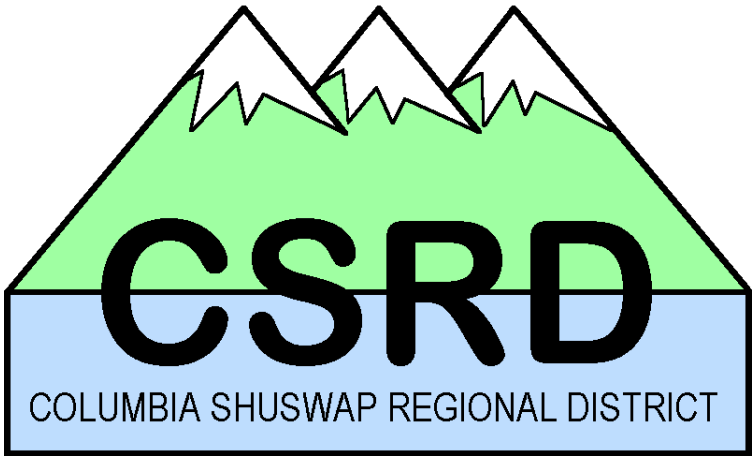
APPROVED STANDARD DRAWINGS

as Referred to in The Subdivision Servicing Bylaw



COLUMBIA SHUSWAP REGIONAL DISTRICT

MARCH 2011

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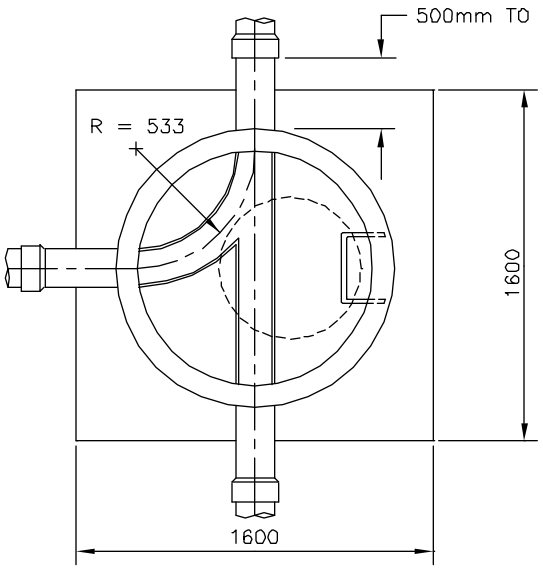
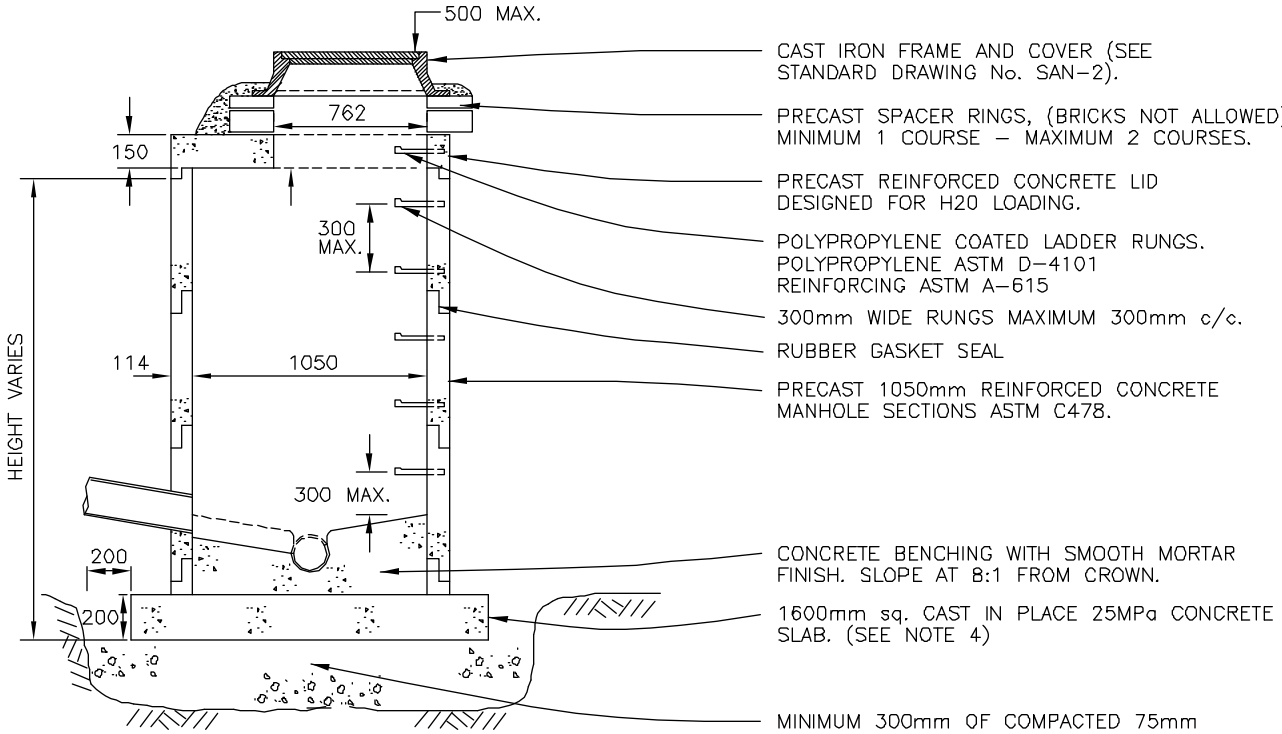


PLAN



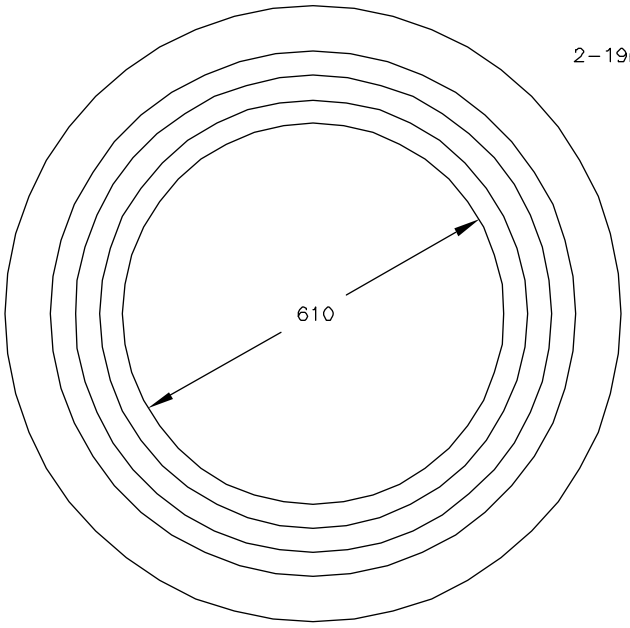
ELEVATION

NOTES:

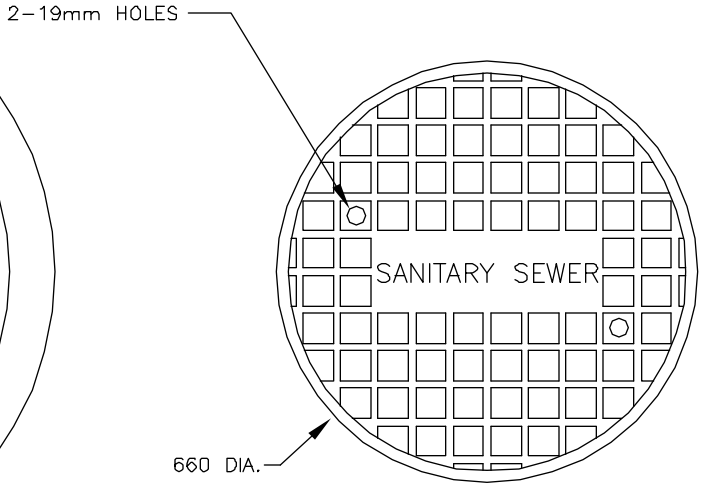
1. Manhole lid, spacer rings & any breaks made into manhole shall be made water tight with approved mortar, sealants or gaskets inside and out.
2. All interior joints to have smooth mortar finish.
3. Top of pipe running through manhole to be broken out.
4. Precast manhole base may be used in place of cast-in-place slab.
5. Frame & cover to be set at 5mm below finished asphalt design grade and cross-fall.
6. 1200mm Manhole required for pipes larger than 600mm and/or number of pipes exceed allowable for 1050mm manhole.
7. Drop Manhole required where pipe enters a manhole at an elevation greater than 600mm above manhole invert.
8. Low Profile Frame not allowed.

CSRD
COLUMBIA SHUSWAP REGIONAL DISTRICT

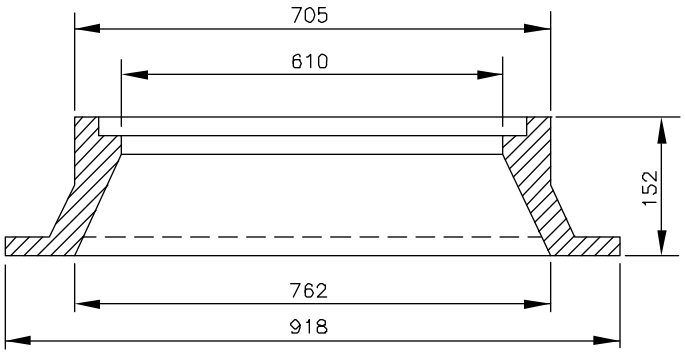
SCALE: NOT TO SCALE		TITLE: **TYPICAL 1050mm SANITARY MANHOLE**
DATE DRAWN: MAR. 2011	LATEST REVISION DATE:	
APPROVED BY:		
SECTION: SANITARY	REVISION No. 0	DWG.No. **SAN - 1**



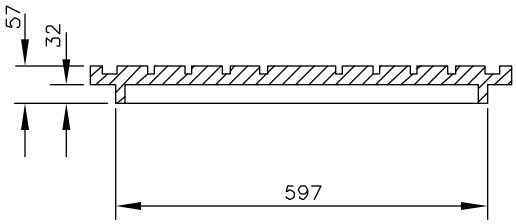
FRAME PLAN



COVER PLAN



FRAME ELEVATION

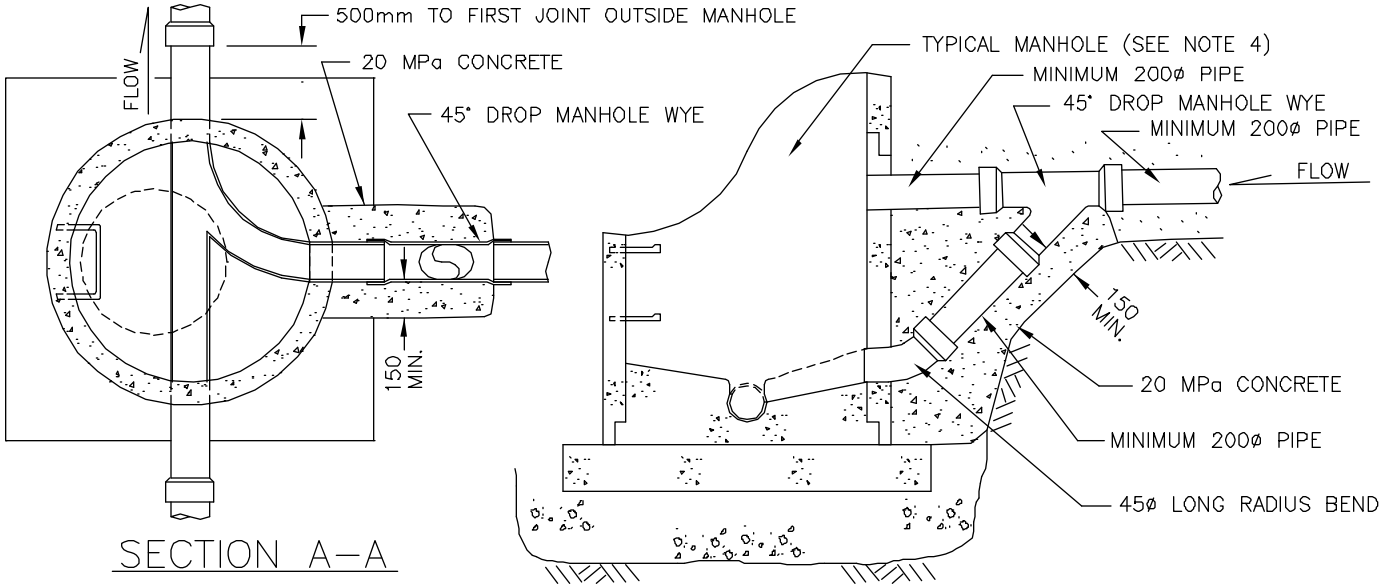


COVER ELEVATION

NOTES:

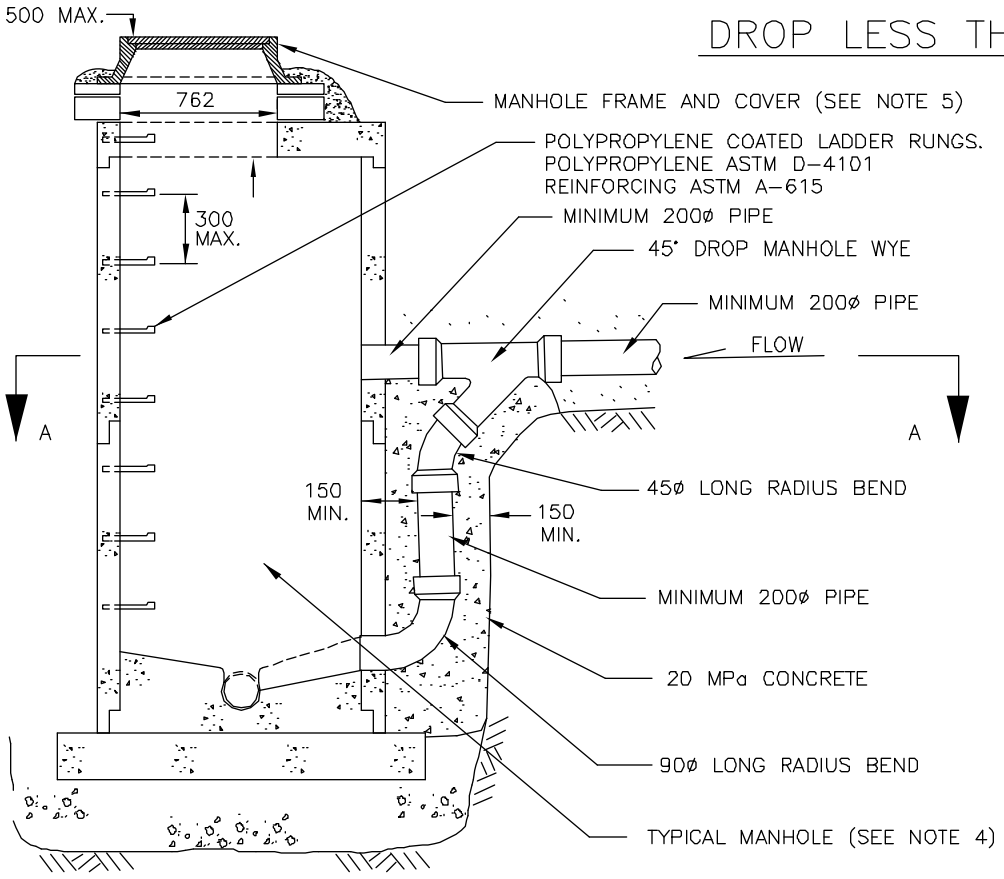
1. Frames and covers are to be designed to withstand H-20 loading.
2. Sanitary Sewer manhole covers shall be labelled: "SANITARY SEWER"
3. Frame and covers shall be Dobney Foundry No. C-44A or approved equivelant.
4. Low Profile Frame not allowed.

CSRD COLUMBIA SHUSWAP REGIONAL DISTRICT	SCALE: NOT TO SCALE	TITLE: **H-20 MANHOLE FRAME & COVER**	
	DATE DRAWN: MAR. 2011 / LATEST REVISION DATE:		
	APPROVED BY:	SECTION: SANITARY	REVISION No. 0 / DWG.No. **SAN-2**



SECTION A–A

DROP LESS THAN 1500mm

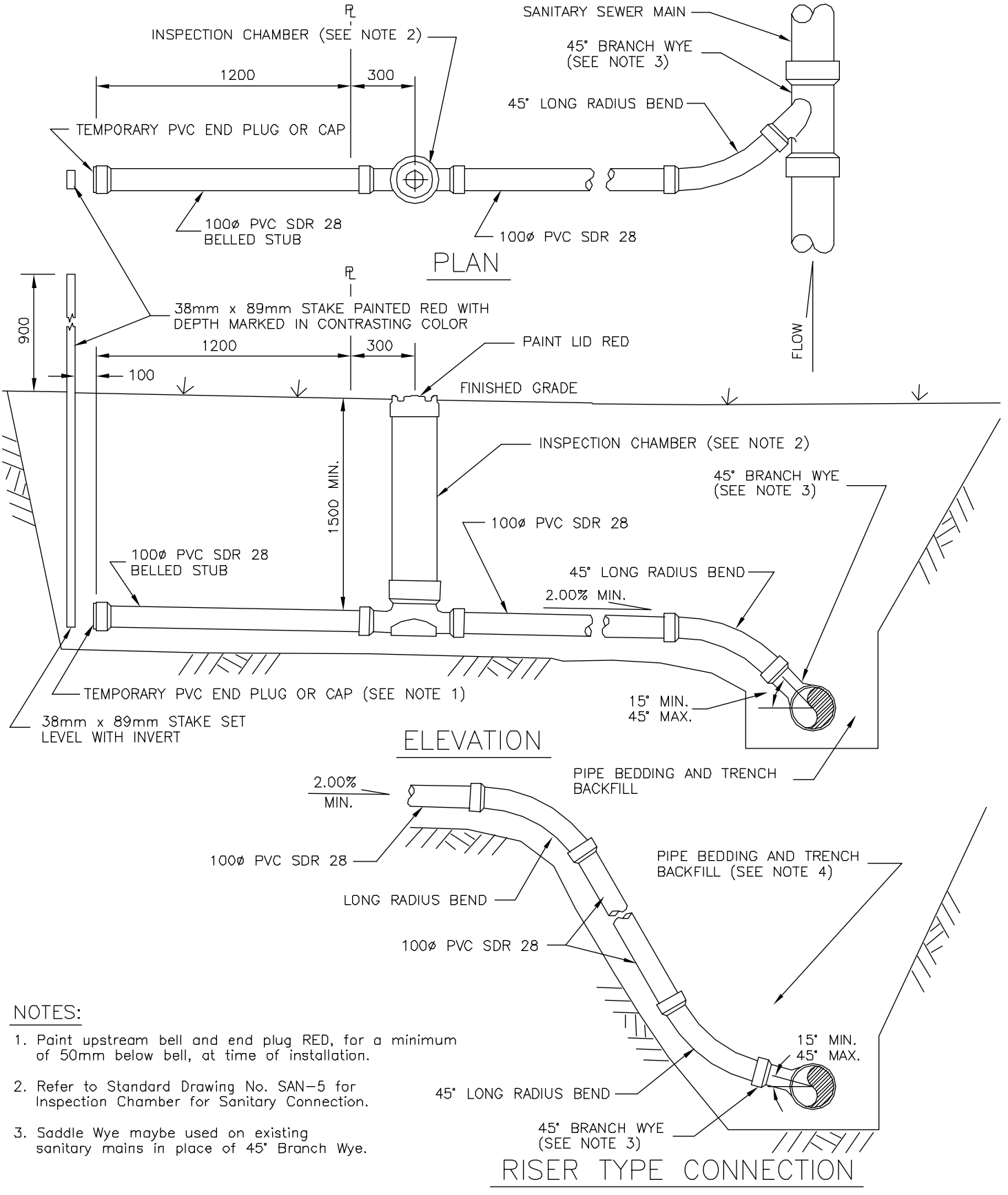


DROP GREATER THAN 1500mm

NOTES:

1. Inside ramps shall be utilized where the elevation of the invert is <600mm above the invert of the through pipe (Refer to Specification Drawing San–1).
2. All interior joints to have smooth mortar finish.
3. Encasement Concrete strength to be 20MPa at 28 days.
4. Refer to Standard Drawing No. San–1, Typical 1050mm Sanitary Manhole.
5. Refer to Standard Drawing No. San–2, H–20 Manhole Frame & Cover (Low Profile Frame not allowed).
6. Inside drop to be approved by the CSRD.

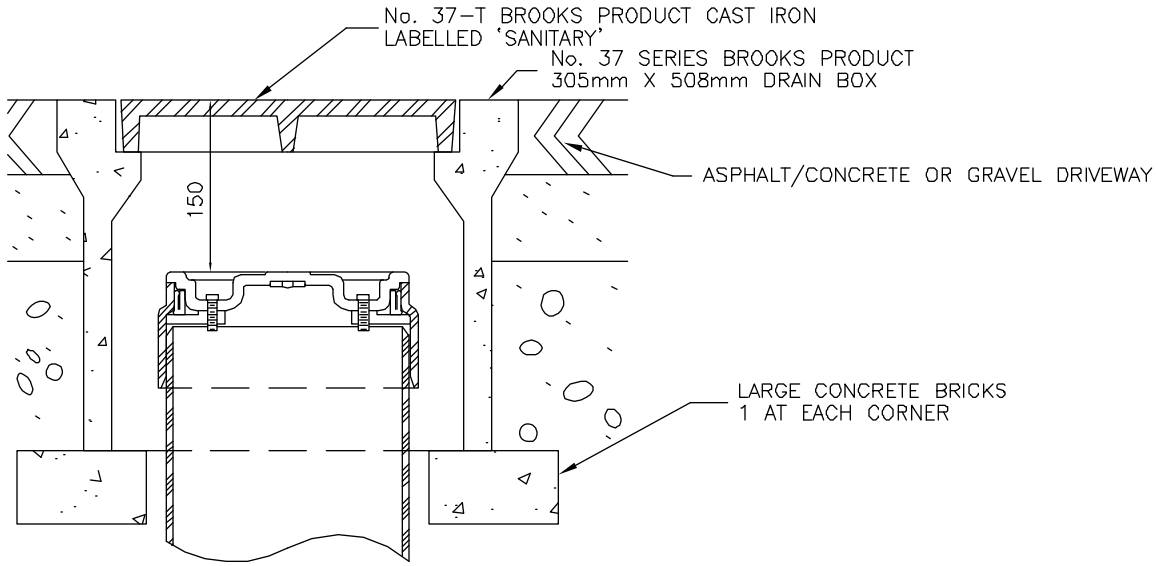
CSRD COLUMBIA SHUSWAP REGIONAL DISTRICT	SCALE: NOT TO SCALE	TITLE: **TYPICAL 1050mm SANITARY DROP MANHOLE**	
	DATE DRAWN: MAR. 2011 / LATEST REVISION DATE:		
	APPROVED BY:	SECTION: SANITARY	REVISION No. 0 / DWG.No. **SAN-3**



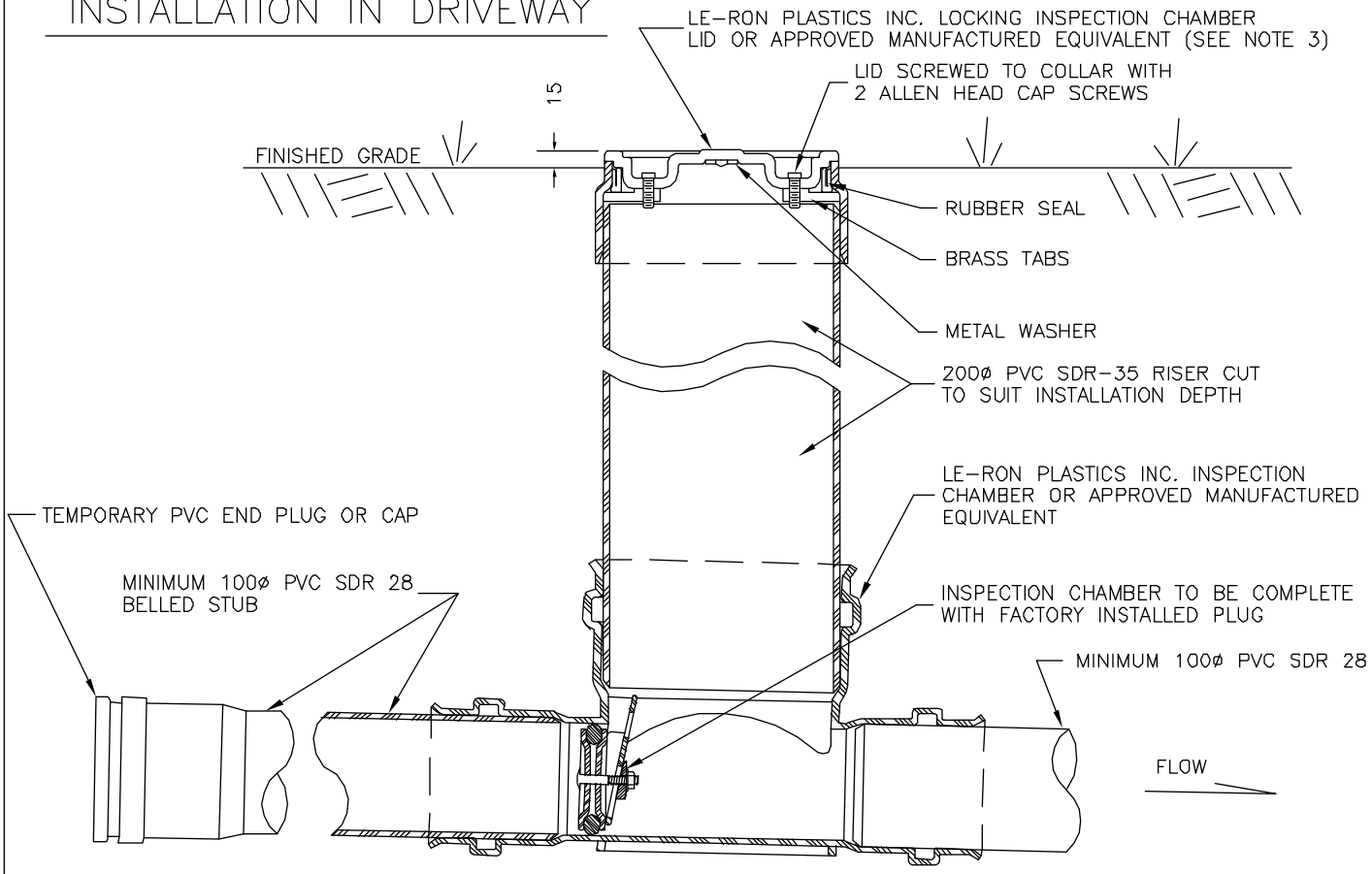
NOTES:

1. Paint upstream bell and end plug RED, for a minimum of 50mm below bell, at time of installation.
2. Refer to Standard Drawing No. SAN–5 for Inspection Chamber for Sanitary Connection.
3. Saddle Wye maybe used on existing sanitary mains in place of 45° Branch Wye.

CSRD COLUMBIA SHUSWAP REGIONAL DISTRICT	SCALE: NOT TO SCALE	TITLE: **TYPICAL 100mm SANITARY SERVICE CONNECTION**	
	DATE DRAWN: MAR. 2011 / LATEST REVISION DATE:		
	APPROVED BY:	SECTION: SANITARY	REVISION No. 0 / DWG.No. **SAN-4**



INSTALLATION IN DRIVEWAY

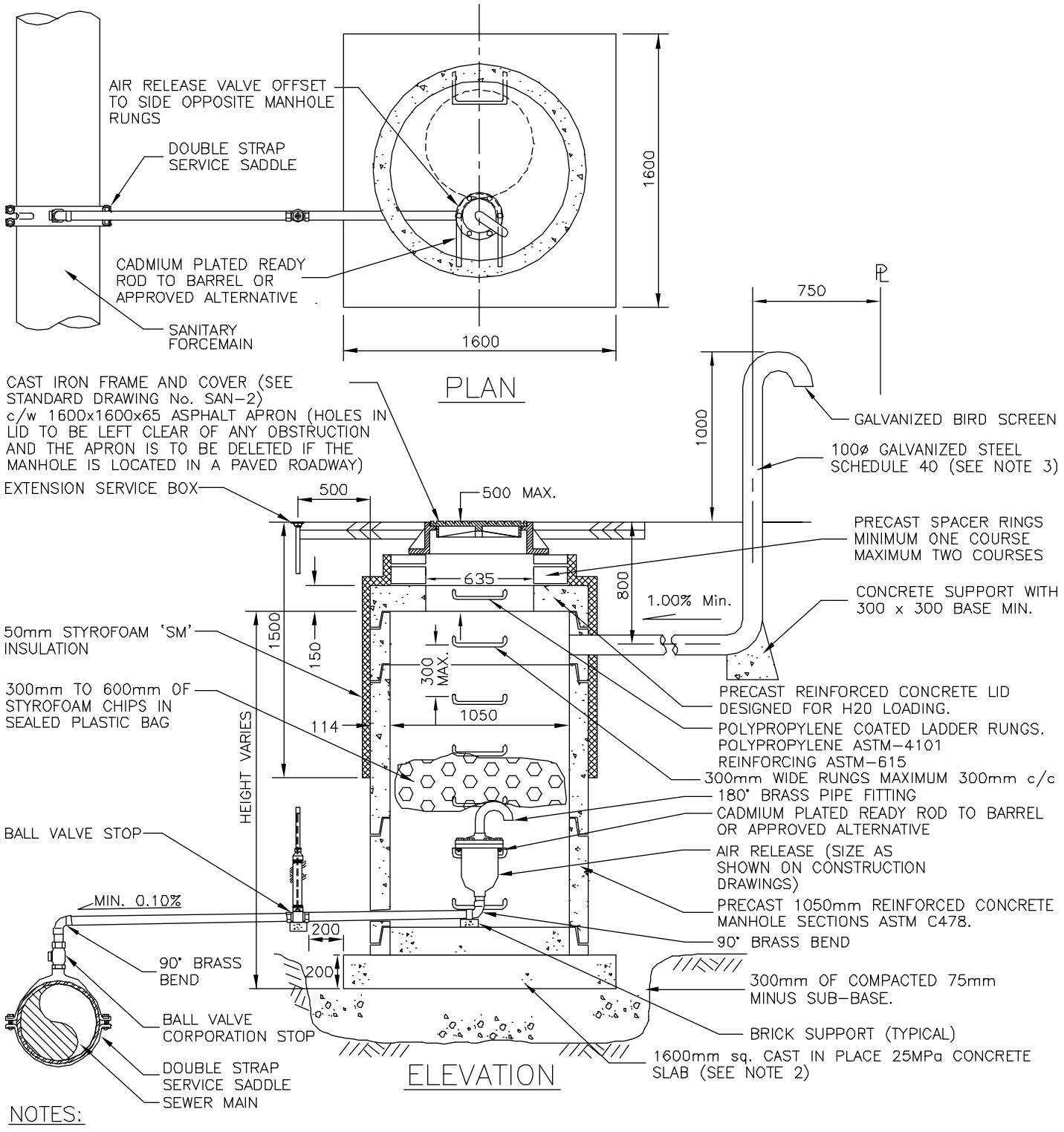


INSTALLATION IN BOULEVARD

NOTES:

1. Paint upstream bell and end plug RED, for a minimum of 50mm below bell, at time of installation.
2. Refer to Standard Drawing No. SAN-4 Typical 100mm Sanitary Connection.
3. Paint Inspection Chamber lid RED.

CSRD COLUMBIA SHUSWAP REGIONAL DISTRICT	SCALE: NOT TO SCALE	TITLE: **INSPECTION CHAMBER FOR SANITARY CONNECTION**	
	DATE DRAWN: MAR. 2011 / LATEST REVISION DATE:		
	APPROVED BY:	SECTION: SANITARY	REVISION No. 0 / DWG.No. **SAN-5**



NOTES:

1. Frame & cover to be set at 5mm below finished asphalt design grade and cross-fall.
2. Precast manhole base may be used in place of cast-in-place slab.
3. 100ø vent to be used in rural areas only.
4. Combination Air Release where required by the CSRD.

PIPE SIZE (mm)	AIR RELEASE VALVE (mm)
200 AND SMALLER	25
250 TO 350	50
400 TO 500	75

CSRD
COLUMBIA SHUSWAP REGIONAL DISTRICT

SCALE: NOT TO SCALE

DATE DRAWN: MAR. 2011

LATEST REVISION DATE:

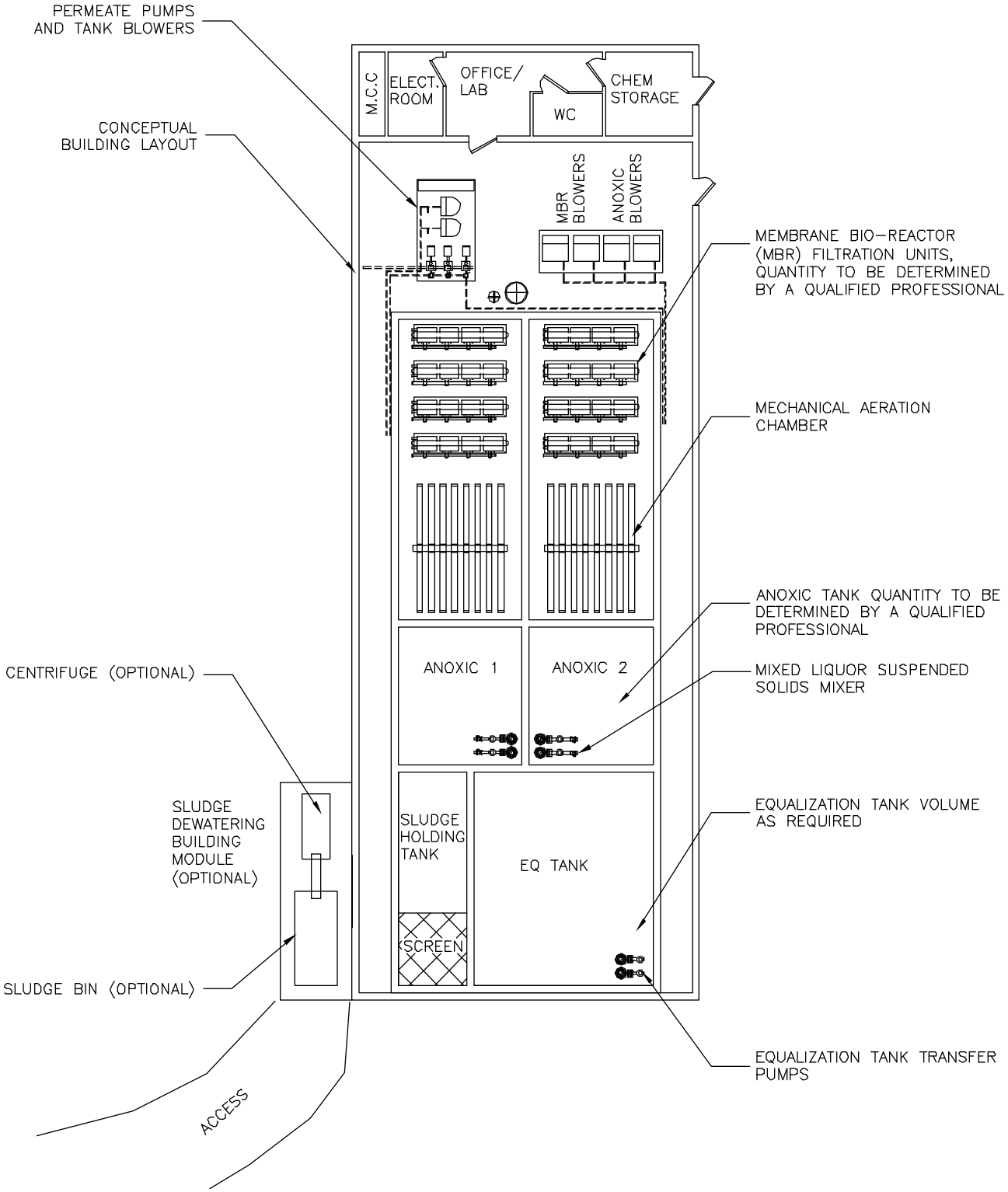
APPROVED BY:

TITLE: **AIR RELEASE VALVE-FORCEMAIN**

SECTION: SANITARY

REVISION No. 0

DWG.No. **SAN - 6**



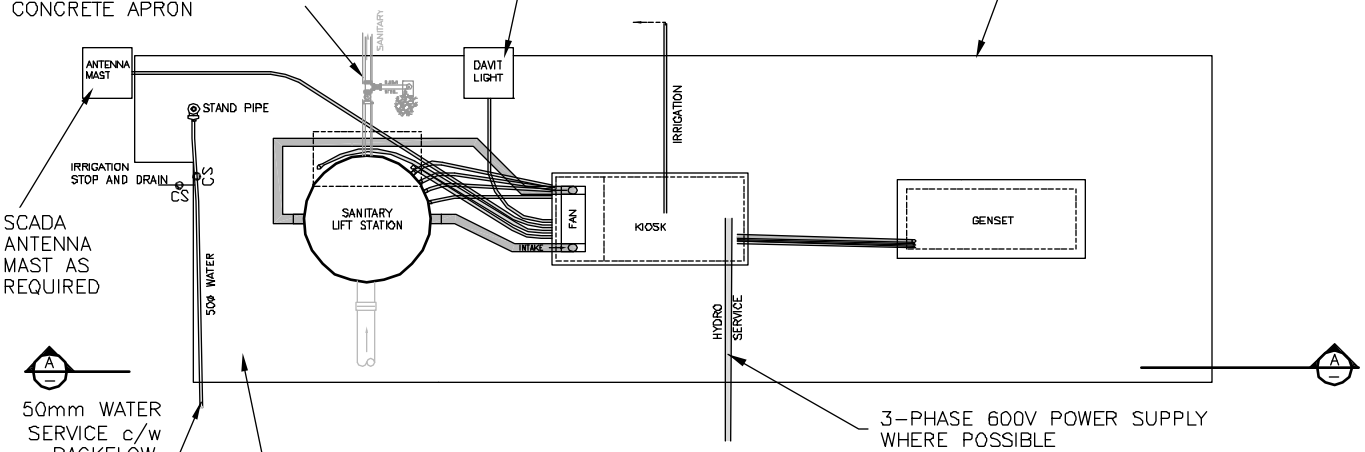
CSRD
COLUMBIA SHUSWAP REGIONAL DISTRICT

SCALE: NOT TO SCALE		TITLE: **CONCEPTUAL MEMBRANE BIO-REACTOR LAYOUT**	
DATE DRAWN: MAR. 2011	LATEST REVISION DATE:		
APPROVED BY:		SECTION: SANITARY	REVISION No. 0 / DWG.No. **SAN - 7**

FORCEMAIN EMERGENCY BYPASS SHALL BE A MINIMUM 100mm DIAMETER SCHEDULE 40 STEEL PIPE c/w 2 COATS OF EPOXY, 25mm CS DRAIN, DRAIN PIT, 75mm KAMLOCK MALE CONNECTION c/w CAP, BROOK'S BOX AND ALL FORCE MAIN/BYPASS ISOLATION VALVES TO BE LOCATED WITHIN THE CONCRETE APRON

DAVIT LIGHT c/w DAYLIGHT SENSOR SHALL BE LOCATED TO ADEQUATELY LIGHT ALL STRUCTURES

SECURITY PERIMETER FENCING POSTS SHALL BE ANCHORED TO CONCRETE APRON AND SURROUND ALL STRUCTURES, MIN. 4.0m WIDE VEHICLE ACCESS TO LIFT STATION HATCH, AND 1–0.9m MAN DOOR



SCADA ANTENNA MAST AS REQUIRED

50mm WATER SERVICE c/w BACKFLOW, SHUTOFF AND SELF DRAINING STANDPIPE

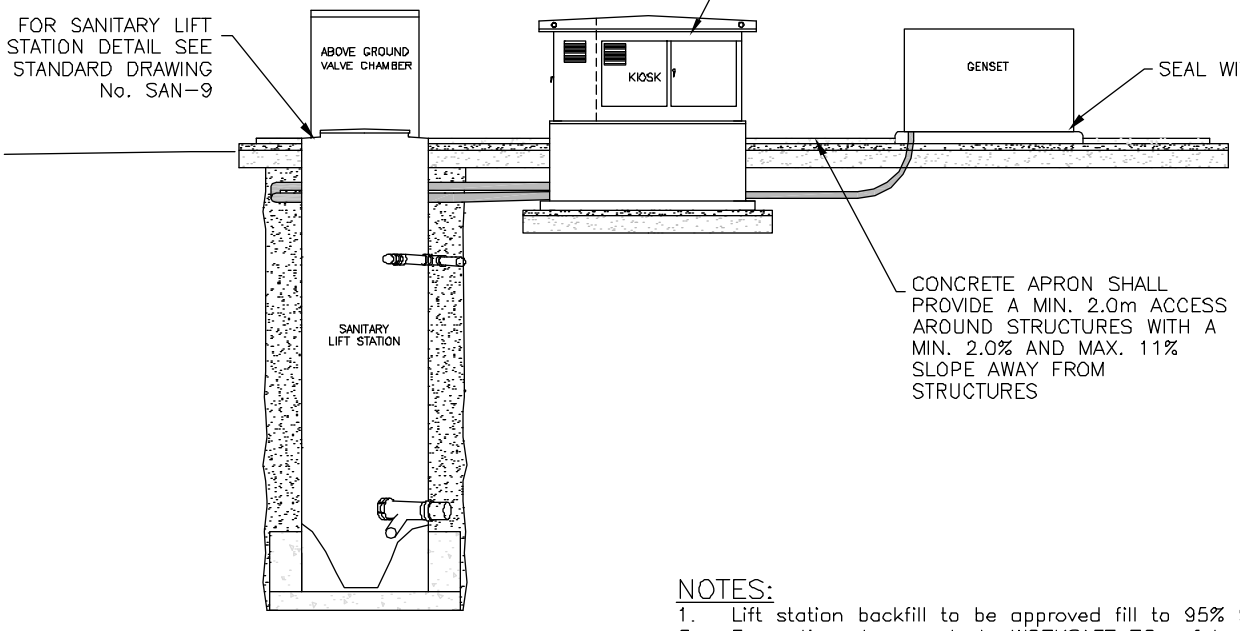
3–PHASE 600V POWER SUPPLY WHERE POSSIBLE

LIFT STATION SITE PLAN

MIN. 100mm – 32MPa CONCRETE APRON c/w BROOMED FINISH, SEALER, CONTROL JOINTS, DONACONDA AROUND STRUCTURES AND 10M REBAR 300mm x 300mm c/c AT VEHICLE ACCESS TO HATCH

FOR LIFT STATION KIOSK DETAIL SEE STANDARD DRAWING No. SAN–10

FOR SANITARY LIFT STATION DETAIL SEE STANDARD DRAWING No. SAN–9



SEAL WITH SPRAY FOAM

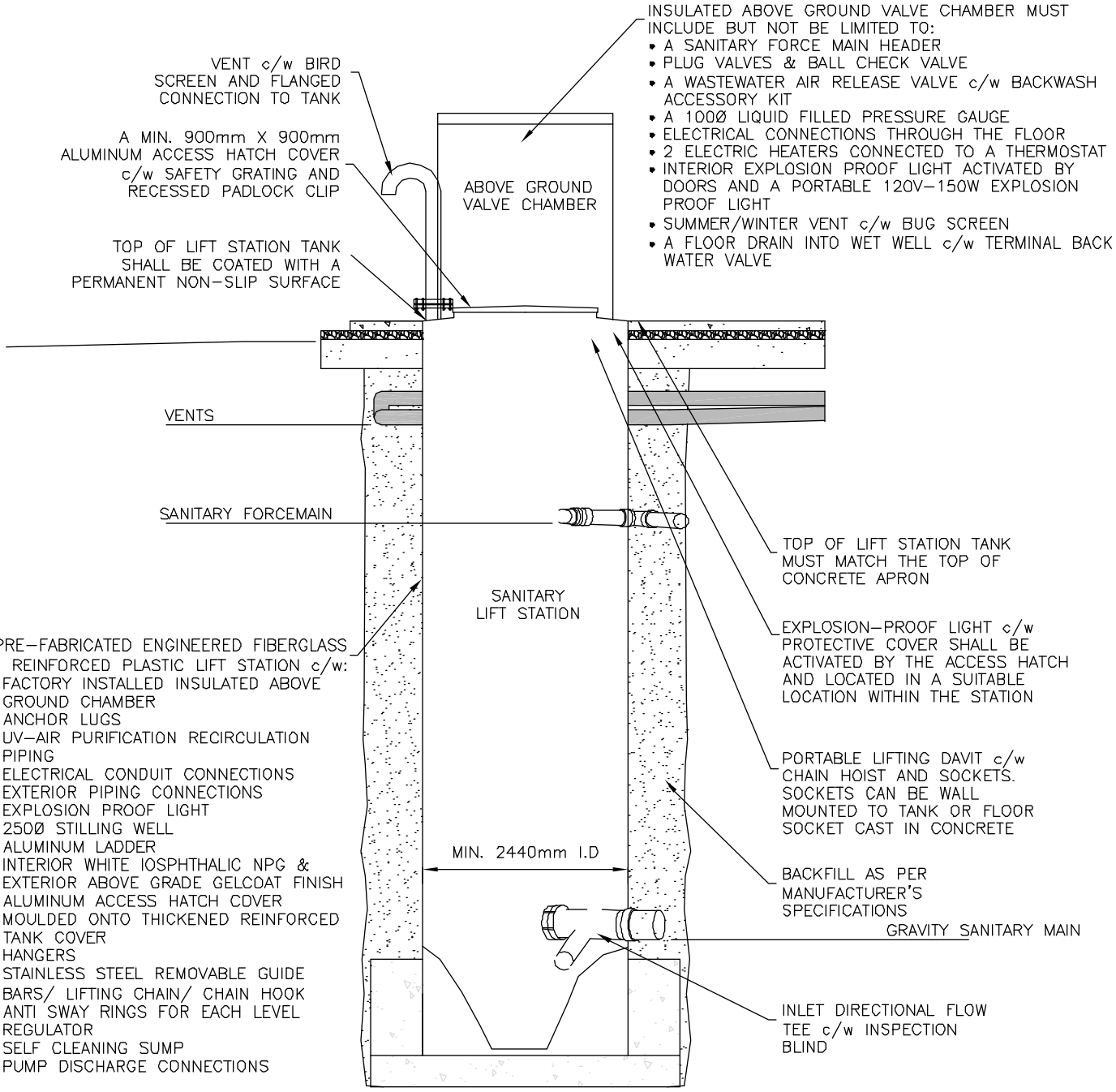
CONCRETE APRON SHALL PROVIDE A MIN. 2.0m ACCESS AROUND STRUCTURES WITH A MIN. 2.0% AND MAX. 11% SLOPE AWAY FROM STRUCTURES

SECTION A–A

NOTES:

1. Lift station backfill to be approved fill to 95% S.P.D;
2. Excavations to comply to WORKSAFE BC safety regulations;
3. All hydro/tel services, fuel lines, conduits, piping, etc. to be underground to structures.

CSRD COLUMBIA SHUSWAP REGIONAL DISTRICT	SCALE: NOT TO SCALE	TITLE: **CONCEPTUAL LIFT STATION/KIOSK LAYOUT**	
	DATE DRAWN: MAR. 2011 / LATEST REVISION DATE:		
	APPROVED BY:	SECTION: SANITARY	REVISION No. 0 / DWG.No. **SAN - 8**



NOTES:

1. The design of the pump station must facilitate unobstructed removal and installation of the pump(s) and operate while one pump is under maintenance;
2. Station uplift design must be based on minimum load level and maximum flood elevations;
3. All fasteners to be 316 stainless steel;
4. All piping and appurtenances to be corrosion resistant.

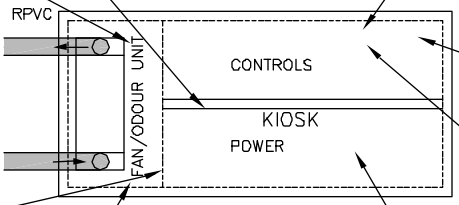
CSRD COLUMBIA SHUSWAP REGIONAL DISTRICT	SCALE: NOT TO SCALE	TITLE: **SANITARY LIFT STATION DETAIL**
	DATE DRAWN: MAR. 2011 / LATEST REVISION DATE:	
	APPROVED BY:	SECTION: SANITARY / REVISION No. 0 / DWG.No. **SAN - 9**

INTERIOR MOUNTING WALL FOR CONTROLS AND POWER EQUIPMENT

EXPLOSION–PROOF WET WELL FAN SHALL BE ACTIVATED BY A MANUAL SWITCH

KIOSK ENCLOSURE INTERIOR SHALL CONTAIN:
- A CONTROLS SIDE
- POWER SIDE
- A SEPARATED WET WELL CONNECTION COMPARTMENT FROM THE CONTROLS AND POWER SIDE WITH A SEALED BARRIER WALL

WET WELL CONNECTION COMPARTMENT SHALL BE DESIGNED AND SIZED FOR A SOL–AIR RECIRCULATION UNIT. IF A FAN IS ONLY REQUIRED THE SOL–AIR RETURN AIR VENT SHALL BE CAPPED



KIOSK LAYOUT PLAN VIEW

PLC CONTROL PANEL ENCLOSURE MUST INCORPORATE BUT NOT LIMITED TO:
- SCADA PACK PLC
- ULTRASONIC CONTROLS AND HAND PROGRAMMER
- DIGITAL OPERATOR INTERFACE
- RELAYS & LED INDICATOR LIGHTS
- POWER SUPPLY & ARRESTORS
- UHF RADIO MODEM
- DUPLEX RECEPTACLES & TERMINALS
- BATTERY BACK–UP POWER SUPPLY
- HAND OFF AUTO SWITCH

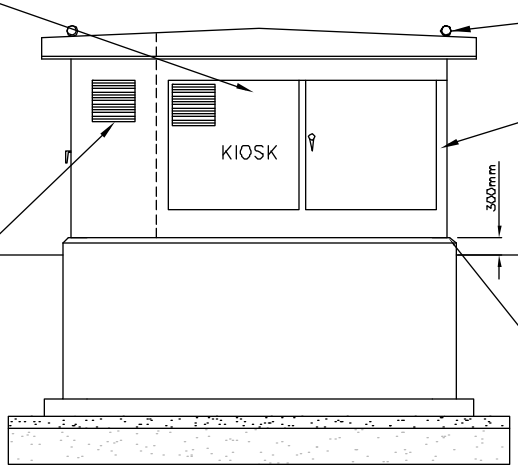
PUMP PANEL SHALL BE c/w CONTROL TRANSFORMER, DIGITAL DOOR MOUNT DISPLAY AND LED PUMP INDICATOR LIGHTS

CONTROLS SIDE OF KIOSK ENCLOSURE INTERIOR SHALL CONTAIN:
- COOLING FAN & HEATERS
- HEATING AND COOLING THERMOSTATS
- GFI RECEPTACLE & LIGHT SWITCHES
- WET WELL FAN SWITCH
- PLC CONTROL PANEL
- PUMP VFD CONTROL PANELS
- WIREWAY & RELAYS
- IRRIGATION CONTROLS
- FLOW METER CONTROL UNIT

POWER SIDE OF KIOSK ENCLOSURE INTERIOR SHALL CONTAIN:
- A LIGHT SWITCH & LIGHTS
- HEATER
- LOAD CENTER c/w BREAKERS
- LIGHTING TRANSFORMER
- SURGE ARRESTORS & DISCONNECTS
- WIREWAY
- HYDRO PULL BOX & HYDRO METER
- AUTOMATIC TRANSFER SWITCH

LARGE ACCESS DOORS FOR EACH COMPARTMENT c/w GREASE ABLE HINGES, WEATHER SEALS, WIND LOCKS AND PAD LOCKABLE LATCHES

EACH COMPARTMENT SHALL HAVE A STAMPED LOUVER c/w REMOVABLE BUG SCREEN SIZED AS REQUIRED, AND 25MM FOILED BACKED INSULATED INTERIOR c/w SUMMER/WINTER PLUGS FOR LOUVERS



SLOPED ROOF c/w DRIP EDGE AND LIFTING LUGS

ENCLOSURE SHALL BE MADE OF A STEEL WELDED NON CORROSIVE METAL AND SIZED AS REQUIRED

KIOSK ENCLOSURE SHALL BE MOUNTED ON A CONCRETE FOUNDATION c/w SILL GASKETS, BEVELLED EDGES, REBAR, AND BLOCKOUTS FOR ELECTRICAL CONDUITS.

KIOSK LAYOUT SECTION VIEW

NOTES:
1. A complete set of electrical relays, fuses etc. spare parts shall be stored within kiosk;
2. All components, switches etc. shall have a black engraved white lamicoid nameplate;
3. All conduits connected into structures shall be sealed with "DUCTSEAL".

CSRD COLUMBIA SHUSWAP REGIONAL DISTRICT	SCALE: NOT TO SCALE	TITLE: **KIOSK LAYOUT**
	DATE DRAWN: MAR. 2011 / LATEST REVISION DATE:	
	APPROVED BY:	SECTION: SANITARY / REVISION No. 0 / DWG.No. **SAN - 10**