Application for Registration MSW – XXXXX
Type V – Municipal Solid Waste Facility

Nexus Material Recovery and Transfer Station

Harris County~~,~~
Houston, Texas

Prepared for
Nexus Continuum, LLC

~~October 2011~~ April 2012

Prepared by:

HDR Engineering, Inc.
17111 Preston Road
Suite 200
Dallas, Texas 75248
TBPE Firm Registration F - 754

Signature Page

I, Efrain González (Operator), President (Title),

certify under penalty of law that this 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 who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: Efrain González Date: 04/04/2012

TO BE COMPLETED BY THE OPERATOR IF THE APPLICATION IS SIGNED BY AN AUTHORIZED REPRESENTATIVE FOR THE OPERATOR

I, Efrain González (Print or Type Operator Name), hereby designate Efrain González Jr (Print or Type Representative Name)

as my representative and hereby authorize said representative to sign any application, submit additional information as may be requested by the Commission; and/or appear for me at any hearing or before the Texas Commission on Environmental Quality in conjunction with this request for a Texas Water Code or Texas Solid Waste Disposal Act permit. I further understand that I am responsible for the contents of this application, for oral statements given by my authorized representative in support of the application, and for compliance with the terms and conditions of any permit which might be issued based upon this application.

Efrain González Jr
Printed or Typed Name of Operator or Principal Executive Officer

Efrain González Jr
Signature

SUBSCRIBED AND SWORN to before me by the said _____

On this 4th day of April, 2012

My commission expires on the 27th day of February, 2013

MINERVA GONZALEZ
MY COMMISSION EXPIRES
February 27, 2013

_____
Notary Public in and for

Harris County, Texas

(Note: Application Must Bear Signature & Seal of Notary Public)

Part I

Nexus Continuum, LLC

Type V- Municipal Solid Waste Facility

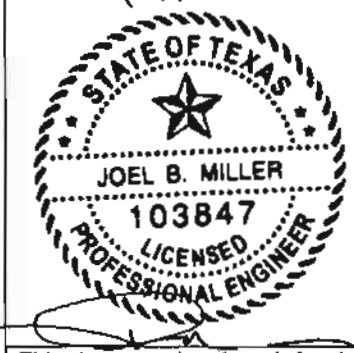
Nexus Material Recovery and Transfer Station

MSW Registration No. XXXXX

Harris County
Houston, Texas

~~**December 2011**~~ **April 2012**

4.11.12



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For pages 1 thru 1

Nexus Material Recovery and Transfer Station
Part I
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List of Attachments

4.11.12

STATE OF TEXAS
JOEL B. MILLER
103847
LICENSED
PROFESSIONAL ENGINEER

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For pages 1 thru 16

5.0 LEGAL AUTHORITY

30TAC §330.59(e)

The applicant, Nexus Continuum, LLC, is a Texas Limited Liability Company which is owned 80% by Efrain Gonzalez, Sr. and 20% by Efrain Gonzalez, Jr., and will own and operate the Nexus Material Recovery and Transfer Station facility. A copy of the certificate of formation issued to Nexus Continuum, LLC by the Secretary of State is provided as Attachment A to Part I.

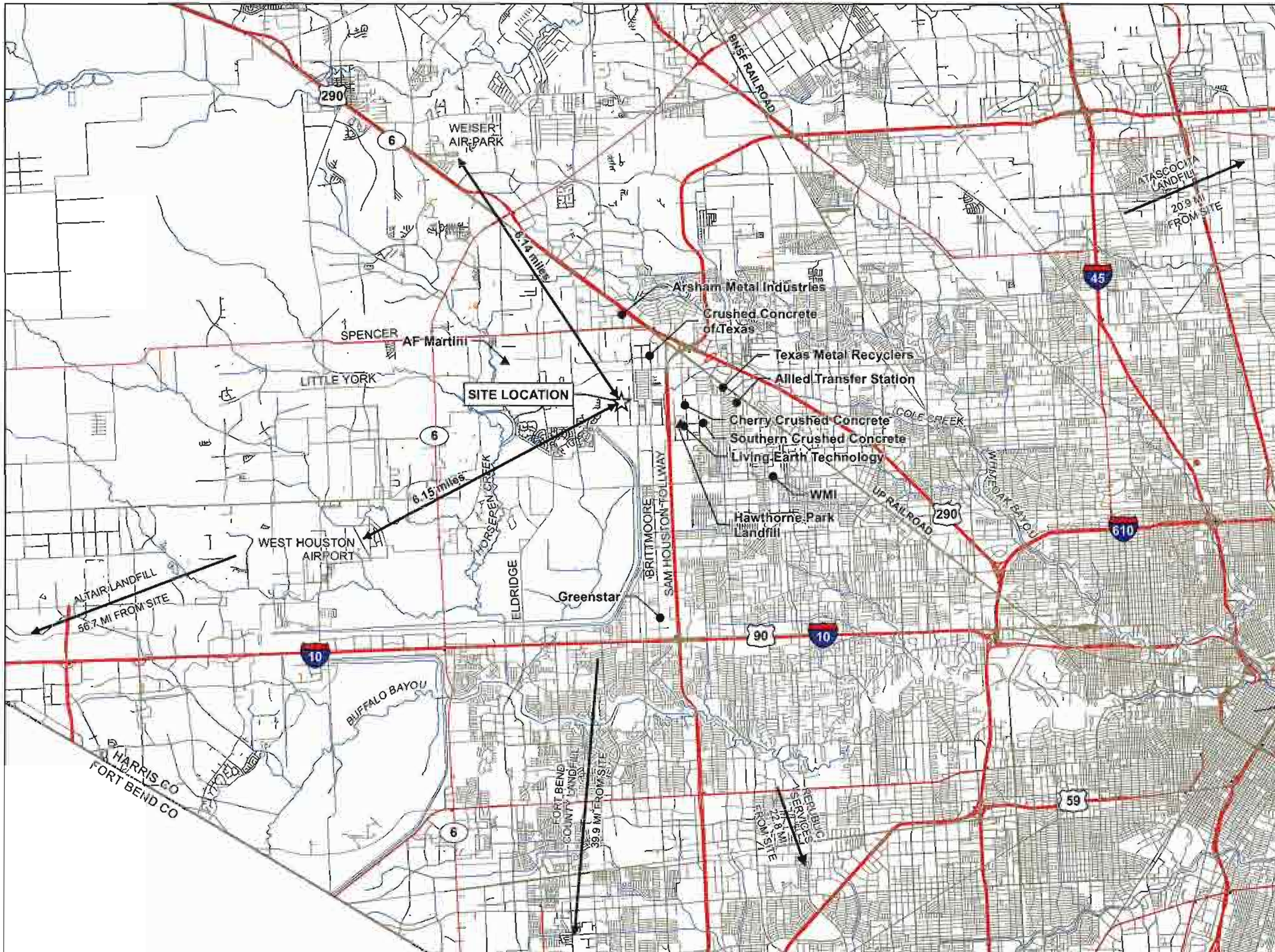
GENERAL LOCATION MAP

NEXUS MATERIAL RECOVERY & TRANSFER STATION

TYPE V MSW REGISTRATION

NEXUS CONTINUUM LLC

HARRIS CO, TX



290
6
WEISER AIR PARK
BNSF RAILROAD
6.14 miles
ATASCOCITA LANDFILL
20.9 MI FROM SITE
45
Arsham Metal Industries
Crushed Concrete of Texas
Texas Metal Recyclers
Allied Transfer Station
SPENCER
AF Martini
LITTLE YORK
SITE LOCATION
Cherry Crushed Concrete
Southern Crushed Concrete
Living Earth Technology
COLE CREEK
6
HORSEPEN CREEK
6.15 miles
WMI
UP RAILROAD
290
Hawthorne Park Landfill
610
WHITE OAK BAYOU
WEST HOUSTON AIRPORT
BRITTMOORE
SAM HOUSTON TOLLWAY
ELDRIDGE
ALTAIR LANDFILL
56.7 MI FROM SITE
Greenstar
90
10
10
BUFFALO BAYOU
HARRIS CO
FORT BEND CO
FORT BEND COUNTY LANDFILL
39.9 MI FROM SITE
REPUBLIC SERVICES
22.8 MI FROM SITE
59
6

LEGEND

- ☆ SITE LOCATION
- ▲ PERMITTED LANDFILL
- ● RECYCLABLE MATERIALS MARKET

4.11.12

STATE OF TEXAS
JOEL B. MILLER
103847
LICENSED
PROFESSIONAL ENGINEER

SOURCE: 2002 TXDOT URBAN FILE, BY COUNTY, HARRIS COUNTY

0 0.5 1 2
Miles

NEXUS CONTINUUM

HDR Engineering, Inc.

OCT 2011	PART I FIGURE 1

FILE: 142132_Nexus_Disposal_PartI_Fig1_GenLoc_11x17.mxd

NOTE: REPRODUCTION OF ORIGINAL SURVEY DOCUMENT. ORIGINAL DOCUMENT SCALE VALID ONLY FOR FULL SIZE PLOT.

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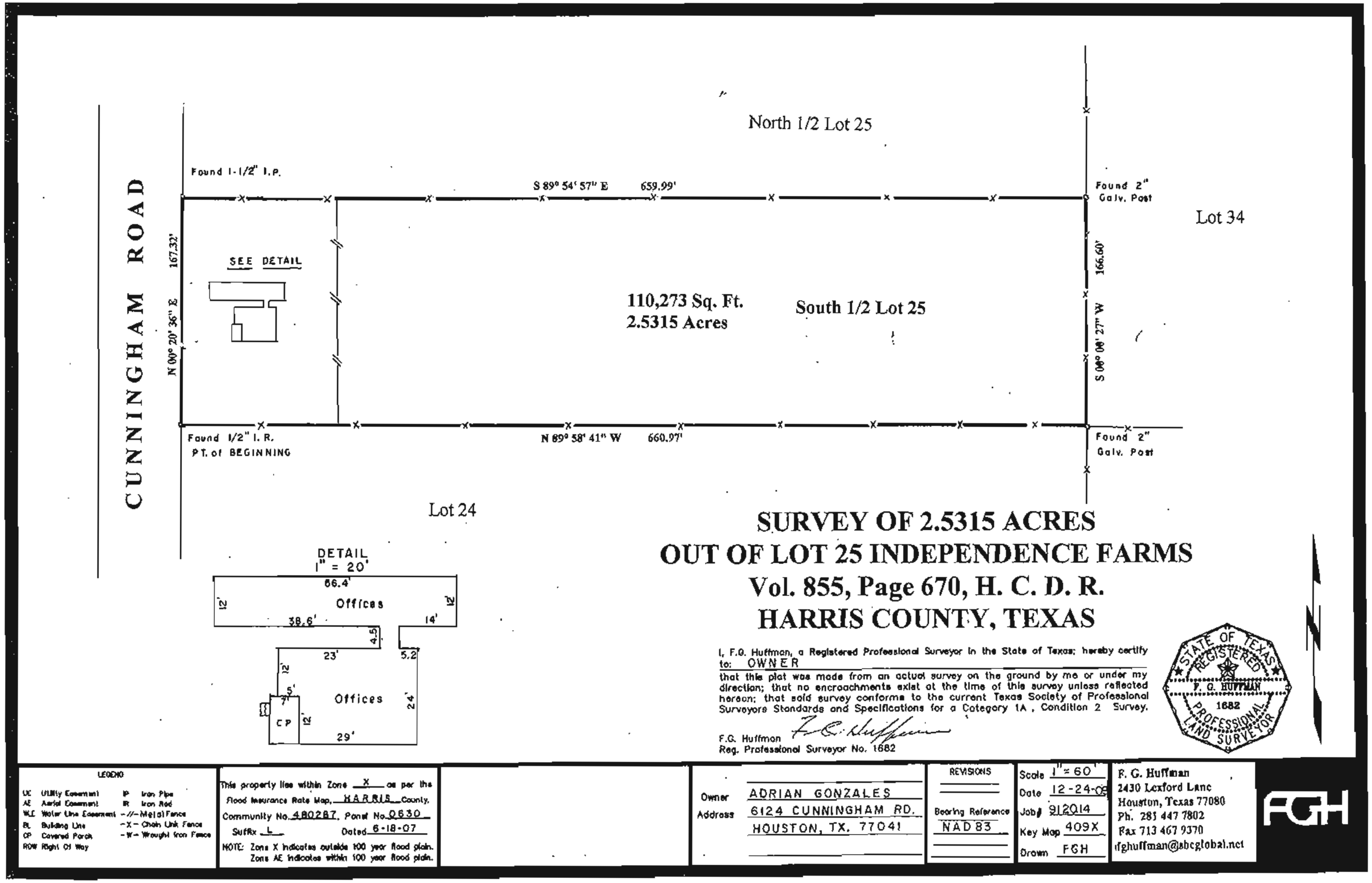
ACTUAL LAYOUT SCALE IN FEET AS SHOWN

0 — 25
ACTUAL DETAIL SCALE IN FEET AS SHOWN



CUNNINGHAM ROAD
North 1/2 Lot 25
Found 1-1/2" I.P.
S 89° 54' 57" E 659.99'
Found 2" Galv. Post
Lot 34
SEE DETAIL
N 00° 20' 36" E 167.32'
110,273 Sq. Ft.
2.5315 Acres
South 1/2 Lot 25
166.60'
S 00° 08' 27" W
Found 1/2" I.R.
PT. of BEGINNING
N 89° 58' 41" W 660.97'
Found 2" Galv. Post
Lot 24
DETAIL
1" = 20'
66.4'
12'
Offices
12'
38.6'
14'
4.5
23'
5.2'
12'
5'
7'
CP
12'
Offices
24'
29'
SURVEY OF 2.5315 ACRES
OUT OF LOT 25 INDEPENDENCE FARMS
Vol. 855, Page 670, H. C. D. R.
HARRIS COUNTY, TEXAS
I, F.G. Huffman, a Registered Professional Surveyor in the State of Texas; hereby certify to: OWNER
that this plat was made from an actual survey on the ground by me or under my direction; that no encroachments exist at the time of this survey unless reflected hereon; that said survey conforms to the current Texas Society of Professional Surveyors Standards and Specifications for a Category 1A, Condition 2 Survey.
F.G. Huffman
Reg. Professional Surveyor No. 1682
STATE OF TEXAS
REGISTERED
F. G. HUFFMAN
1682
PROFESSIONAL LAND SURVEYOR
LEGEND
UE Utility Easement
AE Aerial Easement
W.E. Water Line Easement
BL Building Line
CP Covered Porch
ROW Right Of Way
IP Iron Pipe
IR Iron Rod
-//- Metal Fence
-X- Chain Link Fence
-W- Wrought Iron Fence
This property lies within Zone X as per the Flood Insurance Rate Map, HARRIS County, Community No. 480287, Panel No. 0630 Suffix L Dated 6-18-07
NOTE: Zone X indicates outside 100 year flood plain. Zone AE indicates within 100 year flood plain.
Owner ADRIAN GONZALES
Address 6124 CUNNINGHAM RD. HOUSTON, TX. 77041
REVISIONS
Bearing Reference NAD83
Scale 1" = 60'
Date 12-24-09
Job# 912014
Key Map 409X
Drawn FGH
F. G. Huffman
2430 Lexford Lane
Houston, Texas 77080
Ph. 281 447 7802
Fax 713 467 9370
fghuffman@sbcglobal.net
FGH

4.11.12

STATE OF TEXAS
JOEL B. MILLER
103847
LICENSED
PROFESSIONAL ENGINEER

DATE: 3/30/2012
TIME: 1:00:08 PM
USER: rcox
FILE: Nexus-D:\pdsoa\Nexus-TS-Registration\13.00-CAD\Sheet Files
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PENTABLE: NEW HDR-ERM.tbl

NEXUS CONTINUUM

HDR
HDR Engineering, Inc.
17111 Preston Rd.
Suite 200
Dallas, Texas 75248
Texas P.E. Firm
Firm Registration No.F-754

ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	J.MILLER
ENGINEER	J.MILLER
CHECKED BY	
DESIGNED	
DRAWN BY	B.COX
QA/QC	
PROJECT NUMBER	142132

FOR PERMITTING ONLY. NOT FOR BIDDING, OR CONSTRUCTION.
Prepared by or under the Direct Supervision of JOEL B. MILLER, P.E. 103847
3/30/2012

NEXUS CONTINUUM, LLC.
HARRIS COUNTY, TEXAS

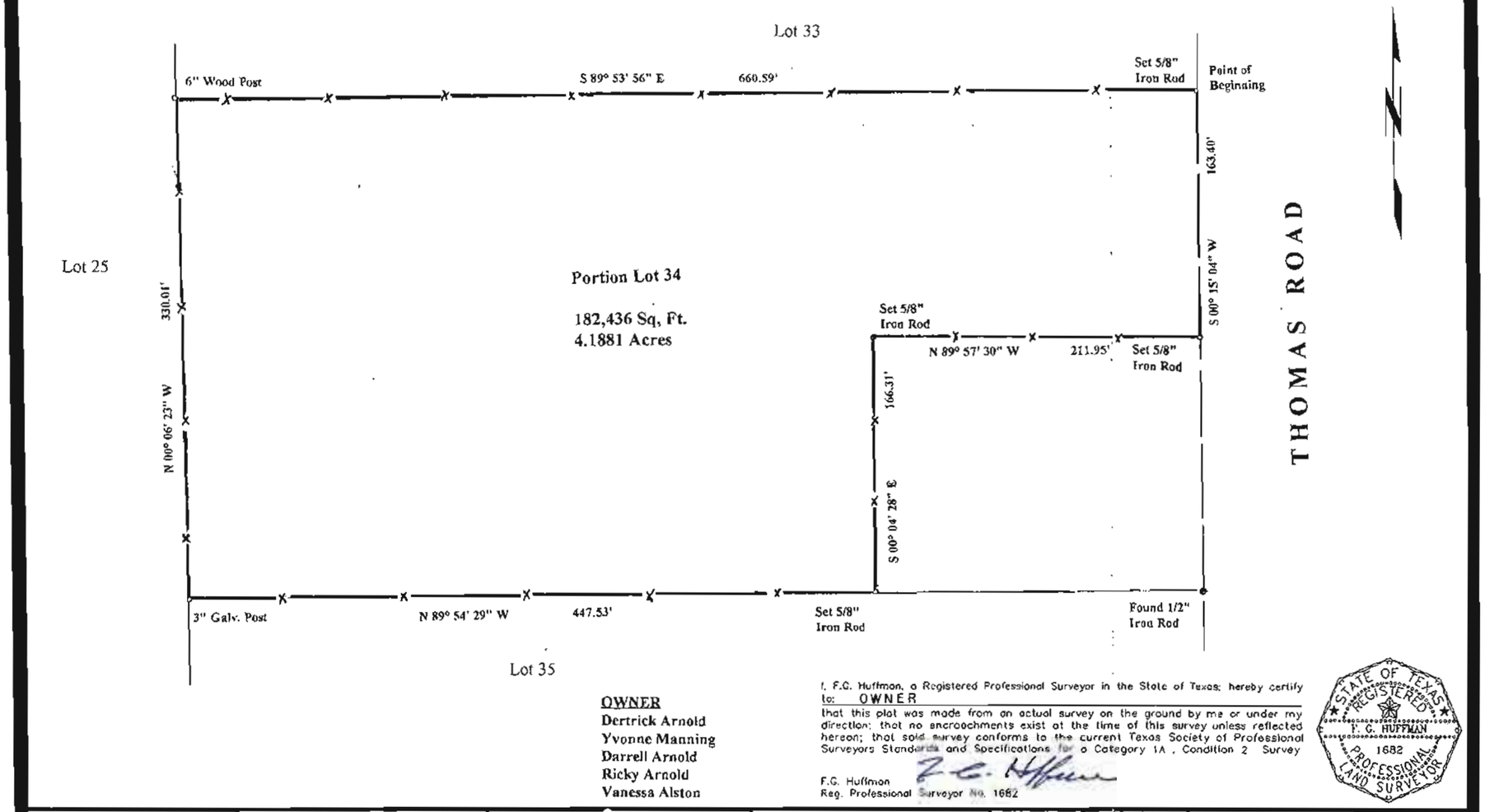
METES AND BOUNDS SITE PLAT
NEXUS MATERIAL RECOVERY
& TRANSFER STATION

FILENAME	PART 1 FIG4.dgn	SHEET PART 1 FIGURE 4
SCALE		

NOTE: REPRODUCTION OF ORIGINAL SURVEY DOCUMENT. ORIGINAL DOCUMENT SCALE VALID ONLY FOR FULL SIZE PLOT.

0 — 80

ACTUAL LAYOUT SCALE IN FEET AS SHOWN



OWNER
Dertrick Arnold
Yvonne Manning
Darrell Arnold
Ricky Arnold
Vanessa Alston

I, F.G. Huffman, a Registered Professional Surveyor in the State of Texas; hereby certify to: OWNER
that this plat was made from an actual survey on the ground by me or under my direction; that no encroachments exist at the time of this survey unless reflected hereon; that said survey conforms to the current Texas Society of Professional Surveyors Standards and Specifications for a Category 1A , Condition 2 Survey

F.G. Huffman
Reg. Professional Surveyor No. 1682

STATE OF TEXAS REGISTERED F. G. HUFFMAN 1682 PROFESSIONAL LAND SURVEYOR

4.11.12

STATE OF TEXAS JOEL B. MILLER 103847 LICENSED PROFESSIONAL ENGINEER

LEGEND

UE	Utility Easement	IP	Iron Pipe
AE	Aerial Easement	IR	Iron Rod
WLE	Water Line Easement	-//-	Board Fence
		-X-	Wire Fence
BL	Building Line	-W-	Wrought Iron Fence
CP	Covered Porch		
ROW	Right Of Way		

This property lies within Zone X as per the Flood Insurance Rate Map, HARRIS County, Community No. 480287, Panel No. 0630, Suffix L, Dated 6-18-07
NOTE: Zone X indicates outside 100 year flood plain. Zone AE indicates within 100 year flood plain

Portion Lot 34
Addition INDEPENDENCE FARMS
Section — Recorded in Vol 855 Page 670 Harris County Deed Records, Harris County, Texas

6131 THOMAS ROAD
HOUSTON, TX. 77041

REVISIONS

Bearing Reference NAD 93

Scale 1" = 60'
Date 10-12-10
Job# 10-1007A
Key Map 409 X
Drawn FGH
Checked By FGH

F.G. HUFFMAN
2430 Lexford Lane
Houston, Texas 77080
Ph. 281 447 7802
Fax 713 467 9370
FGHUFFMAN@sbcglobal.net

FGH

NEXUS CONTINUUM

HDR
HDR Engineering, Inc.
17111 Preston Rd.
Suite 200
Dallas, Texas 75248
Texas P.E. Firm
Firm Registration No.F-764

ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	J.MILLER
ENGINEER	J.MILLER
CHECKED BY	
DESIGNED	
DRAWN BY	B.COX
QA/QC	
PROJECT NUMBER	142132

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3/30/2012

NEXUS CONTINUUM, LLC.
HARRIS COUNTY, TEXAS

METES AND BOUNDS SITE PLAT
NEXUS MATERIAL RECOVERY & TRANSFER STATION

FILENAME PART 1 FIG5.dgn
SCALE
SHEET PART 1 FIGURE 5

TCEQ Technical Revision #1, April 2012

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NOTE: REPRODUCTION OF ORIGINAL SURVEY DOCUMENT. ORIGINAL DOCUMENT SCALE VALID ONLY FOR FULL SIZE PLOT.

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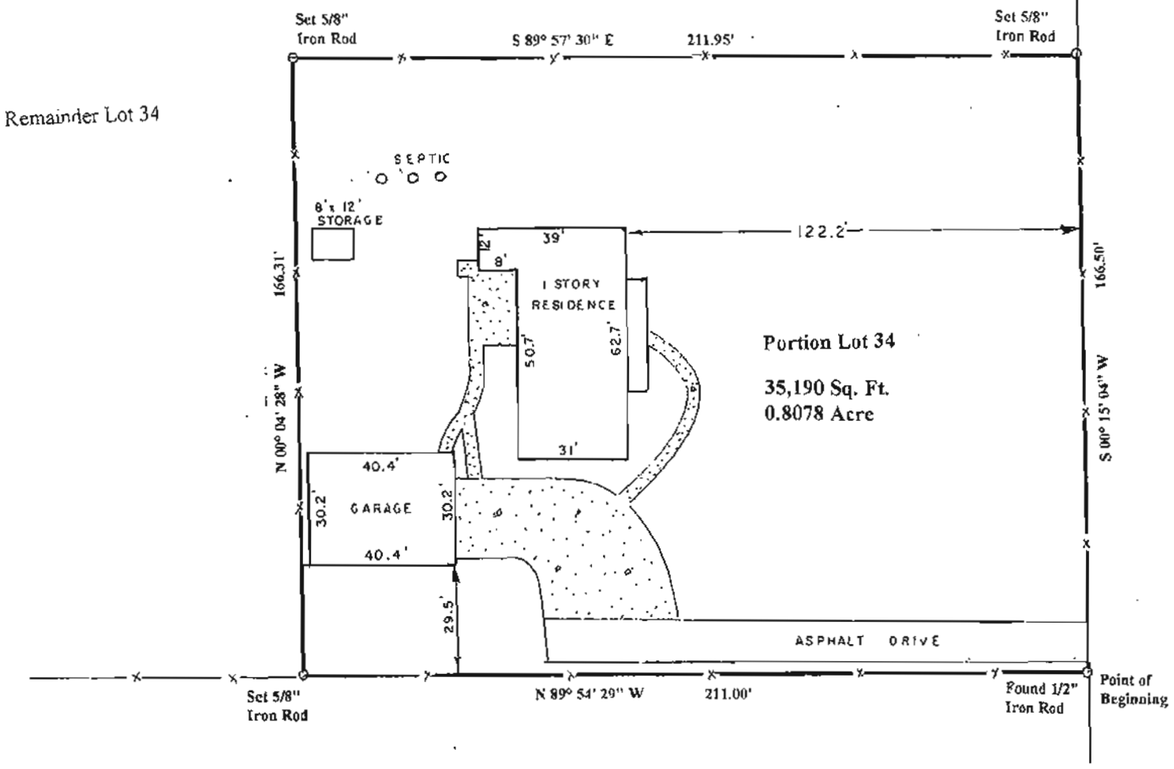
ACTUAL LAYOUT SCALE IN FEET AS SHOWN



OWNER
Dertrick Arnold
Yvonne Manning
Darrell Arnold
Ricky Arnold
Vanessa Alston

I, F.G. Huffman, a Registered Professional Surveyor in the State of Texas; hereby certify to: OWNER
that this plat was made from an actual survey on the ground by me or under my direction; that no encroachments exist at the time of this survey unless reflected hereon; that said survey conforms to the current Texas Society of Professional Surveyors Standards and Specifications for a Category 1A, Condition 2 Survey.

F.G. Huffman
Reg. Professional Surveyor No. 1662

STATE OF TEXAS REGISTERED F. G. HUFFMAN 1662 PROFESSIONAL LAND SURVEYOR

LEGEND

UE	Utility Easement	IP	Iron Pipe
AE	Aerial Easement	IR	Iron Rod
WLE	Water Line Easement	-//-	Board Fence
		-X-	Wire Fence
BL	Building Line	-W-	Wrought Iron Fence
CP	Covered Porch		
ROW	Right Of Way		

This property lies within Zone X as per the Flood Insurance Rate Map, HARRIS County, Community No. 480287, Panel No. 0630, Suffix L, Dated 6-18-07
NOTE: Zone X indicates outside 100 year flood plain. Zone AE indicates within 100 year flood plain.

Portion Lot 34
Addition INDEPENDENCE FARMS
Section ___ Recorded in Vol. 85 Page 670
Harris County Deed Records,
Harris County, Texas

6131 THOMAS ROAD
HOUSTON, TX. 77041

REVISIONS

Bearing Reference NAD 83

Scale 1" = 30'
Date 10-13-10
Job# 10-1007
Key Map 409 X
Drawn FGH
Checked By FGH

F.G. HUFFMAN
2430 Lexford Lane
Houston, Texas 77080
Ph 281 447 7802
Fax 713 467 9370
FGHUFFMAN@sbcglobal.net

FGH

J.M.L.R

STATE OF TEXAS JOEL B. MILLER 103847 LICENSED PROFESSIONAL ENGINEER

DATE: 3/30/2012
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NEXUS CONTINUUM

HDR
HDR Engineering, Inc
17111 Preston Rd.
Suite 200
Dallas, Texas 75248
Texas P.E. Firm
Firm Registration No.F-754

ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	J.MILLER
ENGINEER	J.MILLER
CHECKED BY	
DESIGNED	
DRAWN BY	B.COX
QA/QC	
PROJECT NUMBER	142132

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JOEL B. MILLER, P.E. 103847
3/30/2012

NEXUS CONTINUUM, LLC.
HARRIS COUNTY, TEXAS

METES AND BOUNDS SITE PLAT
NEXUS MATERIAL RECOVERY & TRANSFER STATION

FILENAME PART 1 FIG6.dgn
SCALE
SHEET PART 1 FIGURE 6

TCEQ Technical Revision #1, April 2012

Part II

Nexus Continuum, LLC

Type V- Municipal Solid Waste Facility

Nexus Material Recovery and Transfer Station

MSW Registration No. XXXXX

Harris County
Houston, Texas

~~October 2011~~April 2012

4.11.12

STATE OF TEXAS
JOEL B. MILLER
103847
LICENSED
PROFESSIONAL ENGINEER

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For pages 1 thru 111

Nexus Material Recovery and Transfer Station
Part II
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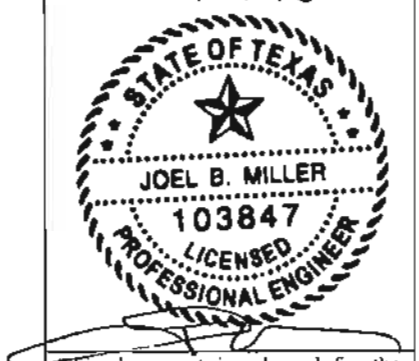
List of Figures

~~Figure 7 – Water Well Locations~~

List of Attachments

Attachment A: TxDOT Coordination
Attachment B: Soil Information
Attachment C: Wetlands and Endangered or Threatened Species Statement
Attachment D: Texas Historical Commission Review
Attachment E: Local Agency Coordination

4.11.12



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For pages 1 thru 27

closed or when collection vehicles are not full at the end of a route, consolidation of the partial load with other partial loads reduces the number of trips to the landfill. Should significant amounts of commercial waste be determined to be recyclable (paper, cardboard, etc.), it will be directed to temporary storage locations or the sorting area for recyclables. Municipal solid waste from residential sources will not be recovered or reused and will be consolidated and transferred directly to an area landfill for disposal.

One of the purposes of the material recovery and transfer station registration is to allow Nexus to consolidate and transfer to a landfill the non-recyclable portion of the material it receives. This waste will be placed in containers for transportation to a landfill. The facility will also allow Nexus to continue to remove recyclable materials prior to disposal.

Regulated hazardous waste and putrescible waste will not be accepted at the facility, therefore~~T~~ there is not a waste characteristic or constituent that would be a limiting factor in the design of the facility based on the type of materials to be received.

2.2 Sources and Characteristics of Waste

Waste and recyclables delivered to the Nexus facility will be primarily from Harris County and the city of Houston, although minor amounts could be delivered from surrounding areas. C&D materials are generated from a wide range of events and activities including storm-related disaster relief and clean up, building fires, new construction of homes and buildings, and demolition, remodeling, reconstruction and roof replacement of existing infrastructure.

Customers generating C&D materials are typically serviced on a scheduled or on a demand basis. Once a container is loaded, it is picked up by the service company and delivered to the Nexus facility. Nexus will remove recyclable material, as that term is defined in 30 TAC 330.3(122), from construction and demolition loads and other loads with a high percentage of materials that can be reused or recycled.

Some portion of the material delivered to the facility from C&D projects will not be recyclable material, either because the material does not meet quality standards, no market exists or, if markets exist, their transportation and reuse/recycling is not economically feasible. When Nexus determines a material is not recyclable, they will collect and consolidate it with other non-recyclable materials and dispose of it offsite at appropriate permitted solid waste facilities.

Nexus proposes to operate a MSW Transfer Station, as well as a Material Recovery facility. The transfer station will enable Nexus to accumulate, consolidate and compact the residual solid waste from recyclable loads along with municipal solid waste delivered to the facility into roll-off containers or transfer trailers, allowing for temporary storage and subsequent transfer to a permitted landfill.

Nexus will remove at least 10 percent of the material it receives for reuse or recycling. However, Nexus intends to remove as much recyclable material as is reasonably and economically feasible. By increasing the amount of material recovered from the waste stream, Nexus is helping to reduce society's dependency on landfill disposal and preserving natural resources.

2.3 Quantity of Waste

The amount of material that will be received at the facility is estimated to be a maximum of 5,000 cubic yards per day (CY/d). Based on an average incoming density of 400 pounds per cubic yard, the anticipated maximum material to be received is expected to be 1,000 tons per day (TPD). The facility will have the capacity to transfer up to 5,000 CY/d. This is based on the ability to load two 125 CY transfer trailers in an hour (250 CY/hr x 20 hours – assumes 4 hours of down time). This reflects an average waste processing time of 250 CY/hr (0.24 min/CY) at full capacity. If smaller capacity trailers are utilized, the maximum amount of material that can be processed may be less than the stated 5,000 CY/d. With smaller trailers and/or less incoming waste, the waste processing time could increase up to an expected maximum waste processing time of 120 CY/hr (0.50 min/CY) at lower (initial) capacity. It is anticipated that 2,400 cubic yards per day will be received initially. The maximum amount of waste and recyclable material to be received is 5,000 CY/d, of which a minimum of 500 cubic yards per day will be recovered and sent for reuse or recycling.

- Cunningham Road – asphalt
- Little York – concrete
- Tanner – concrete
- Sam Houston Tollway - concrete

There are no recorded archeological or historical or sites with exceptional aesthetic quality adjacent to or within the facility.

In addition, the general location maps and statements below show compliance with 30 TAC 330 Subchapter M (Location Restrictions). Specifically:

- There are no drainage, pipeline or utility easements within or adjacent to the facility;
- Buffer zones are provided for solid waste storage and processing areas as shown on Part II, Figure 2;
- Airport proximity is not applicable as the facility is not a landfill unit;
- The facility is not located in the 100-year floodplain;
- The facility is not a landfill unit located within the recharge zone of the Edwards Aquifer;
- The facility does not affect endangered or threatened species (see Part II, Attachment C);
- The facility is not located near jurisdictional wetlands (see Part II, Attachment C);
- The facility is not a landfill unit located in a fault area;
- The facility is not a landfill unit located in a seismic impact zone;
- The facility is not a landfill unit located in an unstable area;
- The facility is not a landfill cell in a coastal area; and,
- The facility is not a proposed Type I or Type IV Landfill.

5.0 FACILITY LAYOUT MAPS

30TAC §330.61(d)

A Facility Layout Map is provided as Figure 2, Part II. This map provides information on:

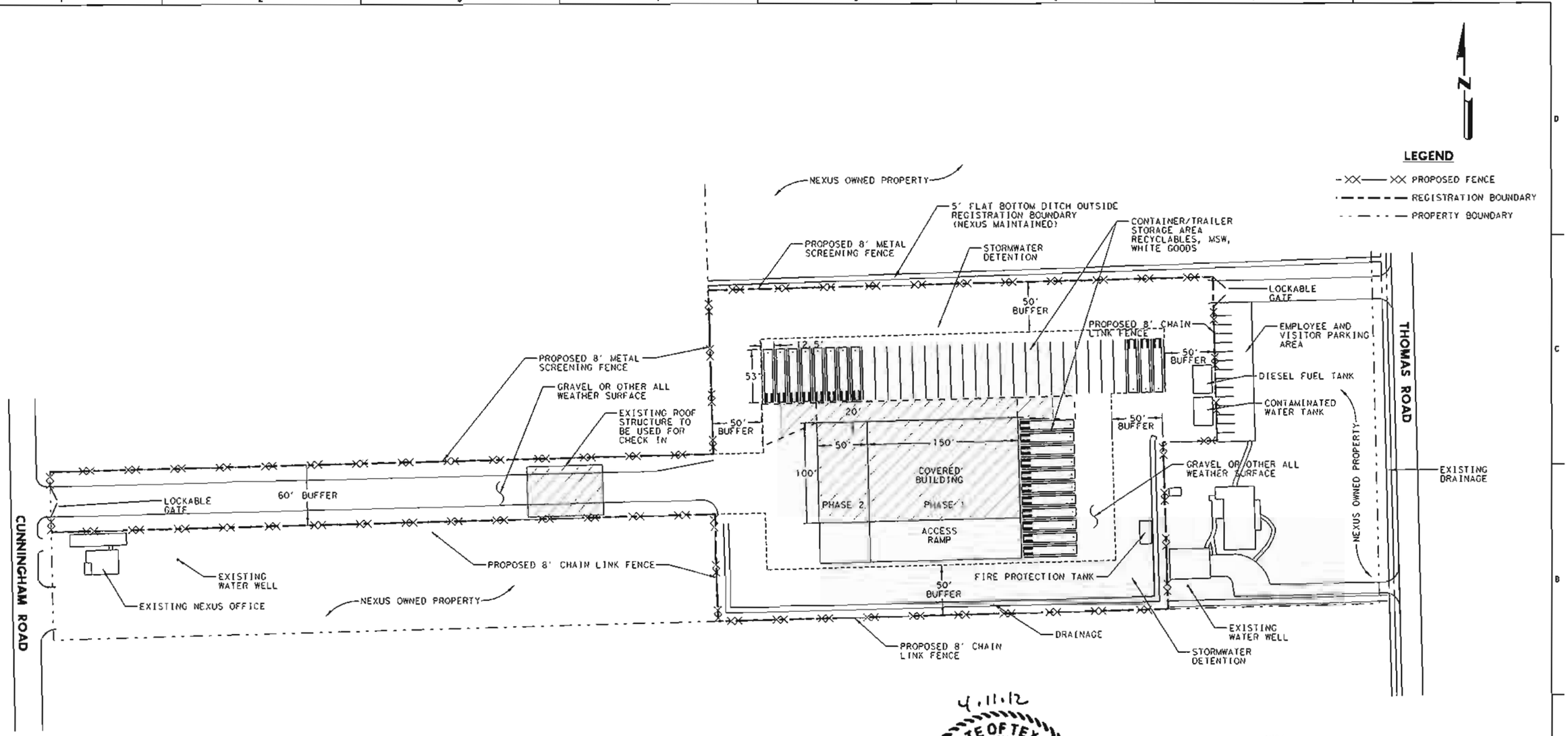
- The outline of the material process and storage areas
- Interior roadways
- Locations of buildings
- Fencing
- Facility screening plans
- Site entrance from public access roads
- On-site buffer zones (minimum 50-ft from processing facility)

Ground water monitoring wells are not proposed for the Material Recovery and Transfer Station.

16.0 TEXAS HISTORICAL COMMISSION REVIEW

30TAC §330.61(o)

The Texas Historical Commission (THC) has reviewed the project site in the context of the Natural Resources Code, Chapter 191, Texas Antiquities Code. The THC reported that the project does not affect any historic properties ~~(see Part II, Attachment D)~~. A coordination letter has been sent to the THC requesting documentation of compliance with the Natural Resources Code, Chapter 191, Texas Antiquities Code (see Part II, Attachment D).



NOTES:

1. PROPERTY ADDRESS
   6124 CUNNINGHAM ROAD
   6131 THOMAS ROAD
2. ALL DEVELOPMENT PERMITS REQUIRED BY HARRIS COUNTY WILL BE OBTAINED PRIOR TO OPERATION UNDER THIS REGISTRATION.
3. STORAGE AREA FOR MSW AND RECYCLABLES IS SUFFICIENT FOR 43 125 C.Y. TRANSFER TRAILERS.

4.11.12

STATE OF TEXAS
JOEL B. MILLER
103847
LICENSED
PROFESSIONAL ENGINEER

DATE: 3/30/2012
TIME: 12:58:54 PM PLTDRVER:11X17LASER4BW4PDF.pltr
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FILE: Nexus\Disposal\Nexus415-Registration\13.00-CAD\Sheet Files\Permit Files

NEXUS CONTINUUM

HDR

HDR Engineering, Inc.
17111 Preston Rd.
Suite 200
Dallas, Texas 75248

Texas P.E. Firm
Firm Registration No.F-754

ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	J.MILLER
ENGINEER	J.MILLER
CHECKED BY	
DESIGNED	
DRAWN BY	B.COX
QA/QC	
PROJECT NUMBER	142132

FOR PERMITTING ONLY. NOT FOR BIDDING, OR CONSTRUCTION.
Prepared by or under the Direct Supervision of
JOEL B. MILLER, P.E. 103847
3/30/2012

NEXUS CONTINUUM, LLC.
HARRIS COUNTY, TEXAS

FACILITY LAYOUT
MATERIAL RECOVERY AND TRANSFER STATION

0 50' 100'

FILENAME: PART II FIG2.dgn
SCALE:

SHEET
PART II
FIGURE 2

Attachment A:
TxDOT Coordination

Texas Department of Transportation
P.O. BOX 1386 • HOUSTON, TEXAS 77251-1386 • (713) 802-5000

November 8, 2011

CONTACT: DOM

Harris County
Nexus Continuum, LLC
6124 Cunningham Road

Mr. Michael W. Oden, P.E.
Project Manager
HDR Engineering, Inc.
4500 West Eldorado Parkway, Suite 3500
McKinney, Texas 75070-5757

Dear Mr. Oden:

In response to your letter dated October 27, 2011, concerning the reapplication of subject facility, the Texas Department of Transportation (TxDOT) has reviewed your request. Since the site is small and not on State highway system, it will not have a negative effect.

However, TxDOT does reserve the right to comment on the permit application when it is sent out by the Texas Commission on Environmental Quality to the various agencies for review.

Please contact Mr. Leonard E. Polk, P.E., Transportation Engineering Supervisor, at (713) 802-5554, if you should have any questions.

Sincerely,

Quincy D. Allen, P.E.

Quincy D. Allen, P.E.
Director of Maintenance
Houston District

LEP
cc: Mr. Leonard E. Polk, P.E.
Mr. Jesse R. Garcia, P.E.

Attachment D:
Texas Historical Commission Review

March 29, 2012

Mr. Mark Denton
State Historic Preservation Officer
Department of Antiquities Protection
Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711-2276

Re: Nexus Continuum, LLC
Proposed Type V Material Recovery and Transfer Station
Houston, Harris County, Texas

Dear Mr. Denton:

Nexus Continuum, LLC (Nexus) has applied to the Texas Commission on Environmental Quality (TCEQ) for registration of a Type V - Material Recovery and Transfer Station to be located at 6124 Cunningham Road, Houston, Texas. The proposed facility will receive municipal solid waste and recyclable material. The purpose of the registration application is to allow Nexus to receive and consolidate waste and recyclable materials and transfer to a landfill the non-recyclable portion of the incoming material that remains following processing. The waste will be placed in containers for transportation to a permitted landfill. The proposed facility will allow Nexus to remove recyclable materials from the waste stream so that these materials may be beneficially reused as commodities.

TCEQ regulations [30 TAC 330.61 (o)] require documentation of coordination with your agency documenting compliance with the Natural Resources Code, Chapter 191, Texas Antiquities Code. This letter is to inform you of the proposed facility and request your response indicating that the proposed facility will not conflict with any applicable restrictions.

The proposed facility will occupy approximately 5 acres of a 7.6 acre site. This site has been in use for approximately 15 years and has sustained significant disturbances from construction, maintenance, and operational activities. HDR archaeologist Marcus Grant, MA, RPA reviewed the project and on 27 August 2010 examined online maps at http://atlas.thc.state.tx.com.us. Mr. Grant determined that no historic sites, historic landmarks, architectural resources, or cemeteries existed within a one-mile radius of the subject property and concluded the proposed action would have no direct or indirect effect on historic properties. On 2 September 2010, Mr. Grant was advised by Mr. Ed Baker, Texas Center for Environmental Quality (TCEQ) Coordinator for the Texas Historical Commission (THC), via telephone, that submission of a "Request for SHPO Consultation Form" was not required.

HDR Engineering, Inc.
Texas Registered Engineering Firm F-754

4401 West Gate Blvd.
Suite 400
Austin, TX 78745

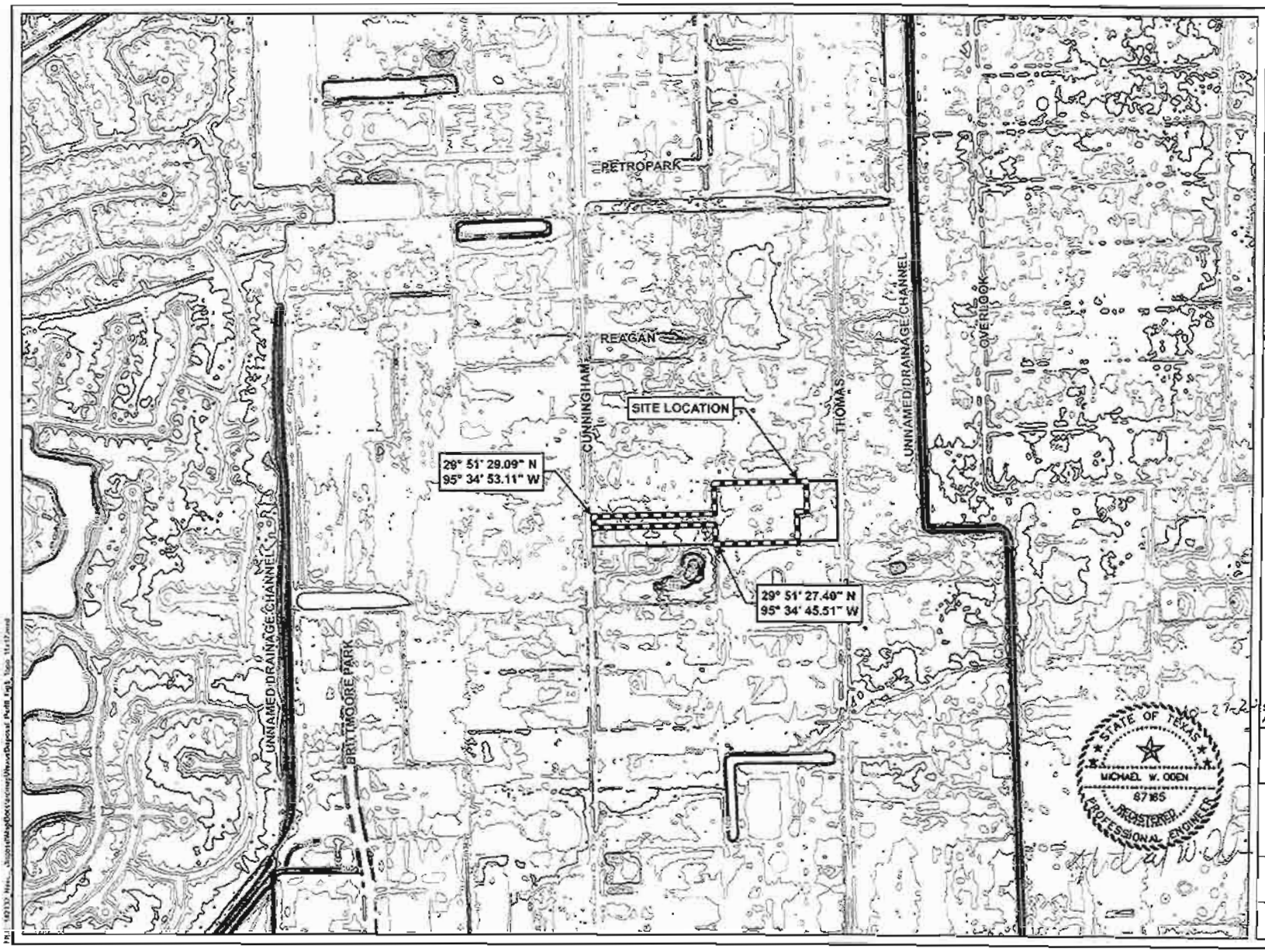
Phone: 512•912•5100
Fax: 512•912•5158
www.hdrinc.com

It has since come to HDR's attention that the application does require a review letter from the THC documenting compliance with the Natural Resources Code, Chapter 191, Texas Antiquities Code. We request the assistance of your office in providing the required review letter including any recommendations you may have. Please find enclosed a general topographic map showing the site location and boundaries to assist your review. As Nexus is under a time limit to respond to TCEQ comments, HDR would greatly appreciate a response within 30 days. If further information is needed or you wish to discuss project details, please feel free to contact Joel Miller at 512-498-4716 or Marcus Grant at 303-754-4259.

Sincerely,
HDR Engineering, Inc.
Texas Registered Engineering Firm F-754

Joel Miller, P.E.
Project Manager

Enclosure



GENERAL TOPOGRAPHIC MAP

NEXUS MATERIAL RECOVERY & TRANSFER STATION

TYPE V MSW REGISTRATION

NEXUS CONTINUUM LLC

HARRIS CO. TX

LEGEND

- REGISTRATION BOUNDARY
- PROPERTY BOUNDARY
- DRAINAGE CHANNEL
- 1-FOOT INDEX CONTOUR
- 1-FOOT INTERMEDIATE CONTOUR

SOURCE: 2006, HOUSTON-GALVESTON AREA COUNCIL

0 125 250 500 Feet

NEXUS CONTINUUM

HDR

OCT 2011	PART II FIGURE 3

Part III

Nexus Continuum, LLC

Type V- Municipal Solid Waste Facility

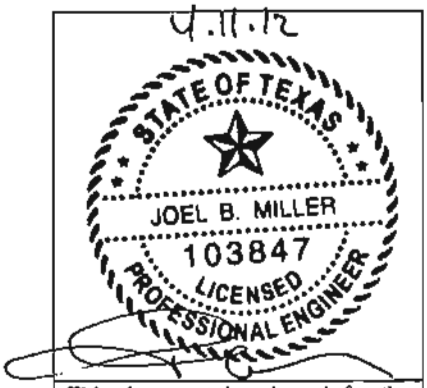
Nexus Material Recovery and Transfer Station

MSW Registration No. XXXXX

Harris County
Houston, Texas

~~October 2011~~April 2012

4.11.12



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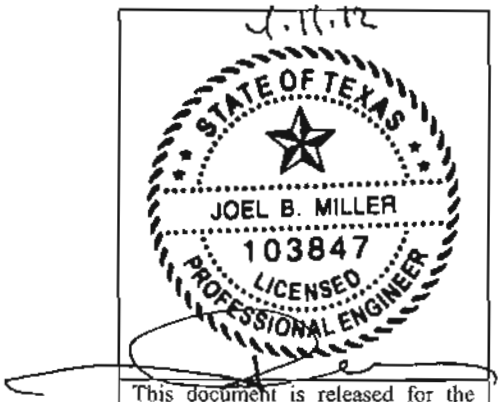
For pages 1 thru 1

Nexus Material Recovery and Transfer Station
Part III
Table of Contents

List of Figures



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For pages 1 thru 24

Attachments

Attachment A – Surface Water Drainage Report

2.0 GENERAL FACILITY DESIGN

30 TAC §330.63(b)

2.1 Facility Access

§330.63(b)(1)

As shown on the Facility Layout (Part III, Figure 1), the current Nexus facility has 165 feet of frontage on Cunningham Road, this Registration application requests only 60 feet of frontage as access to the processing area. Therefore, the majority of the facility boundary adjoins privately owned property and is separated from these properties with a chainlink fence with barbed wire strands across the top. The adjacent properties north and south of the site appear to be used for industrial purposes. In addition, Nexus owns the properties directly to the north (partial), and east (entire) of the Registration boundary as shown on the Facility Layout (Part III Figure 1). There is no access to the adjacent properties afforded to the general public, so there is no potential for members of the general public to gain access to the site from adjacent properties. Nexus personnel will routinely monitor the condition of the property line fences and will make necessary repairs to maintain their integrity.

The main point of access to the site by vehicular traffic is by means of the main entrance proposed on Cunningham Road. A fence with a lockable gate will be installed, and truck traffic will be physically routed from Cunningham Road through the currently existing roof structure for entrance processing. The exterior gate will be closed and locked during non-operating hours, and when it is opened, any person or vehicle entering the site will be within view of Nexus personnel at the check-in facility. Nexus personnel will not allow any unauthorized entry or deposition of unauthorized solid waste or hazardous materials of any kind. A sign, indicating the type of site, the hours and days of operation, and the registration number will be located at the entrance through which wastes are received. An administrative entrance will be located on the eastern boundary with vehicular access to Thomas Road. This entrance will be available for small vehicle traffic for Nexus personnel and will not include waste delivery. The exterior gate

will be closed and locked during non-operating hours, and when it is opened, any person or vehicle entering the site will be within view of Nexus personnel at the administrative office.

2.2 Waste Movement

§330.63(b)(2)

The amount of waste and recyclable materials, both commingled and source separated, that will be received at the facility is estimated to be a maximum of 5,000 cubic yards per day (CY/d). The site capacity is discussed in more detail in Part II, Section 2.3 and outlined in Part II, Table II-1 (Projected Waste Acceptance). The facility will have the capacity to process and transfer a maximum of 5,000 CY/d of waste and recyclable material, of which a minimum of 500 CY/d (10%) will be recovered and sent for reuse or recycling. Based on an average incoming density of 400 pounds per cubic yard, the anticipated maximum material to be received is expected to be 1,000 tons per day (TPD). The facility proposes to operate up to 24 hours per day seven days per week to provide options for haulers of MSW and recyclable materials when other facilities are closed.

As shown on the Traffic Flow Diagram (Part III Figure 9), incoming material will be brought to the facility by roll-off trucks, front-end loaders and other collection vehicles and off-loaded immediately onto the tipping floor of the material recovery and transfer station. If the containers contain mostly one type of material, they will be unloaded directly to the storage bins or transfer trailers onsite. The amount of time required for unloading will depend on the composition of the load, but the maximum amount of time anticipated for unloading is 9 minutes for an average 40 CY roll-off or collection vehicle (267 CY/hr), which means that the facility will have the ability to unload and process the proposed Registration maximum of 5,000 CY/d (average 267 CY/hr x 20 hours = 5,340 CY/d – greater than 5,000 CY/d). Average unloading and sorting/processing time will increase when the facility is receiving less material, as the workers will not have to process and load material as quickly. Average time may reach 15 minutes for an average 40 CY roll-off in these instances, depending on composition and current operations. Based on this

maximum daily volume, and the ability of Nexus to schedule its own transport drivers, it is not anticipated that excessive queuing of collection vehicles will be required. However, in the event that queuing is necessary, trucks will be able to line up along the 660' site entrance road (capacity for over 24 trucks). It is not anticipated that trucks will need to queue on Cunningham Road.

Once the collection vehicles have unloaded on the tipping floor, the loads will be sorted by hand (with the aid of excavators, backhoes or similar equipment) by sorting personnel. All unauthorized waste will be returned to the generator. If an item has no economic value as a recyclable commodity or has no practical reuse potential, the material will then become municipal solid waste (MSW), and will be placed in a transfer trailer and hauled to the nearest properly permitted landfill when the transfer trailer reaches capacity. The selectively separated recyclable commodities will be stored and managed temporarily in separate storage bins, roll-off containers or transfer trailers onsite. When a sufficient quantity of a particular commodity has accumulated, it will be hauled to market. Commodities such as paper, metal, wood, glass, concrete, sheetrock, brush, asphalt, corrugated cardboard, carpeting, and white goods are among these commodities; which will account for more than 10% of the incoming waste stream at this facility. The Process Flow Diagram (Part III Figure 2) provides a graphical overview of the proposed process.

Ventilation of the processing building will be accomplished by an opening on the south side for truck access from the access ramp. In addition, the other three sides will have various doors and windows that will remain open during operations as needed. The building will be a commercially produced metal building of the type sometimes referred to as "pre-engineered". If necessary, additional ventilation can be provided by ventilation fans designed and installed into the building walls. Building design will ensure a minimum of eight air changes per hour. As a conservative example, at maximum building size, with no other ventilation (not the case, as the structure will not be fully enclosed), the facility would require the following ventilation flow rate:

$$\frac{600{,}000\ cubic\ feet}{1\ air\ change\ volume} * \frac{8\ air\ changes}{1\ hour} * \frac{1\ hour}{60\ minutes} = 80{,}000\ cubic\ feet\ per\ minute$$

This could be accomplished with up to 6 commercially available ventilation fans rated at 13,500 cubic feet per minute. As stated, this is a conservative example and ventilation fans will be utilized if building design warrants their use.

The owner or operator will also employ the following measures for odor control:

- on-site buffer zones (minimum 50-ft – as shown on Part II, Figure 2 and related drawings) will separate the processing facility from the Registration boundary,
- building ventilation measures,
- extremely odorous or dusty material will not be accepted for processing, and
- liquid waste and putrescible waste will not be accepted and solid waste will be stored in odor-retaining containers.

Roll-offs, transfer trailers, and other containers will be kept covered to the extent possible to minimize odors and contact with rain. On-site storage of recyclables and municipal solid waste will be in covered or closed odor-retaining containers constructed of metal and are leak proof, durable, and designed for safe handling and easy cleaning. Reusable containers will be maintained in a clean condition so that they do not constitute a nuisance and to retard the harborage, feeding, and propagation of vectors. Non-reusable containers will not be used. Containers will be covered by metal or plastic attached covers, or polyvinyl tarp covers. These covers will be water, weather and abrasion resistant and will provide coverage of the container contents to limit exposure to precipitation.

In addition, the site is surrounded by other industrial facilities, including other property owned by Nexus. Prevailing winds at the site are from the southeast (see wind rose – Part II Figure 1), which will direct potential odors into the exterior wall on the north side of the load out area, thereby keeping odor to the interior of the site. As noted previously, Nexus owns the properties directly to the north, west and east of the processing area. All odorous material will be processed

Conducting the processing operations within a partially enclosed building will provide noise pollution control, as the walls on the three sides of the building will direct noise from operations to the interior of the site. The building is located on an industrial site, and is immediately surrounded by other industrial sites, as well as Nexus-owned property to the north, west and east. In addition, the tree and brush covered terrain at the property boundaries will provide additional mitigation of any noise that may emanate from the operation. Current Nexus operations at this site have not generated any noise complaints.

2.3 Sanitation

§330.63(b)(3)

The material recovery and transfer station will receive C&D material, MSW and commingled or source-separated recyclable material; and will be designed to facilitate appropriate cleaning for these types of materials. Surface water run-on will be prevented by a raised tipping floor surface and storage areas. In addition, all material stored onsite will be stored in roll-off boxes or transfer trailers and covered to prevent surface water contamination. Floors shall be constructed of reinforced concrete to facilitate cleaning and scrubbing, and will be swept daily and cleaned with pressure hoses ~~as necessary~~a minimum of twice per week to maintain a reasonably clean environment. Water will be available at various locations to allow for use of hoses for cleaning. After cleaning in designated processing areas, the water will be collected in floor drains located both on the tipping floor and in the transfer-trailer load-out area. The collected water will be stored in a contaminated water storage tank onsite and directed to the sanitary sewer line onsite for disposal. Alternately, the contaminated water may be hauled by truck to a permitted wastewater treatment plant. In all cases final disposal of the contaminated water will take place prior to the tank reaching 70% storage capacity.

4.0 WASTE MANAGEMENT UNIT DESIGN

30 TAC §330.63(d)

All incoming material brought to the facility will be off-loaded and processed rapidly on the tipping floor of the facility. Non-recyclable waste will be transferred to transfer trailers and hauled to a properly permitted landfill when the transfer trailer reaches capacity. If it is not possible to remove the non-recyclable waste at the end of the day, the waste will be covered to prevent the creation of nuisance conditions or public health concerns. The non-recyclable waste will be stored onsite for no more than 72 hours.

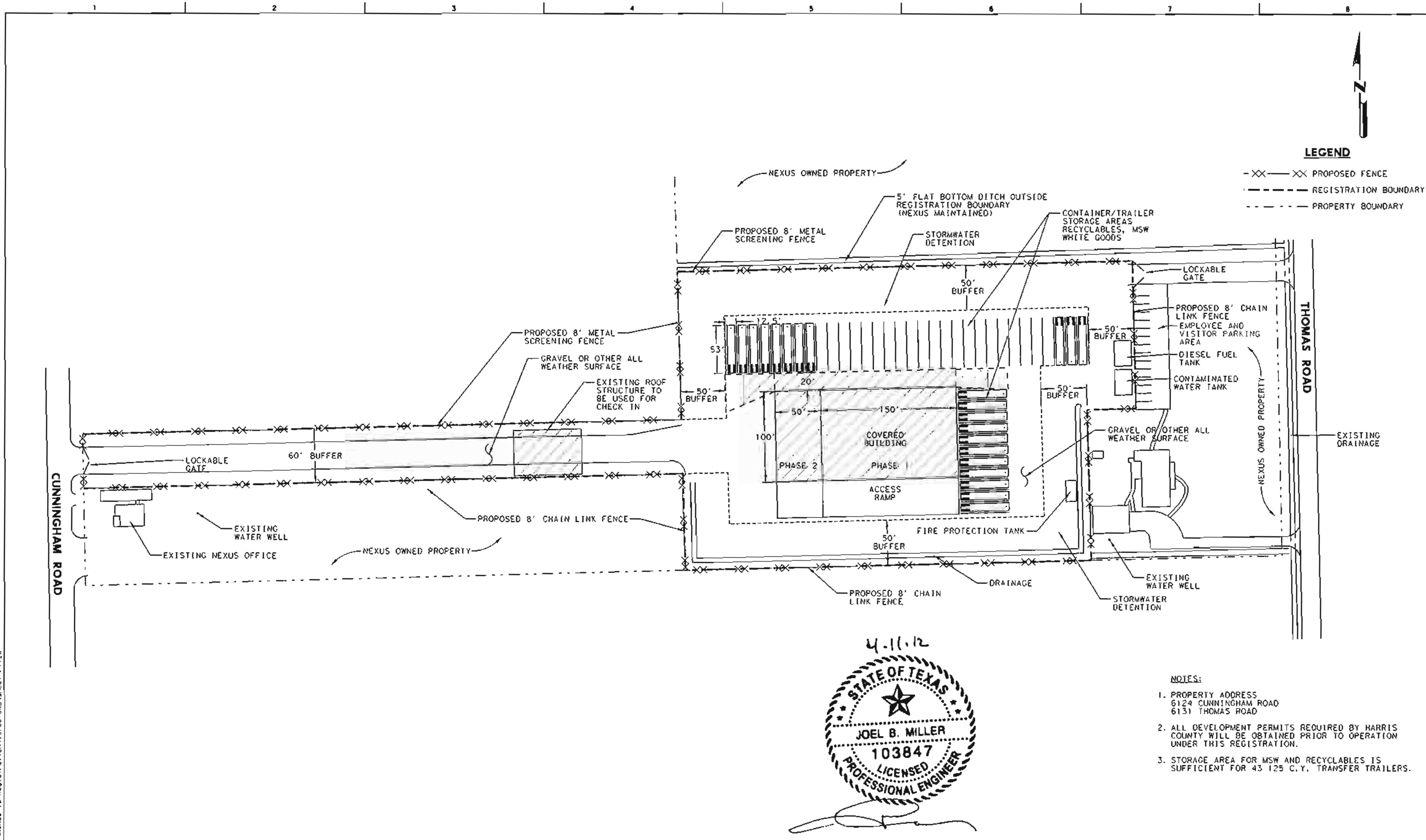
The tipping floor will be graded toward floor drains, and will not allow any contaminated water to run off of the tipping floor or transfer-trailer loading area. The processing area will be covered and elevated, and therefore will not be inundated by run-on resulting from the 25-year rainfall event except by blowing rain. Roll-offs, transfer trailers, and other containers will be covered when they contain waste or recyclable material. Contaminated water calculations for peak flow conditions include conservative assumptions for rainfall, wet waste, and wash-down water. The contaminated water system sump capacity will be a minimum of 170 gallons (total system) to handle the maximum contaminated water generated during the 25 year event due to rain water blowing into the side of processing building and thereby possibly becoming contaminated. All contaminated water will be collected and ~~P~~pipes will carry the contaminated water from the points of collection to the contaminated water storage tank or directly to the sewer system. The tank will be dual contained, and will have a minimum capacity of 5,000 gallons. The design of any tank will be such that contaminated water can be pumped through a force main to the sanitary sewer system. Nexus operators will be able to visually determine the level of the tank during daily operations. The tank will be emptied prior to reaching 70% capacity. Since the tank will be fully enclosed, it will not be required to accommodate a 25-year, 24-hour rainfall event per 30 TAC §330.63(d)(1)(B). ~~If s~~Secondary containment ~~is~~ will be provided by berms or dikes, and the capacity of the secondary containment (if open to precipitation) will be a minimum of 10,000 gallons, in order to hold the largest tank volume plus

the 25-year, 24-hour storm (precipitation event of 11 inches per the TxDOT Hydraulic Design Manual).

The facility proposes to operate up to 24 hours per day seven days per week. Therefore, minimal storage of materials onsite is anticipated, with a maximum storage period for MSW of 72 hours. TCEQ authorization will be requested to exceed this storage period during unusual events such as natural disaster situations. The maximum time limit for the storage of recyclable commodities is 180 days.

Please note that none of the following features apply to this facility:

- Incineration units
- Surface impoundments
- Landfill units
- Arid exemption landfill units
- Mobile liquid waste processing units
- Type IX energy, material, gas recovery for beneficial use
- Compost units
- Type VI waste processing demonstration units



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NEXUS CONTINUUM

HDR
HDR Engineering, Inc.
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Texas P.E. Firm
Firm Registration No.F-754

ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	J.MILLER
ENGINEER	J.MILLER
CHECKED BY	
DESIGNED	
DRAWN BY	B.COX
QA/QC	
PROJECT NUMBER	142132

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Prepared by or under the Direct Supervision of
JOEL B. MILLER, P.E. 103847
3/30/2012

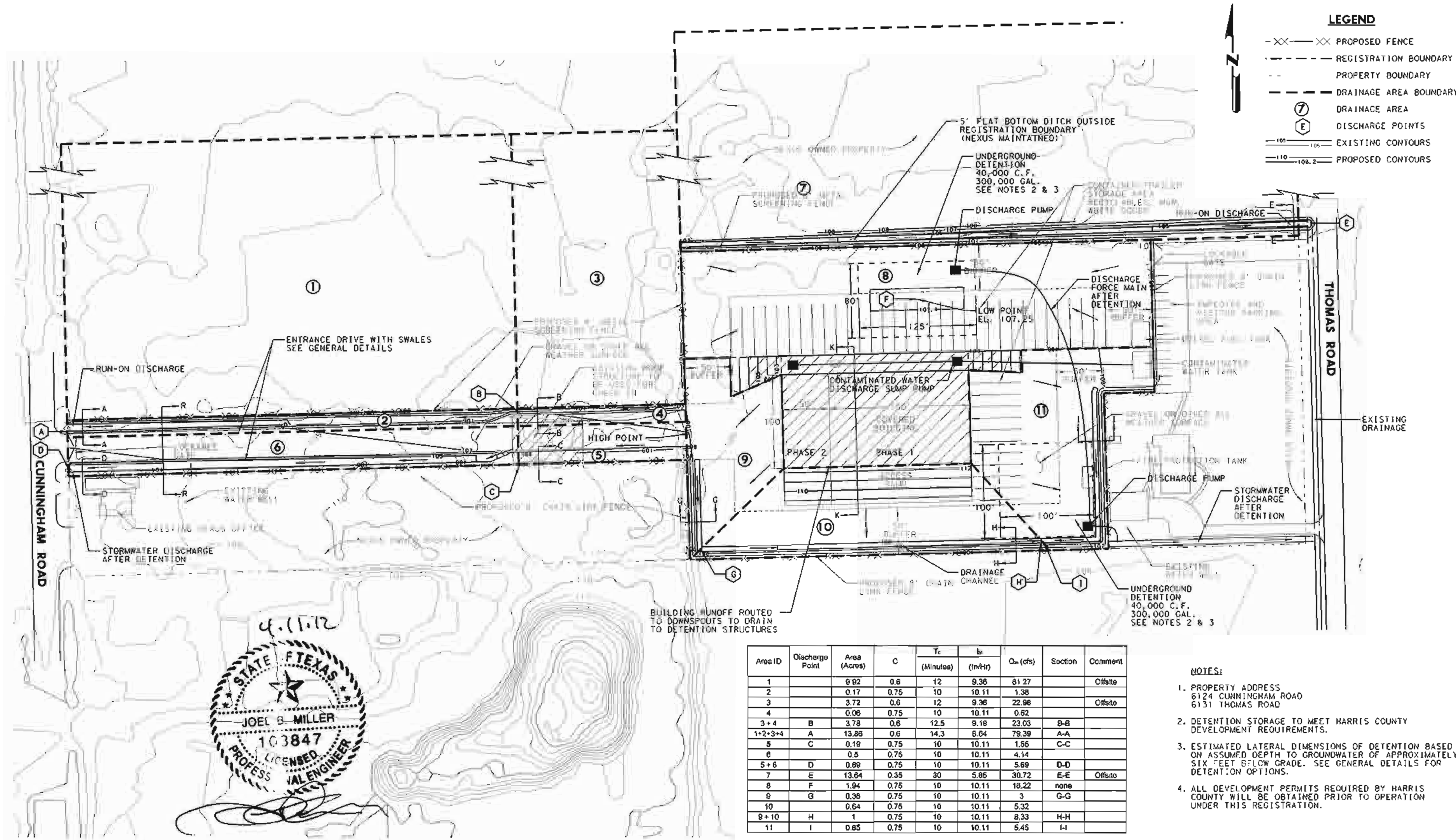
NEXUS CONTINUUM, LLC.
HARRIS COUNTY, TEXAS

FACILITY LAYOUT
MATERIAL RECOVERY AND TRANSFER STATION

0 50' 100'

FILENAME	N_SL08.dgn
SCALE	

SHEET
PART III
FIGURE 1



Area ID	Discharge Point	Area (Acres)	C	T_c (Minutes)	I_{25} (In/Hr)	Q_{25} (cfs)	Section	Comment
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2		0.17	0.75	10	10.11	1.38		
3		3.72	0.6	12	9.36	22.98		Offsite
4		0.06	0.75	10	10.11	0.62		
3 + 4	B	3.78	0.6	12.5	9.18	23.03	B-B	
1+2+3+4	A	13.86	0.6	14.3	8.64	79.39	A-A	
5	C	0.19	0.75	10	10.11	1.56	C-C	
6		0.5	0.75	10	10.11	4.14		
5 + 6	D	0.69	0.75	10	10.11	5.69	D-D	
7	E	13.64	0.35	30	5.85	30.72	E-E	Offsite
8	F	1.94	0.75	10	10.11	16.22	none	
9	G	0.36	0.75	10	10.11	3	G-G	
10		0.64	0.75	10	10.11	5.32		
9 + 10	H	1	0.75	10	10.11	8.33	H-H	
11	I	0.65	0.75	10	10.11	5.45	I-I	

NOTES:

1. PROPERTY ADDRESS
   6124 CUNNINGHAM ROAD
   6131 THOMAS ROAD
2. DETENTION STORAGE TO MEET HARRIS COUNTY DEVELOPMENT REQUIREMENTS.
3. ESTIMATED LATERAL DIMENSIONS OF DETENTION BASED ON ASSUMED DEPTH TO GROUNDWATER OF APPROXIMATELY SIX FEET BELOW GRADE. SEE GENERAL DETAILS FOR DETENTION OPTIONS.
4. ALL DEVELOPMENT PERMITS REQUIRED BY HARRIS COUNTY WILL BE OBTAINED PRIOR TO OPERATION UNDER THIS REGISTRATION.

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ENGINEER	J.MILLER
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DESIGNED	
DRAWN BY	B.COX
QA/QC	
PROJECT NUMBER	142132

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3/30/2012

NEXUS CONTINUUM, LLC.
HARRIS COUNTY, TEXAS

OVERALL SITE DRAINAGE PLAN
DEVELOPED CONDITIONS

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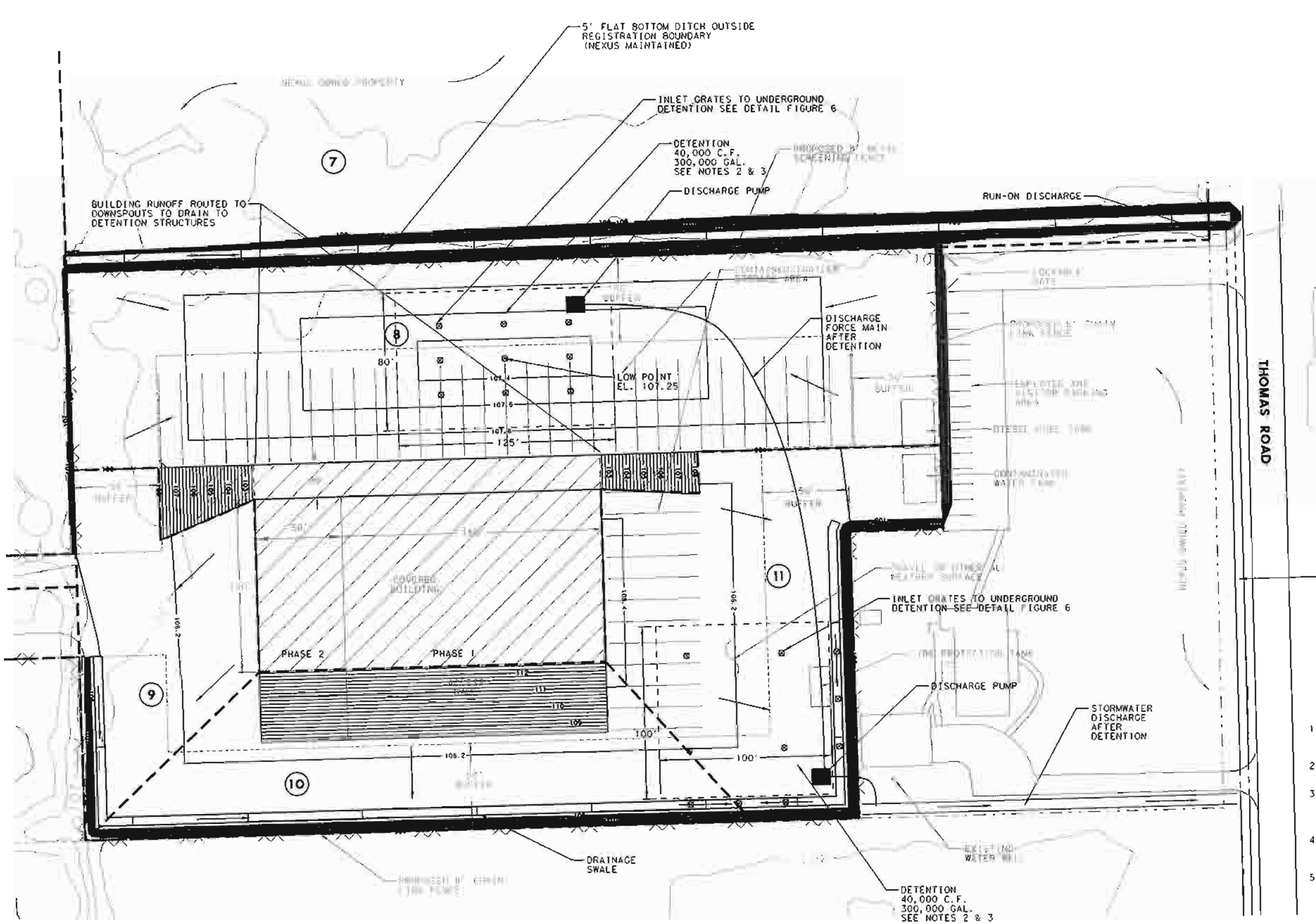
SCALE

SHEET
PART III
FIGURE 3



LEGEND

- PROPOSED FENCE
- REGISTRATION BOUNDARY
- PROPERTY BOUNDARY
- DRAINAGE AREA BOUNDARY
- (7) DRAINAGE AREA
- INLETS
- EXISTING CONTOURS
- PROPOSED CONTOURS

4.11.12

STATE OF TEXAS
JOEL B. MILLER
103847
LICENSED
PROFESSIONAL ENGINEER

NOTES:

1. PROPERTY ADDRESS
   6124 CUNNINGHAM ROAD
   6131 THOMAS ROAD
2. DETENTION PONDS OR UNDERGROUND STORAGE TO MEET HARRIS COUNTY DEVELOPMENT REQUIREMENTS.
3. ESTIMATED LATERAL DIMENSIONS OF DETENTION BASED ON ASSUMED DEPTH TO GROUNDWATER OF APPROXIMATELY SIX FEET BELOW GRADE. SEE GENERAL DETAILS FOR DETENTION OPTIONS.
4. ALL DEVELOPMENT PERMITS REQUIRED BY HARRIS COUNTY WILL BE OBTAINED PRIOR TO OPERATION UNDER THIS REGISTRATION.
5. INLET GRATES OR INLET CUTTERS WILL BE USED AS NECESSARY TO CONVEY RUNOFF TO UNDERGROUND DETENTION. DETAILS AND EXACT LOCATION WILL DEPEND ON DETENTION ALTERNATIVE.

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3/30/2012

NEXUS CONTINUUM, LLC.
HARRIS COUNTY, TEXAS

SITE DRAINAGE PLAN
DEVELOPED CONDITIONS

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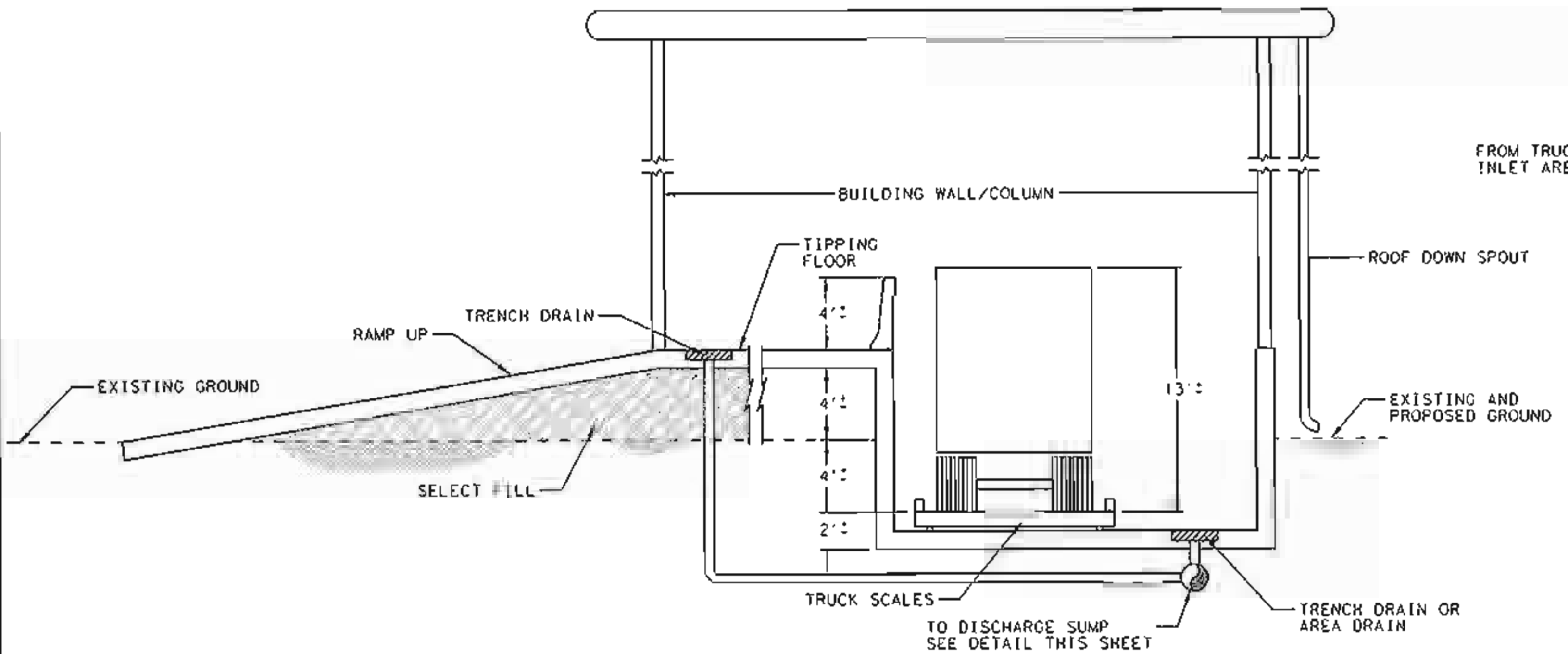
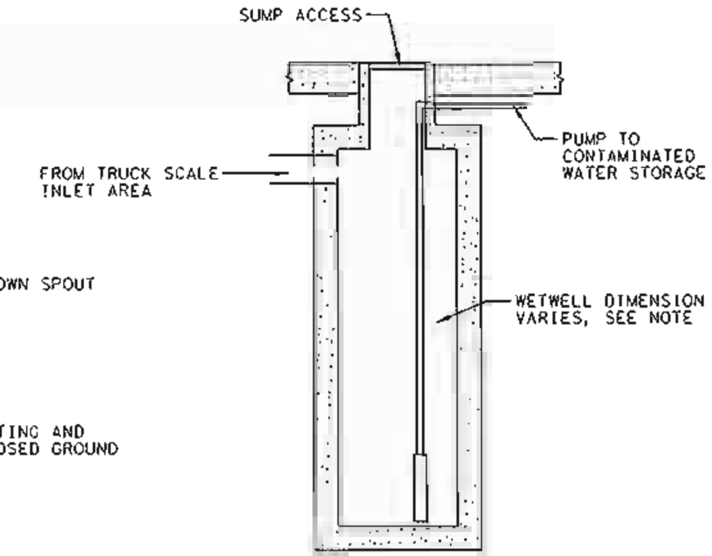
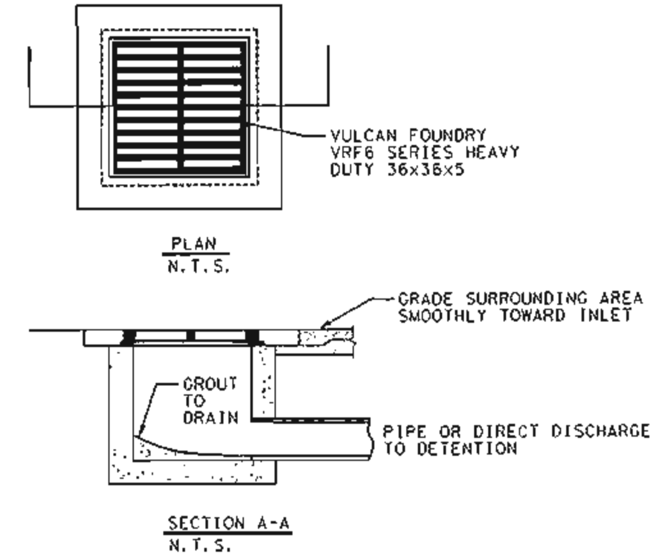


SECTION K-K
SCHEMATIC CROSS SECTION
N.T.S.



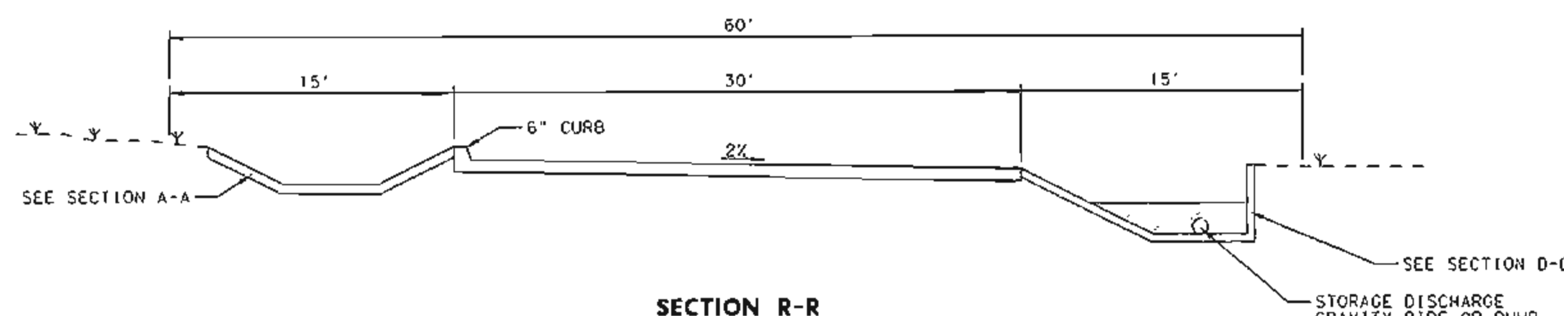
TYPICAL CONTAMINATED WATER DISCHARGE SUMP DETAIL
N.T.S.

NOTE: 170 GALLON MINIMUM STORAGE CAPACITY OF CONTAMINATED WATER SYSTEM.



GRATE INLET
N.T.S.

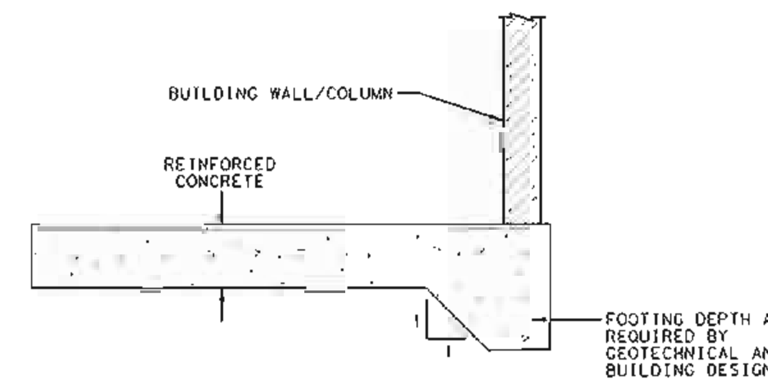
NOTE:
INLET GRATES OR INLET GUTTERS WILL BE USED AS NECESSARY TO CONVEY RUNOFF TO DETENTION. DETAILS AND EXACT LOCATION WILL DEPEND ON DETENTION ALTERNATIVE.



SECTION R-R
TYPICAL ENTRANCE DRIVE CROSS SECTION
N.T.S.

4.11.12

STATE OF TEXAS
JOEL B. MILLER
103847
LICENSED PROFESSIONAL ENGINEER



TYPICAL SLAB & FOOTING DETAILS
N.T.S.

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NEXUS CONTINUUM, LLC.
HARRIS COUNTY, TEXAS

GENERAL DETAILS
CROSS SECTIONS

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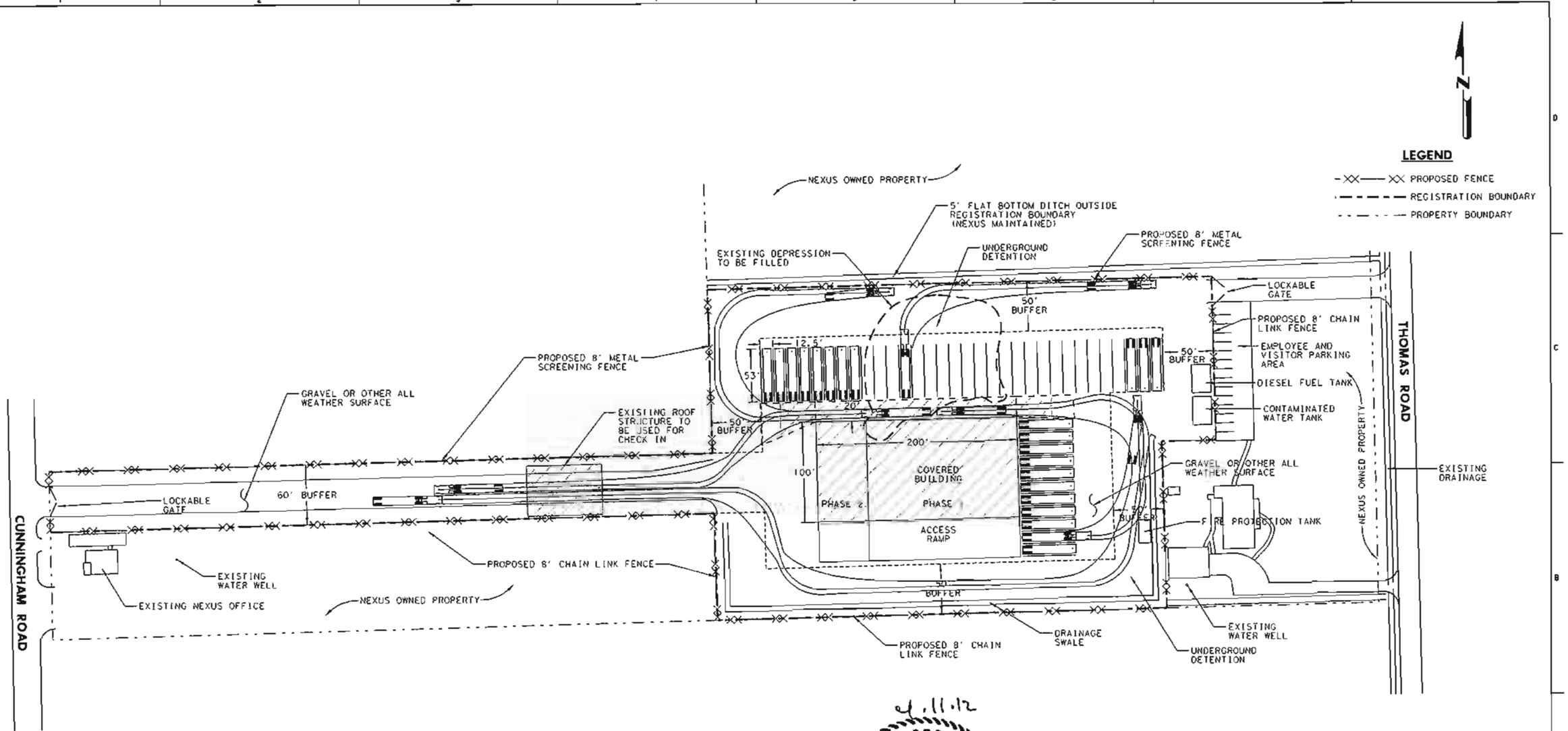

4.11.12

STATE OF TEXAS
JOEL B. MILLER
103847
LICENSED
PROFESSIONAL ENGINEER

NOTES:

1. PROPERTY ADDRESS
   6124 CUNNINGHAM ROAD
   6131 THOMAS ROAD
2. CONCEPTUAL TRAFFIC FLOW SHOWN WITH ACTUAL TRUCK TURNING RADII TO DETERMINE BUILDING AND OTHER SITE FEATURES.
3. ALL TRUCK TRAFFIC WILL ENTER/EXIT CUNNINGHAM ROAD. ACCESS FROM THOMAS ROAD LIMITED TO ADMINISTRATIVE AND EMERGENCY.
4. STORAGE AREA IS SUFFICIENT FOR 43 125 C.Y. TRANSFER TRAILERS.

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ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	J.MILLER
ENGINEER	J.MILLER
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DESIGNED	
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QA/QC	
PROJECT NUMBER	142132

FOR PERMITTING ONLY. NOT FOR BIDDING, OR CONSTRUCTION.
Prepared by or under the Direct Supervision of
JOEL B. MILLER, P.E. 103847
3/30/2012

NEXUS CONTINUUM, LLC.
HARRIS COUNTY, TEXAS

TRAFFIC FLOW DIAGRAM

0 50' 100'

FILENAME N_TF004.dgn
SCALE

SHEET
PART III
FIGURE 9

TCEQ Technical Revision #1, April 2012

Attachment A – Surface Water Drainage Report

Pierce L. Chandler, Jr., P.E.

DESIGN MEMORANDUM TO: Michael W. Oden, P.E.
SUBJECT: Surface Water Drainage Report
PROJECT: Nexus Continuum Material Recovery & Transfer Station Facility, Houston, Texas
DATE: October 10, 2011
PAGES: 23

Texas Registered Engineering Firm F-566
October 10, 2011
Pages 1-23

PURPOSE AND SCOPE

This design memorandum was prepared to demonstrate compliance with the requirements of **30 TAC §330.303 – Surface Water Drainage for Municipal Solid Waste Facilities and 30 TAC §330.63(c) – Facility Surface Water Drainage Report.** This design memorandum is provided in support of the application by Nexus Continuum for registration of their proposed material recovery and transfer station facility ("Nexus Facility") as a Type V Transfer Station that recycles more than 10% of the incoming waste stream.

PROPERTY DESCRIPTION

The Nexus Facility will occupy a narrow strip of land between Cunningham Road and Thomas Road. The physical location of the Nexus Facility is shown on Part II, Figure II – Facility Layout. Of the approximately 2-1/2 acres of property owned by Nexus Continuum along Cunningham Road, a 60-foot by 660-foot corridor (approximately 0.91 acres) is proposed as part of the Nexus Facility. This narrow strip will be referred to as the "western tract." Of the 5 acres of Nexus-owned property along Thomas Road, approximately 3.6 acres is proposed to be included as part of the Nexus Facility and will be referred to as the "eastern tract." The total registration boundary will encompass 4.51 acres.

SUMMARY

The Nexus Facility will be constructed, maintained, and operated to manage run-on and runoff during the peak discharge of a 25-year rainfall event. The Nexus Facility will prevent the off-site discharge of waste and feed-stock material through a combination of constructed features and operating procedures:

- providing concrete flooring / pavement under all tipping, processing and storage areas
- providing a roof over tipping, processing and interior storage areas to minimize the potential to generate "contaminated water"
- providing constructed features to control run-on and run-off

The Nexus Facility will operate under a TPDES General Permit for storm water discharges. A Storm Water Pollution Prevention Plan ("SWPPP") will be prepared for the facility and will be updated as necessary to reflect site modifications proposed by Nexus.

1204 Bayshore, Rockwall, Texas 75087 omc@airmail.net 972-771-1310(office) 972-740-8827(cell)

PETROPARK

REAGAN

EXISTING RUN-ON DRAINAGE AREA (APPROX. 27.3 ACRES)

CUNNINGHAM

THOMAS

UNNAMED DRAINAGE CHANNEL

OVERLOOK

SITE LOCATION

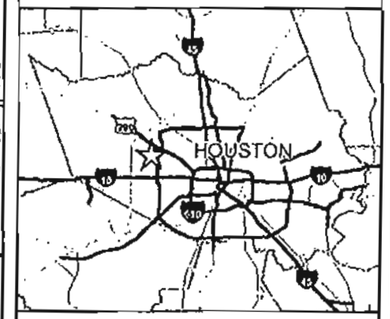
DRAINAGE AREA MAP

NEXUS MATERIAL RECOVERY & TRANSFER STATION

TYPE V MSW REGISTRATION

NEXUS CONTINUUM LLC

HARRIS CO, TX



LEGEND

- REGISTRATION BOUNDARY
- PROPERTY BOUNDARY
- DRAINAGE AREA
- DRAINAGE CHANNEL
- 1-FOOT INDEX CONTOUR
- 1-FOOT INTERMEDIATE CONTOUR

STATE OF TEXAS
PIERCE L. CHANDLER, JR.
33368
LICENSED
PROFESSIONAL ENGINEER

October 19, 2011

Texas Registered Engineering Firm F-566

SOURCE: 2008, HOUSTON-GALVESTON AREA COUNCIL

0 75 150 300
Feet

N
W E
S

NEXUS CONTINUUM

FILE: N:\Dept037_DallasEngineering\SBA\12-42132_Nexus Disposal\MapDocs\Aromas\NexusDisposal_Drainage4Area_11x17.mxd

Part IV

Nexus Continuum, LLC

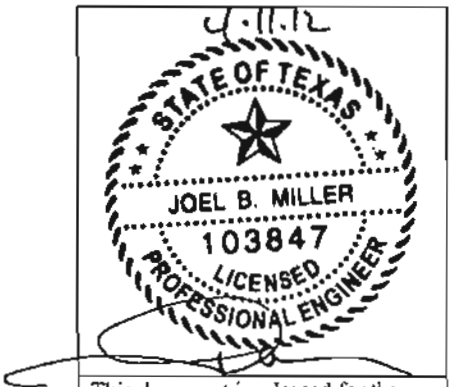
Type V- Municipal Solid Waste Facility

Nexus Material Recovery and Transfer Station

MSW Registration No. XXXXX

Harris County
Houston, Texas

~~October 2011~~April 2012



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For pages 1 thru 11

Nexus Material Recovery and Transfer Station
Part IV
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4.11.12

STATE OF TEXAS
JOEL B. MILLER
103847
LICENSED
PROFESSIONAL ENGINEER

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For pages 1 thru 44

6.0 WASTE ACCEPTANCE AND ANALYSIS

30 TAC §330.203

The amount of material that will be received at the facility is estimated to be a maximum of 5,000 cubic yards per day (CY/d). Based on an average incoming density of 400 pounds per cubic yard, the anticipated maximum material to be received is expected to be 1,000 tons per day (TPD). The facility will have the capacity to transfer up to 5,000 CY/d. This is based on the ability to load two 125 CY transfer trailers in an hour (250 CY/hr x 20 hours – assumes 4 hours of down time). This reflects an average waste processing time of 250 CY/hr (0.24 min/CY) at full capacity. If smaller capacity trailers are utilized, the maximum amount of material that can be processed may be less than the stated 5,000 CY/d. With smaller trailers and/or less incoming waste, the waste processing time could increase up to an expected maximum waste processing time of 120 CY/hr (0.50 min/CY) at lower (initial) capacity. It is anticipated that 2,400 cubic yards per day will be received initially. The maximum amount of waste and recyclable material to be received is 5,000 CY per day, of which a minimum of 500 cubic yards per day will be recovered and sent for reuse or recycling.

The facility proposes to operate up to 24 hours per day seven days per week and expects to receive a maximum of about 365,000 tons per calendar year. The population equivalent (based on 5 pounds per capita per day) of 365,000 tons per year is 400,000. The following Table IV-4 shows the maximum amount of solid waste to be received daily and annually for the next five years. These projections are not intended to limit the receipt to less than the maximum of 5,000 cubic yards per day.

Table IV-4: Projected Waste Acceptance

Year	Daily (CY)	Annually (CY)
1	2,400	876,000
2	2,640	963,600
3	2,904	1,059,960
4	3,194	1,165,956
5	3,514	1,282,552

7.0 CONTAMINATED WATER MANAGEMENT

30 TAC §330.207

All liquids resulting from the operation of the Transfer Station will be disposed of in a manner that will not cause surface water or groundwater pollution. Contaminated water will be collected and contained until properly managed. Contaminated water from received waste and from tipping floor washdown will be collected and stored onsite in a storage tank with either built-in or external secondary containment. The storage tank will be manufactured for liquid storage and will have a minimum capacity of 5,000 gallons. The tank will be coated per manufacturer instructions as an aid against corrosion. Off-site discharge of contaminated waters will be made only after approval under the Texas Pollutant Discharge Elimination System authority.

This Transfer Station does not use leachate or gas condensate for mining processes, nor does it process grease trap waste, grit trap waste, septage, or mobile liquid waste, therefore §330.207(c) and (d) do not apply.

Wastewaters discharged to a treatment facility permitted under Texas Water Code, Chapter 26 will not:

1. interfere with or pass-through the treatment facility processes or operations
2. interfere with or pass-through its sludge processes, use, or disposal
3. otherwise be inconsistent with the prohibited discharge standards, including 40 Code of Federal Regulations Part 403, General Pretreatment Regulations for Existing and New Source Pollution

Upon receipt of a discharge authorization by the receiving treatment plant owner/operator, a sampling plan will be developed according to the applicable requirements of the discharge authorization. At a minimum, effluent from the facility will be analyzed annually for TPH, fats, oil and grease, and pH. Records of each analysis shall be maintained at the facility for a minimum of three years. All sampling and analysis shall be done according to EPA-approved methods.

Final disposition of the contaminated water will be by permitted discharge into an existing sanitary sewer line at the site, for treatment at an authorized wastewater treatment plant. As a contingency, Nexus will have the ability to truck-haul wastewater to a permitted waste-water treatment plant. The daily effluent design standard for oil and grease concentration leaving the facility and entering the public sewer system will not exceed the concentration established in the wastewater discharge ~~permit~~ authorization pretreatment limit.

10.0 APPROVED CONTAINERS

30 TAC §330.211

On-site storage of recyclables and municipal solid waste will be in covered or closed odor-retaining containers constructed of metal and are leak proof, durable, and designed for safe handling and easy cleaning. Reusable containers will be maintained in a clean condition so that they do not constitute a nuisance and to retard the harborage, feeding, and propagation of vectors. Non-reusable containers will not be used. Containers will be covered by metal or plastic attached covers, or polyvinyl tarp covers. These covers will be water, weather and abrasion resistant; and will provide coverage of the container contents to limit exposure to precipitation. ~~All solid wastes containing food wastes will be stored in covered or closed containers that are leak proof, durable, and designed for safe handling and easy cleaning. Reusable containers will be maintained in a clean condition so that they do not constitute a nuisance and to retard the harborage, feeding, and propagation of vectors. Non-reusable containers will not be used.~~ Containers that are emptied manually will be capable of being serviced without the collector coming into physical contact with the waste. Containers that are mechanically emptied will be designed to prevent spillage or leakage during storage, handling, and transport.

11.0 RECORDKEEPING AND REPORTING REQUIREMENTS

30 TAC §330.219

A copy of the registration, the approved registration application and all other related or required plans or documents will be maintained at the facility during construction and throughout the active life of the site and shall be considered a part of the operating record of this facility. In addition, information and data shall be recorded, as appropriate, in the operating record to be retained at the site during the active life of the site. Upon request by the TCEQ or other interested parties, all such documents will be made available for inspection.

The following records will be kept, maintained and filed as part of the facility operating record. Log books and schedules may be used.

- Access Control Inspection and Maintenance
- Waste Screening Records
- Daily Litter Inspection and Pickup (including adjacent roadways)
- Windblown Waste and Litter Control Operations
- Dust Nuisance Control Efforts
- Access Roadway Regrading
- Salvaged Material Storage Nuisance Control Efforts
- Fire Occurrence Notices

In addition to the plans and documents listed above, the information in Table IV-5 will be recorded and retained in the operating record. This information will be placed in the operating record within seven working days of completion or upon receipt of analytical data, as appropriate.

13.0 ACCESS CONTROL

30 TAC §330.223

Public access will be controlled to minimize unauthorized vehicular traffic, unauthorized and illegal dumping, and public exposure to hazards associated with waste management. Controlled access will be obtained by chainlink and metal screening fences and gates.

The main point of access to the site by vehicular traffic is by means of the main entrance on Cunningham Road. A fence with a lockable gate will be installed, and truck traffic will be physically routed through the currently existing roof structure for entrance processing. The exterior gate will be closed and locked during non-operating hours. The remainder of the site will be enclosed by chainlink and metal screening fence that connects to the Cunningham Road frontage fence. The chainlink and metal screening fence will be at least eight feet in height throughout. When the main entrance gate is opened, any person or vehicle entering the site will be within view of Nexus personnel at the check-in facility. Nexus personnel will not allow any unauthorized entry or deposition of solid waste or hazardous materials. A sign, indicating the type of site, the hours and days of operation, and the registration number will be located at the entrance through which wastes are received. An administrative entrance will be located on the eastern boundary with vehicular access to Thomas Road. This entrance will be available for small vehicle traffic for Nexus personnel and will not include waste delivery. The exterior gate will be closed and locked during non-operating hours, and when it is opened, any person or vehicle entering the site will be within view of Nexus personnel at the administrative office. The entrance gates and the type and location of the perimeter fencing are shown on the Facility Layout (Part III, Figure 1). Perimeter fences will be inspected at least on a quarterly basis. Records of these inspections are required maintenance and will be kept in the site's operating record.

When there is an access breach, the commission's regional office, and any local pollution agency with jurisdiction that has requested to be notified, must be notified within 24 hours of detection. The breach must be temporarily repaired within 24 hours of detection and must be permanently repaired by the time specified to the commission's regional office when it was reported in the initial breach

15.0 SPILL PREVENTION AND CONTROL

30 TAC §330.227

Storage and processing areas are designed to control and contain spills and contaminated water from leaving the facility. All storage and processing areas are covered and are therefore not subject to runoff from direct rainfall. The only contaminated water is wash water. The wash water is controlled within the building and the transfer-trailer loading area with sloped floors that drain to a contaminated water storage tank onsite. In addition, the cleaning of waste processing equipment and vehicles will be performed within the processing facility so that the contaminated wash water will be captured. The contaminated water will be pumped to the sanitary sewer line onsite for disposal, or hauled by truck to a permitted wastewater treatment plant. In all cases final disposal of the contaminated water will take place prior to the tank reaching 70% capacity.

A worst-case spill condition can be estimated by assuming complete rupture of the contaminated water tank. The tank will be dual contained, and will have a minimum capacity of 5,000 gallons. Secondary containment will be provided by berms or dikes as shown on Part III, Figure 6; and the capacity of the secondary containment (if open to precipitation) will be a minimum of 10,000 gallons, in order to hold the largest tank volume plus the 25-year, 24-hour storm (precipitation event of 11 inches per the TxDOT Hydraulic Design Manual). Therefore, the worst-case spill of tank rupture during the 25-year event will be able to be contained in the secondary containment berm.

19.0 MATERIALS ALONG THE ROUTE TO THE FACILITY

30 TAC §330.235

The Gate Personnel will take steps to encourage that vehicles hauling waste to the facility are enclosed or provided with a tarpaulin, net, or other means to effectively secure the load in order to prevent the escape of any part of the load by blowing or spilling. The Gate Personnel or Site Supervisor will take actions such as posting signs, reporting offenders to proper law enforcement officers, adding surcharges, or similar measures.

The Nexus Material Recovery and Transfer Station will use its own forces or contract labor for litter removal. Waste material will only be accepted from the facility entrance on Cunningham Road. Therefore, ~~They~~Nexus will collect spilled materials within the right of way of public access roads serving the facility for a distance from the site entrance for 2.0 miles in any direction ~~along Cunningham Road~~ on days the transfer station ~~accepts waste~~is in operation. These public access roads will include portions of Cunningham Road, Little York Road, Tanner Road, and the Sam Houston Tollway. All vehicles will be required to ensure their loads are covered in compliance with vehicle laws.

19.1 Facility Access Roads

30 TAC §330.237

On-site roads will be all-weather surfaced (gravel, asphalt or concrete) to provide wet-weather operation capability. The roads will be free draining and passable in two directions, and free of excessive ruts. Tracked mud and associated debris at the entrance to the facility and on the public roadway at the entrance to the facility and trash on public roadways will be removed at least once per day on days when mud and associated debris are being tracked onto the public roadway, to the extent that mud can be reasonably considered to be associated with facility operations.

Dust from on-site and other access roadways will not become a nuisance to surrounding areas. A water source and necessary equipment will be provided to prevent nuisance dust. All on-site and

other access roadways will be maintained on a regular basis to minimize depressions, ruts, and potholes.

20.0 NOISE POLLUTION AND VISUAL SCREENING

30 TAC §330.239

Conducting the waste separation/recycling and transfer operations within a partially enclosed building will provide noise pollution control. The walls on the three sides of the building will direct noise from operations to the interior of the site. The building is located on an industrial site, and is immediately surrounded by other industrial sites, as well as Nexus-owned property to the north, west and east. In addition, the tree and brush covered terrain at the property boundaries will provide additional mitigation of any noise that may emanate from the operation. Nexus operations have never generated any noise complaints in the past.

Visual screening of the proposed facility will be provided by the three walls of the processing building and, perimeter screening fencing ~~and the vegetation~~ that will be constructed~~exists~~ at the property boundaries. All operations dealing with municipal solid waste are to take place in the processing building that is enclosed on three sides. Perimeter fencing will be a combination of 8-foot tall chain link fencing and 8-foot tall metal screening fencing.

These features along with the use of mufflers on equipment and proximity to other adjacent land uses, provides adequate visual screening and control of noise pollution.

21.0 OVERLOADING AND BREAKDOWN

30 TAC §330.241

The design capacity of the solid waste facility will not be exceeded during operation. The facility will not accumulate solid waste in quantities that cannot be processed within such time as will preclude the creation of odors, insect breeding, or harborage of other vectors. If such accumulations occur, additional solid waste will not be received until the adverse conditions are abated. The facility does not accept grease trap waste, grit trap waste, septage, or liquid waste, therefore §330.241(a)(1) and (2) do not apply.

The facility is sized to accept 5,000 cubic yards per day with a maximum temporary storage of 5,375 cubic yards based upon 43 transfer trailers loaded with an average of 125 cubic yards of material each. Once this storage volume has been received, no additional material will be accepted until an equal volume is removed. The anticipated amounts of waste to be accepted during normal operations will be significantly less than this amount (refer to the Waste Acceptance Plan). The operation is an open-top load facility, which limits the amount of equipment that would affect operations at capacity. Front-end loaders will be used to move waste and recyclables to the appropriate transfer trailers, storage bins or roll-off containers. If a front-end loader does break down, waste will either be stored until it is repaired or until the remaining loader catches up with material removal or the facility will obtain other equipment.

If a significant work stoppage should occur, the owner or operator will restrict additional solid waste receipt. In the event that the facility becomes inoperable for periods longer than 24 hours, waste acceptance will stop and waste haulers will be directed to the disposal facilities shown on Part I, Figure 1. If the work stoppage is anticipated to last long enough to create objectionable odors, insect breeding, or harborage of vectors, steps will be taken to remove the accumulated solid waste from the facility to an approved backup storage, processing, or disposal facility within 72 hours.

22.0 SANITATION

30 TAC §330.243

The waste separation/recycling facility and transfer station will receive MSW, C&D and recyclable material and is designed to facilitate appropriate cleaning. Litter and wind-blown materials will be contained by the site fencing and picked up for disposal as necessary. Surface water run-on will be prevented by a raised tipping floor surface and storage areas. In addition, all material stored onsite will be stored in roll-off boxes or transfer trailers and covered, which will further prevent surface water run-on. Floors shall be constructed of reinforced concrete to facilitate cleaning and scrubbing, and will be swept and cleaned with pressure hoses as necessary to maintain a reasonably clean environment. Water will be available at various locations to allow for use of pressure hoses. Working surfaces that have come into contact with waste will be washed down once per week, at the completion of processing activities. During times that the facility is in continuous operation, the floor will be swept daily and washed down at least two times per week.

After cleaning in designated processing areas, the water will be collected in floor drains located both on the tipping floor and in the transfer-trailer loading area. The collected water will be stored in a contaminated water storage tank onsite or discharged directly to a sanitary sewer. Stored contaminated water will be pumped to the sanitary sewer line onsite for disposal, or hauled by truck to a permitted wastewater treatment plant. In all cases final disposal of the contaminated water will take place prior to the tank reaching 70% storage capacity. Wash waters shall not be allowed to accumulate on site without proper treatment to prevent the creation of odors or an attraction to vectors. All wash waters shall be collected and disposed of in an authorized manner.

23.0 VENTILATION AND AIR POLLUTION CONTROL

30 TAC §330.245

Air emissions from the facility will not cause or contribute to a condition of air pollution as defined in the Texas Clean Air Act. The facility will obtain authorization, under Subchapter U of 30 TAC 330 (relating to Standard Air Permits for Municipal Solid Waste Landfill Facilities and Transfer Stations).

No burning of wastes is proposed for this processing facility. This facility will be operated in a manner that includes routine waste removal and facility cleaning to avoid the generation of objectionable odors becoming a nuisance.

The facility will be designed and operated to provide adequate ventilation for odor control and employee safety. The operator will prevent nuisance odors from leaving the boundary of the facility. If nuisance odors are found to be passing the facility boundary, the facility operator will suspend operations until the nuisance is abated or immediately take action to abate the nuisance.

The owner or operator will employ the following measures for odor control:

- on-site buffer zones (minimum 50-ft – as shown on Part II, Figure 2 and related drawings) will separate the processing facility from the Registration boundary,
- building ventilation measures,
- extremely odorous or dusty material will not be accepted for processing, and
- liquid waste and putrescible waste will not be accepted and solid waste will be stored in odor-retaining containers.

Ventilation of the proposed processing building will be accomplished by the fact that the building will not be a fully enclosed structure. The building will be open on the south side for truck access from the access ramp. In addition, the other three sides will have various doors, ~~and~~ windows and ridge vents that will remain open during operations. The building will be a commercially produced metal building of the type sometimes referred to as "pre-engineered". If necessary, additional

ventilation can be provided by ventilation fans designed and installed into the building walls. Building design will ensure a minimum of eight air changes per hour. As a conservative example, at maximum building size, with no other ventilation (not the case, as the structure will not be fully enclosed), the facility would require the following ventilation flow rate:

$$\frac{600{,}000\ cubic\ feet}{1\ air\ change\ volume} * \frac{8\ air\ changes}{1\ hour} * \frac{1\ hour}{60\ minutes} = 80{,}000\ cubic\ feet\ per\ minute$$

This could be accomplished with up to 6 commercially available ventilation fans rated at 13,500 cubic feet per minute. As stated, this is a conservative example and ventilation fans will be utilized if building design warrants their use.

Roll-offs, transfer trailers, and other containers will be kept covered to the extent possible to minimize odors. In addition, the site is surrounded by other industrial facilities. Prevailing winds at the site are from the southeast (see wind rose – Part II,

Figure 1), which will direct odor into the barrier on the north side of the tipping floor, thereby keeping odor to the interior of the site. As noted previously, Nexus owns property directly to the north, west and east of the building. All odorous material will be processed quickly on the tipping floor to minimize the amount of time that the odorous material is exposed. The material will be stored onsite for a maximum period of 72 hours in storage bins, roll-offs, or trailers, which will be covered in order to minimize odor. Extremely odorous material and putrescible waste will not be accepted for processing.

Any ponded water at the facility will be controlled to avoid becoming a nuisance. In the event that objectionable odors do occur as a result of ponding, appropriate measures will be taken to alleviate the condition. These measures may include elimination of the ponded water and regrading of the area to prevent future ponding.

Other measures that will be taken to control air pollution at the facility include:

- No open burning will occur at the site except as approved by TCEQ.
- Accidental fires are controlled as outlined in the Fire Protection Plan.
- Weekly wash down of all surfaces that have come into contact with waste.
- Waste materials that contain strong, objectionable odors will not be accepted at the facility.
-

Emissions events and scheduled maintenance activities shall be reported as they occur and as required by applicable regulations.