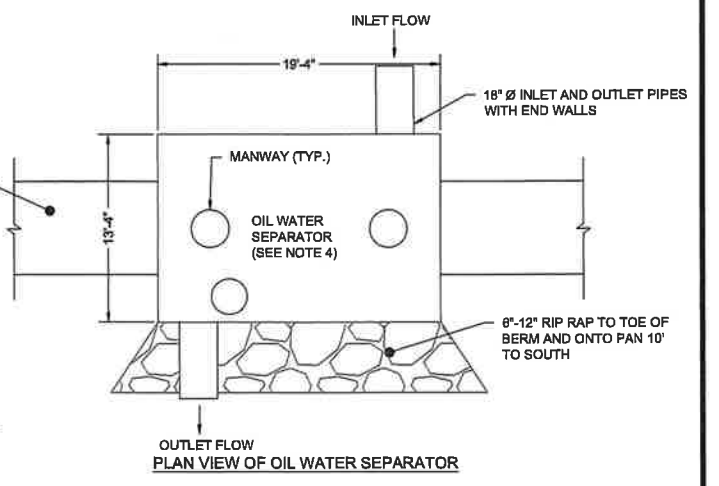


**LEGEND**

	DESIGN 5' CONTOUR
	DESIGN 1' CONTOUR
	RECORD 5' CONTOUR
	RECORD 1' CONTOUR
	EXISTING GROUNDWATER CONTOUR
	EXISTING FENCE
	EXISTING UTILITY POLE
	EXISTING PEDESTAL
	EXISTING SURFACE WATER PIPE
	EXISTING RIP RAP
	EXISTING DRAIN TILE
	APPROXIMATE TOP OF WILLOW BERM
	RECORD SPOT ELEVATION

- NOTES:**
1. AERIAL SURVEY PERFORMED BY SURDEX CORPORATION ON FEBRUARY 6, 2006. SUPPLEMENTAL GROUND SURVEY PERFORMED BY CORNERSTONE ENVIRONMENTAL IN THE SUMMER OF 2016 AND OCTOBER 14, 2016.
  2. SPILLWAY IS MADE OF 6"-12" RIP-RAP.
  3. OIL WATER SEPARATOR WAS PLACED ON ESTABLISHED FIRM SUB-SOILS WITH 12" OF CRUSHED GRAVEL (OPEN GRADED, <6% P200) AND WOVEN GEOTEXTILE.
  4. GROUNDWATER FLOW IS TYPICALLY NORTHWEST TO SOUTHEAST.
  5. RECORD SURVEYS WERE PERFORMED ON SEPTEMBER 19-20, 2017 AND NOVEMBER 30, 2017 BY CORNERSTONE.



**RECORD DRAWINGS**

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

DATE OF ISSUE: 12/11/2017  
 DRAWN BY: SRC  
 DESIGNED BY: SRC  
 CHECKED BY: DS  
 APPROVED BY: DS

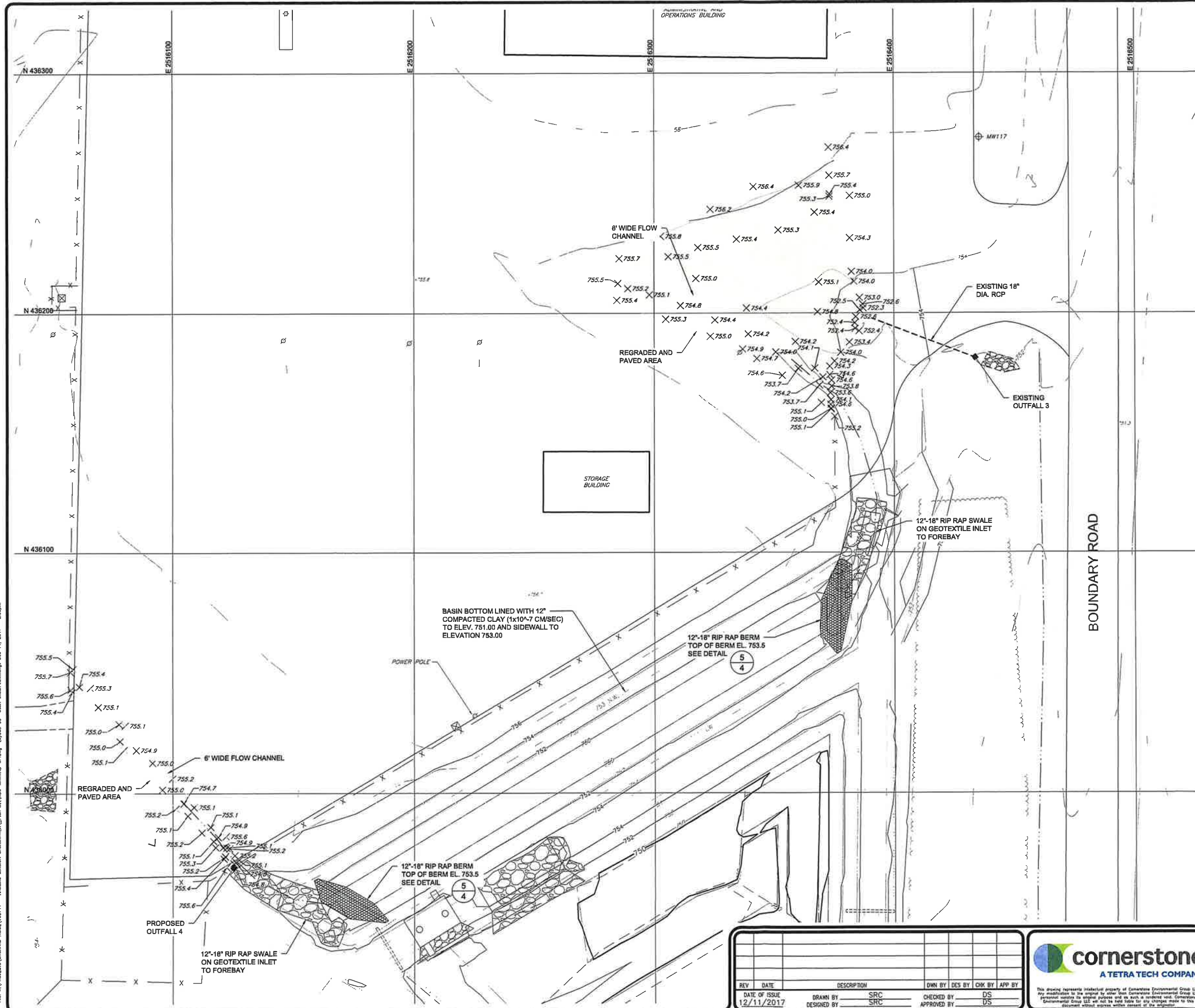


WASTE MANAGEMENT—MENOMONEE FALLS  
 SOUTHEAST HAULING DIVISION  
 MENOMONEE FALLS, WISCONSIN

**STORMWATER TREATMENT  
 DETENTION BASIN**

SHEET NO.  
**2**  
 PROJECT NO.  
 160711

Fig. X:\PROJECTS\ORCHARD RIDGE\160711 - HAULING DIVISION STORMWATER\_Plan\_S&I\B2-MWMB-SP.dwg Layout: 02 User: shan.commins Date: 11/11/2017 2:28pm  
 1" = 1/2" @ 0"



**LEGEND**

	PROPERTY BOUNDARY
	EXISTING 10' CONTOUR
	EXISTING 2' CONTOUR
	EXISTING FENCE
	EXISTING TREE LINE
	EXISTING EDGE OF WATER
	EXISTING UTILITY POLE
	EXISTING PEDESTAL
	EXISTING MONITORING WELL
	EXISTING CULVERT
	EXISTING RIP RAP
	EXISTING SLURRY WALL DRAIN TILE & CLEANOUT
	EXISTING SLURRY WALL
	RECORD MAJOR CONTOUR
	RECORD MINOR CONTOUR
	PERIMETER BERM
	REGRADED PAVEMENT AREA
	CULVERT
	RECORD SPOT ELEVATION

- NOTES:**
1. AERIAL SURVEY PERFORMED BY SURDEX CORPORATION ON FEBRUARY 6, 2006.
  2. GROUND SURVEY PERFORMED BY CORNERSTONE ENVIRONMENTAL IN THE SUMMER OF 2016 AND OCTOBER 14, 2016.



**RECORD DRAWINGS**

REV	DATE	DESCRIPTION	OWN BY	DES BY	CHK BY	APP BY
1	12/11/2017	DATE OF ISSUE				
		DRAWN BY	SRC	CHECKED BY	DS	
		DESIGNED BY	SRC	APPROVED BY	DS	



WASTE MANAGEMENT—MEMONEE FALLS  
 SOUTHEAST HAULING DIVISION  
 MEMONEE FALLS, WISCONSIN

**STORMWATER IMPROVEMENTS  
 2017 SITE PLAN**

SHEET NO.  
**3**

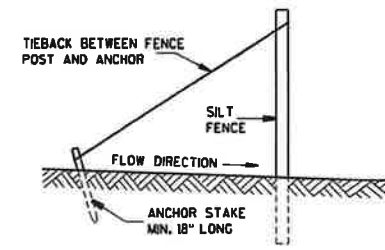
PROJECT NO.  
 160711

File: S:\PROJECTS\Stormwater\160711 - HAULING DIVISION STORMWATER\160711 - HAULING DIVISION STORMWATER.dwg Layout: 03 User: shawna.campbell Dec 11, 2017 - 2:33pm

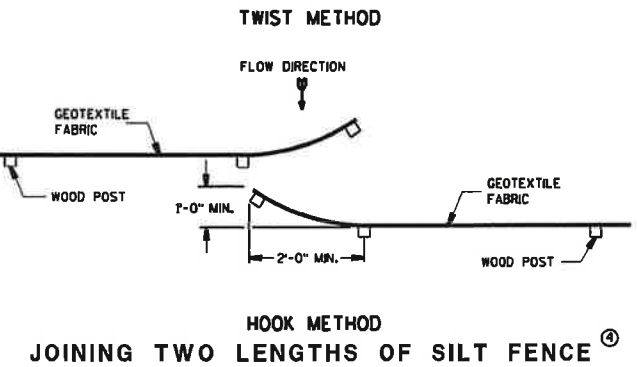
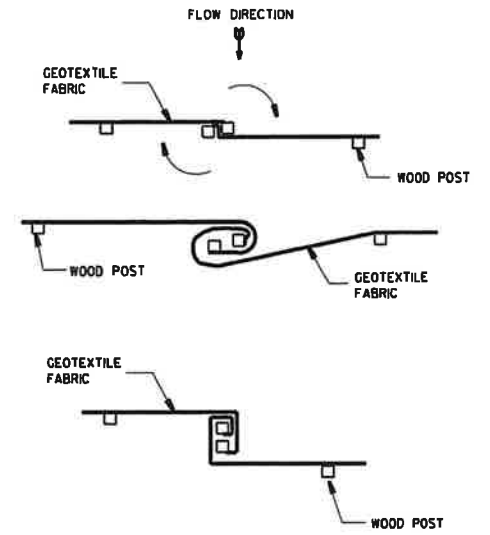
**GENERAL NOTES**

- ① TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ② WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/2" X 1 1/2" OF OAK OR HICKORY.
- ③ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS: A) TWIST METHOD -- OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK METHOD -- HOOK THE END OF EACH SILT FENCE LENGTH.

NOTE: DETAIL IS FROM WISCONSIN DNR CONSERVATION PRACTICE STANDARDS; SILT FENCE (1056).

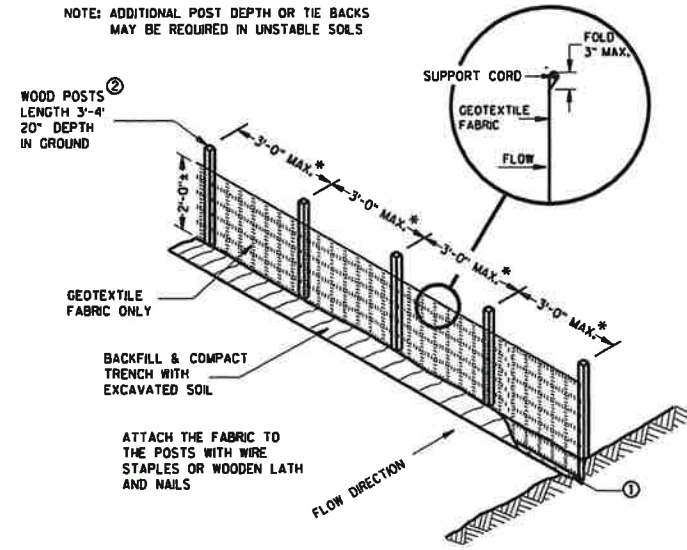


**SILT FENCE TIE BACK**  
(WHEN ADDITIONAL SUPPORT REQUIRED)

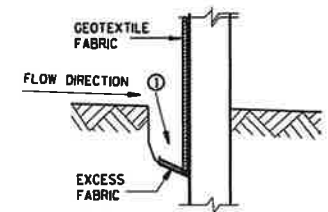


**HOOK METHOD**  
**JOINING TWO LENGTHS OF SILT FENCE** ④

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

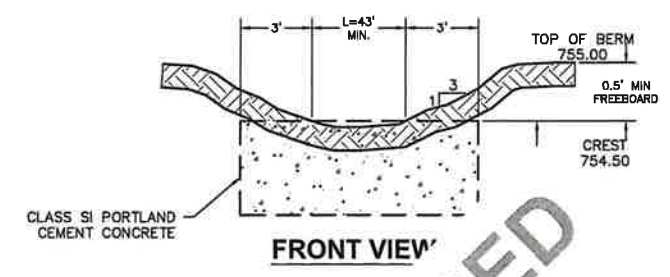


\* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

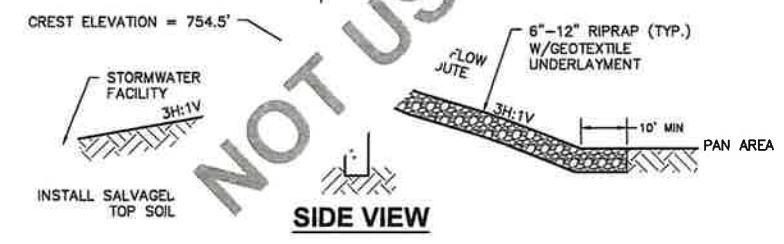


**TRENCH DETAIL**

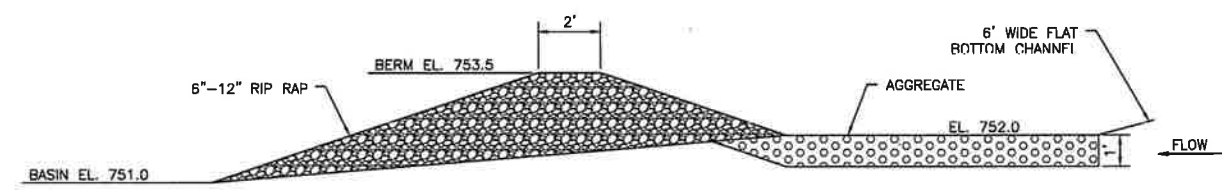
**SILT FENCE**  
**DETAIL** ②  
SCALE: NOT TO SCALE ④



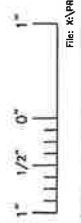
**NOT USED**



**CONCRETE OVERFLOW WEIR**  
**DETAIL** ①  
SCALE: NOT TO SCALE ④



**RIP RAP BERMS IN DETENTION BASIN**  
**DETAIL** ⑤  
SCALE: NOT TO SCALE ④



File: X:\PROJECTS\CONCRETE\160711 - HULLING DIVISION STORMWATER\_Plan\_SiltFence-WaterB-05.dwg Layout: 04 User: shawn.rummage Date: 11/20/17 2:28pm

**RECORD DRAWINGS**

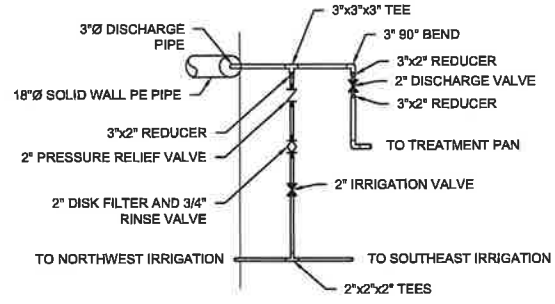
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DATE OF ISSUE	12/11/2017	DRAWN BY SRC	DESIGNED BY SRC	CHECKED BY DS	APPROVED BY DS	



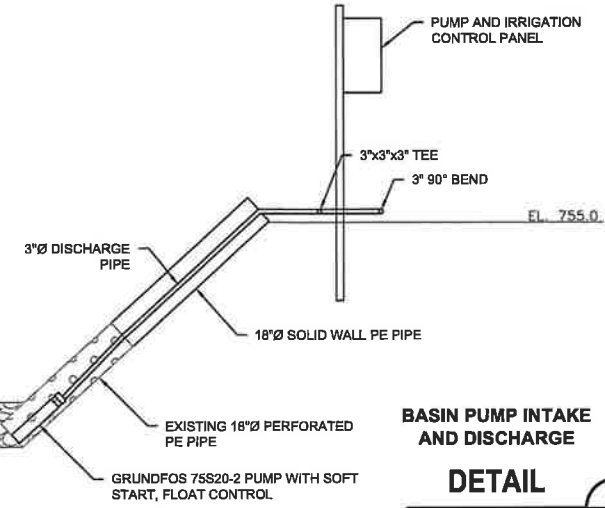
WASTE MANAGEMENT—MEMONEE FALLS  
SOUTHEAST HAULING DIVISION  
MEMONEE FALLS, WISCONSIN

**STORMWATER IMPROVEMENTS**  
**DETAILS**

SHEET NO.  
**4**  
PROJECT NO.  
160711



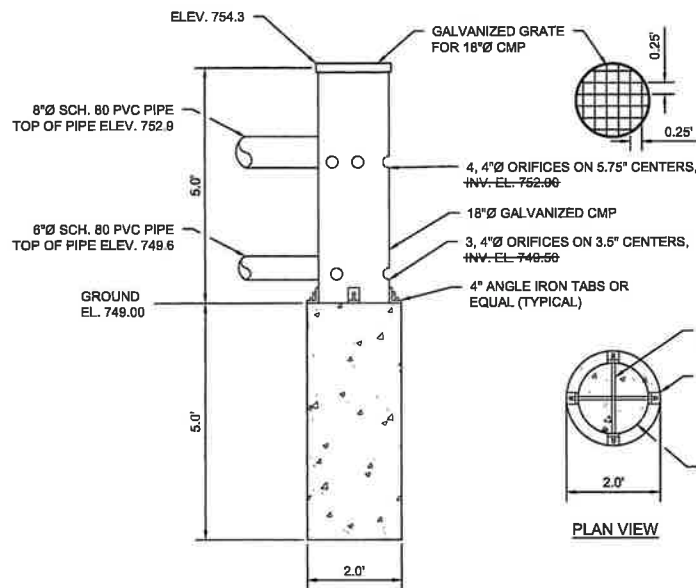
PUMP AND CONTROLS NOT INSTALLED AS OF RECORD SURVEY DATE



**BASIN PUMP INTAKE AND DISCHARGE**

**DETAIL**

SCALE: NOT TO SCALE 1 / 5



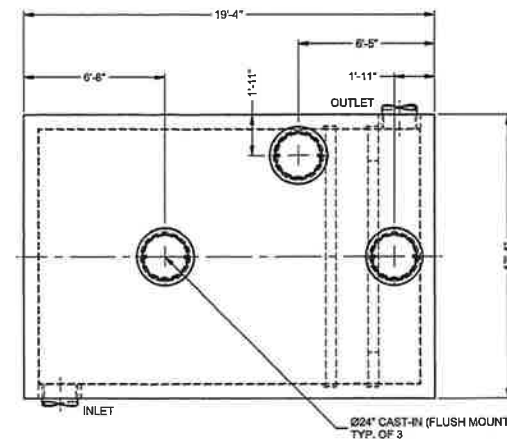
**SIDE VIEW**

**PAN GRAVITY DISCHARGE PIPE**

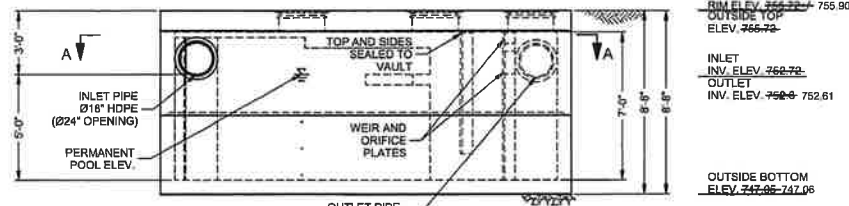
**DETAIL**

SCALE: NOT TO SCALE 2 / 5

- NOTES:**
- ATTACH ANCHOR TABS TO SONI-TUBE WITH STAINLESS STEEL 5/8"x8" ANCHOR BOLTS, WASHERS AND NUTS.
  - ATTACH ANCHOR TABS TO CMP RISER WITH STAINLESS STEEL 1/2" THREADED RODS, WASHERS AND NUTS.

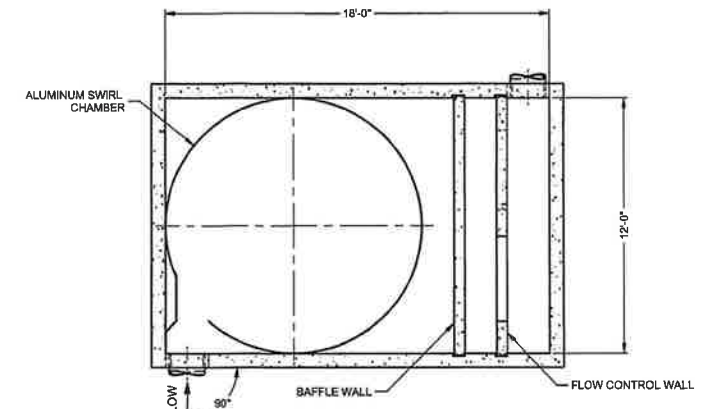


**PLAN VIEW**



**ELEVATION VIEW**

**- BYPASS STRUCTURE INFORMATION -**  
 PROPOSED SPILL WAY  
 BYPASS WEIR CREST ELEVATION = 754.5'  
**- NOT SUPPLIED BY CONTECH ENGINEERED SOLUTIONS -**



**SECTION A-A**

**MATERIALS LIST - PROVIDED BY CONTECH**

COUNT	DESCRIPTION	INSTALLED BY
1	ALUMINUM SWIRL CHAMBER	CONTECH
1	SWIRL CHAMBER SEALANT	CONTECH
1	ALUMINUM ORIFICE PLATE	CONTECH
1	ALUMINUM WEIR PLATE	CONTECH
1	BUTYL MASTIC JOINT SEALANT	CONTRACTOR
3	24" X 4" EIM160089 FRAME AND COVER, OR EQUIVALENT	CONTECH

**SITE DESIGN DATA**

WATER QUALITY FLOW RATE	16 CFS
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**GENERAL NOTES**

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- FOR FABRICATION DRAWINGS WITH DETAILED VAULT DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH REPRESENTATIVE: [www.contechES.com](http://www.contechES.com)
- VORTECHS WATER QUALITY VAULT SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM THAT STRUCTURE MEETS REQUIREMENTS OF PROJECT.
- STRUCTURE SHALL MEET HS-20 LOAD RATING ASSUMING EARTH COVER OF 0'-5" AND GROUNDWATER ELEVATION AT, OR BELOW, 3'-0" ABOVE STRUCTURE INVERT. ENGINEER OF RECORD TO PROVIDE ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M308 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
- WATER SURFACE ELEVATION IN THE VORTECHS STRUCTURE IS EXPECTED TO BE AT OR BELOW TOP OF FLOW CONTROL WALL DURING THE DESIGN STORM.
- VORTECHS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-857 AND AASHTO LOAD FACTOR DESIGN METHOD.

**INSTALLATION NOTES**

- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE VORTECHS STRUCTURE (LIFTING CLUTCHES PROVIDED).
- CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE JOINTS AND ASSEMBLE STRUCTURE.
- CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. INLET PIPE TO BE SET 90° TO STRUCTURE WALL. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
- CONTRACTOR TO PROVIDE ANY EXTERNAL BYPASS STRUCTURE REQUIRED FOR OFFLINE LAYOUT UNLESS OTHERWISE SPECIFIED.
- CONTRACTOR TO PROVIDE AND INSTALL MANHOLE RISERS, GRADE RINGS OR BLOCK REQUIRED BETWEEN THE TOP OF THE VORTECHS STRUCTURE AND THE BASE OF THE MANHOLE FRAMES.
- CONTRACTOR IS RESPONSIBLE FOR GROUTING AND SEALING THE INTERIOR BAFFLE WALLS FOLLOWING ASSEMBLY. INSTALLATION AND ASSEMBLY INSTRUCTIONS AVAILABLE UPON REQUEST.

**STRUCTURE WEIGHT**  
 APPROXIMATE HEAVIEST PICK = 59500 LBS.  
 OF 3 PIECES  
 MAX FOOTPRINT = 13.33' x 19.33'

**CONTECH CONTRACT DRAWING**

WES CLASS 600 TARGET: 1 OF 1

**OIL/WATER DETAIL NOT YET APPROVED FOR CONSTRUCTION**  
**VORTECHS 16000**

**DETAIL**

SCALE: NOT TO SCALE 3 / 5

**NOTE:**

- ORIFICE SET AT INVERT = ~~752.00~~ 752.81. ORIFICE SHALL BE 3.08' WIDE AT CREST, 0.92 FEET TALL WITH 4:1 SIDESLOPES. WEIR SET AT INVERT = ~~754.00~~ 754.31 AND SHALL BE 3.67 FEET WIDE AT CREST WITH 4:1 SIDESLOPES.
- OIL WATER SEPARATOR TO BE PLACED ON ESTABLISHED FIRM SUB-SOILS WITH 12" OF CRUSHED GRAVEL (OPEN GRADED, <5% P200) AND WOVEN GEOTEXTILE.



**RECORD DRAWINGS**

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
1	12/11/2017	DATE OF ISSUE				
		DRAWN BY	SRC	CHECKED BY	DS	
		DESIGNED BY	SRC	APPROVED BY	DS	



WASTE MANAGEMENT—MENOMONEE FALLS  
 SOUTHEAST HAULING DIVISION  
 MENOMONEE FALLS, WISCONSIN

**STORMWATER TREATMENT DETAILS**

SHEET NO. **5**  
 PROJECT NO. 160711

NO.	DATE	REVISION DESCRIPTION	BY

VORTECHS 16000 - 561606-010  
 WASTE MANAGEMENT  
 MENOMONEE FALLS, WI  
 FOR SYSTEM: SW TREATMENT

**CONTECH ENGINEERED SOLUTIONS LLC**  
 12345 Main St., Suite 100  
 Menomonee Falls, WI 53051  
 Phone: 262.241.1111  
 Fax: 262.241.1112  
 Email: [info@contechES.com](mailto:info@contechES.com)

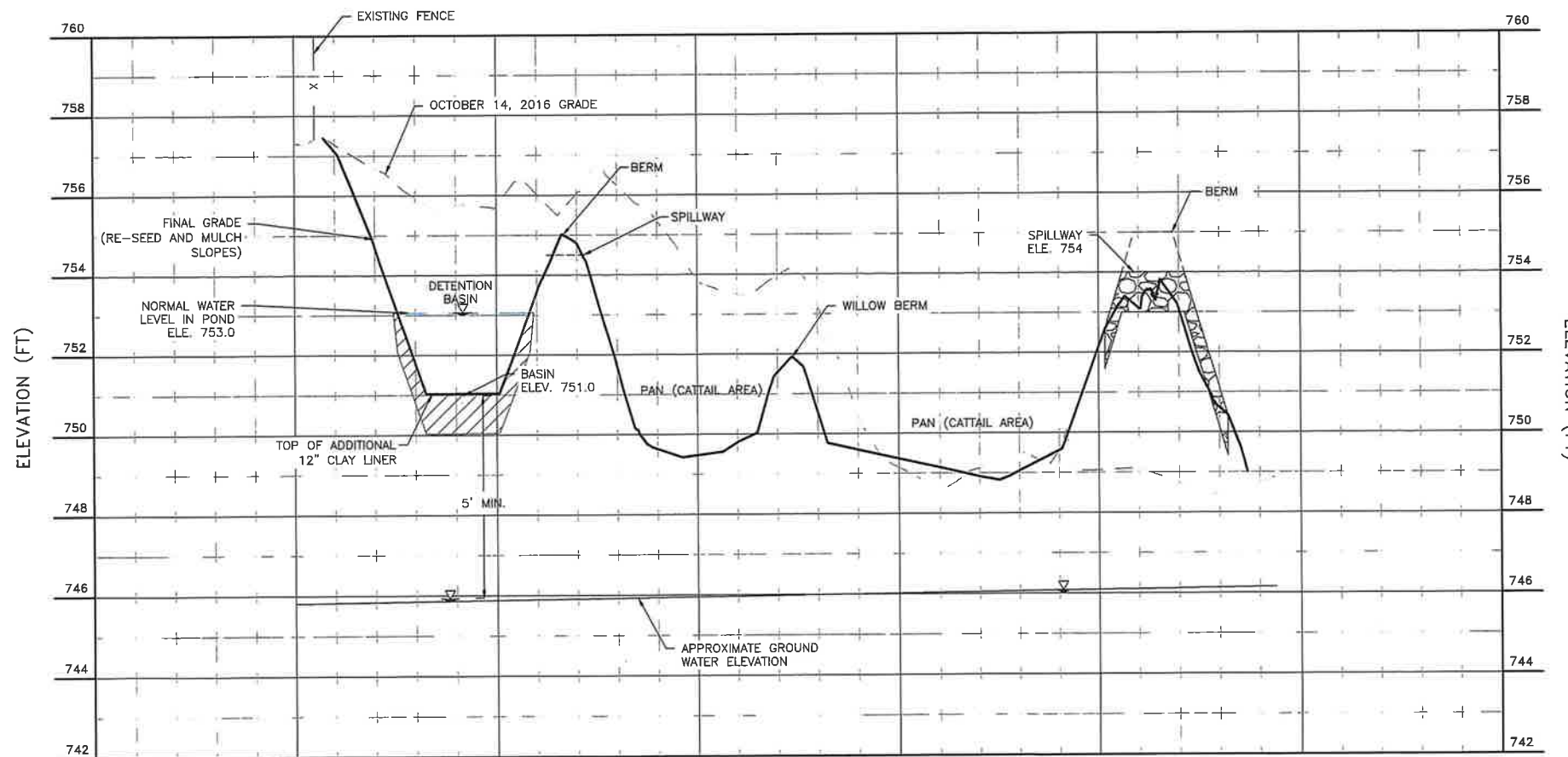
**Vortechs**  
 THE VORTECHS WATER QUALITY VAULT SYSTEM

DATE: 5/15/17 SCALE: AS SHOWN  
 DESIGNED: DRW DRAWN: KJW  
 CHECKED: DRW APPROVED: DRW  
 PROJECT NUMBER: 561606  
 WES CLASS 600 TARGET: 1 OF 1

**LEGEND**

 COMPACTED CLAY (1 X 10<sup>-7</sup> CM/SEC.)

**STORMWATER TREATMENT AND PAN AREA PROFILE**



**NOTE:**

1. 2016 GROUNDWATER ELEVATIONS OBTAINED FROM WASTE MANAGEMENT MONITORING TECHNICIAN.
2. SPILLWAYS DESIGNED FOR 100 YR/24 HR STORM EVENT.
3. RECORD SURVEYS WERE PERFORMED ON SEPTEMBER 19-20, 2017 AND NOVEMBER 30, 2017 BY CORNERSTONE.

**SECTION A-A'**  
SCALE: NOT TO SCALE



**RECORD DRAWINGS**

1" = 10' SCALE  
 FILE: S:\PROJECTS\WINDING ROAD\160711 - HAULING DIVISION STORMWATER\_Plan SWA\02-MAIN-01-SP.dwg Layout: 06 User: thuan.cummings Date: 11/11/2017 2:20pm

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
1	12/11/2017	DATE OF ISSUE				
		DRAWN BY: SRC			DS	
		DESIGNED BY: SRC			DS	

**cornerstone**  
A TETRA TECH COMPANY

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WASTE MANAGEMENT—MENOMONEE FALLS  
SOUTHEAST HAULING DIVISION  
MENOMONEE FALLS, WISCONSIN

**STORMWATER TREATMENT  
GROUNDWATER PROFILE VIEW**

SHEET NO.  
**6**  
PROJECT NO.  
160711