November 1, 2017

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Storm Water Program
Municipal Phase II
Division of Water Quality
State Water Resources Control Board
PO Box 1977
Sacramento, CA 95812-1977

Subject: Certification Application for Full Capture Trash Control Device

Reference: Listing on State Water Boards Certified Full Capture Systems List

Full Capture Device: ***Jensen Deflective Separators***

Good Day Mr. Consentini:

The Stormwater Division of Jensen Precast is pleased to submit this application for the ***Jensen deflective separator*** (***JDS***) to be included on the State Water Boards Certified Full Capture System List. This application submittal Cover Letter and the attached Application Package have been prepared in accordance with the *Trash Treatment Control Device Application Requirements*, downloaded from the Trash Implementation Program page of the California State Water Resources Control Board (SWRCB).

A. GENERAL DESCRIPTION OF TECHNOLOGY

The ***Jensen deflective separator*** ***(JDS)*** is a qualified Full Capture Trash Control Device for stormwater treatment. The ***JDS*** technology is a non-blocking, screening, swirl concentrating treatment process for both small and large stormwater flows. All treatment flow in a ***JDS*** unit must pass through its screen. ***JDS*** screen cylinders have aperture widths of 2.4-millimeter (mm), and 4.7-mm, which are both less than the target 5-mm particle for Full Capture. The ***JDS*** unit's treatment flow path does not physically allow the passage of a 5-mm or greater particle. The specific gravity of the particle does not determine its passage if it is ≥ 5-mm. The ***JDS***, stormwater treatment unit (SWTU), falls in the category of Hydrodynamic Separators (HDS) and is often referred to as a vortexing unit.

Jensen deploys these ***JDS*** units in 3 to 16-foot (ft) diameter precast manholes, screening flows from 0.7 cubic feet per second (cfs) to 80-cfs configured to receive flow from:

- grated drop inlets or
- placed in the storm drain's (SD) pipeline alignment in an "Inline" deployment with integral bypass, or
- placed adjacent to the SD pipeline alignment in an "Offline" configuration with a separate manhole or vault structure having a diversion weir to channel water quality treatment flows into the ***JDS*** unit. This separate diversion structure enables high conveyance flows, which are greater than the ***JDS***'s rated Full Capture Treatment capacity to bypass the ***JDS*** treatment unit.

The design of each ***JDS*** SWTU embodies the essential design parameters and aspects of the continuous deflective separation process. The continuous deflective separation process pioneered non-blocking, indirect screening processes for stormwater treatment. The continuous deflective separation (CDS) process is now a public domain treatment process and is no longer a patented or proprietary treatment process. The patent for the continuous deflective separation treatment process expired in June of 2015.

Stormwater treatment units using the continuous deflective separation treatment process have already been included on the certified list as a Full Capture Devices by the SWRCB. Region 4, the California Los Angeles Regional Water Quality Control Board (LARWQCB), considers the continuous deflective separation process to be a Full Capture Device capable of satisfying their Total Maximum Daily Load (TMDL) for trash. LARWQCB refers to the continuous deflective separation process, that is embodied in the ***JDS*** unit, as a Vortex Separation System. The San Francisco Bay – RWQCB (SFRWQCB), also lists a treatment unit employing the continuous deflective separation process as a Full Capture system.

B. CONTACT INFORMATION & LOCATION

Name: Stormwater Division
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Contact Persons:

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C. MANUFACTURING LOCATIONS

Jensen Precast is among the largest independently owned precast concrete companies in the United States. Jensen designs and manufactures standard and custom precast concrete products to meet large-scale infrastructure demands for highway construction, retaining walls, electric and gas utility, telecommunications, water, on-site wastewater, and sewage applications.

Jensen has been providing detention, retention and infiltration systems since 1968. The development of stormwater management and treatment systems deployed in precast structures has been an integral part of the Jensen business in California for more than 25-years. Floatation; sedimentation; coalescing; horizontal and vertical clarification; hydrodynamic separation; and physical and chemical filtration are all treatment processes Jensen offers to provide pollution removal from stormwater.

Jensen Precast started business in 1968, originally precasting underground utilities in Sparks, NV. Today Jensen has eleven precasting facilities in the South Western States of Arizona, Nevada and California, as well as the Hawaii islands.

Jensen Precast's Corporate Offices are in Northern Nevada at:

825 Steneri Way
Sparks, NV 89431
(775) 352-2700

In California, Jensen Precast operates seven (7x) primary manufacturing facilities at the following locations:

Northern California:

Sacramento, CA
5400 Raley Blvd
Sacramento, CA 95838
Phone: (916) 991-8800

Orland, CA
7210 Highway 32
Orland, CA 95963
Phone: (530) 865-4277

Lockeford, CA
12404 Locke Road
Lockeford, CA 95237
Phone: (209) 727-5573

Martinez, CA
3430 Pacheco Boulevard
Martinez, CA 94553
Phone: (925) 387-1135

Central California:

Fresno, CA
4915A E. Annadale Ave
Fresno, CA 93725
Phone: (925) 387-1135

Southern California:

Fontana, CA
14221 San Bernardino Ave
Fontana, CA 92335
Phone: (909) 350-4111

Lakeside, CA
12440 Vigilante Road
Lakeside, CA 92040
Phone: (909) 350-4111

The standard, as well as custom, reinforced precast concrete components of the ***JDS*** units are manufactured at all of these California locations as well as at the Arizona, Nevada and Hawaii facilities.

The internal metal components of the ***JDS*** units are manufactured or assembled at Jensen MetalTech located at:

Jensen MetalTech
450 E Glendale Ave
Sparks, NV 89431

Manufacturing of fiberglass components in accordance with design specifications are provided by a specialty fiberglass shop in Sacramento, CA. A specialty HDPE manufacturer in Canada provides high density polyethylene (HDPE) components.

D. LABORATORY TEST SUMMARYING

Jensen has completed full scale Full Capture Testing of the ***JDS*** unit. Test results document greater than 98% capture and retention efficiencies for solid particles greater than or equal to (≥) 5-mm. This full scale testing also included scour testing of the ***JDS*** unit at flow rates much greater

than its Full Capture design treatment flow rate to determine if the unit scours or "Burps" previously captured solids during high flow bypass hydraulic conditions. This 98% Removal Efficiency (RE%) for the capture and retention of solids was calculated using the Effluent Method and Mass Balance Method. These methods are presented in detail in the report.

Jensen believes that these Full Capture tests are the most current for stormwater gross solids removal efficiency verification procedures. Jensen offers these test procedures and protocols as the basis for the minimum requirement for Full Capture verification testing that should become an explicit requirement for devices to be certified and listed as Full Capture devices. A full-scale testing requirement is a natural evolution for the SWRCB's management of compliant Full Capture devices.

These gross solids removal tests of particles ≥ 5-mm were performed at the Jensen Stormwater Test Facility (Laboratory Testing), which is located in Sparks, NV.

Independent Third Party:

These Full Capture Performance Laboratory Tests were performed under the direct supervision of Professor Keith Dennett. Professor Dennett served as an independent third-party observer of all tests on the ***JDS*** unit. Professor Keith Dennett, Ph.D., P.E is an Associate Professor in the Department of Civil and Environmental Engineering, University of Nevada, Reno.

Jensen Precast recommends the incorporation of an Independent Third-Party Observer in Full Capture tests as a future requirement for Certification Listing of Full Capture Devices.

"Burping" Determination of Previously Captured Solids and Floatables

Jensen believes that testing should be adopted to include the quantitative determination if a Full Capture Device releases previously capture solids. This "Burping" of previously captured solids is not an allowable performance feature of a Full Capture Device. A Full Capture Device that allows "Burping" of previously captured solids during high flow bypass conditions is not a long term Full Capture Device that enables true compliance with the Trash Amendment. Full Capture devices that allow "Burping" of previously captured solids, especially floatables, should be removed from the State Water Boards Certified Full Capture System List until design modifications eliminate "Burping" and are verified through full scale testing.

E. DEVICE LIMITATION, OPERATIONS, SIZING and MAINTENANCE

Device Limitations

Site Constrains That Impact Hydraulic Function: Limitations of the JDS unit when applied as a Full Capture device are typically the result of difficult installation conditions that impact the functioning hydraulic operations of the continuous deflective separation process.

For example, shallow installation sites may not allow sufficient freeboard in the unit's floatable control cylinder and may require design modifications to physically pin the floatable control cylinder to the soffit of the unit. This eliminates the potential of "Burping" floatables during high conveyance flows that create bypass conditions. The unit may also require a second access lid.

High bypass flows can be accommodated in most Offline ***JDS*** units, because they have a project specific designed diversion vault or manhole with either concrete or adjustable stainless steel diversion weirs. High bypass flows may require strengthening of internal components of Inline ***JDS*** units by reinforcing the fiberglass (FRP) and HDPE inlet and baffle components. Switching from FRP and HDPE materials to marine grade Aluminum or stainless steel is also an option.

When the JDS units are subject to high bypass flows, especially Inline ***JDS*** units, the forces along with both the hydraulic and energy gradelines (EGL & HGL) must be quantitatively evaluated for structural resistance capacities as well as flooding potential.

Tailwater conditions require unit design modifications that typically involve raising the diversion weir and modifying the geometry of the inlet to the screening, swirl concentrating separation chamber to ensure the entire treatment flow enters the screening separation chamber. A more detailed hydraulic analysis of this condition is necessary to ensure that the required balanced hydraulic condition of the continuous deflective separation process is achieved and produces a non-blocking screening process.

Steeply sloped inlet pipes will create a hydraulic jump immediately upstream of the diversion weir in both Inline and Offline units. This hydraulic condition also requires increasing the height of the diversion weir.

These difficult installation conditions, if not considered in the design phase of the project, may result in hydraulic conditions that cause the treatment flow capacity of the ***JDS*** unit to vary from the design treatment flow rate. In short, upstream and downstream hydraulic conditions can impact the treatment capacity of the unit, but can be addressed by a simple hydraulic analysis during the design phase.

Larger *JDS* treatment capacity units may experience functional problems when subjected to frequent small inlet flows that are a small percentage of the *JDS* unit's larger peak rated treatment flow capacity. These larger units never generate the necessary rotational velocities to create an assured non-blocking screen during these "nuisance" flows. These larger installations require consideration of these frequent "nuisance" flow conditions. Jensen has design modifications that have proved successful in mitigating the negative impact of frequent small percentage inflows into large treatment capacity *JDS* units.

Operations

As mentioned above, the operation of the *JDS* unit employs the continuous deflective separation process. When successfully deployed, the continuous deflective separation process produces a balanced hydraulic condition that creates a non-blocking screening process in addition to the swirl concentration, vortexing separation treatment processes. The design of all *JDS* units strictly adheres to the governing design tenets of the continuous deflective separation process.

Jensen's primary *JDS* design engineers: Stein, PE and Kohzad, PhD, have over 20-years' experience in the design and deployment of the continuous deflective separation treatment process from its genesis in Australia, followed by its introduction to the United States and Europe. They have developed the catalog of precast *JDS* units, which are able to operate through a wide range of flow conditions, while still functionally creating the continuous deflective separation treatment process. Between the two of them, they have designed thousands of units successfully deploying the continuous deflective separation process.

Sizing

The sizing of each individual *JDS* unit is a matter of ensuring that the rated treatment flow capacity of the *JDS* unit effectively produces the continuous deflective separation process throughout that specific unit's rated Full Capture treatment capacity. Hydraulic similitude applies to the continuous deflective separation process and *JDS* units are entirely scalable.

Site development engineers complete their calculation of the Full Capture treatment flow rate using the Rational Method to determine the peak runoff flow rate from a 1-hour duration storm event having a 1-year return frequency. This treatment flow rate determination is per regulations stipulated by both the Regional Water Quality Control Boards (RWQCBs) of San Francisco and Los Angeles, which are Regions 2 & 4, and the SWRCB's Trash Amendment sizing requirements for Full Capture Devices.

Following this calculation of the Full Capture treatment flow rate, the site engineer selects the *JDS* unit with a commensurate treatment flow rate. Jensen provides a table of 27 standard precast Inline *JDS* units and a table of 30 standard Offline units from which the site engineer can select the *JDS*

unit having the adequate Full Capture treatment flow rate capacity. Jensen can also readily provide custom, project specific ***JDS*** designs.

Maintenance

The frequency for cleaning a ***JDS*** unit depends upon the accumulation of trash, debris, oil and sediment, which will vary based on the land use in the watershed draining to the unit.

The attached application includes a more detailed discussion on the proper method and means of maintaining ***JDS*** units. Additionally, Jensen design and deployment enhancements for vector control are outlined in the maintenance section of the attached application.

The application packet also includes a complete Operations and Maintenance Manual from an actual project installation as an exhibit.

F. INSTALLATION LOCATIONS

Public and private agencies are specifying the ***Jensen Deflective Separator*** SWTUs as a preferred "off-patent" continuous deflective separation treatment process. Public agencies are readily accepting the ***Jensen Deflective Separator*** HDS units as an equivalent on existing projects.

The following cities have installed ***Jensen Deflective Separator*** units as an embodiment of the continuous deflective separation treatment process in the short time since the expiration of the patent:

- Long Beach, CA
- Santa Monica, CA
- Aliso Viejo, CA
- Irvine, CA
- Huntington Beach, CA
- San Francisco, CA
- Truckee, CA
- Las Vegas, Reno, Sparks and Elko, NV
- City of Los Angeles, CA
- West Hollywood, CA
- Signal Hill, CA
- Agoura Hills, CA
- Scottsdale, AZ
- Oro Valley, AZ
- Sahuarita, AZ
- Nevada Department of Transportation

This ready acceptance of Jensen's offering is a natural transition that happens with all technologies as they eventually come "off-patent". Once "off-patent", public agencies, municipalities and private developers can readily specify the ***Jensen Deflective Separator*** units for the benefit of the greater public interest and achieve project stormwater treatment goals by the most efficient and economical means.

Contact Information - Three (3x) Installations

Municipality #1: City of Santa Monica, CA

Contact: Selim Eren, P.E.
Civil Engineer
Civil Engineering Division - City of Santa Monica
1437 4th Street, Suite 300, Santa Monica, CA 90401
O 310-458-2200 ext 5107
selim.eren@smgov.net

Project: Los Amigos Park Stormwater Harvesting and Direct Use Demonstration

JDS **Model**: 9.0-cfs Full Capture Capacity Inline ***JDS120-6748***

Comments: California Stormwater Quality Association (CASQA), Award winning project. ***JDS120-6748*** unit pre-treated all flows before entrance to Cistern. ***JDS*** system readily accepted as equivalent to only other continuous deflective separation system.

Municipality #2: Town of Truckee, CA

Contact: Todd Landry, P.E.
Senior Engineer
Engineering & Public Works
10183 Truckee Airport Road
Truckee, CA 96161
(530) 582-2904
tlandry@townof truckee.com

Project: West River Street Bike Lane

JDS **Model**: 2.0-cfs Full Capture Capacity Inline ***JDS72-3624***

Comments: ***JDS72-3624*** unit treats all flows before outfall to Truckee River. ***JDS*** system readily accepted as equivalent to only other continuous deflective separation system.

Municipality #3: City of Signal Hill, CA

Contact: Larry Tortuya, PE.
Senior Project Manager
GHD
175 Technology Drive, Suite 200
Irvine, CA 92630
Office: (949) 585-5210
Larry.tortuya@ghd.com

Contact Comment: Larry is the design engineer for the contractor on this design build project. Contact information for final owner at the City of Signal Hill not yet identified.

Project: Los Cerritos Channel Sub-Basin 4 Stormwater Capture Facility

JDS* Model**: 166-cfs Full Capture Capacity Dual Offline ***JDS162-132132s

Comments: This is a dual treatment system consisting of two 83-cfs capacity ***JDS162-132132*** SWTUs treating all flows before entering an infiltration system having a final storage capacity of 25-acre-feet. This installation is scheduled for December 2017 and will be the world's largest continuous deflective separation system. All internal components are manufactured from Stainless Steel. The dual ***JDS*** SWT system was the preferred continuous deflective separation system.

Though this is a City of Signal Hill capital improvement project, it is being constructed on the South West corner of the Long Beach Airport, in cooperation with the airport authority and the City of Long Beach.

G. CERTIFICATION

The Stormwater Division of Jensen Precast is pleased to submit this application packet for the ***Jensen Deflective Separators*** to be added to the State Water Board's Certified Full Capture System List, and formally state the following:

"I certify under penalty of law that this application document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system or those persons directly

responsible for gathering the information, to the best of my knowledge and belief, the information submitted is, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

The Jensen Stormwater Division of Jensen Precast looks forward to the favorable review and approval of this Application for the ***Jensen Deflective Separator*** units to be included on the State Water Boards Certified Full Capture System List.

If there are any questions regarding this Full Capture Certification Application, the full scale testing or require more information in order to approve this application, please call me at (775) 352-6336 or email wstein@jensenprecast.com.

Respectfully Submitted,

Walter Stein, P.E.
Division Manager
Jensen Stormwater BMP/LID Systems

11/1/2017

Attachments:

CERTIFICATION APPLICATION For the ***Jensen deflective separator*** (***JDS***), a FULL CAPTURE TRASH CONTROL DEVICE

CERTIFICATION APPLICATION

For the

Jensen deflective separator (***JDS***)

a

FULL CAPTURE TRASH CONTROL DEVICE

From:

A Division of Jensen Precast Concrete

Full Capture (FC) Systems
Jensen ***D***eflective ***S***eparator (***JDS***)
Hydrodynamic Separator (HDS), Stormwater Treatment

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1. PHYSICAL DESCRIPTION OF TECHNOLOGY

Background of Treatment Unit's Process:

The design of each ***Jensen deflective separator*** (***JDS***) stormwater treatment unit embodies the essential design parameters and aspects of the continuous deflective separation[1] process, which pioneered non-blocking, indirect screening processes for stormwater treatment. The ***Jensen deflective separator*** (***JDS***) stormwater treatment unit clearly falls in the category of a Hydrodynamic Separator (HDS).

The continuous deflective separation process within the ***JDS*** unit was refined in Australia in 1992 to remove gross solids and other pollutants from stormwater runoff, though initially intended as a treatment unit for combined sewer overflows (CSOs). The continuous deflective separation process of separating solids from liquids has also been successfully applied to water supply, wastewater and industrial fluid treatment.

The continuous deflective separation treatment process was introduced in the United States in 1996 to treat both stormwater and CSOs. Since 1996, it has gained nation wide acceptance, primarily in stormwater treatment. The continuous deflective separation is a proven treatment process that has gone through in-depth third party field performance evaluations and laboratory tests. This treatment process has verified performance capacities to capture gross solids typically defined in a general manner as trash and debris, (including floatables, neutrally buoyant, and negatively buoyant debris), under very high flow rate conditions. This treatment process also has quantified capacities to remove and capture total suspended solids (TSS), sediments, oils and greases.

General Overview of a JDS "Inline" Stormwater Treatment Unit

The ***Jensen deflective separator (JDS)*** is a Full Capture Trash Control Device for stormwater treatment. It is a is a non-blocking, screening, swirling, concentrating treatment process for small as well as very large stormwater flows.

[1] No Affiliation to CDS® as provided by Contech Engineered Solutions or its CDS® mark

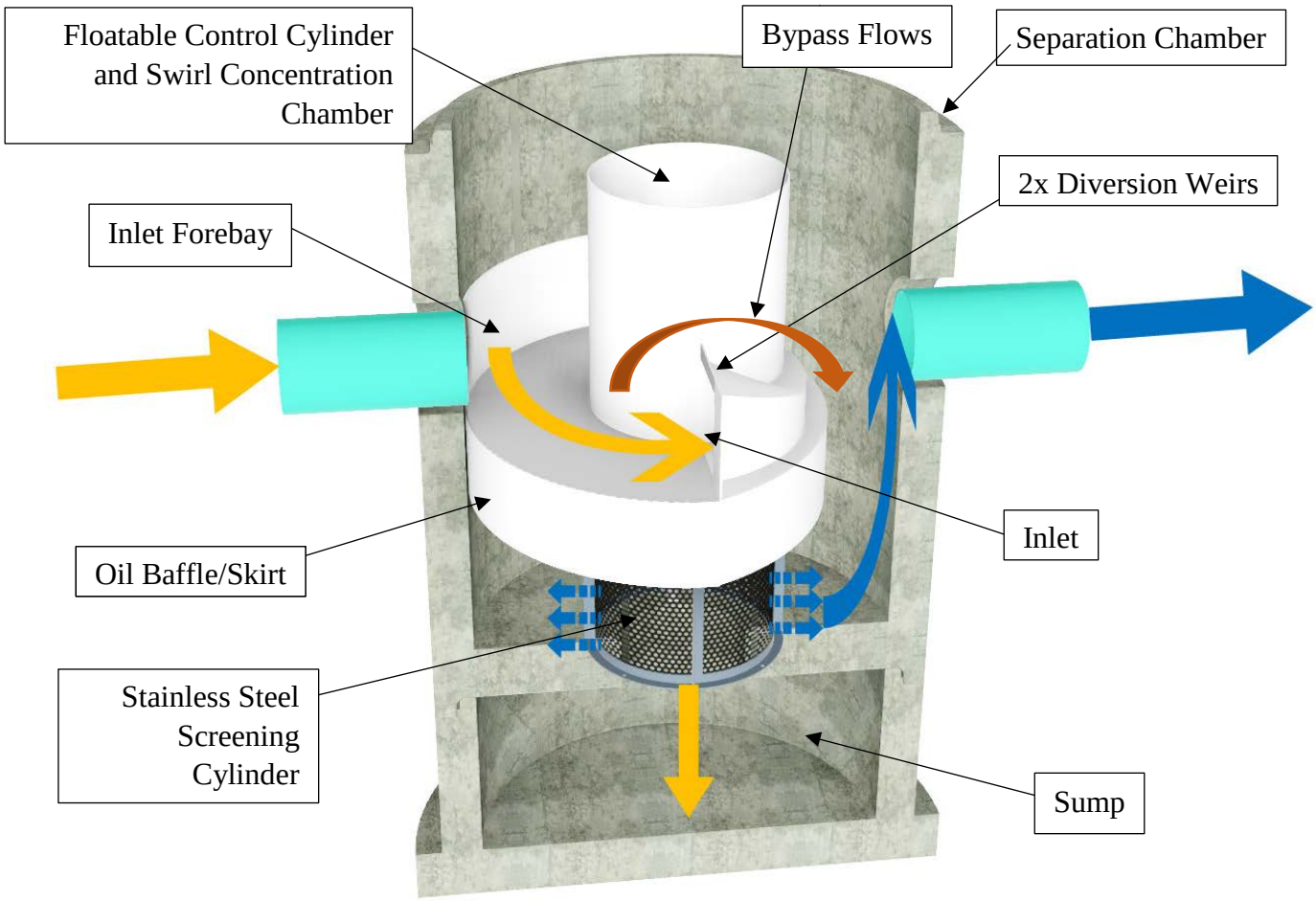


*Figure 1. Flow of Typical "Inline" **JDS** Unit*

JDS units consist of a separation chamber and sump, typically deployed in precast manhole structures. The separation chamber has a specially designed inlet that introduces flow into a floatable control cylinder, which is configured on top of a stainless steel screening cylinder.

Inline ***JDS*** units placed within the alignment of the storm drain or channel have internal inlets and bypasses weirs within the separation chamber. Offline units are placed immediately adjacent to the storm drain or channel alignment. These offline units have a separate diversion structure with a diversion weir to divert water quality treatment flows and bypass larger conveyance flows. ***Jensen deflective separator*** units are designed to treat all flows up to their treatment flow capacity, and bypass larger flows.

The ***Jensen deflective separator*** has no moving parts. It is designed in accordance with the continuous deflective separation treatment process of balanced hydraulics to create the following multiple treatment processes in a very tight footprint: swirl concentration, vortex and toroidal flow paths, screening and sedimentation.

The treatment process of the ***JDS*** is unique in its ability to screen any gross solid trash or debris material that is 5-millimeter (mm) or larger from the stormwater without its screen blocking. This treatment process readily satisfies the requirements of a "**Full Capture**" trash and debris device. The entire treatment flow must pass through its screening cylinder. The unit's design also captures Total Suspended Solids (TSS) and other water quality pollutants of concern such as oil and grease.

Floatables pollutants are always captured within the floatable control cylinder. Floatables have a specific gravity (SG) less than 1.0. Styrofoam is a commonly captured floatable in the ***JDS*** Unit.

Pollutants like tree leaves and paper products often stay afloat within the cylinder formed by both the floatable control cylinder and the screen cylinder for a period of time before settling as they become water logged. Leaves and paper products also attach themselves to denser sediment. Oil, grease, leaves and paper products may settle in the sump if they have a SG > 1.

Aqueous floatables such as such as oils and greases (O&G) are also captured in the unit's floatable control cylinder, which also has an integral baffle skirt extending below the inlet invert. O&G typically adhere to floatables and other solids, which are captured in the ***JDS*** unit.

Both coarse and finer sediments that are swirl concentrated as well as deflected by the screen will settle in the sump as they move toward the stagnant center region, which is the quiescent zone of the swirl chamber within the ***JDS*** unit. The positive, continuous, deflective screening process within the unit captures particles smaller than the screen aperture, which have a wide range of SGs.

Nutrients that are transported as an attachment to sediments and other solids captured in the ***JDS*** unit are among the pollutants removed from stormwater flows.

The Unique Continuous Deflective Treatment Flow Process

The multiple treatment processes occur in a ***JDS*** unit in a balanced hydraulic condition. Stormwater flows are diverted into the separation chamber as a jet. This entrance jet forms across the internal face of a stainless steel screen cylinder located immediately beneath the invert of the jet's entrance. The design relies upon the development of balanced hydraulics of the inlet flow versus the rotational flow across the face of the screen cylinder. The design ratios to produce balanced hydraulics within the ***JDS*** for a large range of treatment flows incorporates the screen functionality design parameter which plays an important role in the unit's sustained operation. This balance of hydraulics enables the swirl concentrating flow path to enact a continuous, deflective screening process that also acts as a non-blocking screening process with no moving parts. Flows across the inside of the stainless steel screen cylinder's surface eliminate screen clogging.

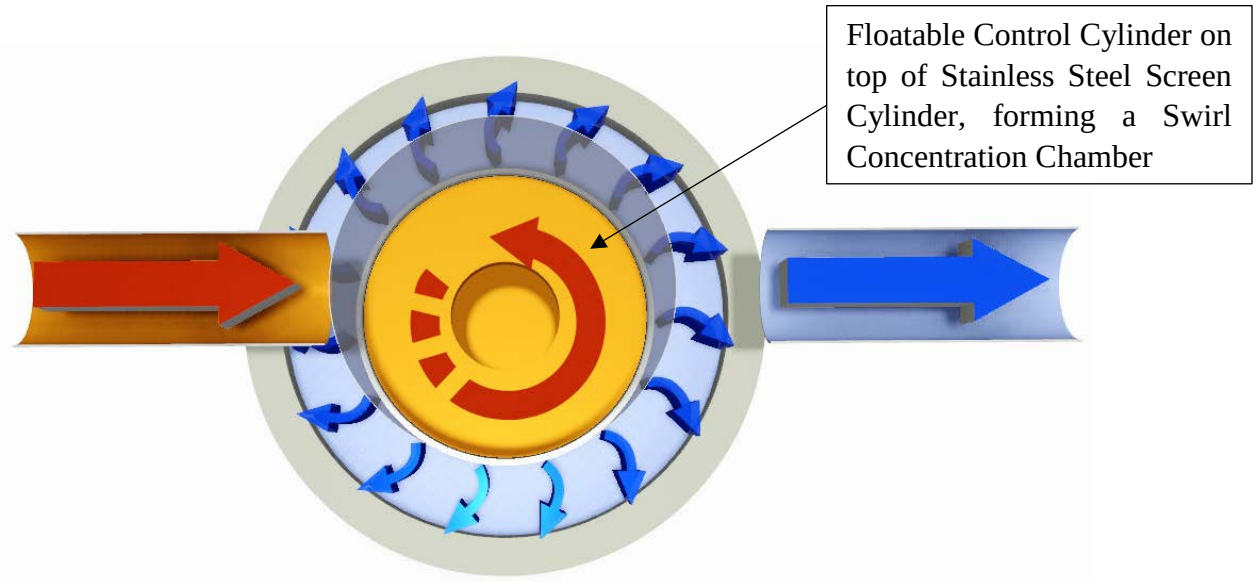


*Figure 2. Schematic Plan View Treatment Flow Pattern Typical Inline **JDS** Unit.*

The stainless steel cylindrical screen of the ***JDS*** units has punched openings oriented to present the "Blind Side" of the screen to the incoming circular flow. This presentation of the "Blind side" of the screen to the rotational flow within the screening cylinder creates a non-blocking positive screening system. The rotational flow across the screen face ensures that debris does not pin itself to the screen face.

This exposed "blind" surface causes the pollutants in the high velocity region near the screen surface to be deflect and move towards the center of the cylinder. At the center of the screen cylinder the flow is mostly stagnant. It is a quiet region and has small velocities in relation to the rotational flow at the screen face.

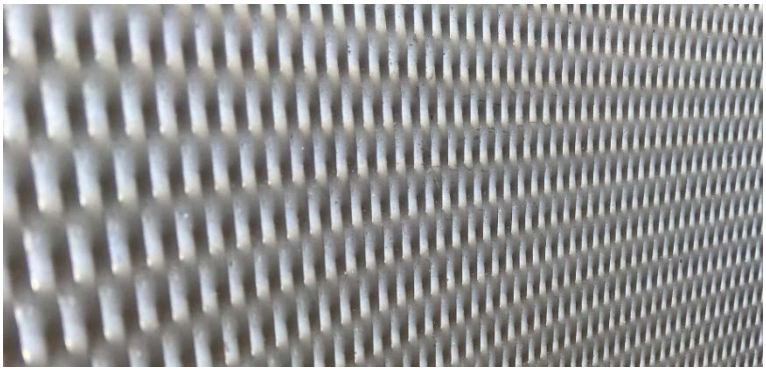


Figure 3. View of the "Blind" Side of 2,400-micron (µm), (2.4-mm) Screen Cylinder.

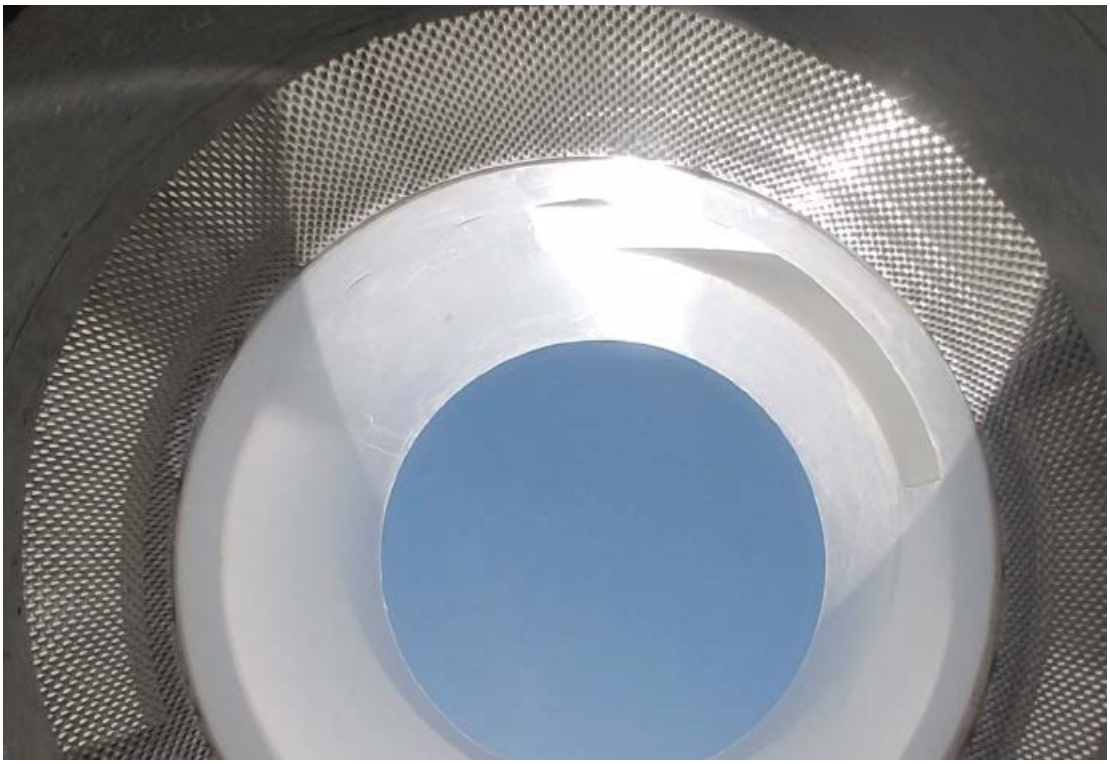


*Figure 4. Bottom Up View of Separation Chamber, Showing an HDPE Inlet Riser on Top of a Stainless Steel Screen Cylinder of an Inline **JDS60-2424** Unit.*

Inline, Drop Inlet and Offline JDS Configurations

Jensen deflective separator units are able to be deployed either in the pipeline alignment for "Inline" configurations, receive water from a grated "Drop Inlet," as well as adjacent to storm drain pipelines in an "Offline" configuration.

For "Inline" and "Drop Inlet" ***JDS*** units, both the Treatment Flow processed through the units screening cylinder and the larger conveyance flow of the storm drain pipeline, which is typically generated form a storm event having a 10-year return frequency or larger, enter the inlet forebay of the unit, which is typically deployed within a precast manhole. The inlet of this unit has an internal bypass weir, channeling the Treatment Flow into the swirl concentrating treatment chamber of the unit. The weir of this inlet also enables the larger conveyance flow of the storm drain pipeline to bypass the swirl concentrating treatment chamber of the unit.

In its offline configuration, the Treatment Flow is diverted into the ***JDS*** from a diversion vault or manhole containing a weir within the pipeline alignment. This diversion vault or manhole is a completely separate structure from the ***JDS*** unit. The Treatment Flow is returned to the pipeline downstream of the diversion structure. Storm drain conveyance flows greater than the "Offline" ***JDS***'s Treatment Flow bypass the ***JDS*** unit and flow over the diversion weir. Flows larger than

the Treatment Flow never enter the ***JDS*** unit. Hydraulic conditions both upstream and downstream should be determined through a simple hydraulic analysis in sizing the diversion weir.

1. **Inline**: This configuration of ***Jensen deflective separator*** is installed within the alignment of the storm drain pipeline of small to mid-size catchment areas. These units have internal bypass weirs to convey large flows around the treatment process. These units may also accommodate multiple inlet pipes as well as flow from grated Drop Inlets.

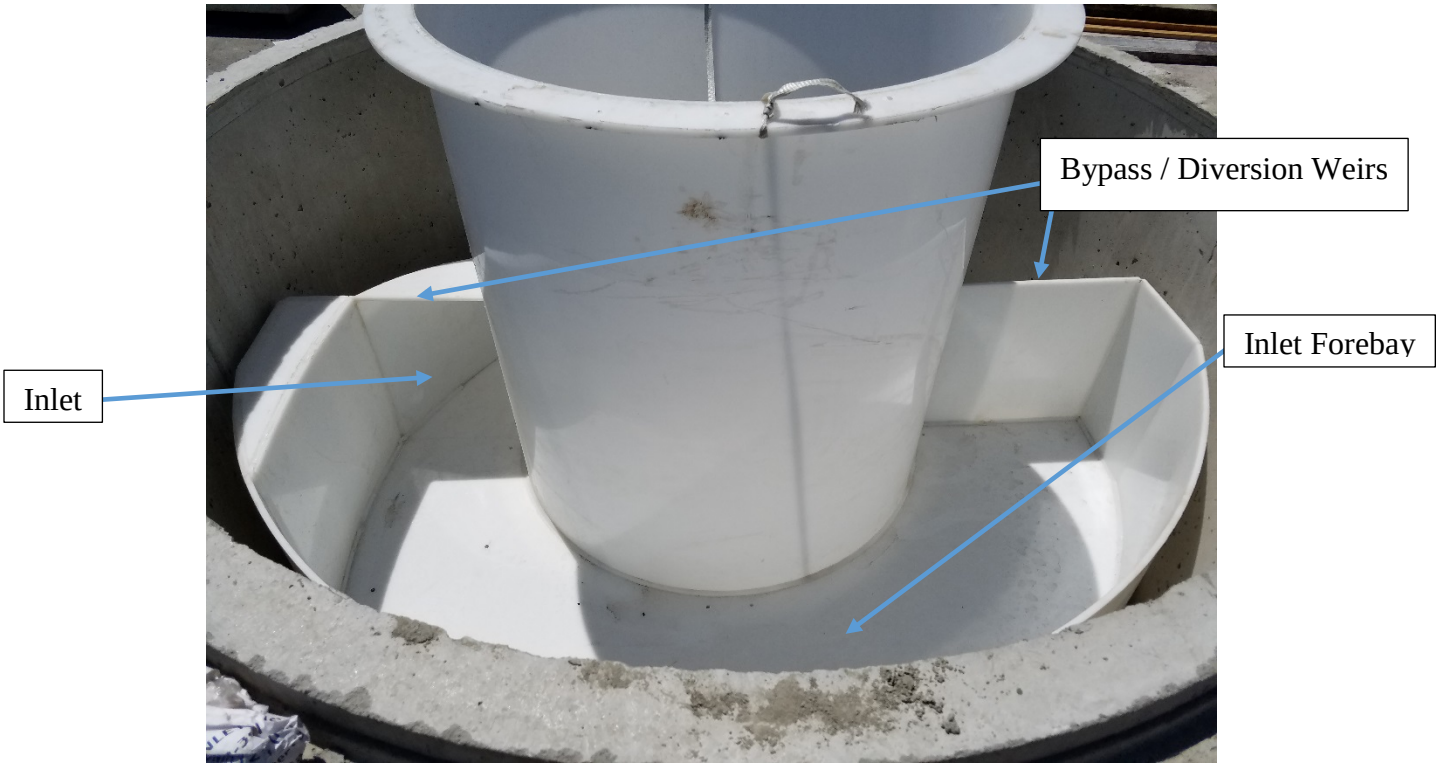


*Figure 5. View of Inlet Forebay of an Inline **JDS** Unit, Typically High Density Polyethylene (HDPE) or Fiberglass*

Figure 6. High Stress, High Flow Resistant Metal Inlets: Non Corrosive Stainless Steel or Marine Grade Aluminum

2. **Drop-Inlet**: These units have a grated inlet to receive inflow directly from the surface and can also simultaneously receive flows from lateral storm drains. Like the "Inline" units, these "Drop-Inlet" units are installed within the alignment of the storm drain pipeline of small to mid-size catchment areas. These units have internal bypass weirs to convey large flows around the treatment process. These function as catch basins or storm drain inlets, but also provide treatment.

Treatment Flow Process Description

1. Stormwater enters the JDS unit from one or more inlet pipes, or a grated drop or curb inlet.
2. Incoming waters collect in the forebay of the inlet trough.
3. Waters enter the separation and screening cylinder through the volute entrance in the diversion weir wall.
4. Water entering the separation cylinder forms a spinning vortex, capturing all floatables and swirl concentrating suspended solids to the center of the separation chamber.
5. The vortex flow pattern produces a washing force across the screen face, preventing it from becoming blocked, while allowing stormwater to pass through the screen and beneath the oil baffle.
6. Oils, greases and other Total Petroleum Hydrocarbons (TPHs) are trapped within the integral oil baffle attached beneath the inlet bay. Screened stormwater moves toward the outlet pipe.

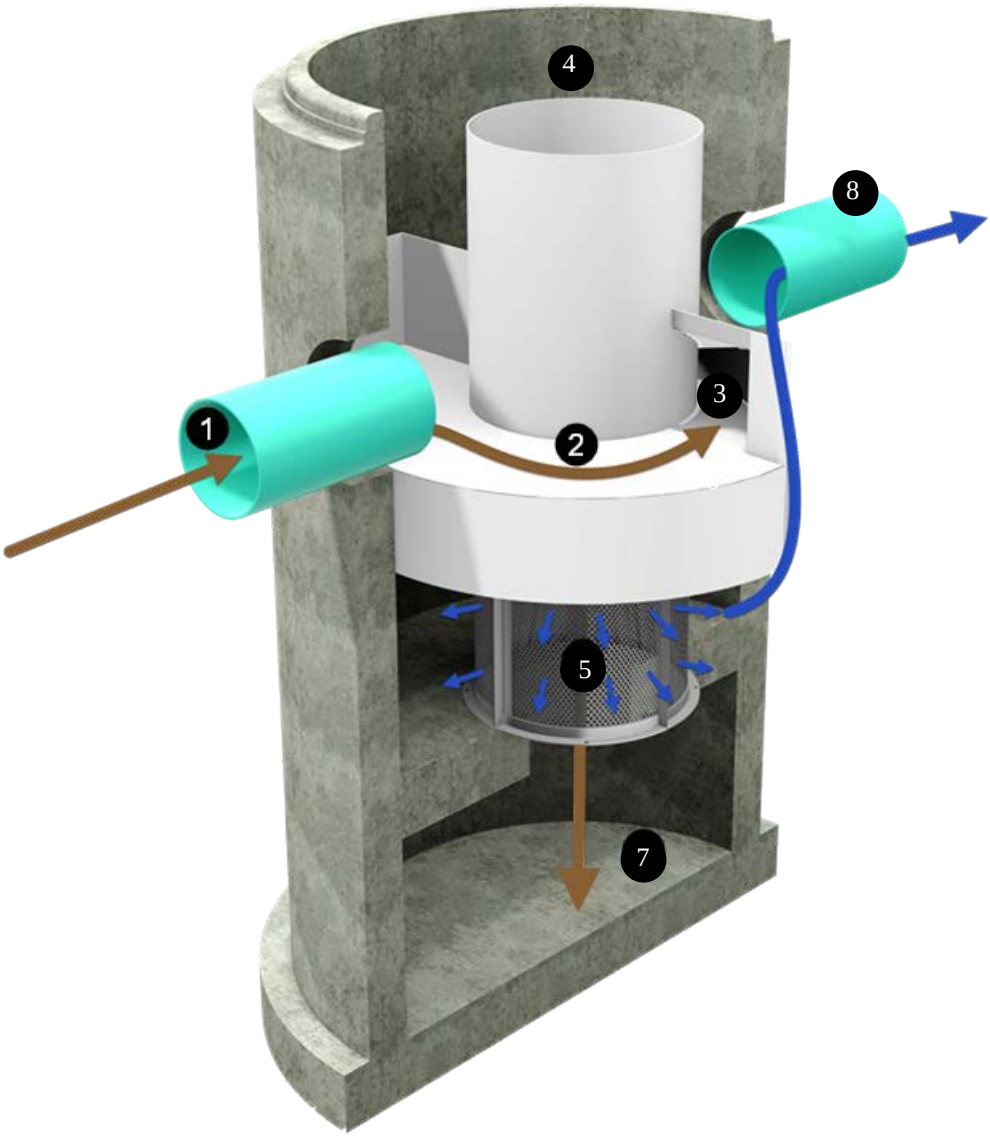


*Figure 7. Inline **JDS** Cut Away Illustration & Treatment Flow Path.*

7. Settled and swirl concentrated suspended solids are captured in the sump, which is typically cleaned out by a vacuum truck.
8. Flows larger than the ***JDS*** unit's design water quality treatment flow bypass over the diversion weir. Bypass flows do not scour out previously captured pollutants.

2. **Offline**: "Offline" units are placed immediately adjacent to the storm drain/channel alignment and always have a separate diversion structure with a diversion weir. The diversion structure design can accommodate multiple inlet pipes if needed.

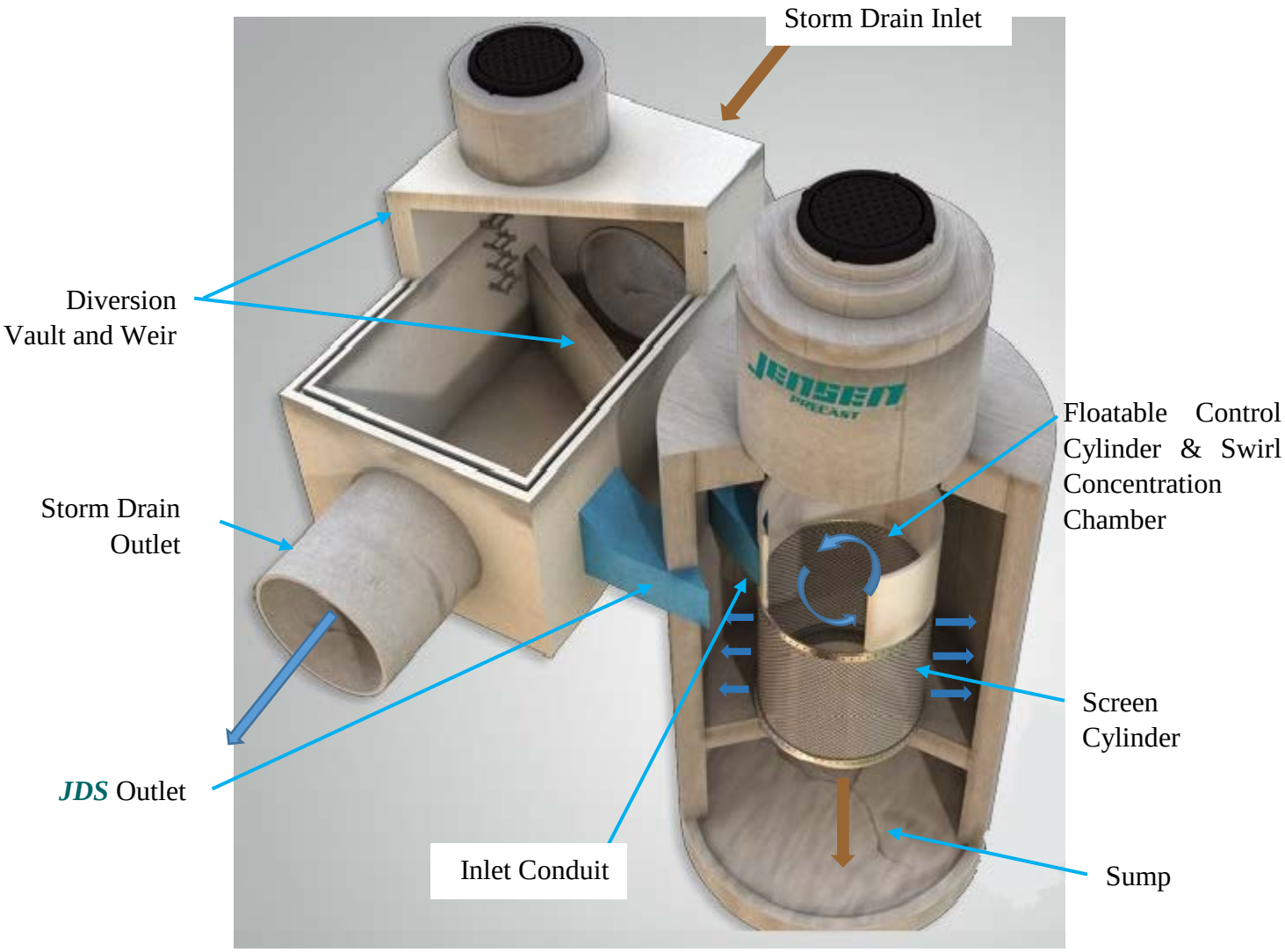


*Figure 8. Cut Away View of an Offline **JDS** unit and Diversion Vault Structure.*

Exhibit A presents tables of the more standard size precast "Inline" and "Offline" ***JDS*** units.

A. Design Drawings for Standard Devices and Alternative Configurations

Precast ***JDS*** units are deployed in manhole structures having internal diameters ranging from 3 to 16-feet (ft). These ***JDS*** unit screen stormwater flows from 0.7 cubic feet per second (cfs) to 80-cfs through their screening treatment flow path and bypass larger flows.

Exhibit A of this Certification Application provides a design sizing table of ***JDS*** units configured to receive stormwater flows in an "Inline" configuration. The units listed in Exhibit A are also compatible with a "Drop Inlet" configuration. Drawings of each of the twenty-eight (28x) typical JDS units listed in the table are also included in Exhibit A.

Exhibit B provides a design sizing table of "Offline" ***JDS*** units to be placed adjacent to the pipeline alignment in an "Offline" configuration. Drawings of each of the thirty-one (31x) typical "Offline" ***JDS*** units listed in the table are also included in Exhibit B.

Exhibit C provides example plan and profile drawings for dual ***JDS*** system installation, with a ***JDS*** unit on both sides of a flow splitting diversion structure. All of the ***JDS*** units listed in Exhibits A and B can be configured in a dual system layout to double treatment flow capacities.

B. Trapping Process for All 5-mm and Greater Particles and Scaling of JDS Units for Varying Flows

5-mm Trapping, Screening Process:

All stormwater flows up to a specific ***JDS*** unit's treatment flow rate must pass through its screening cylinder. All ***JDS*** units are equipped with a stainless steel screen cylinder having standard openings of either 2.4-millimeter (mm) (= 2,400-micron (µm) = 0.094-inches (in)), which is essentially 3/32-in, or a 4.7-mm (= 4,700-µm = 0.185-in), which is two (2) thousands of an inch less than 3/16-in. Again, particulates that are greater than or equal to (≥) 5-mm (= 0.196-in ≈ 25/128-in) cannot pass through the unit.

All solids ≥ 5-mm captured in the sump, screen cylinder or in the floatable control cylinder are retained in the unit. Under bypass conditions, these previously captured solids in the sump, screen cylinder and floatable control cylinder are physically separated from bypass flows and cannot wash out or be "Burped" from the unit. Again, the ***JDS*** unit retains all previously captured solids ≥ 5-mm.

Scaling of JDS Units

The model ***JDS60-2418*** used in the Full Capture Laboratory tests, presented in Section 5 of this Certification Application, is a full-scale ***JDS*** unit having the smallest available treatment capacity of 0.7-cfs. All other larger capacity ***JDS*** models can be sized for the same 98% plus solids removal efficiency by sizing the diversion weir height to ensure treatment flows are driven through their screening cylinder. Hydraulic scale model laws such as Peclet Law are also properly applied to the recreate the balanced hydraulics of the continuous deflective separation process.

Scaling of the balanced hydraulics within the ***JDS*** unit can also be used for distorted ***JDS*** models with different aspect ratios of their screen diameters and heights.

A list including references of both literature and performance studies on the continuous deflective separation process is provided in Exhibit I. These literature and performance studies readily substantiate the scalability for the continuous deflective separation process.

Each ***JDS*** unit is designed to treat all flows less than or equal to (≤) the design flow rate listed in the sizing tables in Exhibits A and B. As the ***JDS*** units become larger, the diversion weir height, screen height, screen diameter and sump capacity all increase. These dimensional variations allow the family of commercially available ***JDS*** units to treat a broad range of flow rates.

C. Maximum Trash Capture Capacity

Typical Sump Storage Capacities as well as ultimate Maximum Trash Capture Capacity volumes are listed for "Inline" ***JDS*** Units in the Table of ***JDS*** Inline units on page one of Exhibit A. These values are also provided for "Offline" units in the Table of ***JDS*** Offline units on the first page of Exhibit B.

Operation and Maintenance (O&M) Information is detailed in Section 3 and a Project Example Operations and Maintenance Manual is included in Exhibit F of this Certification Application. If these recommended O&M guidelines are not performed and the sumps are not cleaned when they are full, trash will rise above the sump up into the screening cylinder of the ***JDS*** unit. When this happens, the amount of trash captured in a ***JDS*** unit can achieve an ultimate Maximum Trash Capture volume greater than the sump storage capacity listed in the tables of "Inline" and "Offline" units on the first pages of Exhibits A and B. This ultimate Trash Capture volume ranges from 28 cubic feet (ft^3), to 1,715- ft^3 for precast manholes having internal diameters ranging from 4 to 16-ft.

In the event that proper operation and maintenance are not performed, ***JDS*** units have a Maximum Trash Capture Capacity volume that is greater than the sump storage volume. Trash, debris and other settable solids will first fill up the sump and then start to fill up in the screening cylinder of the unit. The captured trash and solids will rise to block the inlet into the floatable control cylinder, which is above the screen cylinder. In this ultimate Maximum Trash Capture condition, both the sump and the entire screen cylinder above the sump are completely full. All flows will bypass the ***JDS*** treatment process unit until its cleaned out. The ***JDS*** unit is a buried trash can under this ultimate Maximum Trash Capture condition. Again, ultimate storage volumes for this Maximum Trash Capture condition range 28-ft^3 to 1,715-ft^3 for precast manholes having internal diameters from 4 to 16-ft.

D. Hydraulic Capacity at Maximum Trash Capture Capacity

When filled to the Maximum Trash Capture Capacity, the design of ***JDS*** units allows all flows in the storm drain pipeline to flow over the water quality diversion weir whether in the "Inline" or

"Offline" configurations. There is no detrimental impact to the design conveyance capacity of the storm drain pipeline under these conditions.

As explained in subsection C, in the event that proper operation and maintenance is not performed, it is possible for the sump and screen cylinder of the ***JDS*** units to completely fill up with trash and solids. Eventually these solids will block the inlet to the screening cylinder and swirl concentration treatment chamber and filling the unit up to its ultimate Maximum Trash Capture Capacity. In this condition, all flows into the ***JDS*** unit will top the diversion weir in both the "Inline" and "Offline" configurations. Additionally, very little flow will pass through the treatment path of a ***JDS*** unit under these conditions.

E. Trash Re-introduction

The design of the ***JDS*** treatment unit eliminates the potential to "Burp" and/or release any previously captured trash even when not properly maintained. Physical separation of the treatment and separation flow path from the bypass flow path make this retention possible.

Bypass flows that exceed the runoff rate from the 1-hour duration, 1-year return frequency storm event for a given site are physically separated from the ***JDS*** treatment flow path and will not re-introduce or "Burp" any of the trash or solids previously captured in its sump, screening cylinder and swirl separation chamber under any flow conditions.

Figures 1 & 7 demonstrate a caveat for this trash retention performance claim. The crest height of the floatable control cylinder should have a minimum of 6-inches of freeboard above the hydraulic gradeline (HGL) of the peak design conveyance capacity of the storm drain pipeline. If there is not head space for this freeboard due to shallow installation conditions, then the floatable control cylinder is pinned to the ceiling of the unit's precast top slab, eliminating any potential for re-introduction, or "Burping", of any previously captured solids from the treatment section of the unit.

The 98% plus retention of captured solids is a unique, test proven performance claim of the ***JDS*** unit. The designs of many of the previously approved Full Capture device store the trash and floatables in the treatment and bypass flow paths. These units do not have screens on their bypass flows. So, at a minimum, bypass flows through units designed like this "Burp" the previously captured floatables.

F. Materials Used to Construct the JDS

The manufacture of the ***JDS*** treatment system can be broken down into Precast Concrete deployment structures, and internal components.

PRECAST CONCRETE:

The precast manholes used for ***JDS*** installations are produced at Jensen Precast following standards set forth by the National Precast Concrete Association (NPCA) and the American Society for Testing and Materials, specifically ASTM C478. All Jensen precasting facilities are certified by the NPCA.

If the ***JDS*** unit is deployed in a vault, the precast concrete vault will be designed and manufactured in accordance with ASTM C655, C789, C850, C857 and C858. These precast manholes and vaults are designed with an intended operational life of 100-years.

INTERNAL COMPONENTS:

INLETS: Presently, Jensen manufactures the inlet of the ***JDS*** system from either: HDPE plastic, inert fiberglass, marine grade aluminum, or ASTM 304 or 316 stainless steel. The inlet material is chosen based on what is best suited for the job at hand.

1. Stainless Steel (SS): SS is the premier material for the inlet. SS grade ASTM 304 is the typical material selected for most all applications in California. If the ***JDS*** unit application may be in near a shore subject to salt water or snow runoff containing salt (Sodium Chloride, NaCl), then the more corrosive resistant SS grade ASTM 316 would be suggested.

2. Aluminum (Al): Marine grade Al meeting ASTM 5052 or better such as 6061 or 6063 is used for manufacturing of the inlets. This material represents Jensen's preferred material for high flow, stress resistant installations. Aluminum inlets with their integral weirs resist the force momentum ($F=mv^2$) loading from larger flow rates. Aluminum inlets also enable the Inline units to bypass flows twenty (20x) to thirty (30x) times their Full Capture treatment flow rate.

3. HDPE: High Density Polyethylene (HDPE), per ASTM D3261 is frequently used to make the inlets. This is wonderful, inert material that is completely resistant to corrosion. It has more strength than fiberglass and can be reinforced with Al or SS

4. Fiberglass: When Jensen chooses to manufacture the inlet from fiberglass reinforced plastic (FRP), it is manufactured per the National Bureau of Standards PS-15. This fiberglass is laid up using a minimum of 3-ounce (oz) chop mat, 24-oz bi-directional woven fabric per MIL-C-19663 and general-purpose polyester resin per MIL-M-43248. Final structural thickness is typically 3/8-in thick with panels and cylinder walls at 3/16-in.

   Fiberglass Material Note: Existing providers of the continuous deflective separation process have been manufacturing these inlets from fiberglass for more than 17-years. It is now clear that that SS, Al & HDPE are better material alternatives for longer life. Over time, the fiberglass inlets will have a tendency to delaminate due to normal wear and tear

while also being continually submerged. The design life of the fiberglass is guesstimated at 20 to 35-years. For this reason, Jensen Precast recommends the use of HDPE, Aluminum or Stainless Steel rather than the fiberglass used by the other company presently providing the continuous deflective separation system for treatment of stormwater flows in California.

SCREEN CYLINDERS: The screen and the structural cage encasing the screen is always manufactured out of ASTM 316 stainless steel. This ensures a durable, long lasting screen that will not readily succumb to even the most aggressive salt-water installation conditions.

CONNECTION HARDWARE: All connection hardware and wedge anchor bolts are manufactured from ASTM 316 SS.

G. JDS Design Life

The precast structure in which the ***JDS*** units are deployed have a design infrastructure life of 100-years. The internals components excluding the fiberglass inlets can be expected to last between 50 to 100-years.

H. Plans/Diagrams for Typical Installation

Exhibits A & B provide plan and profile drawings for the installation of “Inline” and “Offline” ***JDS*** units treating flows from 0.7 to 80-cfs.

Example installation plan and profile drawings of Dual Offline ***JDS*** systems are also included in Exhibit C. Dual ***JDS*** units on both sides of a diversion structure double the treatment capacity of a given installation.

I. Pre/Post Installation Photographs

*Figure 9. Assembly of SS Screen to HDPE Inlet for 1.1-cfs Capacity Inline **JDS60-2424**.*

Figure 10. In Yard Assembly of Separation Chamber with Aluminum Inlet and SS S
*2.0-cfs Capacity **JDS72-3624** unit in 72-in ID Manhole.*

*Figure 11. Completed Separation Chamber Installed with a HDPE Inlet and SS Screen Cylinder, 1.1-cfs Capacity **JDS60-2424**. Ready for Project Delivery. Handling Consistent with a Typical Manhole.*

*Figure 12. Separation Chamber of 1.1-cfs Capacity **JDS60-2424** Unit Set in the Field on Top of Sump. The **JDS60-2424** is Handled and Installed as Typical 60-in ID Precast Manhole Riser Piece.*

*Figure 13. **JDS60-2424** Unit Set in Field, Waiting for Riser Barrels and Top Slab to be Stacked to Finished Grade.*

The majority of ***JDS*** units are delivered to the project site with the inlets and separation chambers pre-installed in their Separation Chambers. The separation chamber is then handled on site as a typical manhole section or riser barrel. Larger capacity ***JDS*** units 's often require that the inlet and screen cylinder be installed in the field after the precast sump and separation chamber structure have been set. Some underground contractors are practiced and competent installing these internals per instructions provided by Jensen, alternatively Jensen can send out a field crew of experienced installers. It typically takes a half a day for the Jensen field crew to install internals within these larger precast structures.

*Figure 14. 3x Man Jensen Field Crew Installing the SS Screen Cylinder & HDPE Inlet on a 9-cfs Capacity Inline **JDS120-6448** after 120-in ID Manhole Deployment Structure was Set by the Contractor.*

J. Internal Bypass

Jensen Precast offers both "Inline" and "Offline" ***JDS*** units. In the case of an "offline" unit, flows greater than the Full Capture design flow simply passes over the weir in the separate diversion structure and continue to flow down the storm drain pipeline.

Inline ***JDS*** units are equipped with two (2x) internal bypass weirs. Inline ***JDS*** unit have bypass weirs, which are often called diversion weirs, on both sides of the floatable control cylinder. During high bypass flow conditions, the level of the water will rise above the inlet into the floatable control cylinder and swirl concentrating separation chamber while simultaneously rising above the crest of the two (2x) bypass weirs. The water surface level inside the floatable control cylinder

will be just a bit less than the water level spilling over the bypass weirs, but higher than the water surface level downstream of the bypass weirs. The inlet will be submerged and there will be a pressure differential between these water surfaces. Under this condition, previously captured floatables and solids within the swirl chamber will not flow upstream and out of the inlet. The energy does not exist to create this upstream flow condition.

It is important to acknowledge that the bypass flow path is physically separate from the treatment flow path. Therefore, the bypass flow does not flow through the solids storage zones of the ***JDS*** unit.

If properly maintained, flow will also go into the ***JDS*** inlet and receive treatment through the unit. This treated flow will join with the bypass flow downstream of the bypass weirs.

It should be understood that floatables will not be captured by the ***JDS*** unit in bypass conditions.

This the bypass flow condition and the internal bypass weirs can be seen in Figure 15 below, as well as Figures: 1, 5, 6 & 7.

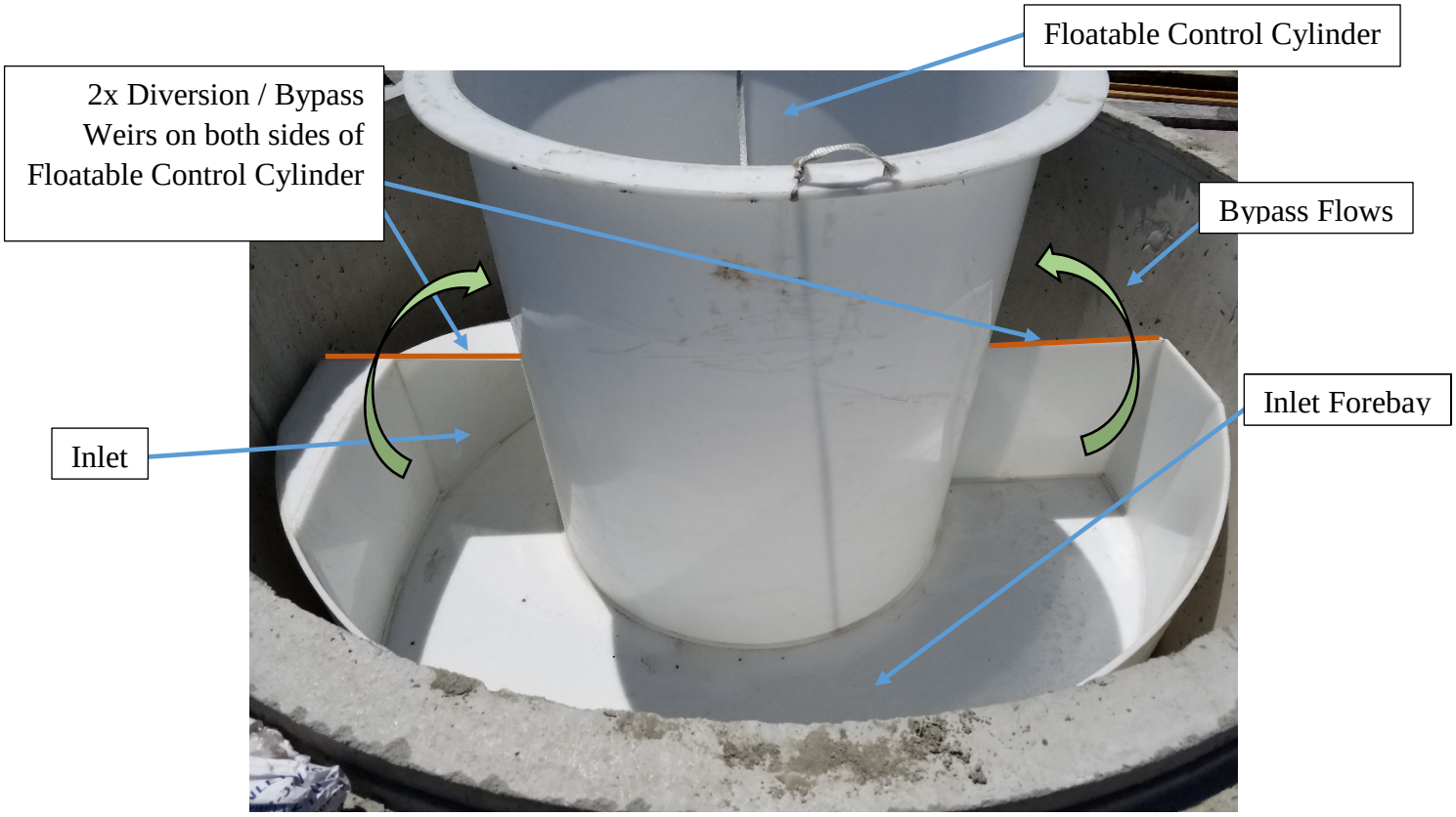


*Figure 15. View the 2x Internal Bypass Weirs on Both Sides of Floatable Control Cylinder on a 1.1-cfs Capacity "Inline" **JDS60-2424** Unit. HDPE Inlet.*

Jensen recommends Aluminum or Stainless Steel inlets that can accommodate stresses of bypass flows twenty (20x) to thirty (30x) times the Full Capture treatment flow rate.

2. INSTALLATION INFORMATION

Inline Units

Exhibit D contains instructions for installing the internal components of "Inline" ***JDS*** units in either the Jensen precast yard or in the field at the project site.

The actual manhole structure of the ***JDS*** unit is something that 100 percent of underground contractors are familiar with and competent at installing. The one significant issue that differs from a standard storm manhole installation is that ***JDS*** unit's separation chamber and sump extend below the storm drain pipeline's invert.

The contractor must confirm the storm drain pipeline's invert elevation and then determine the subgrade elevation of the exterior bottom of the ***JDS*** unit. Exhibit A demonstrates the required depth below pipe invert on the plan and profile drawings for each ***JDS*** unit. These drawings are provided to design engineers in AutoCAD format so that these elevations can be clearly called out on the plans.

Offline Units

The installation of "Offline" ***JDS*** units requires the installation of the diversion structure. The ***JDS*** unit is installed essentially as if it were an "Inline" ***JDS*** unit. The entrance and exit pipes or conduits from the ***JDS*** unit are connected to the diversion structure. The diversion structure is installed within the storm drain pipeline's alignment as a typical precast or cast in place or drainage structure.

A set of typical specifications for a 2.0-cfs capacity "Inline" Model ***JDS72-3624*** is included in Exhibit E as an example of specifications that are provided by design engineers for all ***JDS*** units. These specifications cover:

- SWTU's Scope of Application
- Performance
- Sizing Criteria
- Requirements for Approval of Alternatives
- Hydraulic Capacity
- Solids and Oil Storage Capacities
- Manufacturing Materials
- Manufacturer
- Installation
- Submittals Requirements

3. OPERATION AND MAINTENANCE INFORMATION

A complete Operations and Maintenance, (O&M), Manual completed for a past project is provided in Exhibit F. A complete O&M Manual is provided with every ***JDS*** that is installed as part of the construction submittal process. This O&M manual reiterates the following information for proper maintenance of a ***JDS*** unit.

A. Inspection Procedures and Frequency Considerations

The frequency of routine maintenance and cleanouts will be dependent upon the rate of accumulation of trash, sediment, oil and other debris. The accumulation rate will vary based on the land use in the drainage or catchment area. Due to the variability of solids coming off the catchment areas, cleanout and maintenance timelines should be determined based on operating experience for each installation.

Periodic inspections should be performed to determine the rate of solids accumulation in the sump as well as the thickness of the floatables raft retained on top of the swirl chamber. From these inspections, a cleanout frequency can be established to keep pace with the accumulation of solids in a specific unit.

Inspect newly installed units after each runoff event for the initial month or two of the wet season following installation. This inspection should include a check of the inlet area and the screen surface for any obstructions. Additionally, a measurement of accumulated floatable debris at the top of the unit and of solids in the sump should be made using a "dip stick". During these inspections, the level of oil and grease captured should also be noted to determine a cleanout frequency for the oil baffle.

After the first several months of operation, the appropriate inspection schedule for a rainy season is more definitively developed. In short, the unit should be cleaned at least once a year, immediately prior to the start of the wet season, and inspected at end of the wet season.

During the season ending cleanout and inspection, a thorough assessment of the unit's internal components should be conducted. This inspection looks for signs of damage within the separation chamber and oil baffle. Any loose components should be fastened and a thorough pressure washing of the screen should be performed.

B. Maintenance Procedures

A vacuum (vactor), truck is the recommended means of cleaning out a ***JDS*** unit. This allows the ***JDS*** unit to be cleaned safely and quickly from the ground surface. Using a vactor truck, most smaller ***JDS*** units can be cleaned in 30 to 40 minutes. Confined space operations must be employed if maintenance personal ever enter the unit.

Disposal of the solids and decant liquid removed from the ***JDS*** should be in accordance with the local municipality's requirements. Often decant liquid is simply conveyed to the publicly operated wastewater treatment plant and solids are disposed of in a landfill.

C. Maintenance Frequency Considerations

It is recommended that the ***JDS*** sump is cleaned of solids when the sump capacity is filled up to between 50% and 75%. Although cleanout at this stage is recommended, the unit's performance will not be hindered if the solids accumulation exceeds 75% or even reaches 100% of the sump capacity, right up to the bottom of the SS screen cylinder.

Cleanout of oils and grease captured by the ***JDS***'s standard oil baffle will also need to be conducted. In situations where the unit captures oil and grease greater than 15 mg/L (PPM) in concentration, sorbents can be used to assist the cleanout process.

End of season cleanouts are recommended even if the solids in the sump is not more than 50% full. There is a potential for odor generation from the decomposition of captured material if this end of season cleanout is not performed. This cleanout also prevents the ***JDS*** from discharging poor quality water during periods of infrequent runoff events.

D. Device Maintenance Accessibility & Vector Control

Access

The access to clean and perform maintenance on a ***JDS*** is typically achieved through cast-iron manhole frames and covers (F&Cs) ranging in diameters from 24 to 42-inches. These manhole F&Cs allow access to the separation chamber, where the inlet and screen are located. They also provide access to the sump. Larger ***JDS*** units are designed with multiple F&Cs to increase the ease of access for maintenance to annular space outside the screening, swirl concentrating separation chamber.

The access to ***JDS*** units is definitely a design variable. Jensen readily provides different access diameters and locations to ***JDS*** units than those shown on the plan and profile drawings in Exhibits A & B. One of the design tenets is to increase the ease of access to the ***JDS***, so that the units can be readily maintained.

Jensen MetalTech can provide most any hatch access alternative to the ***JDS***. Traffic and pedestrian loading rated hatches are also readily available.

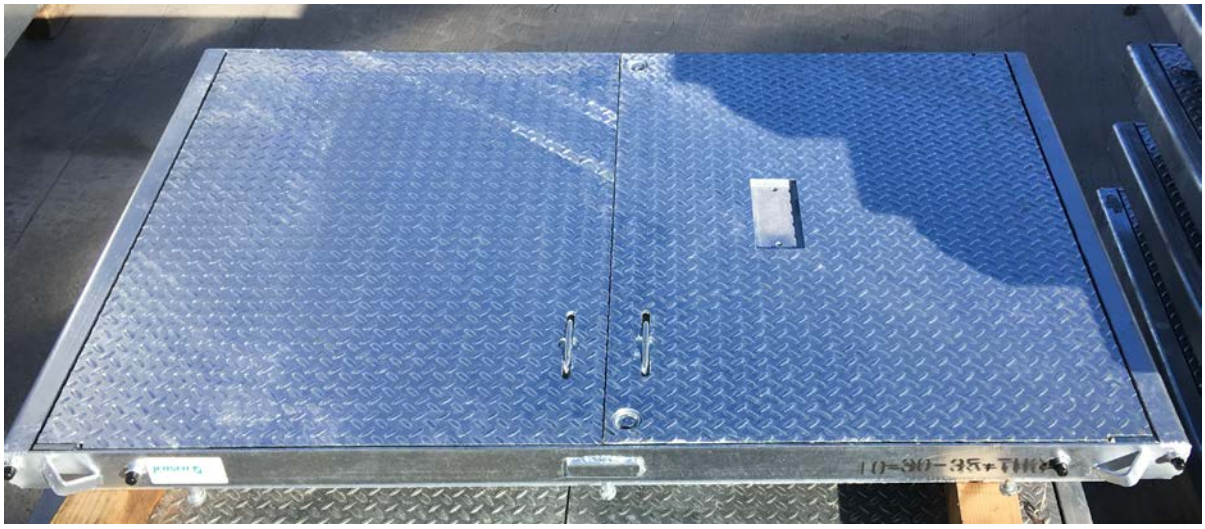


Figure 16. 36-in x 42-in Spring Assisted Access Hatch.

Figure 17. Various Access Hatches, Jensen MetalTech Yard, Sparks, NV.

Vector Control

One primary method Jensen uses for controlling mosquitos from breeding in the ***JDS*** unit, is to physically deny access to enter or egress from the ***JDS*** unit. This denial of access falls under the abatement category of Habitat Reduction.

Physical Option 1 – No "Through" pick holes: Covers with Jensen recommends the use cast iron F&Cs because these materials allow for pick points that do not completely penetrate the cast iron cover. However, such pick points tend to be shallow and sometimes difficult for maintenance personnel to securely fix their opening tool into for a firm, safe connection. Covers with pick holes

that penetrate all the way through the material are easier to insert a variety of lifting tools into, and are therefore easier to remove. Unfortunately, these holes allow mosquitos into the ***JDS*** unit.

Physical Option 2 – HDPE Inserts: When the cover does have pick holes that completely penetrate, mosquitos can be prevented from entering and exiting the ***JDS*** unit by sealing the space immediately beneath the cover with a readily available HDPE insert. These HDPE inserts are typically used to prevent or reduce inflow and infiltration, see Figures 18 and 19.

Figure 18. HDPE Insert that Fits Immediately below Cast Iron Cover.

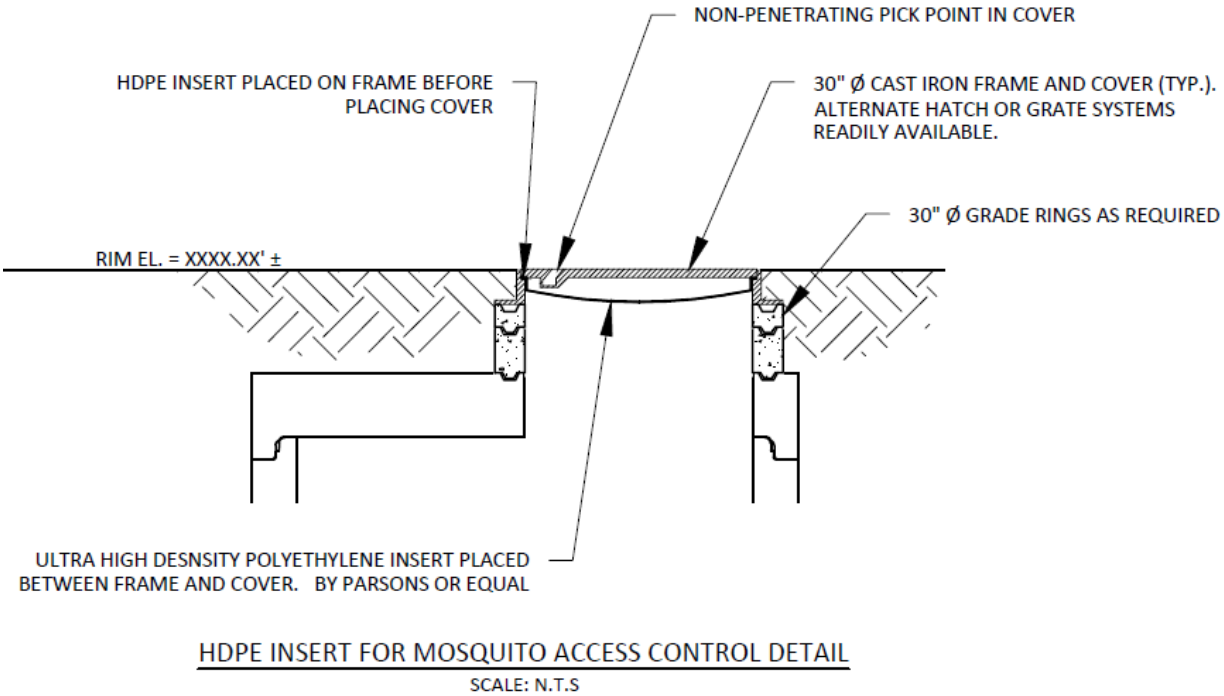


Figure 19. HDPE Insert Placed in the Frame of the Cast Iron Cover.

The HDPE insert is a practical and durable means of sealing the ***JDS*** from mosquitos.

Physical Option 3 – Netting: Netting can also be used to prevent mosquitos from accessing the ***JDS*** unit through openings in the manhole:

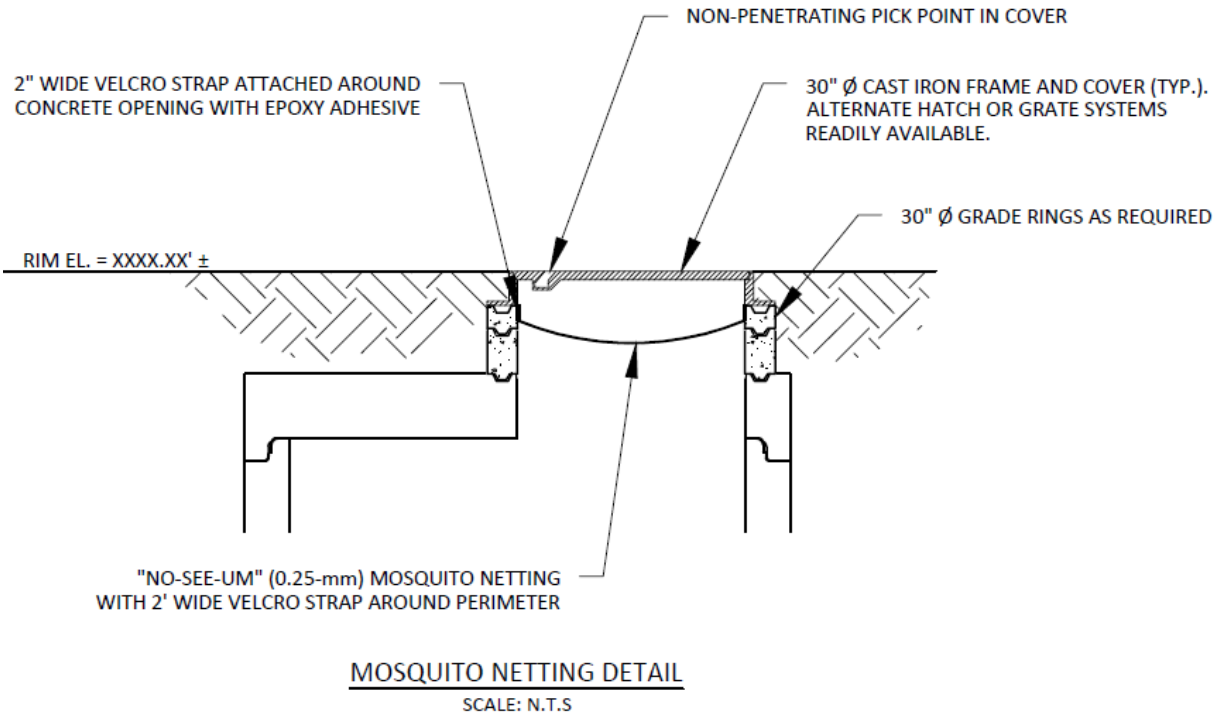


Figure 20. Mosquito Netting System for Vector Control.

Feedback from maintenance personnel conclude that the netting alternative for preventing mosquito access rapidly wears out, tears or the Velcro delaminates form the walls of the manway.

Physical Control to Diversion Vault for Offline Configurations: One of these three (3x) means of physically controlling the access into the ***JDS*** Unit shall be used for each installation. When the ***JDS*** unit is installed in an Offline configuration, the manhole access of the associated diversion vault will also include one to these three physical access control design options. The selection of the physical access control whether a cover with no "Through" pick holes, an HDPE Insert or Netting is at the discretion of the design engineer and most often is per the preferences of the long-term maintainers. Again, the covers with no "Through" pick holes and the HDPE inserts are the most effective long-term means of preventing mosquito access to the ***JDS*** unit and diversion vault if installed in the offline configuration.

Other Access Hatch Options: As stated above in this "***Access***" section, Jensen MetalTech can provide most any hatch access alternative to the ***JDS***. These traffic and pedestrian loading rated access hatches shall be equipped with gaskets as necessary to eliminate the physical access of mosquitos.

Jensen also recommends the use of Mosquito Dunks that have Bacillus thuringiensis israelensis (Bti) as their active ingredient. Bti is preferred for mosquito control, because of its low toxicity to non-target species. It is a naturally occurring soil bacterium that effectively kills mosquito larvae

present in water. Mosquitos have no documented resistance to Bti as a larvicide. Mosquito dunks or briquettes containing have a sustained-release capacity of larvicide that conveniently floats. The following application dosages and frequencies are recommended to control mosquitos:

1. SOLID Bti LARVICIDE: ½ to 1 briquette (typically treats 50-100 sq. ft.) one time per month (30-days) or as directed by manufacturer.
2. SOLID METHOPRENE LARVICIDE (not recommended for some locations): ½ to 1 briquette (typically treats 50-100 sq. ft.) one time per month (30-days) to once every 4-½ to 5-months (150-days) or as directed by manufacturer.

The design of the diversion vaults does not have a standing water pool in any part of the diversion vault, so the "Mosquito Dunks" mitigation measure will not of any utility and is not included in the list of control measures to be applied to the diversion vault's manhole access. "Mosquito Dunks" are only recommended for use in the ***JDS*** Units.

Jensen will incorporate in the design of each ***JDS*** unit a perforated ABS or PVC tube that shall be located in the annular space of the unit, downstream of the oil baffle skirt in each JDS unit. This perforated tube will retain "Mosquito Dunks" and will be located immediately beneath or immediately adjacent to the access F&Cs. This will allow for the double application of the "Mosquito Dunks" to both the water surface area inside floatable control cylinder as well as to the water surface immediately downstream of the oil baffle, so that all open water surfaces in any ***JDS*** unit will be assured to be in direct contact with a "Mosquito Dunks".

This perforated tube will ensure that "Mosquito Dunks" are not washed out of this annular space, downstream of the oil baffle during any wet or dry weather flows. This is an additional mosquito mitigation enhancement feature that shall be apply to all ***JDS*** units. This is a conservative design m measure, but it does represent an additional measure to ensure the control mosquitos in a ***JDS*** unit.

Finally, following a brief discussion with Mark Hall, Urban Water Program Manager of the Greater Los Angeles County Vector Control District, at the CASQA Conference in Sacramento in September 2017, Jensen has initiated preliminary designs of possible flow flexible screening systems. The design goal of these flexible screening systems would be that they could be fastened to both the inlet and outlet pipes resulting in the reduction or elimination of mosquitos from flying down the storm drain pipelines and into the ***JDS*** units.

4. RELIABILITY INFORMATION

A. Device Sensitivity

The non-blocking, screening action of the continuous deflective separation process is developed through balanced hydraulic conditions inside the screening, swirl concentrating cylinder. This

balanced condition in itself is not overly sensitive and the functionality of this non-blocking, screening process is developed in the ***JDS*** unit throughout the entire range of flows for a given ***JDS*** unit. The standard tenet in the design of balanced hydraulics for each unit includes at least a 40% functional factor to ensure the development of these hydraulics conditions.

As mentioned earlier in Section 1.B, ***Scaling of JDS Unit***, larger units subjected to frequent low flows that area a very low percentage of their peak treatment capacity may not develop the balanced hydraulic conditions for a non-blocking screen. Under these conditions, the rotational washing velocity on the screen is not developed and previously neutrally buoyant material has the opportunity to become pinned on the screen face. This is a rare event, and typically the unit self corrects on the next storm event.

Additionally, out of the thousands of installed units embodying the continuous deflective separation system, the few failures of the non-blocking, screening portion of the treatment process have to do with significant tailwater conditions. The continuous deflective separation process can operate in significant tailwater conditions, but the inlet of the unit must be modified in the design phase to best address the tailwater conditions. Jensen can modify the inlet of an installed ***JDS*** unit if later it is determined that tailwater conditions are negatively influencing the functionality of the unit.

Overall, the continuous deflective separation treatment process, through more than 10,000 installations, has shown itself to a very robust treatment process well suited for application to storm drainage systems.

B. Warranty & Certification Information

Warranty:

Jensen Precast provides a standard warranty for all of the ***Jensen deflective separator*** hydrodynamic stormwater treatment units against all manufacturers' defects for a period of one year (12-months) from the date of the of the final project acceptance. Within this warranty, Jensen states that it will, upon its determination, repair, correct or replace any noted manufacturer originated defects advised to Jensen Precast in writing during the warranty period. This warranty also states that it is sole and exclusive, and that no implied-by-law warranties, including those of "merchantability and fitness for a particular purpose", apply.

This is typical warranty language provided by Jensen for each ***JDS*** unit. For any given project, the duration and scope of the warranty can be modified per the request of the customer or owner.

C. Applicant's Customer Support

PLANNING and ENGINEERING:

Consulting and Municipal Design engineers can size a ***JDS*** unit and download both pdf and AutoCAD files of a given ***JDS*** unit from the Jensen website.

Exhibits A, B, and C provide site-specific designs for all ***JDS*** units.

Jensen engineers provide energy and hydraulic gradeline, (EGL & HGL), calculations to design engineers for both the peak Full Capture flow, from the 1-hour duration, 1-year return frequency storm event, as well as the larger 5 or 10-yr conveyance flow of the storm drainage pipeline. Engineering budget/value estimates for purchase and installation are also provided by Jensen to consulting and municipal design engineers along with bid specifications. Exhibit E provides example specifications.

Exhibit F provides a site-specific O&M manual for each installation.

FIELD INSTALLATION:

Exhibit D provides guidelines for field installations.

Jensen delivery trucks have a crane capable of setting the smaller 60 and 48-in diameter ***JDS*** units, as well as the 72-in ID units, if the truck can get close to the installation hole. The contractor must coordinate an onsite crane for setting larger diameter ***JDS*** units. For these larger units, Jensen regularly sends out a field crew of 2 to 3-men to set the internal screening cylinder and inlet.

5. LABORATORY TESTING INFORMATION AND ANALYSIS

A Full Capture experiment was conducted on a 0.7-cfs (315-gpm), Full Capture capacity, full-scale model, ***JDS60-2418*** unit on May 25th and 26th, 2017 at the Jensen Precast Stormwater Testing Facility. Exhibit G has the complete report entitled "Laboratory Testing for the ***Jensen Deflective Separator***, a Full Capture Trash Control Device".

This Full Capture test consisted of six (6x) flow tests quantifying the removal and retention efficiency (RE%) equaling 98% for particles ≥5-mm. These 6x tests included three capture efficiency tests at 50%, 75% and 100% of the 0.7-cfs (315-gpm) full capture treatment capacity of the ***JDS*** unit. The solids in the influent water were added at a controlled rate. The remaining three tests were scour, or "Burping", tests at 125%, 150% and 200% of the ***JDS*** unit's treatment flow rate. These burping tests quantify retention efficiency of the solids previously captured in the first three removal efficiency tests.

Engineered plastic spheres we used to simulate gross pollutants particles ≥5-mm in these tests. These engineered plastic spheres had differing specific gravities (SG) ranging from 0.9 to 2.1. Although the spheres had different SGs, they all had the same diameter of (3/16") 4.76 mm, which is less than the 5-mm particle size criteria for Full Capture. The resulting 98% performance claim for removal and retention are based on these 4.76-mm size spheres that are < 5-mm. So, this 98% capture and retention performance claim is conservative.

These gross solids tests are first generation certification test procedures and protocols done on a standard not previously applied to determine capture and retention efficiencies of Full Capture devices. These tests are uniquely innovative and more importantly, repeatable and scalable.

EXHIBIT A: INLINE JDS UNITS- STANDARD SIZES
EXHIBIT B: OFFLINE JDS UNITS- STANDARD SIZES
EXHIBIT C: EXAMPLE OF DUAL OFFLINE JDS UNITS
EXHIBIT D: INSTALLATION GUIDE/ INTERNAL COMPONENT ASSEMBLY
EXHIBIT E: EXAMPLE SPECIFICATIONS- JDS72-3624
EXHIBIT F: OPERATIONS AND MAINTENANCE MANUAL EXAMPLE
EXHIBIT G: LABORATORY TESTING
EXHIBIT H: JDS BROCHURE
EXHIBIT I: STUDIES AND EVALUATIONS OF THE PUBLIC DOMAIN CDS PROCESS

EXHIBIT A

Table

of

Inline *JDS* Units

Standard Sizes

JENSEN STORMWATER SYSTEMS

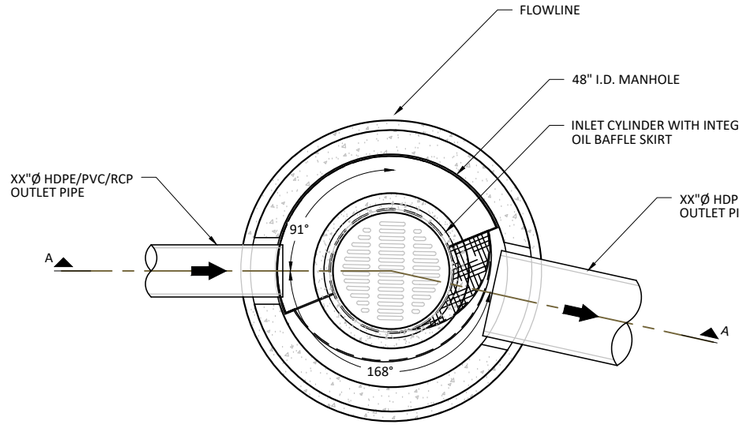
INLINE UNITS
JENSEN DEFLECTIVE SEPARATOR (JDS)

Precast Model Designation[1]	Treatment Flow Rate (Nominal)	Approximate Treated Catchment Area	Manhole Internal Diameter		Screen Cylinder Diameter & Height		External Foot Print Diameter	Depth Below Pipe Invert[2]	Sump Storage Capacity[3]		Oil Storage Capacity[4]		Maximum Trash Capture Capacity	
	(ft^3/s)	(acres)	(ft)	(in)	(in)	(in)	(ft)	(ft)	(ft^3)	(yd^3)	(ft^3)	(gal)	(ft^3)	(yd^3)
JDS48-2418(G[5])	0.7	1.6 - 2.1	4	48	24	18	4.8	5.3	28	1.0	9	66	38	1.4
JDS48-2424	1.1	2.4 - 3.1	4	48	24	24	4.8	5.7	28	1.0	11	79	39	1.4
JDS48-2430	1.6	3.6 - 4.6	4	48	24	30	4.8	6.2	28	1.0	12	93	41	1.5
JDS60-2418	0.7	1.6 - 2.1	5	60	24	18	6.0	5.8	44	1.6	12	90	53	2.0
JDS60-2424	1.1	2.4 - 3.1	5	60	24	24	6.0	6.2	44	1.6	15	108	55	2.0
JDS60-2430	1.6	4 - 5	5	60	24	30	6.0	6.8	44	1.6	17	127	57	2.1
JDS72-3624	2.0	4 - 6	6	72	36	24	7.2	6.3	64	2.4	21	159	75	2.8
JDS72-3630	2.4	5 - 7	6	72	36	30	7.2	6.8	64	2.4	25	185	91	3.4
JDS72-3636	3.0	7 - 9	6	72	36	36	7.2	7.3	64	2.4	28	211	94	3.5
JDS72-3642	3.8	8 - 11	6	72	36	42	7.2	7.8	64	2.4	32	238	98	3.6
JDS84-4230	2.7	6 - 8	7	84	42	30	8.3	7.9	106	3.9	38	285	134	5.0
JDS84-4236	3.6	8 - 10	7	84	42	36	8.3	8.4	106	3.9	43	321	148	5.5
JDS84-4242	4.4	10 - 13	7	84	42	42	8.3	8.8	106	3.9	48	357	153	5.7
JDS84-4248	5.5	12 - 16	7	84	42	48	8.3	9.3	106	3.9	52	392	158	5.8
JDS96-4836	4.5	10 - 13	8	96	48	36	9.5	8.3	126	4.7	58	434	168	6.2
JDS96-4848	6.0	13 - 17	8	96	48	48	9.5	9.3	126	4.7	71	531	184	6.8
JDS96-4854	7.5	17 - 21	8	96	48	54	9.5	9.7	126	4.7	77	579	197	7.3
JDS120-6748	9.0	20 - 26	10	120	67	48	11.8	8.7	157	5.8	103	771	305	11
JDS120-6758	11	24 - 31	10	120	67	58	11.8	9.5	157	5.8	119	888	295	11
JDS120-6764	14	31 - 40	10	120	67	64	11.8	10.0	157	5.8	128	958	315	12
JDS120-6770	15	34 - 43	10	120	67	70	11.8	10.5	157	5.8	137	1,028	327	12
JDS120-6782	19	42 - 54	10	120	67	82	11.8	11.5	157	5.8	156	1,168	340	13
JDS120-6794	25	56 - 71	10	120	67	94	11.8	12.5	157	5.8	175	1,308	364	13
JDS144-8484	25	56 - 72	12	144	84	84	14.2	12	283	10	253	1,895	515	19
JDS144-9480	26	57 - 73	12	144	94	80	14.2	11.7	283	10	244	1,829	613	23
JDS144-9490	31	69 - 89	12	144	94	90	14.2	12.5	283	10	269	2,015	678	25
JDS144-94102	38	83 - 107	12	144	94	102	14.2	14.5	283	10	299	2,239	718	27
JDS144-94114	44	98 - 126	12	144	94	114	14.2	14.5	283	10	329	2,463	766	28

Footnotes:

1. Typical and site-specific plan and profile drawings are available for all *JDS* units.
2. Depth below pipe invert may vary per plan and design of a project, values are estimated standards per *JDS* model with deep sump. More shallow, smaller storage volume sumps readily available.
3. Sump depths designed to meet project specific settleable solid storage requirements.
4. Baffle designs to meet project speicific oil storage requirements, readily available.
5. "G" Suffix on model number designates that unit is configured for grated drop inlet of stormwater.

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS48-2418G



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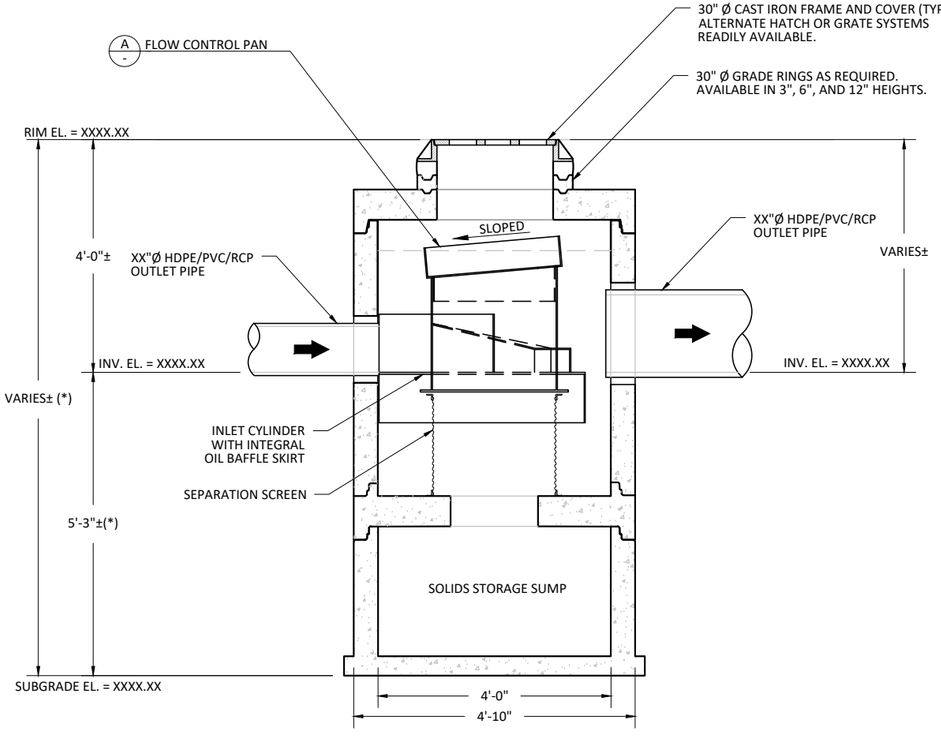

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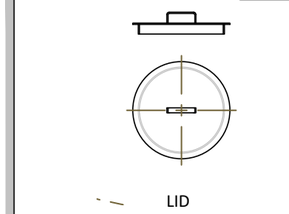

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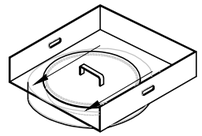

ASSEMBLY

ORIENTATION - PLAN VIEW

A
-
FLOW CONTROL PAN
SCALE= 1:30

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 0.7 - CFS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 7.0 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:						
JDS48-2418G ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME CITY & STATE			JENSEN STORMWATER SYSTEMS			
				521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com			
HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE: 04/18/2017	REV. DWG. DATE:	SCALE: AS SHOWN	SHEET SIZE: 11" X 17"	DRAWN BY: V.G.	SHEET NUMBER: SITE LAYOUT	

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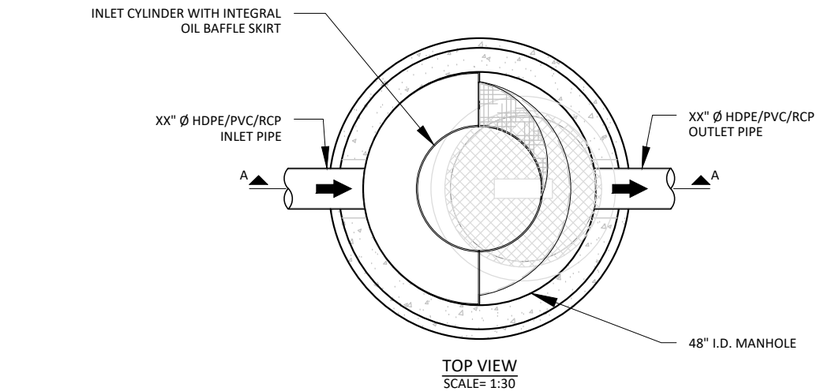
JENSEN DEFLECTIVE SEPARATOR, MODEL JDS48-2418



TOP VIEW
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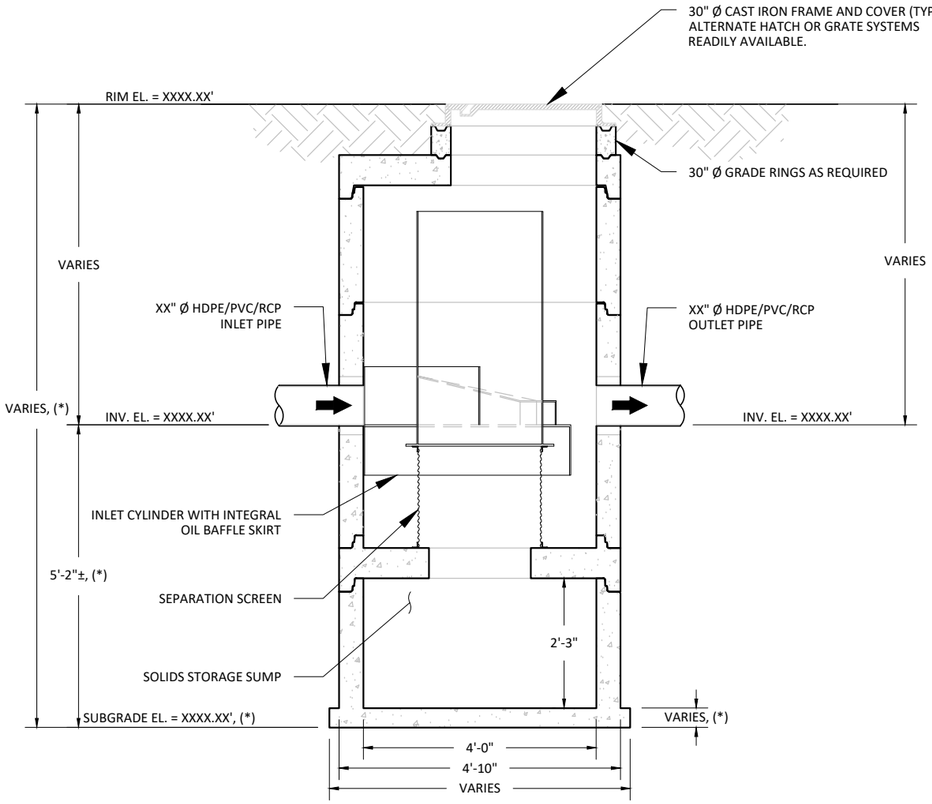

SECTION A-A
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HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 0.7 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXXX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 7.0 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

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2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

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2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
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MODEL:	PROJECT:	
JDS48-2418 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME PROJECT LOCATION	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	JDS48-2418

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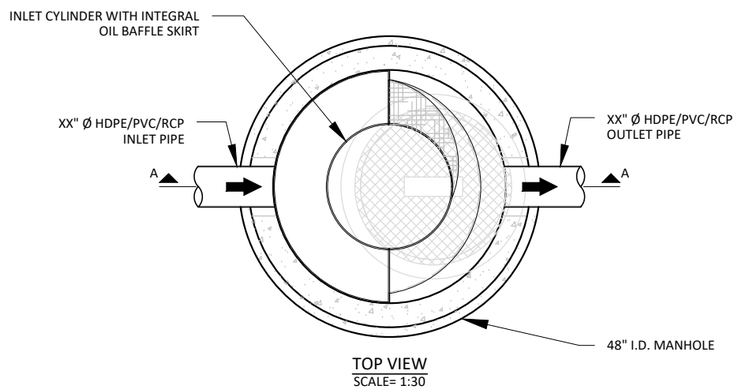

TOP VIEW
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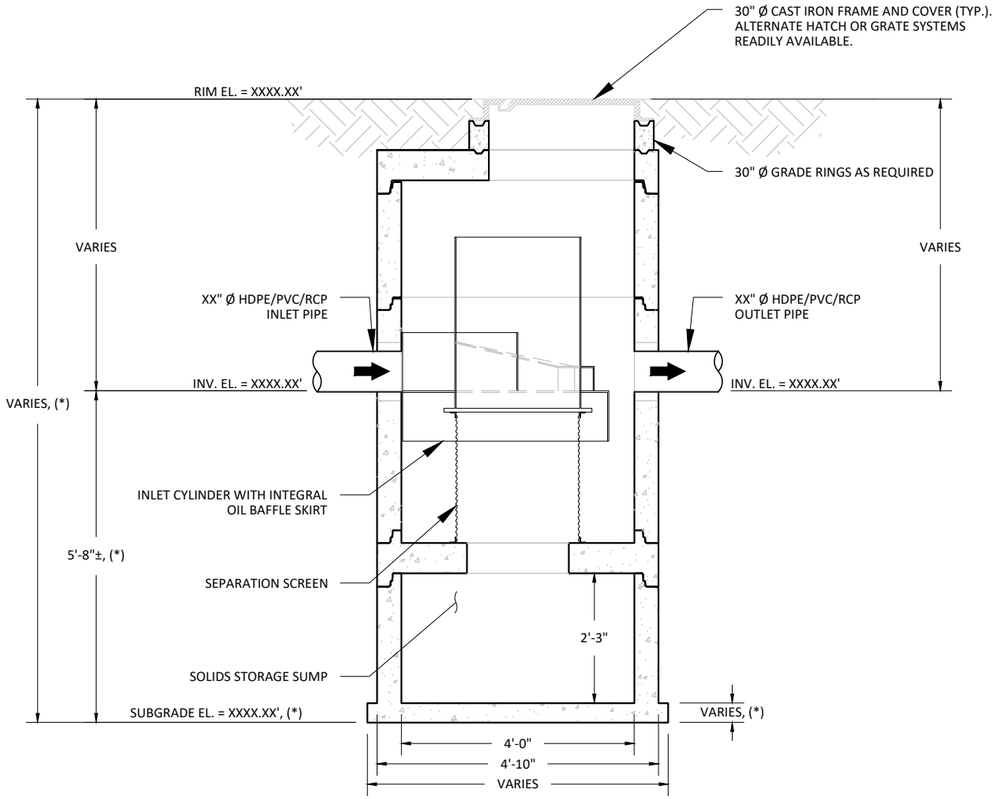

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JENSEN DEFLECTIVE SEPARATOR, MODEL JDS48-2424

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 1.1 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXXX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 7.0 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
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   - TOTAL SUSPENDED SOLIDS (TSS)
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   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

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4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:	
JDS48-2424 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME PROJECT LOCATION	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	JDS48-2424

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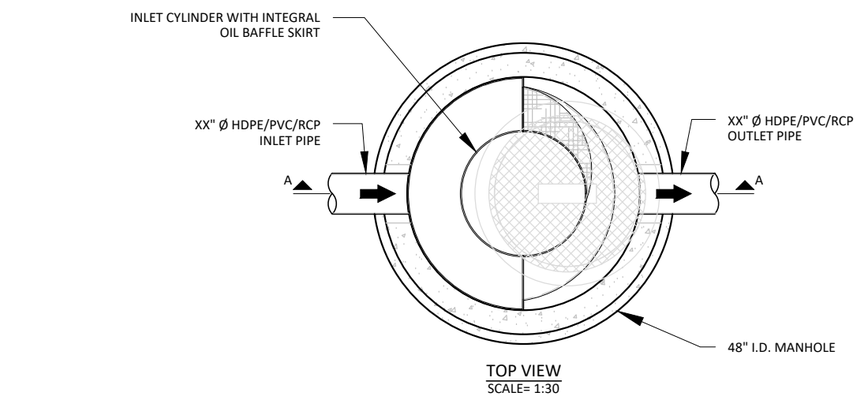
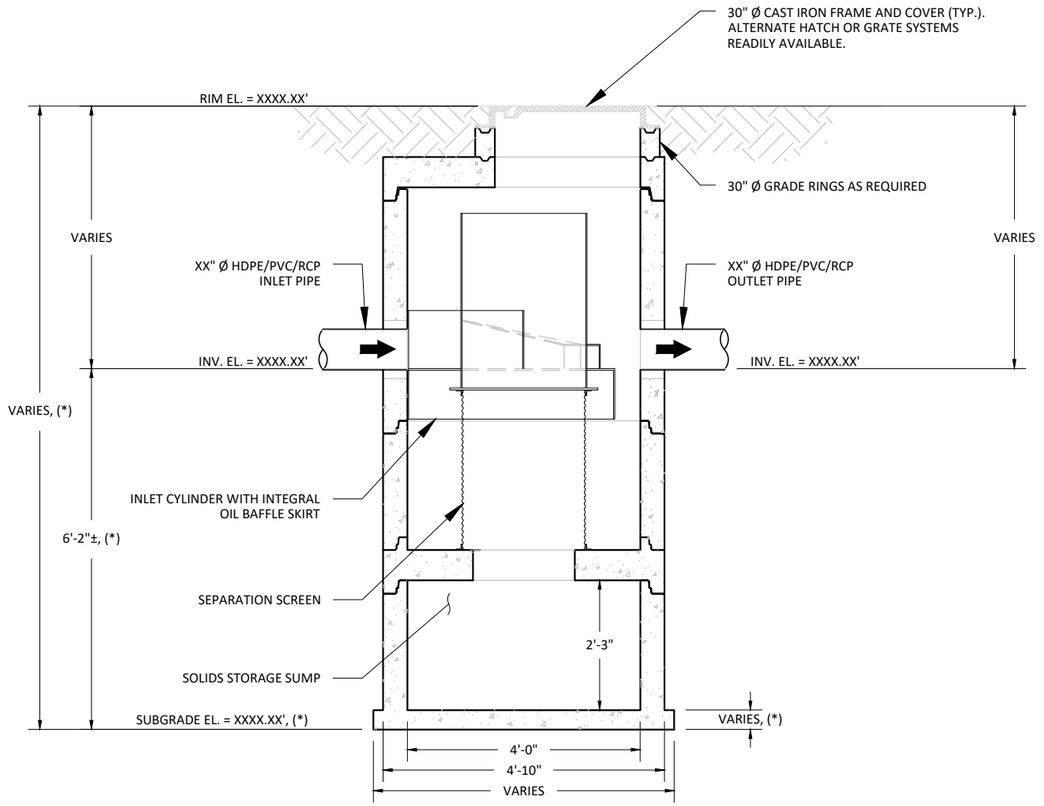


TOP VIEW
SCALE= 1:30



SECTION A-A
SCALE= 1:30

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS48-2430

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 1.6 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXXX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 7.0 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL: ***JDS48-2430*** ***JENSEN DEFLECTIVE SEPARATOR***	**PROJECT:** PROJECT NAME PROJECT LOCATION			JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com		
HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE XX/XX/XXXX	REV. DWG. DATE XX/XX/XXXX	SCALE: AS SHOWN	SHEET SIZE 11" X 17"	DRAWN BY X.XXXX	SHEET NUMBER JDS48-2430

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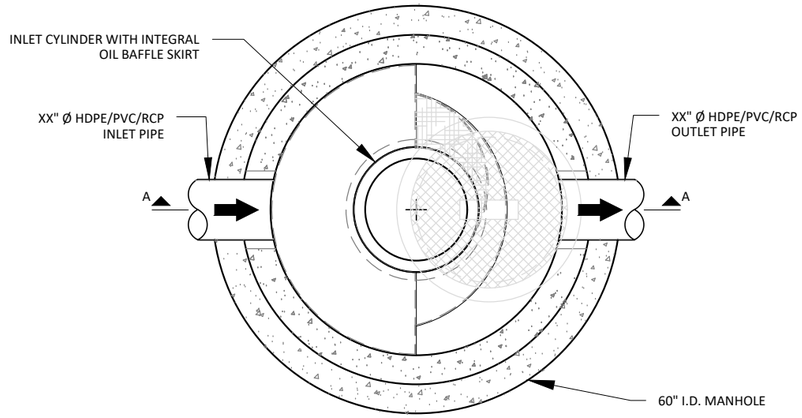
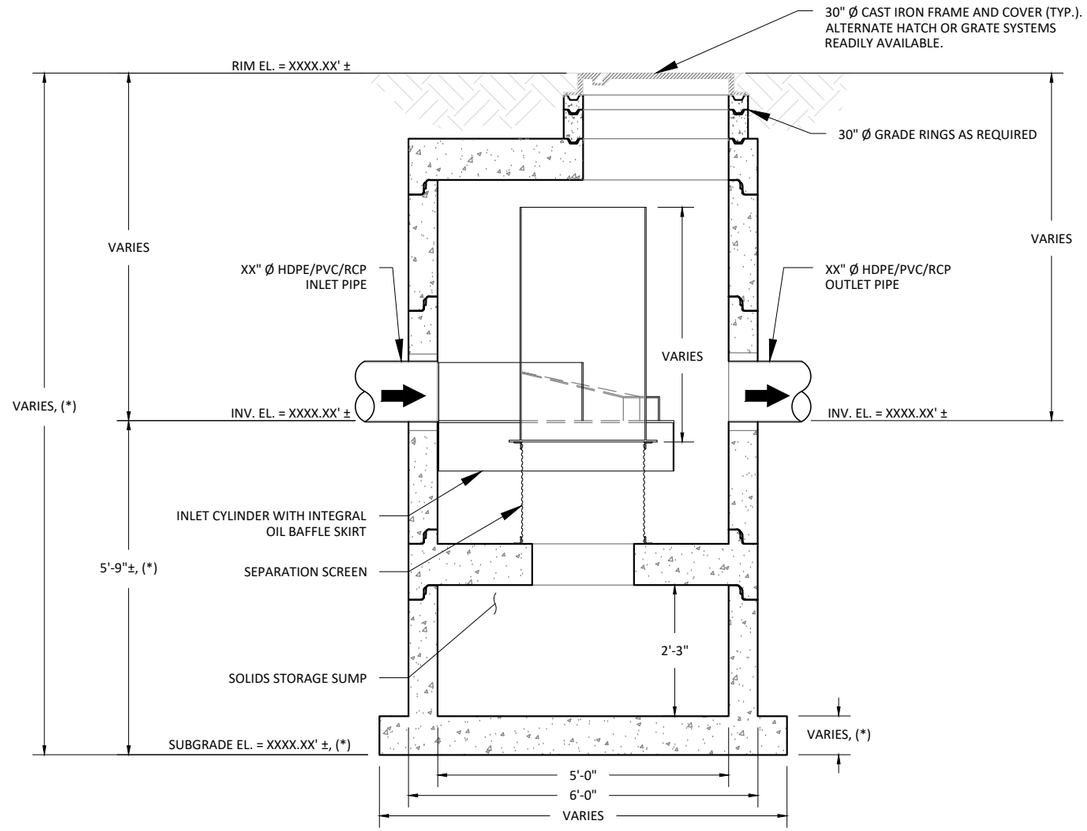


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS60-2418

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 0.7 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXXX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 10.0 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL: ***JDS60-2418*** ***JENSEN DEFLECTIVE SEPARATOR***	**PROJECT:** PROJECT NAME PROJECT LOCATION			JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com		
HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE XX/XX/XXXX	REV. DWG. DATE XX/XX/XXXX	SCALE: AS SHOWN	SHEET SIZE 11" X 17"	DRAWN BY X.XXXX	SHEET NUMBER JDS60-2418

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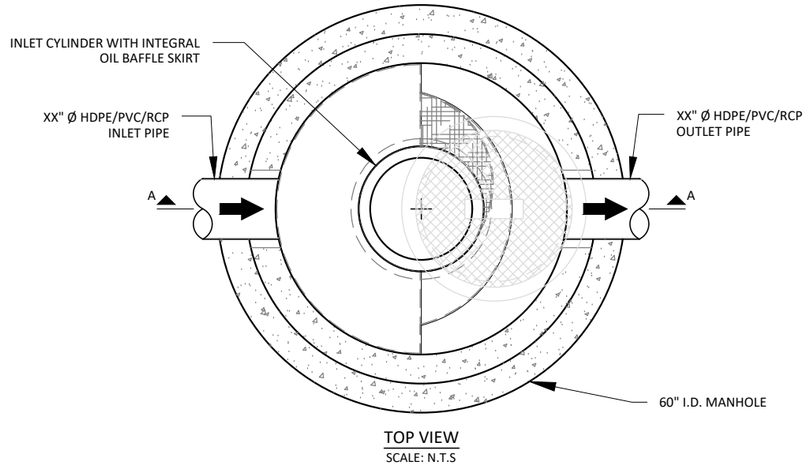
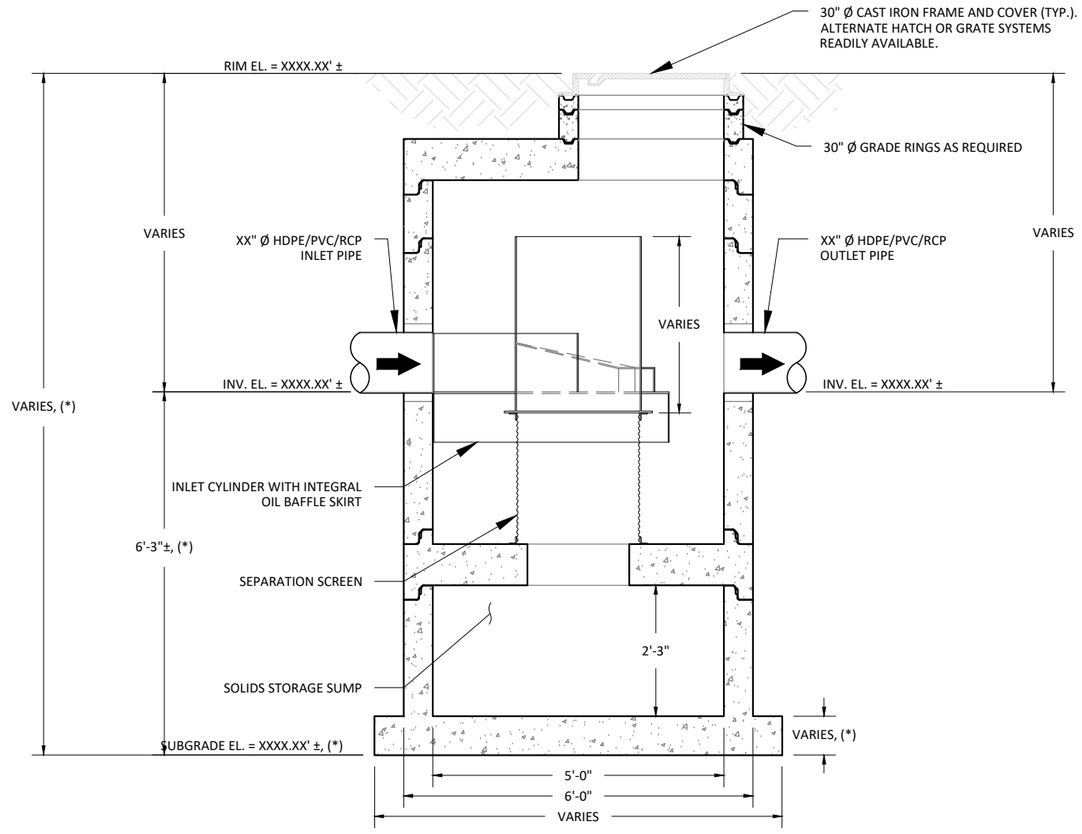


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS60-2424

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 1.1 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 10 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL: ***JDS60-2424 JENSEN DEFLECTIVE SEPARATOR***	**PROJECT:** PROJECT NAME PROJECT LOCATION			JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com		
HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE: XX/XX/XXXX	REV. DWG. DATE: XX/XX/XXXX	SCALE: AS SHOWN	SHEET SIZE: 11" X 17"	DRAWN BY: X.XXXX	SHEET NUMBER: JDS60-2424

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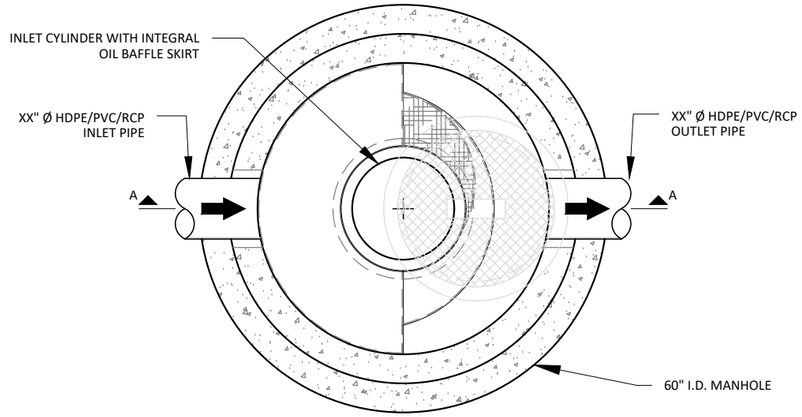
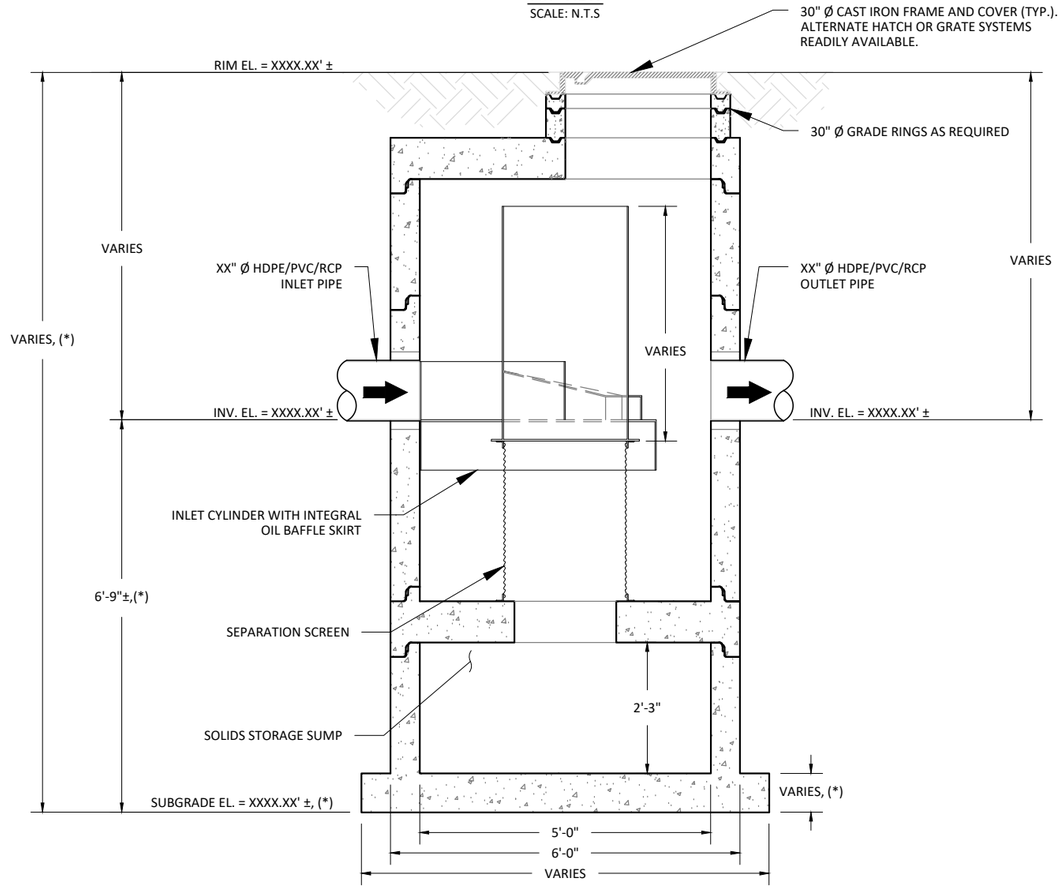


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS60-2430

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 1.6 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 10 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:	
JDS60-2430 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME PROJECT LOCATION	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	1

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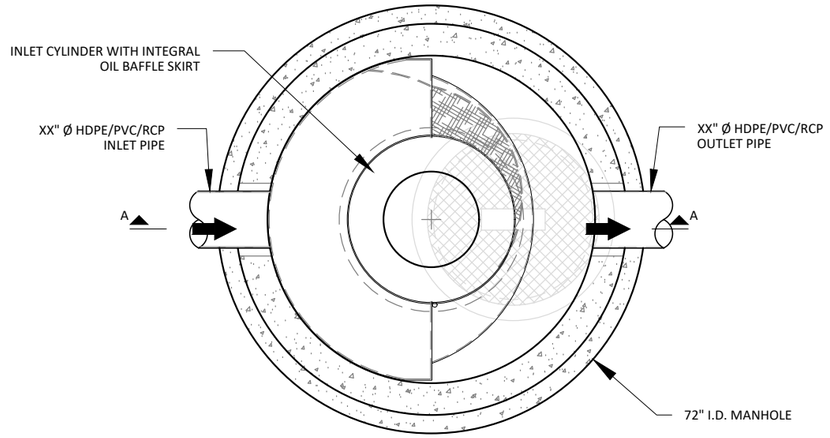
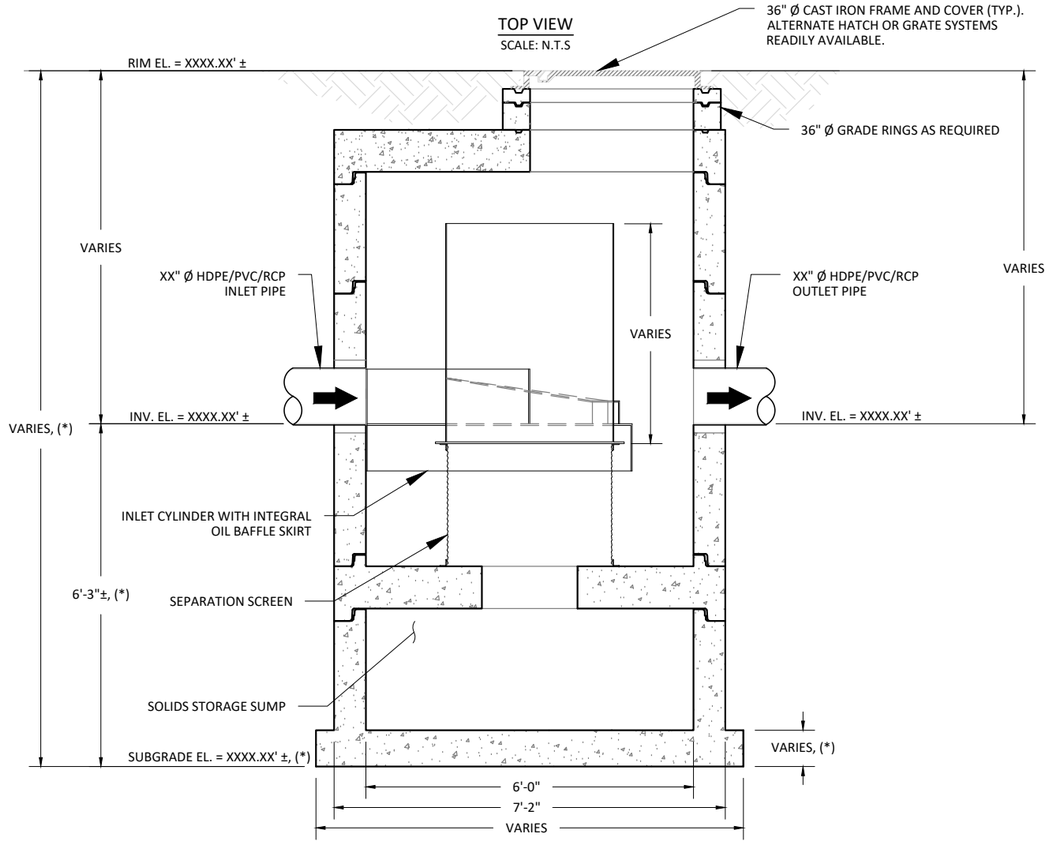


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS72-3624

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 2.0 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 14 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:						
JDS72-3624 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME PROJECT LOCATION			JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com			
HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE XX/XX/XXXX	REV. DWG. DATE XX/XX/XXXX	SCALE: AS SHOWN	SHEET SIZE 11" X 17"	DRAWN BY X.XXXX	SHEET NUMBER JDS72-3624	

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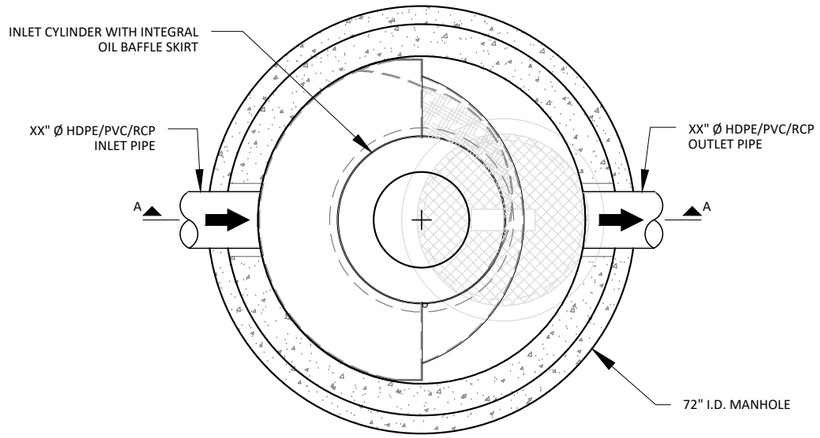
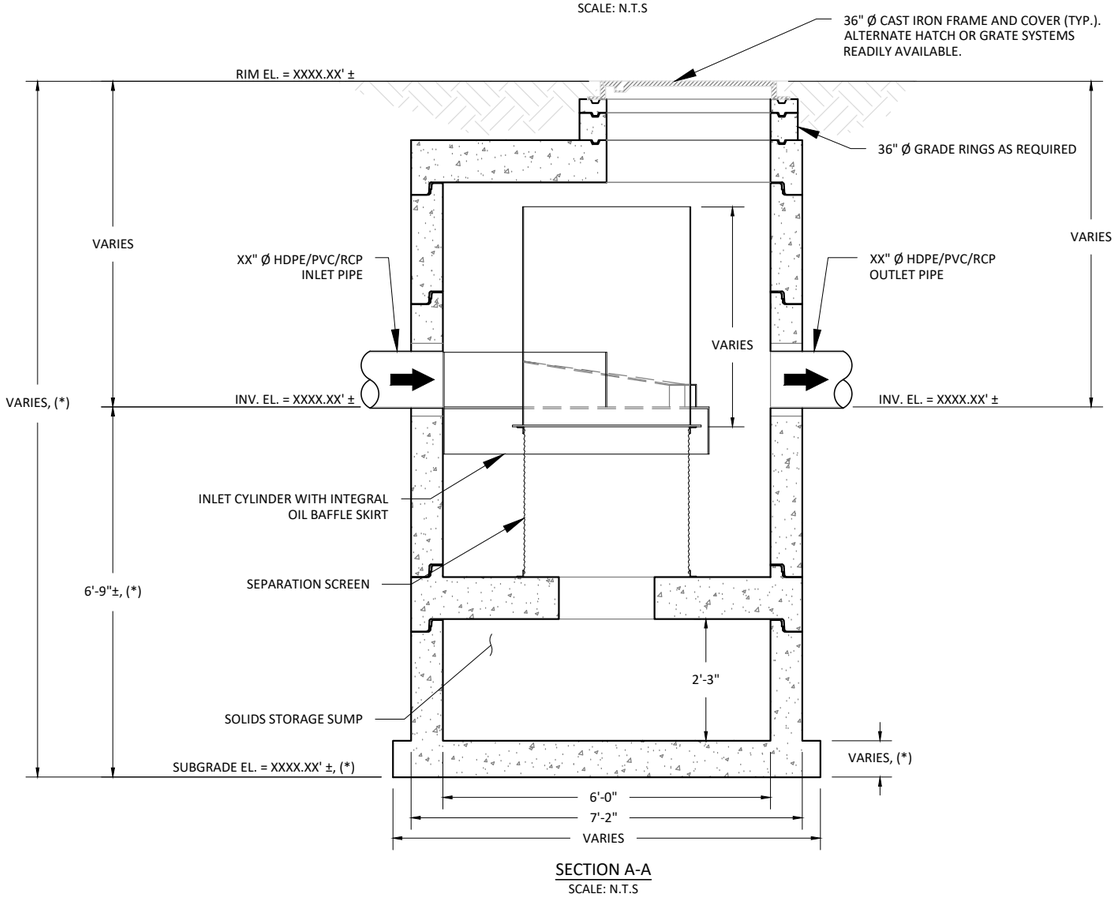


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS72-3630

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 2.4 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 14 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:	
JDS72-3630 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME PROJECT LOCATION	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	JDS72-3630

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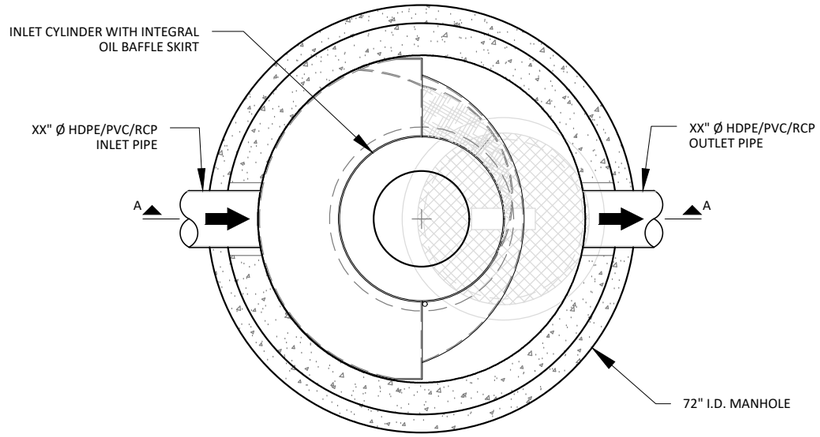
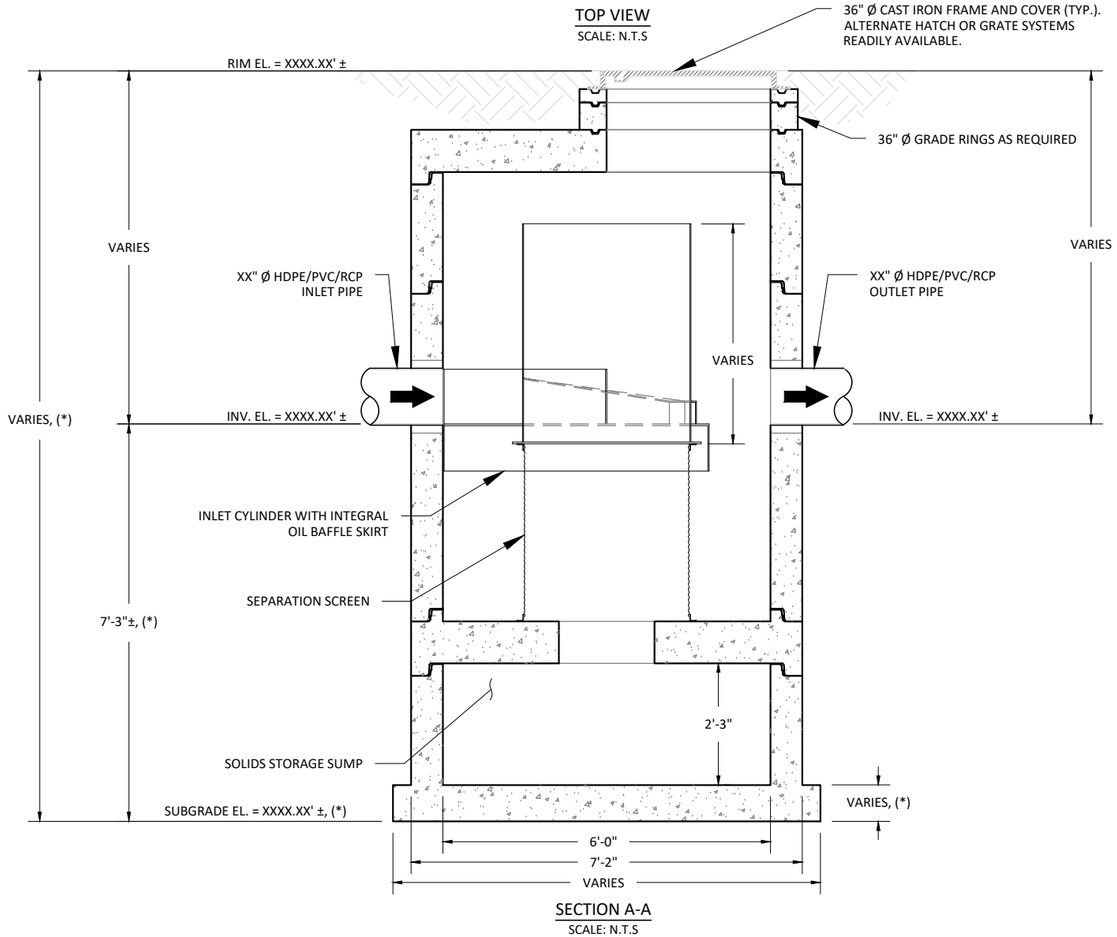


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS72-3636

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 3.0 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 14 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:	
JDS72-3636 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME PROJECT LOCATION	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	JDS72-3636

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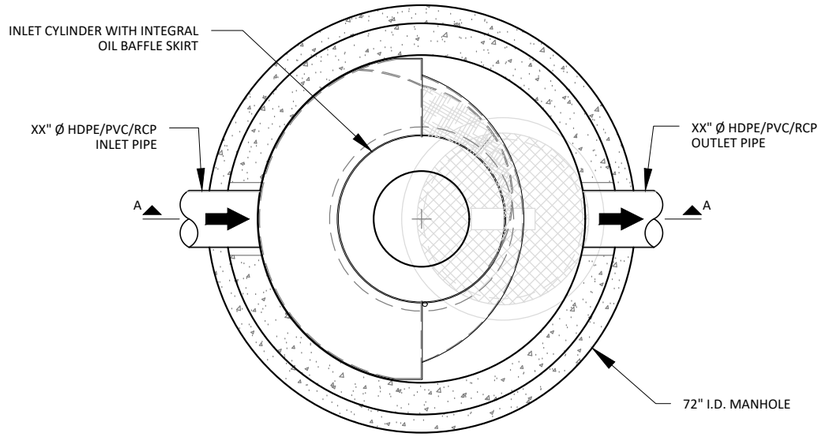
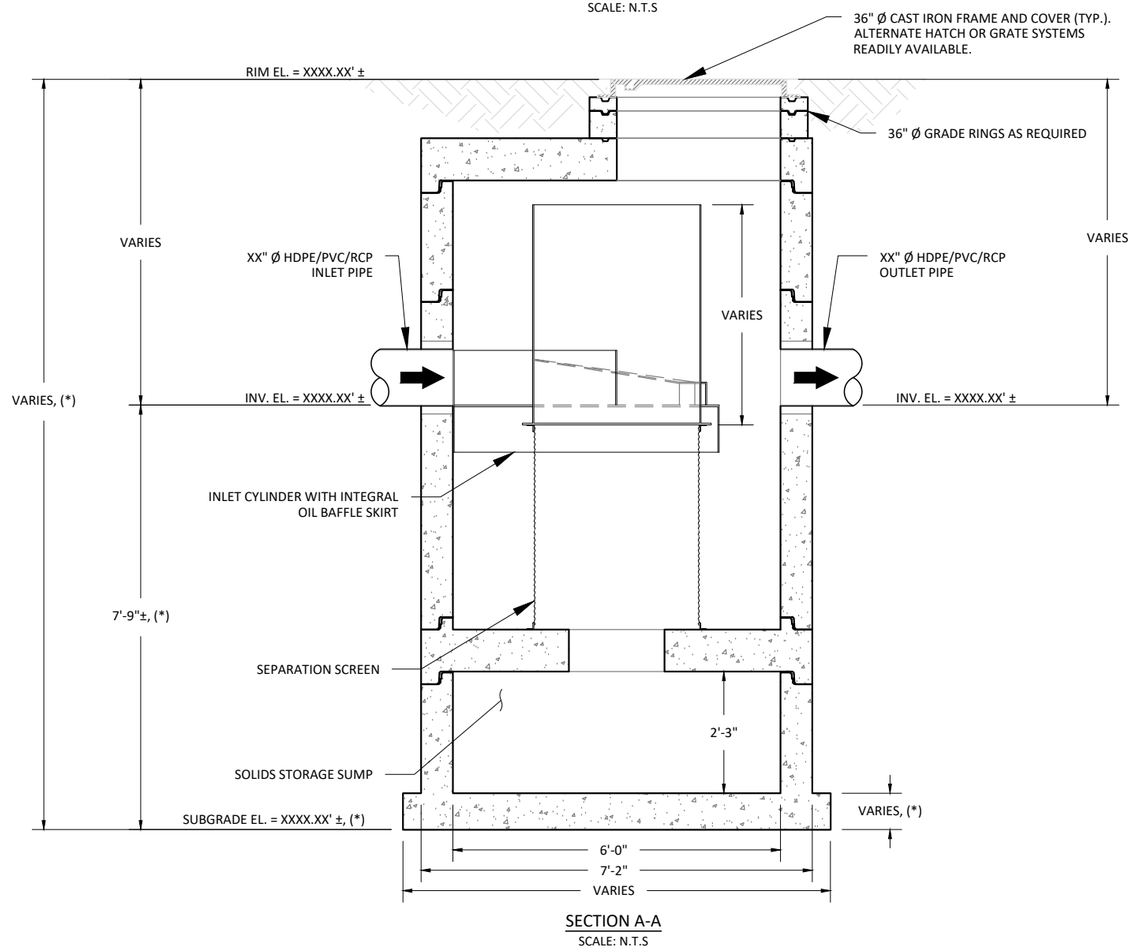


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS72-3642

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 3.8 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 14 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:	
JDS72-3642 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME PROJECT LOCATION	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	JDS72-3642

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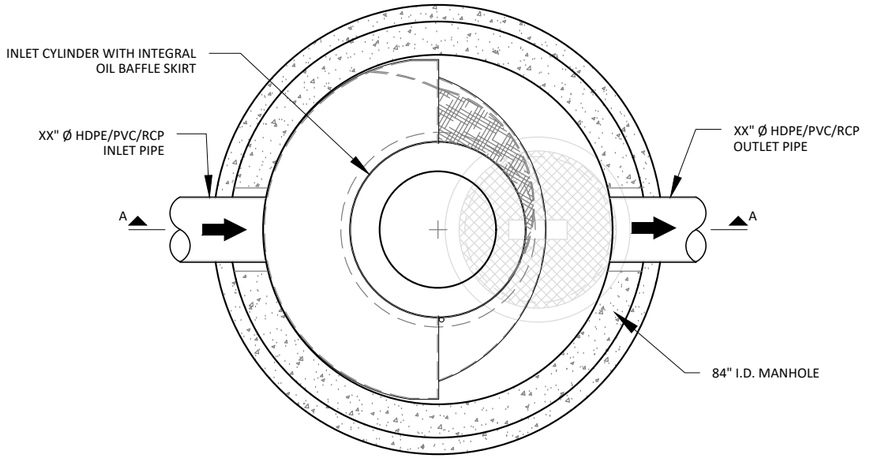
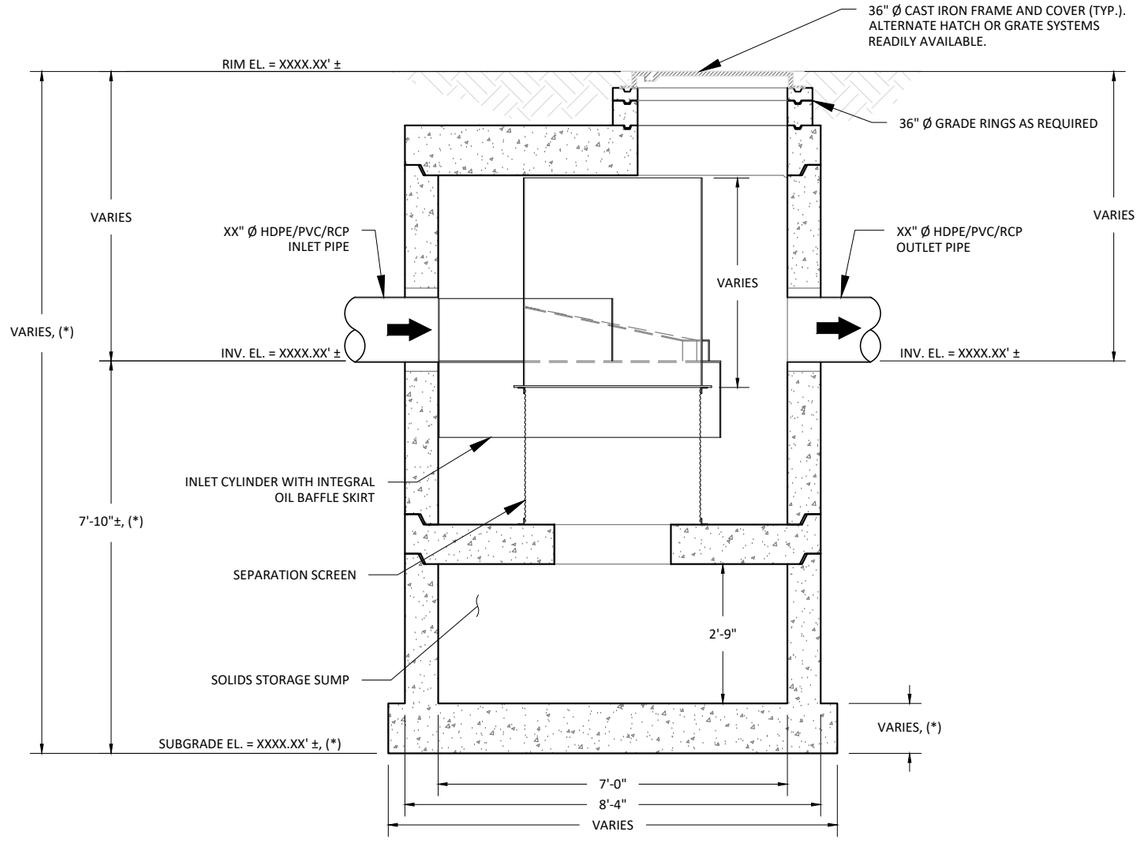


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS84-4230

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 2.7 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 14 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:	
JDS84-4230 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME PROJECT LOCATION	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	JDS84-4230

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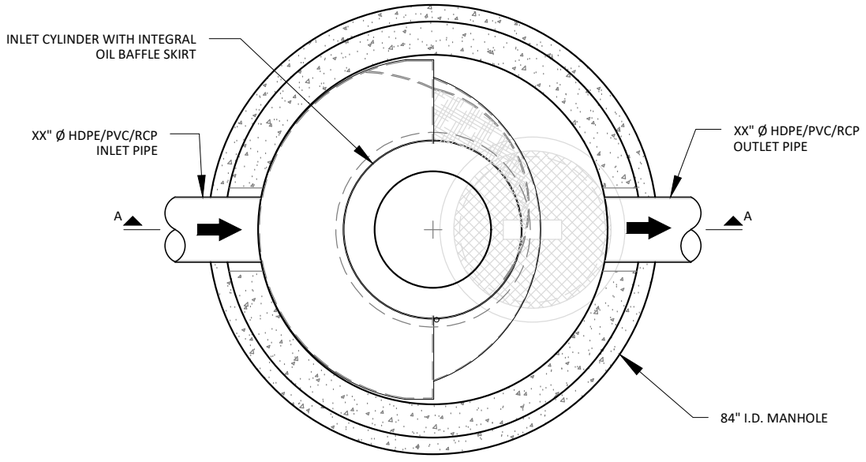
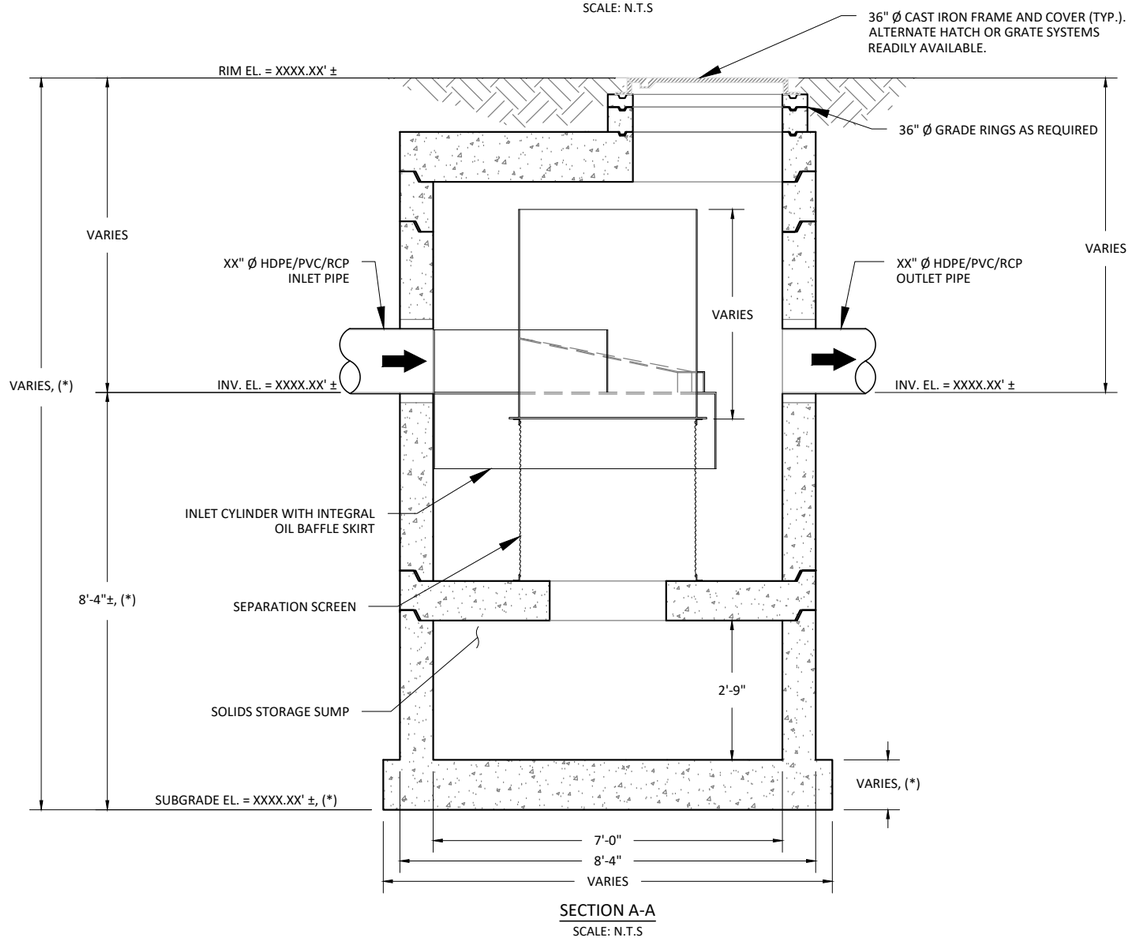


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS84-4236

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 3.6 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 14 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:	
JDS84-4236 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME PROJECT LOCATION	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	JDS84-4236

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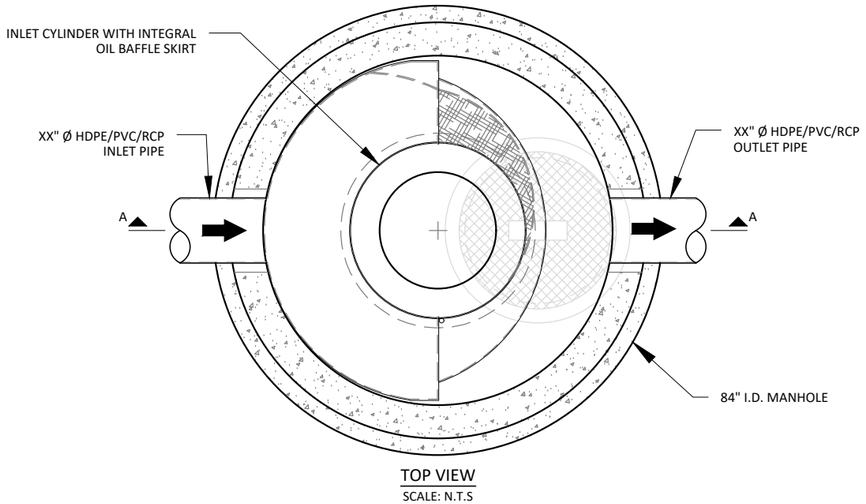
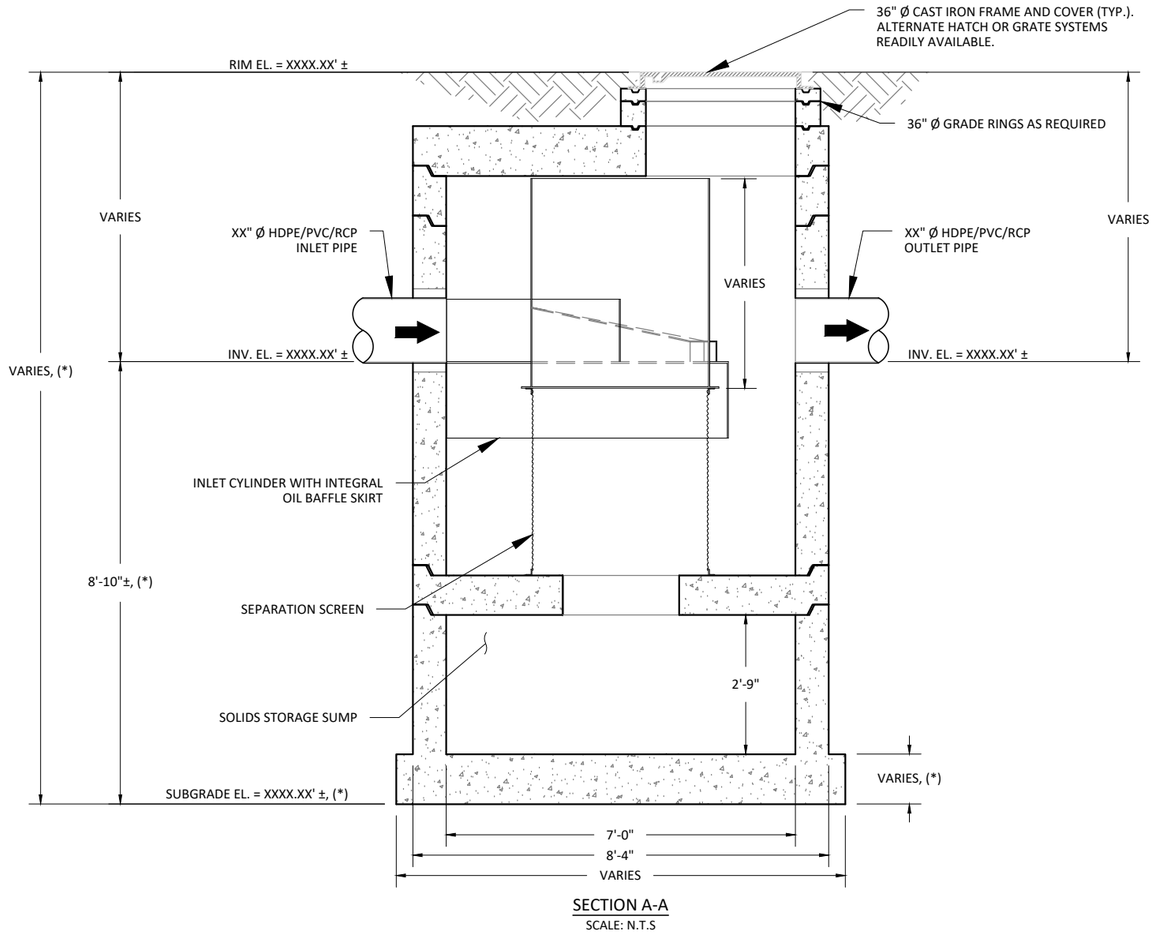


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS84-4242

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 4.4 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 14 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL: ***JDS84-4242 JENSEN DEFLECTIVE SEPARATOR***	**PROJECT:** PROJECT NAME PROJECT LOCATION			JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com		
HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE XX/XX/XXXX	REV. DWG. DATE XX/XX/XXXX	SCALE: AS SHOWN	SHEET SIZE 11" X 17"	DRAWN BY X.XXXX	SHEET NUMBER JDS84-4242

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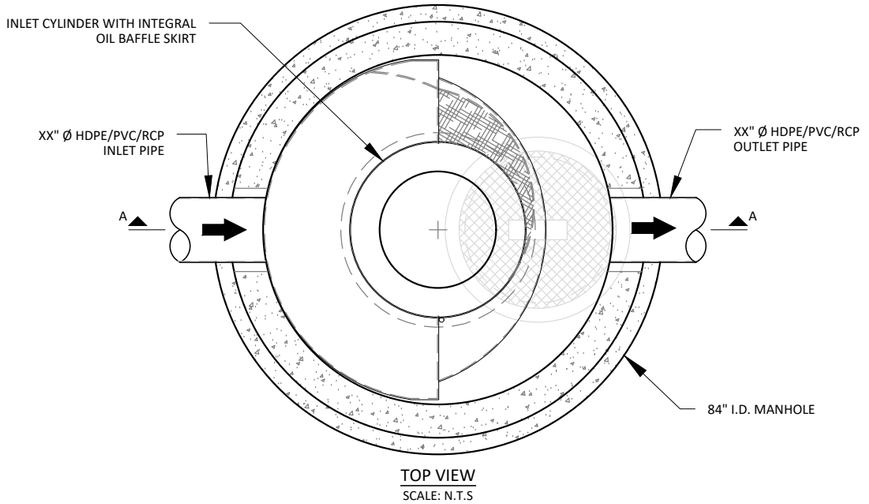
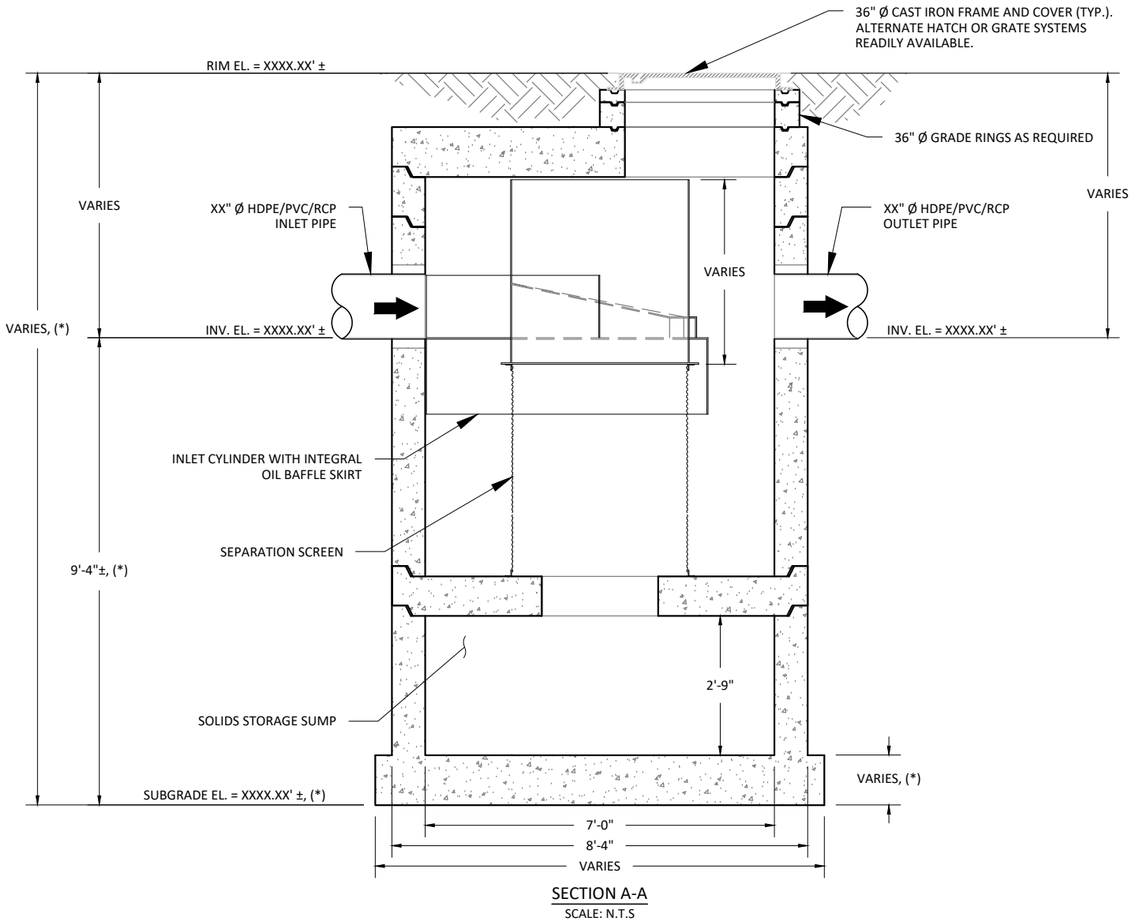


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS84-4248

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 5.5 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 14 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:					
JDS84-4248 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME PROJECT LOCATION			JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com		
HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE XX/XX/XXXX	REV. DWG. DATE XX/XX/XXXX	SCALE: AS SHOWN	SHEET SIZE 11" X 17"	DRAWN BY X.XXXX	SHEET NUMBER JDS84-4248

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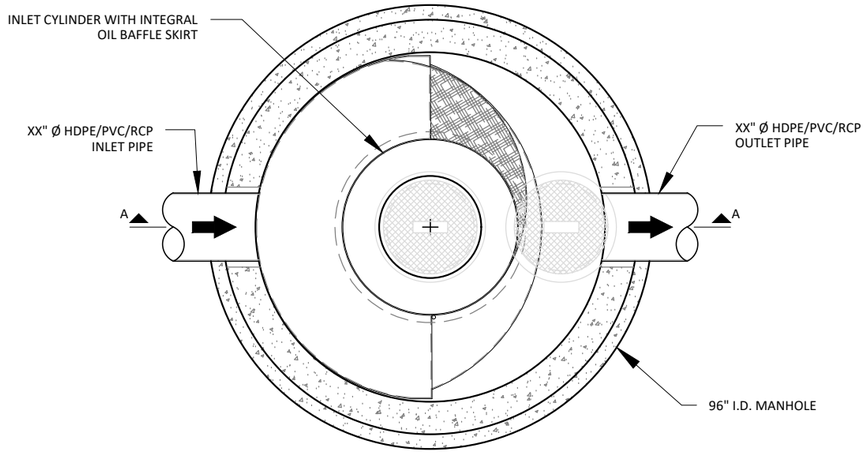
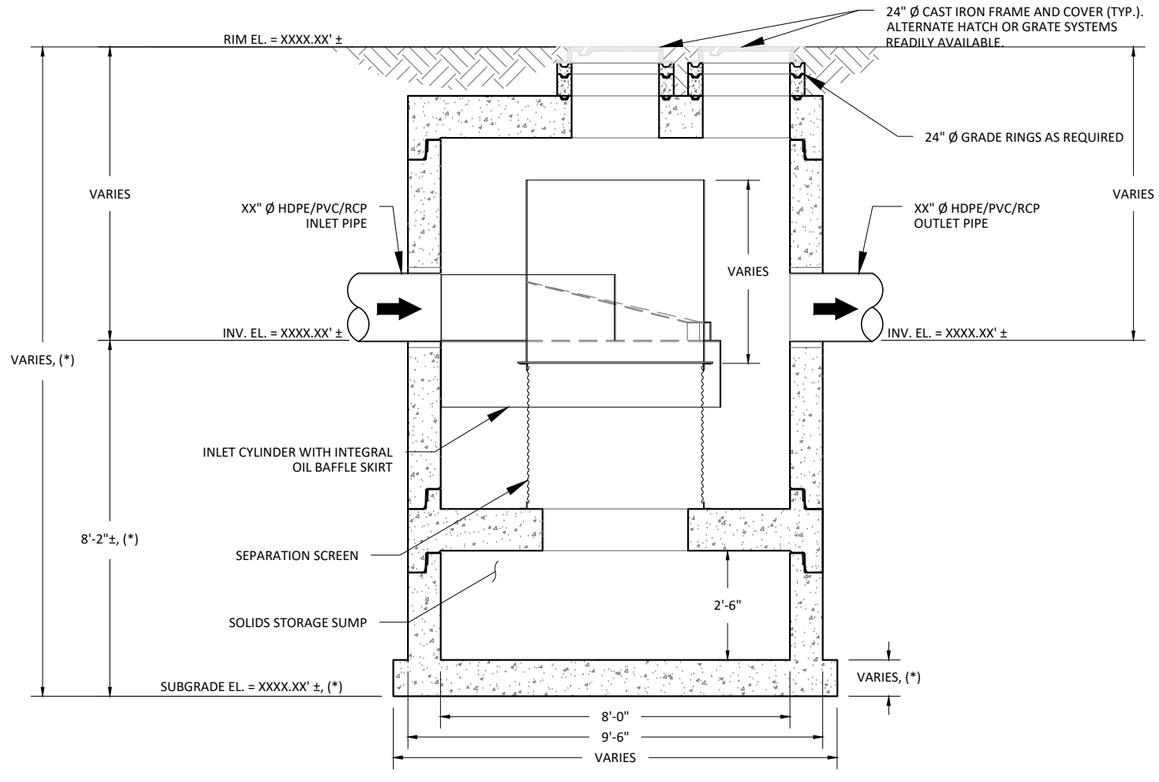


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS96-4836

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 4.5 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 20 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL: ***JDS96-4836*** ***JENSEN DEFLECTIVE SEPARATOR***	**PROJECT:** PROJECT NAME PROJECT LOCATION			JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com		
HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE: XX/XX/XXXX	REV. DWG. DATE: XX/XX/XXXX	SCALE: AS SHOWN	SHEET SIZE: 11" X 17"	DRAWN BY: X.XXXX	SHEET NUMBER: JDS96-4836

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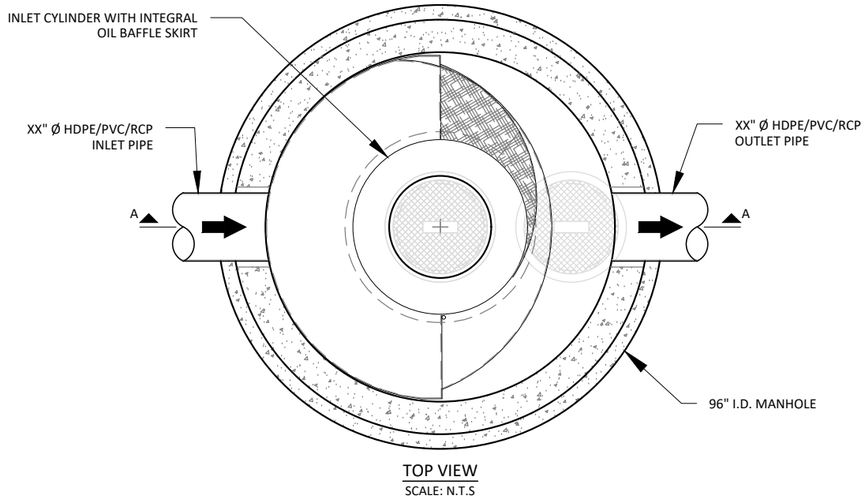
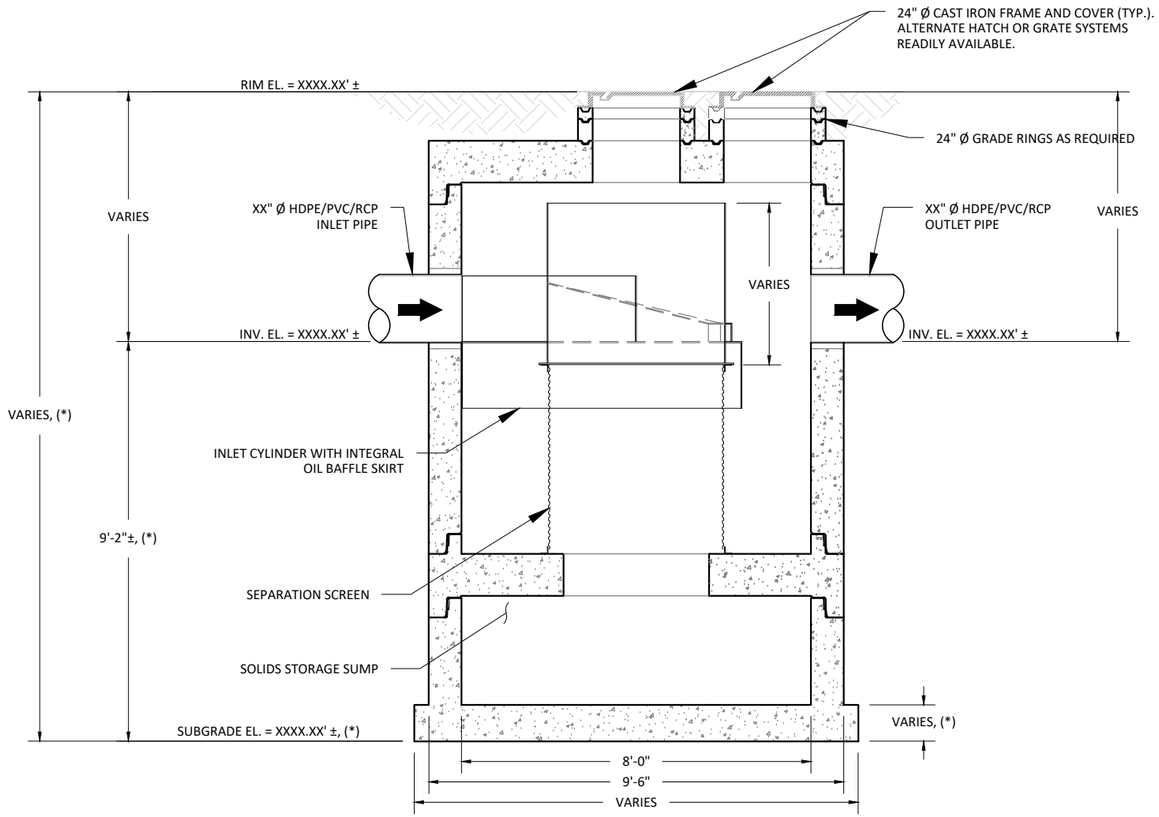


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS96-4848

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 6.0 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 24 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL: ***JDS96-4848*** ***JENSEN DEFLECTIVE SEPARATOR***	**PROJECT:** PROJECT NAME PROJECT LOCATION			JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com		
HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE XX/XX/XXXX	REV. DWG. DATE XX/XX/XXXX	SCALE: AS SHOWN	SHEET SIZE 11" X 17"	DRAWN BY X.XXXX	SHEET NUMBER JDS96-4848

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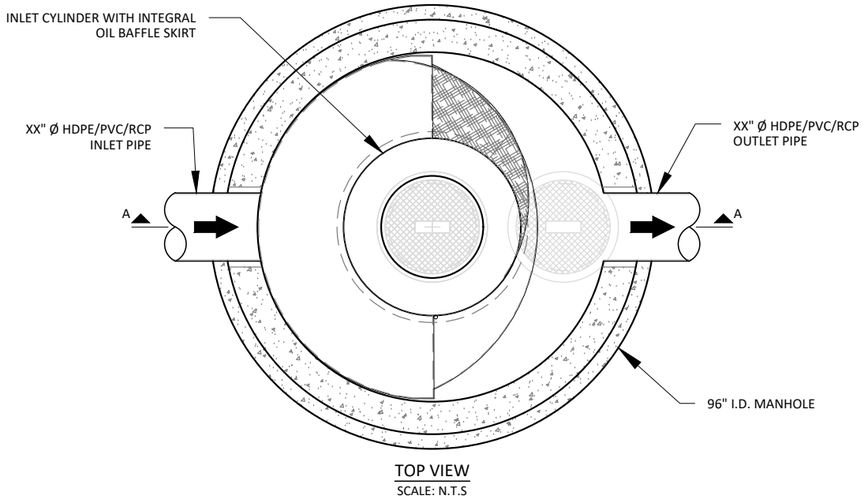
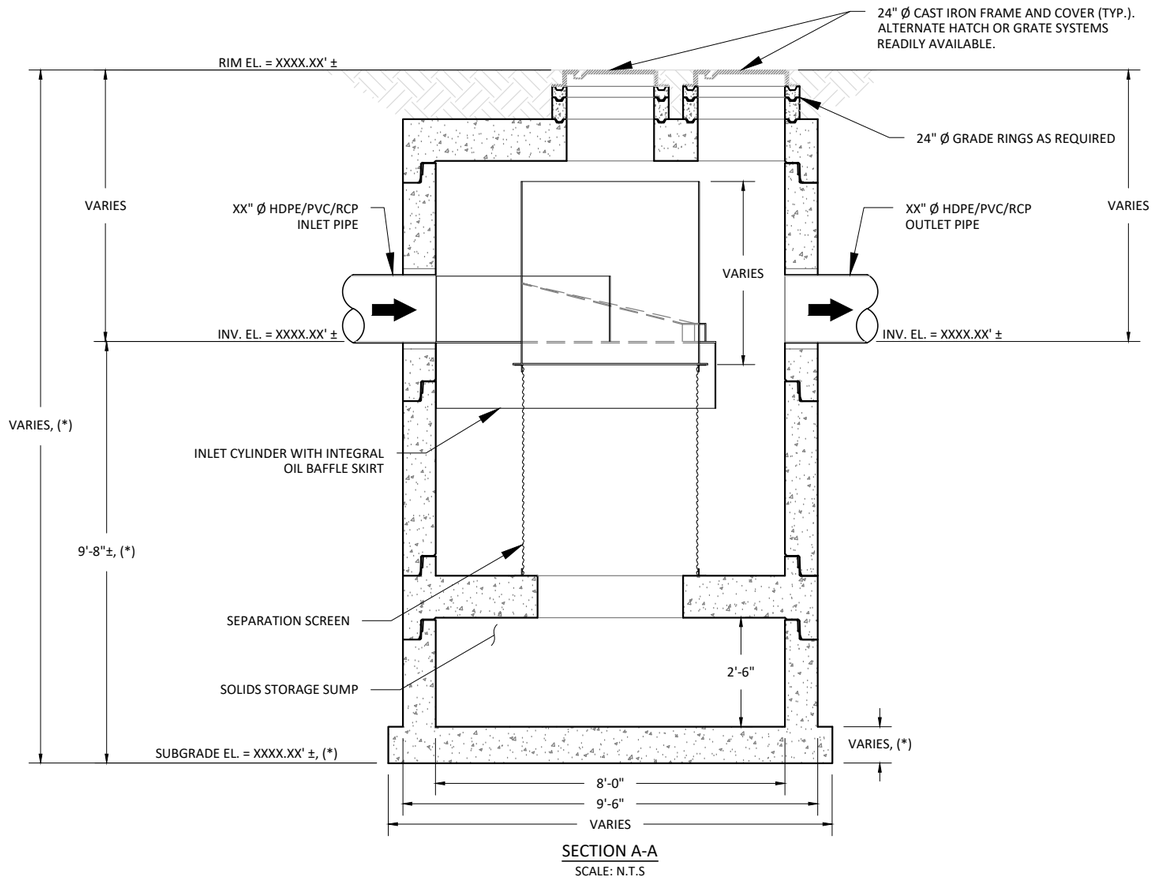


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS96-4854

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 7.5 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 30 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:	
JDS96-4854 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME PROJECT LOCATION	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	JDS96-4854

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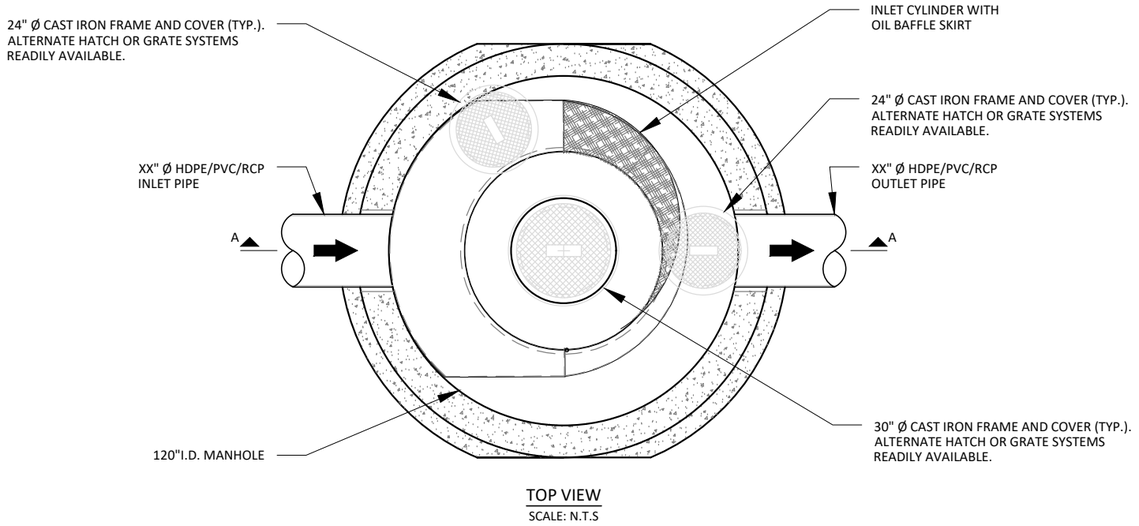
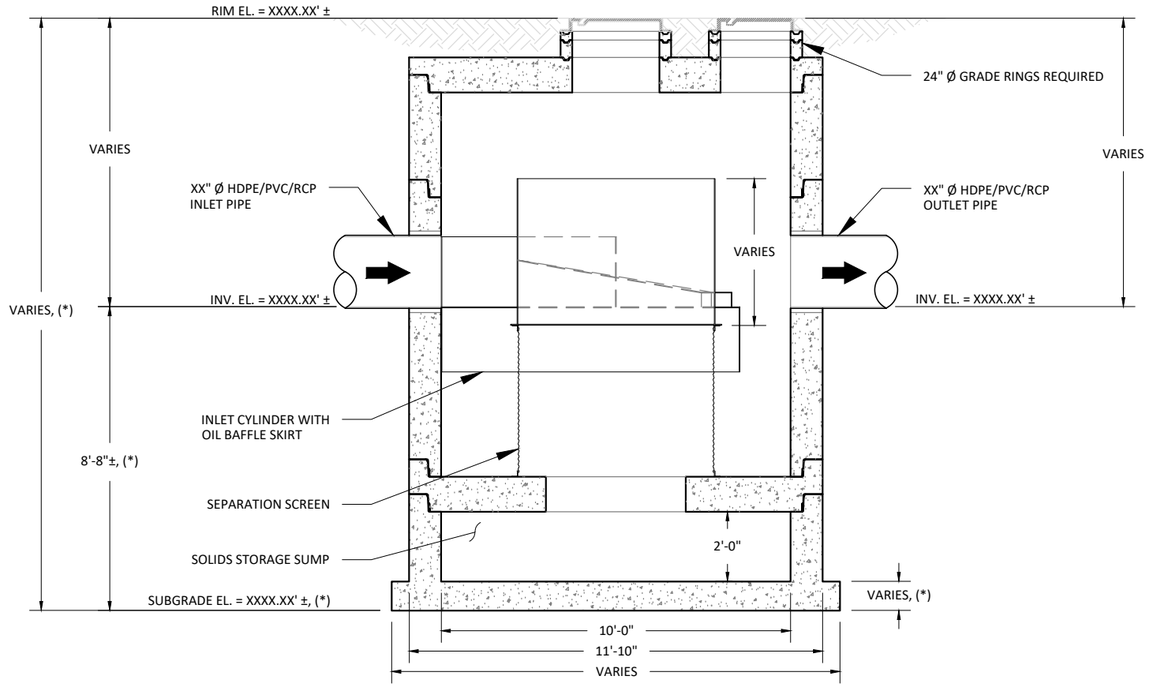


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS120-6748

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 9.0 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 50 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:	
JDS120-6748 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	JDS120-6748

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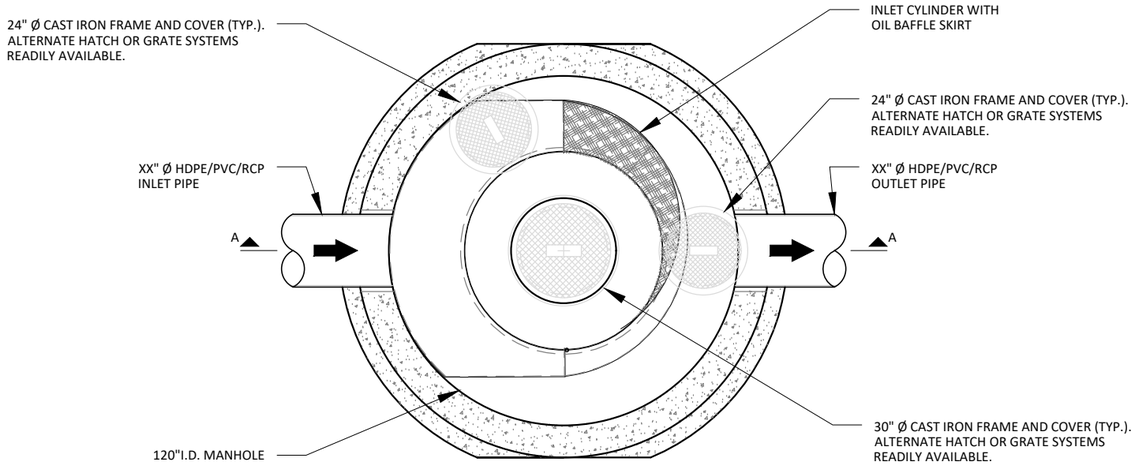
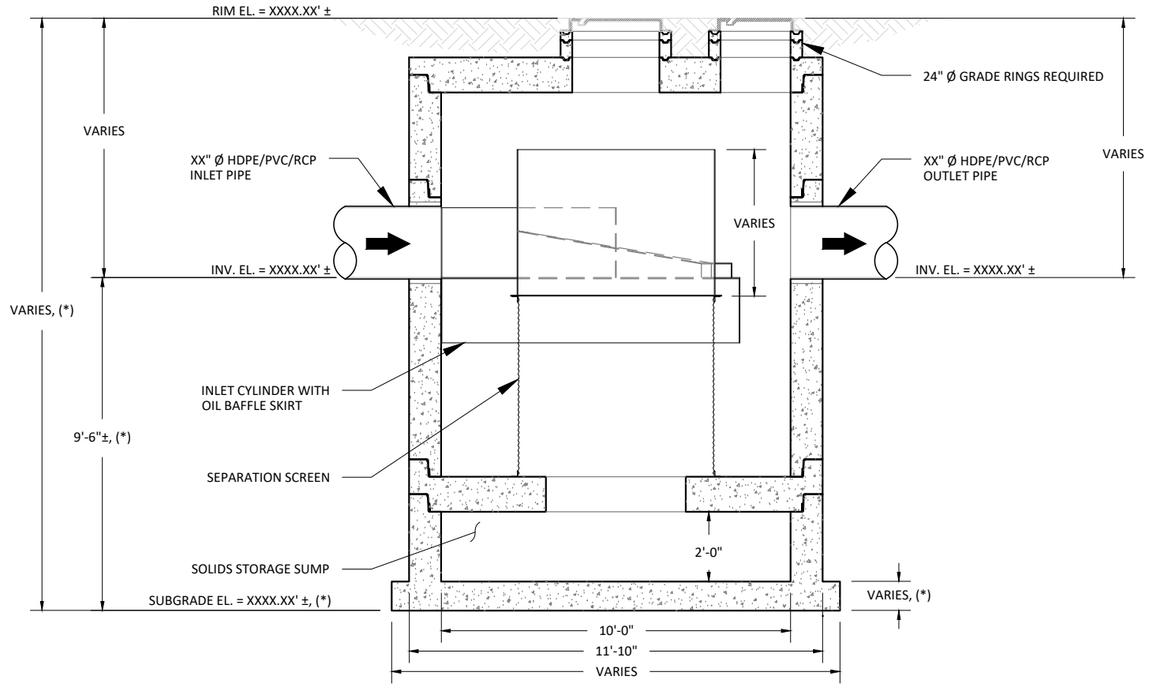


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS120-6758

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 11.0 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 50 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:	
JDS120-6758 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	JDS120-6758

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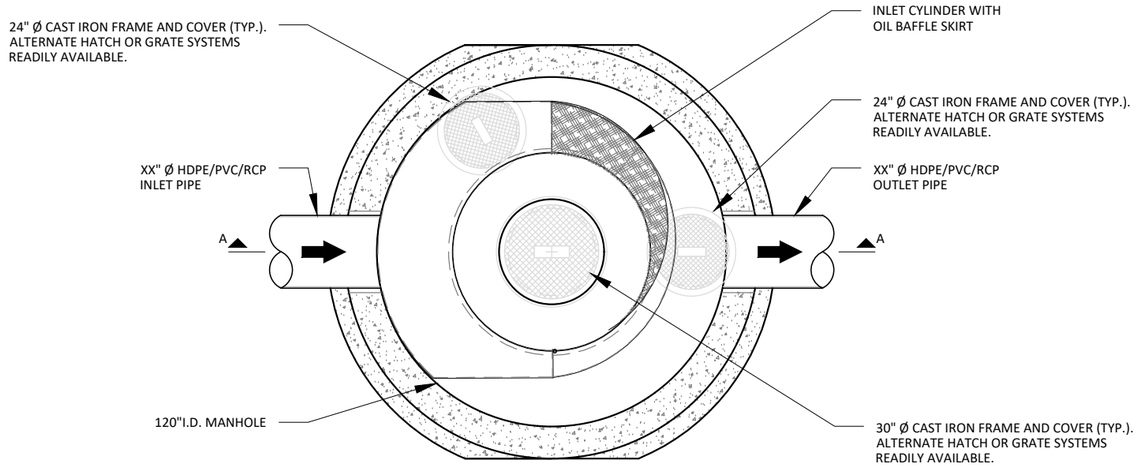
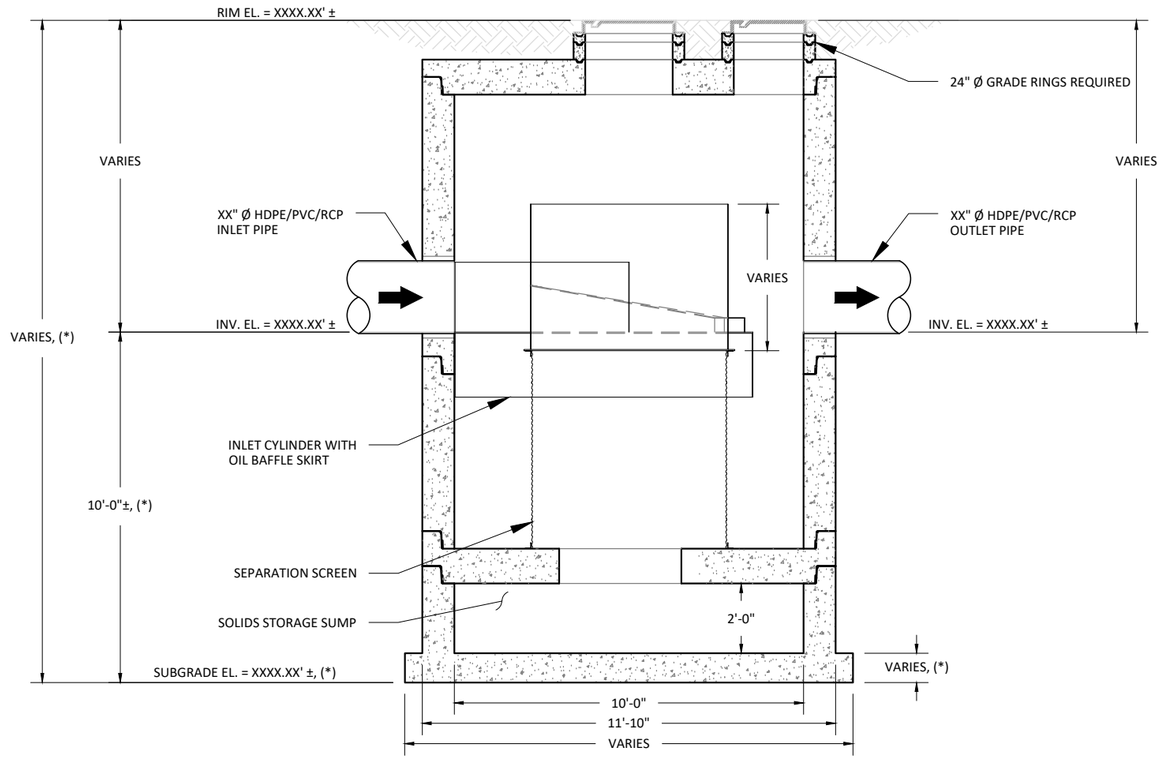


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS120-6764

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 14.0 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 50 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:	
JDS120-6764 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	JDS120-6764

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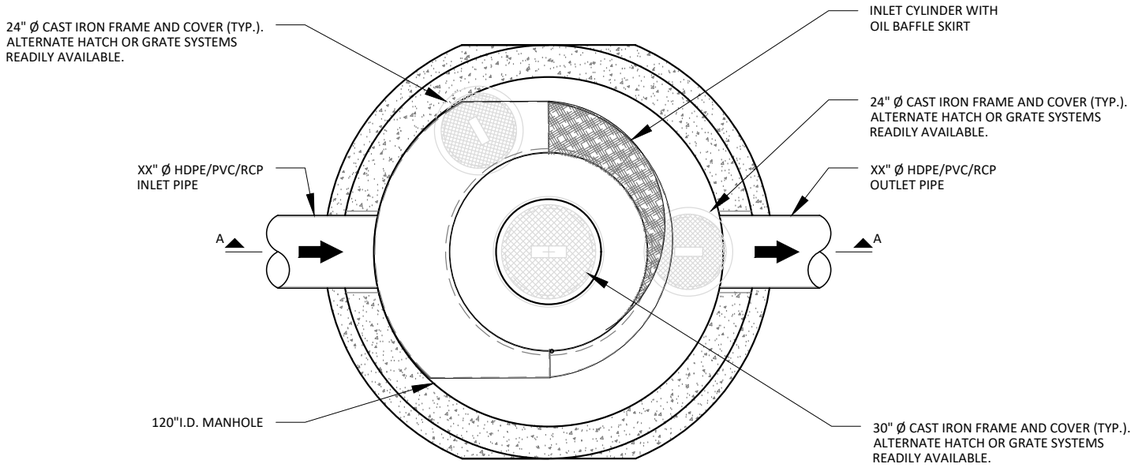
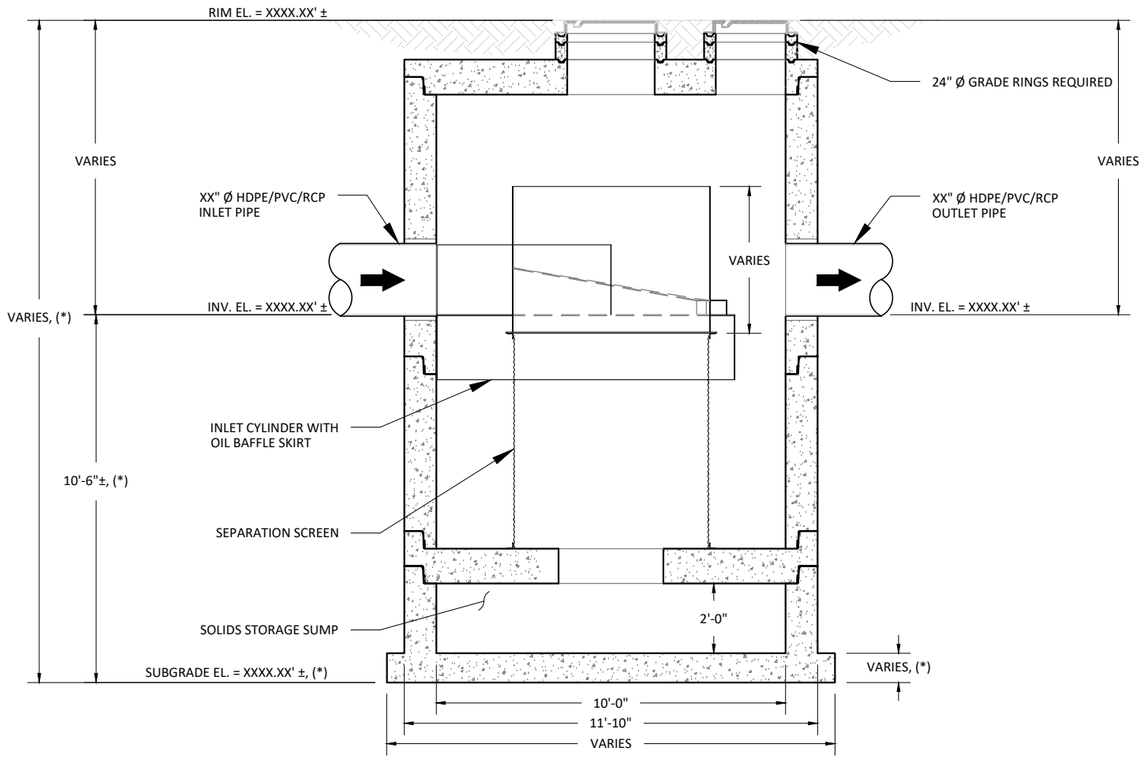


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS120-6770

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 15.0 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 50 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:	
JDS120-6770 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2313 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	JDS120-6770

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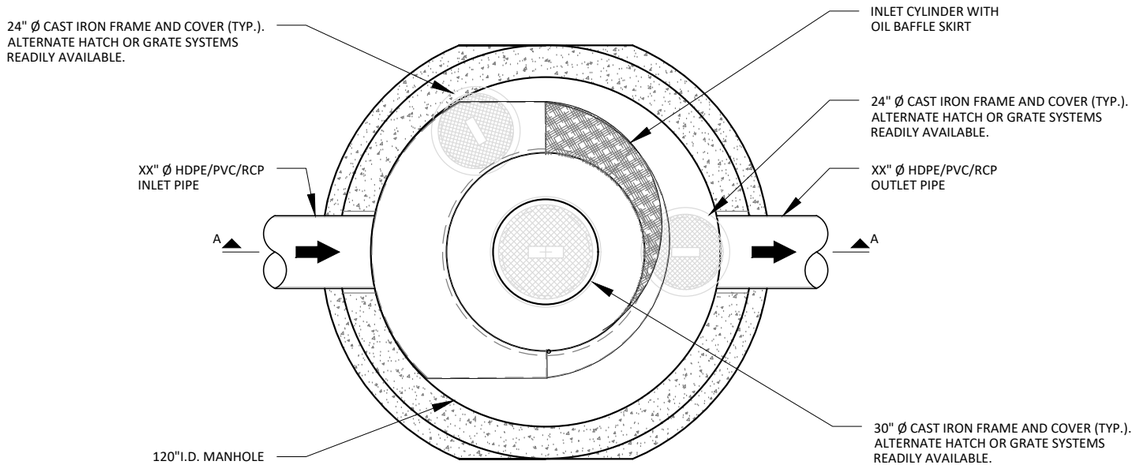
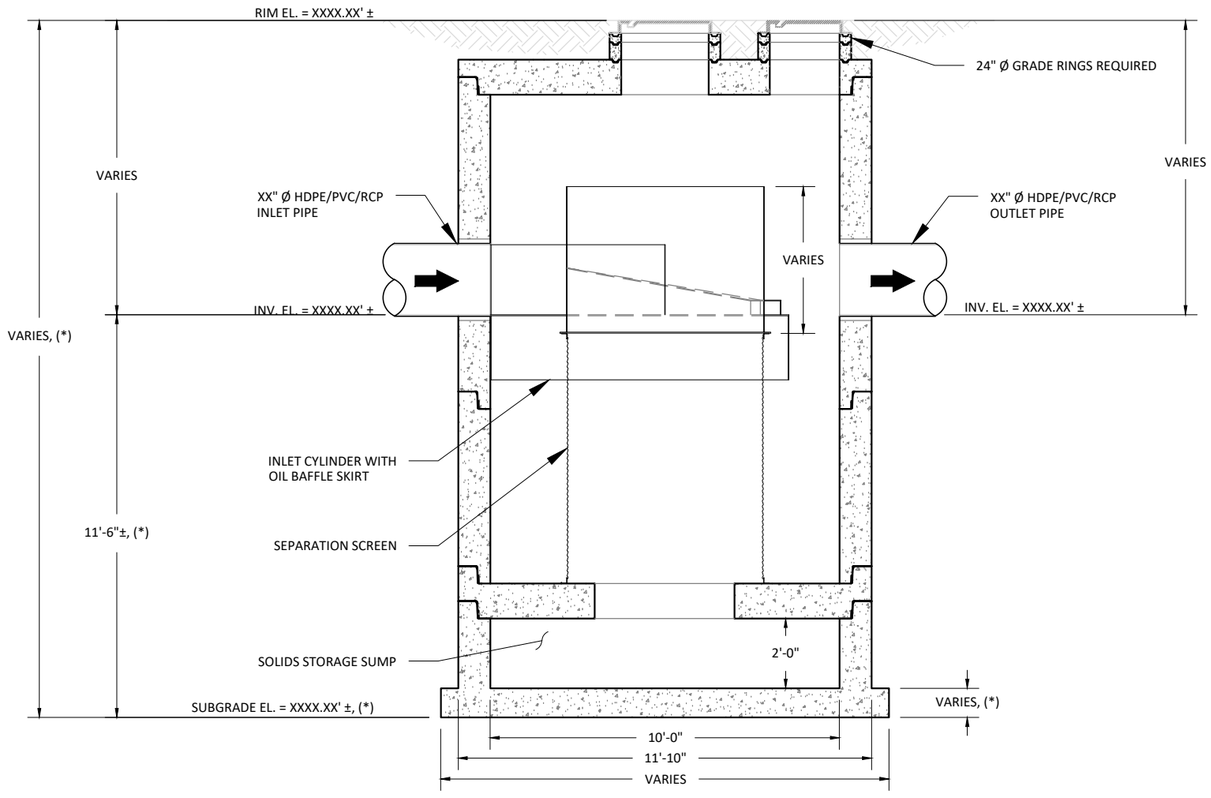


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS120-6782

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 19.0 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 50 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:	
JDS120-6782 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	JDS120-6782

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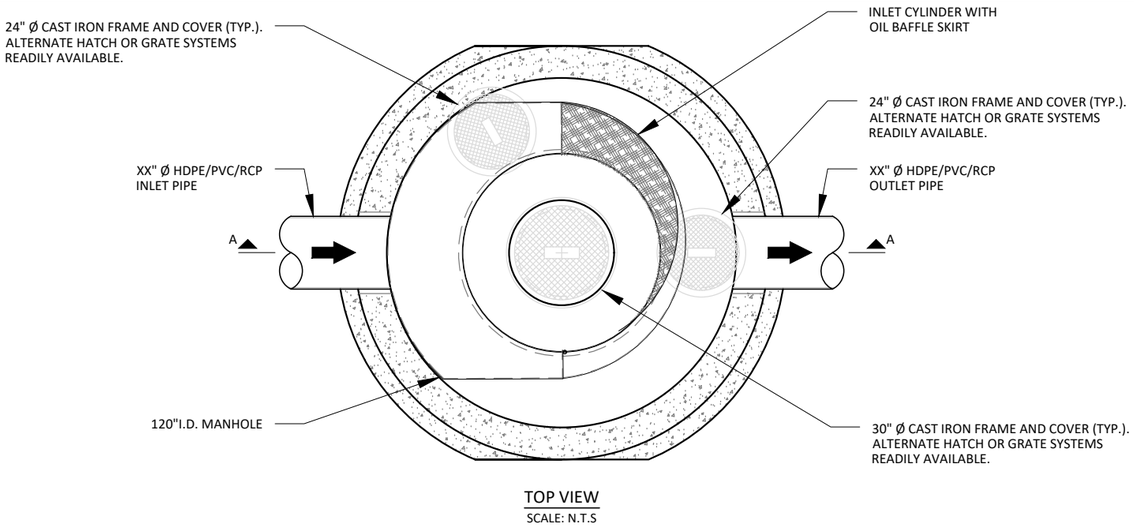
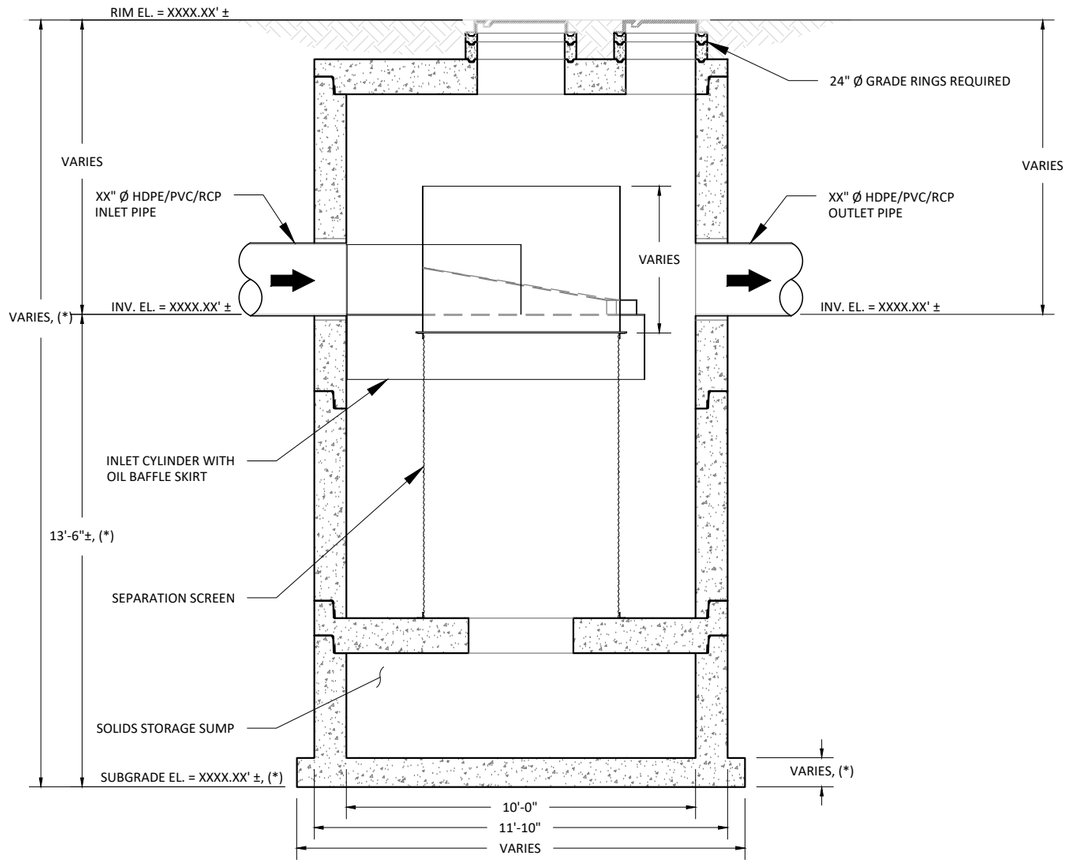


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS120-6794

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 25.0 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 50 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:	
JDS120-6794 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	JDS120-6794

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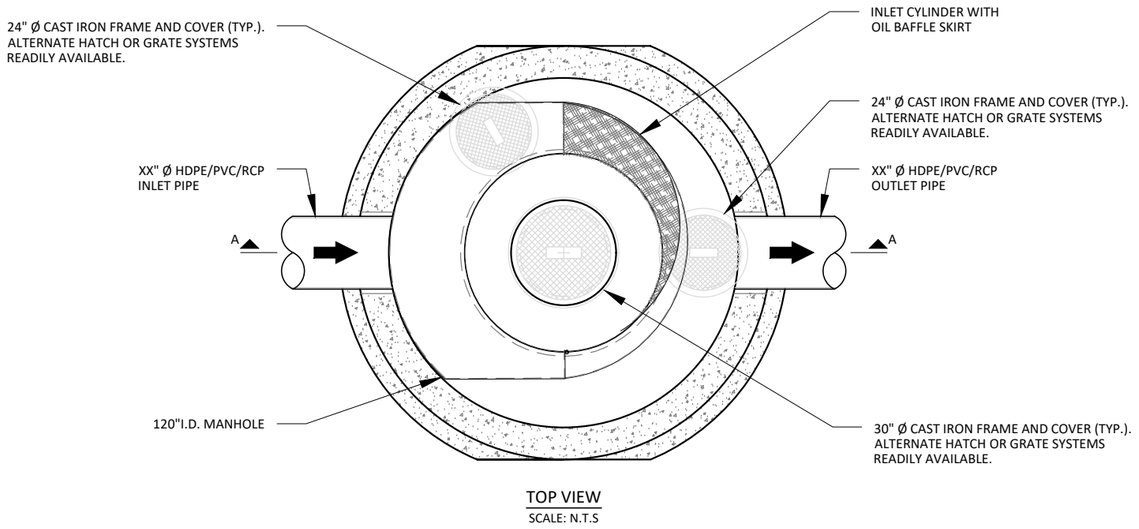
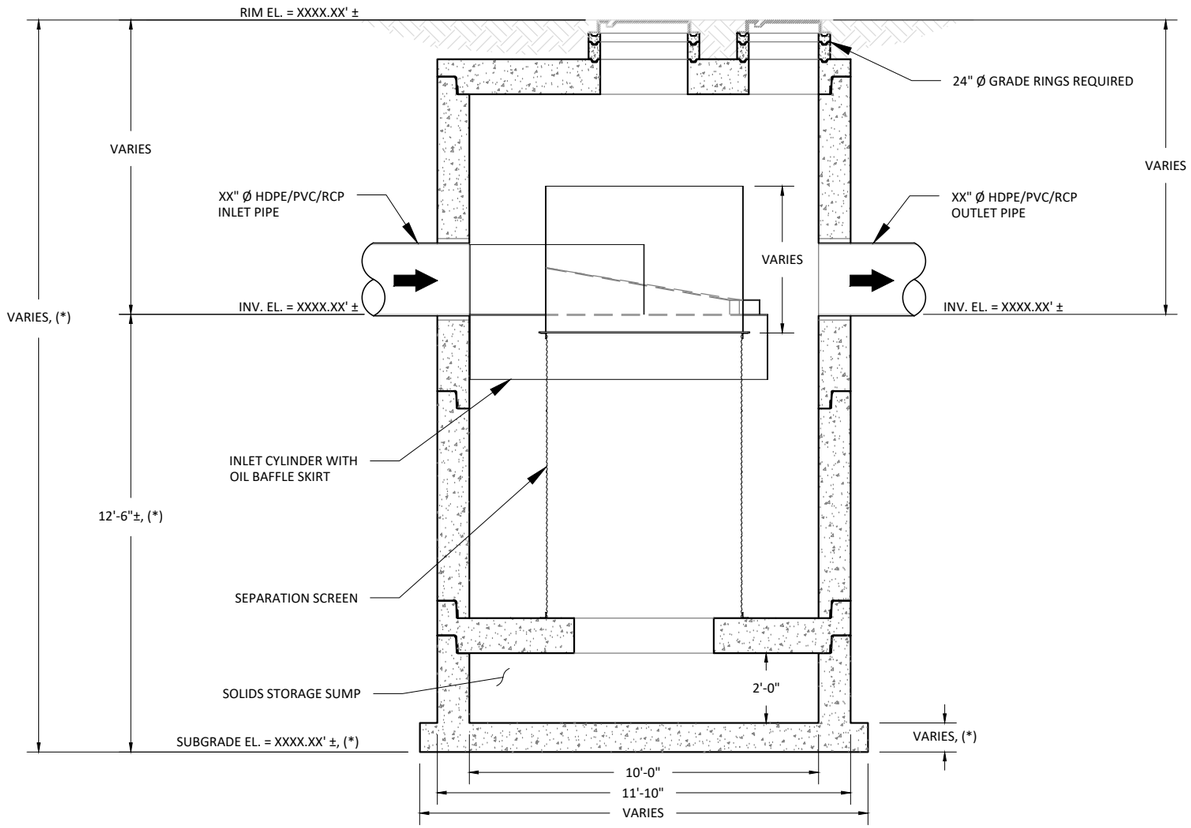


TOP VIEW

SCALE: N.T.S



SECTION A-A

SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS120-6794

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 25.0 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 50 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:	
JDS120-6794 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	JDS120-6794

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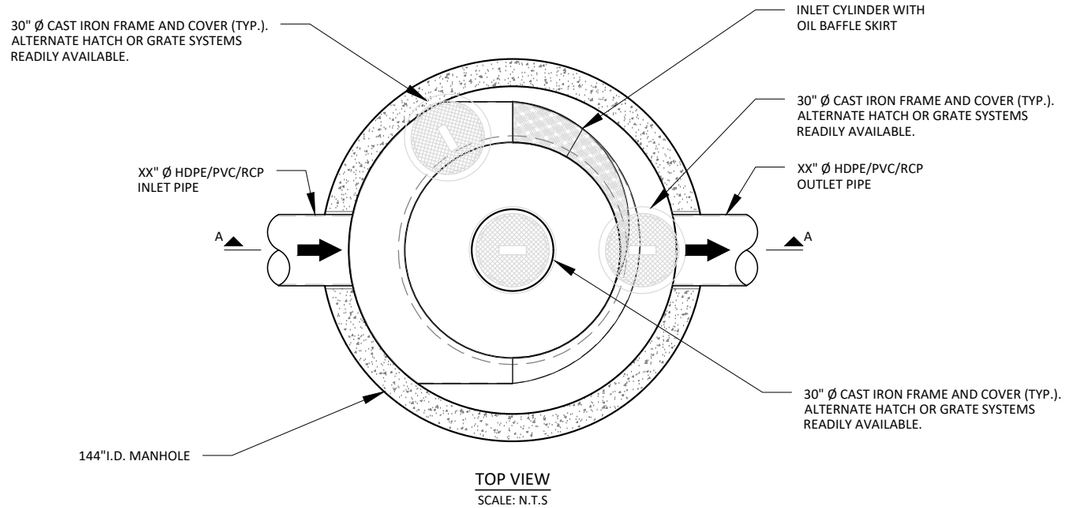
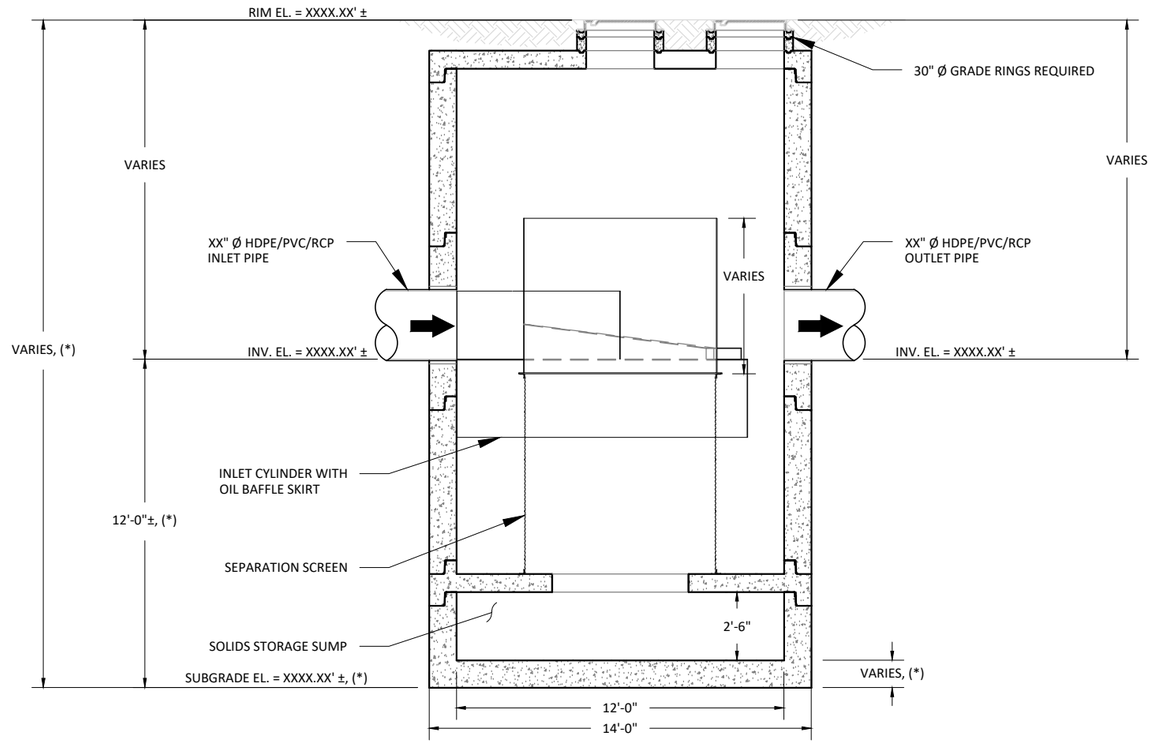


TOP VIEW

SCALE: N.T.S



SECTION A-A

SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS144-8484

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 25.2 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 50 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL: ***JDS144-8484 JENSEN DEFLECTIVE SEPARATOR***	**PROJECT:** PROJECT NAME CITY, STATE			JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com		
HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE XX/XX/XXXX	REV. DWG. DATE XX/XX/XXXX	SCALE: AS SHOWN	SHEET SIZE 11" X 17"	DRAWN BY X.XXXX	SHEET NUMBER JDS144-8484

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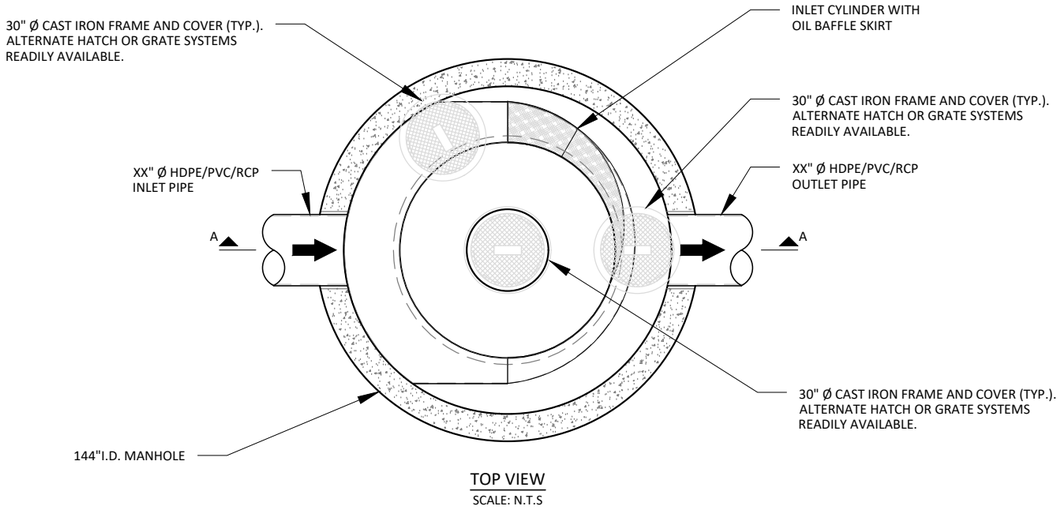
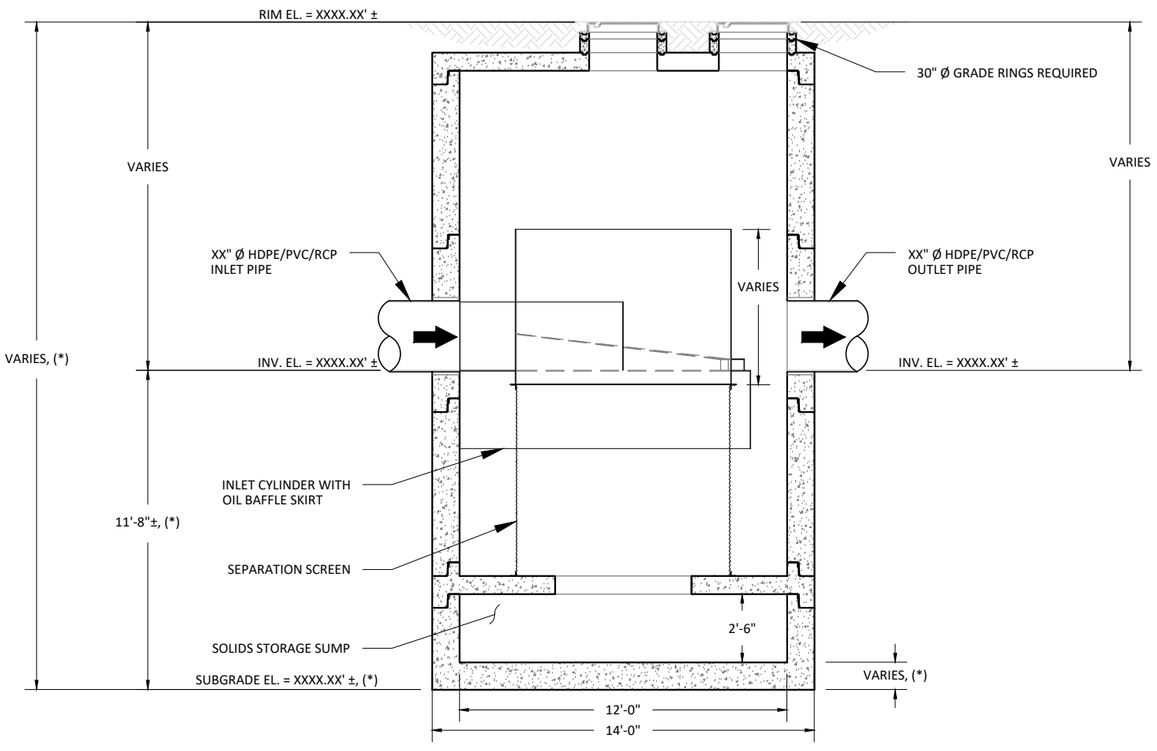


TOP VIEW

SCALE: N.T.S



SECTION A-A

SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS144-9480

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 25.7 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 50 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL: ***JDS144-9480*** ***JENSEN DEFLECTIVE SEPARATOR***	**PROJECT:** PROJECT NAME CITY, STATE			JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com		
HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE XX/XX/XXXX	REV. DWG. DATE XX/XX/XXXX	SCALE: AS SHOWN	SHEET SIZE 11" X 17"	DRAWN BY X.XXXX	SHEET NUMBER JDS144-9480

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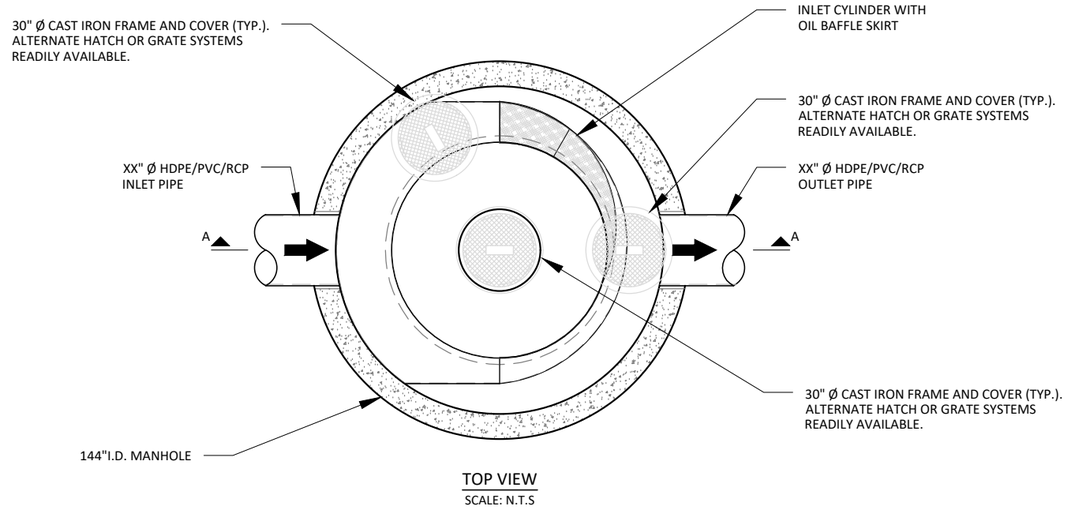
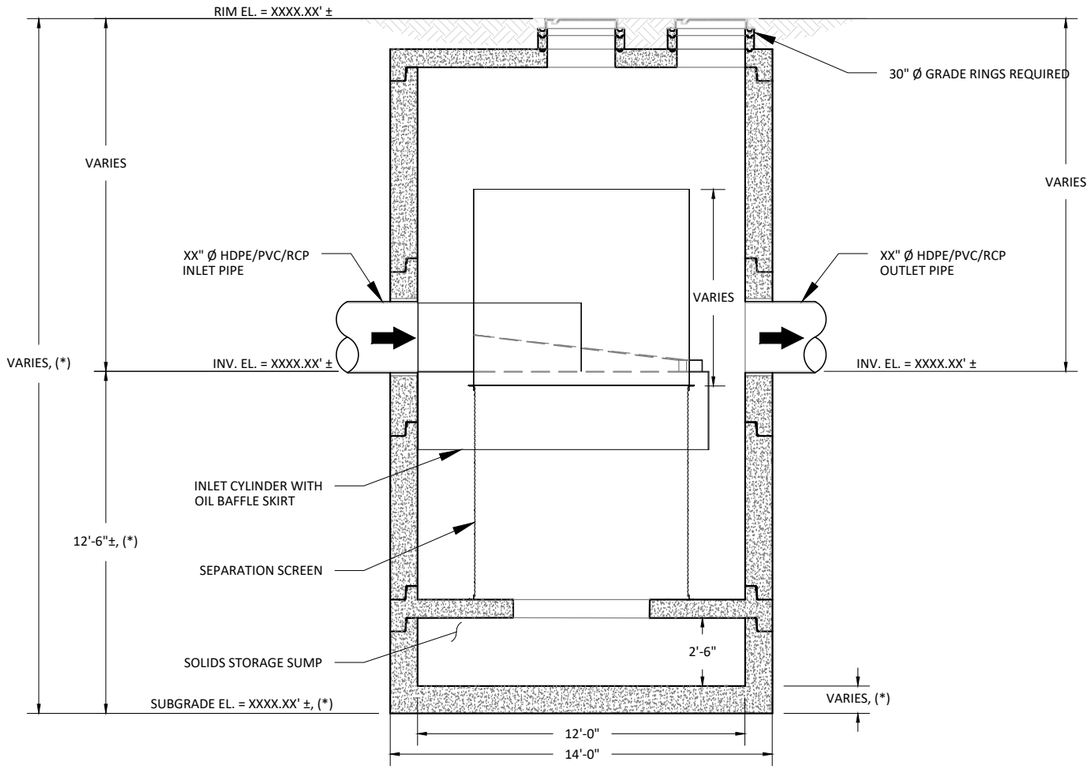


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS144-9490

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	31.2 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 50 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:	PROJECT:	
JDS144-9490 ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	JDS144-9490

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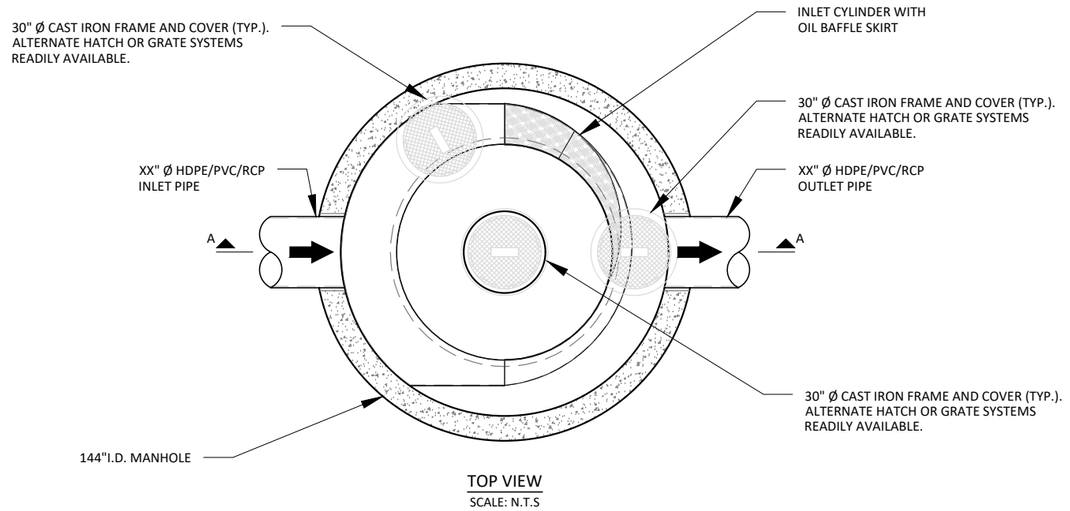
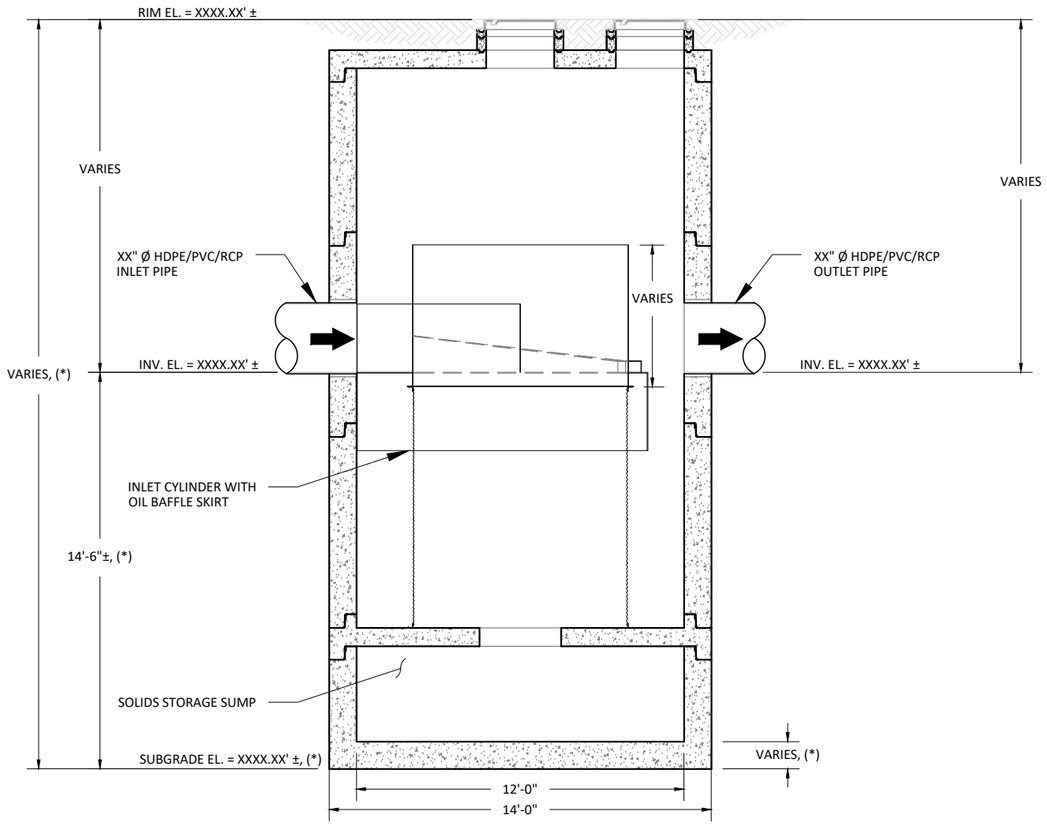


TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS144-94102

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 38.0 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 50 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:
JDS144-94102
JENSEN DEFLECTIVE SEPARATOR

PROJECT:
PROJECT NAME
CITY, STATE

JENSEN STORMWATER SYSTEMS
521 DUNN CIRCLE, SPARKS, NV 89431-6312
(877) 649-0095 FAX (775) 440-2013
www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT

ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	JDS144-94102

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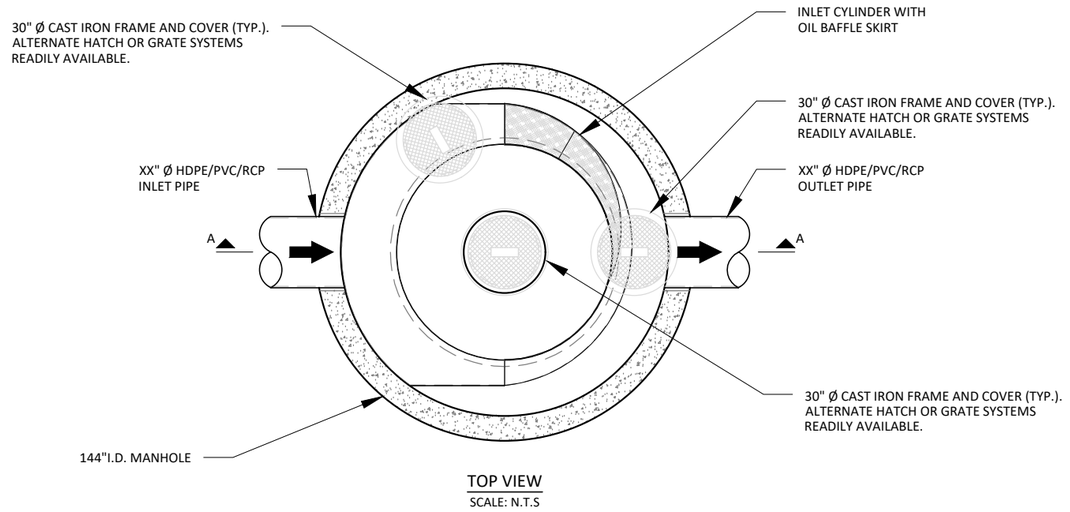
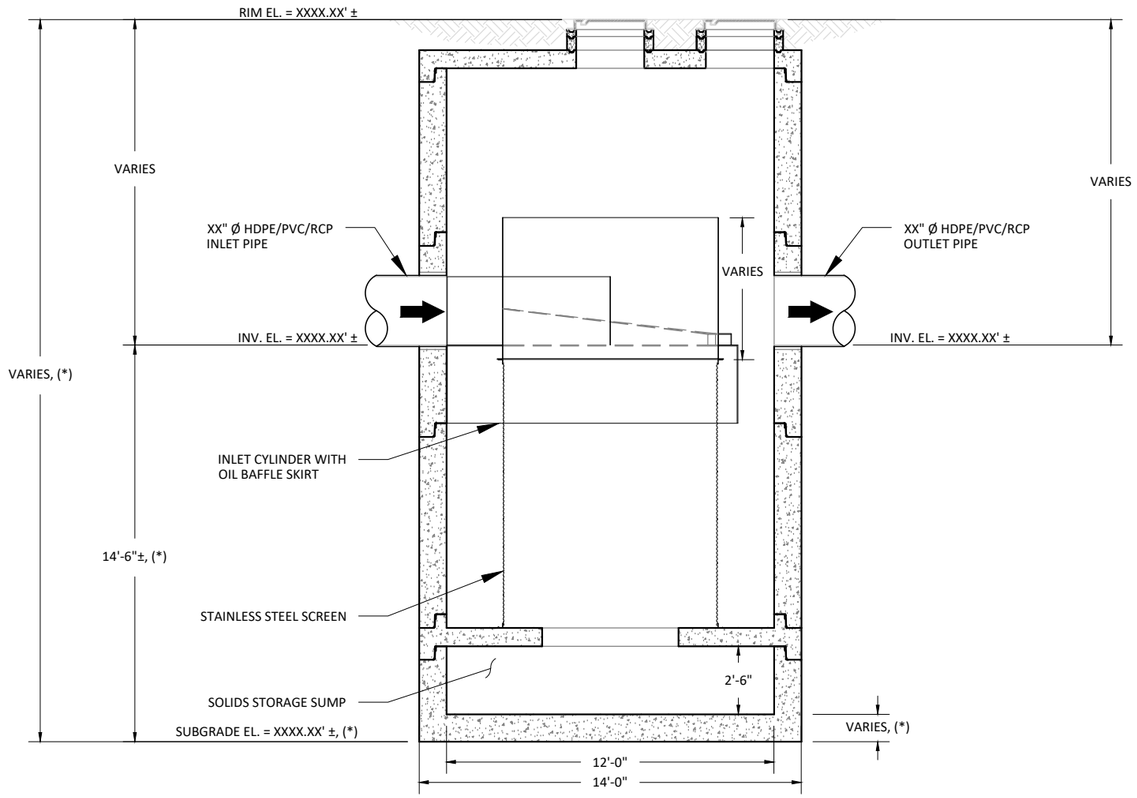
JENSEN DEFLECTIVE SEPARATOR, MODEL JDS144-94114



TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 44.0 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 50 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.
4. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.
5. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
6. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.
7. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
8. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESSES VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCE.

MODEL:
JDS144-94114
JENSEN DEFLECTIVE SEPARATOR

PROJECT:
PROJECT NAME
CITY, STATE

JENSEN STORMWATER SYSTEMS
521 DUNN CIRCLE, SPARKS, NV 89431-6312
(877) 649-0095 FAX (775) 440-2013
www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT

ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	JDS144-94114

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EXHIBIT B

Table

of

Offline ***JDS*** Units

Standard Sizes

JENSEN STORMWATER SYSTEMS

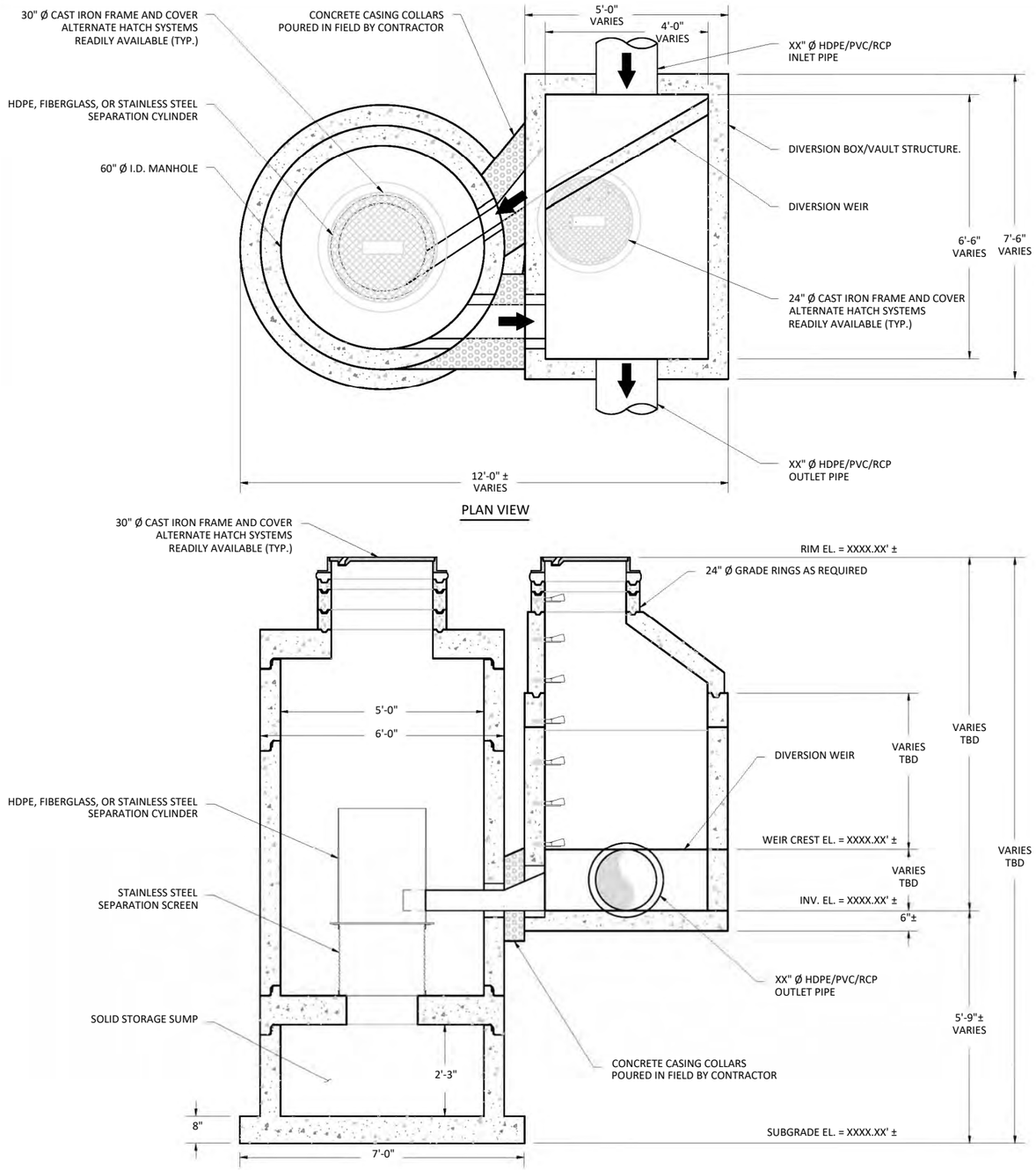
OFFLINE UNITS

JENSEN DEFLECTIVE SEPARATOR (JDS)

Casting	Model Designation[1]	Treatment Flow Rate (Nominal)	Approximate Treated Catchment Area	Manhole Internal Diameter		Screen Cylinder Diameter & Height		External Foot Print Diameter	Depth Below Pipe Invert[2]	Sump Storage Capacity[3]		Oil Storage Capacity[4]		Maximum Trash Capture Capacity	
		(ft^3/s)	(acres)	(ft)	(in)	(in)	(in)	(ft)	(ft)	(ft^3)	(yd^3)	(ft^3)	(gal)	(ft^3)	(yd^3)
PRECAST	JDS60-2418	0.7	2 - 2	5	60	24	18	6.0	5.8	44	1.6	12	90	54	2.0
	JDS60-2424	1.1	2 - 3	5	60	24	24	6.0	6.2	44	1.6	15	108	55	2.0
	JDS60-2430	1.6	4 - 5	5	60	24	30	6.0	6.8	44	1.6	17	127	57	2.1
	JDS72-3624	2.0	4 - 6	6	72	36	24	7.2	6.3	64	2.4	21	159	87	3.2
	JDS72-3630	2.4	5 - 7	6	72	36	30	7.2	6.8	64	2.4	25	185	91	3.4
	JDS72-3636	3.0	7 - 9	6	72	36	36	7.2	7.3	64	2.4	28	211	94	3.5
	JDS72-3642	3.8	8 - 11	6	72	36	42	7.2	7.8	64	2.4	32	238	98	3.6
	JDS84-4230	2.7	6 - 8	7	84	42	30	8.3	7.9	106	3.9	38	285	142	5.3
	JDS84-4236	3.6	8 - 10	7	84	42	36	8.3	8.4	106	3.9	43	321	147	5.4
	JDS84-4242	4.4	10 - 13	7	84	42	42	8.3	8.8	106	3.9	48	357	152	5.6
	JDS84-4248	5.5	12 - 16	7	84	42	48	8.3	9.3	106	3.9	52	392	157	5.8
	JDS84-4836	4.5	10 - 13	7	84	48	36	8.3	8.3	106	3.9	58	434	147	5.4
	JDS96-4836	4.5	10 - 13	8	96	48	36	9.5	8.3	126	4.7	58	434	181	6.7
	JDS96-4848	6.0	13 - 17	8	96	48	48	9.5	9.3	126	4.7	71	531	194	7.2
	JDS96-4854	7.5	17 - 21	8	96	48	54	9.5	9.7	126	4.7	77	579	200	7.4
	JDS120-6748	9.0	20 - 26	10	120	67	48	11.8	8.8	157	5.8	103	771	290	11
	JDS120-6758	11.0	24 - 31	10	120	67	58	11.8	9.5	157	5.8	119	888	310	11
	JDS120-6764	14.0	31 - 40	10	120	67	64	11.8	10.0	157	5.8	127	953	322	12
	JDS120-6770	15.2	34 - 43	10	120	67	70	11.8	10.5	157	5.8	137	1,027	187	7
	JDS120-6782	19.0	42 - 54	10	120	67	82	11.8	11.5	157	5.8	156	1,168	359	13
	JDS120-6794	25.0	56 - 71	10	120	67	94	11.8	12.5	157	5.8	175	1,308	384	14
	JDS144-8484	25.2	56 - 72	12	144	84	84	14.2	12.0	283	10.5	253	1,895	604	22
	JDS144-9480	25.7	57 - 73	12	144	94	80	14.2	11.7	283	10.5	244	1,829	669	25
	JDS144-9490	31.2	69 - 89	12	144	94	90	14.2	12.5	283	10.5	269	2,015	709	26
	JDS144-94114	44.0	98 - 126	12	144	94	114	14.2	14.5	283	10.5	329	2,463	806	30
	JDS192-12072	28.0	62 - 80	16	192	120	72	17.3	12.3	603	22.3	238	1,777	1180	44
	JDS192-12096	43.0	96 - 123	16	192	120	96	17.3	14.3	603	22.3	301	2,251	1337	50
	JDS192-120120	61.0	136 - 174	16	192	120	120	17.3	16.3	603	22.3	364	2,725	1494	55
	JDS192-12696	45.0	100 - 129	16	192	126	96	17.3	14.3	603	22.3	301	2,251	1412	52
	JDS192-126120	64.0	142 - 183	16	192	126	120	17.3	14.3	603	22.3	364	2,725	1585	59
	JDS192-126138	80.0	178 - 229	16	192	126	138	17.3	17.8	603	22.3	412	3,081	1715	64
CAST IN PLACE	JDS264-180161	131.0	291 - 374	22	264	180	161	25.8	22.0	2,281	84.5	511	3,821	4887	181
	JDS312-240197	236.5	526 - 676	26	312	240	197	30.5	26.0	3,717	137.6	645	4,824	9291	344
	JDS384-288192	273.0	607 - 780	32	384	288	192	37.5	25.0	5,630	208.5	676	5,058	13468	499

Footnotes:

1. Typical and site-specific plan and profile drawings are available for all *JDS* units.
2. Depth below pipe invert may vary per plan and design of a project, values are estimated standards per *JDS* model with deep sump. More shallow, smaller storage volume sumps readily available.
3. Sump depths designed to meet project specific settleable solids storage requirements.
4. Baffle design to meet project specific oil storage requirements, readily available.



JENSEN DEFLECTIVE SEPARATOR, MODEL JDS60-2418 OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 0.7 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:
JDS60-2418 OFFLINE
JENSEN DEFLECTIVE SEPARATOR

PROJECT:
PROJECT NAME
PROJECT LOCATION

JENSEN STORMWATER SYSTEMS
521 DUNN CIRCLE, SPARKS, NV 89431-6312
(877) 649-0095 FAX (775) 440-2013
www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:35	11" X 17"	X.XXXX	1

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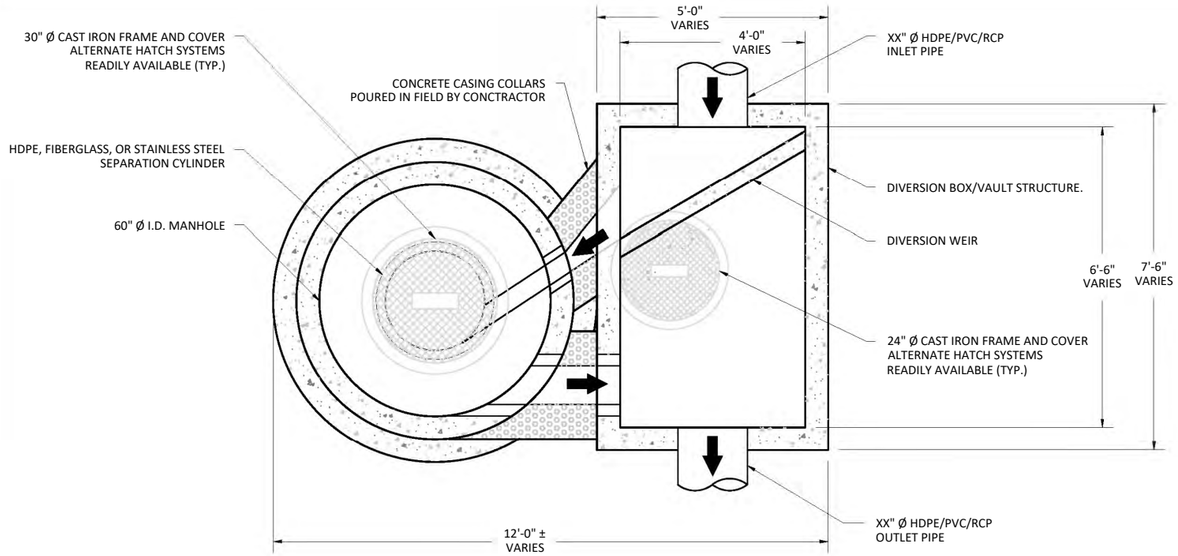

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS60-2424 OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 1.1 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:	PROJECT:	
JDS60-2424 OFFLINE ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME PROJECT LOCATION	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:35	11" X 17"	X.XXXX	1

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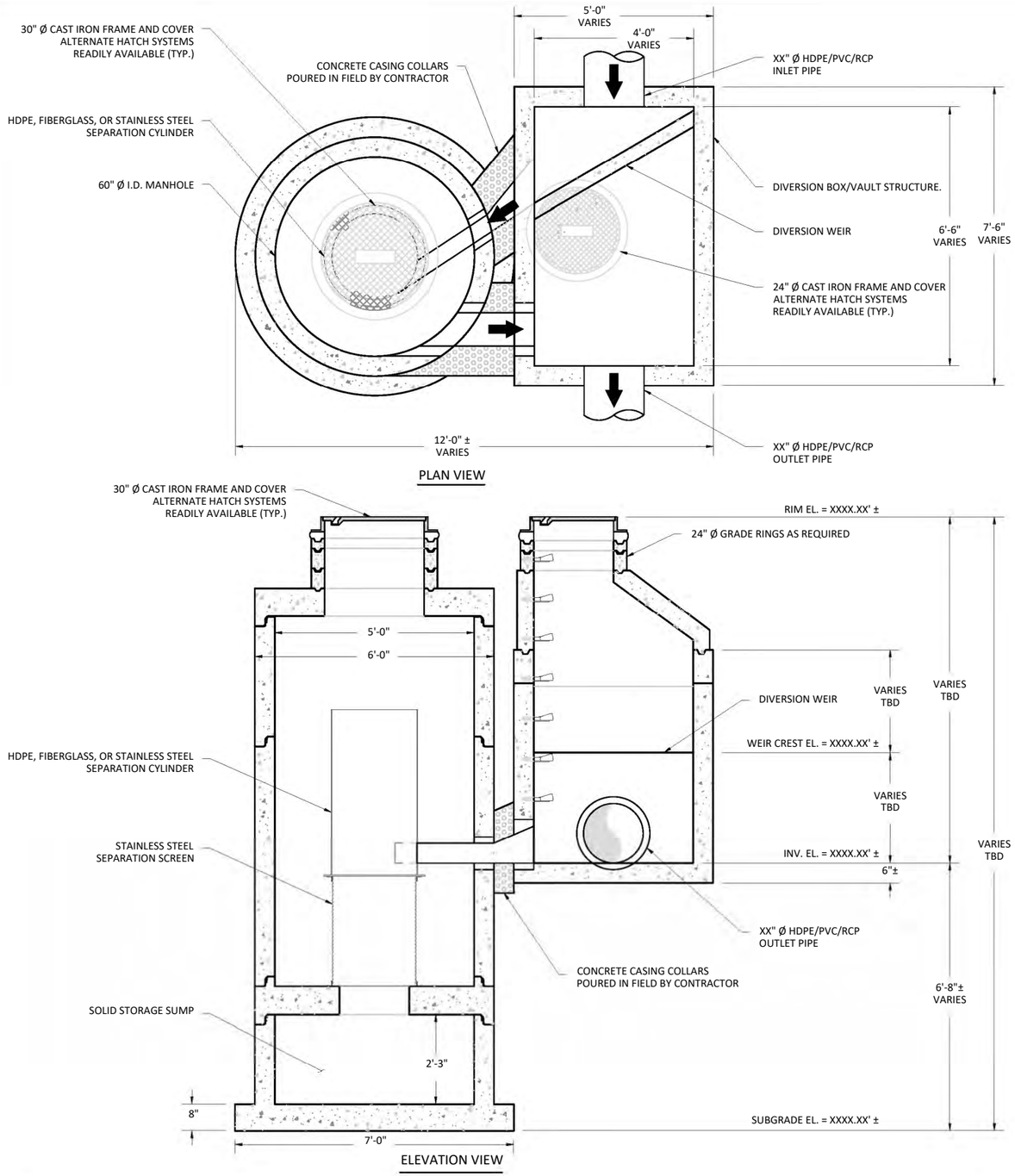

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS60-2430 OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 1.6 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:
JDS60-2430 OFFLINE
JENSEN DEFLECTIVE SEPARATOR

PROJECT:
PROJECT NAME
PROJECT LOCATION

JENSEN STORMWATER SYSTEMS
521 DUNN CIRCLE, SPARKS, NV 89431-6312
(877) 649-0095 FAX (775) 440-2013
www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:35	11" X 17"	X.XXXX	1

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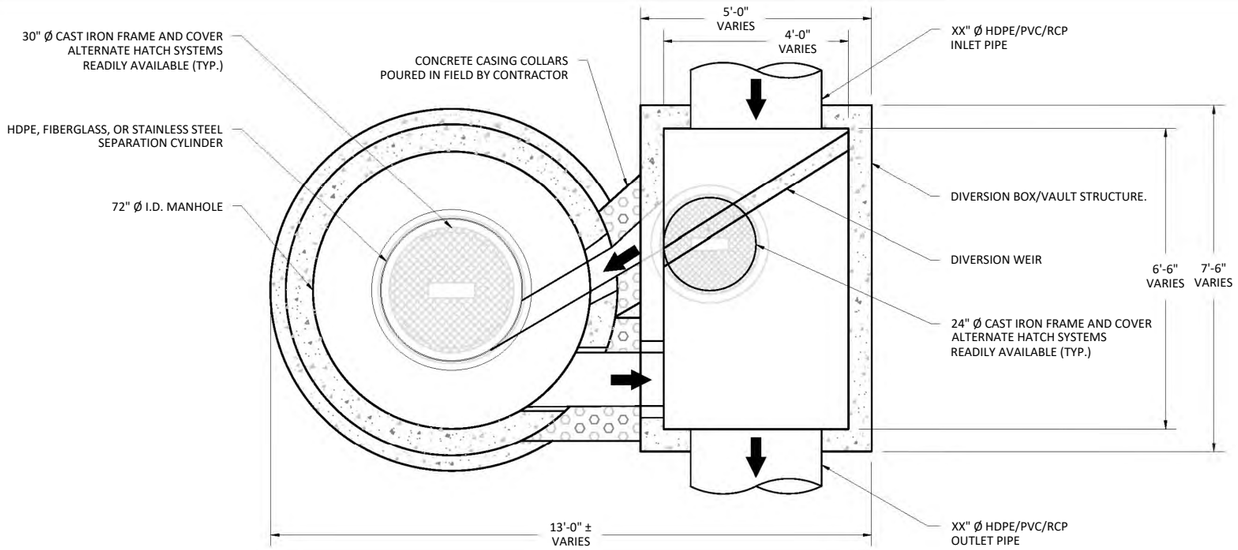
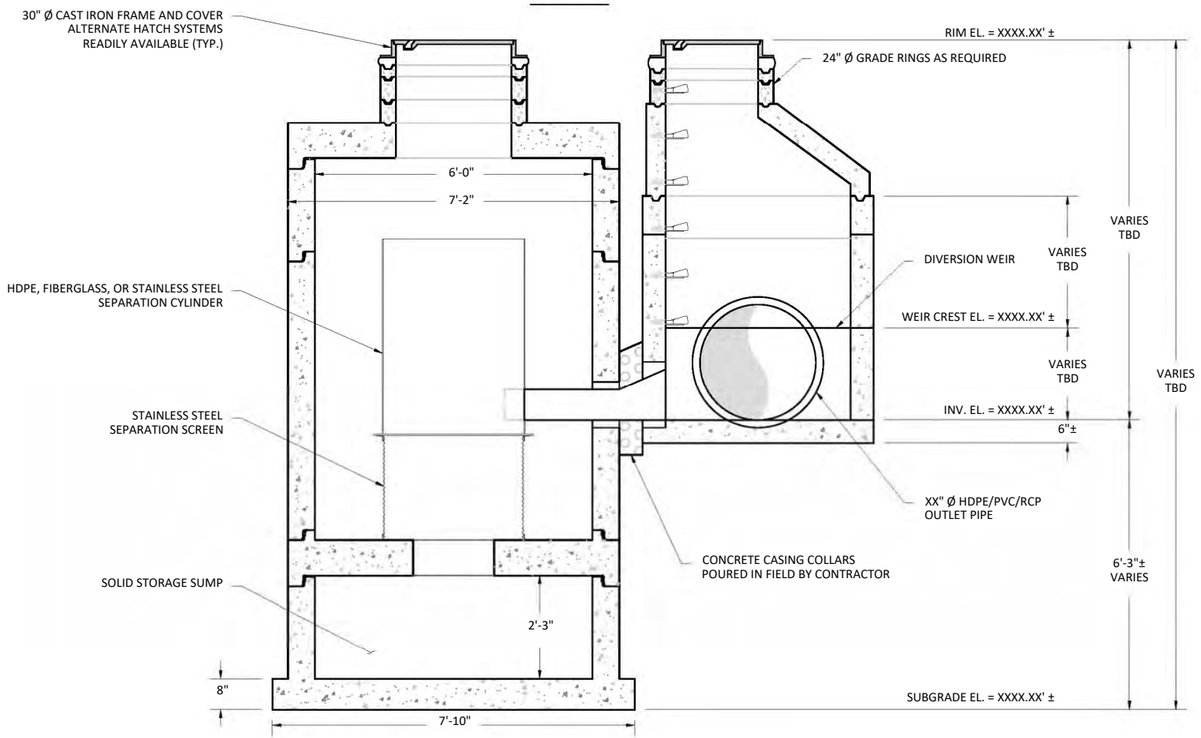


PLAN VIEW



ELEVATION VIEW

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS72-3624 OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 2.0 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUIT BETWEEN THESE STRUCTURE.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:
JDS72-3624 OFFLINE
JENSEN DEFLECTIVE SEPARATOR

PROJECT:
PROJECT NAME
PROJECT LOCATION

JENSEN STORMWATER SYSTEMS
521 DUNN CIRCLE, SPARKS, NV 89431-6312
(877) 649-0095 FAX (775) 440-2013
www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORIG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE:	DRAWN BY:	SHEET NUMBER:
	XX/XX/XXXX	XX/XX/XXXX	1:35	11" X 17"	X.XXXX	1

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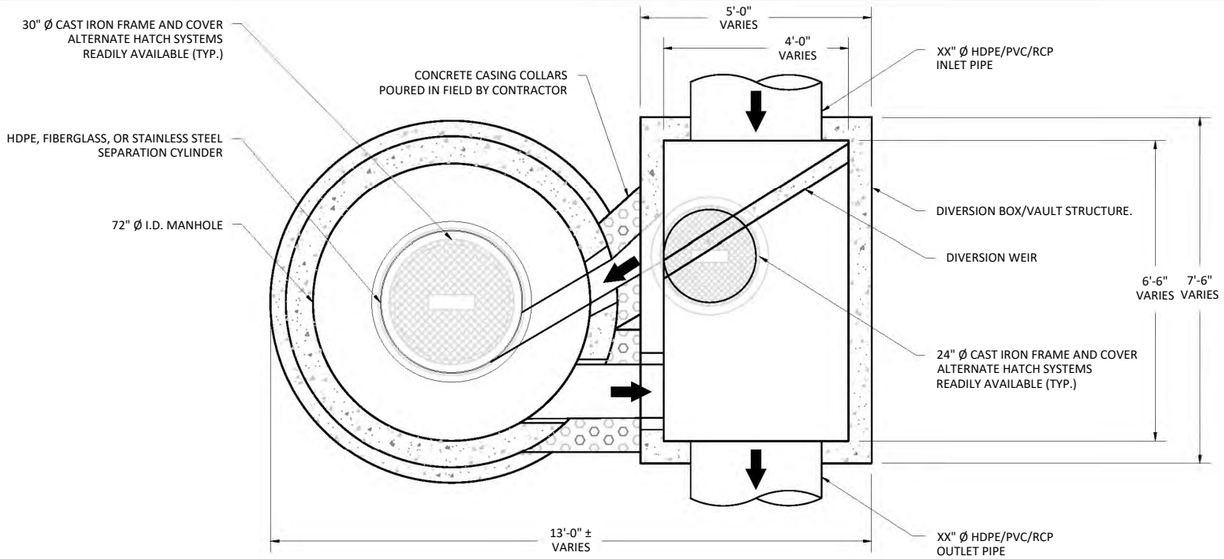
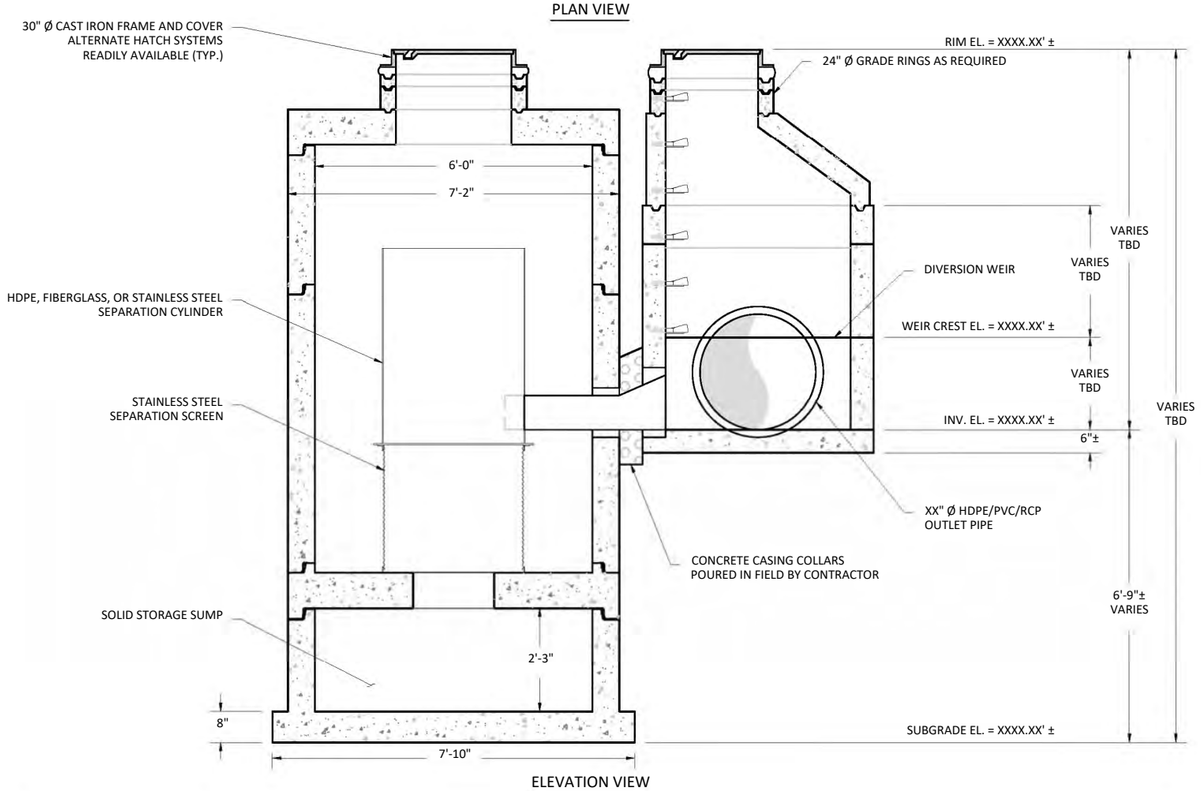


PLAN VIEW



ELEVATION VIEW

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS72-3630 OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 2.4 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUIT BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:
JDS72-3630 OFFLINE
JENSEN DEFLECTIVE SEPARATOR

PROJECT:
PROJECT NAME
PROJECT LOCATION

JENSEN STORMWATER SYSTEMS
521 DUNN CIRCLE, SPARKS, NV 89431-6312
(877) 649-0095 FAX (775) 440-2013
www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:35	11" X 17"	X.XXXX	1

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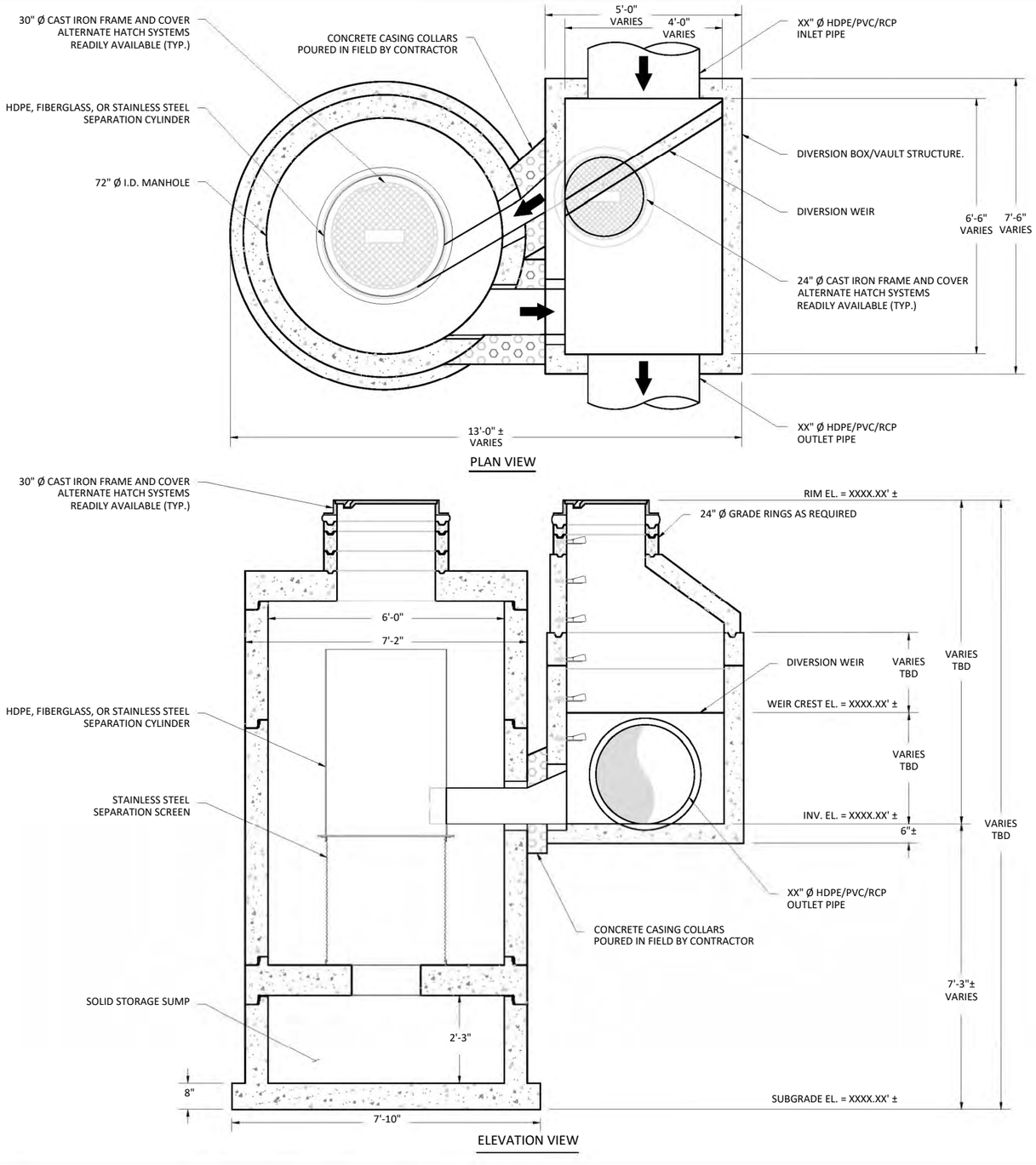

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS72-3636 OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ **3.0** - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:
JDS72-3636 OFFLINE
JENSEN DEFLECTIVE SEPARATOR

PROJECT:
PROJECT NAME
PROJECT LOCATION

JENSEN STORMWATER SYSTEMS
521 DUNN CIRCLE, SPARKS, NV 89431-6312
(877) 649-0095 FAX (775) 440-2013
www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
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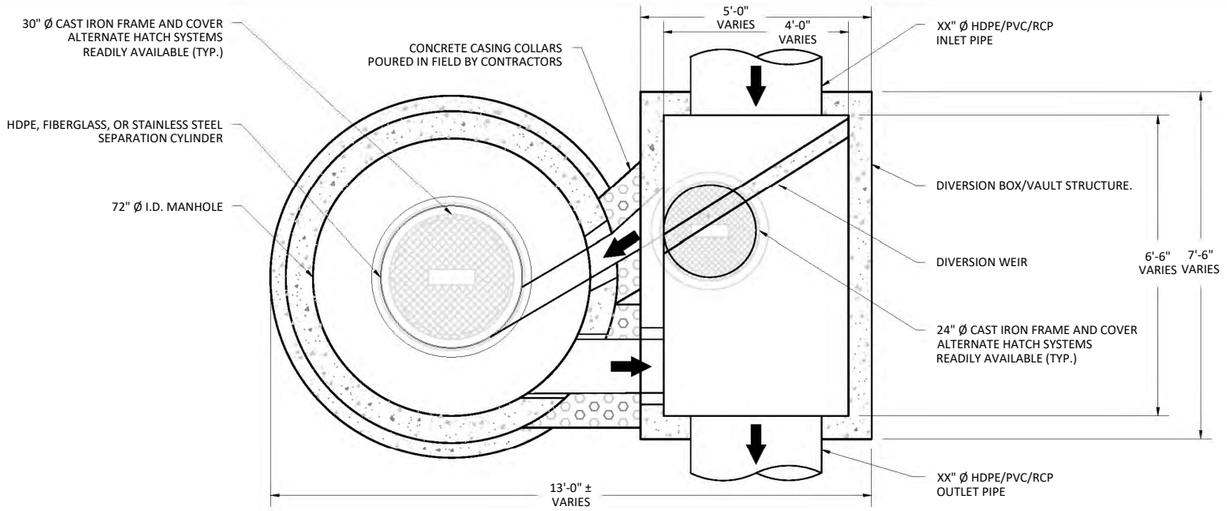
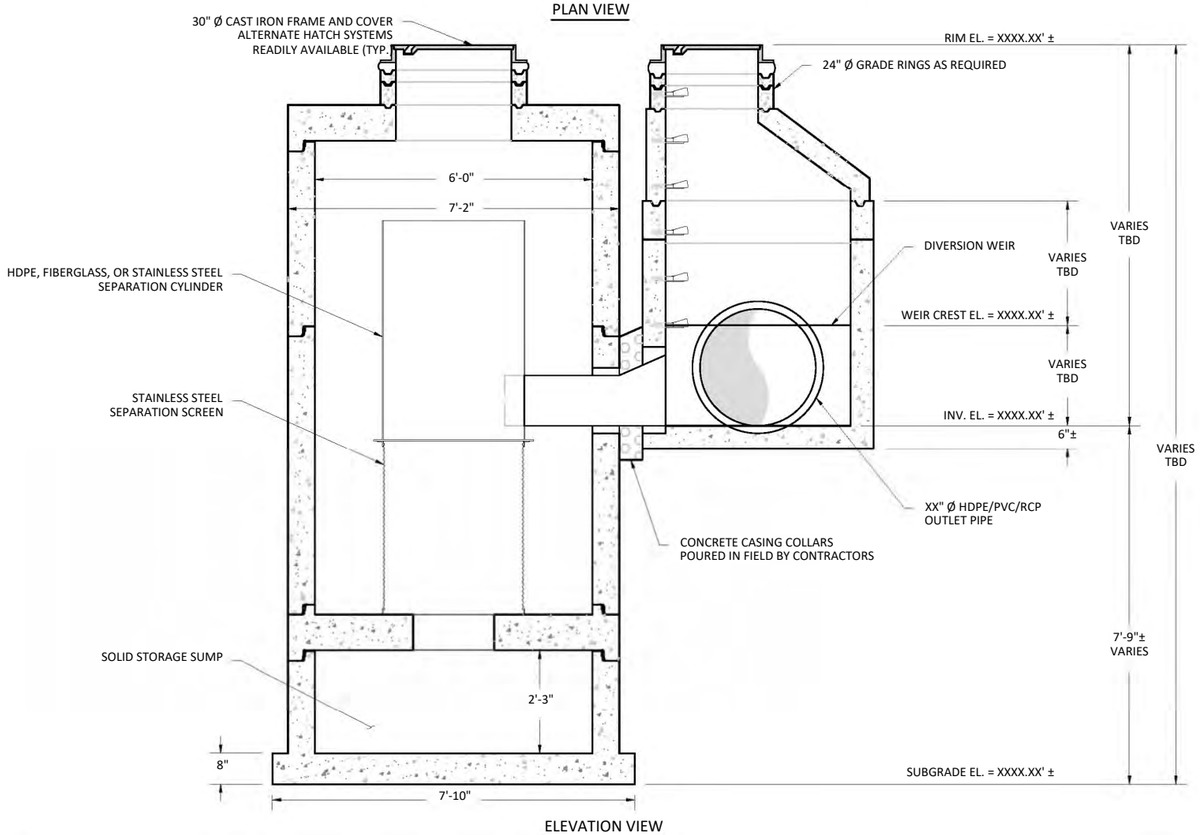


PLAN VIEW



ELEVATION VIEW

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS72-3642 OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 3.8 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
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DIVERSION STRUCTURE DESIGN NOTES :

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MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
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7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:	PROJECT:	
JDS72-3642 OFFLINE ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME PROJECT LOCATION	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:35	11" X 17"	X.XXXX	1

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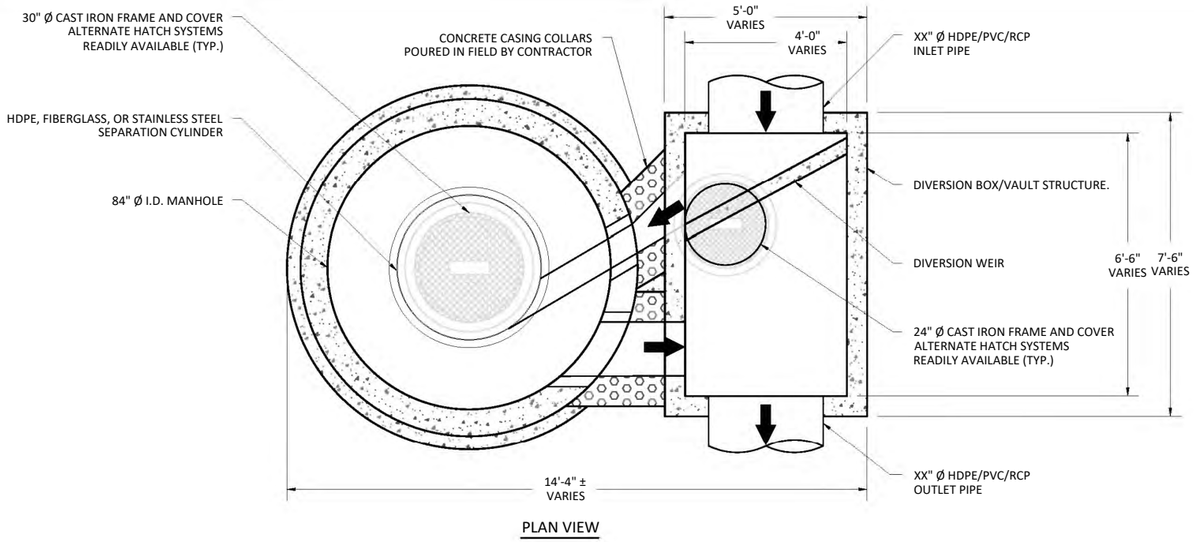
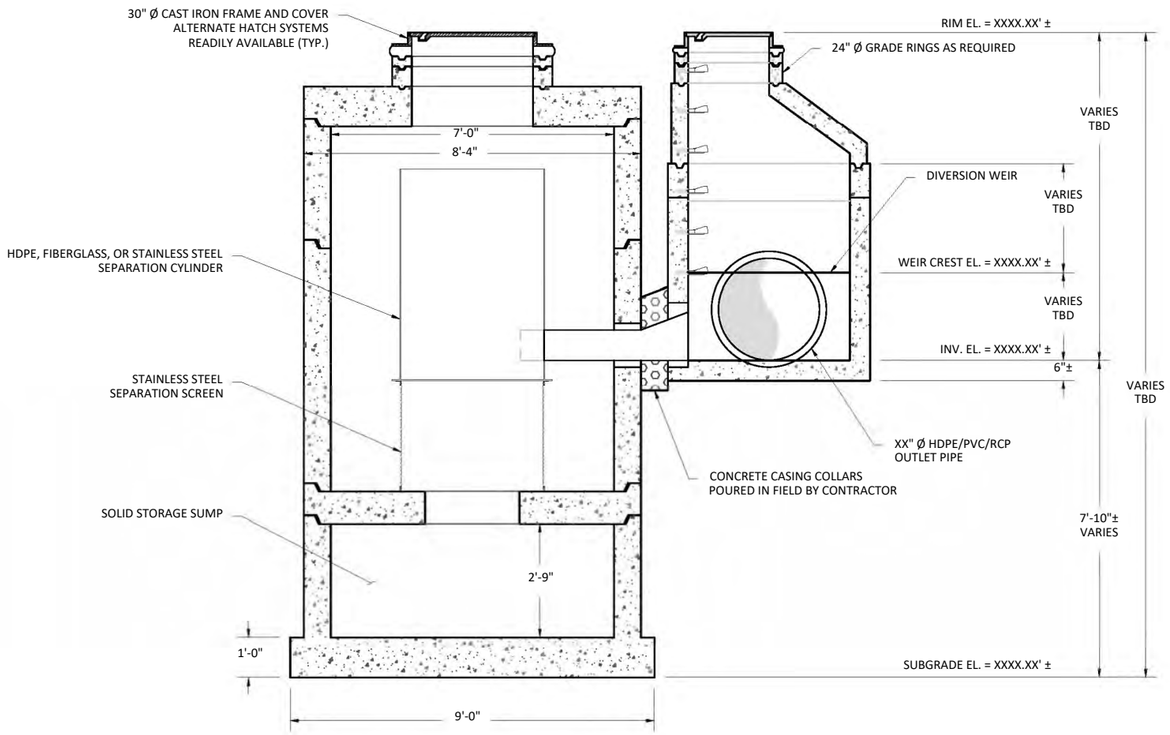


PLAN VIEW



ELEVATION VIEW

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS84-4230 OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 2.7 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSIONBOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:
JDS84-4230 OFFLINE
JENSEN DEFLECTIVE SEPARATOR

PROJECT:
PROJECT NAME
PROJECT LOCATION

JENSEN STORMWATER SYSTEMS
521 DUNN CIRCLE, SPARKS, NV 89431-6312
(877) 649-0095 FAX (775) 440-2013
www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:40	11" X 17"	X.XXXX	1

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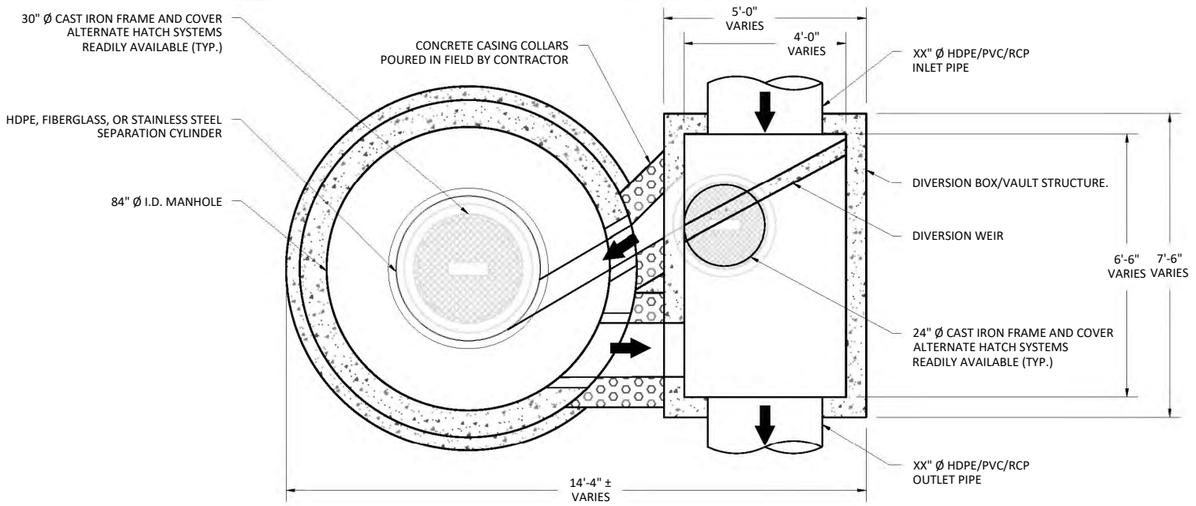
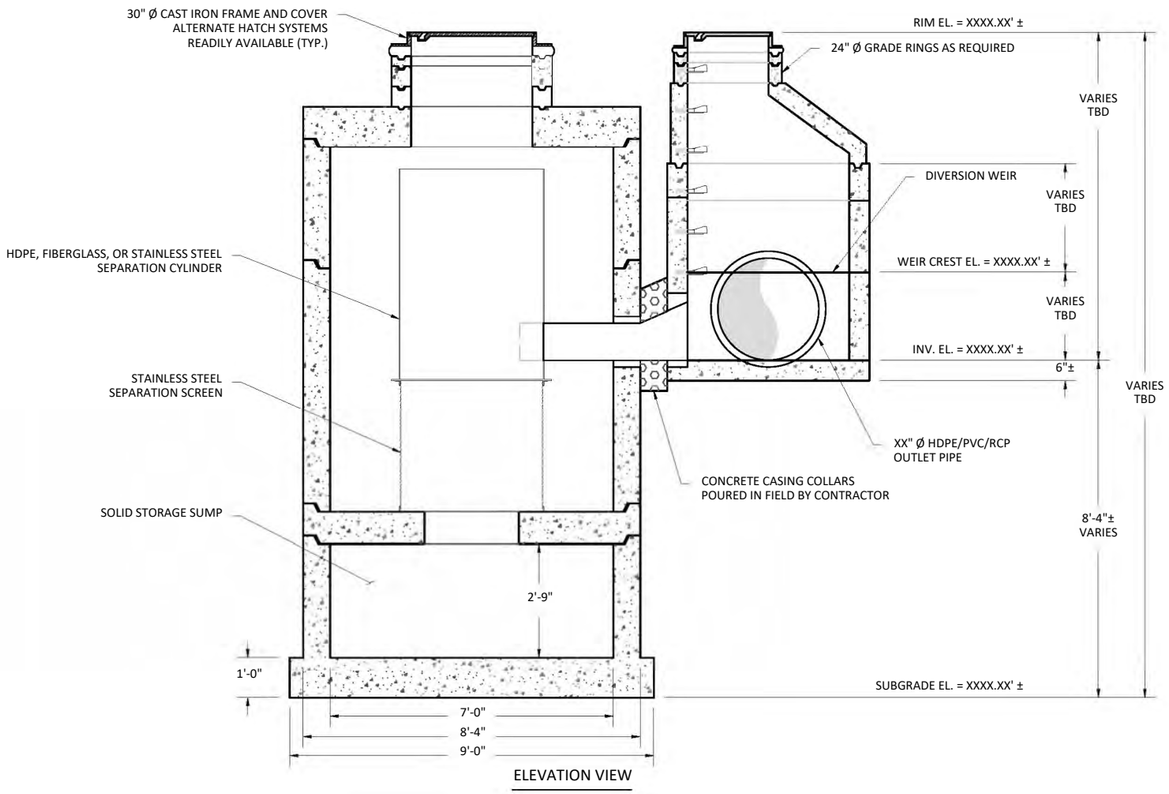


PLAN VIEW



ELEVATION VIEW

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS84-4236 OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 3.6 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSIONBOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:
JDS84-4236 OFFLINE
JENSEN DEFLECTIVE SEPARATOR

PROJECT:
PROJECT NAME
PROJECT LOCATION

JENSEN STORMWATER SYSTEMS
521 DUNN CIRCLE, SPARKS, NV 89431-6312
(877) 649-0095 FAX (775) 440-2013
www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:40	11" X 17"	X.XXXX	1

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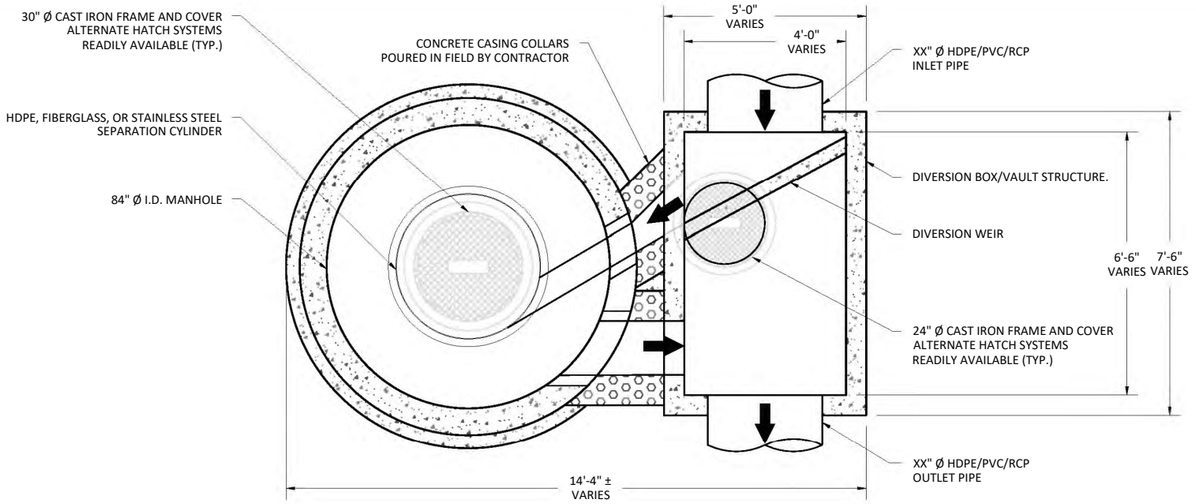
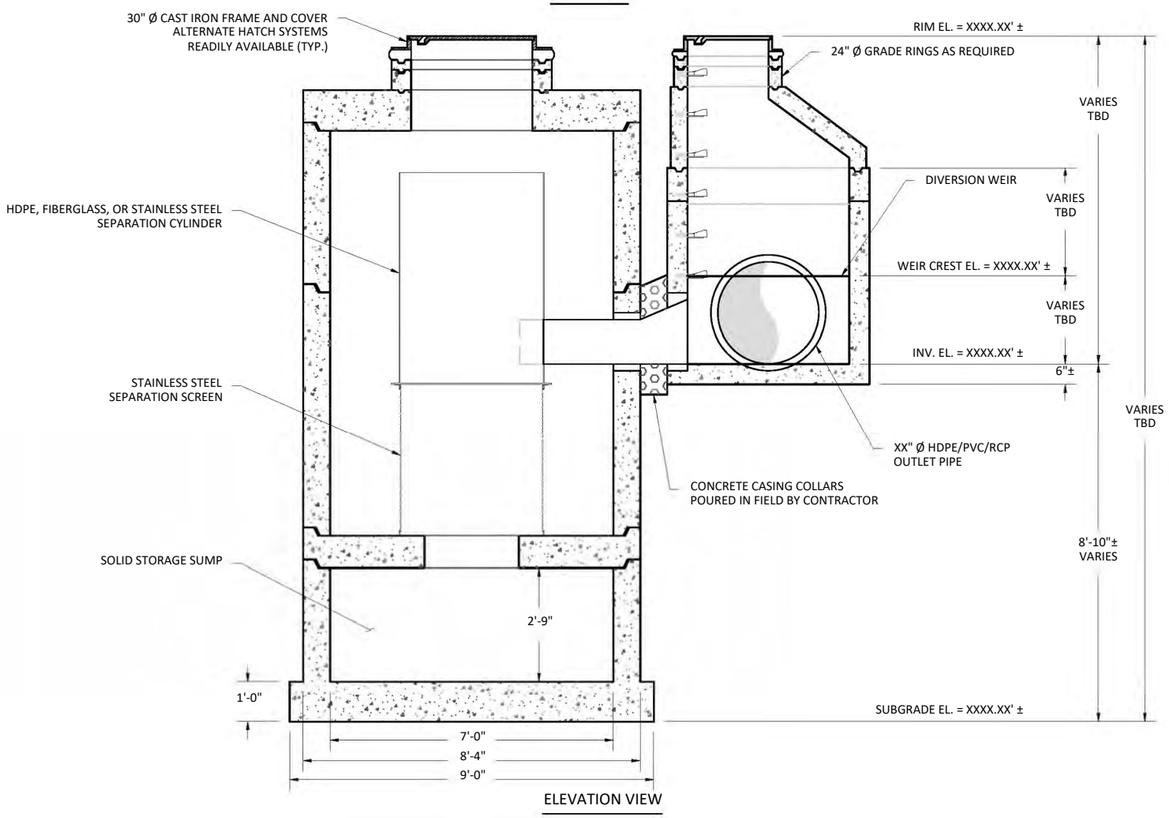


PLAN VIEW



ELEVATION VIEW

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS84-4242 OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 4.4 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSIONBOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:	PROJECT:	
JDS84-4242 OFFLINE ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME PROJECT LOCATION	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORIG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:40	11" X 17"	X.XXXX	1

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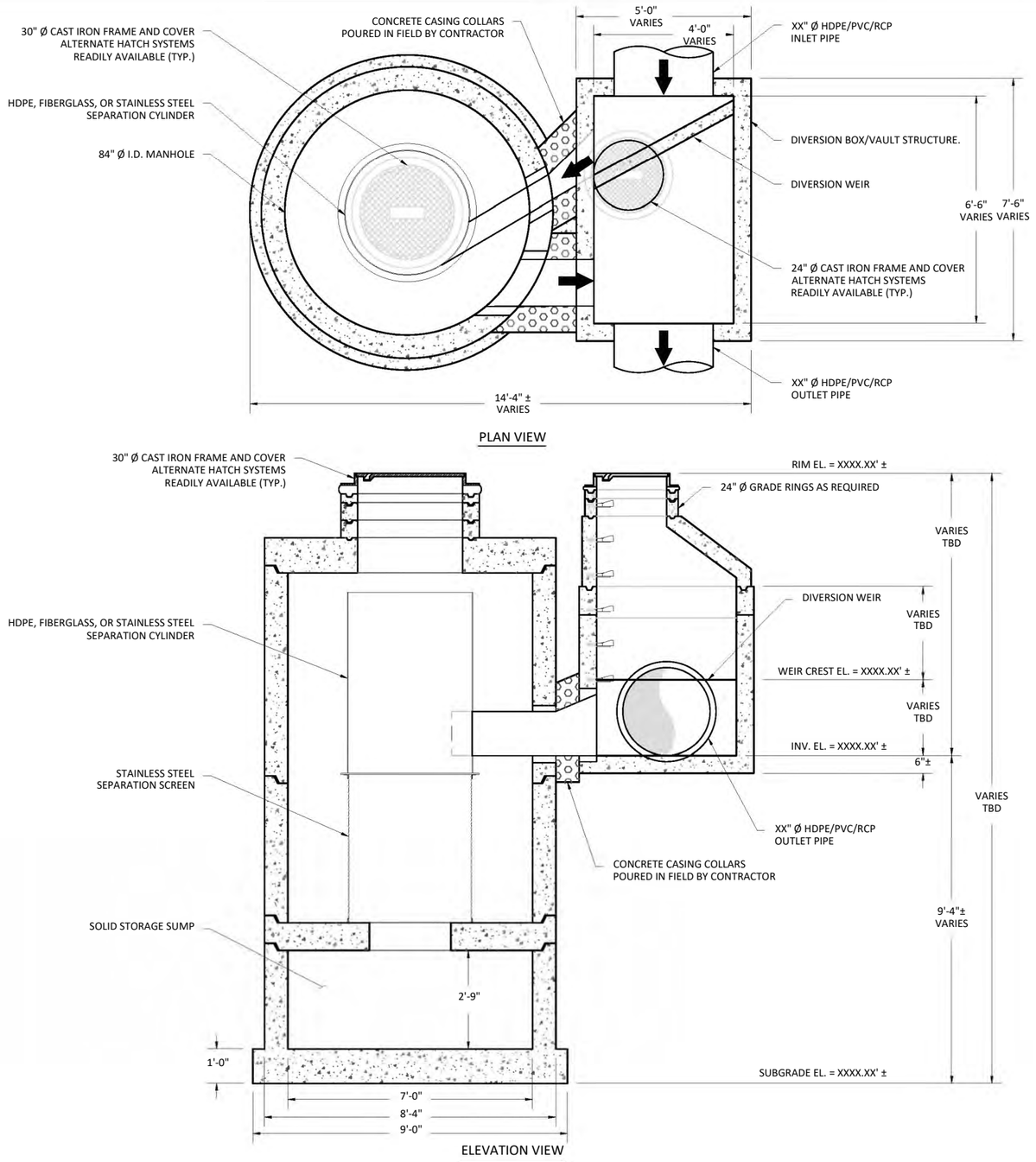

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS84-4248 OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 5.5 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jenseneningeeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSIONBOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:	PROJECT:	
JDS84-4248 OFFLINE ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME PROJECT LOCATION	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jenseneningeeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:40	11" X 17"	X.XXXX	1

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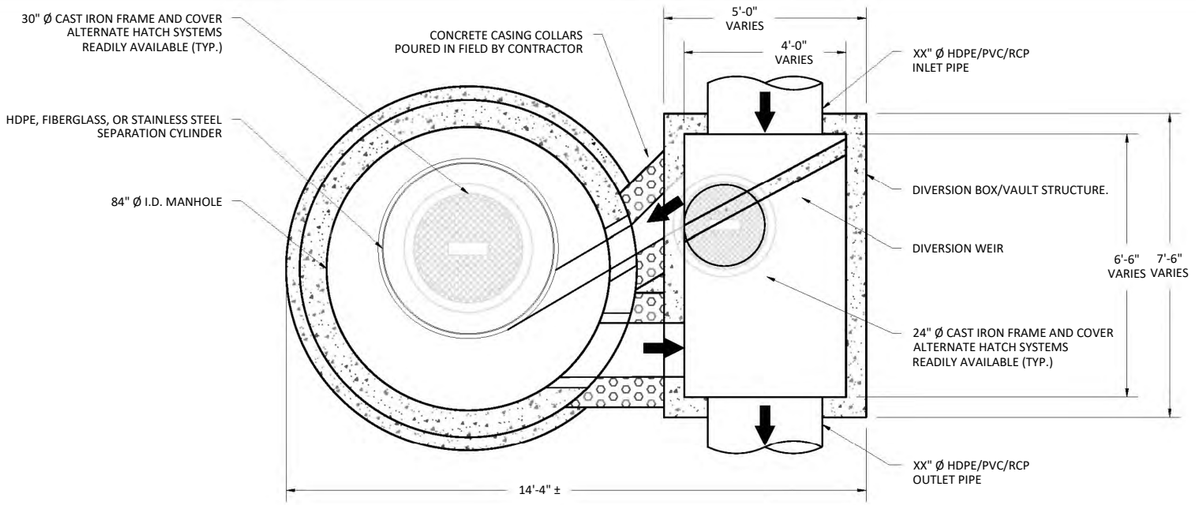
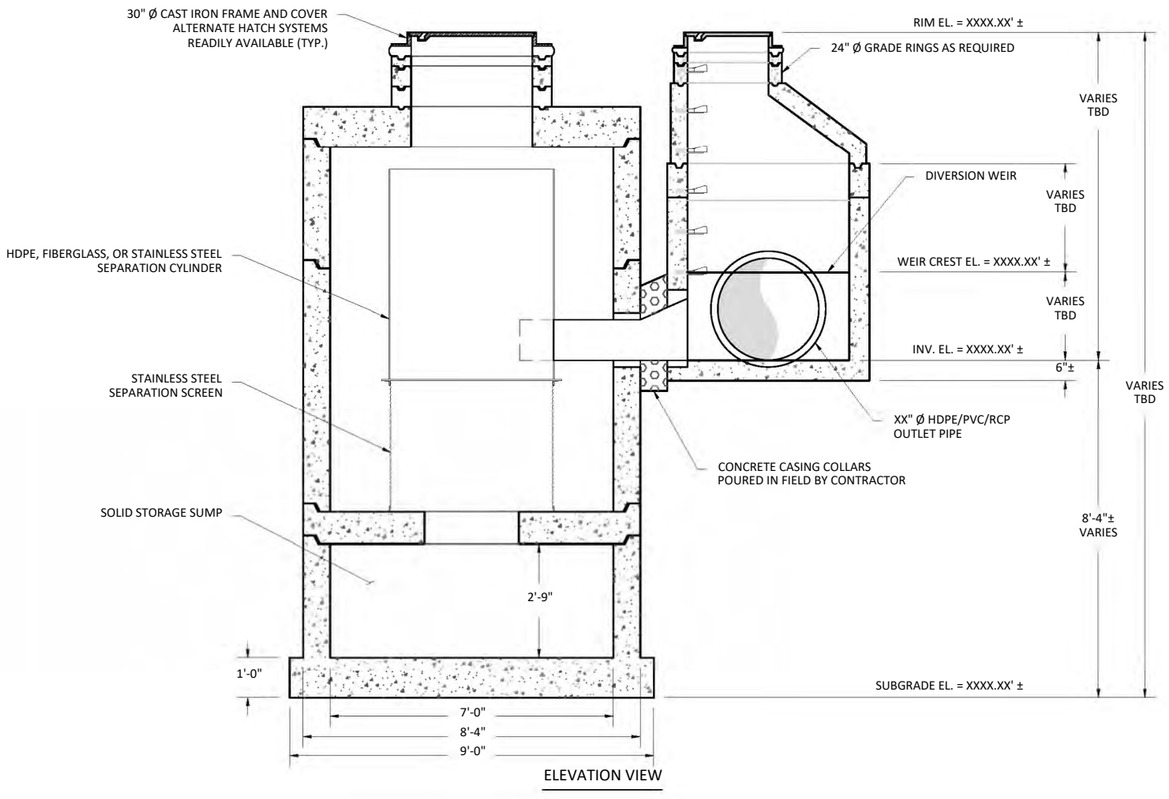


PLAN VIEW



ELEVATION VIEW

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS84-4836 OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 4.5 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSIONBOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL: ***JDS84-4836 OFFLINE*** ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT: PROJECT NAME PROJECT LOCATION			JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com		
HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE: XX/XX/XXXX	REV. DWG. DATE: XX/XX/XXXX	SCALE: 1:40	SHEET SIZE: 11" X 17"	DRAWN BY: X.XXXX	SHEET NUMBER: 1

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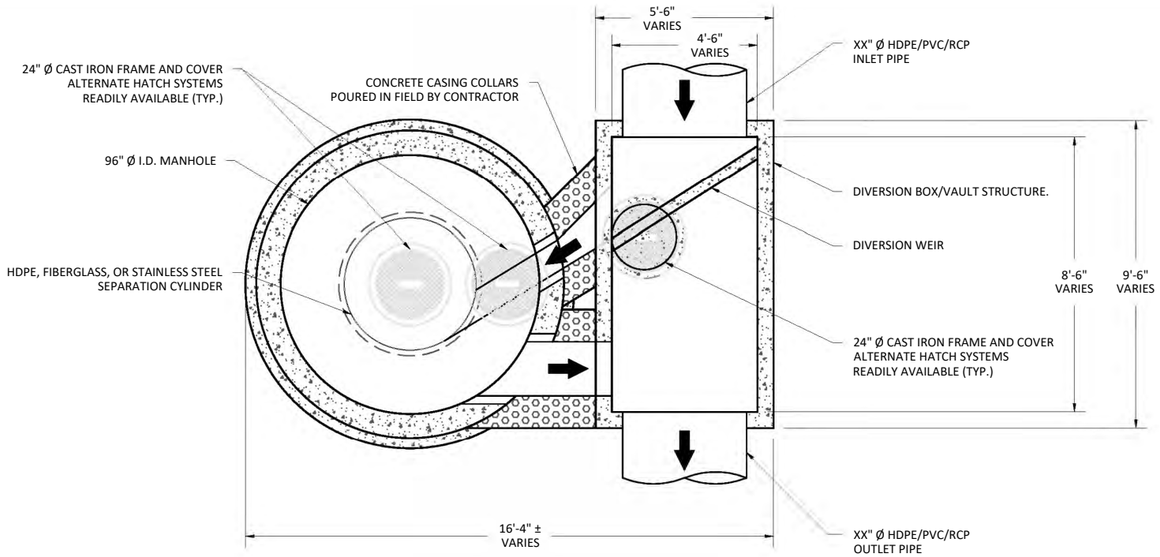
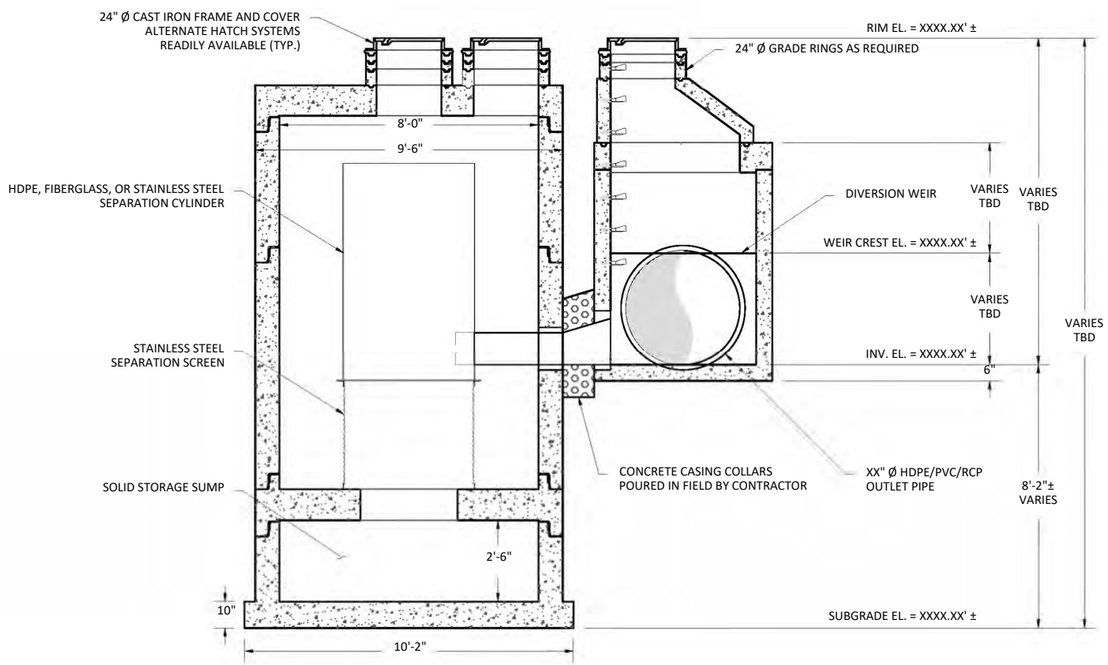


PLAN VIEW



ELEVATION VIEW

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS96-4836 OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 4.5 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:	PROJECT:	
JDS96-4836 OFFLINE *JENSEN DEFLECTIVE SEPARATOR*	PROJECT NAME PROJECT LOCATION	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:50	11" X 17"	X.XXXX	1

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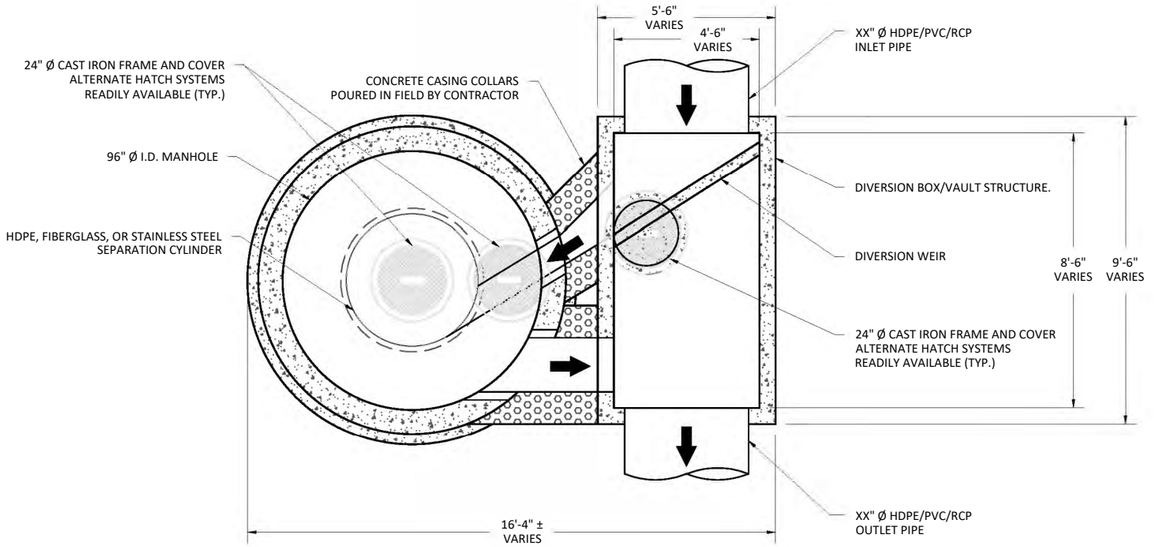
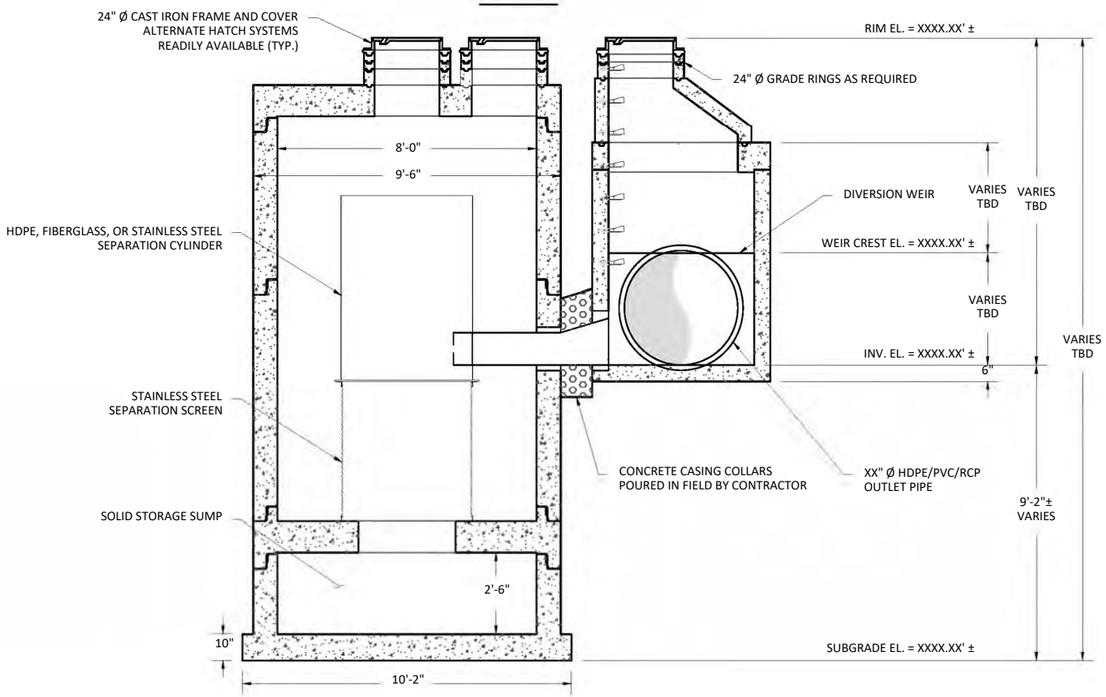


PLAN VIEW



ELEVATION VIEW

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS96-4848 OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 6.0 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:	PROJECT:	
JDS96-4848 OFFLINE ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME PROJECT LOCATION	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:50	11" X 17"	X.XXXX	1

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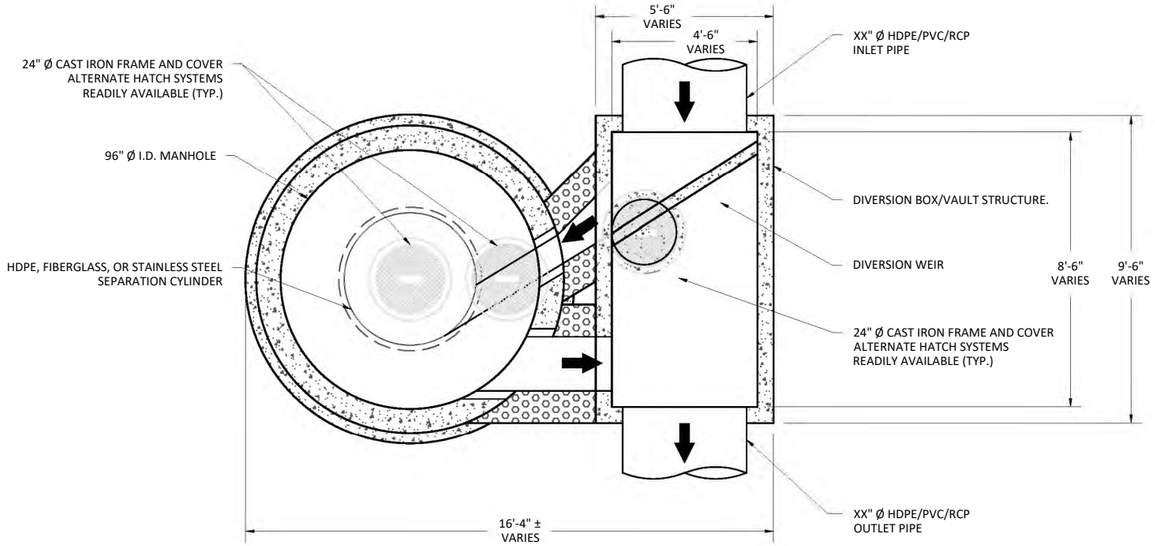
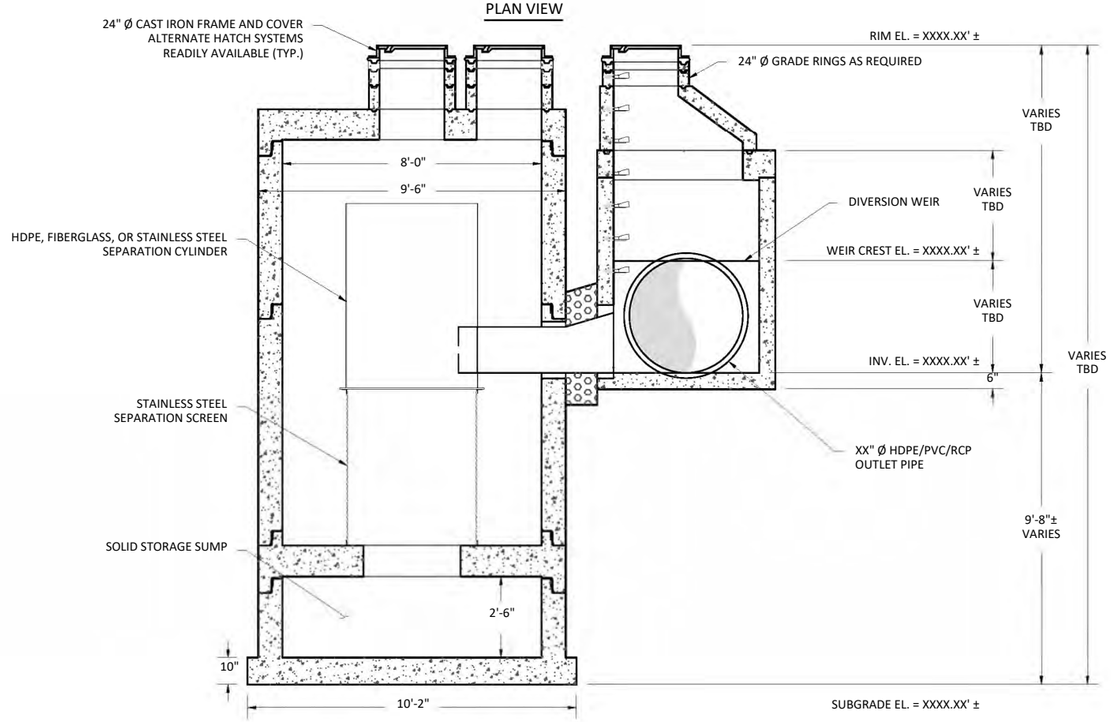


PLAN VIEW



ELEVATION VIEW

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS96-4854 OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 7.5 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:	PROJECT:	
JDS96-4854 OFFLINE ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME PROJECT LOCATION	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:50	11" X 17"	X.XXXX	1

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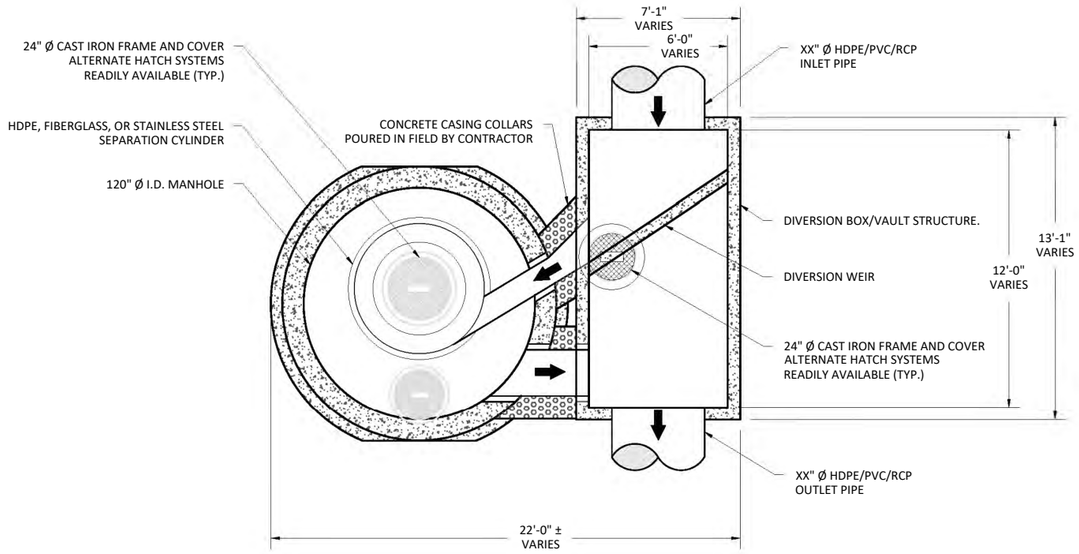
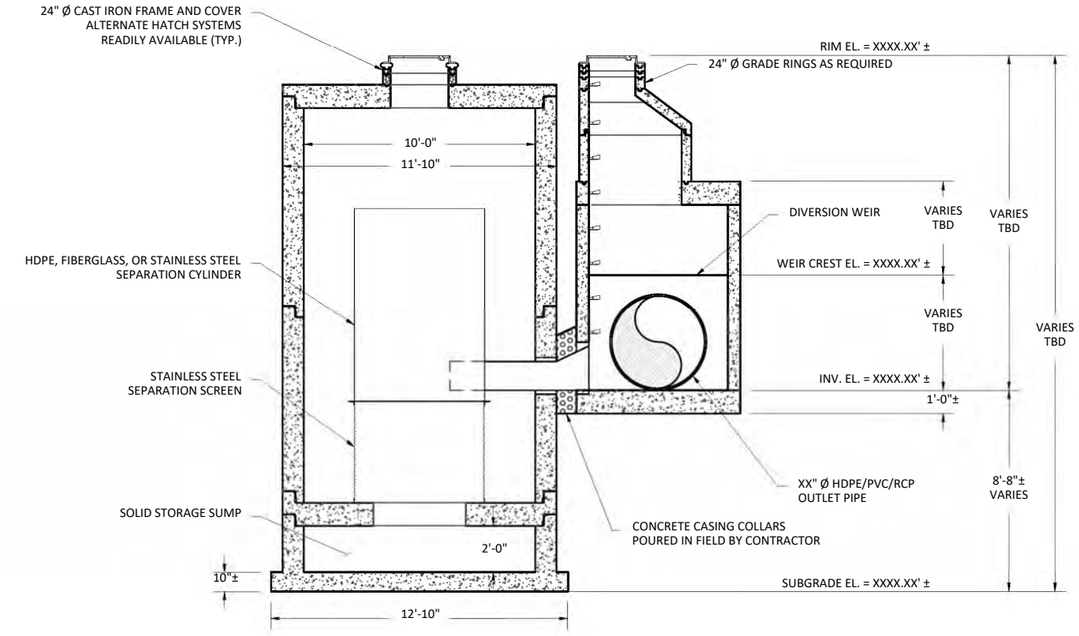


PLAN VIEW



ELEVATION VIEW

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS120-6748-OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 9.0 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, ≥ 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
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GENERAL NOTES:

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2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
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MATERIALS :

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4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:	PROJECT:	
JDS120-6748 OFFLINE ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
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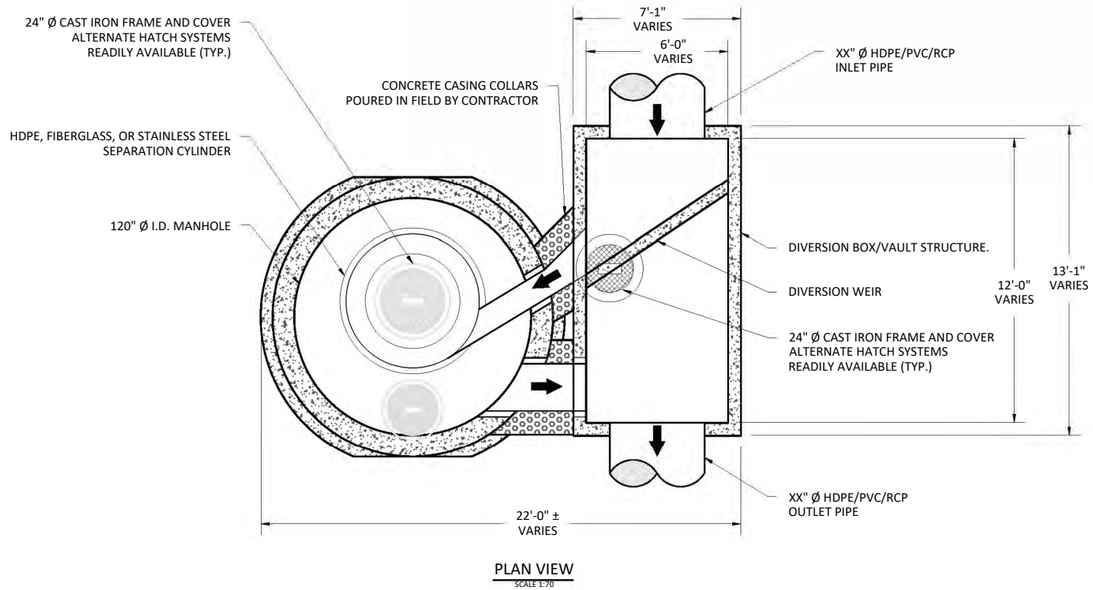
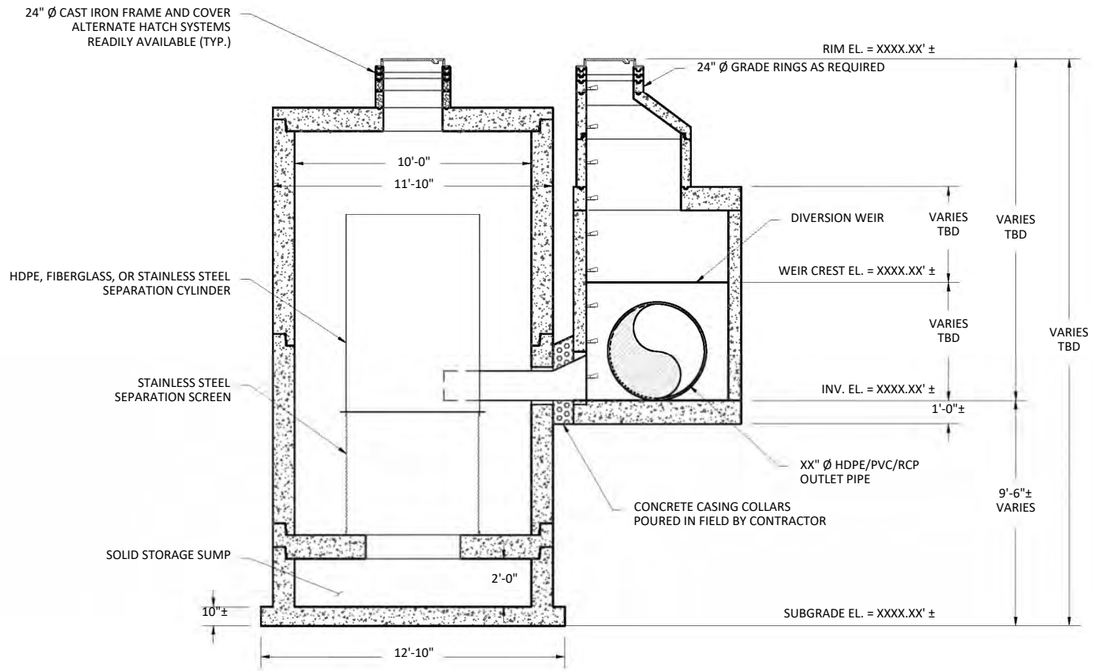


PLAN VIEW
SCALE 1:70



ELEVATION VIEW
SCALE 1:70

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS120-6758-OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 11 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, ≥ 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:	PROJECT:	
JDS120-6758 OFFLINE ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:70	11" X 17"	X.XXXX	1

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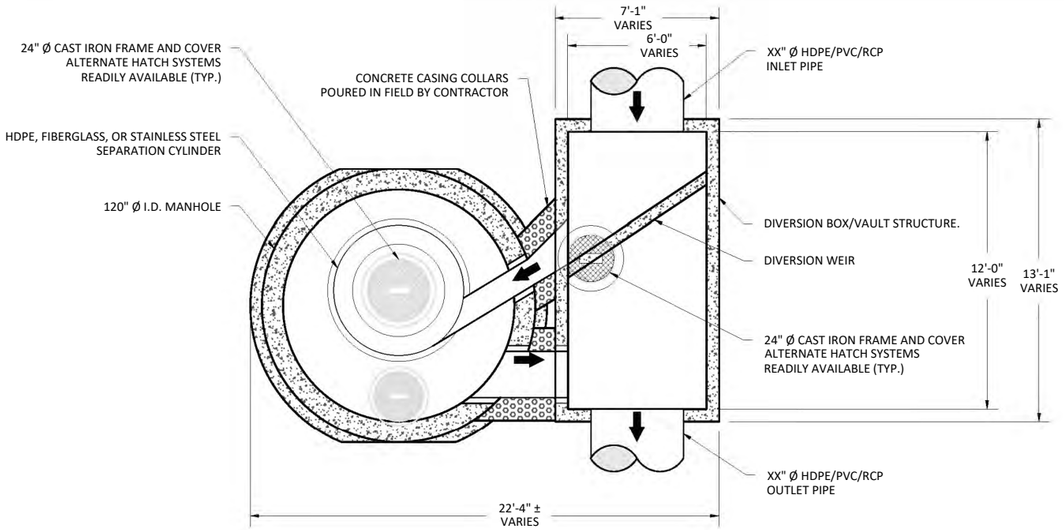
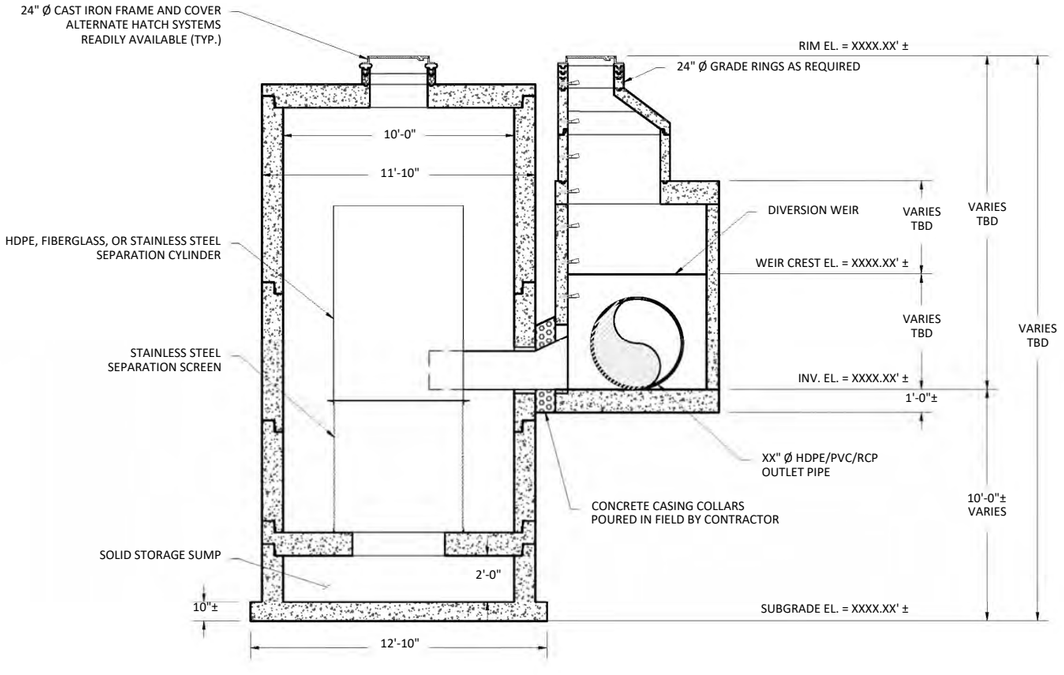


PLAN VIEW



ELEVATION VIEW

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS120-6764-OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 14 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & CONDUITS IN BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:	PROJECT:	
JDS120-6764 OFFLINE ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:70	11" X 17"	X.XXXX	LAYOUT1

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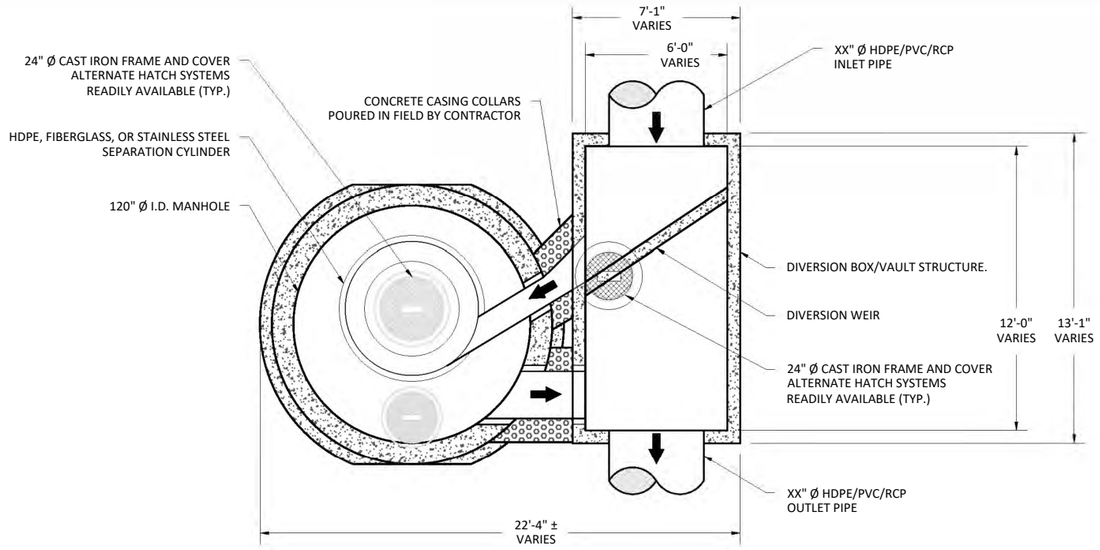
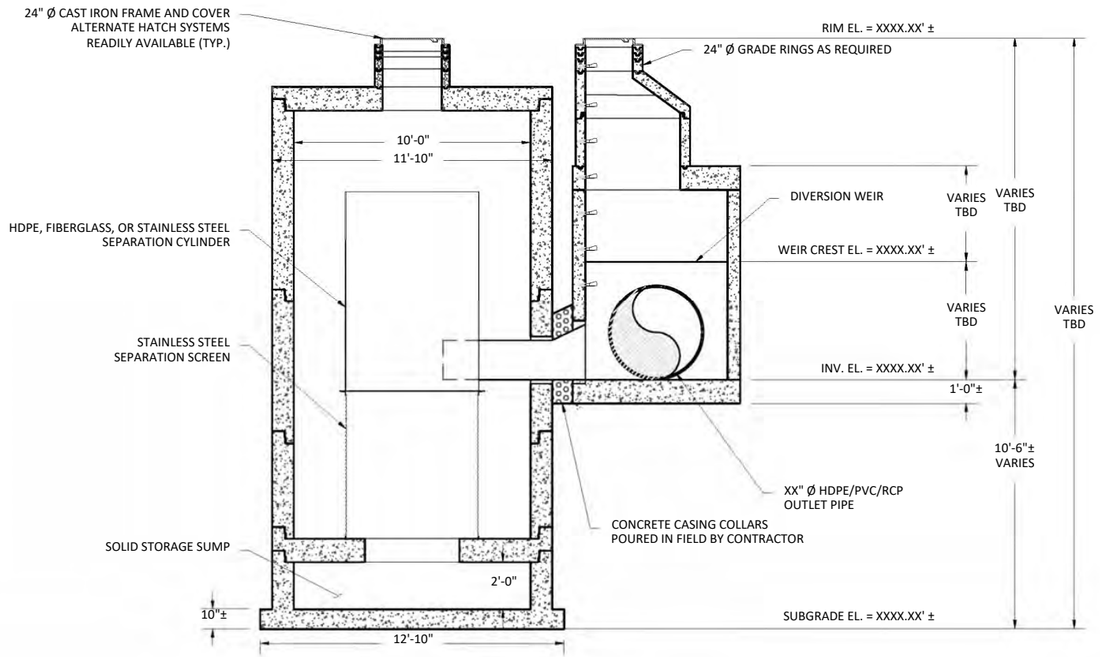


PLAN VIEW



ELEVATION VIEW

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS120-6770-OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 15 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
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GENERAL NOTES:

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2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
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INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
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5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:	PROJECT:						
JDS120-6770 OFFLINE JENSEN DEFLECTIVE SEPARATOR	PROJECT NAME CITY, STATE			JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com			
HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE XX/XX/XXXX	REV. DWG. DATE XX/XX/XXXX	SCALE: 1:70	SHEET SIZE 11" X 17"	DRAWN BY X.XXXX	SHEET NUMBER LAYOUT1	

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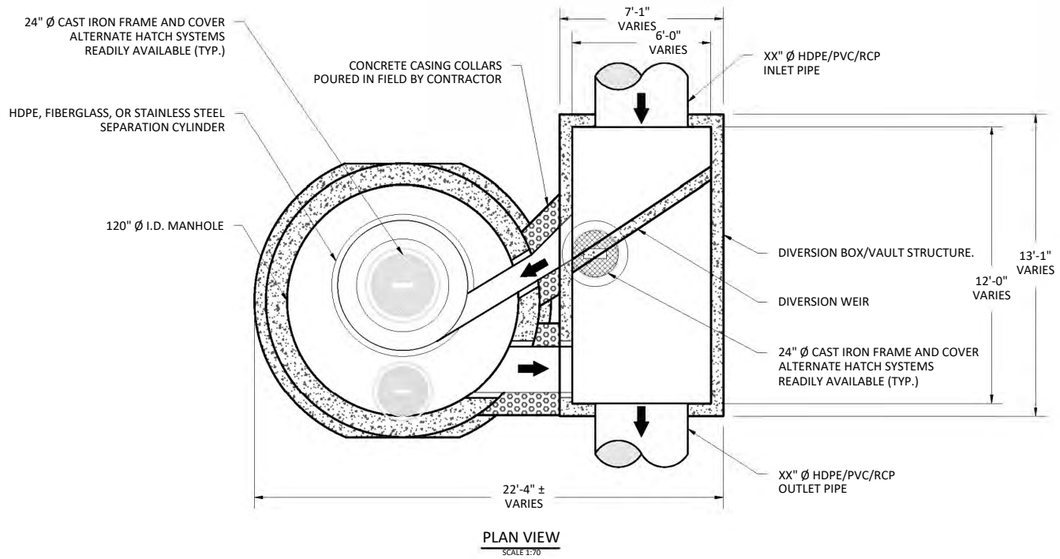
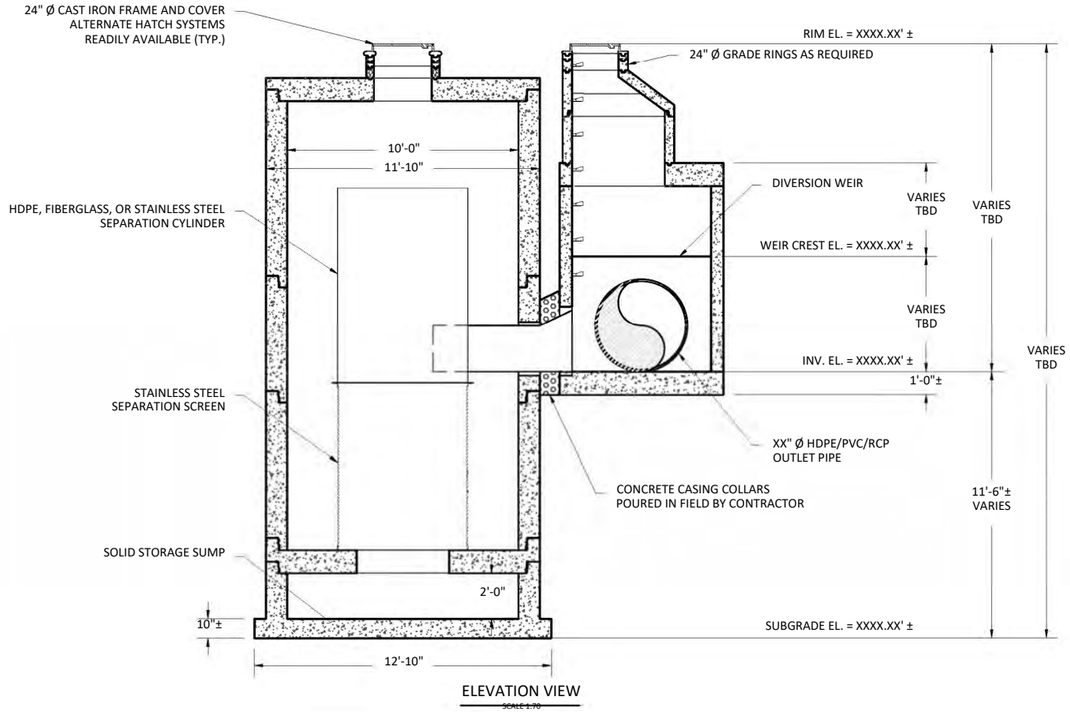


PLAN VIEW
SCALE 1:70



ELEVATION VIEW
SCALE 1:70

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS120-6782-OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 19 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

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2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:	PROJECT:	
JDS120-6782 OFFLINE ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:70	11" X 17"	X.XXXX	1

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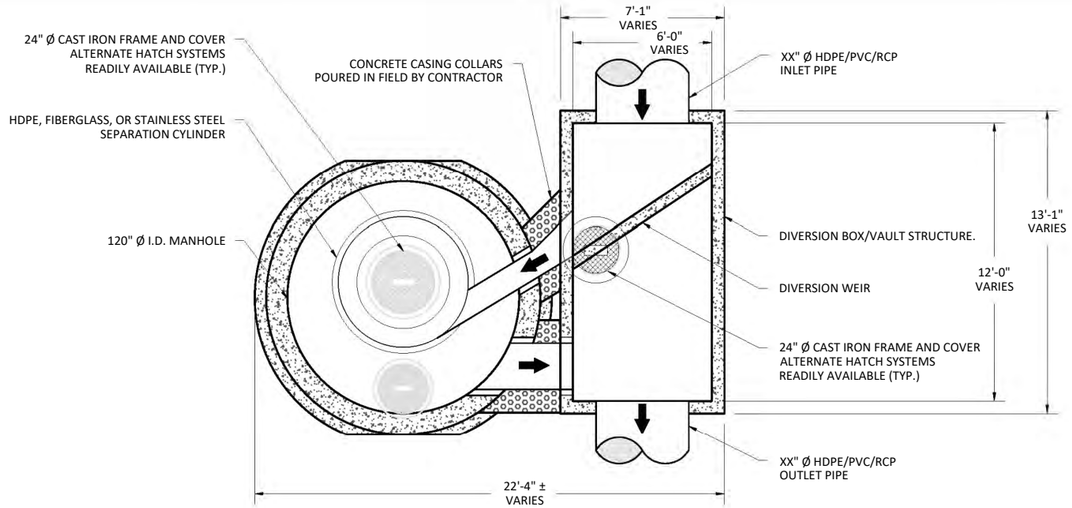
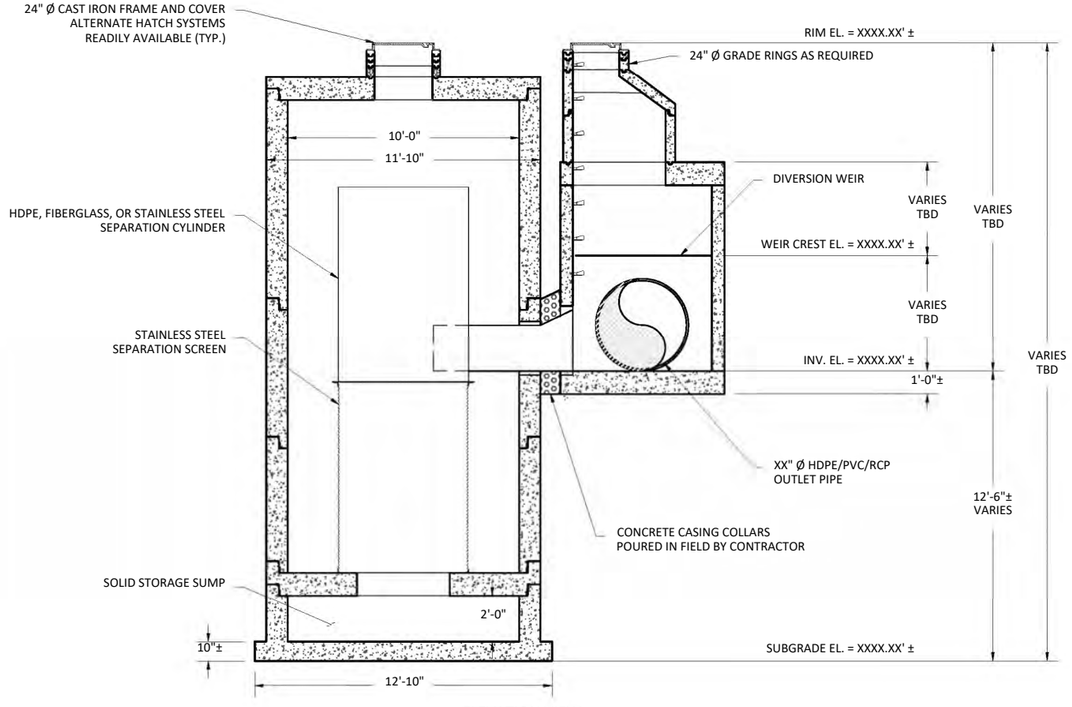


PLAN VIEW



ELEVATION VIEW

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS120-6794-OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 25 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
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   - OIL & GREASE
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DIVERSION STRUCTURE DESIGN NOTES :

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2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
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2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:	PROJECT:	
JDS120-6794 OFFLINE ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:70	11" X 17"	X.XXXX	LAYOUT1

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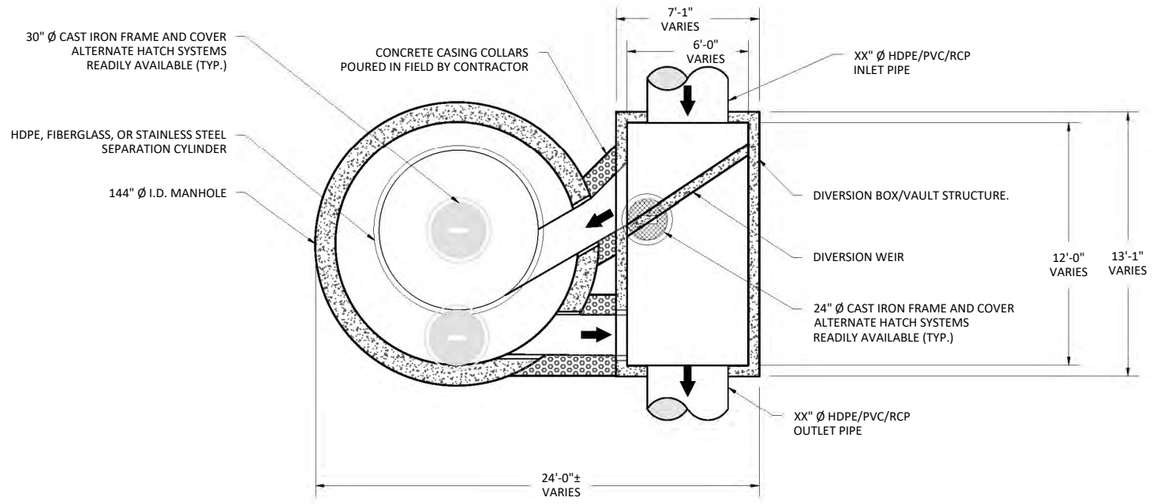
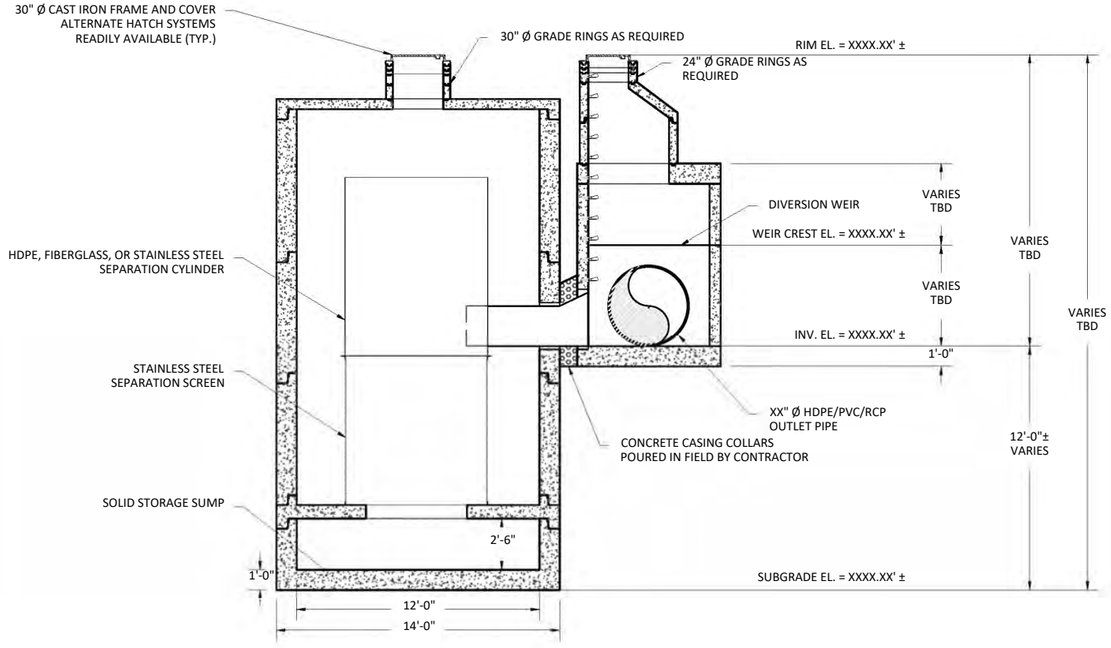


PLAN VIEW



ELEVATION VIEW

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS144-8484-OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 25.2 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VUALT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:	PROJECT:	JENSEN STORMWATER SYSTEMS
JDS144-8484 OFFLINE ***JENSEN DEFLECTIVE SEPARATOR***	PROJECT NAME CITY, STATE	521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:80	11" X 17"	X.XXXX	1

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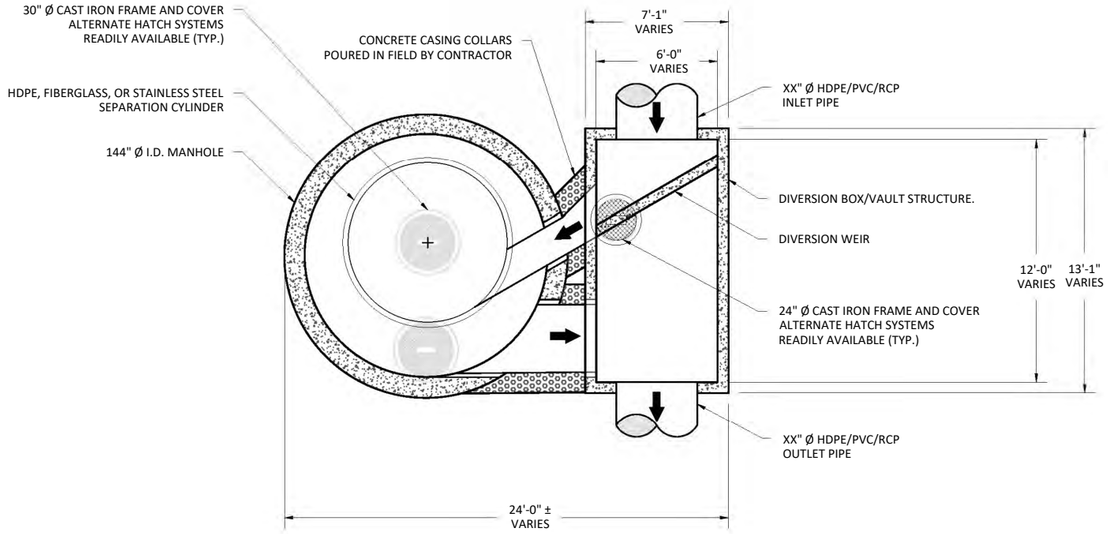
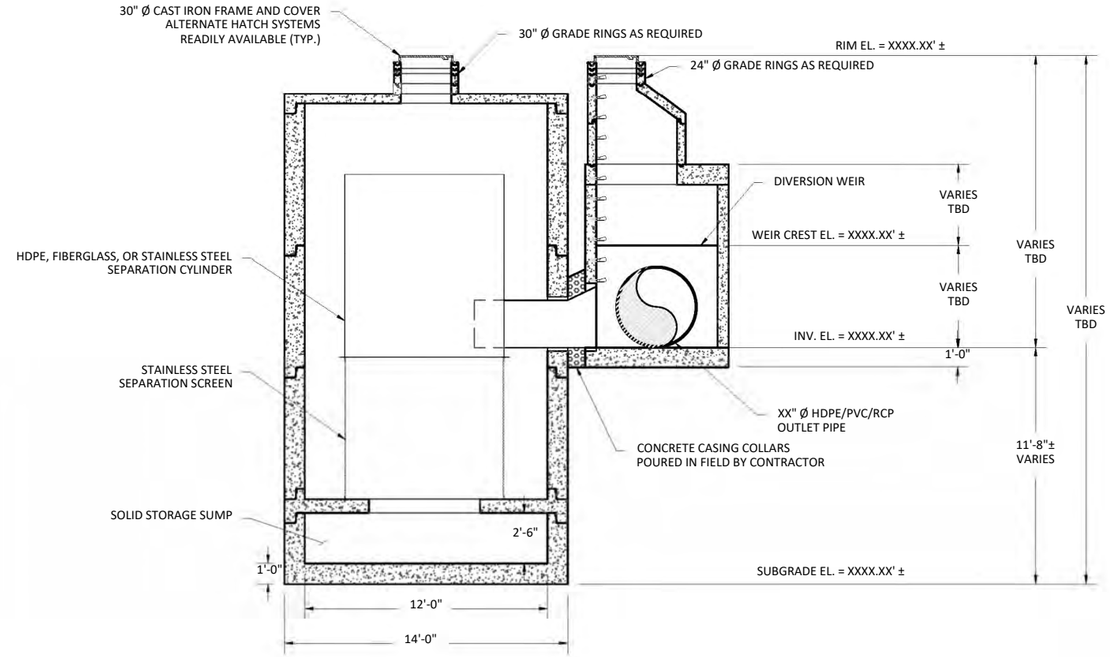


PLAN VIEW



ELEVATION VIEW

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS144-9480-OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 25.7 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, ≥ 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:	PROJECT:	
JDS144-9480 OFFLINE JENSEN DEFLECTIVE SEPARATOR	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORIG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:80	11" X 17"	X.XXXX	1

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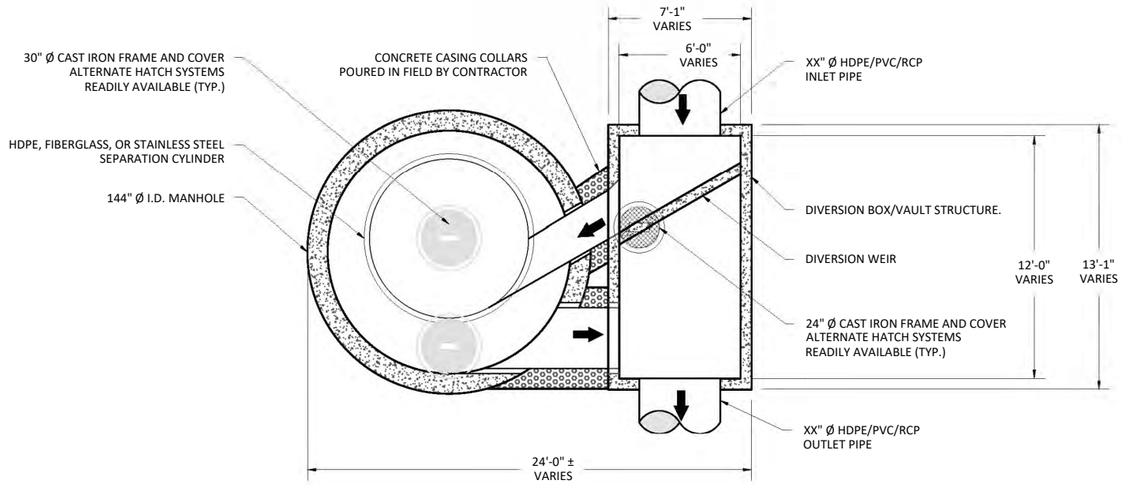
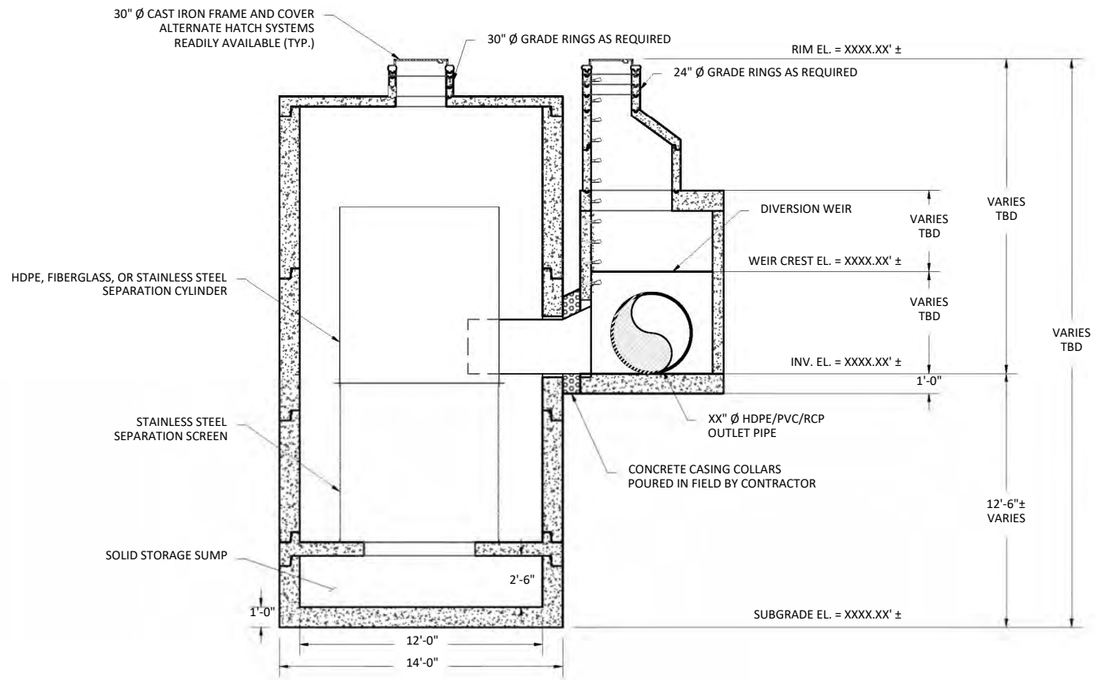


PLAN VIEW



ELEVATION VIEW

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS144-9490-OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 31.2 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, ≥ 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUT CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:	PROJECT:	
JDS144-9490 OFFLINE JENSEN DEFLECTIVE SEPARATOR	PROJECT NAME CITY, STATE	JENSEN PRECAST STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:80	11" X 17"	X.XXXX	1

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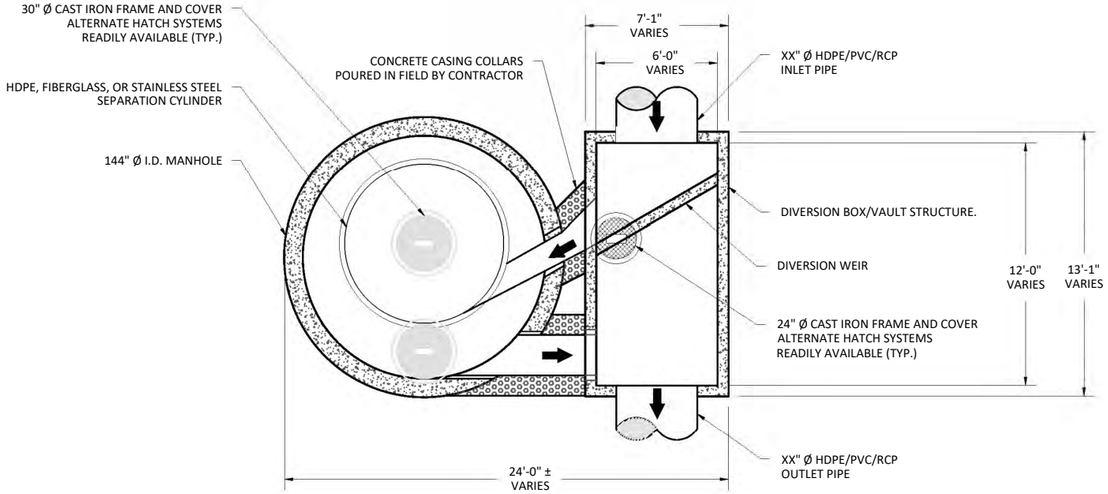
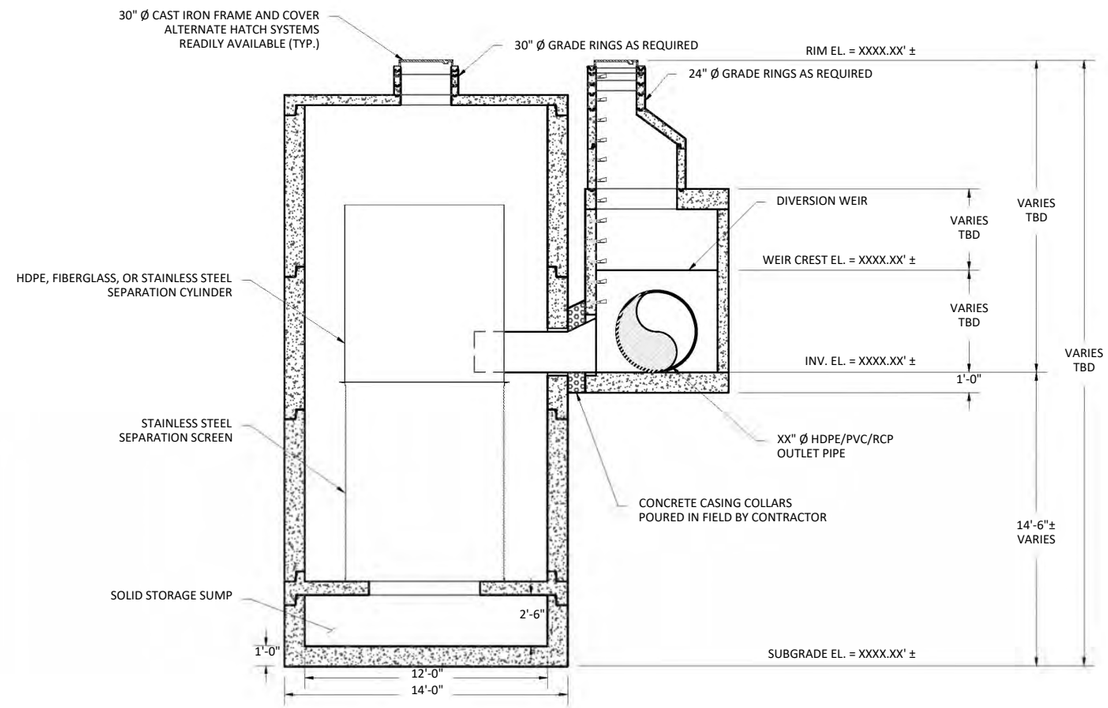


PLAN VIEW



ELEVATION VIEW

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS144-94114-OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 44 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, ≥ 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL:	PROJECT:	
JDS144-94114 OFFLINE JENSEN DEFLECTIVE SEPARATOR	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	1:80	11" X 17"	X.XXXX	1

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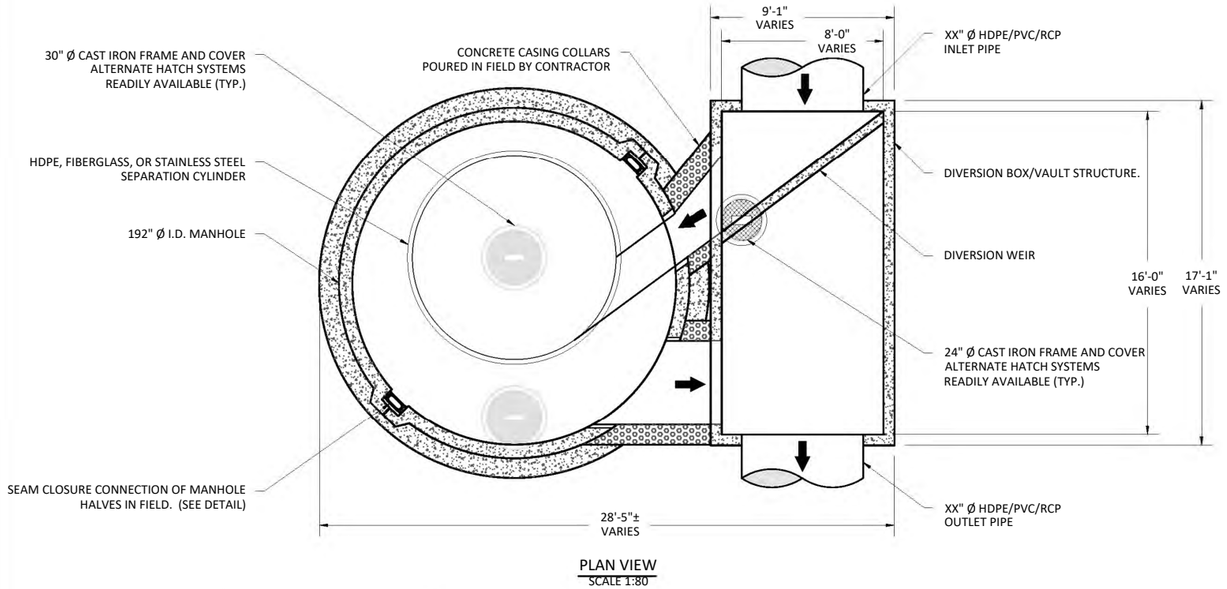
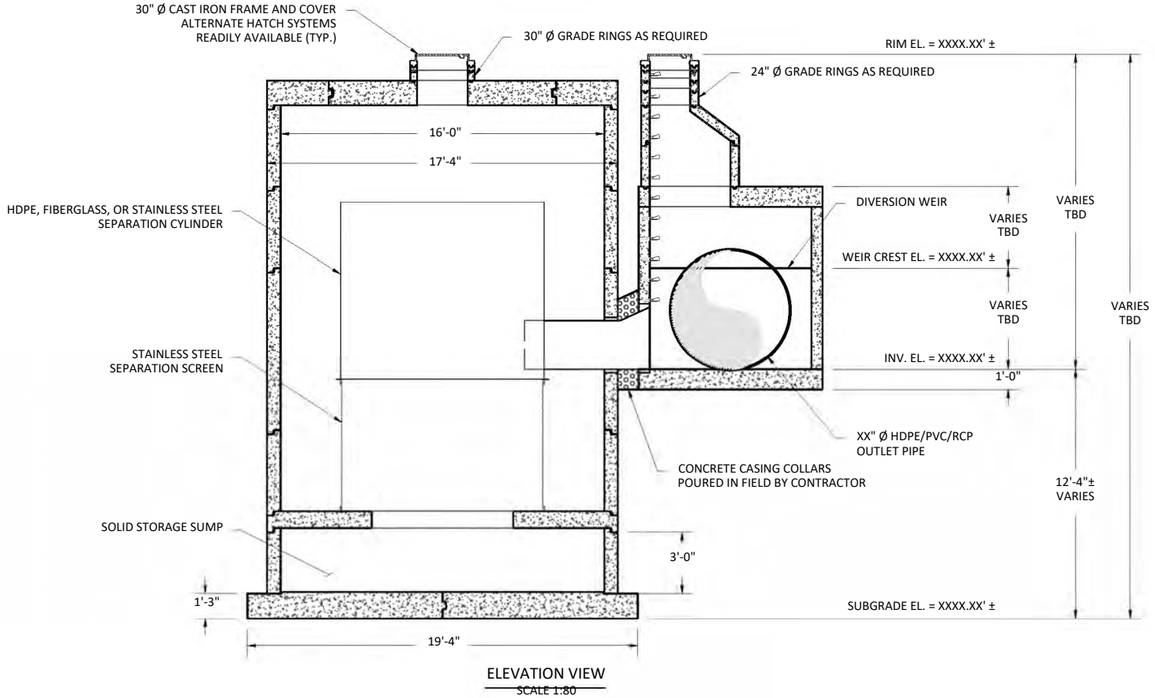


PLAN VIEW
SCALE 1:80



ELEVATION VIEW
SCALE 1:80

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS192-12072-OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 28 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

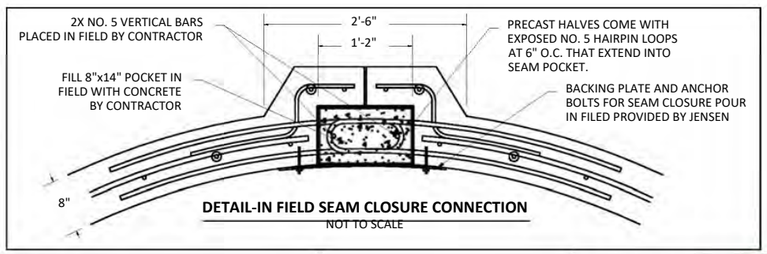
1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT



DETAIL-IN FIELD SEAM CLOSURE CONNECTION
NOT TO SCALE

MODEL:	PROJECT:	
JDS192-12072 OFFLINE JENSEN DEFLECTIVE SEPARATOR	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	1

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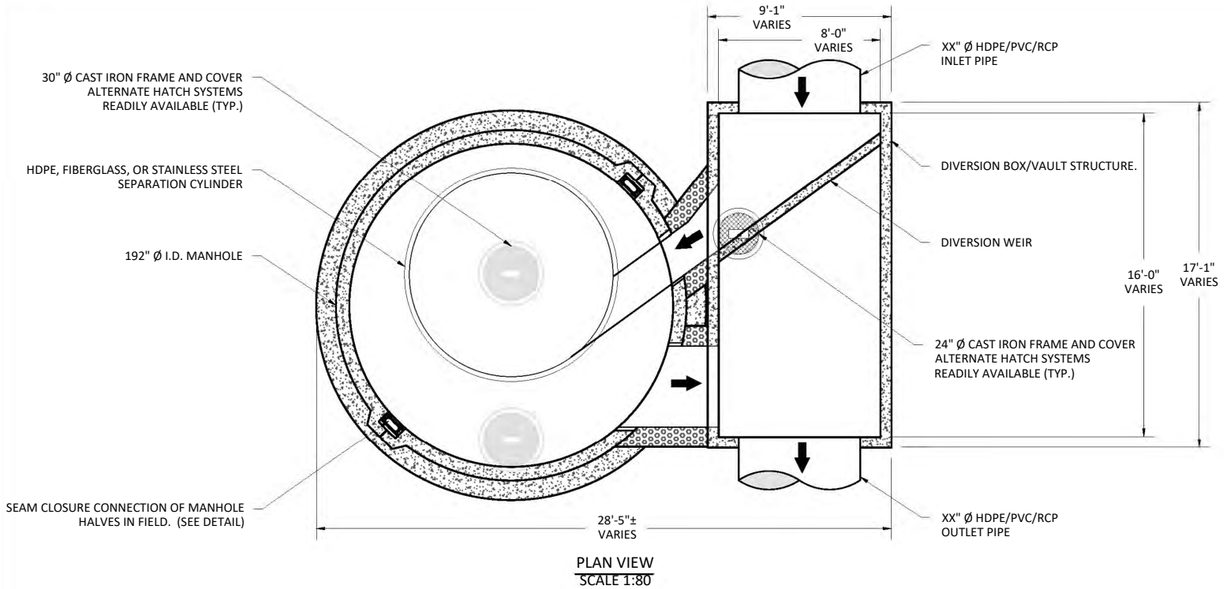
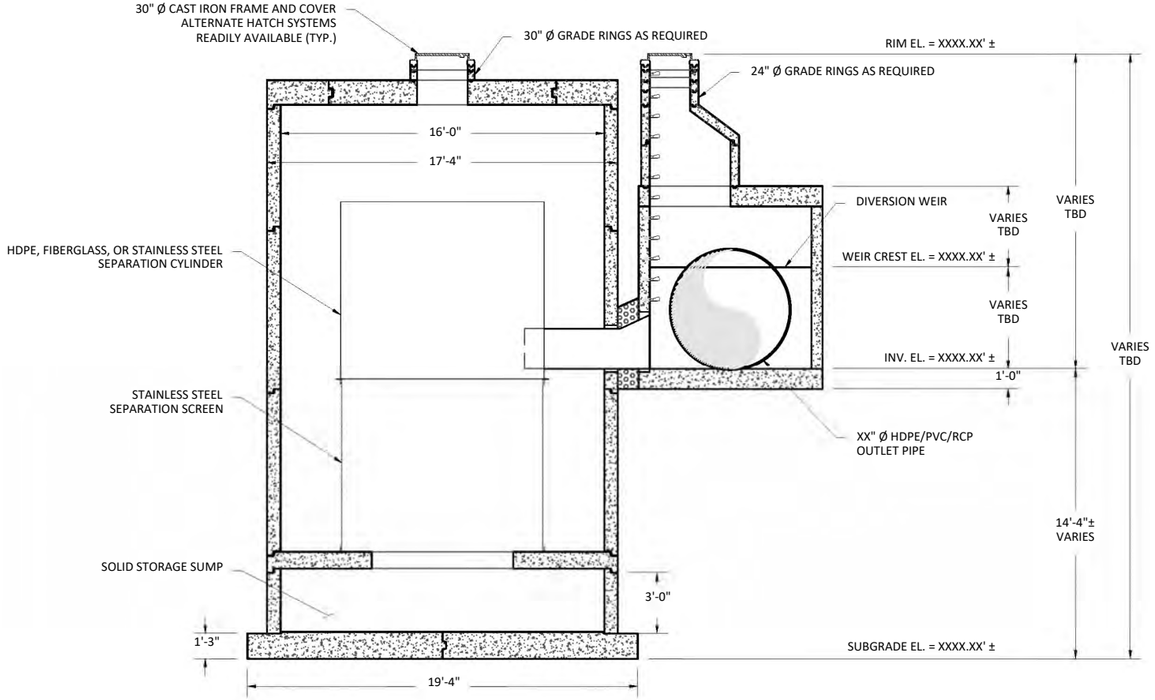


PLAN VIEW
SCALE 1:80



ELEVATION VIEW
SCALE 1:80

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS192-12096-OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 43 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, ≥ 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

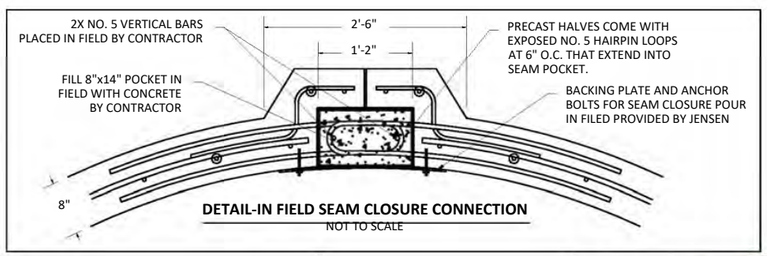
1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT



DETAIL-IN FIELD SEAM CLOSURE CONNECTION
NOT TO SCALE

MODEL:	PROJECT:	
JDS192-12096 OFFLINE JENSEN DEFLECTIVE SEPARATOR	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	1

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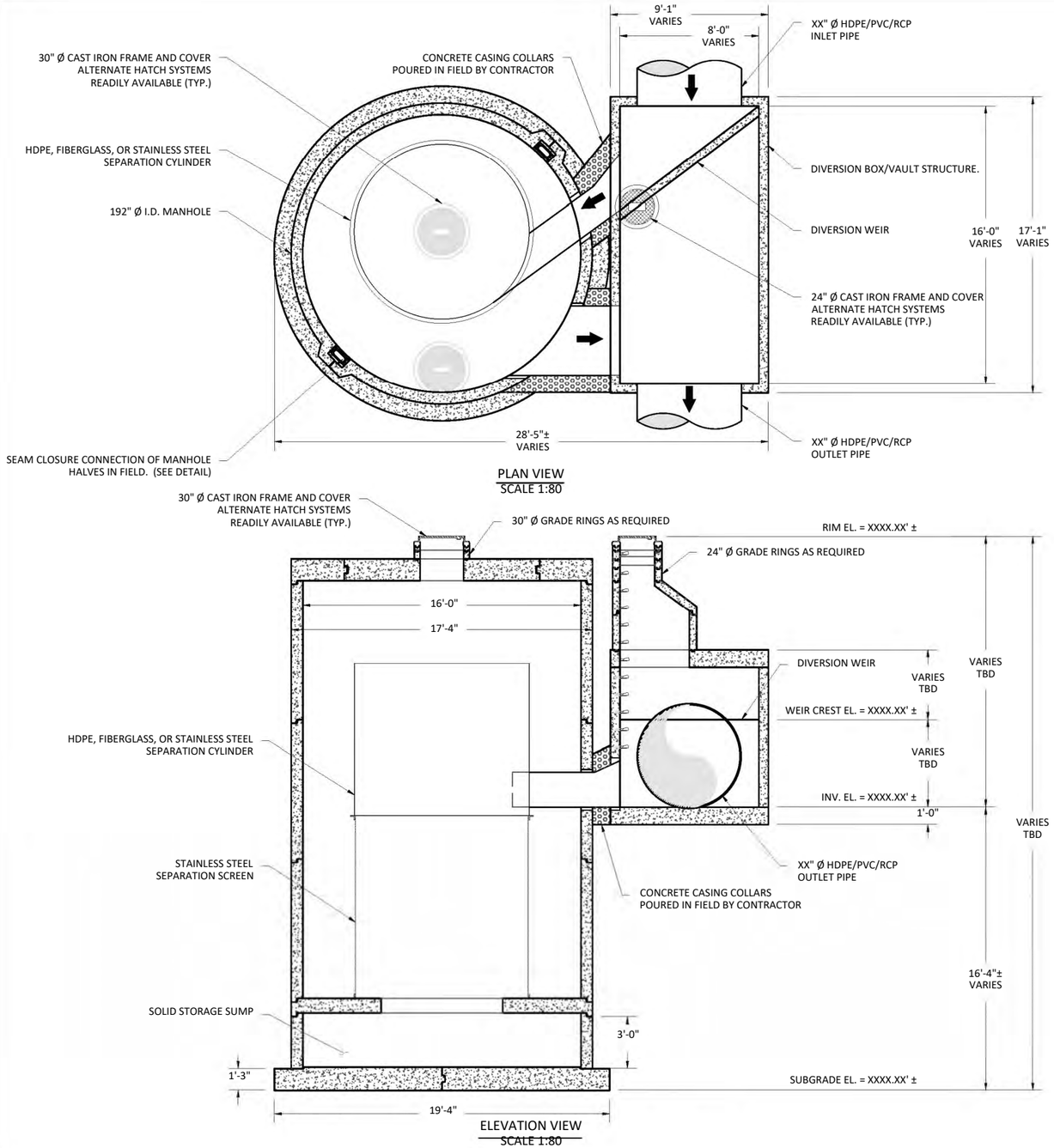


JENSEN DEFLECTIVE SEPARATOR, MODEL JDS192-120120-OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 61 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

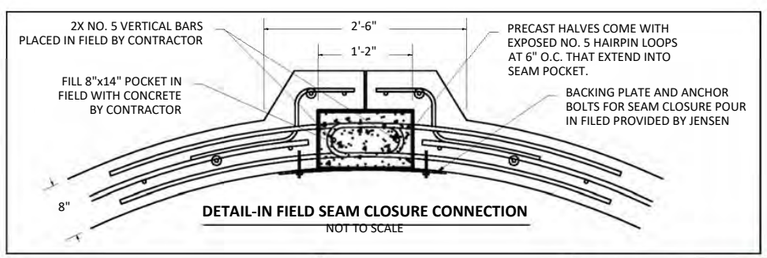
1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jenseneengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT



DETAIL-IN FIELD SEAM CLOSURE CONNECTION
NOT TO SCALE

MODEL:	PROJECT:	
JDS192-120120 OFFLINE JENSEN DEFLECTIVE SEPARATOR	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jenseneengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	1

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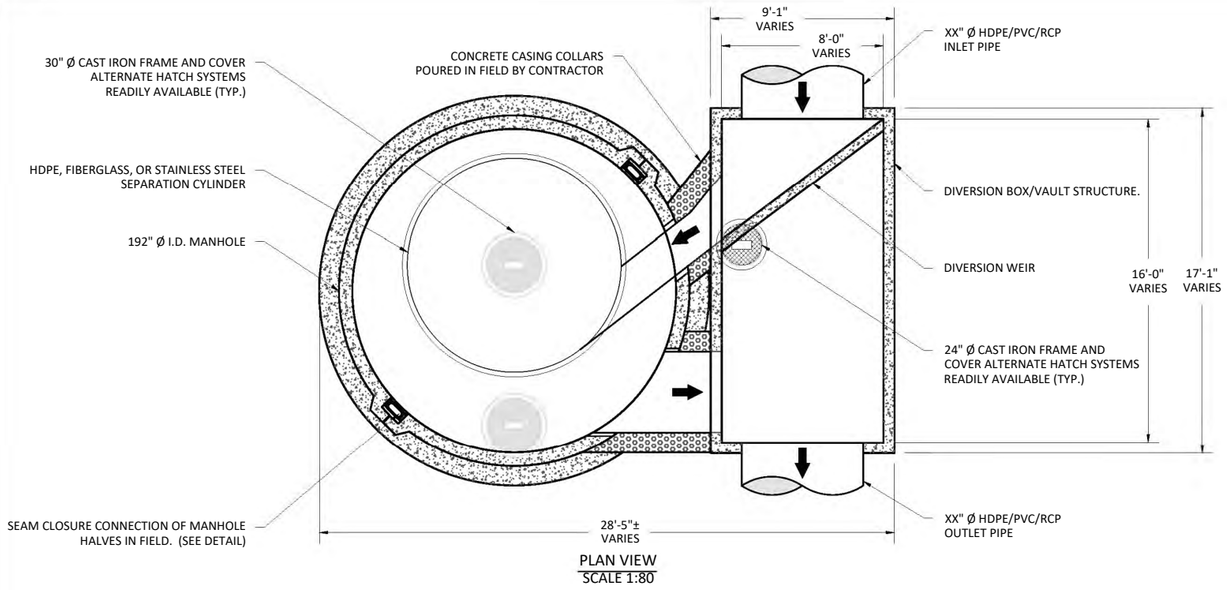
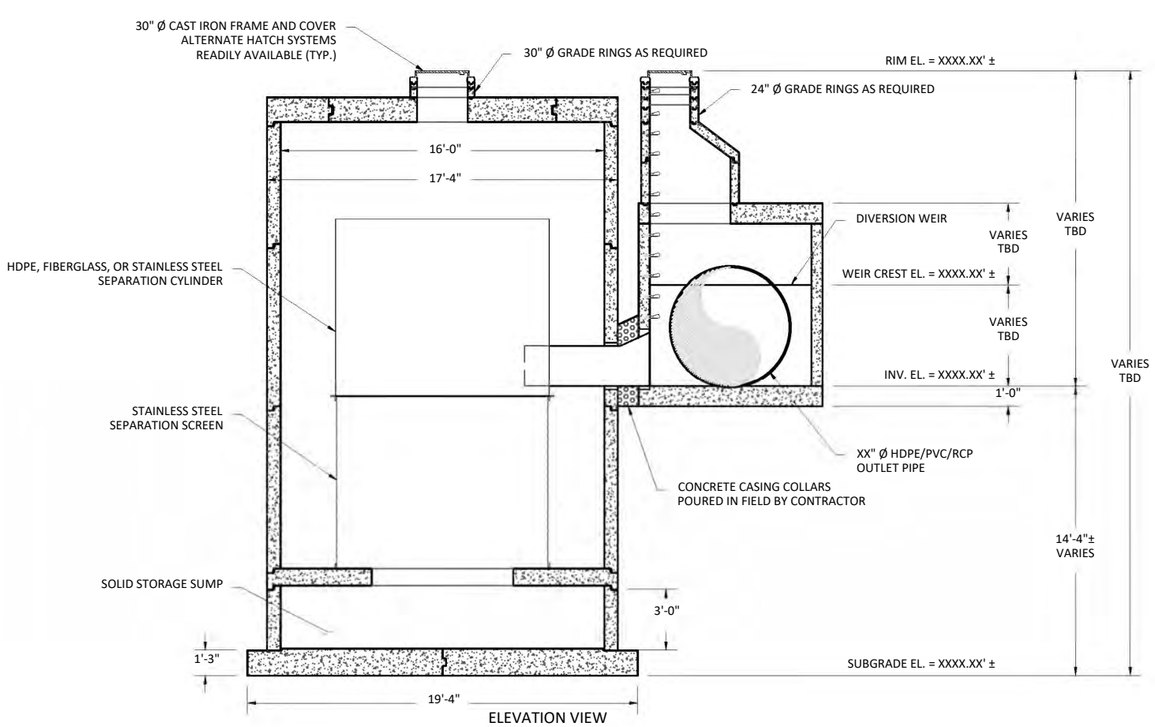


PLAN VIEW
SCALE 1:80



ELEVATION VIEW
SCALE 1:80

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS192-12696-OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 45 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

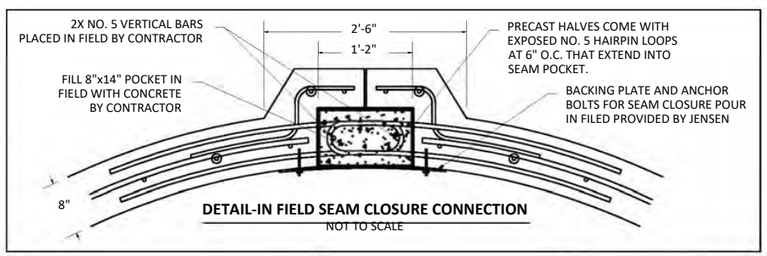
1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT



DETAIL-IN FIELD SEAM CLOSURE CONNECTION
NOT TO SCALE

MODEL:	PROJECT:	
JDS192-12696 OFFLINE JENSEN DEFLECTIVE SEPARATOR	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORIG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	1

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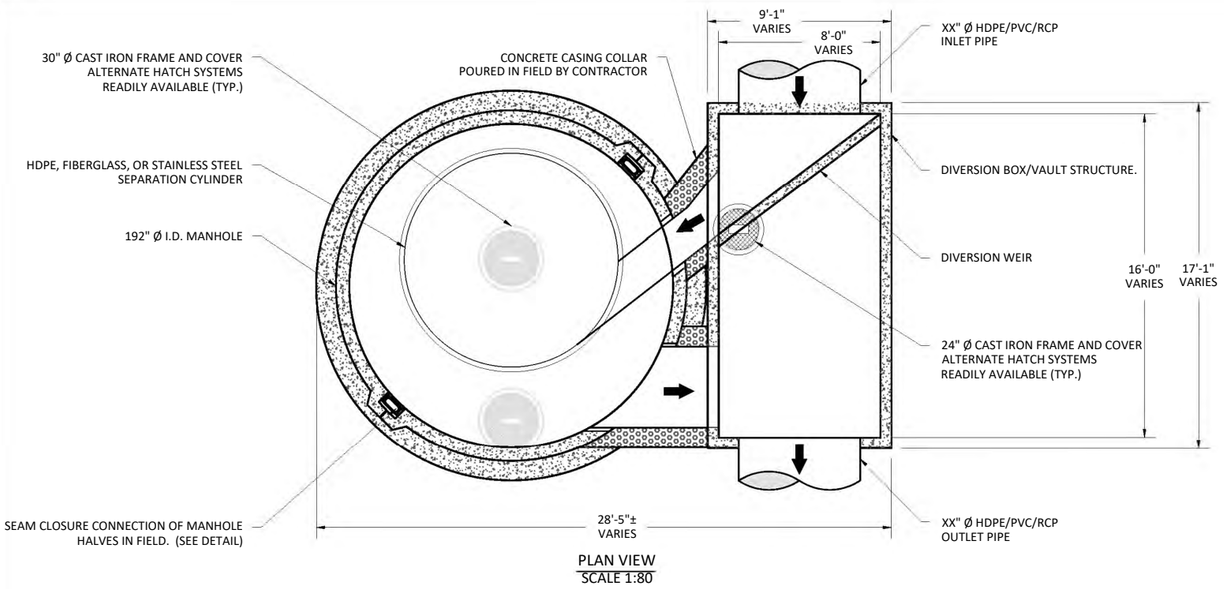
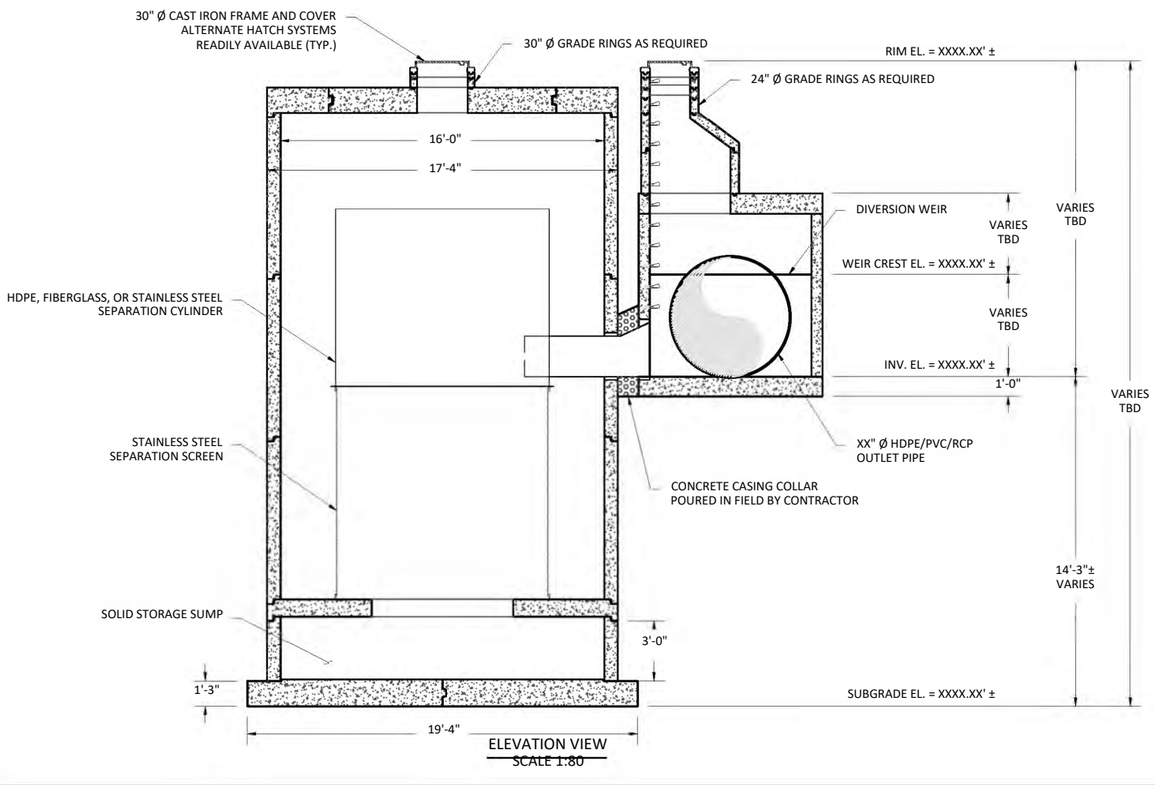


PLAN VIEW
SCALE 1:80



ELEVATION VIEW
SCALE 1:80

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS192-126120-OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 64 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, > 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES
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GENERAL NOTES:

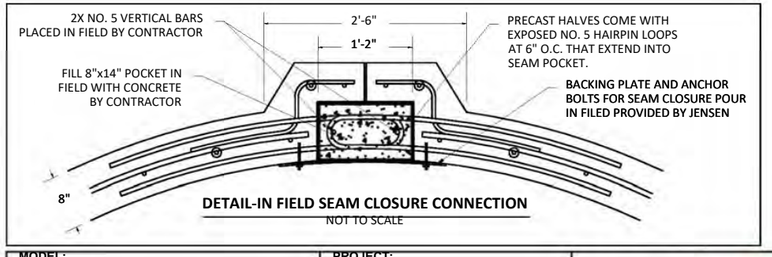
1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT



DETAIL-IN FIELD SEAM CLOSURE CONNECTION
NOT TO SCALE

MODEL:	PROJECT:	
JDS192-126120 OFFLINE JENSEN DEFLECTIVE SEPARATOR	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	1

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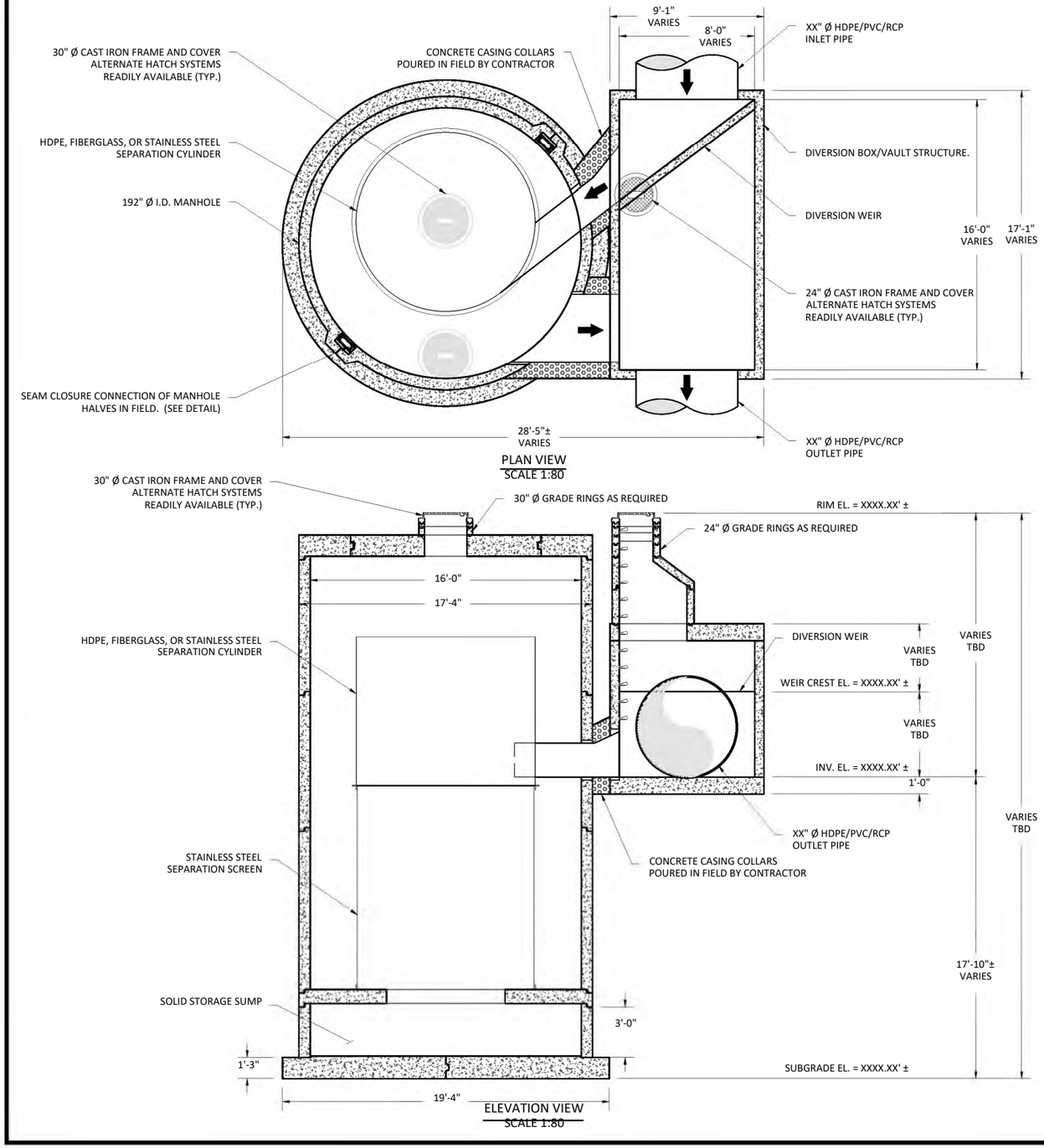


JENSEN DEFLECTIVE SEPARATOR, MODEL JDS192-126138-OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 80 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR CREST ELEVATION	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APERTURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, ≥ 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

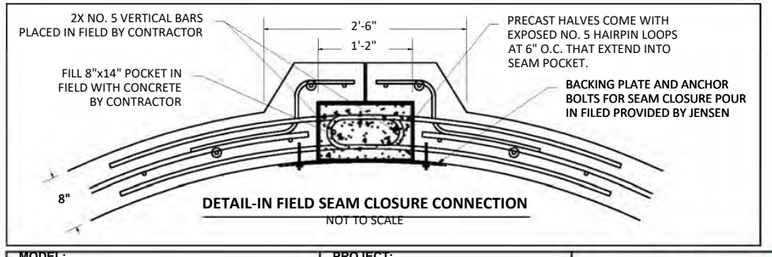
1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT



DETAIL-IN FIELD SEAM CLOSURE CONNECTION
NOT TO SCALE

MODEL:	PROJECT:	
JDS192-126138 OFFLINE JENSEN DEFLECTIVE SEPARATOR	PROJECT NAME CITY, STATE	JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com

HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORIG. DWG. DATE	REV. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	XX/XX/XXXX	XX/XX/XXXX	AS SHOWN	11" X 17"	X.XXXX	1

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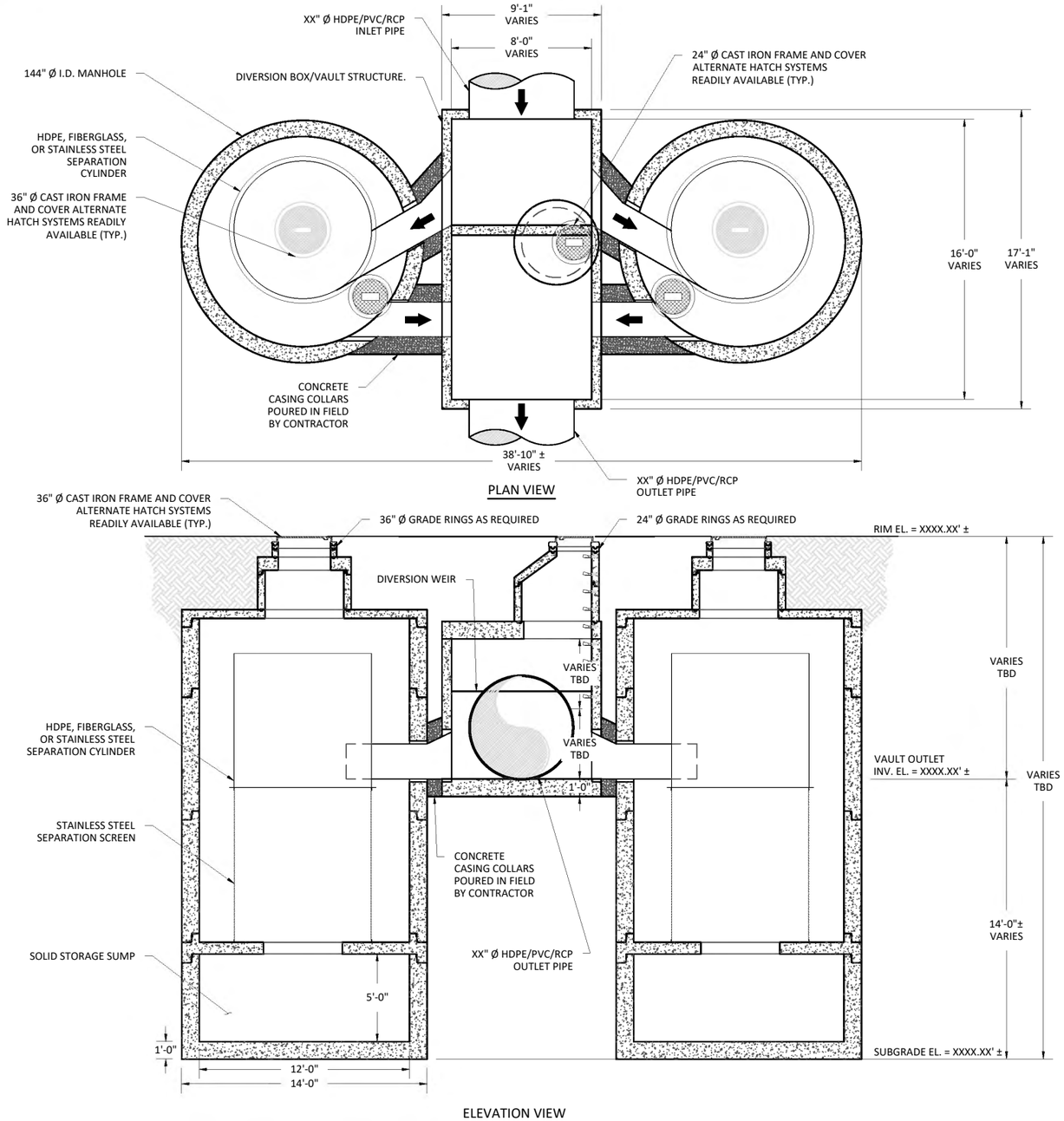
EXHIBIT C

Dual Offline *JDS* Units

Example

Plan and Profile Drawings



JENSEN DEFLECTIVE SEPARATOR, MODEL JDS144-94102-DUAL-OFFLINE

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 76 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XXX - YRS
DIVERSION WEIR ELEVATION	XXXX.XX' ±
DIVERSION WEIR CREST	XXXX.XX' ±
2,400 or 4,700 MICRON SCREEN APETURE	

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THE DEPLOYMENT OF THIS HYDRODYNAMIC SEPARATION TREATMENT UNIT IN THE OFFLINE CONFIGURATION SHOWN ON THIS SHEET REQUIRES A SEPARATE DIVERSION STRUCTURE CONSTRUCTED WITHIN THE PIPELINE ALIGNMENT TO DIVERT THE STORMWATER QUALITY FLOW LISTED IN THE TABLE ABOVE AS WELL AS ENSURE THE BYPASS OF THE PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED SOLIDS FROM THE OFFLINE JDS UNIT.

TREATMENT :

1. 100% FULL CAPTURE FOR TRASH & DEBRIS, ≥ 5mm
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION STRUCTURE DESIGN NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING AND HYDRAULIC & ENERGY GRADELINE ANALYSES.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.

GENERAL NOTES:

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
3. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
4. JENSEN STORMWATER SYSTEMS TO PROVIDE; JDS AND DIVERSION BOX/VAULT TO FINISHED GRADE WITH INLET & OUTLET CONDUITS BETWEEN THESE STRUCTURES.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.
5. CONCRETE CASING COLLARS AROUND INLET AND OUTLET CONDUITS MUST BE POURED IN FIELD BY CONTRACTOR. CONTACT JENSEN FOR ANY DETAILS.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING
7. ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT

MODEL: ***JDS144-94102 DUAL JENSEN DEFLECTIVE SEPARATOR***	**PROJECT:** PROJECT NAME CITY, STATE			JENSEN PRECAST STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com		
HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT	ORG. DWG. DATE XX/XX/XXXX	REV. DWG. DATE XX/XX/XXXX	SCALE: 1:80	SHEET SIZE 11" X 17"	DRAWN BY X.XXXX	SHEET NUMBER 1

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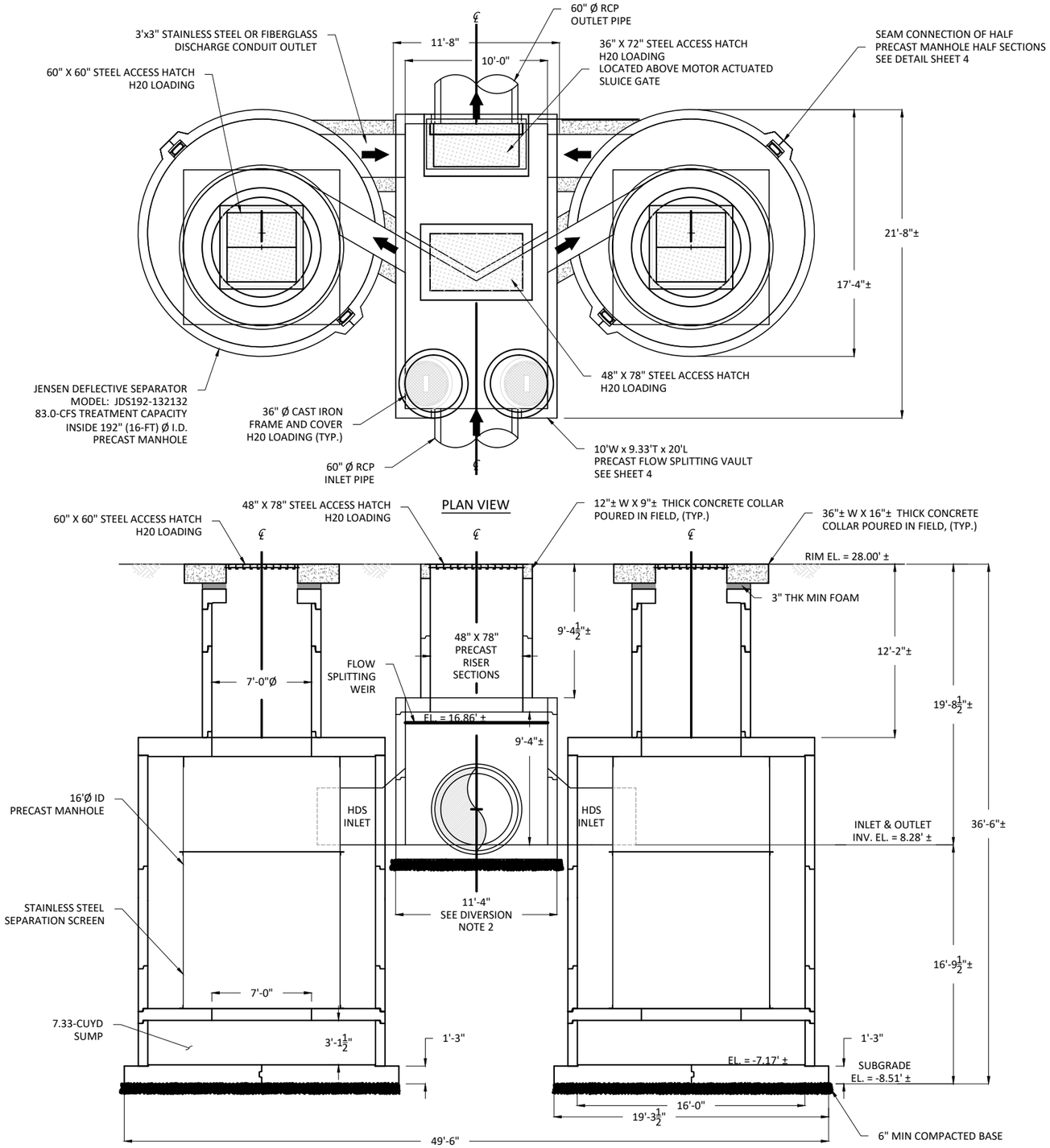

ELEVATION VIEW

SCALE: 1"=100"

JENSEN DEFLECTIVE SEPARATOR
MODEL: JDS192-132 132-OFFLINE, 83.0-CFS CAPACITY
DUAL CONFIGURATION PROVIDING 166-CFS TREATMENT CAPACITY

HYDRAULICS AND TREATMENT :

PRETREATMENT STORMWATER QUALITY DESIGN FLOW (SQDF)	166 - CFS
FLOW SPLITTING WEIR HEIGHT	PRELIM ≈ 8'-7" FINAL HEIGHT TO BE DETERMINED
FLOW SPLITTING WEIR CREST ELEVATION	16.86' ±

STORMWATER TREATMENT UNIT EMPLOYS THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION.

TREATMENT :

NON-BLOCKING SCREENING AND SWIRL CONCENTRATING TREATMENT CAPACITIES.

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

DIVERSION NOTES :

1. FINAL DIVERSION STRUCTURE/VAULT DIMENSIONS TO BE DETERMINED (TBD) FROM ENGINEERING, HYDRAULIC AND ENERGY GRADELINE ANALYSIS OF THE PRETREATMENT AND BYPASS FLOW. THE DIMENSIONS SHOWN SHOULD BE CONSIDERED PRELIMINARY UNTIL COMPLETION OF HGL AND EGL ANALYSIS.

CONSTRUCTION NOTES :

1. CONTRACTOR TO VERIFY VERTICAL DIMENSIONS OF ALL PRECAST PIECES IN FIELD.
2. VERIFY SUBBASE ELEVATION BEFORE PLACING PRECAST COMPONENTS OR BACKFILLING.
3. APPLY BUTYL MASTIC AND/OR GROUT TO SEAL JOINTS OF MANHOLE STRUCTURE.
4. APPLY LOAD TO MASTIC SEAL IN JOINTS OF MH SECTIONS TO COMPRESS SEALANT IF NECESSARY. UNIT MUST BE WATER TIGHT, HOLDING WATER UP TO FLOWLINE INVERT (MINIMUM).
5. CONTRACTOR TO GROUT SEAL DISCHARGE PIPE TO INTERNAL SCREEN SUPPORT PEDESTAL AND PENETRATION THROUGH MANHOLE WALL.
6. ALL INTERNAL COMPONENTS INSTALLED BY MANUFACTURER.
7. BLOCK AND/OR GROUT PACK BENEATH FRAMES AND COVERS TO MATCH FINISHED GRADE.

MATERIALS & MANUFACTURING :

1. ALL DIMENSIONS ARE IN DECIMAL INCHES.
2. STRUCTURES DESIGNED FOR H-20 TRAFFIC AND SOIL LOADING PER ASTM C890 & C915 AND ASSHTO LOADING METHODS.
3. PRECAST VAULT MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-857 & C-478.
4. PRECAST MANHOLE MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478 AND LACSD S-A-206, WHEN IN LA COUNTY.
5. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
6. 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.

MATERIAL LIST - PROVIDED WITH UNIT :

QTY.	COMPONENT DESCRIPTION	RESPONSIBLE PROVIDER	RESPONSIBLE INSTALLER
1	SS INLET, OUTLET AND SEPARATION CYLINDER	JENSEN	CONTRACTOR
1	SEPARATION SCREEN	JENSEN	CONTRACTOR
1	SS INLET CHANNEL	CONTRACTOR	CONTRACTOR
1	SS OUTLET CHANNEL	CONTRACTOR	CONTRACTOR
2	60"x60" H20 RATED ACCESS HATCH FOR HDS UNITS	JENSEN	CONTRACTOR
1	36"x72" H20 RATED ACCESS HATCH FOR ACTUATED VALVE	JENSEN	CONTRACTOR
1	48"x78" H20 RATED ACCESS HATCH FOR FLOW SPLITTING WEIR	JENSEN	CONTRACTOR
2	36" Ø CAST IRON FRAME AND COVER, H20 RATED	JENSEN	CONTRACTOR
X	3" TALL 30" Ø GRADE RING	JENSEN	CONTRACTOR
X	6" TALL 30" Ø GRADE RING	JENSEN	CONTRACTOR

SHEET: 3

MODEL: *JDS192 - 132 132-OFFLINE, JENSEN DEFLECTIVE SEPARATOR 82.5-CFS CAPACITY EACH DUAL CONFIGURATION: 166-CFS TOTAL TREATMENT CAPACITY*

PROJECT: LOS CERRITOS CHANNEL SUB-BASIN 4 STORMWATER CAPTURE FACILITY LONG BEACH AIRPORT *CITY OF SIGNAL HILL, CA*

JENSEN STORMWATER BMP/LID SYSTEMS
521 DUNN CIRCLE, SPARKS, NV 89431-6312
(877) 649-0095 FAX (775) 440-203

NON-BLOCKING CONTINUOUS DEFLECTIVE SEPARATION SCREENING & SWIRL CONCENTRATION PROCESS	ORG. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
	7/25/2016	AS SHOWN	11" X 17"	W. STEIN	SHEET 3

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EXHIBIT D

INSTALLATION GUIDE

INTERNAL COMPONENT

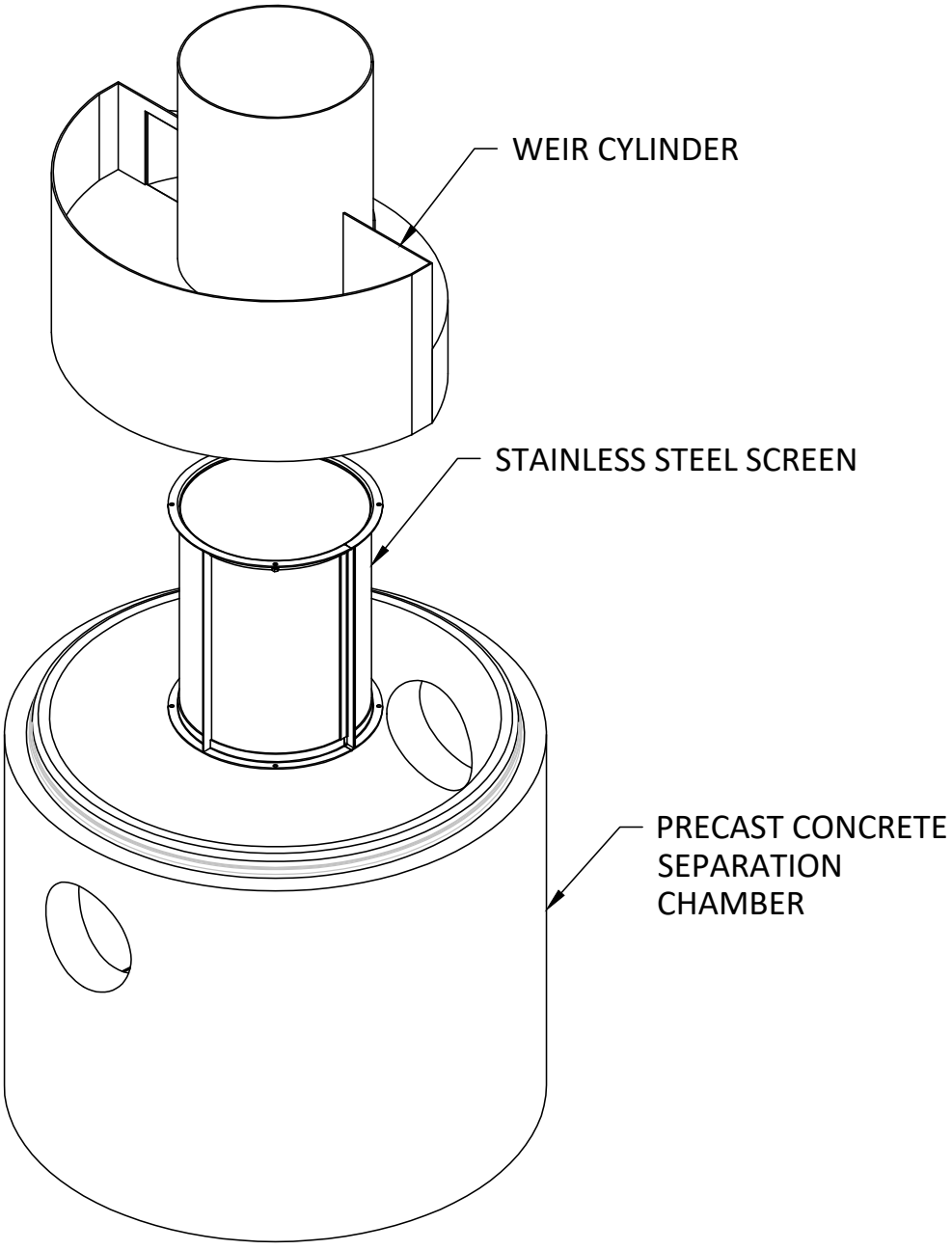
ASSEMBLY

for

YARD & FIELD

Inline *JDS* Units

JENSEN DEFLECTIVE SEPARATOR
INTERNAL COMPONENT ASSEMBLY
YARD/FIELD INSTALLATION GUIDE



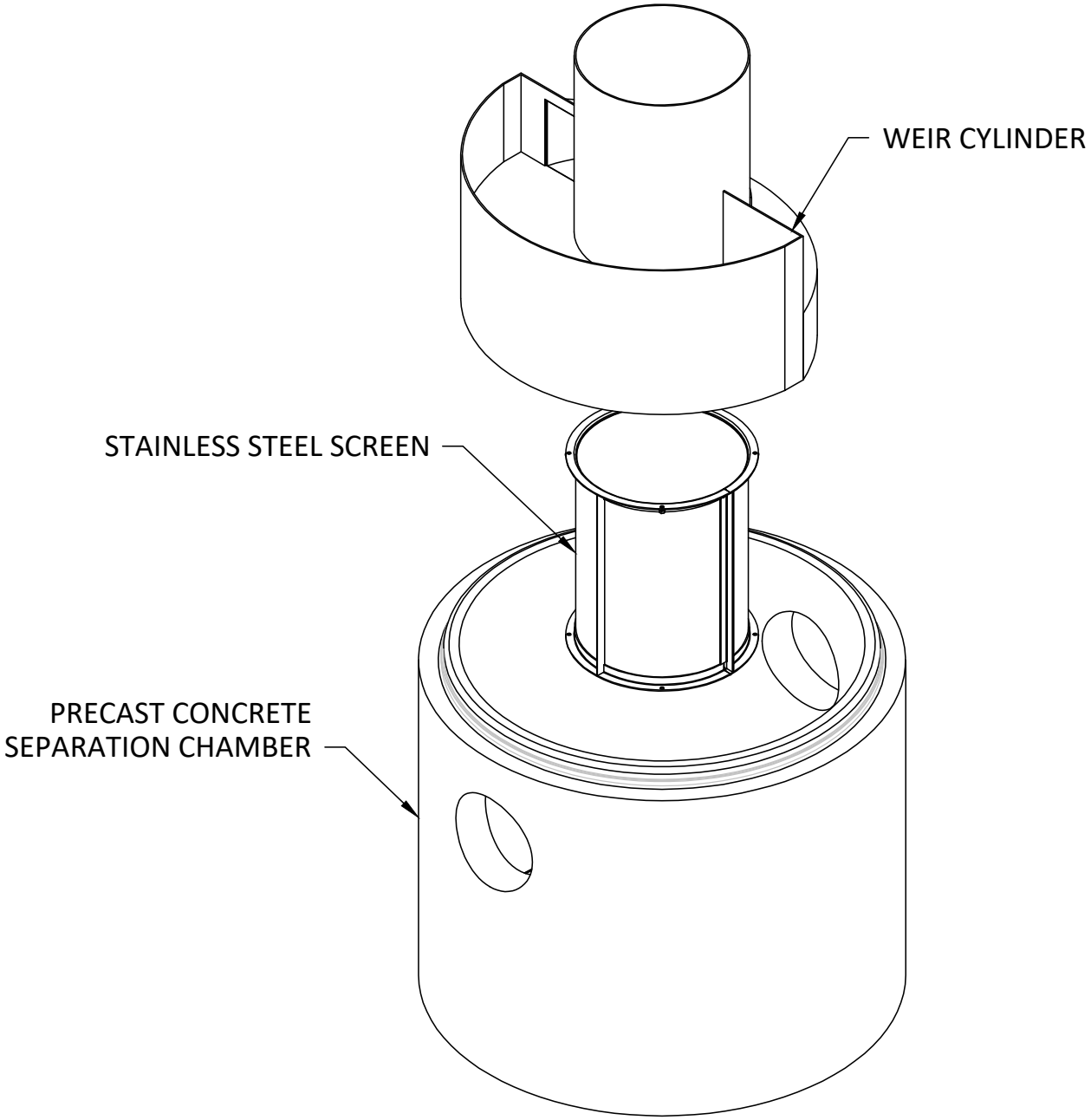
JENSEN
STORMWATER
SHIP/LIB SYSTEMS
521 DUNN CIRCLE, SPARKS, NV 89431-6312
(877)649-0095 FAX (775) 440-2013

TOOLS REQUIRED FOR INSTALLATION

- RECIPROCATING SAW
- ROTARY HAMMER
- 3/8" Ø MASONRY BIT FOR 3-1/4" WEDGE ANCHORS
- RATCHET WRENCH
- 3/4" SOCKET FOR 1/2" BOLTS
- 9/16" SOCKET FOR 3/8" WEDGE ANCHORS
- ADJUSTABLE CRESCENT WRENCH
- MALLET HAMMER
- SEALANT GUN
- WATER TIGHT SEALANT
- TAPE MEASURE
- PAINT MARKER OR EQUAL

COMPONENTS AND HARDWARE

1. WEIR CYLINDER
2. STAINLESS STEEL SCREEN/CYLINDER
3. TOTAL OF (4) 1/2" Ø x 1-1/2" LONG BOLTS
4. TOTAL OF (12) 1/2" Ø FLAT WASHERS
5. TOTAL OF (4) 1/2" Ø LOCK WASHERS
6. TOTAL OF (4) 1/2" Ø HEX NUTS
7. TOTAL OF (8) 3/8" Ø X 3-1/4" LONG WEDGE ANCHORS



INSTALLATION GUIDE

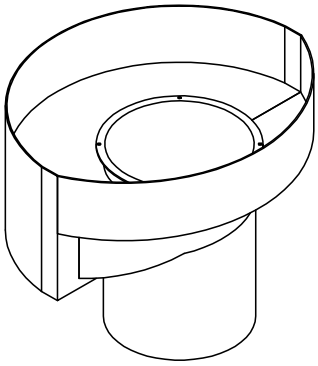


FIGURE JDS-1

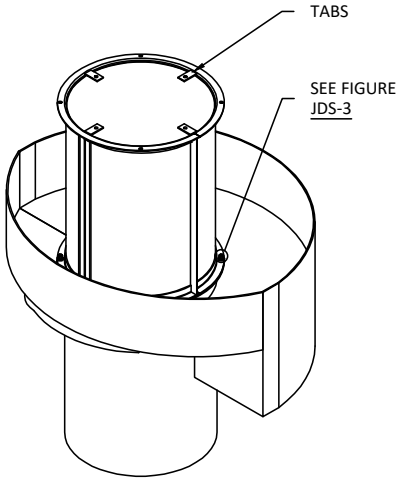


FIGURE JDS-2

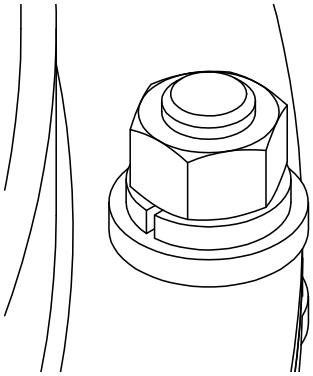


FIGURE JDS-3

1. POSITION WEIR CYLINDER UPSIDE DOWN AS SHOWN ON FIGURE JDS-1.
2. PLACE S.S. SCREEN WITH THE TOP SIDE SETTING ON WEIR CYLINDERS FLANGE AS SHOWN ON FIGURE JDS-2.
3. USE MARKER TO MATCH S.S. SCREEN FLANGE HOLES TO WEIR CYLINDER.
4. USE 9/16" BIT TO MATCH DRILL HOLES ON WEIR CYLINDER.
5. ONCE HOLES ARE DRILLED, MATCH CYLINDER S.S. SCREEN AGAIN AS SHOWN ON FIGURE JDS-2.
6. USE (4) 1/2" Ø x 1-1/2" LONG BOLTS, (8) 1/2" Ø FLAT WASHERS, (4) 1/2" Ø LOCK WASHERS, AND (4) 1/2" Ø HEX NUTS TO CONNECT WEIR CYLINDER AND S.S. SCREEN. AS SHOWN ON FIGURE JDS-3.
7. ROTATE WEIR CYLINDER AND S.S. SCREEN ASSEMBLY INTO UPRIGHT POSITION. USE MECHANICAL MEANS IF AVAILABLE.
8. LIFT ASSEMBLY INTO PRECAST CONCRETE SEPARATION CHAMBER. USE MECHANICAL MEANS TO LIFT IF AVAILABLE.

4

INSTALLATION GUIDE

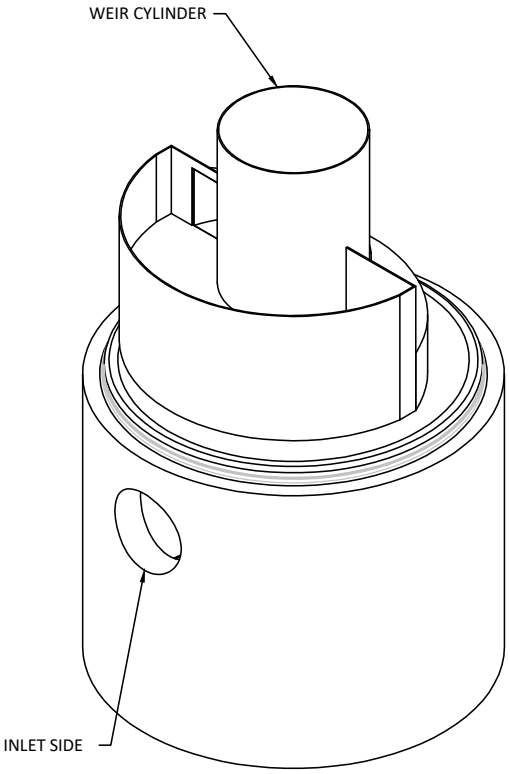


FIGURE JDS-4

9. CENTER S.S. SCREEN OVER OPENING IN PRECAST SEPARATION SLAB. ROTATE ASSEMBLY AS NECESSARY SO INLET PIPE ENTERS AT CORRECT LOCATION. SEE FIGURE JDS-4 ON PAGE 5.
10. SECURE S.S. SCREEN TO SEPARATION SLAB USING ROTARY HAMMER, 3/8" Ø WEDGE ANCHORS, HAMMER, ETC. USE TABS AS SHOWN IN FIGURE JDS-2, THIS PAGE.
11. SECURE WEIR CYLINDER TO INSIDE OF PRECAST CONCRETE COMPONENT BY DRILLING THROUGH WEIR CYLINDER AND USING (4) 3/8" Ø WEDGE ANCHORS WITH (4) 1/2" Ø FLAT WASHERS. SEE FIGURE JDS-5, THIS PAGE.

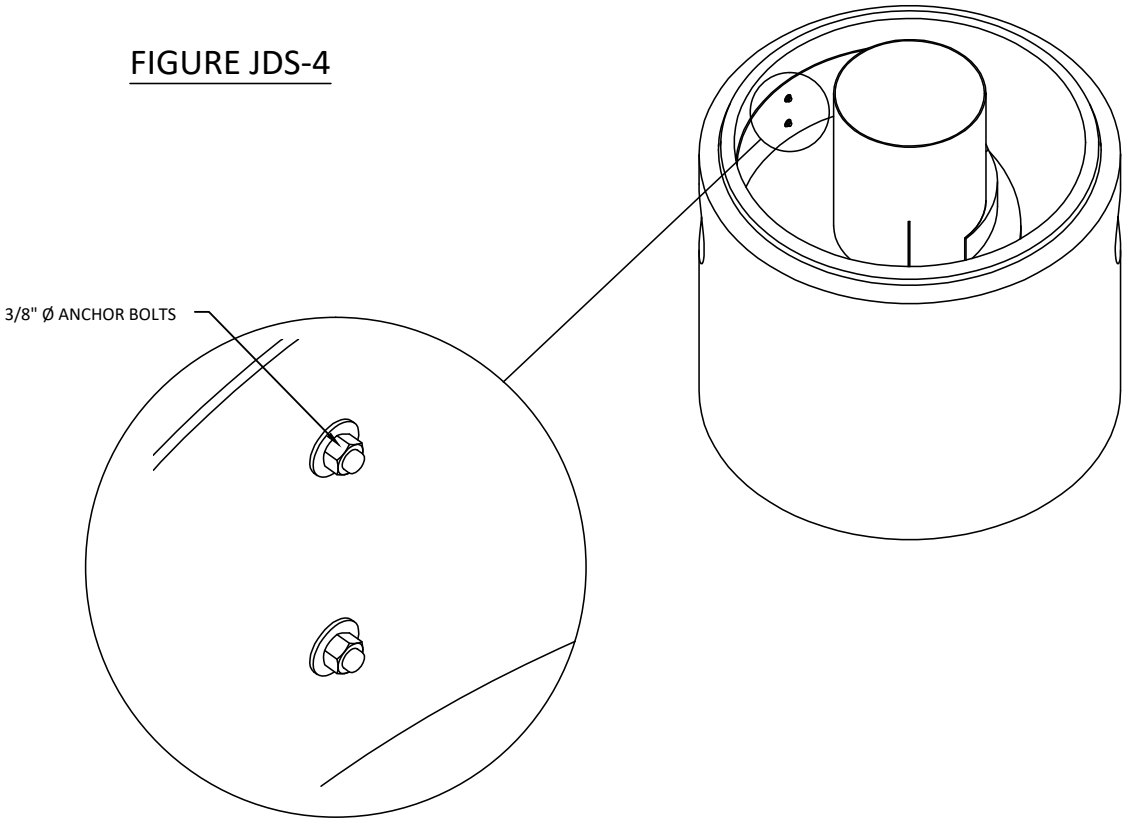


FIGURE JDS-5

5

INSTALLATION GUIDE

12. USE RECIPROCATING SAW TO CUT WEIR CYLINDER FOR INLET PIPE ACCESS. USE WATER TIGHT SEALANT TO SEAL BETWEEN WEIR CYLINDER AND CONCRETE. SEE FIGURE JDS-6.

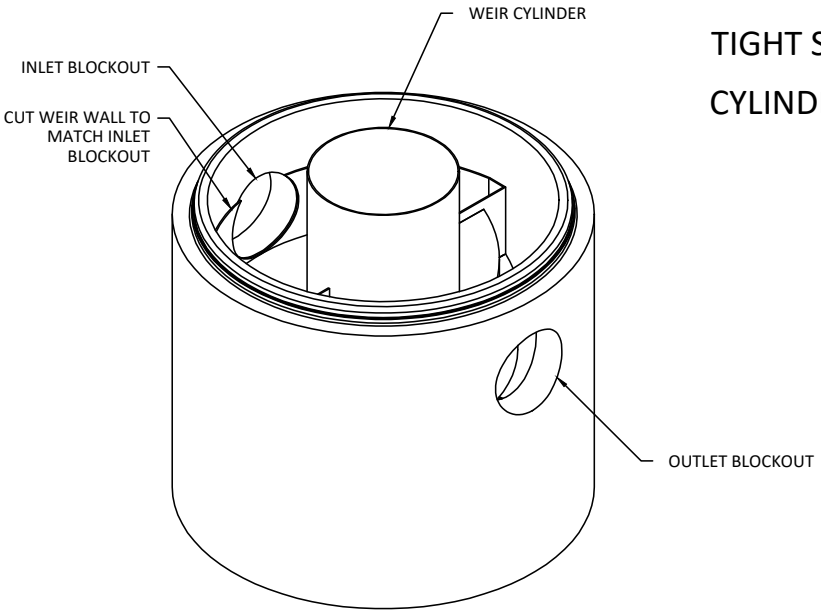


FIGURE JDS-6

6

EXHIBIT E

Example Specifications For Inline *JDS72-3624* Unit

Performance Product

Material and Installation

Specifications

STORMWATER QUALITY STORMWATER TREATMENT UNIT

SPECIFICATIONS

GENERAL SWTU SPECS

1.1 Scope

The Contractor shall install a precast storm water treatment unit(s) (SWTUs) in accordance with the notes and details shown on the drawings and in conformance with these Specifications. The precast SWTU(s) shall be a (**2.0**)-cubic foot per second (-cfs [-ft^3/s]) treatment flow rate capacity ***J***ensen ***D***eflective ***S***eparator (***JDS***), model ***JDS72-3624*** as manufactured by Jensen Precast. This type of SWTU(s) is typically categorized as a Hydrodynamic Separation (HDS) unit.

The Contractor shall furnish all labor, equipment and materials necessary to install the SWTU(s) along with any required appurtenances. The SWTU(s) shall be a precast underground structure capable of achieving the treatment and hydraulic performance and materials requirements of these SWTU(s), Stormwater Quality Specifications.

The SWTU(s) shall be non-mechanical and gravity driven. The SWTU(s) shall come equipped with a stainless steel expanded metal screen cylinder configured in the separation chamber. This expanded screen shall have openings of (**4,700**)-micron (**0.185** inches). The treatment flow through the separation screen cylinder assembly shall be self-cleaning and non-blocking for all flows diverted to it, even when flows within the storm drain pipeline exceed the SWTU's treatment flow capacity listed above.

SWTU(s) must have approval prior to implementation.

The following specifications sections also apply to the installation of this SWTU

Excavation & Backfill	Specification Section (_____)
Shoring	Specification Section (_____)
Dewatering	Specification Section (_____)

SWTU(s) TREATMENT, HYDRAULIC AND MATERIALS SPECS

2.1 PERFORMANCE

A. Solids Removal Efficiencies (RE%)

1. The specified SWTU(s), is a Full Capture shall capture and retain 98% of all gross solid trash and debris particles ≥ 5-mm than (≥) 5-mm = 0.196-in ≈

25/128-in.

2. Particles ≥ 5-mm shall not pass through the unit when operating at or below its Full Capture treatment flow rate of 2.0-cfs. Additionally, 98% of these solids shall be retained in the unit when flows exceed 2.0-cfs.

3. The unit shall not release, "Burp" previously capture solids under any flow condition.

4. The SWTU(s) shall be capable of achieving an 80 percent (%) average annual reduction in the total suspended solids (TSS).

5. The SWTU(s) shall be capable of capturing and retaining 100% of pollutants greater than or equal to (≥) 4.7-millimeters (mm) regardless of the specific gravity of the pollutant, whether the pollutant is a floatable or neutrally buoyant for flows up to the SWTU's water quality design treatment flow rate capacity.

6. There shall be no flow path through the SWTU(s)' listed treatment flow capacity that allows the passage of a 4.7-mm or larger neutrally buoyant object. The SWTU(s) must have positive, non-blocking screening process.

7. The SWTU(s) shall be designed to retain all previously captured pollutants even during bypass flow conditions.

8. The SWTU(s) device shall be capable of achieving greater than 65% removal efficiency (RE%) of particles typically found in roadside sediments.

9. Solids RE% shall be supported by independent third-party research utilizing Particle Size Distributions consistent with the New Jersey Department of Environmental Protection's or the City of Indianapolis's SW BMP certification programs in accordance with their evaluation protocols or a (PSD) consistent with the National Urban Runoff Program's (NURP) findings.

10. The SWTU(s) shall be capable of capturing and retaining Total Petroleum Hydrocarbons (TPH), also known as oils and greases (O&G). The SWTU(s) shall be capable of achieving the following $RE\%_{TPH}$:

    - $RE\%_{TPH}$ = 92% when hydraulically loaded at 25% percent of its rated-treatment capacity.

    - $RE\%_{TPH}$ = 78% when hydraulically loaded at 50% percent of its rated-treatment capacity.

    These $RE\%_{TPH}$ shall be based on independent third-party research for

influent oil concentrations representative of storm water runoff of 20-mg/L, ± 5-mg/L.

8. The SWTU(s) shall be greater than 99% effective in controlling oil spills during dry weather.

9. The SWTU(s) shall be capable of utilizing sorbent media to enhance removal and retention of petroleum based pollutants.

B. Treatment Sizing Criteria: The treatment sizing methodology and design criteria for this SWTU(s) shall conform to the following:

1. The specified SWTU(s), is a Full Capture non-blocking screening device designed in accordance with the governing tenets of the continuous deflective separation treatment process for the capture and retain 98% of all gross solid trash and debris particles ≥ 5-mm than (≥) 5-mm = 0.196-in ≈ 25/128-in. Particles ≥ 5-mm shall not pass through the unit when operating at or below its Full Capture treatment flow rate of 2.0-cfs. Additionally, 98% of these solids shall be retained in the unit when flows exceed 2.0-cfs. The unit shall not release, "Burp" previously capture solids under any flow condition.

2. treatment of the water quality runoff rate at its critical flow depth in the inlet, to achieve a RE% = 80% for TSS. This 80% TSS RE% shall be based on an average particles size of D_{50}=63-microns (µm).

3. The specified SWTU(s), is a swirl concentrating non-blocking screening HDS designed in accordance with the governing tenets of the continuous deflective separation treatment process for the treatment of the water quality runoff rate at its critical flow depth in the inlet, to achieve a RE% = 80% for TSS. This 80% TSS RE% shall be based on an average particles size of D_{50}=63-microns (µm).

4. This HDS, vortex-type separation system has been designed so that the surface hydraulic loading rate in the plan view of the separation chamber does not exceed 24-gpm/ft^2 at any time of operation up to the SWTU's treatment flow rate listed above.

C. Alternative SWTUs: Alternative SWTU(s) may be considered and must be approved before implementation. At a minimum, an alternative SWTU(s) system shall have treatment sizing methodology and design criteria that conform with these entire specifications to include the following:

1. Alternative-Gravity-based separation systems based on "Stokes Law" for gravity settling of particles shall not have a surface hydraulic loading rate in their primary sedimentation chamber that exceeds 6-gpm/ft^2, plan view, at

the peak of the treatment flow rate. Solids RE% claims of 80% TSS removal based on an average particles size of D_{50}=63-µm when the unit has a surface hydraulic loading rate, in the plan view, more than 6-gpm/ft^2 will not be accepted.

These gravity units shall not exceed laminar flow condition parameters in their primary treatment chamber. Additionally, they will be design to include a bypass system to prevent turbulence from occurring in their primary treatment sedimentation chamber.

2. The performance of alternative treatment processes shall have been evaluated by a third party and verified in a program that allows a reasonable comparison to other technologies on an essentially equal Particle Size Distribution (PSD) basis.

3. Solids RE% performance should be third party verified, and removal efficiencies across the spectrum of particle sizes reported, at a range of hydraulic loading rates varying over a range of at least 25% to 125% of the manufacturer's advertised 'water treatment' loading rate.

4 The manufacturer of an alternative SWTU shall be vetted to confirm their suitability to provide an acceptable SWTU. At a minimum, alternative manufacturer shall have been regularly engaged in the engineering design and production of stormwater treatment systems deployed for at least five (5) years with a proven record of providing quality SWTUs as well as a history of successful production and delivery.

A. Hydraulic Treatment and Bypass Capacity

1. The SWTU shall have a treatment flow rate capacity of not less than 1.29-cfs (ft^3/s), before bypass flow is allowed.

2. The SWTU shall maintain the peak conveyance capacity of the drainage network as defined by the Engineer.

B. Solids and Oil Storage Capacity

1. The SWTU shall be designed with a sump chamber for the storage of captured sediments and other negatively buoyant pollutants in between maintenance cycles. The minimum storage capacity provided by the sump chamber shall be 2.1 cubic yards (yd^3).

The sump chamber shall be hydraulically and physically separate from the treatment process flow path of the SWTU(s) to minimize re-suspension

potential of fine particles. Access ways shall be no smaller in diameter then 20-inches.

2. The SWTU shall have an oil storage capacity of 146-gallons for retention of oil and fuel spills during dry-weather.

4.2 MATERIALS

A. Precast Concrete Components: Precast concrete components shall conform to applicable sections of ASTM C 478, ASTM C 857 and ASTM C 858 and the following:

1. Concrete shall achieve a minimum 28-day compressive strength of 3,000 pounds per square-inch (psi);

2. Unless otherwise noted, the precast concrete sections shall be designed to withstand lateral earth and AASHTO H-20 traffic loads;

3. Cement shall conform to ASTM C 150;

4. Aggregates shall conform to ASTM C 33;

5. Reinforcing steel shall be deformed billet-steel bars, welded steel wire or deformed welded steel wire conforming to ASTM A 615, A 706, A 185 or A 497; and

6. Joints shall be sealed with preformed joint sealing compound conforming to ASTM C 990.

B. Internal Components and Appurtenances: Internal Components and Appurtenances shall conform to the following:

1. Screen and support structure shall be manufactured of Type 316 and 316L stainless steel;

2. Connection hardware shall be manufactured of Type 316 stainless steel;

3. Inlet Weir Cylinder shall be manufactured from high density polypropylene (HDPE), marine grade aluminum or stainless steel 304 or 316; and

4. Access system(s) shall conform to the following:

a. Manhole cast iron frames and covers shall withstand AASHTO H-20 loadings and cast-iron material shall conform to ASTM A 48 Class 30.

b. Hatch systems shall be designed to withstand the site loading

conditions, and shall be manufactured from either steel or aluminum and must be approved before implementation.

4.3 MANUFACTURER

In accordance with these Specifications and the Drawings, the SWTU(s) shall be a ***J***ensen ***D***eflective **S**eparator (***JDS***) SWTU manufactured by:

Jensen Stormwater Systems
521 Dunn Circle
Sparks, NV 89431
(877) 649-0095

INSTALLATION SPECS

3.1 HANDLING AND STORAGE: The contractor shall handle and store the SWTU and any of its components with care upon receipt and during installation. Any repair or replacement costs associated with events occurring after delivery is accepted and unloading has commenced shall be the responsibility of the contractor.

3.2 INSTALLATION

A. The SWTU shall be installed in accordance with the manufacturer's recommendations, these specifications, and per the drawings. The manufacturer shall provide the contractor installation instructions and offer guidance during critical stages of the installation. Reasonable notice shall be provided to the manufacturer prior to installation to coordinate onsite guidance.

B. The contractor shall grout fill all voids in the precast concrete that are associated with lifting connection pockets in the concrete sections. Use non-shrink grout to fill pockets and strike flush with adjacent finished surfaces. The contractor shall trim all protruding lifting provisions flush with the adjacent concrete surface, leaving no sharp points or edges.

C. Inspection: All components shall be subject to inspection by the Engineer at the place of manufacture and/or installation. All components are subject to be rejected or identified for repair if the quality of materials and manufacturing do not comply with the requirements of this specification. Components which have been identified as defective may be subject for repair. Final acceptance of the component is at the discretion of the Engineer.

3.3 SUBMITTALS

A. Shop Drawings & Catalog Cut Sheets Details: The contractor shall submit shop drawings for approval by the Engineer. Shop drawings shall be annotated to indicate

all materials to be used and all applicable standards for materials, required tests of materials, and design assumptions for structural analysis. The shop drawings shall detail horizontal and vertical dimensioning, reinforcement, and pipe type and locations. Supporting Catalog Cut Sheets of associated components and appurtenances shall also be included in the submittal packet substantiating materials and dimensions.

B. Warranty: The manufacturer shall guarantee the SWTU(s) components against all manufacturer- originated defects in materials or workmanship for a period of twelve (12) months from the date of installation. The manufacturer shall be notified of repair/replacement issues in writing within the referenced warranty period. The manufacturer shall, upon its determination: repair, correct or replace any manufacturer-originated defects identified by the written notice within the referenced warranty period. The use of SWTU components shall be limited to the application for which it was specifically designed.

C. Manufacturer's Performance Certificate: The SWTU manufacturer shall submit a "Manufacturer's Performance Certification" certifying that each SWTU can achieve the specified removal efficiencies as listed in these specifications. The certification shall be supported by pervious independent third-party research of the continuous deflective treatment process.

JENSEN DEFLECTIVE SEPARATOR (JDS)
Stormwater Treatment Units (SWTUs), Hydrodynamic Separator (HDS),
Full Capture (FC), Non-Blocking Screening, Swirl Concentrating Units

Jensen Deflective Separator (JDS)			Treatment Flow Rate (nominal)	Typical Sump Capacity		Oil & Grease Storage Capacity
Casting	Configuration	Model Designation	cfs	(ft^3)	(yd^3)	(gal)
Precast*	Inline and Offline	JDS48-2418G[2]	0.7	25	0.9	65
		JDS48-2418	0.7	25	0.9	65
		JDS60-2418	0.7	39	1.5	88
		JDS60-2424	1.1	39	1.5	106
		JDS60-2430	1.6	39	1.5	124
		JDS72-3624	2.0	57	2.1	183
		JDS72-3630	2.4	57	2.1	209
		JDS72-3636	3.0	57	2.1	235
		JDS72-3642	3.8	57	2.1	235
		JDS96-4836	4.5	151	5.6	435
		JDS96-4848	6.0	151	5.6	532
		JDS96-4854	7.5	151	5.6	580
		JDS120-6748	9.0	314	11.6	765
		JDS120-6758	11	314	11.6	881
		JDS120-6764	14	314	11.6	951
		JDS120-6770	15	314	11.6	1,020
		JDS120-6782	19	314	11.6	1,159
		JDS120-6794	25	314	11.6	1,299
		JDS144-8484	25	565	20.9	1,893
		JDS144-9480	26	565	20.9	1,819
		JDS144-9490	31	565	20.9	2,004
		JDS144-94102	38	565	20.9	2,227
		JDS144-94114	44	565	20.9	2,450
	Offline Only	JDS192-12696	42	1005	37.2	4,484
		JDS192-12072	31	1005	37.2	3,588
		JDS192-12096	50	1005	37.2	4,484
		JDS192-120120	64	1005	37.2	5,381
		JDS192-126120	67	1005	37.2	5,381
		JDS192-126138	73	1005	37.2	6,054

Cast In Place	Offline	JDS264-180161	131	2281	84.5	TBD
		JDS312-240197	237	3717	137.6	TBD
		JDS384-288192	273	5630	208.5	TBD

1. This depth below pipe invert may vary varies in accordance with regional precast capacities. Sump base and separation slab thickness vary by few inches across regional Jensen Precast Facilities: AZ, CA, HI & NV. Custom height sumps readily available.
2. "G" Suffix on the model number means that unit is configured to receive flow from a grated drop or curb inlet.
3. This is an approximate storage volume. Final Storage volume varies as a function of the outlet pipe diameter

EXHIBIT F

Project Example

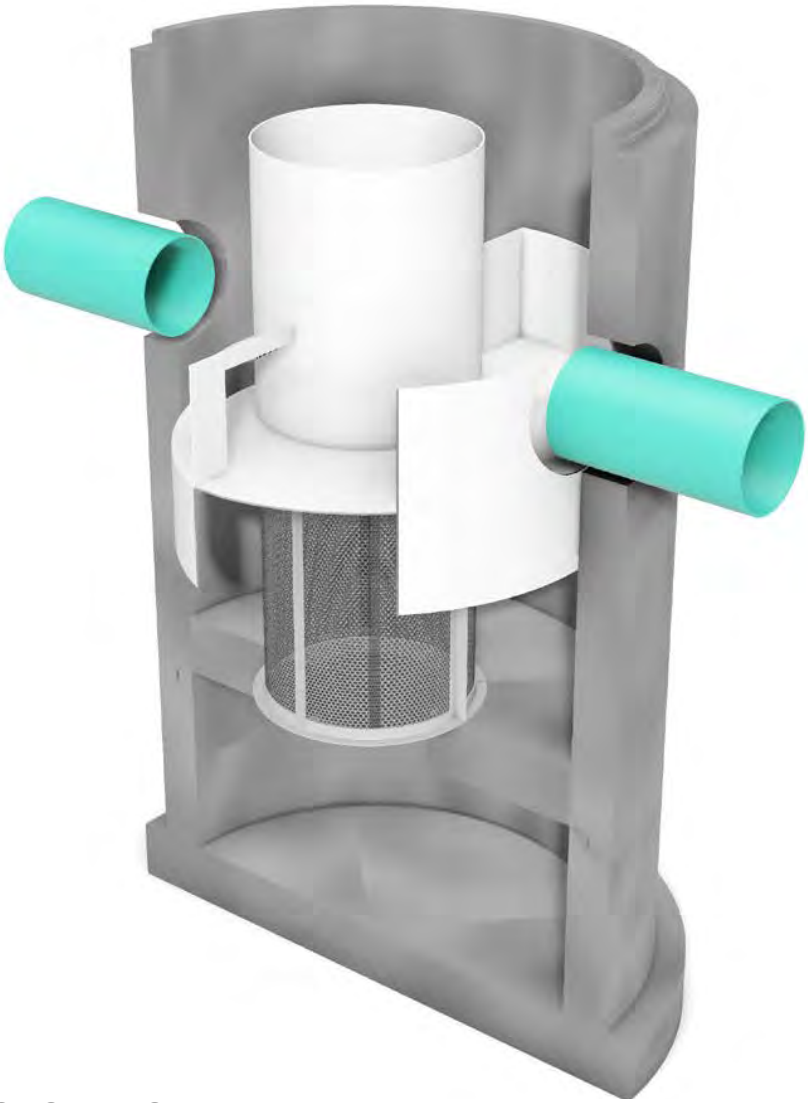
Operations & Maintenance Manual

Operations & Maintenance Manual

Jensen Deflective Separator (JDS)

Stormwater Treatment Unit (SWTU)

West River Street Lane
Truckee, CA



JENSEN STORMWATER SYSTEMS
521 DUNN CIRCLE
SPARKS, NV 89431
Toll Free: (877) 649-0095
Fax: (775) 440-2013

JENSEN STORMWATER BMP/LID SYSTEMS

Operations & Maintenance

Operations and Maintenance Guidelines for the *Jensen Deflective Separator (JDS)* Unit Model *JDS72-3624*

Project: West River Street Bike Lane

Location: Town Of Truckee, CA

Subject: Stormwater Treatment / Water Quality Unit

INTRODUCTION

The ***Jensen Deflective Separator (JDS)*** Stormwater Treatment unit (**SWTU**) is an important and effective component of the stormwater management program and proper operation and maintenance of the unit are essential to demonstrate project's compliance with local, state and/or federal water pollution control requirements.

The ***JDS*** SWTU features the Continuous deflective separation non-blocking, indirect screening technique to treat Stormwater runoff and is highly effective in capturing floatables, suspended solids, large particles and even fine sediments. Because of its non-blocking screening capacity, the ***JDS*** unit is un-matched in its ability to capture and retain gross pollutants such as trash and debris that are greater than 0.05 inch. In addition it is also very effective in capturing 80-90% of fine sand particles and other storm water pollutants to such as free oil and grease when sorbents are placed in the separation chamber.

OPERATIONS

The ***JDS*** unit is a non-mechanical self-operating system and will function any time there is flow in the storm drainage system. The unit will continue to effectively capture pollutants even during extreme rainfall events when the influent flow exceeds the design flow. The pollutants captured previously in the ***JDS*** unit's separation chamber and sump will be retained even when the units design capacity is exceeded.

JDS UNIT CLEANOUT

The frequency of cleaning the ***JDS*** unit will depend upon the accumulation of trash, debris and sediments based on the application and the land use activity in the drainage watershed. Cleanout and preventive maintenance schedules shall be determined based on operating experience unless precise pollutant loadings have been determined. The unit should be periodically inspected to determine the amount of accumulated pollutants

and to ensure that the cleanout frequency is adequate to handle the predicted pollutant load being processed by the ***JDS*** unit. The recommended cleanout of solids within the ***JDS*** unit's sump should be done at 50% to 75% of the sump capacity; however, there will be no significant impact to the ***JDS*** unit's performance even when the accumulated solids exceeds 75% of the sump's capacity.

Access to the ***JDS*** unit is typically achieved through the manhole access cover. The access cover allows for the inspection and cleanout of the separation chamber (screen/cylinder) & sump.

Recommendations for Achieving Optimal Performance from *JDS* SWTU:

NEW INSTALLATIONS – The condition of the unit should be checked after every runoff event for the first 30 days. The visual inspection should ascertain that the unit is functioning properly (no blockages or obstructions to inlet and/or separation screen), measuring the amount of solid materials that have accumulated in the sump, the amount of fine sediment accumulated behind the screen, and determining the amount floating trash and debris in the separation chamber. This can be done with a calibrated "dip stick" so that the depth of deposition can be tracked. Schedules for inspections and cleanout should be based on storm events and pollutant accumulation.

ONGOING OPERATION – During the rainfall season, the unit should be inspected at least once every 30 days. The floatables should be removed and the sump cleaned when it is 50-75% full. If floatables accumulate more rapidly than the settleable solids, the floatables should be removed using a vactor truck or dip net before the layer thickness exceeds one to two feet.

Cleanout of the ***JDS*** unit at the end of a rainfall season is recommended because of the nature of pollutants collected and the potential for odor generation from the decomposition of material collected and retained. This end of season cleanout will assist in preventing the discharge of pore water from the ***JDS*** unit during summer months.

USE OF SORBENTS – It needs to be emphasized that the addition of sorbents is not a requirement for the ***JDS*** units to effectively control oil and grease from storm water. The conventional oil baffle within the unit assures satisfactory oil and grease removal. However, the addition of sorbents will enhance the capacity to capture oil and grease beyond that attainable by conventional oil baffle systems.

Under normal operations, ***JDS*** units will provide effluent concentrations of oil and grease that are less than 15 parts per million (ppm) for all dry weather spills where the volume is less than or equal to the spill capture volume of the ***JDS*** unit. During wet weather flows, the oil baffle system can be expected to remove between 40 and 70% of the free oil and grease from the storm water runoff.

Jensen only recommends the addition of sorbents to the separation chamber if there are specific land use activities in the catchment watershed that could produce exceptionally large concentrations of oil and grease in the runoff; concentration levels well above typical amounts. If site evaluations merit an increased control of free oil and grease then oil sorbents can be added to the ***JDS*** unit to thoroughly address these particular pollutants of concern.

Recommended Oil Sorbents

ClearTec™ Rubberizer® products sorb and transform into a rubber-like material many petroleum products to include typical oil and greases in stormwater runoff. ***Jensen*** recommends Rubberizer® Particulate 8-4 mesh Particulate for Filtration, HPT4100 or equal. Rubberizer® is supplied by Haz-Mat Response Technologies, Inc. 4626 Santa Fe Street, San Diego, CA 92109 (800) 618-13856, **www.rubberizer.com**.

The amount of sorbent to be added to the ***JDS*** separation chamber can be determined if sufficient information is known about the concentration of oil and grease in the runoff. Frequently the actual concentrations of oil and grease are too variable and the amount to be added and frequency of cleaning will be determined by periodic observation of the sorbents.

As an initial application, it is recommended that approximately 4 to 8 pounds of sorbent material be added to the separation chamber of the ***JDS*** units per acre of parking lot or road surface per year. Typically this amount of sorbent results in a ½ inch to one (1”) inch depth of sorbent material on the liquid surface of the separation chamber. The oil and grease loading of the sorbent material should be observed after major storm events. Oil Sorbent material may also be furnished in pillow or boom configurations.

The sorbent material should be replaced when it is fully discolored by skimming the sorbent from the surface. The sorbent may require disposal as a special or hazardous waste, but will depend on local and state regulatory requirements.

CLEANOUT AND DISPOSAL

A vactor truck is recommended for cleanout of the ***JDS*** unit and can be easily accomplished in less than 30-40 minutes for most installations. Standard vactor operations should be employed in the cleanout of the unit. Disposal of material from the ***JDS*** unit should be in accordance with the local municipality's requirements.

Disposal of the decant liquid/material to a Publically Operated Waste Water Treatment Plant is recommended. Field decanting to the storm drainage system is not recommended, unless through a proven fine filtration process.

Solids can be disposed of in a similar fashion as those materials collected from street sweeping operations and catch-basin cleanouts.

MAINTENANCE

The ***JDS*** unit should be pumped down at least once a year and a thorough inspection of the separation chamber (inlet/cylinder and separation screen) and oil baffle should be performed. The unit's internal components should not show any signs of damage or any loosening of the bolts used to fasten the various components to the manhole structure and to each other. Ideally, the screen should be power washed for the inspection. If any of the internal components are damaged or if any fasteners appear to be damaged or missing, please contact ***Jensen*** Precast (***Jensen Stormwater Systems***) to make arrangements to have the damaged items repaired or replaced:

Jensen Stormwater Systems (***Jensen*** Precast)
521 Dunn Circle
Sparks, NV 89431
Toll Free: (877) 649-0095
Fax: (775) 440-2013

The screen assembly is fabricated from ASTM Type 316 stainless steel and fastened with Type 316 stainless steel fasteners that are easily removed and/or replaced with conventional hand tools. Damaged screen assembly should be replaced with the new expanded metal screen assembly placing the expanded apertures in the same orientation as existing screen section that was removed.

CONFINED SPACE

The ***JDS*** unit is a confined space environment and only properly trained personnel possessing the necessary safety equipment should enter the unit to perform maintenance or inspection procedures. Inspections of the internal components can, in most cases, be accomplished through observations from the ground surface.

RECORDS OF OPERATION AND MAINTENANCE

JDS recommends that the owner maintain annual records of the operation and maintenance of the ***JDS*** unit to document the effective maintenance of this important component of your storm water management program. The attached **Annual Record of Operations and Maintenance** form (see **Appendix A**) is suggested and should be retained for a minimum period of three years.

Appendix A

Annual record of
Operations & Maintenance
and
Clean Out Sketch

Jensen Deflective Separator (*JDS*) ANNUAL RECORD OF OPERATION AND MAINTENANCE

OWNER _____

ADDRESS _____

OWNER REPRESENTATIVE _____ **PHONE** _____

JDS INSTALLATION:

MODEL DESIGNATION _____ **DATE** _____

SITE LOCATION _____

DEPTH FROM COVER TO BOTTOM OF SUMP _____

VOLUME OF SUMP _____ **CUYD** **VOLUME/INCH DEPTH** _____ **CUYD**

INSPECTIONS:

DATE/INSPECTOR	SCREEN INTEGRITY	FLOATABLES DEPTH	SEDIMENT VOLUME	SORBENT DISCOLORATION

OBSERVATIONS OF FUNCTION: _____

_____

_____

_____

CLEANOUT:

DATE	VOLUME FLOATABLES	VOLUME SEDIMENTS	METHOD OF DISPOSAL OF FLOATABLES, SEDIMENTS, DECANT AND SORBENTS

OBSERVATIONS OF FUNCTION: _____

_____

_____

_____

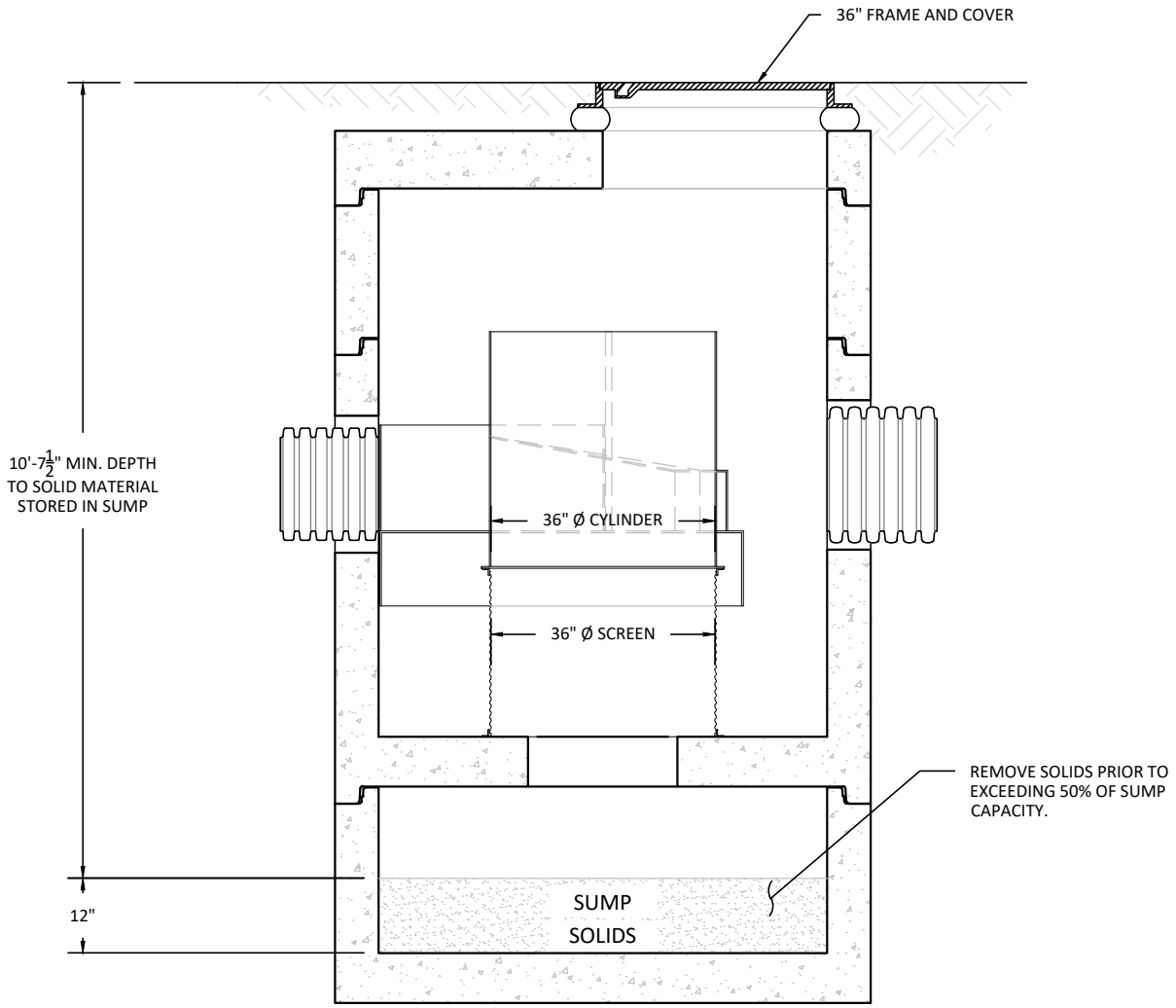
SCREEN MAINTENANCE:

DATE OF POWER WASHING, INSPECTION AND OBSERVATIONS: _____

_____

CERTIFICATION: _____ **TITLE:** _____ **DATE:** _____

CLEAN OUT SKETCH - JENSEN DEFLECTIVE SEPARATOR (JDS) STORMWATER TREATMENT UNIT



MODEL:	PROJECT:	
MODEL JDS72-3624 JENSEN DEFLECTIVE SEPARATOR	WEST RIVER STREET BIKE LANE PROJECT TRUCKEE, CA	JENSEN STORMWATER SHP/LAB SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013

NON-BLOCKING CONTINUOUS DEFLECTIVE SEPARATION SCREENING & SWIRL CONCENTRATION PROCESS	ORG. DWG. DATE:	SCALE:	SHEET SIZE:	DRAWN BY:	FILE NAME:
	05/19/2016	NTS	8.5" X 11"	CM	JDS72-3624_O & M

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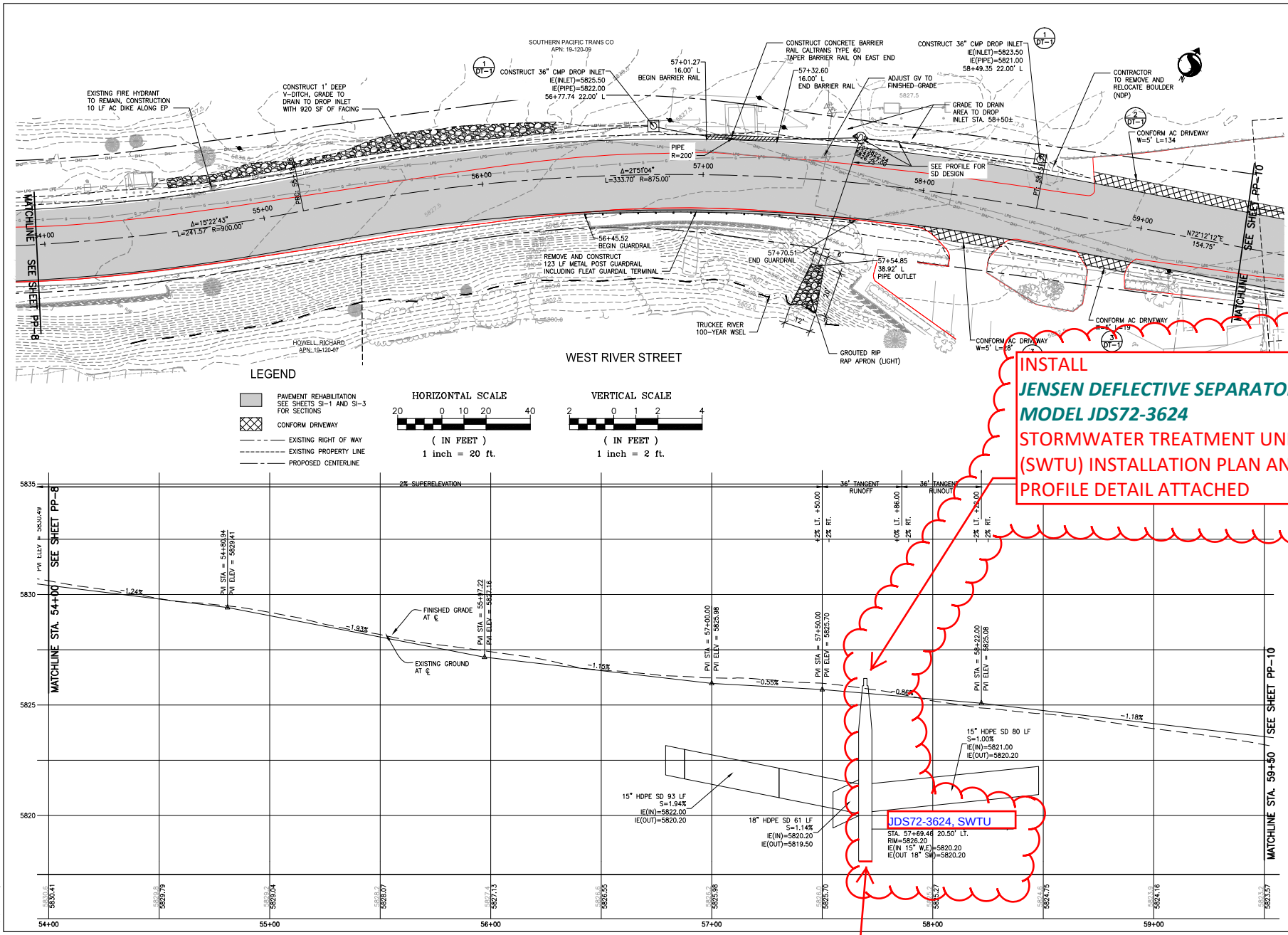
Appendix B

Site Location Plans



INSTALL
JENSEN DEFLECTIVE SEPARATOR (JDS)
MODEL JDS72-3624
STORMWATER TREATMENT UNIT (SWTU) INSTALLATION PLAN AND PROFILE DETAIL ATTACHED

EXTERIOR INVERT ELEV = 5813.9

Stantec

6995 Sierra Center Parkway
Reno NV 89511
www.stantec.com

The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay.
The Copyright to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.

No.	Issues	By	Appd.	YY.MM.DD

FOR BIDDING PURPOSE ONLY

Client/Project
TOWN OF TRUCKEE
WEST RIVER STREET BIKE LANE PROJECT
Truckee, California

Title
PLAN AND PROFILE
STA. 54+00 TO STA. 59+50

No. 70446 Exp. 6-30-18 CIVIL STATE OF CALIFORNIA

Project Number: 180101282
File Name: WESTRIVER_PP.DWG

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Drawing No. PP-9
Revision 0
Sheet 17 of 41

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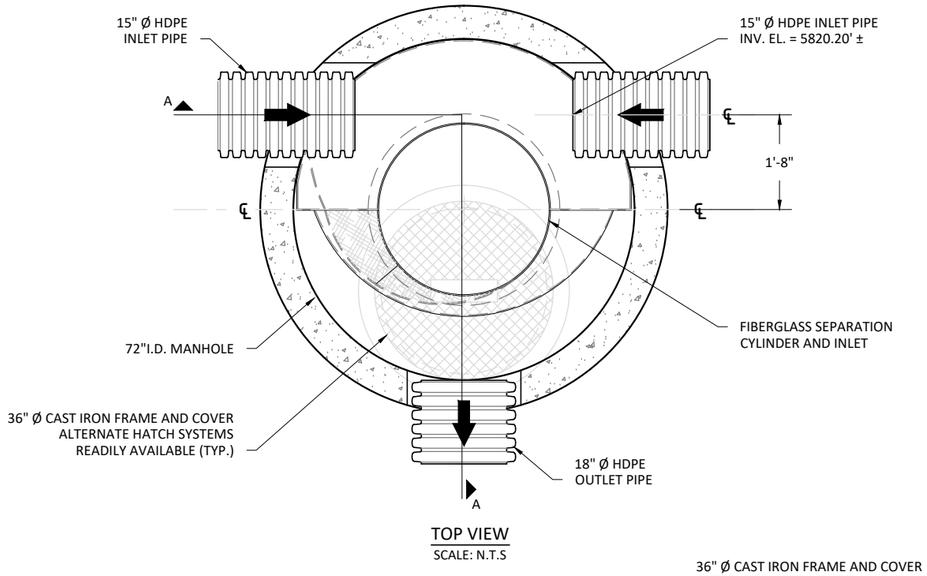
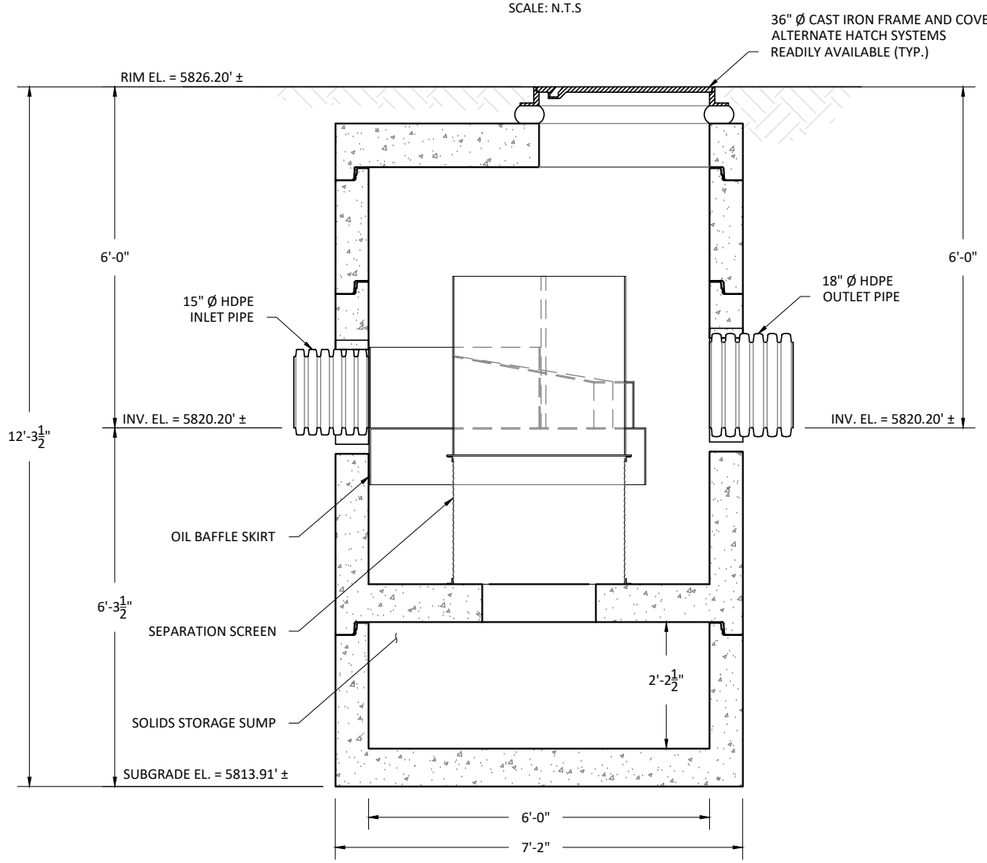
Appendix C

Plan & Profile Drawings



TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS72-3624

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 2.0 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 14 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. 100% CAPTURE FOR TRASH & DEBRIS.
2. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
3. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
4. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
   - TOTAL SUSPENDED SOLIDS (TSS)
   - HEAVY METALS
   - OIL & GREASE
   - NUTRIENTS
   - FECAL COLIFORM

CONSTRUCTION NOTES :

1. CONTRACTOR TO VERIFY VERTICAL DIMENSIONS OF ALL PRECAST PIECES IN FIELD.
2. VERIFY SUBBASE ELEVATION BEFORE PLACING PRECAST COMPONENTS OR BACKFILLING.
3. APPLY BUTYL MASTIC AND/OR GROUT TO SEAL JOINTS OF MANHOLE STRUCTURE.
4. APPLY LOAD TO MASTIC SEAL IN JOINTS OF MH SECTIONS TO COMPRESS SEALANT IF NECESSARY. UNIT MUST BE WATER TIGHT, HOLDING WATER UP TO FLOWLINE INVERT (MINIMUM).
5. CONTRACTOR TO GROUT SEAL INLET AND DISCHARGE PIPE PENETRATIONS THROUGH MANHOLE WALL.
6. ALL INTERNAL COMPONENTS INSTALLED BY MANUFACTURER.
7. BLOCK AND/OR GROUT PACK BENEATH FRAMES AND COVERS TO MATCH FINISHED GRADE.
8. CONTRACTOR TO TRIM ENTRANCE AND EXIT PIPES TO MATCH INTERNAL DIAMETER CIRCUMFERENCE OF MANHOLE.

MATERIALS :

1. ALL DIMENSIONS ARE IN DECIMAL INCHES.
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. 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.

MATERIAL LIST - PROVIDED WITH UNIT :

QTY.	COMPONENT DESCRIPTION	RESPONSIBLE PROVIDER	RESPONSIBLE INSTALLER
1	SS/FIBERGLASS INLET WITH INTEGRAL OIL BAFFLE SKIRT	JENSEN	CONTRACTOR
1	2400 MICRON (2.4 mm) SEPARATION SCREEN CYLINDER	JENSEN	CONTRACTOR
2	15" Ø HDPE INLET PIPE	CONTRACTOR	CONTRACTOR
1	18" Ø HDPE OUTLET PIPE	CONTRACTOR	CONTRACTOR
1	36" Ø CAST IRON FRAME AND COVER, H20 RATED	JENSEN	CONTRACTOR

MODEL:
MODEL JDS72-3624 JENSEN DEFLECTIVE SEPARATOR

PROJECT:
WEST RIVER STREET
BIKE LANE PROJECT
TRUCKEE, CA

JENSEN STORMWATER SYSTEMS
521 DUNN CIRCLE, SPARKS, NV 89431-6312
(877) 649-0095 FAX (775) 440-203

NON-BLOCKING CONTINUOUS DEFLECTIVE SEPARATION SCREENING & SWIRL CONCENTRATION PROCESS

ORG. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
5/18/2016	AS SHOWN	11" X 17"	X.XXXXX	JDS72-3624

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EXHIBIT G

LABORATORY TESTING

For the

Jensen Deflective Separator

a

FULL CAPTURE TRASH CONTROL DEVICE

LABORATORY TESTING

for the

Jensen Deflective Separator (*JDS*)

Hydrodynamic Separator (HDS), Stormwater Treatment

a

FULL CAPTURE TRASH CONTROL DEVICE

From:

A Division of Jensen Precast Concrete

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DESCRITPTION OF TECHNOLOGY

The ***Jensen deflective separator (JDS)*** is a Full Capture Trash Control Device for stormwater treatment.

The ***JDS*** technology is a non-blocking screening treatment process that also includes swirl concentrating separation, which is appropriate for small to very large stormwater flows.

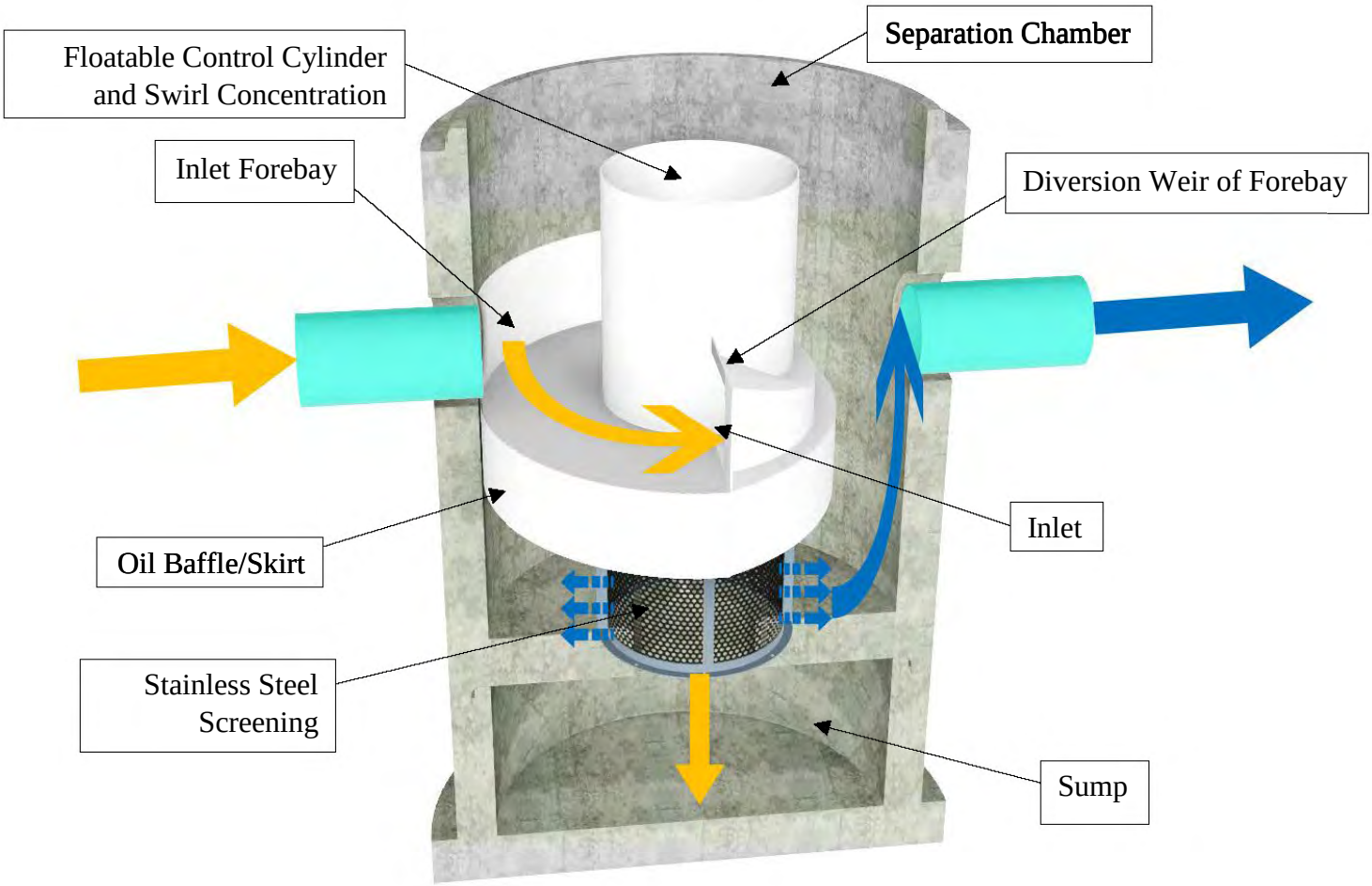


*Figure 1. Flow of Typical "Inline" **JDS** Unit*

JDS units consist of a separation chamber and a sump, typically deployed in precast manhole structures. The separation chamber has a specially designed inlet that introduces flow into a floatable control cylinder, which is configured on top of a stainless steel screening cylinder.

Inline ***JDS*** units placed within the alignment of the storm drain or channel have internal inlets and bypasses weirs within the separation chamber. Offline units are placed immediately adjacent to the storm drain or channel alignment. These offline units have a separate diversion structure with a diversion weir to divert water quality treatment flows and bypass larger conveyance flows. The

Jensen deflective separator units are designed to treat the water quality flows and bypass larger flows.

The ***Jensen deflective separator*** has no moving parts. It is designed in accordance with the continuous deflective separation treatment process of balanced hydraulics to create the following multiple treatment processes in a very tight footprint: swirl concentration, vortex and toroidal flow paths, screening and sedimentation.

The treatment process of the ***JDS*** is unique in its ability to screen any gross solid trash or debris material that is 5-millimeter (mm) or larger from the stormwater without blocking its screen. This treatment process readily satisfies the requirements of a "Full Capture" trash and debris device. The entire treatment flow must pass through its screening cylinder, leaving no path that does not cross through its stainless steel screen. The unit's design also captures Total Suspended Solids (TSS) and other water quality pollutants of concern such as oil and grease.

Unit Used in Testing

The ***Jensen deflective separator*** has no moving parts. It is designed in accordance with the continuous deflective separation treatment process of balanced hydraulics to create the following multiple treatment processes in a very tight footprint: swirl concentration, vortex and toroidal flow paths, screening and sedimentation.

This Full Capture performance test used is a full-scale 0.7-cubic foot per second (cfs) treatment capacity, model ***JDS60-2418*** unit. This tested unit has some modifications to ease cleanout between tests runs if necessary. However, the dimensions and flow paths within the treatment process are identical to commercial units of the same size. For the purpose of mimicking a state in which the sump is partially full, a false floor was installed within this test ***JDS*** unit.

Again, this false floor also provides advantages related to clean out as the unit must be cleaned and washed thoroughly between different tests conducted at the Stormwater Test Facility. As mentioned, the false floor has no impact on the treatment process, capacity or flow paths of the unit. The false floor is adjustable so that full sump conditions can be replicated and measured during test runs.

LABORATORY TESTING

Laboratory testing for Full Capture performance was conducted at the Jensen Precast Stormwater Test Facility located between Jensen MetalTech buildings 460 and 470, Dunn Circle in Sparks, NV.

These Full Capture Performance tests were performed under the direct supervision of Professor Keith E. Dennett, Ph.D, P.E., an Associate Professor in the Department of Civil and Environmental

Engineering at the University of Nevada, Reno. Professor Dennett served as an independent third party observer of all tests on the ***JDS*** unit.

These Full Capture Tests were completed on May 25th and 26th of 2017.

Testing was performed in accordance with the "Full Capture Experimental Protocol" and the "Full Capture Experimental Procedure" written by Fariar Kohzad, Ph.D., and Walter Stein, P.E., Jensen Stormwater Division. The Full Capture Test Protocols and Procedures specific to the ***JDS*** unit tested are provided in Appendices A and C of this Test Report. The general form of these Protocols and Procedures for Full Capture Testing of HDS units can found as Appendices E & F.

Appendix G contains a signed non-conflict of interest statement from Prof. Dr. Keith Dennett establishing him as a truly independent, third party observer.

LABORATORY SETUP

As mentioned above, testing was performed in-house at the Jensen Precast Test Facility. The test facility is equipped with numerous flow measurement devices, water storage tanks, sampling chambers, pump skids controlled by a Variable Frequency Drive (VFD), and an extensive data acquisition system. The V-notch weir was used as the primary flow measurement device during testing and was calibrated using a timed fill volume in the return tank. A detailed description of each component within the test facility is provided in Appendix D as well as drawings and schematics showing the test facility layout, flow diagrams and data acquisition schematics.

PLASTIC SPHERES (GROSS POLLUTANTS)

Plastic spheres of differing specific gravities (SGs), used to mimic gross pollutants having a particle size equal to or greater than ≥5-mm. The specific gravities of these spheres ranged from 0.9 to 2.1 to better represent the solids in stormwater, which have various SGs. Since water has a specific gravity of 1.0, this range adequately represents stormwater solids that float, are neutrally buoyant or settleables.

89% of the spheres used had a diameter of 4.76-mm and the other 11% appeared just slightly larger, but still smaller than the 5-mm particle size that must be removed to be granted Full Capture certification. These plastic spheres were sent to an independent laboratory operated by the Wood Rodgers, Inc., consulting civil engineering firm, for a particle size distribution (PSD) analysis. The results of that analysis are presented in Appendix B.

Figure 2 shows a sample of the spheres used to mimic gross pollutants. The lighter colors are representative of lower specific gravities.

Figure 2. Plastic Spheres used to mimic gross pollutants.

BRIEF OF *JDS* TEST PROCEDURE

Removal Efficiency Test #1

The first test conducted was a removal efficiency (RE%) test a flow rate of 0.35-cfs (157-gpm), which is equal to 50% of the 0.7-cfs (315-gpm) full capture treatment design flow of the ***JDS60-2418*** unit. The Variable Frequency Drive on the water supply pumps was used in cooperation with the Datalogger and V-Notch weir to set the flow rate before the test commenced. The flow was allowed to stabilize for approximately 10-minutes (min) before the plastic spheres were added to the system at the Upstream Sampling (U/S) Chamber. A 6.09-pound (lbs) mix of plastic spheres was introduced to the flow manually over a period of approximately 10-min at fairly constant feed rate.

The feed rate of the solids was not a precise measurement item for these tests, though the concentration of the stream of "gross pollutants" making their way to the unit could be roughly calculated at 465-milligrams per liter (mg/l). Whether the plastic spheres are dumped upstream of the unit in a slug load or fed evenly over a 10-min interval has no bearing on the screening efficiency determination of the test.

After the pollutants (plastic spheres), were added, the system was operated for 10-min before the flow was stopped and the effluent mesh sampling bag, which as a 0.125-in (3.175-mm) square

mesh, was checked for any plastic spheres (pollutants) that may have passed through the ***JDS*** unit. All plastic spheres captured in this effluent mesh bag were removed and weighed.

Removal Efficiency Test #2

The second test was conducted in the same manner as Test #1, for a flow of 0.52-cfs (236-gpm), which equal to 75% of the ***JDS*** unit's 0.7-cfs full capture design flow. The flow was set and allowed to stabilize before 6.05-lbs of plastic spheres were added over a 10-min period. Due to the increased flow rate, the influent pollutant concentration dropped to roughly 307-mg/l. The flow was again allowed to run for another 10-min and the effluent mesh sampling bag was checked for pollutants that passed through the unit. Again, all plastic spheres captured in this effluent mesh bag were removed and weighed.

Removal Efficiency Test #3

Test #3 was run at 0.7-cfs (315-gpm), which is 100% of the Full Capture design flow capacity of the ***JDS60-241***8. This test was the final RE% test and was conducted in a manner consistent to Tests #1 and #2. 6.14-lbs of plastic spheres were added to the influent flow for this test. The influent pollutant concentration decreased to roughly 234-mg/l. During this 100% flow test, some flow was observed to overtop the bypass weir in the form of wave action. This resulted in a small amount, less than 2% by mass, of floatable plastic spheres making their way to the effluent mesh sampling bag.

A total of 18.28-lbs of plastic spheres was added to the influent for the three (3x) Capture RE% Tests (#1 through #3).

Burping (Scour) Testing (Tests #4-#6)

Burping Tests were conducted in a similar manner to Full Capture RE% Tests #1 through #3. The major difference between the Burping and Full Capture RE% Tests is that there is no need for the addition of gross pollutants, (plastic spheres), to the influent during the Burping Tests. The purpose of these tests is to quantify the ***JDS*** unit's retention efficiency of the previously captured solids in Full Capture RE% Tests #1 through #3.

Tests #4, #5 and #6 were conducted at flow rates of 0.875-cfs, 1.05-cfs and 1.4-cfs, which is 125%, 150% and 200% the ***JDS***'s 0.7-cfs full capture treatment capacity respectively. In each of these Burp Tests, the effluent mesh sampling bag having a ⅛-in = 0.125-inches = 3.17-mm mesh was securely fastened completely around the discharge pipe in the sampling box downstream of the ***JDS*** unit. The flow rate for each test was reached and allowed to stabilize for 10-min. After the flow was stabilized, the pumps remained operational for an additional 10-min. This 20-min period was used to determine if the unit would "burp" any of the previously captured materials. Once the

final 10-min of constant test flow expired, the effluent mesh sampling bag was checked for plastic spheres (gross pollutants) before continuing to the next flow rate.

For Test #6, at the 200% of the ***JDS60-2418***'s Full Capture treatment capacity of 1.4-cfs (630-gpm), the screen was blocked using a plastic cylinder fitted to cover the entire screen surface area of the screen cylinder. This simulated a completely full sump and screen cylinder, which is at a "Maximum Trash Capture Capacity" situation during which the screen was clogged.

The Step-By-Step test procedure with the data tables of the plastic spheres and measured values for each test run are documented in Appendix A: "***JDS*** Specific Test Procedure".

Sample Processing

Effluent Samples

The samples collected downstream of the ***JDS*** from the effluent mesh sampling bag were placed in plastic bags, sealed and labelled immediately after each test run. These samples were then placed in ceramic evaporating dishes and oven dried at 140-degrees Fahrenheit (140°F) for 30-min to ensure no moisture was retained within the sample. After the drying, the samples were weighed using a calibrated scientific balance and the mass was recorded in grams. This data was then used to calculate RE% by both the Effluent and the Mass Balance Methods presented in the ANALYIS OF DATA section of this report.

Retained Material

The material retained by the ***JDS*** throughout the course of the experiment was processed in a slightly different manner. After the complete inlet and screen cylinder and the false floor of the ***JDS60-2418*** were hoisted out of the 60-inch internal diameter (ID) precast manhole, the sump was washed out and the contents were collected in the same effluent mesh sampling bag used to capture the effluent samples. This bag was securely clamped around the 4-in discharge pipe from the sump before draining down and washing out the sump.

This material was then spread out in a thin layer on a large black tarp and allowed to dry in the sun for 6-hours. Once there was no sign of moisture on the spheres, they were taken and weighed using the same scientific balance in groups of approximately 1,000-grams (g). These weight values were used to determine the capture and retention efficiencies of the DJS unit using the Mass Balance Method, which is also presented in the ANALYIS OF DATA section.

FULL CAPTURE TEST RESULTS

As mentioned, the Full Capture removal and retention efficiency of the ***JDS*** was measured and calculated to be greater than 98%. The full scale testing produced the following results for the Removal Efficiency (RE%) portion of the evaluations: Tests #1 through #3. Table 1 presents the RE% for these three Full Capture tests.

Table 1. Removal Efficiencies by the Effluent Method.

Test Type	**Test**	**Flow** (cfs)	**Removal Efficiency (RE%)**	**Comments**
Removal	1	0.35	100.00	None
Removal	2	0.52	100.00	None
Removal	2	0.70	99.29	Floatables passed over the weir
Average			99.76	No material passed through screen

Table 2 calculates a 98%+ retention efficiency to prevent Burping of previously capture solids from the ***JDS*** unit. The combined results from Tables 1 and 2 documents Capture and Retention Efficiencies of 98%+.

Table 2. Results from Burping Tests by the Effluent Method.

Test Type	**Test**	**Flow**	**Retention Efficiency (%)**	**Comments**
Scour	4	0.87	99.91	Floatables passed over the weir
Scour	5	1.05	99.89	Floatables passed over the weir
Blocked Scour	6	1.40	99.87	Floatables passed over the weir, Screen blocked to simulate “Maximum Trash Capture Capacity
Average			99.89	No material appeared to passed through screen during the test, only over the bypass weir

Combining the Removal and Retention Efficiency results creates and average Full Capture and retention rate of **99.83%**, exceeding the claim of a 98% capture and retention rate. Due to the scalability of ***JDS*** technology, these RE% and Retention Efficiencies can be achieved by any standard commercial or custom designed ***JDS*** unit produced by Jensen Precast.

The test run data was also used to calculate Full Capture RE% and Retention Efficiencies using a Mass Balance Method. This alternative calculation method resulted in an overall Full Capture efficiency of **98.65%**, exceeding the RE% claim of 98%. This Mass Balance Method combines the Removal and Burping results into one analysis.

Calculations for RE% and Retention Efficiency reported above for both the Effluent and the Mass Balance methods are provided following ANALYIS OF DATA section.

It should be acknowledged that these 98%+ RE% were determined on particles between 4.76 and mm 5-mm plastic spheres. The performance of the ***JDS*** unit on particles greater than 5-mm should be 100%.

ANALYSIS OF DATA

Effluent Method

The RE% and Retention efficiency results displayed in Tables 1 and 2 above were calculated using the Effluent Method, which uses the following equation:

$$RE\% = \left(\frac{(M_F - M_P)}{M_F}\right) \bullet 100\%$$

Variable definitions:

RE%	-	Removal Efficiency
M_F	-	Mass of pollutant fed into the system
M_P	-	Mass of pollutant in the effluent mesh sampling bag

The Effluent Method was also used to calculate retention efficiencies during the Burping Tests by the following equation:

$$Retained\% = \left(\frac{(M_R - M_S)}{M_R}\right) \bullet 100\%$$

Variable definitions:

Retained%	-	Percentage of material that the unit prevented from burping
M_R	-	Mass of pollutant that was in the sump before the burping test began
M_S	-	Mass that burped out of the unit

Mass Balance Method

The Mass Balance Method provides a quality check of the Full Capture RE% and Retention Efficiencies to compare to the results for these efficiencies calculated using the Effluent Method.

The Mass Balance Method differs from the Effluent Method because it does not evaluate each flow rate discretely and then sum the results and provide an average as does the Effluent Method.

The Mass Balance Method measures the total amount of plastic spheres (gross pollutants) that entered the system and amount of spheres (pollutant) retained in the control cylinder and sump at the end of testing, the Mass Balance Method analyzes all tests and flow rates together.

The Mass Balance Method uses the following equation to calculate the Full Capture RE% of the ***JDS*** via the Mass Balance Method:

$$RE\% = 100 - \left(\left(\frac{(M_E - M_R)}{M_E} \right) \bullet 100\% \right)$$

Variable definitions:

$RE\%$ - Full Capture efficiency of the unit
M_R - Mass retained by the unit
M_E - Amount of mass that entered the system

The data from Test Runs #1 through # that the equations above were applied to can be found in Appendix A.

REFERENCES

1. California Regional Water Quality Control Board, Los Angeles Region. Letter from Jonathan Bishop to Michael Yang, August 3, 2004. Website: CAL-EPA.

2. County of Los Angeles, DPW, Letter October 17, 2006, Catch Basin Best Practice by 4 Cities. Website: CAL-EPA.

3. Full Capture Experimental Protocol, by Stormwater Division, Jensen Precast Concrete, Sparks, NV, April 2017.

4. Full Capture Experimental Procedure, by Stormwater Division, Jensen Precast Concrete, Sparks, NV, April 2017

APPENDIX A

JDS SPECIFIC TEST PROCEDURE

Full Capture Experimental Procedure- JDS60-2418

This procedure is specific to the Jensen Test Facility.

Prepared by Fariar Kohzad, PhD, and Walter Stein, PE of
Jensen Precast Concrete, Sparks, NV
April, 2017

1. Setup the Test Facility

A. Turn on Data Logger, connect it physically to laptop.

B. Login the laptop, run LoggerNet, connect CR3000 to LoggerNet via Connect Button.

C. Install all Pressure Transducers.

D. Turn on Main Circuit Breaker.

E. Open Supply and Return Tank valves and make sure the other valves are open according to the flow directions.

F. Start VFD and select the Target Flow, best to start with a flow of 100 to 200-gpm.

G. Release air from pumps.

2. Run Removal Efficiency Test

A. Take the total amount of mixed plastic spheres (gross pollutants), to be used in the test from the Excel Spreadsheet: "Full Capture Performance of TCD-Calc-FK.xlsx" in the stormwater performance testing folder. A pre-specified mass should be allocated for each test.

B. Mix the simulated pollutants to be uniform.

C. Insert the effluent bag with 1/8-in mesh openings over the end of the pipe flowing into the downstream (D/S) Sampling Chamber. Clamp effluent mesh sampling bag tightly over pipe to ensure capture of all plastic sphere that passed the ***JDS60-2418.***

D. Set Test Flow as "Target" in the VFD panel. The first test should be for 50% of the ***JDS*** design flowrate. That is 50%•Q_{design} = 0.35-cfs. Check the flowrate on the DataLogger screen for the V-Notch weir to see if it reads the test flowrate. If not, modify the VFD Target flow until the test flowrate is seen in the DataLogger screen for the V-Notch Weir. Wait 5 to 10-min (min) for the flowrate to stabilize.

E. Feed the total plastic spheres into the flow over a period of about 10-min at the U/S Sampling Chamber.

F. Check the effluent mesh sampling bag clamped over pipe end at the discharge into the D/S Sampling Chamber 10-min after the end of the simulated pollutants feed.

G. Keep zip-lock plastic bags and a Sharpie to label the bags:

i. Test Name / Test Run #

ii. Test Flowrate

iii. Date and time

H. If there were any plastic spheres in the effluent mesh sampling bag, take them out and put the contents into a clear zip-lock plastic bag and label it as described in (G).

I. Change flowrate to 75%•Q_{design} = 0.52-cfs and follow step (A) to (H.

J. Change flowrate to 100%•Q_{design} = 0.7-cfs and follow steps (A) to (H) once more.

3. Burping (Scour) Tests Runs

A. Set the Target flow to 125%•Q_{design} = 0.87-cfs, in the VFD and check the Datalogger to confirm the flowrate in the V-Notch Weir.

B. Wait approximately 10-min for the flow to stabilize.

C. Run the targeted flow rate for 10-min.

D. Check the effluent mesh sampling bag in the D/S Sampling Chamber

E. If any gross pollutants (Plastic Spheres) are in the effluent mesh sampling bag, take them out and place them into a zip-lock bag. Label the bag as described in (G) of the Removal Efficiency Procedure.

F. Change the flow rate to 150%•Q_{design} = 1.05-cfs in the VFD and confirm the flowrate through the V-Notch weir using the Datalogger. Wait until the flow gets to a steady and stable state.

G. Follow steps (B) to € above.

H. Change flowrate to 200%•Q_{design} = 1.4-cfs.

I. Repeat steps (B) to (E) for a second time.

Samples Added During Removal Efficiency Testing

A breakdown of the plastic spheres added to the influent of Test #1 is provided in Table 1.

Table 1. Gross pollutant information for the 50% design flow Test #1.

Material		**Diameter**		**Specific Gravity**	**Mass Added**	
Composition	**Color**	**(in)**	**(mm)**	**(SG)**	**(lbs)**	**(kg)**
Polypropylene	Clear	0.1875	4.763	0.90	1.2470	0.57
Nylon	Yellowish	0.1875	4.763	1.13	2.1089	0.96
PVC	Black	0.1875	4.763	1.41	2.4893	1.13
PTFE	White	0.1875	4.763	2.10	0.2476	0.11
				Total=	6.0927	2.7636

Polypropylene	(PP)
Nylon	Nylon
Polyvinyl Chloride	(PVC)
Polytetrafluoroethylene	(PTFE)

The sample that was added during Test #2 is shown in Table 2.

Table 2. Gross pollutant information for the 75% design flow Test #2.

Material		Diameter		Specific Gravity (SG)	Mass Added	
Composition	**Color**	**(in)**	**(mm)**		**(lbs)**	**(kg)**
Polypropylene	Clear	0.1875	4.763	0.90	1.2457	0.57
Nylon	Yellowish	0.1875	4.763	1.13	2.0101	0.91
PVC	Black	0.1875	4.763	1.41	2.5470	1.16
PTFE	White	0.1875	4.763	2.10	0.2454	0.11
				Total=	6.0482	2.7435

The sample used in Test #3 is broken down in Table 3.

Table 3. Gross pollutant information for the 100% design flow Test #3.

Material		Diameter		Specific Gravity (SG)	Mass Added	
Composition	**Color**	**(in)**	**(mm)**		**(lbs)**	**(kg)**
Polypropylene	Clear	0.1875	4.763	0.90	1.2438	0.56
Nylon	Yellowish	0.1875	4.763	1.13	2.0616	0.94
PVC	Black	0.1875	4.763	1.41	2.5872	1.17
PTFE	White	0.1875	4.763	2.10	0.2487	0.11
				Total=	6.1413	2.7857

Data Collected

The data collected during each test run is displayed in Table 4.

Table 4. Data collected during the test.

Test #	Flow (cfs)	Mass In (lbs)	Mass Captured in Effluent Mesh Sampling Bag (lbs)
1	0.350	**6.09**	0.00000
2	0.525	**6.05**	0.00000
3	0.700	**6.14**	0.04359
4	0.875	**0.00**	0.01611
5	1.050	**0.00**	0.00457
6	1.400	**0.00**	0.00336
	Total	**18.28**	**0.06763**

APPENDIX B

PARTICLE SIZE DISTRIBUTION (PSD)

LABORATORY TEST RESULTS

May 22, 2017
Project No. 2892.100

Dr. Fariar Kohzad, PhD
JENSEN STORMWATER SYSTEMS
521 Dunn Circle
Sparks, Nevada 89431

RE: ASTM C117/136 Sieve Analysis
Sample - Plastic Balls

Dear Dr. Kohzad:

Per your request, we have performed a sieve analysis on the sample of plastic balls you delivered to our laboratory on May 18, 2017. Results of the testing performed are tabulated below.

Sieve Analysis (ASTM C117/C136)	
U.S. Standard Sieve Size	Cumulative Percent by Weight Passing
3/8 Inch (9.50 mm)	100
No. 4 (4.75 mm)	89
No. 5 (4.00 mm)	0
No. 8 (2.36 mm)	0
No. 16 (1.18 mm)	0
No. 30 (0.600 mm)	0
No. 50 (0.300 mm)	0
No. 100 (0.150 mm)	0
No. 200 (0.075 mm)	0

We appreciate the opportunity to provide our laboratory testing services. If you have any questions or require further information, please do not hesitate to call.

Sincerely,

Wood Rodgers, Incorporated

Casey Engels
Laboratory Supervisor

James Smith, PE
Principal
RE Number 10101
Expires 06-30-18

PROFESSIONAL ENGINEER - STATE OF NEVADA
JAMES G. SMITH
EXP. 6-30-18
GEOLOGICAL
No. 10101

5/24/17

Corporate Office: 3301 C Street, Bldg. 100-B · Sacramento, CA 95816 · 916.341.7760 · Fax: 916.341.7767
Reno Office: 1361 Corporate Boulevard, Reno, NV 89502 · 775.823.4068 · Fax: 775.823.4066
www.woodrodgers.com

Sieve Analysis of Aggregate
AASHTO T27, T11 / ASTM C136, C117

Project Name: Jensen Stormwater Sys. - SAO
Project Loc:
Material Type: Plastic Balls
Material Source: Plastic Balls
Wood Rodgers Job No.: 2892.100
Wood Rodgers Lab No.: 4030
Date: 05/18/17
Sampled By: Client

(For Split Sieve Use Only) Total Weight of Sample Used

Total Wet Wt. Sample + Tare:		(A)
Tare Wt.:		(B)
Total Wet Wt. Sample:		(C) =(A)-(B)
Total Wt. + #4:		(D) = Total of Sieves 6"-- #4
Total Wet Wt. - #4:		(E) = (C)-(D)
Total Dry Wt. - #4:		(F) = (E)/(1-(Moisture as a Decimal))
Total Dry Sample:		(G) = (D)+(F)
Factor:		(1)-(F)/(G)

Moisture

Pan ID.:	
Wet Wt. + Tare:	90.8
Dry Wt. + Tare:	90.3
Tare Wt.:	
Moisture Loss:	0.5
Dry Wt.:	90.3
% Moisture	0.6

Sieve Size	Cummulative Wt. Retained	Cummulative % Retained	Cummulative % Passing	Min	Max
3"		0.0	100.0		
2.5"		0.0	100.0		
2"		0.0	100.0		
1 1/2"		0.0	100.0		
1"		0.0	100.0		
3/4"		0.0	100.0		
1/2"		0.0	100.0		
3/8"	0.0	0.0	100.0		
#4	10.0	11.1	88.9		
#5	90.3	100.0	0.0		
#8	90.3	100.0	0.0		
#16	90.3	100.0	0.0		
#30	90.3	100.0	0.0		
#40	90.3	100.0	0.0		
#50	90.3	100.0	0.0		
#100	90.3	100.0	0.0		
#200	90.3	100.0	0.0		
Pan	90.3	100.0	0.0		
Total	90.3	100.0	0.0		

Total Wt. Before Wash

Pan ID.:	
Wet Wt. + Tare:	90.3
Dry Wt. + Tare:	90.3
Tare Wt.:	
Dry Wt. w/o Tare:	90.3

Total Wt. After Wash

Dry Wt. + Tare:	90.3
Tare Wt.:	0
Dry Wt. w/o Tare:	90.3

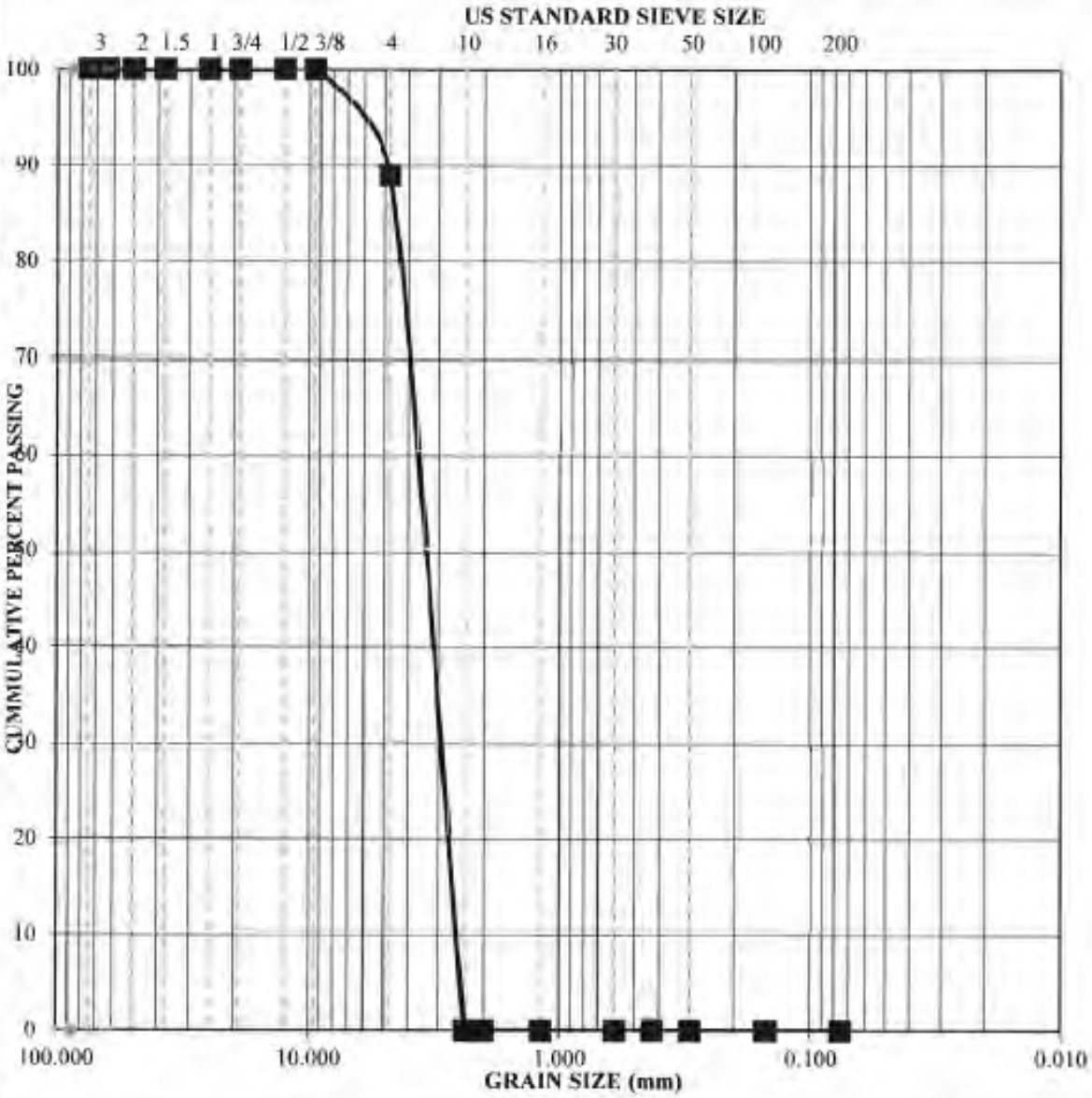
Remarks:

Tested By:

Submitted By: for

Brian T. Clark, PE
Laboratory Manager

WOOD RODGERS
1361 Corporate Blvd, Reno, NV 89502
Phone: 775.823.4068 Fax: 775.823.4066



COBBLES	GRAVEL	SAND	SILT OR CLAY
	11.1	88.9	

Symbol	Sample Source	Classification
■	Plastic Balls	Plastic Balls

WOOD RODGERS
1361 Corporate Blvd, Reno, NV 89502
Phone 775.823.4068 Fax 775.823.4066

SIEVE ANALYSIS
Jensen Stormwater Sys. - SAC
Brian Clark, PE
Laboratory Manager

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
	2892.100		05/22/17		

APPENDIX C

JDS SPECIFIC TEST PROTOCOLS

Prepared by Fariar Kohzad, PhD, and Walter Stein, PE of
Jensen Precast Concrete, Sparks, NV, April, 2017

Tested Stormwater Treatment Technology

JDS60-2418 with 2400-micron screen = 2.4-mm < 5.0-mm required mesh size, having a design treatment flow of 0.70-cfs = Q_{design}. A 4700 micron can also be used as well to achieve the required removal, because 4.7-mm < 5.0-mm.

Full Captuee Criteria

The definition of a "full capture system" is defined as follows:

"A full capture system is any single device or series of devices that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow rate (Q) resulting from a one-year, one-hour, storm in the subdrainage area. Rational equation is used to compute the peak flow rate: Q = C x I x A, where Q = design flow rate (cubic feet per second, cfs); C = runoff coefficient (dimensionless); I = design rainfall intensity (inches per hour, as determined per the rainfall isohyetal map), and A = subdrainage area (acres)."[1,2,3 & 4]

“A full-capture device is any device or system that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow resulting from a one-year, one-hour, storm (determined to be 0.6-inch per hour for the Los Angeles River Watershed, and assumed to be similar for the Ballona Creek Watershed).” [1]

In the above definition, the mesh specification of 5-mm can be used in experimental studies, but the full capture treatment flow runoff flow rate for a given development site is derived from regional hydrological applied to the specific site runoff.

Materials Used to Simulate Gross Pollutants

1. Plastic spheres of 3/16" (4.76mm) in diameter with differing specific gravities:

Table 1. Specific Gravities - Plastic Spheres

Plastic Sphere Material		Specific Gravity (SG)
Polypropylene, (PP)	PP	0.90
Polyvinyl Chloride (PVC)	PVC	1.41
Nylon	Nylon	1.13
Polytetrafluoroethylene (PTFE)	PTFE	2.10

2. The individual and total masses of all plastic sphere samples added to the influent of the first three (3x) test runs:

Table 2. Influent Mass - Plastic Spheres

Test Number (#)	Mass	
	(lbs)	(kg)
1	6.093	2.76
2	6.048	2.74
3	6.141	2.78
Total	18.282	8.28

Testing Flowrates

Based on the ***JDS60-2418*** design flow rate (Q_{design}) = 0.70-cfs = 314-gpm:

Test #1	50%•Q_{design}	Capturing Performance.
Test #2	75%•Q_{design}	Capturing Performance.
Test #3	100%•Q_{design}	Capturing Performance.
Test #4	125%•Q_{design}	Resuspension Check.
Test #5	150%•Q_{design}	Resuspension Check.
Test #6	200%•Q_{design}	Resuspension Check w/ blocked screen.

Feeding Gross Pollutants in the Flow

Allow 5 to 15-min for the flow to stabilize before adding gross pollutants during each test run.

For each test, the plastic spheres are to be fed into the flow at the Upstream (U/S) Sampling Chamber at a precomputed rate. The U/S Chamber is approximately 40-ft upstream of the ***JDS60-***

2418. This will provide an adequate distance for the materials to mix well within the flow before encountering the unit.

Feed the plastic spheres into the flow over a period of approximately 10-min and determine a rough influent concentration for each test.

$$\mathbf{C = Q_s / Q_w} = [mg/s] / [l/s] = [mg/l]$$

Variable Definitions:

C	-	Concentration of pollutants in water [mg/l]
Q_s	-	Pollutants discharge [mg/s]
Q_w	-	Flow rate [l/s]

Other units should be converted to keep consistency.

Flowrates and Gross Pollutant Feed Rates can be determined for the treatment flow, $Q_{design,}$ of the technology to be tested and recorded in the Table 3.

Table 3. Flowrate and Gross Pollutant feed rate recording template.

Test [#]	Q [%Q_{design}]	Q [cfs]	Q [gpm]	Purpose [Test type]	Feed Concentration [mg/L]
1	50			Capture Performance	
2	75			Capture Performance	
3	100			Capture Performance	
4	125			Resuspension Check	N/A
5	150			Resuspension Check	N/A
6	200			Resuspension check with blocked screen	N/A

Collecting, Cleaning and Measuring Captured Materials

Materials will be captured at two locations:

1. In the ***JDS*** sump, consisting of settled and floatable materials.
2. In the effluent mesh screen bag of 3.175-mm, (1/8-in), mesh at the outlet pipe in the Sampling Chamber Downstream Sampling (D/S) of the ***JDS***. The effluent mesh screen bag is for the material that may pass the ***JDS*** unit or over the bypass weir.

After the tests, the ***JDS*** can be decanted in a number of ways such as the use of a vacuum pump, gravity or other appropriate method, but a 3.175-mm, (1/8-in) screen must be used to make sure

the captured materials are not lost. At the Jensen Test Facility, there is a drain tube at the bottom of the sump with a valve. A 3.175-mm effluent mesh screen bag can be used to collect the captured materials.

The materials should then be collected, dried and weighed to determine the captured mass.

Capture Performance Computation

Effluent Method

The Effluent Method of evaluating the performance of the ***JDS*** used data collected from each individual test run during the Removal Efficiency testing. This method determined the removal efficiency of the unit by using the following equation:

$$RE\% = \left(\frac{(M_F - M_P)}{M_F}\right) \bullet 100\%$$

Where:

$RE\%$	-	Removal Efficiency
M_F	-	Mass of pollutant fed into the system
M_P	-	Mass of pollutant in the effluent sampling bag

The data collected during Removal Efficiency (RE%) Testing and results from the Effluent Method were recorded in the following table.

Table 4. Removal Efficiency and Effluent Method results recording template.

Test	Mass In [kg]	Mass Captured [kg]	Capture Performance [%]	Comments
1	2.76			
2	2.74			
3	2.78			
Total	8.28			

Mass Balance Method

The Mass Balance Method compares the total amount of pollutants introduced to the system to the amount of pollutants found in the sump after both Removal Efficiency and Burping Tests. The following equation was used:

$$RE\% = 100 - \left(\left(\frac{(M_E - M_R)}{M_E} \right) \bullet 100\% \right)$$

Where:

RE%	-	Overall efficiency of the unit
M_R	-	Mass retained by the unit
M_E	-	Mass introduced to the system upstream of the unit

References:

1. Los Angeles Regional Water Quality Control Board adopted the definition of "full capture system" for the Ballona Creek Trash TMDL per Resolution No. 04-023 on March 4, 2004.. Letter from Jonathan Bishop to Michael Yang, August 3, 2004.

2. County of Los Angeles, DPW, Letter October 17, 2006, Catch Basin Best Practice by 4 Cities. Website: CAL-EPA.

3. California Regional Water Quality Control Board, San Francisco Bay Region. Municipal Regional Stormwater NPDES Permit. Order R2-2009-0074, NPDES Permit No. CAS612008, October 14, 2009

4. Trash Amendment to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) to Control Trash and Part 1 Trash Provision of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries (ISWEBE Plan), April 7 & 15, 2015, State Water Board

APPENDIX D

BRIEF OF JENSEN TEST FACILITY

The Stormwater Test Facility located between Jensen MetalTech buildings 460 and 470, Dunn Circle, Sparks, NV. The facility has been constructed and equipped to perform experiments with accurate and precise measurements in a repeatable manner.

Layout drawings of this Stormwater Test Facility are attached to the end of this brief. These drawings provide a list of the installed equipment. Additionally, Flow diagrams and Data Acquisition Schematic are also attached to the brief.

The flowing brief describes the major components and installed equip on the stormwater Test Facility and discusses the flow process, test operations and measurements and the capture of the data from the measurements.

Water Storage Tanks

The Stormwater Test Facility has two precast concrete storage tanks on site. These two tanks are referred to as the Supply and Return Tanks. Both tanks are identical in shape and size having internal diameters and heights of 8-ft and 10-ft, respectively. By filling these storage vessels to an appropriate depth, water is circulated through the test system. These tanks ensure there is always an adequate amount of water to conduct testing. Figure 1 shows the Supply Tank in the foreground with the ***JDS*** and Return Tank in the background. The position occupied by the JDS unit can accommodate many different, larger stormwater treatment process. The stormwater device under testing can be readily changed out in this position.

*Figure 1. Supply Tank in the foreground with the **JDS60-2418** and Return Tank in the background.*

JDS60-2418 Full Capture Test Unit

The ***JDS60-2418*** test unit is located between the Supply and Return Tanks. The ***JDS60-2418*** unit is also displayed in Figure 1. This ***JDS60-2418*** has a relatively small footprint. This model ***JDS*** unit is deployed in a 60-in internal diameter (ID) precast concrete manhole. There is access space adjacent to the test JDS unit, which allows for the internals to be completely lifted from the precast manhole with a boom truck for thorough clean outs between tests if necessary.

Different stormwater treatment units can be installed and tested at this location. There is room for much larger treatment processes to be tested such as sedimentation systems.

Pumping System

Two sets of pumps produce the flows and driving head for performance tests on treatment units and recirculate the water back to the Supply Tank from the Return Tank. These pump sets are configured on skids located immediately adjacent to the Supply and Return Tanks. The skids are named according their respective functions and locations. The Supply Pump Skid located near the Supply Tank provides the needed energy to supply water to the unit being tested. Similarly, the Return Pump Skid is located near the Return Tank and pushes the flow back to the Supply Tank after driving it through a membrane filter system which is also configured on a skid.

The two pumping skids are each equipped with one small pump and one large pump. The smaller pumps are able to produce a maximum flow rate of 250-gpm and 18.68-ft of head while the large pumps are capable of producing 700-gpm and 23.3-ft of head. When the pumps are running in parallel, each pump skid is capable of producing well over 700-gpm which is far beyond any flow rate that will be needed for the purpose of testing a full scale stormwater treatment unit. Figure 2 shows both the Supply and Return Pump Skids.

Figure 2. Supply Pump Skid (left) and Return Pump Skid (right).

The pump skids are also equipped with a flow meter on each of their intake pipes. These meters will be discussed in greater detail in the Flow Measurement and Control section of this brief.

Filtration

The water is driving from the return pump skid through a set of membrane filters then to the Supply Tank. These membrane filters keep background TSS concentrations low throughout the course of a test.

The pipeline that originates at the smaller pump leads to two small filters that are configured in parallel to process the flow from the smaller pump. Each of these filters are able to process up to 125-gpm, having a combined capacity of 250-gpm. The flow from the larger return pump is directed to one large membrane filter capable of treatment to 600-gpm.

These filter capacities allow the Test Facility to recycle more than enough flow through the Filtration Skid to perform both Removal and Burping Testing without needing to empty and refill and the storage tanks.

All three filtration units are equipped with 5-micron (µm) filter media. Figure 3 shows the Filtration Skid with two small filter units and one larger unit.

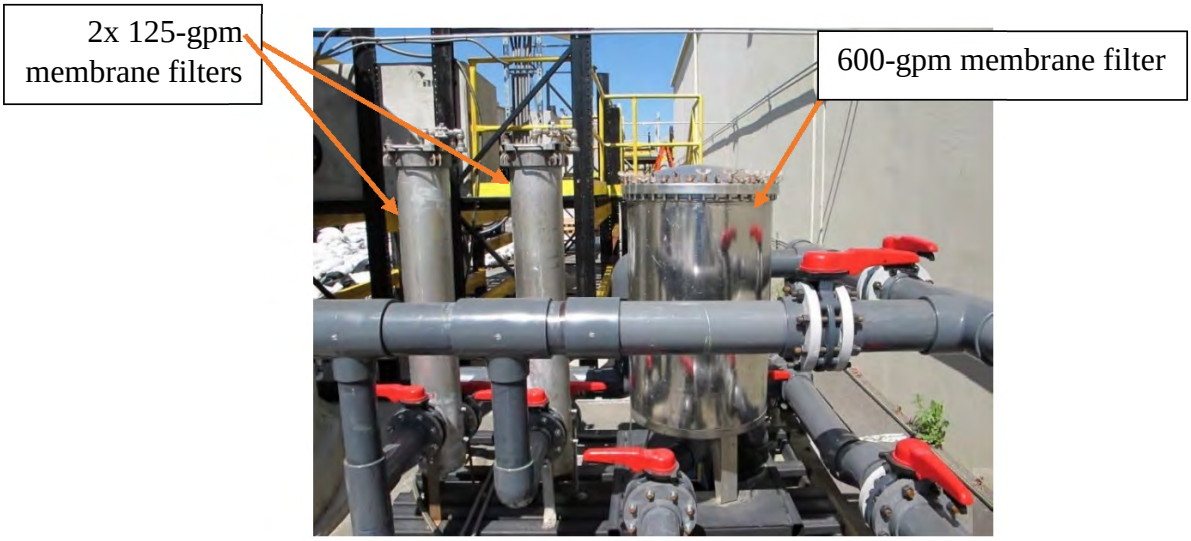


Figure 3. Filtration Skid with 2x smaller filters (left) and large filter (right).

Flow Measurement and Control

The Stormwater Test Facility is equipped with various flow measurement devices that include mag meters, a Parshall flume, a V-shaped flume and a V-Notch weir. Of all these flow measurement

devices, the V-Notch has been selected as the governing flow measurement device for reporting flows through a test unit.

The magnetic flowmeters send flow measurement readings directly to the Variable Frequency Drive (VFD) where a flowmeter display gives the pump flow and the pumps can be adjusted. The VFD allows each of the four pumps to be controlled individually on an automatic or manual basis. This type of customizable control makes it easy to produce flow rates ranging from 5-gpm to 650-gpm.

In the event that the magnetic flowmeter and V-Notch weir readings differ, the VFD will be adjusted until the flow rate reading through the V-Notch weir displays the desired flow regardless of the magnetic flowmeter reading. The flow through the V-Notch weir has been calibrated by measuring the time to fill a known volume in the return tank during steady constant flow conditions. Flow measurement through the V-Notch are considered to be the most accurate of all the devices.

The flow rate over the V-Notch weir is recorded by the CR3000 DataLogger. The equation for flow through the V-Notch is a calibrated equation and processed by LoggerNet software so that depth of flow is converted to a flowrate in real time. The depth of flow over the V-Notch is measured by a pressure transducer located in the V-Notch weir chamber. The depths measurement provided by the pressure transducer have also been calibrated by physical depth measurements. A description of the DataLogger is provided in detail below.

By using a V-Notch weir that has been calibrated over the course of several months at countless flow rates, the Test Facility creates an environment in which different flow rates can be produced and adjusted quickly, accurately and consistently. Figure 4 shows the v-notch weir that is used for flow measurement during testing.

Figure 4. V-notch weir used for flow measurement.

Sediment Feed System

The Vibra Screw sediment feed component of the facility is absolutely necessary for determining total suspended solids removal efficiencies. This system was not used in this gross test and will not be described, because it was not part of this testing.

Data Acquisition

Throughout the Stormwater Test Facility, there are thirteen (13x) pressure transducers and two probes that monitor temperature and hydraulic conductivity respectively. These different sensors convey measurements to the CR3000 DataLogger that is located near the VFD. With the help of LoggerNet software, these measurements are instantly turned into useful information such as head loss, flow rate, water temperature and hydraulic conductivity that is displayed in real time on the laptop connected to the CR3000.

The entire testing operation is monitored and the data archived in real time from this one location. Figure 5 shows the CR3000 housed within a weather proof container.

Figure 5. CR3000 DataLogger housed within a weatherproof box.

Sampling Chambers

Manual grab samples need to be taken throughout the course of any test. The Stormwater Test Facility has locations for grab samples across the entire flow section. These locations are the Upstream (U/S) and Downstream (D/S) Sampling Chambers, with the tested device located between them.

The U/S Sampling chamber is located several feet immediately downstream of the V-Notch weir and Vibra Screw sediment feed location. This U/S Sampling chamber mixes influent and then provides a free spilling flow stream where the entire cross section of the flow can be easily sampled as the water falls into this U/S Sampling Chamber.

The chamber itself is a precast concrete box with inner dimensions of 3-ft wide, 5-ft long and 3-ft deep. It is also equipped with sloping aluminum sides to channel the flow into the pipe flowing to the test unit. Water flowing into the U/S Sampling Chamber is illustrated in Figure 6.

Figure 6. Water flowing into the U/S Sampling Chamber.

The D/S Sampling Chamber is very similar to the U/S Chamber with the exception of the aluminum channel. The water enters an unlined 3×5×3-ft precast concrete box from a 10-in diameter PVC pipe. The outfall flow stream from this PVC pipe enables a sample to be drawn from the entire cross-stream to enable the take of the most representative sample possible. The D/S Sampling Chamber is shown in Figure 7.

Figure 7. The D/S Sampling Chamber and free outfall for sampling.

Water Heating System

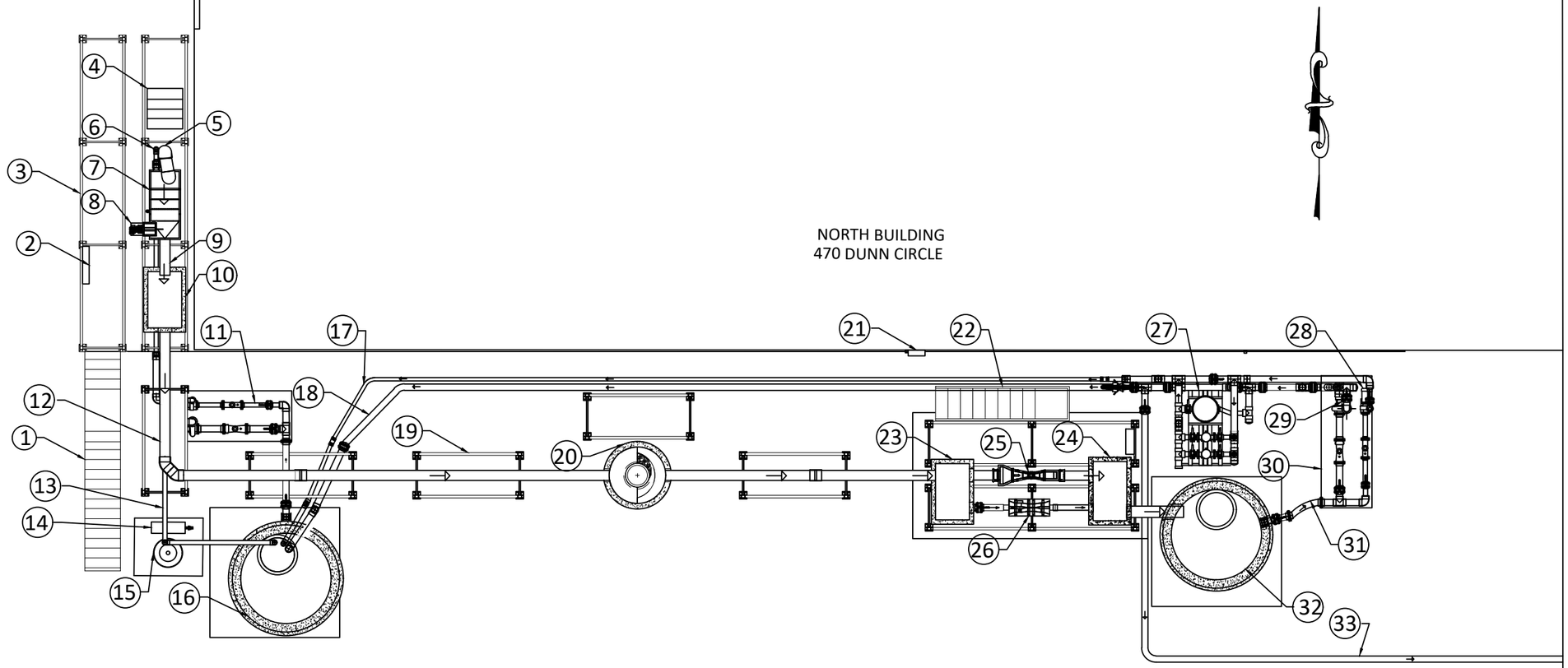
The test water temperature can be regulated by the installed heating system. However, the heating system, like the Vibra Screw sediment feed system was not used in this gross solids screening test and will not be described further in this brief. The heating system is a more germane influence on oil coalescing tests. Figure 8 shows the heating system.

Figure 8. Water heating system and propane tank.

Test Facility Layout

Figures 9 through 13 show the location of the major components of the Stormwater Test Facility. These drawings show a plan view and two different profile views of the Facility's layout and include itemization of the major pieces of equipment and components.

A process flow diagram as well as a schematic of the data acquisition system is also provided.



ITEM #	EQUIPMENT & COMPONENT DESCRIPTION
1	STAIRCASE LEADING TO WEST PLATFORM
2	VFD CONTROL PANEL
3	WEST RAISED PLATFORM
4	STAIRCASE LEADING TO VIBRA-SCREW AND V-NOTCH WEIR
5	DISCHARGE FOR LARGE SUPPLY PUMP
6	DISCHARGE FOR SMALL SUPPLY PUMP
7	V-NOTCH WEIR
8	VIBRA-SCREW
9	UPSTREAM SAMPLING DISCHARGE
10	UPSTREAM SAMPLING CHAMBER
11	SUPPLY PUMP SKID
12	UPSTREAM SUPPLY PIPELINE
13	AIR RELEASE PIPE
14	WATER HEATER
15	PROPANE TANK
16	8' DIAMETER I.D. SUPPLY TANK WET WELL

17	SMALL RETURN PUMP FLEXIBLE HOSE
18	LARGE RETURN PUMP FLEXIBLE HOSE
19	PLATFORM PLACEHOLDER FOR TECHNOLOGY TO BE TESTED
20	JENSEN DEFLECTIVE SEPARATOR PLACEHOLDER
21	MAIN CIRCUIT BREAKER
22	STAIRCASE LEADING TO SOUTH PLATFORM
23	DOWNSTREAM SAMPLING CHAMBER
24	CONCRETE RETAINING VAULT
25	PARSHALL FLUME
26	SMALL FLOW WEIR
27	WATER FILTRATION SYSTEM
28	SMALL RETURN PUMP
29	LARGE RETURN PUMP
30	RETURN SKID
31	RETURN PUMP SKID SUPPLY PIPE
32	8' DIAMETER I.D RETURN TANK WET WELL
33	FLEXIBLE HOSE FOR OVERFLOW

OUTDOOR TESTING FACILITY

SITE PLAN

SITE PLAN
STORMWATER TREATMENT
TEST FACILITY

JDS STORMWATER
TREATMENT TESTS

JENSEN STORMWATER HYDRAULIC SYSTEMS
521 DUNN CIRCLE, SPARKS, NV 89431-6312
(877) 649-0095 FAX (775) 440-203

ORG. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
10/9/2017	AS SHOWN	11" X 17"	CM, DG &WS	1 OF 6

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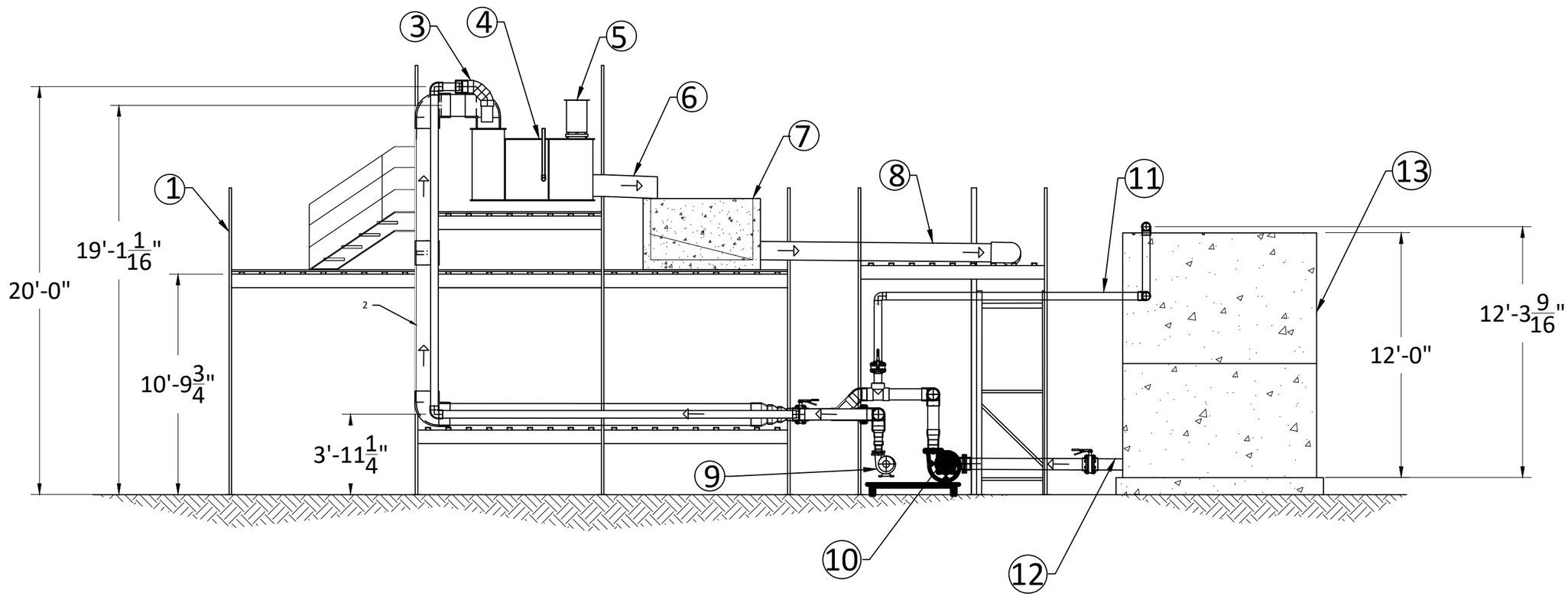
Figure 9. Test Facility plan view drawing.



ITEM #	EQUIPMENT & COMPONENT DESCRIPTION
1	WEST RAISED PLATFORM
2	LARGE SUPPLY PIPELINE
3	SMALL SUPPLY PIPELINE
4	V-NOTCH WEIR
5	VIBRA-SCREW
6	UPSTREAM SAMPLING DISCHARGE
7	UPSTREAM SAMPLING CHAMBER
8	UPSTREAM SUPPLY PIPELINE
9	SMALL SUPPLY PUMP
10	LARGE SUPPLY PUMP
11	AIR RELEASE PIPE
12	SUPPLY PUMP SKID SUPPLY PIPE
13	96" Ø SUPPLY TANK

NORTH - SOUTH PROFILE VIEW

STORMWATER TREATMENT TEST FACILITY

JDS STORMWATER TREATMENT TESTS

JENSEN PRECAST STORMWATER SYSTEMS
521 DUNN CIRCLE, SPARKS, NV 89431-6312
(877) 649-0095 FAX (775) 440-203

DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
10/9/2017	AS SHOWN	11" X 17"	CM, DG &WS	2 OF 6

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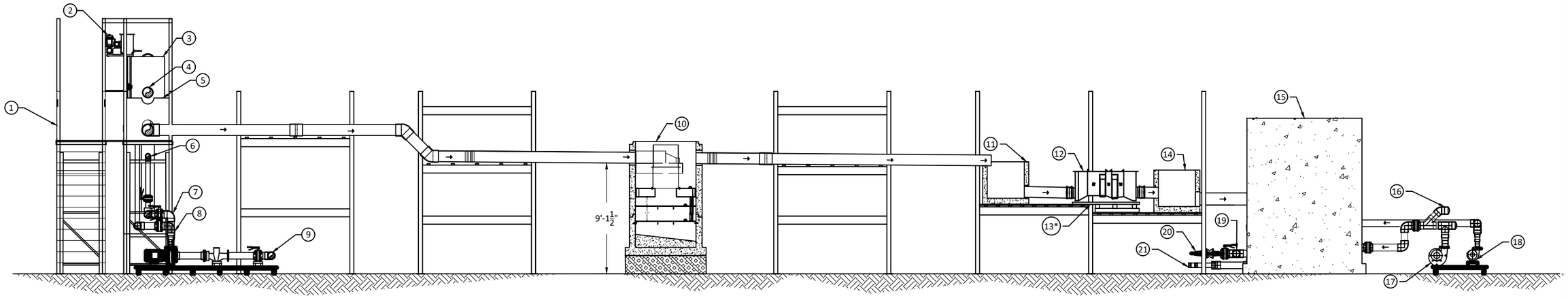
Figure 10. Test Facility North-South profile view drawing.



ITEM #	EQUIPMENT & COMPONENT DESCRIPTION
1	STAIRCASE LEADING TO WEST PLATFORM
2	VIBRA-SCREW
3	V-NOTCH WEIR
4	UPSTREAM SAMPLING DISCHARGE
5	UPSTREAM SAMPLING CHAMBER
6	AIR RELEASE PIPE
7	LARGE SUPPLY PUMP
8	SMALL SUPPLY PUMP
9	SUPPLY PUMP SKID SUPPLY PIPE
10	JENSEN DEFLECTIVE SEPARATOR PLACEHOLDER
11	DOWNSTREAM SAMPLING CHAMBER
12	PARSHALL FLUME
13	SMALL FLOW WEIR *(NOT SHOWN)
14	CONCRETE RETAINING VAULT
15	96" Ø RETURN TANK
16	AIR RELEASE VALVE
17	LARGE RETURN PUMP
18	SMALL RETURN PUMP
19	OUTFLOW PIPE
20	LARGE FLEXIBLE HOSE
21	SMALL FLEXIBLE HOSE

WEST - SOUTH PROFILE VIEW STORMWATER TREATMENT TEST FACILITY

JDS STORMWATER TREATMENT TESTS

JENSEN STORMWATER SYSTEMS
521 DUNN CIRCLE, SPARKS, NV 89431-6312
(877) 649-0095 FAX (775) 440-203

ORG. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
10/9/2017	AS SHOWN	11" X 17"	CM, DG &WS	3 OF 6

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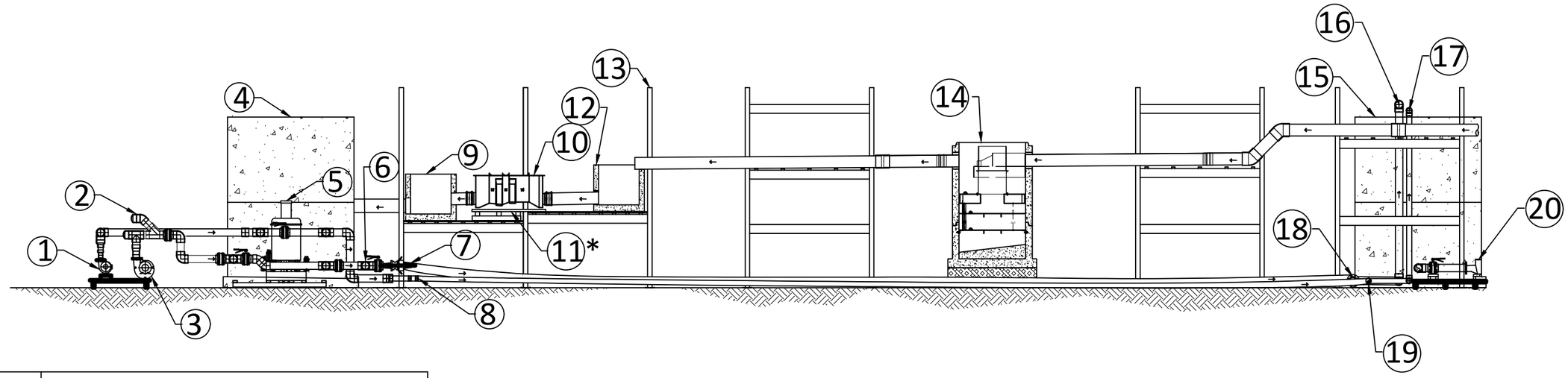
Figure 11. Test Facility West-South profile view drawing.



ITEM #	EQUIPMENT & COMPONENT DESCRIPTION
1	SMALL RETURN TANK
2	AIR RELEASE VALVE
3	LARGE RETURN TANK
4	96" Ø RETURN TANK
5	WATER FILTRATION SYSTEM
6	OUTFLOW PIPE
7	LARGE FLEXIBLE HOSE
8	SMALL FLEXIBLE HOSE
9	CONCRETE RETAINING VAULT
10	PARSHALL FLUME
11	SMALL FLOW WEIR *(NOT SHOWN)
12	DOWNSTREAM SAMPLING CHAMBER
13	SOUTH RAISED PLATFORM
14	JENSEN DEFLECTIVE SEPARATOR PLACEHOLDER
15	96" Ø SUPPLY TANK
16	LARGE RETURN SUPPLY
17	SMALL RETURN SUPPLY
18	LARGE RETURN FLEXIBLE HOSE CONNECTION
19	SMALL RETURN FLEXIBLE HOSE CONNECTION
20	SUPPLY PUMP SKID

EAST - WEST PROFILE VIEW STORMWATER TREATMENT TEST FACILITY

JDS STORMWATER TREATMENT TESTS

JENSEN STORMWATER SYSTEMS
521 DUNN CIRCLE, SPARKS, NV 89431-6312
(877) 649-0095 FAX (775) 440-203

ORG. DWG. DATE	SCALE:	SHEET SIZE	DRAWN BY	SHEET NUMBER
10/9/2017	AS SHOWN	11" X 17"	CM, DG &WS	4 OF 6

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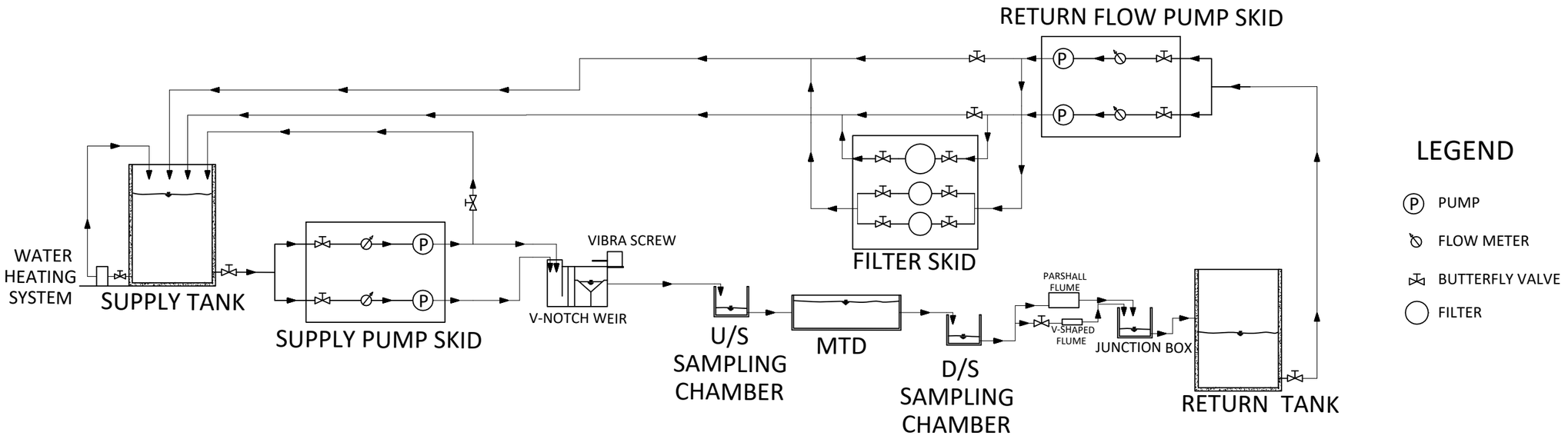
Figure 12. Test Facility East-West profile view drawing.



PROCESS FLOW DIAGRAM ***OUTDOOR TESTING FACILITY***	STORMWATER TREATMENT TECHNOLOGIES TESTS			JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-203	
JCMS TREATMENT TECHNOLOGY	ORG. DWG. DATE 05/06/2016	SCALE: NTS	SHEET SIZE 11" X 17"	DRAWN BY WS & DG	SHEET NUMBER 5 OF 6

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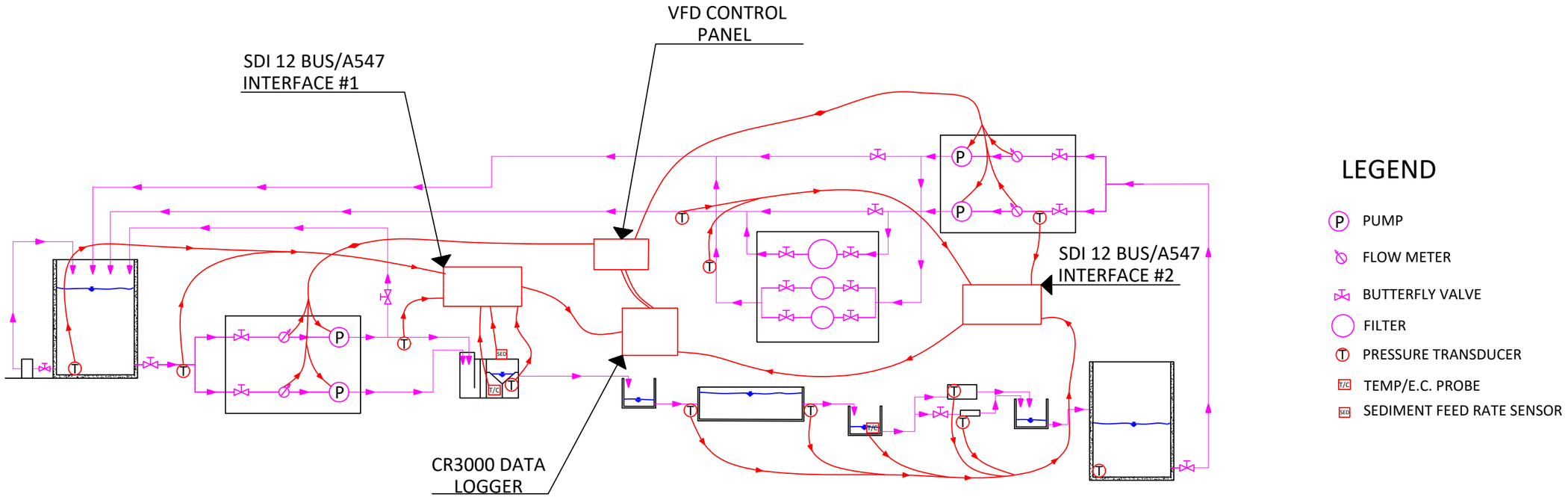
Figure 13. Test facility Process Flow Diagram.



PROCESS FLOW / DATA ACQUISITION SCHEMATIC OUTDOOR TESTING FACILITY	STORMWATER TREATMENT TECHNOLOGIES TESTS			JENSEN STORMWATER SYSTEMS 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-203	
JCMS TREATMENT TECHNOLOGY	ORG. DWG. DATE 10/16/2017	SCALE: NTS	SHEET SIZE 11" X 17"	DRAWN BY WS & DG	SHEET NUMBER 6 OF 6

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Figure 14. Test Facility Process Flow/ Data Acquisition Schematic.

APPENDIX E

GENERALIZED FULL CAPTURE EXPERIMENTAL PROCEDURE

Full Capture Experimental Procedure

Prepared by Fariar Khozad, Ph.D. and Walter Stein, P.E. of Jensen Precast Concrete, Sparks, NV, April 2017

1. Setup the Test Facility or Laboratory

A. Turn on data acquisition software and check all appropriate connections.

B. Install and check all pressure transducers and/or flow measurement devices.

C. Turn on/check main power supply.

D. Open all necessary valves.

E. Start VFD or other flow control mechanism and select the Target Flow.

F. Release air from pumps if necessary.

2. Run the Capturing Performance Test

A. Obtain and prepare the total amount of mass (plastic spheres) to be introduced to the system.

B. Mix the simulated pollutants to be uniform.

C. Insert the 1/8-in opening screen bag at a downstream point where a free outfall from a pipe exists.

D. Set the desired flow rate using the VFD or other flow control device. The first test should be for 50% of the unit's design flowrate. Check the flowrate using a calibrated flow measurement device. Wait for 5 to 15-mininutes (min) for the flowrate to stabilize.

E. Feed the gross pollutants (spheres) into the flow upstream of the unit as specified in the experimental protocol.

F. Run the flow for an additional 10-min after the last pollutants have been added.

G. Check the Screen Bag downstream of the unit after the 10-min has passed and the test is declared over.

H. Place any contents from the screen bag into sealable plastic bags and label them with the following information:

   i. Test Run Number

   ii. Flowrate

   iii. Date and time

I. Change flowrate to 75%•Q_{design} and follow step (A) to (H).

J. Change flowrate again and run the test for flowrate 100%•Q_{design} and repeat steps (A) to (H).

3. Run the Burping (Scour) Tests

A. Set the Target flow to 125%•Q_{design} in the VFD or other flow control device and check the flowrate via a physical measurement.

B. Allow the flow to stabilize for 5 to 10-min.

C. Run the flow for an additional 10-min.

D. Check the Screen Bag downstream of the unit.

E. Take any gross pollutants from the screen bag and place them into sealable plastic bags labeled as discussed in the Effluent Test section.

F. Change the flow rate to 150%•Q_{design} in the VFD/other control device and allow 5 to 10-min for flow stabilization.

G. Repeat steps (A) to (F) above.

H. Change flowrate to 200%•Q_{design} and repeat steps (A) to (F)

APPENDIX F

GENERALIZED FULL CAPTURE EXPERIMENTAL PROTOCOL

Full Capture Experimental Protocol

Prepared by Fariar Khozad, Ph.D. and Walter Stein, P.E., Jensen Precast, April 2017

In California a "full capture system" is defined as:

"A full capture system is any single device or series of devices that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow rate (Q) resulting from a one-year, one-hour, storm in the subdrainage area. Rational equation is used to compute the peak flow rate: Q = C x I x A, where Q = design flow rate (cubic feet per second, cfs); C = runoff coefficient (dimensionless); I = design rainfall intensity (inches per hour, as determined per the rainfall isohyetal map), and A = subdrainage area (acres)."[1,2,3 & 4]

"A full-capture device is any device or system that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow resulting from a one-year, one-hour, storm (determined to be 0.6-inch per hour for the Los Angeles River Watershed, and assumed to be similar for the Ballona Creek Watershed)." [1]

In the above definition, the mesh specification of 5-mm can be used in experimental studies, but the full capture treatment flow runoff flow rate for a given development site is derived from regional hydrological applied to the specific site runoff.

Materials used to simulate Gross Pollutants

A mix of 3/16-inch (4.76mm) diameter Plastic Spheres consisting of the following material and specific gravities (SGs):

Table 1. Specific Gravities - Plastic Spheres

Plastic Sphere Material		**Specific Gravity (SG)**
Polypropylene, (PP)	PP	0.90
Polyvinyl Chloride (PVC)	PVC	1.41
Nylon	Nylon	1.13
Polytetrafluoroethylene (PTFE)	PTFE	2.10

A mixture of the listed types of plastic balls should be used and the mass of each type should be recorded.

Testing Flowrates

Test flowrates should be based on the treatment units rated design flow rate as follows:

Test #1	50%•Q_{design}	Capturing Performance.
Test #2	75%•Q_{design}	Capturing Performance.
Test #3	100%•Q_{design}	Capturing Performance.
Test #4	125%•Q_{design}	Resuspension Check.
Test #5	150%•Q_{design}	Resuspension Check.
Test #6	200%•Q_{design}	Resuspension Check w/ blocked screen.

*Test #6 should be conducted to simulate a blocked screen if applicable.

To ensure an accurate and precise flow rate, allow 5 to 15-min for flow stabilization before initiating each test.

Feeding Gross Pollutants in the Flow

For each test the materials prepared to simulate gross pollutants are to be fed into the flow at an upstream location that provides adequate time for the particles to mix into the flow. A distance of 10-ft or more is recommended.

Based on the flow rates to be tested, the amount of time needed to feed the gross pollutants into the flow should be recorded to calculate a rough influent concentrations for each test.

$$\mathbf{C = Q_s / Q_w} = [mg/s] / [L/s] = [mg/L]$$

C	-	Concentration of pollutants in water [mg/L]
Q_s	-	Pollutants discharge [mg/s]
Q_w	-	Flow rate [L/s]

Influent concentrations are not seen as a critical influence on the determination of the screening capture efficiency of the test unit. The dumping of the plastic spheres in a single slug is not seen as poor protocol.

Flow and Gross Pollutant feed rates should be determined for each test required and recorded in the template table given as Table 1.

Table 2. Flow and Gross Pollutant Feed rate template table.

Test (#)	% of Q_{design} (%)	Test Flowrate		Test Purpose	Concentration (mg/L)
		(cfs)	(gpm)		
1	50			Capture Performance	
2	75			Capture Performance	
3	100			Capture Performance	
4	125			Resuspension Check	N/A
5	150			Resuspension check	N/A
6	200			Resuspension check	N/A

Collecting, Cleaning and Measuring Captured Materials

Materials will be captured at two locations:

1. In the treatment unit's sump, consisting of settled and floatable materials.
2. In the screen bag having 1/8-in, (3.175-mm), mesh at a pipe outlet downstream of the treatment process.

The treatment unit's sump can be emptied in a number of ways such vacuum pump, gravity, or other appropriate process, but a 1/8-in, 3.175-mm, screen must be used to make sure the captured materials are not lost.

The materials should then be collected, dried and weighed to determine the captured mass.

Capture Performance Computation

Effluent Method

The Effluent Method of evaluating performance uses data collected from each individual test run. This method determines the removal efficiency of the unit by using the following equation:

$$RE(\%) = \left(\frac{(M_F - M_P)}{M_F}\right) \bullet 100\%$$

Variable Definitions:

RE% - Removal Efficiency
M_F - Mass of pollutant fed into the system
M_P - Mass of pollutant in the effluent sampling bag

Mass Balance Method

The Mass Balance Method removal efficiency can be computed as:

$$RE\% = 100\% - \left(\left(\frac{(M_E - M_R)}{M_E} \right) \bullet 100\% \right)$$

Variable Definitions:

$RE\%$	-	Overall efficiency of the unit
M_R	-	Mass retained by the unit
M_E	-	Mass introduced to the system upstream of the unit

Note

The above protocols should be strictly followed and both computational methods should be used in testing a stormwater treatment device for Full Capture Performance.

References:

1. Los Angeles Regional Water Quality Control Board adopted the definition of "full capture system" for the Ballona Creek Trash TMDL per Resolution No. 04-023 on March 4, 2004.. Letter from Jonathan Bishop to Michael Yang, August 3, 2004.

2. County of Los Angeles, DPW, Letter October 17, 2006, Catch Basin Best Practice by 4 Cities. Website: CAL-EPA.

3. California Regional Water Quality Control Board, San Francisco Bay Region. Municipal Regional Stormwater NPDES Permit. Order R2-2009-0074, NPDES Permit No. CAS612008, October 14, 2009

4. Trash Amendment to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) to Control Trash and Part 1 Trash Provision of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries (ISWEBE Plan), April 7 & 15, 2015, State Water Board

APPENDIX G

CONFLICT OF INTEREST STATEMENT

3rd Party Independent Observer

University of Nevada, Reno

Keith E. Dennett, Ph.D., P.E.
Associate Professor
University of Nevada, Reno
Department of Civil and Environmental Engineering
Reno, Nevada 89557
Phone 775-784-4056
kdennett@unr.edu

Date: October 30, 2017

Subject: Statement of Independent Third Party Observer

Reference: Full Capture Testing for
Certification Application for Full Capture Trash Control Device
California State Water Resources Control Board

Treatment System: Jensen deflective separator (JDS)

Procedure and Protocol Compliance Statement

I served as an independent, third-party observer for Full Capture Testing conducted by the Stormwater Division of Jensen Precast Concrete. These Full Capture Tests were performed on the Jensen deflective separator (JDS) stormwater treatment technology to evaluate and quantify the efficiencies of solids capture and retention. All tests were performed at the Jensen Stormwater Testing Facility located at 470 Dunn Circle, Sparks, NV.

These tests were performed in accordance with the "Full Capture Experimental Procedure" and the "Full Capture Experimental Protocol" developed by Fariar Khozad, Ph.D., and Walter Stein, P.E., of the Jensen Stormwater Division.

Conflict of Interest Statement

I, Dr. Keith Dennett, Ph.D., P.E., am a non-biased, independent, third-party observer and a full-time faculty member in the Department of Civil and Environmental Engineering at the University of Nevada, Reno (UNR). I declare that I do not have any vested interest in the Jensen deflective separator product or any other Jensen product offering or any companies affiliated with Jensen. There is no financial, personal, or professional conflict of interest between myself and Jensen Precast Concrete.

If I can provide any additional information, please do not hesitate to contact me by telephone at (775) 784-4056 or by e-mail at kdennett@unr.edu.

Sincerely,

Keith E. Dennett

Keith E. Dennett, Ph.D., P.E.
Associate Professor

EXHIBIT H

Jensen Deflective Separator

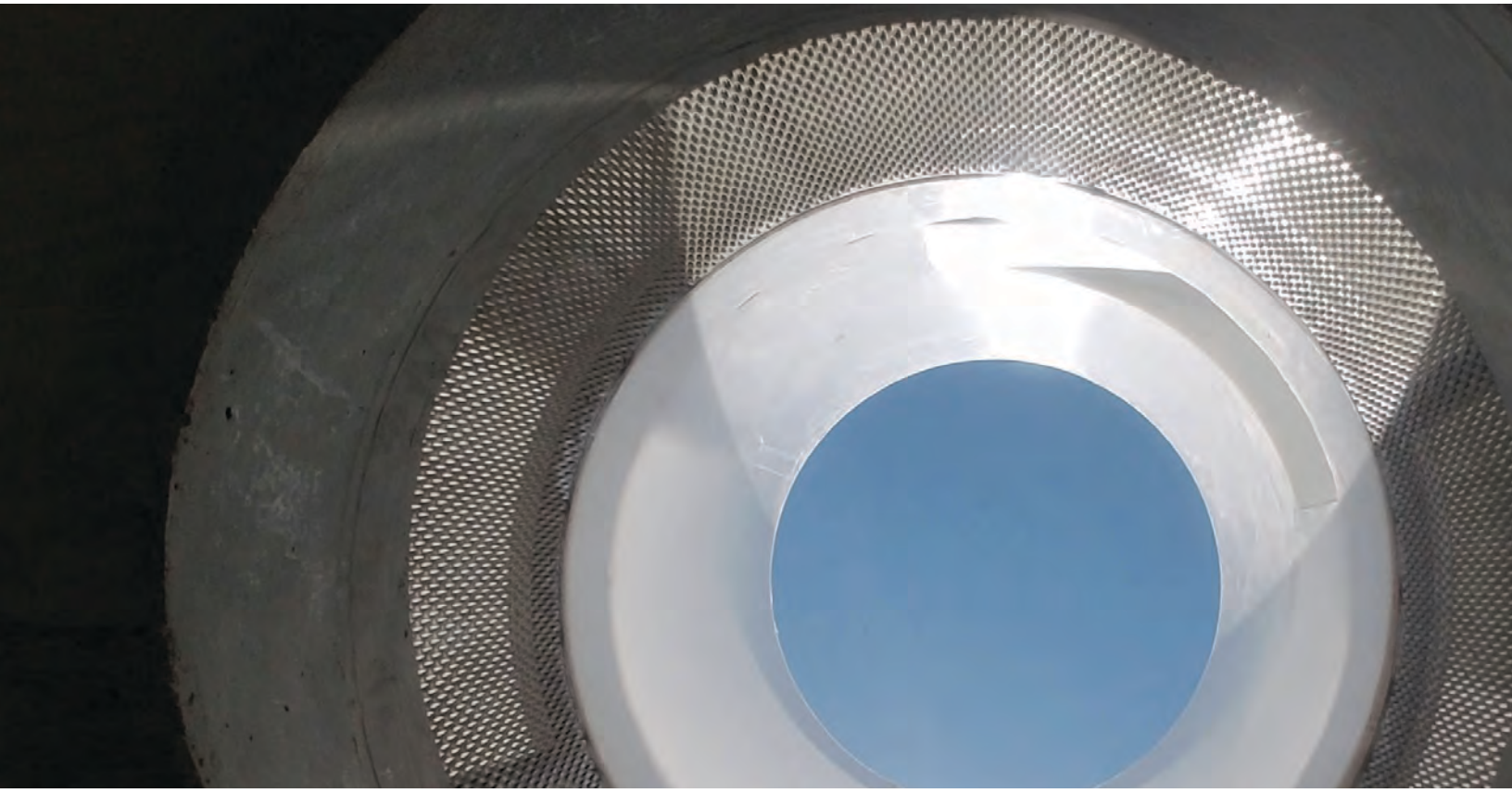
BROCHURE

a

FULL CAPTURE TRASH CONTROL DEVICE

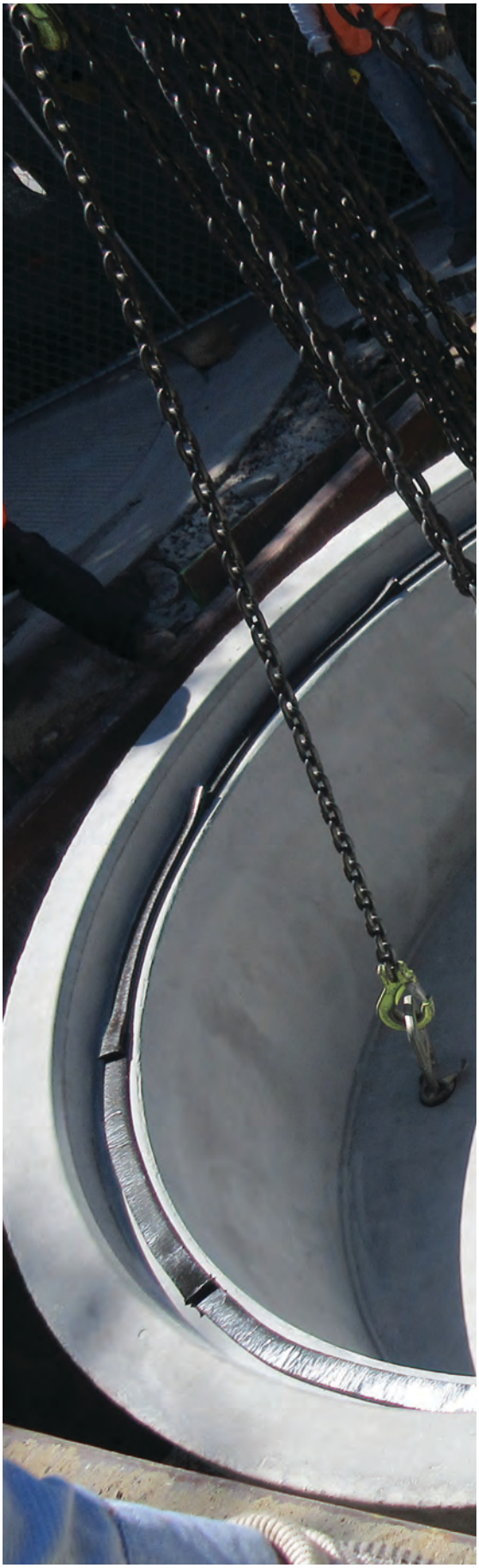
Jensen Deflective Separator (JDS)

Stormwater Treatment Unit



JENSEN® STORMWATER SYSTEMS

A Full Capture, Screening, Swirl-Concentrating, Stormwater Treatment Unit



The **Jensen Deflective Separator (JDS)** is a full-capture, screening, swirl-concentrating, stormwater treatment system. With no moving parts, the JDS is uniquely able to screen trash and debris (including floatables and both neutrally and negatively buoyant materials), from stormwater, all without blocking the screen. The JDS also captures total suspended solids (TSS); sediments; as well as oil, grease, and other total petroleum hydrocarbon (TPH) pollutants from stormwater runoff. Captured pollutants are retained without scouring, even under high-flow bypass conditions.

JDS units are available in precast manholes as **Inline units** with integral bypass weirs. For larger storm conveyance systems, **Offline units** connect to the storm drain pipeline by a diversion manhole or vault structure. The smallest units can also be deployed in drop-inlets or catch-basins.

LAND USE APPLICATIONS:

- New and Existing Residential and Urban Developments
- Commercial Developments
- Industrial Sites
- Roadway Improvements
- Parking Lots
- Pre-treating Detention and Infiltration systems
- Pre-treating Bio-Retention and Bio-Infiltration

"We're pleased to introduce the new, proven JDS treatment process; designed to meet the stormwater needs of municipal and private developments."

— Walter Stein, PE
Jensen Stormwater Systems
Division Manager

STORMWATER SYSTEMS

Key Features & Benefits

The JDS deployed in underground manholes or

TREATMENT APPLICATIONS

- Full Capture Trash & Debris Storm Water Treatment Unit (SWTU)
- Stand-alone SWTU
- Pre-treatment:
  - — Detention & Infiltration
  - — Bio-Retention & Bio-Infiltration
  - — Rainwater Harvesting Cisterns
  - — Fine Media, Membrane and Sand Filters
  - — Wetlands, Ponds and Swales
  - — Oil/Water Separators
  - — Pump Stations

NEW & RETROFIT DEVELOPMENT APPLICATIONS

- Residential, Commercial and Industrial
- Parking Lots and Parking Structures
- Roads, Streets, Highways and Freeways
- Intermodal Transportation Facilities
- Solid Waste Transfer Yards and Landfills

EFFICIENT CAPTURE & CONTAINMENT

- Non-blocking, swirl concentrating screening unit
- Total Suspended Solids (TSS)
- Course sediment and sand
- Full Capture — 100% of trash and debris equal to or greater than the screen aperture
- 100% floatables control
- 90% of sediment as small as one third the screen aperture
- Removal of free oil and grease with the use of an oil baffle
- Additional oil sorbent options available
- Screen, non-scouring sump, and oil baffle retain all captured pollutants for removal

NON-BLOCKING & NON-MECHANICAL

- No moving parts
- Screen will not clog
- No power requirements
- Configured within the existing drainage infrastructure

vaults enables greater land-use options than larger, land-based water quality treatment systems.

COST-EFFECTIVE TREATMENT ALTERNATIVE

JDS is a more cost effective treatment per Cubic Feet per Second (CFS) of stormwater processed as compared to other structural BMPs.

UNOBTRUSIVE & EASY TO INSTALL

JDS units are configured inside typical precast manholes and installed below ground as typical storm drain structures.

ECONOMICAL & EASY MAINTENANCE

- Standard vactor/vacuum truck readily removes all pollutants
- Maintenance cleanout achieved from the surface
- No confined space entry
- Safe, and eliminates exposure to personnel

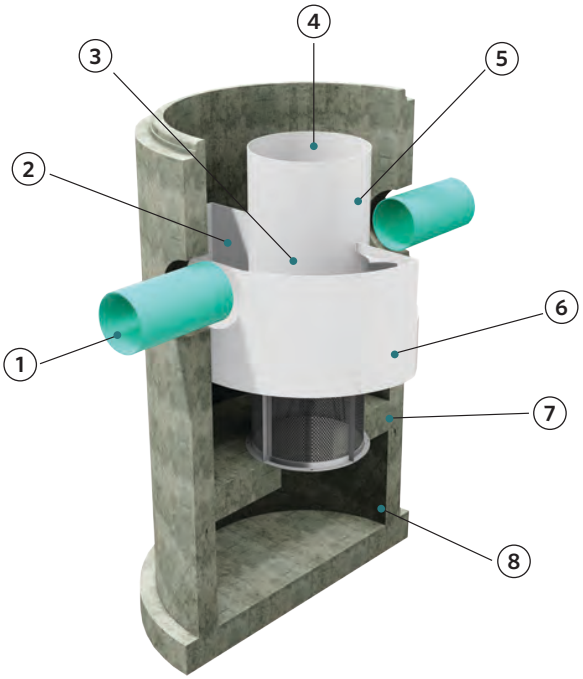
STORMWATER SYSTEMS

The JDS features a large treatment flow range. Precast Inline and Offline units treat flows from 0.7 to 73 CFS. Cast-in-place units treat flows from 73 to 273 CFS.

Treatment Flow Process

Using the proven continuous deflective treatment process, the JDS Full Capture device captures 100% of trash and debris particles equal to or greater than the screen apertures of either 2400 or 4700-micron (µm).

Vortex separation settles fines through a larger range of flow rates than in



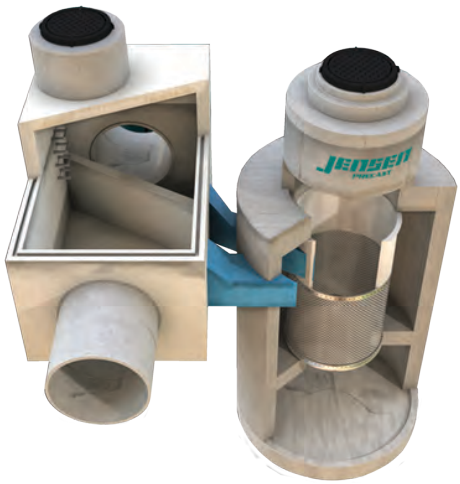
STANDARD **JDS** INLINE UNIT

1. Stormwater enters the JDS unit from one or more inlet pipes, a grated drop or curb inlet.
2. Incoming waters collect in the bay of the inlet trough.
3. Waters enter the separation and screening cylinder through the volute entrance in the diversion weir wall.
4. Water entering the separation cylinder forms a spinning vortex, capturing all floatables and swirl concentrating suspended solids to the center of the separation chamber.
5. The vortex flow pattern produces a washing force across the screen face, preventing it from becoming blocked, while allowing stormwater to pass through the screen and flow beneath the oil baffle.
6. Oils, greases and other Total Petroleum Hydrocarbons (TPHs) are trapped within the integral oil baffle attached beneath the inlet bay.
7. Screened stormwater moves toward the outlet pipe.
8. Settled and swirl concentrated suspended solids are captured in the sump which is typically cleaned out by a vactor truck.

Flows larger than the JDS unit's design treatment flow bypass over the diversion weir. Bypass flows do not scour out previously captured pollutants.

a classic settling tank of the same size.

Offline Unit



JDS Offline units are placed adjacent to the storm drain or channel alignment and have a separate diversion structure with a high-flow bypass weir.

STORMWATER SYSTEMS

INLINE UNITS

JENSEN DEFLECTIVE SEPARATOR (JDS)

Precast Model Designation1	Treatment Flow Rate (Nominal) (ft^3/s)	Approximate Treated Catchment Area (acres)	Manhole Internal Diameter (ft)	Manhole Internal Diameter (in)	Screen Cylinder Diameter & Height (in)	Screen Cylinder Diameter & Height (in)	External Foot Print Diameter (ft)	Depth Below Pipe Invert[2] (ft)
JDS48-2418(G[3])	0.7	4 - 6	4	48	24	18	4.8	5.3
JDS48-2424	1.1	6 - 9	4	48	24	24	4.8	5.7
JDS48-2430	1.6	9 - 13	4	48	24	30	4.8	6.2
JDS60-2418	0.7	4 - 6	5	60	24	18	6.0	5.8
JDS60-2424	1.1	6 - 9	5	60	24	24	6.0	6.2
JDS60-2430	1.6	9 - 13	5	60	24	30	6.0	6.8
JDS72-3624	2.0	11 - 17	6	72	36	24	7.2	6.3
JDS72-3630	2.4	13 - 20	6	72	36	30	7.2	6.8
JDS72-3636	3.0	17 - 25	6	72	36	36	7.2	7.3
JDS72-3642	3.8	21 - 32	6	72	36	42	7.2	7.8
JDS84-4230	2.7	15 - 23	7	84	42	30	8.3	7.9
JDS84-4236	3.6	20 - 30	7	84	42	36	8.3	8.4
JDS84-4242	4.4	24 - 37	7	84	42	42	8.3	8.8
JDS84-4248	5.5	31 - 46	7	84	42	48	8.3	9.3
JDS84-4836	5.5	31 - 46	7	84	48	36	8.3	8.3
JDS96-4836	4.5	25 - 38	8	96	48	36	9.5	8.3
JDS96-4848	6.0	33 - 50	8	96	48	48	9.5	9.3
JDS96-6754	7.5	42 - 63	8	96	67	54	9.5	9.7
JDS120-6748	9.0	50 - 75	10	120	67	48	11.8	8.7
JDS120-6758	11	61 - 92	10	120	67	58	11.8	9.5
JDS120-6764	14	78 - 117	10	120	67	64	11.8	10.0
JDS120-6770	15	84 - 127	10	120	67	70	11.8	10.5
JDS120-6782	19	106 - 158	10	120	67	82	11.8	11.5
JDS120-6794	25	139 - 208	10	120	67	94	11.8	12.5
JDS144-8484	25	140 - 210	12	144	84	84	14.2	12
JDS144-9480	26	143 - 214	12	144	94	80	14.2	11.7
JDS144-9490	31	173 - 260	12	144	94	90	14.2	12.5
JDS144-94102	38	209 - 313	12	144	94	102	14.2	13.5
JDS144-94114	44	244 - 367	12	144	94	114	14.2	14.5

1. Typical and site-specific plan and profile drawings are available for all ***JDS*** units.
2. Depth below pipe invert may vary per plan and design of a project, values are estimated standards per ***JDS*** model with deep sump. More shallow, smaller storage volume sumps readily available.
3. "G" Suffix on model number designates that unit is configured for grated drop inlet of stormwater.

EXHIBIT I

INDEPENDENT 3rd PARTY

STUDIES AND EVALUATIONS

OF

THE PUBLIC DOMAIN

CONTINUOUS DEFLECTIVE SEPARATION

STORMWATER TREATMENT PROCESS

Exhibit I

INDEPENDENT 3RD PARTY STUDIES AND EVALUATIONS OF THE PUBLIC DOMAIN CONTINUOUS DEFLECTIVE SEPARATION STORMWATER TREATMENT PROCESS

The continuous deflective separation process for the treatment of stormwater has been extensively studied and evaluated from 1995 to 2012. The following is a short list of the publically available studies, most all of which are meet the criteria as being independent.

Independent Studies & Public Docs Referencing Independent Studies:

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Attachment C

INDEPENDENT 3RD PARTY STUDIES AND EVALUATIONS OF THE PUBLIC DOMAIN CONTINUOUS DEFLECTIVE SEPARATION STORMWATER TREATMENT PROCESS

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