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Transmittal

Attention: Mr. Steve Morgan | Date: October 27, 2011 | Job No: 153175

To: Florida Department of Environmental Protection
Southwest District
13051 N. Telecom Parkway
Temple Terrace, FL 33637

Phone: 813-632-7600

Regarding: Central County Solid Waste Disposal Complex (CCSWDC)
Phase I Closure and Landfill Gas Collection System
Permit No. 130542-014-SF/01 - Minor Permit Modification - Supplemental Information

We are sending you: ☒ **Attached** ☐ **Under separate cover via _____ the following items**

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change Order ☒ Other See Below

Copies	Date	No.	Description
4	10/7/2011		Revised Page 2 of 4 - Cover Letter October 7, 2011 Submittal
4	10/20/2011		Phase I Closure South Swale ICPR Model Results Memorandum

Dept. Of Environmental Protection
OCT 27 2011
Southwest District

These are transmitted as checked below:

☒ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☒ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review/comment ☐ Other _____
☐ For bids due _____ ☐ Prints returned after loan to us

Remarks

Copy to File Signed Jason Timmons, PE

If enclosures are not as noted, please notify us at once

Permit Application Forms and Fees

As discussed with the Department, HDR is providing Parts A, B and S of DEP Form# 62-701.900(1), F.A.C., in Attachment A. The remaining parts of the permit application submitted as part of the Phase I Closure permitting for Permit No. 130542-01-SF/01 are unchanged. In addition, a check in the amount of $250, for the minor permit modification application fee, is enclosed with this application.

Conformed Documents

A complete set of conformed construction documents was submitted to the Department on September 21, 2011, however, additional copies of the construction drawings (11x17 size) are provided in Attachment B and additional copies of the permit technical specifications with changes marked are provided in Attachment C for the Department's reference during review of the minor permit modification revisions.

Phase I Leachate Collection Pump Station Modifications (North Slope)

Locations and detail call outs for modifications to the leachate cleanout pump stations (LCP) located on the north toe of Phase I have been added to Sheet C-05. The following proposed modifications to LCP-1 through LCP-5 are intended to improve operations and maintenance of the LCPs:

1. Relocate the flow meter and check valve in the existing utility vault to above grade locations. This will allow easier access, monitoring, and repair of these components.
2. Remove the existing utility vault and replace with a smaller vault to encapsulate the gate valve and connection to the 6-inch force main.
3. Remove the gate valve and piping which would allow redirection of the pumped liquid to the stormwater swale. This piping was used when Phase I was first constructed, but is no longer needed for operations.
4. Construct an LCP concrete maintenance pad at each location to reduce sediment and water accumulation around the LCP. As part of the concrete maintenance pad, a drain will remove stormwater accumulated on the pad and discharge it to the leachate pump riser pipe.

Details for the proposed LCP modifications are provided on Sheet C-12A of the conformed construction drawings attached. The revisions to the pump station piping and meter locations do

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Memo

To: Jason Timmons, P.E.	
From: Itza Rivera-Frisco	Project: Sarasota County Phase I Closure, South Swale, ICPR Model Results
CC: File	
Date: October 20, 2011	Job No:

RE: ICPR Model Results

As part of the design of the Sarasota County Central County Solid Waste Disposal Facility, HDR generated an ICPR Stormwater Model (see attached input and output printouts including node diagram) to verify that for the 25 year, 24-hour storm the proposed and existing RCP and ADS pipes, the existing swale along the south side of the Phase I landfill, and the proposed swales on the south side of the existing East-West road on the south side of Phase I, were adequately sized to accommodate the runoff flow. These stormwater features are shown on several design and construction drawings for the Phase I Closure project, including Sheet C-05. The following are the results of the model.

Swales

The table below summarizes the maximum stages and the Top of Bank Elevations for the proposed and existing swales on the south side of Phase I.

Swale	*Maximum Stage*	*Top of Bank Elevation*
Ex. SSwale (node: Swale1/Sec1)	30.70 ft.	32.00 ft.
Prop. SW. Swale (node: Swale2/Sec1)	Upstream: 25.93 ft. Downstream: 25.76 ft.	32.00 ft.
Prop. S.E. Swale (node: Swale2/Sec2)	Upstream: 25.74 ft. Downstream: 25.68 ft.	32.00 ft.
Prop. S.End Swale (node: End Swale)	Upstream: 24.53 ft. Downstream: 22.92 ft.	32.00 ft.

Pipes

The model results show that none of the pipes (24" ADS, 36" RCP, 38"x60" Elliptical) will back up in this system. See Table below showing the Maximum Stage and Node Warning Stage.

Pipe	*Maximum Stage (ft)*	*Node Warning Stage (ft)*
24" ADS Pipe #1	116.23	117.00
24" ADS Pipe #2	75.02	76.00
24" ADS Pipe #3	75.46	76.00
24" ADS Pipe #5	75.27	76.00
24" ADS Pipe #7	26.08	33.00
24" ADS Pipe #8	26.95	33.00
36" Culvert #1	25.76	32.00
38X60 Pipe	30.70	32.00
36" Culvert #1	25.68	32.00

Summary

The proposed stormwater systems include 24" ADS terrace/downdrain pipes, 36" RCPs, an existing 38"x60" ERCP, a ditch bottom inlet, and an existing and proposed swale. The model demonstrates that the system is capable of capturing and discharging the 25-year, 24-hr storm event runoff flow into the existing north-south outfall (swale). The model also shows that the water elevation from the discharge of the 25-year, 24-hr storm into the existing and proposed swales never breaches the top of bank, thereby decreasing the probability of flooding the adjacent roadway.

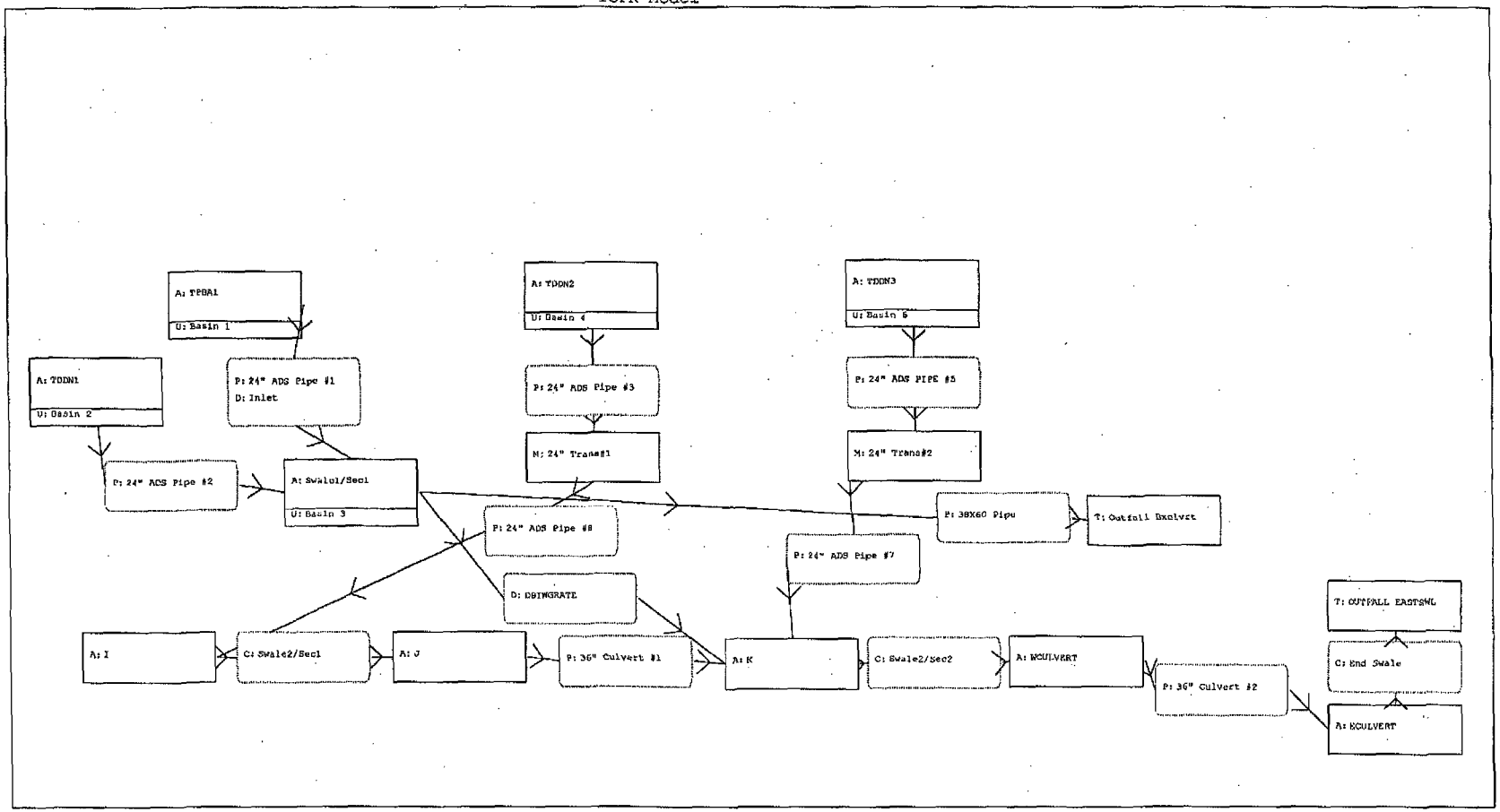
Please note that there is no additional stormwater flow being directed to the existing system. The existing ditch and stormwater system is sized to accommodate stormwater runoff from the entire Phase I area, therefore no modifications to the existing conveyance ditches on the east side of Phase I was required.

Phase I Closure - South Swale
ICPR Model

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



POND #1

ENERGY DISSIPATOR NORTH SLOPE (TYP)

STORMWATER DOWNDRAIN PIPE (TYP)

MEET AND MATCH EXISTING PAVEMENT (TYP)

EXISTING LEACHATE PUMP STATION (TYP)

PROPOSED LEACHATE PUMP STATION (TYP)

DOWNDRAIN TRENCH (TYP)

PROPOSED LEACHATE PUMP STATION ACCESS ROAD

FINAL COVER TIE IN (TYP)

EXISTING STORMWATER PERIMETER SWALES

LIMITS OF CONSTRUCTION

TYPICAL DRAINAGE TERRACE

APPROXIMATE LOCATION OF EXISTING LEACHATE FORCEMAIN (TYP)

TOE DRAIN TIE-IN TO 24" DOWNDRAIN

LIMITS OF EXISTING PHASE I/II OVERLAY LINER SYSTEM

TRANSITION FINAL COVER (SIDESLOPE) TO PHASE I/II OVERLAY LINER SYSTEM

TRANSITION FINAL COVER (SIDESLOPE) TO PHASE I/II OVERLAY LINER SYSTEM

CELL I

PROPOSED PHASE I/II OVERLAY LINER SYSTEM

SLOPE TO DRAIN

DOWNDRAIN AT TOP OF LANDFILL (TYP)

TERRACE/DOWNDRAIN INTERSECTION (TYP)

TRANSITION FINAL COVER (TOPSLOPE) TO PHASE I/II OVERLAY LINER SYSTEM

FINAL COVER PROFILE (TYP)

BERM ON TOP OF LANDFILL (TYP)

PHASE I

PHASE II (NIC)

EXISTING OVERLAY LINER TO NEW OVERLAY LINER TIE-IN

TRANSITION PHASE I/II OVERLAY LINER TO TEMPORARY FINAL COVER

DOWNDRAIN TRENCH (TYP) SOUTH SLOPE

RIDGE EL. 121

TERRACE/DOWNDRAIN INTERSECTION SOUTH SLOPE

ACCESS ROAD

LIMITS OF TPO

TRANSITION FINAL COVER (TOPSLOPE) TO TEMPORARY FINAL COVER

TPO CONNECTION TO HIGH-BOTTOM INLET

ENERGY DISSIPATOR (TYP) EAST SLOPE

TRANSITION FINAL COVER (SIDESLOPE) TO TEMPORARY FINAL COVER

FABRIC FORMED CONCRETE LINING OR FDOT DITCH LINING (RIP RAP)

EXISTING 38"X60" ERCP (TO REMAIN)

EXISTING BOX CULVERT (TO REMAIN)

MATCH EXISTING (EL 21.40)

FDOT DITCH LINING (RIP RAP)

24" ADS Pipe #1

24" ADS Pipe #2

24" ADS Pipe #3

24" ADS Pipe #4

24" ADS Pipe #5

36" CULVERT #1

Pipe #7

Pipe (CULVERT #2)

DBI WGrate

STORMWATER DOWNDRAIN DISCHARGE AT ROAD CROSSING (TYP OF 2)

REGRADE SOUTH SWALE AS REQUIRED AND REMOVE EXISTING CROSSINGS AND STORMWATER PIPE

CONTRACTOR STAGING, STORAGE AND STOCKPILE AREA ACCESS ROAD

PHASE III (NIC)

EXISTING PAVED ACCESS ROAD

LIMITS OF TPO

PHASE IV (NIC)

EXISTING MONITORING WELLS (TO BE EXTENDED)

NOTES:

1. TOPOGRAPHY WITHIN PHASES III AND IV AREAS COMPILED BY KUCERA INTERNATIONAL INC., OF WILLOUGHBY, OHIO USING PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHS DATED JUNE 2, 2010.
2. CONTOURS WITHIN PHASE I CLOSURE AREA REPRESENT PROPOSED TOP OF FINAL COVER.
3. OPERATIONAL AND FINAL GRADES SHALL NOT BE GREATER THAN 3:1.
4. APPROXIMATE LOCATION OF PHASE I LEACHATE FORCEMAIN OBTAINED FROM RECORD DRAWINGS BY CAMP DRESSER & McKEE, INC. DATED APRIL 1998. VERIFY LOCATION IN FIELD.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ROADS USED BY CONTRACTOR AND SUBCONTRACTORS DURING PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING MUD AND TRASH, SUPPRESSING DUST, AND REPAIRING ROADS AND OTHER FACILITIES DAMAGED BY HIS VEHICLES.
6. LFG WELLS NOT SHOWN FOR CLARITY.

LEGEND

- EXISTING CONTOUR
- PROPOSED ELEVATION
- SPECIAL BOUNDARY
- EXISTING ROADWAY
- LIMITS OF CONSTRUCTION
- APPROX. LOCATION OF PHASE I LEACHATE FORCEMAIN (SEE NOTE 4)
- TOE DRAIN
- LP LOW POINT
- HP HIGH POINT
- TERRACE/DOWNDRAIN INTERSECTION
- PHASE I LEACHATE PUMP STATIONS
- CONSTRUCTION TRAFFIC ROUTE (SEE NOTE 5)
- STORMWATER FLOW DIRECTION
- FABRIC FORMED CONCRETE LINING
- VAULT BOX
- LEACHATE PUMP STATION STABILIZED ACCESS ROAD

HDR
HDR Engineering, Inc.
2601 Cattlemen Rd., Ste. 106
Sarasota, FL 34232-6212
(941) 342-2700
CA00004293

ISSUE	DATE	DESCRIPTION
A	09/2010	DRAFT ISSUED FOR REVIEW

PROJECT MANAGER	R. SIEMERING
REVIEWED BY	J. TIMMONS, R. SIEMERING
CIVIL DESIGN	C. RESTREPO, T. YANOSCHACK
DRAWN BY	B. JOHNSON
PROJECT NUMBER	60096-131392-004

THOMAS M. YANOSCHAK, P. E.
CERTIFICATE NO. 44200

Central County Solid Waste Disposal Complex

PHASE I CLASS I LANDFILL CLOSURE AND LANDFILL GAS COLLECTION SYSTEM BID DRAWINGS

SARASOTA COUNTY FLORIDA

PHASE I CLOSURE FINAL SITE PLAN

0 1" 2"

FILENAME	00C-05A.DWG
SCALE	1"=100'

SHEET C-05A

Basins

Name: Basin 1 | Node: TPBA1 | Status: Onsite
Group: BASE | Type: SCS Unit Hydrograph CN

Unit Hydrograph:	Uh256	Peaking Factor:	256.0
Rainfall File:	Flmod	Storm Duration(hrs):	24.00
Rainfall Amount(in):	8.000	Time of Conc(min):	9.00
Area(ac):	0.560	Time Shift(hrs):	0.00
Curve Number:	79.00	Max Allowable Q(cfs):	999999.000
DCIA(%):	0.00		

Name: Basin 2 | Node: TDDN1 | Status: Onsite
Group: BASE | Type: SCS Unit Hydrograph CN

Unit Hydrograph:	Uh484	Peaking Factor:	484.0
Rainfall File:	Flmod	Storm Duration(hrs):	24.00
Rainfall Amount(in):	8.000	Time of Conc(min):	6.00
Area(ac):	0.670	Time Shift(hrs):	0.00
Curve Number:	98.00	Max Allowable Q(cfs):	999999.000
DCIA(%):	0.00		

Name: Basin 3 | Node: Swale1/Sec1 | Status: Onsite
Group: BASE | Type: SCS Unit Hydrograph CN

Unit Hydrograph:	Uh484	Peaking Factor:	484.0
Rainfall File:	Flmod	Storm Duration(hrs):	24.00
Rainfall Amount(in):	8.000	Time of Conc(min):	6.00
Area(ac):	4.190	Time Shift(hrs):	0.00
Curve Number:	98.00	Max Allowable Q(cfs):	999999.000
DCIA(%):	0.00		

Name: Basin 4 | Node: TDDN2 | Status: Onsite
Group: BASE | Type: SCS Unit Hydrograph CN

Unit Hydrograph:	Uh484	Peaking Factor:	484.0
Rainfall File:	Flmod	Storm Duration(hrs):	24.00
Rainfall Amount(in):	8.000	Time of Conc(min):	6.00
Area(ac):	1.120	Time Shift(hrs):	0.00
Curve Number:	98.00	Max Allowable Q(cfs):	999999.000
DCIA(%):	0.00		

Name: Basin 6 | Node: TDDN3 | Status: Onsite
Group: BASE | Type: SCS Unit Hydrograph CN

Unit Hydrograph:	Uh484	Peaking Factor:	484.0
Rainfall File:	Flmod	Storm Duration(hrs):	24.00
Rainfall Amount(in):	8.000	Time of Conc(min):	6.00
Area(ac):	1.050	Time Shift(hrs):	0.00
Curve Number:	98.00	Max Allowable Q(cfs):	999999.000
DCIA(%):	0.00		

Nodes

Name: 24" Trans#1 | Base Flow(cfs): 0.000 | Init Stage(ft): 26.050
Group: BASE | Plunge Factor: 1.00 | Warn Stage(ft): 33.000
Type: Manhole, Flat Floor

Stage(ft)	Area(ac)
26.050	0.0001
33.000	0.0001

Name: 24" Trans#2 Base Flow(cfs): 0.000 Init Stage(ft): 24.640
Group: BASE Plunge Factor: 1.00 Warn Stage(ft): 33.000
Type: Manhole, Flat Floor

Stage(ft)	Area(ac)
24.640	0.0001
33.000	0.0001

Name: ECULVERT Base Flow(cfs): 0.000 Init Stage(ft): 22.950
Group: BASE Warn Stage(ft): 32.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: I Base Flow(cfs): 0.000 Init Stage(ft): 25.000
Group: BASE Warn Stage(ft): 32.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: J Base Flow(cfs): 0.000 Init Stage(ft): 23.840
Group: BASE Warn Stage(ft): 32.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: K Base Flow(cfs): 0.000 Init Stage(ft): 23.600
Group: BASE Warn Stage(ft): 32.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: Outfall Bxclvrt Base Flow(cfs): 0.000 Init Stage(ft): 24.000
Group: BASE Warn Stage(ft): 32.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	24.000
999.00	29.000

Name: OUTFALL EASTSWL Base Flow(cfs): 0.000 Init Stage(ft): 21.400
Group: BASE Warn Stage(ft): 32.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	21.400
999.00	24.000

Name: Swale1/Sec1 Base Flow(cfs): 0.000 Init Stage(ft): 30.000
Group: BASE Warn Stage(ft): 32.000
Type: Stage/Area

Stage(ft)	Area(ac)
30.000	0.0330

31.000	0.3000
32.000	0.6100

Name: TDDN1 Base Flow(cfs): 0.000 Init Stage(ft): 74.000
Group: BASE Warn Stage(ft): 76.000
Type: Stage/Area

Terrace/Downdrain (southwest LF - Elev: 75)

Stage(ft)	Area(ac)
74.300	0.0010
75.000	0.0200
76.000	0.0600

Name: TDDN2 Base Flow(cfs): 0.000 Init Stage(ft): 74.000
Group: BASE Warn Stage(ft): 76.000
Type: Stage/Area

Terrace/Downdrain (southwest of access rd - Elev. 75)

Stage(ft)	Area(ac)
74.300	0.0010
75.000	0.0220
76.000	0.0560

Name: TDDN3 Base Flow(cfs): 0.000 Init Stage(ft): 74.000
Group: BASE Warn Stage(ft): 76.000
Type: Stage/Area

Terrace/Downdrain (southeast of access road - Elev. 75)

Stage(ft)	Area(ac)
74.300	0.0010
75.000	0.0220
76.000	0.0760

Name: TPBA1 Base Flow(cfs): 0.100 Init Stage(ft): 116.000
Group: BASE Warn Stage(ft): 117.000
Type: Stage/Area

Top of Landfill (SW Corner) LP EL. 116

Stage(ft)	Area(ac)
116.000	0.0300
117.000	0.0400

Name: WCULVERT Base Flow(cfs): 0.000 Init Stage(ft): 23.210
Group: BASE Warn Stage(ft): 32.000
Type: Stage/Area

Stage(ft)	Area(ac)

==========

==== Pipes ====

==========

Name: 24" ADS Pipe #1 From Node: TPBA1 Length(ft): 248.00
Group: BASE To Node: Swale1/Sec1 Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM		
Geometry:	Circular	Circular	Solution Algorithm:	Most Restrictive
Span(in):	24.00	24.00	Flow:	Both
Rise(in):	24.00	24.00	Entrance Loss Coef:	0.00
Invert(ft):	130.000	31.450	Exit Loss Coef:	1.00
Manning's N:	0.012000	0.012000	Bend Loss Coef:	0.70
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec:	Use dc
			Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular CMP: Projecting

Downstream FHWA Inlet Edge Description:
Circular CMP: Projecting

Name: 24" ADS Pipe #2 From Node: TDDN1 Length(ft): 149.00
Group: BASE To Node: Swale1/Sec1 Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	24.00	24.00
Rise(in):	24.00	24.00
Invert(ft):	74.300	31.450
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 1.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular CMP: Projecting

Downstream FHWA Inlet Edge Description:
Circular CMP: Projecting

Name: 24" ADS Pipe #3 From Node: TDDN2 Length(ft): 188.00
Group: BASE To Node: 24" Trans#1 Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	24.00	24.00
Rise(in):	24.00	24.00
Invert(ft):	74.300	35.000
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 1.00
Bend Loss Coef: 0.70
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular CMP: Projecting

Downstream FHWA Inlet Edge Description:
Circular: Smooth tapered inlet throat

Name: 24" ADS PIPE #5 From Node: TDDN3 Length(ft): 144.00
Group: BASE To Node: 24" Trans#2 Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	24.00	24.00
Rise(in):	24.00	24.00
Invert(ft):	74.300	35.000
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 1.00
Bend Loss Coef: 0.70
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: 24" ADS Pipe #7 From Node: 24" Trans#2 Length(ft): 88.00
Group: BASE To Node: K Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	24.00	24.00
Rise(in):	24.00	24.00
Invert(ft):	24.640	23.600
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000

Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 1.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc

Bot Clip(in): 0.000 0.000 Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular: Smooth tapered inlet throat

Downstream FHWA Inlet Edge Description:
Circular CMP: Mitered to slope

Name: 24" ADS Pipe #8 From Node: 24" Trans#1 Length(ft): 80.00
Group: BASE To Node: I Count: 1
Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 1.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	24.00	24.00
Rise(in):	24.00	24.00
Invert(ft):	26.050	25.000
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular: Smooth tapered inlet throat

Downstream FHWA Inlet Edge Description:
Circular CMP: Mitered to slope

Name: 36" Culvert #1 From Node: J Length(ft): 120.00
Group: BASE To Node: K Count: 1
Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 1.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	36.00	36.00
Rise(in):	36.00	36.00
Invert(ft):	23.840	23.600
Manning's N:	0.011000	0.011000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular CMP: Mitered to slope

Downstream FHWA Inlet Edge Description:
Circular CMP: Mitered to slope

36" Concrete culvert between existing monitoring wells MW-8 and CW-8A (S. of Landfill).

Name: 36" Culvert #2 From Node: WCULVERT Length(ft): 116.00
Group: BASE To Node: ECULVERT Count: 1
Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 1.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	48.00	48.00
Rise(in):	48.00	48.00
Invert(ft):	23.120	22.950
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular CMP: Mitered to slope

Downstream FHWA Inlet Edge Description:
Circular CMP: Mitered to slope

48" concrete culvert under existing access rd to mulch area (south of landfill).

Name: 38X60 Pipe From Node: Swale1/Sec1 Length(ft): 240.00
Group: BASE To Node: Outfall Bxclvrt Count: 1
Friction Equation: Automatic

	UPSTREAM	DOWNSTREAM
Geometry:	Horz Ellipse	Horz Ellipse
Span(in):	60.00	60.00
Rise(in):	38.00	38.00
Invert(ft):	29.700	29.000
Manning's N:	0.013000	0.013000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.70
Exit Loss Coef: 1.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

Channels

Name: End Swale
Group: BASE
From Node: ECULVERT
To Node: OUTFALL EASTSWL
Length(ft): 423.00
Count: 1

	UPSTREAM	DOWNSTREAM
Geometry:	Trapezoidal	Trapezoidal
Invert(ft):	22.950	22.000
TClpInitZ(ft):	9999.000	9999.000
Manning's N:	0.030000	0.030000
Top Clip(ft):	0.000	0.000
Bot Clip(ft):	0.000	0.000
Main XSec:		
AuxElev1(ft):		
Aux XSec1:		
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft):	4.000	4.000
LtSdSlp(h/v):	3.00	3.00
RtSdSlp(h/v):	3.00	3.00

Friction Equation: Automatic
Solution Algorithm: Automatic
Flow: Both
Contraction Coef: 0.100
Expansion Coef: 0.300
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

Name: Swale2/Sec1
Group: BASE
From Node: I
To Node: J
Length(ft): 600.00
Count: 1

	UPSTREAM	DOWNSTREAM
Geometry:	Trapezoidal	Trapezoidal
Invert(ft):	25.000	23.840
TClpInitZ(ft):	9999.000	9999.000
Manning's N:	0.030000	0.030000
Top Clip(ft):	0.000	0.000
Bot Clip(ft):	0.000	0.000
Main XSec:		
AuxElev1(ft):		
Aux XSec1:		
AuxElev2(ft):		
Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft):	4.000	4.000
LtSdSlp(h/v):	3.00	3.00
RtSdSlp(h/v):	3.00	3.00

Friction Equation: Automatic
Solution Algorithm: Automatic
Flow: Both
Contraction Coef: 0.100
Expansion Coef: 0.300
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

Name: Swale2/Sec2
Group: BASE
From Node: K
To Node: WCULVERT
Length(ft): 190.00
Count: 1

	UPSTREAM	DOWNSTREAM
Geometry:	Trapezoidal	Trapezoidal
Invert(ft):	23.600	23.210
TClpInitZ(ft):	9999.000	9999.000
Manning's N:	0.030000	0.030000
Top Clip(ft):	0.000	0.000
Bot Clip(ft):	0.000	0.000
Main XSec:		
AuxElev1(ft):		
Aux XSec1:		
AuxElev2(ft):		

Friction Equation: Automatic
Solution Algorithm: Automatic
Flow: Both
Contraction Coef: 0.100
Expansion Coef: 0.300
Entrance Loss Coef: 0.000
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

Aux XSec2:		
Top Width(ft):		
Depth(ft):		
Bot Width(ft):	4.000	4.000
LtSdSlp(h/v):	3.00	3.00
RtSdSlp(h/v):	3.00	3.00

Drop Structures

Name: DBIWGRATE From Node: Swale1/Sec1 Length(ft): 60.00
Group: BASE To Node: K Count: 1

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	24.00	24.00
Rise(in):	24.00	24.00
Invert(ft):	25.500	24.300
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.000
Exit Loss Coef: 1.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Groove end projecting

*** Weir 1 of 1 for Drop Structure DBIWGRATE ***

TABLE

Count: 1 Bottom Clip(in): 0.000
Type: Horizontal Top Clip(in): 0.000
Flow: Both Weir Disc Coef: 3.200
Geometry: Rectangular Orifice Disc Coef: 0.600

Span(in): 18.00 Invert(ft): 30.000
Rise(in): 48.00 Control Elev(ft): 30.000

Name: Inlet From Node: TPBA1 Length(ft): 248.00
Group: BASE To Node: Swale1/Sec1 Count: 1

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	24.00	24.00
Rise(in):	24.00	24.00
Invert(ft):	113.000	31.450
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Friction Equation: Automatic
Solution Algorithm: Most Restrictive
Flow: Both
Entrance Loss Coef: 0.000
Exit Loss Coef: 1.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure Inlet ***

TABLE

Count: 1 Bottom Clip(in): 0.000
Type: Horizontal Top Clip(in): 0.000
Flow: Both Weir Disc Coef: 3.200
Geometry: Circular Orifice Disc Coef: 0.600

Span(in): 24.00 Invert(ft): 116.000
Rise(in): 24.00 Control Elev(ft): 116.000

Hydrology Simulations

Name: So_Swle2G
Filename: E:\To Be Moved\Icpr3\So_Swle2G.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00

Rainfall File: Flmod
Rainfall Amount(in): 8.00

Time(hrs)	Print Inc(min)
30.000	5.00

Routing Simulations

Name: So_Swle2G Hydrology Sim: So_Swle2G
Filename: E:\To Be Moved\Icpr3\So_Swle2G.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 24.00
Min Calc Time(sec): 0.1000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
30.000	15.000

Group	Run
BASE	Yes

Phase I Closure - South Swale
Node Min/Max Report

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Ou
24" Trans#1	BASE	So_Swle2G	12.02	26.95	33.00	0.0030	342	12.01	6.47	
24" Trans#2	BASE	So_Swle2G	12.04	26.08	33.00	0.0049	286	12.00	6.13	
ECULVERT	BASE	So_Swle2G	12.10	24.53	32.00	0.0029	2981	12.08	28.50	
I	BASE	So_Swle2G	12.09	25.93	32.00	-0.0024	3511	12.02	6.46	
J	BASE	So_Swle2G	12.09	25.76	32.00	0.0043	4496	12.11	5.60	
K	BASE	So_Swle2G	12.08	25.74	32.00	0.0047	1949	12.03	29.49	
Outfall Bxclvrt	BASE	So_Swle2G	24.00	24.12	32.00	0.0001	320	12.01	9.70	
OUTFALL EASTSWL	BASE	So_Swle2G	24.00	21.46	32.00	0.0000	922	12.10	28.36	
Swale1/Sec1	BASE	So_Swle2G	12.01	30.70	32.00	-0.0047	10304	12.00	31.30	
TDDN1	BASE	So_Swle2G	12.00	75.02	76.00	-0.3000	1043	12.00	4.03	
TDDN2	BASE	So_Swle2G	12.01	75.46	76.00	-0.3000	1809	12.00	6.73	
TDDN3	BASE	So_Swle2G	12.01	75.27	76.00	-0.3000	1736	12.00	6.31	
TPBA1	BASE	So_Swle2G	12.05	116.23	117.00	0.0005	1420	12.00	2.28	
WCULVERT	BASE	So_Swle2G	12.08	25.68	32.00	0.0050	2077	12.05	28.80	

Phase I Closure - South Swale
Link Min/Max Report

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
24" ADS Pipe #1	BASE	So_Swle2G	0.00	0.00	0.000	12.05	116.23	12.01	30.70
24" ADS Pipe #2	BASE	So_Swle2G	12.00	3.96	-0.404	12.00	75.02	12.00	31.69
24" ADS Pipe #3	BASE	So_Swle2G	12.01	6.47	0.218	12.01	75.46	12.01	35.33
24" ADS PIPE #5	BASE	So_Swle2G	12.00	6.13	-0.370	12.01	75.27	12.00	35.30
24" ADS Pipe #7	BASE	So_Swle2G	12.01	6.03	-1.279	12.04	26.08	12.08	25.74
24" ADS Pipe #8	BASE	So_Swle2G	12.02	6.46	0.090	12.02	26.95	12.02	25.65
36" Culvert #1	BASE	So_Swle2G	12.19	8.15	0.081	12.09	25.76	12.08	25.74
38X60 Pipe	BASE	So_Swle2G	12.01	9.70	0.943	12.01	30.70	12.01	29.76
DBIWGRATE	BASE	So_Swle2G	12.01	20.78	-0.124	12.01	30.70	12.08	25.74
End Swale	BASE	So_Swle2G	12.10	28.36	-0.070	12.10	24.53	12.10	22.92
Inlet	BASE	So_Swle2G	12.05	2.25	0.006	12.05	116.23	12.01	30.70
Swale2/Sec1	BASE	So_Swle2G	12.11	5.60	-0.016	12.09	25.93	12.09	25.76
Swale2/Sec2	BASE	So_Swle2G	12.05	28.80	-0.072	12.08	25.74	12.08	25.68