS AT PEAK DRY WEATHER FLOW.
THE EMERGENCY STORAGE VOLUMES IN THE PUMP WELL AND THE GRIT COLLECTOR MAINTENANCE HOLE ARE TO BE MEASURED FROM THE TOP WATER LEVEL TO THE OVERFLOW LEVEL.

G6. IF DIRECTED BY SEQ-SPs PUMPING STATIONS MAY REQUIRE A HIGH LEVEL OVERFLOW BETWEEN THE GRIT COLLECTOR AND THE PUMP WELL. THIS OVERFLOW MAY BE REQUIRED IN NEW DEVELOPMENT AREAS WHERE INITIAL FLOWS ARE EXPECTED TO BE LOW.

G7. FOR SMALL STATIONS (<30L/S CAPACITY) ALTERNATIVE ARRANGEMENTS MAY BE USED AT SEQ-SP DISCRETION. SEE SEQ-SPS-1102-6 FOR ALTERNATIVE ARRANGEMENT DETAILS.



PUMP STATION LEVEL INTERACTION DIAGRAM
NOT TO SCALE (SEE NOTE G7)

REV. No.	DATE	DESCRIPTION	AUTH.
B	06/05/14	ADD REFERENCE TO NOTE G7	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

LEVEL AND CAPACITIES
INTERACTION DIAGRAM

CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1102-5

VERSION B

NOT TO SCALE

ORG DATE: 1/1/2013

TABULATION OF PUMP STATION LEVELS

REF.	DESCRIPTION	LEVEL
LEVEL 1	SURFACE LEVEL (ACCESS ROAD)	X.XXX
LEVEL 2	INVERT LEVEL OF OVERFLOW	X.XXX
LEVEL 3	INVERT LEVEL OF BASE OF VALVE PIT	X.XXX
LEVEL 4	INVERT LEVEL OF INLET SEWER AT PUMP WELL	X.XXX
LEVEL 5	TOP WATER LEVEL OF PUMP WELL	X.XXX
LEVEL 6	BOTTOM WATER LEVEL OF PUMP WELL	X.XXX
LEVEL 7	INVERT OF PUMP WELL	X.XXX
LEVEL 8	BOTTOM OF BASE SLAB OF PUMP WELL	X.XXX
LEVEL 9	TOP OF ROOF SLAB OF PUMP WELL	X.XXX
LEVEL 10	INVERT LEVEL OF RISING MAIN THROUGH PIT WALL	X.XXX

NOTE. THIS TABLE IS TO BE COMPLETED AND INCLUDED ON THE PROJECT DRAWING FOR THE LEVEL INTERACTION DIAGRAM

NOTES:

G1. THIS DRAWING MAY BE USED AS AN ALTERNATIVE TO DRAWING SEQ-SPS-1102-5 FOR SMALL STATIONS (<30L/S CAPACITY) ONLY . **USE OF THIS ALTERNATIVE IS SUBJECT TO SEQ-SP APPROVAL.**

G2. THIS DRAWING IS PROVIDED TO DESIGNERS TO SHOW THE LEVEL RELATIONSHIPS BETWEEN THE VARIOUS COMPONENTS OF A SEWERAGE PUMPING STATION.
THE PROJECT DRAWINGS MUST CONTAIN A LEVEL INTERACTION DIAGRAM. THE PROJECT DRAWING MUST CONTAIN ALL THE INVERT LEVELS AND GRADES OF ALL THE PIPES. ALSO TO BE INCLUDED ARE ALL THE LEVELS OF THE STRUCTURES AND ALL THE WATER LEVELS AS INDICATED ON THIS DRAWING. THE PROJECT DRAWING IS TO CONTAIN THE TABLES SHOWN ON THIS DRAWING.

G3. THE LEVELS OF THE TOP SLABS OF THE PUMP WELL, VALVE PIT, FLOWMETER PIT (WHERE REQUIRED) AND SWITCHBOARD FOUNDATION ARE TO BE ABOVE THE Q100 FLOOD LEVEL.

G4. THE INTERNAL DIAMETER OF THE INLET SEWER TO THE PUMP WELL IS TO BE A MINIMUM OF ID225.

G5. THE MINIMUM TOTAL EMERGENCY STORAGE CAPACITY IS TO BE 3 HOURS AT PEAK DRY WEATHER FLOW. THE EMERGENCY STORAGE VOLUMES IN THE PUMP WELL AND THE GRIT COLLECTOR MAINTENANCE HOLE ARE TO BE MEASURED FROM THE TOP WATER LEVEL TO THE OVERFLOW LEVEL.

G6. VACTOR PIPE MAY NOT BE REQUIRED IN WET WELLS <3 M IN DEPTH SUBJECT TO SEQ-SP APPROVAL.

G7. SEPARATE WET WELL AND VALVE PIT MAY BE CONSIDERED FOR SMALL STATIONS PROVIDED DIFFERENTIAL SETTLEMENT CAN BE ADEQUATELY ADDRESSED.

G8. SUMP PUMPS MAY BE OMITTED AND A GRAVITY DRAIN TO WET WELL MAY BE USED AS AN ALTERNATIVE. THE GRAVITY DRAIN MUST HAVE SEALS INCLUDING WATER TRAPS AND FLAP VALVES.

G9. FLOWMETERS ARE GENERALLY NOT REQUIRED FOR SMALL STATIONS WHICH DO NOT PUMP DIRECTLY TO A WWTP OR INTO A COMMON RISING MAIN SYSTEM UNLESS DIRECTED BY SEQ-SP.

G10. PRECAST UNITS MAY BE CONSIDERED FOR THE CONCRETE WET WELL WALLS FOR SMALL STATIONS. WHERE PRECAST UNITS ARE APPROVED, INDIVIDUAL SECTIONS MUST BE POSITIVELY FIXED TOGETHER WITH STAINLESS STEEL ANCHORS AND JOINTS MUST BE SEALED WITH AN APPROVED SEALANT.
PE LINING MUST BE WELDED AT JOINTS TO PROVIDE A CONTINUOUS BARRIER.

G11. WHERE APPROVED EPOXY COATING MAY BE CONSIDERED AS AN ALTERNATIVE TO PE LINING FOR SMALL STATIONS.

G12. ALTERNATIVE ACCESS ROAD CONSTRUCTION MAY BE CONSIDERED FOR SMALL STATIONS PROVIDED IT IS SUITABLY DURABLE FOR THE SITE CONDITIONS AND IS ABLE TO WITHSTAND THE LOADING & TURNING CIRCLE OF FULL MAINTENANCE TRUCKS WITH 24/7 ALL WEATHER ACCESS.

G13. WHERE APPROVED GRIT COLLECTOR MAINTENANCE HOLE MAY BE OMITTED FOR SMALL STATIONS.

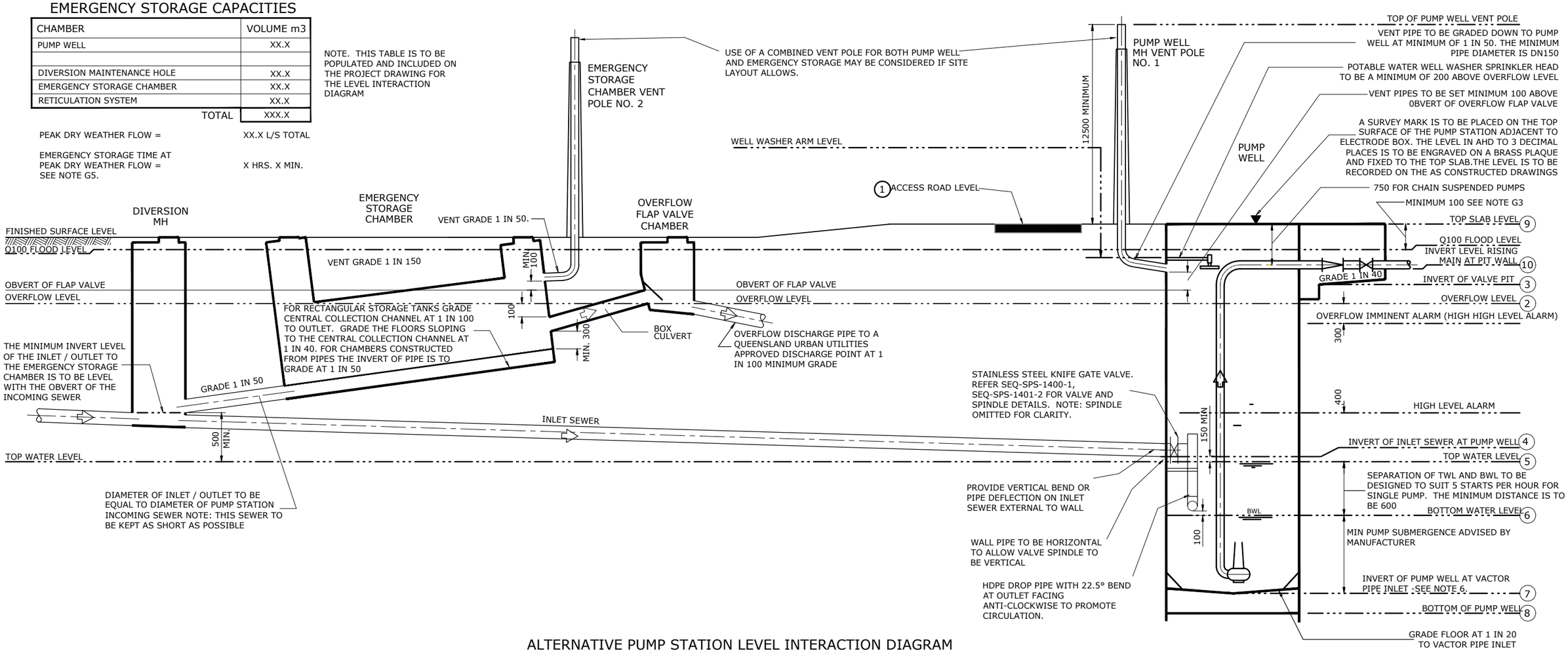
EMERGENCY STORAGE CAPACITIES

CHAMBER	VOLUME m3
PUMP WELL	XX.X
DIVERSION MAINTENANCE HOLE	XX.X
EMERGENCY STORAGE CHAMBER	XX.X
RETICULATION SYSTEM	XX.X
TOTAL	XXX.X

NOTE. THIS TABLE IS TO BE POPULATED AND INCLUDED ON THE PROJECT DRAWING FOR THE LEVEL INTERACTION DIAGRAM

PEAK DRY WEATHER FLOW = XX.X L/S TOTAL

EMERGENCY STORAGE TIME AT PEAK DRY WEATHER FLOW = SEE NOTE G5. X HRS. X MIN.



ALTERNATIVE PUMP STATION LEVEL INTERACTION DIAGRAM
NOT TO SCALE
(SEE NOTES G1 AND G6 - G13)

REV. No.	DATE	DESCRIPTION	AUTH.
B	14/05/14	ADD NOTES G7-G13 FOR SMALL STATION	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALTERNATIVE LEVEL INTERACTION DIAGRAM FOR SMALL STATIONS

CoGC	LCC	RCC	QUU	UW

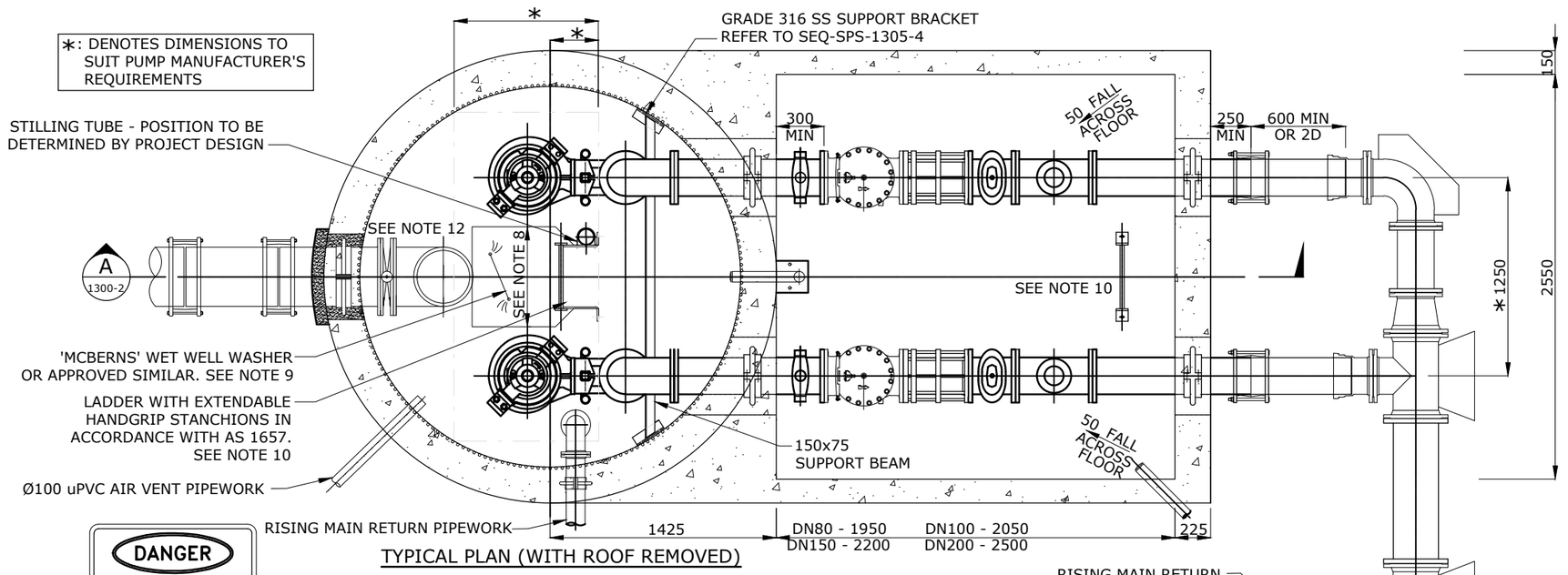
DRAWING No. SEQ-SPS-1102-6

VERSION B

NOT TO SCALE

ORG DATE: 1/1/2013

∗: DENOTES DIMENSIONS TO SUIT PUMP MANUFACTURER'S REQUIREMENTS



TYPICAL PLAN (WITH ROOF REMOVED)

RISING MAIN RETURN PIPEWORK

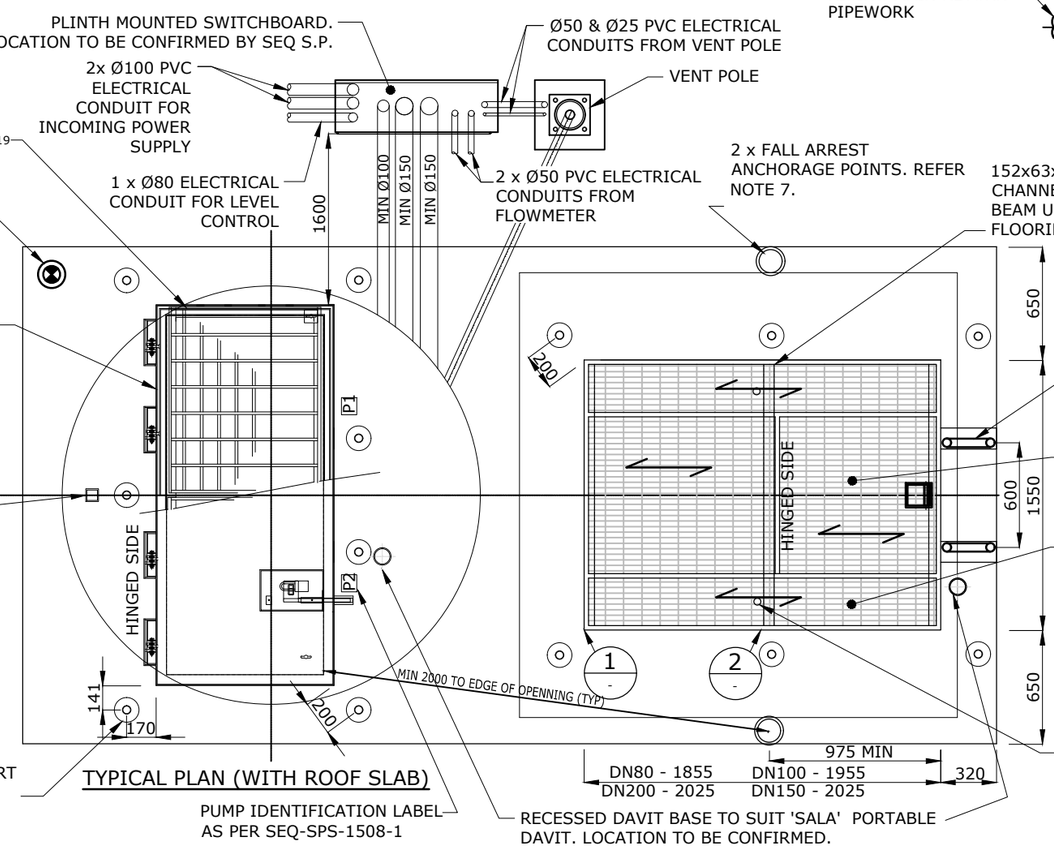
600 MIN OR 2D

SEE NOTE 11
FLOWMETER & SECTION VALVE CHAMBER
REFER DWG SEQ-SPS-1300-4

DANGER
ENTRY PROHIBITED
AUTHORISED PERSONNEL ONLY
PRIOR TO ENTRY INTO THIS STRUCTURE, PERSONNEL MUST COMPLY WITH SAFE WORK PRACTICE - CONFINED SPACE ENTRY PROCEDURES.

POLYPROPYLENE SIGN TO BE PLACED ON UNDERSIDE OF HINGED ACCESS COVERS TO PUMP STATION AND VALVE PITS. SIGN SHALL BE IN ACCORDANCE WITH AS 1319

SAFETY SIGN
NOT TO SCALE



TYPICAL PLAN (WITH ROOF SLAB)

RAILSAFE ALUMINIUM POST INSERT AT LOCATIONS SHOWN FOR TEMPORARY BARRICADE C/W REMOVABLE PLUGS

PUMP IDENTIFICATION LABEL AS PER SEQ-SPS-1508-1

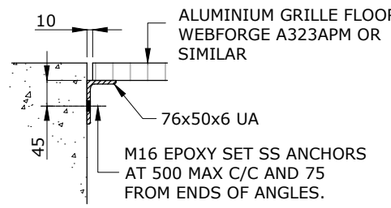
RECESSED DAVIT BASE TO SUIT 'SALA' PORTABLE DAVIT. LOCATION TO BE CONFIRMED.

SEE NOTE 10
ALUMINIUM HANDGRIPS IN ACCORDANCE WITH AS 1657

900 SQ HINGED ALUMINIUM GRILLE ACCESS OPENING WITH RECESSED LOCKABLE LATCH COMPLETE WITH WARNING SIGNS. HINGES TO BE FLUSH WITH TOP OF GRATING SURFACE.

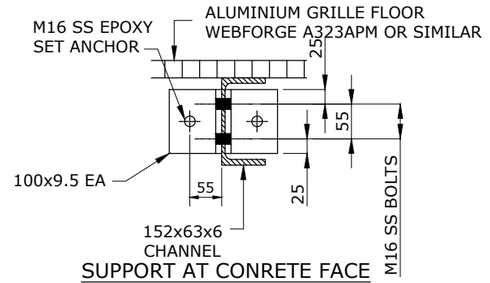
ALUMINIUM OPEN GRILLE COVERS WEBFORGE A323APM OR SIMILAR WITH BANDING BARS ALL ROUND AND FIXED IN PLACE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. DIRECTION OF LOAD BEARINGS BARS SHOWN THUS:

MIN. 90 DIA HOLE FOR VALVE KEY, LOCATE DIRECTLY ABOVE VALVE SPINDLE. FOR VALVE EXTENSION SPINDLES REFER CLAUSE 9.3.2 SEQ-SPS CODE.



SUPPORT AT CONRETE FACE

DETAIL 1
SCALE -



SUPPORT AT CONRETE FACE

DETAIL 2
SCALE -

NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH SEQ-SP-1300-7 AND 1300-8.
2. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
3. PUMP BASEPLATES AND GUIDE RAILS SHALL BE FIXED TO THE FLOOR AND TOP OF SLAB WITH GRADE 316 STAINLESS STEEL DROP FLUSH ANCHOR MASONRY FASTENERS IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION.
4. PROVIDE STAINLESS STEEL DROP PIPE SUPPORT BRACKETS AT 2500 MAX. CENTRES FIXED TO WALL WITH GRADE 316 SS MASONRY FASTENERS. REFER NOTE 6.
5. ALL INTERNAL VERTICAL, SOFFIT & COVER OPENING WET WELL SURFACES SHALL HAVE AN APPROVED POLYETHYLENE LINER (MIN 2.5mm THICK) MECHANICALLY BONDED TO WALL VIA ANCHORS CAST INTO CONCRETE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. POLYETHYLENE LINING SHALL BE AS PER SEQ-SP PRODUCTS AND MATERIALS LIST. BENCHING SHALL NOT BE COATED.
6. ALL ENTRIES THROUGH THE CONCRETE STRUCTURE AND ALL FITMENT HOLES THROUGH THE POLYETHYLENE LINER SHALL BE SEALED WITH AN APPROVED SEALANT IN ACCORDANCE WITH DWGS SEQ-SPS-1407-1 AND SEQ-SPS-1407-2.
7. FALL ARREST FLUSH MOUNT ANCHORAGE POINT. REFER SEQ-SP PRODUCTS AND MATERIALS LIST.
8. MINIMUM CIRCULATION CLEARANCES TO RUNG TYPE LADDER AS PER AS1657 CLAUSE 5.1.
9. GCCC/RCC/LCCC- NO WELL WASHER UNLESS SPECIFICALLY REQUESTED
10. GCCC/RCCC/LCCC- NO LADDER UNLESS SPECIFICALLY REQUESTED.
11. GCCC/RCC/LCC -FLOWMETER NOT REQUIRED UNLESS SPECIFICALLY REQUESTED.
12. GCCC/LCC/RCCC - NO INLET VALVE UNLESS SPECIFICALLY REQUESTED.

REV. No.	DATE	DESCRIPTION	AUTH.
B	01/06/14	NOTE 4 AMENDED, NOTE 7 AMENDED VALVE EXTENSION NOTE ADDED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL 2.4 M WET WELL
GENERAL ARRANGEMENT

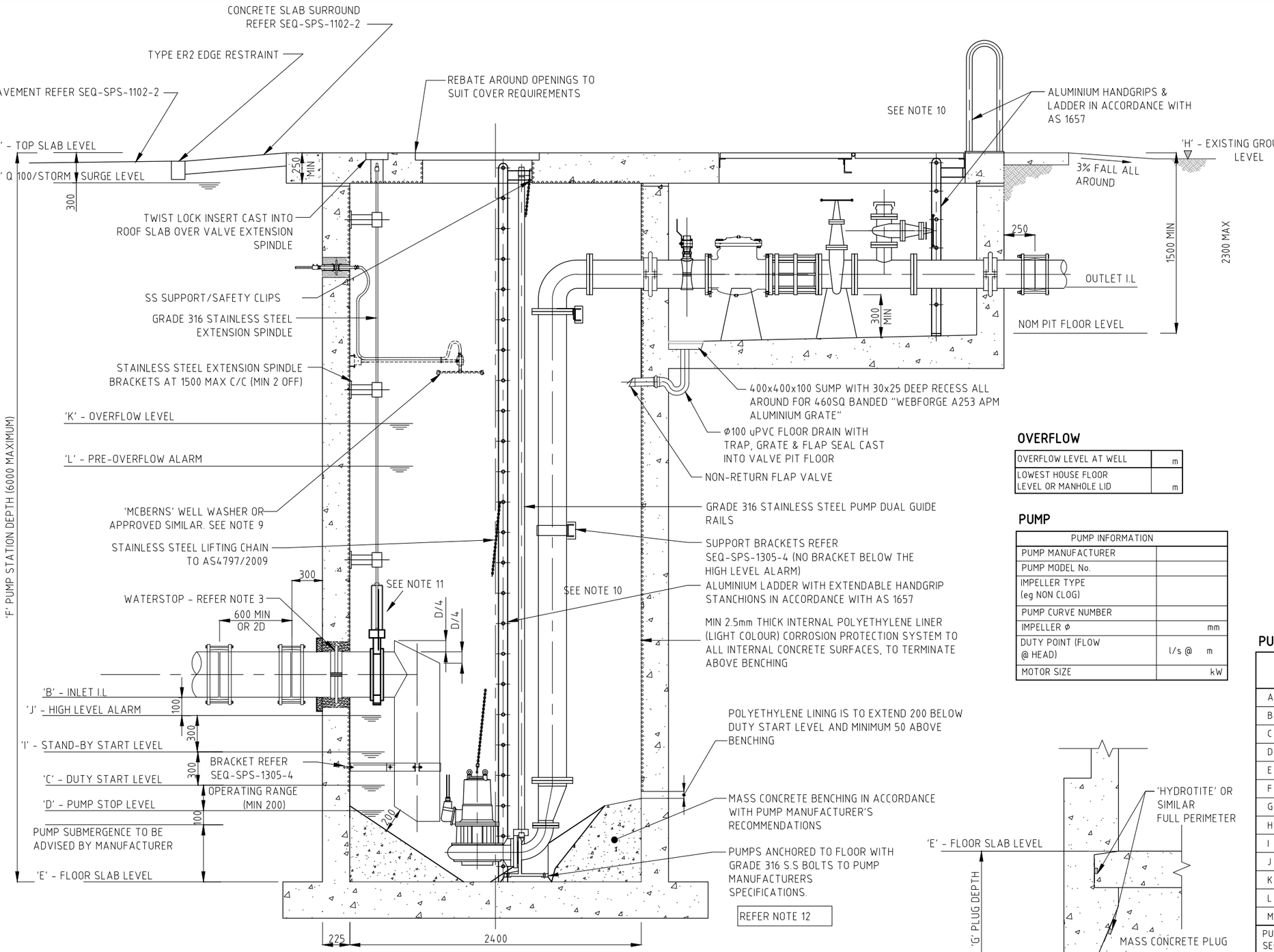
CoGC	LCC	RCC	QUU	UW

DRAWING No.
SEQ-SPS-1300-1

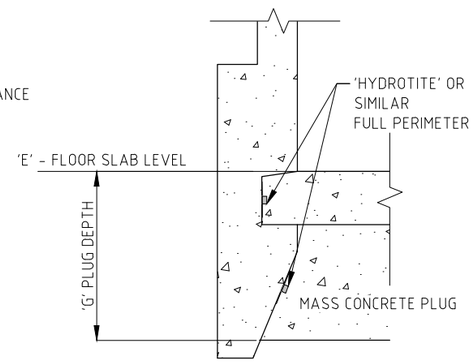
VERSION
B

NOT TO SCALE

ORG DATE:
1/1/2013



CAST IN-SITU BASE CONSTRUCTION
TYPICAL SECTION A 1300-1



CAISSON BASE CONSTRUCTION

OVERFLOW

OVERFLOW LEVEL AT WELL	m
LOWEST HOUSE FLOOR LEVEL OR MANHOLE LID	m

PUMP

PUMP INFORMATION	
PUMP MANUFACTURER	
PUMP MODEL No.	
IMPELLER TYPE (eg NON CLOG)	
PUMP CURVE NUMBER	
IMPELLER Ø	mm
DUTY POINT (FLOW @ HEAD)	l/s @ m
MOTOR SIZE	kW

NOTE:

1. ALL CRITICAL LEVELS AND DIMENSIONS SHALL BE CONFIRMED ON SITE PRIOR TO COMMENCING CONSTRUCTION.
2. PUMP STATION LID THICKNESS SHALL ALLOW FOR RECESSED DAVIT BASE - MIN 250.
3. PROVIDE 'HYDROTITE' OR SIMILAR APPROVED HYDROPHILIC WATERSTOP ON INSIDE & OUTSIDE FACE OF ALL PUDDLE FLANGES.
4. ALL WALL PENETRATIONS SHALL BE VIA CONCRETE BLOCKOUT WITH WATER PROOFING AS PER NOTE 3.
5. WHERE CONSTRUCTION JOINTS ARE REQUIRED, PROVIDE 'HYDROTITE' OR SIMILAR APPROVED HYDROPHILIC WATERSTOP.
6. SPACING BETWEEN PUMPS AND CLEARANCE BETWEEN PUMP & FINISHED FLOOR SHALL BE IN ACCORDANCE WITH PUMP MANUFACTURER'S RECOMMENDATIONS.
7. BENCHING SHALL BE CLEAR OF PIPEWORK & BOLTS AS PER PUMP MANUFACTURER RECOMMENDATIONS.
8. FOR DETAILS OF LEVEL SENSORS AND OTHER ELECTRICAL EQUIPMENT, REFER TO APPROPRIATE SEQ-SP ELECTRICAL SPECIFICATIONS.
9. GCCC/LCC/RCC - NO WELL WASHER UNLESS SPECIFICALLY REQUESTED.
10. GCCC/RCC/LCC - NO LADDER UNLESS SPECIFICALLY REQUESTED
11. GCCC/LCC/RCC - NO INLET VALVE UNLESS SPECIFICALLY REQUESTED
12. PUMP PEDESTAL SHALL COMPLY WITH WSA 101 SPECIFICATION, UNITYWATER REQUIRES "FORRERS" TYPE PUMPS PEDESTAL WITH "FORRERS" LOCKING PLATE FITTED TO PUMP.

PUMP STATION CONTROL LEVELS

	ITEM	LEVEL (A.H.D)	HEIGHT FROM BASE (m)
A	TOP OF SLAB	m	
B	INLET	m	
C	DUTY START	m	
D	PUMP STOP	m	
E	FLOOR SLAB	m	
F	PUMP STATION DEPTH	N.A.	
G	PLUG DEPTH	m	
H	EXISTING GROUND LEVEL	m	
I	STAND-BY START	m	
J	HIGH LEVEL ALARM	m	
K	OVERFLOW LEVEL	m	
L	PRE-OVERFLOW ALARM	m	
M	Q100/STORM SURGE LEVEL	m	

PUMP OPERATING LEVELS AND DEFAULT SETTINGS SHALL BE AS PER THE SEQ-SP FUNCTIONAL DESCRIPTION.

REV. No.	DATE	DESCRIPTION	AUTH.
C	30/01/17	ADDED CONCRETE SLAB DETAILS, MOVED WELL WASHER ABOVE OVERFLOW	
B	01/06/14	NOTE 12 AMENDED, LOWER BRACKET REMOVED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

2.4 m WET WELL
SECTION DETAILS

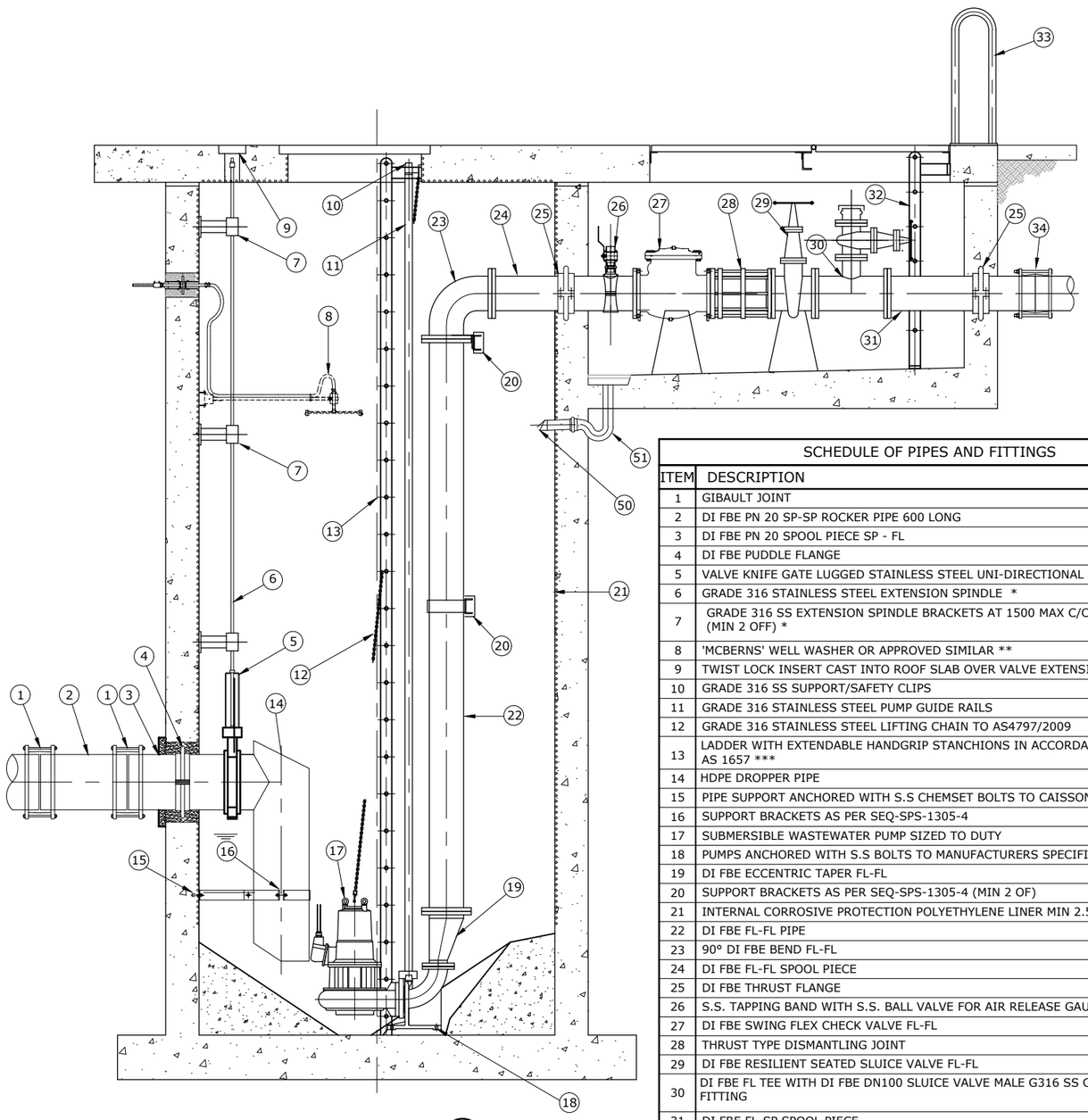
CoGC | LCC | RCC | ~~QUU~~ | UW

DRAWING No.
SEQ-SPS-1300-2

VERSION
C

NOT TO SCALE

ORG DATE:
1/1/2013



TYPICAL SECTION A

CAST IN-SITU BASE CONSTRUCTION

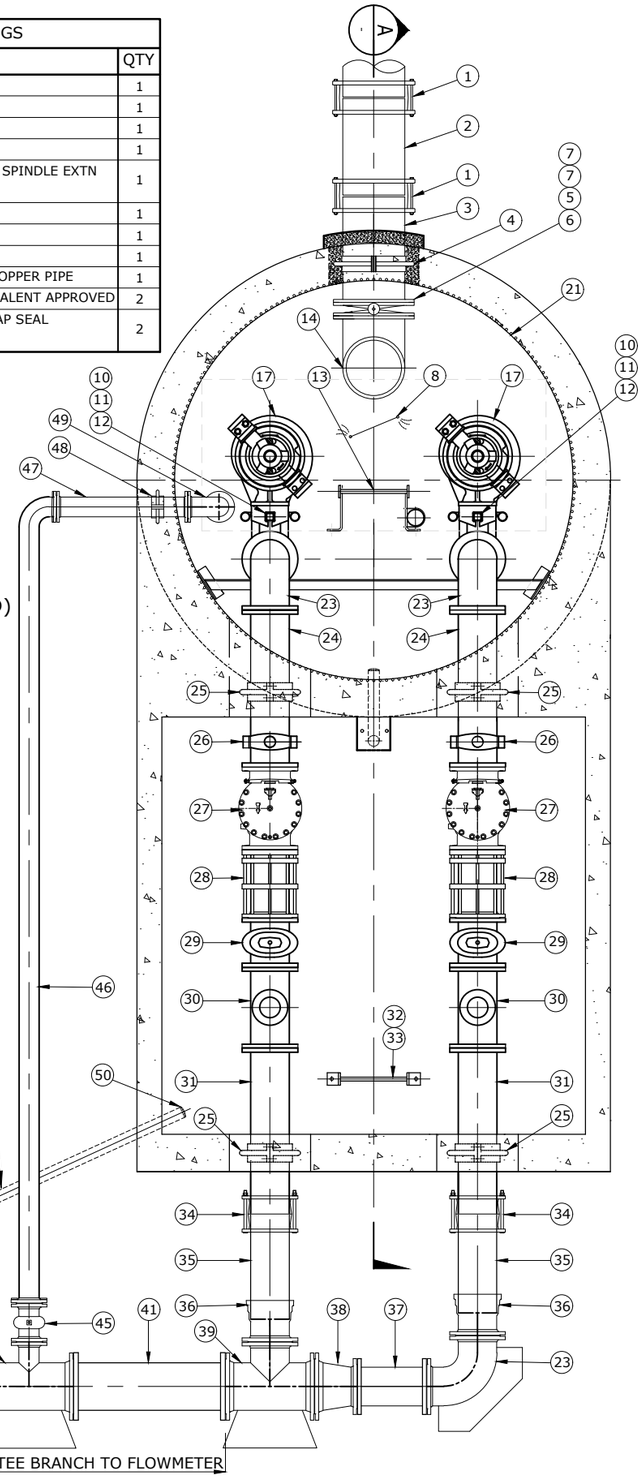
SCHEDULE OF PIPES AND FITTINGS		
ITEM	DESCRIPTION	QTY
1	GIBAULT JOINT	2
2	DI FBE PN 20 SP-SP ROCKER PIPE 600 LONG	1
3	DI FBE PN 20 SPOOL PIECE SP - FL	1
4	DI FBE PUDDLE FLANGE	1
5	VALVE KNIFE GATE LUGGED STAINLESS STEEL UNI-DIRECTIONAL *	1
6	GRADE 316 STAINLESS STEEL EXTENSION SPINDLE *	1
7	GRADE 316 SS EXTENSION SPINDLE BRACKETS AT 1500 MAX C/C (MIN 2 OFF) *	2
8	'MCBERNS' WELL WASHER OR APPROVED SIMILAR **	1
9	TWIST LOCK INSERT CAST INTO ROOF SLAB OVER VALVE EXTENSION SPINDLE	1
10	GRADE 316 SS SUPPORT/SAFETY CLIPS	2
11	GRADE 316 STAINLESS STEEL PUMP GUIDE RAILS	2
12	GRADE 316 STAINLESS STEEL LIFTING CHAIN TO AS4797/2009	2
13	LADDER WITH EXTENDABLE HANDGRIP STANCHIONS IN ACCORDANCE WITH AS 1657 ***	1
14	HDPE DROPPER PIPE	1
15	PIPE SUPPORT ANCHORED WITH S.S CHEMSET BOLTS TO CAISSON WALL	1
16	SUPPORT BRACKETS AS PER SEQ-SPS-1305-4	1
17	SUBMERSIBLE WASTEWATER PUMP SIZED TO DUTY	2
18	PUMPS ANCHORED WITH S.S BOLTS TO MANUFACTURERS SPECIFICATIONS	2
19	DI FBE ECCENTRIC TAPER FL-FL	2
20	SUPPORT BRACKETS AS PER SEQ-SPS-1305-4 (MIN 2 OF)	6
21	INTERNAL CORROSIVE PROTECTION POLYETHYLENE LINER MIN 2.5mm THICK	
22	DI FBE FL-FL PIPE	2
23	90° DI FBE BEND FL-FL	3
24	DI FBE FL-FL SPOOL PIECE	2
25	DI FBE THRUST FLANGE	5
26	S.S. TAPPING BAND WITH S.S. BALL VALVE FOR AIR RELEASE GAUGE	2
27	DI FBE SWING FLEX CHECK VALVE FL-FL	2
28	THRUST TYPE DISMANTLING JOINT	2
29	DI FBE RESILIENT SEATED SLUICE VALVE FL-FL	2
30	DI FBE FL TEE WITH DI FBE DN100 SLUICE VALVE MALE G316 SS CAMLOCK FITTING	2
31	DI FBE FL-SP SPOOL PIECE	2
32	LADDER IN ACCORDANCE WITH AS 1657 ***	1
33	HANDGRIP STANCHIONS IN ACCORDANCE WITH AS1657	1
34	GIBAULT JOINT	2
35	DI FBE SP-SP SPOOL PIECE MIN 600mm LONG	2
36	DI FBE FL-SO CONNECTOR	2
37	DI FBE FL-FL SPOOL PIECE	1
38	DI FBE CONCENTRIC TAPER FL-FL	1
39	DI FBE REDUCING FL TEE	1
40	DI FBE FL-SO CONNECTOR	1

SCHEDULE OF PIPES AND FITTINGS		
ITEM	DESCRIPTION	QTY
41	DI FBE FL-FL SPOOL PIECE	1
42	DI FBE SCOUR TEE FL TEE	1
43	DI FBE SP-SP SPOOL PIECE MIN 600mm LONG	1
44	GIBAULT JOINT	1
45	DI FBE RESILIENT SEATED SLUICE VALVE FL-FL C/W SPINDLE EXTN & VALVE BOX	1
46	PE100 SDR11 FL-FL PIPE	1
47	DI FBE FL-FL SPOOL PIECE	1
48	DI FBE THRUST FLANGE	1
49	DI FBE FL-FL 90° BEND WITH 1500 LONG DI FBE DROPPER PIPE	1
50	NON-RETURN FLAP VALVE "HARDIE KING" OR EQUIVALENT APPROVED	2
51	DN100 uPVC FLOOR DRAIN WITH TRAP, GRATE & FLAP SEAL CAST INTO PIT	2

TYPICAL PLAN
(WITH ROOF REMOVED)

REFER SEQ-SPS-1300-1
* -SEE NOTE 12
** -SEE NOTE 9
*** - SEE NOTE 10

RISING MAIN SIZE	RETURN LINE SIZE
DN 80	DN 80
DN 100	DN 100
DN 150	DN 100
DN 200	DN 100
DN 250	DN 100
DN 300	DN 100



REV. No.	DATE	DESCRIPTION	AUTH.
C	30/01/17	UPDATED CONCRETE SLAB, MOVED WELL WASHER ABOVE OVERFLOW LEVEL	
B	01/06/14	LOWER BRACKET REMOVED ITEM 20 DESCRIPTION AMENDED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

2.4 m WET WELL
PIPEWORK ARRANGEMENT

CoGC	LCC	RCC	QUU	UW

DRAWING No.
SEQ-SPS-1300-3

VERSION
C

NOT TO SCALE

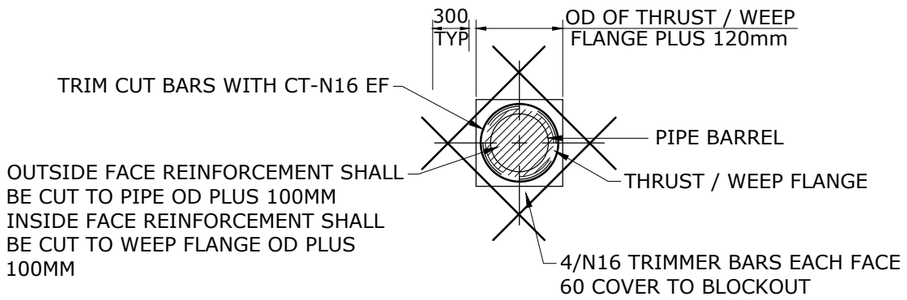
ORG DATE:
1/1/2013

TABLE OF PIT DIMENSIONS

PIPE DN (mm)	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'
100	1100	600	1250	300	450	500	250	200
150	1100	600	1350	300	450	600	250	200
200	1150	650	1500	300	500	700	250	200
250	1150	650	1650	300	500	800	300	200
300	1200	700	2000	300	550	900	400	300
375	1250	750	2100	300	600	1060	400	300
450	1300	800	2300	300	650	1220	400	300
500	1300	800	2450	300	650	1375	400	300
600	1350	850	2600	350	700	1635	400	300
750	1450	950	3100	400	800	1975	400	300

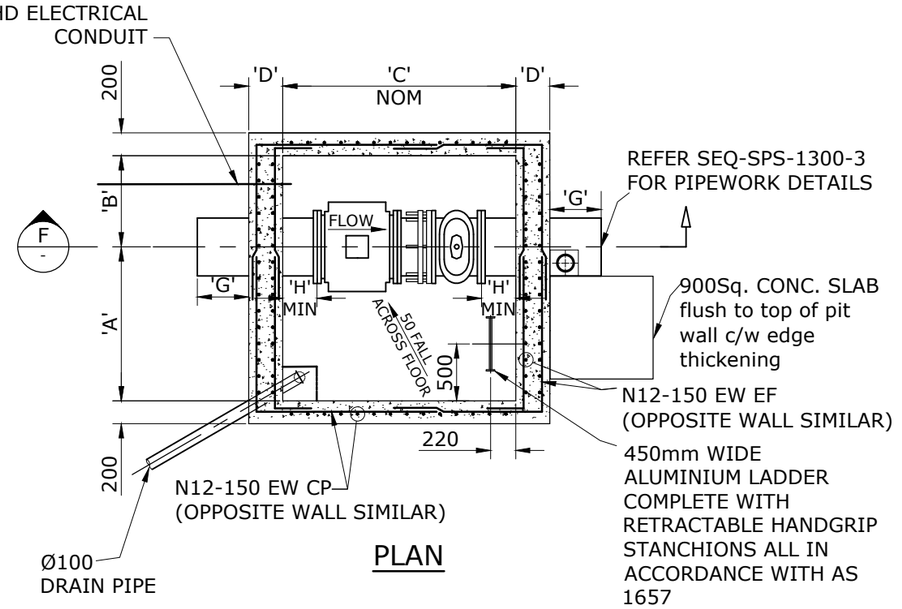
SCHEDULE OF PIPES AND FITTINGS

ITEM	DESCRIPTION	QTY
1	DI FBE FL-SP SPOOL PIECE	2
2	DI FBE THRUST FLANGE	2
3	FBE ELECTROMAGNETIC BIDIRECTIONAL FLOWMETER FL-FL	1
4	DI FBE FL-SP CONNECTOR	1
5	NON-THRUST TYPE DISMANTLING JOINT	1
6	DI FBE RESILIENT SEATED SLUICE VALVE FL-FL	1



"SALA" WALL MOUNT SLEEVE, MIN. ANCHOR SPEC.

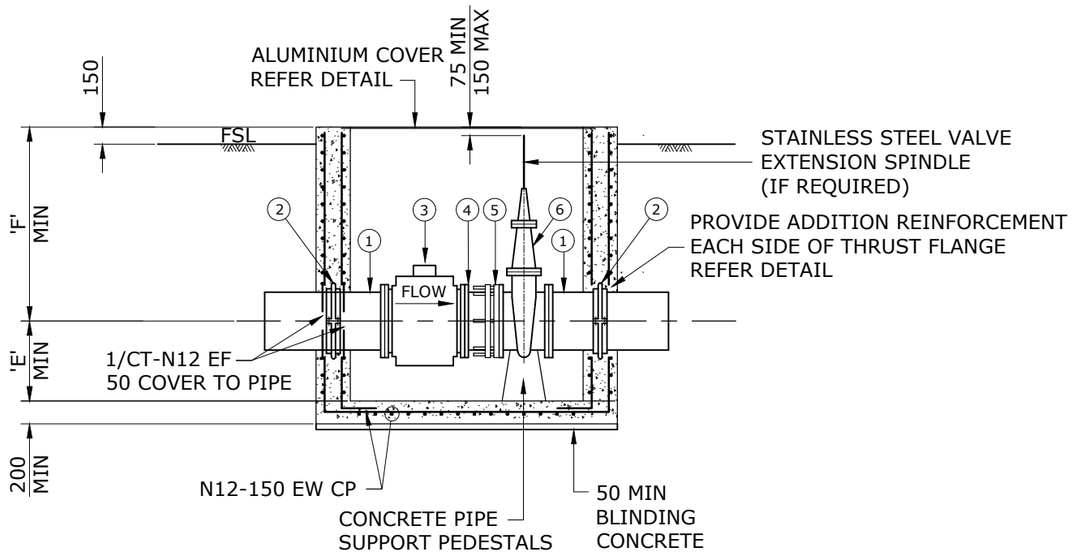
- 4/M16 316 S/STEEL "CHEMSET" ANCHORS
- HOLE DIA.: 18mm
- HOLE DEPTH: 125mm
- MIN. CONCRETE THICKNESS: 200mm
- MIN. DISTANCE OF ANCHOR C/LINE TO CONCRETE EDGE :150mm
- EPOXY RESIN SPEC. : HILTI HIT-RE-500 OR FISCHER FIS VS 360 S
- EACH ANCHOR TO BE LOAD TESTED AFTER CURING TO 13.5 kN.



PLAN

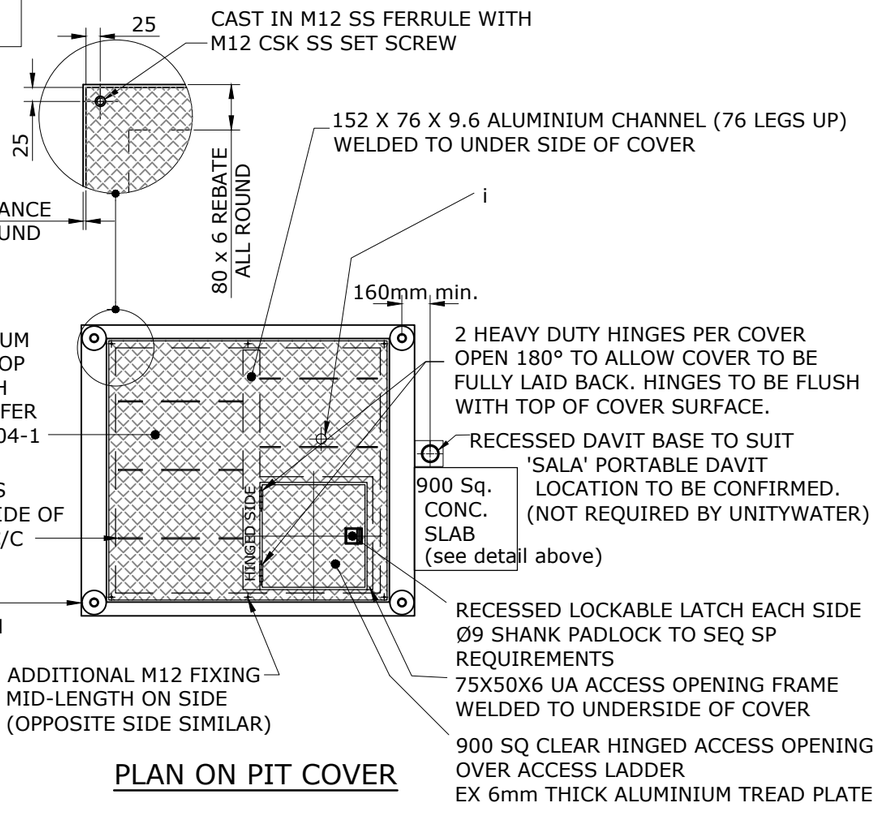
TYPICAL DETAIL OF ADDITIONAL REINFORCEMENT AT PIPE PENETRATIONS

NOT TO SCALE



SECTION F
NOT TO SCALE

200 0 400 800 1200mm
A3 COPY HALF SCALE



PLAN ON PIT COVER

REV. No.	DATE	DESCRIPTION	AUTH.
B	07/08/14	900sq SLAB, ANCHOR SPEC & SALA SLEEVE ADDED, DAVIT POINT MOVED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

FLOWMETER & SECTION VALVE CHAMBER

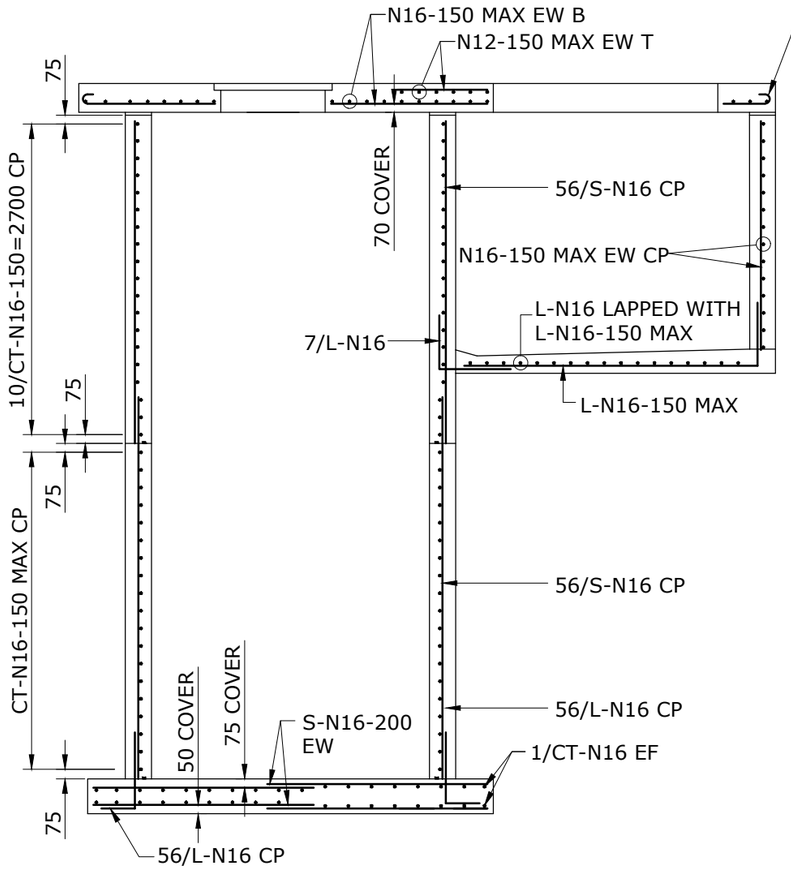
CoGC | LCC | RCC | QUU | UW

DRAWING No.
SEQ-SPS-1300-4

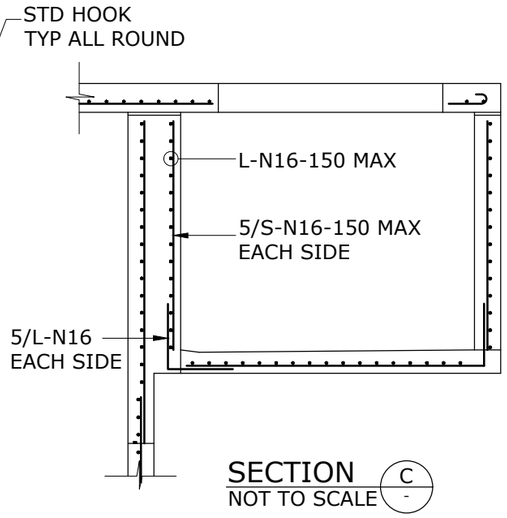
VERSION
B

NOT TO SCALE

ORG DATE:
1/1/2013



CAST IN SITU BASE CONSTRUCTION



SECTION C
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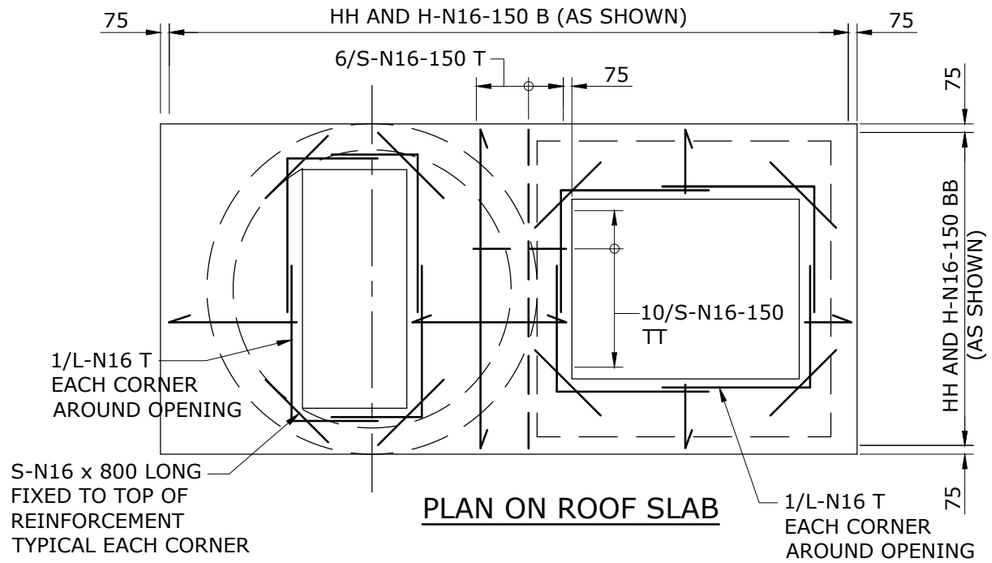
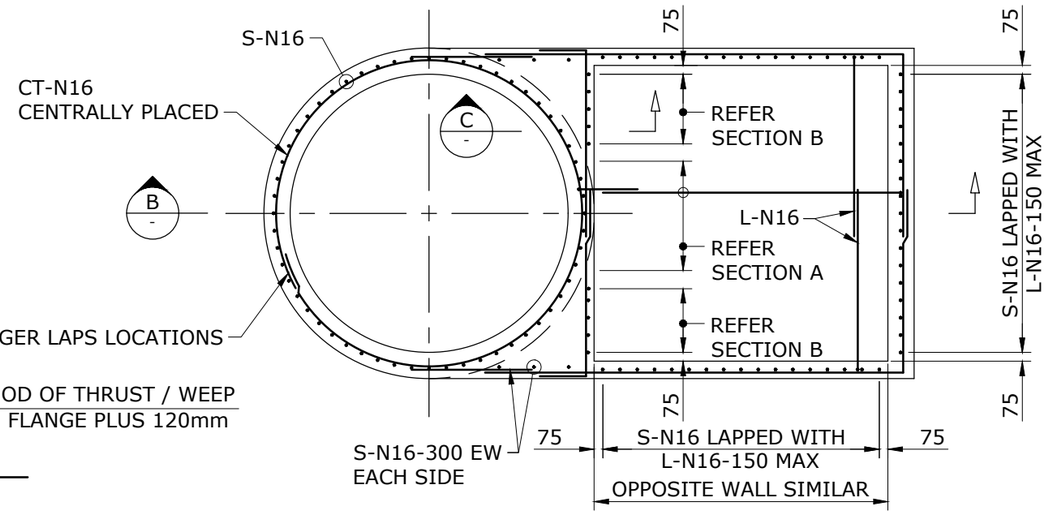
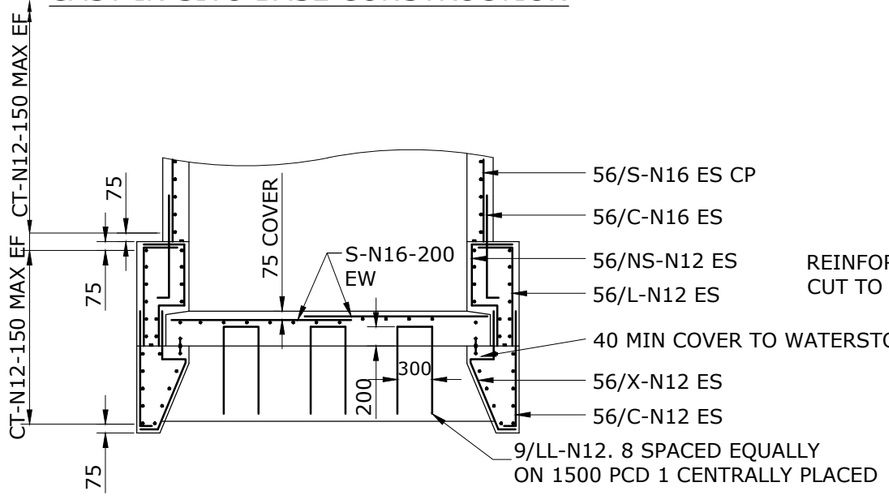


PLAN ON ROOF SLAB

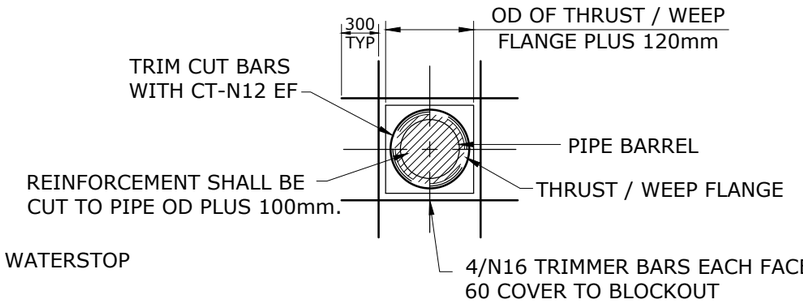


PLAN OF PUMP WELL AND VALVE CHAMBER



CAISSON BASE CONSTRUCTION

SECTION B
-



FULL WALL REINFORCEMENT AT BLOCKOUTS SHALL REMAIN IN PLACE DURING CONSTRUCTION OF PUMP WELL. REINFORCEMENT CUTTING SHALL ONLY OCCUR AFTER COMPLETION OF WALL CONSTRUCTION.

TYPICAL DETAIL OF ADDITIONAL REINFORCEMENT AT PIPE PENETRATIONS

NOTE - DESIGN OF PUMP STATION IS FOR 2.4m DIA AND DEPTH NO GREATER THAN 6.0m.
THIS DRAWING SHOULD ALWAYS BE READ IN RELATION TO PROJECT SPECIFIC DESIGN DRAWINGS AND RELEVENT STANDARD DRAWINGS.

200 0 400 800 1200mm
A3 COPY HALF SCALE

REV. No.	DATE	DESCRIPTION	AUTH.
B	30/01/17	UPDATED CONCRETE SLAB DETAILS	

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SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

2.4 m WET WELL
STRUCTURAL DETAILS

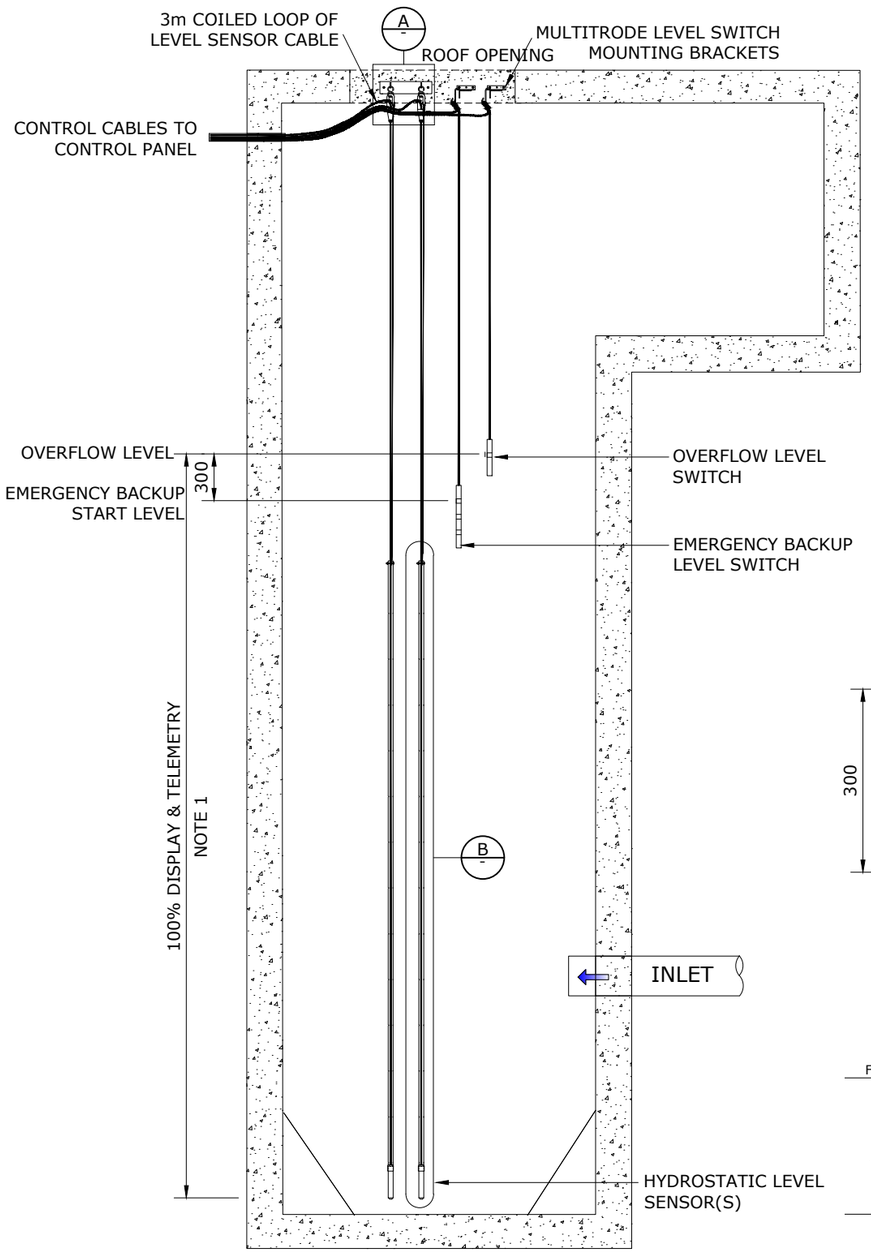
CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1300-5

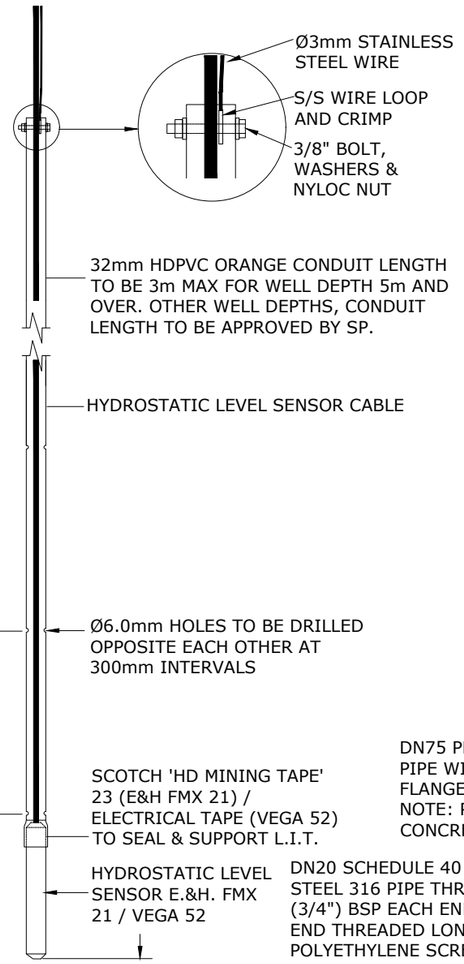
VERSION B

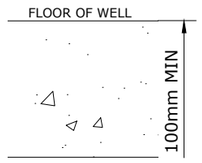
NOT TO SCALE

ORG DATE: 1/1/2013



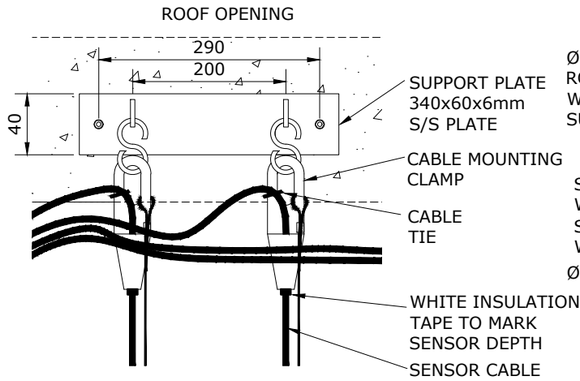
SECTION ELEVATION OF PUMP WELL



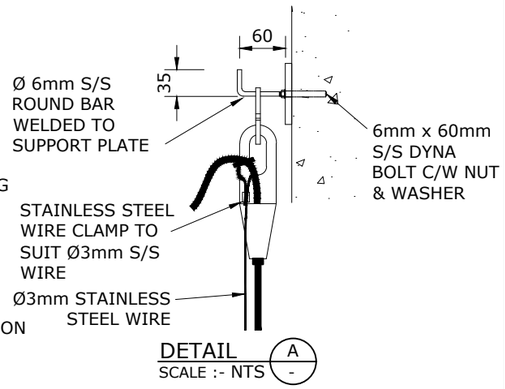


DETAIL B
SCALE :- NTS

LEVEL SENSOR & CONDUIT DETAILS



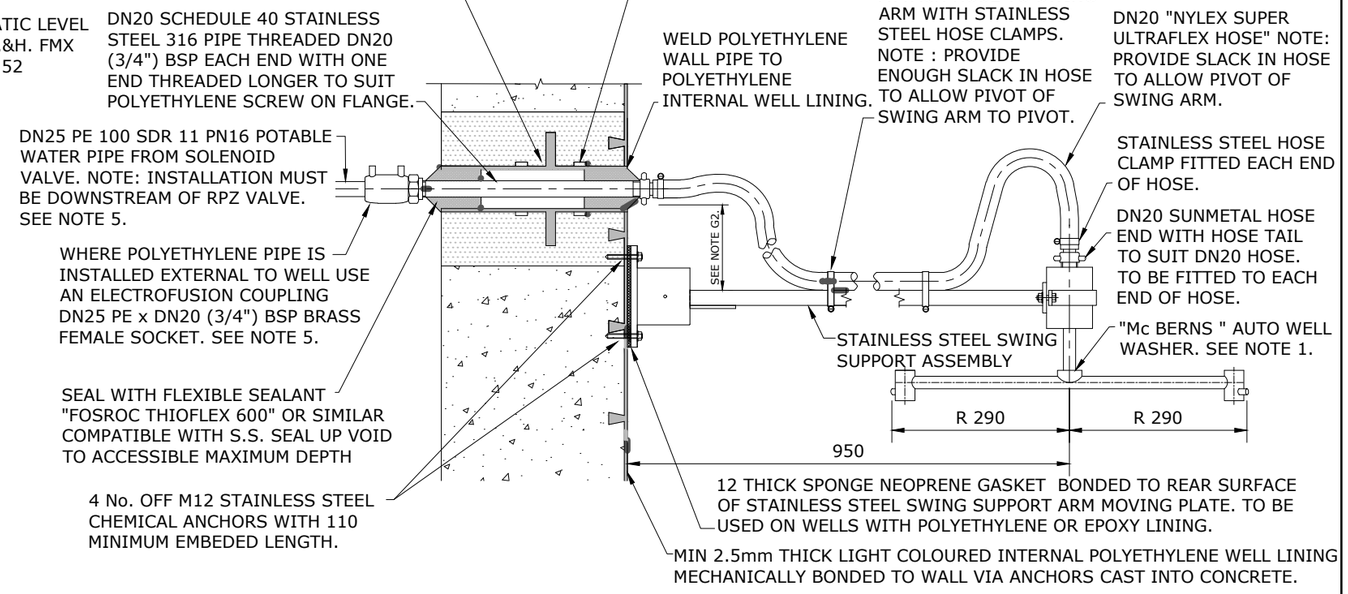
HYDROSTATIC CLAMP MOUNTING AND SUPPORT BRACKET DETAIL - FRONT VIEW



HYDROSTATIC CLAMP MOUNTING AND SUPPORT BRACKET DETAIL - SIDE VIEW

GENERAL NOTES

1. THE HEIGHT OF THE WELL WASHER IS SET AS PER SP STD DRG'S. THE LOCATION OF THE WELL WASHER IN PLAN POSITION IS TO BE SUCH THAT THE WASHER IS ACCESSIBLE FOR MAINTENANCE FROM THE ACCESS LADDER. THE WELL WASHER MAY BE ROTATED ON THE SWING ARM TO OBTAIN THIS ACCESS. THE ROTATING ARM MUST BE CLEAR OF ALL CABLES, CHAINS, PIPES AND ELECTRODES. THE WELL WASHER IS TO BE LOCATED AS CLOSE AS POSSIBLE TO THE CENTRE OF THE WELL AND IS TO ALLOW A MINIMUM 75 CLEARANCE OF THE PUMPS.
2. CLEARANCE MUST BE GIVEN TO ALLOW REMOVAL OF THE SWING ARM FROM THE WALL BRACKET.
3. THE WELL WASHER IS TO BE CONTROLLED BY THE SOLENOID VALVE ON THE POTABLE WATER SYSTEM DOWNSTREAM OF THE RPZ VALVE. THE WASHER IS TO OPERATE FOR THE FIRST MINUTE AFTER ANY PUMP STARTS.
4. ALL STAINLESS STEEL IS TO BE GRADE 316.
5. ALL STAINLESS STEEL BOLTS AND NUTS ARE TO BE INSTALLED WITH ANTI GALLING COMPOUND. THIS IS TO INCLUDE THE BOLTS IN THE LINK SEAL.



SECTIONAL ELEVATION OF WELL WASHER INSTALLATION

NOTES:
1. HYDROSTATIC LEVEL SENSOR TO BE SPANNED 0-120% (4-20mA)

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

LEVEL CONTROL AND WELL WASHER DETAILS

CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1300-6

VERSION A

NOT TO SCALE

ORG DATE: 1/1/2013

INFORMATION ON THIS DRAWING SHALL APPLY UNLESS NOTED OTHERWISE ON THE DRAWINGS

DESIGN

D1. THE PUMP STATION HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT RELEVANT AUSTRALIAN STANDARDS INCLUDING THE FOLLOWING:-

AS 1170: 2002 PARTS 1, 2 & 4 SAA LOADING CODE
AS 1657: 1992 FIXED PLATFORMS, WALKWAYS, STAIRWAYS AND LADDERS
AS/NZS 1664: 1997 SAA ALUMINIUM STRUCTURES CODE
AS 3600: 2001 CONCRETE STRUCTURES
AS 3735: 1991 CONCRETE STRUCTURES FOR RETAINING LIQUID

D2. THE STRUCTURE(S) HAVE BEEN DESIGNED TO CARRY THE FOLLOWING LOADS:-

(A) SELF WEIGHT

(B) WIND LOAD BASIC WIND SPEEDS Vu : 55 M/S
Vp : 46 M/S
Vs : 37 M/S

REGION	B
TERRAIN CATEGORY	2
SHIELDING MULTIPLIER	1.0
TOPOGRAPHIC MULTIPLIER	1.0
IMPORTANCE MULTIPLIER	1.0

(C) LIVE LOADS ALUMINIUM ACCESS COVERS 2.5 kPA
CONCRETE ROOF SLAB W7 WHEEL LOAD

(D) OTHER LOADS EXTERNAL EARTH LOADS KO = 0.5
SOIL DENSITY = 20 kN/m³

EXTERNAL GROUND WATER FULL DEPTH

MAXIMUM PIPELINE TEST PRESSURE 900 kPA

FOUNDATIONS

F1. ALL TOPSOIL AND VEGETATION SHALL BE REMOVED BEFORE EXCAVATION.

F2. FOUNDATIONS HAVE BEEN DESIGNED FOR THE FOLLOWING SAFE ALLOWABLE GROUND BEARING CAPACITIES:-

ELEMENT	ALLOWABLE BEARING CAPACITY (kPA)
VALVE PIT	100
PUMP WELL	200

F3. THE SEQ-SP SHALL APPROVE FOUNDATION MATERIAL PRIOR TO PLACING REINFORCEMENT OR CONCRETE.

F4. ANY OVER-EXCAVATIONS OR CAVITIES OF FOUNDATIONS SHALL BE FILLED WITH BLINDING CONCRETE.

GENERAL

G1. NO DIMENSION SHALL BE OBTAINED BY SCALING.

G2. ALL DIMENSIONS ARE IN MILLIMETRES UNO.

G3. ALL LEVELS ARE IN METRES UNO.

G4. ALL DIMENSIONS ARE TO BE VERIFIED ON SITE BY THE CONTRACTOR BEFORE FABRICATION AND CONSTRUCTION.

G5. REFER ALL DISCREPANCIES TO THE SEQ-SP BEFORE PROCEEDING WITH THE WORKS.

G6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE AND NEIGHBOURING STRUCTURES IN A SAFE AND STABLE CONDITION DURING CONSTRUCTION. NO PART SHALL BE OVERSTRESSED.

G7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING STRUCTURES AGAINST FLOATATION DURING CONSTRUCTION.

G8. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS, THE REQUIREMENTS OF RELEVANT SAA CODES, BCA AND THE LOCAL LAWS AND ORDINANCES OF THE RELEVANT GOVERNMENT AUTHORITY.

G9. NO PENETRATIONS, CHASES OR TEMPORARY FIXTURES ARE PERMITTED WITHOUT PRIOR APPROVAL FROM THE SEQ-SP. ALL DRAWINGS SHALL BE CHECKED AGAINST ARCHITECTURAL AND SERVICES DRAWINGS FOR PENETRATIONS, CONDUITS AND PIPES ETC.

G10. NOMINATION OF PROPRIETARY ITEMS DOES NOT INDICATE EXCLUSIVE PREFERENCE BUT INDICATES THE REQUIRED PROPERTIES OF THE ITEM. SIMILAR ALTERNATIVES WITH THE REQUIRED PROPERTIES MAY BE OFFERED FOR WRITTEN APPROVAL.

G11. PUMPS MUST BE ABLE TO BE REMOVED FROM, AND REINSTALLED INTO THE WET WELL, WITHOUT DISMANTLING ANY EQUIPMENT, PIPEWORK, BRACKETS OR COVERS.

G12. FOR REFERENCED DOCUMENTS USE THE LATEST EDITIONS WITH AMENDMENTS, EXCEPT WHERE OTHER EDITIONS OR AMENDMENTS ARE REQUIRED BY STATUTORY AUTHORITIES.

ALUMINIUM

A1. ALL WORKMANSHIP SHALL BE IN ACCORDANCE WITH AS/NZS 1664.

A2. ALL MATERIALS SHALL BE IN ACCORDANCE WITH AS/NZS 1734, AS/NZS 1865, AS/NZS 1866 OR AS/NZS 1867.

A3. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE SEQ-SP FOR APPROVAL PRIOR TO FABRICATION.

A4. ALUMINIUM MEMBERS SHALL HAVE THE FOLLOWING ALLOY GRADES UNO:-

ALL EXTRUSIONS SHALL BE ALLOY	6061-T6.
PLATE 3MM AND THICKER SHALL BE ALLOY	5083-H321.
TREAD PLATE SHALL BE ALLOY	5251-0.

A5. ALL METALWORK CONNECTIONS NOT SHOWN BOLTED, SHALL BE WELDED AS FOLLOWS:-

(a) ALL WELDING SHALL BE WELD QUALITY B IN ACCORDANCE WITH AS 1665.
(b) WELDS SHALL BE CONTINUOUS 6MM FILLET OR FULL PENETRATION BUTT WELDS ALL ROUND USING FILLER ALLOY 5556.
(c) ALL JOINTS SHALL BE FULLY SEAL WELDED UNLESS SHOWN OTHERWISE.
(d) GRIND WELDS FLUSH ONLY AT CONTACT POINTS WITH OTHER MEMBERS AND CONCRETE SURFACES.

A6. ALL FASTENERS SHALL BE GRADE 316 STAINLESS STEEL.

A7. NYLON OR POLYETHYLENE WASHERS, TOP HAT SECTIONS AND SPACERS SHALL BE USED TO SEPARATE STAINLESS STEEL FASTENERS FROM ALUMINIUM. HOLE SIZES SHALL BE DRILLED ONLY SUFFICIENTLY LARGE ENOUGH TO ACCOMMODATE THE FASTENER AND ISOLATOR CHOSEN. OVERSIZED HOLES WILL NOT BE ACCEPTED.

A8. ALL ALUMINIUM SURFACES PLACED IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH TWO HEAVY COATS OF ALKALI-RESISTANT BITUMINOUS PAINT OR OTHER COATING PROVIDING EQUIVALENT PROTECTION BEFORE INSTALLATION.

STAINLESS STEEL

SS1. ALL STAINLESS STEEL SHALL BE GRADE 316 IN ACCORDANCE WITH AS 1769 OR AS 2837 UNLESS SHOWN OTHERWISE.

SS2. ALL WELDS SHALL BE 6MM CONTINUOUS FILLET OR FULL PENETRATION BUTT WELDS ALL ROUND IN ACCORDANCE WITH AS 1554.6 UNLESS SHOWN OTHERWISE.

SS3. STAINLESS STEEL SURFACES SHALL HAVE THE SCALE REMOVED BY PICKLING AND SHALL BE PASSIVATED OR SURFACE TREATED TO PLACE THE ALLOY NEAR THE CATHODIC END OF THE GALVANIC SERIES. ALL AREAS OF STAINLESS STEEL WHICH ARE SUBSEQUENTLY MACHINED, GROUND OR WORKED IN ANY MANNER WHICH TENDS TO DESTROY THE ORIGINAL PASSIVATED CONDITION SHALL AGAIN BE PASSIVATED AS A FINAL CLEANING OPERATION. AFTER PASSIVATING, THE SURFACES SHALL BE FREE FROM PITTING OR SURFACE DEFECTS.

SS4. FABRICATED HANDRAILS, LADDERS, STAIRWAYS, PLATFORMS AND WALKWAYS SHALL COMPLY WITH AS1657.

SS5. LADDERS SHALL BE 450MM WIDE, FIXED IN PLACE WITH M20 FIXINGS.

CONCRETE

C1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 UNLESS SHOWN OTHERWISE.

C2. QUALITY OF CONCRETE ELEMENTS SHALL BE:-

ELEMENT	EXPOSURE CLASSIFICATION	MINIMUM COVER TO REINFORCEMENT (mm)	CONCRETE GRADE (MPa)
WET WELL - INTERNAL	B2	70	N40
WET WELL - EXTERNAL	B2	50	N40
VALVE PITS	B2	50	N40
ROOF SLAB	B2	50	N40
CAISSON PLUG	B1	65	N32
PUMP WELL BENCHING	-	-	N32
BLINDING	-	- *	N15
SLABS ON GROUND	B1	45	N25

* COVER FOR SLAB CAST ON BLINDING CONCRETE.
WHERE CONCRETE IS CAST ON OR AGAINST GROUND, THE COVER SHALL BE INCREASED BY 10MM IF THE CONCRETE IS PROTECTED BY A WATERPROOF MEMBRANE OR 20MM OTHERWISE.

C3. THE DRYING SHRINKAGE AT 56 DAYS, FOR CONCRETE USED IN WATER RETAINING STRUCTURES, SHALL NOT EXCEED 700 MICROSTRAIN AS DETERMINED IN ACCORDANCE WITH AS 1012.13.

C4. NOMINAL MAXIMUM AGGREGATE SIZE SHALL BE 20MM UNO.

C5. ADMIXTURES SHALL NOT BE USED WITHOUT WRITTEN APPROVAL.

C6. ALL CONCRETE SHALL BE READY MIXED CONCRETE COMPLYING WITH AS 1379.

C7. THE TYPE OF CEMENT TO BE USED SHALL BE TYPE GP - GENERAL PURPOSE PORTLAND CEMENT UNLESS SPECIFIED OTHERWISE.

C8. PROVIDE ALL EXPOSED EDGES AND CORNERS WITH A 20MM X 20MM CHAMFER OR FILLET.

C9. CONCRETE SHALL BE COMPACTED BY MECHANICAL VIBRATION.

C10. ALL CONCRETE SURFACES SHALL BE CURED BY APPROVED MEANS FOR A MINIMUM CONTINUOUS DURATION OF 7 DAYS COMMENCING IMMEDIATELY AFTER THE INITIAL SET OF THE CONCRETE.

C11. CONCRETE FACES AT CONSTRUCTION JOINTS SHALL BE THOROUGHLY SCABBLED, FREE OF LAITANCE, CLEANED AND WETTED THOROUGHLY PRIOR TO THE PLACEMENT OF ABUTTING CONCRETE.

C12. NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR APPROVAL OF THE SEQ-SP.

C13. PROVIDE A FINE NON-SLIP SURFACE WITH A WOOD FLOAT TO THE TOPS OF ALL WALLS AND FLOORS.

C14. CONSTRUCTION JOINTS WHERE NOT SHOWN ON THE DRAWINGS SHALL BE LOCATED TO THE APPROVAL OF THE SEQ-SP.

C15. ALL INTERNAL CONCRETE SURFACES OF THE PUMP WELL, COLLECTOR MANHOLE AND EMERGENCY STORAGE SHALL BE PAINTED WITH "APPROVED SEALANT" IN STRICT ACCORDANCE WITH THE MANUFACTURERS WRITTEN INSTRUCTIONS.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

2.4M WET WELL
NOTES SHEET 1 OF 2

CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1300-7

VERSION A

NOT TO SCALE

ORG DATE: 1/1/2013

INFORMATION ON THIS DRAWING SHALL APPLY UNLESS NOTED OTHERWISE ON THE DRAWINGS

REINFORCEMENT

R1. REINFORCEMENT SYMBOL - 23/S-N16-200 EW

23	NUMBER OF BARS IN GROUP (IF SHOWN)
S	BAR SHAPE CODE, REFER AS1100.501 (IF SHOWN)
N16	BAR GRADE/TYPE AND DIAMETER
200	SPACING BETWEEN BARS IN MILLIMETRES
EW	LOCATION CODE (IF SHOWN)

REINFORCEMENT SYMBOL, STANDARD AND GRADE DESIGNATIONS ARE AS FOLLOWS:-

N	GRADE 500N DEFORMED BAR TO AS/NZS 4671.
SL	SQUARE REINFORCING FABRIC TO AS/NZS 4671.

LOCATION CODES (IF SHOWN) :-

B	BOTTOM FACE	HORIZ	HORIZONTAL
BB	BOTTOM BOTTOM (LAID FIRST)	IL	INNER LAYER
CP	CENTRALLY PLACED	INTF	INTERNAL FACE
EF	EACH FACE	NF	NEAR FACE
ES	EQUALLY SPACED	OL	OUTER LAYER
EW	EACH WAY	T	TOP FACE
EXTF	EXTERNAL FACE	TT	TOP TOP (LAID LAST)
FF	FAR FACE	VERT	VERTICAL

R2. REINFORCEMENT IS REPRESENTED ON THE DRAWINGS DIAGRAMMATICALLY, AND IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.

R3. REINFORCEMENT SHALL BE CUT OR DISPLACED TO PROVIDE 50MM COVER TO PIPES OR OPENINGS AS DIRECTED BY THE SEQ-SP.

R4. REINFORCEMENT SHALL BE KEPT 40MM CLEAR OF WATERSTOPS.

R5. MINIMUM DEVELOPMENT/LAP LENGTHS FOR MINIMUM 25 MPA CONCRETE UNO SHALL BE:-

BAR DIAMETER	VERTICAL BARS AND HORIZONTAL BARS WITH LESS THAN 300mm OF CONCRETE CAST BELOW	HORIZONTAL BARS WITH MORE THAN 300mm OF CONCRETE CAST BELOW
N10	250	325
N12	300	375
N16	400	600

R6. MINIMUM LAP LENGTH FOR SLAB REINFORCING FABRICS SHALL BE ONE FULL MESH PLUS 25MM.
MINIMUM LAP LENGTH FOR FABRIC MESH AND BARS SHALL BE 300MM.

R7. LAPS IN REINFORCEMENT SHALL BE MADE ONLY IN THE LOCATIONS SHOWN ON THE DRAWINGS OR AS OTHERWISE APPROVED BY THE SEQ-SP.

R8. WELDING OF REINFORCEMENT IS ONLY PERMITTED WHERE SHOWN ON THE DRAWINGS OR IF APPROVED BY THE SEQ-SP.

PIPEWORK

P1. WHERE CONNECTING TO EXISTING PIPEWORK, THE LEVEL AND DIAMETER OF THE EXISTING PIPEWORK, SHALL BE CONFIRMED BY THE CONTRACTOR, PRIOR TO CONNECTION.

P2. ALL FLANGES SHALL BE IN ACCORDANCE WITH AS 4087, CLASS 14 FOR CAST IRON AND, CLASS 16 FOR DUCTILE IRON AND STEEL, UNO.

P3. ALL FLANGE BOLT HOLE ORIENTATIONS SHALL BE OFF-CENTRE UNO.

P4. ALL FLANGE BOLT SETS SHALL BE GRADE 316 STAINLESS STEEL.
REFER AS 4087 - TABLE C1 FOR CLASS.

P5. FLANGE GASKET MATERIAL AND THICKNESS SHALL BE IN ACCORDANCE WITH
AS 4087 - TABLE C1.

P6. THRUST AND PUDDLE FLANGES SHALL BE CAST CENTRALLY WITHIN WALLS UNLESS SHOWN OTHERWISE.

P7. ALL SPIGOT AND SOCKET DICL PIPEWORK SHALL BE CLASS PN35.

P8. ALL GATE AND REFLUX VALVES SHALL BE INTERNALLY AND EXTERNALLY COATED WITH A POLYMERIC COATING. ALL GATE VALVES SHALL BE RESILIENT SEATED. ALL REFLUX VALVES SHALL BE RESILIENT SEATED SWING FLEX CHECK VALVE OR SIMILAR APPROVED TOP OPENING VALVE.

ELECTRICAL

EL1. THE LOCATION OF ALL CONDUITS SHALL BE CONFIRMED BY THE SEQ-SP PRIOR TO CONSTRUCTION OF THE SWITCHBOARD SLAB.

EL2. ALL CABLES AND CONDUITS SHALL COMPLY WITH AS/NZS 3000 AND AUSTEL REQUIREMENTS.

EL3. UNDERGROUND CONDUITS SHALL BE HEAVY DUTY RIGID PVC WITH 600MM MINIMUM COVER.

EL4. POLYMERIC CABLE COVER STRIPS COMPLYING WITH AS 4702 SHALL BE USED AS ADDITIONAL MECHANICAL PROTECTION OF ALL UNDERGROUND WIRING ENCLOSURES.

EL5. ALL EXTERNAL ABOVEGROUND CONDUITS SHALL BE GALVANISED STEEL UNO.

EL6. ALL INTERNAL ABOVE GROUND ELECTRICAL CONDUITS SHALL BE MEDIUM DUTY RIGID PVC UNO.

EL7. ALL CONDUITS SHALL HAVE LONG RADIUS BENDS.

ABBREVIATIONS

1. ABBREVIATIONS SHALL BE IN ACCORDANCE WITH STANDARDS AUSTRALIA PUBLICATION "SYMBOLS AND ABBREVIATIONS FOR BUILDING AND CONSTRUCTION" EXCEPT AS FOLLOWS:-

ECDP	ELECTRICAL CONDUIT DRAW PIT
FL	FLANGE
FSL	FINISHED SURFACE LEVEL
GJ	GIBAULT JOINT
RRJ	RUBBER RING JOINT
SP	SPIGOT
SC	SOCKET
SS	STAINLESS STEEL
STD DRG	STANDARD DRAWING
TWL	TOP WATER LEVEL
UNO	UNLESS NOTED OTHERWISE

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

2.4M WET WELL
NOTES SHEET 2 OF 2

CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1300-8

VERSION A

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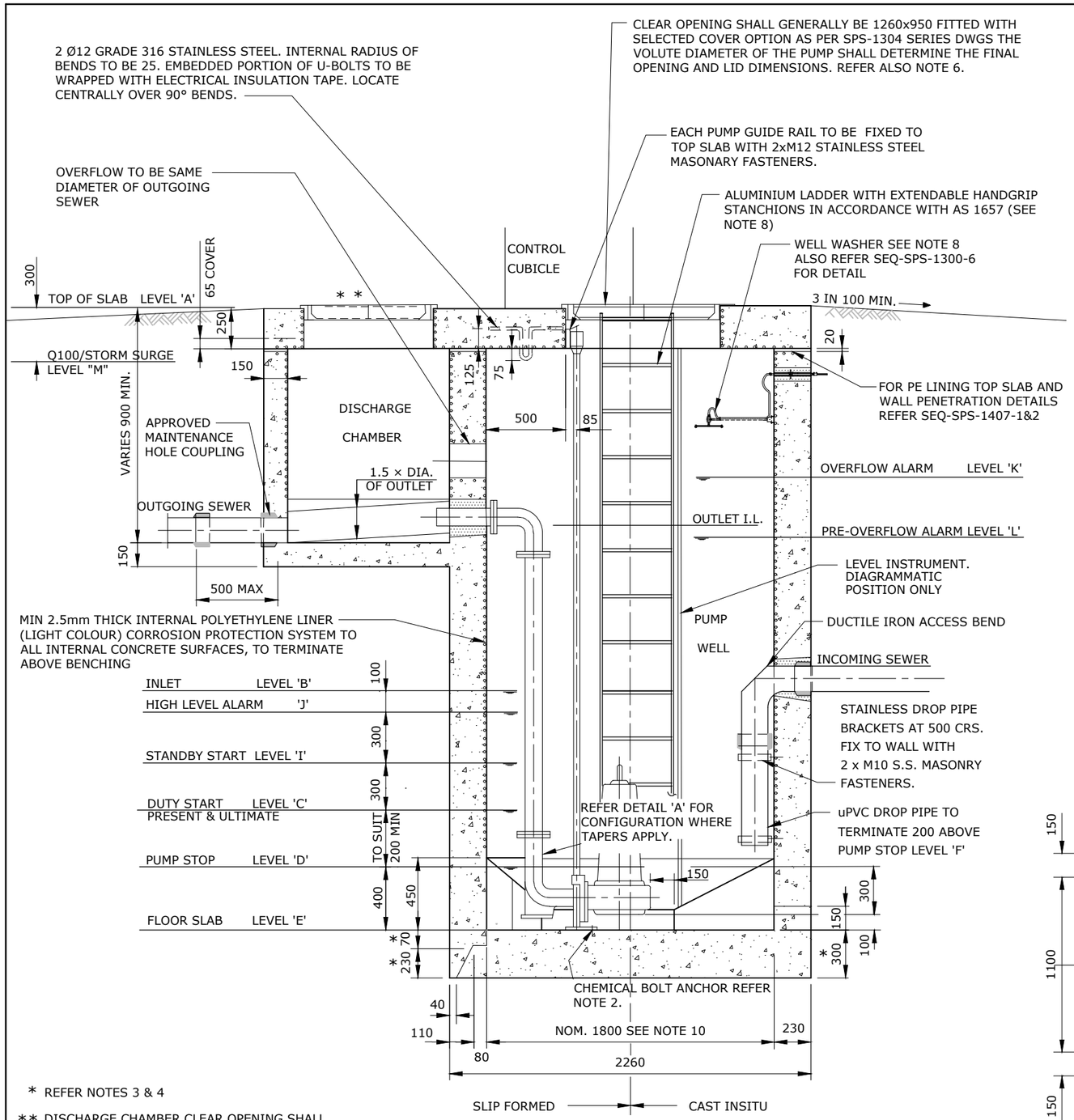
ORG DATE: 1/1/2013



* REFER NOTES 3 & 4

** DISCHARGE CHAMBER CLEAR OPENING SHALL BE 1000 x 800 FITTED WITH SELECTED COVER OPTION AS PER SPS-1304 DWGS

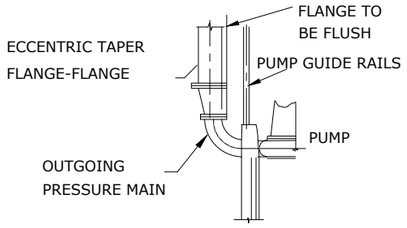
SECTIONAL ELEVATION

NOTES

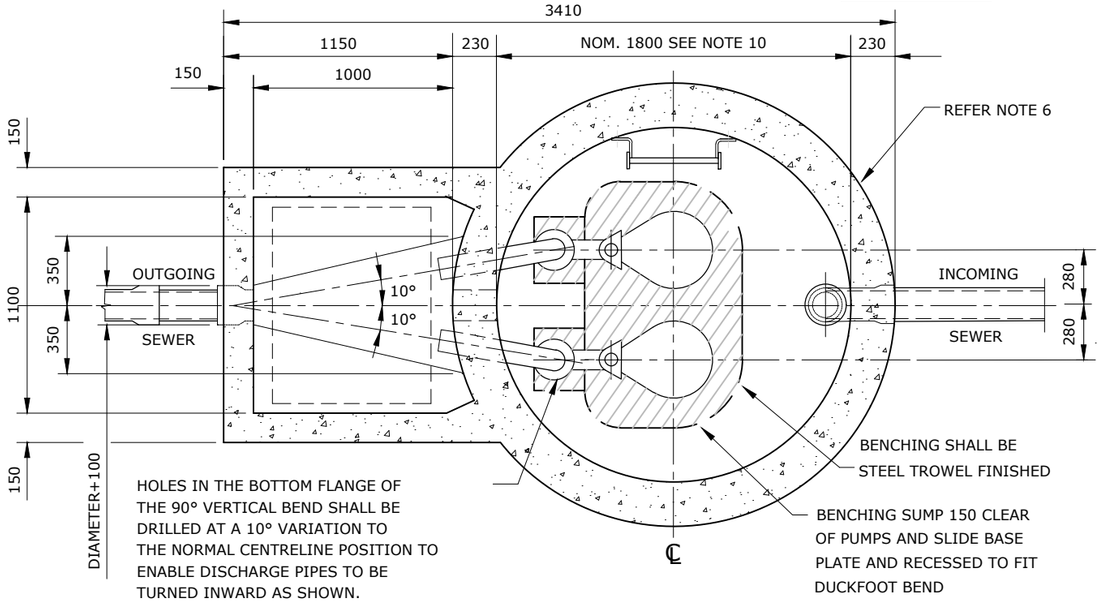
1. THIS DRAWING SHOULD BE READ IN CONJUNCTION SEQ-SPS-1300 SERIES DRAWINGS
2. PUMP BASEPLATES AND SLIDE SUPPORTS SHALL BE FIXED TO FLOOR AND TOP OF SLAB WITH STAINLESS STEEL DROP IN FLUSH ANCHOR MASONARY FASTENERS IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION.
3. THE THICKNESS OF THE BASE SHOWN IS FOR LIFT STATIONS TO A MAX. DEPTH OF 4.0m.
4. FOR DEPTHS OF LIFT STATIONS GREATER THAN 4.0m THE BASE THICKNESS SHALL BE INCREASED TO COVER FLOATATION OF THE STRUCTURE WHEN EMPTY OF PUMPS, PIPEWORK, FITTINGS AND LIQUID AND SHALL BE AS DETAILED ON THE DRAWINGS.
5. RCC - OUTGOING PRESSURE MAINS TO BE ABS PN 16 (WITH 316SS STAINLESS STEEL BOLTS, NUTS AND WASHERS) UNLESS SPECIFIED OTHERWISE. WALL PENETRATIONS OF THE PRESSURE MAIN TO BE STAINLESS STEEL - 316SS SCH40.
6. RCC - ACCESS COVER(S) TO BE MCBERNS FLUSH MOUNT 4-SIDED VOID PROTECTION ACCESS COVER(S) OR APPROVED SIMILAR UNLESS SPECIFIED OTHERWISE.
7. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
8. GCCC/LCC/RCC - NO LADDER, NO WELL WASHER UNLESS SPECIFICALLY REQUESTED.
9. FALL PREVENTION INSERTS TO BE IN ACCORDANCE WITH SELECTED OPTION FOR COVERS SEE SEQ-SPS-1304 SERIES DRAWINGS.
10. MINIMUM CIRCULATION CLEARANCE FOR RUNG TYPE LADDERS AS PER AS1657 CLAUSE 5.1 WITH EXCEPTION THAT SEQ-SP ACCEPTS NO LEVEL LANDING AREA AT THE BASE OF WET WELL IS PROVIDED.

PUMP STATION CONTROL LEVELS

	ITEM	LEVEL (A.H.D)	HEIGHT FROM BASE (m)
A	TOP OF SLAB	m	
B	INLET	m	
C	DUTY START	m	
D	PUMP STOP	m	
E	FLOOR SLAB	m	
F	PUMP STATION DEPTH	N.A.	
G	PLUG DEPTH	m	
H	EXISTING GROUND LEVEL	m	
I	STAND-BY START	m	
J	HIGH LEVEL ALARM	m	
K	OVERFLOW LEVEL	m	
L	PRE-OVERFLOW ALARM	m	
M	Q100/STORM SURGE LEVEL	m	
PUMP OPERATING LEVELS AND DEFAULT SETTINGS SHALL BE AS PER THE SEQ-SP FUNCTIONAL DESCRIPTION.			



DETAIL 'A'



TYPICAL SECTIONAL PLAN

REV. No.	DATE	DESCRIPTION	AUTH.
B	25/01/17	ADDED PE LINING, UPDATED CONTROL LEVELS, REFERENCES AND NOTES	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL 1.8m DIA LIFT STATION
GENERAL ARRANGEMENT

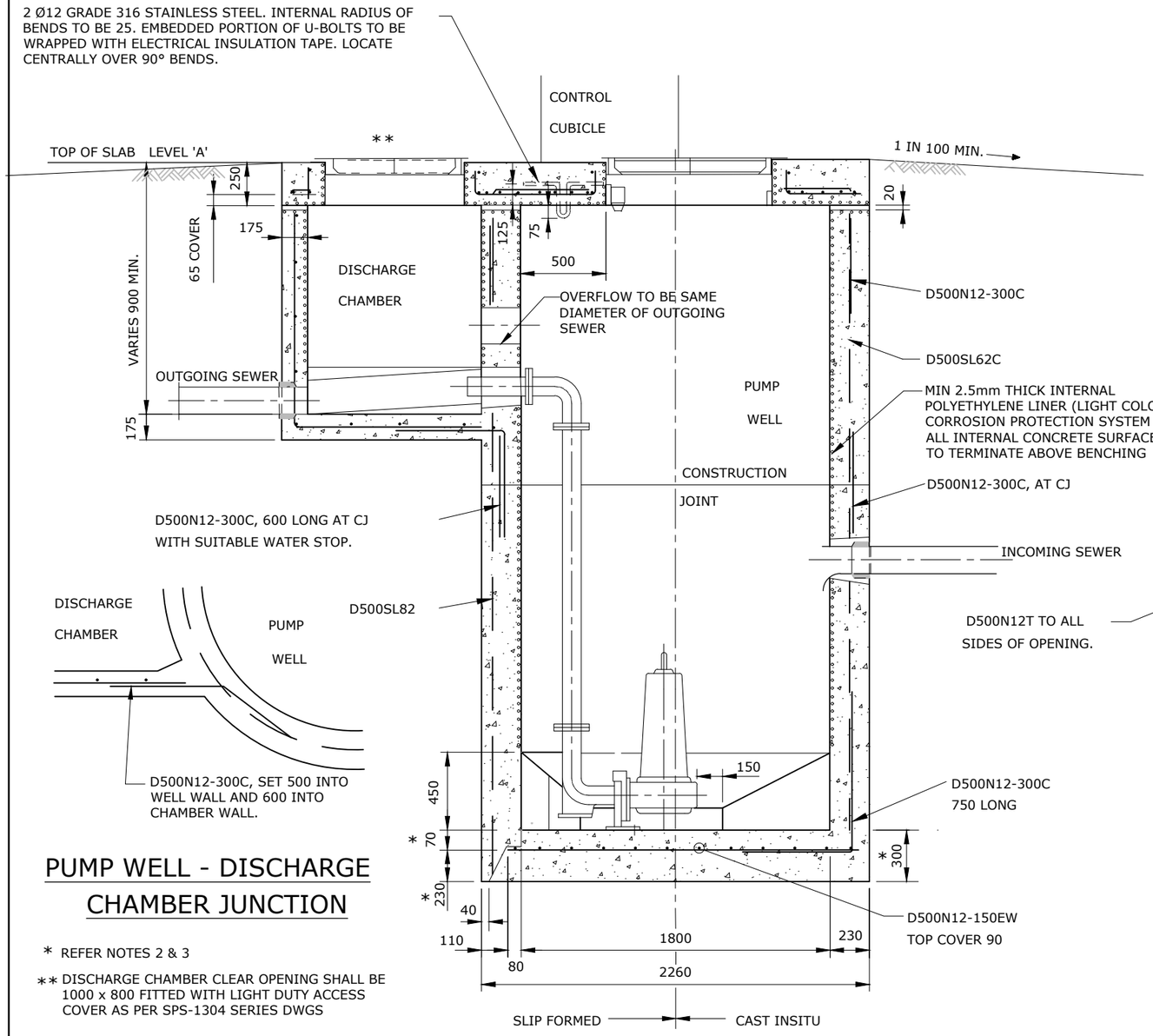
CoGC	LCC	RCC	QUU	UW

DRAWING No.
SEQ-SPS-1300-9

VERSION
B

NOT TO SCALE

ORG DATE:
1/1/2013

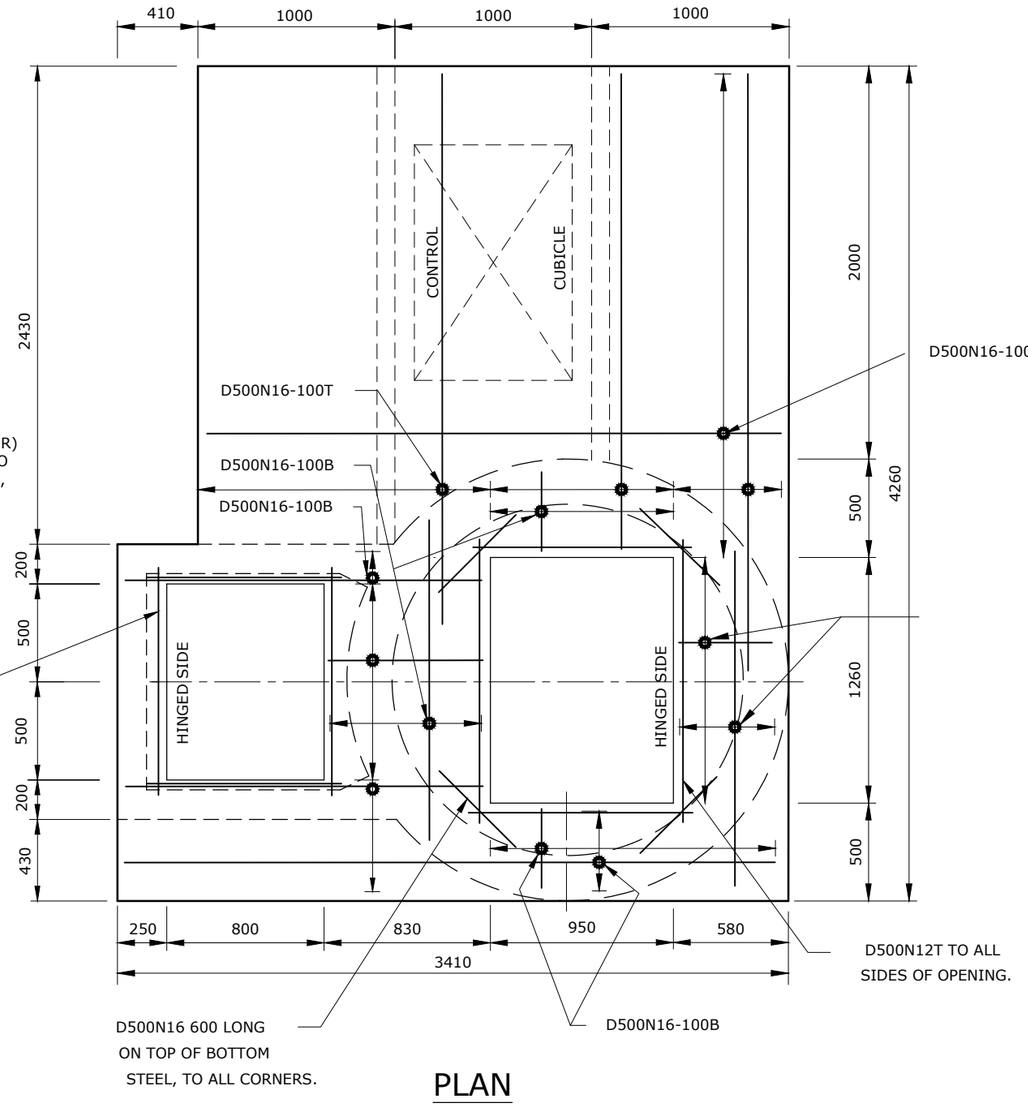


PUMP WELL - DISCHARGE CHAMBER JUNCTION

* REFER NOTES 2 & 3

** DISCHARGE CHAMBER CLEAR OPENING SHALL BE 1000 x 800 FITTED WITH LIGHT DUTY ACCESS COVER AS PER SPS-1304 SERIES DWGS

SECTIONAL ELEVATION



PLAN

NOTES:

1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH SEQ-SPS-1300 SERIES DRAWINGS.
2. THE THICKNESS OF THE BASE SHOWN IS FOR LIFT STATIONS TO A MAX. DEPTH OF 4.0m.
3. FOR DEPTHS OF LIFT STATIONS GREATER THAN 4.0m THE BASE THICKNESS SHALL BE INCREASED TO COVER FLOTATION OF THE STRUCTURE WHEN EMPTY OF PUMPS, PIPEWORK, FITTINGS AND LIQUID AND SHALL BE AS DETAILED ON THE DRAWINGS.
4. ALL CONCRETE SHALL:
   (a) BE GRADE S40
   (b) COMPLY WITH THE REQUIREMENTS OF SEQ-SP STANDARD SPECIFICATIONS
5. ALL CORED HOLES IN LIFT WELL WALLS SHALL BE TAPERED TO BE Ø25 LARGER IN DIAMETER ON THE OUTSIDE FACE THAN THE INSIDE FACE. PACK HOLES WITH 3:1 CEMENT MORTAR UNLESS OTHERWISE DIRECTED.
6. ALL REINFORCING TO AS/NZS 4671:2001.
7. LAPS IN REINFORCING SHALL BE 600 MINIMUM FOR BARS AND ONE (1) MESH SPACING FOR FABRIC.
8. CONCRETE COVER TO REINFORCEMENT SHALL BE A MINIMUM 65 UNLESS OTHERWISE DIRECTED.
9. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

REV. No.	DATE	DESCRIPTION	AUTH.
B	27/01/17	ADDED PE LINING, IMPROVED DRAFTING QUALITY	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL 1.8m DIA LIFT STATION
SECTIONS

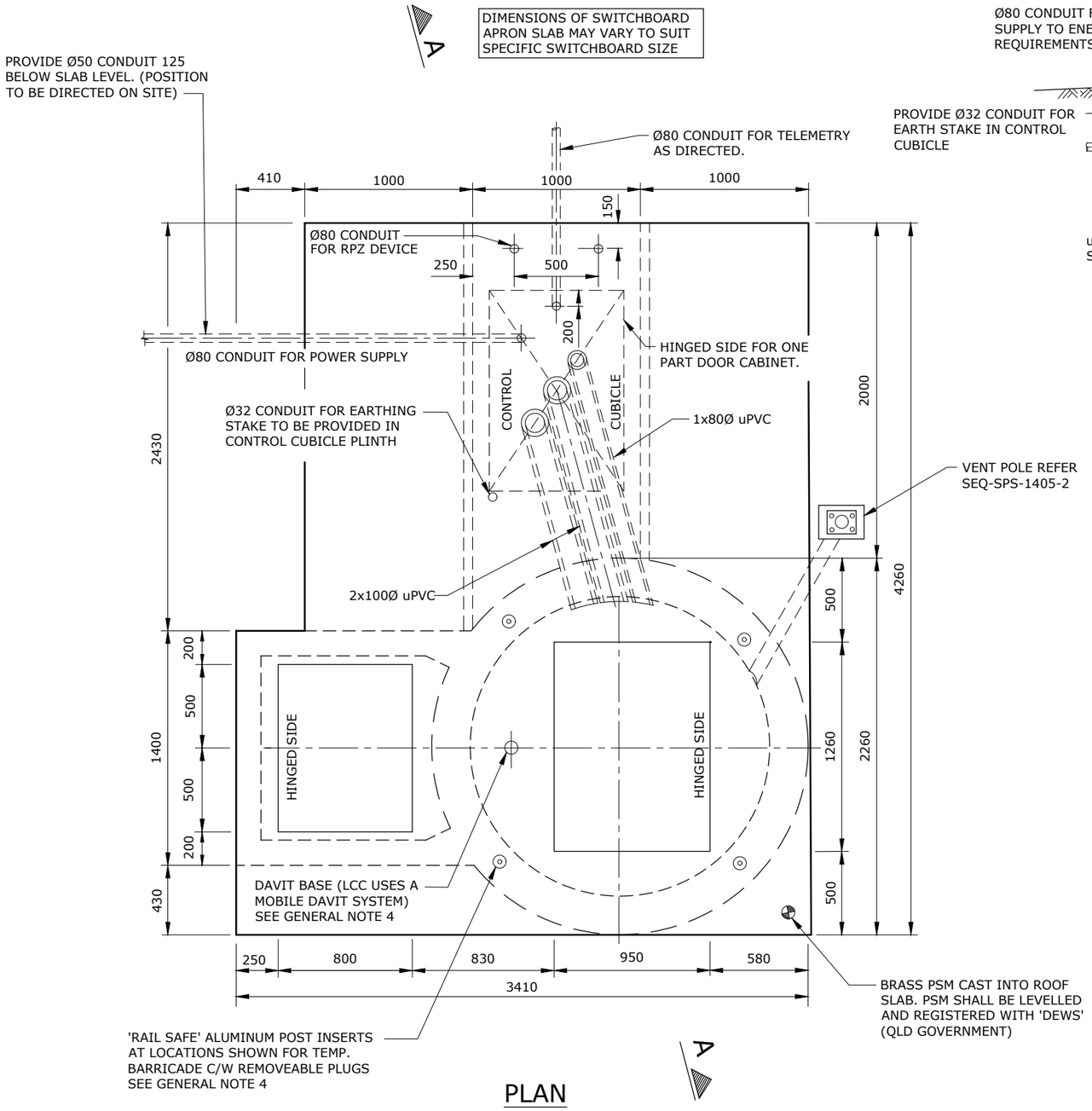
CoGC	LCC	RCC	QUU	UW

DRAWING No.
SEQ-SPS-1300-10

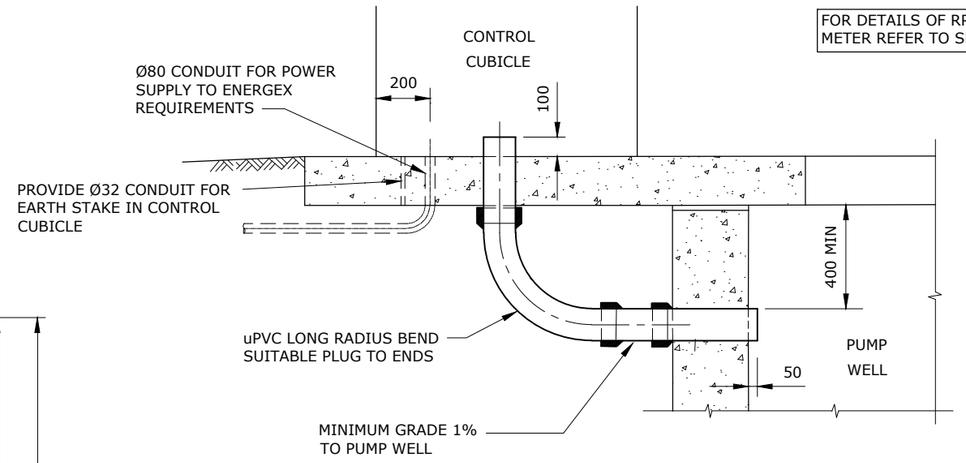
VERSION
B

NOT TO SCALE

ORG DATE:
1/1/2013



PLAN



SECTION A-A TYPICAL CONDUIT DETAIL

NOTES

GENERAL

1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH SEQ-SPS-1300 SERIES DRAWINGS .
2. THE LOCATION OF THE LIFT STATION SHALL BE AS SHOWN ON THE APPROVED DRAWINGS.
3. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
4. FALL PREVENTION INSERTS TO BE IN ACCORDANCE WITH SELECTED OPTION FOR COVERS SEE SEQ-SPS-1304 SERIES DRAWINGS.

ELECTRICAL CONDUITS

1. CONDUITS TO BE MINIMUM 100 NOMINAL DIAMETER FOR EACH PUMP AND MINIMUM 80 NOMINAL DIAMETER FOR CONTROL CABLES OR TWICE THE OUTSIDE DIAMETER OF THE INSTALLED CABLE WHICHEVER IS THE GREATER.
2. PUMP CONDUITS AND CONTROL CONDUIT SHALL BE SEPARATED BY A MINIMUM 300. PUMP CONDUITS SHALL BE SEPARATED BY 30.
3. CONDUITS SHALL BE INSTALLED IN ACCORDANCE WITH AS/NZS3000.
4. CONDUITS SHALL BE IN ACCORDANCE WITH AS.2053.

COMPONENTS

1. ALL PIPES, FITTINGS, ASSOCIATED COMPONENTS AND PROTECTION SYSTEMS SHALL COMPLY WITH SEQ-SP STANDARD SPECIFICATIONS.

LEVELS

1. THE FINISHED LEVEL OF THE ACCESS COVERS AND CONTROL CUBICLE SHALL BE 300 ABOVE THE HIGHEST RECORDED FLOOD LEVEL (OR Q100 FLOOD LEVEL WHICH EVER IS HIGHER) AND A 1 IN 6 GRADE EXTENDED TO NATURAL LEVEL.

REV. No.	DATE	DESCRIPTION	AUTH.
B	27/01/17	ADDED FALL PREVENTION INSERTS, VENT POLE, CHANGED CONDUIT SIZES AND NOTES	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL 1.8m DIA LIFT STATION
MISCELLANEOUS DETAILS

CoGC	LCC	RCC	QUU	UW

DRAWING No.

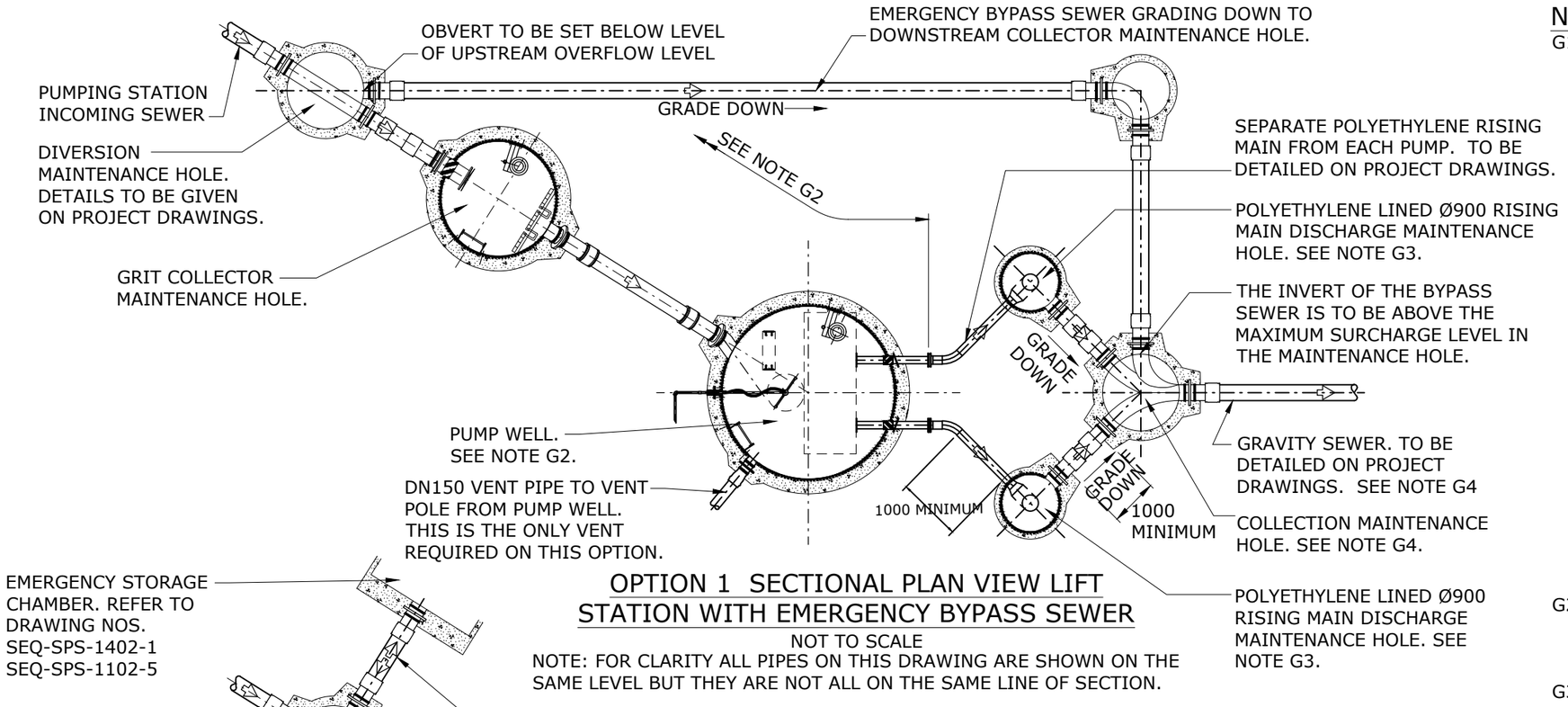
SEQ-SPS-1300-11

VERSION

B

NOT TO SCALE

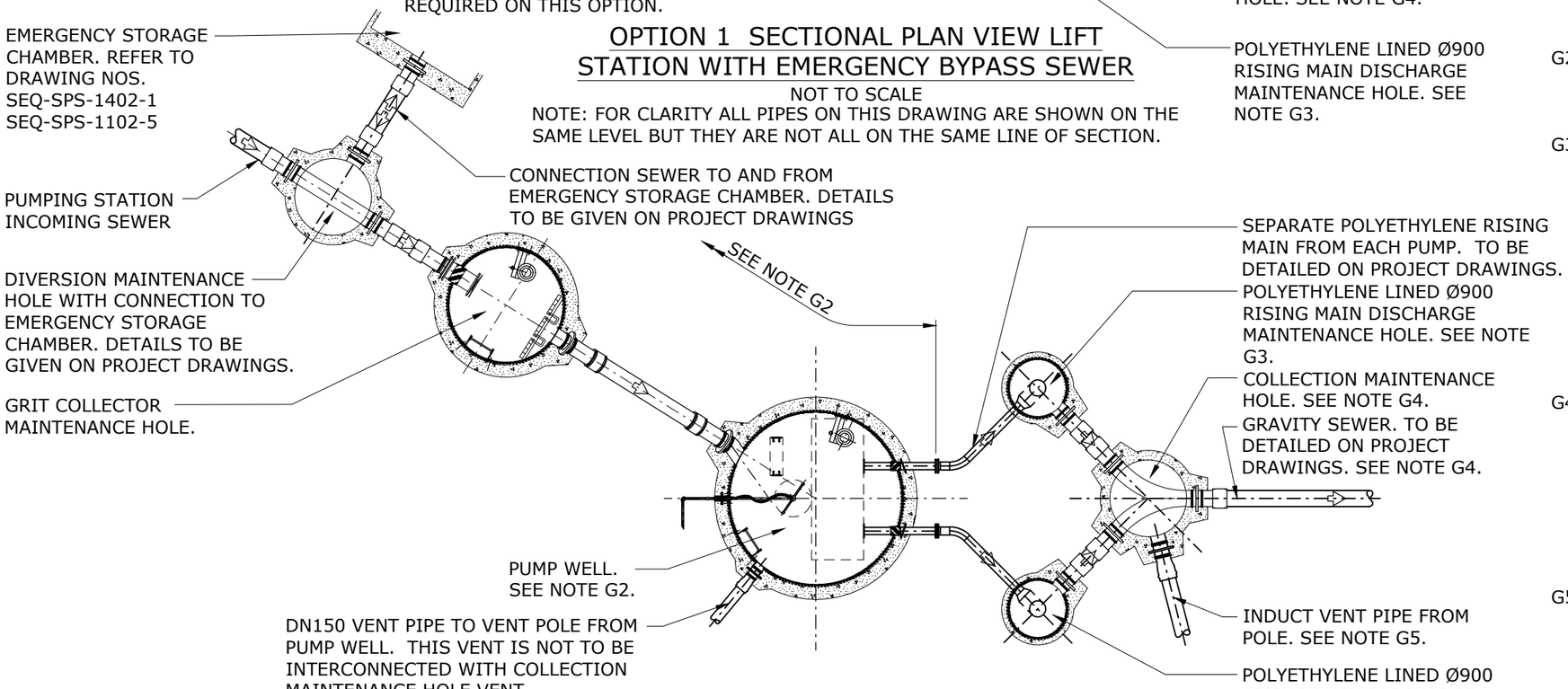
ORG DATE:
1/1/2013



OPTION 1 SECTIONAL PLAN VIEW LIFT STATION WITH EMERGENCY BYPASS SEWER

NOT TO SCALE

NOTE: FOR CLARITY ALL PIPES ON THIS DRAWING ARE SHOWN ON THE SAME LEVEL BUT THEY ARE NOT ALL ON THE SAME LINE OF SECTION.



OPTION 2 SECTIONAL PLAN VIEW LIFT STATION WITH EMERGENCY STORAGE CHAMBER

NOT TO SCALE

NOTE: FOR CLARITY ALL PIPES ON THIS DRAWING ARE SHOWN ON THE SAME LEVEL BUT THEY ARE NOT ALL ON THE SAME LINE OF SECTION.

NOTES

G1. THIS DRAWING SETS OUT THE REQUIREMENTS FOR A LIFT PUMPING STATION.
LIFT PUMPING STATIONS ARE TO BE USED WHERE IT IS POSSIBLE TO DISCHARGE INTO A GRAVITY SEWER ADJACENT TO THE PUMPING STATION.
THERE ARE TWO OPTIONS AVAILABLE.

OPTION 1 UTILISES A HIGH LEVEL BYPASS SEWER WHICH WILL ALLOW THE SEWERAGE TO BYPASS THE PUMPING STATION IN AN EMERGENCY SITUATION.
THIS HIGH LEVEL BYPASS MUST BE ABLE TO CARRY PEAK WET WEATHER FLOW.
THE OBVERT OF THE BYPASS PIPE AT THE UPSTREAM END DIVERSION MAINTENANCE HOLE MUST BE BELOW THE LEVEL OF THE OVERFLOW.
THE INVERT OF THE UPSTREAM END MUST ALSO BE ABOVE THE OVERFLOW IMMINENT ALARM (HIGH HIGH LEVEL ALARM) LEVEL AND ALSO BE ABOVE THE CROWN OF THE INCOMING SEWER.

OPTION 2 IS TO BE USED WHEN A SITE DOES NOT ALLOW A BYPASS TO BE INSTALLED. THIS OPTION REQUIRES AN EMERGENCY STORAGE CHAMBER TO BE INSTALLED.
THE LEVEL INTERACTIONS FOR THIS OPTION ARE TO BE AS SHOW ON DRAWING SEQ-SPS-1102-5.

G2. THE PUMPING STATION PUMP WELL IS TO BE AS SHOWN ON DRAWINGS NOS. SEQ-SPS-1301-1 TO 4 BUT WITH THE OMISSION OF THE VALVE PIT AND RISING MAIN.

G3. A SEPARATE POLYETHYLENE LINED Ø900 RISING MAIN DISCHARGE MAINTENANCE HOLE IS REQUIRED FOR EACH PUMP. THE DISCHARGE MAINTENANCE HOLE IS TO BE THE ALTERNATE OPTION DESIGN WHERE THE OUTLET PIPE GRADES DOWN FROM THE DISCHARGE MAINTENANCE HOLE. THE DETAILS OF THIS OPTION ARE TO BE FOUND ON STANDARD DRAWING NO. SEQ-SPS-1406-3.

THE INVERT OF THE OUTLET SEWER FROM THE DISCHARGE MAINTENANCE HOLE IS TO BE ABOVE THE OBVERT OF THE SEWER ENTERING THE COLLECTION MAINTENANCE HOLE.

G4. THE DETAILS OF THE COLLECTION MAINTENANCE HOLE ARE TO BE INCLUDED ON THE PROJECT DRAWINGS. THIS COLLECTION MAINTENANCE HOLE AND THE DOWNSTREAM SEWER IS TO BE DESIGNED SUCH THAT THE MAINTENANCE HOLE WILL NOT SURCHARGE AT MAXIMUM PUMP FLOW CAUSING FLOW BACK INTO THE NON OPERATING DISCHARGE MANHOLE OR INTO THE EMERGENCY BYPASS SEWER IF IT IS INSTALLED.

G5. A VENT PIPE TO A VENT POLE IS REQUIRED IN OPTION 2 WHERE THE DOWNSTREAM SEWER IS AN END OF A GRAVITY SEWER LINE. THE MAIN FUNCTION OF THIS VENT IS TO ACT AS AN INDUCT VENT. THE SIZE OF THIS VENT IS DESIGNED TO SUIT THE PROJECT.
THE VENT IS NOT TO BE CONNECTED TO THE PUMP WELL VENT.

REV. No.	DATE	DESCRIPTION	AUTH.
B	07/05/14	CORRECT DRAWING NUMBER IN NOTE G2	

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALTERNATIVE LIFT STATION ARRANGEMENT INCLUDING STORAGE OPTION

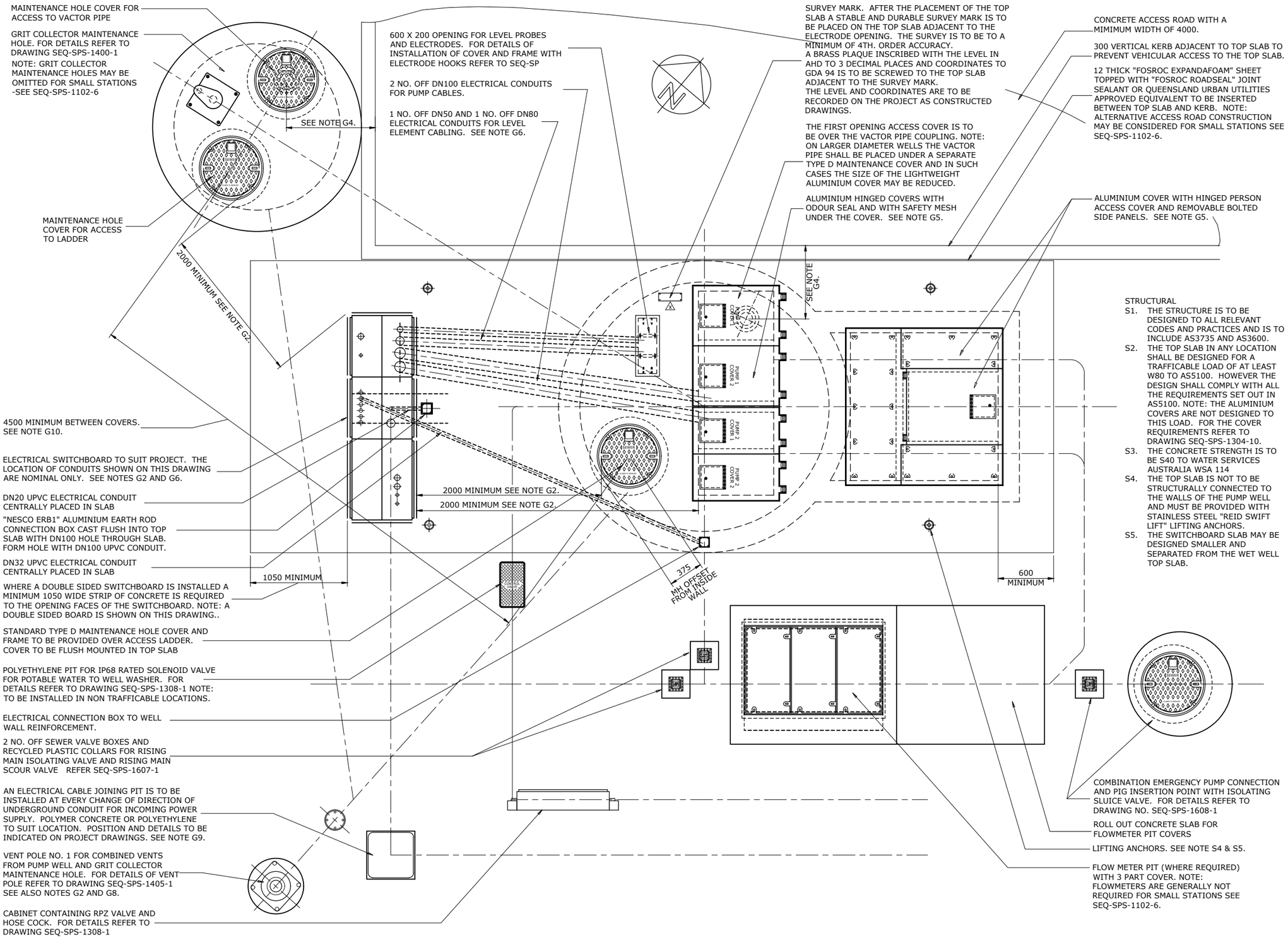
CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1300-12

VERSION B

NOT TO SCALE

ORG DATE: 1/1/2013



NOTES:

GENERAL

G1. THIS DRAWING SHOWS A NOMINAL LAYOUT OF A PUMPING STATION AND IS ONLY GIVEN AS A GUIDE TO THE PROJECT DESIGNER. THE RELATIVE POSITION OF THE COMPONENTS WILL VARY TO SUIT THE PROJECT LOCATION.

G2. THE LOCATION OF THE SWITCHBOARD AND ANY OTHER EQUIPMENT MOUNTED ABOVE THE LEVEL OF THE TOP SLAB IS TO HAVE A MINIMUM CLEARANCE OF 2000mm FROM ANY OPENING IN THE TOP SLAB. SOME EXAMPLES OF ABOVE GROUND EQUIPMENT MAY BE VENT POLES, SUPPORTS FOR OVERHEAD GANTRY, SWITCHBOARD, FENCES, VALVE GEARBOXES AND ODOUR CONTROL UNITS.

G3. NOT ALL DIMENSIONS REQUIRED ARE SHOWN ON THIS DRAWING. THE PROJECT DRAWINGS MUST CONTAIN DIMENSIONS SHOWING THE POSITION OF ALL ITEMS CONTAINED ON THE PLAN.
IN ADDITION TO THE DIMENSIONS THE PROJECT DRAWINGS MUST CONTAIN GIS COORDINATES OF ALL COMPONENTS. ALL PROJECT DRAWINGS CONTAINING PLAN VIEWS MUST HAVE A NORTH POINT.

G4. THE VACTOR PIPE COUPLINGS ARE TO BE LOCATED ADJACENT TO THE ACCESS ROAD AND ARE TO BE A MAXIMUM DISTANCE OF 1500mm FROM THE VERTICAL FACE OF THE 300 HIGH KERB.

G5. FOR THE DETAILED REQUIREMENTS OF THE ALUMINIUM COVERS FOR THE PUMP WELL AND THE VALVE PIT REFER TO DRAWINGS NOS. SEQ-SPS-1304-10 TO SEQ-SPS-1304-17 FOR THE REQUIREMENTS OF THE OPENING SIZE OF THE COVERS REFER TO NOTE 17 ON DRAWING NO. SEQ-SPS-1304-10 THE PROJECT DRAWINGS MUST CONTAIN DETAILS SUITABLE FOR THE COVER MANUFACTURER TO DESIGN THE INDIVIDUAL COVERS. INFORMATION MUST INCLUDE CLEAR OPENING SIZES, REMOVABLE BEAM POSITIONS, LOCATION OF SAFETY MESH HOOKS AND INSCRIPTION DETAILS.
THE PERSON ACCESS MAINTENANCE HOLE MUST NOT BE IMPEDED BY THE PUMP COVER IN THE OPEN POSITION.

G6. THE SWITCHBOARD SHOWN ON THIS DRAWING IS THE PREFERRED DOUBLE-SIDED BOARD AND IS MOUNTED ON THE TOP SLAB. A NON-PREFERRED SINGLE-SIDED BOARD MAY BE APPROVED BY QUEENSLAND URBAN UTILITIES TO SUIT SELECTED SITE. ON SITES REQUIRING MORE THAN 15000mm OF PUMP CABLE AND FOR PUMPS OVER 30 kW THEN AN INTERMEDIATE FIELD DISCONNECT BOX IS REQUIRED. THE SWITCHBOARD IS TO BE NO MORE THAN 15000mm FROM THE PUMP WELL AND THE TOP OF THE PUMP WELL AND VALVE PIT MUST BE FULLY VISIBLE FROM THE SWITCHBOARD.

G7. THE PREFERRED OPTION OF THE ELECTRICAL CONDUITS CAST INTO TOP SLAB IS SHOWN ON THIS DRAWING. THE NON-PREFERRED OPTION WHERE THE ELECTRICAL CONDUITS ARE LOCATED UNDER THE SLAB AND PASS THROUGH THE WALL MAY BE APPROVED BY QUEENSLAND URBAN UTILITIES, PROVIDED THE CABLES DO NOT CLASH WITH OTHER EQUIPMENT IN THE WELL.

G8. THE VENT POLE IS TO BE LOCATED IN A POSITION WHICH WILL NOT INTERFERE WITH THE OPERATION OF A CRANE USED FOR REMOVING THE PUMPS AND MUST ALSO COMPLY WITH NOTE G2.
THE LOCATION MUST BE AS FAR AWAY AS POSSIBLE FROM PRIVATE PROPERTY AND OCCUPIED BUILDINGS.

G9. ALL SERVICES WITHIN THE PUMPING STATION PROPERTY SHALL BE UNDERGROUND. CARE MUST BE TAKEN IN POSITIONING THE COMPONENTS TO ENSURE EXISTING AERIAL SERVICES, EXTERNAL TO THE SITE, DO NOT IMPEDE CRANE ACCESS TO ALL COMPONENTS.

G10. TO MINIMISE THE NOISE FROM THE PORTABLE VENTILATION FAN USED FOR CONFINED SPACE ENTRY, THE ACCESS MAINTENANCE HOLES IN THE GRIT COLLECTOR AND THE PUMP WELL ARE TO BE PLACED A MINIMUM OF 4500mm APART.

G11. THE LOCATION AND SIZE OF ALL ELECTRICAL CONDUITS ARE TO BE CLEARLY DETAILED ON THE PROJECT DRAWINGS. DETAILS OF SWITCHBOARD REQUIREMENTS ARE AVAILABLE FROM SEQ-SPS

STRUCTURAL

S1. THE STRUCTURE IS TO BE DESIGNED TO ALL RELEVANT CODES AND PRACTICES AND IS TO INCLUDE AS3735 AND AS3600.

S2. THE TOP SLAB IN ANY LOCATION SHALL BE DESIGNED FOR A TRAFFICABLE LOAD OF AT LEAST W80 TO AS5100. HOWEVER THE DESIGN SHALL COMPLY WITH ALL THE REQUIREMENTS SET OUT IN AS5100. NOTE: THE ALUMINIUM COVERS ARE NOT DESIGNED TO THIS LOAD. FOR THE COVER REQUIREMENTS REFER TO DRAWING SEQ-SPS-1304-10.

S3. THE CONCRETE STRENGTH IS TO BE S40 TO WATER SERVICES AUSTRALIA WSA 114

S4. THE TOP SLAB IS NOT TO BE STRUCTURALLY CONNECTED TO THE WALLS OF THE PUMP WELL AND MUST BE PROVIDED WITH STAINLESS STEEL "REID SWIFT LIFT" LIFTING ANCHORS.

S5. THE SWITCHBOARD SLAB MAY BE DESIGNED SMALLER AND SEPARATED FROM THE WET WELL TOP SLAB.

REV. No.	DATE	DESCRIPTION	AUTH.
B	28/05/14	CORRECT DRAWING NO. IN LEVEL PROBES REFERENCE	

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

PUMP WELL GENERAL ARRANGEMENT PLAN AT TOP SLAB LEVEL

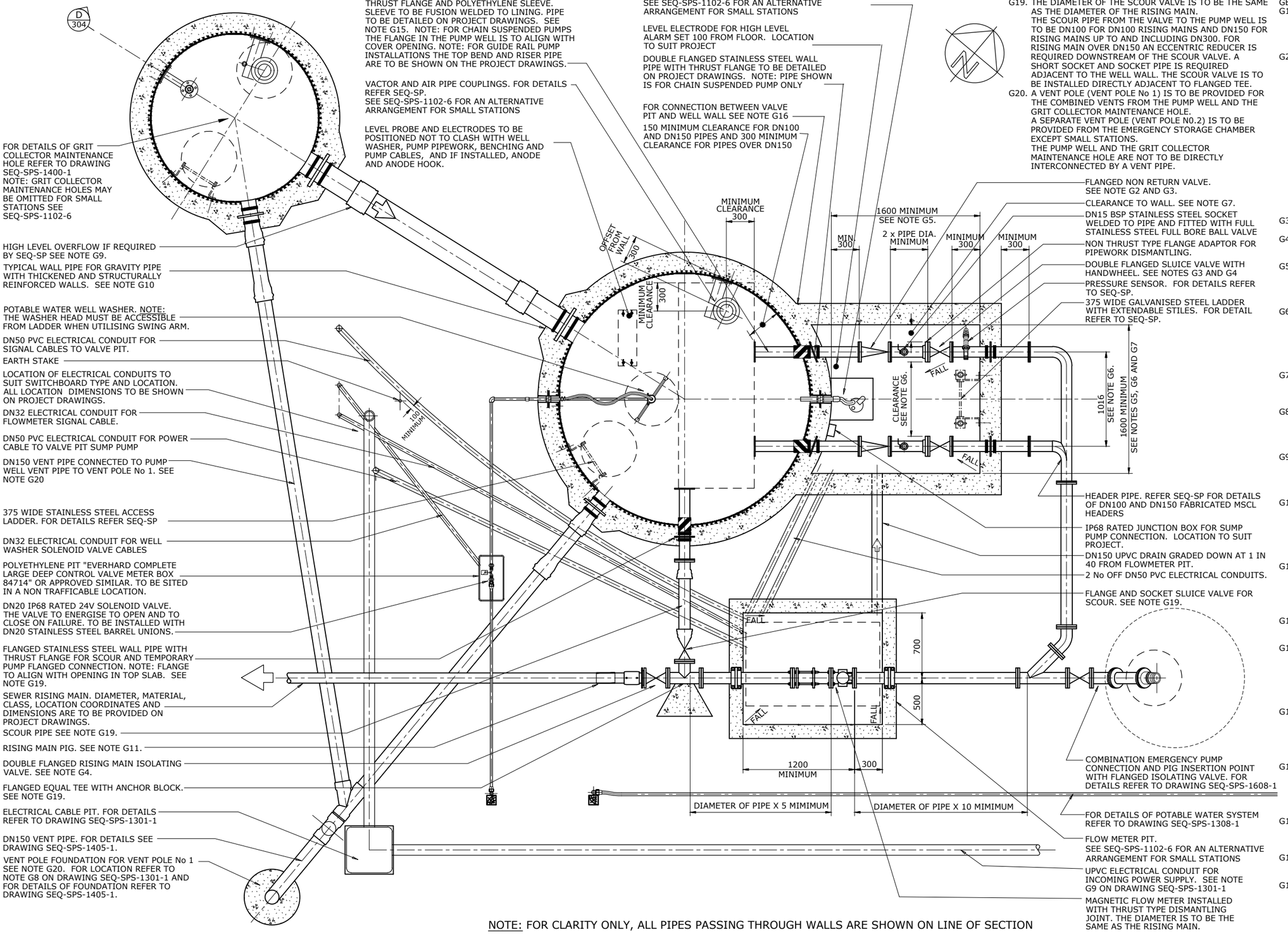
CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1301-1

VERSION B

NOT TO SCALE

ORG DATE: 1/1/2013



NOTE: FOR CLARITY ONLY, ALL PIPES PASSING THROUGH WALLS ARE SHOWN ON LINE OF SECTION

NOTES

GENERAL

G1. THIS DRAWING SHOWS A NOMINAL LAYOUT OF A PUMPING STATION AND IS ONLY GIVEN AS A GUIDE TO THE PROJECT DESIGNER. THE RELATIVE POSITION OF THE COMPONENTS WILL VARY TO SUIT THE PROJECT LOCATION.

G2. THE NON RETURN VALVE FOR DIAMETERS DN100 TO DN200 AND FOR PUMPS UNDER 30 KW. IS TO BE A FLANGED "VALMATIC SWING FLEX CHECK VALVE". FOR DIAMETERS LARGER THAN DN200 AND FOR PUMPS OVER 30kW A SWING CHECK VALVE WITH EXTENDED SPINDLE SHAFT AND ADJUSTABLE COUNTER WEIGHT IS REQUIRED. THE O RING SEALS ON THE SPINDLE SHAFT ARE TO BE EPDM. ON PROJECTS WITH PUMPS ABOVE 30 kW SEQ-SP MAY REQUIRE THE INSTALLATION OF A POSITION SWITCH. INDEPENDENT OF THE VALVE CHOSEN THE DESIGN MUST ALLOW FOR THE FLANGE TO FLANGE DIMENSION SET OUT IN AS4794 FIGURE 3.1. IT IS THEREFORE EXPECTED THAT THE REMOVABLE PIPE BETWEEN THE NON RETURN VAVE AND THE ISOLATING VALVE IS TO BE LONGER THAN THE MINIMUM SPECIFIED ON THIS DRAWING IF A SHORTER VALVE IS APPROVED.

G3. ALL VALVES AND FITTINGS ARE TO BE DRILLED TO AS4087 SUITABLE FOR PN16 PRESSURE RATING.

G4. ALL SLUICE VALVES IN PUMPING STATION AND RISING MAIN ARE TO BE RESILIENT SEATED VALVES TO AS 2638.2

G5. THE DIMENSION OF THE VALVE PIT WILL VARY TO SUIT THE PROJECT AND THE MINIMUM DIMENSIONS SHOWN ARE FOR DN100 AND DN150 PIPEWORK ONLY. ALL DIMENSIONS AND CLEARANCES MUST BE SHOWN ON THE PROJECT DRAWINGS.

G6. THE 1016 DIMENSION BETWEEN CENTRE LINE OF OUTLET PIPES IS FOR DN100 AND DN150 PIPES ONLY.
FOR LARGER DIAMETER PIPES THE MINIMUM CLEARANCE REQUIRED BETWEEN THE OUTSIDE OF THE FLANGES OR EXTERNAL SWING ARMS ON NON RETURN VALVES IF INSTALLED IS TO BE 800.

G7. THE MINIMUM CLEARANCE BETWEEN THE WALL AND THE OUTSIDE OF THE FLANGE IS TO BE 300 FOR PIPES LARGER THAN DN150 AND UP TO DN300 INCLUSIVE.

G8. THE STAINLESS STEEL ANODE HOOK IS NOT SHOWN ON THIS DRAWING BUT MUST BE INSTALLED ON THE UNDERSIDE OF THE ROOF SLAB FOR PUMPING STATIONS WITH MOTORS 30KW AND ABOVE. FOR DETAILS REFER TO SEQ-SP.

G9. IF DIRECTED BY SEQ-SP A HIGH LEVEL OVERFLOW PIPE MAY BE REQUIRED ON NEW PUMPING STATIONS LOCATED IN NEWLY DEVELOPED AREAS WHERE THE INITIAL INFLOW IS BELOW THE DESIGNED AVERAGE DRY WEATHER FLOW.

G10. TYPICAL WALL THICKENING FOR ALL WALL PIPES TO PROVIDE 150 MINIMUM CONCRETE COVER TO BACK FACE OF FLANGES. TYPICAL WALL PIPE TO BE POLYETHYLENE PIPE WITH THRUST FLANGE AND "HYDROTITE" SEALS AND TO BE FUSION WELDED TO INTERNAL WALL LINING. THE MINIMUM CLEARANCE TO THE BACK FACE OF THE FLANGE IS TO BE 150.

G11. DURING CONSTRUCTION OF THE RISING MAIN A FOAM PIG IS TO BE INSERTED IN THE RISING MAIN DIRECTLY DOWNSTREAM OF THE RISING MAIN ISOLATING VALVE. THE PIG IS TO BE MADE FROM URETHANE FOAM AND IS TO BE 1.5 x PIPE DIAMETER IN DIAMETER AND 2 x PIPE DIAMETER IN LENGTH.

G12. ON PROJECT DRAWINGS A DETAILED PIPE AND FITTINGS LIST IS TO BE PROVIDED ALONG WITH DETAILED DRAWINGS OF PIPE SPECIALS.

G13. ALL FLANGES ARE TO BE INSTALLED WITH 316 STAINLESS STEEL BOLTS. BOLTS ARE TO BE ASSEMBLED WITH ANTI GALLING COMPOUND "DURALAC" OR SEQ-SP APPROVED EQUIVALENT. ALL BURIED FLANGES ARE TO BE WRAPPED WITH PETROLATUM TAPE "DENSO" TO MANUFACTURER'S REQUIREMENTS.

G14. WHERE NOT SPECIFIED THE MATERIAL OF THE PIPEWORK FROM THE HEADER PIPE TO THE START OF THE RISING MAIN MAY BE FLANGED CLASS DICL (DUCTILE IRON CEMENT LINED) OR MSCL (MILD STEEL CEMENT LINED WITH MEDIUM DENSITY POLYETHYLENE EXTERNAL COATING).

G15. THE DELIVERY WALL PIPES SHOWN ON THIS DRAWING ARE FOR CHAIN SUSPENDED PUMPS WITH THE PUMP WELL FLANGE ALIGNED WITH THE COVER OPENING. FOR GUIDE RAIL PUMP INSTALLATIONS AN AIR BLEED PIPE IS REQUIRED FROM THE DELIVERY PIPE IN VALVE PIT BACK INTO WET WELL.

G16. THE VALVE PIT IS TO BE STRUCTURALLY INTEGRAL WITH THE PUMP WELL WALL. SEE SEQ-SPS-1102-6 FOR AN ALTERNATIVE ARRANGEMENT FOR SMALL STATIONS

G17. ALL ELECTRICAL CONDUITS ARE TO BE INSTALLED IN ACCORDANCE WITH AS/NZS3000. ALL CONDUITS ARE TO BE INSTALLED WITH MARKER TAPE.

G18. ALL SERVICES INCLUDING TELEPHONE, WATER, SIGNAL AND POWER CONDUITS ARE TO BE DETAILED ON PROJECT CIVIL AND MECHANICAL GENERAL DRAWINGS.

G19. THE DIAMETER OF THE SCOUR VALVE IS TO BE THE SAME AS THE DIAMETER OF THE RISING MAIN.
THE SCOUR PIPE FROM THE VALVE TO THE PUMP WELL IS TO BE DN100 FOR DN100 RISING MAINS AND DN150 FOR RISING MAINS UP TO AND INCLUDING DN300. FOR RISING MAIN OVER DN150 AN ECCENTRIC REDUCER IS REQUIRED DOWNSTREAM OF THE SCOUR VALVE. A SHORT SOCKET AND SOCKET PIPE IS REQUIRED ADJACENT TO THE WELL WALL. THE SCOUR VALVE IS TO BE INSTALLED DIRECTLY ADJACENT TO FLANGED TEE.

G20. A VENT POLE (VENT POLE No 1) IS TO BE PROVIDED FOR THE COMBINED VENTS FROM THE PUMP WELL AND THE GRIT COLLECTOR MAINTENANCE HOLE.
A SEPARATE VENT POLE (VENT POLE N0.2) IS TO BE PROVIDED FROM THE EMERGENCY STORAGE CHAMBER EXCEPT SMALL STATIONS.
THE PUMP WELL AND THE GRIT COLLECTOR MAINTENANCE HOLE ARE NOT TO BE DIRECTLY INTERCONNECTED BY A VENT PIPE.

REV. No.	DATE	DESCRIPTION	AUTH.
B	07/05/14	MINOE CORRECTIONS TO DRAWING REFERENCE	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

PUMP WELL GENERAL ARRANGEMENT
PLAN AT HEADER PIPE LEVEL

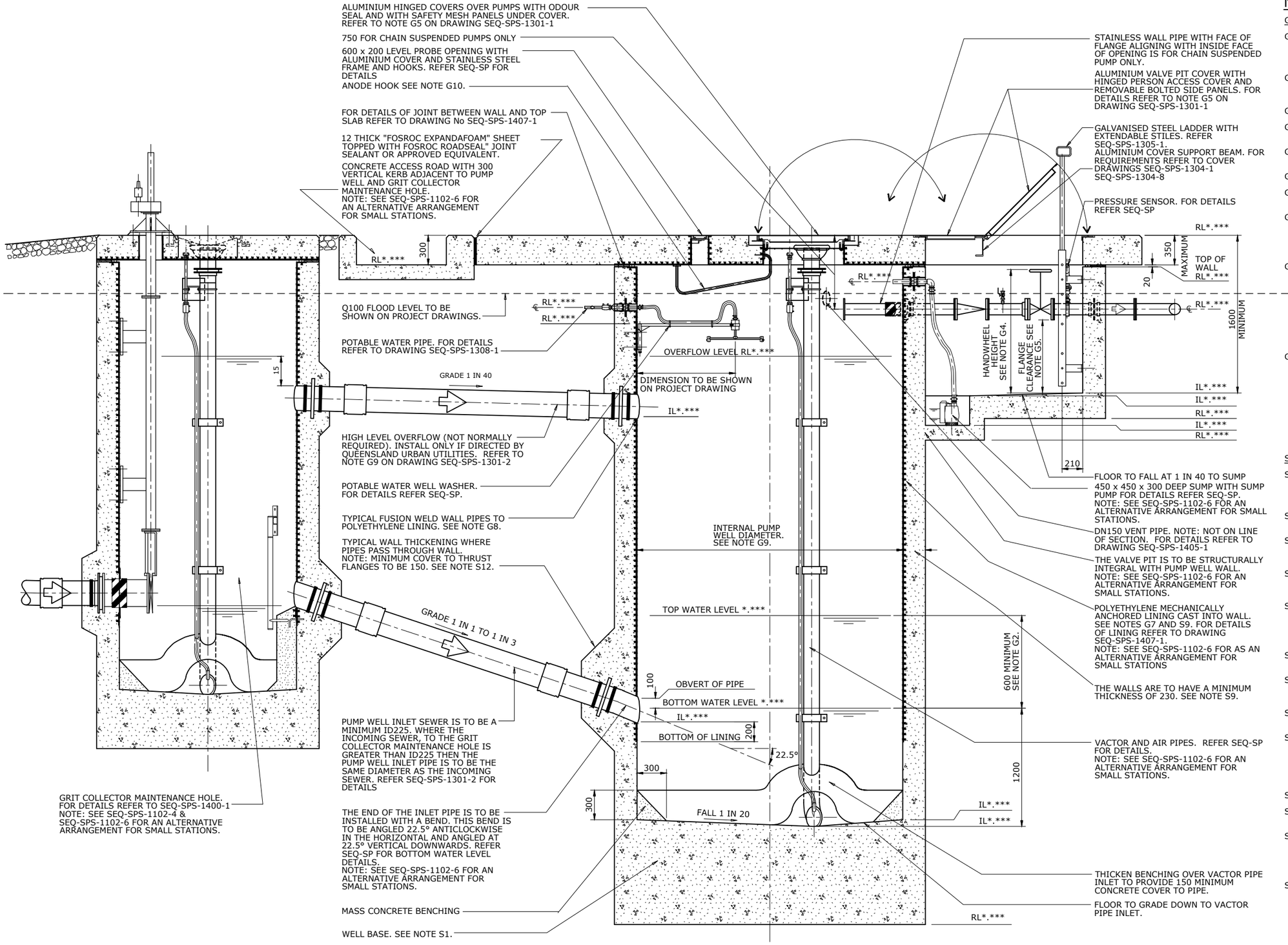
CoGC | LCC | RCC | QUU | UW

DRAWING No.
SEQ-SPS-1301-2

VERSION
B

NOT TO SCALE

ORG DATE:
1/1/2013



NOTES

GENERAL

G1. THE DIMENSIONS AND LEVELS SHOWN ON THIS DRAWING ARE INDICATIVE ONLY. THE LEVELS SHOWN AS *.*** ON THIS DRAWING AND ALL DIMENSIONS MUST BE INCLUDED ON THE PROJECT DRAWINGS.

G2. FOR THE RELATIONSHIP BETWEEN THE LEVELS REFER TO THE LEVEL INTERACTION DIAGRAM ON DRAWING SEQ-SPS-1102-5 &SEQ-SPS-1102-6.

G3. FOR DETAILS OF VALVE PIT PIPE FITTING REQUIREMENTS SEQ-SPS-1301-1.

G4. THE MAXIMUM HEIGHT FROM THE FLOOR TO THE HAND WHEEL ON THE RESILIENT SEATED SLUICE VALVE IS TO BE 1400.

G5. THE MINIMUM CLEARANCE UNDER THE FLANGES IN THE VALVE PIT IS TO BE 300 FOR PIPE DIAMETERS UP TO AND INCLUDING DN300.

G6. FOR DETAILS OF PIPES AND FITTINGS SEE DRAWING SEQ-SPS-1301-2

G7. THE POLYETHYLENE INTERNAL LINING MAY BE OMITTED IF PRIOR APPROVAL IS GIVEN BY SEQ-SP

G8. THE PIPES THAT PASS THROUGH THE WELL WALL ARE TO BE EITHER POLYETHYLENE OR STAINLESS STEEL WITH A HEAT SHRUNK POLYETHYLENE SLEEVE. THE PIPES ARE TO BE FULLY SEALED FUSION WELDED TO THE LINING. FOR EXCEPTION SEE NOTE G7.

G9. THE INTERNAL PUMP WELL DIAMETER IS TO SUIT PROJECT REQUIREMENTS AND WILL VARY ACCORDING TO THE PUMP SIZE, NUMBER OF PUMPS AND LAYOUT. THE PUMP WELL INTERNAL DIMENSION IS TO BE CHOSEN FROM ONE OF THE FOLLOWING STANDARD SIZES:
(1800) 2700 4000
(2100) 3000
2400 3600
1800 & 2100 MAY BE CONSIDERED FOR SMALL STATION ONLY, SUBJECT TO SEQ-SP APPROVAL.

G10. A STAINLESS STEEL ANODE HOOK IS TO BE PROVIDED ON PUMPING STATION WITH PUMP MOTORS GREATER THAN 30kW. DETAILS OF THE HOOK ARE TO BE FOUND FROM SEQ-SP. THE LOCATION OF THE ANODE HOOK IS TO BE SHOWN ON THE PROJECT DRAWINGS. CARE MUST BE TAKEN WHEN LOCATING THE HOOK SO THAT THE SUPPORTING CABLE AND ANODE HANGING FROM THE HOOK DO NOT FOUL WITH ANY OTHER EQUIPMENT AND INCLUDING PROVISION FOR PUMP REMOVAL AND LADDER ACCESS.

STRUCTURAL

S1. THE BASE OF THE PUMP WELL SHOWN ON THIS DRAWING IS INDICATIVE ONLY. THE PROJECT GENERAL ARRANGEMENT DRAWINGS MUST REFLECT THE ACTUAL STRUCTURE TO BE CONSTRUCTED (EG. CAISSON).

S2. THE STRUCTURE IS TO BE DESIGNED TO ALL RELEVANT CODES AND PRACTICES AND IS TO INCLUDE AS3735 AND AS3600.

S3. THE TOP SLAB IN ANY LOCATION SHALL BE DESIGNED FOR A TRAFFICABLE LOAD. FOR DETAILS REFER TO NOTE S2. ON DRAWING SEQ-SPS-1301-1

S4. THE TOP SLAB IS NOT TO BE STRUCTURALLY CONNECTED TO THE WALLS OF THE PUMP WELL AND MUST BE PROVIDED WITH STAINLESS STEEL "REID SWIFT LIFT" LIFTING ANCHORS.

S5. PRECAST UNITS ARE NOT GENERALLY ACCEPTABLE FOR THE WALLS OF THE STRUCTURE.
NOTE: SEE SEQ-SPS-1102-6 FOR AN ALTERNATIVE ARRANGEMENT OF THE CONCRETE WALL FOR SMALL STATIONS.

S6. DETAILS ARE TO BE PROVIDED ON THE PROJECT DRAWINGS FOR THE SEAL BETWEEN THE WALL AND THE FLOOR.

S7. THE ACCESS ROAD MUST HAVE A 300 HIGH VERTICAL KERB ADJACENT TO THE PUMP WELL AND GRIT COLLECTOR MAINTENANCE HOLE TO PREVENT VEHICLE ACCESS TO TOP SLAB.

S8. THE CONCRETE STRENGTH IS TO BE S40 TO WATER SERVICES ASSOCIATION CONCRETE SPECIAL CLASS WSA 114

S9. THE MINIMUM EXPOSURE CLASS OF THE INTERNAL CONCRETE SURFACE IS TO BE B2 TO AS3735 . THE COVER TO THE REINFORCEMENT IS TO BE MEASURED FROM THE REINFORCEMENT STEEL TO THE EMBEDMENT LUGS OF THE POLYETHYLENE LINING AND NOT TO THE EXPOSED OUTER SURFACE.

S10. THE STRUCTURE IS TO BE TESTED IN ACCORDANCE WITH AS3735.

S11. ALL EXPOSED EXTERNAL ANGLES IN THE CONCRETE ARE TO BE FINISHED WITH 25 ARRISES.

S12. WHERE THE WALLS ARE THICKENED TO SUIT PIPE PENETRATIONS THE WALLS ARE TO BE STRUCTURALLY REINFORCED. THE REINFORCEMENT IS NOT TO BE IN CONTACT WITH THE PIPES AND IS TO BE PROVIDED WITH COVER AS NOTED IN S9.

S13. ALL EXTERNAL CONCRETE SURFACES IN CONTACT WITH SOIL ARE TO BE COATED WITH "OXYDUR PTB" OR A APPROVED EQUIVALENT.

REV. No.	DATE	DESCRIPTION	AUTH.
B	12/05/14	MINOR REFERENCE CHANGES FOR SMALL STATIONS	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

PUMP WELL GENERAL ARRANGEMENT
SECTIONAL ELEVATION

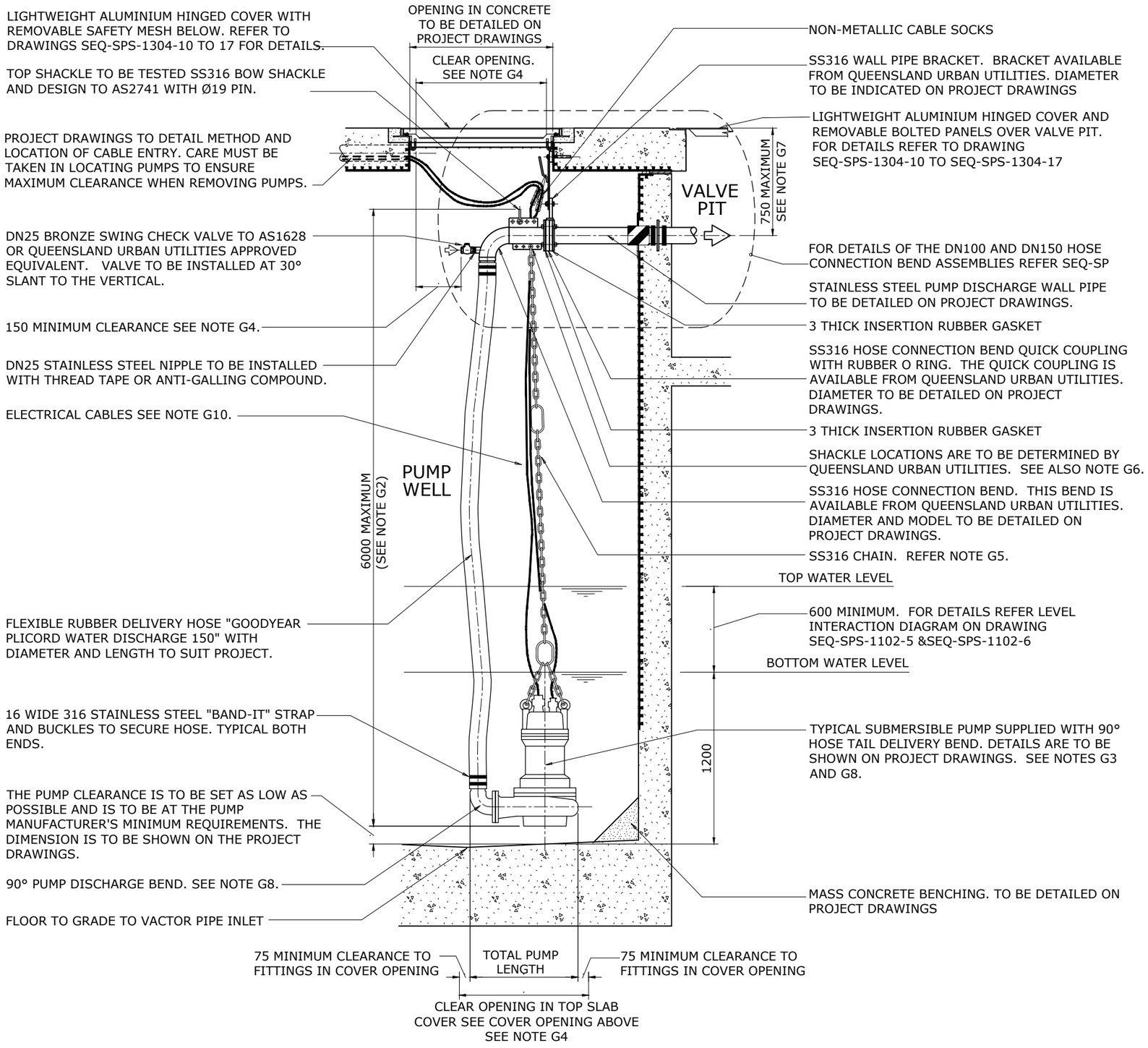
~~CoGC~~ ~~LCC~~ ~~RCC~~ QUU UW

DRAWING No.
SEQ-SPS-1301-3

VERSION
B

NOT TO SCALE

ORG DATE:
1/1/2013



SECTION ELEVATION
NOT TO SCALE

NOTES

G1. THIS DRAWING SHOWS THE INSTALLATION FOR A CHAIN-SUSPENDED PUMP. THE PIPEWORK IN THIS DRAWING REPRESENTS DN100 PIPES. AN INSTALLATION WITH DN150 PIPEWORK IS SIMILAR.

G2. CHAIN-SUSPENDED PUMPS ARE TO BE USED IN PUMPING STATIONS WHERE:
- A. THE PUMP MOTOR IS LESS THAN 30kW
- B. THE DEPTH OF THE PUMP WELL IS SUCH THAT THE MAXIMUM HEIGHT OF THE PUMP ASSEMBLY IS LESS THAN 6000
- C. THE PUMP DISCHARGE PIPE THROUGH THE PUMP WELL WALL INTO THE VALVE PIT IS DN100 OR DN150.

G3. THE PUMPS ARE TO BE SELECTED FROM SEQ-SP LIST FOR ZONES 1 TO 6. FOR PUMPS OUTSIDE THE STANDARD RANGE APPROVAL MUST BE GIVEN PRIOR TO FINAL DESIGN BY SEQ-SP.

G4. WHERE THE TOP SLAB SIZE AND LAYOUT ALLOW, THE MINIMUM CLEAR OPENING WIDTH IN THE TOP SLAB IS TO BE THE TOTAL OF THE WIDTH OF THE PUMP INCLUDING THE 90° DISCHARGE BEND PLUS A 75 CLEARANCE ALL ROUND.
THE OPENING HOWEVER CANNOT BE LESS THAN THE LENGTH OF THE HOSE CONNECTION BEND PLUS THE SWING-CHECK VALVE PLUS 150 CLEARANCE. THE MINIMUM OPENING FOR DN100 PIPEWORK IS 815 AND FOR DN150 PIPEWORK IS 940.
THE HOSE CONNECTION BEND MUST BE ABLE TO BE REMOVED VERTICALLY WITHOUT ROTATING HORIZONTALLY.
IF THE BEND DIMENSION IS LESS THAN THE PUMP DIMENSION THEN THE DESIGNER MUST ENSURE THAT THE PUMP CAN BE REMOVED BY ROTATING THE PUMP ASSEMBLY AFTER THE HOSE CONNECTION BEND HAS CLEARED THE TOP SLAB.
IN A ROTATED POSITION A MINIMUM CLEARANCE OF 75 AROUND THE PUMP AND BEND IS TO BE MAINTAINED.
THE PROJECT DESIGNER MUST POSITION ALL FITTINGS SUCH AS SAFETY MESH HOOKS AND CABLE ACCESS TO GIVE THE MAXIMUM ROOM TO REMOVE THE PUMPS. BY POSITIONING THE ABOVE ITEMS WITH CARE, THE CLEAR OPENING MAY BE THE SAME AS THE CONCRETE OPENING SIZE.

G5. FOR PUMP ASSEMBLIES LESS THAN 350kg TOTAL WEIGHT, USE 10mm LONG LINK SS316 CHAIN WITH A MAXIMUM WORKING LOAD OF 0.75 TONNES.
FOR PUMP ASSEMBLIES 350kg. OR GREATER TOTAL WEIGHT, USE SS316 SHORT LINK CHAIN COMPLYING TO AS 2321.
THIS SHORT LINK CHAIN IS TO BE FITTED WITH MASTER LINK LIFTING RINGS AT 1500 CENTRES ALONG THE CHAIN.
THE MINIMUM SIZE OF THIS TESTED CHAIN IS TO BE 10mm.
THE WORKING LOAD LIMIT OF THE CHAIN SHOULD BE SET TO A MINIMUM OF TWICE THE TOTAL WEIGHT OF THE PUMP ASSEMBLY.
THE CHAIN SHOULD BE PROOF TESTED.

G6. ALL SHACKLES ATTACHED TO THE CHAIN ARE TO BE PROOF TESTED SS316 SHACKLES WITH A WORKING LOAD LIMIT OF A MINIMUM OF TWICE THE TOTAL WEIGHT OF THE PUMP ASSEMBLY.
THE MINIMUM SHACKLE SIZE IS TO BE 10mm.

G7. FOR CHAIN SUSPENDED PUMPS THE MAXIMUM DEPTH FROM TOP SLAB LEVEL TO THE CENTRELINE OF THE DISCHARGE PIPE IS TO BE 750.
WHERE POSSIBLE THIS DISTANCE SHOULD BE REDUCED TO PROVIDE EASIER ACCESS TO THE BOW SHACKLE ON TOP OF THE HOSE CONNECTION BEND.
NOTE: CARE IS TO BE TAKEN TO ENSURE CLEARANCE FOR THE OPERATION OF THE HANDWHEEL ON THE METAL WEDGE SLUICE VALVE ON THE DISCHARGE PIPE IN THE VALVE PIT.

G8. THE 90° PUMP DISCHARGE BEND IS NORMALLY SUPPLIED WITH THE PUMP. THE DESIGNER IS TO CONFIRM THE FLUID VELOCITY IN THE DELIVERY HOSE. IF HIGH HEAD LOSSES ARE INDICATED A FABRICATED SS316 ENLARGING BEND IS REQUIRED AND IS TO BE DETAILED ON THE PROJECT DRAWINGS.

G9. ALL BOLTS AND NUTS ARE TO BE GRADE 316 STAINLESS STEEL AND ARE TO BE INSTALLED WITH ANTI-GALLING COMPOUND.

G10. ALL PUMPS ARE TO BE SUPPLIED WITH CABLES 15.000m LONG.
THE CABLE MUST BE OF SUFFICENT LENGTH TO ALLOW THE PUMP TO BE REMOVED TO A POSITION 2.500m FROM THE TOP SLAB OPENING WITHOUT ELECTRICALLY DISCONNECTING IT. THE CABLES ARE TO BE CABLE-TIED TO THE CHAIN AND THESE TIES CAN BE REMOVED AS THE PUMP IS EXTRACTED. EXCESS CABLE IS TO BE SUSPENDED FROM THE CABLE HOOK ON THE WALL PIPE BRACKET.
IF THE PUMPS REQUIRE MORE THAN 15.000m OF CABLE TO REACH THE SWITCHBOARD THEN AN INTERMEDIATE ELECTRICAL DISCONNECT BOX IS REQUIRED.

REV. No.	DATE	DESCRIPTION	AUTH.
B	12/05/14	UPDATE MATERIAL TO SS316	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

CHAIN SUSPENDED
SUBMERSIBLE PUMP
TYPICAL INSTALLATION

~~CoGC~~ ~~LCC~~ ~~RCC~~ QUU ~~UW~~

DRAWING No.
SEQ-SPS-1301-4

VERSION
B

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ORG DATE:
1/1/2013

DRAWING INDEX

DRAWING No.	DRAWING TITLE
SEQ-SPS-1304-1	ALUMINIUM ACCESS COVERS OPTION 1 - GENERAL ARRANGEMENT
SEQ-SPS-1304-2	ALUMINIUM ACCESS COVERS OPTION 1 - TYPICAL MULTI-COVER ARRANGEMENT AND SECTION DETAILS
SEQ-SPS-1304-3	ALUMINIUM ACCESS COVERS OPTION 1 - SECTIONS AND HINGE DETAILS
SEQ-SPS-1304-4	ALUMINIUM ACCESS COVERS OPTION 1 - COVER SECTION DETAILS
SEQ-SPS-1304-5	ALUMINIUM ACCESS COVERS OPTION 1 - LOCK BOX MECHANISM DETAILS
SEQ-SPS-1304-6	ALUMINIUM ACCESS COVERS OPTION 1 - GRILL HINGE DETAILS & SECTIONS
SEQ-SPS-1304-7	ALUMINIUM ACCESS COVERS OPTION 1 - CENTRE GRILLE HINGE DETAILS & SECTIONS
SEQ-SPS-1304-8	ALUMINIUM ACCESS COVERS OPTION 1 - MISCELLANEOUS DETAILS
SEQ-SPS-1304-9	ALUMINIUM ACCESS COVERS OPTION 1 - RETAINING POST DETAILS

NOTES

1. THIS SET OF STANDARD ALUMINIUM ACCESS COVER DRAWINGS ARE TO BE USED AS A GUIDE ONLY FOR THE MANUFACTURE AND FABRICATION OF ALUMINIUM LIDS AND FRAMES OVER WET-WELLS AND VALVE CHAMBERS WHERE APPLICABLE. THESE DRAWINGS SHALL COMMUNICATE INTENT AND FUNCTION AND ARE NOT FABRICATION OR CONSTRUCTION DRAWINGS. ALL MEASUREMENTS ARE INDICATIVE ONLY. LID MANUFACTURER RESPONSIBLE FOR FULL STRUCTURAL DESIGN OF ALL LID COMPONENTS AS PER NOTE 17 WITH FULL RPEQ SIGNOFF.
2. TEMPORARY BARRICADE SYSTEM MUST BE INSTALLED PRIOR TO THE OPENING/REMOVAL OF SAFETY GRILLES. SAFETY GRILLES ARE TO BE EITHER REMOVED OR SECURED WITH A PORTABLE LANYARD WHEN RAISED. TEMPORARY BARRICADE SYSTEM AND RECESSED BASES TO BE "RAILSAFE" OR EQUAL APPROVED, COMPLYING WITH AS 1657. RECESSED BASES FOR BARRICADE POSTS ARE TO BE CAST INTO THE PUMP STATION SLAB, SUITABLY POSITIONED TO CLEAR COVERS. COVERS ARE TO BE SECURED IN THE OPEN POSITION BY AN APPROVED LATCHING SYSTEM.
3. ALL MEASUREMENTS IN MILLIMETRES UNLESS STATED OTHERWISE.
4. EACH COVER AND FRAME IS TO BE DESIGNED TO SUIT INDIVIDUAL SITE CONDITIONS AND STRUCTURAL COMPONENTS. LOCKING AND SEAL ARRANGEMENTS MAY VARY TO SUIT DESIGN OF THE LID MANUFACTURER/ FABRICATOR HOWEVER THE GENERAL PRINCIPLES AND FUNCTION ARE TO BE AS PER THESE DRAWINGS.
5. THE MAXIMUM WEIGHT OF EACH LID IS TO BE 32 kg WITH THE LIFTING WEIGHT AT THE HANDLE NO GREATER THAN 16 kg.
6. MATERIALS:
   - A.) COVER AND FRAME: THE COVER AND FRAME IS TO BE ALUMINIUM GRADE T6061 T6 AND/ OR GRADE 5083 H116 TO AS 1734.
   - B.) THE SAFETY GRILLES ARE TO BE ALUMINIUM GRADE T6061 T6 AND/ OR GRADE 5083 H116 TO AS 1734.
   - C.) ALL ALUMINIUM USED SHALL BE GRADE T6061 T6 AND/ OR GRADE 5083 H116 TO AS 1734.
   - D.) ALL STAINLESS STEEL USED SHALL BE GRADE 316.
   - E.) ALL STAINLESS STEEL NUTS AND BOLTS TO BE ASSEMBLED WITH ANTI-GALLING COMPOUND "DURALAC" OR APPROVED SIMILAR.
7. INSULATION: ALUMINIUM AND STAINLESS STEEL SHALL NOT BE ALLOWED TO COME IN CONTACT WITH EACH OTHER UNLESS ADEQUATELY INSULATED WITH APPROVED SEALANTS, GASKETS, WASHERS AND SLEEVES.
8. COATINGS:
   - A.) COVER LIDS: THE COVER LIDS SHALL HAVE THEIR TOP SURFACES PAINTED WITH AN APPROVED ANTI-SLIP COATING. COLOUR TO BE CONFIRMED BY SEQ-SP BASED ON SITE LOCATION.
   - B.) ALUMINIUM FRAME: WHERE ALUMINIUM IS IN CONTACT WITH CONCRETE, THE ALUMINIUM SHALL BE PAINTED WITH MINIMUM 2 COATS OF BITUMINOUS PAINT OR APPROVED EQUIVALENT.
9. SEALING: PROVIDE REPLACEABLE NEOPRENE ODOUR SEAL ON THE UNDERSIDE OF THE LID/ COVER. TO ENSURE FULL ODOUR SEAL, PROVIDE SEAL WELDS BETWEEN THE COVER AND FRAME.
10. CLEAR OPENING: THE CLEAR OPENING POSITION AND DIMENSIONS ARE TO BE INDICATED IN THE PROJECT DRAWINGS. THE CLEAR OPENING IS TO ALLOW FOR THE SAFE REMOVAL OF PUMPS AND COMPONENTS WITHIN THE WET-WELL AS PER MANUFACTURER'S RECOMMENDATIONS AND HEALTH AND SAFETY GUIDELINES.
11. THE MAXIMUM WIDTH OF THE COVER LID IS TO BE NO GREATER THAN 1500.
12. COVER STIFFENERS: STIFFENERS MAY BE REQUIRED ON THE UNDERSIDE OF COVERS AND THE SIZE, LOCATION AND DIRECTION SHALL BE DESIGNED FOR EACH COVER.
13. REMOVABLE SUPPORT BEAMS: IF MULTI-PART COVERS ARE REQUIRED, PROVIDE REMOVABLE SUPPORT BEAMS STRATEGICALLY LOCATED TO AVOID OBSTRUCTION OF NORMAL MAINTENANCE PROCEDURES SUCH AS OPERATION OF VALVES. THE SUPPORT BEAMS ARE TO BE BOLTED IN PLACE OR SEATED SECURELY IN A MANNER APPROVED BY SEQ-SP.
14. HINGES: ALL HINGES TO ALLOW COVERS TO ROTATE 85° AND SHALL BE RECESS MOUNTED TO AVOID BEING A TRIPPING HAZARD.

NOTES CONT.

15. THE LATCH IS TO BE LOCKABLE WITH SEQ-SP PADLOCK. THE LATCH IS TO HAVE A COVER FLAP WITH SCREW DRIVER OPERATED 90° TURN CATCH.
16. SAFETY GRILLE: PROVIDE ALUMINIUM SAFETY GRILLE BELOW ALUMINIUM LIDS TO PREVENT PERSONNEL FROM FALLING THROUGH AN OPEN LID. MAXIMUM OPENING ON THE GRILLE ON A HORIZONTAL PLANE TO BE 84 mm IN ONE DIRECTION AND 130 mm IN THE PERPENDICULAR DIRECTION.
17. LOADING: COVERS TO BE DESIGNED TO AS 3996 FOR CLASS A NON-TRAFFICABLE LOCATIONS AND PEDESTRIAN LOADS ONLY. PROVIDE MEASURES APPROVED BY SEQ-SP TO PREVENT ANY POSSIBLE VEHICLE LOADING. SAFETY GRILLES TO BE DESIGNED TO ACHIEVE A MAXIMUM DEFLECTION OF 20 mm WHEN EITHER A 120 kg POINT WORKING LOAD, OR A DISTRIBUTED WORKING LOAD OF 1.5 kPa IS APPLIED.
18. WELDING: ALL ALUMINIUM WELDING TO COMPLY WITH AS/NZS 1665 AND ISO 18273. ALL WELDS TO BE FULLY SEAL WELDED UNLESS OTHERWISE NOTED.
19. PROVIDE RECESSED LID CLOSURE PREVENTION POST OD50 AL T6 6106 TUBE 5 mm THICK ON HINGE SIDE OF OPENING AS SHOWN TO HOLD LIDS IN OPEN POSITION. LOCATION OF THE RETRACTABLE POSTS SHALL ALLOW OPENING OF THE VOID PROTECTION GRILLE WHILE IN THE "UP " POSITION .
20. PROVIDE KEYWAY FOR TELSTRA TYPE MANHOLE LIFTER IN LID AND SAFETY GRILLE.

REV. No.	DATE	DESCRIPTION	AUTH.
C	23/12/16	NOT APPLICABLE TO GCCC	
B	14/05/14	TITLE CHANGED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 1
DRAWING INDEX AND GENERAL NOTES

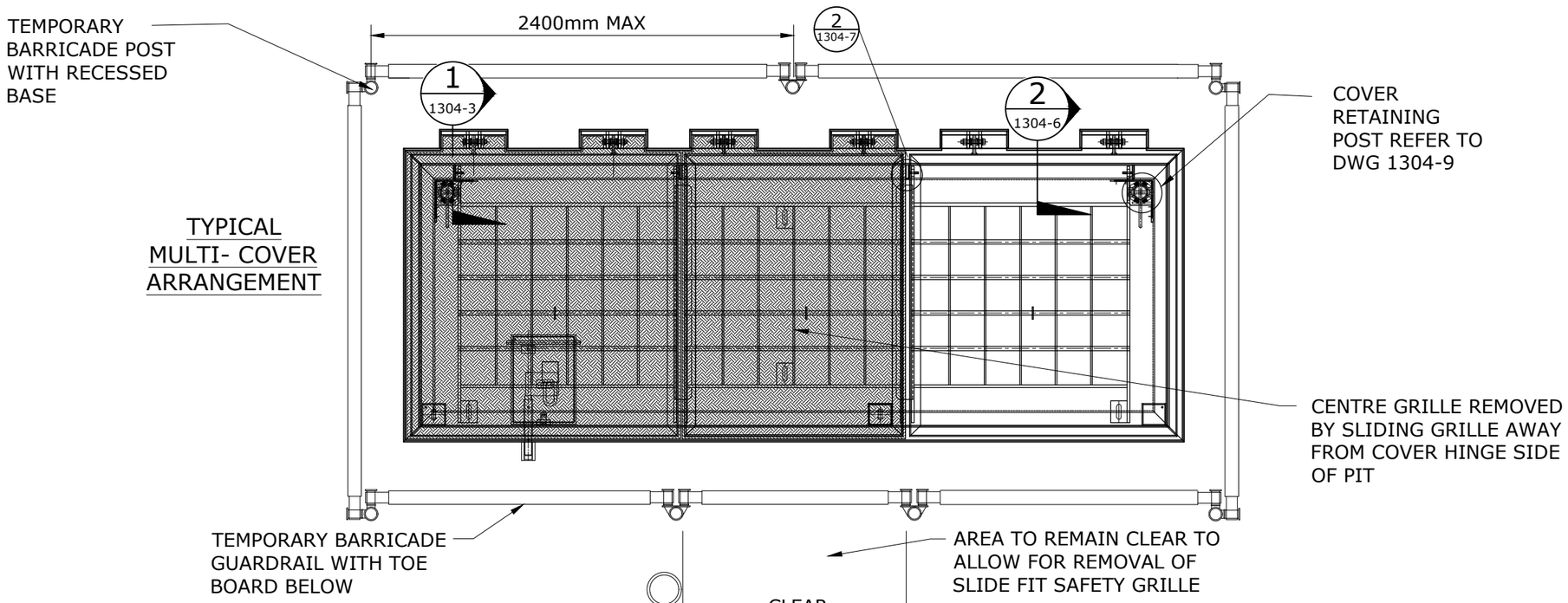
~~CoGC~~ | LCC | RCC | ~~QUU~~ | UW

DRAWING No.
SEQ-SPS-1304-0

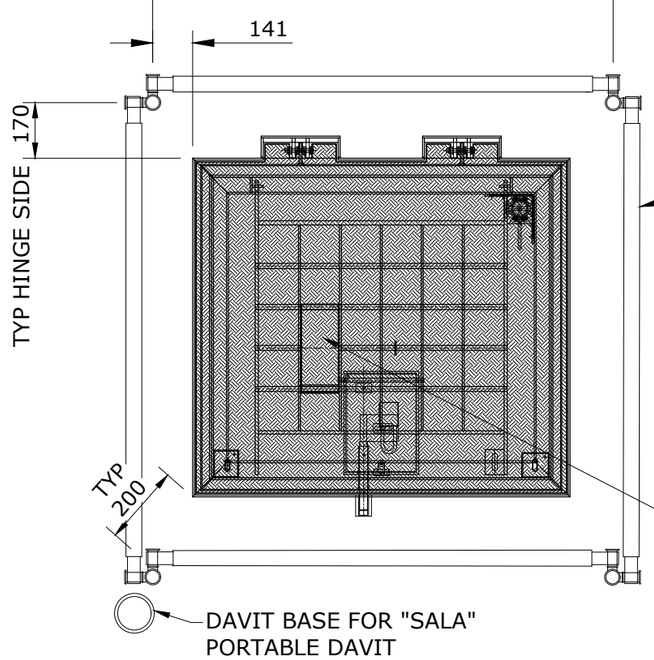
VERSION
C

NOT TO SCALE

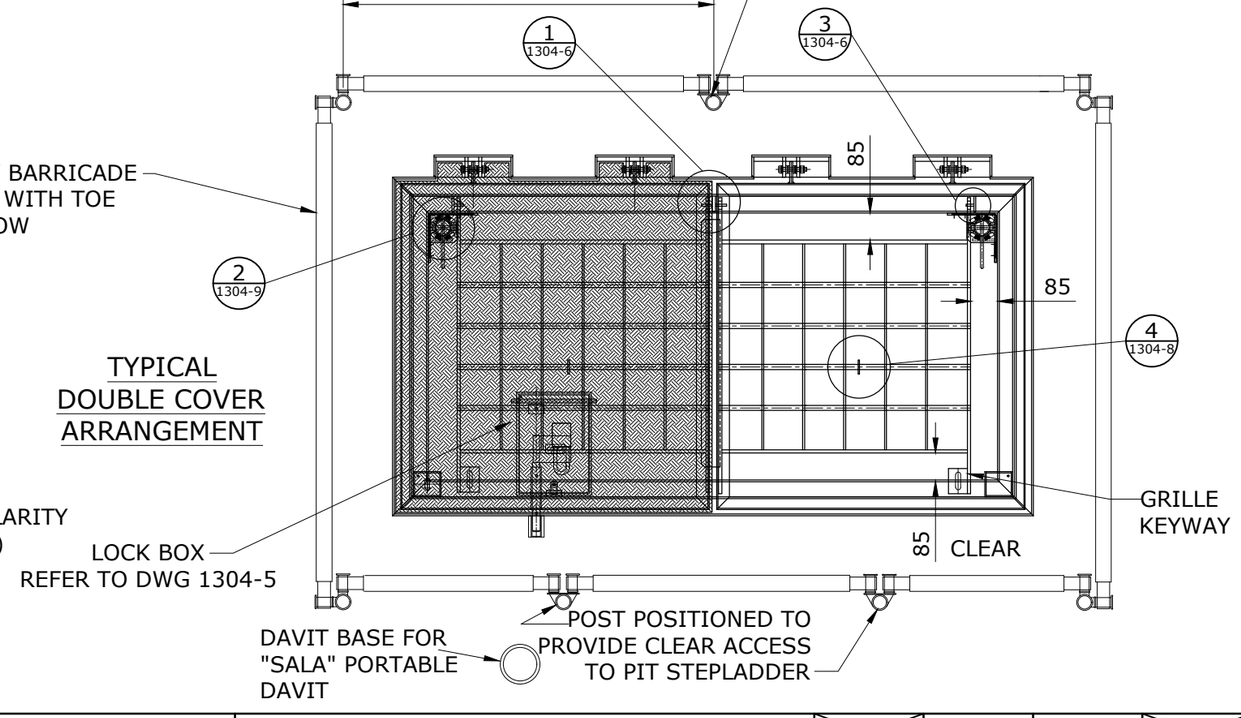
ORG DATE:
1/1/2013



TYPICAL MULTI- COVER ARRANGEMENT



TYPICAL SINGLE COVER ARRANGEMENT



TYPICAL DOUBLE COVER ARRANGEMENT

REV. No.	DATE	DESCRIPTION	AUTH.
C	23/12/16	NOT APPLICABLE TO GCCC	
B	14/05/14	TITLE CHANGED	

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS - OPTION 1 GENERAL ARRANGEMENT

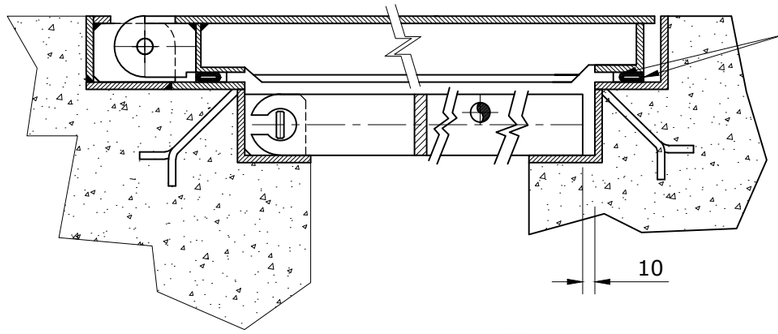
CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1304-1

VERSION C

NOT TO SCALE

ORG DATE: 1/1/2013



SECTION A
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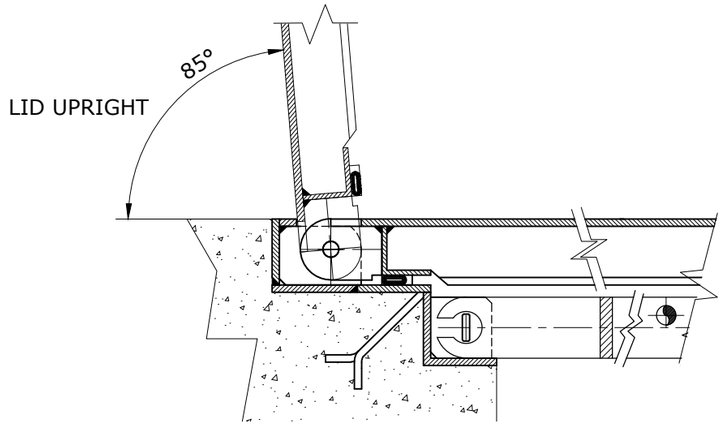
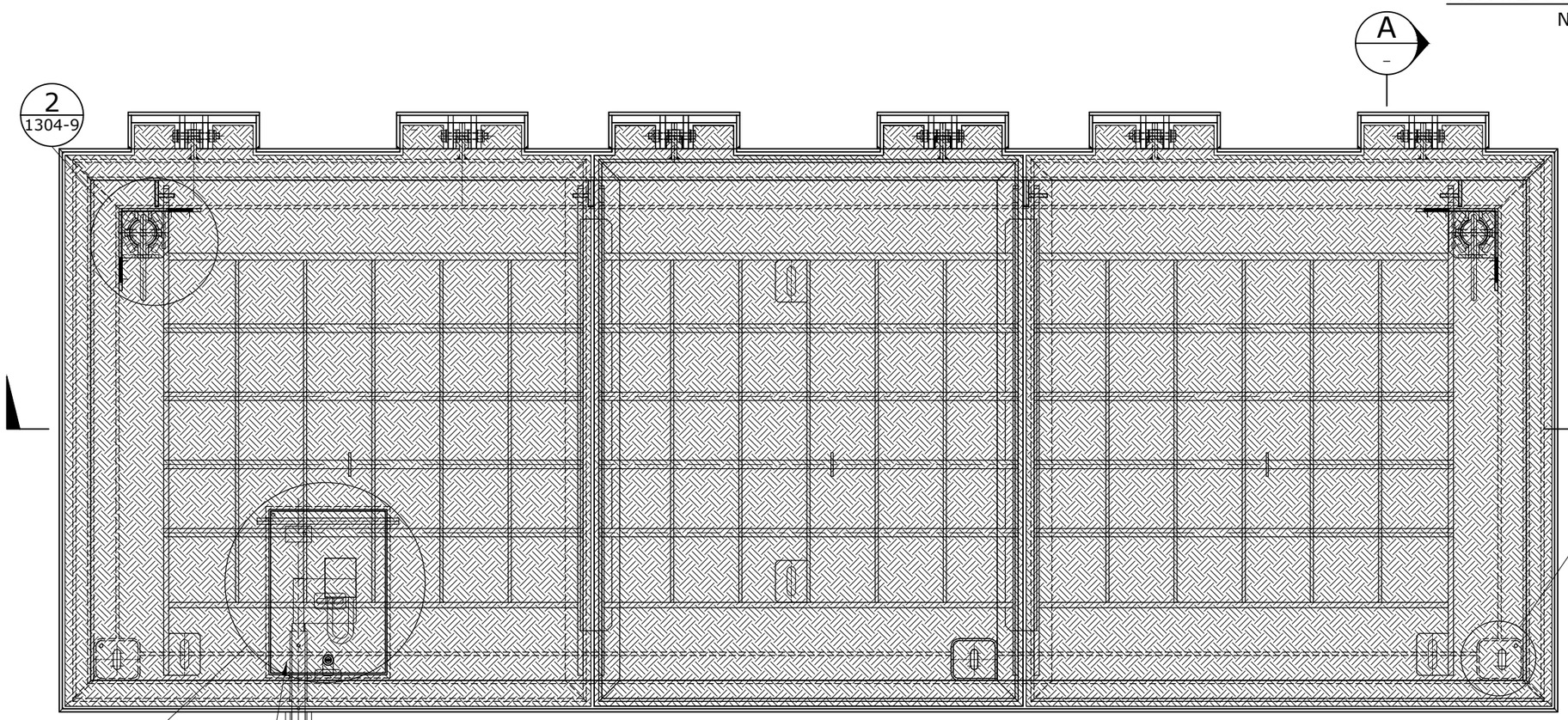
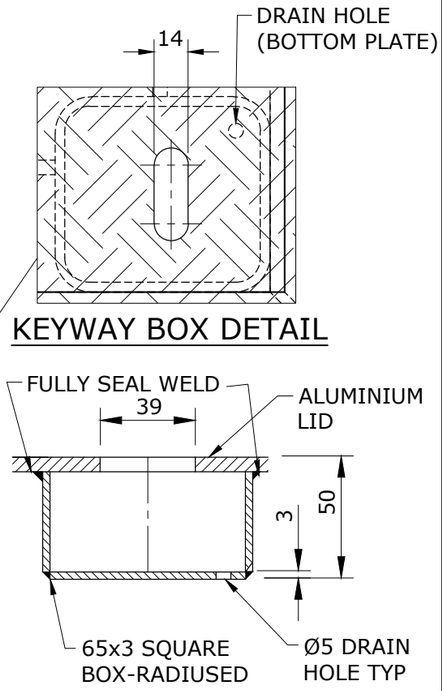


HINGE OPEN DETAIL
NTS



ALUMINIUM TOP COVER
NTS



KEYWAY BOX DETAIL

SECTIONAL DETAIL OF KEYWAY FOR LID LIFTER
NOT TO SCALE

REV. No.	DATE	DESCRIPTION	AUTH.
C	23/12/16	NOT APPLICABLE TO GCCC	
B	14/05/14	TITLE CHANGED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS - OPTION 1
TYPICAL MULTI COVER ARRANGEMENT
AND SECTION DETAILS

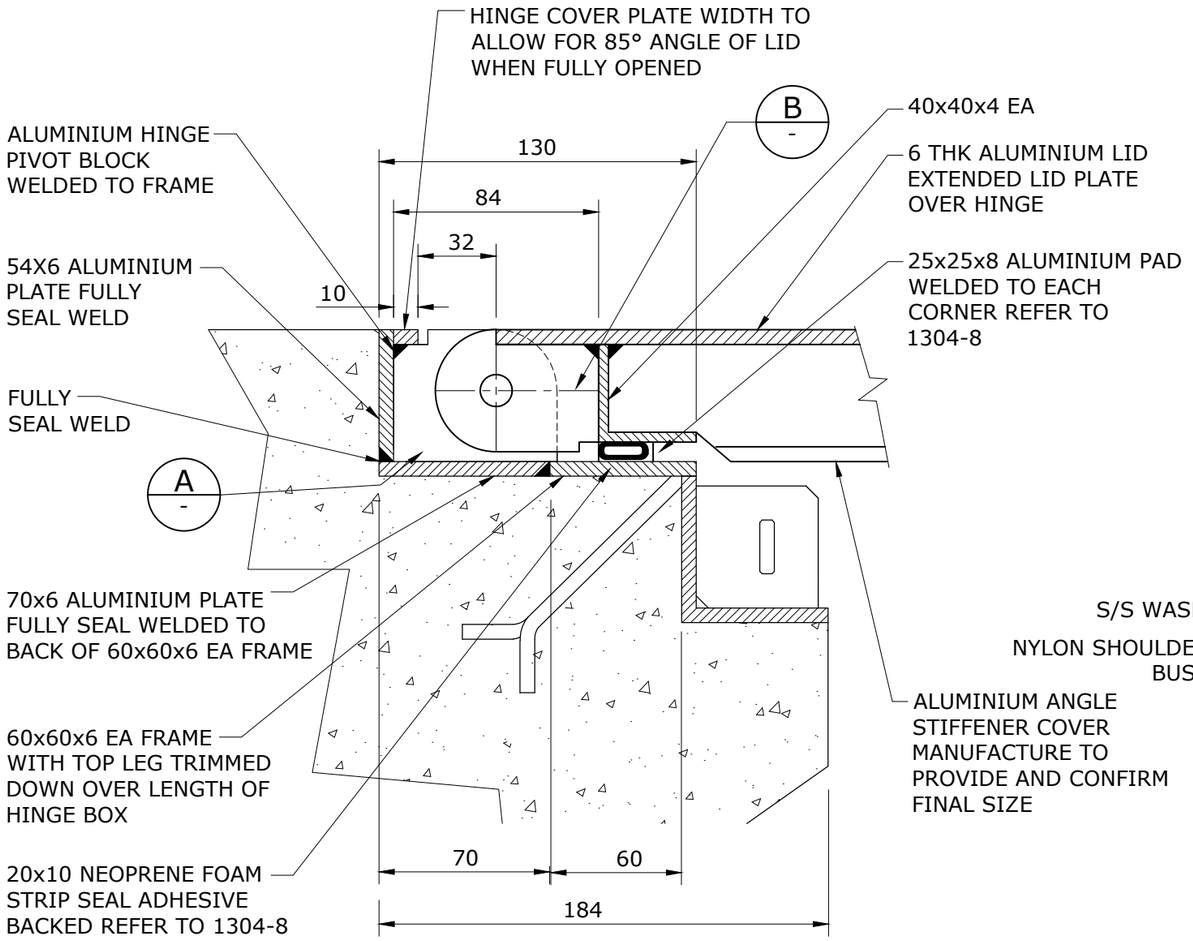
CoGC	LCC	RCC	QUU	UW

DRAWING No.
SEQ-SPS-1304-2

VERSION
C

NOT TO SCALE

ORG DATE:
1/1/2013



SECTION 1

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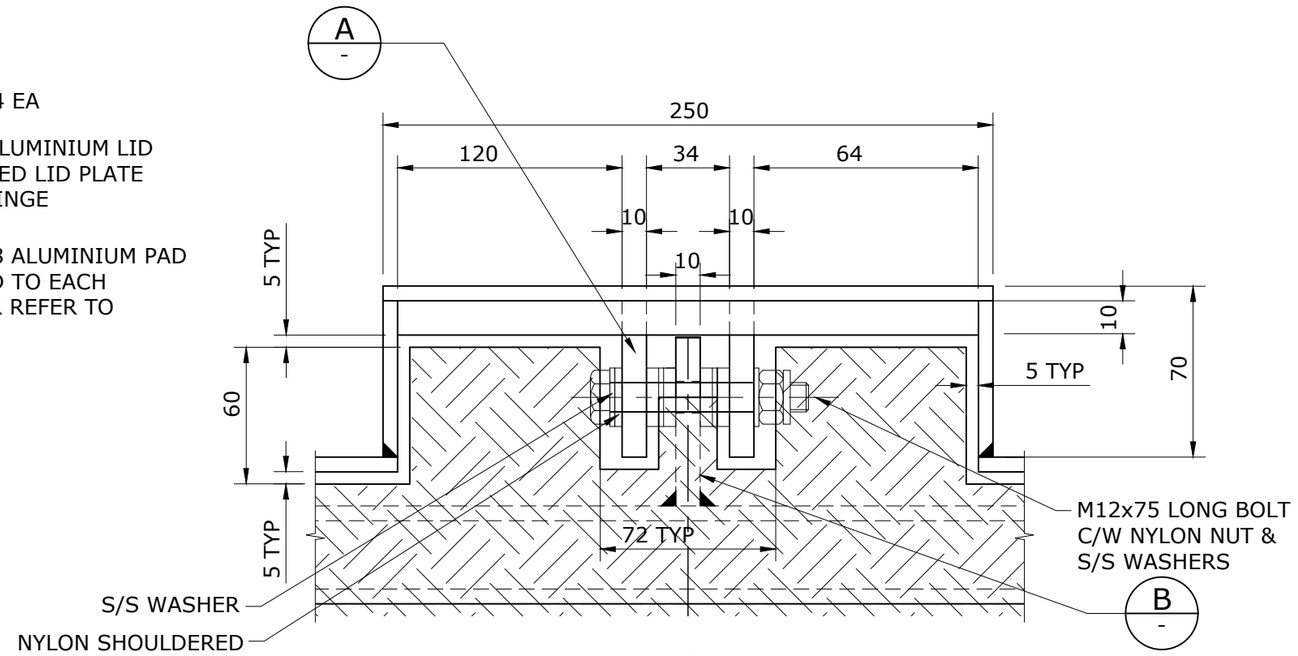
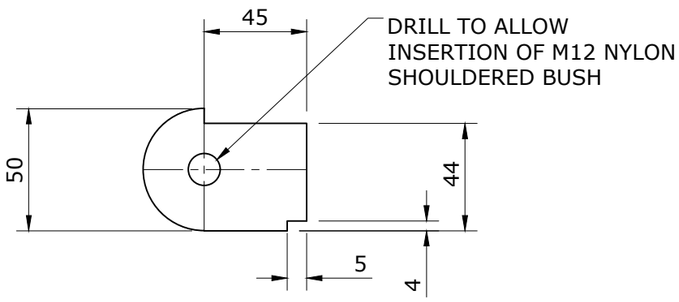


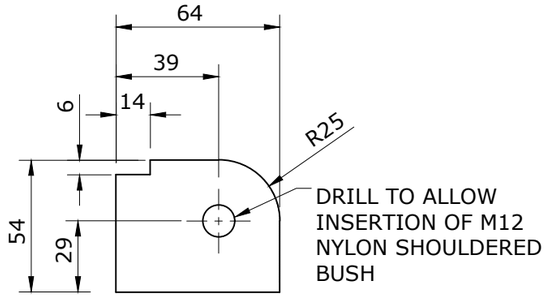
HINGE LID PLATE TRANSPARENT FOR CLARITY

NTS



DETAIL A / SCALE NTS

LID HINGE BLOCK 10 THK



DETAIL B / SCALE NTS

FRAME HINGE BLOCK 10 THK

NOTES

1. ALL MEASUREMENTS ARE INDICATIVE ONLY AND ARE SOLELY FOR THE PURPOSE OF COMMUNICATING INTENT AND FUNCTION OF THE DESIGN.
2. COVER LID WHEN FULLY OPEN SHOULD HAVE 85° TOP SIDE OF LID HORIZONTAL.
3. THE LID MANUFACTURE IS RESPONSIBLE FOR THE FULL STRUCTURAL DESIGN OF ALL LID COMPONENTS AS PER NOTE 17 IN DWG 1304-0 WITH FULL RPEQ SIGN OFF.

REV. No.	DATE	DESCRIPTION	AUTH.
C	23/12/16	NOT APPLICABLE TO GCCC	
B	14/05/14	TITLE CHANGED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS - OPTION 1
SECTIONS AND
HINGE DETAILS

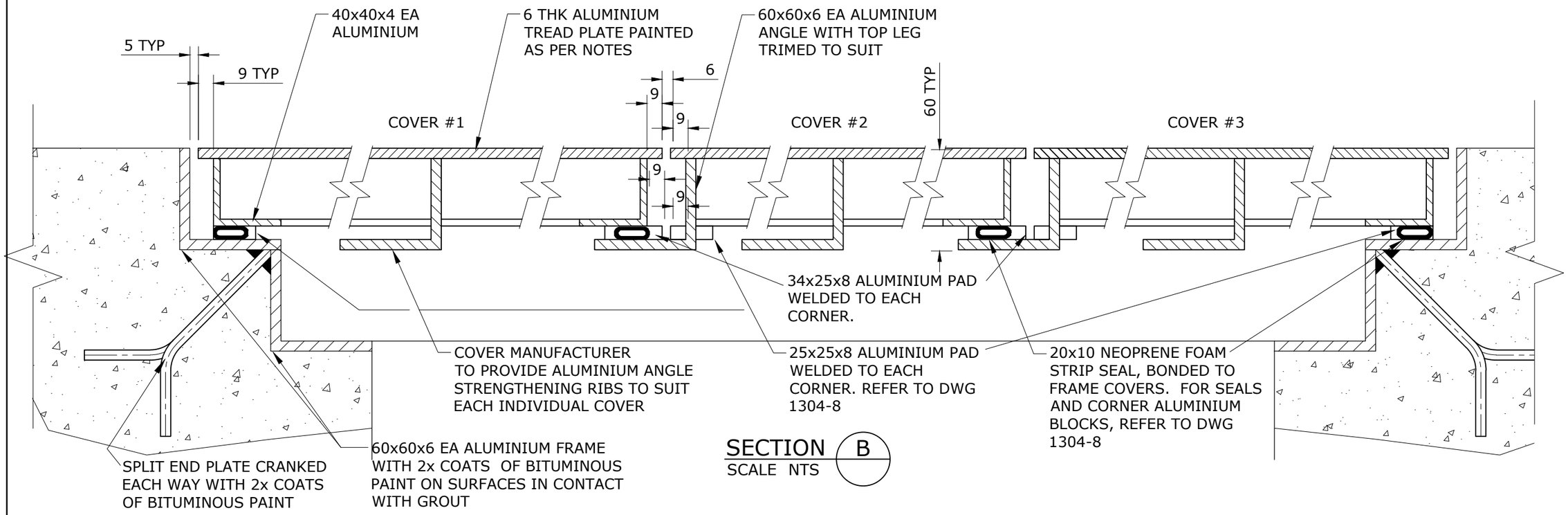
CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1304-3

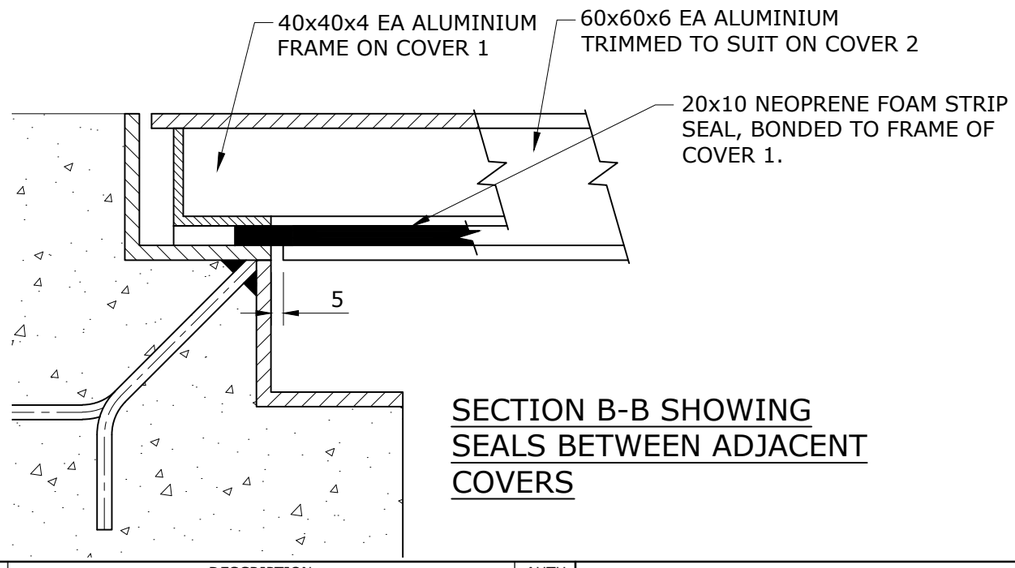
VERSION C

NOT TO SCALE

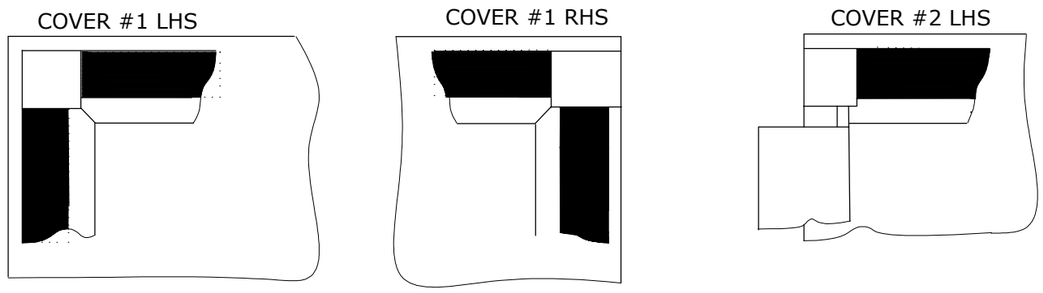
ORG DATE: 1/1/2013



SECTION B
SCALE NTS



SECTION B-B SHOWING SEALS BETWEEN ADJACENT COVERS



VIEW ON UNDERSIDE OF COVERS

REV. No.	DATE	DESCRIPTION	AUTH.
C	23/12/16	NOT APPLICABLE TO GCCC	
B	14/05/14	TITLE CHANGED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS - OPTION 1
COVER SECTION DETAILS

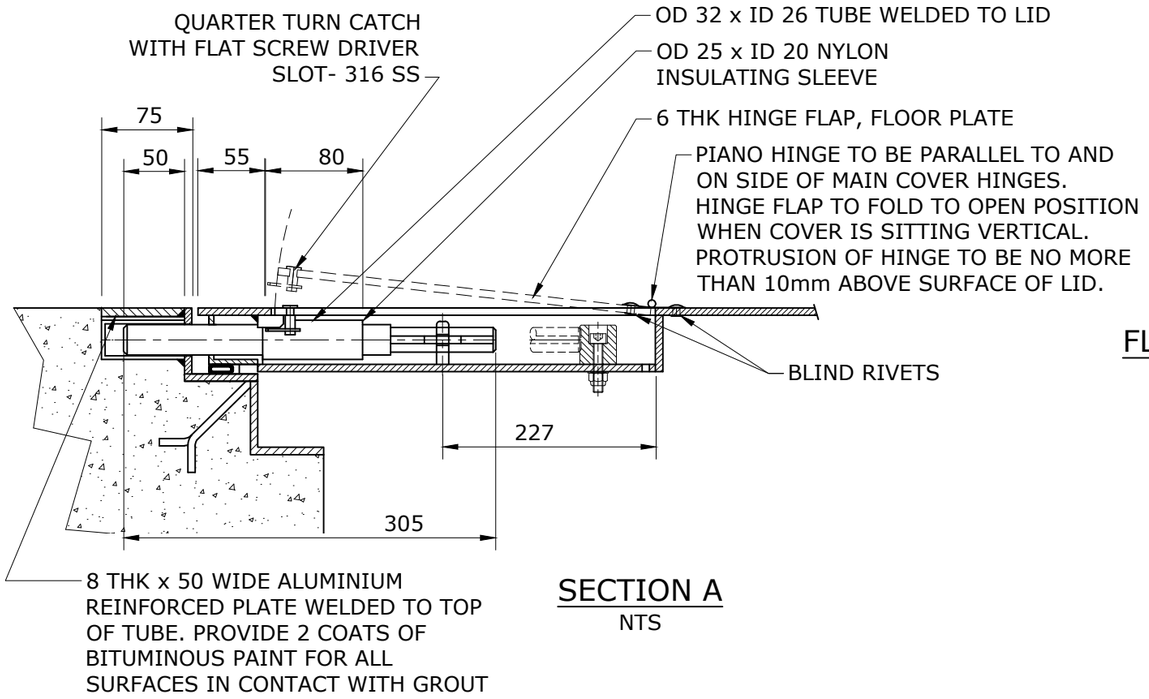
CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1304-4

VERSION C

NOT TO SCALE

ORG DATE: 1/1/2013



SECTION A
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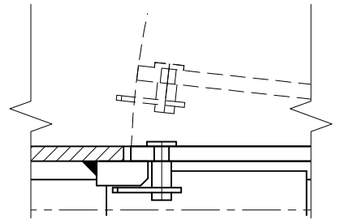
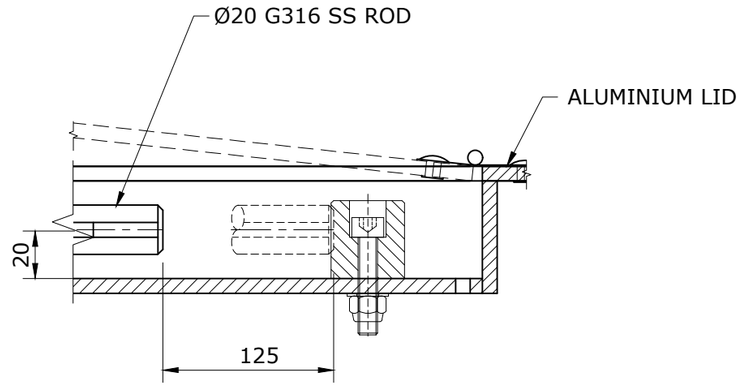
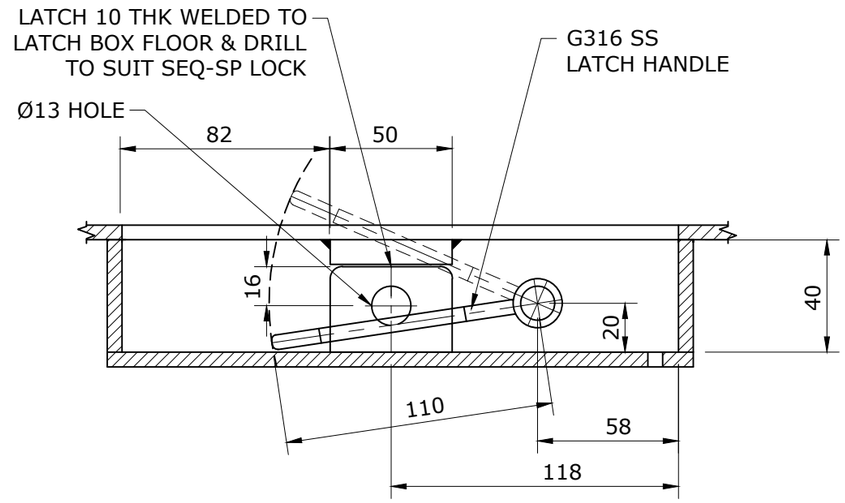


FLAP DOOR, LOCK DETAIL





SECTION B
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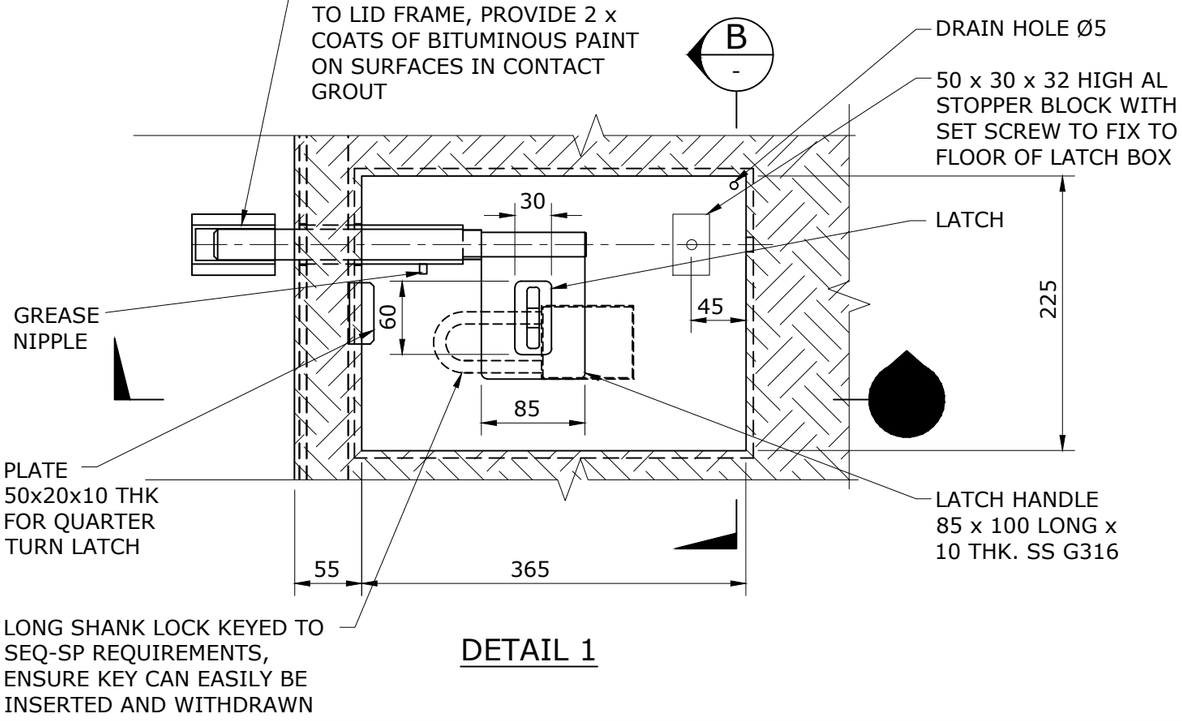


DETAIL 1

NOTE

1. ALL MEASUREMENTS IN MILLIMETRES.
2. CONFIRM SIZE OF LOCK WITH SEQ-SP AND POSITION LOCKING BOLT & PLATES TO ALLOW EASY INSERTION & WITHDRAWAL OF LOCK & KEY WITH LATCH BOX.
3. THESE DRAWINGS COMMUNICATE INTENT & FUNCTION OF LATCH MECHANISM & ARE NOT FABRICATION OR CONSTRUCTION DRAWINGS.
4. FRAME & SAFETY GRILL TO ALLOW FOR LOCKING & LATCH.

REV. No.	DATE	DESCRIPTION	AUTH.
C	23/12/16	NOT APPLICABLE TO GCCC	
B	14/05/14	TITLE CHANGED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS - OPTION 1
LOCK BOX MECHANISM DETAILS

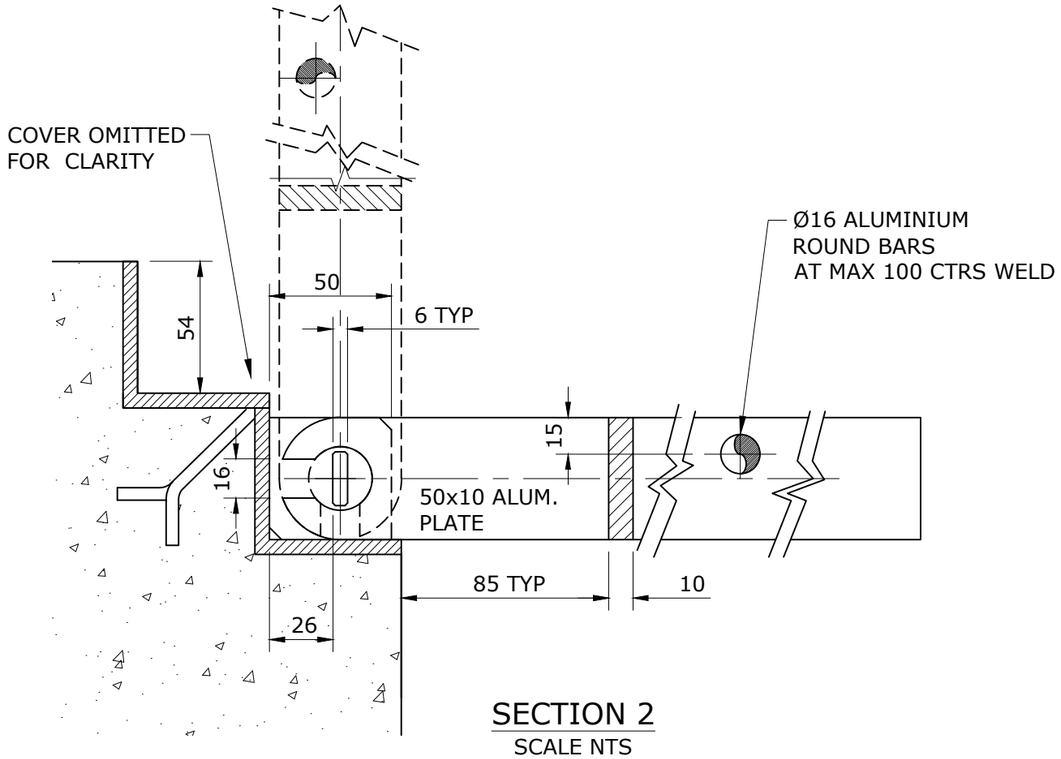
~~CoGC~~	LCC	RCC	~~QUU~~	UW

DRAWING No. SEQ-SPS-1304-5

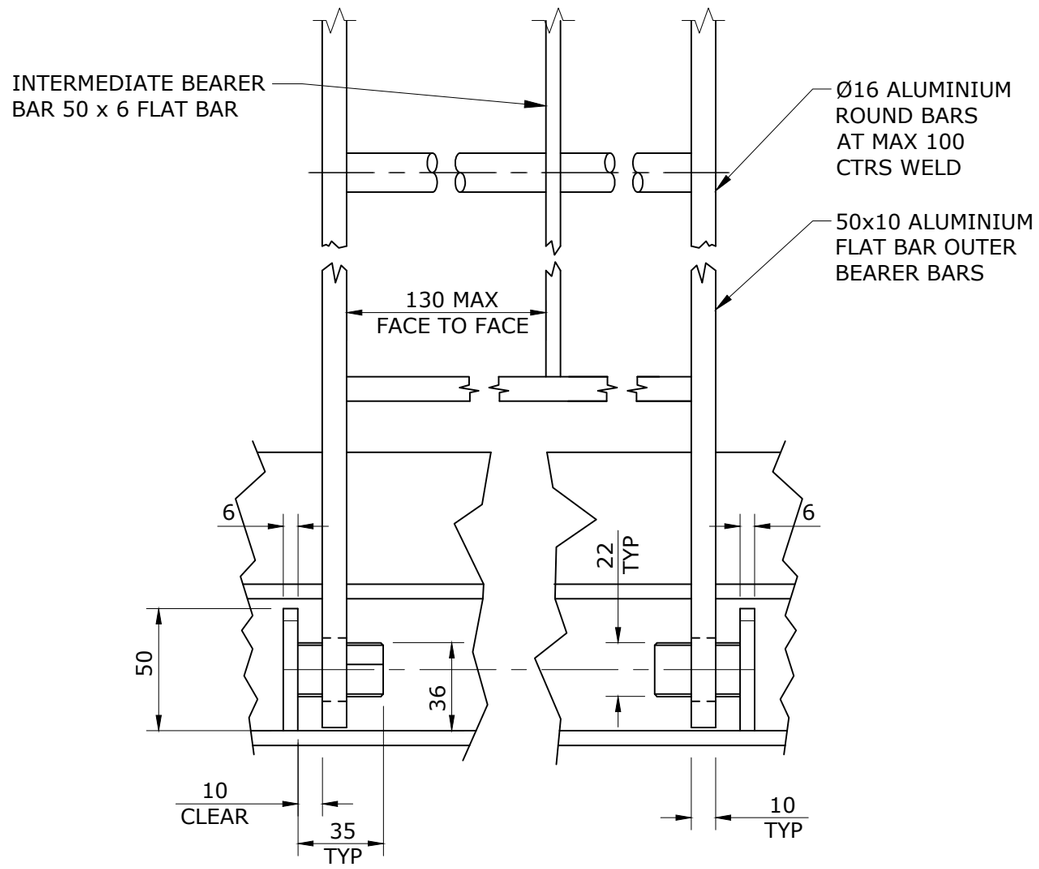
VERSION C

NOT TO SCALE

ORG DATE: 1/1/2013

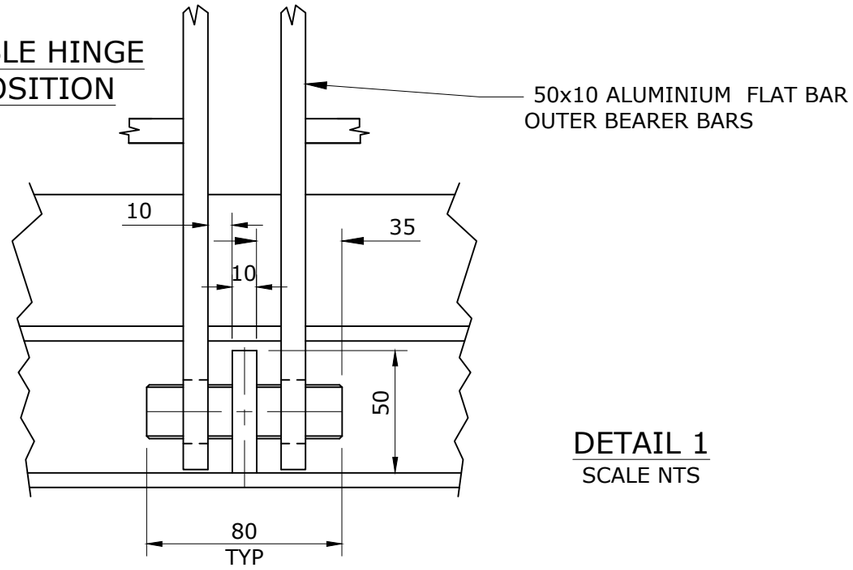


SECTION 2
SCALE NTS



DETAIL 3
SCALE NTS

GRILLE DOUBLE HINGE
DETAIL-UP POSITION



DETAIL 1
SCALE NTS

REV. No.	DATE	DESCRIPTION	AUTH.
C	23/12/16	NOT APPLICABLE TO GCCC	
B	14/05/14	TITLE CHANGED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS - OPTION 1
GRILLE HINGE DETAILS & SECTIONS

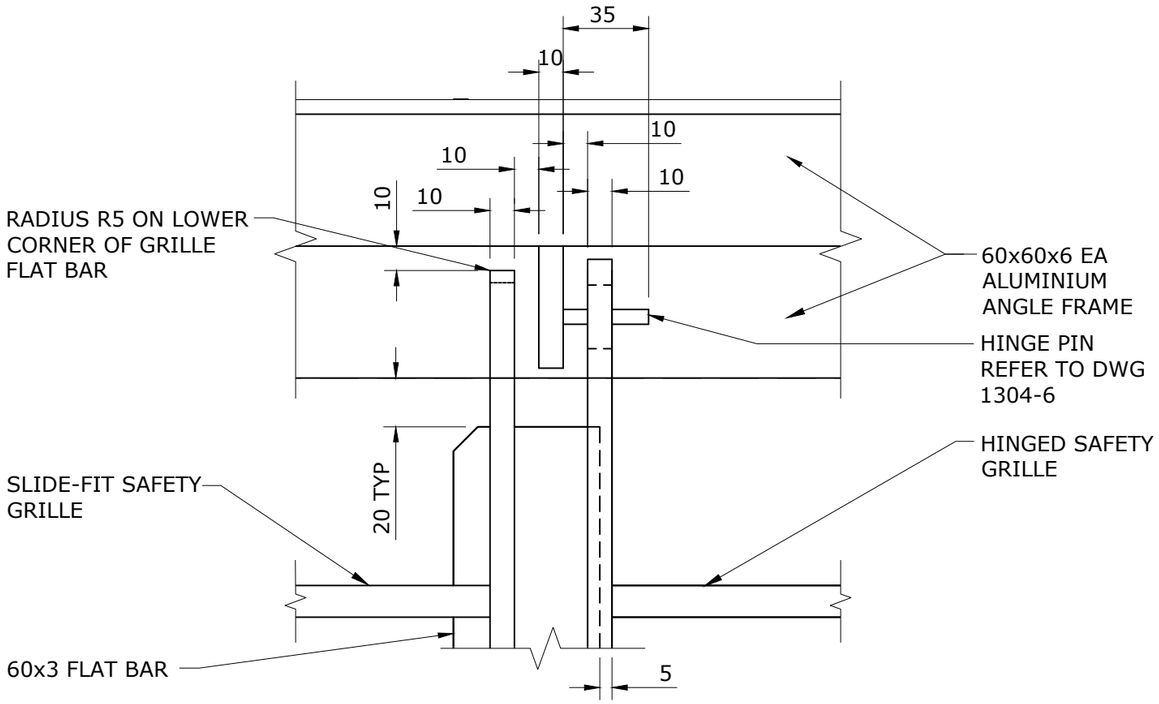
~~CoGC~~	LCC	RCC	~~QUU~~	UW

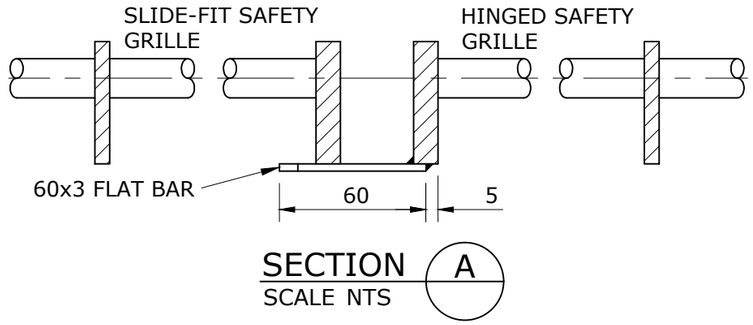
DRAWING No.
SEQ-SPS-1304-6

VERSION
C

NOT TO SCALE

ORG DATE:
1/1/2013





SECTION A
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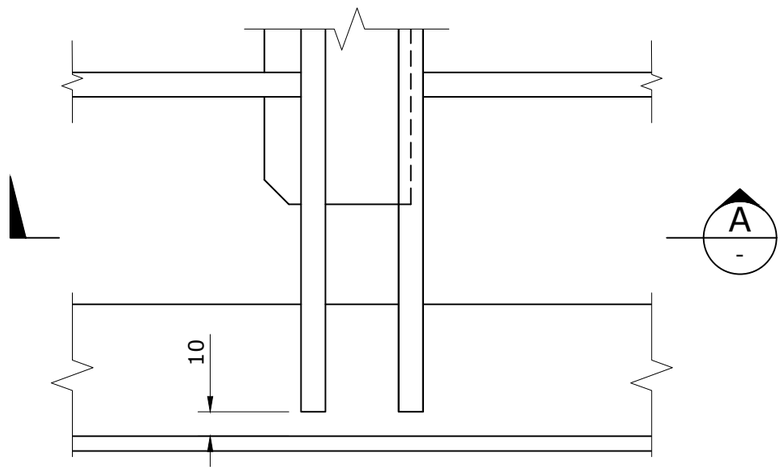


DETAIL 2
SCALE NTS

CENTRE GRILLE DETAILS

REV. No.	DATE	DESCRIPTION	AUTH.
C	23/12/16	NOT APPLICABLE TO GCCC	
B	14/05/14	TITLE CHANGED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS - OPTION 1
CENTRE GRILLE HINGE
DETAILS & SECTIONS

CoGC	LCC	RCC	QUU	UW

DRAWING No.
SEQ-SPS-1304-7

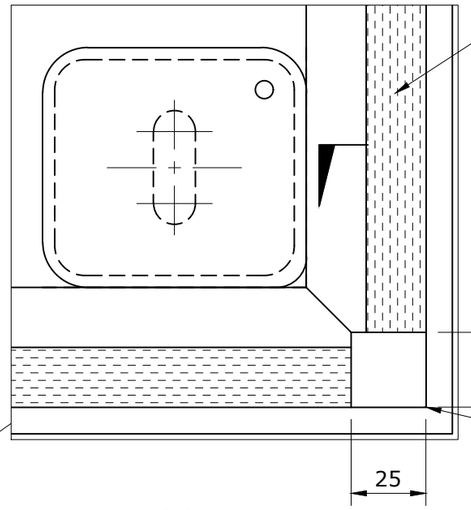
VERSION
C

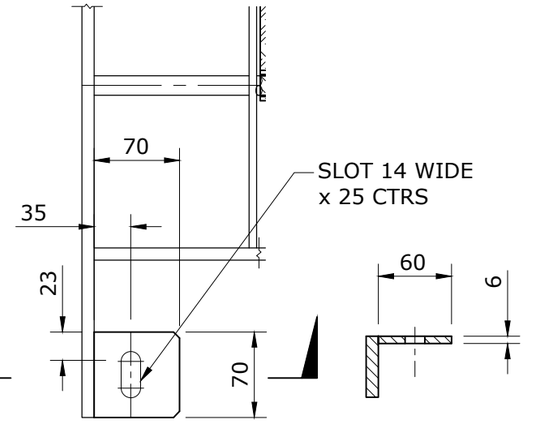
NOT TO SCALE

ORG DATE:
1/1/2013

ALUMINIUM BLOCKS FOUR REQ'D

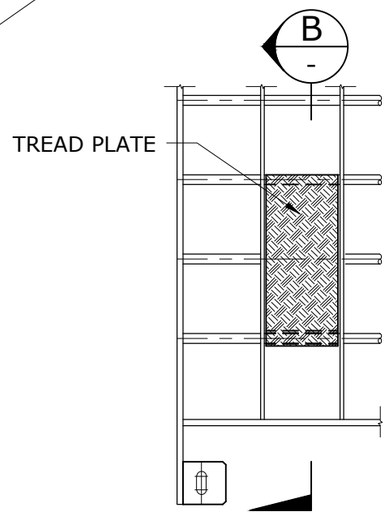
NEOPRENE FOAM STRIP SEAL BONDED TO FRAME





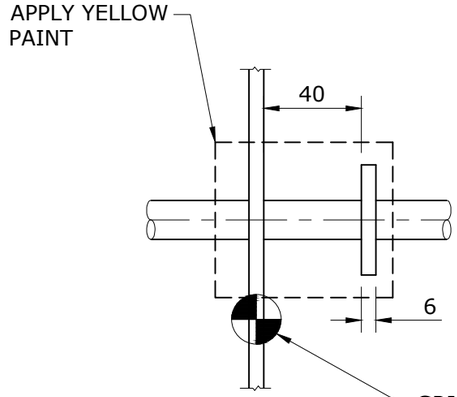
KEYWAY DETAIL
NTS

SECTION C
SCALE NTS



DETAIL 1
NOT TO SCALE

SAMPLING FLAP



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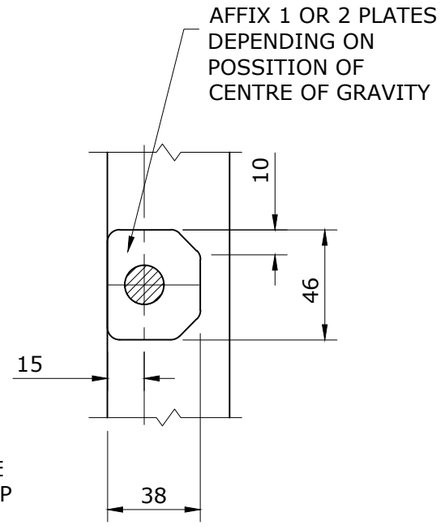
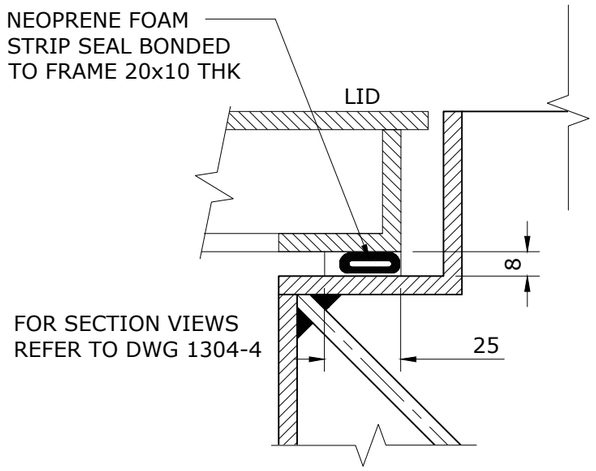
NTS





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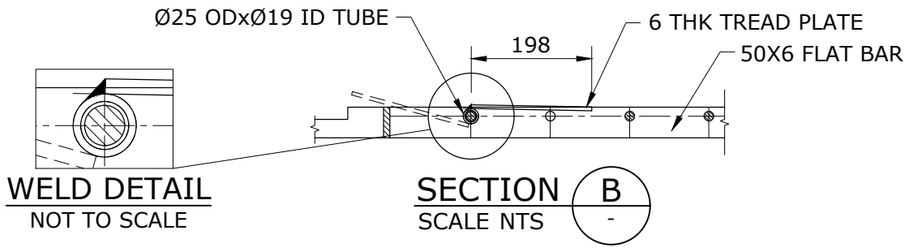


WELD DETAIL
NOT TO SCALE

SECTION B
SCALE NTS

REV. No.	DATE	DESCRIPTION	AUTH.
C	23/12/16	NOT APPLICABLE TO GCCC	
B	14/05/14	TITLE CHANGED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS - OPTION 1
MISCELLANEOUS DETAILS

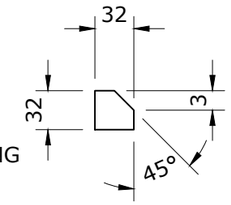
CoGC	LCC	RCC	QUU	UW

DRAWING No.
SEQ-SPS-1304-8

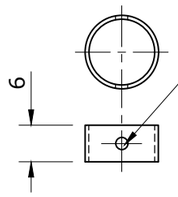
VERSION
C

NOT TO SCALE

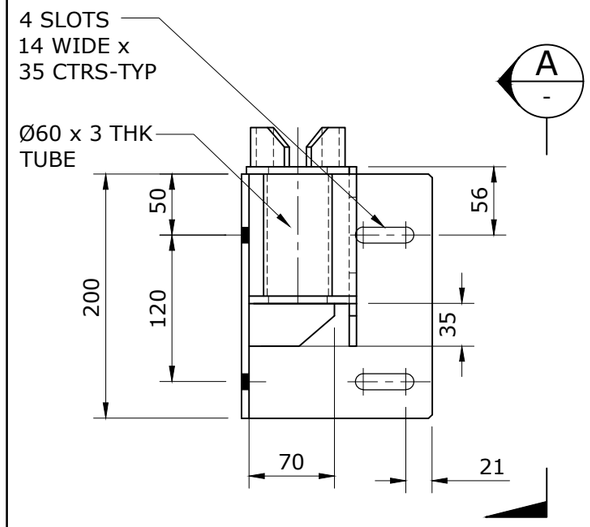
ORG DATE:
1/1/2013

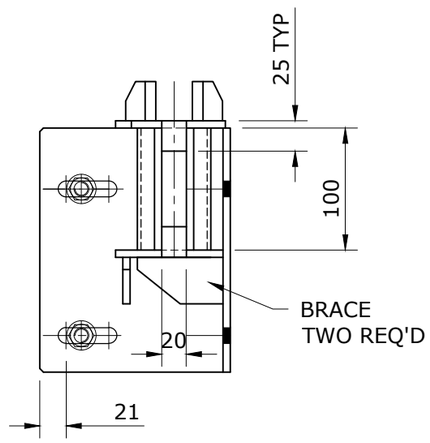


GUIDE BLOCK
FLAT 32 x 10 x 32 LONG

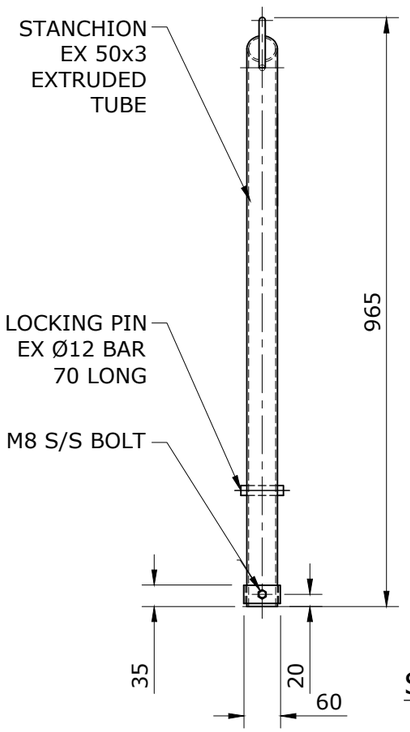


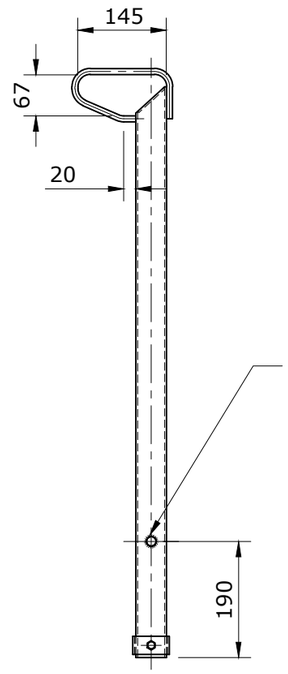
COLLAR
Ø60 x 3 THK TUBE
30 LONG



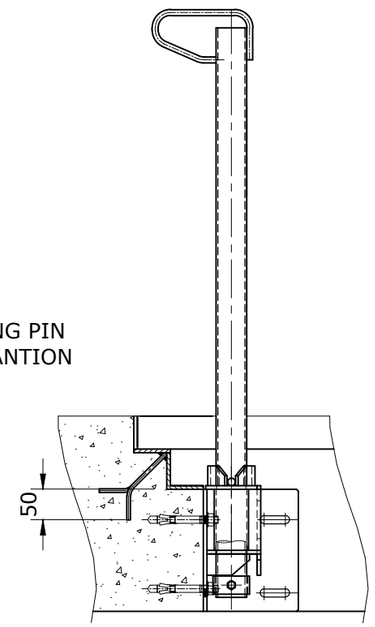


SECTION A
SCALE 1:10

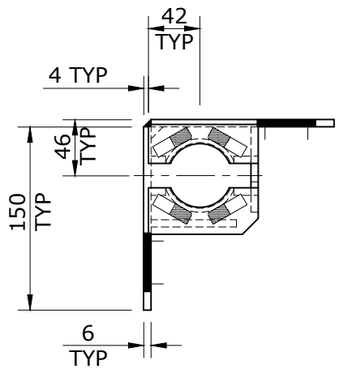




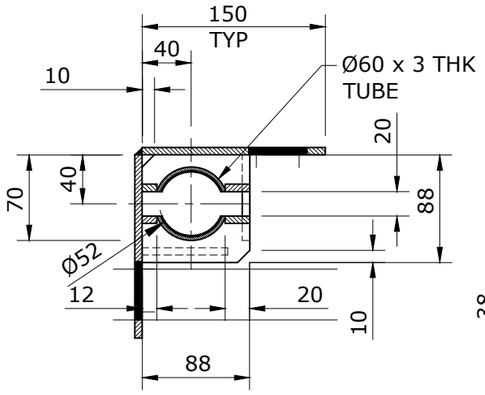
SUPPORT POST
DETAILS



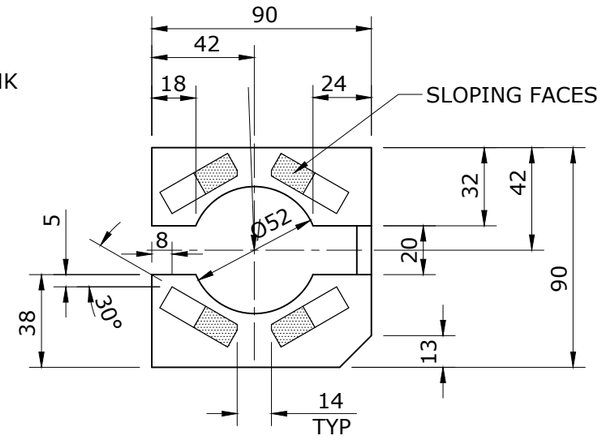
POST ASSEMBLY
ELEVATION



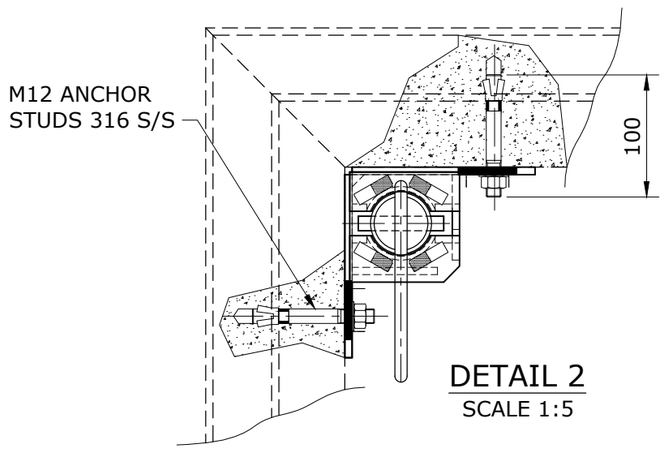
DETAIL 1
SCALE 1:10



BOTTOM PLATE
DETAILS



TOP PLATES
DETAIL



DETAIL 2
SCALE 1:5

POST ASSEMBLY
PLAN

ALL PLATES 6 THK

REV. No.	DATE	DESCRIPTION	AUTH.
C	23/12/16	NOT APPLICABLE TO GCCC	
B	15/05/14	TITLE CHANGED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVER - OPTION 1
RETAINING POST DETAILS

CoGC	LCC	RCC	QUU	UW

DRAWING No.
SEQ-SPS-1304-9

VERSION
C

NOT TO SCALE

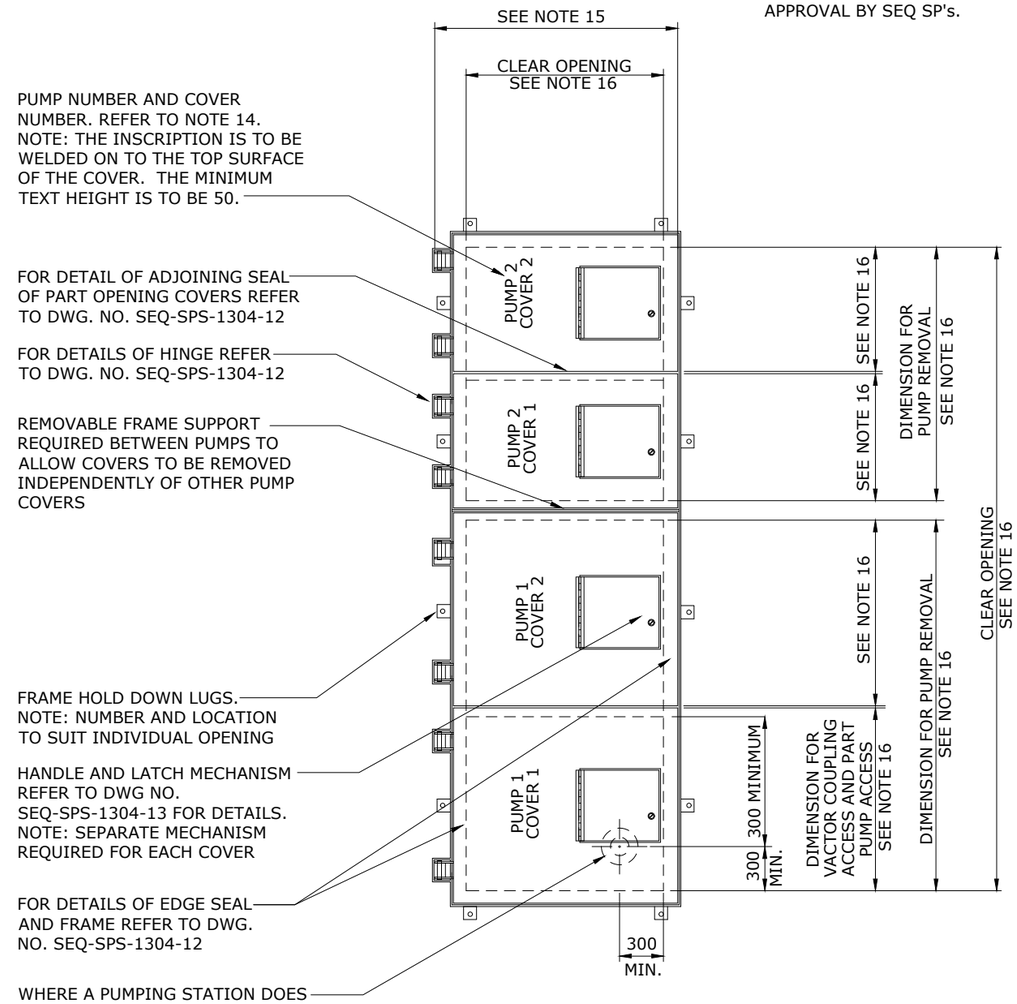
ORG DATE:
1/1/2013

ALUMINIUM COVER NOTES:

1. GENERAL: DRAWINGS NOS. SEQ-SPS-1304-10 TO SEQ-SPS-1304-17 ARE TO BE USED AS A GUIDE FOR THE MANUFACTURE OF THE ALUMINIUM COVERS AND FRAMES FOR SEWER PUMP STATIONS AND VALVE PITS. EACH COVER IS TO BE DESIGNED TO SUIT EACH INDIVIDUAL LOCATION AND SIZE. THE ALUMINIUM SECTION SIZE AND SEAL ARRANGEMENT MAY BE VARIED TO SUIT INDIVIDUAL MANUFACTURER'S DESIGN BUT MUST FOLLOW GENERAL PRINCIPLES SETOUT BELOW AND IN THE ASSOCIATED DRAWINGS.
2. MATERIAL: THE COVER AND FRAME IS TO BE ALUMINIUM AND TO BE GRADE 6061 T6 AND OR GRADE 5083 H116 TO AS1734 WHERE STAINLESS STEEL IS USED IT IS TO BE TYPE 316 INSULATING WASHERS, GASKETS OR SEALANT IS TO BE PROVIDED WHERE STAINLESS STEEL IS IN CONTACT WITH ALUMINIUM.
3. PAINTING:
   - 3.1. THE TOP SURFACE OF THE COVER IS TO BE PAINTED WITH AN ANTI-SLIP COATING. THE COLOUR SHALL BE DULUX MIST GREEN 36648 OR EQUIVALENT. THE COATING SHALL BE APPLIED TO MANUFACTURER'S REQUIREMENTS AND SHALL BE EITHER:
     * 100% SOLIDS MOISTURE CURING MDI BASED POLYURETHANE INCLUDING A CRUMBED RUBBER BINDER (SUCH AS HUNTSMAN DALTOBOND CR2), OR
     * A LIQUID APPLIED ACRYLIC-POLYURETHANE COMPOSITE COATING INCLUDING A 16/30 CRUMBED RUBBER (SUCH AS NEOFERMA NEOTOP).
   - 3.2. WHERE THE ALUMINIUM FRAME MAY BE IN CONTACT WITH CONCRETE THE ALUMINIUM IS TO BE PAINTED WITH A MINIMUM OF TWO COATS OF BITUMENOUS PAINT OR SEQ-SPS APPROVED ALTERNATIVE.
4. SAFETY MESH: STAINLESS STEEL SAFETY MESH PANELS ARE TO BE PROVIDED UNDER THE COVERS OVER THE PUMPS. THE SAFETY MESH IS TO BE DESIGNED TO PREVENT A PERSON FROM FALLING THROUGH AN OPEN HATCH. THE SAFETY MESH IS TO BE IN INDIVIDUAL PANELS OVER EACH SEPARATE PUMP THE MESH MUST BE EASILY REMOVABLE FROM THE SURFACE. THE MESH IS TO BE FITTED AS CLOSELY AS POSSIBLE TO THE UNDERSIDE OF THE COVER TO PROVIDE MAXIMUM CLEARANCE FOR CABLES AND PUMP FITTINGS WITHOUT PROVIDING EXTRA OPENINGS IN THE MESH PANEL. THE MESH IS TO HAVE DIAMETER 6 BARS AT 75 CENTRES.
5. REMOVABLE SUPPORT BEAMS: WHERE MULTI-PART COVERS REQUIRE ADDITIONAL SUPPORT BEAMS THESE BEAMS SHOULD NOT BE PLACED OVER EQUIPMENT REQUIRING REMOVAL SUCH AS VALVES. THESE BEAMS SHOULD BE PROVIDED WITH LIFTING LUGS OR HOLES. THE BEAMS SHOULD BE BOLTED IN PLACE.
6. STRENGTHENING WEBS: ADDITIONAL STRENGTHENING WEBS MAY BE REQUIRED ON THE UNDERSIDE OF COVERS. THE SIZE, LOCATION AND DIRECTION SHOULD BE DESIGNED TO SUIT EACH INDIVIDUAL COVER. ALSO SEE NOTE 18.
7. WEIGHT: EACH SEPARATE COVER SHOULD HAVE A MAXIMUM WEIGHT OF 32 Kg. THE MAXIMUM LIFT AT THE HANDLE IS TO BE NO GREATER THAN 16 Kg.
8. FRAME MOUNTING: THE ALUMINIUM FRAME SHOULD BE GROUTED IN PLACE USING NON-SHRINK EPOXY GROUT. CAST INSITU FRAMES MAY BE APPROVED BY QUEENSLAND URBAN UTILITIES. SEE NOTE 3 FOR PAINTING.
9. HINGES: HINGES MUST BE FLUSH MOUNTED WITH NO TRIPPING HAZARD. REMOVABLE HINGE GUDGEONS ARE NOT PERMITTED. HINGES SHOULD ALLOW COVER TO ROTATE 180°. THE COVER IS TO BE EASILY REMOVED WHEN IN VERTICAL POSITION AND CARRIED TO A REMOTE LOCATION. HINGES MUST PROVIDE POSITIVE LOCKING WHEN COVER IS IN CLOSED POSITION.
10. SEAL: A NEOPRENE RUBBER ODOUR SEAL IS TO BE PROVIDED UNDER THE COVERS. THE SEAL IS TO BE MOUNTED ON THE COVER AND NOT ON THE FRAME. THE SEAL IS TO BE FIXED TO ALLOW REPLACEMENT. THE SEAL IS NOT TO TAKE THE LIVE AND DEAD LOADS OF THE COVER. THE ALUMINIUM COVER IS TO BE SEAL WELDED TO COMPLETE THE ODOUR SEAL.
11. LIFTING HANDLES: A RECESSED LIFTING HANDLE IS TO BE PROVIDED ON THE UPPERSIDE OF EACH COVER. THIS HANDLE MAY BE COMBINED WITH THE LATCHING MECHANISM. IN ADDITION A MINIMUM OF TWO LIFTING HANDLES ARE TO BE PROVIDED ON THE UNDERSIDE OF THE COVER. HANDLES ARE TO ALLOW LIFTING BY PERSONS OR ALTERNATIVELY BY TRUCK MOUNTED HOIST.
12. LATCHING MECHANISM: A POSITIVE LOCKING FLUSH MOUNTED MECHANISM IS TO BE PROVIDED AND IS TO ALLOW THE FITTING OF A PADLOCK. THE MECHANISM IS ALSO TO PROVIDE A POSITIVE SET TO THE ODOUR SEAL. THE RECESSED HANDLE AND LOCK IS TO BE PROVIDED WITH A HINGED FLAP WITH A SCREWDRIVER OPERATED QUARTER TURN CATCH. THIS FLAP IS TO HAVE ITS HINGE ON THE SIDE OF THE COVER HINGES SO AS TO ALLOW THE FLAP TO FALL OPEN WHEN THE COVER IS OPENED TO THE VERTICAL POSITION.
13. PADLOCK: THE PADLOCKS ARE TO BE KEYED TO QUU 177 OR SEQ-SPS REQUIRED.
14. OPENING SEQUENCE: THE COVERS OVER EACH PUMP MUST BE ABLE TO BE OPENED WITHOUT OPENING THE COVERS OVER OTHER PUMPS. THIS MAY REQUIRE A REMOVABLE FRAME SUPPORT ACROSS THE OPENING AT A POINT MID-WAY BETWEEN THE PUMPS. TO ALLOW ALL COVERS TO BE OPEN AT THE SAME TIME THE COVERS SHOULD OPEN IN SEQUENCE ACROSS THE WHOLE OPENING. IF THE VACTOR PIPE IS INSTALLED UNDER THESE ALUMINIUM COVERS THEN THE FIRST OPENING COVER IS TO BE OVER THE VACTOR PIPE.
    THE COVERS ARE TO BE NUMBERED IN ORDER. THE PUMP NUMBER AND COVER NUMBER ARE TO BE WELDED ONTO THE TOP SURFACE OF COVER. THE PROJECT DRAWINGS ARE TO INDICATE THESE INSCRIPTIONS. THE MINIMUM TEXT HEIGHT IS TO BE 50 THE ORIENTATION OF THE TEXT SHOULD BE SUCH THAT THE TEXT CAN BE READ FROM THE SWITCHBOARD.
15. COVER WIDTH: THE MAXIMUM WIDTH OF THE COVER INCLUDING HINGES IS TO BE 1200mm. THIS IS TO ALLOW MANUAL REMOVAL OF THE COVER WHEN OPEN IN THE VERTICAL POSITION.
16. DIMENSIONS: THE INTERNAL DIMENSIONS OF THE OPENINGS ARE TO BE INDICATED ON THE PROJECT DRAWINGS. THE SIZE OF EACH SEPARATE COVER IS TO BE INDICATED ON THE PROJECT DRAWINGS AS INDIVIDUAL COVERS ACROSS THE WHOLE OPENING MAY VARY IN SIZE.
17. CLEARANCE: THE SIZE OF THE COVER OPENING IS TO BE DESIGNED INSTALLATION. FOR GUIDE RAIL PUMPS THE CLEARANCE TO THE THE AFORE-MENTIONED 75mm CLEARANCE APPLIES TO ALL FITTINGS IN THE OPENING INCLUDING THE SAFETY MESH HOOKS AND CABLE SUSPENSION HOOKS.
18. LOADING: COVERS ON NEW PUMPING STATIONS IN NON-TRAFFICABLE LOCATIONS ARE TO BE DESIGNED TO AS3996 TABLE 3.1 CLASS A FOR NON-TRAFFICABLE LOCATIONS AND FOR PEDESTRIAN LOADS ONLY. THE TOP SLAB OF THE PUMP STATION IS TO BE 300mm VERTICALLY ABOVE SURROUNDING GROUND LEVEL AND ACCESS ROAD TO PREVENT ANY POSSIBLE VEHICLE ACCESS.
19. FLUSH MOUNTING: ALL COVERS, FRAMES, HINGES AND HANDLES TO BE FLUSH MOUNTED LEVEL WITH CONCRETE TOP SLAB.
20. STAINLESS STEEL THREADED ASSEMBLY: ALL THREADED STAINLESS STEEL NUTS AND BOLTS ARE TO BE ASSEMBLED WITH ANTI-GALLING COMPOUND "DURALAC" OR SEQ-SPS APPROVED EQUIVALENT.
21. WELDING: ALL ALUMINIUM WELDING SHALL COMPLY WITH THE REQUIREMENTS SET OUT IN AS/NZS 1665.2004 AND AS/NZS ISO 18273.2006. TO MINIMISE CREVICE CORROSION THE COVERS AND FRAME ARE TO BE FULLY SEAL WELDED.

GENERAL NOTES

G1. THE FOLLOWING DRAWINGS AND THE NOTES ON THIS DRAWING ARE TO BE USED TO AID IN THE DESIGN OF THE LIGHTWEIGHT ALUMINIUM COVERS FOR PUMP WELLS WHICH REQUIRE ODOUR SEALS AND FOR GENERAL PIT COVERS IN NON-TRAFFICABLE LOCATIONS.
G2. ALL DIMENSIONS ARE IN MILLIMETRES
G3. NO SUBSTITUTE DESIGN OR MATERIALS SHALL BE USED WITHOUT PRIOR APPROVAL BY SEQ SP's.



PLAN OF TYPICAL PUMP WELL COVER INSTALLATION
NOT TO SCALE

TO BE USED IN NON-TRAFFICABLE LOCATIONS ONLY

REV. No.	DATE	DESCRIPTION	AUTH.
B	13/05/14	TITLE CHANGED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 2
NOTES AND PUMP WELL COVER PLAN

~~CoGC~~ ~~LCC~~ ~~RCC~~ QUU ~~UW~~

DRAWING No. SEQ-SPS-1304-10

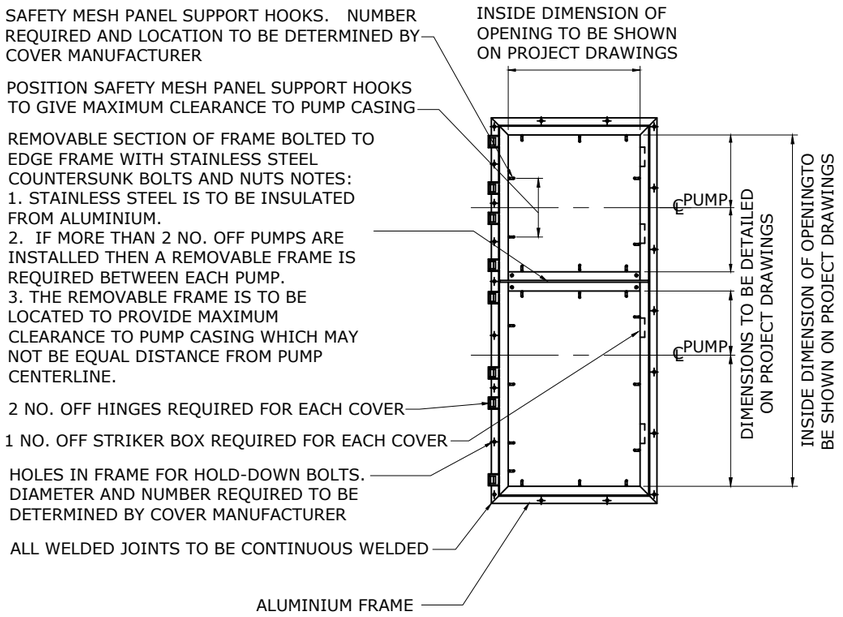
VERSION B

NOT TO SCALE

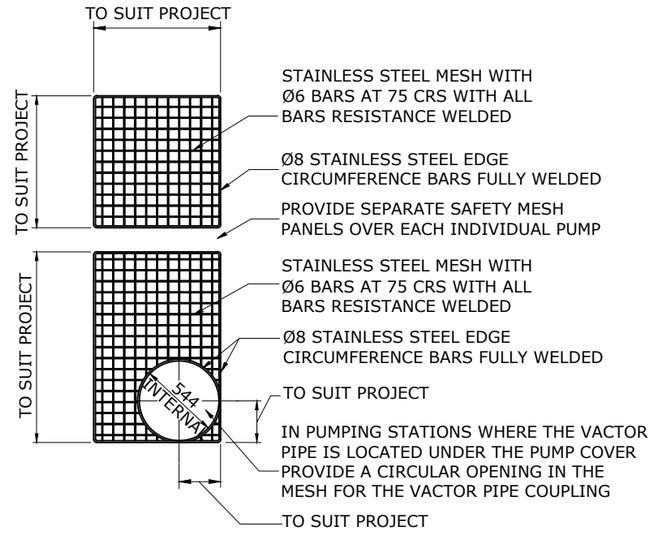
ORG DATE: 1/1/2013

GENERAL NOTES

G1. FOR ALL NOTES DETAILING COVER REQUIREMENTS REFER TO DRAWING NO. SEQ-SPS-1304-10

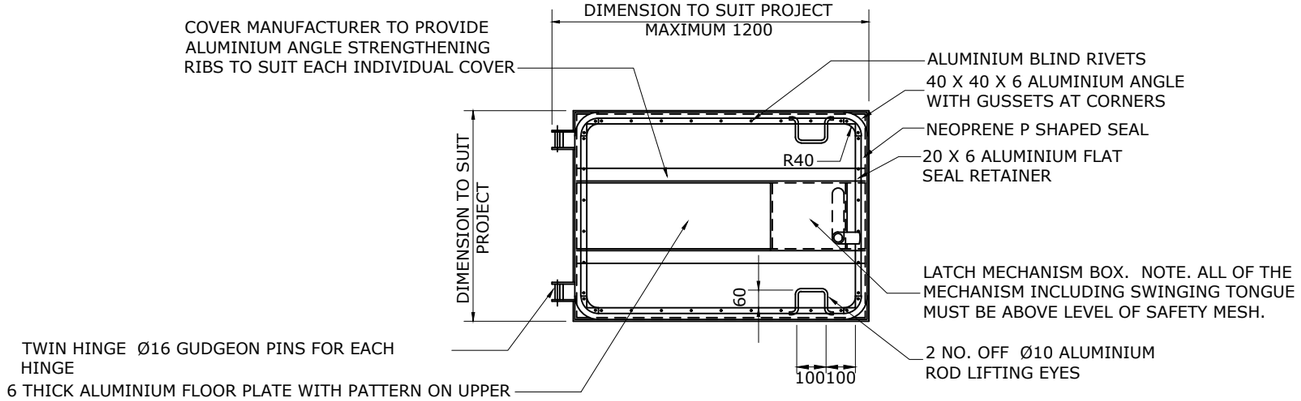


PLAN OF FRAME



SAFETY MESH PANELS

MATERIAL: ALL BARS TO BE GRADE 316 STAINLESS STEEL



UNDERSIDE VIEW OF COVER

NOTE: THE COVER SHOWN IS FOR THE FIRST OPENING COVER. THE SECOND AND ANY FUTHER OPENING COVERS REQUIRE A MODIFIED SIDE TO ACCOMMODATE THE ADJACENT ODOUR SEAL.

TO BE USED IN NON-TRAFFICABLE LOCATIONS ONLY

REV. No.	DATE	DESCRIPTION	AUTH.
B	13/05/14	TITLE CHANGED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 2
PUMP WELL FRAME, SAFETY MESH PANELS
AND COVER UNDERSIDE DETAILS

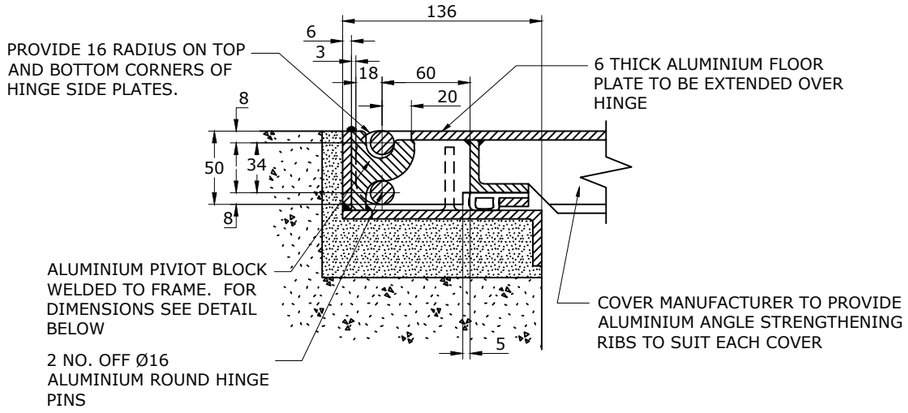
CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1304-11

VERSION B

NOT TO SCALE

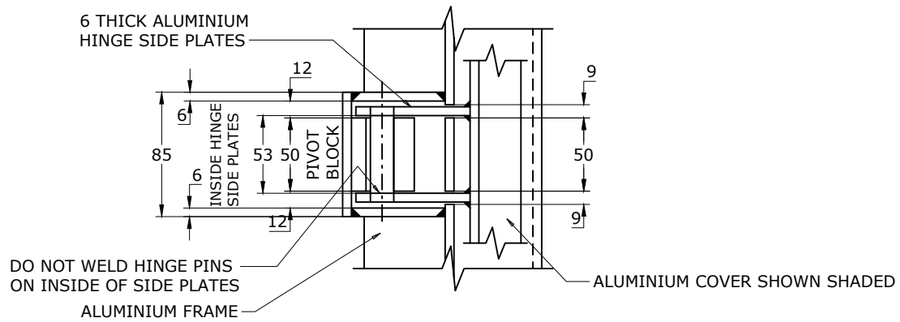
ORG DATE: 1/1/2013



SECTION THROUGH ASSEMBLED HINGE

SCALE 1 : 2 FULL SIZE A1 SHEET

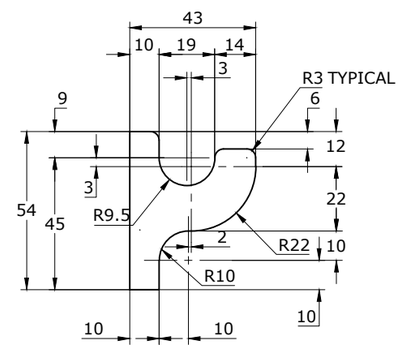
SECTION C -



PLAN OF ASSEMBLED HINGE

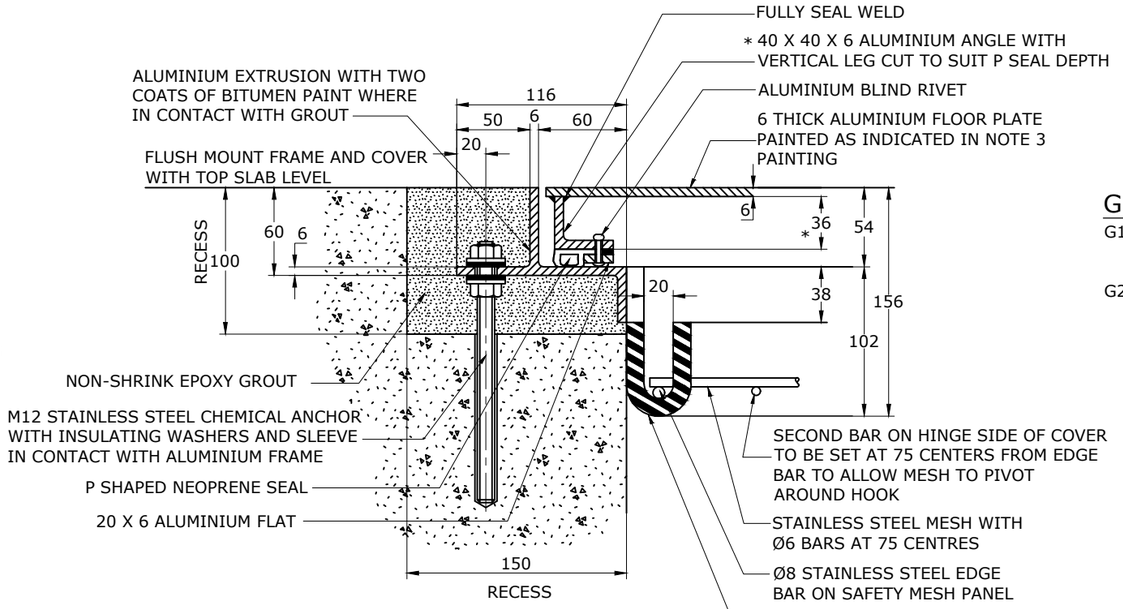
NOTE: FLOOR PLATE ON COVER NOT SHOWN

SCALE 1 : 2 FULL SIZE A1 SHEET



DETAIL OF HINGE PIVOT BLOCK

SCALE 1 : 1 FULL SIZE A1 SHEET



TYPICAL SECTION OF INSTALLED FRAME

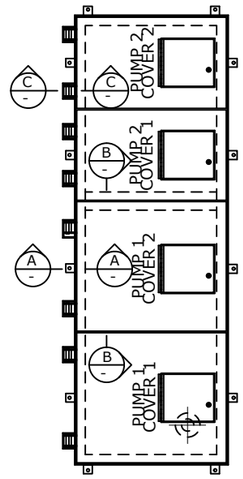
SCALE 1 : 2 FULL SIZE A1 SHEET

SECTION A -

GENERAL NOTES

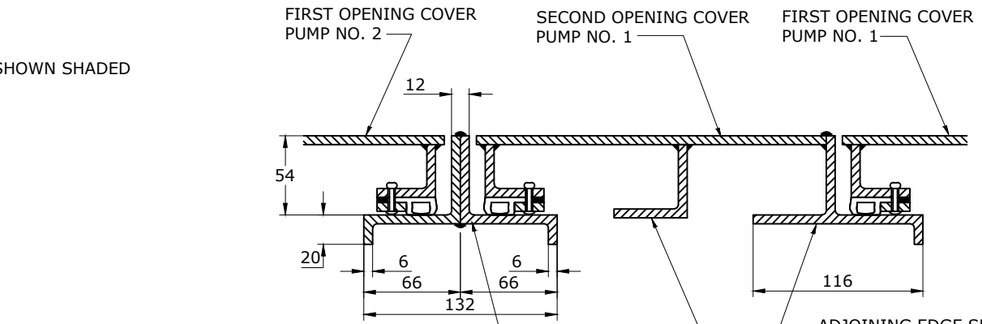
G1. FOR ALL NOTES DETAILING COVER REQUIREMENTS REFER TO DRAWING NO. SEQ-SPS-1304-10

G2. THE HINGE DETAIL SHOWN ON THIS DRAWING IS TO BE USED FOR BOTH THE PUMP WELL COVERS AND THE VALVE PIT COVERS



SECTION LOCATION PLAN

NOT TO SCALE



CENTRAL REMOVABLE SUPPORT FRAME

COVER WITH INTERMEDIATE SEAL SUPPORT

SECTION SHOWING SEALS BETWEEN COVERS

SCALE 1 : 2 FULL SIZE A1 SHEET

SECTION B -

TO BE USED IN NON-TRAFFICABLE LOCATIONS ONLY

REV. No.	DATE	DESCRIPTION	AUTH.
B	13/05/14	TITLE CHANGED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 2
PUMP WELL HINGE AND SEAL DETAILS

CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1304-12

VERSION B

NOT TO SCALE

ORG DATE: 1/1/2013

MARK NO.	DESCRIPTION	MATERIAL	NO. OFF
1	COVER (NOTE: COVER SHOWN IS FOR PUMP WELL WITH ODOUR EDGE SEAL)	ALUMINIUM	-
2	LATCH MECHANISM BOX	ALUMINIUM	1
3	FRAME (REFER TO PUMP WELL AND VALVE PIT FRAMES FOR DETAILS)	ALUMINIUM	-
4	LOCKING HANDLE	ALUMINIUM	1
5	LOCKING TONGUE	ALUMINIUM	1
6	LIFTING HANDLE	ALUMINIUM	1
7	THRUST WASHER 3 THICK	DOTMAR TETRON C PTFE	1
8	STRIKER BOX (REFER TO PUMP WELL AND VALVE PIT FRAMES FOR DETAILS)	ALUMINIUM	-
9	STRIKER PLATE (REFER TO PUMP WELL AND VALVE PIT FRAMES FOR DETAILS)	ALUMINIUM	1
10	M6 NYLOCK LOCKING NUT	STAINLESS STEEL	1
11	M6 BOLT 50 LONG	STAINLESS STEEL	1
12	M6 FLAT WASHER	STAINLESS STEEL	2

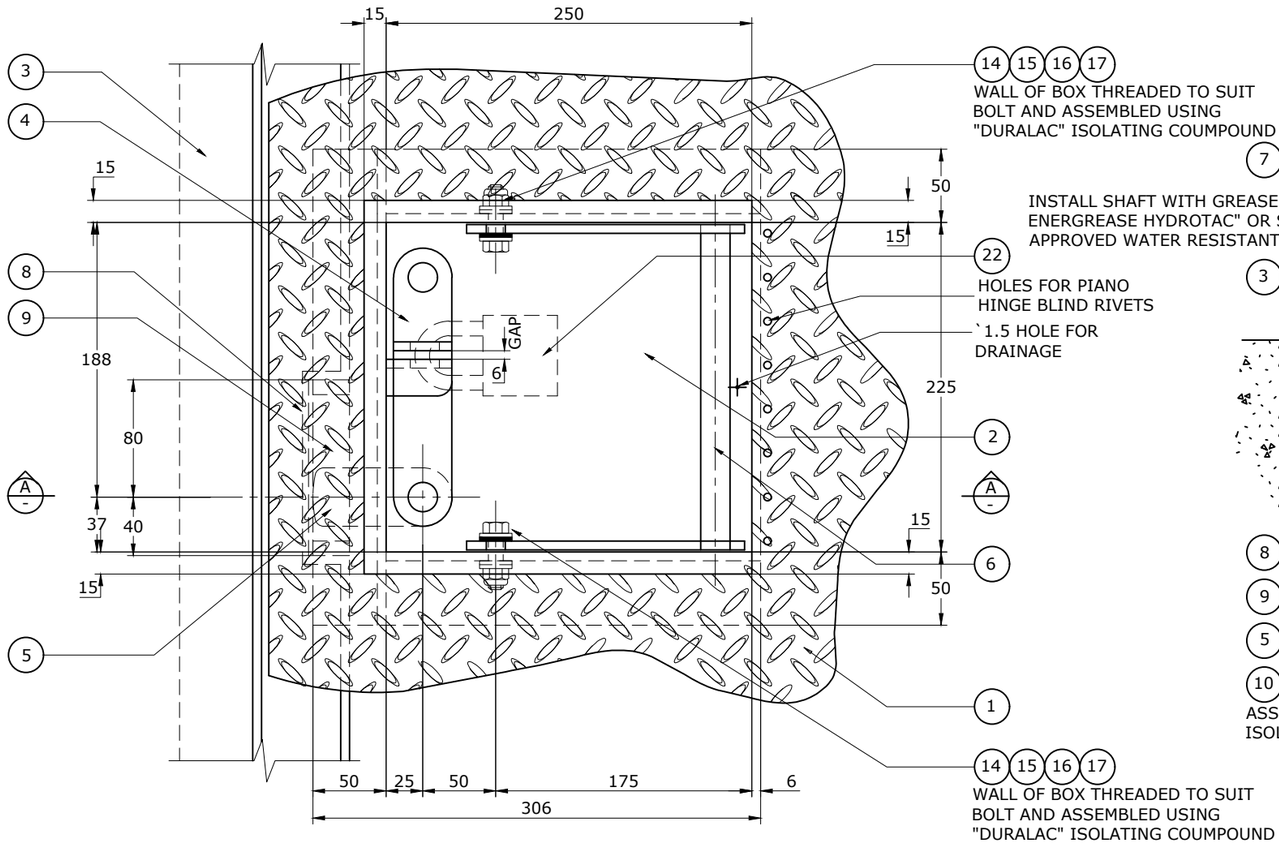
MARK NO.	DESCRIPTION	MATERIAL	NO. OFF
13	M6 NYLON INSULATING WASHER	NYLON	2
14	M10 NYLOCK LOCKING NUT	STAINLESS STEEL	2
15	M10 HEX HEAD SET SCREW 35 LONG	STAINLESS STEEL	2
16	M10 FLAT WASHER	STAINLESS STEEL	4
17	M10 NYLON INSULATING WASHER	NYLON	4
18	HINGED FLAP 6 THICK FLOOR PLATE	ALUMINIUM	1
19	PIANO HINGE	STAINLESS STEEL	1
20	BLIND RIVETS	ALUMINIUM	QNT.
21	QUARTER TURN CATCH WITH FLAT SCREW DRIVER SLOT	STAINLESS STEEL	1
22	PADLOCK KEYED TO QUU 177 OR SEQ-SPS-REQUIRED	AS SUPPLIED	1
23	SAFETY MESH	STAINLESS STEEL	-

GENERAL NOTES

G1. FOR ALL NOTES DETAILING COVER REQUIREMENTS REFER TO DRAWING NO. SEQ-SPS-1304-10.

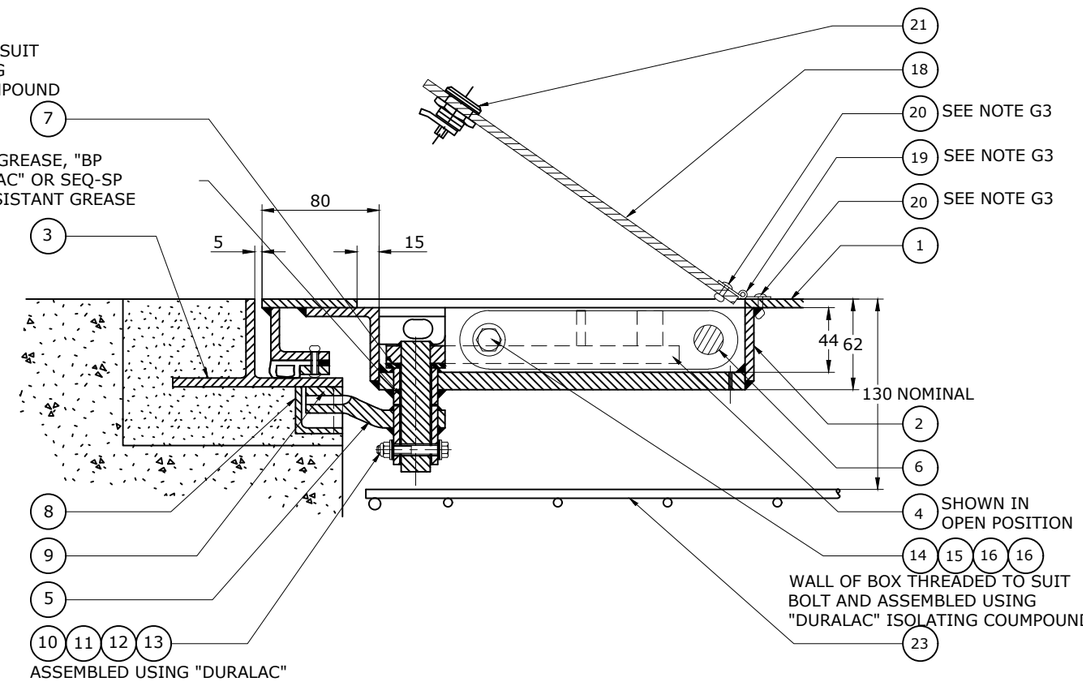
G2. THE LATCH MECHANISM SHOWN ON THIS DRAWING IS TO BE USED FOR BOTH THE PUMP WELL COVERS AND THE VALVE PIT COVERS.

G3. THE PIANO HINGE ON THE HINGED FLAP ITEM 18 IS TO BE LOCATED PARALLEL TO THE SIDE CLOSEST TO THE MAIN HINGES OF THE OVERALL COVER. THIS HINGED FLAP MUST FALL TO THE OPEN POSITION AS THE COVER IS OPENED.



PLAN OF LATCH MECHANISM

HINGED COVER FLAP ITEM 18 NOT SHOWN SEE NOTE G3
SCALE 1 : 2 FULL SIZE A1 SHEET



SECTION A-A

(FRAME AND STRIKER BOX SHOWN IS FOR PUMP WELL ONLY)
SCALE 1 : 2 FULL SIZE A1 SHEET

TO BE USED IN NON-TRAFFICABLE LOCATIONS ONLY

REV. No.	DATE	DESCRIPTION	AUTH.
B	13/05/14	TITLE CHANGED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 2
PUMP WELL AND VALVE PIT
LATCH MECHANISM BOX
GENERAL ARRANGEMENT

CoGC | LCC | RCC | QUU | UW

DRAWING No. SEQ-SPS-1304-13

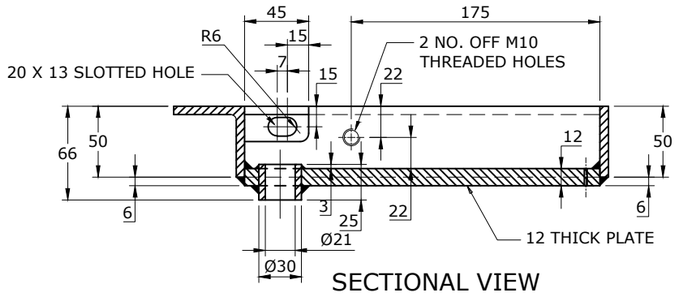
VERSION B

NOT TO SCALE

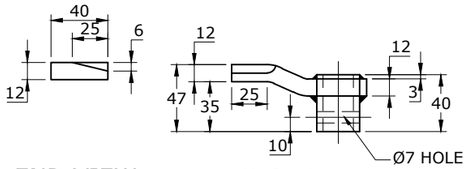
ORG DATE: 1/1/2013

GENERAL NOTES

G1. FOR ALL NOTES DETAILING COVER REQUIREMENTS REFER TO DRAWING NO. SEQ-SPS-1304-10.

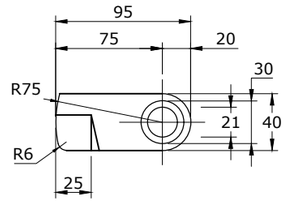


SECTIONAL VIEW



END VIEW

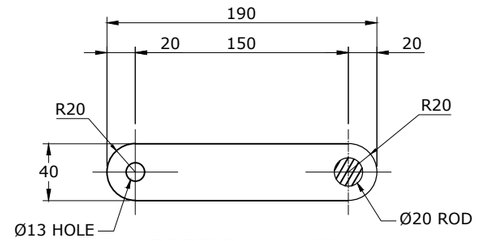
SIDE VIEW



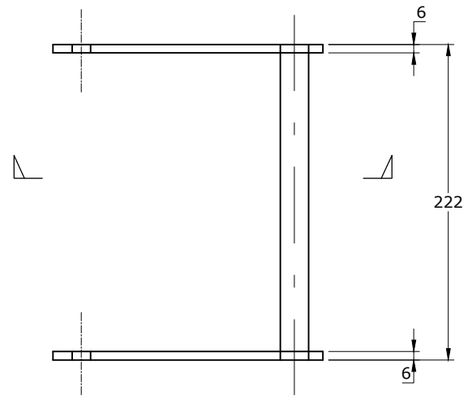
TOP VIEW

ITEM 5 LOCKING TONGUE

SCALE 1 : 2 FULL SIZE A1 SHEET



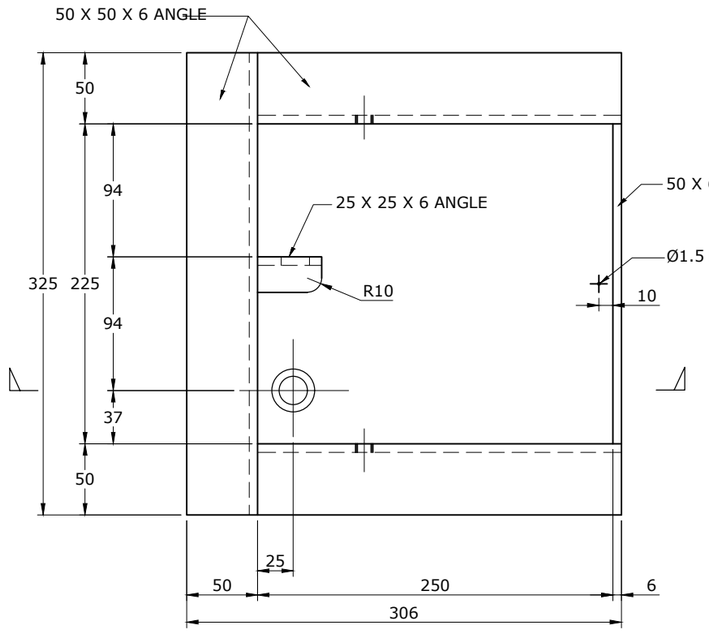
SECTIONAL VIEW



TOP VIEW

ITEM 6 LIFTING HANDLE

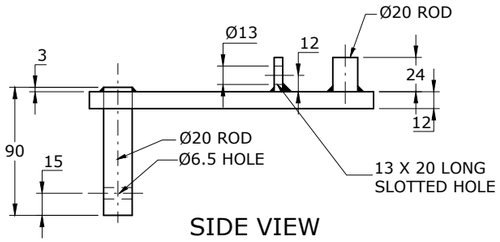
SCALE 1 : 2 FULL SIZE A1 SHEET



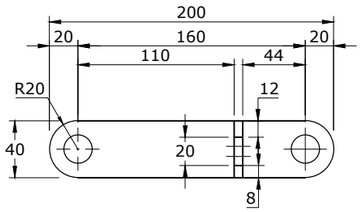
TOP VIEW

ITEM 2 LATCH MECHANISM BOX

SCALE 1 : 2 FULL SIZE A1 SHEET



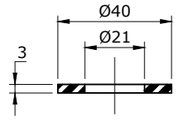
SIDE VIEW



TOP VIEW

ITEM 4 LOCKING HANDLE

SCALE 1 : 2 FULL SIZE A1 SHEET



ITEM 7 THRUST WASHER

SCALE 1 : 1 FULL SIZE A1 SHEET

TO BE USED IN NON-TRAFFICABLE LOCATIONS ONLY

REV. No.	DATE	DESCRIPTION	AUTH.
B	13/05/14	TITLE CHANGED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 2
PUMP WELL AND VALVE PIT
LATCH MECHANISM BOX
DETAILS

~~CoGC~~ ~~LCC~~ ~~RCC~~ QUU ~~UW~~

DRAWING No. SEQ-SPS-1304-14

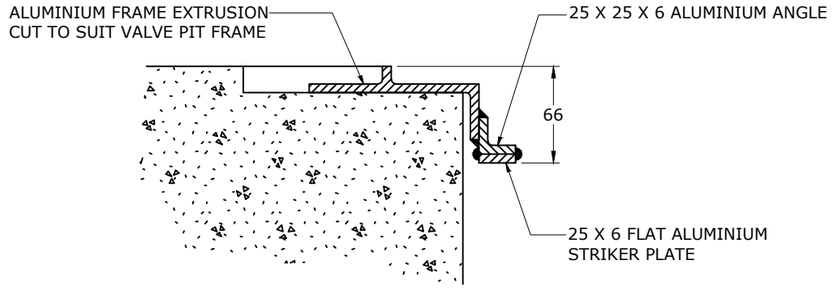
VERSION B

NOT TO SCALE

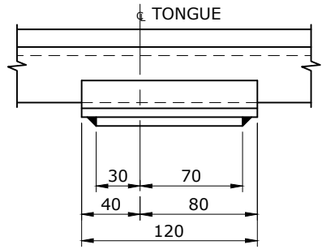
ORG DATE: 1/1/2013

GENERAL NOTES

G1. FOR ALL NOTES DETAILING COVER REQUIREMENTS REFER TO DRAWING NO. SEQ-SPS-1304-10



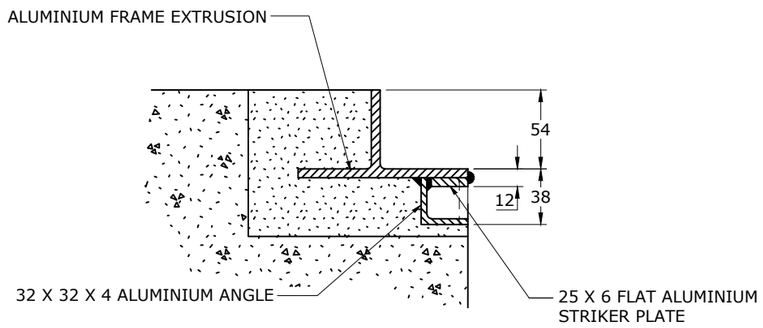
SECTIONAL VIEW



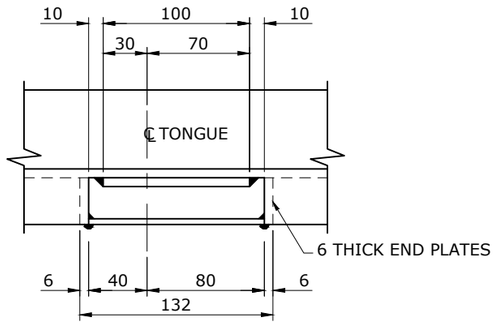
FRONT VIEW

STRIKER PLATE FOR VALVE PIT COVERS

SCALE 1 : 2 FULL SIZE A1 SHEET



SECTIONAL VIEW



FRONT VIEW

RECESSED STRIKER BOX FOR PUMP WELL COVERS WITH ODOUR SEAL

SCALE 1 : 2 FULL SIZE A1 SHEET

TO BE USED IN NON-TRAFFICABLE LOCATIONS ONLY

REV. No.	DATE	DESCRIPTION	AUTH.
B	13/05/14	TITLE CHANGED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 2
PUMP WELL AND VALVE PIT
STRIKER PLATE ON FRAMES DETAILS

CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1304-15

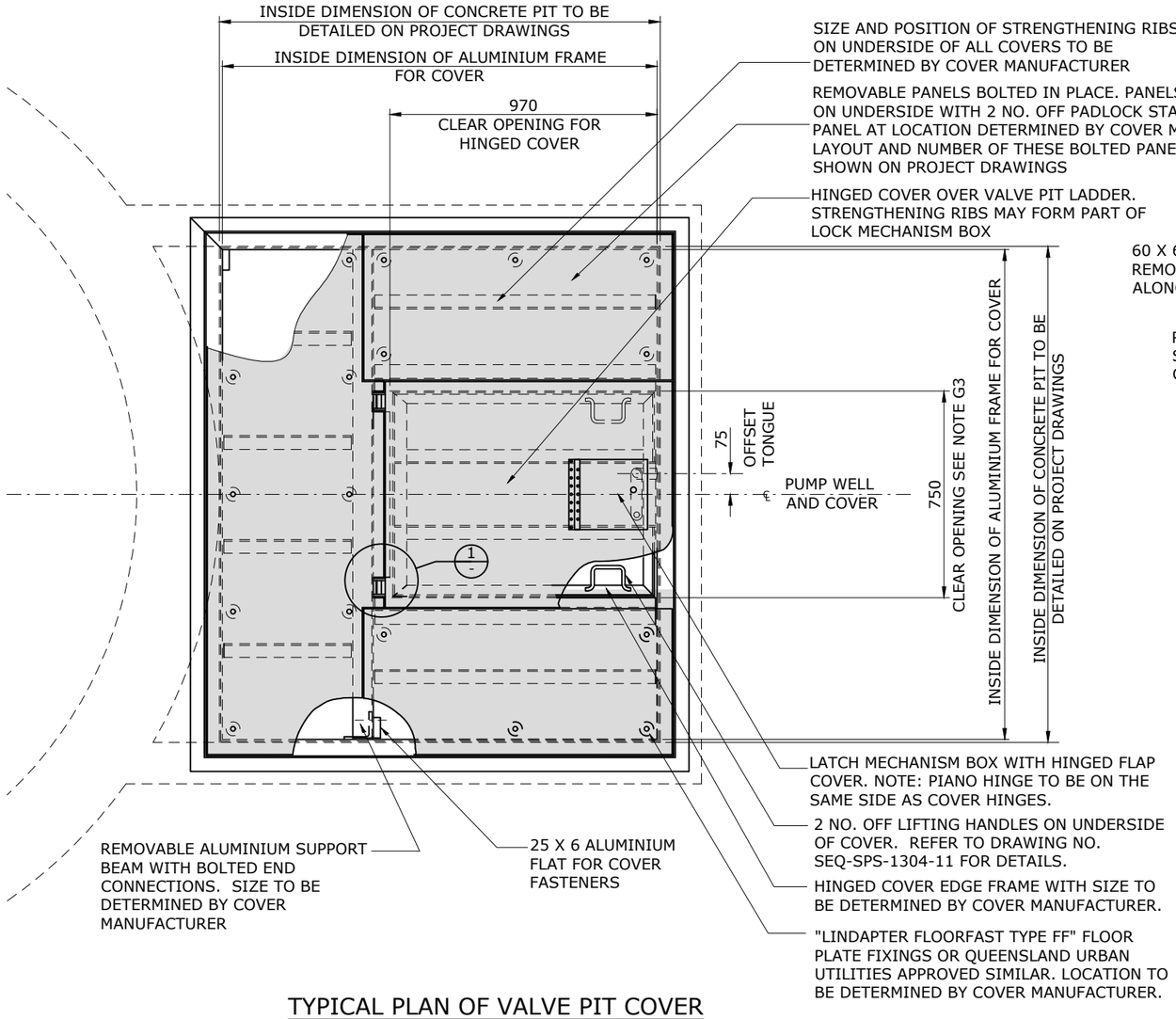
VERSION B

NOT TO SCALE

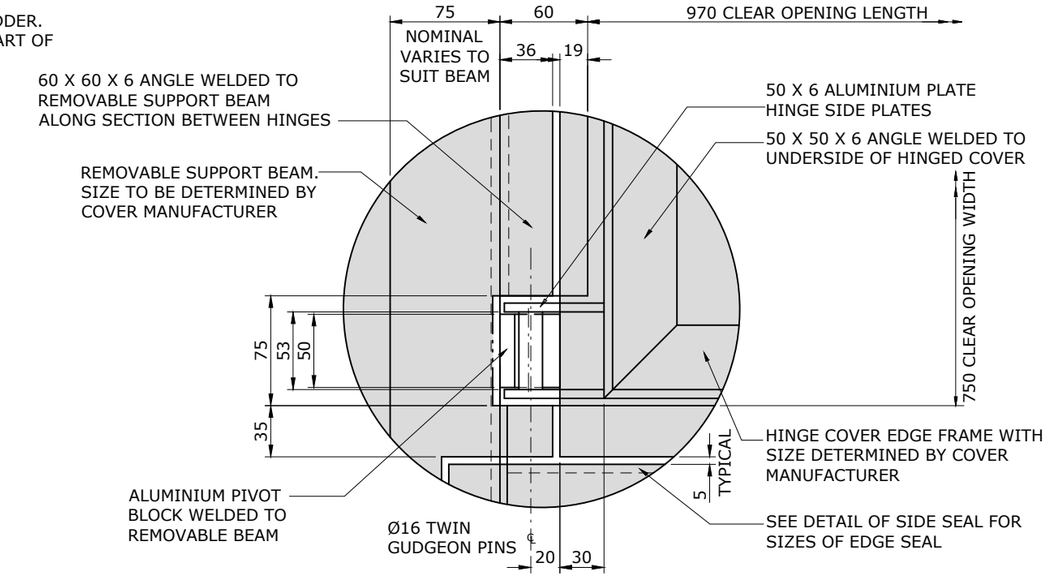
ORG DATE: 1/1/2013

GENERAL NOTES

G1. FOR ALL NOTES DETAILING COVER REQUIREMENTS REFER TO DRAWING NO. SEQ-SPS-1304-10.
G2. THIS DRAWING SHOWS ONLY ONE HINGED COVER WHICH IS FOR A PUMPING STATION WITH TWO PUMPS. FOR INSTALLATIONS WITH MORE THAN TWO PUMPS A SEPARATE HINGED COVER WITH A SEPARATE LADDER UNDER EACH IS REQUIRED BETWEEN EVERY PIPE HEADER.
G3. THE 750 WIDE CLEAR OPENING IS FOR INSTALLATION WITH 375 WIDE LADDER WITH EXTENDABLE STILES ONLY.



TYPICAL PLAN OF VALVE PIT COVER
NOT TO SCALE



DETAIL 1/-

AREAS SHOWN SHADED INDICATE THE SEPARATE PIECES OF THE ALUMINIUM FLOOR PLATE ON THE SEPARATE COVERS. THIS FLOOR PLATE IS TO BE PAINTED ON TOP SURFACE AS DETAILED IN NOTES

TO BE USED IN NON-TRAFFICABLE LOCATIONS ONLY

REV. No.	DATE	DESCRIPTION	AUTH.
B	13/05/14	TITLE CHANGED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 2
VALVE PIT GENERAL ARRANGEMENT

~~CoGC~~ ~~LCC~~ ~~RCC~~ QUU ~~UW~~

DRAWING No.
SEQ-SPS-1304-16

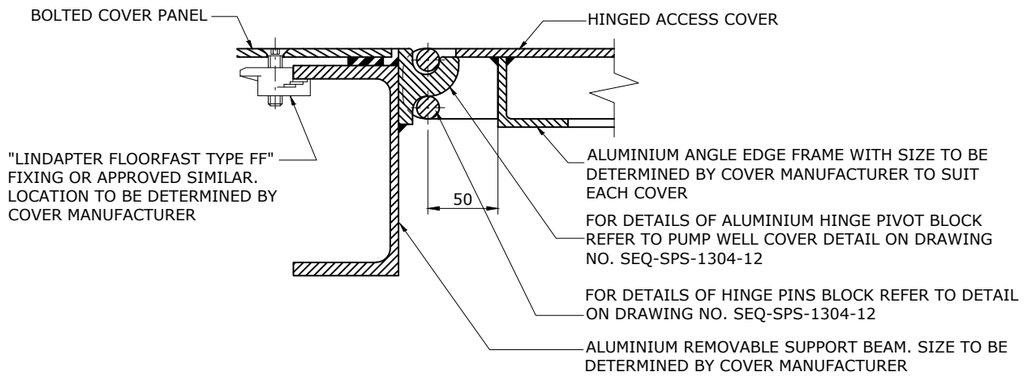
VERSION
B

NOT TO SCALE

ORG DATE:
1/1/2013

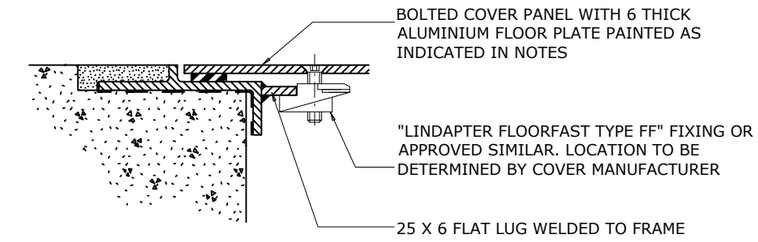
GENERAL NOTES

G1. FOR ALL NOTES DETAILING COVER REQUIREMENTS REFER TO DRAWING SEQ-SPS-1304-10.



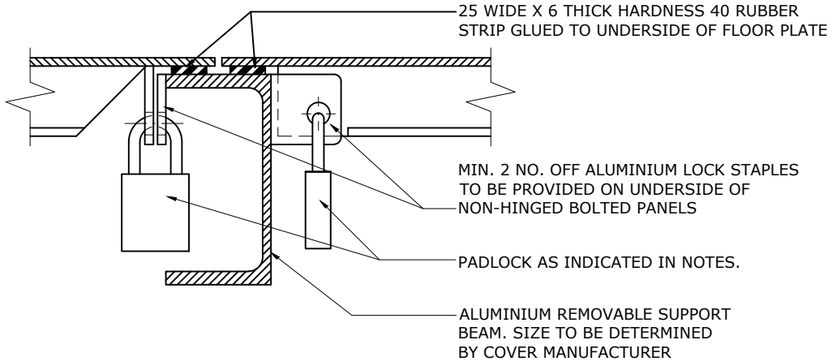
HINGE INSTALLATION DETAILS

SECTION A -



BOLTED COVER ATTACHMENT TO EDGE FRAME

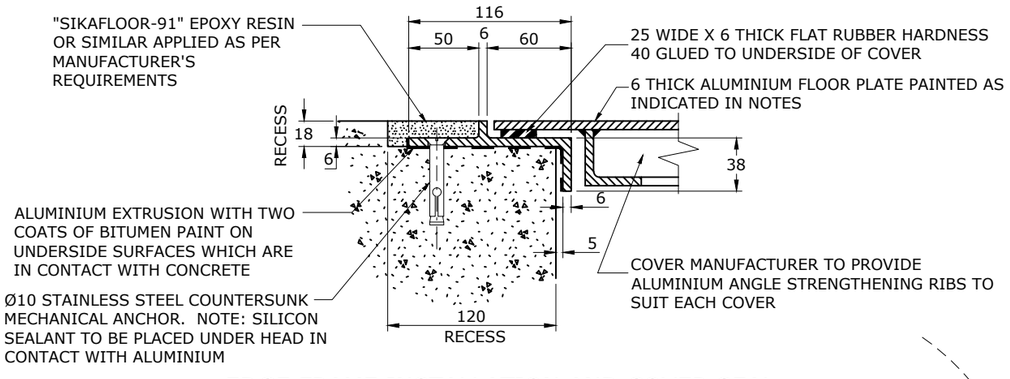
DETAIL 3 -



TYPICAL LOCKING ARRANGEMENTS FOR BOLTED COVERS

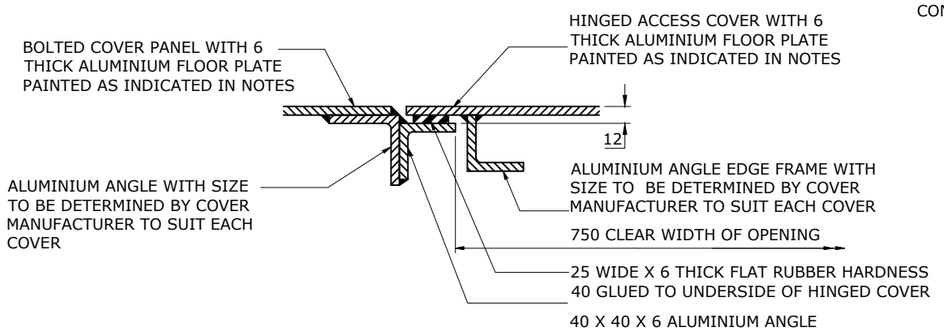
NOTE: 2 NO. OFF PADLOCK STAPLES REQUIRED PER BOLTED PANEL

SECTION C -



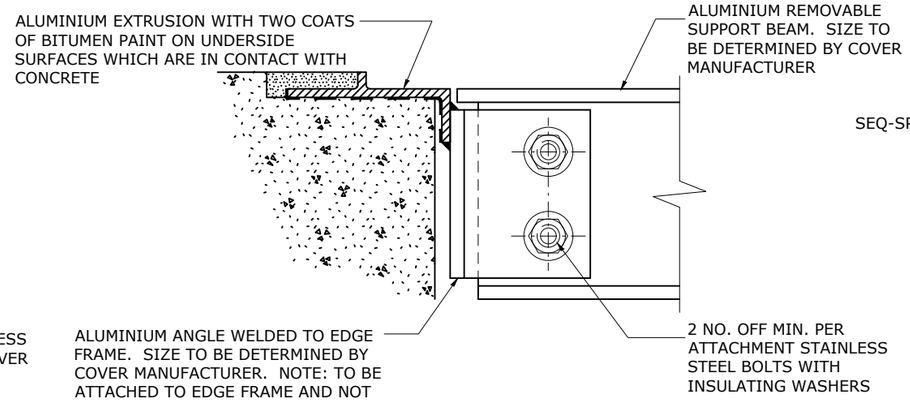
EDGE FRAME INSTALLATION AND COVER SEAL

SECTION B -



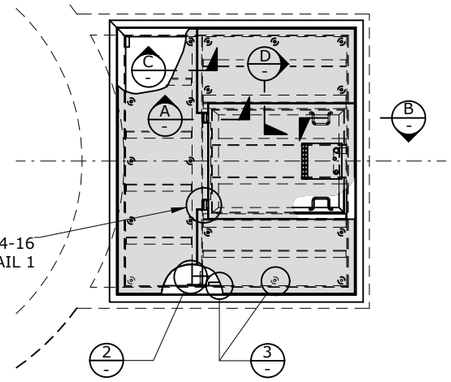
SIDE SEAL BETWEEN BOLTED AND HINGED COVERS

SECTION D -



REMOVABLE SUPPORT BEAM ATTACHMENT

DETAIL 2 -



SECTION AND DETAIL LOCATION PLAN

NOT TO SCALE SEE SEQ-SPS-1304-16

TO BE USED IN NON-TRAFFICABLE LOCATIONS ONLY

REV. No.	DATE	DESCRIPTION	AUTH.
B	13/05/14	TITLE CHANGED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 2
VALVE PIT SECTIONS AND DETAILS

CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1304-17

VERSION B

NOT TO SCALE

ORG DATE: 1/1/2013

GENERAL NOTES

1. ALL DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE.
2. THIS SET OF STANDARD ALUMINIUM ACCESS COVER AND HANDRAILS DRAWINGS ARE TO BE USED AS A GUIDE ONLY FOR THE MANUFACTURE AND FABRICATION OF ALUMINIUM COVERS AND FRAMES OVER WET-WELLS AND VALVE CHAMBERS WHERE APPLICABLE. THESE DRAWINGS SHALL COMMUNICATE THE INTENT AND FUNCTION, AND ARE NOT FABRICATION OR CONSTRUCTION DRAWINGS. ALL MEASUREMENTS ARE INDICATIVE ONLY. THE MANUFACTURER IS RESPONSIBLE FOR THE FULL STRUCTURAL DESIGN OF ALL COMPONENTS WITH FULL RPEQ CERTIFICATION.
3. EACH COVER AND FRAME SHALL BE DESIGNED TO SUIT INDIVIDUAL SITE CONDITIONS AND STRUCTURAL COMPONENTS. LOCKING AND SEAL ARRANGEMENTS MAY VARY TO SUIT THE DESIGN OF THE MANUFACTURER / FABRICATOR, HOWEVER THE GENERAL PRINCIPLES AND FUNCTION SHALL BE AS DETAILED IN THESE DRAWINGS.
4. THE STRUCTURAL COMPONENTS ON THESE DRAWINGS SHALL BE DESIGNED IN ACCORDANCE WITH THE STRUCTURAL DESIGN ACTIONS OF AS/NZS1170.
5. ACCESS COVERS IN NON-TRAFFICABLE LOCATIONS AND SUBJECT TO PEDESTRIAN LOADS ONLY, SHALL BE DESIGNED FOR CLASS A LOADINGS AS SPECIFIED IN AS3996 SECTION 3.
6. SAFETY GRATES SHALL BE DESIGNED FOR PLATFORM LOADINGS IN ACCORDANCE WITH AS1657.
7. HANDRAILS SHALL BE DESIGNED AND FABRICATED IN ACCORDANCE WITH AS1657.
8. FOR A HINGED COVER OR GRATE THE MAXIMUM LIFTING WEIGHT AT EACH LIFTING POINT SHALL NOT BE GREATER THAN 16kg.
9. COVERS MUST BE DESIGNED SUCH THAT THEIR TOTAL LIFTING WEIGHT (W_l) DOES NOT EXCEED 16kg, UNLESS APPROVED OTHERWISE BE THE PRINCIPAL.
10. COVERS WITH A TOTAL LIFTING WEIGHT (W_l) GREATER THAN 16kg, SHALL BE DESIGNED FOR A TWO PERSON LIFT AND THE TOP OF THE COVER SHALL BE MARKED WITH AN ETCHED PLATE STATING 'OVER 16kg'.
11. THE UNDERSIDE OF THE COVERS SHALL BE MARKED WITH AN ETCHED PLATE, STATING THE MANUFACTURER'S NAME OR REGISTERED TRADEMARK, AND MONTH AND YEAR OF MANUFACTURE.
12. SWITCHBOARD (WHEN ITS DOOR IS OPEN) AND HANDRAILS (WHEN ITS GATE IS OPEN) MUST HAVE A MINIMUM CLEARANCE OF 600mm.
13. THE ACCESS COVER OPENING TYPE AND HANDRAIL ARRANGEMENT TYPE SHALL BE SPECIFIED IN THE PROJECT DRAWING. THE SPECIFIED TYPES SHALL ALLOW FOR THE SAFE REMOVAL OF PUMPS AND COMPONENTS WITHIN THE WET-WELL AND VALVE CHAMBER AS PER THE MANUFACTURER'S RECOMMENDATIONS, AND HEALTH AND SAFETY GUIDELINES.
14. ACCESS COVERS LOCATED WITHIN PEDESTRIAN WALKWAYS (e.g. FOOTPATHS) THAT DO NOT HAVE A HANDRAIL AROUND THE PERIMETER SHALL BE DESIGNED WITH A FLUSH COVER IN ACCORDANCE WITH AS3996 SECTION 3.3. A FLUSH COVER DESIGN IS NOT SHOWN IN THESE STANDARD DRAWINGS.
15. PRIOR TO APPLICATION OF SIKAFLEX TANK AND SIKAFLEX PRO (OR APPROVED EQUIVALENT), CONCRETE SURFACE UNDERNEATH EXTERNAL FRAME OF WET-WELL AND UP TO 50mm AWAY FROM EXTERNAL FRAME, MUST BE SCRUBBED CLEAN AND GRINDED BEFORE FILLING ALL VOIDS WITH EPOXY MORTAR, AND RENDERED SMOOTH SUCH THAT ANY IRREGULARITIES ON THE THE CONCRETE SURFACE ARE NOT MORE THAN 5mm.

MATERIAL NOTES

1. ALL ALUMINIUM COMPONENTS SHALL BE DESIGNED AND FABRICATED IN ACCORDANCE WITH AS/NZS 1664.
2. ALL ALUMINIUM SHALL BE MARINE GRADE TO AS1734.
3. ALUMINIUM SHALL ONLY BE ANODIZED IF SPECIFIED BY THE PRINCIPAL.
4. ALL STAINLESS STEEL USED SHALL BE GRADE 316.
5. ALL STAINLESS STEEL NUTS AND BOLTS TO BE ASSEMBLED WITH AN ANTI-GALLING COMPOUND 'DURALAC' OR APPROVED EQUIVALENT.
6. ALUMINIUM AND STAINLESS STEEL SHALL NOT BE ALLOWED TO COME IN CONTACT WITH EACH OTHER UNLESS ADEQUATELY INSULATED WITH APPROVED SEALANTS, GASKETS, WASHERS AND SLEEVES.
7. ALL ACCESS COVERS SHALL HAVE THEIR TOP SURFACES COVERED WITH A GREEN COLOURED 'EPIREZ SAFE STEP 550' EXPOXY ANTI-SLIP COATING OR APPROVED EQUIVALENT.
8. WHERE ALUMINIUM IS IN CONTACT WITH CONCRETE, THE ALUMINIUM SHALL BE PAINTED WITH A MINIMUM TWO COATS OF BITUMINOUS PAINT OR APPROVED EQUIVALENT.
9. REPLACEABLE SEALS SHALL BE PROVIDED ON THE UNDERSIDE OF THE WET WELL COVERS TO PROVIDE A FULL ODOUR TIGHT SEAL.
10. ALL ALUMINIUM WELDING TO COMPLY WITH AS/NZS1665 AND ISO18273.

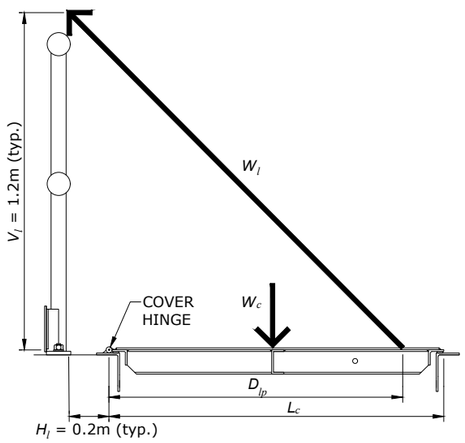
DRAWING INDEX

LIFTING WEIGHT CALCULATION

THE TOTAL LIFTING WEIGHT FOR A HINGED COVER SHALL BE DETERMINED AS FOLLOWS:

WHERE

- W_l = THE TOTAL COVER LIFTING WEIGHT (kg) (REFER GENERAL NOTES 8, 9 & 10)
- W_c = THE TOTAL COVER WEIGHT (DEAD WEIGHT) (kg)
- L_c = THE LENGTH OF THE COVER (m)
- D_{lp} = THE DISTANCE TO THE LIFTING POINT (m)
- V_l = THE LIFT VERTICAL HEIGHT, 1.2m TYPICAL
- H_l = THE LIFT HORIZONTAL OFFSET FROM THE HINGE, 0.2m TYPICAL



LEGEND

A / 3 — DETAIL LETTER / SHEET WHERE SHOWN *

DETAIL A / 2 — DETAIL LETTER / SHEET WHERE TAKEN *

1 / 3 — SECTION NUMBER / SHEET WHERE SHOWN *

SECTION 1 / 2 — SECTION NUMBER / SHEET WHERE TAKEN *

* DASH INDICATES SHOWN ON SAME SHEET

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 3
DRAWING INDEX, NOTES AND LEGEND
SHEET 1 OF 12

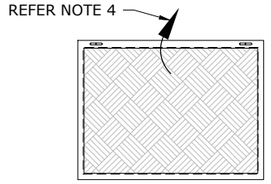
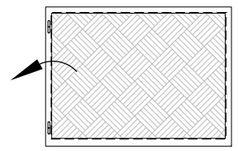
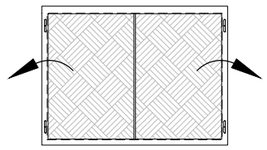
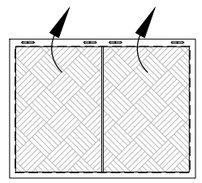
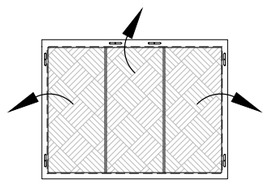
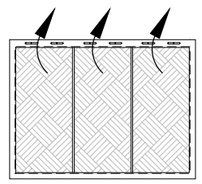
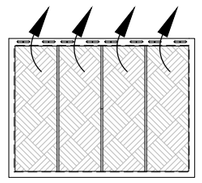
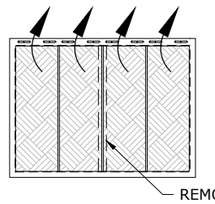
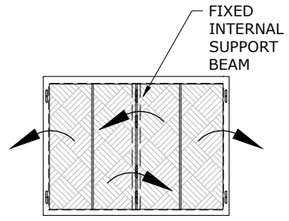
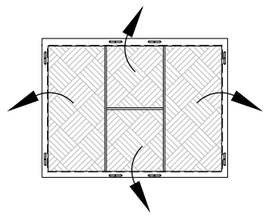
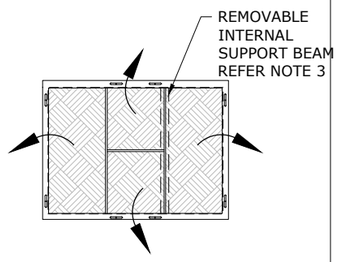
CoGC | LCC | RCC | QUU | UW

DRAWING No. SEQ-SPS-1304-18

VERSION A

NOT TO SCALE

ORG DATE: 04/07/2016

SINGLE COVER ARRANGEMENTS	 TYPE 1LA	 TYPE 1LB			
DUAL COVER ARRANGEMENTS	 TYPE 2LA	 TYPE 2LB			
THREE COVER ARRANGEMENTS	 TYPE 3LA	 TYPE 3LB			
FOUR COVER ARRANGEMENTS	 TYPE 4LA	 TYPE 4LB	 TYPE 4LC	 TYPE 4LD	 TYPE 4LE

NOTES

1. REFER DRG NO. SEQ-SPS-1304-18 FOR GENERAL AND MATERIAL NOTES.
2. REFER DRG NO. SEQ-SPS-1304-22 FOR WET-WELL ACCESS COVERS GENERAL ARRANGEMENT PLANS.
3. REFER DRG NO. SEQ-SPS-1304-28 FOR REMOVABLE INTERNAL SUPPORT BEAM DETAILS.
4. ARROWS INDICATE OPENING DIRECTION OF COVERS.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 3
WET-WELL ACCESS COVERS
OPENING OPTIONS
SHEET 2 OF 12

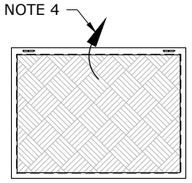
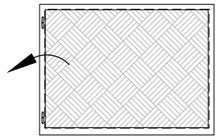
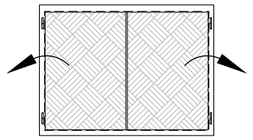
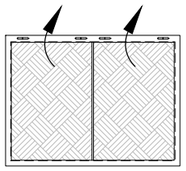
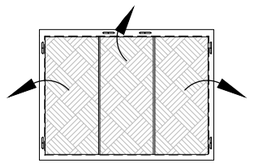
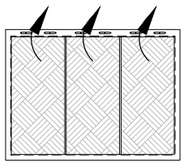
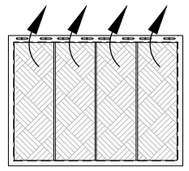
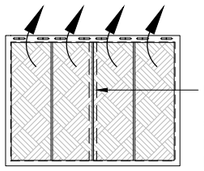
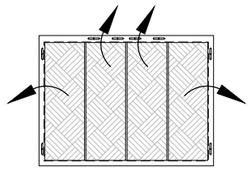
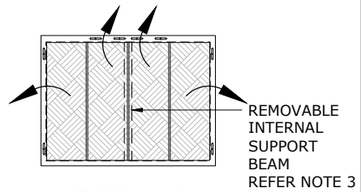
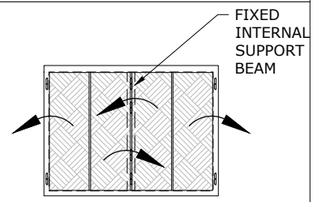
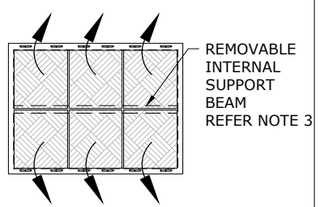
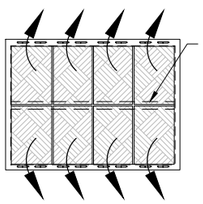
CoGC | ~~LCC~~ | ~~RCC~~ | ~~QUU~~ | ~~UW~~

DRAWING No.
SEQ-SPS-1304-19

VERSION
A

NOT TO SCALE

ORG DATE:
04/07/2016

SINGLE COVER ARRANGEMENTS	 TYPE 1VCA	 TYPE 1VCB			
DUAL COVER ARRANGEMENTS	 TYPE 2VCA	 TYPE 2VCB			
THREE COVER ARRANGEMENTS	 TYPE 3VCA	 TYPE 3VCB			
FOUR COVER ARRANGEMENTS	 TYPE 4VCA	 TYPE 4VCB	 TYPE 4VCC	 TYPE 4VCD	 TYPE 4VCE
ALTERNATIVE MULTI-COVER ARRANGEMENTS	 TYPE 5VCA	 TYPE 5VCB			

NOTES

1. REFER DRG NO. SEQ-SPS-1304-18 FOR GENERAL AND MATERIAL NOTES.
2. REFER DRG NO. SEQ-SPS-1304-24 AND SEQ-SPS-1304-25 FOR VALVE CHAMBER ACCESS COVERS GENERAL ARRANGEMENT PLANS - TYPE A AND TYPE B RESPECTIVELY.
3. REFER DRG NO. SEQ-SPS-1304-28 FOR REMOVABLE INTERNAL SUPPORT BEAM DETAILS.
4. ARROWS INDICATE OPENING DIRECTION OF COVERS.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 3
VALVE CHAMBER ACCESS COVERS
OPENING OPTIONS
SHEET 3 OF 12

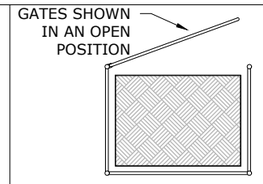
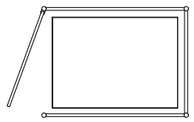
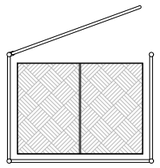
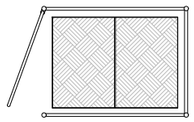
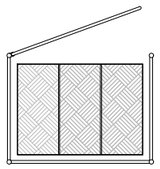
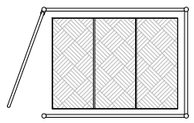
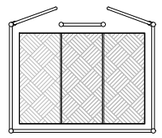
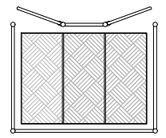
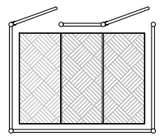
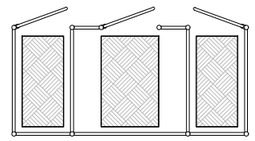
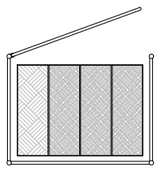
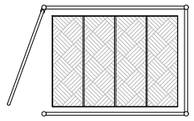
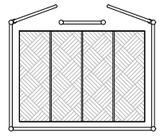
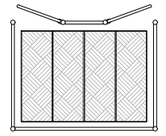
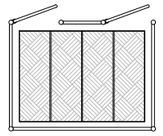
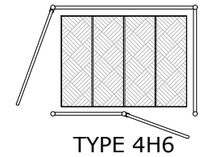
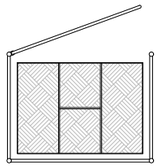
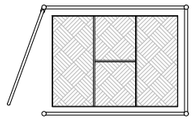
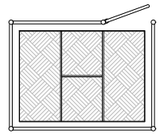
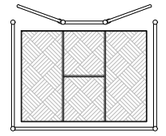
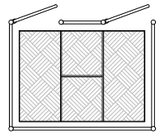
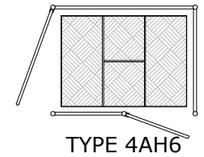
CoGC ~~LCC~~ ~~RCC~~ ~~QUU~~ ~~UW~~

DRAWING No.
SEQ-SPS-1304-20

VERSION
A

NOT TO SCALE

ORG DATE:
04/07/2016

SINGLE COVER HANDRAIL ARRANGEMENTS	 TYPE 1H1	 TYPE 1H2				
DUAL COVER HANDRAIL ARRANGEMENTS	 TYPE 2H1	 TYPE 2H2				
THREE COVER HANDRAIL ARRANGEMENTS	 TYPE 3H1	 TYPE 3H2	 TYPE 3H3	 TYPE 3H4	 TYPE 3H5	 TYPE 3H6 (SPECIAL)
FOUR COVER HANDRAIL ARRANGEMENTS	 TYPE 4H1	 TYPE 4H2	 TYPE 4H3	 TYPE 4H4	 TYPE 4H5	 TYPE 4H6
ALTERNATIVE MULTI-COVER HANDRAIL ARRANGEMENTS	 TYPE 4AH1	 TYPE 4AH2	 TYPE 4AH3	 TYPE 4AH4	 TYPE 4AH5	 TYPE 4AH6

NOTES

1. REFER DRG NO. SEQ-SPS-1304-18 FOR GENERAL AND MATERIAL NOTES.
2. REFER DRG NO. SEQ-SPS-1304-27 FOR HANDRAILS AND TOEBOARDS DETAILS.
3. FOR VALVE CHAMBER COVER ARRANGEMENT TYPE 5VCA USE THREE COVER HANDRAIL ARRANGEMENT.
4. FOR VALVE CHAMBER COVER ARRANGEMENT TYPE 5VCB USE FOUR COVER HANDRAIL ARRANGEMENT.
5. HANDRAILS FOR VALVE CHAMBERS ARE OPTIONAL, REFER NOTE 3 ON DRG NO. SEQ-SPS-1304-24 OR SEQ-SPS-1304-25.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 3
WET-WELL AND VALVE CHAMBER HANDRAILS
ARRANGEMENT OPTIONS
SHEET 4 OF 12

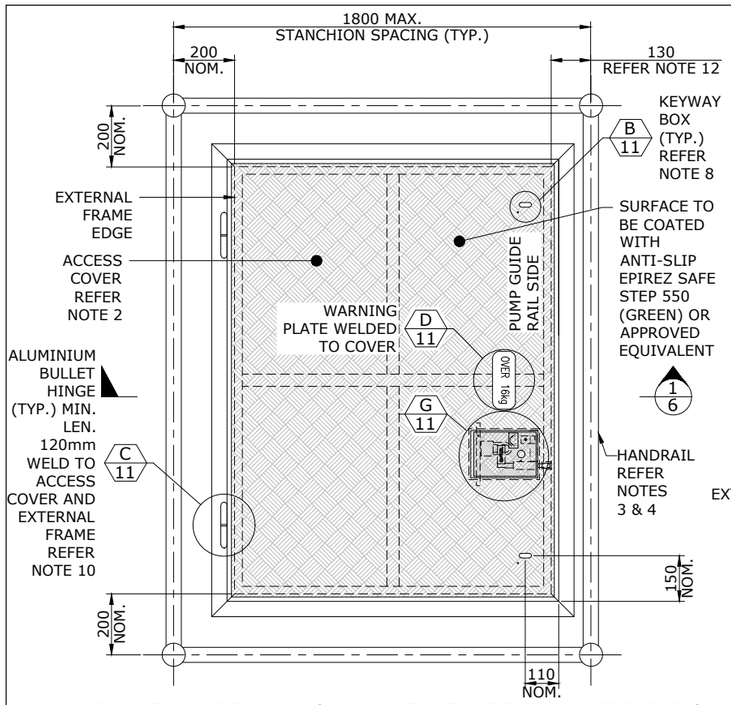
CoGC | ~~LCC~~ | ~~RCC~~ | ~~QUU~~ | ~~UW~~

DRAWING No. SEQ-SPS-1304-21

VERSION A

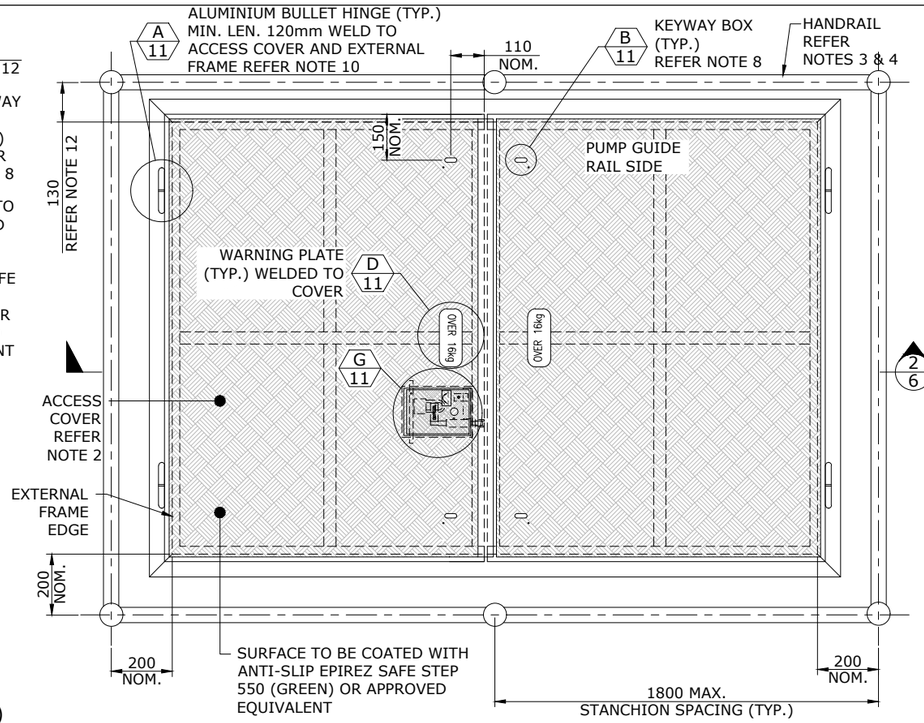
NOT TO SCALE

ORG DATE: 04/07/2016



SINGLE COVER PLAN (ALONG FACE OF PUMP GUIDE RAIL)

N.T.S (GATE/S NOT SHOWN)

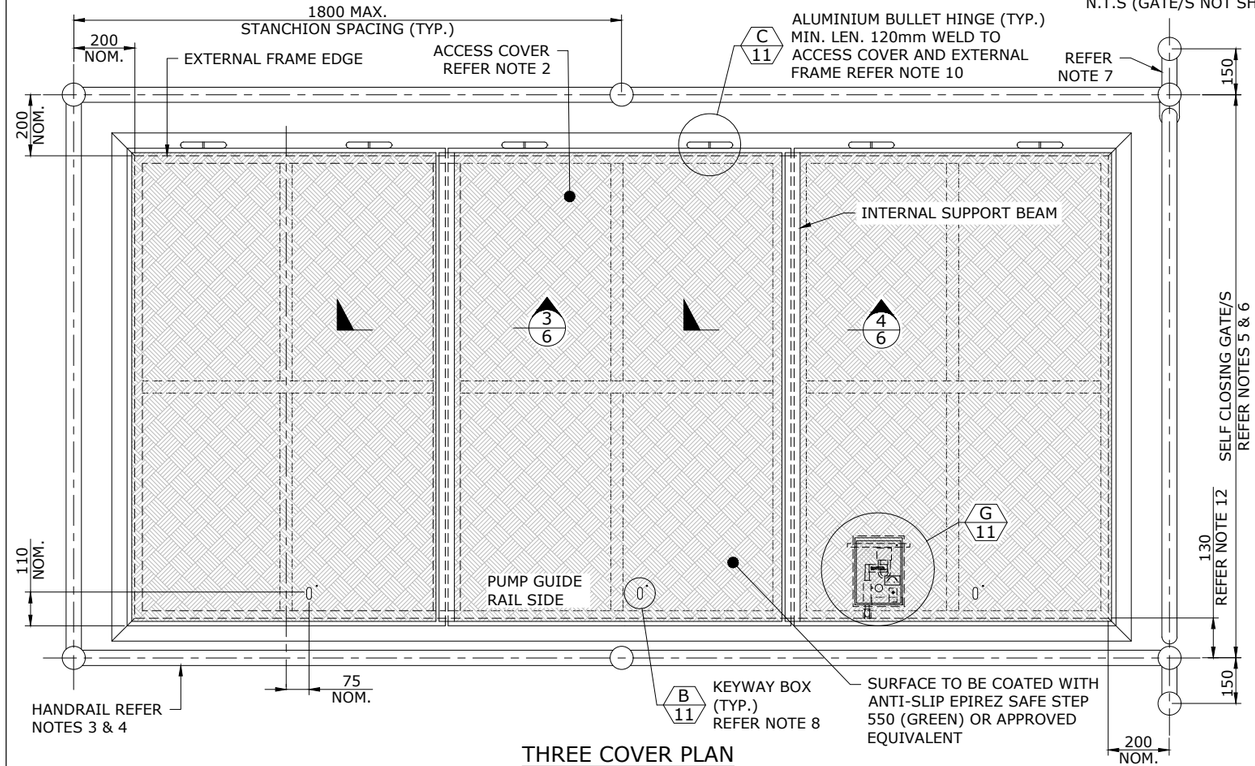


DUAL COVER PLAN

N.T.S (GATE/S NOT SHOWN)

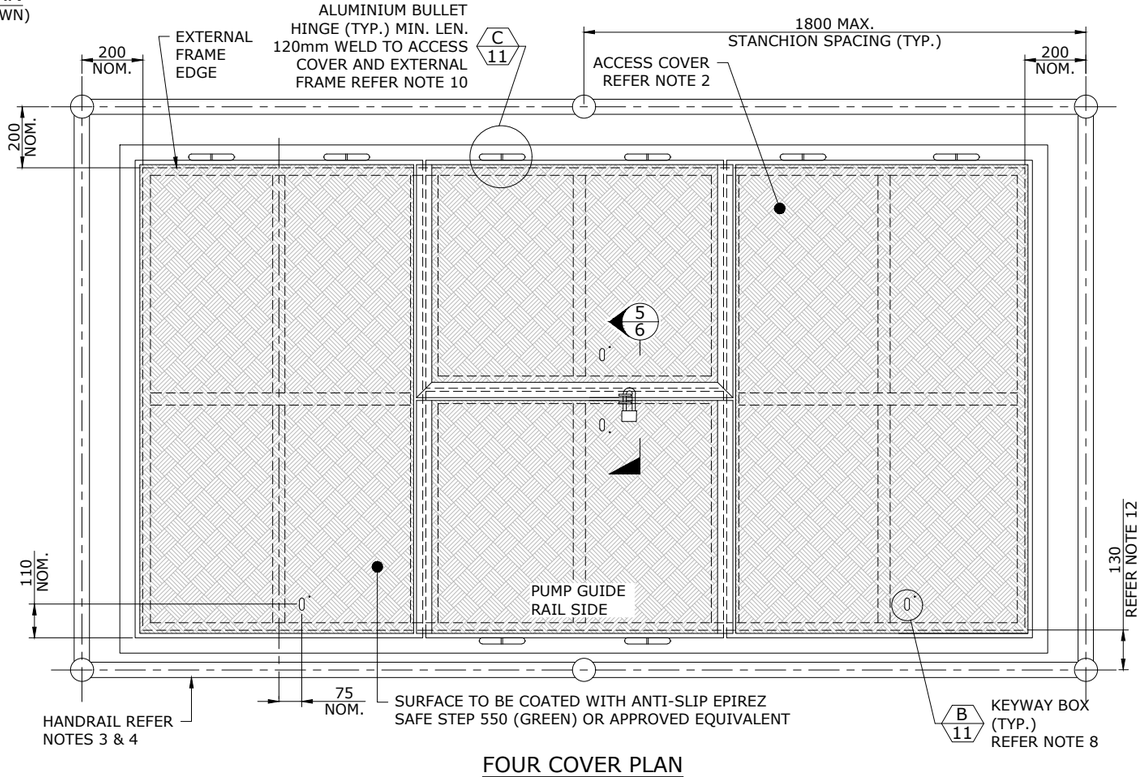
NOTES

1. REFER DRG NO. SEQ-SPS-1304-18 FOR GENERAL AND MATERIAL NOTES.
2. REFER DRG NO. SEQ-SPS-1304-23 FOR WET-WELL ACCESS COVER DETAILS.
3. HANDRAIL LAYOUT AND GATE LOCATION/S ARE INDICATIVE ONLY, REFER DRG NO. SEQ-SPS-1304-21 FOR ARRANGEMENT OPTIONS AND DRG NO. SEQ-SPS-1304-27 FOR DETAILS.
4. HANDRAIL TOEBOARDS ON THE PUMP GUIDE RAIL SIDE SHALL HAVE A 'HINGED AT BOTTOM' CONNECTION, REFER TYPE 2 TOEBOARD CONNECTION DETAIL ON DRG NO. SEQ-SPS-1304-27.
5. SELF CLOSING GATE/S WITH ACCESS COVERS OPENING TOWARDS AND BENEATH THEM, SHALL HAVE TOEBOARDS WITH A 'HINGED AT TOP' CONNECTION, REFER TYPE 3 TOEBOARD CONNECTION DETAIL ON DRG NO. SEQ-SPS-1304-27.
6. SELF CLOSING GATE/S SHALL SWING OUTWARDS AND THE NUMBER OF GATE/S REQUIRED SHALL BE AS FOLLOWS:
   - 6.1. A SINGLE GATE FOR SPANS BETWEEN STANCHIONS OF UP TO A MAXIMUM OF 1500mm.
   - 6.2. DOUBLE GATES FOR SPANS BETWEEN STANCHIONS GREATER THAN 1500mm AND UP TO A MAXIMUM OF 2400mm.
7. WHERE GATES SPAN THE ENTIRE LENGTH OF A HANDRAIL'S SIDE AND WHERE DEEMED NECESSARY, ADDITIONAL STANCHIONS AND RAILS SHALL BE PROVIDED EITHER SIDE OF THE GATE/S TO INCREASE HANDRAIL STABILITY.
8. FOR COVERS WITH A TOTAL LIFTING WEIGHT LESS THAN 16kg, A SINGLE KEYWAY BOX SHALL BE PROVIDED CENTRALLY (REFER THREE AND FOUR COVER PLANS), UNLESS REQUESTED OTHERWISE BY THE PRINCIPAL. FOR COVERS WITH A TOTAL LIFTING WEIGHT GREATER THAN 16kg, DUAL KEYWAY BOXES AND AN ETCHED WARNING PLATE SHALL BE PROVIDED (REFER SINGLE AND DUAL COVER PLANS).
9. WHERE POSSIBLE, THE PADLOCK TONGUE SHOULD NOT BE LOCATED ON THE PUMP GUIDE RAIL SIDE.
10. BULLET HINGES SHALL BE ORIENTATED IN OPPOSITE DIRECTIONS TO RESTRICT THE REMOVAL OF THE COVER.
11. WET WELL COVERS SHALL BE COMPLETELY SEALED WITH 'TESA' PERMAFOAM TAPE OR APPROVED EQUIVALENT, REFER TYPICAL SEALING TAPE CORNER DETAIL AND NOTE 3 ON DRG NO. SEQ-SPS-1304-28.
12. HANDRAIL SHALL HAVE A 130mm OFFSET ON THE PUMP GUIDE RAIL SIDE ONLY.



THREE COVER PLAN

N.T.S



FOUR COVER PLAN

N.T.S (GATE/S NOT SHOWN)

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 3
WET-WELL ACCESS COVERS
GENERAL ARRANGEMENT PLANS
SHEET 5 OF 12

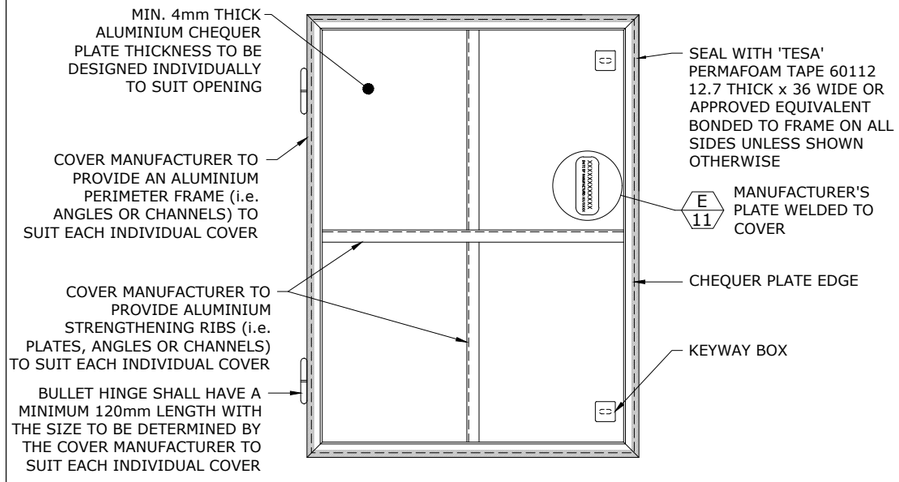
CoGC ~~LCC~~ ~~RCC~~ ~~QUU~~ ~~UW~~

DRAWING No. SEQ-SPS-1304-22

VERSION A

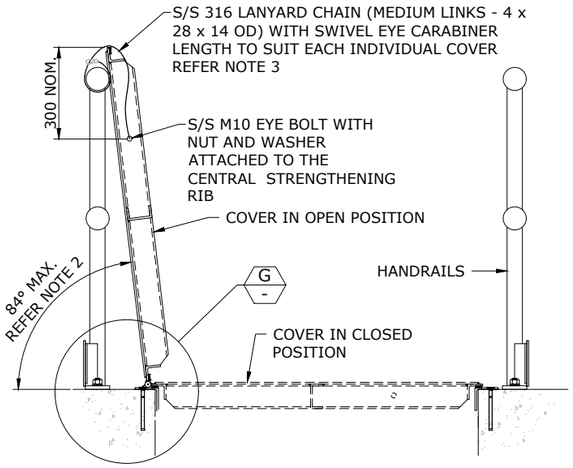
NOT TO SCALE

ORG DATE: 04/07/2016

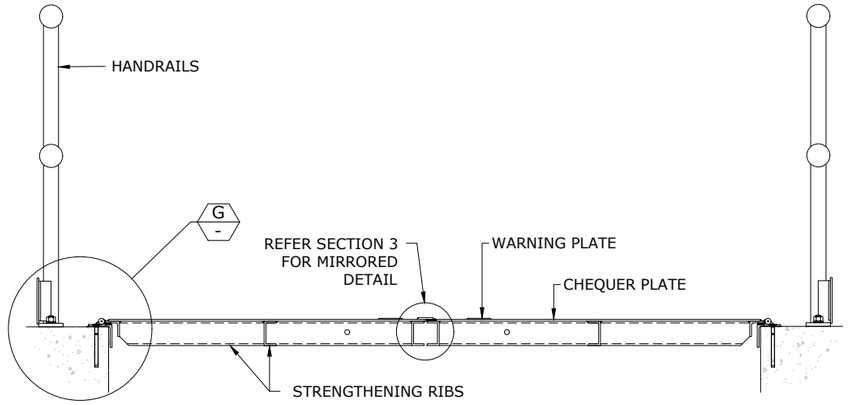


TYPICAL BACK OF ACCESS COVER - PLAN

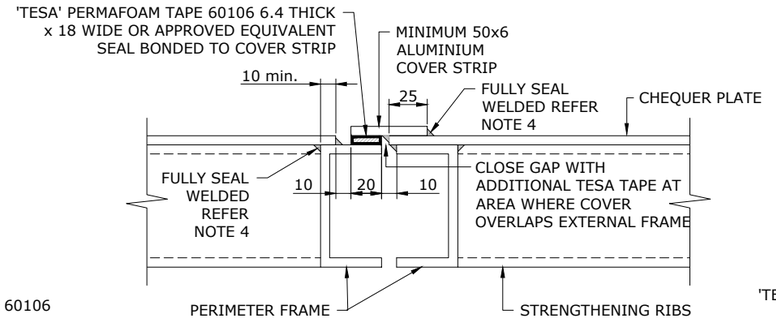
N.T.S



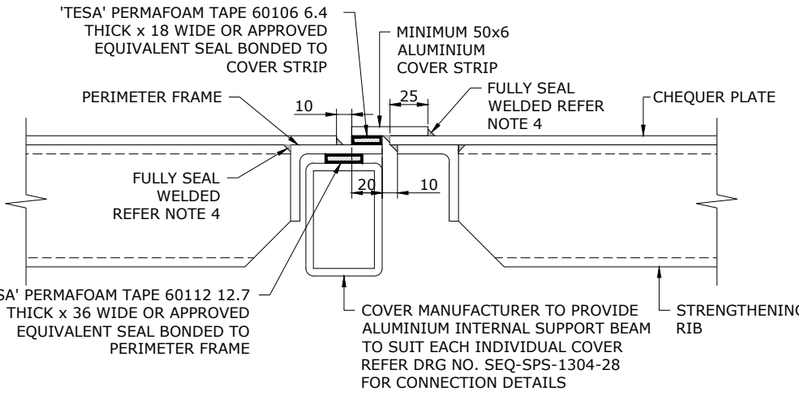
SECTION 1/5
N.T.S



SECTION 2/5
N.T.S

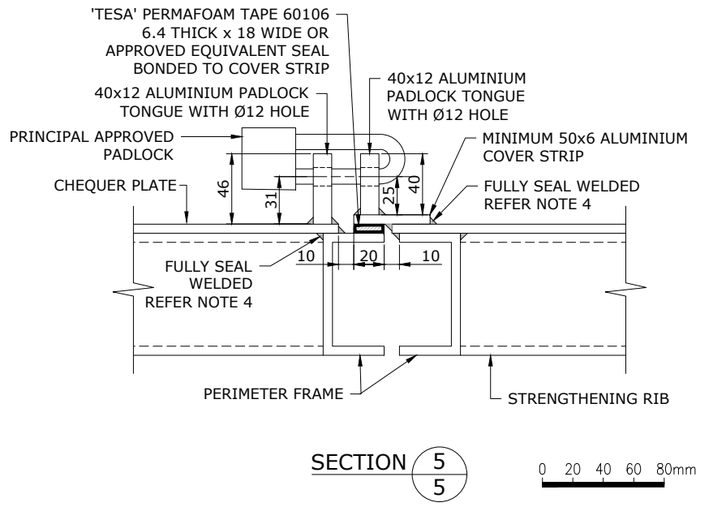


SECTION 3/5



SECTION 4/5

DETAIL G -
(COVER IN CLOSED POSITION)



SECTION 5/5

0 20 40 60 80mm

NOTES

1. REFER DRG NO. SEQ-SPS-1304-18 FOR GENERAL AND MATERIAL NOTES.
2. HANDRAILS AND COVERS SHALL BE DESIGNED TO ALLOW COVERS TO OPEN AT LEAST 6° PAST THE VERTICAL.
3. COVERS OPENING TOWARDS A HANDRAIL SHALL BE SECURED TO THE HANDRAIL BY A STAINLESS STEEL LANYARD WITH SWIVEL EYE CARABINER; THE LANYARD SHALL BE ATTACHED TO THE COVER'S CENTRAL STRENGTHENING RIB.
4. WET WELL COVERS SHALL BE COMPLETELY SEALED BY FULLY SEAL WELDS AS SPECIFIED OR ALTERNATIVELY INTERMITTENT WELDS WITH SIKAFLEX TANK N OR APPROVED EQUIVALENT SEALANT.
5. SIKAFLEX TANK N SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS, WITH ALUMINIUM SURFACES TREATED WITH A VERY FINE ABRASIVE PAD AND SIKA AKTIVATOR-205.
6. WET WELL COVERS SHALL BE DESIGNED TO BE COMPLETELY SEALED TO PROVIDE A FULL ODOUR TIGHT SEAL.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 3
WET-WELL ACCESS COVERS
DETAILS
SHEET 6 OF 12

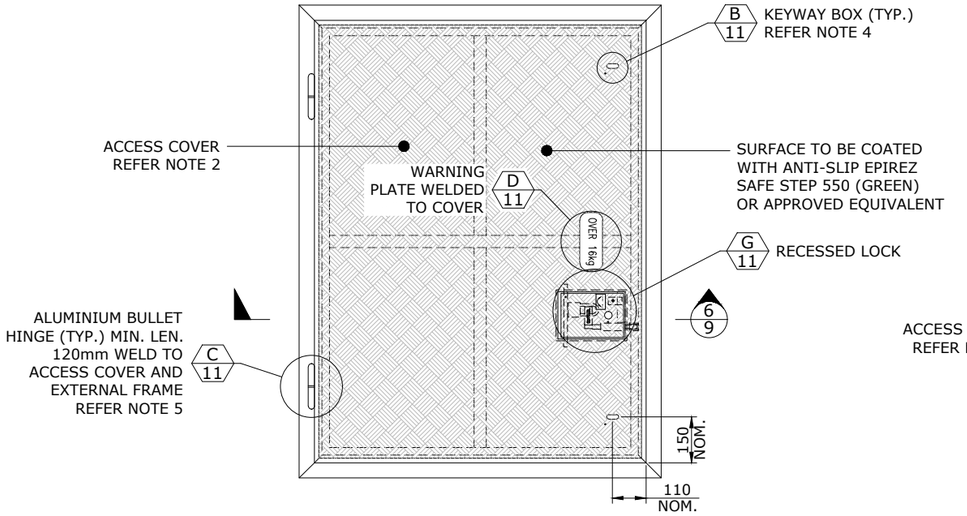
CoGC | ~~LCC~~ | ~~RCC~~ | ~~QUU~~ | ~~UW~~

DRAWING No.
SEQ-SPS-1304-23

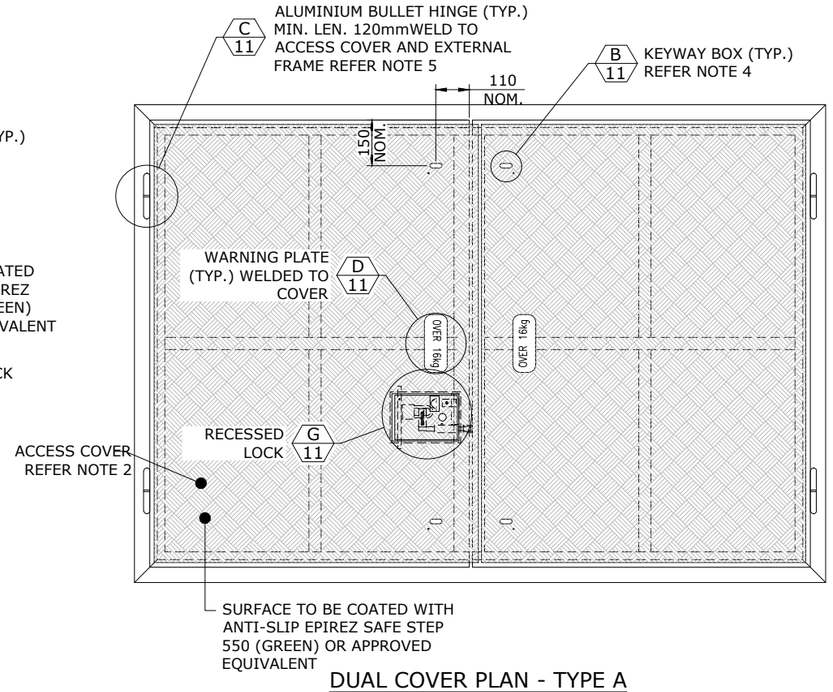
VERSION
A

NOT TO SCALE

ORG DATE:
04/07/2016



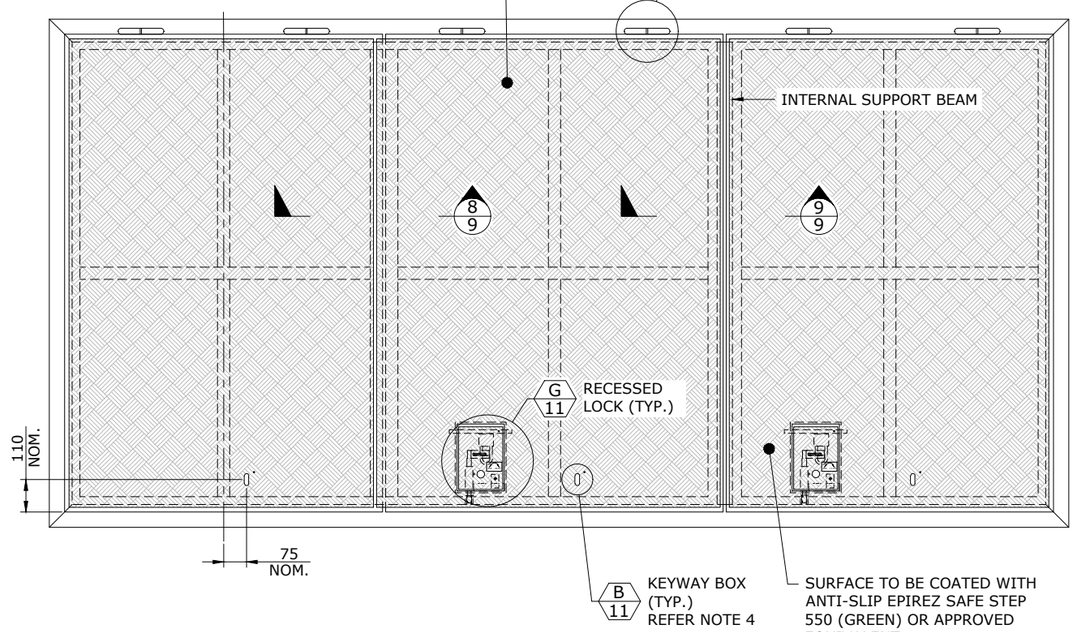
SINGLE COVER PLAN - TYPE A
N.T.S



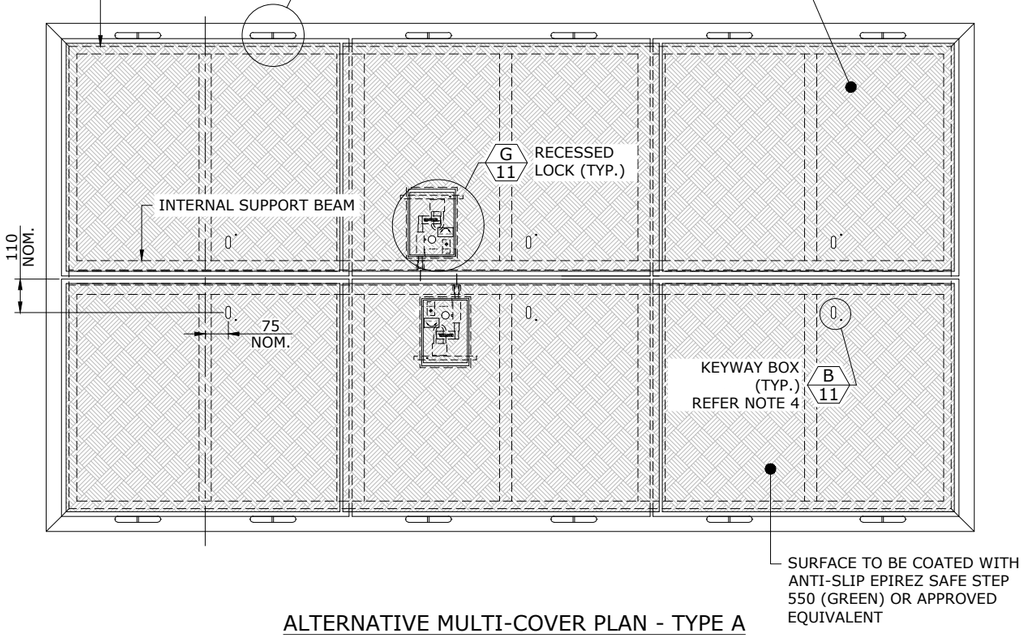
DUAL COVER PLAN - TYPE A
N.T.S

NOTES

1. REFER DRG NO. SEQ-SPS-1304-18 FOR GENERAL AND MATERIAL NOTES.
2. REFER DRG NO. SEQ-SPS-1304-26 FOR VALVE CHAMBER ACCESS COVER AND GRATE DETAILS.
3. VALVE CHAMBERS SHALL HAVE ONE OF THE FOLLOWING FALL PREVENTION OPTIONS, AS SPECIFIED BY THE PRINCIPAL:
   - 3.1. TYPE A - LID AND GRATE (i.e. NO HANDRAIL) WITH TYPE 2 BOLLARDS (REFER GCCC STD DRG 13-05-616) ON CONCRETE SURFACES AND TYPE 3 BOLLARDS (REFER GCCC STD DRG 13-05-617) ON GRASS OR ASPHALT SURFACES AROUND THE PERIMETER OF THE VALVE CHAMBER; THE PRINCIPAL SHALL DETERMINE THE NUMBER AND LOCATION OF BOLLARDS.
   - 3.2. TYPE B - LID AND HANDRAIL (i.e. NO GRATE) WITH VALVE SPINDLE OPENING/S PROVIDED ON THE COVER.
4. FOR COVERS WITH A TOTAL LIFTING WEIGHT LESS THAN 16kg, A SINGLE KEYWAY BOX SHALL BE PROVIDED CENTRALLY (REFER THREE AND ALTERNATIVE MULTI-COVER PLANS), UNLESS REQUESTED OTHERWISE BY THE PRINCIPAL. FOR COVERS WITH A TOTAL LIFTING WEIGHT GREATER THAN 16kg, DUAL KEYWAY BOXES AND AN ETCHED WARNING PLATE SHALL BE PROVIDED (REFER SINGLE AND DUAL COVER PLANS).
5. BULLET HINGES SHALL BE ORIENTATED IN OPPOSITE DIRECTIONS TO RESTRICT THE REMOVAL OF THE COVER.



THREE COVER PLAN - TYPE A
N.T.S



ALTERNATIVE MULTI-COVER PLAN - TYPE A
N.T.S

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 3
VALVE CHAMBER ACCESS COVERS
GENERAL ARRANGEMENT PLANS-TYPE A
SHEET 7 OF 12

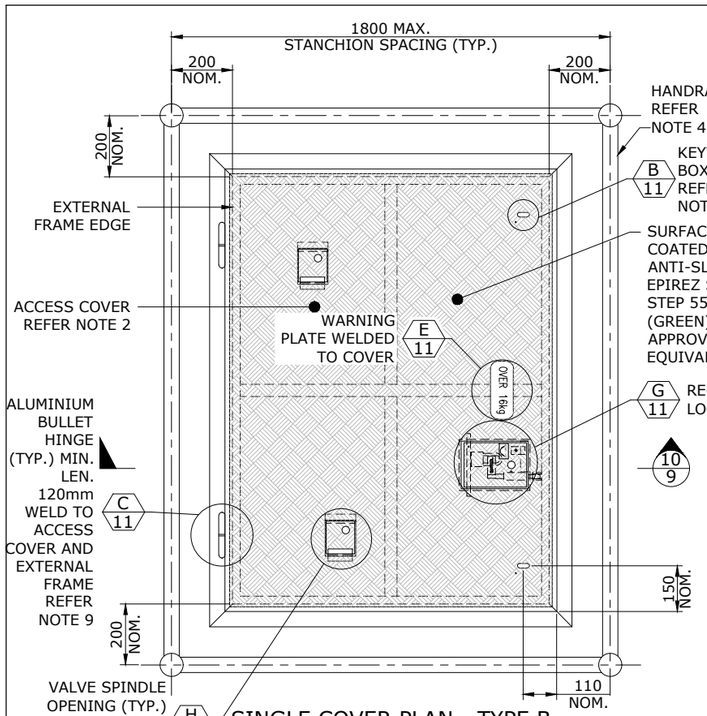
CoGC | ~~LCC~~ | ~~RCC~~ | ~~QUU~~ | ~~UW~~

DRAWING No.
SEQ-SPS-1304-24

VERSION
A

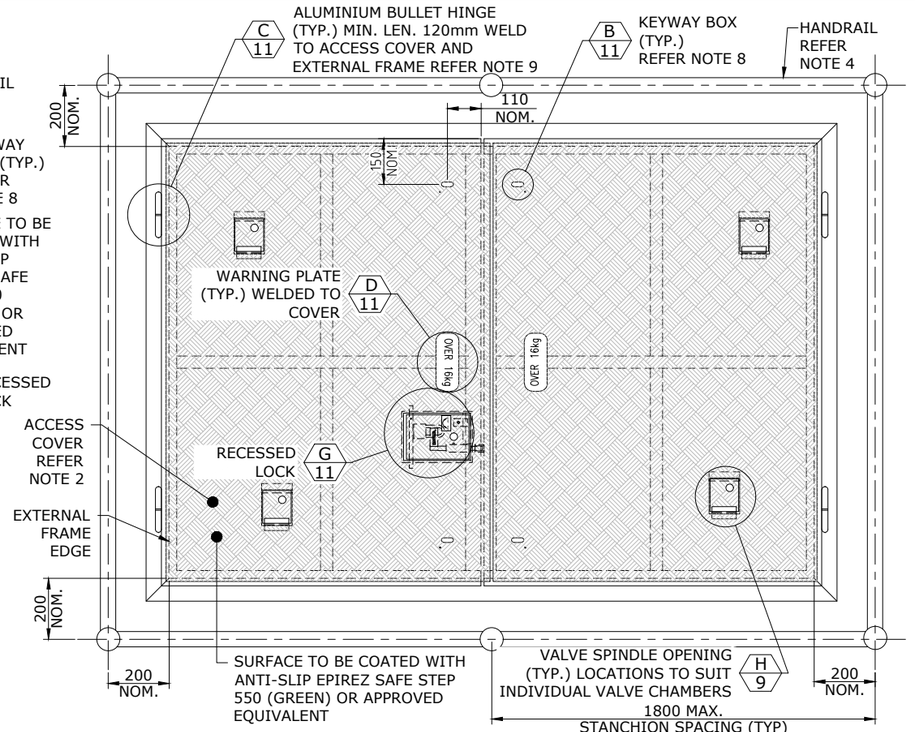
NOT TO SCALE

ORG DATE:
04/07/2016



SINGLE COVER PLAN - TYPE B

N.T.S (GATE/S NOT SHOWN)

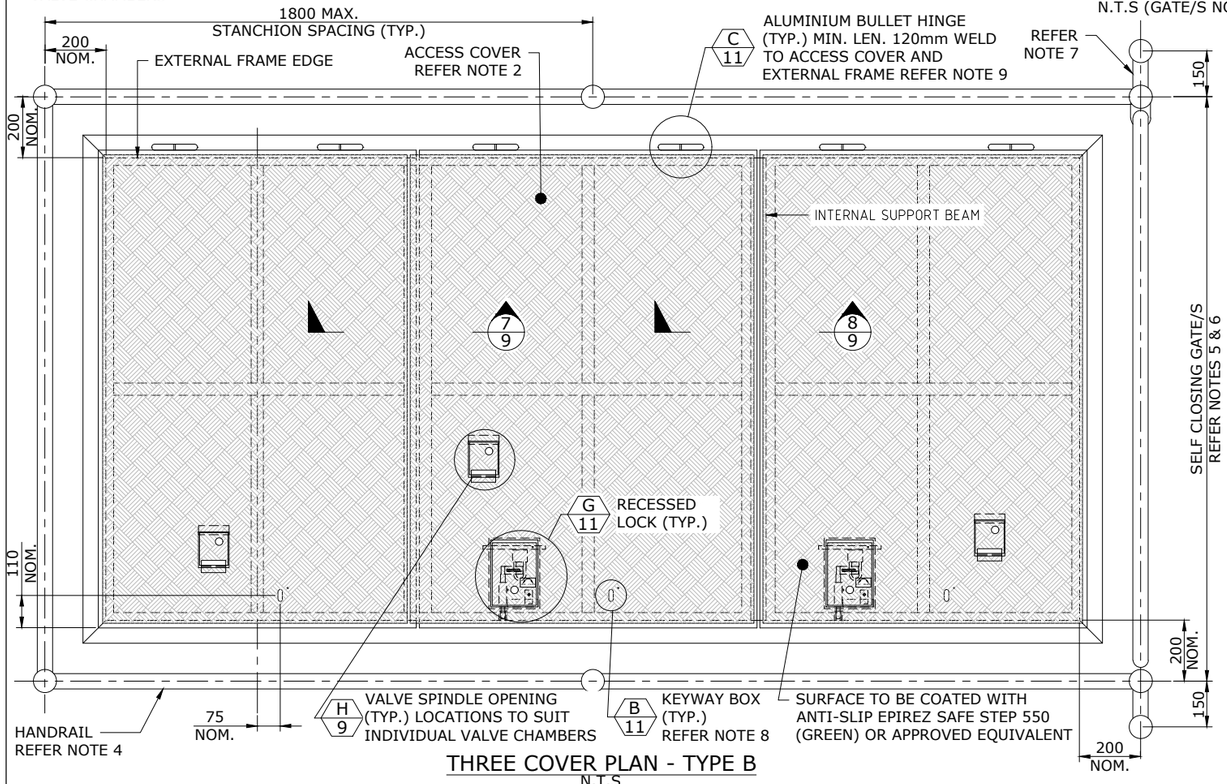


DUAL COVER PLAN - TYPE B

N.T.S (GATE/S NOT SHOWN)

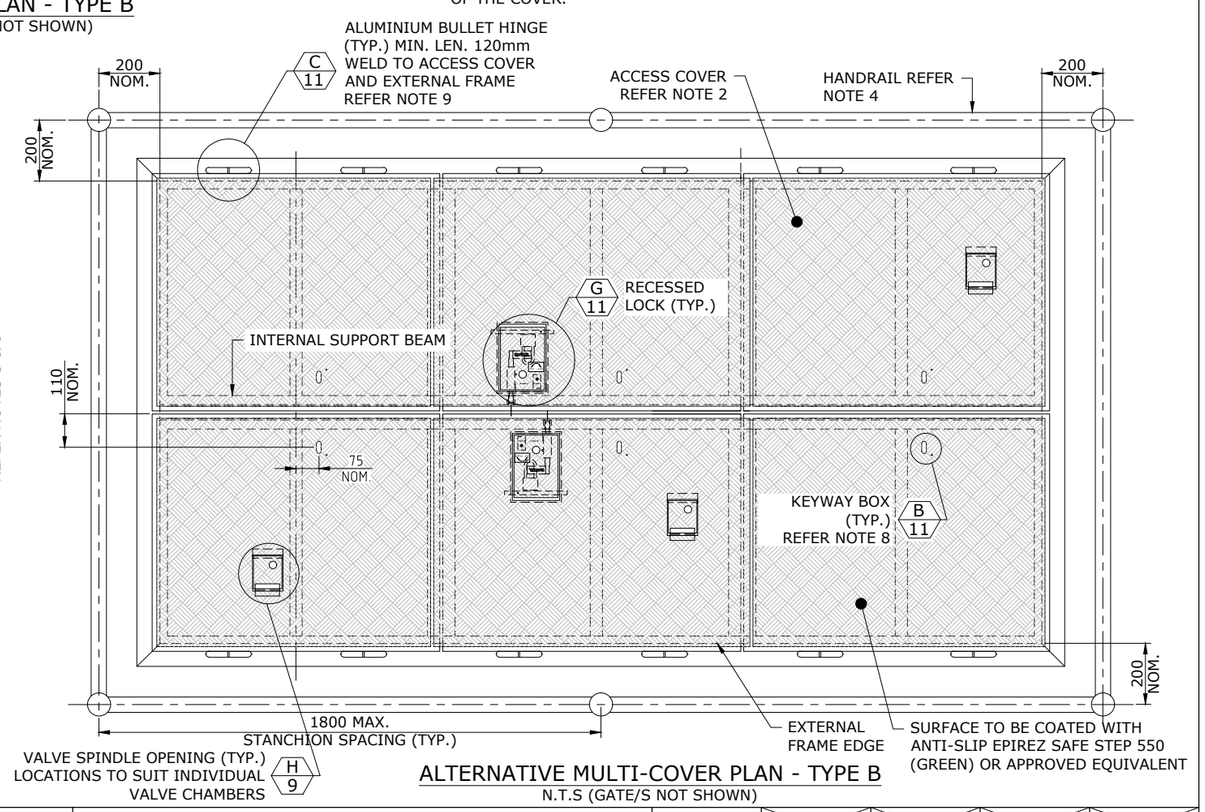
NOTES

1. REFER DRG NO. SEQ-SPS-1304-18 FOR GENERAL AND MATERIAL NOTES.
2. REFER DRG NO. SEQ-SPS-1304-26 FOR VALVE CHAMBER ACCESS COVER DETAILS.
3. VALVE CHAMBERS SHALL HAVE ONE OF THE FOLLOWING FALL PREVENTION OPTIONS, AS SPECIFIED BY THE PRINCIPAL:
   - 3.1. TYPE A - LID AND GRATE (i.e. NO HANDRAIL) WITH TYPE 2 BOLLARDS (REFER GCCC STD DRG 13-05-616) ON GRASS OR ASPHALT SURFACES AND TYPE 3 BOLLARDS (REFER GCCC STD DRG 13-05-617) ON CONCRETE SURFACES AROUND THE PERIMETER OF THE VALVE CHAMBER; THE PRINCIPAL SHALL DETERMINE THE NUMBER AND LOCATION OF BOLLARDS.
   - 3.2. TYPE B - LID AND HANDRAIL (i.e. NO GRATE) WITH VALVE SPINDLE OPENING/S PROVIDED ON THE COVER.
4. HANDRAIL LAYOUT AND GATE LOCATION/S ARE INDICATIVE ONLY, REFER DRG NO. SEQ-SPS-1304-21 FOR ARRANGEMENT OPTIONS AND DRG NO. SEQ-SPS-1304-27 FOR DETAILS.
5. SELF CLOSING GATE/S WITH ACCESS COVERS OPENING TOWARDS AND BENEATH THEM, SHALL HAVE TOEBOARDS WITH A 'HINGED AT TOP' CONNECTION, REFER TYPE 3 TOEBOARD CONNECTION DETAIL ON DRG NO. SEQ-SPS-1304-27.
6. SELF CLOSING GATE/S SHALL SWING OUTWARDS AND THE NUMBER OF GATE/S REQUIRED SHALL BE AS FOLLOWS:
   - 6.1. A SINGLE GATE FOR SPANS BETWEEN STANCHIONS OF UP TO A MAXIMUM OF 1500mm.
   - 6.2. DOUBLE GATES FOR SPANS BETWEEN STANCHIONS GREATER THAN 1500mm AND UP TO A MAXIMUM OF 2400mm.
7. WHERE GATES SPAN THE ENTIRE LENGTH OF A HANDRAIL'S SIDE AND WHERE NECESSARY, ADDITIONAL STANCHIONS AND RAILS SHALL BE PROVIDED EITHER SIDE OF THE GATE/S TO INCREASE HANDRAIL STABILITY.
8. FOR COVERS WITH A TOTAL LIFTING WEIGHT LESS THAN 16kg, A SINGLE KEYWAY BOX SHALL BE PROVIDED CENTRALLY (REFER THREE AND ALTERNATIVE MULTI-COVER PLANS), UNLESS REQUESTED OTHERWISE BY THE PRINCIPAL. FOR COVERS WITH A TOTAL LIFTING WEIGHT GREATER THAN 16kg, DUAL KEYWAY BOXES AND AN ETCHED WARNING PLATE SHALL BE PROVIDED (REFER SINGLE AND DUAL COVER PLANS).
9. BULLET HINGES SHALL BE ORIENTATED IN OPPOSITE DIRECTIONS TO RESTRICT THE REMOVAL OF THE COVER.



THREE COVER PLAN - TYPE B

N.T.S



ALTERNATIVE MULTI-COVER PLAN - TYPE B

N.T.S (GATE/S NOT SHOWN)

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 3
VALVE CHAMBER ACCESS COVERS
GENERAL ARRANGEMENT PLANS-TYPE B
SHEET 8 OF 12

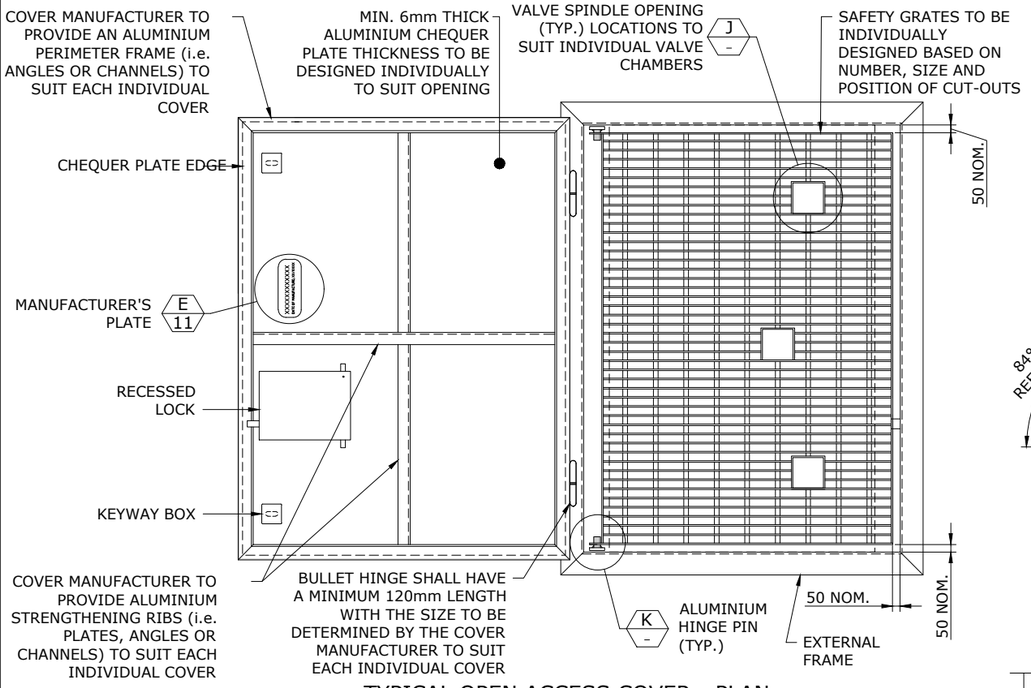
CoGC ~~LCC~~ ~~RCC~~ ~~QUU~~ ~~UW~~

DRAWING No. SEQ-SPS-1304-25

VERSION A

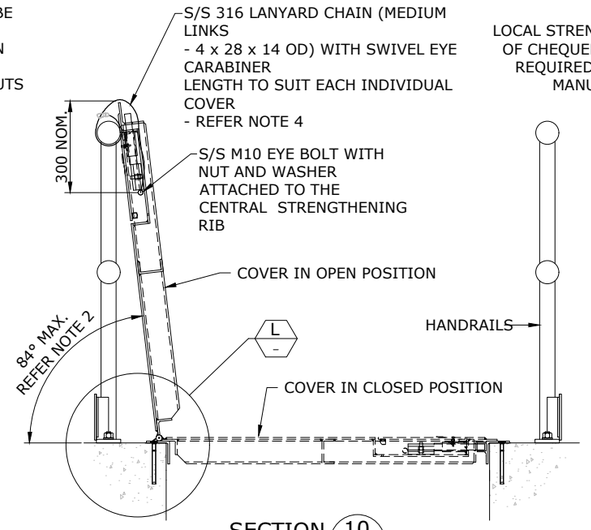
NOT TO SCALE

ORG DATE: 04/07/2016



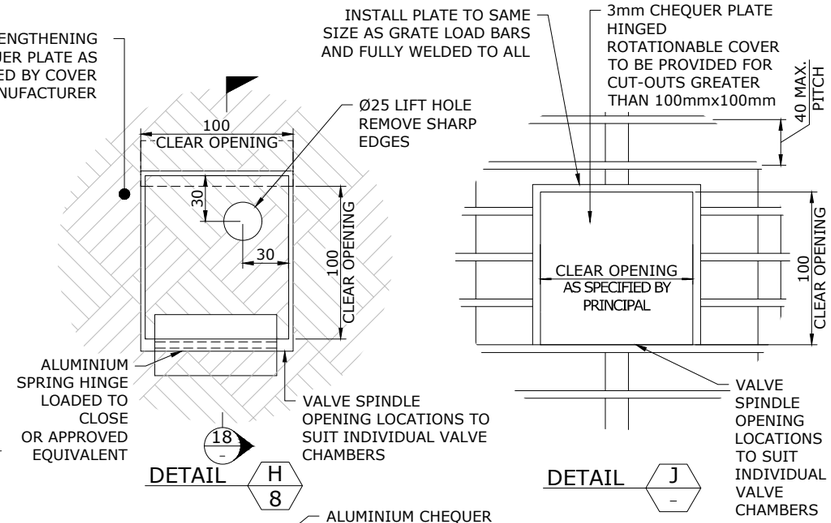
TYPICAL OPEN ACCESS COVER - PLAN

N.T.S (TYPE B HANDRAILS NOT SHOWN)



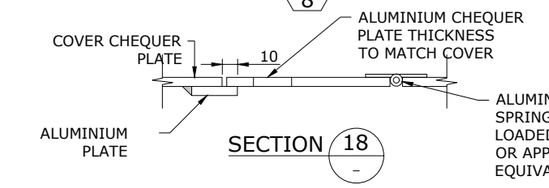
SECTION 10/8 N.T.S

TYPE B

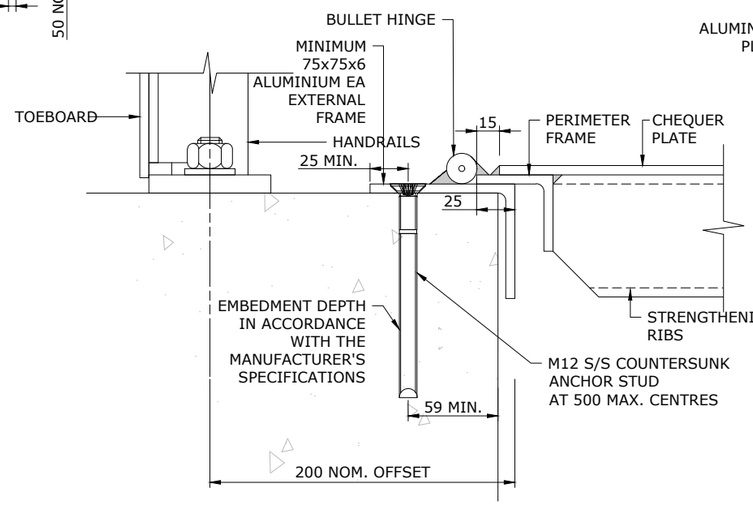


DETAIL 18/– H/8

DETAIL J/–

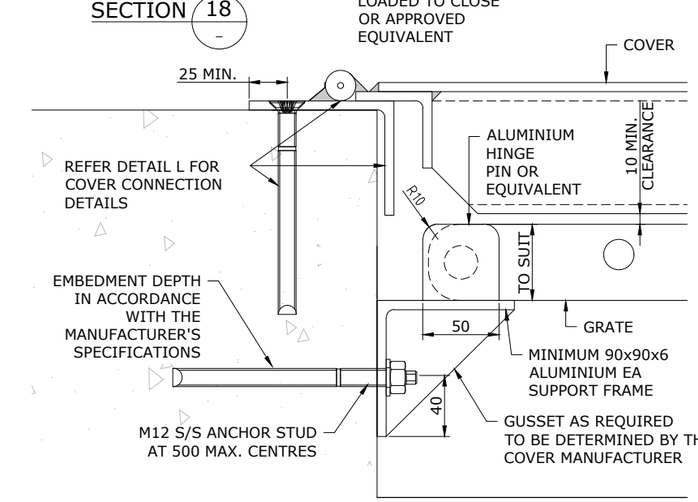


SECTION 18/–



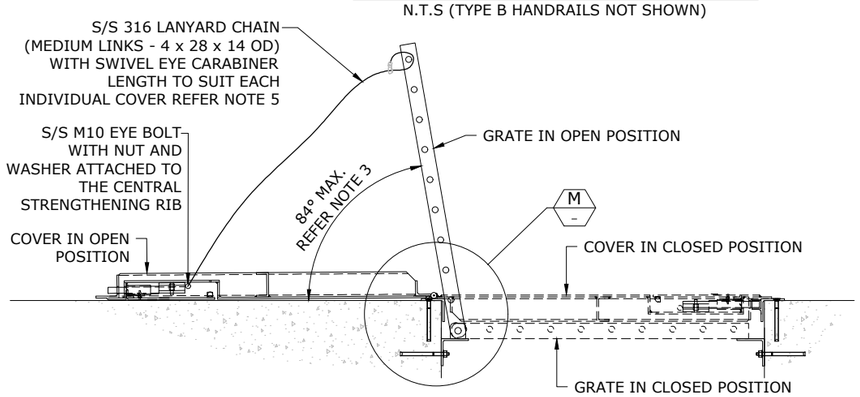
DETAIL L/–

(COVER IN CLOSED POSITION)



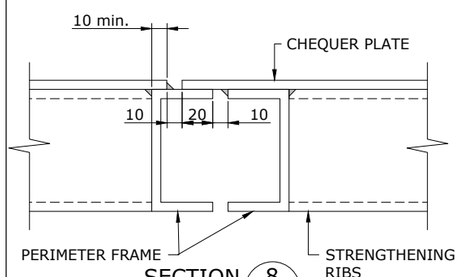
DETAIL M/–

(COVER & GRATE IN CLOSED POSITION)



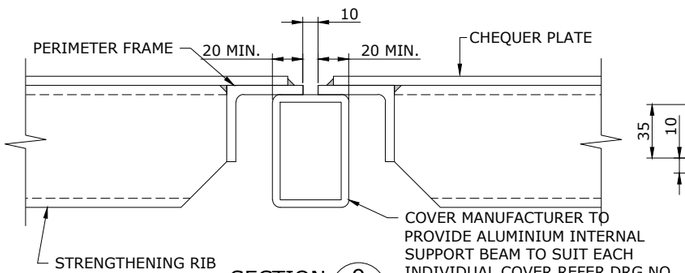
SECTION 6/7 N.T.S

TYPE A



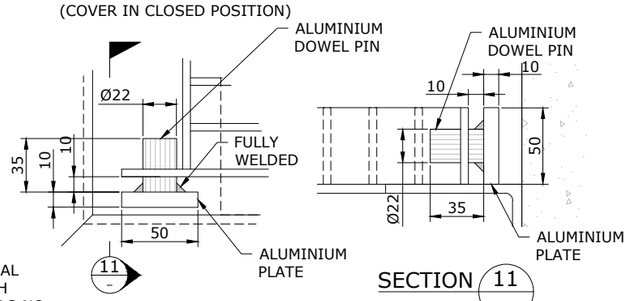
SECTION 8/7&8

(OPTIONAL GRATE NOT SHOWN)



SECTION 9/7&8

(OPTIONAL GRATE NOT SHOWN)



DETAIL K/–

SECTION 11/–

0 20 40 60 80mm

A1 UNREDUCED

NOTES

1. REFER DRG NO. SEQ-SPS-1304-18 FOR GENERAL AND MATERIAL NOTES.
2. HANDRAILS AND COVERS SHALL BE DESIGNED TO ALLOW COVERS TO OPEN AT LEAST 6° PAST THE VERTICAL.
3. GRATES SHALL BE DESIGNED TO ALLOW THE GRATE TO OPEN AT LEAST 6° PAST THE VERTICAL.
4. COVERS OPENING TOWARDS HANDRAILS SHALL BE SECURED TO THE HANDRAIL BY A STAINLESS STEEL LANYARD WITH SWIVEL EYE CARABINER; THE LANYARD SHALL BE ATTACHED TO THE COVER'S CENTRAL STRENGTHENING RIB.
5. GRATES SHALL OPEN IN THE SAME DIRECTION AS THE COVER AND SHALL BE SECURED TO THE COVER BY A STAINLESS STEEL LANYARD WITH SWIVEL EYE CARABINER; THE LANYARD SHALL BE ATTACHED TO THE COVER'S CENTRAL STRENGTHENING RIB.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 3
VALVE CHAMBER ACCESS COVERS
AND SAFETY GRATE DETAILS
SHEET 9 OF 12

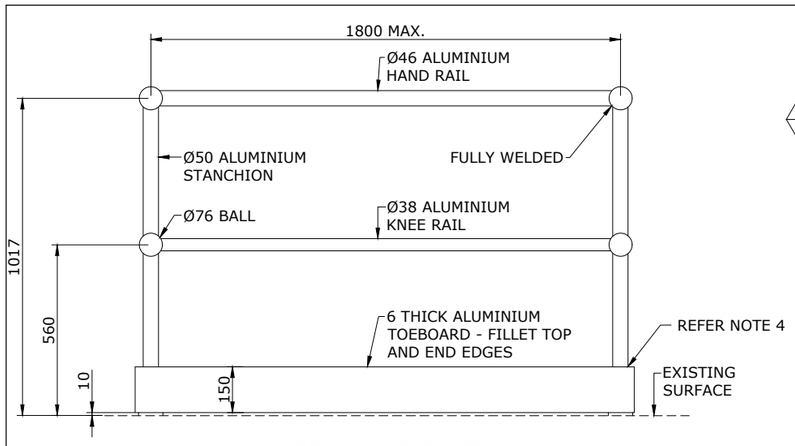
CoGC ~~LCC~~ ~~RCC~~ ~~QUU~~ ~~UW~~

DRAWING No. SEQ-SPS-1304-26

VERSION A

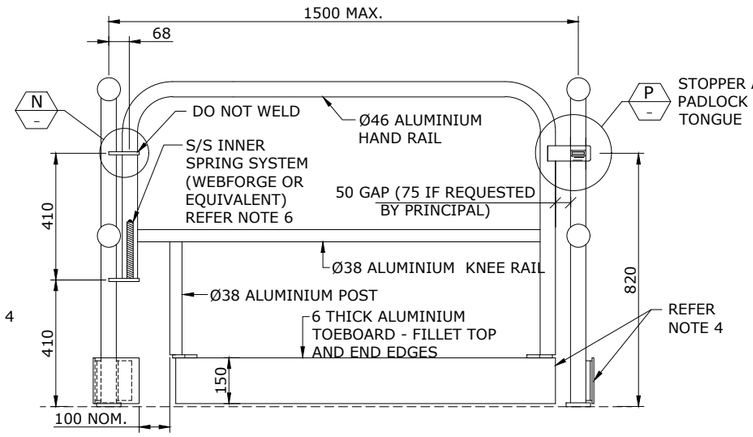
NOT TO SCALE

ORG DATE: 04/07/2016



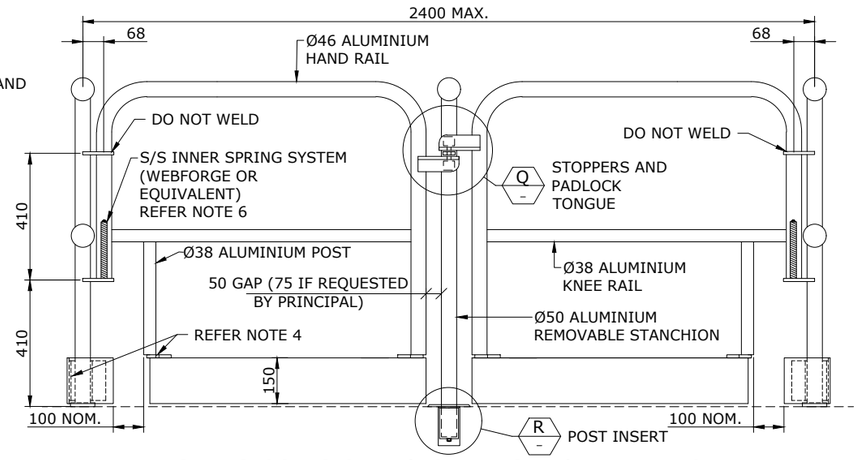
HANDRAILS - ELEVATION

N.T.S



SELF CLOSING GATE (SINGLE GATE) - ELEVATION

N.T.S

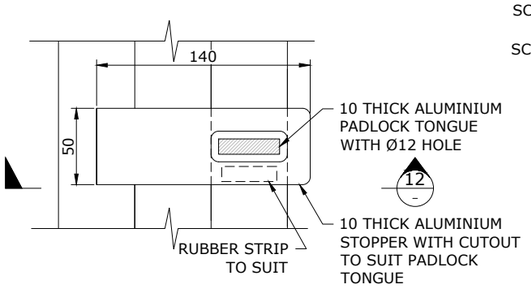


SELF CLOSING GATE (DOUBLE GATE) - ELEVATION

N.T.S

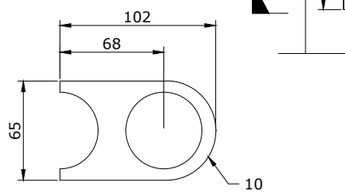
SCALE A 0 20 40 60 80mm

SCALE B 0 50 100 150 200mm



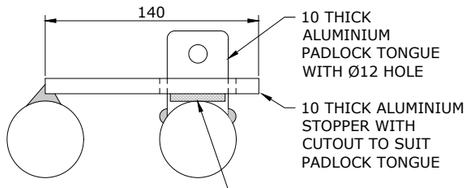
DETAIL P

SCALE A



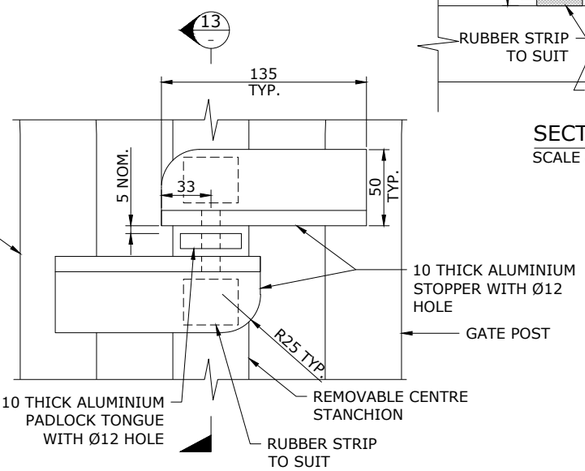
DETAIL N

SCALE A



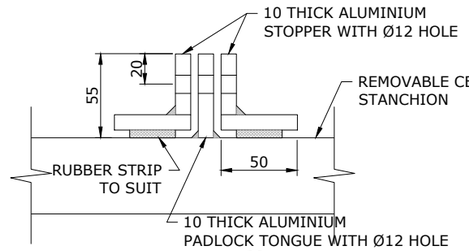
SECTION 12

SCALE A



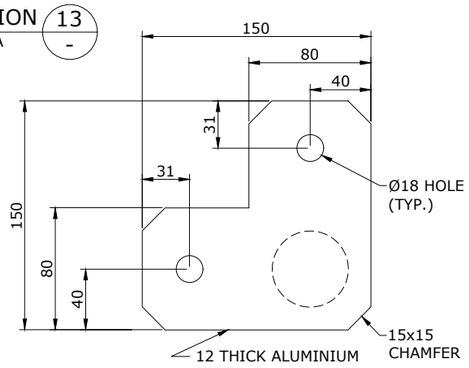
DETAIL Q

SCALE A



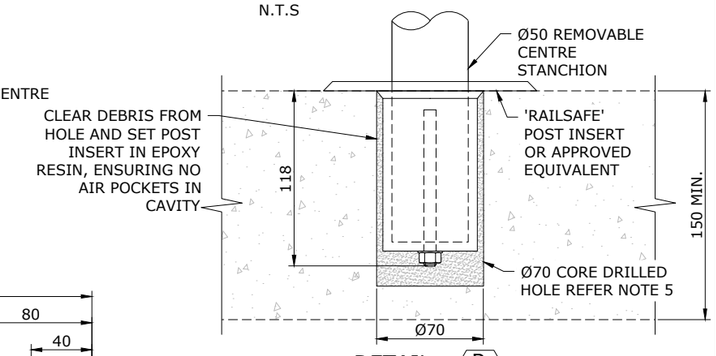
SECTION 13

SCALE A



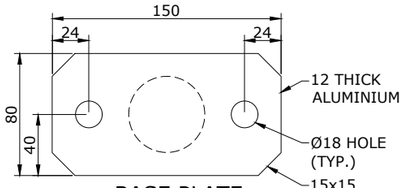
RIGHT ANGLE BASE PLATE

SCALE A



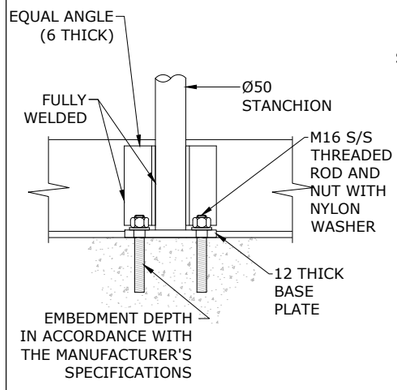
DETAIL R

SCALE A



BASE PLATE

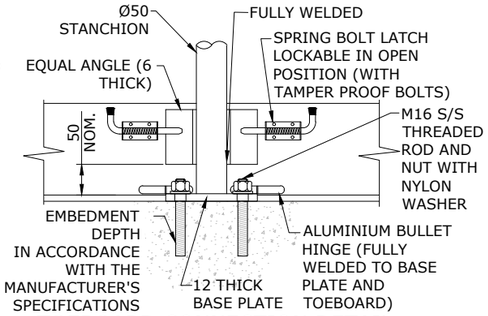
SCALE A



TOEBOARD CONNECTION DETAIL

(TYPE 1 - FIXED ENDS)

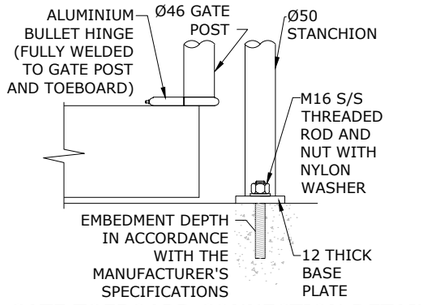
SCALE B



TOEBOARD CONNECTION DETAIL

(TYPE 2 - HINGED AT BOTTOM)

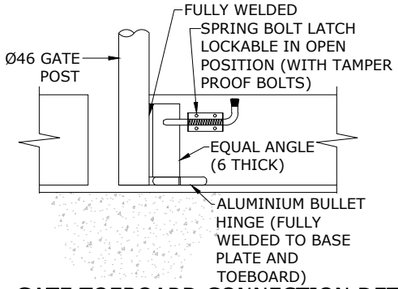
SCALE B



GATE TOEBOARD CONNECTION DETAIL

(TYPE 3 - HINGED AT TOP)

SCALE B



GATE TOEBOARD CONNECTION DETAIL

(TYPE 4 - HINGED AT BOTTOM)

SCALE B

NOTES

1. REFER DRG NO. SEQ-SPS-1304-18 FOR GENERAL AND MATERIAL NOTES.
2. REFER DRG NO. SEQ-SPS-1304-21 FOR HANDRAIL ARRANGEMENTS.
3. HANDRAILS SHALL BE WEBFORGE OR APPROVED EQUIVALENT.
4. TOEBOARDS SHALL BE PROVIDED ON ALL SIDES AND CONNECTED AS FOLLOWS TO EACH STANCHION:
   - 4.1. TYPE 1 - TYPICAL CONNECTION DETAIL.
   - 4.2. TYPE 2 - CONNECTION DETAIL FOR HANDRAILS ON THE PUMP GUIDE RAIL SIDE.
   - 4.3. TYPE 3 - CONNECTION DETAIL FOR GATES WITH COVERS OPENING TOWARDS AND FALLING BENEATH THEM.
   - 4.4. TYPE 4 - CONNECTION DETAIL FOR GATES ON THE PUMP GUIDE RAIL SIDE.
5. SITE SURVEY EACH DRILLING LOCATION WITH X-RAY DETECTION EQUIPMENT. PLACE POST INSERT TO CLEAR EXISTING REINFORCEMENT IN SLAB.
6. THE SELF CLOSING GATE BOTTOM AND TOP HINGES SHALL HAVE A NYLON SLEEVE OR APPROVED EQUIVALENT.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 3
HANDRAILS AND TOEBOARDS
DETAILS
SHEET 10 OF 12

CoGC | LCC | RCC | QUU | UW

DRAWING No.

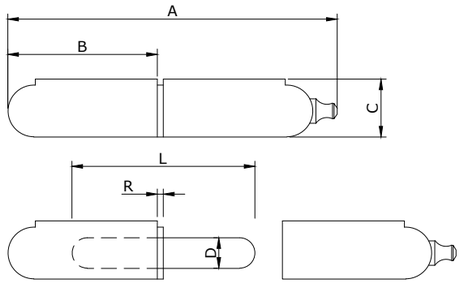
SEQ-SPS-1304-27

VERSION

A

NOT TO SCALE

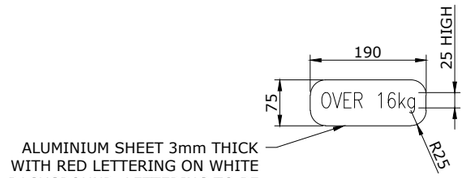
ORG DATE: 04/07/2016



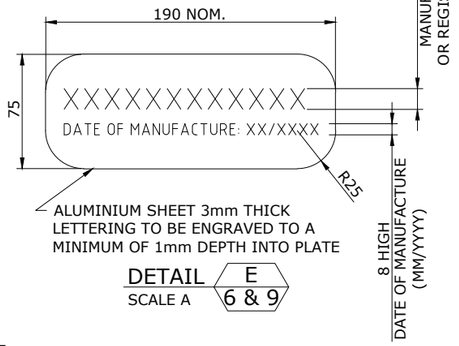
DETAIL C (5,7,8)
N.T.S

REFER NOTE 2

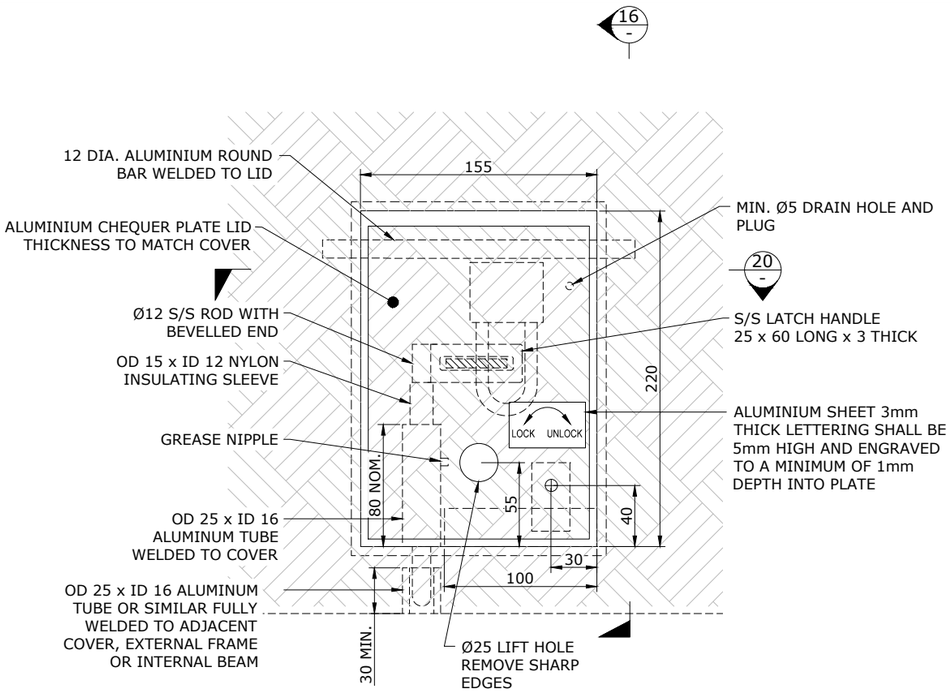
	A	B	C	D	E	F
1	ALUMINIUM BULLET HINGE DIMENSIONS					
2	A (mm)	B (mm)	C (mm)	D (mm)	R (mm)	L (mm)
3	120	59	20	16	2	60
4	150	74	25	20	2	75



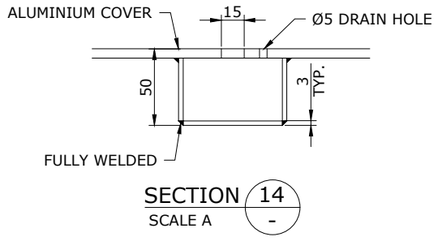
DETAIL D (5,7,8)
SCALE B



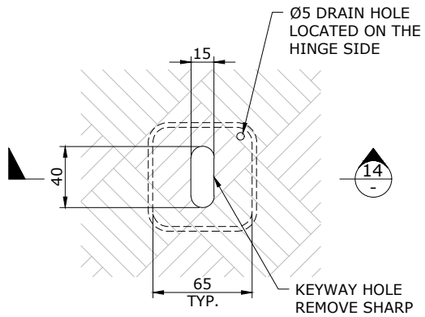
DETAIL E (6 & 9)
SCALE A



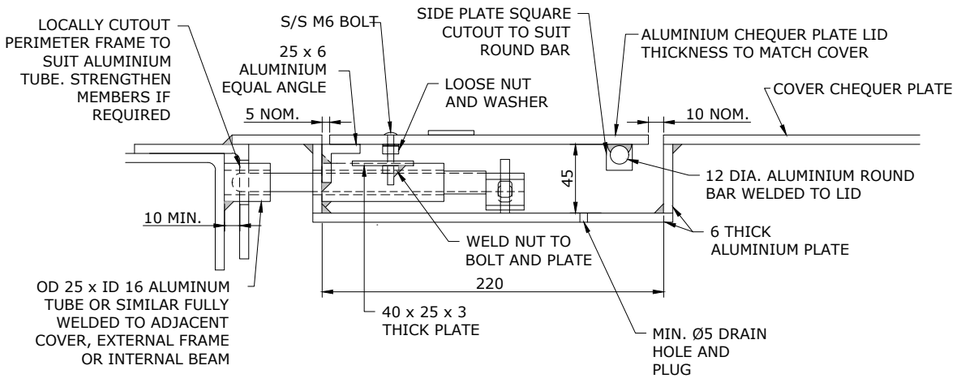
DETAIL G (7 & 8)
SCALE A



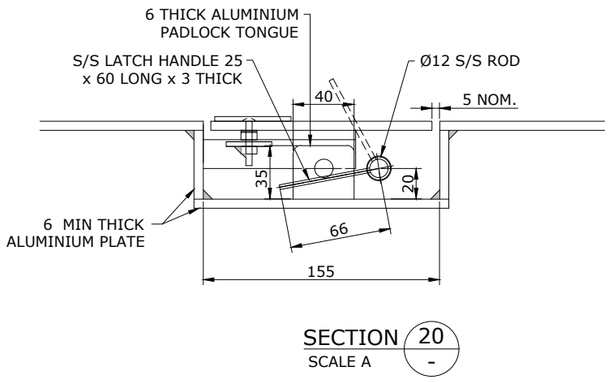
SECTION 14 (-)
SCALE A



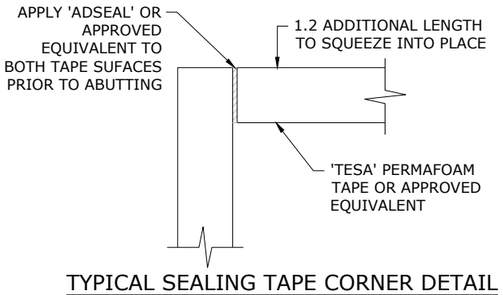
DETAIL B (5,7,8)
SCALE A



SECTION 16 (-)
SCALE A



SECTION 20 (-)
SCALE A



TYPICAL SEALING TAPE CORNER DETAIL
N.T.S
REFER NOTE 3

SCALE A 0 20 40 60 80mm

SCALE B 0 50 100 150 200mm

NOTES

1. REFER DRG NO. SEQ-SPS-1304-18 FOR GENERAL AND MATERIAL NOTES.
2. BULLET HINGE DIMENSIONS ARE INDICATIVE ONLY. COVER MANUFACTURER TO DETERMINE THE HINGE SIZE TO SUIT.
3. WIPE SURFACE WITH A CLEAN, LINT-FREE, DRY CLOTH TO ENSURE ABSENCE OF GREASE, DIRT AND MOISTURE PRIOR TO APPLICATION OF TAPE.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 3
MISCELLANEOUS DETAILS 1 OF 2
SHEET 11 OF 12

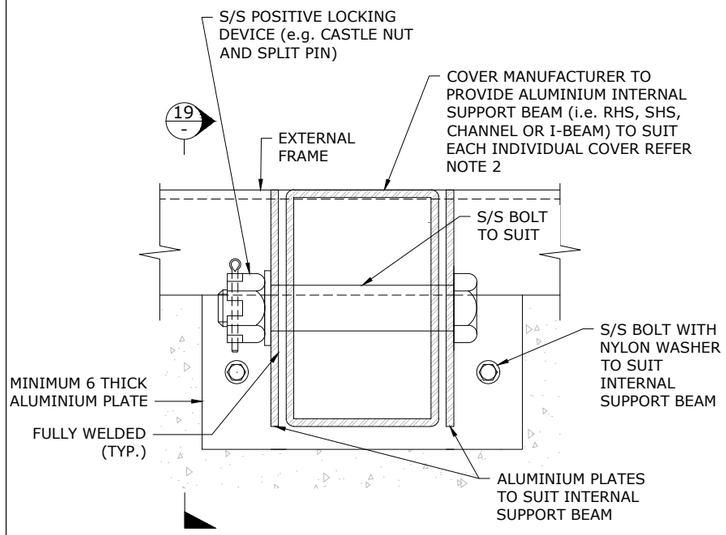
CoGC | LCC | RCC | QUU | UW

DRAWING No.
SEQ-SPS-1304-28

VERSION
A

NOT TO SCALE

ORG DATE:
04/07/2016

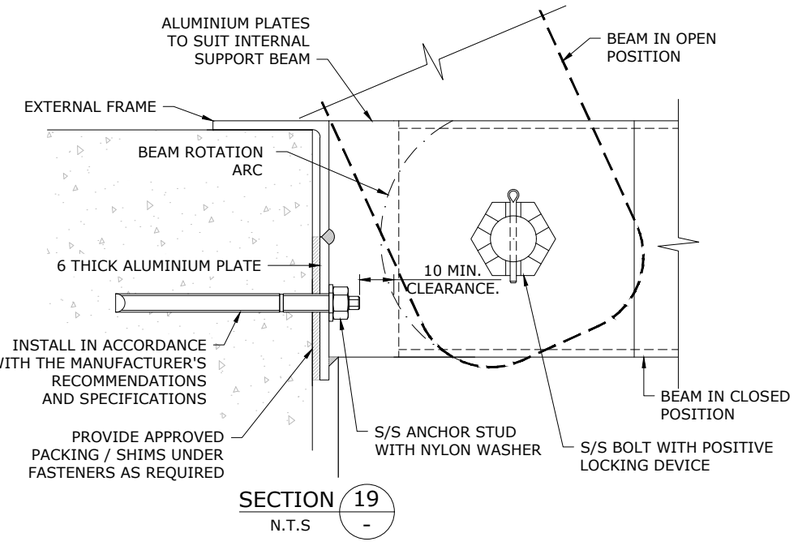


HINGED INTERNAL SUPPORT BEAM CONNECTION DETAIL

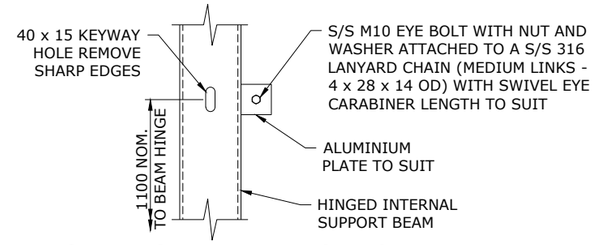
N.T.S

(COVER NOT SHOWN)

REFER NOTE 3, 4 & 5

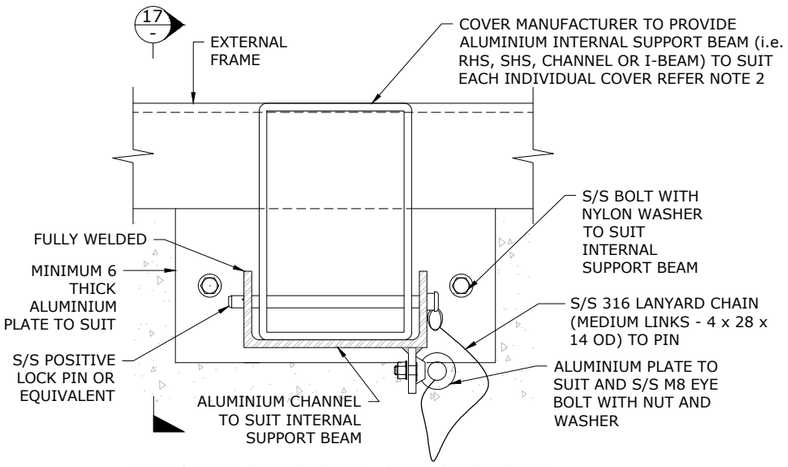


SECTION 19 - N.T.S



TYPICAL HINGED INTERNAL SUPPORT BEAM KEYWAY HOLE AND LANYARD ATTACHMENT

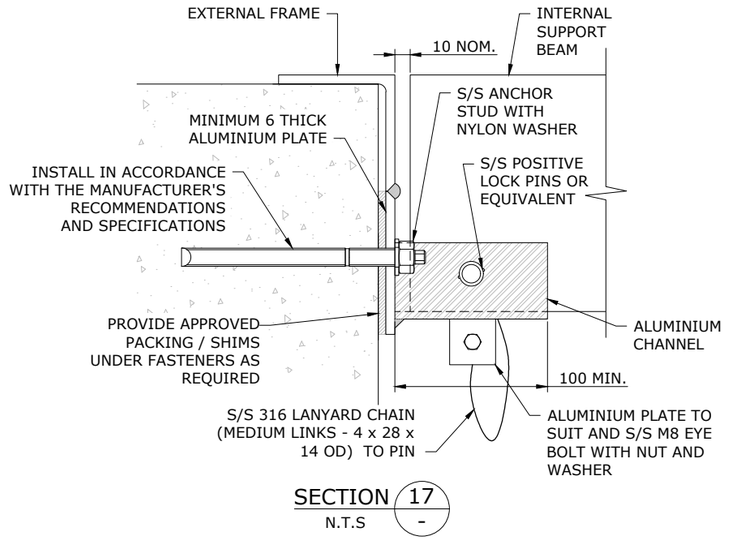
N.T.S



REMOVABLE INTERNAL SUPPORT BEAM CONNECTION DETAIL

N.T.S

(COVERS NOT SHOWN)



SECTION 17 - N.T.S

NOTES

1. REFER DRG NO. SEQ-SPS-1304-18 FOR GENERAL AND MATERIAL NOTES.
2. WHERE POSSIBLE REMOVABLE INTERNAL SUPPORT BEAMS SHALL BE LOCATED TO AVOID OBSTRUCTION OF NORMAL MAINTENANCE PROCEDURES.
3. HINGED INTERNAL SUPPORT BEAMS SHALL HAVE A MAXIMUM LIFTING WEIGHT OF 16kg.
4. HINGED INTERNAL SUPPORT BEAMS SHALL HAVE A SUITABLY LOCATED KEYWAY HOLE (40 x 15) OPENING, REFER TYPICAL DETAIL THIS SHEET
5. HINGED INTERNAL SUPPORT BEAM SHALL HAVE A S/S LANYARD AND ALUMINIUM PLATE LOCATED TO SUIT SECUREMENT TO THE HANDRAIL WHEN THE BEAM IS IN AN OPEN POSITION, REFER TYPICAL DETAIL THIS SHEET.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM ACCESS COVERS-OPTION 3
MISCELLANEOUS DETAILS 2 OF 2
SHEEET 12 OF 12

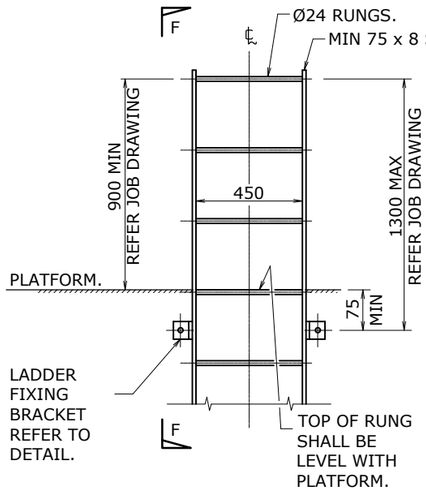
CoGC | LCC | RCC | QUU | UW

DRAWING No. SEQ-SPS-1304-29

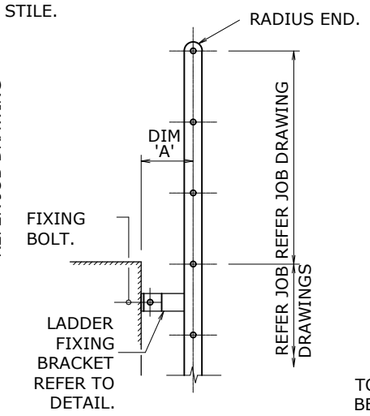
VERSION A

NOT TO SCALE

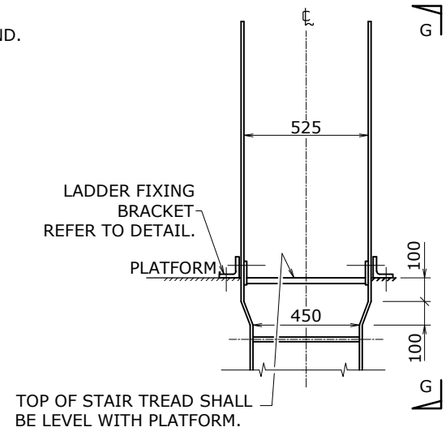
ORG DATE: 04/07/2016



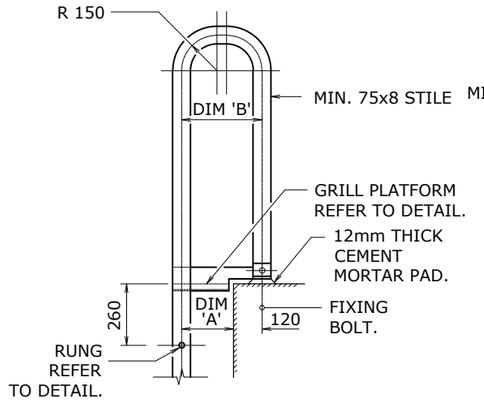
FRONT ELEVATION



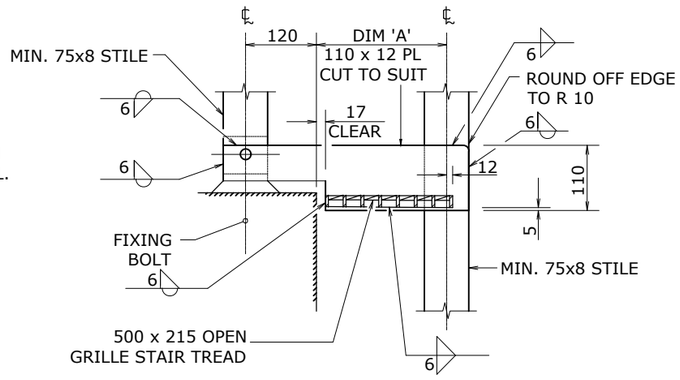
SIDE ELEVATION (F - F)



FRONT ELEVATION



SIDE ELEVATION (G - G)

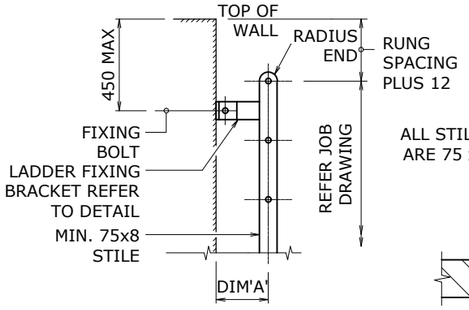


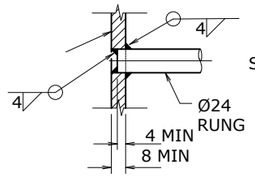
SECTIONAL ELEVATION (K - K)

TYPE 'B' LADDER TOP

TYPE 'A' LADDER TOP

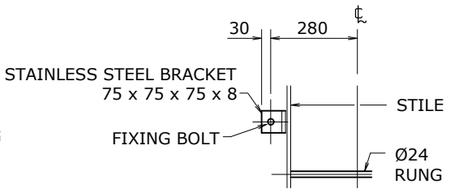
SIDE ACCESS



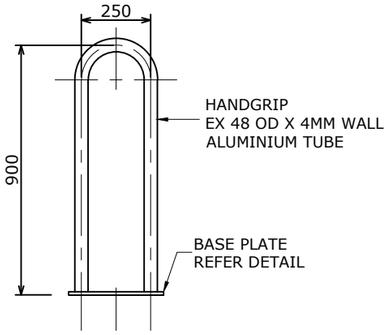


ALL STILES
ARE 75 x 8

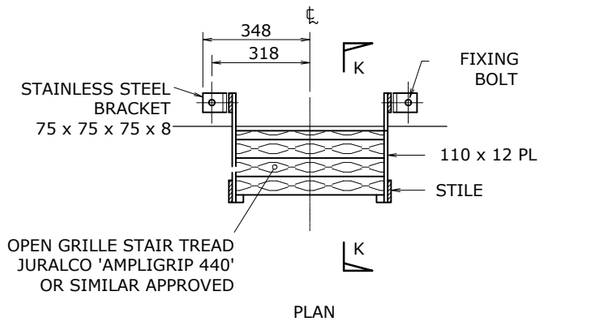
RUNG FIXING DETAIL



FRONT ELEVATION

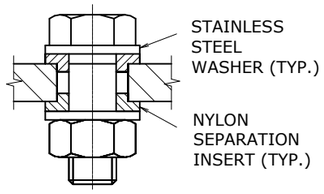


ELEVATION



PLAN

LADDER TYPE 'B' GRILLE PLATFORM

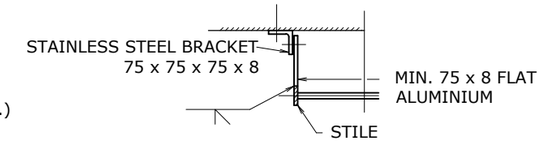


TYPICAL BOLTING DETAIL

SHOWING SEPARATION INSERT

TYPE 'C' LADDER

TOP RUNG DETAIL



PLAN

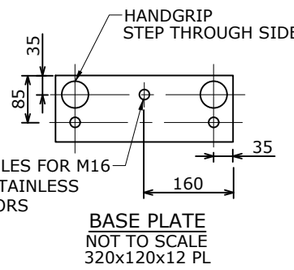
LADDER FIXING BRACKETS

MAX. 1800 VERTICAL SPACINGS

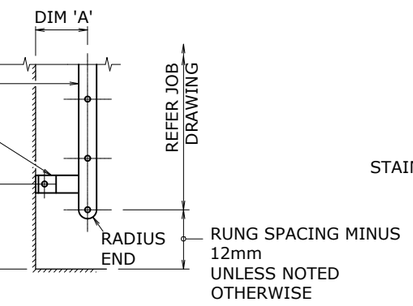
ALUMINIUM HANDGRIPS

TO SUIT PIT LADDER

2 No. REQ'D PER LADDER

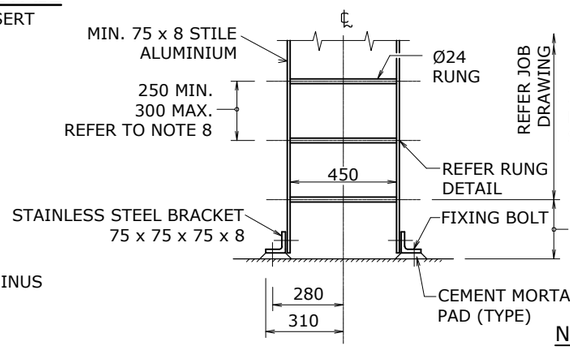


BASE PLATE
NOT TO SCALE
320x120x12 PL



TYPE 'D' LADDER BASE

SIDE ELEVATION



TYPE 'E' LADDER BASE

FRONT ELEVATION

NOTES

1. ALL LADDER COMPONENTS SHALL BE FABRICATED FROM GRADE 6061-T6 ALUMINIUM AND SHALL BE SECURED BY THE USE OF GRADE 316 STAINLESS STEEL BRACKETS.(REFER TO LADDER FIXING DETAIL).
2. GRIND OFF ALL SHARP EDGES AFTER FABRICATION.
3. ALL CONNECTIONS UNLESS NOTED OTHERWISE SHALL BE WELDED AS FOLLOWS:-
   (a) ALL WELDING SHALL BE WELD QUALITY 'B' IN ACCORDANCE WITH AS1665.
   (b) ALL WELDS SHALL BE 6mm FILLET ALL AROUND USING FILLER ALLOY 5356.
4. ALL FASTENERS SHALL BE GRADE 316 STAINLESS STEEL.
   UNLESS OTHERWISE NOTED, FASTENERS SHALL BE AS DESCRIBED BELOW
   (a) FIXING TO CONCRETE - BOLTS SHALL BE M16 DROP-IN ANCHORS.
   (RAMSET DYNASET OR SIMILAR)
   (b) FIXING TO METALWORK - BOLTS SHALL BE M16 HEX HEAD BOLTS.
5. ANTI GALLING LUBRICANT 'LOCTITE 222 OR 567' OR SIMILAR SHALL BE USED ON ALL THREAD AND BETWEEN ALL STAINLESS STEEL MATING SURFACES.
6. PROVIDE APPROVED NYLON OR POLYTHENE SEPARATION INSERTS BETWEEN ALL STAINLESS STEEL ANCHORS AND ALUMINIUM SECTIONS.
7. 3mm H.D.P.E. GASKETS SHALL BE PLACED BETWEEN ALL ALUMINIUM MOUNTS AND OTHER SURFACES TO PREVENT DIRECT CONTACT.
8. LADDER RUNG SPACING SHALL BE A MINIMUM 0F 200 FOR THE LADDERS LESS THAN 1500 LONG.
9. DIM 'A' SHELL BE 220 UNLESS SHOWN OTHERWISE ON JOB DRAWING.
10. DIM 'B' SHALL BE 340 UNLESS SHOWN OTHERWISE ON JOB DRAWING.

NOTE

TYPE 'E' LADDER SHALL BE USED WHEN THE LADDER CANNOT BE FIXED TO A VERTICAL FACE OR WALL. THE TYPE 'E' LADDER BASE IS NOT TO BE USED IN AN INTERNAL SITUATION.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM LADDERS

CoGC | LCC | RCC | QUU | UW

DRAWING No.

SEQ-SPS-1305-1

VERSION

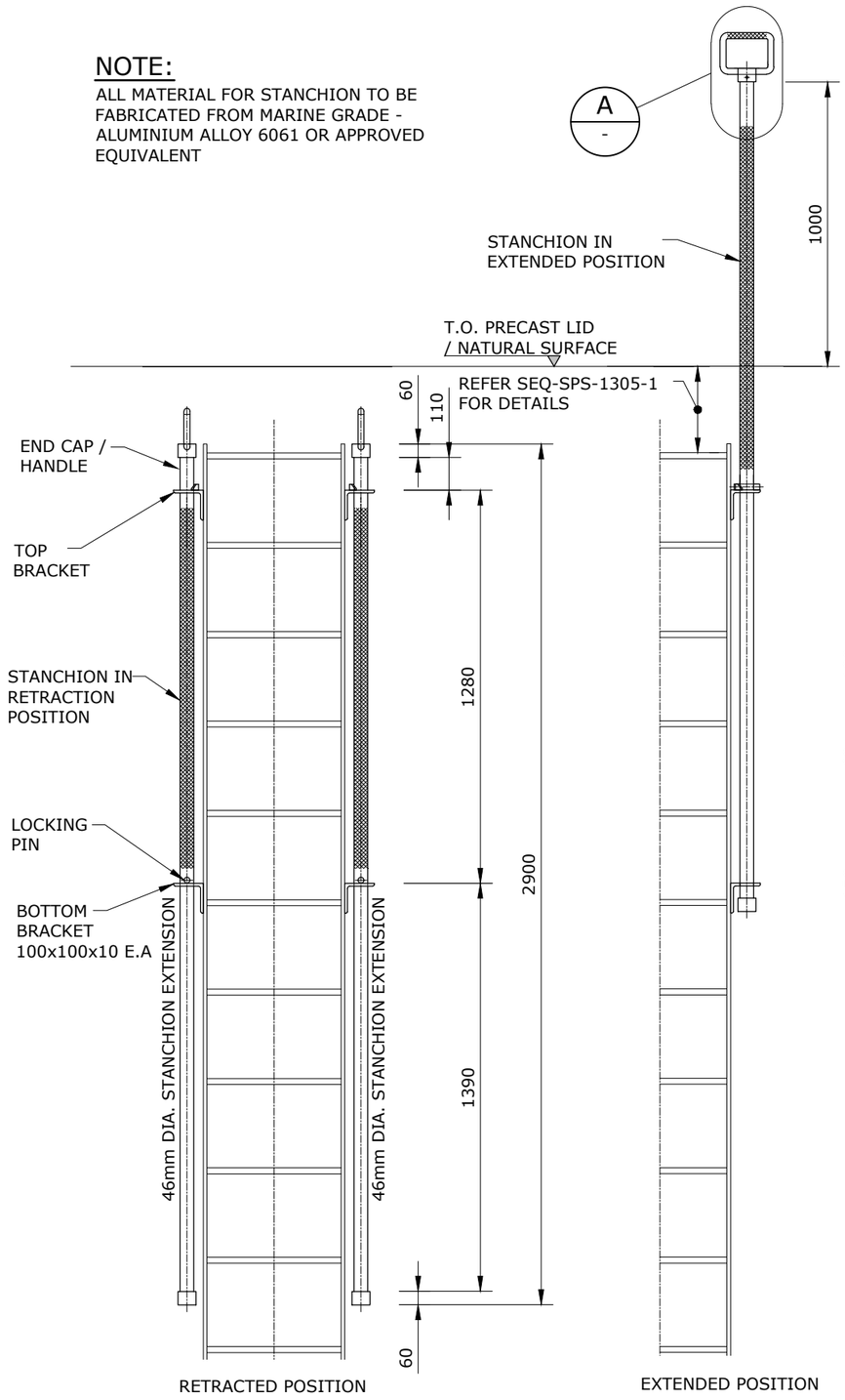
A

NOT TO SCALE

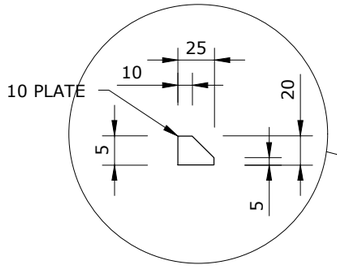
ORG DATE: 1/1/2013

NOTE:

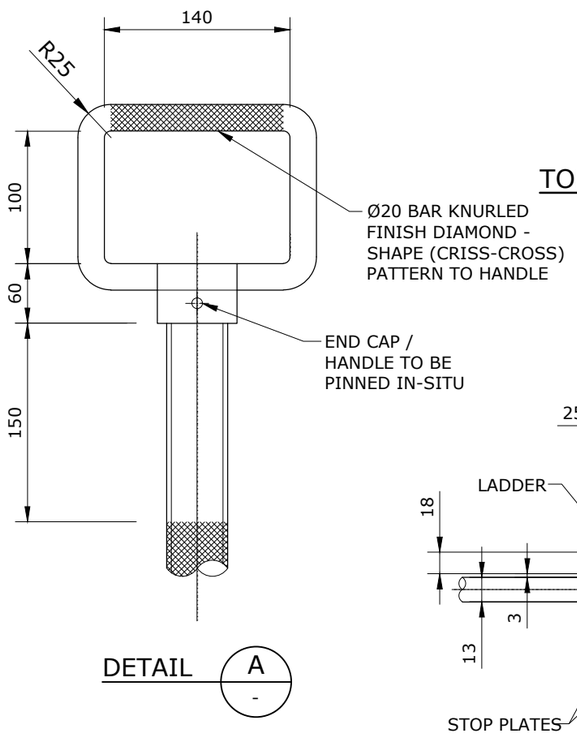
ALL MATERIAL FOR STANCHION TO BE FABRICATED FROM MARINE GRADE - ALUMINIUM ALLOY 6061 OR APPROVED EQUIVALENT



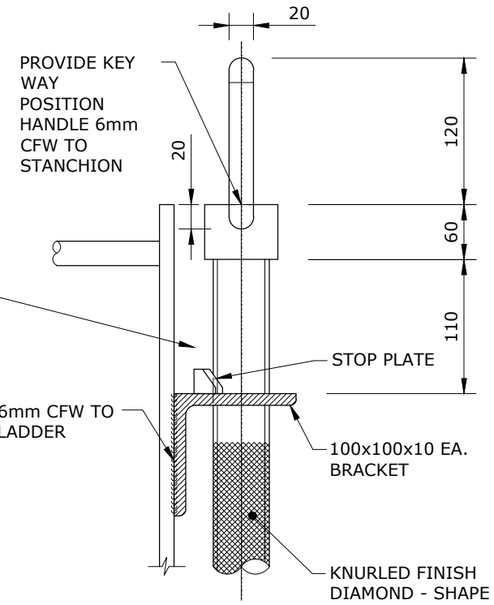
LADDER EXTENSION DETAIL



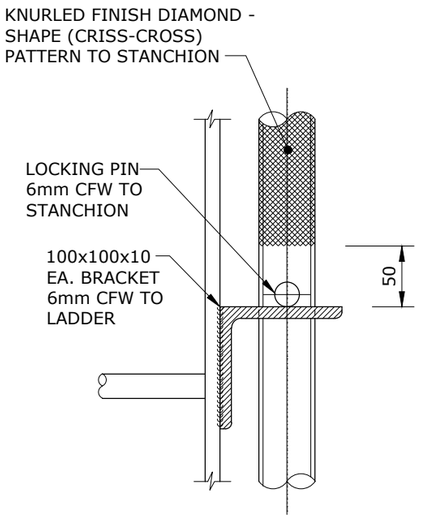
STOP PLATE DETAIL (2 No REQ'D)



DETAIL A



TOP BRACKET ELEVATION



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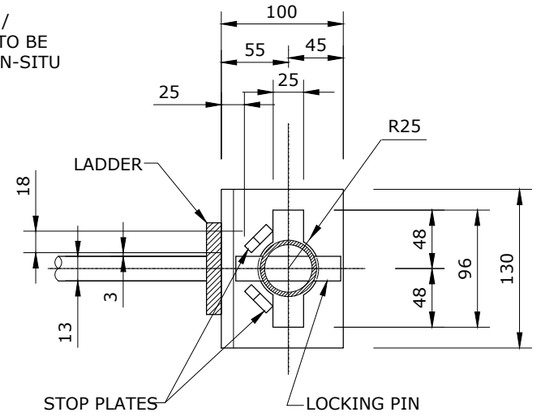
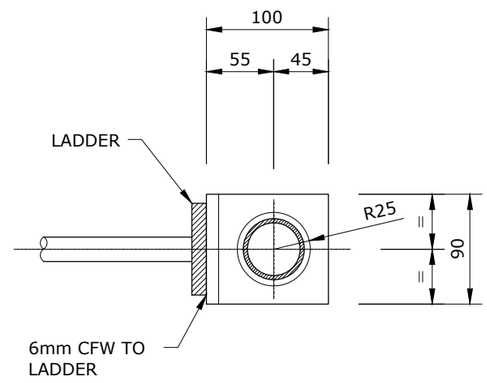


TOP BRACKET DETAIL

PLAN VIEW



BOTTOM BRACKET DETAIL

PLAN VIEW

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM EXTENDABLE HANDGRIP STANCHION

~~CoGC~~ ~~LCC~~ ~~RCC~~ ~~QUU~~ UW

DRAWING No.

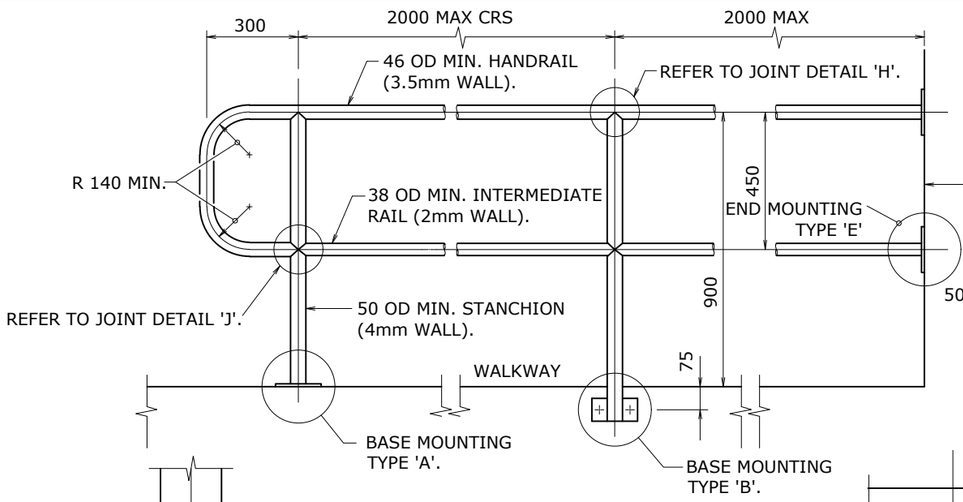
SEQ-SPS-1305-2

VERSION

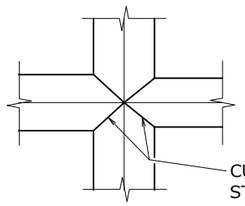
A

NOT TO SCALE

ORG DATE: 1/1/2013



HANDRAIL FOR WALKWAYS



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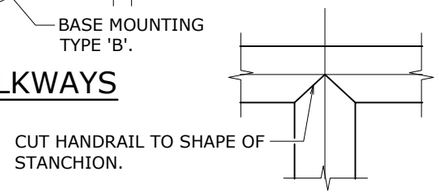

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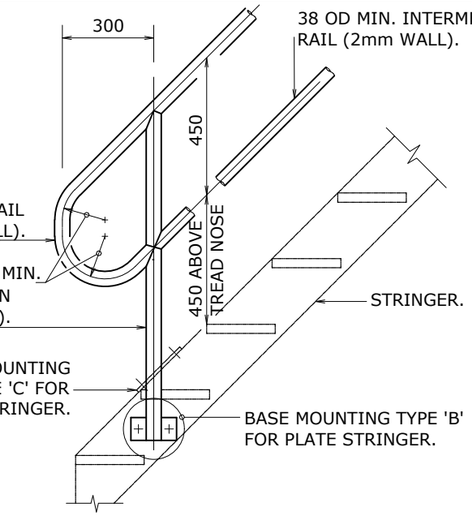
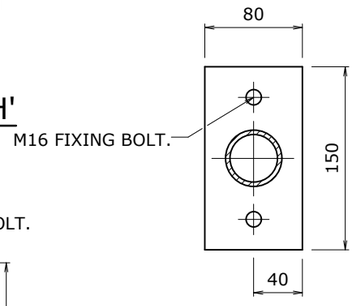


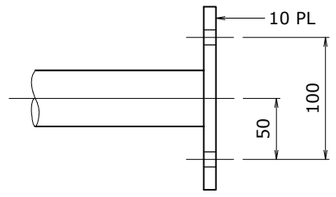
HANDRAIL FOR STAIRWAYS

NOTES

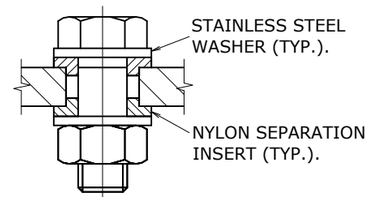
1. ALL HANDRAIL COMPONENTS SHALL BE FABRICATED FROM ALUMINIUM GRADE 6061-T6 UNLESS NOTED OTHERWISE AND SHALL COMPLY WITH THE DESIGN AND MATERIAL REQUIREMENTS OF AS1657.
2. GRIND OFF ALL SHARP EDGES AFTER FABRICATION.
3. ALL FASTENERS SHALL BE GRADE 316 STAINLESS STEEL.
   UNLESS OTHERWISE NOTED, FASTENERS SHALL BE DESCRIBED BELOW
   (a) FIXING TO CONCRETE - BOLTS SHALL BE M16 DROP-IN ANCHORS (RAMSET DYNASET OR SIMILAR)
   (b) FIXING TO METALWORK - BOLTS SHALL BE M16 HEX HEAD BOLTS.
4. NYLON OR POLYTHENE SEPARATION INSERTS SHALL BE USED BETWEEN STAINLESS STEEL FASTENERS AND ALUMINIUM SECTIONS. HOLE DIAMETER TO SUIT THESE INSERTS. REFER TO BOLTING DETAIL.
5. ANTI-GALLING LUBRICANT "LOCTITE 222 OR 5567" OR SIMILAR APPROVED SHALL BE USED ON ALL THREADS AND BETWEEN ALL STAINLESS STEEL MATING SERVICES.
6. UNLESS OTHERWISE NOTED, ALL METALWORK CONNECTIONS SHALL BE WELDED AS FOLLOWS:
   (a) ALL WELDING TO BE WELD QUALITY B IN ACCORDANCE WITH AS1665.
   (b) ALL WELDS TO BE 4mm FILLET ALL ROUND USING FILLER ALLOY 5356.
7. WHERE JOINTS IN HANDRAIL AND INTERMEDIATE RAILS ARE NECESSARY THEY SHALL BE WELDED ON SITE IN A MANNER APPROVED BY THE SEQ-SP. SLIP JOINTS WILL NOT BE ACCEPTED UNLESS SPECIFICALLY NOTED TO THE CONTRARY ON THE JOB DRAWINGS.
8. 3mm H.D.P.E GASKETS SHALL BE PLACED BETWEEN ALL ALUMINIUM MOUNTS AND OTHER SURFACES TO PREVENT DIRECT CONTACT.
9. KICK PLATES, WHERE REQUIRED BY AS1657, SHALL COMPLY.
10. ALTERNATIVE JOINTING SYSTEMS SUBJECT TO SEQ-SP SPECIFIC APPROVAL.



LEFT SIDE ELEVATION



FRONT SIDE ELEVATION

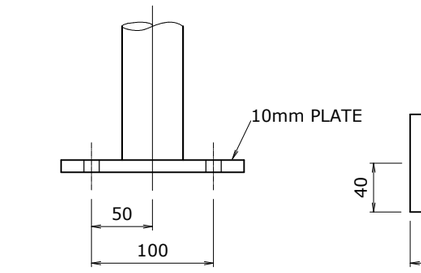


TYPICAL BOLTING DETAIL

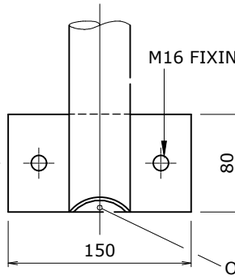
SHOWING SEPARATION INSERT

TYPE `E'

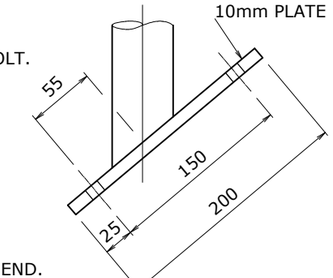
WALL MOUNTING



PLAN



PLAN



PLAN

ELEVATION

TYPE `A'

TOP MOUNTED
HANDRAIL

ELEVATION

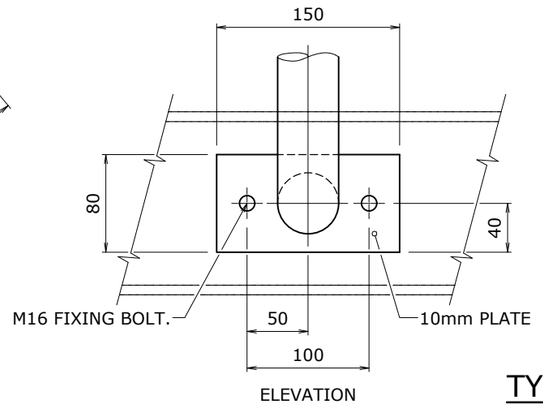
TYPE `B'

SIDE MOUNTED
HANDRAIL

ELEVATION

TYPE `C'

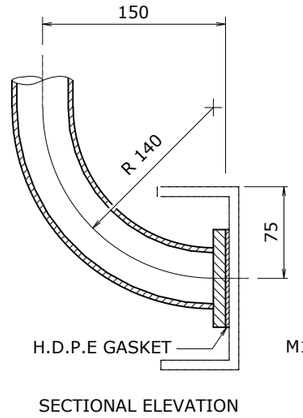
TOP MOUNTED
HANDRAIL ON ANGLE



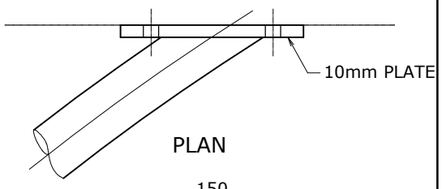
ELEVATION

TYPE `D'

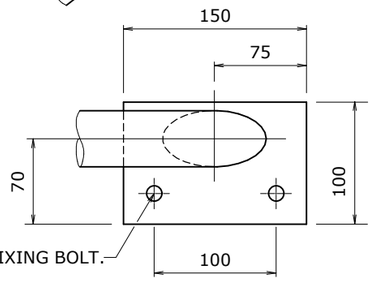
SIDE MOUNTED HANDRAIL



SECTIONAL ELEVATION



PLAN



ELEVATION

TYPE `F'

CIRCULAR HANDRAIL WALL MOUNTING

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALUMINIUM HANDRAILS

CoGC	LCC	RCC	QUU	UW

DRAWING No.

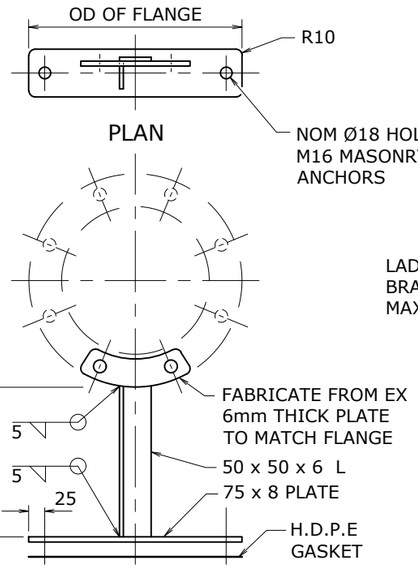
SEQ-SPS-1305-3

VERSION

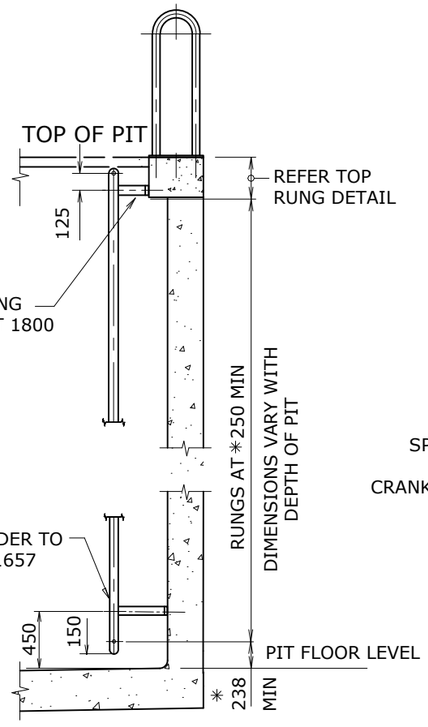
A

NOT TO SCALE

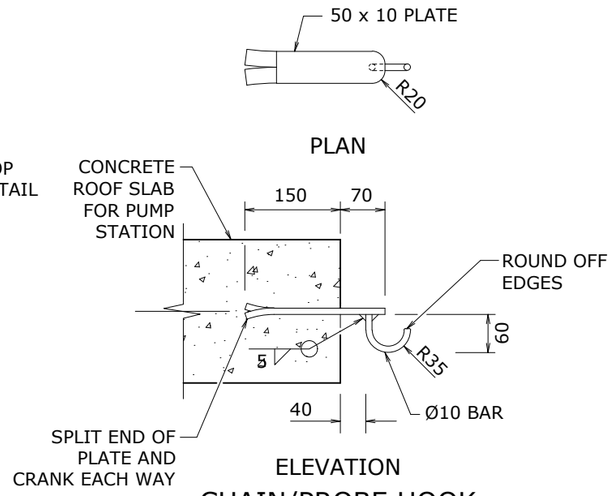
ORG DATE:
1/1/2013



VALVE SUPPORT
ALUMINIUM



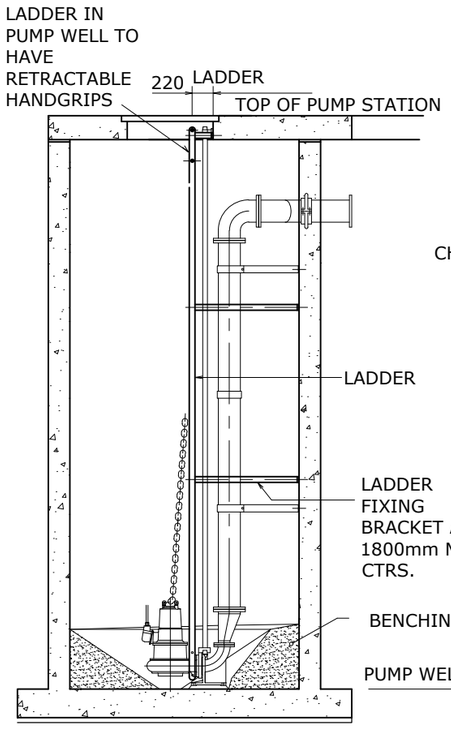
PIT LADDER



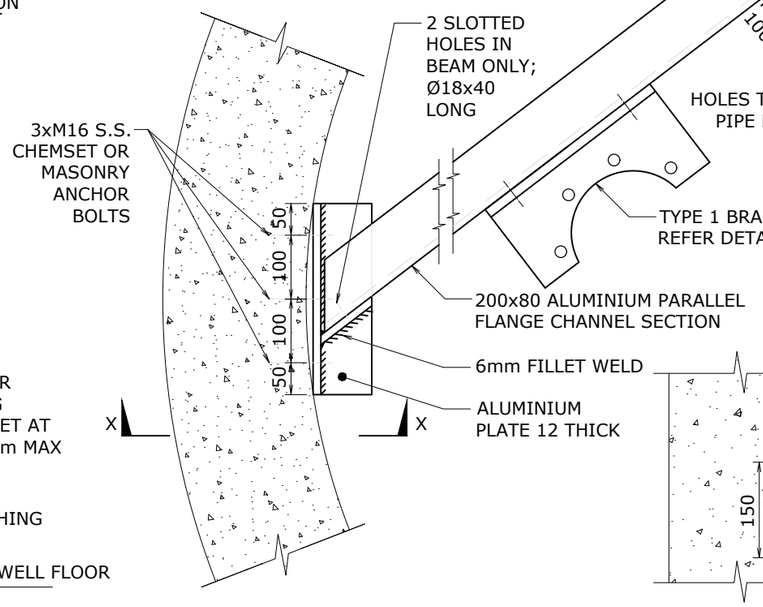
CHAIN/PROBE HOOK
FABRICATE FROM STAINLESS STEEL

NOTES

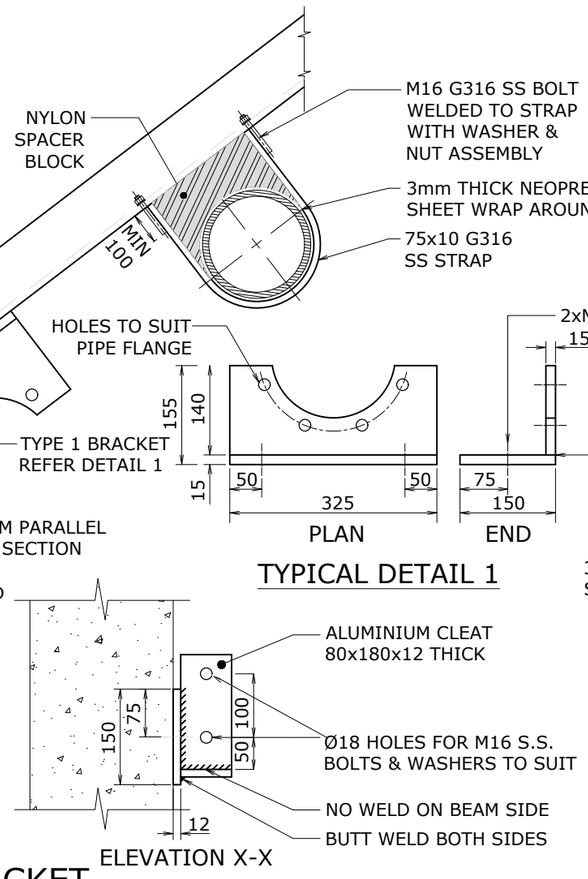
1. ALL DIMENSIONS SHOWN ARE TYPICAL AND SHALL BE DESIGNED IN RELATION TO PIPE DIAMETER.
2. LADDERS, HANDRAILS AND HAND GRIPS SHALL BE CONSTRUCTED GENERALLY AS SHOWN AND SHALL COMPLY WITH AS1657. PAY SPECIAL ATTENTION TO CLAUSE 5.2 ALUMINIUM PLATE SHALL BE ALLOY 5083-H321, ALUMINIUM TUBES SHALL BE ALLOY 6061.T6. 3mm H.D.P.E GASKETS SHALL BE PLACED BETWEEN ALL ALUMINIUM MOUNTS AND OTHER SURFACES.
3. ALL FASTENERS SHALL BE GRADE 316 STAINLESS STEEL. WHERE HANDRAILS AND LADDERS ARE FIXED TO CONCRETE THE FASTENER SHALL BE EITHER:
   (a) M16 x 150 MIN. LONG HEX BOLT PROJECTING 50 FROM CONCRETE, FITTED WITH NUT AND WASHER.
   (b) M16 DROP IN ANCHOR (RAMSET DYNASET OR SIMILAR).
4. UNLESS NOTED OTHERWISE, STEELWORK SHALL BE HOT DIP GALVANISED AFTER FABRICATION.
5. NYLON OR POLYTHENE SEPARATION INSERTS SHALL BE USED BETWEEN STAINLESS STEEL FASTENERS AND ALUMINIUM SECTIONS.
6. ANTI-GALLING LUBRICANT "LOCTITE 222 OR 567" OR SIMILAR SHALL BE USED ON ALL THREADS AND BETWEEN ALL STAINLESS STEEL MATING SURFACES.



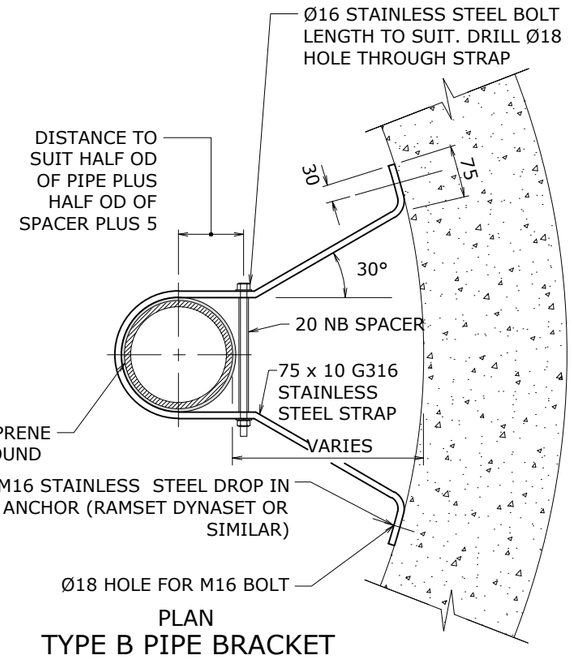
PUMP WELL LADDER



TYPE A PIPE BRACKET



TYPICAL DETAIL 1



TYPE B PIPE BRACKET

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

FABRICATED METALWORK

CoGC	LCC	RCC	QUU	UW

DRAWING No.
SEQ-SPS-1305-4

VERSION
A

NOT TO SCALE

ORG DATE:
1/1/2013

NOTES:

G1. PIPE MATERIAL:
THE PIPE MATERIAL BELOW GROUND AND NOT UNDER CONCRETE SLABS SHALL BE POLYETHYLENE PE 100 PN16 SDR 11. PLASSON OR APPROVED SIMILAR COMPRESSION FITTINGS MAY BE USED ON THE POLYETHYLENE PIPES. THE EXCEPTION TO USING POLYETHYLENE IS IN LOCATIONS OF LAND FILL OR GROUND CONTAMINATED WITH HYDROCARBONS. IN SUCH LOCATIONS GRADE 316 STAINLESS STEEL OR PROTECTED COATED COPPER SHALL BE USED. IN ABOVE GROUND LOCATIONS COPPER OR GRADE 316 STAINLESS STEEL SHALL BE USED. FOR LOCATIONS UNDER CONCRETE SLABS SCHEDULE 40S GRADE 316 STAINLESS STEEL IS TO BE USED. BSP THREADED STAINLESS STEEL FITTINGS SHALL BE USED ON THE STAINLESS STEEL PIPE.

G2. PIPE DIAMETER AND PIPE CAPACITIES: THE POTABLE WATER SUPPLY PIPE FROM THE WATER MAIN SHALL BE SIZED TO PROVIDE 1 l/s (AT 250 kPa MAINS PRESURE) ON THE DOWNSTREAM SIDE OF THE RPZD. THIS SERVICE PIPE AND THE RPZD AND ASSOCIATED FITTINGS SHALL HAVE A MINIMUM DIAMETER OF DN25 FOR COPPER AND STAINLESS STEEL AND DN32 FOR POLYETHYLENE. THE HOSE COCK AND THE WELL WASHER PIPE SHALL BE DN20 FOR COPPER AND STAINLESS STEEL AND DN25 FOR POLYETHYLENE.

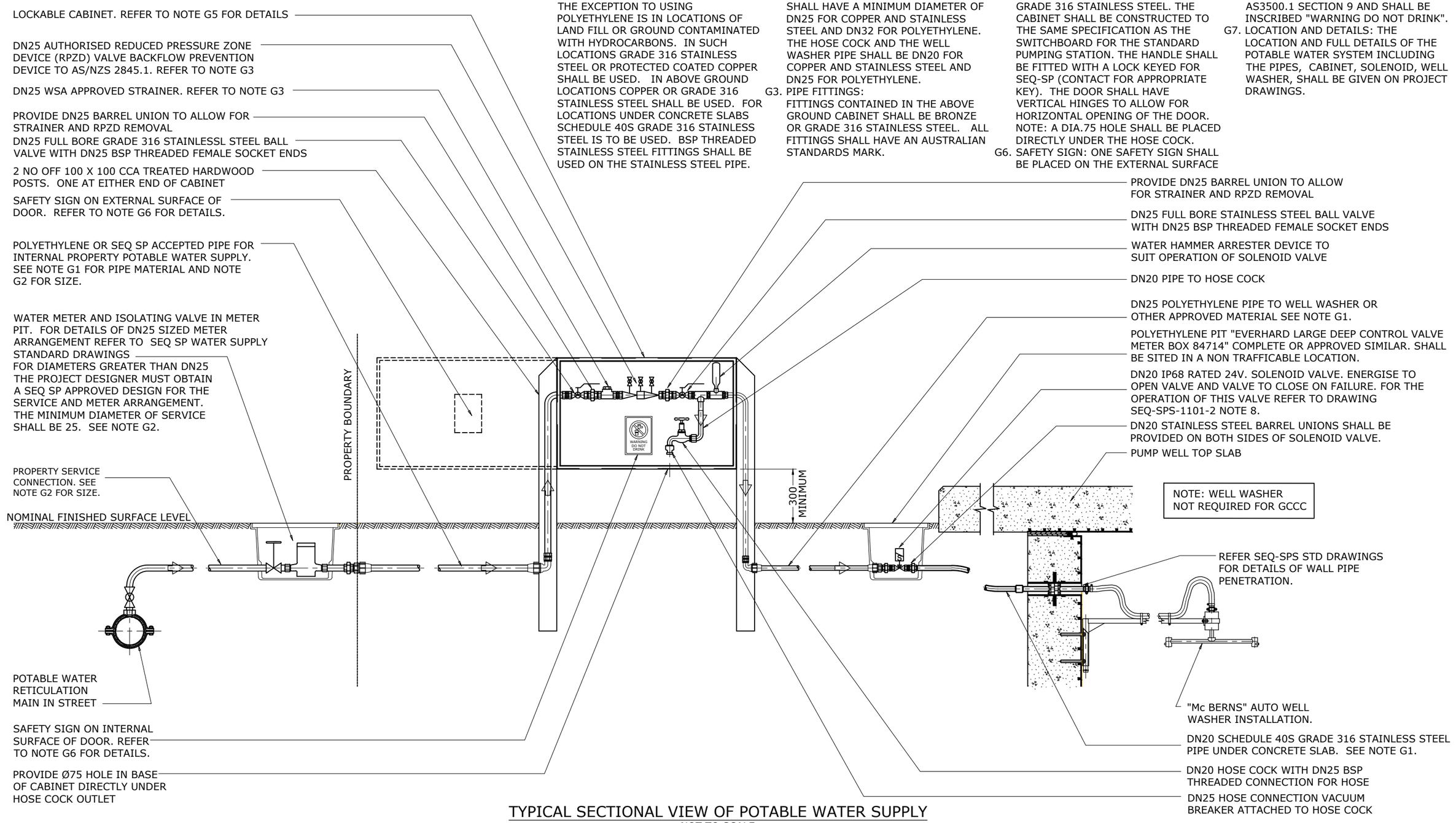
G3. PIPE FITTINGS:
FITTINGS CONTAINED IN THE ABOVE GROUND CABINET SHALL BE BRONZE OR GRADE 316 STAINLESS STEEL. ALL FITTINGS SHALL HAVE AN AUSTRALIAN STANDARDS MARK.

G4. ALL STAINLESS STEEL THREADS SHALL BE ASSEMBLED WITH THREAD TAPE OR ANTI- GALLING COMPOUND.

G5. CABINET: THE CABINET FOR THE RPZD AND HOSE COCK SHALL BE CONSTRUCTED FROM 3mm THICK GRADE 5052 ALUMINIUM OR 1.6 THICK GRADE 316 STAINLESS STEEL. THE CABINET SHALL BE CONSTRUCTED TO THE SAME SPECIFICATION AS THE SWITCHBOARD FOR THE STANDARD PUMPING STATION. THE HANDLE SHALL BE FITTED WITH A LOCK KEYED FOR SEQ-SP (CONTACT FOR APPROPRIATE KEY). THE DOOR SHALL HAVE VERTICAL HINGES TO ALLOW FOR HORIZONTAL OPENING OF THE DOOR. NOTE: A DIA.75 HOLE SHALL BE PLACED DIRECTLY UNDER THE HOSE COCK.

G6. SAFETY SIGN: ONE SAFETY SIGN SHALL BE PLACED ON THE EXTERNAL SURFACE OF THE DOOR AND ONE SAFETY SIGN SHALL BE PLACED ON THE INSIDE OF THE CABINET ADJACENT TO THE HOSE COCK. THE SAFETY SIGNS SHALL BE INSTALLED AS INDICATED IN AS3500.1 SECTION 4.4.5 AND THE SIGN SHALL BE A VERBAL PICTOGRAM AS SHOWN IN AS3500.1 SECTION 9 AND SHALL BE INSCRIBED "WARNING DO NOT DRINK".

G7. LOCATION AND DETAILS: THE LOCATION AND FULL DETAILS OF THE POTABLE WATER SYSTEM INCLUDING THE PIPES, CABINET, SOLENOID, WELL WASHER, SHALL BE GIVEN ON PROJECT DRAWINGS.



TYPICAL SECTIONAL VIEW OF POTABLE WATER SUPPLY
NOT TO SCALE

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

RPZ DEVICE
TYPICAL LAYOUT

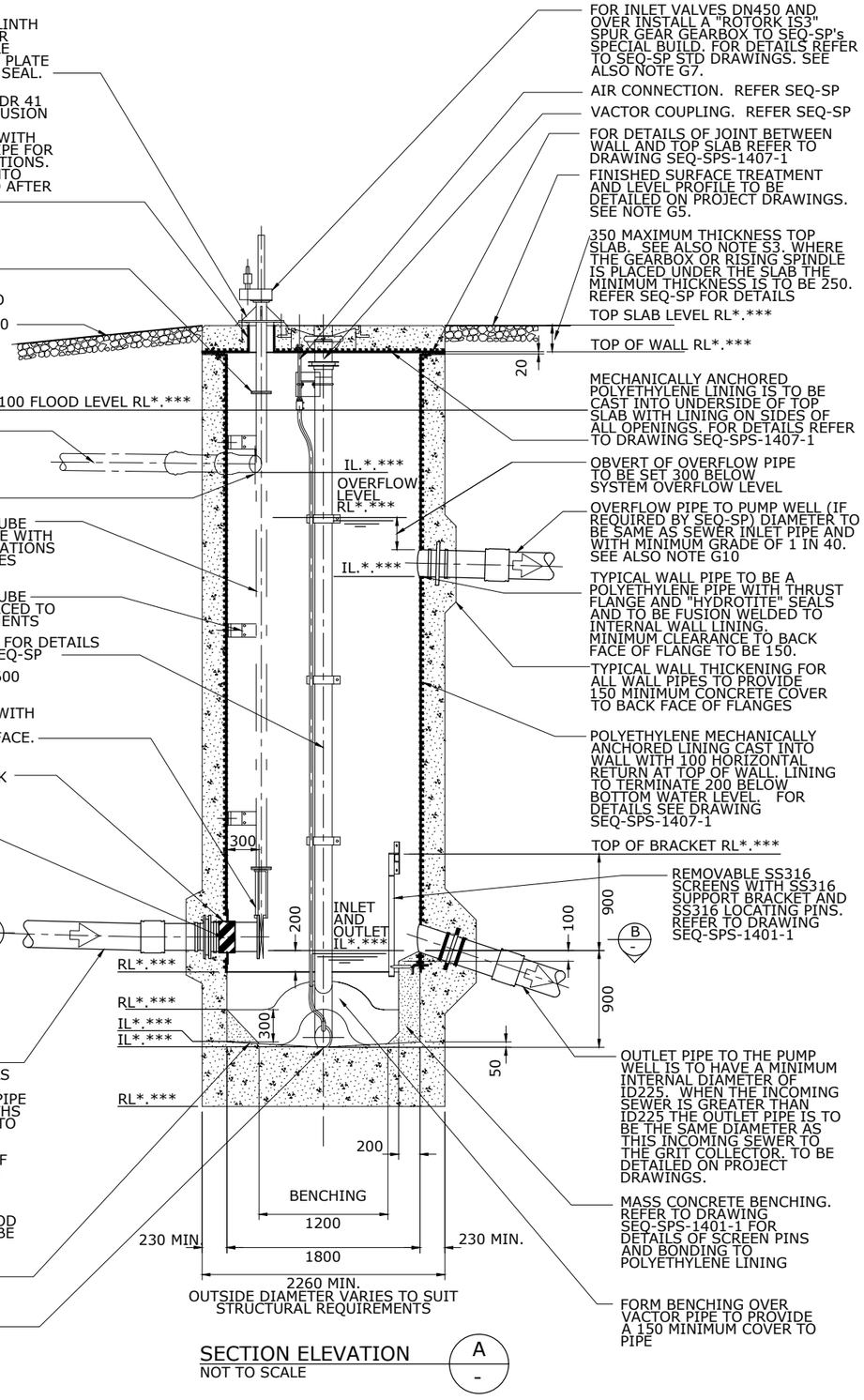
CoGC	LCC	RCC	QUU	UW

DRAWING No.
SEQ-SPS-1308-1

VERSION
A

NOT TO SCALE

ORG DATE:
1/1/2013



SECTION ELEVATION A
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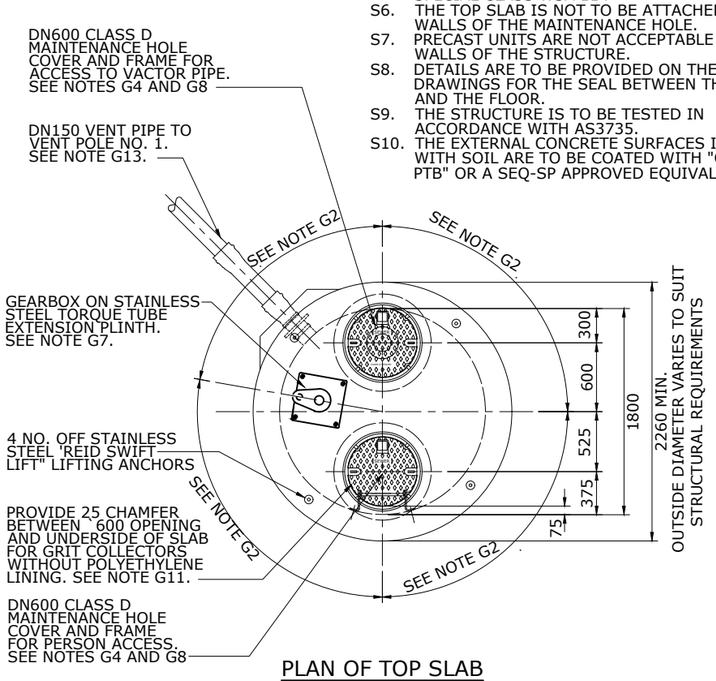
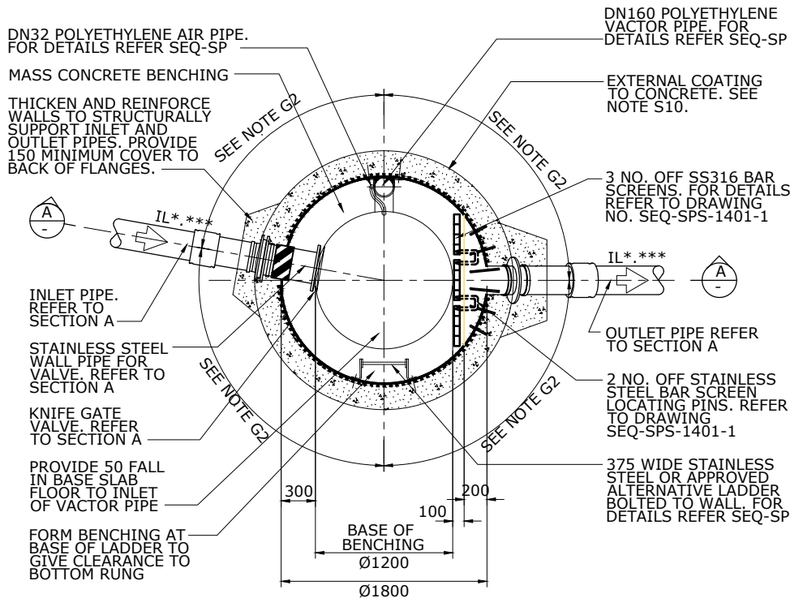


PLAN OF TOP SLAB
NOT TO SCALE



SECTION PLAN B
NOT TO SCALE

STRUCTURAL NOTES CONT.

S5. THE CONCRETE STRENGTH IS TO BE S40 TO WATER SERVICES ASSOCIATION CONCRETE SPECIAL CLASS WSA 114
S6. THE TOP SLAB IS NOT TO BE ATTACHED TO THE WALLS OF THE MAINTENANCE HOLE.
S7. PRECAST UNITS ARE NOT ACCEPTABLE FOR THE WALLS OF THE STRUCTURE.
S8. DETAILS ARE TO BE PROVIDED ON THE PROJECT DRAWINGS FOR THE SEAL BETWEEN THE WALL AND THE FLOOR.
S9. THE STRUCTURE IS TO BE TESTED IN ACCORDANCE WITH AS3735.
S10. THE EXTERNAL CONCRETE SURFACES IN CONTACT WITH SOIL ARE TO BE COATED WITH "OXYDUR PTB" OR A SEQ-SP APPROVED EQUIVALENT.

NOTES

GENERAL

G1. THIS DRAWING SHOWS AN ARRANGEMENT FOR AN INSTALLATION WITH A STAINLESS STEEL KNIFE GATE VALVE WHICH IS LARGER THAN DN450 AND WITH A GEARBOX MOUNTED ABOVE THE SLAB. REFER TO FOLLOWING NOTES FOR VARIATION REQUIREMENTS.
G2. THE ANGLE BETWEEN THE INLET AND OUTLET PIPE MAY VARY FROM 180° TO 140°. CLEARANCES MUST BE ALLOWED FOR THE CLEANING AND REMOVAL OF THE BAR SCREENS AND FOR THE MAINTENANCE AND REMOVAL OF THE VALVE OR PENSTOCK. IN ADDITION TO THESE CLEARANCES A MINIMUM CLEAR SPACE OF 600 WIDE X 900 LONG MUST BE PROVIDED AT THE BASE OF THE LADDER.
G3. THE GRIT COLLECTOR MAINTENANCE HOLE IS TO BE LOCATED IN AREAS NOT SUBJECT TO ANY VEHICLE LOADS. IN SUCH LOCATIONS THE GEARBOX OR NON RISING SPINDLE MECHANISM IS TO BE MOUNTED ABOVE THE TOP SLAB. THE ABOVE GROUND MECHANISMS ARE TO BE PROTECTED TO PREVENT ANY POSSIBLE DAMAGE BY VEHICLES BY THE USE OF A 300 HIGH VERTICAL KERB OR AN APPROVED ALTERNATIVE.
G4. THE MAINTENANCE HOLE COVERS ARE TO BE PROVIDED WITH A MINIMUM 2000mm CLEARANCE TO ALL ABOVE GROUND STRUCTURES WITH THE EXCEPTION OF THE VALVE OPENING MECHANISM. THE VACTOR PIPE IS TO BE LOCATED WITHIN 1500mm OF THE ACCESS ROAD KERB. THIS ACCESS ROAD IS TO HAVE A 300 HIGH VERTICAL KERB.
THIS CLEARANCE IS TO BE MAINTAINED TO ALLOW EASY ACCESS FOR VACTOR TRUCKS.
G5. FINISHED SURFACE TREATMENT AND LEVEL PROFILE IS TO BE DETAILED ON PROJECT DRAWINGS. NOTE: SURFACE IS TO GRADE DOWN FROM THE TOP SLAB LEVEL AT A MAXIMUM OF 1 IN 10.
THIS GRADE IS TO BE MAINTAINED FOR A MINIMUM OF 1500 HORIZONTALLY FROM THE EDGE OF THE TOP SLAB.
G6. THE TOP SLAB LEVEL IS TO BE ABOVE THE Q100 FLOOD LEVEL.
G7. FOR INLET PIPES UNDER DN600 A FULL 316 STAINLESS STEEL LUGGED KNIFE GATE VALVE WITH METAL SEAT AND RTFE SCRAPER, "KEYSTONE FIGURE 952" OR SEQ-SP APPROVED ALTERNATIVE, IS TO BE INSTALLED.
THIS VALVE IS TO BE MODIFIED WITH SPINDLE NUT REMOVED AND THROUGH SPINDLE SHAFT INSTALLED.
FOR INLETS DN600 AND ABOVE A FULL 316 STAINLESS STEEL WEDGE CLOSING DESIGN PENSTOCK WITH INSITU REPLACEMENT SEAL IS TO BE INSTALLED. VALVES AND PENSTOCKS DN450 AND ABOVE ARE TO BE FITTED WITH GEARBOXES. VALVES SMALLER THAN DN450 ARE TO BE FITTED WITH A RISING SPINDLE MECHANISM.
G8. THE MAINTENANCE HOLE COVERS ARE TO BE FLUSH MOUNTED WITH THE TOP SLAB. THE FRAME AND THE 35 HIGH RISER RING MAY BE INSTALLED IN RECESS IN TOP SLAB WITH NON SHRINK EPOXY GROUT OR ALTERNATIVELY CAST IN PLACE.
G9. IF PIPES OF MATERIAL OTHER THAN POLYETHYLENE ARE USED, EXTERNAL TO THE STRUCTURE, THEN SHORT SOCKETED PIPES ARE TO BE USED DIRECTLY ADJACENT TO THE WALLS.
G10. IF DIRECTED BY SEQ-SP A HIGH LEVEL OVERFLOW PIPE MAY BE REQUIRED ON ALL NEW PUMPING STATIONS LOCATED IN NEWLY DEVELOPED AREAS WHERE THE INITIAL INFLOW IS BELOW THE DESIGNED AVERAGE DRY WEATHER FLOW.
G11. THE POLYETHYLENE INTERNAL LINING MAY BE OMITTED IF PRIOR APPROVAL IS GIVEN BY SEQ-SP.
G12. ALL LEVELS SHOWN *.*** ARE TO BE INDICATED ON THE PROJECT GENERAL ARRANGEMENT DRAWINGS.
G13. A VENT POLE (VENT POLE NO. 1) IS REQUIRED FOR THE GRIT COLLECTOR MAINTENANCE HOLE AND THE PUMP WELL. THIS POLE IS TO BE SEPARATE FROM VENT POLE NO. 2 WHICH VENTS THE EMERGENCY STORAGE CHAMBER. THE VENT PIPE TO THE POLE IS TO BE INTERCONNECTED WITH THE VENT PIPE FROM THE PUMP WELL.
NOTE: THE WELLS ARE NOT TO BE DIRECTLY INTERCONNECTED.
FOR DETAILS OF THE VENT AND POLE REFER TO DRAWING NO. SEQ-SPS-1405-1

STRUCTURAL

S1. THE STRUCTURE IS TO BE DESIGNED TO ALL RELEVANT CODES AND PRACTICES AND IS TO INCLUDE AS3735 AND AS3600.
S2. THE TOP SLAB IN ANY LOCATION SHALL BE DESIGNED FOR A TRAFFICABLE LOAD OF AT LEAST W80 TO AS5100. HOWEVER THE DESIGN SHALL COMPLY WITH ALL REQUIREMENTS SET OUT IN AS5100.
S3. THE TOP SLAB IS TO BE OF SUFFICIENT MASS TO WITHSTAND THE UPTHRUST FROM THE VALVE SPINDLE. THE TOP SLAB IS TO HAVE A MAXIMUM THICKNESS OF 350.
S4. THE MINIMUM EXPOSURE CLASS OF THE INTERNAL CONCRETE SURFACE IS TO BE B2 TO AS3735 AND THE COVER IS TO BE MEASURED FROM THE REINFORCEMENT STEEL TO THE EMBEDMENT LUGS OF THE POLYETHYLENE LINING.

REV. No.	DATE	DESCRIPTION	AUTH.
B	19/05/14	DRAFTING IMPROVEMENT, UPGRADE TO SS316	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

GRIT COLLECTOR
MAINTENANCE HOLE
GENERAL ARRANGEMENT

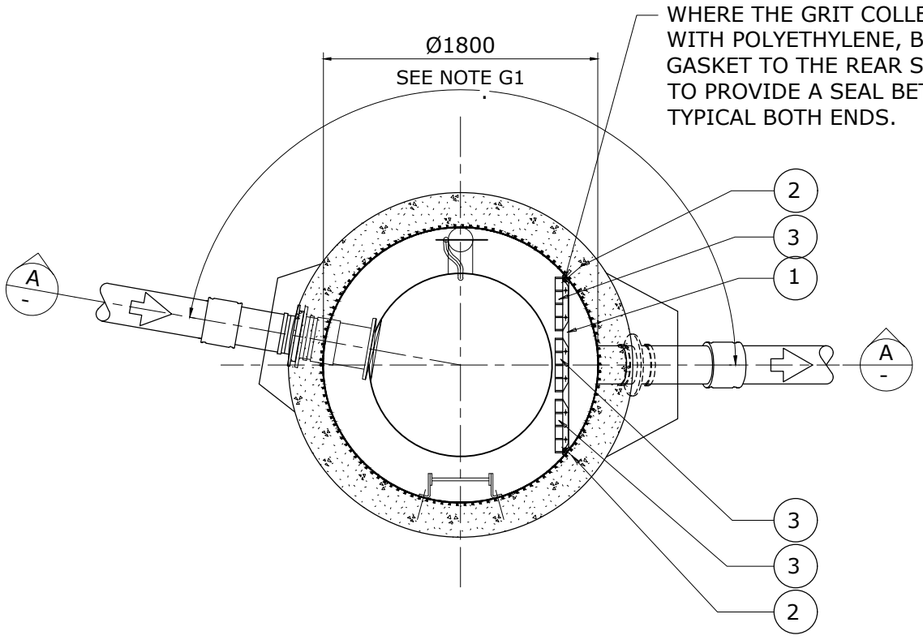
CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1400-1

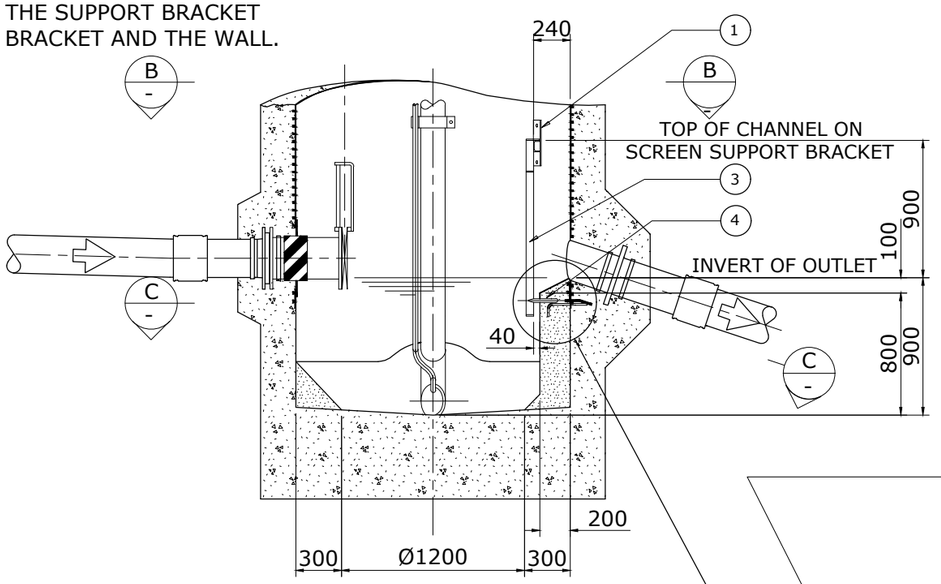
VERSION B

NOT TO SCALE

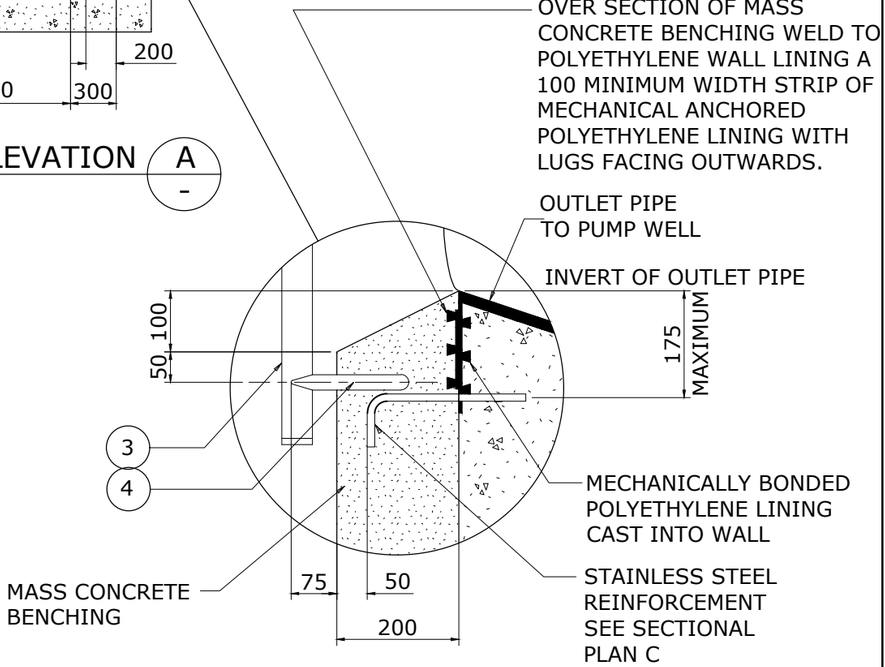
ORG DATE: 1/1/2013

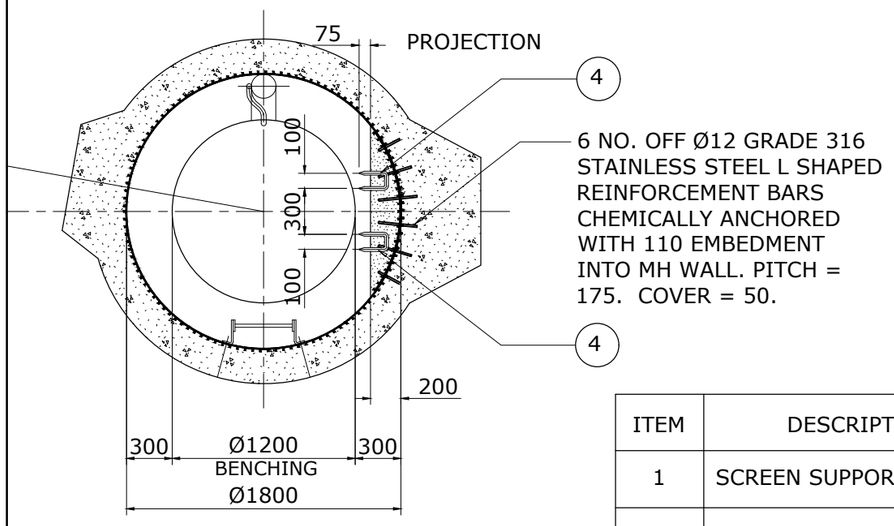


SECTIONAL PLAN B -



SECTIONAL ELEVATION A -





SECTIONAL PLAN C -

NOTE: SCREENS NOT SHOWN ON THIS VIEW

NOTES:

G1. FOR GENERAL NOTES ON GRIT COLLECTOR MAINTENANCE HOLE REQUIREMENTS REFER TO DRAWING NO. SEQ-SPS-1400-1. FOR SPECIFIC DETAILS OF THE ANGLE BETWEEN THE INLET AND OUTLET PIPES REFER TO NOTE G2 ON DRAWING NO. SEQ-SPS-1400-1.

G2. THE SCREEN SUPPORT BRACKET IS TO BE INSTALLED WITH INSULATING WASHERS AND SLEEVES BETWEEN THE BRACKET AND THE STAINLESS STEEL ANCHORS. THE NUTS ARE TO BE ASSEMBLED WITH ANTI GALLING COMPOUND.

ITEM	DESCRIPTION	MATERIAL	NO. REQUIRED	DETAILS SHOWN ON DRAWING NO.
1	SCREEN SUPPORT BRACKET	TYPE 316 STAINLESS STEEL	1	REFER SEQ-SP
2	M16 CHEMICAL ANCHOR	TYPE 316 STAINLESS STEEL SEE NOTE G2.	4	SEE NOTE G2.
3	BAR SCREEN	TYPE 316 STAINLESS STEEL	3	REFER SEQ-SP
4	SCREEN LOCATING PIN	TYPE 316 STAINLESS STEEL	2	REFER SEQ-SP

REV. No.	DATE	DESCRIPTION	AUTH.
B	19/05/14	UPGRADE TO SS316	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

GRIT COLLECTOR - MAINTENANCE HOLE
BAR SCREEN INSTALLATION
GENERAL ARRANGEMENT

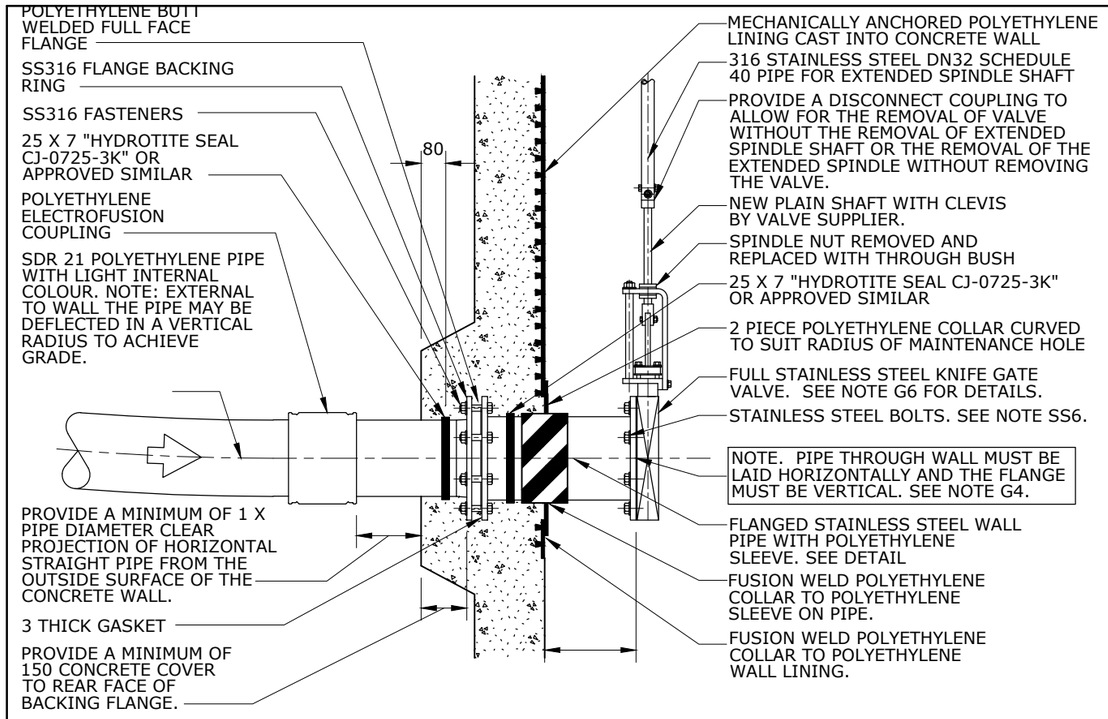
~~CoGC~~ ~~LCC~~ ~~RCC~~ QUU ~~UW~~

DRAWING No. SEQ-SPS-1401-1

VERSION B

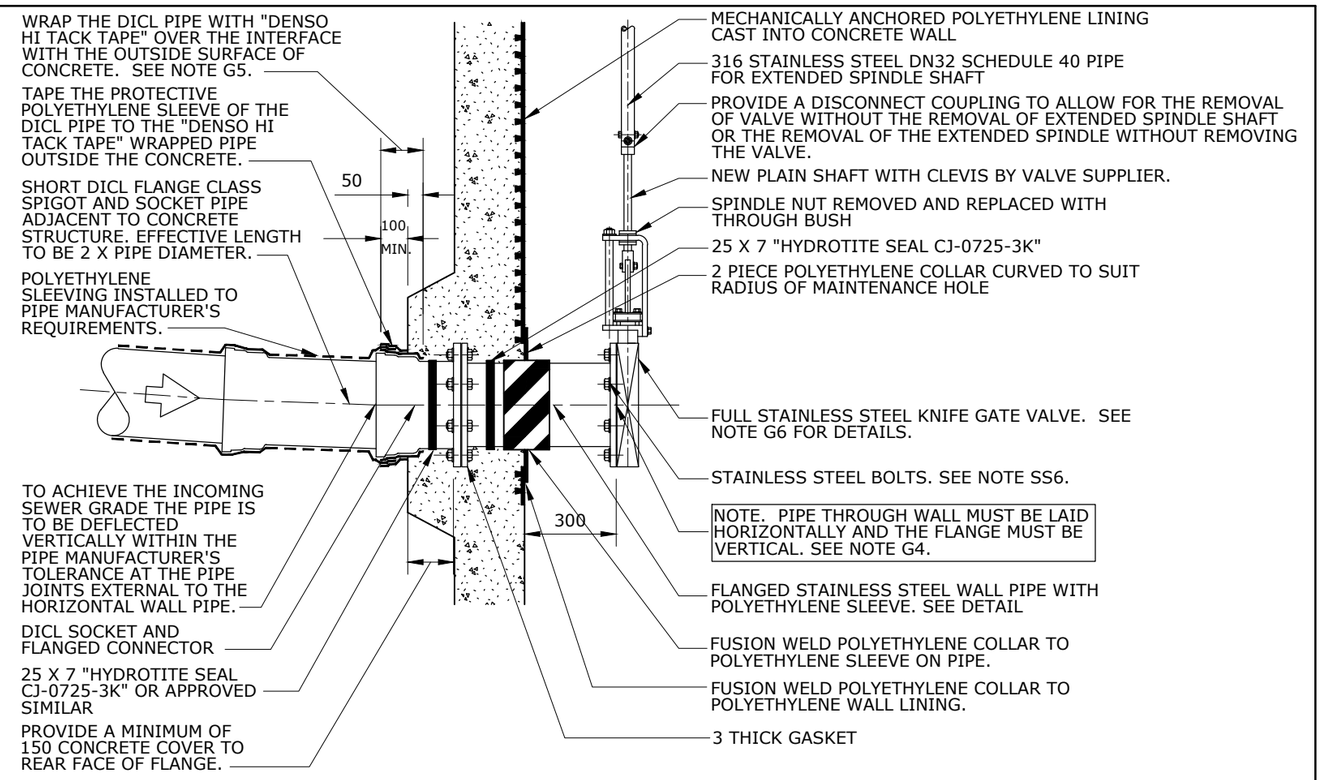
NOT TO SCALE

ORG DATE: 1/1/2013



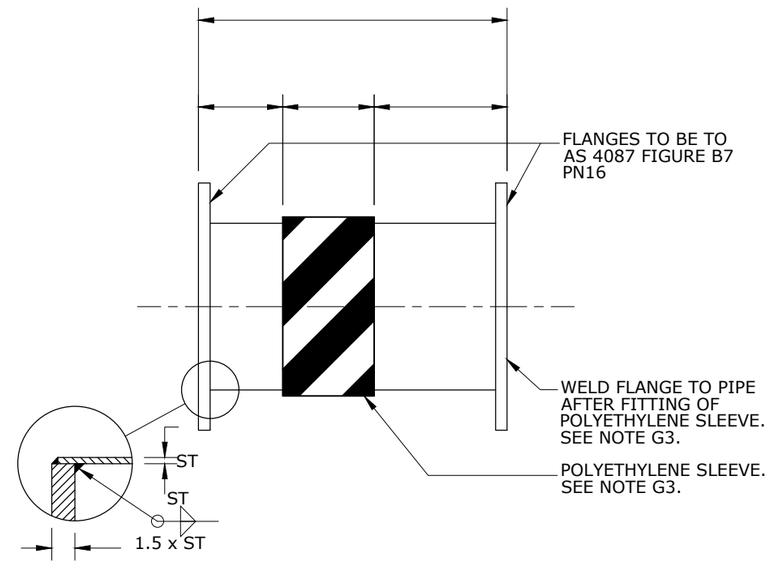
VALVE INSTALLATION WITH POLYETHYLENE INLET PIPE

NOT TO SCALE



VALVE INSTALLATION WITH DICL INLET PIPE

SEE NOTE G5.NOT TO SCALE



DETAILS OF VALVE WALL PIPE

MATERIAL: 316 STAINLESS STEEL
NOT TO SCALE

STAINLESS STEEL VALVE WALL PIPE DIMENSIONS

NOMINAL PIPE DIAMETERS	PIPE OUTSIDE DIAMETER	MINIMUM * WALL THICKNESS (ST)
150	168.28	5*
200	219.08	5*
250	273.05	5*
300	323.85	5*
350	355.60	5*
400	406.40	5*
450	457.20	6*
500	508.00	6*

* SEE NOTE G2.

NOTES

GENERAL

G1. THE VALVE INSTALLATION SHOWN ON THIS DRAWING IS FOR VALVES SMALLER THAN DN450. FOR VALVES DN450 AND DN500 THE INSTALLATION IS SIMILAR EXCEPT FOR THE RISING SPINDLE WHICH IS TO BE CONTAINED IN A TORQUE TUBE AND FITTED WITH A GEARBOX. FOR DETAILS OF THE TORQUE TUBE AND GEARBOX REFER SEQ-SP.

G2. THE PIPE WALL THICKNESSES SHOWN ON THE TABULATION ARE MINIMUM THICKNESSES ONLY. THE STAINLESS STEEL PIPE MAY BE SCHEDULE, SPIRAL WELDED, OR FABRICATED PIPE.

G3. THE POLYETHYLENE SLEEVE ON THE STAINLESS STEEL WALL PIPE IS TO HAVE A MINIMUM THICKNESS OF 6mm. THE SLEEVE IS TO BE FITTED TO THE PIPE BEFORE ONE END FLANGE IS WELDED IN PLACE. THE SLEEVE IS TO HAVE AN INTERFERENCE FIT AND IS TO BE HEATED TO EXPAND TO ALLOW INSTALLATION. THE SLEEVE IS TO BE MACHINED FROM PIPE OR SOLID AND IS NOT TO BE FABRICATED AND SHALL NOT HAVE ANY WELDED JOINTS. THE POLYETHYLENE SLEEVE MAY ONLY BE OMITTED IF PRIOR APPROVAL IS GIVEN BY SEQ-SP FOR THE OMISSION OF THE POLYETHYLENE LINING TO THE WALLS OF THE GRIT COLLECTOR MAINTENANCE HOLE.

G4. EXTREME CARE MUST BE TAKEN WHEN INSTALLING THE WALL PIPE TO ENSURE THAT THE PIPE IS HORIZONTAL AND THE FLANGE ADJACENT TO THE VALVE IS VERTICAL TO WITHIN A TOLERANCE OF 0.2° AND WITH BOLT HOLES ALIGNED CORRECTLY. THIS ENSURES THE VALVE SPINDLE IS INSTALLED VERTICALLY AND ALIGNS WITH PLUMMER BLOCKS AND THE CENTRE OF THE HOLE IN THE TOP SLAB.

G5. IF THE INLET PIPE IS DICL THEN THE PIPE AT THE INTERFACE WITH THE OUTER FACE OF THE CONCRETE WALL IS TO BE WRAPPED WITH "DENSO HI TACK TAPE" OVER THE AREA INDICATED ON THIS DRAWING. THE SURFACE IS TO BE PREPARED AS REQUIRED BY THE TAPE MANUFACTURER AND PRIMED WITH A THIN FILM OF "DENSO PRIMER" THE PIPE IS THEN TO BE WRAPPED WITH THE "DENSO HI TACK TAPE" WITH EACH BINDING OVERLAPPING THE PREVIOUS BINDING BY A MINIMUM OF 50%.

NOTES CONT.

G6. THE VALVE IS TO BE A FULL 316 STAINLESS STEEL LUGGED KNIFE GATE VALVE WITH METAL SEAT AND RTFE SCRAPER, "KEYSTONE FIGURE 952" OR QUEENSLAND URBAN UTILITIES APPROVED ALTERNATIVE. THE VALVE IS TO BE MODIFIED BY THE VALVE SUPPLIER BY REMOVING THE SPINDLE NUT AND REPLACING WITH A THROUGH BUSH. IN ADDITION THE THREADED SPINDLE IS TO BE REPLACED WITH A STRAIGHT SHAFT WITH AN END SUITABLE FOR CONNECTION TO THE DN32 EXTENDED SPINDLE SHAFT.

G7. ALL FLANGES ARE TO BE TO AS 4087 FIGURE B7 PN16

STAINLESS STEEL

SS1. STAINLESS STEELWORK SHALL COMPLY TO AS/NZS 1554.6-1994 AND AS 2837-1986 OR APPROVED EQUIVALENT.

SS2. STAINLESS STEEL MATERIALS SHALL BE SUPPLIED TO AISI GRADE 316 OR GRADE 316L.

SS3. WELDING SHALL COMPLY TO AUSTRALIAN WELDING RESEARCH ASSOCIATION TECHNICAL NOTE 16 - WELDING STAINLESS STEELS. WELDS SHALL BE 4mm CONTINUOUS FILLET WELDS (AWS E316L ELECTRODE), UNLESS NOTED OTHERWISE.

SS4. ALL WELDS ARE TO BE AS SHOWN AND ARE TO BE CONTINUOUS SEAL WELDS.

SS5. ALL STORAGE, FABRICATION AND WELDING OF STAINLESS STEEL SHALL BE CARRIED OUT IN AN AREA SPECIFICALLY DEDICATED TO THE PARTICULAR GRADE OF STAINLESS STEEL BEING USED.

SS6. ALL FABRICATED STAINLESS STEELWORK IS TO BE PASSIVATED.

SS7. ALL STAINLESS STEEL BOLTS ARE TO BE ASSEMBLED WITH ANTI GALLING COMPOUND "DURALAC" OR APPROVED EQUIVALENT.

REV. No.	DATE	DESCRIPTION	AUTH.
B	19/05/14	UPGRADE TO SS316	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

GRIT COLLECTOR - MAINTENANCE HOLE
INLET PIPE & VALVE
INSTALLATION & DETAILS

~~CoGC~~ ~~LCC~~ ~~RCC~~ QUU ~~UW~~

DRAWING No. SEQ-SPS-1401-2

VERSION B

NOT TO SCALE

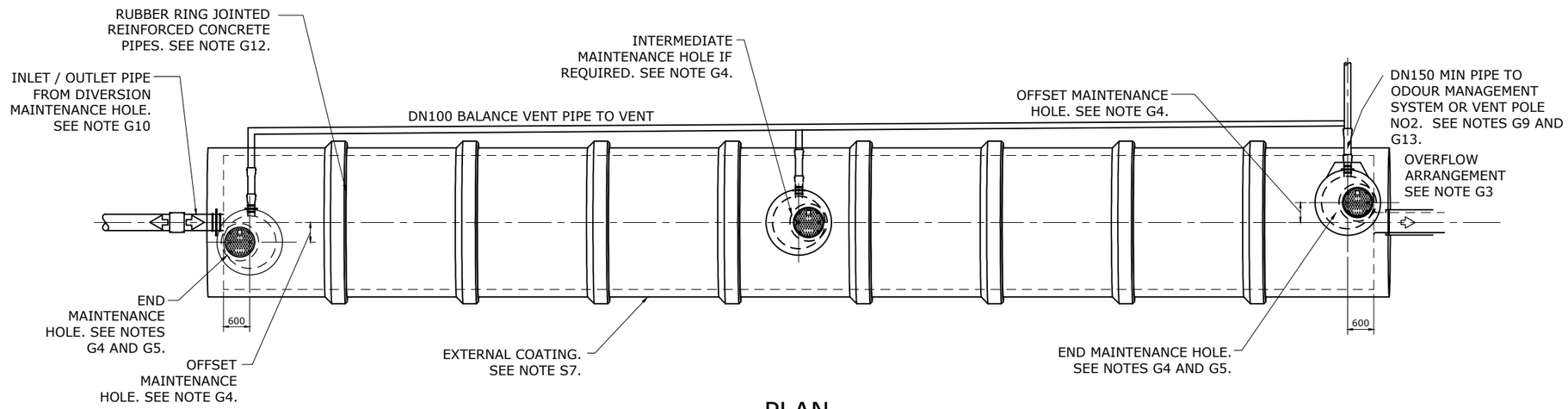
ORG DATE: 1/1/2013

STRUCTURAL NOTES

S1. THE STRUCTURE SHALL BE DESIGNED TO ALL RELEVANT CODES AND PRACTICES INCLUDING AS3735 AND AS3600.
S2. THE CHAMBER SHALL BE DESIGNED FOR TRAFFICABLE LOADS OF AT LEAST W80 TO AS5100.HOWEVER THE DESIGN SHALL COMPLY WITH ALL REQUIREMENTS SET OUT IN AS5100.
S3. THE MINIMUM EXPOSURE CLASS OF THE INTERNAL CONCRETE SURFACE SHALL BE B2 TO AS3735 AND THE COVER SHALL BE MEASURED FROM THE REINFORCEMENT STEEL TO THE EMBEDMENT LUGS OF THE POLYETHYLENE OR PVC LINING.
S4. THE CONCRETE CLASS SHALL BE SPECIAL CLASS SCC40 TO WATER SERVICES ASSOCIATION OF AUSTRALIA INDUSTRY STANDARD FOR CONCRETE SPECIAL CLASS WSA 114.
S5. THE STRUCTURE SHALL BE TESTED IN ACCORDANCE WITH AS3735.
S6. THE DESIGN SHALL INCLUDE PROVISIONS TO PREVENT UPLIFT OF THE STRUCTURE DURING EXTERNAL FLOODING.
S7. ALL EXTERNAL CONCRETE SURFACES IN CONTACT WITH SOIL SHALL BE COATED WITH "OXYDUR PTB" OR A SEQ-SP APPROVED EQUIVALENT.

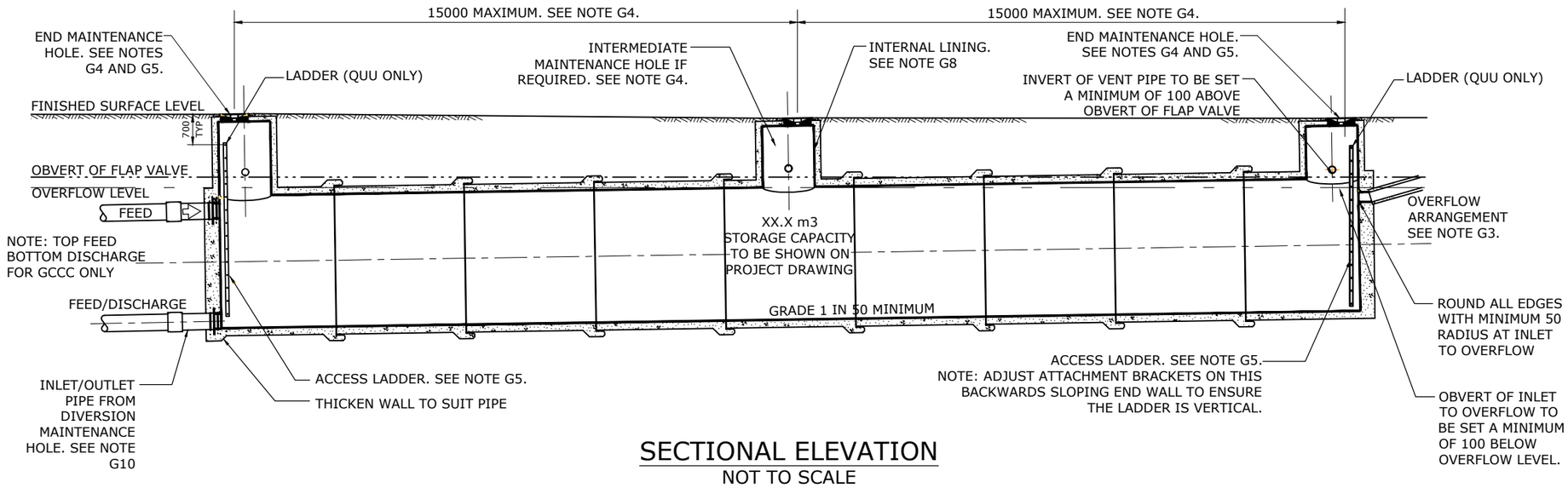
GENERAL NOTES CONT.

G14. WHERE PERMITTED BY SEQ-SP, A HIGH BUILD SOLVENT FREE EPOXY COATING SYSTEM MAY BE USED FOR ALL INTERNAL SURFACES.
THE COATING SYSTEM SHALL BE SEQ-SP APPROVED AND COMPLY WITH THE PRODUCT MANUFACTURER'S SURFACE PREPARATION AND APPLICATION REQUIREMENTS.
THE COATING SYSTEM SHALL BE APPLIED BY THE PRODUCT MANUFACTURER'S APPROVED APPLICATION CONTRACTOR.



NOTE: UNITYWATER REQUIRES BOTH END MAINTENANCE HOLES COVERS TO BE 900 X 6OO C/W "RAILSAFE" POST INSERTS SET 200 OFFSET TO CORNERS. THE 900 SIDE TO BE IN LINE WITH STORAGE PIPE BARREL.

PLAN
NOT TO SCALE



SECTIONAL ELEVATION
NOT TO SCALE

NOTES

GENERAL NOTES

G1. THIS DRAWING SHOWS AN EMERGENCY STORAGE CHAMBER CONSTRUCTED USING PIPES.
G2. THE OVERFLOW FLAP VALVE CHAMBER CONNECTING BOX CULVERT SHALL BE LOCATED AT THE FURTHEST POINT FROM THE INLET TO THE EMERGENCY STORAGE CHAMBER.
THE OVERFLOW IS SITUATED IN THIS LOCATION TO MINIMISE THE SOLID AND FLOATING MATERIAL DISCHARGED INTO THE ENVIRONMENT IF AN OVERFLOW OCCURS. IF NO SUITABLE DISCHARGE POINT IS AVAILABLE AT THE PUMPING STATION SITE THEN SEQ-SP AND WHERE APPROPRIATE D.E.R.M. APPROVAL SHALL BE SOUGHT TO SITE THE OVERFLOW FLAP VALVE CHAMBER AT A UPSTREAM CATCHMENT MAINTENANCE HOLE LOCATION.
G3. THE OVERFLOW FLAP VALVE CHAMBER SHALL BE A TYPE 1, 2 OR 3 AS SHOWN ON STANDARD DRAWINGS NOS. SEQ-SEW 1409 TO 1413.
THE OUTLET TO THE OVERFLOW FLAP VALVE CHAMBER SHALL BE A PIPE. A SEPARATE AS CONSTRUCTED PLAN SHALL BE PRODUCED OF THE OVERFLOW FLAP VALVE CHAMBER.
G4. A MAINTENANCE HOLE COVER ACCESS IS REQUIRED AT BOTH ENDS OF THE EMERGENCY STORAGE CHAMBER REGARDLESS OF THE LENGTH OF THE CHAMBER. THE MAXIMUM DISTANCE BETWEEN THE MAINTENANCE HOLE COVERS SHALL BE 15000. WHERE THE DISTANCE EXCEEDS 15000 INTERMEDIATE MAINTENANCE HOLES ARE REQUIRED. THESE INTERMEDIATE MAINTENANCE HOLES DO NOT REQUIRE LADDERS. AS SHOWN ON THIS DRAWING THE MAINTENANCE HOLE MAY NEED TO BE OFFSET AS THE LADDERS SHALL NOT COVER ANY PIPES OR OPENINGS IN THE CHAMBER. THE MAINTENANCE HOLES SHALL BE 1200 TYPE F BARRELS AND TOP SLABS OR SEQ-SP APPROVED SIMILAR. THE BARRELS SHALL BE INTEGRAL AND FULLY SEALED WITH THE EMERGENCY STORAGE CHAMBER PIPES. THE MAINTENANCE HOLE COVERS SHALL BE CLASS D BOLT DOWN COVERS SUITABLE FOR TRAFFICABLE LOCATIONS.
G5. ACCESS FROM THE END MAINTENANCE HOLE COVERS SHALL BE VIA A 375 WIDE LADDER. THIS LADDER SHALL BE EITHER A GALVANISED STEEL LADDER TO AS 1657 OR A SEQ-SP APPROVED FIBRE REINFORCED PLASTIC LADDER. IN NO CASE SHALL THE LADDER OVERHANG THE PERSON CLIMBING THE LADDER.
G6. FOR DETAILS OF LEVEL INTERACTION WITH OTHER PUMPING STATION STRUCTURES AND STORAGE CAPACITY REQUIREMENTS REFER TO ALL OTHER SEQ-SP DRAWINGS.
G7. NOT ALL LEVELS AND DIMENSIONS ARE SHOWN ON THIS TYPICAL DRAWING.FULL DETAILS SHALL BE PROVIDED ON THE PROJECT DRAWINGS.
G8. ALL INTERNAL SURFACES OF A CHAMBER SHALL BE LINED WITH A LIGHT COLOURED MECHANICAL ANCHORED PE LINING AS DESCRIBED ON DRAWING SEQ-SPS-1407-1. SPUN CAST CONCRETE PIPES WITH NON CONTINUOUS PE LINING ARE NOT PERMITTED. SEE NOTE 14 FOR A COATING SYSTEM ALTERNATIVE.
G9. AN ODOUR CONTROL SYSTEM IN ACCORDANCE WITH THE ODOUR IMPACT ASSESSMENT REPORT IS REQUIRED. IF A VENT POLE (NO. 2) IS REQUIRED, IT SHALL BE SEPARATE FROM THE PUMP WELL AND GRIT COLLECTOR MH VENT POLE. IT SHALL BE LOCATED AT THE OPPOSITE END TO INLET SEWER. PIPE SIZES SHALL MEET THE FLOWS REQUIRED BY THE OMS.
G10. THE INLET / OUTLET PIPE FROM THE DIVERSION MAINTENANCE HOLE TO THE EMERGENCY STORAGE CHAMBER SHALL BE SIZED TO CARRY MAXIMUM WET WEATHER FLOW. THE PIPE SHALL BE GRADED AT A MINIMUM 1 IN 50.
THE PIPE SHOWN ON THIS DRAWING IS POLYETHYLENE. IF VC PIPES ARE USED A SHORT LENGTH OF PLAIN AND SOCKET PIPE IS REQUIRED ADJACENT TO THE STRUCTURE.
G11. THE EMERGENCY STORAGE CHAMBER SHALL BE LOCATED WITHIN FREEHOLD PROPERTY OWNED BY SEQ-SP.
G12. THE PIPES USED TO FORM THE EMERGENCY STORAGE CHAMBER SHALL BE RUBBER RING JOINTED REINFORCED CONCRETE. THE MINIMUM CLASS OF PIPE SHALL BE CLASS 4. SEE NOTES S2 AND S5. THIS DRAWING SHOWS SOCKET RUBBER RING JOINTS, HOWEVER FOR LARGER DIAMETER PIPES AN IN WALL RUBBER RING JOINT IS SUITABLE. SEE NOTE G8 FOR CONCRETE PIPES WHICH ARE NOT APPROVED.
G13. A 2000 MINIMUM CLEARANCE SHALL BE PROVIDED FROM ANY MAINTENANCE HOLE COVER ACCESS IN THE TOP SLAB OF THE CHAMBER TO ANY ABOVE GROUND EQUIPMENT OR STRUCTURE.

REV. No.	DATE	DESCRIPTION	AUTH.
C	19/01/17	NOTE S4 AMENDED	
B	23/06/14	NOTES G8 AND G14 AMENDED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ADDITIONAL STORAGE CHAMBER
GENERAL REQUIREMENTS

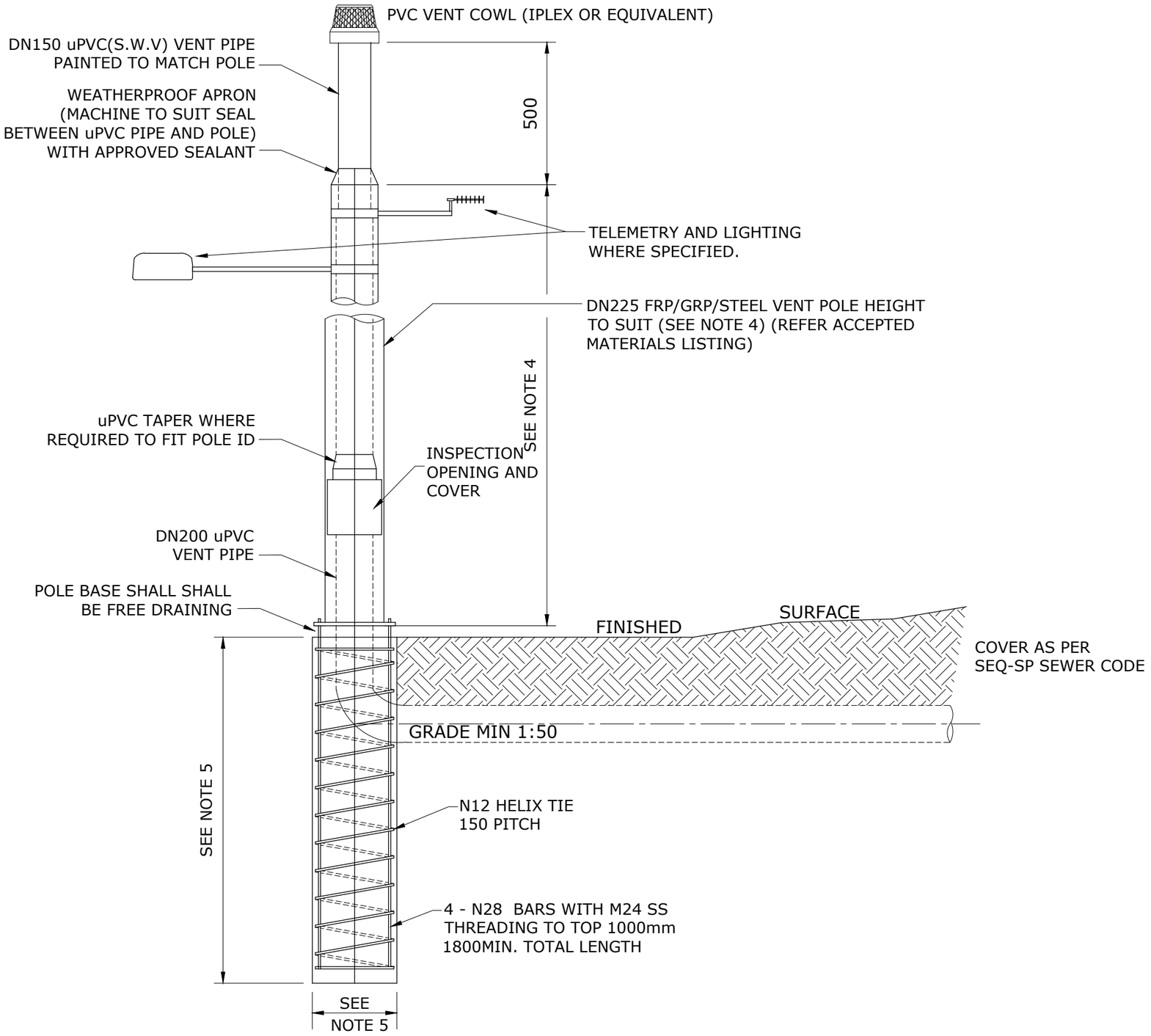
CoGC	LCC	RCC	QUU	UW

DRAWING No.
SEQ-SPS-1402-1

VERSION
C

NOT TO SCALE

ORG DATE:
1/1/2013



VENT POLE DETAIL

NOT TO SCALE

NOTES

1. WHERE STEEL POLES USED -PVC LINER REQUIRED.
2. PREFERRED LOCATION OF TELEMETRY ANTENNA IS ATTACHED TO THE SWITCHBOARD, VENT POLE TO BE USED IF EXTRA HEIGHT REQUIRED.
3. VENT POLES SHALL BE DESIGNED TO ACHIEVE ODOUR AND AIR MOVEMENT AS PER ODOUR ASSESSMENT IMPACT REPORT.
4. HEIGHT AS PER ODOUR ASSESSMENT IMPACT REPORT, PREFERRED COLOURS ARE HERITAGE OR MIST GREEN.
5. THE FOUNDATION DESIGN SHOWN ON THIS DRAWING IS GIVEN AS AN EXAMPLE. THE VENT POLE SUPPORT SHALL BE DESIGNED AND CERTIFIED BY A RPEQ STRUCTURAL ENGINEER TO CURRENT AUSTRALIA STANDARDS AND CODES.
6. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

REV. No.	DATE	DESCRIPTION	AUTH.
B	01/06/14	NOTE 5 AMENDED AND DRAWING REFERENCES	

SEQ WATER SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL VENT POLE

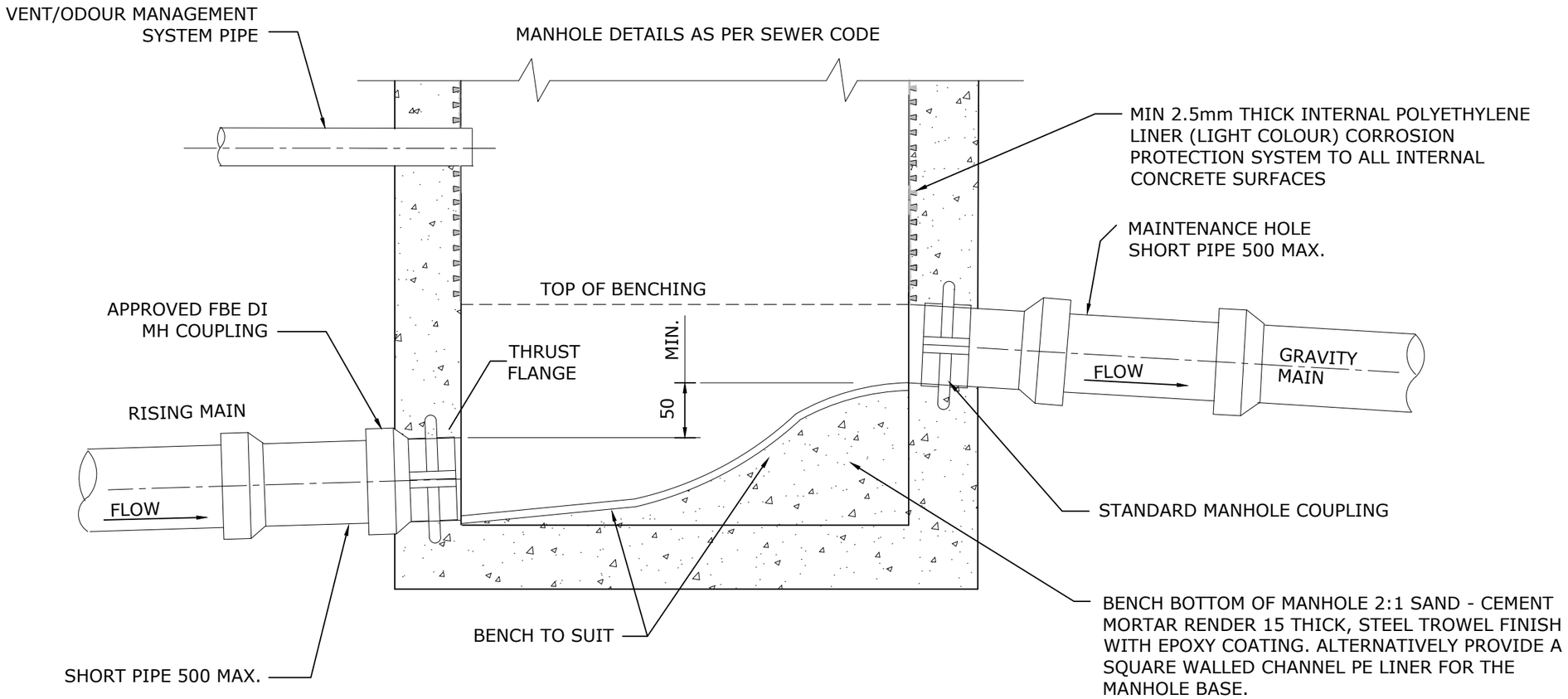
CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1405-2

VERSION B

NOT TO SCALE

ORG DATE: 1/1/2013



PART SECTIONAL ELEVATION
RISING MAIN DISCHARGE MANHOLE

REV. No.	DATE	DESCRIPTION	AUTH.
B	09/04/14	REMOVE QUU FROM DRAWING.	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

RISING MAIN DISCHARGE
TO GRAVITY SEWER

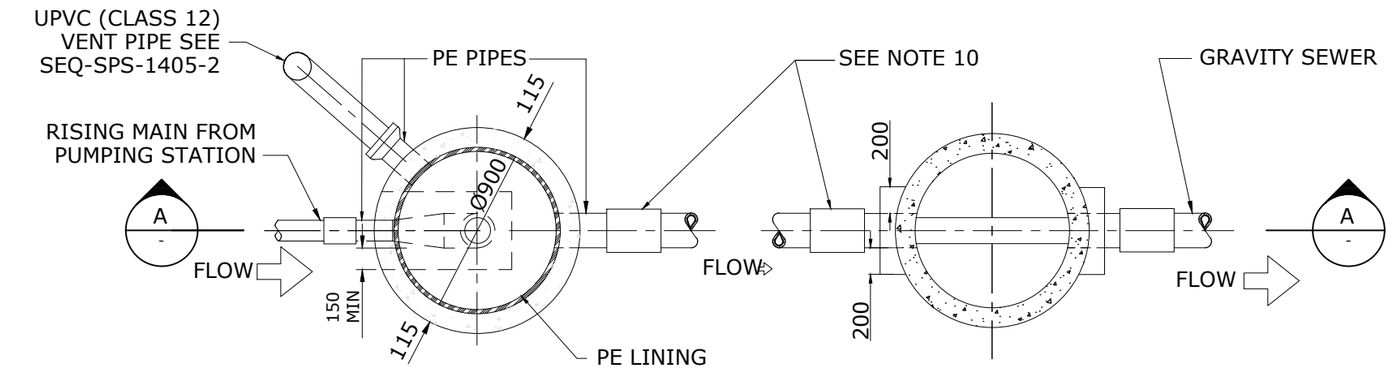
CoGC	LCC	RCC	~~QUU~~	UW

DRAWING No.
SEQ-SPS-1406-1

VERSION
B

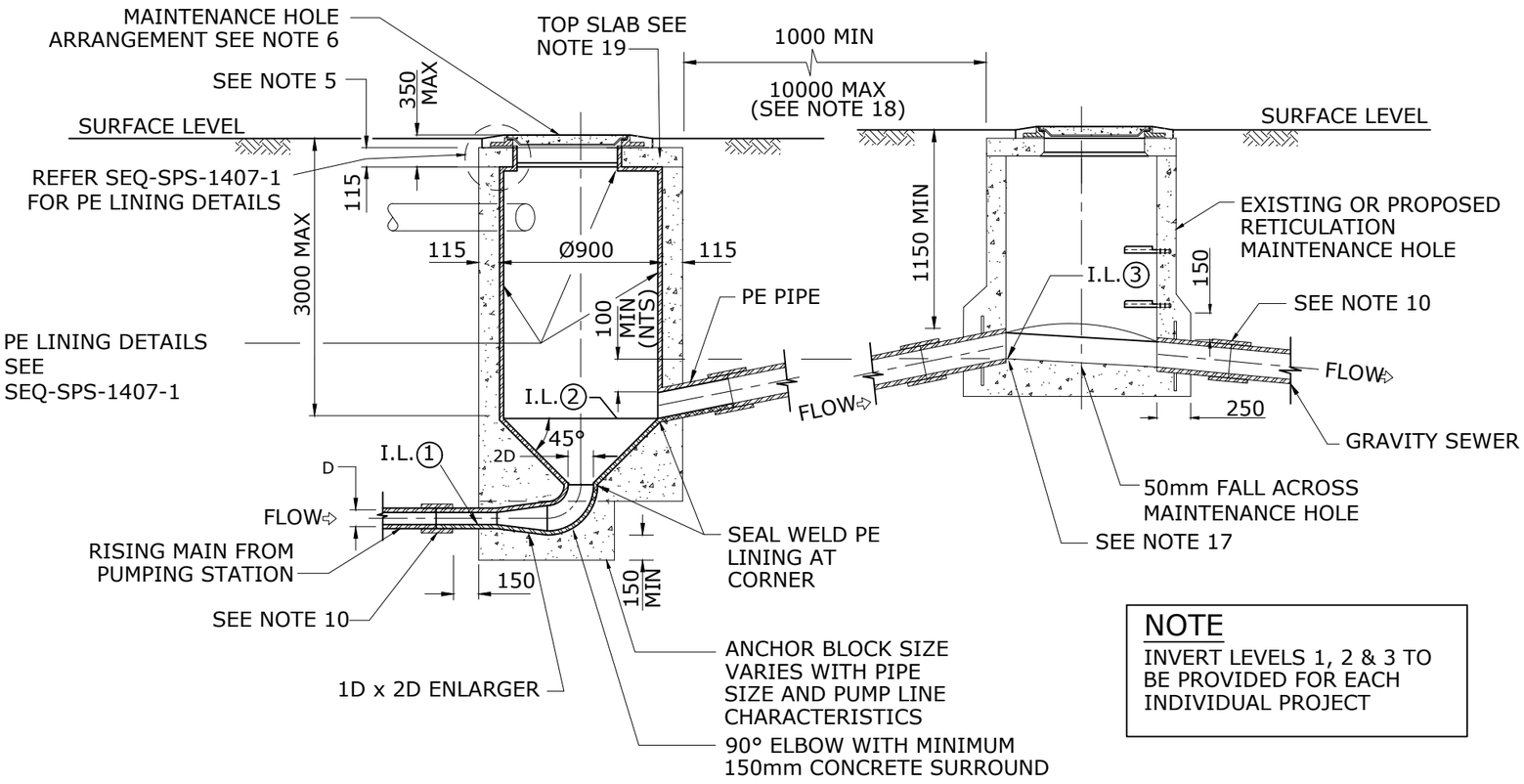
NOT TO SCALE

ORG DATE:
1/1/2013



DISCHARGE M.H. RETICULATION M.H.

SECTIONAL PLAN



NOTE
INVERT LEVELS 1, 2 & 3 TO BE PROVIDED FOR EACH INDIVIDUAL PROJECT

DISCHARGE M.H. RETICULATION M.H.

SECTIONAL ELEVATION A / -

THE ARRANGEMENT DETAILED ON THIS DRAWING SHALL BE USED WHERE THE PUMP FLOW RATES CAN NOT ACHIEVE NON-TURBULENT DISSIPATION IN THE DISCHARGE MAINTENANCE HOLE.

NOTES

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SEQ-SP SPECIFICATIONS AND STANDARDS.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
3. ALL CONCRETE SHALL BE SPECIAL CLASS TO WSA PS-358.
4. REINFORCING BARS SHALL BE TACK WELDED AT ALL INTERSECTIONS.
5. TOP SLAB THICKNESS SHALL BE INCREASED FROM 115mm TO 150mm WHERE CLASS "D" COVERS ARE SPECIFIED FOR TRAFFICABLE LOCATIONS.
6. MAINTENANCE HOLE FRAME, COVER AND COPING SHALL SUIT APPLICATION. REFER STANDARD DRAWING NOS. SEQ-SEW-1301-1, AND SEQ-SEW-1308 SERIES FOR DETAILS.
7. ALL CONCRETE SHALL BE VIBRATED.
8. VC SEWERS SHALL BE CLASS 4 TO A.S. 1741 OR CONFORM TO EN295-1. DICL SEWERS SHALL BE CLASS PN35 TO A.S. 2280 AND POLYETHYLENE SLEEVED. PE PIPELINES SHALL BE CLASS PE100 TO AS/NZS 4130 AND AS/NZS 4131. UPVC SEWERS SHALL BE SN8 (SN10 FOR DN100) TO A.S.1260.
9. DISCHARGE MAINTENANCE HOLE LINER SHALL BE POLYETHYLENE CLASS PE100 TO AS/NZS 4130 AND AS/NZS 4131.
10. ALL POLYETHYLENE PIPES AND FITTINGS SHALL BE JOINED USING BUTT WELDING AND/OR ELECTRO FUSION WELDING PROCESSES.
11. ALL DIMENSIONS ARE IN MILLIMETRES.
12. THIS STANDARD DRAWING APPLIES FOR ALL RETICULATION SEWERS UP TO DN250 NUSEWER.
13. DISCHARGE MAINTENANCE HOLES SHALL NOT BE LOCATED IN PRIVATE PROPERTY.
14. MAINTENANCE HOLES IN FOOTPATH LOCATION SHALL BE CONSTRUCTED ON CENTRE LINE OF SEWERAGE ALLOCATION.
15. ALL PIPEWORK SHALL FINISH FLUSH WITH INSIDE FACE OF MAINTENANCE HOLE WALL.
16. UPVC PIPES SHALL NOT BE USED BETWEEN THE DISCHARGE MAINTENANCE HOLE AND THE FIRST RETICULATION MAINTENANCE HOLE.
17. FOR DISCHARGE TO OTHER THAN RETICULATION SEWERS OR DEEP SEWERS, REFER TO POLYETHYLENE LINE SEWER MAINTENANCE HOLE STANDARD DRAWING SEQ-SEW-1307-2.
18. MAINTENANCE HOLES SHALL BE CONSTRUCTED AS CLOSE AS PRACTICABLE.
19. FOR TOP SLAB ARRANGEMENT SEE SEQ-SEW-1301-3.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

PREFERRED RISING MAIN DISCHARGE MANHOLE TO GRAVITY SEWER - 900mm DIA

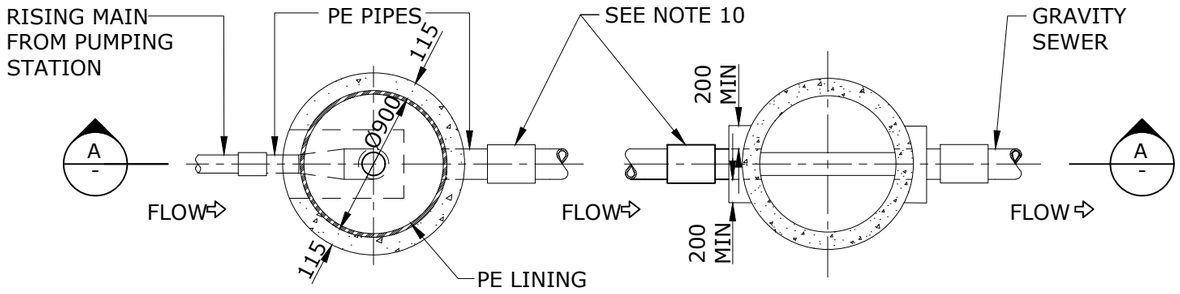
~~CoGC~~ ~~LCC~~ ~~RCC~~ QUU ~~UW~~

DRAWING No. SEQ-SPS-1406-2

VERSION A

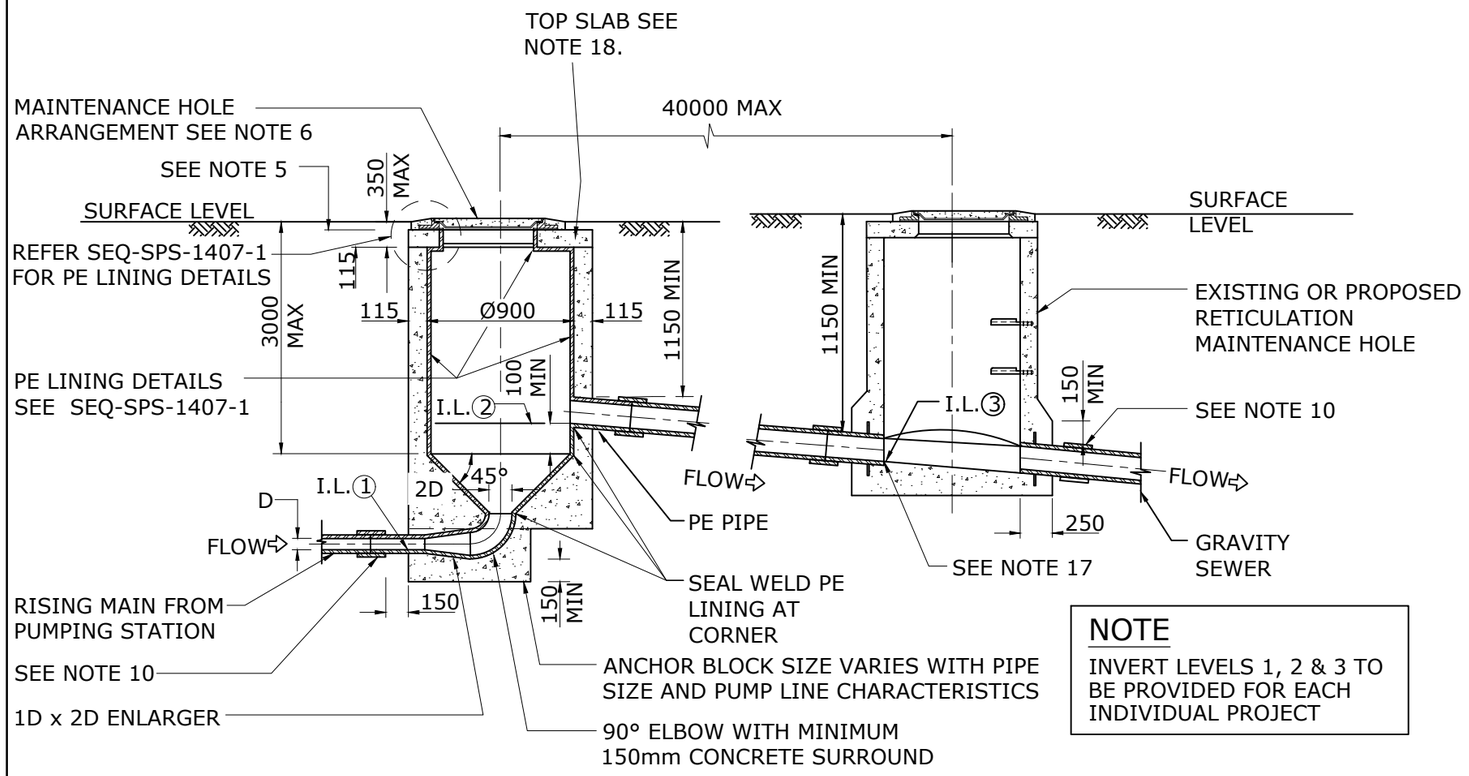
NOT TO SCALE

ORG DATE: 1/1/2013



DISCHARGE M.H. RETICULATION M.H.

SECTIONAL PLAN



NOTE

INVERT LEVELS 1, 2 & 3 TO BE PROVIDED FOR EACH INDIVIDUAL PROJECT

DISCHARGE M.H. RETICULATION M.H.

SECTIONAL ELEVATION A -

NOTES:

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SEQ-SP SPECIFICATIONS AND STANDARDS.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
3. ALL CONCRETE SHALL BE SPECIAL CLASS TO WSA PS-358.
4. REINFORCING BARS SHALL BE TACK WELDED AT ALL INTERSECTIONS.
5. TOP SLAB THICKNESS SHALL BE INCREASED FROM 115mm TO 150mm WHERE CLASS "D" COVERS ARE SPECIFIED FOR TRAFFICABLE LOCATIONS.
6. MAINTENANCE HOLE FRAME COVER AND COPING SHALL SUIT APPLICATION REFER STANDARD DRAWING NOS SEQ-SEW-1301-1 AND SEQ-SEW-1308 SERIES FOR DETAILS.
7. ALL CONCRETE SHALL BE VIBRATED.
8. VC SEWERS SHALL BE CLASS 4 TO A.S 1741 OR CONFORM TO EN295-1.DICL SEWERS SHALL BE CLASS PN35 TO A.S. 2280 AND POLYETHYLENE SLEEVED PE PIPELINES SHALL BE CLASS PE100 TO AS/NZS 4130 AND AS/NZS 4131.UPVC SEWERS SHALL BE SN8 EXCEPT FOR DN100 WHICH SHALL BE SN10.
9. DISCHARGE MAINTENANCE HOLE LINER SHALL BE POLYETHYLENE CLASS PE100 TO AS/NZS 4130 AND AS/NZS 4131.
10. ALL POLYETHYLENE PIPES AND FITTINGS SHALL BE JOINED USING BUTT WELDING AND/OR ELECTRO FUSION WELDING PROCESSES.
11. ALL DIMENSIONS ARE IN MILLIMETRES.
12. THIS STANDARD DRAWING APPLIES FOR ALL RETICULATION SEWERS UP TO DN250 NUSEWER.
13. DISCHARGE MAINTENANCE HOLES SHALL NOT BE LOCATED IN PRIVATE PROPERTY.
14. MAINTENANCE HOLES IN FOOTPATH LOCATION SHALL BE CONSTRUCTED ON CENTRE LINE OF SEWERAGE ALLOCATION.
15. ALL PIPEWORK SHALL FINISH FLUSH WITH INSIDE FACE OF MAINTENANCE HOLE WALL.
16. UPVC PIPES SHALL NOT BE USED BETWEEN THE DISCHARGE MAINTENANCE HOLE AND THE FIRST RETICULATION MAINTENANCE HOLE.
17. FOR DISCHARGE TO OTHER THAN RETICULATION SEWERS OR DEEP SEWERS, REFER TO POLYETHYLENE LINE SEWER MAINTENANCE HOLE STANDARD DRAWING SEQ-SEW-1307-2.
18. FOR TOP SLAB ARRANGEMENT SEE SEQ-SEW-1301-3.

PUMP FLOW RATES SHALL BE DESIGNED TO PROVIDE A NON-TURBULENT DISSIPATION IN THE DISCHARGE MAINTENANCE HOLE. THE GRAVITY SEWER BETWEEN THE DISCHARGE MAINTENANCE HOLE AND THE RETICULATION MAINTENANCE HOLE SHALL BE TREATED AS THE LAST LENGTH OF SEWER TO AN END. THE DESIGN VELOCITIES FROM THE DISCHARGE MAINTENANCE HOLE SHALL CONFORM WITH THE DESIGN VELOCITIES FOR GENERAL SEWER DESIGN AS SET OUT IN THE "SEWERAGE CODE OF AUSTRALIA WSA-02".

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

ALTERNATIVE RISING MAIN DISCHARGE MANHOLE TO GRAVITY SEWER - 900mm DIA

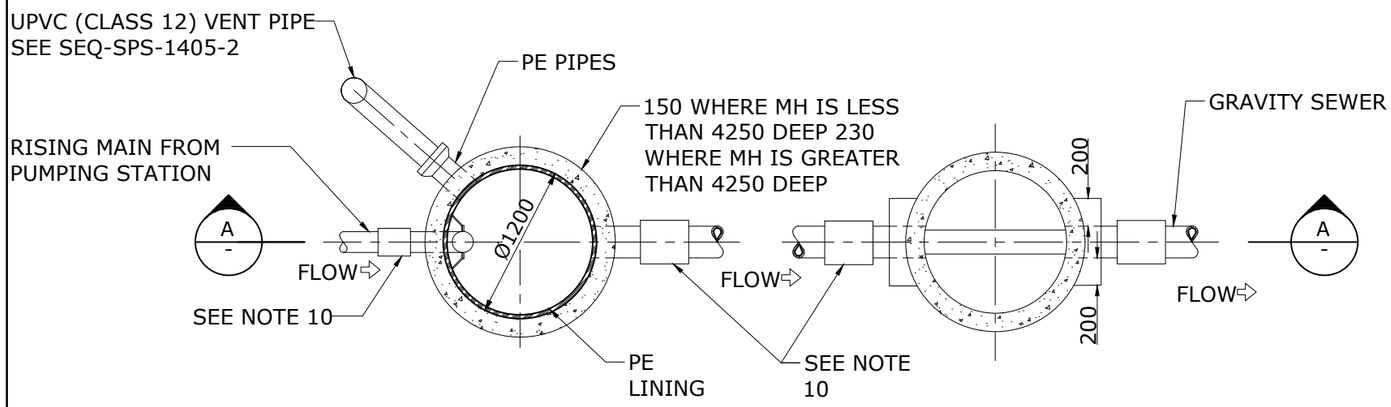
CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1406-3

VERSION A

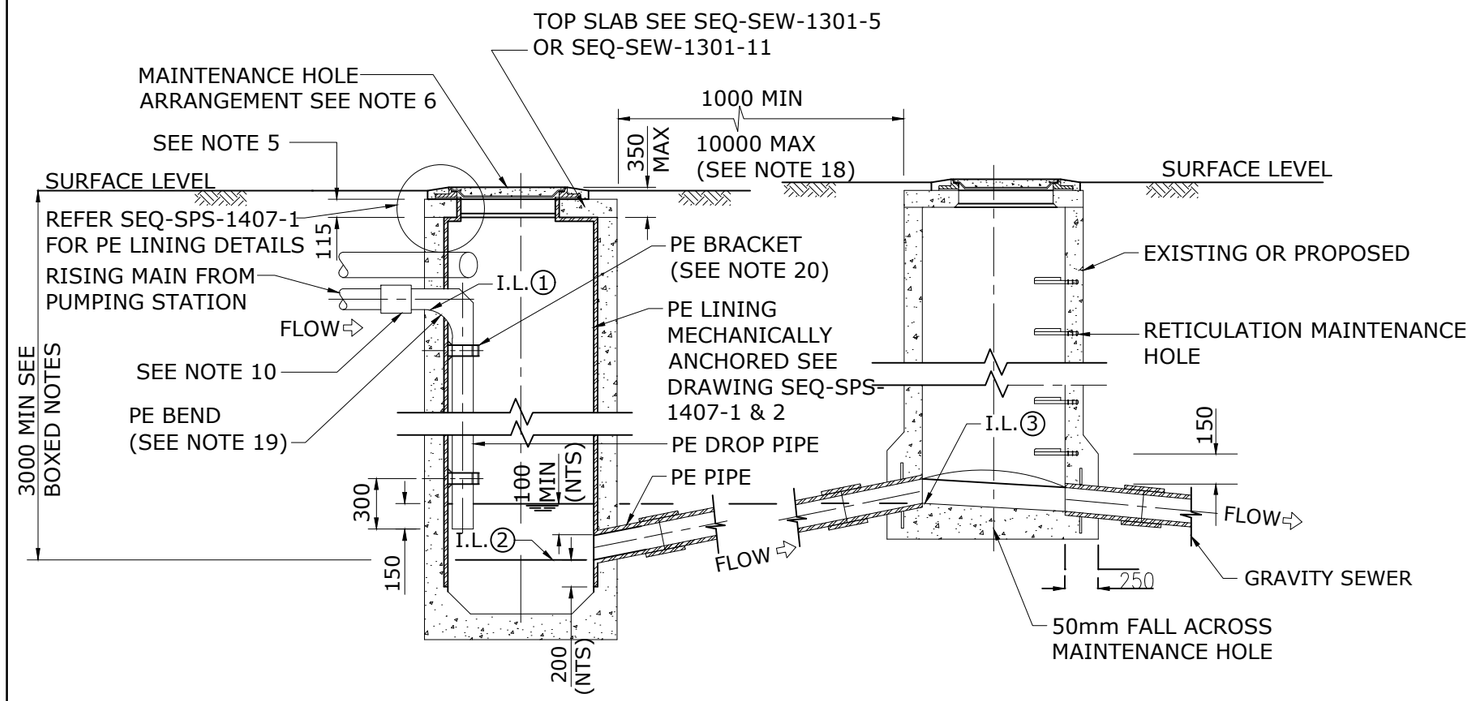
NOT TO SCALE

ORG DATE: 1/1/2013



DISCHARGE M.H. RETICULATION M.H.

SECTIONAL PLAN



DISCHARGE M.H. RETICULATION M.H.

SECTIONAL ELEVATION A / -

NOTE:
INVERT LEVELS 1, 2 & 3 TO BE PROVIDED FOR EACH INDIVIDUAL PROJECT

NOTES

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SEQ-SP SPECIFICATIONS AND STANDARDS.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
3. ALL CONCRETE SHALL BE SPECIAL CLASS TO WSA PS-358.
4. REINFORCING BARS SHALL BE TACK WELDED AT ALL INTERSECTIONS.
5. TOP SLAB THICKNESS SHALL BE INCREASED FROM 115mm TO 150mm WHERE CLASS "D" COVERS ARE SPECIFIED FOR TRAFFICABLE LOCATIONS.
6. MAINTENANCE HOLE FRAME, COVER AND COPING SHALL SUIT APPLICATION. REFER STANDARD DRAWING NOS. SEQ-SEW-1301-1 AND SEQ-SEW-1308 SERIES FOR DETAILS.
7. ALL CONCRETE SHALL BE VIBRATED.
8. VC SEWERS SHALL BE CLASS 4 TO A.S. 1741 OR CONFORM TO EN295-1. DICL SEWERS SHALL BE CLASS PN35 TO A.S. 2280 AND POLYETHYLENE SLEEVED. PE PIPELINES SHALL BE CLASS PE100 TO AS/NZS 4130 AND AS/NZS 4131. UPVC SEWERS SHALL BE SN8 (SN10 FOR DN100) TO A.S. 1260.
9. DISCHARGE MAINTENANCE HOLE LINER SHALL BE POLYETHYLENE CLASS PE100 TO AS/NZS 4130 AND AS/NZS 4131.
10. ALL POLYETHYLENE PIPES AND FITTINGS SHALL BE JOINED USING BUTT WELDING AND/OR ELECTRO FUSION WELDING PROCESSES.
11. ALL DIMENSIONS ARE IN MILLIMETRES.
12. THIS STANDARD DRAWING APPLIES FOR ALL RETICULATION SEWERS UP TO DN315 NU SEWERS.
13. DISCHARGE MAINTENANCE HOLES SHALL NOT BE LOCATED IN PRIVATE PROPERTY.
14. MAINTENANCE HOLES IN FOOTPATH LOCATION SHALL BE CONSTRUCTED ON CENTRE LINE OF SEWERAGE ALLOCATION.
15. ALL PIPEWORK SHALL FINISH FLUSH WITH INSIDE FACE OF MAINTENANCE HOLE WALL.
16. UPVC PIPES SHALL NOT BE USED BETWEEN THE DISCHARGE MAINTENANCE HOLE AND THE FIRST RETICULATION MAINTENANCE HOLE.
17. FOR DISCHARGE INTO EXISTING TRUNK SEWERS OR DEEP SEWERS, REFER TO STANDARD DRAWING SEQ-SEW-1307-2.
18. MAINTENANCE HOLES SHALL BE CONSTRUCTED AS CLOSE AS PRACTICABLE.
19. OGEE PROFILE BEND WITH INSPECTION OPENING FABRICATED FROM PE.BEND TO BE DESIGNED FOR PEAK DRY WEATHER FLOW.
20. FIRST BRACKET SHALL BE PLACED AT TAIL OF FABRICATED BEND. ADDITIONAL BRACKETS SHALL BE AT MAXIMUM 1500mm SPACINGS.

EXCEPT WHERE DN315 GRAVITY SEWERS ARE INSTALLED ON FOOTPATH LOCATIONS AND DISCHARGE MH DEPTH IS REQUIRED TO BE LESS THAN 3.0m. IN THIS CASE, WHERE PRACTICABLE, THE BOTTOM INLET CONFIGURATION SIMILAR TO DRG SEQ-SPS-1406-2 IS PREFERRED.

THE ARRANGEMENT DETAIL ON THIS DRAWING SHALL BE USED WHERE THE DEPTH OF THE GRAVITY SEWER SYSTEM REQUIRES THE DISCHARGE MAINTENANCE HOLE TO BE GREATER THAN 3.0m IN DEPTH.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

RISING MAIN DISCHARGE MANHOLE TO GRAVITY SEWER - 1200mm DIA

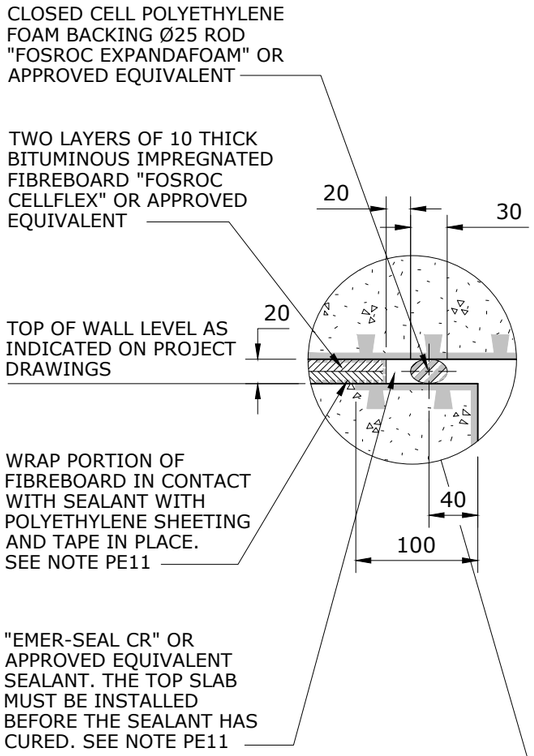
~~CoGC~~ ~~LCC~~ ~~RCC~~ QUU ~~UW~~

DRAWING No. SEQ-SPS-1406-4

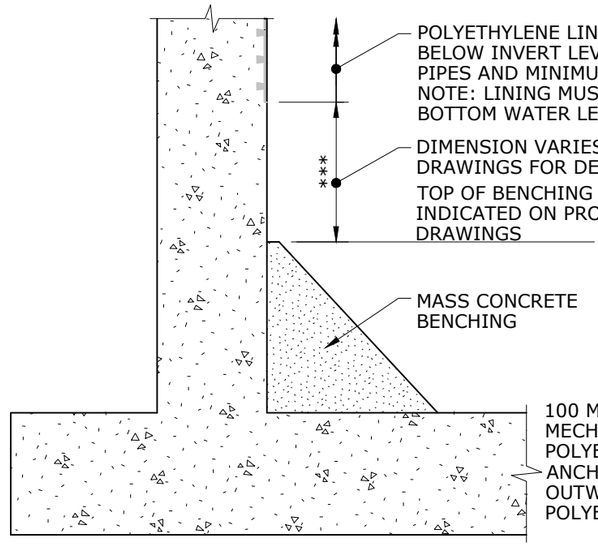
VERSION A

NOT TO SCALE

ORG DATE: 1/1/2013

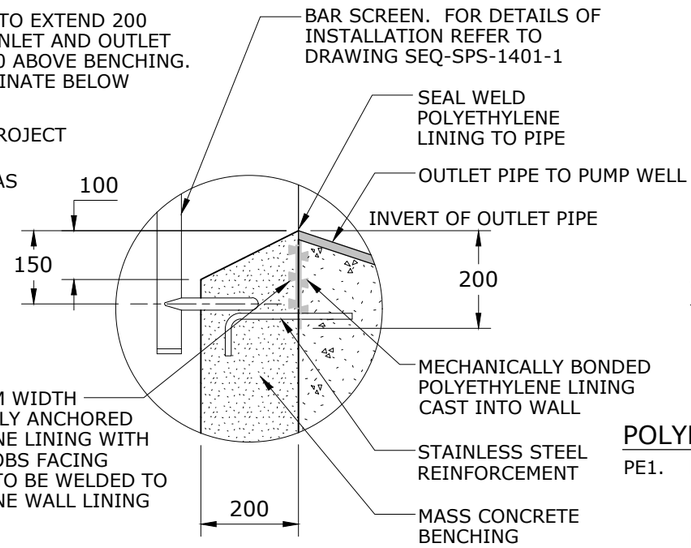


DETAIL OF TOP SEAL



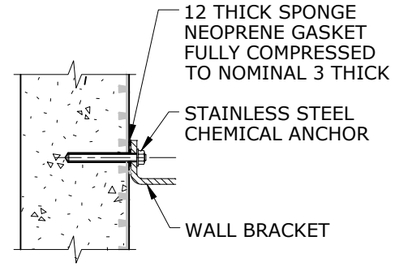
BENCHING AND WALL JUNCTION

NOT TO SCALE



BAR SCREEN BENCHING

NOT TO SCALE SEE NOTE PE10



WALL BRACKET ATTACHMENT

NOT TO SCALE

NOTES:

G1. MECHANICALLY ANCHORED POLYETHYLENE LINING IS REQUIRED ON ALL PUMPING STATIONS AND MAY ONLY BE OMITTED IF PRIOR WRITTEN APPROVAL IS GIVEN BY SEQ-SP.

G2. THE DIMENSIONS OF THE STRUCTURES WILL VARY AND THE DIMENSIONS SHOW *** ARE TO BE INDICATED ON THE PROJECT DRAWINGS.

POLYETHYLENE LINING

PE1. POLYETHYLENE LINING TO BE A MECHANICALLY ANCHORED LINING CAST INTO WALL AND TOP SLAB. "STEULER LINING 400" OR SEQ-SP APPROVED EQUIVALENT. LINING IS TO HAVE MINIMUM SHEET THICKNESS OF 2.5mm. THE LINING IS TO BE WHITE OR A SEQ-SP APPROVED LIGHT COLOUR.

PE2. THE LINING IS TO BE INSTALLED BY AN INSTALLER ACCREDITED BY THE LINING MANUFACTURER.

PE3. THE LINING IS TO BE CONTINUOUS OVER ALL INTERNAL SURFACES.

PE4. THE LINING IS TO BE EXTRUSION WELDED TO ALL PIPES PASSING THROUGH WALL.

PE5. ALL THE JOINS IN THE LINING ARE TO BE EXTRUSION WELDED. WHERE A FILLER ROD IS REQUIRED IT IS TO BE TO THE LINING MANUFACTURER'S SPECIFICATION.

PE6. ALL HOLES DRILLED THROUGH LINER FOR ANCHOR BOLTS, ETC, SHOULD BE SEALED WITH A 12 THICK SPONGE NEOPRENE GASKET COMPRESSED BETWEEN LINING AND EQUIPMENT WALL PLATE.

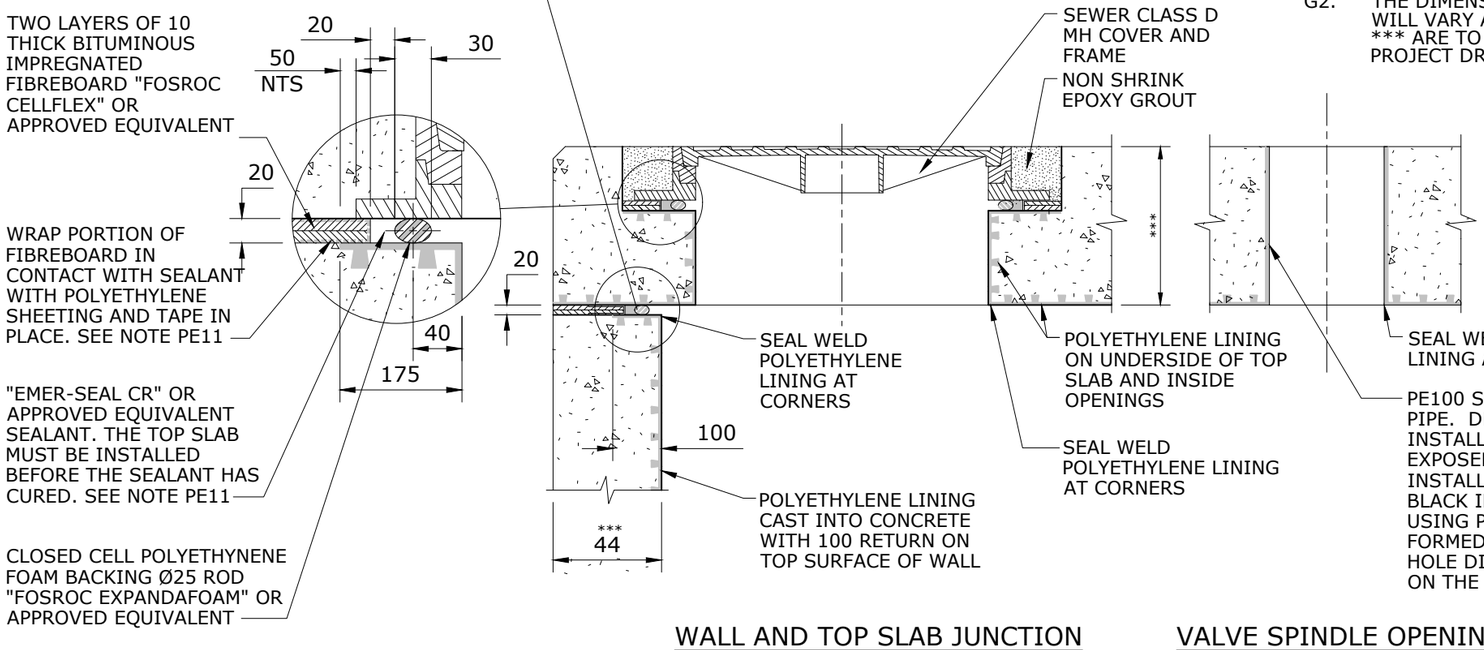
PE7. THE POLYETHYLENE LINING IS TO BE INSTALLED TO THE MANUFACTURER'S REQUIREMENTS TO PREVENT DISTORTION WHEN THE CONCRETE IS POURED.

PE8. IF WHITE COLOURED NATURAL POLYETHYLENE IS USED IT IS NOT TO BE EXPOSED TO DIRECT SUNLIGHT AT ANY TIME. THE POLYETHYLENE MANUFACTURER'S REQUIREMENTS FOR STORAGE AND HANDLING AND SHELF LIFE MUST BE FOLLOWED.

PE9. AFTER INSTALLATION THE LINING IS TO BE TESTED IN ACCORDANCE WITH WSA 02 OR SEQ-SP REQUIREMENTS. THE TESTING INCLUDES SPARK TESTING AND PULL-OUT TESTS WHICH ARE TO BE CARRIED OUT BY AN NATA ACCREDITED INDEPENDENT TESTER. THE TEST RESULTS MUST BE SUBMITTED TO SEQ-SP AS PART OF THE COMMISSIONING. THE AFOREMENTIONED TESTING IS IN ADDITION TO THE TESTING REQUIRED UNDER AS3735.

PE10. THE POLYETHYLENE LINING IS TO FINISH 200 MINIMUM BELOW BOTTOM WATER LEVEL. THE LINING IS TO FINISH WHERE POSSIBLE ABOVE THE BENCHING LEVEL. THE EXCEPTION IS THE BENCHING FOR THE GRIT COLLECTOR MAINTENANCE HOLE BAR SCREEN BENCHING.

PE11. THE "EMER-SEAL CR" SEALANT MUST NOT COME IN CONTACT WITH THE BITUMINOUS IMPREGNATED FIBREBOARD.



WALL AND TOP SLAB JUNCTION

NOT TO SCALE

VALVE SPINDLE OPENING

NOT TO SCALE

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

POLYETHYLENE LINING
TOP SLAB & WALL
TYPICAL DETAILS

CoGC	LCC	RCC	QUU	UW

DRAWING No.

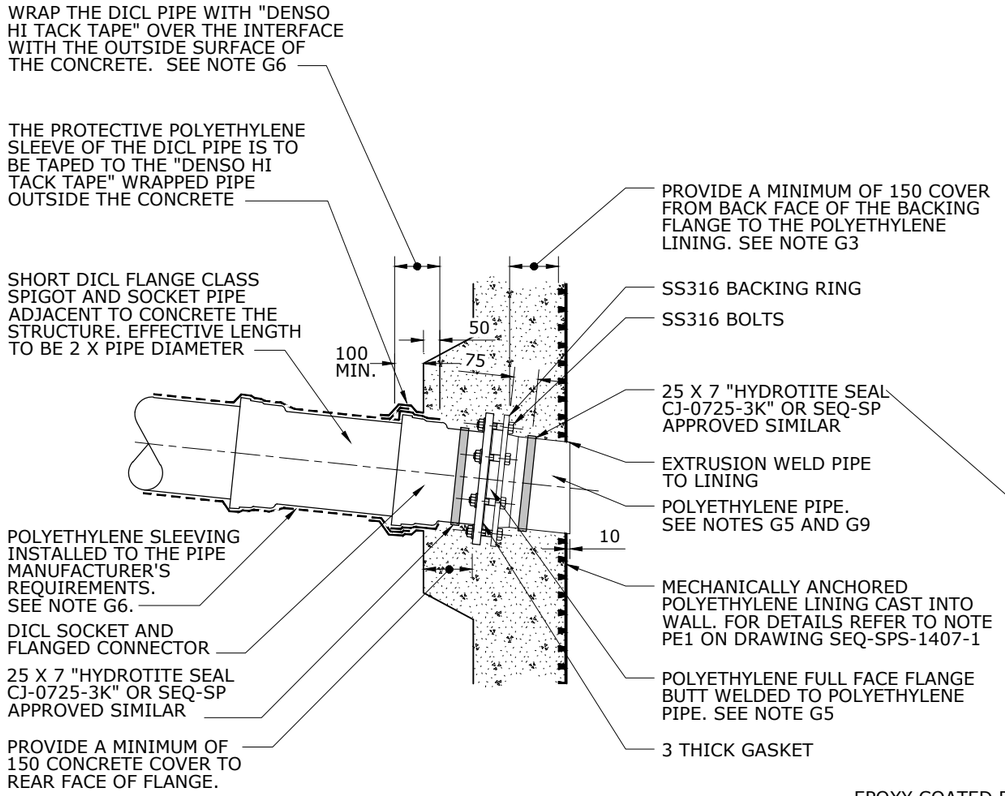
SEQ-SPS-1407-1

VERSION

A

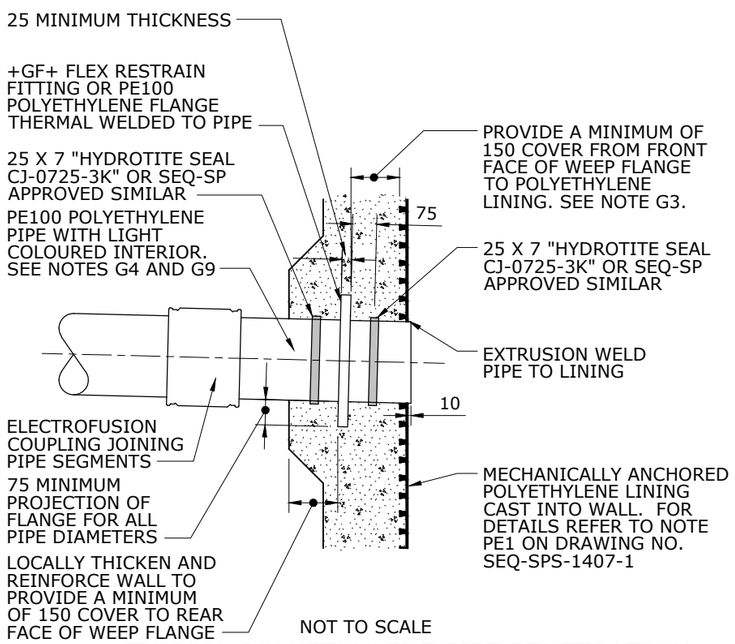
NOT TO SCALE

ORG DATE: 1/1/2013



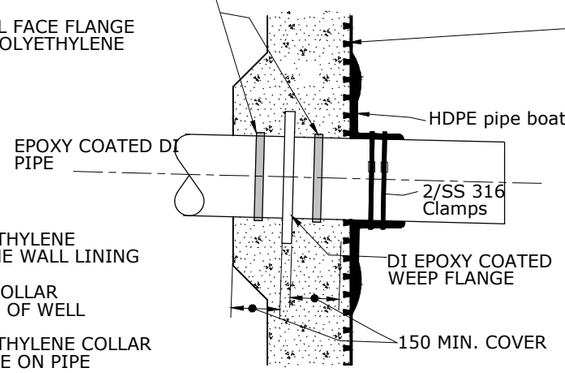
TYPICAL DICL PIPE PENETRATION

NOT TO SCALE



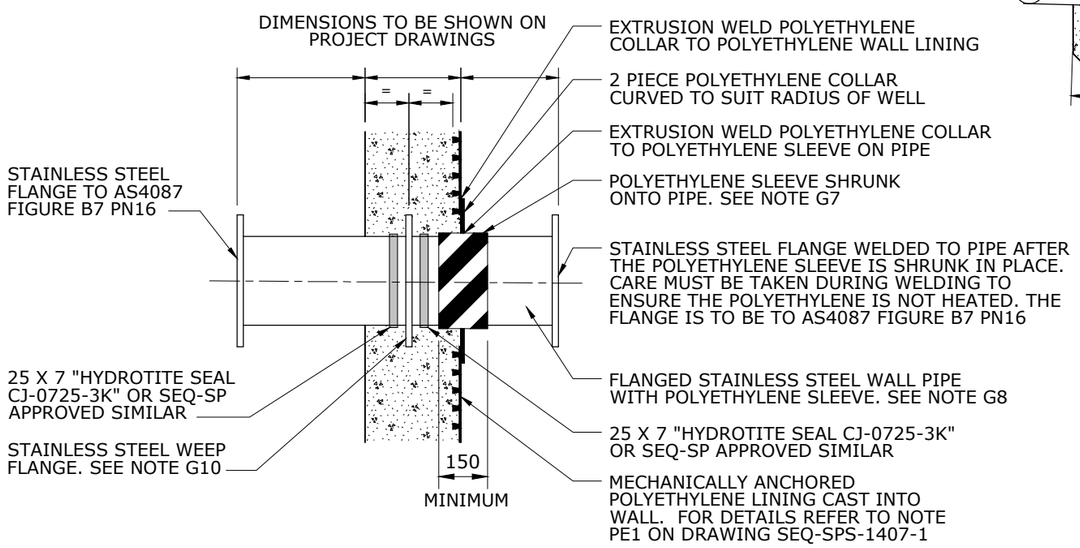
NOT TO SCALE

TYPICAL POLYETHYLENE PIPE PENETRATION



ALTERNATIVE THROUGH PIPE SEAL (NOT FOR QUU USE)

NOT TO SCALE



TYPICAL STAINLESS STEEL WALL PIPE PENETRATION

NOT TO SCALE

TABLE A
STAINLESS STEEL PIPE SIZES

NOMINAL PIPE DIAMETERS	PIPE OUTSIDE DIAMETER	MINIMUM * WALL THICKNESS
100	114.30	6.02 **
150	168.28	7.11 **
200	219.08	5
250	273.05	5
300	323.85	5
350	355.60	5
400	406.40	5
450	457.20	6
500	508.00	6

* SEE NOTE G8
** SCHEDULE 40 PIPE

TABLE B
POLYETHYLENE PIPE SIZES

PIPE OUTSIDE DIAMETER
110
160
250
315
400
500
630

SEE NOTE G9

NOTES:

G1. FOR NOTES ON POLYETHYLENE REFER TO DRAWING SEQ-SPS-1407-1.

G2. FOR TYPICAL DETAILS OF GRIT COLLECTOR MAINTENANCE HOLE VALVE WALL PIPE REFER TO DRAWING SEQ-SPS-1401-2 FOR DETAILS OF POTABLE WATER PIPE WALL PENETRATION REFER TO SEQ-SP. FOR DETAILS OF AIR BLEED PIPE WALL PENETRATION REFER TO SEQ-SP FOR DETAILS OF SUMP PUMP DISCHARGE PIPE WALL PENETRATION REFER SEQ-SP FOR GENERAL DETAILS OF BLOCKOUTS AND THE TREATMENT OF THE REINFORCEMENT REFER SEQ-SP.

G3. THE 150 COVER IS TO BE MEASURED FROM THE CLOSEST SURFACE OF THE FLANGE TO THE EMBEDMENT LUGS OF THE POLYETHYLENE LINING.

G4. THE POLYETHYLENE WALL PIPE USED IN CONJUCTION WITH A POLYETHYLENE GRAVITY SEWER IS TO BE THE SAME DIAMETER PE100 PIPE WITH THE SAME SDR AND PN CLASS AS THE GRAVITY SEWER. SEE NOTE G9. THIS WALL PIPE IS TO HAVE A LIGHT COLOURED INTERIOR.

G5. THE POLYETHYLENE WALL PIPE USED IN CONJUNCTION WITH A DICL GRAVITY SEWER IS TO BE PE100 PIPE WITH THE MINIMUM CLASS OF SDR21 AND PN8. THE INTERNAL DIAMETER OF THE POLYETHYLENE PIPE CANNOT BE LESS THAN THE INTERNAL DIAMETER OF THE FLANGE CLASS DICL PIPE. SEE NOTE G9. THIS SHORT SECTION OF POLYETHYLENE PIPE AND THE BUTT WELDED FULL FACE FLANGE THAT CONNECTS TO THE DICL PIPE MAY BE BLACK IN INTERNAL COLOUR.

G6. IF THE SEWER PIPE IS DICL THEN THE PIPE AT THE INTERFACE OF THE OUTSIDE CONCRETE WALL IS TO BE WRAPPED WITH "DENSO HI TACK TAPE" OVER THE AREA INDICATED ON THIS DRAWING. THE SURFACE IS TO BE PREPARED AS REQUIRED BY THE TAPE MANUFACTURER AND PRIMED WITH A THIN FILM OF "DENSO PRIMER" THE PIPE IS THEN TO BE WRAPPED WITH THE "DENSO HI TACK TAPE" WITH EACH BINDING OVERLAPPING THE PREVIOUS BINDING BY A MINIMUM OF 50%. THE PROTECTIVE POLYETHYLENE SLEEVING TO THE DICL PIPE IS THEN TO BE TAPED TO THE "DENSO" WRAPPED PIPE EXTERNAL TO THE CONCRETE WITH THE TAPE SUPPLIED BY THE PIPE MANUFACTURER FOR TAPING THE POLYETHYLENE SLEEVING.

G7. THE POLYETHYLENE SLEEVE ON THE STAINLESS STEEL WALL PIPE IS TO HAVE A MINIMUM THICKNESS OF 6mm. THE SLEEVE IS TO BE SHRUNK TO THE PIPE BEFORE ONE END FLANGE IS WELDED IN PLACE. THE SLEEVE IS TO HAVE AN INTERFERENCE FIT AND IS TO BE HEATED TO EXPAND TO ALLOW INSTALLATION. THE SLEEVE IS TO BE MACHINED FROM PIPE OR SOLID AND IS NOT TO BE FABRICATED AND SHALL NOT HAVE ANY WELDED JOINTS. THE POLYETHYLENE SLEEVE MAY BE BLACK IN COLOUR. CARE MUST BE TAKEN WHEN WELDING ON THE REMAINING FLANGE TO PREVENT HEATING OF THE POLYETHYLENE SLEEVE. THE POLYETHYLENE SLEEVE MAY ONLY BE OMITTED IF PRIOR APPROVAL IS GIVEN BY SEQ-SP FOR THE OMISSION OF THE POLYETHYLENE LINING FROM THE WALLS OF THE GRIT COLLECTOR MAINTENANCE HOLE.

G8. THE NOMINAL DIAMETERS AND WALL THICKNESS FOR STAINLESS STEEL PIPES ARE GIVEN IN TABLE A. STAINLESS STEEL GRADE 316 SCHEDULE 40 PIPE IS TO BE USED FOR DN100 AND DN150 PIPES. FOR PIPES OVER DN150 STAINLESS STEEL GRADE 316 SCHEDULE 40 OR SPIRAL WELDED PIPE MAY BE USED PROVIDED THE MINIMUM WALL THICKNESS IS MET.

G9. THE OUTSIDE DIAMETERS (OD) OF POLYETHYLENE PIPES USED FOR GRAVITY SEWERS ARE GIVEN IN TABLE B. THE POLYETHYLENE PIPE IS TO BE PE100 WITH A MINIMUM SDR21 AND PN8 AND LIGHT COLOURED INTERIOR. THE DETAILS OF THE PIPES ARE TO BE SHOWN ON THE PROJECT DRAWINGS. SEE ALSO NOTE G4. THE SHORT LENGTH OF POLYETHYLENE PIPE CONNECTING TO THE DICL PIPE NEED NOT CONFORM WITH TABLE B. SEE ALSO NOTE G5.

G10. THE WEEP FLANGE ON THE STAINLESS STEEL WALL PIPE IS TO BE WELDED AT AN ANGLE TO THE PIPE TO SUIT CURVATURE OF THE CONCRETE WALL. THE FLANGE IS TO BE PLACED CENTRALLY IN THE WALL. FULL DETAILS OF PIPES ARE TO BE GIVEN IN THE PROJECT DRAWINGS PIPE LIST AND PIPE SPECIALS DETAILS. THESE WEEP FLANGES ARE TO BE DESIGNED TO TRANSFER THE FULL THRUST LOADS OF A PN16 PIPE. THE MINIMUM DIAMETER OF A FLANGE WELDED AT 90| TO THE PIPE IS TO BE IN ACCORDANCE WITH AS4087 FIGURE B7.

REV. No.	DATE	DESCRIPTION	AUTH.
B	23/06/14	ADDED ALTERNATIVE DETAIL, NOTE G5 AMENDED, UPDATED TO SS316	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

CoGC	LCC	RCC	QUU	UW

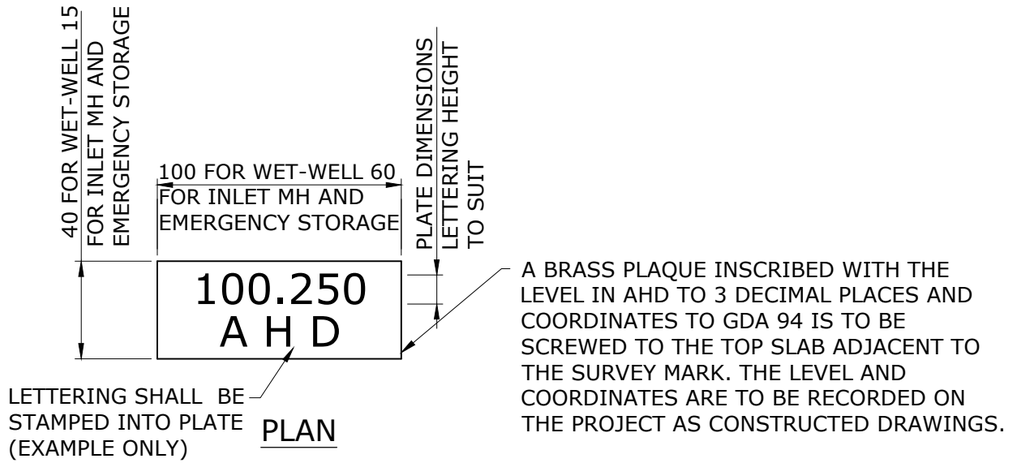
POLYETHYLENE LINING
WALL PIPE PENETRATION
TYPICAL DETAILS

DRAWING No. SEQ-SPS-1407-2

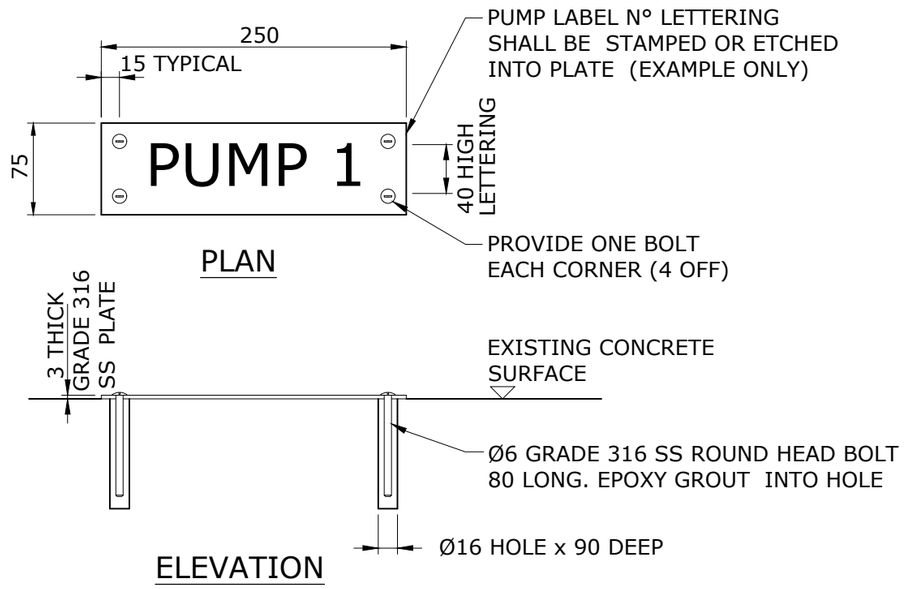
VERSION B

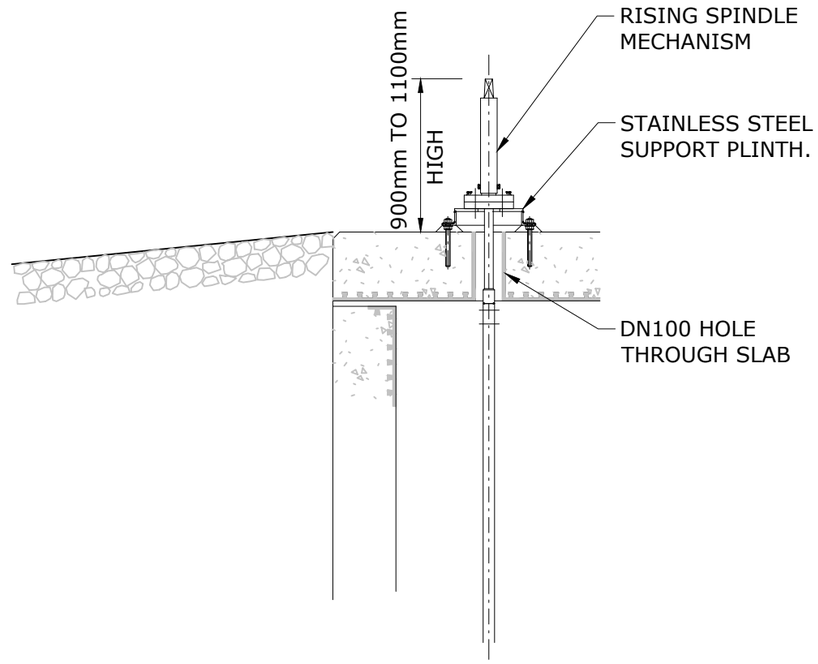
NOT TO SCALE

ORG DATE: 1/1/2013



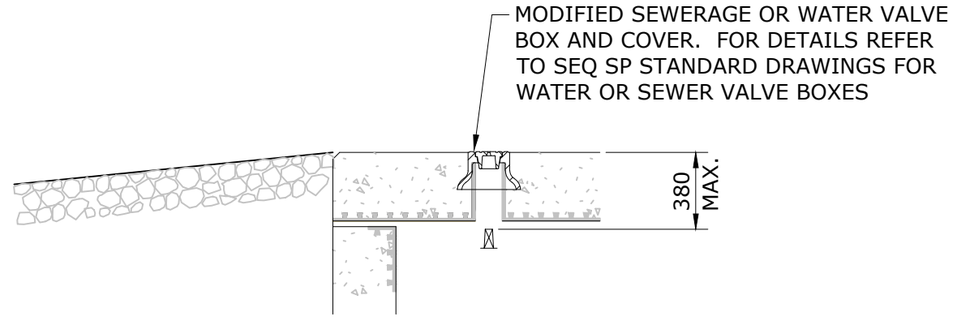
SURVEY LABEL PLATE DETAILS





TYPICAL RISING SPINDLE MECHANISM ABOVE GROUND

(SECURITY FENCED AREAS ONLY)



RISING SPINDLE MECHANISM UNDER SLAB

REV. No.	DATE	DESCRIPTION	AUTH.
B	28/05/14	CROSS ON QUU. MINOR CORRECTIONS	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

SURVEY PLATE, PUMP LABEL PLATE
VALVE SPINDLE ACCESS

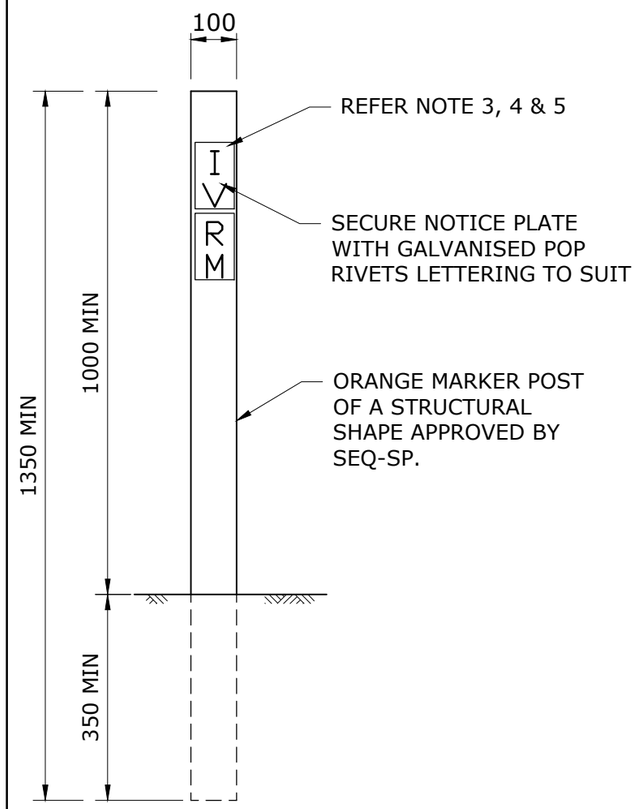
CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1508-1

VERSION B

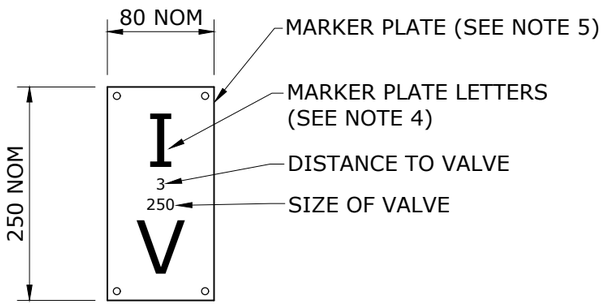
NOT TO SCALE

ORG DATE: 1/1/2013



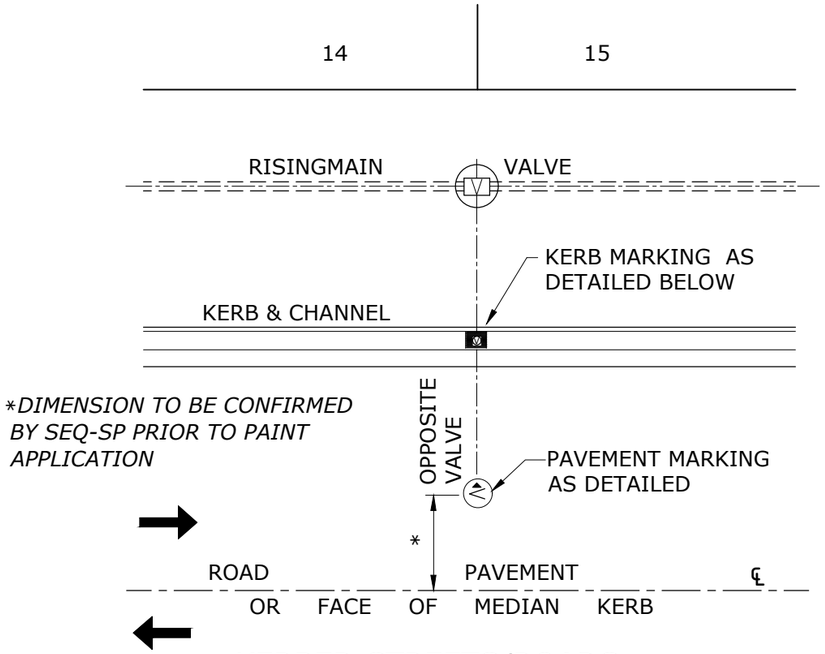
MARKER POST

APPROVED MARKER POST
PARK INTERNATIONAL UTILITY MARKER SYSTEM POLYMER 1350 LONG X 100 WIDE X 4 THICK OR EQUAL



TYPICAL NOTICE PLATE ARRANGEMENT

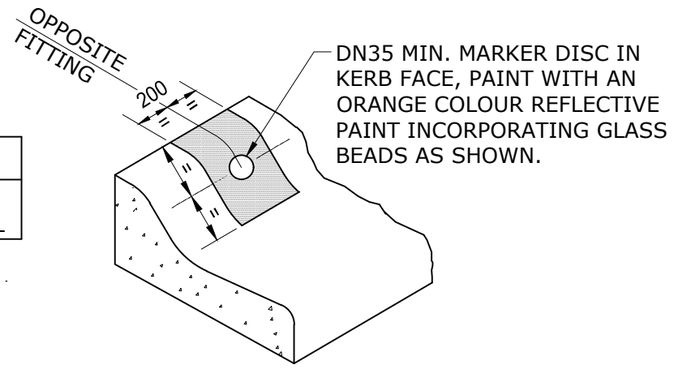
FIXED TO POST



KERBED STREETS/ROADS

TYPICAL PAVEMENT MARKING PLAN FOR VALVES

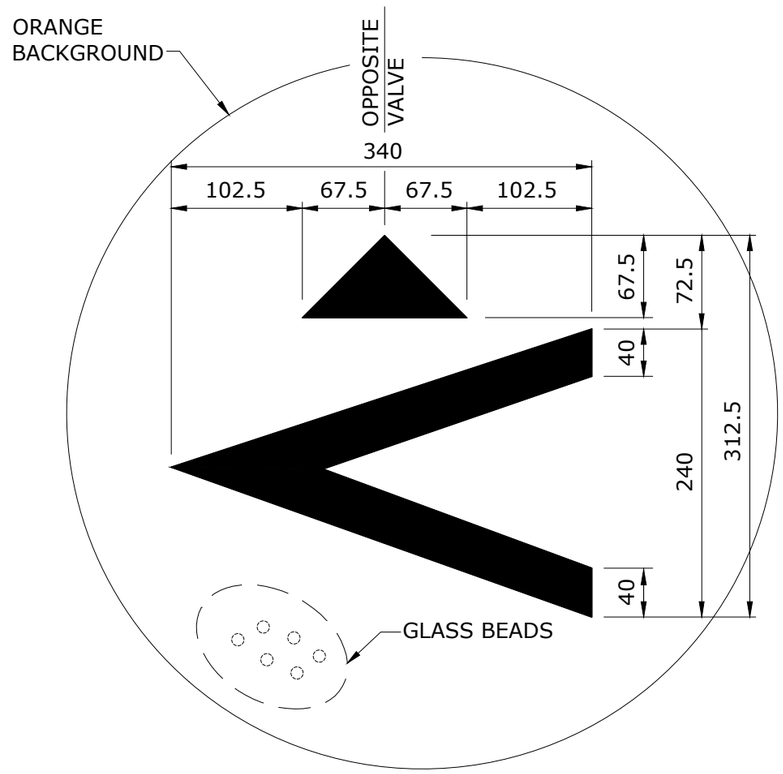
REFER NOTES



KERB MARKING

IV - ISOLATION VALVE
GV - GAS VALVE
SV - SCOUR VALVE
VV - VACUUM SECTION VALVE
RM - RISING MAIN

MARKER DISCS & NOTICE PLATE CODES



PAVEMENT MARKING FOR VALVES

NOTES:

1. ALL SEWERAGE KERB, PAVEMENT & BOX MARKINGS SHALL BE BLACK WITH THE ORANGE PAINTED CIRCLE BACKGROUND TO CONTAIN GLASS BEADS.
2. PAVEMENT MARKING FOR VALVES SHALL BE PROVIDED ON A ORANGE PAINTED BACKGROUND CIRCLE LOCATED CLEAR OF THE PARKING LANE SO THAT TYRE WEAR IS MINIMISED.
   THE EXACT LOCATION SHALL BE DETERMINED BY THE SEQ-SP FOLLOWING SITE INSPECTIONS.
3. MARKER POSTS SHALL ONLY BE USED IN STREETS AND ROADS WHERE THERE IS NO KERB & CHANNEL OR AS DIRECTED BY THE SEQ-SP.
4. THE NOTICE PLATE SHALL BE REFLECTORIZED ALUMINIUM WITH BLACK LETTERING ON A ORANGE BACKGROUND.
5. MARKER POSTS SHALL BE POSITIONED AT THE FRONT OF THE PROPERTY BOUNDARY OPPOSITE THE FITTING.
6. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.

REV. No.	DATE	DESCRIPTION	AUTH.
C	27/07/15	APPROVED MARKER POST ADDED	
B	23/06/14	NOTICE PLACE DETAILS ADDED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

RISING MAIN VALVE MARKING

CoGC	LCC	RCC	QUU	UW

DRAWING No.

SEQ-SPS-1508-2

VERSION

C

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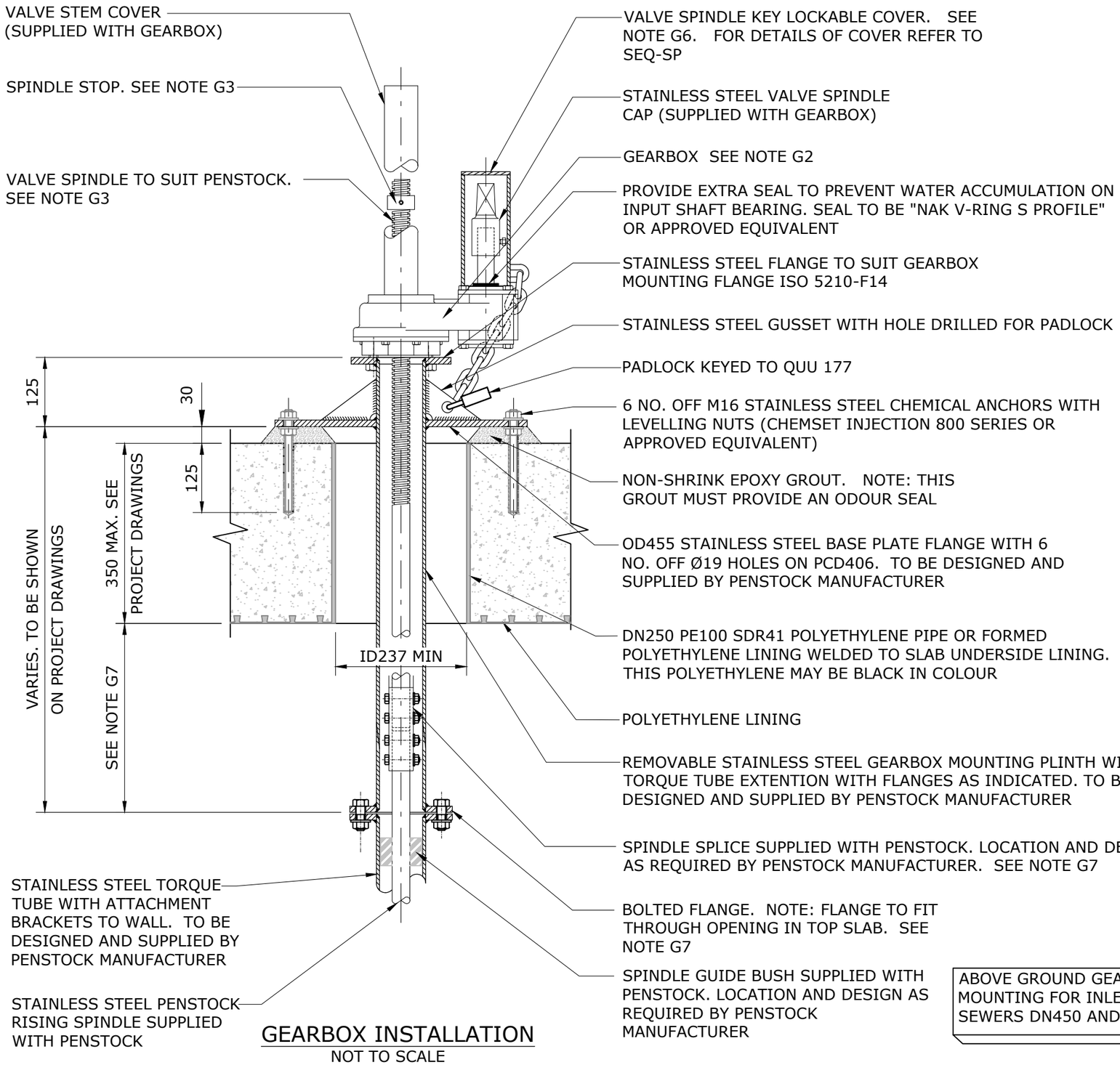
ORG DATE: 1/1/2013



GEARBOX INSTALLATION
NOT TO SCALE

ABOVE GROUND GEARBOX MOUNTING FOR INLET SEWERS DN450 AND ABOVE

NOTES:

G1. THIS DRAWING SHOWS THE INSTALLATION OF A GEARBOX MOUNTED ON AN EXTENDED TORQUE TUBE PLINTH ABOVE TOP SLAB LEVEL.
IT IS TO BE USED ON GRIT COLLECTOR MAINTENANCE HOLES WITH INLETS DN450 AND GREATER. FOR THE NON-PREFERRED OPTION OF INSTALLING THE GEARBOX BELOW THE TOP SLAB REFER TO SEQ-SP.

G2. THE GEARBOX FOR INLET SIZES DN450 TO DN600 IS TO BE A "ROTORK IS3 GEARBOX SEQ-SP SPECIAL BUILD" MODEL IS3A2/F14/Man (2:1) OR APPROVED EQUIVALENT.
DETAILS-
GEAR CASE: CAST IRON TO BS1452 GRADE 250
FASTENERS: 316 STAINLESS STEEL
INPUT SHAFT: 316 STAINLESS STEEL WITH EXTRA EXTERNAL SEAL "NAK V-RING S PROFILE" OR APPROVED EQUIVALENT
DRIVE NUT: ALUMINIUM BRONZE
SPINDLE CAP OR EXTENDED SPINDLE: 316 STAINLESS STEEL
VALVE STEM COVER: 316 STAINLESS STEEL
EXTERNAL COATING: THERMAL BONDED EPOXY
RATIO: 2:1
MOUNTING FLANGE: ISO 5210-F14 (4 X M16 ON PCD140)
THE GEARBOX FOR INLET SIZES GREATER THAN DN600 IS TO BE SIMILAR TO THE ABOVE BUT WITH GEAR RATIO TO SUIT WEDGE GATE PENSTOCK MANUFACTURER'S REQUIREMENTS.

G3. THE THREADED SPINDLE IS TO PROTRUDE A MINIMUM OF FOUR THREADS ABOVE THE SPINDLE STOP. THE SPINDLE STOP IS TO BE SIMILAR DESIGN TO SPINDLE STOP SHOWN ON SEQ-SP DRAWINGS.
STOP TO BE INSTALLED ON SITE AFTER INSTALLATION OF VALVE AND GEARBOX AFTER ONSITE DRILLING THE SPINDLE THREAD IS TO BE CLEANED TO ALLOW REMOVAL OF SPINDLE NUT.

G4. ALL BOLTS AND NUTS ARE TO BE ASSEMBLED WITH ANTI-GALLING COMPOUND "DURALAC" OR SEQ-SP APPROVED EQUIVALENT.

G5. ALL STAINLESS STEEL IS TO BE GRADE 316 OR 316L. ALL OTHER MATERIALS USED ARE TO BE SUITABLE FOR CONTACT WITH SEWAGE AND SEWER GAS.

G6. WHERE THE GEARBOX IS INSTALLED ABOVE THE LEVEL OF THE TOP SLAB AS SHOWN ON THIS DRAWING AND THE PUMPING STATION IS WITHOUT A SECURITY FENCE THEN A VALVE SPINDLE KEY LOCKABLE COVER IS REQUIRED.

G7. THE TOP SPLICE IN THE SPINDLE AND TORQUE TUBE ARE TO BE LOCATED A NOMINAL 300 BELOW THE UNDERSIDE OF THE TOP SLAB. THE DESIGN IS TO ALLOW THE SEPARATE REMOVAL OF THE GEARBOX PLINTH AND THE SEPARATE REMOVAL OF THE THREADED SECTION OF THE SPINDLE.

REV. No.	DATE	DESCRIPTION	AUTH.
B	29/05/14	DRAFTING IMPROVEMENT, MINOR CHANGES	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

GRIT COLLECTOR
MAINTENANCE HOLE
ABOVE GROUND GEARBOX

~~CoGC~~ ~~LCC~~ ~~RCC~~ QUU ~~UW~~

DRAWING No.
SEQ-SPS-1509-1

VERSION
B

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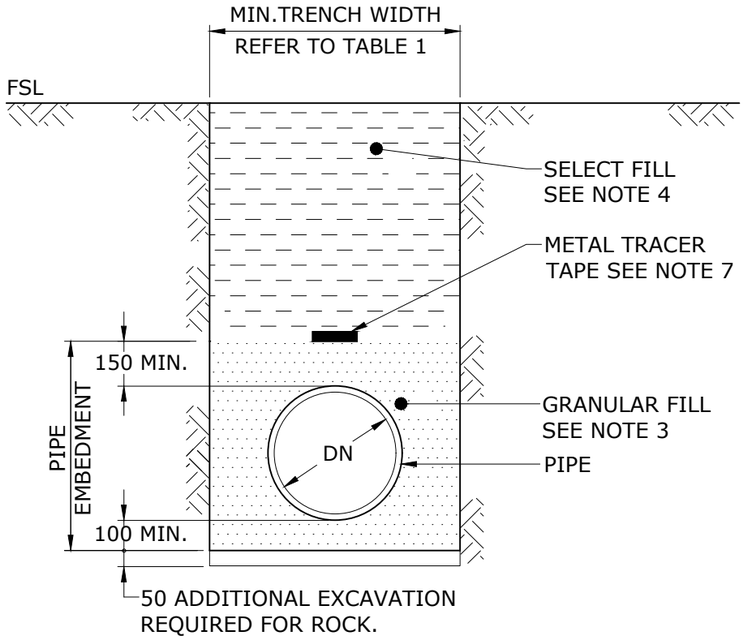
ORG DATE:
1/1/2013



TYPICAL PIPE INSTALLATION

REFER SEQ-SP DRAWINGS - SEQ-WAT 1200 SERIES FOR DETAILS

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
2. THE PIPE MATERIAL AND CLASS OF PIPE SHALL BE AS SPECIFIED ON THE DESIGN PLANS.
3. EMBEDMENT MATERIAL AND COMPACTION SHALL BE IN ACCORDANCE WITH SEQ-SP CONSTRUCTION SPECIFICATIONS. REFER TO RELEVANT TABLE FOR EMBEDMENT MATERIALS.
4. TRENCH FILL AND COMPACTION SHALL BE IN ACCORDANCE WITH SEQ-SP CONSTRUCTION SPECIFICATIONS REFER TO RELEVANT TABLE FOR TRENCH FILL MATERIALS.
5. MINIMUM WIDTH OF TRENCH IS THE WIDTH OF UNSUPPORTED TRENCHES OR CLEAR WIDTH INSIDE A TRENCH SUPPORT SYSTEM.
6. WHERE THE MAIN CROSSES EXISTING SERVICES, THE MINIMUM VERTICAL AND HORIZONTAL CLEARANCE SHALL BE IN ACCORDANCE WITH SEQ-SP CONSTRUCTION SPECIFICATIONS
7. METAL TRACER TAPES FOR LOCATION AND IDENTIFICATION OF BURIED PVC/PE/GRP PRESSURE MAINS AND IDENTIFICATION TAPES FOR IDENTIFICATION OF BURIED DICL PIPELINES SHALL BE CREAM COLOURED POLYETHYLENE TAPE WITH THE INSCRIPTION: "CAUTION - SEWER MAIN BURIED BELOW".
   METAL TRACER TAPE SHALL BE LAID ALONG THE MAIN ON TOP OF THE PIPE EMBEDMENT MATERIAL, AND SHALL BE ATTACHED TO METAL SURFACE FITTINGS TO PROVIDE CONNECTION POINTS FOR LOCATING DEVICES.
8. FOR PIPE COVER AT OTHER LOCATIONS, REFER TO RELEVANT ROAD OWNER'S REQUIREMENTS.
9. FOR OTHER BURIED CROSSINGS - UNDER OBSTRUCTIONS AND RAILWAYS, REFER TO SEQ-SP CONSTRUCTION SPECIFICATIONS.
10. FOR BORED AND JACKED ENCASING PIPE DETAILS, REFER TO SEQ-SP CONSTRUCTION SPECIFICATIONS.
11. FOR ANCHOR BLOCK SIZING REFER TO SEQ-WAT-1205 AND TO THE CODE FOR DESIGN PRESSURE.
12. THIS IS A TYPICAL DRAWING, REFER TO SEQ-WAT 1200 SERIES DRAWINGS FOR PIPE INSTALLATION DETAILS.

TABLE 1-MINIMUM TRENCH WIDTHS

NOMINAL PIPE BORE NB	MINIMUM TRENCH WIDTH (SEE NOTE 5)
<100	300
100	400
150	400
200	530
250	600
300	700

TABLE 2-PIPE COVER REQUIREMENTS

LOCATION (SEE NOTE 8)	<=200mm NB	>200mm NB
NON-TRAFFICABLE AREAS, DRIVEWAYS, VERGES/FOOTWAYS	600	1,000
CARRIAGEWAYS OF SEALED LOCAL ROADS	600	1,000
CARRIAGEWAYS OF UNSEALED ROADS	750	1,000
CARRIAGEWAYS OF MAJOR ROADS, EMBANKMENTS	750	1,000
INDUSTRIAL / COMMERCIAL AREAS	750	1,000
CARRIAGEWAYS OF MOTORWAYS / FREEWAYS	1,200	1,200

REV. No.	DATE	DESCRIPTION	AUTH.
B	19/01/17	NOTE 8 AND TABLE AMENDED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

TYPICAL PIPE INSTALLATION, SUPPORT AND TRENCH FILL - RISING MAINS <= DN300

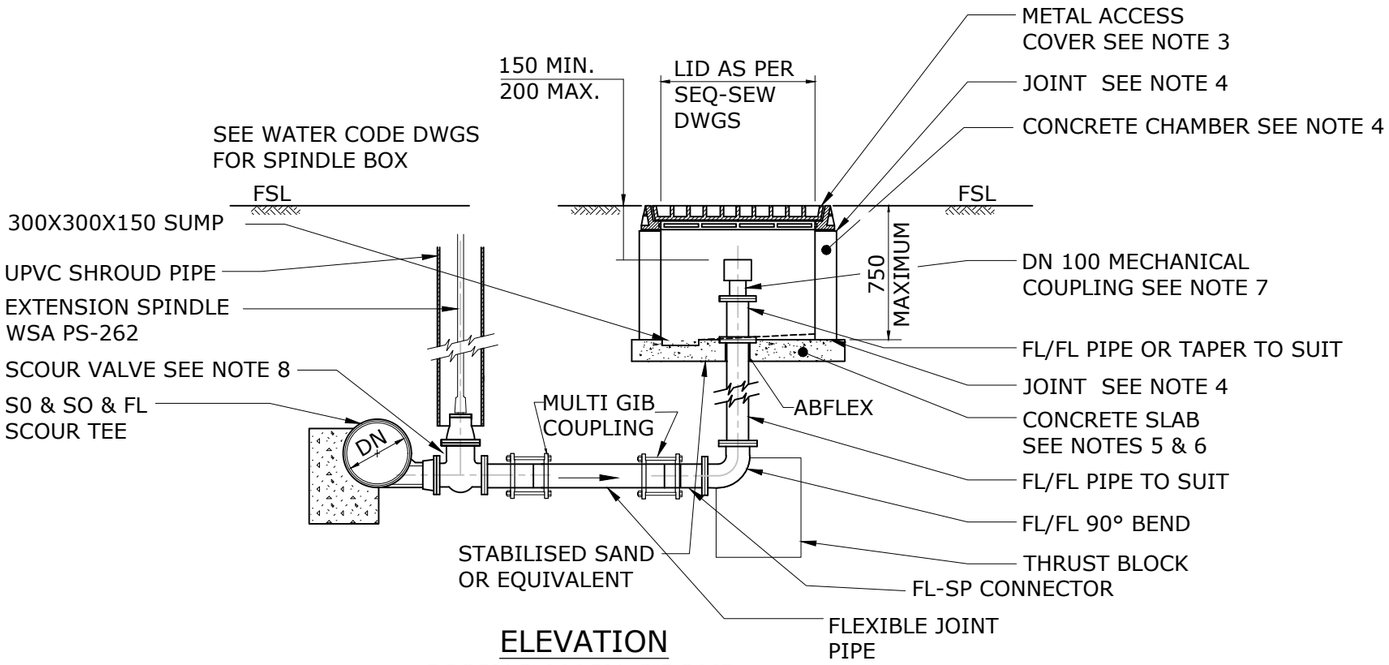
CoGC	LCC	RCC	QUU	UW

DRAWING No. SEQ-SPS-1601-1

VERSION B

NOT TO SCALE

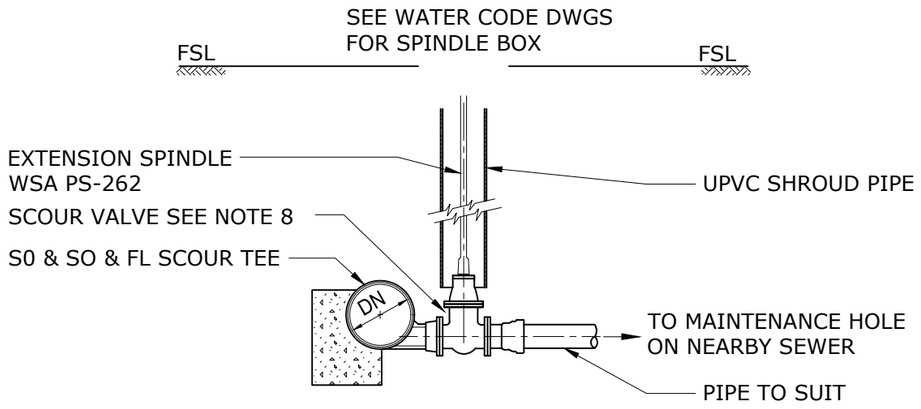
ORG DATE: 1/1/2013



ELEVATION
RISING MAIN SCOUR
SEE NOTE 2

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
2. LOCATION AND SIZE OF SCOUR INSTALLATION SHALL BE AS SHOWN ON DESIGN PLANS. FLANGED DICL PIPE AND FITTINGS SHOWN. OTHER PIPE SYSTEMS MAY BE SPECIFIED.
3. METAL ACCESS COVERS SHALL BE 900x600 :CLASS "B" FOR FOOTWAYS CLASS "D" FOR ROADWAYS. ACCESS COVERS FOR SCOUR CHAMBERS SHALL BE MARKED "SEWER" (OFFSET CAM LOCK TO ALLOW ACCESS TO MH).
4. PRECAST CHAMBERS MAY BE USED IN NON-TRAFFICABLE AREAS. JOINTS SHALL BE 20 TO 50 THICK FOR CEMENT MORTAR. ALTERNATIVELY, A 6 THICK BED OF BUTYL MASTIC MAY BE USED.
5. CONCRETE FOR SLAB SHALL BE N20.
6. REINFORCING FABRIC FOR CONCRETE SLAB SHALL BE TO AS 1304. EQUIVALENT REINFORCEMENT IN DEFORMED
7. MALE CAMLOCK-TYPE COUPLING TO SUIT: (i) TRAILER MOUNTED PUMP UNITS AS USED BY SEQ-SP AND (ii) TANKERS WITH 16,000/21,000 LITRES CAPACITY.
8. RESILIENT SEATED GATE VALVE TO WSA PS-260.



ELEVATION
RISING MAIN SCOUR
SEE NOTE 2

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

RISING MAIN
SCOUR / DRAIN ARRANGEMENT

CoGC	LCC	RCC	QUU	UW

DRAWING No.
SEQ-SPS-1602-1

VERSION
A

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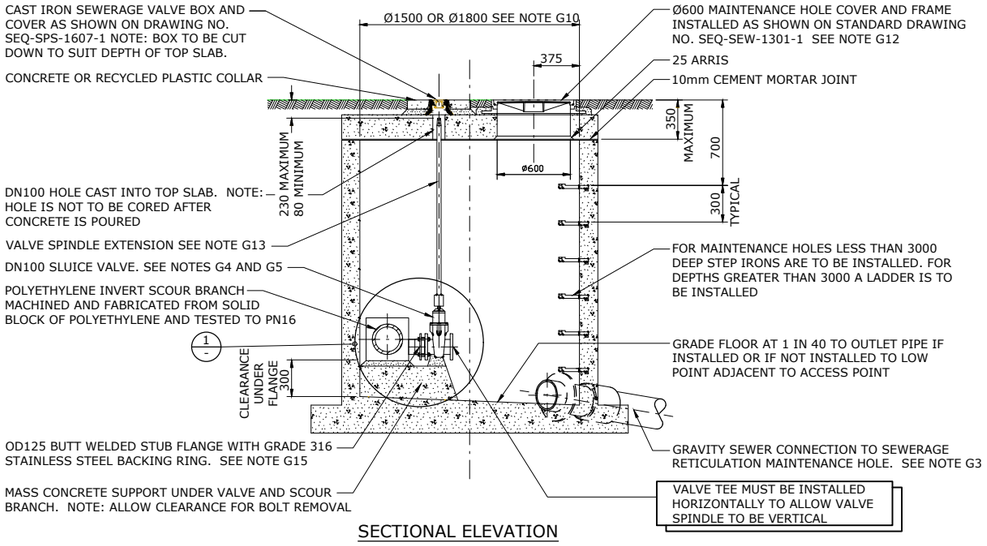
ORG DATE:
1/1/2013



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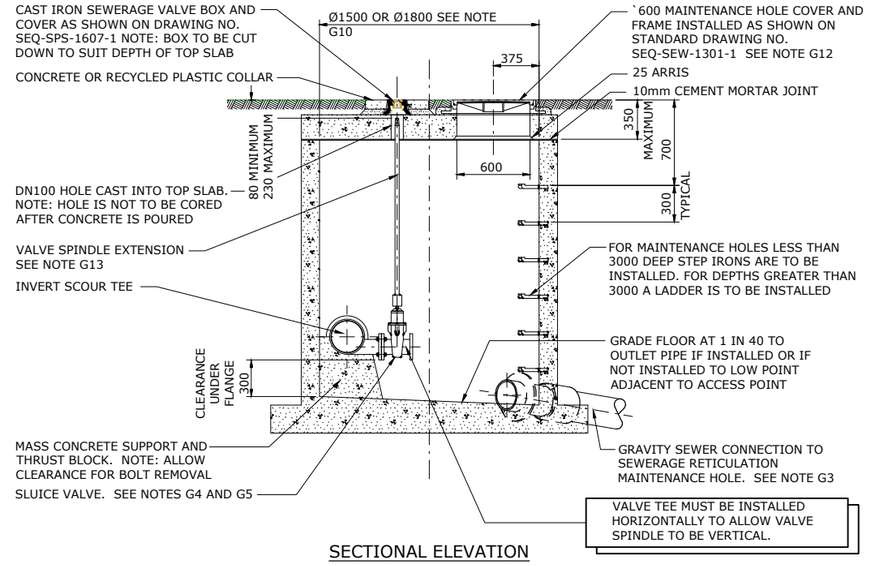

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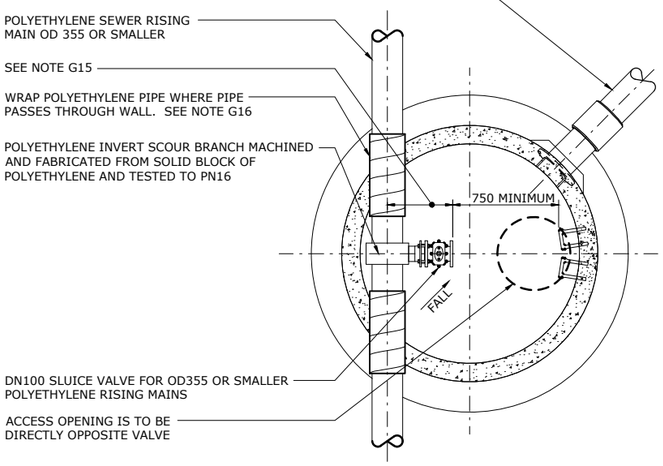
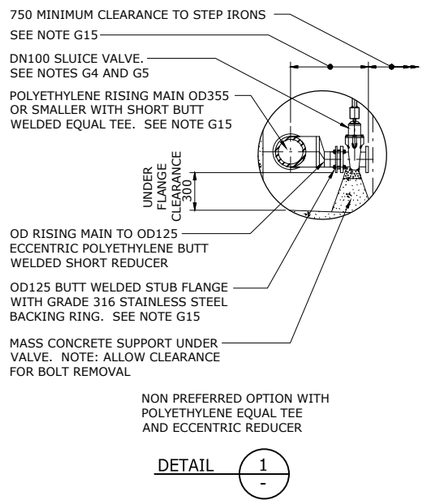


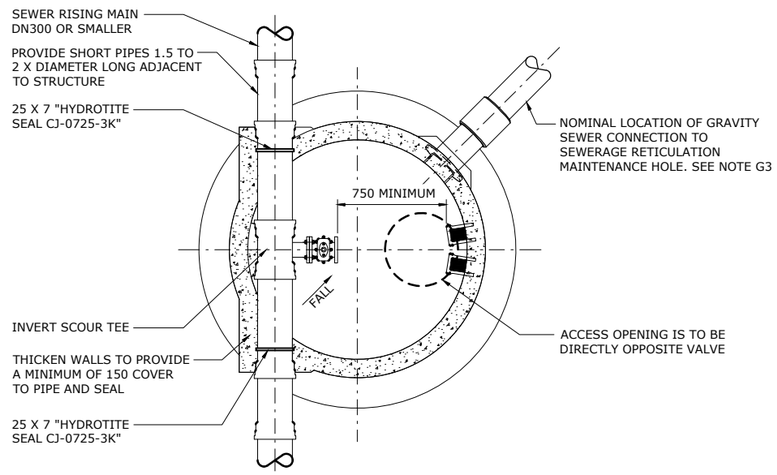
SECTIONAL PLAN

SCOUR ARRANGEMENT FOR POLYETHYLENE RISING MAINS WITH PREFERRED OPTION WITH FABRICATED OD125 INVERT SCOUR BRANCH SEE NOTES G1 AND G14



NON PREFERRED OPTION WITH POLYETHYLENE EQUAL TEE AND ECCENTRIC REDUCER

DETAIL 1/-



SECTIONAL PLAN

SCOUR ARRANGEMENT FOR RISING MAINS WITH SPIGOT AND SOCKET JOINTS

NOTE: MILD STEEL RISING MAINS WITH INVERT SCOUR TEES TO BE SIMILAR BUT WITH NO FLEXIBLE JOINTS ON FULLY WELDED MAINS

NOTES:
GENERAL

G1. THIS DRAWING SHOWS THE SCOUR ARRANGEMENT FOR RISING MAINS DN300 AND SMALLER. THIS WILL INCLUDE OD355 PE100 SDR11 PN16 POLYETHYLENE RISING MAINS.

G2. THE PROJECT DRAWINGS ARE TO SHOW THE DETAILS OF EVERY SCOUR ON THE RISING MAIN. THE PROJECT DRAWINGS WILL INCLUDE THE STRUCTURAL DRAWINGS FOR THE SCOUR PITS. THE VOLUME IN m3 THAT EACH SCOUR IN THE PROJECT COMMANDS IS TO BE SHOWN ON THE LONGITUDINAL SECTION OF THE RISING MAIN AND ON EACH SCOUR DETAIL.

G3. WHERE POSSIBLE THE SCOUR MAINTENANCE HOLE IS TO DRAIN TO THE NEAREST SEWERAGE RETICULATION MAINTENANCE HOLE. WHEN INSTALLED THE GRAVITY SEWER CONNECTION MUST DRAIN FROM THE INVERT OF THE SCOUR MAINTENANCE HOLE. THE PIPE IS TO BE A STANDARD RETICULATION SEWER WITH A MINIMUM GRADE OF 1 IN 150. THE MINIMUM DIAMETER OF THE SEWER IS TO BE DN150 AND IS TO BE NO LARGER THAN THE RECEIVING SEWER. THE LOCATION OF THE DRAIN SHOWN ON THIS DRAWING IS INDICATIVE ONLY.

G4. INVERT SCOUR TEE FITTINGS MUST BE USED WHEN FITTING IS MANUFACTURED. IN POLYETHYLENE RISING MAINS WHERE AN INVERT SCOUR TEE MAY NOT BE MANUFACTURED A FABRICATED INVERT SCOUR TEE IS THE PREFERRED OPTION. THE NON PREFERRED (SEE DETAIL 1) IS AN EQUAL TEE WITH A SHORT ECCENTRIC REDUCER TO AN OD125 STUB FLANGE. THE VALVE IS TO BE INSTALLED AS CLOSE AS POSSIBLE TO THE RISING MAIN.

G5. THE DIAMETER OF THE SCOUR VALVE FOR RISING MAINS DN300 AND SMALLER IS TO BE DN100. ON OD180 PE PIPES AN EQUAL TEE AND A DN150 VALVE MAY BE USED. THE VALVE IS TO BE A DOUBLE FLANGED RESILIENT SEATED SLUICE VALVE TO AS 2638.2 WITH FUSION COATED POLYMETRIC INTERNAL AND EXTERNAL SURFACES. ALL SURFACES ARE TO BE SUITABLE FOR SEWERAGE ENVIRONMENTS.

G6. THE MINIMUM CLASS FOR THE RISING MAIN PIPES AND FITTINGS IS TO BE PN16.

G7. ALL DICL FTTINGS USED INSIDE THE SCOUR MAINTENANCE HOLE ARE TO BE FUSION BONDED POLYMETRIC COATED.

G8. ALL BOLTS ARE TO BE GRADE 316 STAINLESS STEEL INSTALLED WITH ANTI GALLING COMPOUND.

G9. ON POLYETHYLENE RISING MAINS THE BACKING PLATES TO THE FLANGES ARE TO BE GRADE 316 STAINLESS STEEL.

G10. THE DIAMETER OF THE SCOUR MAINTENANCE HOLE FOR DN100, DN150 AND DN200 RISING MAINS IS TO BE Ø1500 AND FOR DN250 AND DN300 RISING MAINS IT IS TO BE Ø1800.

G11. SCOURS ARE TO BE LOCATED AT THE LOW POINTS IN THE RISING MAIN. FOR LOCATIONS SUCH AS CREEK CROSSINGS THE SCOUR NEED NOT BE LOCATED AT THE VERY LOW POINT BUT AT AN ADJACENT ACCESSIBLE LOCATION. ALL SCOUR MAINTENANCE HOLES ARE TO BE ACCESSIBLE BY ARTICULATED TANKER TRUCKS. THIS MAY NECESSITATE THE CONSTRUCTION OF AN ALL WEATHER TRACK. IF THE SCOUR MAINTENANCE HOLE IS IN A ROAD LOCATION THEN CARE MUST BE TAKEN WHEN POSITIONING THE ACCESS COVER. THE COVER IS NOT TO BE IN THE WHEEL TRACKS OF THE ROAD LANE.

G12. THE COVERS IN NON TRAFFICABLE LOCATIONS ARE TO BE Ø600 CLASS B COVERS AND FRAMES AND IN TRAFFICABLE LOCATIONS ARE TO BE Ø600 CLASS D. SEE SEQ-SEW-1308 SET.

G13. WHEN THE VALVE SPINDLE EXTENSION EXCEEDS 2000 IN LENGTH 316 STAINLESS STEEL GUIDES ARE TO BE PROVIDED AT THE TOP AND AT INTERMEDIATE POINTS AS REQUIRED BY THE VALVE MANUFACTURER.

G14. FULLY WELDED MILD STEEL CEMENT LINED PIPE RISING MAINS ARE TO BE INSTALLED SIMILARLY TO THE POLYETHYLENE PIPE INSTALLATION. INVERT SCOUR BRANCHES ARE TO BE USED WITH THIS PIPE. THE PIPE INCLUDING THE FLANGE IS TO BE FUSION BONDED POLYETHYLENE COATED EXTERNALLY. WHERE THE PIPE PASSES THROUGH THE CONCRETE WALL THE WRAPPING IS TO BE REPLACED WITH "HYDROTITE SEAL".

G15. THE FLANGED BRANCH ON POLYETHYLENE AND MILD STEEL RISING MAINS IS TO BE KEPT AS CLOSE AS POSSIBLE TO THE MAIN PIPE. THIS IS TO REDUCE SLUDGE BUILD UP.

G16. WHERE THE POLYETHYLENE RISING MAIN PASSES THROUGH THE CONCRETE WALLS THE PIPE IS TO BE WRAPPED WITH 10 THICK X 75 WIDE CLOSED CELL POLYETHYLENE FOAM STRIP "JOINTFLEX" OR QUEENSLAND URBAN UTILITIES APPROVED ALTERNATIVE. NO GAP IS PERMITTED BETWEEN WRAPPINGS AND JOINTS ARE TO BE TAPED IN PLACE.

G17. WHERE THE RISING MAIN RUNS PARALLEL TO ANOTHER RISING MAIN THE SCOURS ARE TO BE PLACED ADJACENT TO EACH OTHER IN SEPARATE MAINTENANCE HOLES. THIS IS TO ALLOW SCOURING BY CROSS PUMPING.

STRUCTURAL

S1. EACH SCOUR MAINTENANCE HOLE IS TO BE DESIGNED TO SUIT THE PROJECT LOCATION AND GROUND CONDITIONS AND IS TO HAVE A 100 YEAR DESIGN LIFE.

S2. ALL SCOUR MAINTENANCE HOLES ARE TO BE DESIGNED TO CARRY TRAFFICABLE LOADS.

S3. THE CONCRETE IS TO HAVE A MINIMUM EXPOSURE CLASS OF B2 TO AS3600.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

SCOUR MAINTENANCE HOLE FOR RISING MAINS DN300 OR SMALLER

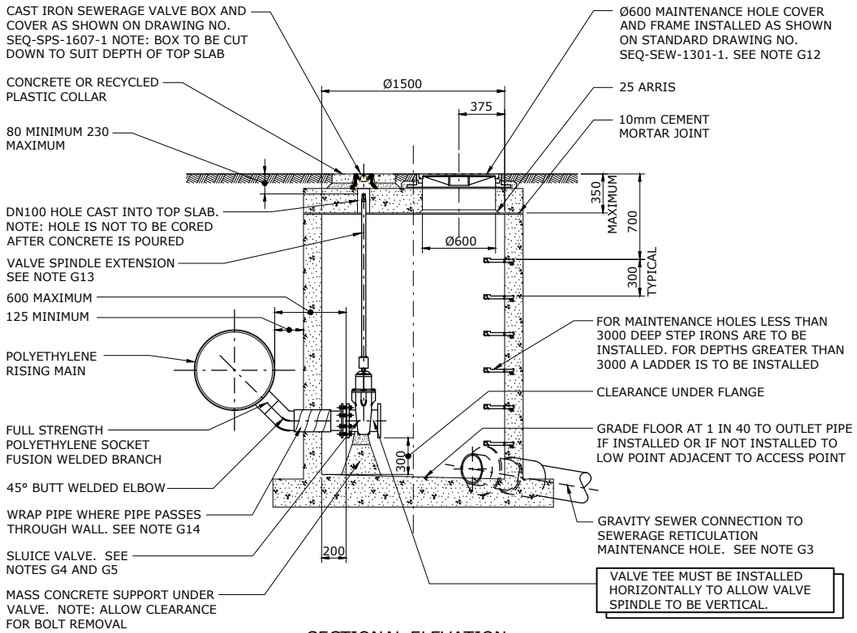
~~CoGC~~ ~~LCC~~ ~~RCC~~ QUU UW

DRAWING No. SEQ-SPS-1603-1

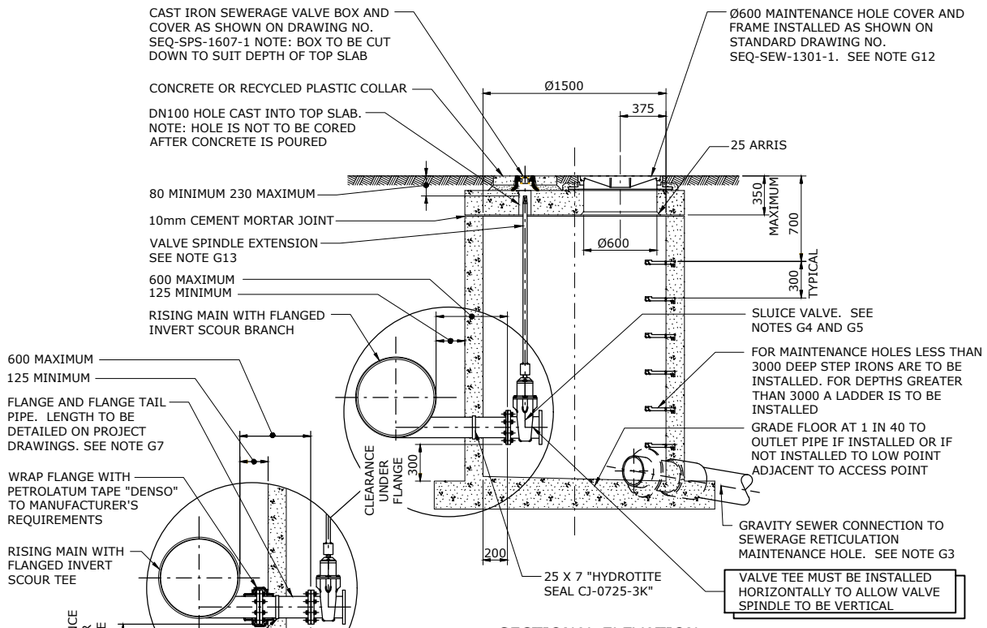
VERSION A

NOT TO SCALE

ORG DATE: 1/1/2013

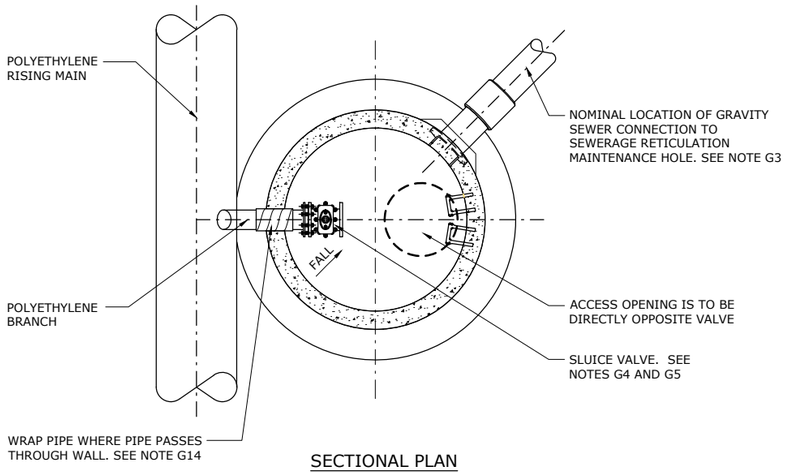


SECTIONAL ELEVATION



SECTIONAL ELEVATION

ALTERNATE SECTIONAL ELEVATION
SHOWING A DICL INVERT SCOUR TEE

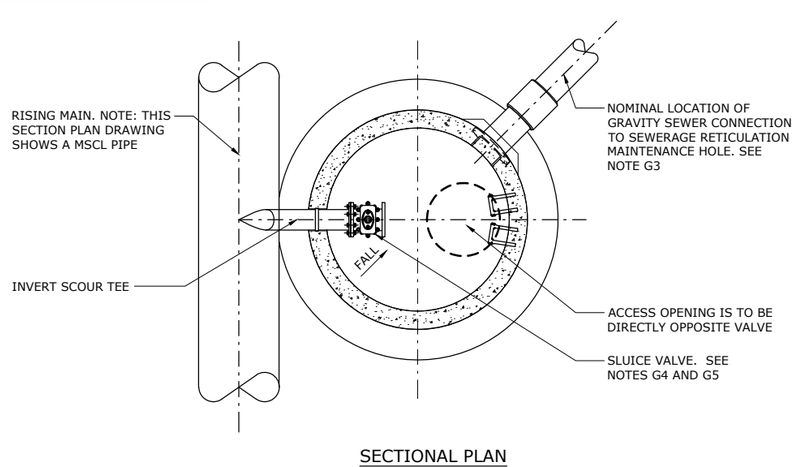


SECTIONAL PLAN

SCOUR ARRANGEMENT FOR POLYETHYLENE RISING MAINS LARGER THAN OD355 SEE NOTES G1

RISING MAIN DIAMETER	SCOUR VALVE DIAMETER
DN300	DN100
>DN300 TO DN600	DN150
>DN600 TO DN900	DN200
>DN900 TO DN1200	DN250
>DN1200	DN300

TABLE A
SCOUR VALVE SIZES



SECTIONAL PLAN

SCOUR ARRANGEMENT FOR RISING MAINS LARGER THAN DN300 WITH INVERT SCOUR BRANCHES

NOTES

GENERAL

G1. THIS DRAWING SHOWS THE SCOUR ARRANGEMENT FOR RISING MAINS LARGER THAN DN300 FOR PIPE MATERIALS OTHER THAN POLYETHYLENE, AND LARGER THAN OD355 FOR POLYETHYLENE RISING MAINS.

G2. THE PROJECT DRAWINGS ARE TO SHOW THE DETAILS OF EVERY SCOUR ON THE RISING MAIN. THE PROJECT DRAWINGS WILL INCLUDE THE STRUCTURAL DRAWINGS FOR THE SCOUR PITS. THE VOLUME IN m3 THAT EACH SCOUR IN THE PROJECT COMMANDS IS TO BE SHOWN ON THE LONGITUDINAL SECTION OF THE RISING MAIN AND ON EACH SCOUR DETAIL.

G3. WHERE POSSIBLE THE SCOUR MAINTENANCE HOLE IS TO DRAIN TO THE NEAREST SEWERAGE RETICULATION MAINTENANCE HOLE. WHEN INSTALLED THE GRAVITY SEWER CONNECTION MUST DRAIN FROM THE INVERT OF THE SCOUR MAINTENANCE HOLE. THE PIPE IS TO BE A STANDARD RETICULATION SEWER WITH A MINIMUM GRADE OF 1 IN 150. THE MINIMUM DIAMETER OF THE SEWER IS TO BE DN150 AND IS TO BE NO LARGER THAN THE RECEIVING SEWER. THE LOCATION OF THE DRAIN SHOWN ON THIS DRAWING IS INDICATIVE ONLY.

G4. INVERT SCOUR TEE FITTINGS MUST BE USED WHEN FITTING IS MANUFACTURED. IN POLYETHYLENE RISING MAINS WHERE AN INVERT SCOUR TEE MAY NOT BE MANUFACTURED A FUSION SOCKET BRANCH OR MOULDED BUTT WELDED BRANCH IS TO BE USED. THE BRANCH IS TO BE PRETESTED TO MEET THE PIPE PRESSURE RATING.

G5. FOR SCOUR VALVE DIAMETER REFER TO TABLE A. THE VALVE IS TO BE A DOUBLE FLANGED RESILIENT SEATED SLUICE VALVE TO AS 2638.2 WITH FUSION COATED POLYMETRIC INTERNAL AND EXTERNAL SURFACES. ALL SURFACES ARE TO BE SUITABLE FOR SEWERAGE ENVIRONMENTS.

G6. THE MINIMUM CLASS FOR THE RISING MAIN PIPES AND FITTINGS IS TO BE PN16.

G7. ALL DICL FTTINGS USED INSIDE THE SCOUR MAINTENANCE HOLE ARE TO BE FUSION BONDED POLYMETRIC COATED.

G8. ALL BOLTS ARE TO BE GRADE 316 STAINLESS STEEL INSTALLED WITH ANTI GALLING COMPOUND.

G9. ON POLYETHYLENE RISING MAINS THE BACKING PLATES TO THE FLANGES ARE TO BE GRADE 316 STAINLESS STEEL. THE DIAMETER OF THE SCOUR MAINTENANCE

G10. HOLE IS TO BE Ø1500 FOR RISING MAINS OVER DN300 WHICH ARE INSTALLED EXTERNAL TO THE MAINTENANCE HOLE.

G11. SCOURS ARE TO BE LOCATED AT THE LOW POINTS IN THE RISING MAIN. FOR LOCATIONS SUCH AS CREEK CROSSINGS THE SCOUR NEED NOT BE LOCATED AT THE VERY LOW POINT BUT AT AN ADJACENT ACCESSIBLE LOCATION. ALL SCOUR MAINTENANCE HOLES ARE TO BE ACCESSIBLE BY ARTICULATED TANKER TRUCKS. THIS MAY NECESSITATE THE CONSTRUCTION OF AN ALL WEATHER TRACK. IF THE SCOUR MAINTENANCE HOLE IS IN A ROAD LOCATION THEN CARE MUST BE TAKEN WHEN POSITIONING THE ACCESS COVER. THE COVER IS NOT TO BE IN THE WHEEL TRACKS OF THE ROAD LANE.

G12. THE COVERS IN NON TRAFFICABLE LOCATIONS ARE TO BE Ø600 CLASS B COVERS AND FRAMES AND IN TRAFFICABLE LOCATIONS ARE TO BE Ø600 CLASS D. SEE SEQ-SEW-1308 SET.

G13. WHEN THE VALVE SPINDLE EXTENSION EXCEEDS 2000 IN LENGTH 316 STAINLESS STEEL GUIDES ARE TO BE PROVIDED AT THE TOP AND AT INTERMEDIATE POINTS AS REQUIRED BY THE VALVE MANUFACTURER.

G14. WHERE THE POLYETHYLENE SCOUR BRANCH PASSES THROUGH THE CONCRETE WALL THE PIPE IS TO BE WRAPPED WITH 10 THICK X 75 WIDE CLOSED CELL POLYETHYLENE FOAM STRIP "JOINTFLEX" OR QUEENSLAND URBAN UTILITIES APPROVED ALTERNATIVE. NO GAP IS PERMITTED BETWEEN WRAPPINGS AND JOINTS ARE TO BE TAPED IN PLACE.

G15. WHERE THE RISING MAIN RUNS PARALLEL TO ANOTHER RISING MAIN THE SCOURS ARE TO BE PLACED ADJACENT TO EACH OTHER IN SEPARATE MAINTENANCE HOLES. THIS IS TO ALLOW SCOURING BY CROSS PUMPING.

STRUCTURAL

S1. EACH SCOUR MAINTENANCE HOLE IS TO BE DESIGNED TO SUIT THE PROJECT LOCATION AND GROUND CONDITIONS AND IS TO HAVE A 100 YEAR DESIGN LIFE.

S2. ALL SCOUR MAINTENANCE HOLES ARE TO BE DESIGNED TO CARRY TRAFFICABLE LOADS.

S3. THE CONCRETE IS TO HAVE A MINIMUM EXPOSURE CLASS OF B2 TO AS3600.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

SCOUR MAINTENANCE HOLE FOR
RISING MAINS LARGER THAN DN300

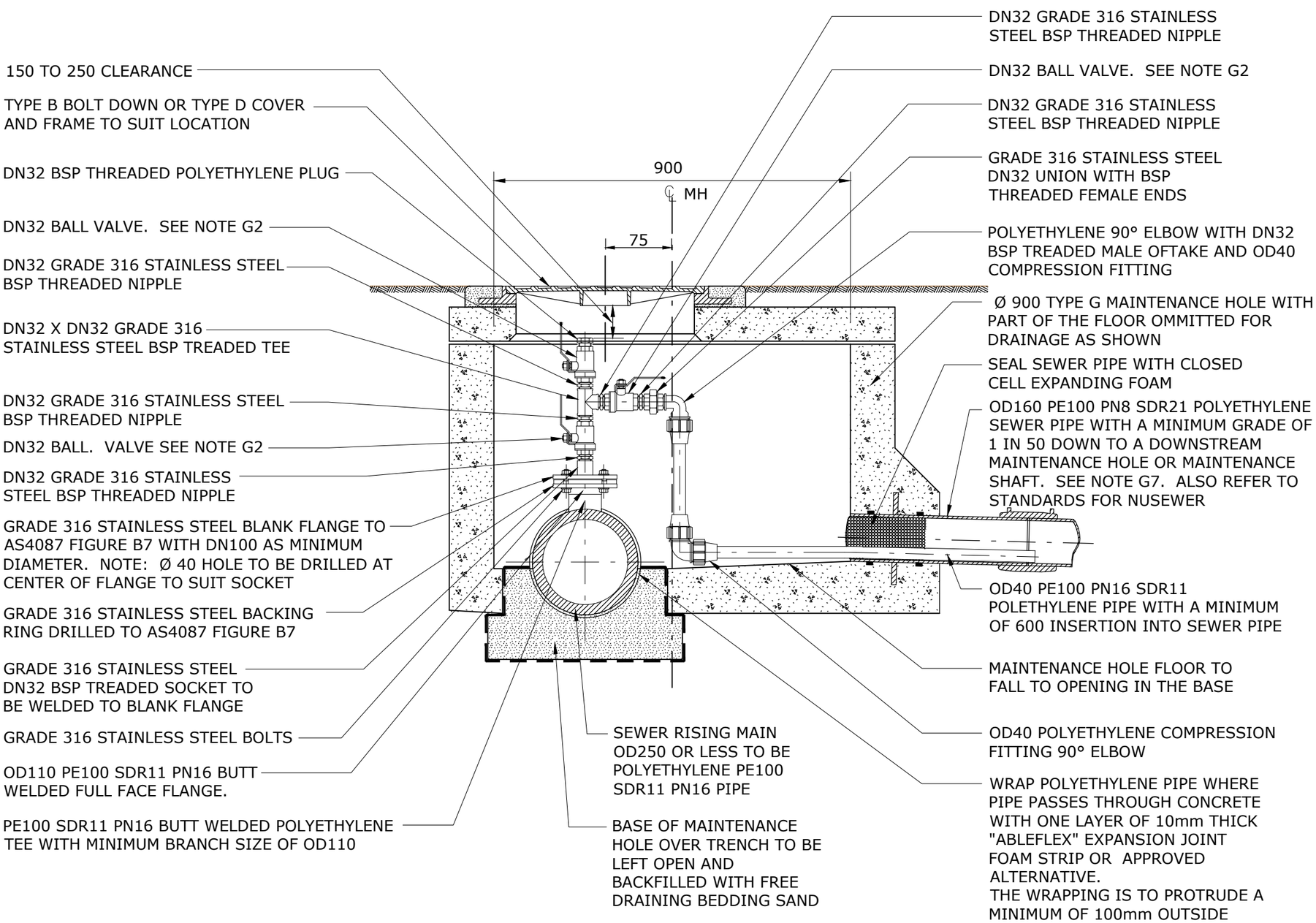
~~CoGC~~	LCC	~~RCC~~	QUU	~~UW~~

DRAWING No. SEQ-SPS-1604-1

VERSION A

NOT TO SCALE

ORG DATE: 1/1/2013



SECTIONAL ELEVATION
DN32 AIR BLEED ASSEMBLY
NOT TO SCALE

NOTES:

G1. THIS DRAWING SHOWS THE AIR BLEED ARRANGEMENT FOR RISING MAINS OF OD250 OR SMALLER AND IS ONLY SUITABLE FOR USE WITH DN32 BALL VALVES.

G2. THE BALL VALVES ARE TO BE DN32 FULL BORE AND ALL GRADE 316 STAINLESS STEEL WITH Ø32 (11/4") BSP THREADED FEMALE SOCKET ENDS.

G3. THE RISING MAIN AND BRANCH SHOWN ON THIS DRAWING ARE POLYETHYLENE. ALTERNATE MATERIALS MAY BE APPROVED BY SEQ-SP AND WILL BE ASSESSED ON AN INDIVIDUAL PROJECT BASIS.

G4. AIR BLEED ASSEMBLIES ARE TO BE LOCATED AT ALL HIGH POINTS ALONG THE RISING MAIN.
WHERE POSSIBLE THE RISING MAIN SHOULD ALWAYS GRADE UP CONTINUOUSLY TO THE DISCHARGE MAINTENANCE HOLE THUS ELIMINATING THE NEED FOR AN AIR BLEED ASSEMBLY.
THE ABOVE WILL REQUIRE APPROVAL FROM SEQ-SP WHERE THE MAIN EXCEEDS A COVER OF 1500.

G5. WHERE THE MAINTENANCE HOLE COVER IS LOCATED IN A ROADWAY THE COVER SHOULD BE SITED AWAY FROM THE NORMAL WHEEL TRACKS OF VEHICLES.

G6. ALL AIR BLEED ASSEMBLY MAINTENANCE HOLES ARE TO BE LOCATED IN POSITIONS THAT ARE EASILY ACCESSIBLE WITH MAINTENANCE VEHICLES.

G7. WHERE POSSIBLE THE OD40 PE AIR RELEASE PIPE IS TO DISCHARGE INTO AN OD160 PE SEWER WHICH GRADES DOWN TO THE NEAREST SEWERAGE RETICULATION MAINTENANCE HOLE OR MAINTENANCE SHAFT.
WHERE A SUITABLE SEWERAGE RETICULATION MAINTENANCE HOLE OR MAINTENANCE SHAFT IS NOT AVAILABLE THEN A TYPE G MAINTENANCE HOLE IS TO BE CONSTRUCTED.
THIS NEW MAINTENANCE HOLE SHOULD NOT BE POSITIONED IN THE ROADWAY AND THE LOCATION MUST BE SUCH THAT IT IS ACCESSIBLE WITH A VACTOR TRUCK FOR CLEANING.

G8. THE LOCATION AND DETAILS INCLUDING LEVELS FOR EVERY AIR BLEED ON THE RISING MAIN ARE TO BE SHOWN ON THE PROJECT DRAWINGS.

G9. ALL STAINLESS STEEL FITTINGS ARE TO BE GRADE 316.

G10. ALL THREADED STAINLESS STEEL IS TO BE ASSEMBLED WITH ANTI-GALLING COMPOUND "DURALAC" OR APPROVED EQUIVALENT.

REV. No.	DATE	DESCRIPTION	AUTH.
B	20/05/14	MH SIZE4 ADN TOP CLEARANCE UPDATED	

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

DN32 AIR BLEED ASSEMBLY FOR OD250 RISING MAINS OR SMALLER

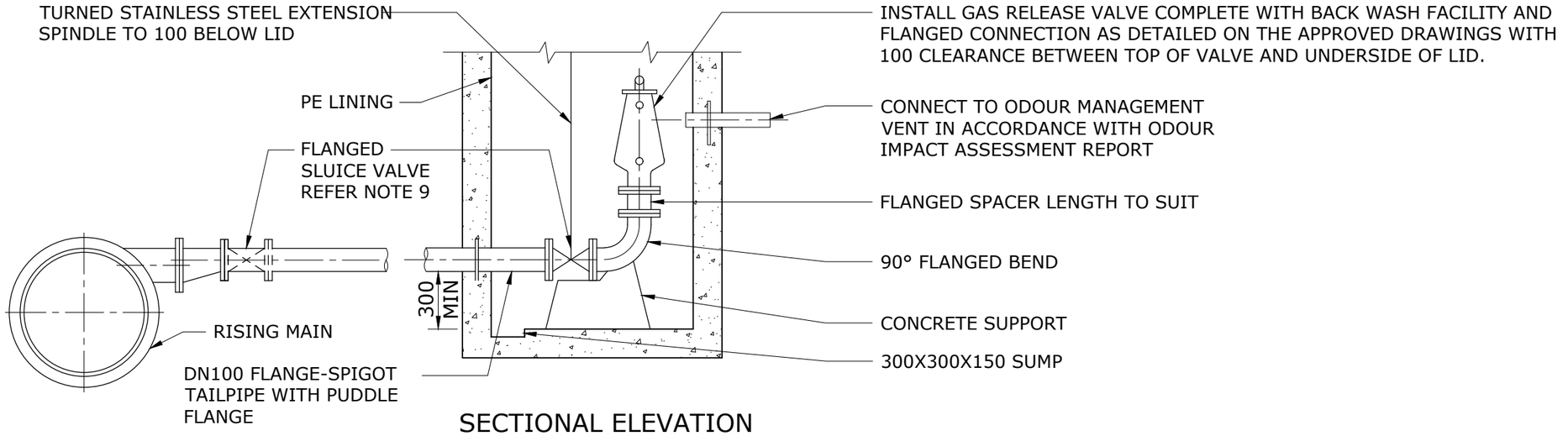
~~CoGC~~ ~~LCC~~ ~~RCC~~ QUU ~~UW~~

DRAWING No. SEQ-SPS-1605-1

VERSION B

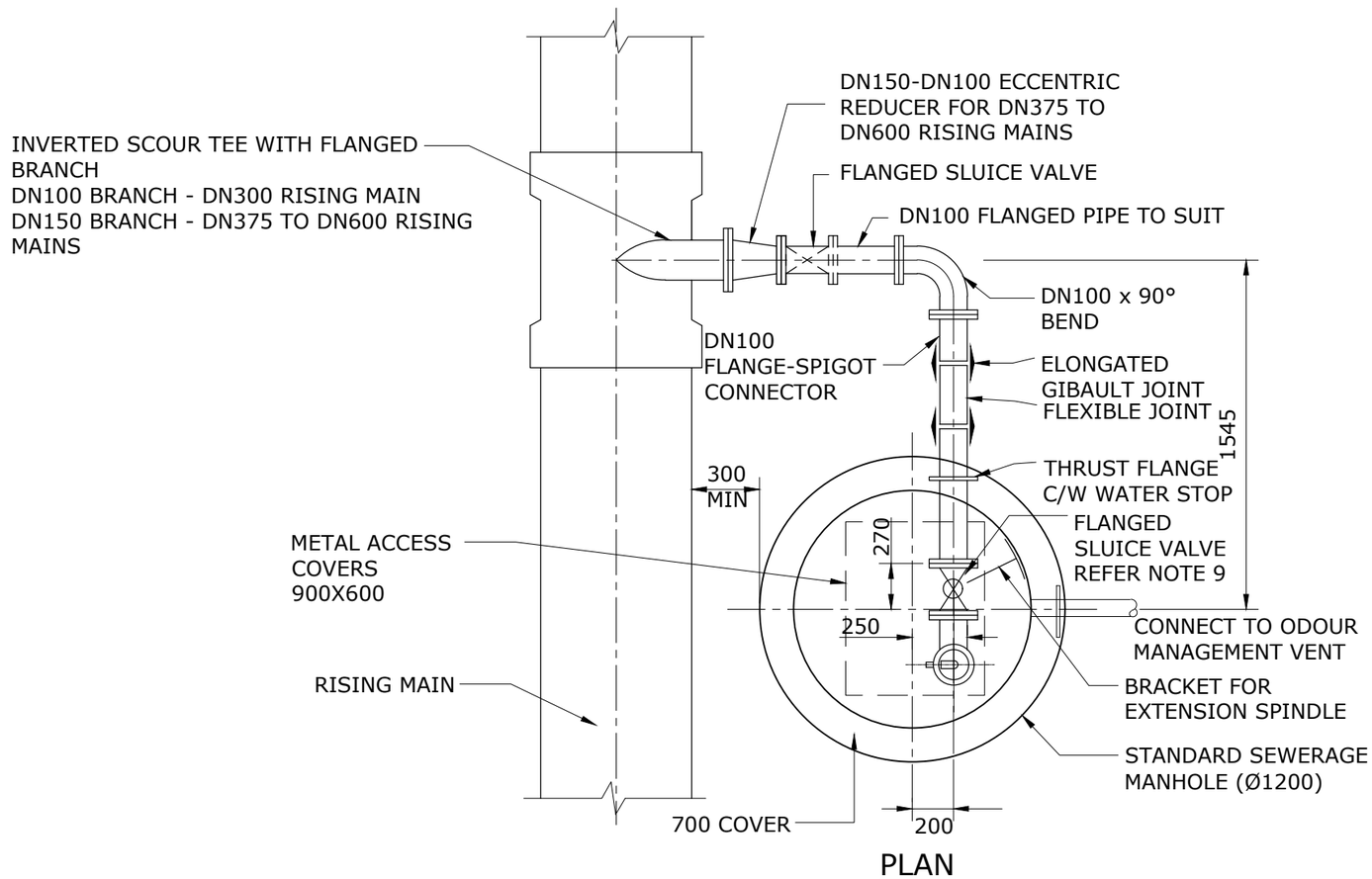
NOT TO SCALE

ORG DATE: 1/1/2013



SECTIONAL ELEVATION

DN300 - DN600 RISING MAIN



PLAN

NOTE:

1. DETAILS SHOWN ARE FOR A BURIED DN100 SEWERAGE RISING MAIN.
2. FOR LARGER THAN DN100 SEWERAGE RISING MAINS A LARGER MANHOLE MAY BE REQUIRED.
3. FOR LARGER THAN DN100 RISING MAINS PROVIDE A DN100 FLANGED BRANCH HYDRANT TEE.
4. CARE SHALL BE TAKEN TO ENSURE THAT ALL CONCRETE IS KEPT CLEAR OF THE FLEXIBLE AND FLANGED JOINTS.
5. FOR PAVEMENT AND KERB & CHANNEL MARKING DETAILS REFER SEQ-SP STDS.
6. DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE.
7. PROVIDE PIPE STUB FOR ODOUR MANAGEMENT WHERE REQUIRED BY ODOUR IMPACT ASSESSMENT REPORT.
8. MANHOLES SHALL BE LINED WITH PE LINER; FLOOR, WALLS, ROOF AND OPENING.
9. PROVIDE SLUICE VALVE IN CHAMBER FOR DOUBLE ISOLATION AS DIRECTED BY SEQ-SP.
10. METAL ACCESS COVER TO BE 900X600 (GAS TIGHT)
    CLASS 'B' FOOTPATHS
    CLASS 'D' ROADWAYS
    OFFSET GRV TO ALLOW ACCESS TO MANHOLE.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

AUTOMATIC GAS RELEASE VALVES

CoGC	LCC	RCC	QUU	UW

DRAWING No.

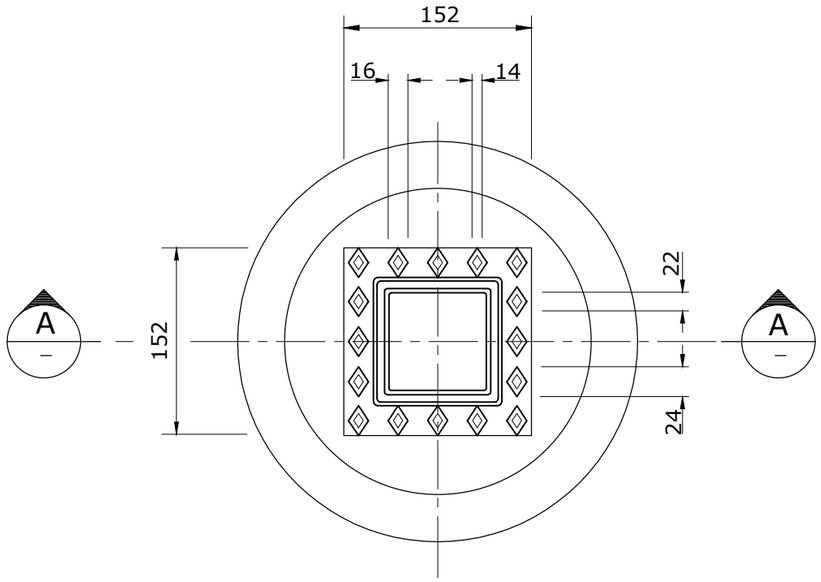
SEQ-SPS-1606-1

VERSION

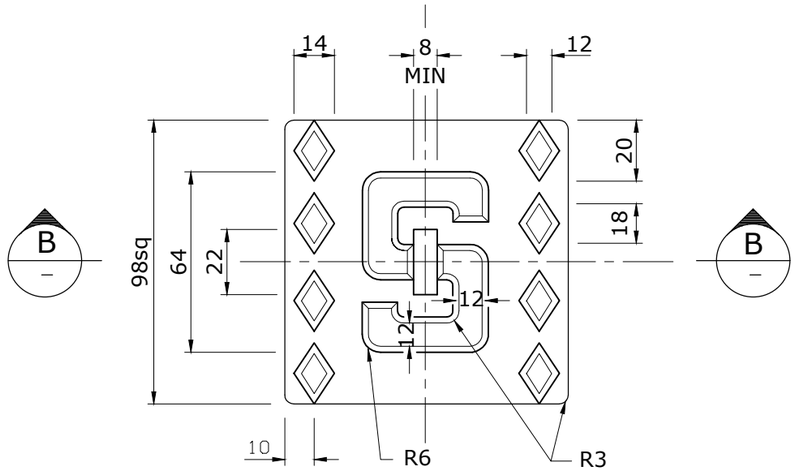
A

NOT TO SCALE

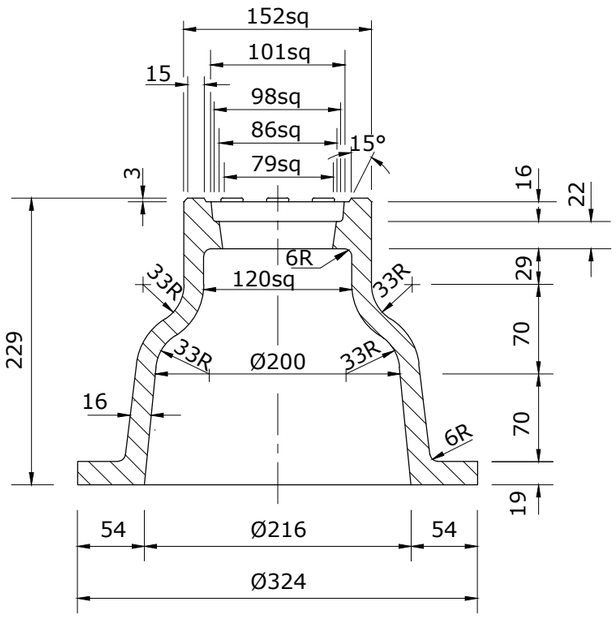
ORG DATE: 1/1/2013



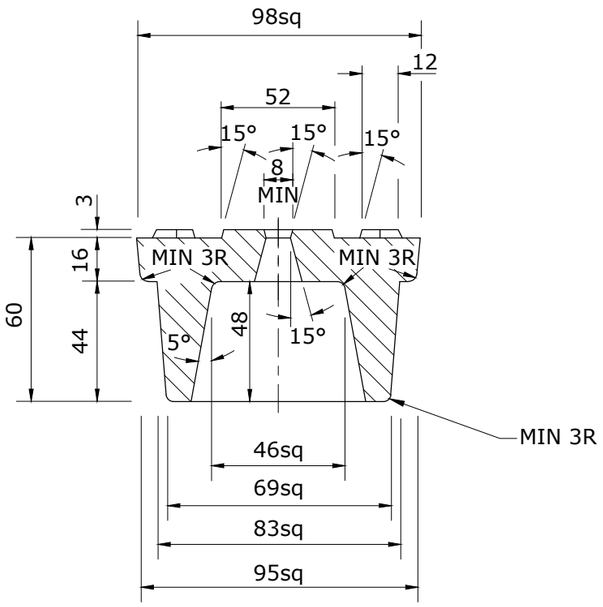
PLAN



PLAN



SECTIONAL ELEVATION
SEWERAGE VALVE BOX — A –



SECTIONAL ELEVATION
SEWERAGE VALVE BOX COVER — B –

NOTES

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SEQ-SP SPECIFICATIONS AND STANDARDS.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
3. RECYCLED PLASTIC COLLAR TO BE USED IN CONJUNCTION WITH THIS CASTING.
4. FOR TYPICAL VALVE CHAMBER DETAILS REFER DRAWINGS SEQ-PSS-1005-1 AND SEQ-WAT-1306-1.

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

CAST IRON VALVE BOX AND COVER

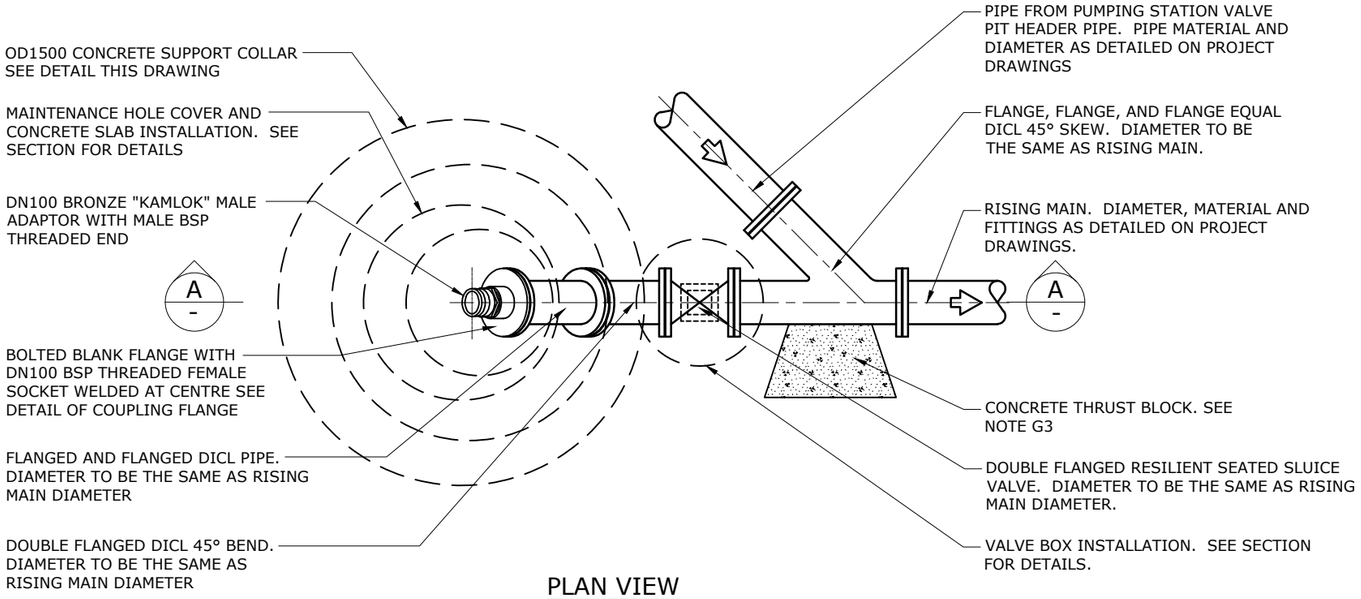
~~CoGC~~	~~LCC~~	~~RCC~~	QUU	UW

DRAWING No.
SEQ-SPS-1607-1

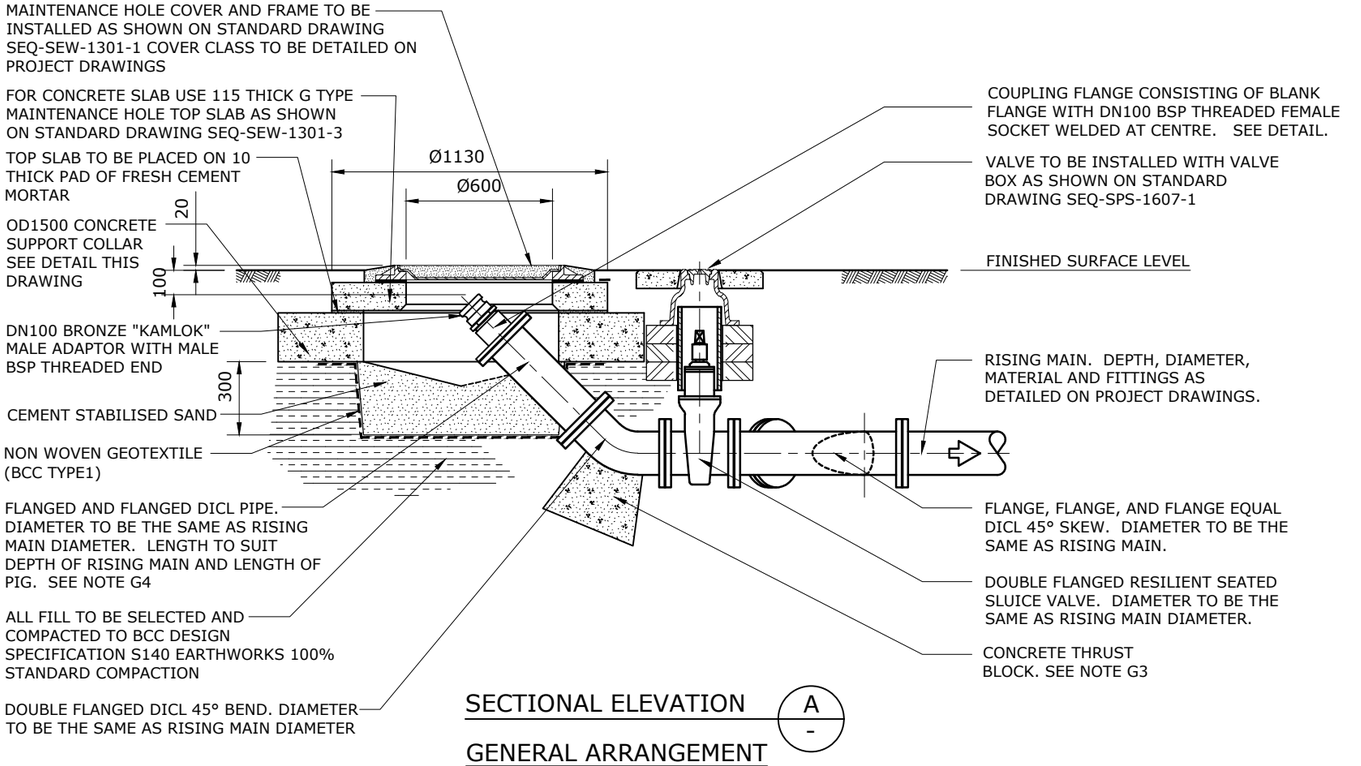
VERSION
A

NOT TO SCALE

ORG DATE:
1/1/2013



PLAN VIEW



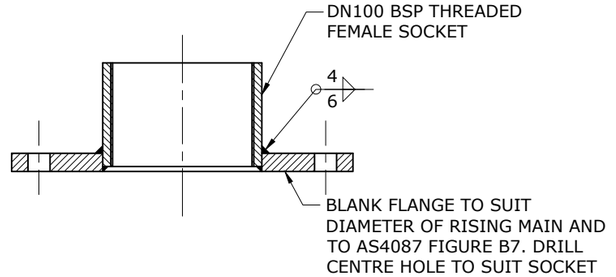
SECTIONAL ELEVATION A -

GENERAL ARRANGEMENT
NOT TO SCALE

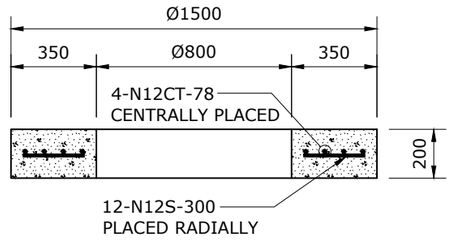
NOTES:

GENERAL

G1. ALL DIMENSIONS ARE IN MILLIMETRES.
G2. ALL DICL PIPEWORK IS TO BE INSTALLED TO MANUFACTURER'S REQUIREMENTS INCLUDING POLYETHYLENE EXTERNAL SLEEVING. IN ADDITION ALL FLANGED CONNECTIONS ARE TO BE COVERED WITH A PETROLATUM WRAP SYSTEM.
G3. THRUST RESTRAINTS SHOWN ON THIS DRAWING ARE DIAGRAMATIC ONLY. IT IS EXPECTED THAT THRUST BLOCKS SHALL BE DESIGNED TO SUIT EACH INDIVIDUAL LOCATION AND WILL FORM PART OF THE PROJECT DESIGN.
G4. THE RISING MAIN IS TO BE PIGGED PRIOR TO OPERATION. THE PIG MAY BE PLACED IN THE RISING MAIN DURING CONSTRUCTION DOWNSTREAM OF THE RISING MAIN ISOLATING VALVE.
FOR DETAILS OF CONSTRUCTION PIG LOCATION SEE DRAWING SEQ-SPS-1301-2
THE PIG IS TO BE MADE OF URETHANE FOAM.
THE DIMENSIONS OF THE PIG ARE TO BE 2 X DIAMETER OF RISING MAIN LONG AND 1.5 X DIAMETER OF RISING MAIN IN DIAMETER.
G5. ALL BOLTS TO BE GRADE 316 STAINLESS STEEL AND TO BE INSTALLED WITH ANTI GALLING COMPOUND. DISSIMILAR METALS ARE TO BE SUITABLY ISOLATED.
G6. NO 90° BENDS ARE PERMITTED IN RISING MAIN SYSTEM. MAXIMUM BEND ANGLE IS 45°. A MINIMUM OF 10 X DIAMETER OF RISING MAIN STRAIGHT PIPE IS REQUIRED BETWEEN BENDS. IF THE RISING MAIN IS POLYETHYLENE THEN PIPE BENDING IS PERMITTED AT A BENDING RADIUS TO POP202.
G7. ALL PIPEWORK IS TO BE DETAILED ON PROJECT DRAWINGS.



DETAIL OF COUPLING FLANGE
MATERIAL: MILD STEEL HOT DIPPED GALVANISED AFTER FABRICATION
NOT TO SCALE



DETAIL OF SUPPORT COLLAR
CONCRETE STRENGTH IS TO BE GRADE N40
NOT TO SCALE

REV. No.	DATE	DESCRIPTION	AUTH.

SEQ WATER
SERVICE PROVIDERS

WORK PRACTICES MUST COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH & SAFETY LEGISLATION

SEWAGE PUMP STATION STANDARD DRAWING

COMBINATION
EMERGENCY PUMP CONNECTION
AND PIG INSERTION POINT DETAILS

CoGC	LCC	RCC	QUU	UW

DRAWING No.
SEQ-SPS-1608-1

VERSION
A

NOT TO SCALE

ORG DATE:
1/1/2013