

8. Continued prevention
8. Certified sedement, organic solids and other settled material in the primary and grit chambers are stored in a sump area containing not less than 66.0 Cult: entire sump area is below the settling surfaces and the teachment flow path, preventing re-suspension of captured pollutions of captured gross pollutions are proposed by vacuum truck; with not less than 18 inch continues access opening to bottom of sump area captured pollutions to bottom of sump orea captured pollutions to bottom of sump orea captured subget dispersion manifold below stacked inclined plate 12. Air and water pressurated sludge dispersion manifold below stacked inclined plate in 18 inch continues access opening to bottom of summ truck suction here. It is always to the pressurated sludge dispersion manifold below stacked inclined by 18. Manufacturer shell submit shop drawings and such other information requested by 18. Manufacturer shell submit shop drawings and such other information in the event that the product supplied is not first from date of installation in the event that the product supplied is not first from dates that nationally affect its performance: I area (Reen shall be installed and used only in the particular application for which it was specifically designed, engineered and manufactured (see written Terre Reen warranty for entire warranty).

area

Terre Kleen is a HYDRODYNAMIC SEPARATOR consisting of preinstalled, stacked inclined plates housed inside a precast structure. Ferre Kleen removes pollutants by separating sediment and floatables such as oils, grease, trash and debris from stormwater. Terre Kleen features are as follows:

Terre Kleen TK02 Performance, Design and Installation Specifications

copture & permanently retion 100 percent of floatable trash & debris at all flore 2. capture & permanently retion > 90 percent of floatable free oil, grease and Total Perroleum Hydrocarbous (FHr) et al. flows; unit shall be capable of receiving "oil sorbents" to permanently remore captured oil, grease and FHr.

5. capable of removing sit and cloy size particles

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5. capable size size particles

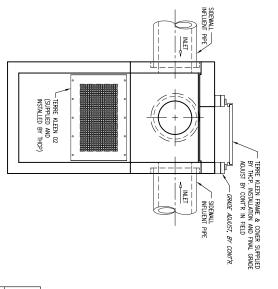
5. capable size size particles

5. stacked inclined pates in the grit chamber are self cleaning settling surfaces

5. stacked inclined pates in the grit chamber are self cleaning settling surfaces

7. buoyancy creentifics

TOP SLAB LAYOUT OPTIONS



REARWALL— INFLUENT PIPE SIDEWALL -

TERRE KLEEN 02
HYDRODYNAMIC
SEPARATOR SHALL
HAVE 13 SQUARE
FEET HORIZONTALLY
PROJECTED
SURFACE AREA IN
THE GRIT
CHAMBER.

— TERRE KLEEN 02 (SUPPLIED AND INSTALLED BY THCP)

8'-2" MINIMUM

SECTION A-A

INSTALL VAULT LEVEL & PLUMB ON A 6" COMPACTED 2A STONE BASE BY CONT'R

SECTION B-B

-PRECAST BAFFLE WALL

EFFLUENT — PIPE INVERT

OUTLET

ERRE KLEEN - GENERAL NOTES:

THE TERRE KLEEN w (US PATENT 6,676,832 E2) HYDRODYNAMIC SEPARATOR AS DESIGNED, MANUFACTURED AND INSTALLED BY THERE HILL STORMMERE SYSTEMS.

CONTACT. TERRE HILL STORMMATER SYSTEMS AT P.O. BOX 10, 485 WEAVERLAND VALLEY ROAD,

TERRE HILL, PA 17281 (PHONE 1-800-242-1509) OR WWW.TERRESTORM.COM

Mointenance Procedures

1. Quarterly inspection is recommended to record sediment, oil, and trash accumulation.

2. Cleaning is recommended when the sediment reaches 16 inches in depth in one or both sediment sump onces.

3. No confirmed space entry required: Terre Meen design allows access from grade, to both charmers by vocum hose for removal of 100% of load optived pollutants.

4. Air and water pressurized studge dispersion manifold, under inclined plates

5. Removed material must be handled and disposed according to local, state, and federal regulations

erre Kleen Installation Specifications

a, project-specific sizing colculations, with 3d party performance verification, clearly showing that the unit meets or exceeds the Performance and Design Specifications of the intere Kleen. The project is a substitution of the project specific bydroulic calculations, with 3d party performance verification, showing the tydraulic Grade Line (HdD,) plotted through the structure for the design flow

. No stormwater treatment BMP shall be approved as an equivalent substitution unless the natives shall receive and approve drawings and specifications stamped and sealed by a notessional engineer registered in the state wherein the project is located showing the

DEFORMED STELL CONFORMS TO ASTM AGIS GRODE 60. WELDED WIRE FABRIC CONFORMS TO ASTM A185. DEFORMED WILLED WIRE FABRIC OF EQUAL SIZE MAY BE SUBSTITUTED FOR SMOOTH WELDED WIRE FABRIC AND SHALL CONFORM TO ASTM A497. CONCRETE: f'c=5,000 PSI @ 28 DAYS, WITH ASTM C-33 NO. 57 OR NO. 67 COARSE AGGREGATE.

BITWEN CONSEAL CS-1028 JOINT MATERSAL MANUFACTURED BY CONCRETE SEALANTS, CONFORMS TO FEDERAL SPECIFICATION SS-5-2-MANUFACTURED BY CONCRETE SEALANTS, INC. RECOMMENDATIONS. . INC. AND ED IN ACCORDANCE

ANNULAR SPACE BETWEEN PIPE AND HOLE TO BE FILLED, BY OTHERS, WITH AN APPROVED NON-SHRINK GROUT OR CONCRETE AS SPECIFIED.

1. Terre Kleen inclined plate assembly shall arrive at the job site fully assembled inside precost concrete structure. Precost structure amount in sections due to weight and transportation issues. Each precost structure shall contain lifting parts with Uni-Hits, annulacturer shall provide lifting equipment required between the uni-Hit and the lifting straps / crare hook, which shall be the property of manufacturer. Contractor shall provide equipment with sufficient lifting capacity to unload and set the Terre Kleen.

2. Contractor shall recoverts dewater and shore in accordance with project specifications, as provided by Engineer and ISSA regulations.

3. Sub-grade shall be established as shown on the Drawings. Underlying soil and sub-grade material shall have design loading of not less than 2000 pounds per square foot (ser). Precost components shall be placed on the compacted base (95% Prector bensity), elevation confirmed, level and disped to ensure that the entire unit will be properly positioned when fully installed.

TOP UNIT (PA TYPE 'M' SHOWN) w/ WELDED TOP UNIT (PA TYPE 'M' SHOWN) w/ WELDED TOP UNIT SHOWN IN THE WELDES TO COURT IN GROUP (PRECAST TOP UNIT SHOWN, TERRE KLEEN FRAME & COVER MAY BE USED AT THIS LOCATION)

TERRE KLEEN FRAME & COVER SUPPLIED BY THCP: INSTALLATION AND FINAL GRADE ADJUST BY CONT'R IN FIELD

GRADE ADJUST, BY CONT'R.

7 1/4"

ALL PIPES TO BE CUT FLUSH WITH INSIDE WALL, AFTER GROUT HAS DRIED.

UNI LIFT ANCHORS MANUFACTURED BY UNIVERSAL FORM CLAMP COMPANY, OR EQUAL TYPICAL FOR HANDLING. DROP-IN ANCHORS TO BE HILTI 316 STAINLESS STEEL KWIK BOLT II AS MANUFACTURED UNI LIFT ANCHORS BY HILTI CORP.

INSTALLATION AND MAINTENANCE MUST BE IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS AND COMPLY WITH LOCAL ORDINANCES AND NPDES PHASE II REGULATION MANHOLE FRAMES AND COVERS SUPPLIED BY TERRE HILL STORNWATER SYSTEMS. INSTALLATION AND GRADE ADJUST BY OTHERS, COVERS TO BE MARKED WITH "TERRE KLEEN STORNWATER TREATMENT SYSTEM" LOGO.

288 SqFt	230 SqFt	172 SqFt	115 SqFt	57 SqFt	32 SqFt	13 SqFt	8 SqFt	Settling area in sedimen tation chamber
3.9 cfs	3.1 cfs	2.3 cfs	1.5 cfs	0.8 cfs	0.4 cfs	0.2 cfs	0.1 cfs	Design ¹ Capacity d ₅₀ =50 Micron
0.13 ln	0.13 ln	0.11 ln.	0.10 ln	0.09 In	< 0.50 n	< 0.50 ln	< 0.50 ln	Design flow head loss
18.7 cfs	15.0 cfs	11.2 cfs	7.5 cfs	3.7 cfs	2.1 cfs	0.8 cfs	0.5 cfs	Design ¹ Capaclty d ₅₀ =110 Micron
3.08 In.	2.94 n.	2.71 ln.	2.44 ln.	1.93 ln.	< 0.50 ln.	< 0.50 ln	< 0.50 n	Design flow head loss
34.9 cfs	27.8 cfs	20.8 cfs	13.9 cfs	6.9 cfs	3.9 cfs	1.6 cfs	1.0 cfs	Design ¹ Capacity d ₅₀ =150 Micron
10.71 n	10 11 ln	9.36 In	8.37 In	6.70 In	< 0.50 In.	< 0.50 n	< 0.50 n	Design flow head loss
62.0 cfs	49.5 cfs	37.0 cfs	24.7 cfs	12.3 cfs	6.9 cfs	2.8 cfs	1.7 cfs	Design ¹ Capacity d ₅₀ =200 Micron
33.81 In.	32 06 In	29.62 In.	26 44 In.	21.30 ln.	< 0.50 ln.	< 0.50 ln.	< 0.50 n	Design flow head loss
70.0 cfs	56.0 cfs	42.0 cfs	28.0 cfs	15.0 cfs	10.0 cfs	4.0 cfs	2.5 cfs	Peak flow
44 00 In	42 00 In	39.00 In	35.00 ln	33.00 In	0.56 In	0.21 In.	0.08 In	Peak ^{2,4} head loss
60 In.	52 In.	42 In.	36 In.	24 In.	18 In.	18 In.	18 In.	max pipe Diam
257 CF	216 CF	151 CF	116 CF	80 CF	132 CF	66 CF	66 CF	Standard ⁵ Sediment Storage
389 Gallon	327 Gallon	265 Gallon	203 Gallon	140 Gallon	236 Gallon	123 Gallon	192 Gallon	Standard ⁵ Trash and Oll volume
3.27 Ft	3.27 Ft	3.27 Ft	3.27 Ft	3.27 Ft	3.27 Ft	3.27 Ft	2.52 Ft	Minimum grade to plpe Invert ³
6.25 F	6.25 F	6.25 F	6.25 F	6.25 F	6.25 F	6.25 F	6.25 F	Standard pipe inver to device bottom
	288 SqFt 3.9 cfs 0.13 ln 18.7 cfs 3.08 ln 34.9 cfs 10.71 ln 62.0 cfs 33.81 ln 70.0 cfs 44.00 ln 60 ln 257 CF 389 Gallon 3.27 Ft 6.25	230 SqFt 3.1 ds 0.13 h. 15.0 ds 2.94 h. 27.8 ds 10.11 h. 49.5 ds 32.06 h. 56.0 ds 42.00 h. 52 h. 216 CF 327 Gallon 3.27 ft 6.25 288 SqFt 3.9 ds 0.13 h. 18.7 ds 3.08 h. 34.9 ds 10.71 h. 62.0 ds 33.81 h. 70.0 ds 44.00 h. 60 h. 257 CF 389 Gallon 3.27 ft 6.25	772 SGF1 23 dts 0.11h. 11.2 dts 271h. 20.8 dts 9.38 h. 37.0 dts 29.2 h. 42.0 dts 93.0 h. 42 h. 151 CF 265 Galpon 3.27 ft 6.25 20.5 h. 42.0 dts 9.3 h. 61.3 h. 151 CF 265 Galpon 3.27 ft 6.25 20.5 h. 42.0 dts 42.0 h. 52.0 h. 216 CF 237 Galpon 3.27 ft 6.25 228 SGF1 3.3 dts 0.13 h. 15.0 dts 29.4 h. 34.9 dts 10.71 h. 62.0 dts 33.8 h. 30.4	115 SqF1 1.5 ds 0.10 h. 7.5 ds 2.4 h. 13.9 ds 8.37 h. 24.7 ds 26.4 h. 280 ds 35.00 h. 36 h. 116 CF 203 Gallon 3.27 f 6.25 dr 3.5 h. 12 ds 2.7 h. 20.6 s 9.36 h. 3.7 ds 2.8 p. 42.0 s 30.00 h. 42 h. 151 CF 265 Gallon 3.27 f 6.25 200 f 3.7 k. 20.6 s 30.0 h. 3.27 f 6.25 200 f 3.7 k. 20.6 s 30.0 h. 42 h. 151 CF 265 Gallon 3.27 f 6.25 200 f 3.7 k. 20.6 h. 3.6 h. 216 CF 203 Gallon 3.27 f 6.25 200 f 3.7 k. 20.6 h. 216 CF 203 Gallon 3.27 f 6.25 200 f 3.7 k. 20 f 200 f	67 SePt U3des 0.00m. 3.7 des 133 m. 19 des 6.70 m. 123 des 12.3 des 12.4 des	32 SSFN O.d.ds < 0.25th 0.25th < 0.25th	39ER Q2 ds < 0.05 ln. 0.8 ds < 0.05 ln. 2.8 ds < 0.05 ln. 4.0 ds 0.2 ln. 18 h. 66 CF (23 callon) 3.27 fs 3.22 fs < 0.05 ln. 2.8 ds < 0.05 ln. 4.0 ds 0.05 ln. 4.0 ds 0.05 ln. 4.0 ds 0.25 ln. 0.05 ln. 0.02 fs 0.05 ln. 0.05 ln.	8 SQFL 0.1 ds < 0.050 h. 0.5 ds < 0.950 h. 1.5 ds < 0.050 h. 1.5 d

Design flow rates based on Weighted Removal according to NUDEP lab protocol and objusted for a particle density 140bs/cft and 60 degree Fahrenheit water temperature.

Peak headloss is defined by the standard insert charance and defines peak flow. Higher flows at reduced treatment rates are optional and avoid external by Add 9° for grade objust and frame and cover, otherwise cast into the lid.

Excess design overflow through a screen is possible above insert.

Initial

Release 11-12-08

B Y: ENG'R: CONT'R:

DATE:

SHT.1 OF 1

FILE NO.

REVISIONS JOB: 4'-0" x 6'-0" PRECAST WATER QUALITY CHAMBER TERRE HIL

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fully installed.

4. Contractor solal pace "CONSEAL" or equivalent water light mastic material between each peacast component.

5. Precast strough particular containing the Terre Kleen component shall be aligned horizontally and werkcolly plumb. Contractor must confirm that the entire Terre Kleen shall be level during and after completion of bookflid of the structure.

6. Manhole frame/cover and inlets frame/grate, if required shall be installed as shown on the drawings and grate algosted objected to match final grade elevations by Contractor.

7. Connect and soal storm donn inlet and outlet pipes to terre Kleen unit using non-shrink grate. If it is recommended that the store sub-base be extended a minimum of one foot (1 ft) beyond the exterior face of the precast and compacted to 55%. Proctor beasity to sub-grade. Upon completion of the precast installation the backfill material shall be placed and compacted obleving a minimum compaction of 90% Proctor Density, or as seperified by the Engineer, when tested by KSM A1557. Backfill material may be a minimal compaction effort material habite material may be used if the material provides an allowable bearing pressure of 2000 pounds per square foot (1ss) and compacts to 90% Proctor Density (SIM A1557). If approved by the Engineer, in neast of well-culor use, the upper two feet (2 ft) of backfill shall be aggregate base, compacted to 95% protor beasity per KSM A1557. If approved by the Engineer is not ones of well-culor use, the upper two feet (2 ft) of backfill shall be aggregate base, compacted to 95% protor beasity per KSM A1557. If approved by the Engineer, in pross of well-culor use, the upper two feet (2 ft) of backfill shall be aggregate base, compacted to 95% protor beasity per KSM A1557.) Protor beasity of the process of the protor beasity per KSM A1557. If approved by the grades are constructed to 95% per KSM A1557. If approved by the confirmation of the protor of the process of the protor beassity per KSM A1557. If approved by the confirmation of the proto