ENVIRO CONTROL ASSOCIATES (I) PVT. LTD.

PROJECT : BANGALORE WATER SUPPLY AND SEWERAGE SEWAGE TREATMENT PLANTS AT HEBBAL

CLIENT : BANGALORE WATER SUPPLY AND SEWERAGE BOARD

CONSULTANT: NJS ENGINEERS INDIA PVT. LTD.

DOCUMENT TITLE: Datasheet & G.A. Detail of Manual Screen for TSPS

ECAIPL DOC No.: ECAIPL/BWSSB/STP/HEB/M/01 | **Rev No.**: 0

NJSEI / BWSSB DRAWING / DOCUMENT REVIEW STATUS

Date of Receipt……

A. Approved, manufacture/construction may commence.

B. Acceptable subject to changes indicated. Resubmit for approval but manufacture/ construction may commence.

C. Amend as comments indicated and resubmit for approval.

D. comments noted in latter/memo attached to forwarding transmittal Nr.....dated…….....
Amend as comments indicated and resubmit for approval.

E. Amend as comments indicated and resubmit for record.

F. Comments noted in latter/memo attached to forwarding transmittal Nr.....dated…….....
Amend as comments indicated and resubmit for Approval.

G. Drawing of this category is for information and hence not required to be approved.

H. Return without review.

Approval of drawing/documents dose not absolve Contractor/vendor from any responsibilities for their accuracy or for the design, performance and safety of the plant/work or any other obligations under the contract and Indian Statutory Laws nor dose it limit the employer's rights under the Contract.

For NJSEI Verified by …… Date _____

For BWSSB Checked by …… Date _____

Reviewed by …… Date _____

Approved by Chief Engineer (WWM) …….. Date _____

0	**08-02-18**	**FOR APPROVAL**	**H.A.P.**	**T.H.M.**	**A.N.V.**
Rev No	**Date**	**Description**	**Prepared**	**Checked**	**Approved**

DOCUMENT INDEX

SR. NO.	DESCRIPTION	ECAIPL Doc. No.	Vendor Doc. No.	Rev. No.	Sheet
1	Technical Data Sheet			0	1
2	Hydraulic Calculation for loss through Screen			0	1
3	GA Drawing of Screen		GA-B-MK2-2267004-00	0	1
4	QAP for Screen			0	1

TECHNICAL DATASHEET

ANNEXURE ' A'

JASH	**TECHNICAL DATA SHEET** **Manual Screen**	R-19
Cusomer	M/s Enviro Control Associates (I) Pvt. Ltd.	
Project	100 MLD STP at Hebbal	**Date**
Offer/PO Ref	JEL/MK-CZ-101/KV/2017-18 Rev-1	09/Feb/18

Specified / Considered Data

Avg flow of the plant		62.50 MLD
Peak Factor		2
Peak flow per screen		125.00 MLD
No of Working screen		1
Avg flow per screen		62.50 MLD
Peak flow per screen		125.00 MLD
Channel width		1500 mm
Channel depth		2550 mm
Max. Water depth		1500 mm
Avg Bar spacing		20 mm
Bar Thickness		10 mm
Inclination		75 °
Material of Construction		AISI 316L

Screen Dimensions

Proposed Screen Model		**MS-2680-1480-20-M3-S1**
Effective Width of Screen		1480 mm
Inclined length of the screen (Approx)		2680 mm
No of Bars		50

Hydraulic Results

Head loss through the screen clogging at	50%	248 mm

HYDRAULIC CALCULATION FOR LOSS THROUGH SCREEN

HYDRAULIC CALCULATION

Cusomer	**M/s Enviro Control Associates (I) Pvt. Ltd.**		**Date**	
Project	**100 MLD STP at Hebbal**		**30 Dec /17**	

SPECIFIED / CONSIDERED VALUES

Avg flow per screen		Qa=	**62.5**	MLD
			0.723	m3/sec
Peak flow per screen		Qp=	**125**	MLD
			1.447	m3/sec
Max.Water depth		WD=	**1500**	mm
Bar Spacing		BS=	**20**	mm
Bar Thickness		BT=	**10**	mm
Screen Inclination		θ=	**75**	°
Channel width		CW=	**1500**	mm
Clogging Factor		CF=	**50%**	
Headloss through clogged screen desired			**300**	mm

HYDRAULIC CALCULATION

Inside/ Screen field width of screen provided		IW=	**1480**	mm
Velocity in the channel at Avg flow		Va=Qa/(CWxWD)	**0.32**	m/Sec
Velocity in the channel at Peak flow		Vp=Qp/(CWxWD)	**0.64**	m/Sec
Velocity through the screen at Peak flow		Vc1=Qp/(WDxIWxBS)/(BS+BT)	**0.98**	m/Sec

Head loss calculation as per Bernoulli Eqn.

Head loss through the clean screen		hL1={1/Cx2gx(Vc1^2-Vp^2)}	**39**	mm
Where C=Coefficient of Discharge=0.7				
g=Acceleration due to gravity=9.81				
Velocity through the clogged screen at Peak flow at Clogging	**50%**	Vc2=Vc1/(1-CF)	**1.955**	m/Sec
Head loss through the clogged screen		hL2={1/Cx2gx(Vc2^2-Vp^2)}	**248**	mm
Where C=Coefficient of Discharge=0.7				
g=Acceleration due to gravity=9.81				

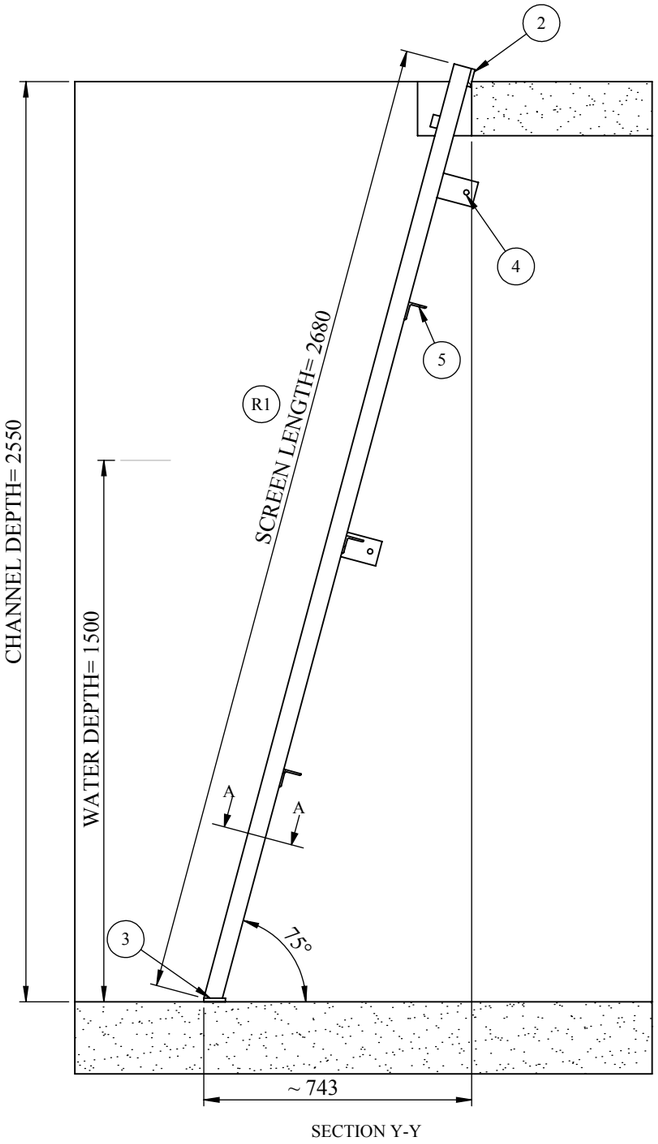
Head loss with in specified limits

G.A. DRAWING OF SCREEN

F:DES:11:04:01

DUE TO PROCESS OF CONTINUOUS UPGRADATION DESIGN IS SUBJECTED TO CHANGE WITHOUT NOTICE.

SOS NO. : MK2-2267



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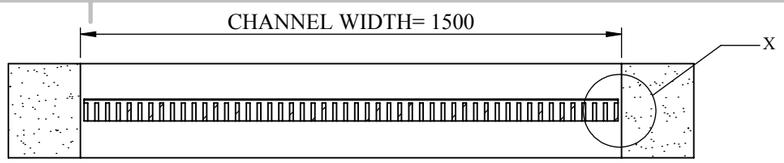
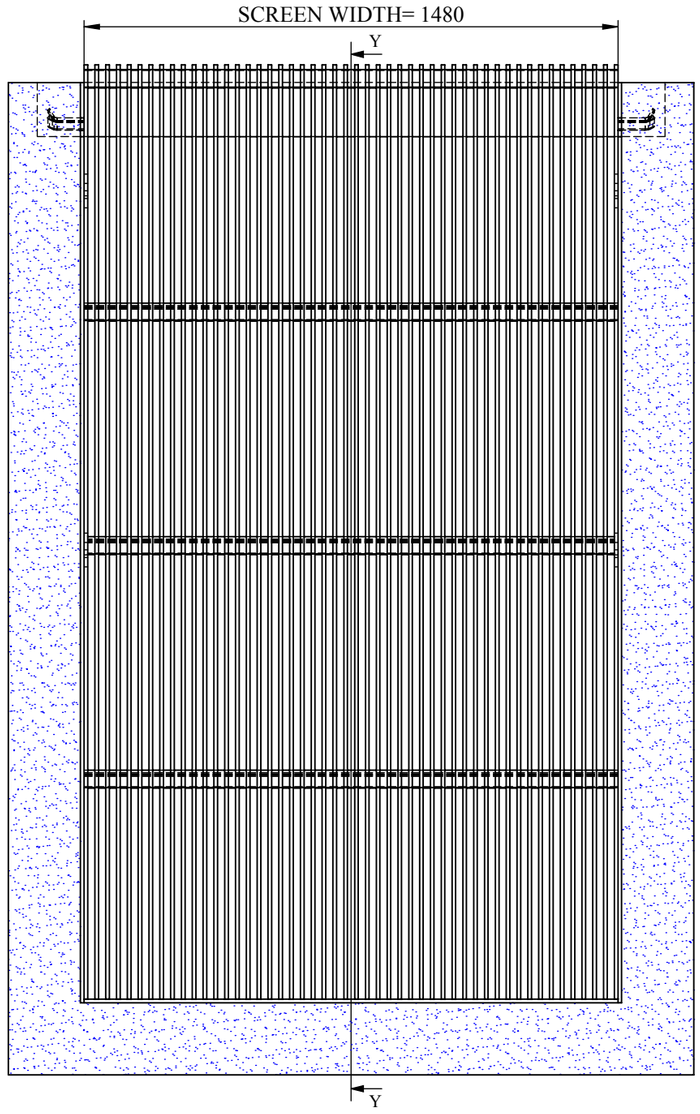
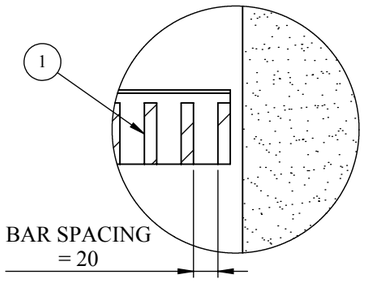


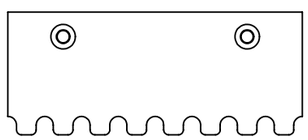
SECTION A-A

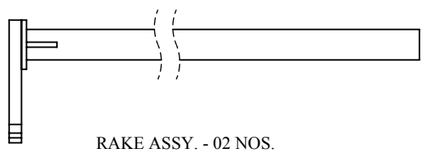




DETAIL X

S. No.	DESCRIPTION	MATERIAL
01	SCREEN BAR (50x10)	SS-316L
02	TOP SUPPORT	SS-316L
03	BOTTOM PLATE	SS-316L
04	ANCHOR LUGS-*(SEE NOTE NO.-2)	SS-316L
05	BACK SUPPORT	SS-316L
06	RAKE (COMB)	SS-316L WITH UHMWPE





RAKE ASSY. - 02 NOS.

CHANNEL WIDTH	1500 MM
CHANNEL DEPTH	2550 MM
WATER DEPTH	1500 MM
BAR SPACING	20 MM
INCLINATION	~75 DEG.

R1

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETE UNLESS OTHERWISE SPECIFIED.
2. ANCHOR BOLT FOR ANCHOR LUGS SHALL NOT BE IN JASH SCOPE OF SUPPLY.
3. FOR SAFE HANDLING AND DISPOSAL REFER O & M MANUAL.

REV. NO.	DESCRIPTION OF REVISION	DATE	REV. BY	APP. BY
R1	REVISED AS PER CIVIL	08.02.18	A.K.	D.S.P.
R0	SUBMITTED FOR APPROVAL.	01.01.18	H.G.	D.S.P.

CLIENT : BANGALORE WATER SUPPLY AND SEWERAGE BOARD
CONTRACTOR : M/s ENVIRO CONTROL ASSO. (I) PVT. LTD.
PROJECT : 100 MLD STP AT HEBBAL FOR BWSSB
LOCATION : COARSE SCREEN CHANNEL
QTY. : 01 NO.

JASH ENGINEERING LIMITED
INDORE (INDIA)

GENERAL ARRANGEMENT DRAWING OF FIXED TYPE MANUAL SCREEN
R1 MS-2680-1480-20-M3-S1

PROJECTION

SCALE-NTS DATE 01.01.2018
APPD D.S.P. CHKD M.J. DRWN H.G.
DRG. SUBMITTED IN PDF FORMAT
DRG. NO. GA-B-MK2-2267004-00 REV. R1

QAP FOR SCREEN

QUALITY ASSURANCE PLAN FOR JASH "MANUAL SCREEN "

MANUFACTURER	**: JASH ENGINEERING LIMITED UNIT-II** Survey no. 74 Gram Bardari Nr Sanwer Road,Tehsil Sanwer Indore (M.P.) INDIA	**CLIENT**	BANGALORE WATER SUPPLY AND SEWERAGE BOARD
		CONTRACTOR	M/s ENVIRO CONTROL ASSO. (I) PVT. LTD.
		PROJECT	100 MLD STP AT HEBBAL FOR BWSSB
		G.A. DRG. NO.	GA-B-MK2-2267004-00-R1
		QAP NO. & DTD.	JEL/QAP/MS/'MK2- 2267 -R1 DTD. 09/02/2018

Sr. No.	Component & Operation	Characteristics	Reference Document	Quantum of **Check**	Acceptance norm	Format record	SCOPE	
							JASH	**CLIENT / TPI**
	(1) MATERIAL TESTS:							
a)	Bottom Plate	Chemical Composition	Approved G.A. Drawing	One per Lot	Approved G.A. Drawing	Test Certificate	Review / Perform	Review
b)	Screen Bars	Chemical Composition				Test Certificate	Review / Perform	Review
	(2) SHOP TESTS :							
a)	Dimensional Check	Dimensional	Approved G.A. Drawing	100%	Approved G.A. Drawing	JASH Inspection Report	Perform	Witness

NOTE : -

1) We do not undertake additional testing other than above stated tests.
2) TPI – Third party Inspection Agency.
3) PMI test shall be carried out for SS parts

JASH ENGINEERING LTD. INDORE		Clients Comments if Any:
Prepared By : JASH Engineering Ltd.	**Approved By :**	