

# STORMVAULT BIOFILTRATION (SVBF)

## CONFIGURATION: TREE WELL (-TW)

### MODEL: SVBF-TW 8'4" X 16'4"

#### HYDRAULICS

WATER QUALITY DESIGN STORM (WQDS)	≤ 0.606-CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.X-CFS
RETURN FREQUENCY / PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX-YRS

#### TREATMENT

BIO SOILS FILTRATION MEDIA	JENSEN'S SIERRA BLEND *
MODEL SVBF-TW 8'4" X 16'4"	0.606-CFS
MAXIMUM TREATMENT FLOW RATE (M TFR)	272-GPM
BIO SOIL MEDIA UNITIZED TREATMENT FLUX RATE	193-(IN/HR)/FT <sup>2</sup>
HYDRAULIC SURFACE LOADING RATE (HSLR)	2-GPM/FT <sup>2</sup>

\*THIS STORMVAULT BIOFILTRATION UNIT PROVIDES A MAXIMUM TREATMENT FLOW RATE (MTFR) EQUAL TO OR GREATER THAN THE PEAK FLOW FROM THE WATER QUALITY DESIGN STORM (WQDS) LISTED IN THE HYDRAULICS TABLE ABOVE.

- THIS PROPRIETARY MANUFACTURED TREATMENT DEVICE (MTD), IS A CERTIFIED GREEN INFRASTRUCTURE (GI), BEST MANAGEMENT PRACTICE (BMP), BY THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION (NJDEP).
- THIS GI CERTIFIED MTD ACHIEVES 80% TSS REMOVAL EFFICIENCY ON A PARTICLE SIZE DISTRIBUTION (PSD), HAVING A  $d_{50} \leq 48$ -MICRONS ( $\mu\text{m}$ ). THIS PERFORMANCE HAS BEEN VERIFIED BY THE NEW JERSEY CORPORATION FOR ADVANCED TECHNOLOGY (NJCAT).
- SIZING OF THIS SVBF IS BASED ON THE VERIFIED HYDRAULIC SURFACE LOADING RATE (HSLR), OF 2-GPM/FT<sup>2</sup> OF THE ENGINEERED "SIERRA BLEND" BIO SOIL MEDIA (BSM).
- CAPTURED WATER QUALITY CONSTITUENTS:  
 TOTAL SUSPENDED SOLIDS (TSS)  
 PHOSPHORUS  
 TOTAL AND DISSOLVED COPPER  
 TOTAL AND DISSOLVED ZINC  
 OIL & GREASE  
 FECAL COLIFORM

#### DESIGN PARAMETERS

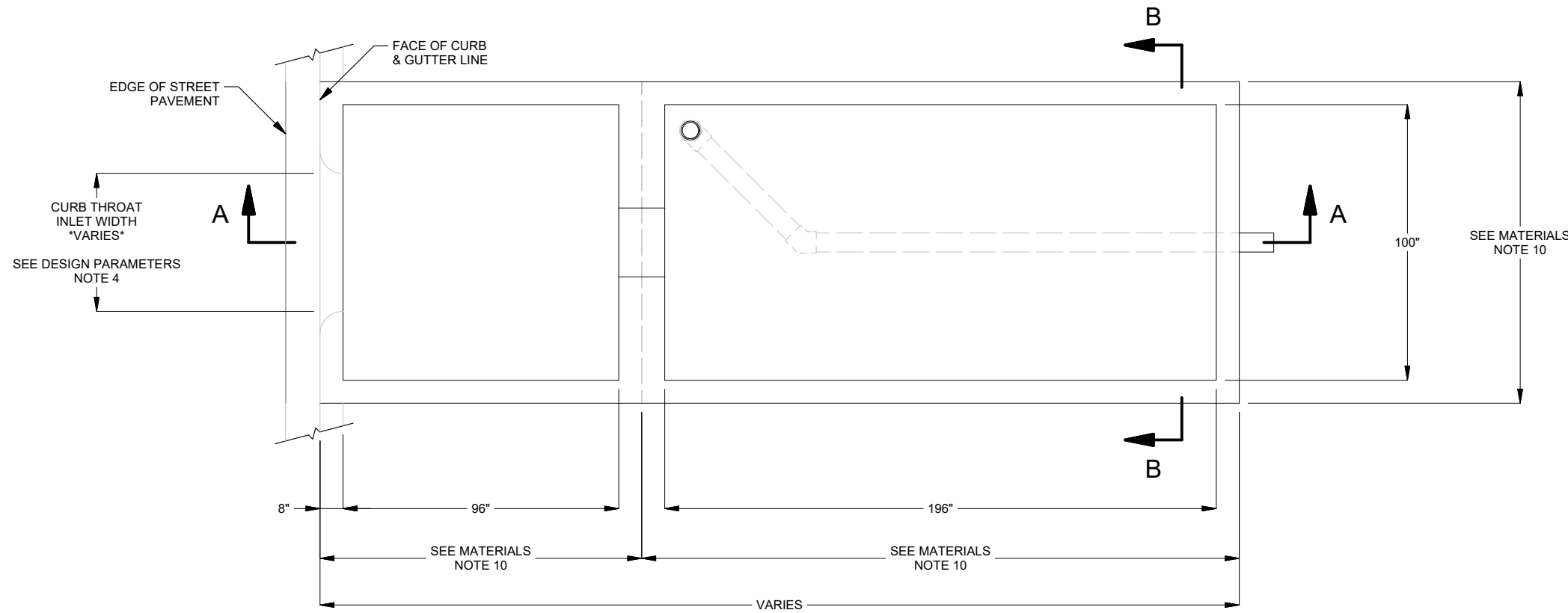
- VEGETATION, FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
- SVBF CAN READILY BE RECONFIGURED AS AN OPEN TOP SWALE SYSTEM TO RECEIVE SURFACE FLOW FROM ALL SIDES.
- SVBF MAY BE DEPLOYED WITH UNFINISHED TOP OF WALLS TO BE POURED IN FIELD ALLOWING FOR CONSTRUCTION OF CONTINUOUS STREETScape AND LANDSCAPE FEATURES.
- INLETS THROUGH CURB CAN BE LOCATED ON ANY SIDE OF THE BOX AND THEIR DIMENSIONS VARY PER DESIGN.
- GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN WATER RESOURCES FOR HIGH GROUNDWATER CONDITIONS.
- STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN WATER RESOURCES FOR CUSTOM DESIGNS.
- FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN WATER RESOURCES.

#### CONSTRUCTION & INSTALLATION NOTES

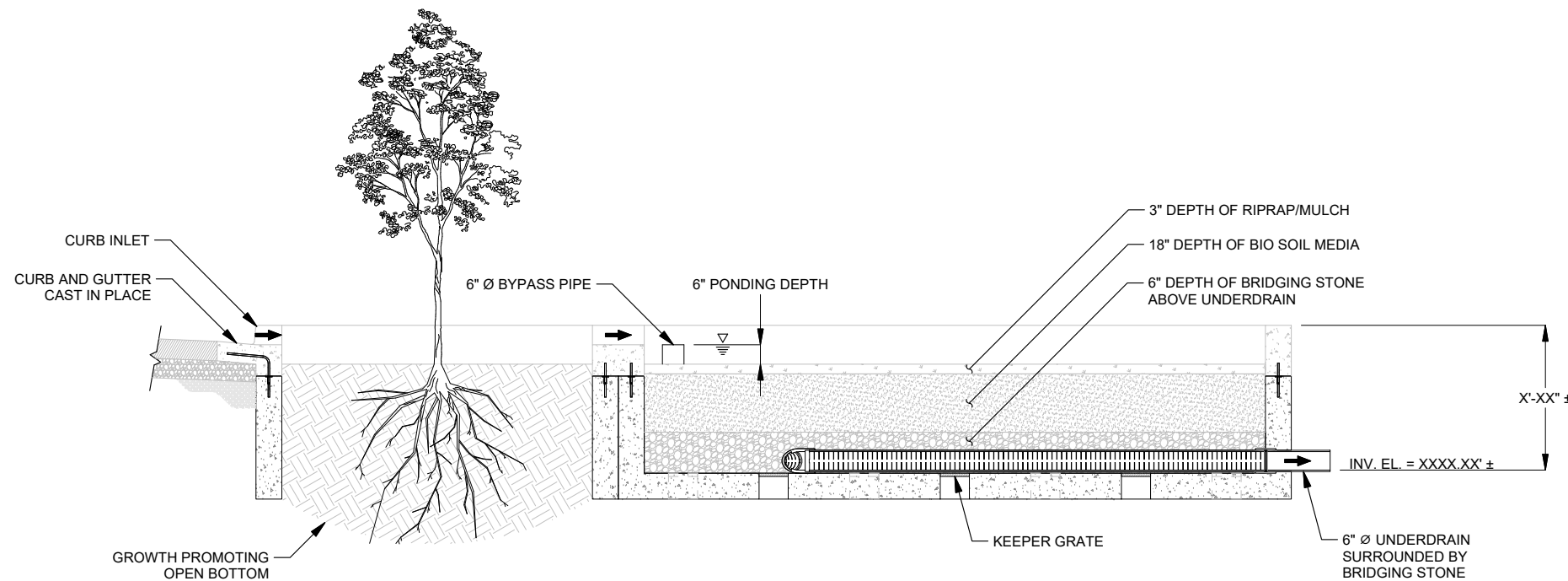
- CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
- THE CONNECTION BETWEEN THE INTERNAL DRAIN PIPING OF THE SVBF SHALL BE WATERTIGHT.
- CONTRACTOR MAY GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
- CONTRACTOR TO PROVIDE FIELD POUR OF CURB TO THE ELEVATIONS SHOWN ON THE SITE DRAWINGS AS NECESSARY.

#### MATERIALS

- ALL DIMENSIONS ARE IN DECIMAL INCHES.
- CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH  $F'c = 4,000$ -psi AT 28-DAYS.
- THE PORTLAND CEMENT USED IN THE PRECAST SECTION SHALL MEET THE REQUIREMENTS OF TYPE II/V HIGH SULFATE RESISTANT CEMENT IN ACCORDANCE WITH ASTM CLASS M C-150.
- VAULT SECTIONS DESIGNED AND MANUFACTURED IN ACCORDANCE WITH ASTM C857 & C858
- ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN A NPCA CERTIFIED PLANT.
- IF REQUIRED, JENSEN WILL FURNISH VAULT WITH FLUID-APPLIED WATERPROOFING COATING AROUND ENTIRE INSIDE SURFACE OF SVBF.
- BRIDGING STONE SHALL BE 3/8" WASHED PEA GRAVEL OR 1/2" CLEAN ROUND ROCK.
- ALL PVC PIPE SHALL CONFORM TO ASTM D 3034 (SDR-35) PIPE.
- JENSEN WATER RESOURCES TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.
- ALL CONCRETE COMPONENT THICKNESSES, DIMENSIONS, AND JOINT ORIENTATIONS MAY VARY ACROSS JENSEN PRECAST'S MANUFACTURING FACILITIES.
- TREE GRATES TYPICALLY AVAILABLE IN 36" X 36" & 48" X 48" ; OTHER GRATE SIZES AVAILABLE UPON REQUEST.



PLAN VIEW



SECTION A-A

DISCLAIMERS, INCLUDING BUT NOT LIMITED TO:  
 1.) All elevations have been provided by others, and have not been verified by Jensen Precast. Contractor to verify all dimensions and elevations in field prior to installation.  
 2.) These layout drawings are intended to show overall system design only. All concrete component thicknesses, dimensions, and joint orientations may vary across Jensen Precast's manufacturing facilities. Contractor to confirm all thicknesses, dimensions, and joint orientations prior to installation.  
 3.) System design criteria has been provided to Jensen Precast. Others are responsible for verification that system meets intended application.  
 4.) Foundation, subgrade, and backfill to be designed by others.

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521 DUNN CIRCLE, SPARKS, NV 89431  
 www.jensenwaterresources.com  
 (855) 468-5600

MODEL:  
 STORMVAULT BIOFILTRATION  
 TREE WELL  
 MODEL: SVBF-TW 8'4"X16'4"

PROJECT:	PROJECT NAME CITY, STATE		REV:
PART NUMBER:	SVBF-TW 8'4"X16'4"	DRAWN BY:	T. Schmaling
CREATED:	6/4/2021	MODIFIED:	6/4/2021
			SHEET: 1 of 2

# STORMVAULT BIOFILTRATION (SVBF)

**CONFIGURATION: TREE WELL (-TW)**

**MODEL: SVBF-TW 8X16**

## HYDRAULICS

STORM WATER QUALITY DESIGN FLOW (SQDF)	≤ XX.X-CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.X-CFS
RETURN REQUENCY / PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX-YRS

## TREATMENT

BIO SOILS FILTRATION MEDIA	PUBLIC DOMAIN BIO SOIL MEDIA*	JENSEN'S SIERRA BLEND **
BIO SOIL MEDIA UNITIZED TREATMENT FLUX RATE HYDRAULIC SURFACE LOADING RATE (HSLR)	10-IN/HR	193-IN/HR
	0.1-GPM/FT <sup>2</sup>	2-GPM/FT <sup>2</sup>
MODEL SVBF-TW 8X16 PEAK TREATMENT FLOW RATE	0.029-CFS	0.570-CFS
	12.8-GPM	256-GPM

\*JENSEN BIORETENTION & INFILTRATION TREE/PLANTER **STORMVAULT BIOFILTRATION** SIZED TO TREAT THE ENTIRE SQDF AT A RATE OF 10-INCHES/HR WHEN USING SPECIFIED PUBLIC DOMAIN BIO SOIL MEDIA.

\*\*JENSEN BIORETENTION & INFILTRATION TREE/PLANTER **STORMVAULT BIOFILTRATION** SIZED TO TREAT THE ENTIRE SQDF AT A RATE OF 193-INCHES/HR WHEN USING JENSEN'S ENGINEERED **SIERRA BLEND** BIO SOIL MEDIA.

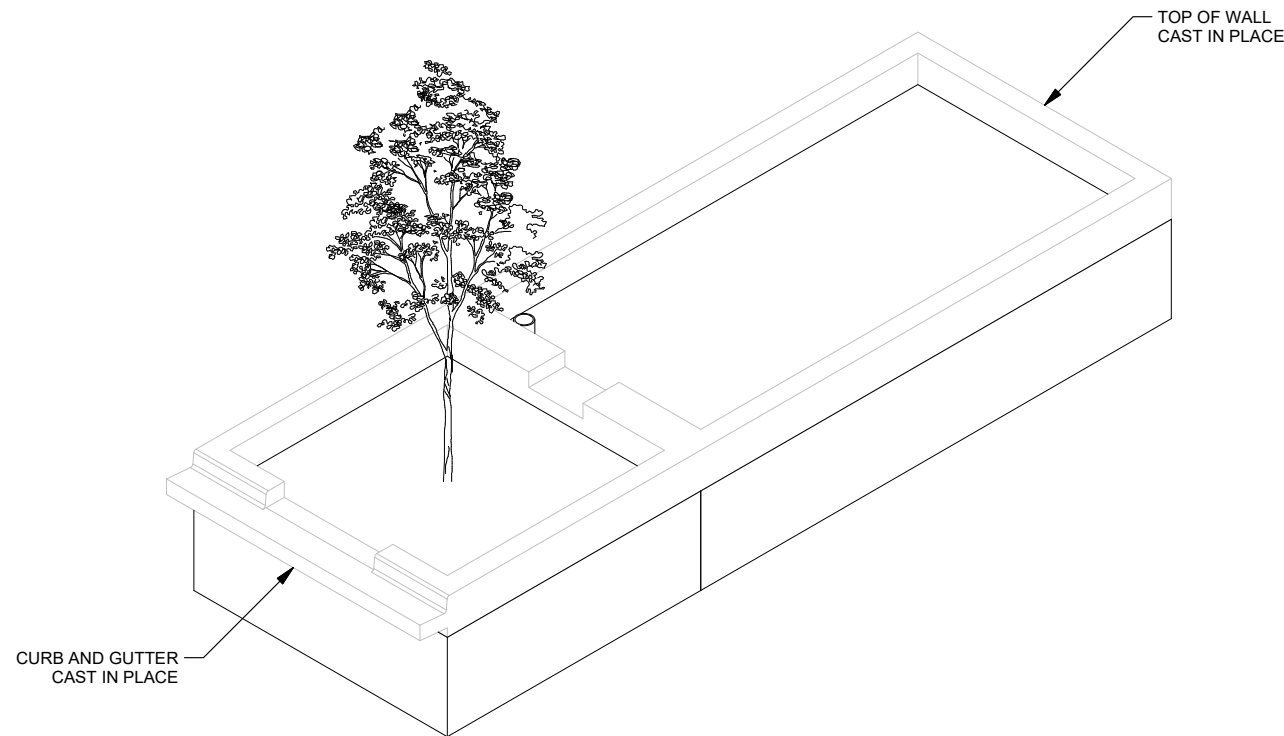
- JENSEN'S STORMVAULT BIOFILTRATION (SVBF) DESIGNED AND SIZED TO TREAT THE ENTIRE SQDF.
- CAPTURED WATER QUALITY CONSTITUENTS:
  - TOTAL SUSPENDED SOLIDS (TSS)
  - PHOSPHORUS
  - TOTAL AND DISSOLVED COPPER
  - TOTAL AND DISSOLVED ZINC
  - OIL & GREASE
  - FECAL COLIFORM

## CONSTRUCTION & INSTALLATION NOTES

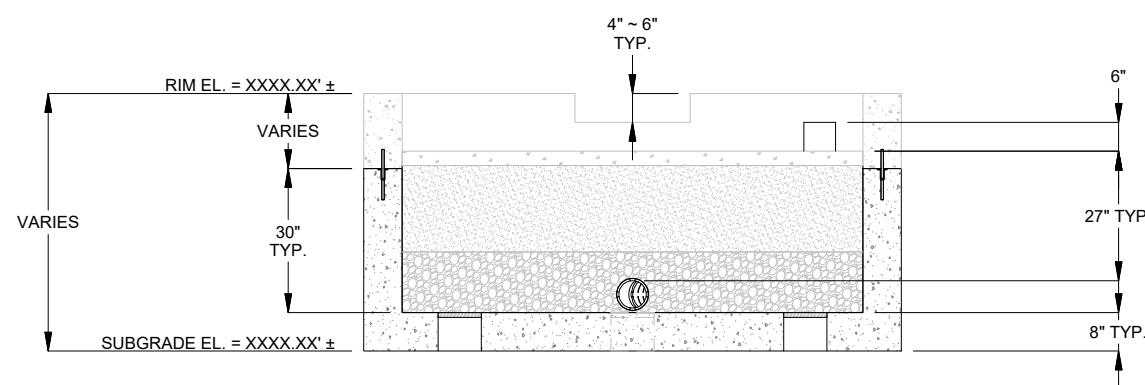
- CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
- THE CONNECTION BETWEEN THE INTERNAL DRAIN PIPING OF THE SVBF SHALL BE MADE USING CONNECTORS CONFORMING TO ASTM C923, AS MADE BY KOR-N-SEAL, A-LOK, OR APPROVED EQUAL AND SHALL BE WATERTIGHT.
- CONTRACTOR MAY ALSO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
- CONTRACTOR TO PROVIDE FIELD POUR OF CURB TO THE ELEVATIONS SHOWN ON THE SITE DRAWINGS AS NECESSARY.
- THE CONNECTION BETWEEN THE STORM DRAIN LINE AND THE SVBF SHALL BE MADE USING A RESILIENT CONNECTOR CONFORMING TO ASTM C923, AS MADE BY KOR-N-SEAL, A-LOK, OR APPROVED EQUAL AND SHALL BE WATERTIGHT.
- VEGETATION, FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
- SVBF CAN READILY BE RECONFIGURED AS AN OPEN TOP SWALE SYSTEM TO RECEIVE SURFACE FLOW FROM ALL SIDES, ELIMINATING TOP SLAB AND TREE GRATE.
- SVBF MAY BE DEPLOYED WITH UNFINISHED TOP OF WALLS TO BE POURED IN FIELD ALLOWING FOR CONSTRUCTION OF CONTINUOUS STREETScape AND LANDSCAPE FEATURES.
- INLETS THROUGH CURB CAN BE LOCATED ON ANY SIDE OF THE BOX AND THEIR DIMENSIONS VARY PER DESIGN.

## MATERIALS & DESIGN PARAMETERS

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- CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
- THE PORTLAND CEMENT USED IN THE PRECAST SECTION SHALL MEET THE REQUIREMENTS OF TYPE II/V HIGH SULFATE RESISTANT CEMENT IN ACCORDANCE WITH ASTM CLASS M C-150.
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**ISOMETRIC VIEW**



**SECTION B-B**

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**JENSEN** WATER RESOURCES  
 521 DUNN CIRCLE, SPARKS, NV 89431  
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**STORMVAULT BIOFILTRATION  
 TREE WELL  
 MODEL: SVBF-TW 8'4"X16'4"**

PROJECT:	<b>PROJECT NAME CITY, STATE</b>		REV:
PART NUMBER:	<b>SVBF-TW 8'4"X16'4"</b>	DRAWN BY:	<b>T. Schmaling</b>
CREATED:	<b>6/4/2021</b>	MODIFIED:	<b>6/4/2021</b>
			<b>SHEET: 2 OF 2</b>