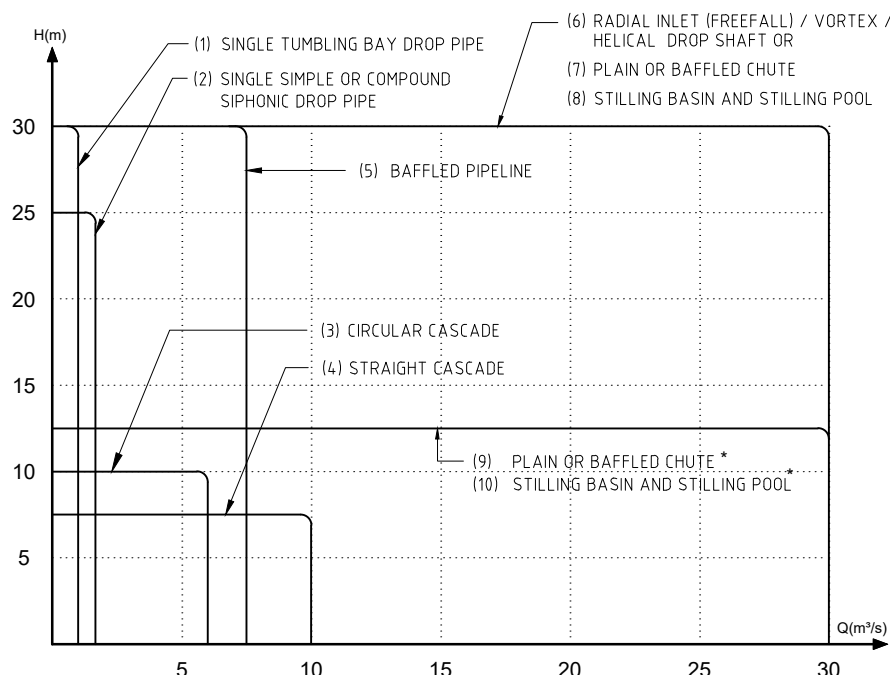
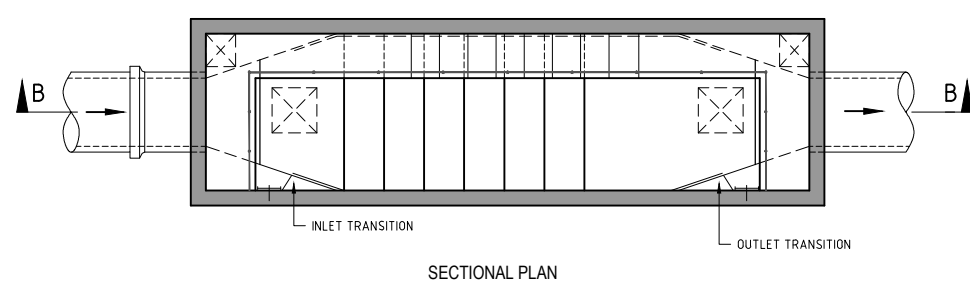


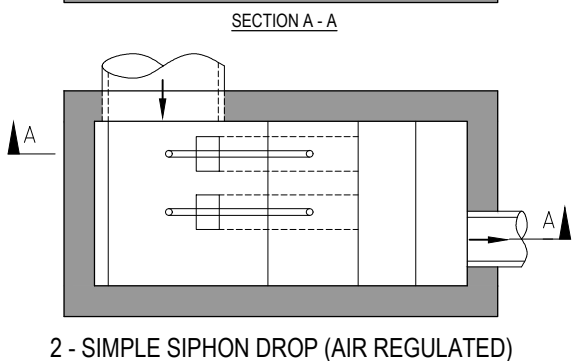


SELECTION CHART

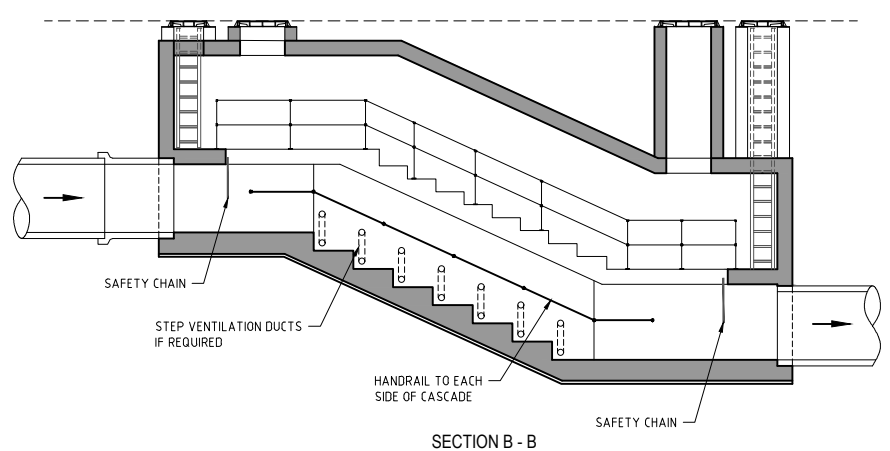
* LIMITING VALUES RELATE TO OPEN CUT CONSTRUCTION



SECTIONAL PLAN



2 - SIMPLE SIPHON DROP (AIR REGULATED)

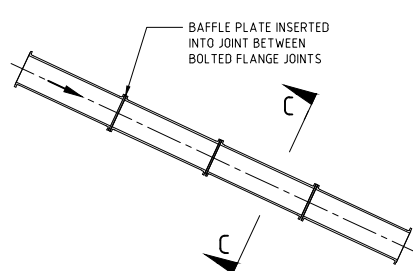


SECTION B - B

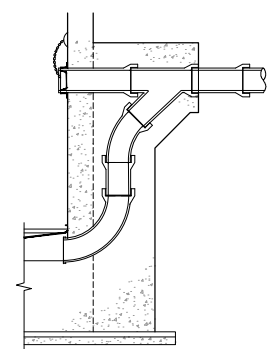
4 - STRAIGHT CASCADE



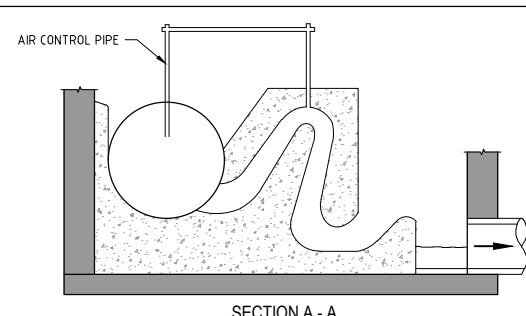
SECTION C - C



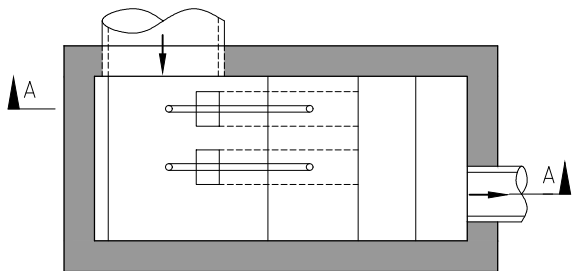
5 - BAFFLED PIPELINE



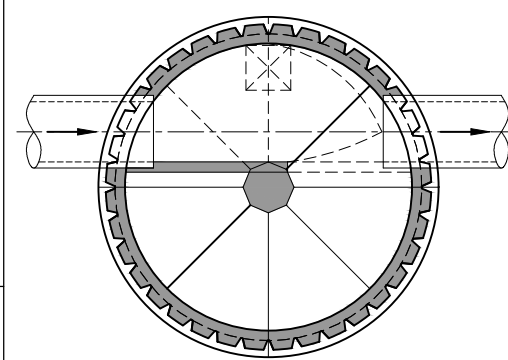
1 - SINGLE TUMBLING BAY DROP PIPE



SECTION A - A

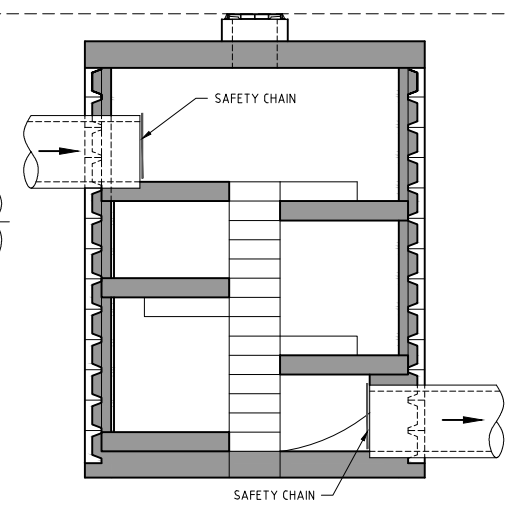


A

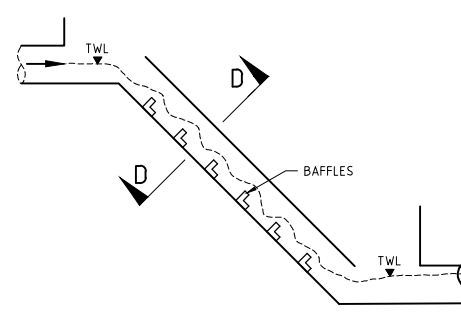


PLAN

3 - CIRCULAR CASCADE

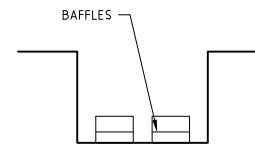


ELEVATION

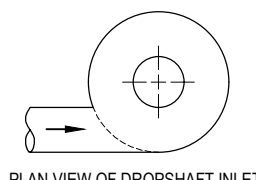


ELEVATION

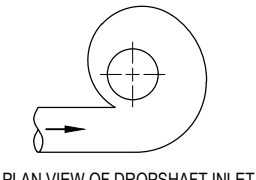
7 AND 9 - PLAIN OR BAFFLED CHUTE



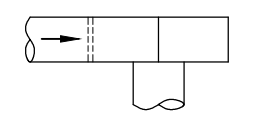
SECTION D - D



PLAN VIEW OF DROPSHAFT INLET

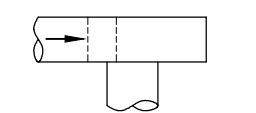


PLAN VIEW OF DROPSHAFT INLET



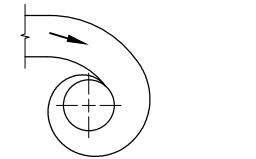
ELEVATION OF DROPSHAFT INLET

(a) CIRCULAR

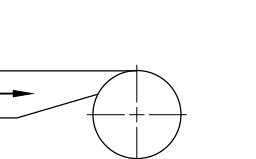


ELEVATION OF DROPSHAFT INLET

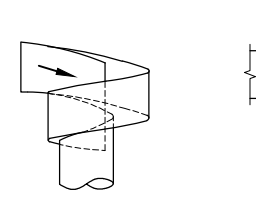
(b) SCROLL



PLAN VIEW OF DROPSHAFT INLET

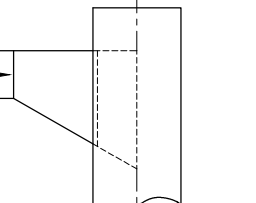


PLAN VIEW OF DROPSHAFT INLET



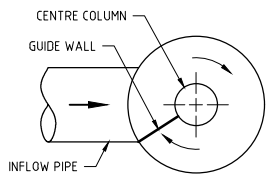
ELEVATION OF DROPSHAFT INLET

(c) SPIRAL



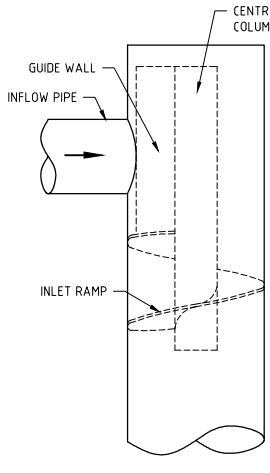
ELEVATION OF DROPSHAFT INLET

(d) TANGENTIAL



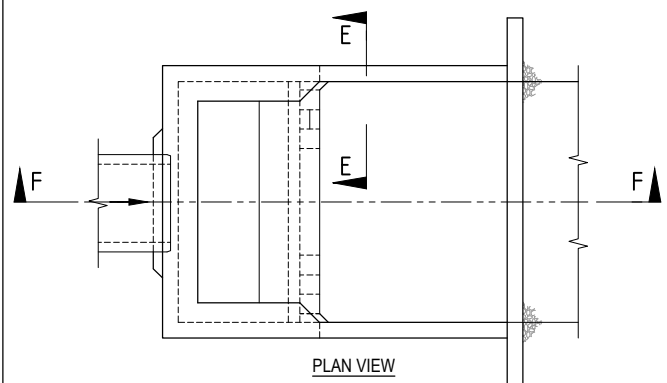
PLAN VIEW OF DROPSHAFT INLET

HELICAL DROPSHAFT



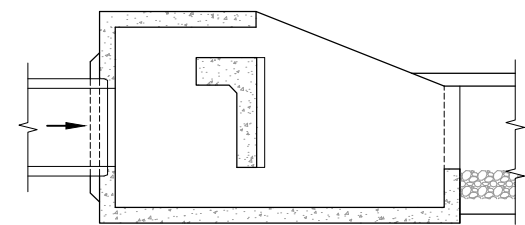
ELEVATION OF DROPSHAFT INLET

HELICAL DROPSHAFT



PLAN VIEW

SECTION E - E



SECTION F - F

8 AND 10 - STILLING BASIN AND STILLING POOL
(US BUREAU OF RECLAMATION TYPE VI IMPACT BASIN)

- NOTES:
- (1) DROP PIPES WITH STILLING POOL AND/OR STAGED DROPS MAY BE NECESSARY IN DEEP APPLICATIONS.
 - (2) STILLING POOLS ARE ESSENTIAL FOR SIPHONIC DROPS DUE TO THEIR VERY HIGH DISCHARGE VELOCITIES.
 - (3) THERE IS NO THEORETICAL LIMIT ON DEPTH OF DROP FOR CIRCULAR CASCADES BUT PRACTICAL CONSIDERATIONS OF SAFE ACCESS PROBABLY LIMIT THE DEPTH OF DROP TO ABOUT 10m, I.E. REPRESENTING 2 TO 3 FULL TURNS OF THE CASCADE.
 - (4) THERE IS NO THEORETICAL LIMIT ON DEPTH OF DROP FOR STRAIGHT CASCADES BUT STRUCTURE SIZE AND CONSTRUCTION ECONOMICS PROBABLY LIMITS DEPTHS OF DROP TO ABOUT 7.5m UNLESS THE TOPOGRAPHY IS FAVOURABLE. STRAIGHT CASCADES CONSTRUCTED IN STEEPLY INCLINED TUNNEL CAN ALSO PROVIDE ECONOMIC SOLUTIONS IN DEEP SITUATIONS.
 - (5) THE LIMITING DISCHARGE FOR THE BAFFLED PIPELINE RELATES TO THE LARGEST KNOWN WORKING EXAMPLE OF THIS APPLICATION BUT EXTRAPOLATION BEYOND THE LIMITS SHOWN MAY BE POSSIBLE.
 - (6) RADIAL INLET (FREEFALL), VORTEX AND HELICAL DROPSHAFTS ARE LIKELY TO REQUIRE STILLING BASINS/DEAERATION STRUCTURES AT THEIR BASES OR IN THE DOWNSTREAM CONDUIT, DEPENDING ON WHETHER FREE SURFACE FLOW CONDITIONS EXIST FOR SATISFACTORY AIR RELEASE.
 - (7) PLAIN AND BAFFLED CHUTES FOR DEEP DROPS MAY BE CONSTRUCTED IN STEEPLY INCLINED TUNNEL.
 - (8) STILLING BASINS AND STILLING POOLS FOR DEEP DROPS MAY BE CONSTRUCTED IN TUNNEL.
 - (9)&(10) LIMITING Q AND H VALUES SHOWN RELATE TO OPEN CUT CONSTRUCTION WHERE CONSTRUCTION ECONOMICS PROBABLY LIMIT THE MAXIMUM DEPTH OF DROP TO ABOUT 12.5m.
 - (11) HYDRAULIC MODELLING OF STRUCTURES IS REQUIRED UNLESS OTHERWISE AGREED BY THE ENGINEER.
 - (12) REFER TO DRAWING SD 8-4-302 FOR NOTES APPLICABLE TO BACKDROP MANHOLES.

DETAILS SHOWN ARE INDICATIVE ONLY.
FULL HYDRAULIC AND STRUCTURAL DESIGNS
ARE TO BE SUBMITTED FOR APPROVAL.

2	APR 19	ISSUED FOR USE	
1	01 MAR 19	UPDATED ISSUE	
0	04APR16	ISSUED FOR USE	

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PROJECTS AFFAIRS
QCS Section:
Section 8 - Drainage Works
Part 4 - Pipeline Installation

Drawing Title: SELECTION CHART FOR ENERGY DISSIPATERS	
Approved:	Sheet No: 1 OF 1
Date: APRIL 2019	Scale: N.T.S.
Drawing Number: SD 8-4-320	Revision: 2