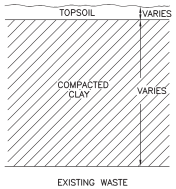
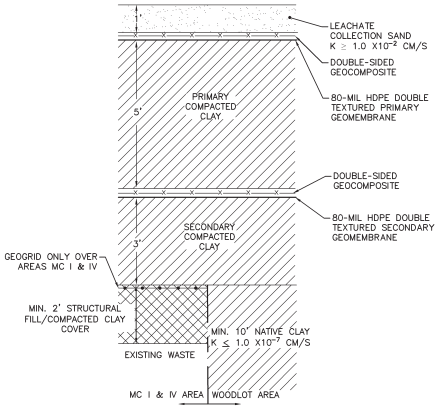
SEQUENCE OF CONSTRUCTION

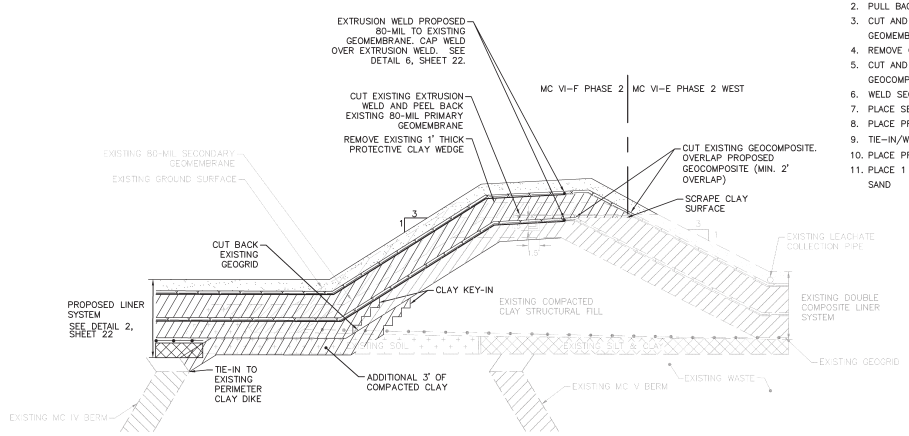
1. REMOVE CLAY WEDGE
2. PULL BACK PRIMARY GEOCOMPOSITE
3. CUT AND PULL BACK PRIMARY GEOMEMBRANE
4. REMOVE OUTSIDE CLAY DIKE
5. CUT AND PULL BACK SECONDARY GEOCOMPOSITE
6. WELD SECONDARY GEOMEMBRANE
7. PLACE SECONDARY GEOCOMPOSITE
8. PLACE PRIMARY CLAY
9. TIE-IN/WELD PRIMARY GEOMEMBRANE
10. PLACE PRIMARY GEOCOMPOSITE
11. PLACE 1 FOOT OF LEACHATE COLLECTION SAND



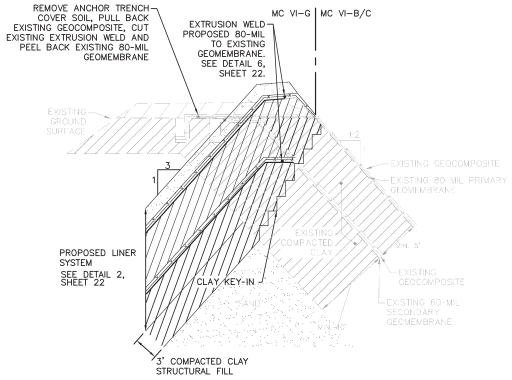
1 / 22 EXISTING COVER DETAIL
NOT TO SCALE



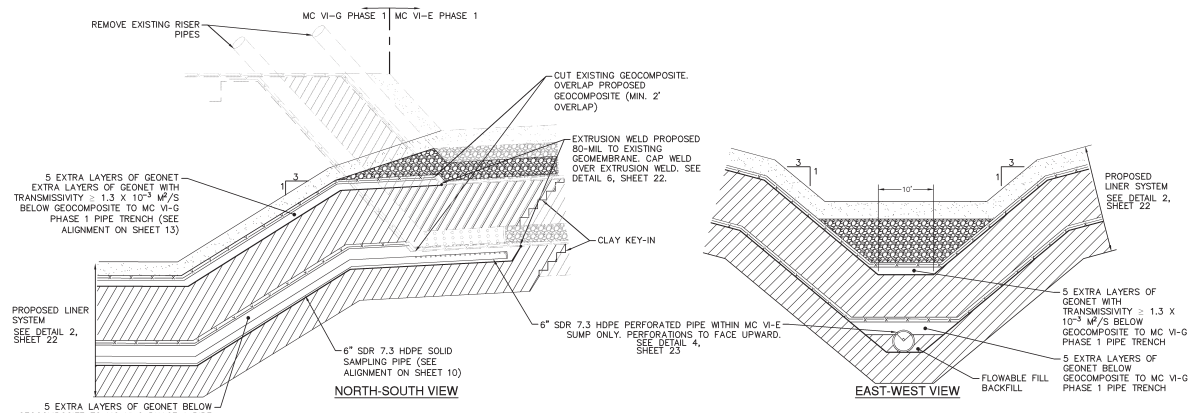
2 / 22 PROPOSED LINER SYSTEM
NOT TO SCALE



3 / 22 MC VI-F PHASE 2 & MC VI-E PHASE 2 WEST TIE-IN DETAIL
NOT TO SCALE



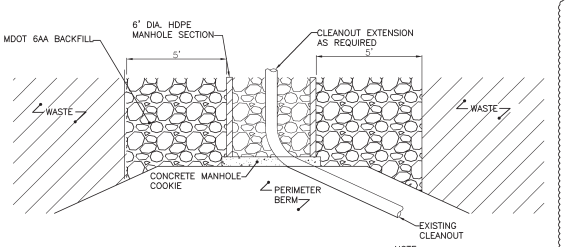
4 / 22 MC VI-G AND MC VI-B OR C TIE-IN DETAIL
NOT TO SCALE



5 / 22 MC VI-E PHASE 1 TRANSFER TRENCH DETAIL
NOT TO SCALE

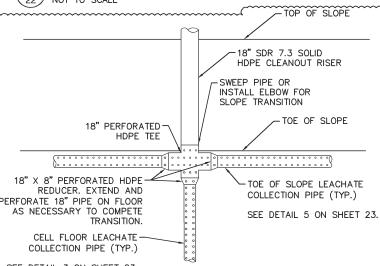
NOTE: DETAIL APPLIES AT LOCATIONS WHERE PROPOSED GEOMEMBRANE TIES INTO EXISTING GEOMEMBRANE

6 / 22 GEOMEMBRANE WELDING DETAIL
NOT TO SCALE

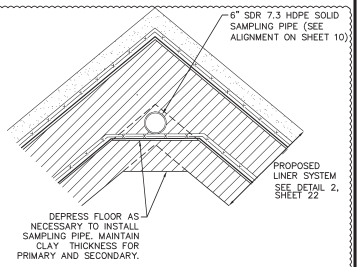


NOTE:
STONE BACKFILL TO BE PLACED AT SAME HEIGHT ON INTERIOR AND EXTERIOR OF MANHOLE.

7 / 22 CLEANOUT EXTENSION
NOT TO SCALE



8 / 22 ENLARGED CLEANOUT ACCESS
NOT TO SCALE



9 / 22 MC VI-E PHASE 1 SAMPLING PIPE
NOT TO SCALE

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Infrastructure Engineering and Environmental Services

Northville, MI	248.553.6300
Detroit, MI	313.237.3900
Lansing, MI	517.484.6900
Grand Rapids, MI	616.957.3690
Exton, PA	610.524.2300
Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY
A	PHASING DESIGNATIONS	8/15/11	DRL
B	PER MDEQ COMMENTS	9/23/11	DRL

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: LINER SYSTEM DETAILS
DESIGNED BY: JHL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: ISS	SUBMITTED DATE: 9/23/11

SHEET TITLE:
LINER SYSTEM DETAILS

SHEET REFERENCE NUMBER:
22

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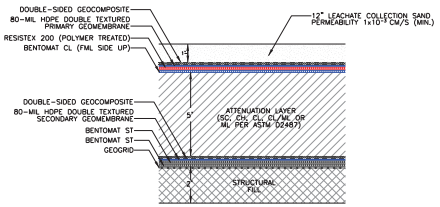
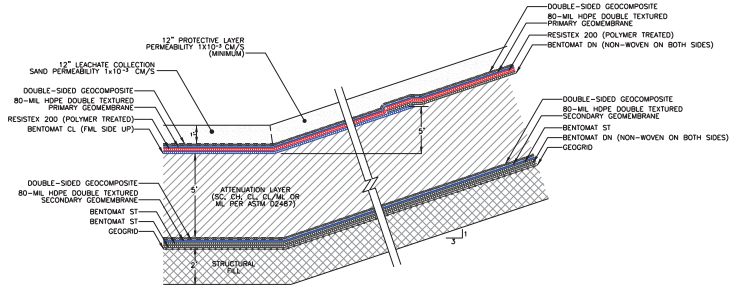


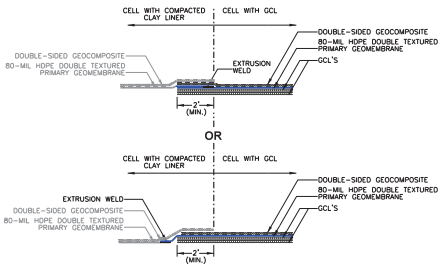
PROPOSED FLOOR LINER SYSTEM 1

NOT TO SCALE



PROPOSED SIDESLOPE LINER SYSTEM 2

NOT TO SCALE



LINER TIE-IN DETAIL 3

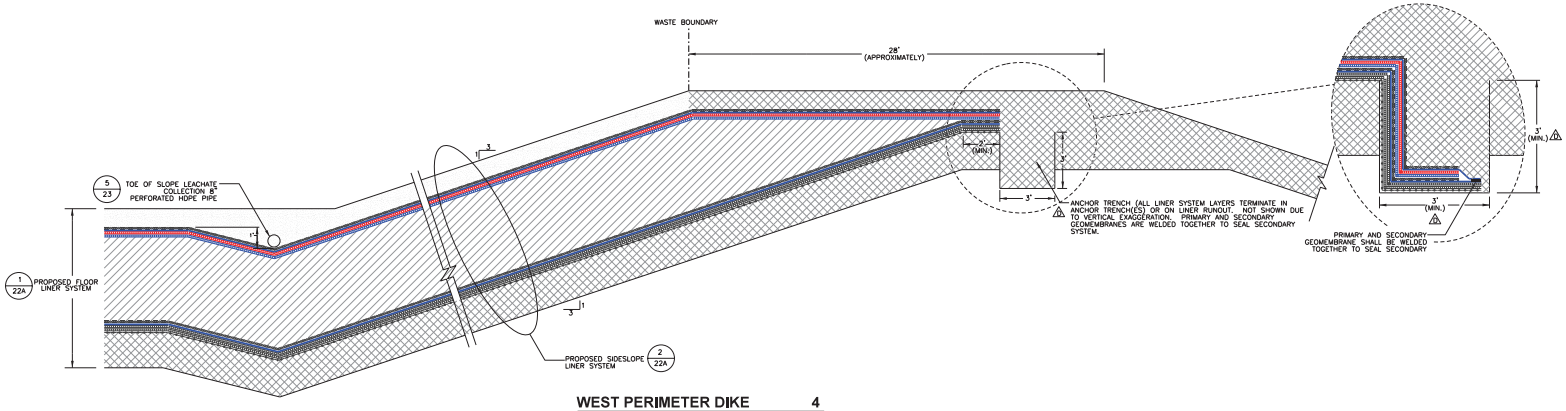
NOT TO SCALE

NOTES:

NEW AND EXISTING GEOCOMPOSITE LAYERS SHALL BE CONNECTED AS:

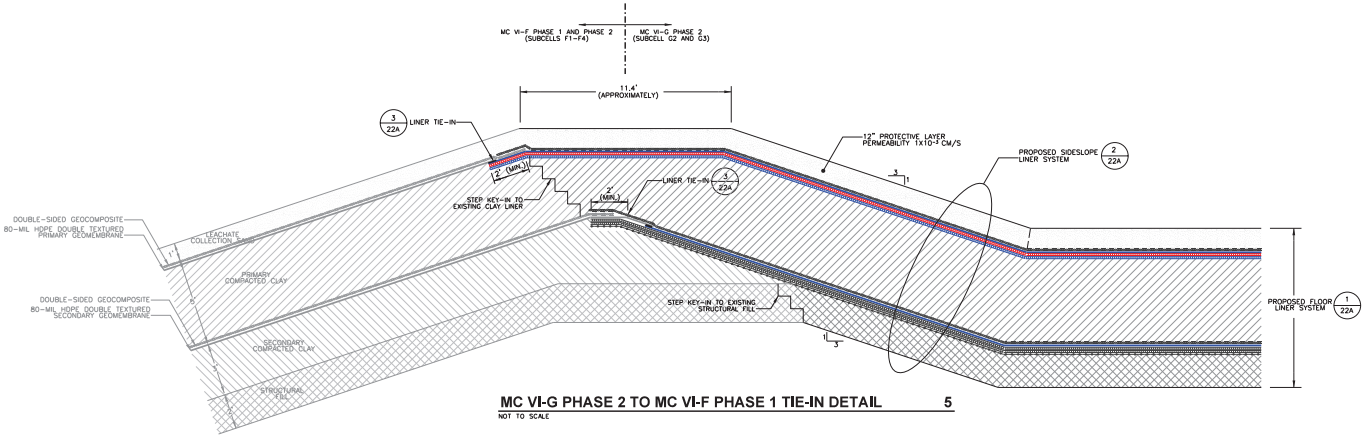
A. GEONET CORES SHALL BE JOINED BY PLASTIC FASTENERS.

B. TOP GEOTEXTILE SHALL BE SEWED TOGETHER.



WEST PERIMETER DIKE 4

NOT TO SCALE



MC VI-G PHASE 2 TO MC VI-F PHASE 1 TIE-IN DETAIL 5

NOT TO SCALE

REV	DATE	REVISION DESCRIPTION	DRN	APP
D	5/08/18	REVISION BASED ON MDEQ'S COMMENTS	PAA	XZ
C	5/02/18	SUBCELLS G2 AND G3 REVISIONS		

CTI and Associates, Inc.
28001 Cabot Drive, Ste. 250
Novi, Michigan 48377
248.486.0100 (tel)/248.486.5060 (fax)
www.cti-cti.com

DATE:	5/02/18
DESIGNED BY:	XZ
DRAWN BY:	PAA
CHECKED BY:	TYS
APPROVED BY:	XZ

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WAYNE DISPOSAL, INC. SITE NO. 2
BELLEVILLE, MICHIGAN

LINER SYSTEM DETAILS (FOR MC VI-G PHASE 2 SUBCELL G2 AND G3)

PROJECT NUMBER 118070010

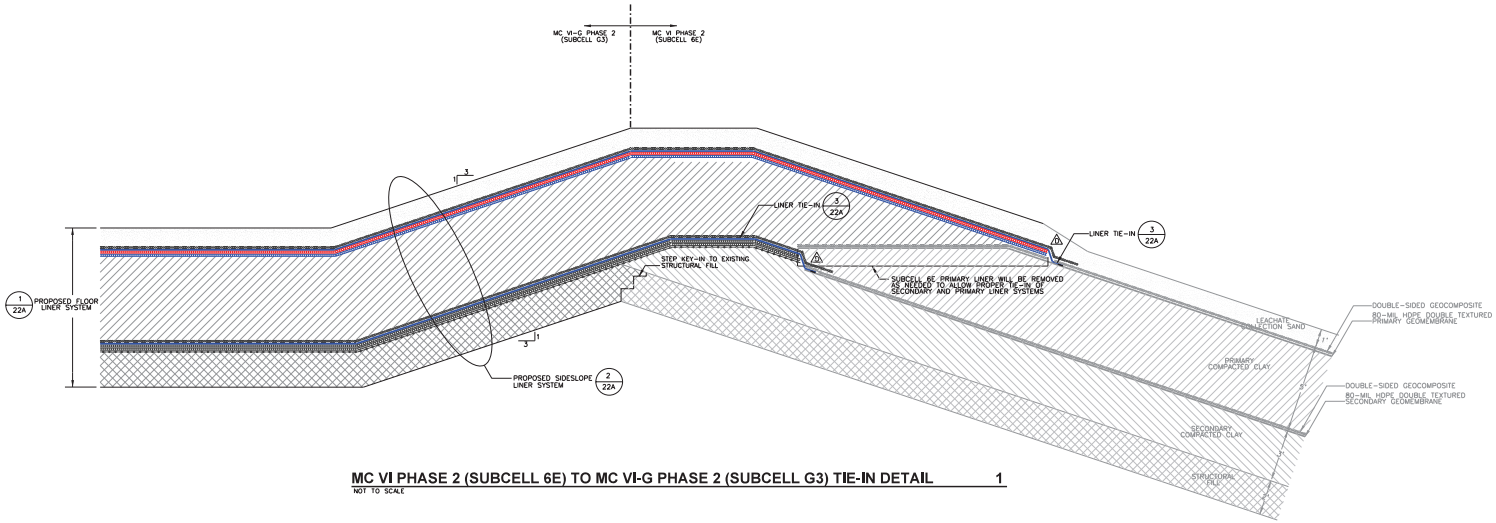
SCALE NTS

DRAWING NO **22A**

DRAWING SIZE: 24" x 36"

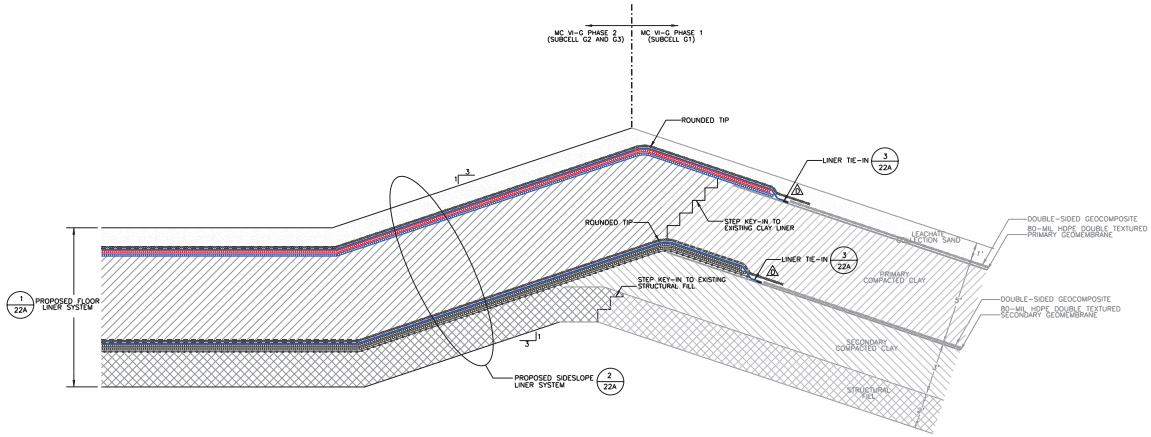
TIME PLOTTED: 8:34AM
DATE PLOTTED: 5/9/2018
PLOTTED BY: PAUL ANDERSON

022A LINER SYSTEM DETAILS 042518.dgn 5/9/2018 5:45:05 PM C:\Users\pab\Documents\EIL 2014 PROJECT\CTI\WAYNE LF CELLS CONST PLANS\022A LINER SYSTEM DETAILS 042518.dgn



MC VI PHASE 2 (SUBCELL 6E) TO MC VI-G PHASE 2 (SUBCELL G3) TIE-IN DETAIL 1

NOT TO SCALE



MC VI-G PHASE 1 AND MC VI-G PHASE 2 TIE-IN DETAIL 2

NOT TO SCALE

REVISIONS			
REV	DATE	REVISION DESCRIPTION	DRN	APP
C	5/02/18	SUBCELLS G2 AND G3 REVISIONS	PAA	XZ
D	5/08/18	REVISION BASED ON MDEQ'S COMMENTS		

CTI and Associates, Inc.
28001 Cabot Drive, Ste. 250
Novi, Michigan 48377
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DATE:	5/02/18
DESIGNED BY:	XZ
DRAWN BY:	PAA
CHECKED BY:	TYS
APPROVED BY:	XZ

WAYNE DISPOSAL INC. SITE NO. 2
BELLEVILLE, MICHIGAN

LINER SYSTEM DETAILS (FOR MC VI-G PHASE 2 SUBCELL G2 AND G3)

PROJECT NUMBER 118070010

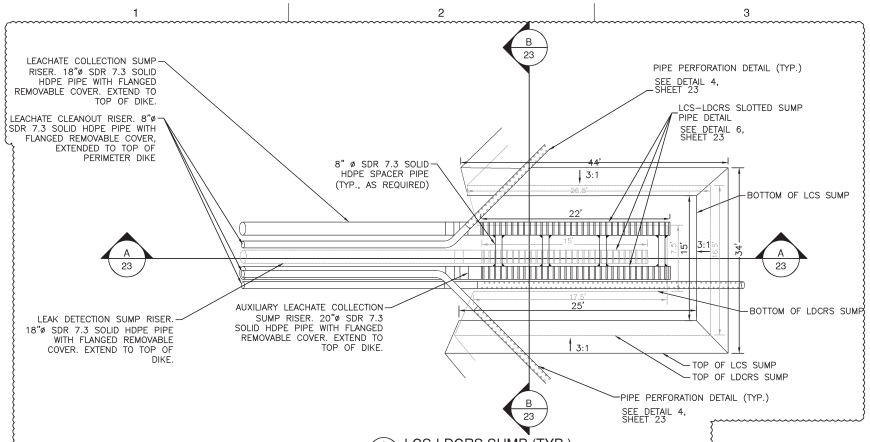
SCALE NTS

DRAWING NO **22B**

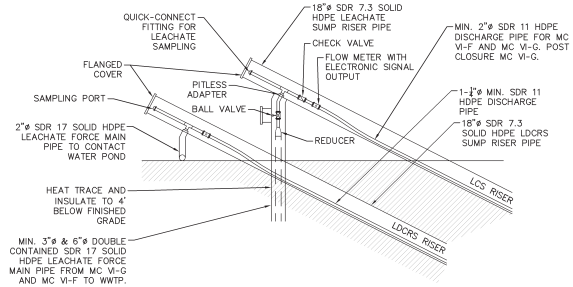
TIME PLOTTED: 8:44AM
DATE PLOTTED: 5/9/2018
PLOTTED BY: PAUL ANDERSON

DRAWING SIZE: 24" x 36"

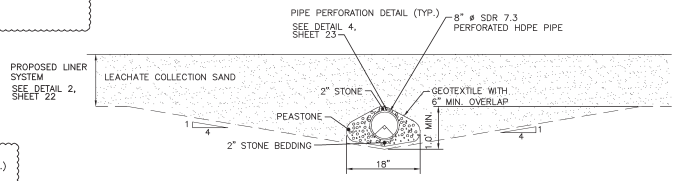
02.28 LINER SYSTEM DETAILS 042518.dgn 5/9/2018 5:44:27 PM C:\Users\pab\Documents\EIL 2014 PROJECTS\CTI\WAYNE LF CELLS CONST PLANS\02.28 LINER SYSTEM DETAILS 042518.dgn



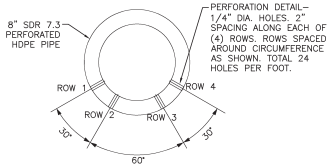
1 / 23 LCS-LDCRS SUMP (TYP.)
NOT TO SCALE



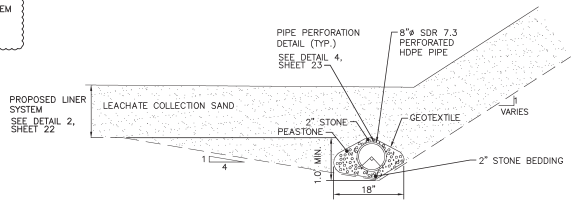
2 / 23 LCS AND LDCRS RISER DETAIL
NOT TO SCALE



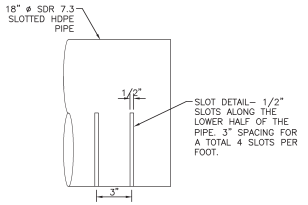
3 / 23 CELL FLOOR LEACHATE COLLECTION PIPE (TYP.)
NOT TO SCALE



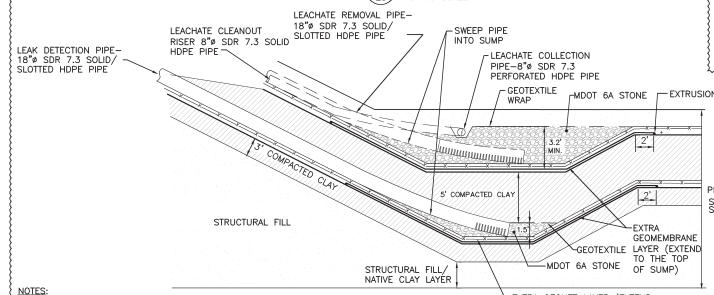
4 / 23 PIPE PERFORATION DETAIL (TYP.)
NOT TO SCALE



5 / 23 TOE OF SLOPE LEACHATE COLLECTION PIPE (TYP.)
NOT TO SCALE

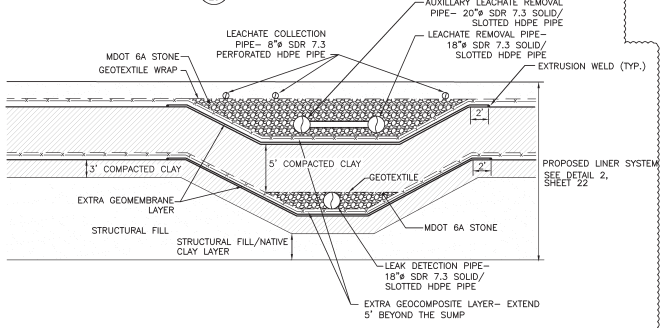


6 / 23 LCS-LDCRS SLOTTED SUMP PIPE DETAIL
NOT TO SCALE



NOTES:
1. THE LCS AND LDCRS PUMP ELEVATIONS ARE:
   LDCRS "PUMP-ON" ELEV= TOP OF LDCRS SUMP
   LDCRS "PUMP-OFF" ELEV= 1 FOOT ABOVE LDCRS SUMP BOTTOM
   LCS "PUMP-ON" ELEV= AT LCS PIPE INVERT
   LCS "PUMP-OFF ELEV= 1 FOOT ABOVE LCS SUMP BOTTOM
2. OTHER "PUMP-ON"/"PUMP-OFF" CONTROLS MAY BE USED PROVIDED LESS THAN 1 FOOT OF LEACHATE HEAD ON THE LINER IS MAINTAINED.
3. THE AUXILLARY LEACHATE REMOVAL PIPE IS REQUIRED FOR THE MC VI-G PHASE 1 SUMP ONLY.

A / 23 SUMP CROSS-SECTION A
NOT TO SCALE



B / 23 SUMP CROSS-SECTION B
NOT TO SCALE

Geosynthetic Materials

Material	Location	Description	Product	Additional Requirements
80-mil Geomembrane	Primary and secondary liners	80-mil HDPE, textured both sides	GSE HD textured, or equivalent	Interface friction requirements in CQA Plan
40-mil Geomembrane	Final cover	40-mil HDPE, textured both sides	GSE HD textured, or equivalent	Interface friction requirements in CQA Plan
Geosynthetic Clay Liner	Final cover	Sodium bentonite encapsulated between two geotextiles that are needle punched or stitch bonded together	CETCO Bentomat ST, or equivalent	Internal shear strength requiremnts in CQA Plan
Geocomposite	LCS and LDCRS	200-mil HDPE, bonded top and bottom to geotextile meeting requirements below	GSE FABRINET, or equivalent	Transmissivity and interface friction requirements in CQA Plan
Cover Geocomposite	Final cover	200-mil HDPE, bonded top and bottom to geotextile meeting requirements below	GSE FABRINET, or equivalent	Transmissivity and interface friction requirements in CQA Plan
Geonet	LCS and LDCRS sumps, and LDCRS collectors	200-mil HDPE	GSE HYPERNET, or equivalent	Transmissivity requirements in CQA Plan
Geotextile	All geocomposites, gravel/geotextile envelopes for LCS, and final cover perimeter drain	Nominal 8 oz/yd2, needle-punched, nonwoven polypropylene	Amoco 4508, Synthetic Industries Geotex 801, or equivalent	AASHTO M288-96 requirements for Drainage Geotextile (Class 2)
Geogrid	Above Subgrade	Biaxial Polymeric Grid	Huesker Fortrac 80-80, or equivalent	None

LCS denotes leachate collection system
LDCRS denotes leak detection, collection, and removal system

NTH Consultants, Ltd.
Infrastructure Engineering and Environmental Services

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Lansing, MI	517.484.6900
Grand Rapids, MI	616.957.3690
Exton, PA	610.524.2300
Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY
B	PER MDEQ COMMENTS	9/23/11	DRL

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: LEACHATE COLLECTION SYSTEM DETAILS
DESIGNED BY: JHL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: ISS	SUBMITTED DATE: 9/23/11

SHEET TITLE:
LEACHATE COLLECTION SYSTEM DETAILS

SHEET REFERENCE NUMBER:
23

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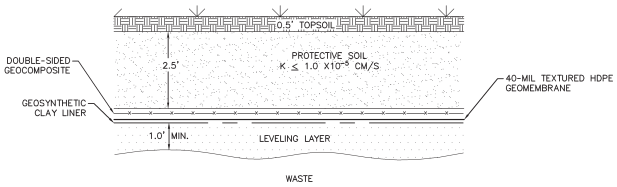
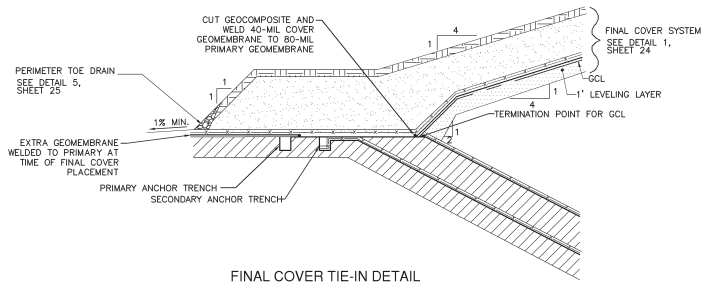
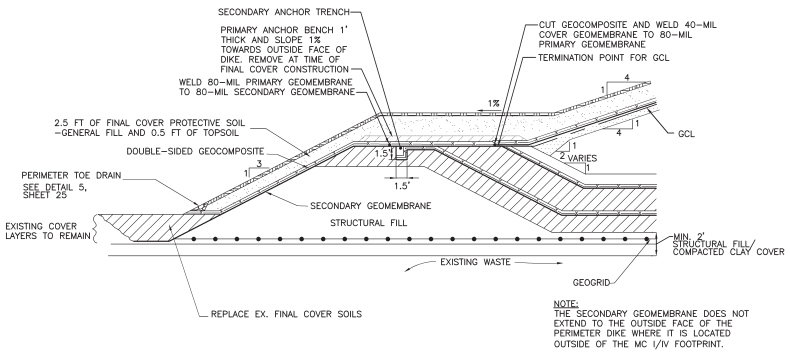


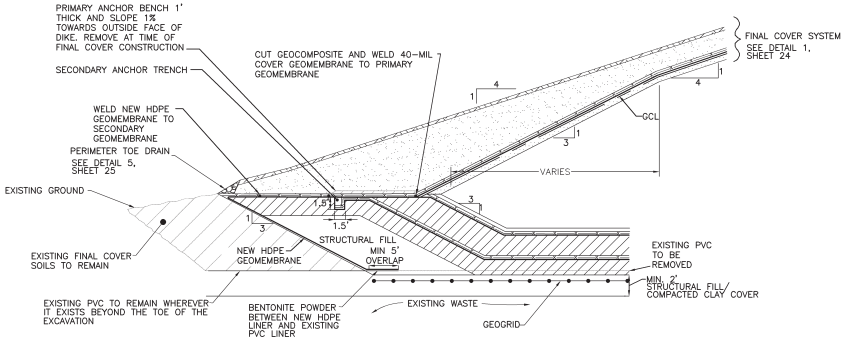
1/24 FINAL COVER SYSTEM
NOT TO SCALE



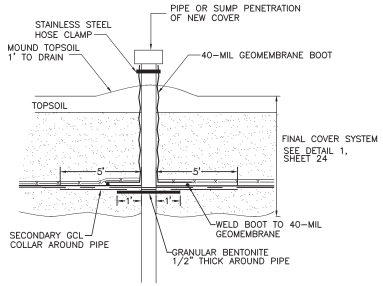
FINAL COVER TIE-IN DETAIL
2/24 MC VI-AN, AS, C & D
NOT TO SCALE



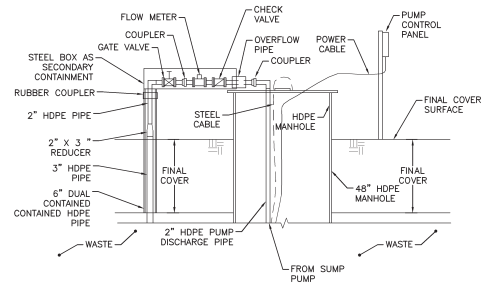
DIKE AND COVER TIE-IN DETAIL (TYP.)
3/24 MC VI-F, G & EAST SIDE OF VI-E
NOT TO SCALE



DIKE AND COVER TIE-IN DETAIL
4/24 NORTH SIDE OF MC VI-E
NOT TO SCALE



5/24 FINAL COVER PENETRATION DETAIL (TYP.)
NOT TO SCALE



LEACHATE SUMP RISER PIPING DETAIL
6/24 (VI-A, B, C, & D RISERS)
NOT TO SCALE

NTH Consultants, Ltd.
Infrastructure Engineering and Environmental Services

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Detroit, MI	313.237.3900
Lansing, MI	517.484.6900
Grand Rapids, MI	616.957.3690
Exton, PA	610.524.2300
Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: FINAL COVER DETAILS
DESIGNED BY: DRL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: RBM	SUBMITTED DATE: 2/28/11

SHEET TITLE:
FINAL COVER DETAILS

SHEET REFERENCE NUMBER:
24

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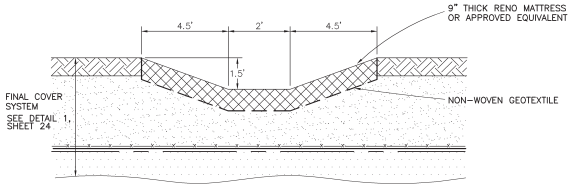
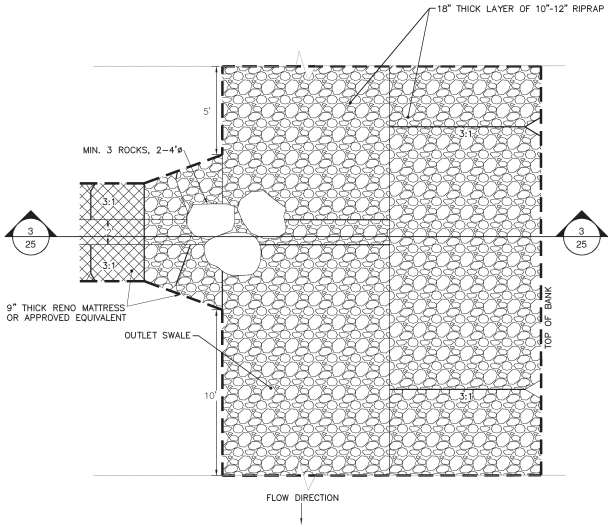
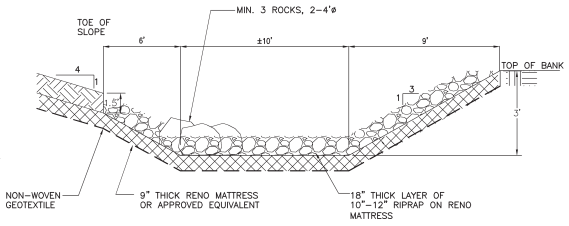


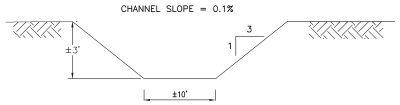
1/25 SPILLWAY CROSS-SECTION
NOT TO SCALE



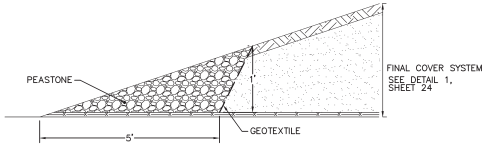
2/25 TOE OF SPILLWAY DOWNSLOPE CHANNEL
NOT TO SCALE



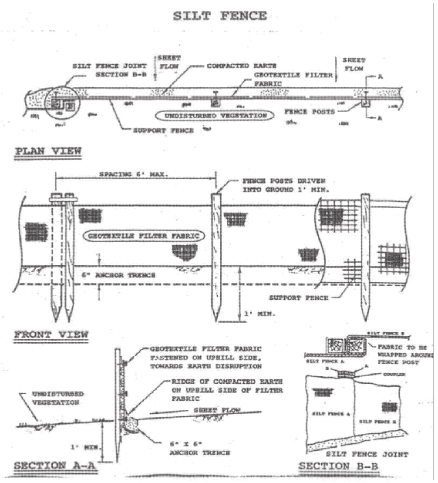
3/25 TOE OF SPILLWAY PROFILE
NOT TO SCALE



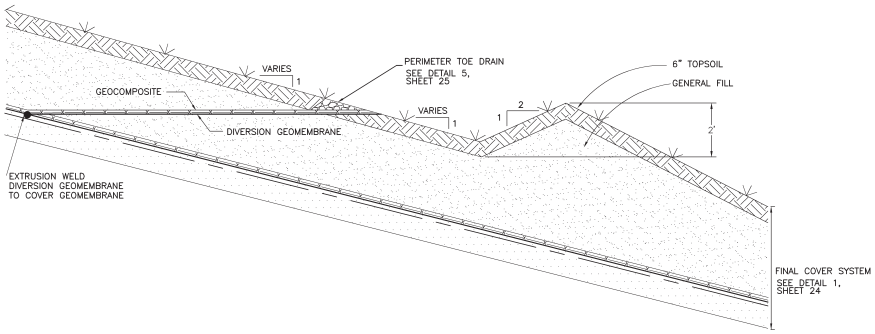
4/25 OUTLET SWALE CROSS SECTION (TYP.)
NOT TO SCALE



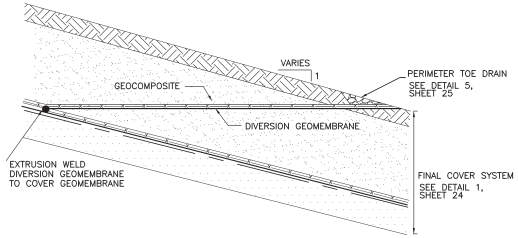
5/25 PERIMETER TOE DRAIN
NOT TO SCALE



6/25 SILT FENCE DETAIL (TYP.)
NOT TO SCALE



7/25 DIVERSION BERM DETAIL (TYP.)
NOT TO SCALE



8/25 DIVERSION GEOMEMBRANE DETAIL (TYP.)
NOT TO SCALE

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Infrastructure Engineering and Environmental Services

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Detroit, MI	313.237.3900
Lansing, MI	517.484.6900
Grand Rapids, MI	616.957.3690
Exton, PA	610.524.2300
Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: STORM WATER MANAGEMENT SYSTEM DETAILS
DESIGNED BY: DRL	INCEP DATE: 11/12/08
DRAWN BY: DRL	DRAWING SCALE: AS SHOWN
CHECKED BY: RBM	SUBMITTED DATE: 2/28/11

SHEET TITLE:
STORM WATER MANAGEMENT SYSTEM DETAILS

SHEET REFERENCE NUMBER:
25

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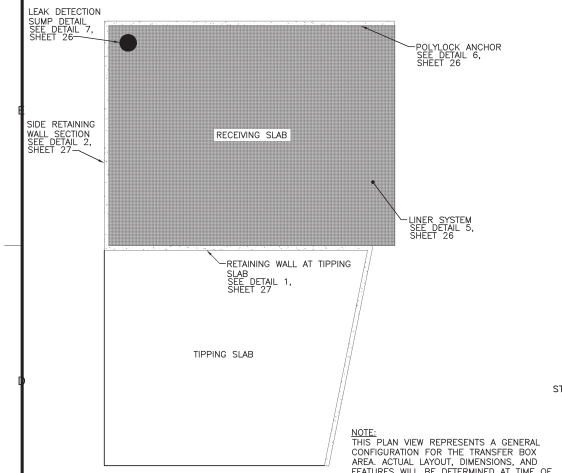
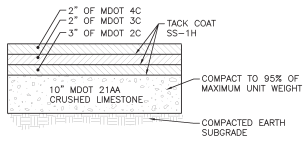
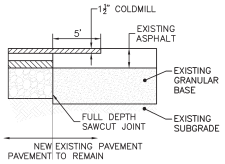


NOTE:
THIS PLAN VIEW REPRESENTS A GENERAL CONFIGURATION FOR THE TRANSFER BOX AREA. ACTUAL LAYOUT, DIMENSIONS, AND FEATURES WILL BE DETERMINED AT TIME OF TRANSFER BOX LOCACTION/RELOCATION.

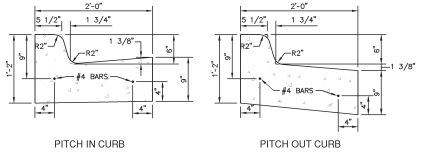
1/26 TRANSFER BOX PLAN VIEW
NOT TO SCALE



2/26 TYPICAL PAVEMENT DETAIL
NOT TO SCALE

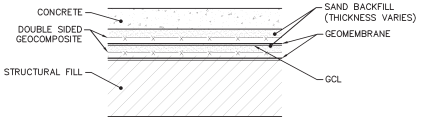


3/26 BUTT JOINT
NOT TO SCALE

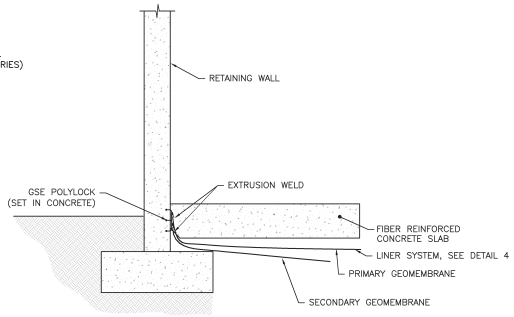


NOTE:
BASE AND SUBBASE AGGREGATES TO EXTEND MINIMUM 1'-0" BEHIND BACK OF CURB.

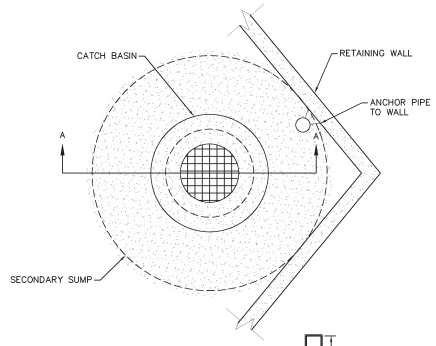
4/26 F4 CURB DETAIL
NOT TO SCALE



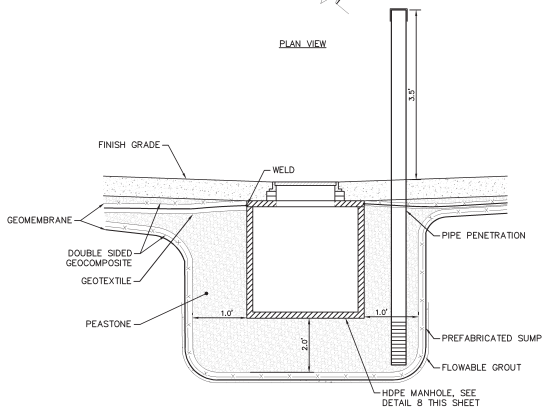
5/26 LINER SYSTEM
NOT TO SCALE



6/26 POLYLOCK ANCHOR
NOT TO SCALE

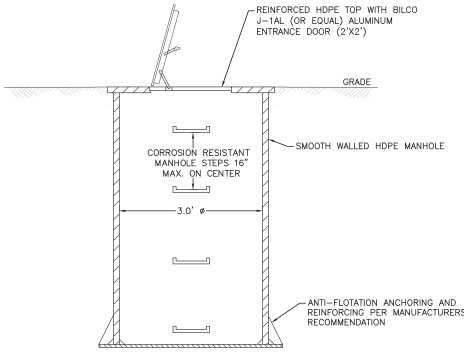


PLAN VIEW



SECTION A–A' VIEW

7/26 LEAK DETECTION SUMP DETAIL
NOT TO SCALE



8/26 HDPE CATCH BASIN
NOT TO SCALE

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Lehigh Valley, PA	484.893.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY

PROJECT NAME:
MASTER CELL VI F&G

PROJECT LOCATION:
WAYNE DISPOSAL, INC.
SITE NO. 2
BELLEVILLE, MICHIGAN

NTH PROJECT NO.: 13-060921-03	CAD FILE NAME: TRANSFER BOX DETAILS
DESIGNED BY: KRO	INCEP DATE: 11/12/08
DRAWN BY: KRO	DRAWING SCALE: NONE
CHECKED BY: RBM	SUBMITTED DATE: 2/28/11

SHEET TITLE:
TRANSFER BOX DETAILS (1 OF 2)

SHEET REFERENCE NUMBER:
26

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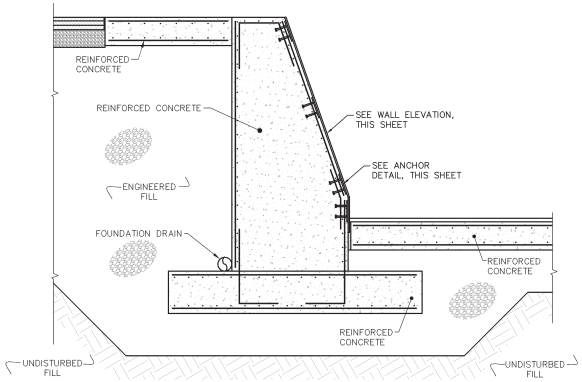
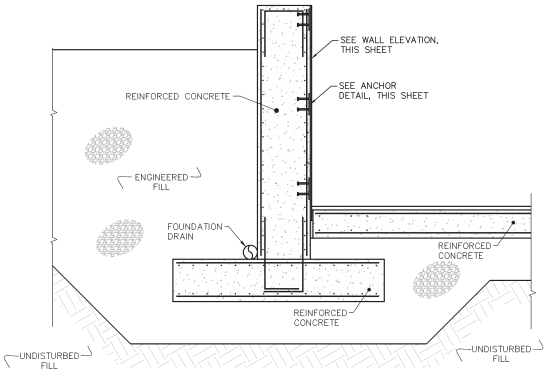
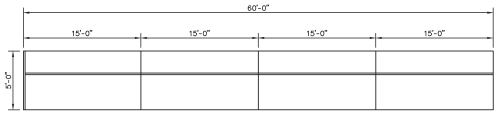


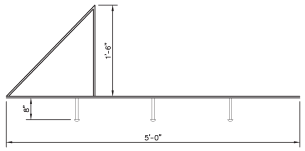
1/27 RETAINING WALL AT TIPPING SLAB
NOT TO SCALE



2/27 SIDE RETAINING WALL SECTION
NOT TO SCALE

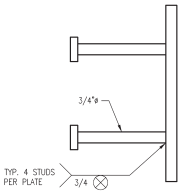


PLAN VIEW

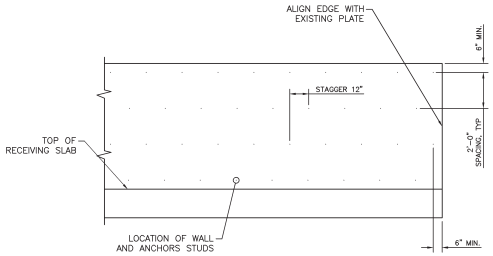


ELEVATION VIEW

3/27 TRUCK STOP SECTION
NOT TO SCALE



4/27 ANCHOR DETAIL
NOT TO SCALE



5/27 WALL ELEVATION
NOT TO SCALE

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Infrastructure Engineering and Environmental Services

Northville, MI	248.553.6300
Detroit, MI	313.237.3900
Lansing, MI	517.484.6900
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SHEET TITLE:
TRANSFER BOX DETAILS
(2 OF 2)

SHEET REFERENCE NUMBER:
27

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