

Part II

Nexus Continuum, LLC

Type V- Municipal Solid Waste Facility

Nexus Material Recovery and Transfer Station

MSW Registration No. XXXXX

Harris County, Texas

October 2011

10-27-2011



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Part II
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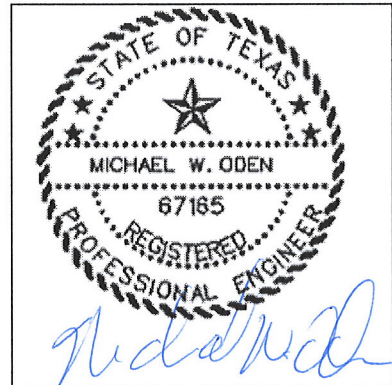
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For pages 1 thru 27

1.0 EXISTING CONDITIONS SUMMARY

30TAC §330.61(a)

Nexus Disposal, LLC is a local, family-owned minority business that operates a commercial solid waste and recyclables collection services company. In operation since 1995, its service area primarily consists of Harris County and the City of Houston. Nexus Disposal currently operates from 6124 Cunningham Road, Harris County, Texas. The current facility occupies 1 acre of the approximately 2.5 acre property which is located immediately adjacent to Cunningham Road. This location provides easy access to the Sam Houston Tollway approximately 1 mile to the east (see General Location Map, Part I, Figure 1). Current operations include an office and storage area for roll-off trucks, transfer trailers and containers when not in use. Truck storage and maintenance activities occur on other property.

Nexus Disposal currently operates a fleet of trucks and containers to serve its customers. Waste and recyclable material storage containers typically range in size from 12 to 40 cubic yards (CY). The more commonly used sizes are 20 and 40 CY. Nexus Disposal specializes in serving the construction and demolition (C&D) waste market. C&D waste is defined in Title 30 of the Texas Administration Code Chapter 330.3(33) [30 TAC 330.3(33)] as " ... waste resulting from construction or demolition projects; includes all materials that are directly or indirectly the by-products of construction work or that result from the demolition of buildings and other structures, including; but not limited to, paper, cartons, gypsum board, wood, excelsior, rubber, and plastics." Construction or demolition projects also generally produce materials such as trees or brush, concrete or masonry rubble, and excavated soil that could become part of the C&D waste stream if not recycled. However, the vast majority of the C&D waste stream is recyclable, so it must first be processed and sorted by commodity type before it can be effectively sold for reuse. Effective processing (segregation and consolidation) can return as much as 95 percent of the typical C&D waste stream for reuse.

Nexus Disposal also provides certification of material recycling as required by the Leadership in Energy and Environmental Design (LEED) Green Building Rating System. Properly managing the recyclable by-products of construction, demolition, renovation, or deconstruction and of society's infrastructure is an integral part of sustainability.

Nexus Disposal has long seen the need for effective recycling of C&D material in the Houston metropolitan area, having provided service to this industry for over 15 years at the current location. The site is in a mostly industrial location, well suited for a material recovery and transfer station facility. Markets for recyclable materials and adequate landfill space for waste materials exist in the near vicinity (see Part I, Figure 1). The site has access, adequate separation and buffer distances from neighbors and is compatible with existing land use. This site is proposed for the Nexus Material Recovery and Transfer Station facility. As such, Nexus Continuum, LLC (Nexus) has prepared this registration application and will become the owner and operator of the processing activities at the Nexus facility.

Nexus is preparing this registration for a Material Recovery and Transfer Station (MRTS) Type V facility, and is eligible for a registration pursuant to 30 TAC 330.9(f) since Nexus will recover a minimum of 10% by weight or weight equivalent of the total incoming waste stream for reuse or recycling and the remaining will be transported to a landfill within 50 miles of the facility (unless specifically granted a variance – see Part II Section 3.0 for variance request).

2.0 WASTE ACCEPTANCE PLAN

30TAC §330.61(b)

2.1 General

The Nexus facility will receive both recyclable and non-recyclable materials. The materials that typically can be sent for reuse include brush, yard and wood waste, C& D, and inert materials (including aggregates), white goods and other metals. Non-recyclable materials could include municipal solid waste and any of the materials described above should a market not be available or the material deemed unacceptable and disposed.

C&D material is a result of construction or demolition projects and it includes all materials that are directly or indirectly the by-products of construction work or that result from demolition of buildings and other structures, including, but not limited to, paper, cartons, gypsum board, wood, excelsior, rubber, and plastics. The majority of this material is recyclable, and recycled material markets are well-established for materials typically found in this waste stream in the area (see Part I, Figure 1).

Processing (sorting, consolidating, etc.) is necessary to produce commodities that achieve certain quality standards for reuse. Due to space limitations, typically only one roll-off container is placed at a project site. Consequently, both recyclable and non-recyclable materials may be placed into the roll-off containers. The non-recyclable materials may be incidental amounts of food waste from construction workers to significant amounts of materials that are not economically feasible to market. Based on the experience of Nexus in collecting and processing C&D materials, only 10 to 20 percent of the C&D material received is not recyclable. This material will be separated from the marketable commodities and transferred to a Houston-area permitted landfill once deemed unacceptable for reuse or recycling.

The major components of municipal solid waste include garbage, rubbish, ashes, street cleanings, dead animals, abandoned automobiles, and all other solid waste other than industrial solid waste resulting from or incidental to municipal, community, commercial, institutional, and recreational activities. As part of this registration Nexus proposes to accept municipal solid waste at the facility. The majority of this waste stream will be commercial waste from area customers. Although commercial waste is typically transferred directly to area landfills, in times when the landfills are

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.

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). 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. 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.

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 II-1 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 II-1: Projected Waste Acceptance

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

Note: Increase is assumed at 10% per year.

The maximum amount of solid waste and recyclables to be stored at the facility is based on 43 transfer trailers loaded with an average of 125 cubic yards of material each. Therefore, a maximum of 5,375 cubic yards may be stored outside of the process building. Use of smaller capacity trailers may decrease the amount of available storage. Additional storage is available in the transfer trailer load out area and on the tipping floor. However, this storage volume availability is not intended to increase the maximum storage of 5,375 cubic yards. Once this storage volume has been received, no additional material will be accepted until an equal volume is removed.

The average length of time that solid waste will be stored at the facility is expected to be 24 hours with a maximum length of 72 hours. Solid waste will be delivered to a permitted area landfill. The average length of time that recyclable materials will be stored at the facility is expected to be two days with a maximum length of 180 days, depending on the market at the time. Recyclable material will be delivered to local commodity markets.

3.0 QUALIFICATION FOR REGISTRATION

30TAC §330.61(b)(2)

The Nexus facility will include a registered Type V municipal solid waste material recovery and transfer station that will receive, process, and transfer up to 5,000 cubic yards per day. The facility is qualified to be registered in accordance with provisions in 30 TAC 330.9(f)(1) by recovering a minimum of 10% by weight or weight equivalent for reuse or recycling. The facility is qualified to be registered in accordance with provisions in 30 TAC 330.9(f)(2) by disposing of municipal solid waste in a permitted landfill no more than 50 miles from the facility. Pursuant to this statement, Nexus requests the following variance for a specific landfill:

Variance Request from the requirements of 30 TAC 330.9 (f)(2):

- Part I, Figure 1 shows the general location of the reuse/recycling markets and some of the permitted landfills in the Houston area. 30 TAC 330.9(f)(2) requires that material that will not be sent for reuse or recycling will be transported to a permitted landfill that is no more than 50 miles from the facility. In an effort to ensure flexibility and competitive business practices, Nexus hereby requests a minor variance to this requirement. Nexus requests specific authorization to dispose of municipal solid waste at the Altair Landfill (MSW 203A) near Columbus, Texas (in addition to any other permitted landfill within 50 miles). The Altair Landfill is located in Colorado County south of Interstate 10 and, at 56.7 miles away from the Nexus site, is only slightly further than the 50 mile radius. The following attributes make it a viable alternative for future disposal under this registration: Potential for a long-term disposal contract;
- Remaining landfill capacity;
- Eliminates the need to drive into neighborhoods in the greater Houston area;
- Fuel-efficiency and logistics for waste hauling along interstate highway;
- Potential for future alternative (to closer landfills) for hurricane waste disposal

As part of this registration, Nexus requests a minor variance to the requirement of 30 TAC 330.9(f)(2) requiring the disposal facility to be within 50 miles of the site.

4.0 GENERAL LOCATION MAPS

30TAC §330.61(c)

A General Location Map is presented as Figure 1 in Part I. Figure 1 in Part II also shows the location of the facility on a USGS quadrangle map, along with other features. Collectively, these maps present the information required by 30 TAC 330.61(c).

- The prevailing wind direction with a wind rose is presented on Figure 1 of Part II.
- Known water wells within 500 feet of the registration boundary are shown on Figure 7 in Part II.
- The locations of all structures and inhabitable buildings within 500 feet of the proposed facility are shown, and include approximately 44 structures, of which approximately 10 are residences as shown on Part II, Figure 7.
- Schools (2), licensed day-care facilities (1), churches (9), hospitals (1), cemeteries (0), ponds and lakes, and residential, commercial and recreational areas within one mile of the facility are shown on Part II, Figure 1.
- The latitude and longitude of the facility is shown on Part II, Figure 3.
- Area streams are shown on Part II, Figure 3.
- There are no airports within 6 miles of the facility (see Part I, Figure 1).
- The registration boundary of the facility is shown on various maps.
- There are no drainage, pipeline or utility easements within or adjacent to the facility.
- Facility access control features are shown on Part II, Figure 2.
- Location of roads within 1 mile that will be used for access are shown on part II, Figure 4.

These include:

- 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.

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

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

6.0 GENERAL TOPOGRAPHIC MAPS

30TAC §330.61(e)

A General Topographic Map is presented as Figure 3, Part II. It was obtained from the Houston-Galveston Area Council and represents information obtained in 2008. It is at a scale of one inch equals 500 feet. Additionally, a USGS quadrangle map has been used as the basis for Figure 1 in Part II. This map is at a scale of one inch equals two thousand feet.

7.0 AERIAL PHOTOGRAPH

30TAC §330.61(f)

An aerial photograph of the required size and scale is provided as Figure 4, Part II. The site boundaries and an area within a one-mile radius are shown on the Figure.

8.0 LAND-USE MAP

30TAC §330.61(g)

A Land-Use Map is presented as Figure 5 in Part II. It shows the existing land uses within one mile of the facility. The land usage presented on this map was obtained from the Houston-Galveston Area Council which obtained the data from the Harris County Appraisal District's web site and is believed to be accurate as of the date of its preparation (2008). This land use information was checked by visual observation and revisions made where applicable based on current use.

Some of the properties within one mile of the site are located within the corporate limits of the City of Houston. There is no existing zoning within the city limits or within Harris County. There are no on-site easements. Access roads serving the facility are shown. It is anticipated that the primary access route for traffic using the facility will be Cunningham Road, W. Little York Road, Tanner Road, and Sam Houston Tollway east of the facility. The most recent land use within the facility boundary is industrial, consisting of the storage and maintenance of solid waste collection vehicles and equipment.

9.0 IMPACT ON SURROUNDING AREA

30TAC §330.61(h)

The proposed material recovery and transfer station facility at this site will not have an adverse impact on human health or the environment. There is no existing zoning that would prohibit this use, and no approval or special permit is required from any local government. Harris County does require permits for development. Meetings have been held with Harris County, and all required development permits will be obtained prior to operating the facility under this registration (see Part II, Attachment E). Neither Harris County nor the City of Houston has established zoning at the site or surrounding area, therefore a zoning map cannot be provided. The site is located in an area comprised primarily of industrial uses.

9.1 Potential Impact to the Human or Natural Environment

Adverse impacts to the environment are not anticipated from the facility. All operations dealing with municipal solid waste are to take place in a partially enclosed building, under a roofed area, and on a concrete floor. Debris barriers will be employed to reduce the potential for wind-blown dispersal of debris and litter. Essentially inert material that is to be recycled or reused may be processed outside of the building. The sorting crew will control blowing litter by selective segregation (i.e., avoiding processing loose material on windy days) and perimeter fencing. Dust and litter suppression by means of a water spray will be employed if needed.

Noise generated by the periodic operation of motorized equipment including a front-end loader or excavator, as well as the trucks used to deliver and remove containers will be minimal. However, the distance from process areas to the property line will also reduce impacts to the surrounding area. Additionally, the facility is within an industrial zone, where equipment typically operates 24 hours a day, making it suitable for the intended use.

9.2 Compatibility with the Surrounding Area

The facility is located generally in the northwest portion of Harris County. Harris County has no authority to establish zoning in the area. Although the site is not zoned, it is suitable for industrial

use. Other commercial and industrial land uses dominate the project area. Harris County development permits will be obtained prior to operating the facility under this registration.

The site is near the Sam Houston Tollway, a six-lane divided highway, and is served by Little York Road and Tanner Road to the north and south, respectively. Existing industrial and commercial areas surround the project area. The project is generally screened from view by on-site vegetation and fencing.

Commercial development within one mile of the site is heavy. It includes an aggregate mining and processing operation, auto repair shop, garage-door company, an engineering firm, a restaurant, tire distributor, builder supply store, garden supply, and multiple smaller service and manufacturing businesses. There are an estimated 125 active commercial establishments or businesses within one mile of the site including another trash hauling company located on property immediately to the south.

Residential use includes the subdivisions approximately one-third mile east and one-half mile west as well as intermittently dispersed single-family residences within a one mile radius of the proposed site. There are an estimated 1,300 active residences within one mile of the site which include 100 mobile homes and 1,200 single family homes.

There are two existing educational facilities within the project vicinity including Kirk Elementary School and the University of Texas, Core Research Center, about one mile southwest of the site and approximately one-half mile north of the site, respectively. There are eight churches located within a one mile radius of the facility. See Figure 1, Part II.

There are no sites believed to have exceptional aesthetic quality within one mile of the facility.

The nearest occupied residences include one single-family home on Cunningham Road south of the site, one single-family residence on the adjacent property to the east (property now belongs to Nexus) as well as the previously discussed subdivisions to the east and west. The facility operation cannot be seen from any of these occupied residences because the operation will be screened by vegetation and

fencing. Vehicle noise that will be generated by the proposed transfer station activities will not be discernable to occupants of these residences because of the low speeds and infrequent occurrence. This noise will be overwhelmed by the noise of truck and automobile traffic along the Sam Houston Tollway which consists of many trucks and tractor-trailer units traveling at all times at highway speeds.

The population of Harris County (2000 Census) was 3,400,590, and the population density of the county as a whole was 1966.8 persons per square mile. Within a one-mile radius of the facility, the population is estimated to be about 5,911 and the population density is estimated to be about 648 persons per square mile. The Houston-Galveston Area Council (H-GAC) forecasts strong suburban growth within a 5 mile area surrounding the project area. Estimated growth patterns predict 67 percent growth in households, and 59 percent of the job growth will occur outside the Sam Houston Tollway, which includes the project area.

Two active water wells are present on the property. A Texas Water Development Board (TWDB) and Harris-Galveston Subsidence District database search indicated there are seven active or recorded water supply wells within 500 feet of the proposed facility, including one of the active wells on site. These are four inch diameter wells drilled between 250 and 450 feet below ground surface. Usage listed in the HGCSDB database include, Industrial (3), Public Supply (1) and Domestic (3) with pumpage varying from none to 976,000 gallons in 2009. Visual reconnaissance also identified nine wells within 500 feet of the proposed facility that were not identified in the database search, including the one on the Thomas Road property now owned by Nexus. Additional data on type and depth of these wells is not available at this time (see Part II, Figure 7 for water well locations).

10.0 TRANSPORTATION

30TAC §330.61(i)

All traffic associated with the Nexus facility will approach and leave the facility on Cunningham Road. Cunningham Road has an asphalt-paved road surface without turning lanes. The sight distance approaching the entrance in either direction is in excess of 500 feet, and the speed limit is 30 miles per hour (MPH). A review of publicly-available data on Houston area traffic did not produce traffic projections for Cunningham Road. Traffic data from 2006 reveals 16,690 vehicles per day (vpd) for Tanner Road and 35,280 vpd for Little York Road.

At the initial expected material acceptance rate of 2,400 cubic yards per day (cy/d), the expected volume of traffic associated with the facility is expected to be 84 trips per day (60 vehicles delivering material to the site in 40 CY roll off containers and 18 vehicles transporting waste to landfills in 125 CY transfer trailers and 6 vehicles transporting recyclables to market in 40 CY roll off containers). At the maximum expected receipt of 5,000 cy/d, the facility traffic is expected to be 174 trips per day (125 vehicles delivering material to the site in 40 CY roll off containers or frontend load vehicles and 36 vehicles transporting waste to landfills in 125 CY transfer trailers and 13 vehicles transporting recyclables to market in 40 CY roll off containers). The actual number of vehicles transporting material off the site will vary as the amount of recycled materials are diverted from disposal, as these materials are typically transported in the smaller 40 CY roll off boxes. Waste being sent to a landfill for disposal will typically be loaded in larger transfer trailers. At the maximum volume, truck traffic will average about 8 vehicles per hour or one every 8 minutes. This volume of site-related traffic will have no significant adverse impact on the capacity of Cunningham Road, Little York or Tanner Roads. Because of the relatively low volume of site traffic, along with the favorable geometry, reduced speed limit and long sight distances, no turning or storage lanes are needed to safely accommodate traffic to the facility.

The majority of traffic using the site will approach from the east, via Little York Road or Tanner Road. Discussions have been held with Harris County regarding maintenance and traffic projections for Cunningham Road. See Attachment E in Part II. Documentation of coordination with TxDOT is included in Attachment A of Part II.

There are no airports within six miles of the facility. Since this will be a Type V facility, the requirements of 30 TAC 330.61(i)(5) are not applicable.

11.0 GENERAL GEOLOGY AND SOILS STATEMENT

30TAC §330.61(j)

This section presents general geology and soils information at the site.

The Texas Coastal Plain is characterized by fluviomarine deposits – alluvial, deltaic, and barrier bar – of Pleistocene age and Recent alluvial, deltaic, barrier island, and dune deposits. There are four depositional sequences (terraces) of Pleistocene age present along the Texas Coastal Plain – Willis (oldest), Lissie (also called Bentley), Montgomery, and Beaumont (newest, and also called Beaumont Clay) Formations.

The site is located in the mapped outcrop of the Montgomery Formation (Reference: **Sand Resources of the Gulf Coast**, University of Texas, Bureau of Economic Geology, Report of Investigations No. 60, March 1967). The Montgomery Formation is comprised of sand, silt, clay and minor amounts of gravel. In some older publications, the Montgomery is referred to as the “Upper Lissie.” The surface areas are fairly flat and featureless except for shallow depression and pimple mounds.

Soils at the facility are mapped in the Gessner Loam and Katy Fine Sandy Loam associations. Areas around the facility area are mapped in the Addicks Loam and Gessner Complex associations (USDA Natural Resource Conservation Service, *Web Soil Survey of Harris County, Texas, Version 10, October 27, 2009*). Part II, Attachment B contains the Web Soil Survey mapping for the Nexus facility and surrounding area. According to the mapping, the western 60% of the Nexus facility is in the Gessner Loam and the eastern 40% is Katy Fine Sandy Loam. The Gessner and Addicks soils in the area are poorly drained and subject to ponding. They also have moderate permeability ($\approx 9 \times 10^{-4}$ cm/sec) and very shallow water tables. The Katy soils are moderately drained and have moderate permeability ($\approx 6 \times 10^{-4}$ cm/sec). The Katy soils have deeper water tables (> 8 feet below ground surface). Part II, Attachment B also contains summaries of physical soil properties and engineering soil properties for the soils mapped in the area of the Nexus property.

12.0 GROUNDWATER AND SURFACE WATER

30TAC §330.61(k)

The following discussion provides information on site-specific groundwater and surface water conditions at and near the site.

The uppermost aquifer beneath the site is the Gulf Coast Aquifer. This aquifer consists of complex interbedded clays, silts, sands and gravels. The upper component of the Gulf Coast Aquifer system is the Chicot Aquifer, which contains the Pleistocene Willis, Lissie (Bentley), Montgomery and Beaumont Formations as well as recent alluvium. The total sand thickness comprising the Chicot aquifer is approximately 700 feet in the vicinity of the Nexus facility. (Reference: **Hydrogeology and Simulation of Ground-Water Flow and Land-Surface Subsidence in the Chicot and Evangeline Aquifers, Houston Area, Texas**, Mark C. Kasmarek and Eric W. Strom, U.S. Geological Survey, Water-Resources Investigations Report 02-4022, In cooperation with the City of Houston, 2002.)

Records from the Texas Water Development Board and the Harris-Galveston Subsidence District (HGSD) identified six wells within 500 feet of the property boundary and one on-site well. See Part II, Figure 7. Records from wells near the site indicate that groundwater is encountered at 175 feet below ground surface (bgs). Discussion with Nexus employees indicate the depth to water in the on site well is approximately 380 feet bgs. Water from this well is potable but is used primarily for irrigation, fire protection and dust suppression.

A visual reconnaissance of the area identified potentially eight additional wells within 500 feet of the registration boundary, including one on the Thomas Road property now owned by Nexus. This well is potable and will also be used for irrigation, fire protection and other operational needs. The approximate location of these wells is shown on Part II, Figure 7.

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 sediment, waste and recyclable materials through a combination of constructed features and operating procedures:

- providing concrete flooring / pavement under all solid waste processing areas,
- providing a roof over solid waste tipping and processing areas,
- providing perimeter berms or silt fences for containment,
- providing leak proof and covered storage units (roll-off boxes or transfer trailers),
- weekly cleaning of potentially contaminated areas, or more often as needed, and
- storage, treatment and disposal of any contaminated water generated within the facility.

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

The facility will comply with the requirements of the TPDES storm water permitting by continuous operation and monitoring of its SWPPP throughout the active life of the facility. The SWPPP will be developed specifically for the Nexus facility and will include both ongoing inspection of systems and practices, and sampling and analysis of storm water discharges. A Notice of Intent (NOI) to obtain coverage under the TPDES General Permit will be submitted to the TCEQ prior to the beginning of operations under this registration.

13.0 ABANDONED OIL AND WATER WELLS

30TAC §330.61(l)

There are no abandoned oil or water wells on the facility property. Two active water wells, are present on the site. HGSD 7225 is listed in TWDB records and is currently used at the Nexus Disposal facility. One additional well has been visually identified on the Thomas Road property.

14.0 FLOODPLAINS AND WETLANDS STATEMENT

30TAC §330.61(m)

The Nexus facility is not located within the 100-year floodplain, as shown on the most current Flood Data (FIRM) maps. A copy of this map is included as Part II, Figure 6.

A wetlands determination was performed at the site in July 2010. The results of this determination are presented in Part II, Attachment C. No wetlands or waters of the state were identified on the site.

15.0 ENDANGERED OR THREATENED SPECIES

30TAC §330.61(n)

The facility and its operation will not result in the destruction or adverse modification of the critical habitat of endangered or threatened species, or cause or contribute to the taking of any endangered or threatened species (see Part II, Attachment C).

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).

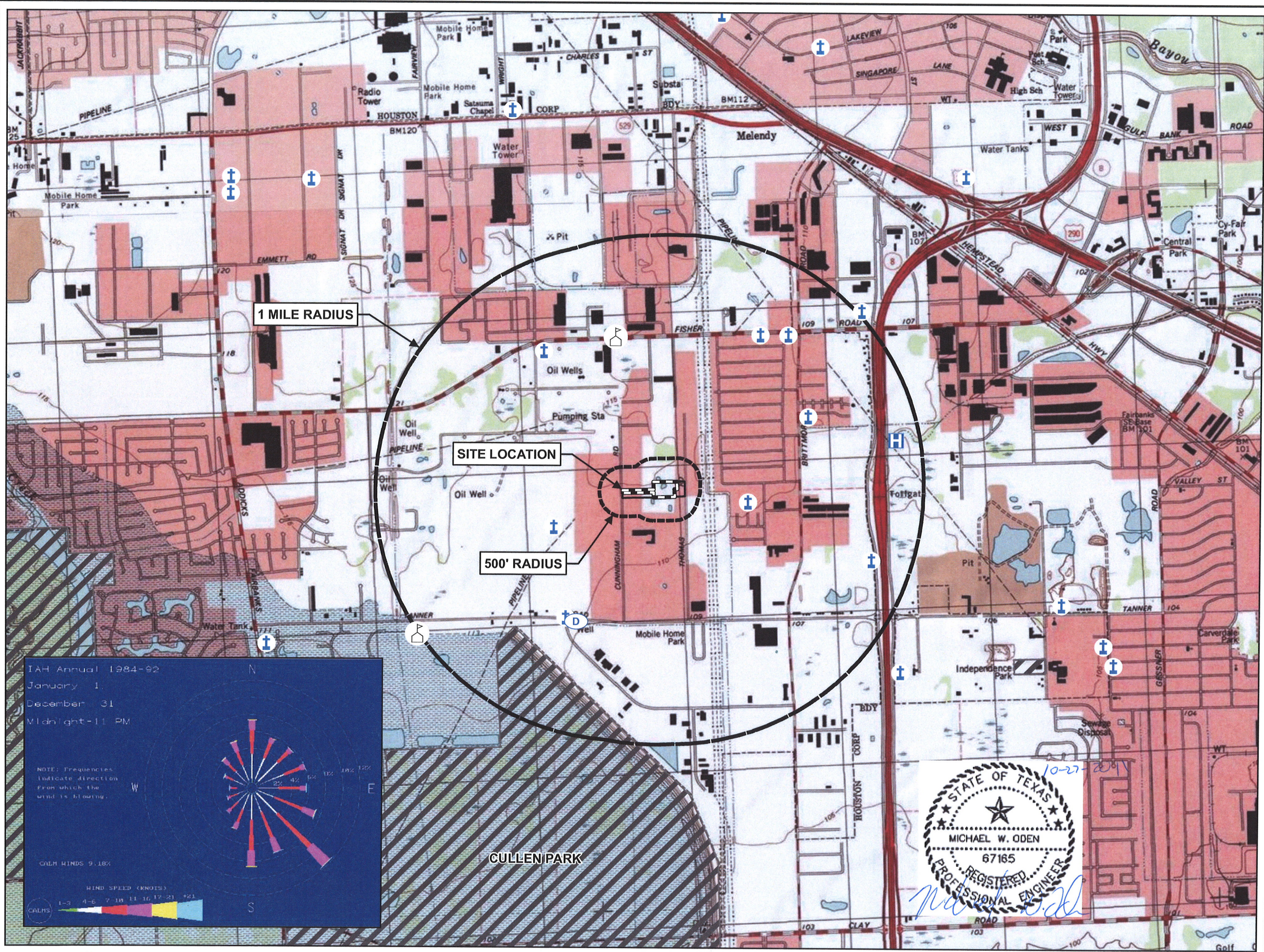
17.0 COUNCIL OF GOVERNMENTS AND LOCAL GOVERNMENT REVIEW

30TAC §330.61(p)

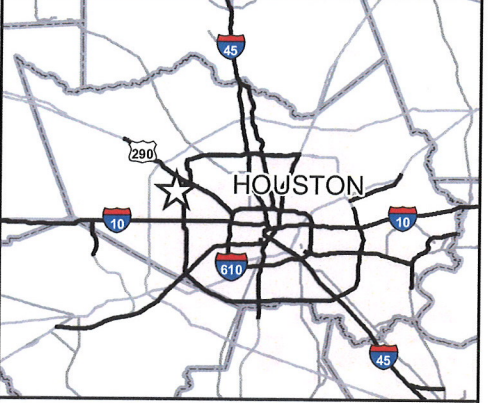
This registration application will be submitted to the Houston-Galveston Area Council (HGAC) for review for compliance with the regional solid waste plan (see Part II, Attachment F).

Figures

FILE: 142132_Nexus_Disposal\MapDoc\staromap\NexusDisposal_PartII_Fig1_DetailedLoc_11x17.mxd

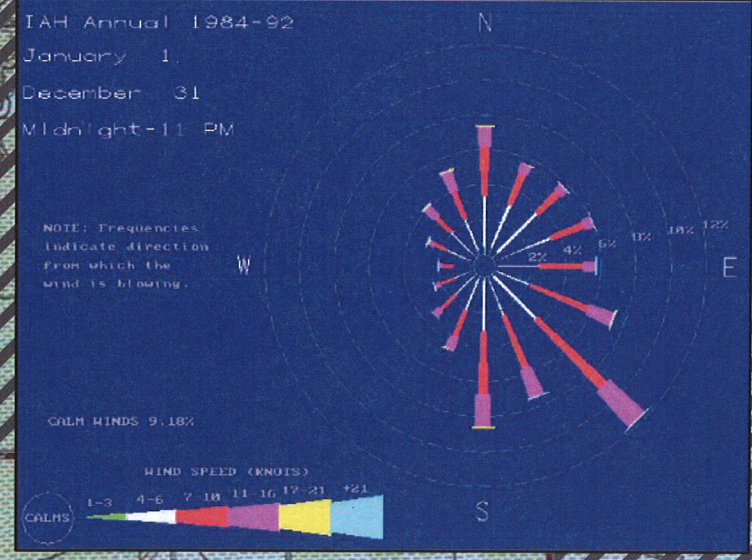
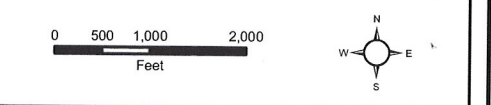


USGS QUADRANGLE MAP
NEXUS MATERIAL RECOVERY & TRANSFER STATION
 TYPE V MSW REGISTRATION
 NEXUS CONTINUUM LLC
 HARRIS CO, TX



- LEGEND**
- REGISTRATION BOUNDARY
 - PROPERTY BOUNDARY
 - STRUCTURE OR INHABITABLE BUILDING
 - SCHOOL / UNIVERSITY
 - CHURCH
 - CEMETERY (NONE)
 - DAY CARE
 - HOSPITAL
 - ARCHAEOLOGICAL OR HISTORICAL SITE (NONE)
 - RECREATIONAL AREA

SOURCE: USGS 7.5-MINUTE SERIES TOPOGRAPHIC MAPS, HEDWIG VILLAGE (1982) AND SATSUMA (1982)



STATE OF TEXAS
 MICHAEL W. ODEN
 67165
 REGISTERED PROFESSIONAL ENGINEER

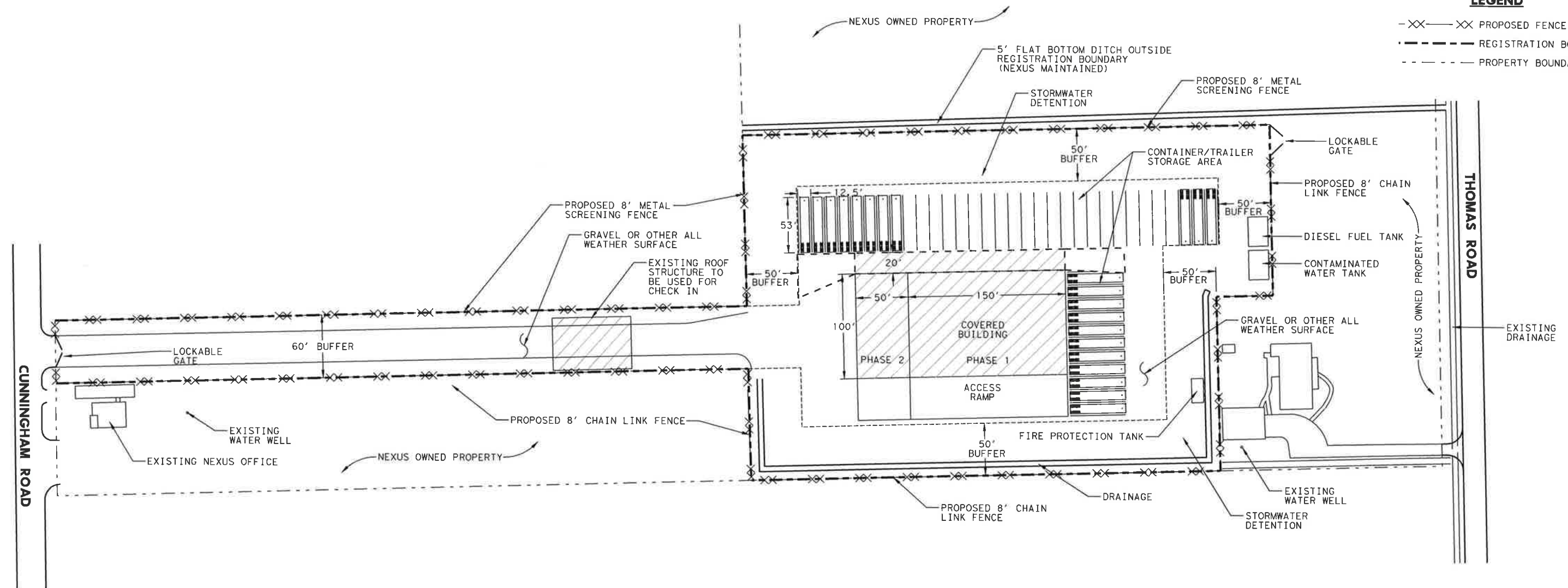
10-27-2017





LEGEND

- XX-XX- PROPOSED FENCE
- REGISTRATION BOUNDARY
- - - - - PROPERTY BOUNDARY



10-27-2011
Michael W. Oden

- 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.

DATES: 11/11/2011
 TIME: 7:53:05 AM
 USER: M.W. Oden
 FILE: \\harris\projects\142132\142132.dwg



HDR
 HDR Engineering, Inc.
 4500 W. Eldorado Parkway
 Suite 3500
 McKinney, Texas 75070
 Texas P.E. Firm
 Firm Registration No. F-754

ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	M.ODEN
ENGINEER	M.ODEN
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
 MICHAEL W. ODEN, P.E. 67165
 11/12/11

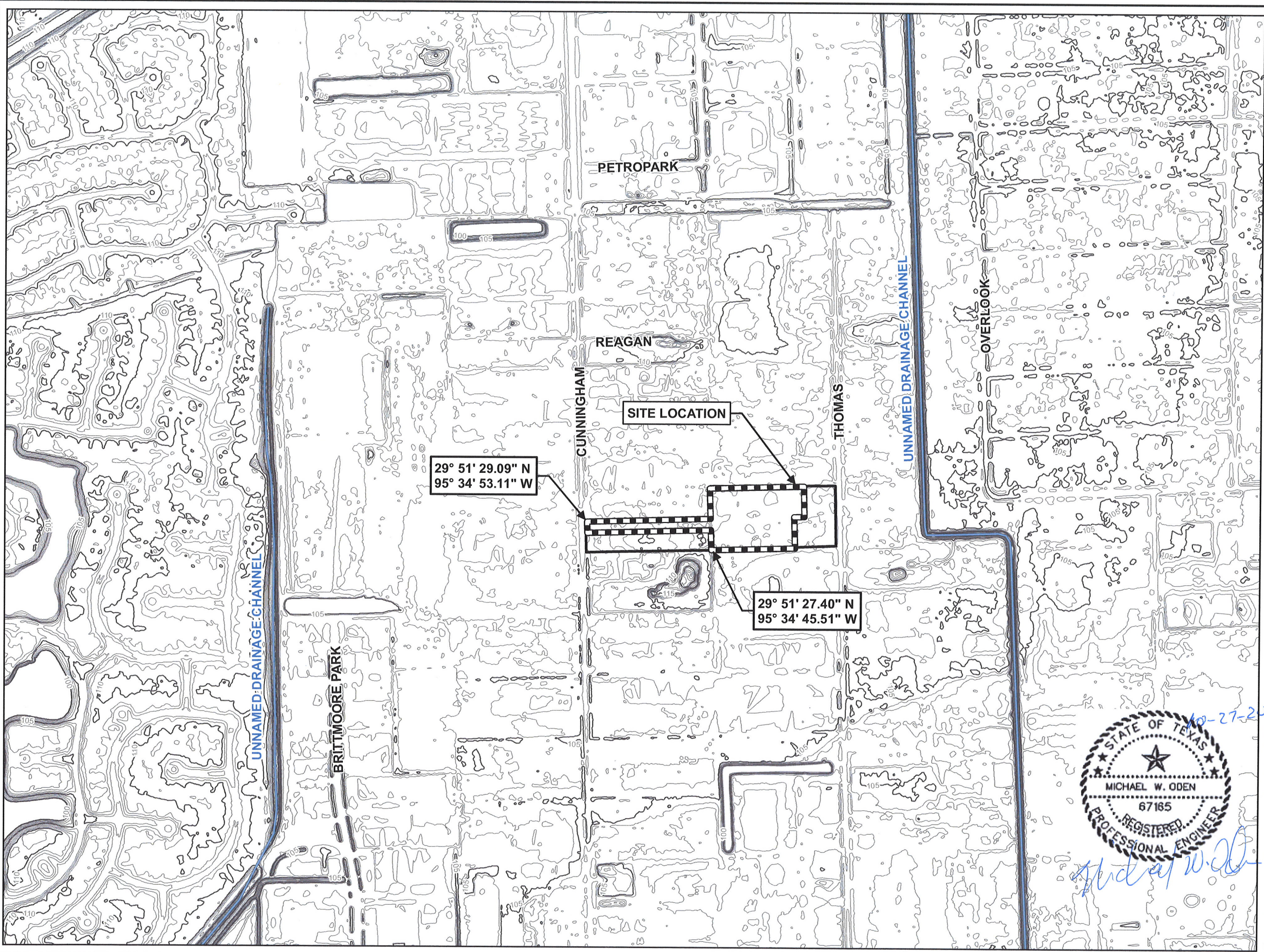
NEXUS CONTINUUM, LLC.
 HARRIS COUNTY, TEXAS

**FACILITY LAYOUT
 MATERIAL RECOVERY AND TRANSFER STATION**

0 50' 100'

FILENAME	PART II FIG2.dgn	SHEET
SCALE		PART II FIGURE 2

FILE: 142132_Nexus_Disposal\MapDoc\starcmap\NexusDisposal_PartII_Fig3_Topo_11x17.mxd



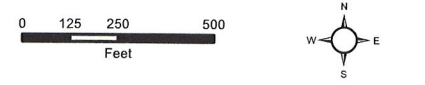
GENERAL TOPOGRAPHIC MAP
NEXUS MATERIAL RECOVERY & TRANSFER STATION
 TYPE V MSW REGISTRATION
 NEXUS CONTINUUM LLC
 HARRIS CO, TX



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

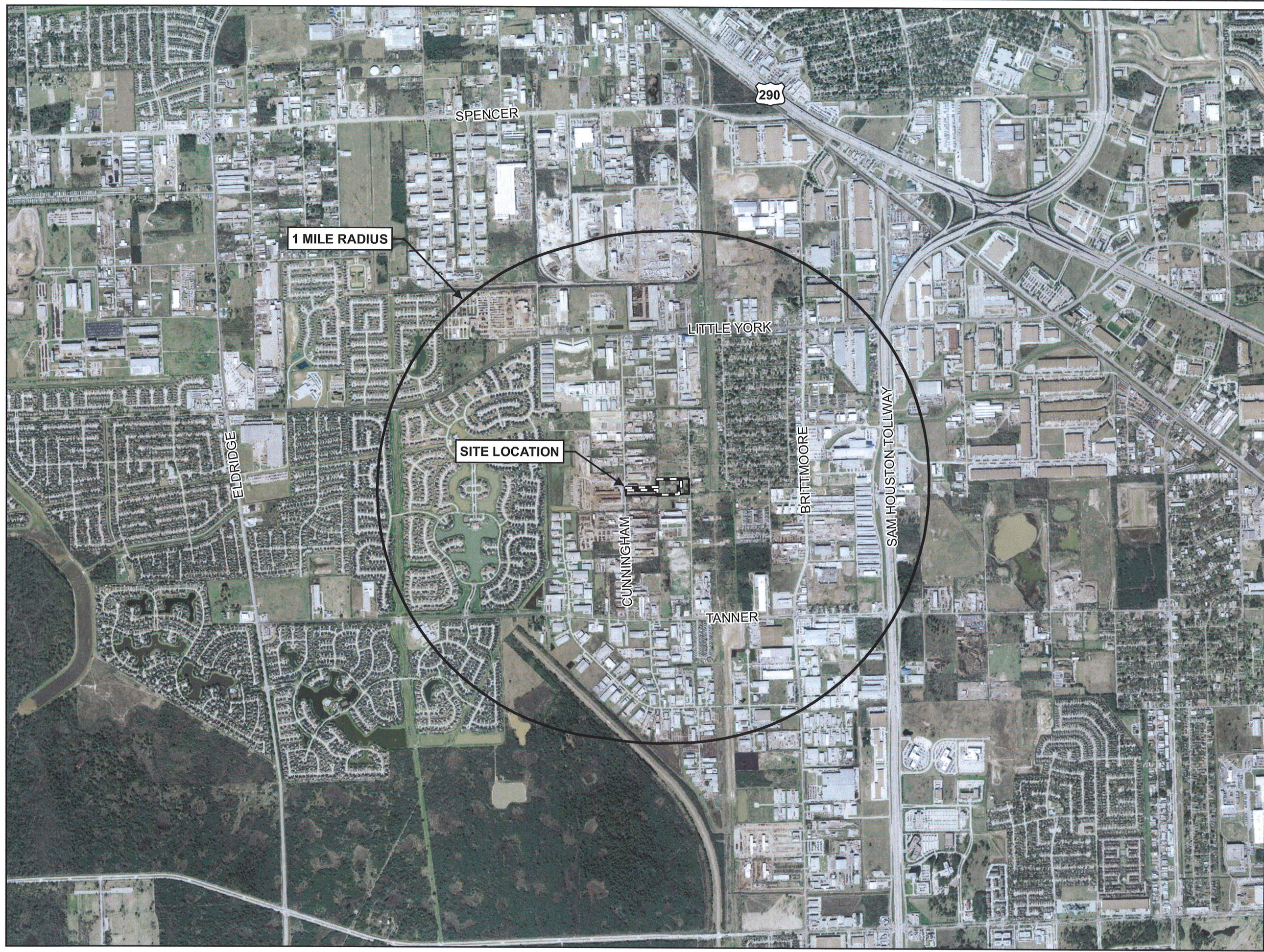


SOURCE: 2008, HOUSTON-GALVESTON AREA COUNCIL



HDR HDR Engineering, Inc.
 TBPE Firm Registration No. F-754
 4500 W. Eldorado Pkwy, Suite 3500
 McKinney, TX 75070-5757
 214-733-5900

FILE: 142132_Nexus_Disposal\MapDocs\arcmap\NexusDisposal_PartII_Fig4_Aerial_11x17.mxd



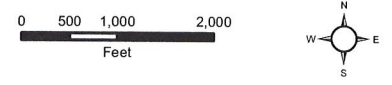
AERIAL PHOTOGRAPH
NEXUS MATERIAL RECOVERY & TRANSFER STATION
TYPE V MSW REGISTRATION
NEXUS CONTINUUM LLC
HARRIS CO, TX



LEGEND
— REGISTRATION BOUNDARY
— PROPERTY BOUNDARY



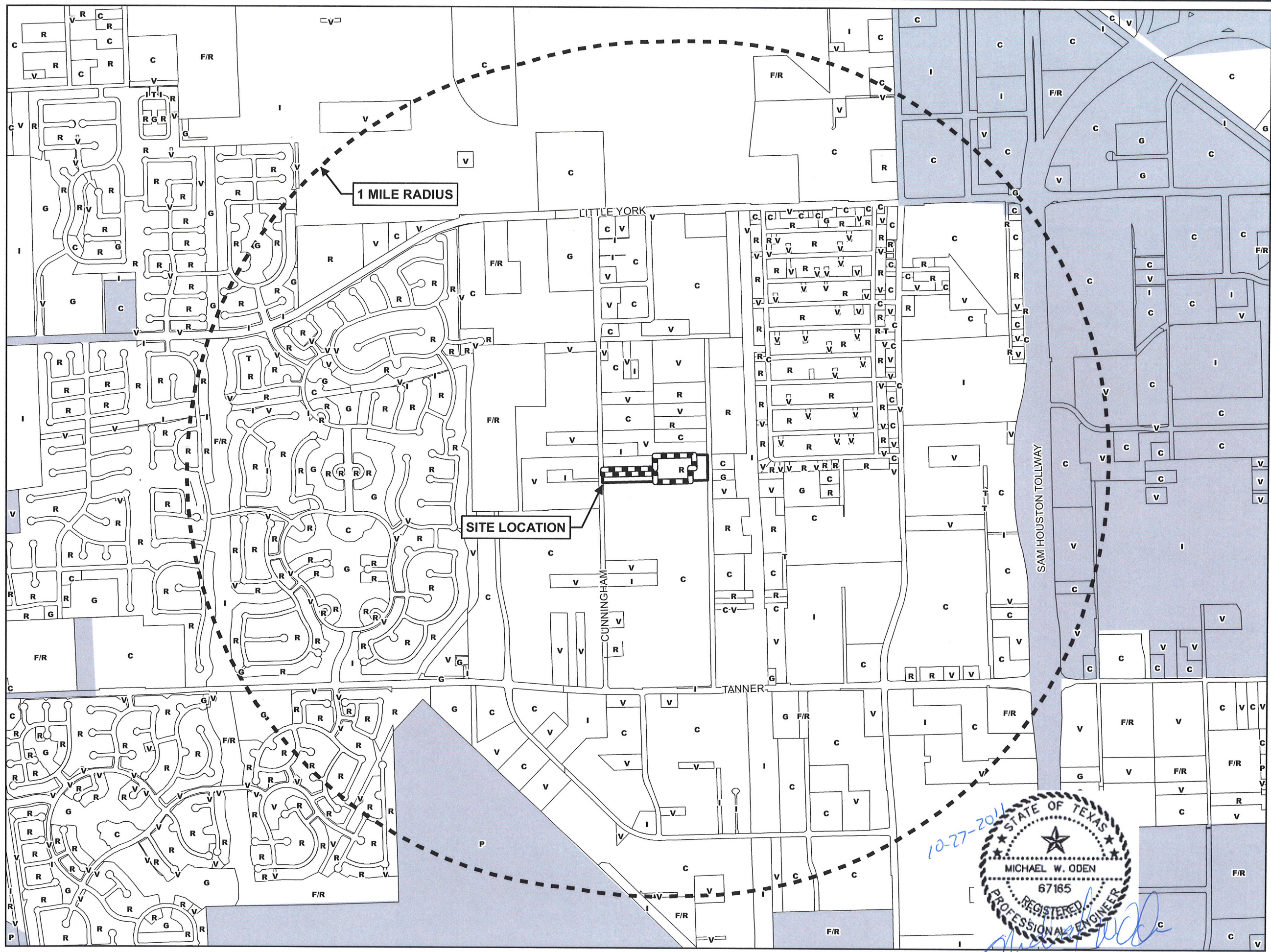
SOURCE: 2006 HOUSTON-GALVESTON AREA COUNCIL



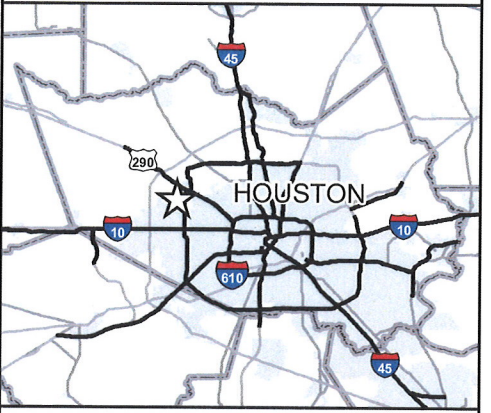
HDR HDR Engineering, Inc.
TBPPE Firm Registration No. F-754
4500 W. Eldorado Pkwy., Suite 3500
McKinney, TX 75070-5757
214-733-5900

OCT 2011 PART II
FIGURE 4

FILE: 142132 Nexus DisposalMapDoc\arcmap\NexusDisposal_PartII_Fig5_LandUse_11x17.mxd

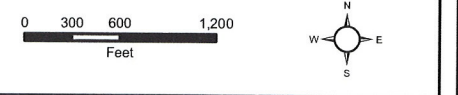


LAND USE MAP
NEXUS MATERIAL RECOVERY & TRANSFER STATION
 TYPE V MSW REGISTRATION
 NEXUS CONTINUUM LLC
 HARRIS CO, TX



- LEGEND**
- REGISTRATION BOUNDARY
 - PROPERTY BOUNDARY
 - COMMERCIAL
 - FARM / RANCH LAND
 - GOVERNMENT-OWNED
 - INDUSTRIAL
 - PARK (>= 5 ACRES)
 - RESIDENTIAL SINGLE-FAMILY
 - TRANSPORTATION (PUBLIC ROADS)
 - VACANT
 - HOUSTON CITY LIMITS

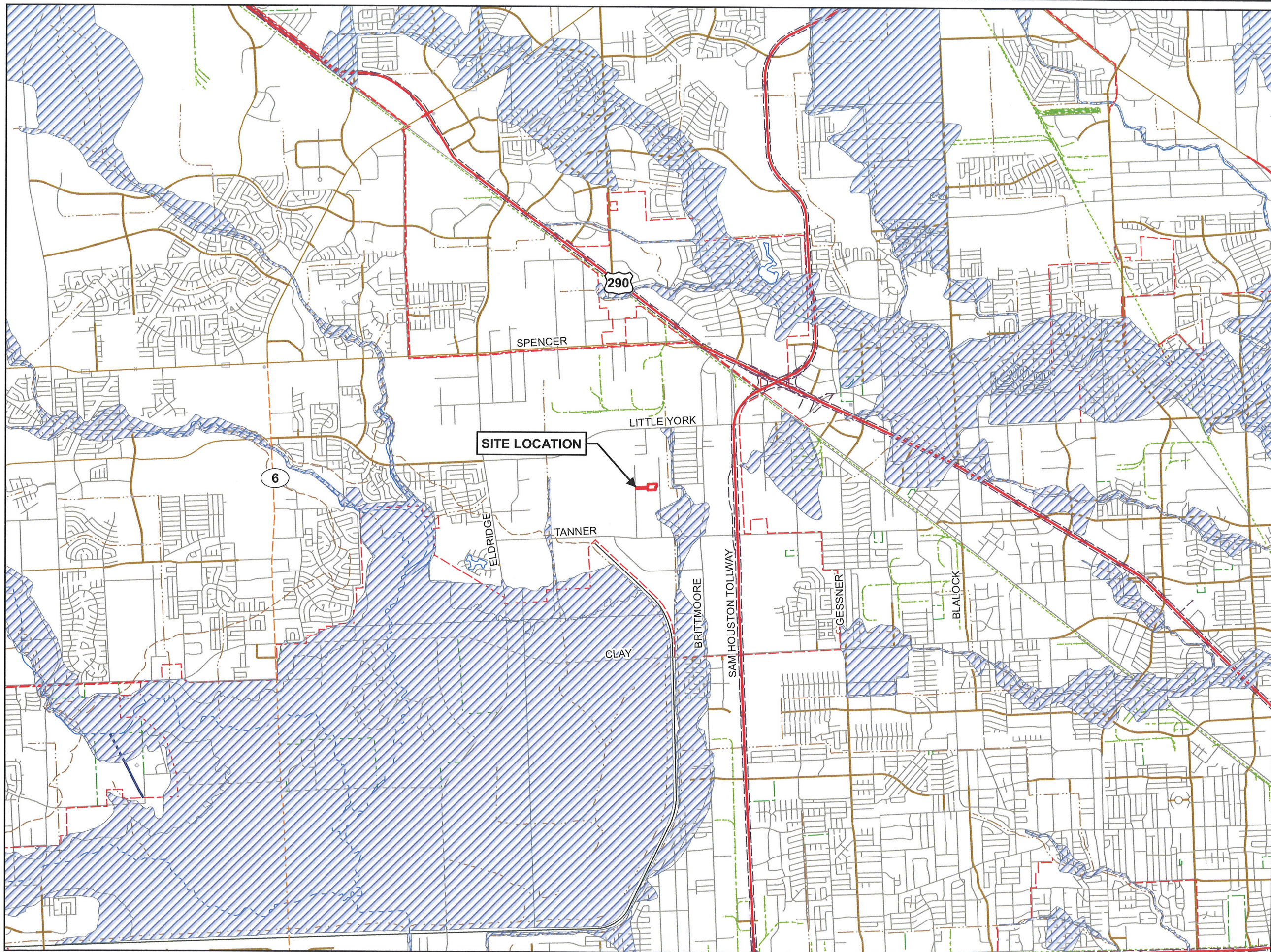
SOURCE: 2008 HOUSTON-GALVESTON AREA COUNCIL. UPDATED BY HDR STAFF SEPTEMBER 2010



HDR HDR Engineering, Inc.
 TBPE Firm Registration No. F-754
 4500 W. Eldorado Pkwy, Suite 3500
 McKinney, TX 75070-3757
 214-733-5900



FILE: 142132 Nexus_Disposal\MapDocs\arcmap\NexusDisposal_PartII_Fig6_Floodplain_11x17.mxd



FEMA 100-YEAR FLOODPLAIN MAP
NEXUS MATERIAL RECOVERY & TRANSFER STATION
TYPE V MSW REGISTRATION
NEXUS CONTINUUM LLC
HARRIS CO, TX



- LEGEND**
- REGISTRATION BOUNDARY (Red dashed line)
 - 100-YEAR FEMA FLOODPLAIN (Blue hatched area)

10-27-2011

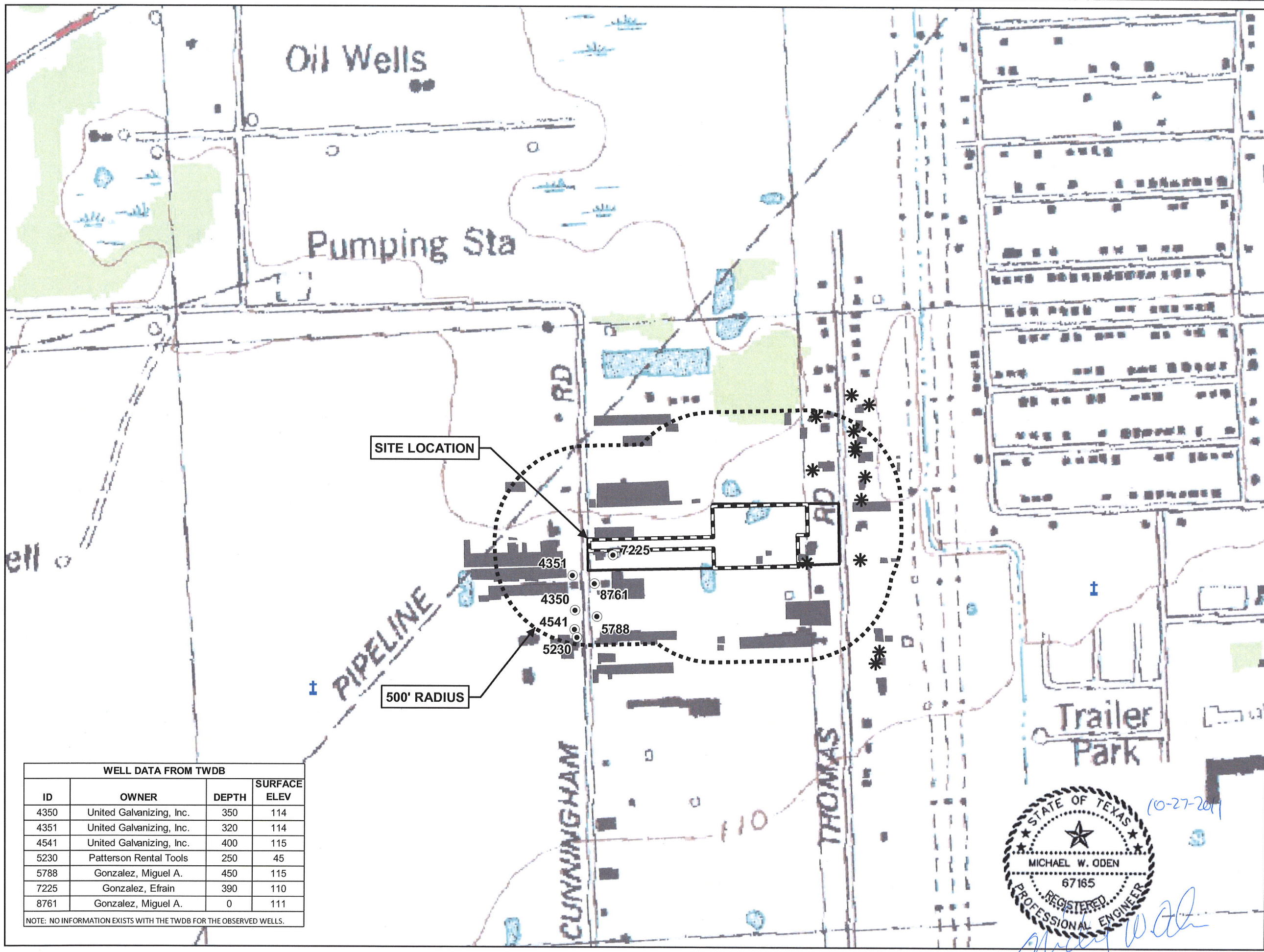
M. W. Oden

SOURCE: FEMA Q3 DATA, HARRIS COUNTY



HDR HDR Engineering, Inc.
TBPPE Firm Registration No. F-754
4500 W. Eldorado Pkwy, Suite 3500
McKinney, TX 75070-5757
214-733-5900

FILE: 142132 Nexus_Disposal\MapDoc\staremap\NexusDisposal_PartII_Fig7_WellLocations_11x17.mxd



WATER WELL LOCATIONS
NEXUS MATERIAL RECOVERY & TRANSFER STATION
 TYPE V MSW REGISTRATION
 NEXUS CONTINUUM LLC
 HARRIS CO, TX



- LEGEND**
- REGISTRATION BOUNDARY
 - PROPERTY BOUNDARY
 - REPRESENTATIVE WATER WELL LOCATION
 - OBSERVED WATER WELL LOCATION
 - STRUCTURE OR INHABITABLE BUILDING

SOURCE: USGS 7.5-MINUTE SERIES TOPOGRAPHIC MAPS, HEDWIG VILLAGE (1982). HARRIS-GALVESTON SUBSIDENCE DISTRICT (2010)



WELL DATA FROM TWDB			
ID	OWNER	DEPTH	SURFACE ELEV
4350	United Galvanizing, Inc.	350	114
4351	United Galvanizing, Inc.	320	114
4541	United Galvanizing, Inc.	400	115
5230	Patterson Rental Tools	250	45
5788	Gonzalez, Miguel A.	450	115
7225	Gonzalez, Efrain	390	110
8761	Gonzalez, Miguel A.	0	111

NOTE: NO INFORMATION EXISTS WITH THE TWDB FOR THE OBSERVED WELLS.



Attachment A: TxDOT Coordination

October 27, 2011

Leonard E. Polk, P.E.
Transportation Engineering Supervisor
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251

**Reference: Nexus Continuum, LLC
Nexus Material Recovery and Transfer Station
Harris County, Texas**

Dear Mr. Polk,

Nexus Continuum, LLC (Nexus) has re-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. A letter was previously transmitted on January 10, 2011 and a response from TxDOT was sent on February 1, 2011. The original submittal contained Parts I and II. The TCEQ requested the application be withdrawn and resubmitted with all four parts. Therefore, we are informing you of this change.

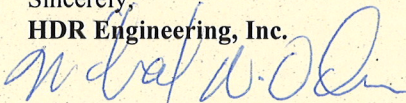
As stated previously, TCEQ regulations [30 TAC 330.61 (i)(4)] require documentation of coordination with your agency regarding traffic and location restrictions. This letter is to inform you of the proposed facility and request your response indicating that the proposed facility will not conflict with any traffic or location restrictions of the Texas Department of Transportation (TxDOT). Nexus is under a strict deadline to file your response, so we would appreciate receiving it as soon as possible.

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.

The facility will use the same driveways that are being used for the existing operation at this site. It is located on the east side of Cunningham Road, about 0.6 miles south of Little York Road, and 0.5 miles north of Tanner Road. Cunningham Road is scheduled to be widened in the future based upon local thoroughfare plans. See attached location map and aerial photograph for reference. Operation of the facility is expected to initially generate approximately 84 trips per day. A total of 174 trips are expected at capacity. Incoming truck traffic is expected from the north and south via Little York Road and Tanner Road, respectively, from the Sam Houston Tollway. Little York Road and Tanner Road are also scheduled to be widened according to local plans. Departing truck traffic is expected to travel east via the same routes to access the Sam Houston Tollway.

Please contact me at 972-960-4479 if you have any questions. We look forward to your response.

Sincerely,
HDR Engineering, Inc.



Michael W. Oden, P.E.
Project Manager

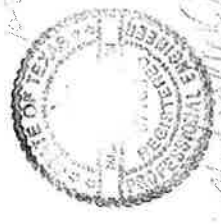
Attachment

**GENERAL LOCATION MAP
NEXUS MATERIAL RECOVERY &
TRANSFER STATION**
TYPE V MSW REGISTRATION
NEXUS CONTINUUM LLC
HARRIS CO, TX



LEGEND

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



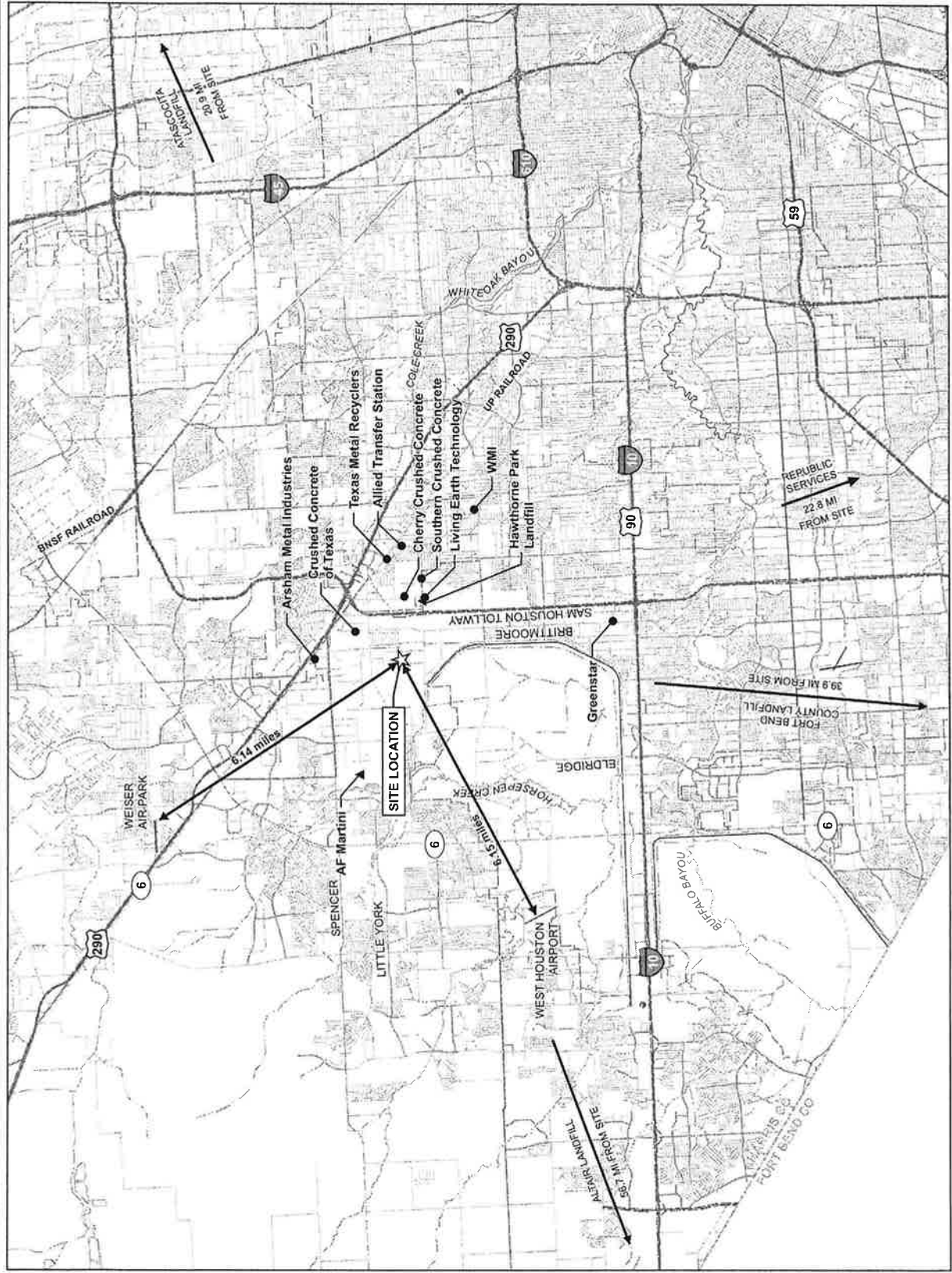
SOURCE: 1996 TXDOT URBAN FILE, BY COUNTY, HARRIS COUNTY



**NEXUS
CONTINUUM**

HDR
HDR Engineering, Inc.
14001 Katy Freeway, Suite 100
Houston, Texas 77050
713.468.1000

OCT 2011 PART I
FIGURE 1



**AERIAL PHOTOGRAPH
NEXUS MATERIAL RECOVERY &
TRANSFER STATION**
TYPE V MSW REGISTRATION
NEXUS CONTINUUM LLC
HARRIS CO, TX



LEGEND

- REGISTRATION BOUNDARY
- PROPERTY BOUNDARY



SOURCE: 2006 HOUSTON-GALVESTON
AREA COUNCIL



HDR
HDR Engineering, Inc.
10000 Katy Road, Suite 400
Houston, Texas 77055-1800

OCT 2011 PART II
FIGURE 4



Attachment B: Soil Information

Physical Soil Properties

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (K_{sat}), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (K_{sat}) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (K_{sat}) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (K_w and K_f) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and K_{sat} . Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor K_w indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor K_f indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (<http://soils.usda.gov>)

Report—Physical Soil Properties

Physical Soil Properties—Harris County, Texas														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
Ad—Addicks loam	In	Pct	Pct	Pct	g/cc	micro m/sec	In/In	Pct	Pct					
Addicks	0-11	35-50-52	30-39-45	8-10-15	1.20-1.50	4.00-14.00	0.15-0.24	0.0-2.9	1.0-2.0	.43	.43	5	5	56
	11-49	30-40-50	40-45-60	10-15-18	1.20-1.50	4.00-14.00	0.15-0.24	0.0-2.9	0.1-0.5	.49	.49			
	49-78	15-33-50	40-45-55	10-22-30	1.20-1.60	4.00-14.00	0.15-0.24	3.0-5.9	0.1-0.5	.49	.49			
Ge—Gessner loam														
Gessner	0-16	46-	44-	6-11-15	1.35-1.60	4.00-14.00	0.10-0.15	0.0-2.9	0.5-2.0	.37	.37	5	5	56
	16-80	44-	41-	12-15-18	1.40-1.70	4.00-14.00	0.15-0.20	0.0-2.9	0.1-0.5	.43	.43			
Gs—Gessner complex														
Gessner	0-16	46-	44-	6-11-15	1.35-1.60	4.00-14.00	0.10-0.15	0.0-2.9	0.5-2.0	.37	.37	5	5	56
	16-80	44-	41-	12-15-18	1.40-1.70	4.00-14.00	0.15-0.20	0.0-2.9	0.1-0.5	.43	.43			
Kf—Katy fine sandy loam														
Katy	0-28	64-	27-	5-10-15	1.30-1.50	4.00-14.00	0.15-0.20	0.0-2.9	0.5-2.0	.37	.37	5	3	86
	28-50	64-	27-	5-10-15	1.30-1.50	4.00-14.00	0.15-0.20	0.0-2.9	0.5-1.0	.37	.37			
	50-65	34-	37-	25-30-35	1.50-1.70	0.42-1.40	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			
	65-80	33-	32-	35-35-50	1.50-1.70	1.40-4.00	0.12-0.18	3.0-5.9	0.0-0.5	.32	.32			

Data Source Information

Soil Survey Area: Harris County, Texas
Survey Area Data: Version 10, Oct 27, 2009

Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Report—Engineering Properties

Absence of an entry indicates that the data were not estimated. The asterisk "*" denotes the representative texture; other possible textures follow the dash.

Engineering Properties— Harris County, Texas												
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
Ad—Addicks loam	In				Pct	Pct					Pct	
Addicks	0-11	*Loam	ML	A-4	0	0	95-100	95-100	95-100	95-100	14-21	2-6
	11-49	*Loam, Silt loam	ML, CL-ML, CL	A-4	0	0	95-100	90-100	75-95	60-75	16-23	3-7
	49-78	*Loam, Silt loam, silty clay loam	ML	A-6, A-4	0	0	95-100	90-100	90-100	60-80	10-34	3-13
Ge—Gessner loam												
Gessner	0-16	*Loam	SC	A-4	0	0	98-100	95-100	85-100	45-75	17-28	4-10
	16-80	*Loam, Fine sandy loam	CL, CL-ML	A-4, A-6	0	0	98-100	95-100	85-100	51-70	20-40	5-20
Gs—Gessner complex												
Gessner	0-16	*Loam	SC	A-4	0	0	98-100	95-100	85-100	45-75	17-28	4-10
	16-80	*Loam, Fine sandy loam	CL, CL-ML	A-4, A-6	0	0	98-100	95-100	85-100	51-70	20-40	5-20

Engineering Properties—Harris County, Texas													
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index	
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200			
	<i>In</i>					<i>Pct</i>	<i>Pct</i>					<i>Pct</i>	
Kf—Katy fine sandy loam													
Katy	0-28	*Fine sandy loam	SM	A-4	0	0	98-100	98-100	98-100	98-100	38-60	0-22	NP-3
	28-50	*Fine sandy loam, Loam	ML, SC-SM, SM, CL-ML	A-4	0	0	98-100	98-100	98-100	98-100	38-70	0-22	NP-7
	50-65	*Clay loam, Sandy clay	CL	A-7-6, A-6	0	0	98-100	98-100	96-100	96-100	55-75	33-48	18-30
	65-80	*Clay loam, Clay, sandy clay loam	CL, CH	A-7-6, A-6	0	0	100	100	98-100	98-100	55-75	35-53	18-35

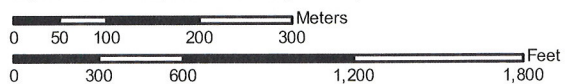
Data Source Information

Soil Survey Area: Harris County, Texas
 Survey Area Data: Version 10, Oct 27, 2009

















































Soil Map—Harris County, Texas
(Nexus Recycling)



Map Scale: 1:8,080 if printed on A size (8.5" x 11") sheet.



MAP LEGEND

 Area of Interest (AOI)	 Area of Interest (AOI)	 Very Stony Spot
 Soils	 Wet Spot	 Other
 Soil Map Units	 Special Line Features	 Special Line Features
 Blowout	 Gully	 Short Steep Slope
 Borrow Pit	 Other	 Other
 Clay Spot	 Political Features	 Political Features
 Closed Depression	 Cities	 Cities
 Gravel Pit	 Water Features	 Oceans
 Gravelly Spot	 Streams and Canals	 Streams and Canals
 Landfill	 Transportation	 Rails
 Lava Flow	 Interstate Highways	 Interstate Highways
 Marsh or swamp	 US Routes	 US Routes
 Mine or Quarry	 Major Roads	 Major Roads
 Miscellaneous Water	 Local Roads	 Local Roads
 Perennial Water		
 Rock Outcrop		
 Saline Spot		
 Sandy Spot		
 Severely Eroded Spot		
 Sinkhole		
 Slide or Slip		
 Sodic Spot		
 Spoil Area		
 Stony Spot		

MAP INFORMATION

Map Scale: 1:8,080 if printed on A size (8.5" x 11") sheet.
 The soil surveys that comprise your AOI were mapped at 1:20,000.
 Please rely on the bar scale on each map sheet for accurate map measurements.
 Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: UTM Zone 15N NAD83
 This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.
 Soil Survey Area: Harris County, Texas
 Survey Area Data: Version 10, Oct 27, 2009
 Date(s) aerial images were photographed: 1995

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Harris County, Texas (TX201)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ad	Addicks loam	56.0	21.5%
Ge	Gessner loam	119.8	46.1%
Gs	Gessner complex	10.1	3.9%
Kf	Katy fine sandy loam	74.1	28.5%
Totals for Area of Interest		260.0	100.0%

Attachment C:
Wetlands and
Endangered or Threatened Species Statement

MEMORANDUM

To: Mike Oden
From: Tony Bassak
Copy: James Thomas and Christine Magers
Date: July 28, 2010
Subject: Summary of Findings – Nexus Continuum Material Recovery and Transfer Station Site Visit

Nexus Continuum, LLC, is a locally family owned, minority business that operates a commercial solid waste and recyclables collection services company. Its service area primarily consists of Harris County and the City of Houston. Nexus Disposal has provided roll-off boxes and dumpsters for the collection and disposal of municipal solid waste (MSW), construction or demolition waste (C&D), brush, inert material, white goods and yard waste within its service area for over 15 years. Nexus Disposal has recognized that much of the C&D and brush material collected is recyclable and that disposing of such material in landfills is a waste of reusable material. A registration application is being prepared for submittal to the TCEQ for a Type V - Material Recovery and Transfer Station at the site. Nexus Continuum, LLC (Nexus) has been formed to prepare the application and to own and operate the facility. The facility will be known as the Nexus Recycling Material Recovery and Transfer Station.

On July 28, 2010, and October 8, 2010, in order to meet regulatory requirements outlined in 330.61(a), HDR staff performed a site assessment that included a threatened and endangered species habitat assessment and waters of the U.S. determination at the Nexus property (Site) located at 6124 Cunningham Road and 6131 Thomas Road in Houston, Texas. The Site consists of approximately 7.6 acres with approximately 180 feet fronting Cunningham Road.

Prior to conducting fieldwork, HDR conducted a thorough review of existing site information including:

- U.S. Geological Survey. 7.5 minute quadrangle topographical map, Hedwig Village, Harris County, Texas. 1982.
- U.S. Geological Survey. 7.5 minute quadrangle topographical map, Satsuma, Harris County, Texas. 1982.

Ecologically-Sensitive Areas and Endangered & Threatened Species

The Texas Parks and Wildlife Department (TPWD) Annotated County Lists of Rare, Threatened and Endangered Species of Texas by County Database website (last updated 3/5/2010) listed endangered, threatened, or rare species in Harris County as:

- **AMPHIBIANS** – Houston toad (*Anaxyrus houstonensis*)
- **BIRDS** - the Bald Eagle (*Haliaeetus leucocephalus*), American peregrine falcon (*Falco peregrinus anatum*), arctic peregrine falcon (*Falco peregrinus tundrius*), Black rail (*Laterallus jamaicensis*), Brown pelican (*Pelecanus occidentalis*), Henslow's sparrow (*Ammodramus henslowii*), Mountain plover (*Charadrius montanus*), Peregrine falcon (*Falco peregrinus*), Red-cockaded woodpecker (*Picoides borealis*), Snowy plover (*Charadrius alexandrines*), Southern snowy plover (*Charadrius alexandrines tenuirostris*), White-faced ibis (*Plegadis chihi*), White-tailed hawk (*Buteo albicaudatus*), Whooping crane (*Grus americana*), Wood stork (*Mycteria americana*)
- **FISHES** – American eel (*Anguilla rostrata*), Creek chubsucker (*Erimyzon oblongus*), Smalltooth sawfish (*Pristis pectinata*)
- **MAMMALS** – Louisiana black bear (*Ursus americanus luteolus*), plains spotted skunk (*Spilogale putorius interrupta*), Rafinesque's big-eared bat (*Corynorhinus rafinesquii*), red wolf (*Canis rufus*), Southeastern myotis bat (*Myotis austroriparius*)
- **MOLLUSKS** – little spectaclecase (*Villosa lienosa*), Louisiana pigtoe (*Pleurobema riddellii*), pistolgrip (*Tritogonia verrucosa*), rock pocketbook (*Arcidens confragosus*), sanbank pocketbook (*Lampsilis satura*), Texas pigtoe (*Fusconaia askewi*), Wabash pigtoe (*Fusconaia flava*)
- **PLANTS** – coastal gay-feather (*Liatris bracteata*), giant sharpstem umbrella-sedge (*Cyperus cephalanthus*), Houston daisy (*Rayjacksonia aurea*), Texas meadow-rue (*Thalictrum texanum*), Texas prairie dawn (*Hymenoxys texana*), Texas windmill-grass (*Chloris texensis*), threeflower broomweed (*Thurovia triflora*)
- **REPTILES** – alligator snapping turtle (*Macrochelys temminickii*), green sea turtle (*Chelonia mydas*), Gulf saltmarsh snake (*Nerodia clarkia*), Kemp's Ridley sea turtle (*Lepidochelys kempi*), leatherback sea turtle (*Derموchelys coriacea*), loggerhead sea turtle (*Caretta caretta*), smooth green snake (*Liochlorophis vernalis*), Texas horned lizard (*Phrynosoma cornutum*), timber/canebrake rattlesnake (*Crotalus horridus*)

An on-site investigation of the proposed site and immediate adjacent properties did not reveal any indications of suitable habitat for threatened or endangered species on or near the project site. Therefore, threatened or endangered species are not anticipated to exist within the project site.

According to the TPWD map "The Vegetation Types of Texas" (1984), the project area is located in the Urban physiognomic region. Urban refers to the high density of development, a lack of any native vegetated areas. The project area is consistent with TPWD mapping.

The facility and the operation of the facility will not result in the destruction or adverse modification of the critical habitat of endangered or threatened species, or cause or contribute to the taking of any endangered or threatened species.

Jurisdictional Determination and Approximate Wetland Boundary Assessment

A site assessment revealed no potentially jurisdictional features located within the site boundary; therefore, completing a wetland delineation under the guidance of the United States Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual was not required.

Well Spatial Data Search

Spatial data that identify nearby O&G wells and groundwater wells were obtained from the Texas Railroad Commission (TRC) and the Texas Water Development Board (TPWD) and the Harris-Galveston Subsidence District (H-GSD). The database search identified no O&G wells onsite, and seven groundwater wells within a 500 foot radius of the Site. Visual reconnaissance identified eight wells within a 500 foot radius of the Site. Of the fifteen identified, two groundwater wells are present on the Site and are used for operational needs.

Attachment D:
Texas Historical Commission Review

MEMORANDUM

To: Mike Oden

From: Tony Bassak

Copy: Marcus Grant

Date: September 10, 2010

**Reference: Nexus Continuum, LLC. Material Recovery and Transfer Station
Houston, Texas**

Nexus Continuum, Inc. (Nexus) is applying to the Texas Commission on Environmental Quality (TCEQ) for registration of the Material Recovery and Municipal Solid Waste Transfer Station to be located at 6124 Cunningham Road and 6131 Thomas Road, Houston, Texas.

The Nexus transfer station is located near the Sam Houston Tollway and is served by Little York Road and Tanner Road to the north and south, respectively. The transfer station will occupy about 5 acres of an approximately 7.6-acre site. The current site has been in use for approximately 15 years and has been previously disturbed by construction and operational activities.

Texas Commission on Environmental Quality (TCEQ) regulations [30 TAC 330.61(0)] require documentation of coordination with the Texas Historical Commission regarding historical sites and cultural resources.

The project was discussed briefly by HDR archaeologist Marcus P. Grant, RPA and staff at the THC via telephone on August 26, 2010. Mr. Grant was directed to online form "Request for SHPO Consultation: Projects Subject to Section 106 of the National Historic Preservation Act and/or the Antiquities Code of Texas." It was also suggested that Mr. Grant contact Mr. Ed Baker, TCEQ Coordinator for THC at 512-463-5394.

On August 27, 2010 Mr. Grant examined online maps at <http://atlas.thc.state.tx.com.us> in relation to the project area locator maps and site plan maps. It was determined no historic sites, historic landmarks, architectural resources, or cemeteries existed within a one-mile radius of the subject property.

On September 2, 2010, after several unsuccessful attempts to respond to one another's voice mail messages, Mr. Grant spoke via telephone with Mr. Baker. On hearing the project details, Mr. Baker advised against HDR submitting the "Request for SHPO Consultation Form" since Title V permits are covered under an interagency agreement between TCEQ and THC and normally do not require action on the part of the proponent. He stated project information would be provided to him directly by TCEQ for his review and if further information was required from HDR, the firm would be contacted.

Since the project involves an existing waste transfer/recycling facility in an industrial area and will apparently not impact any historic properties either directly or indirectly, it is doubtful further cultural resource management actions will be required.

**Attachment E:
Local Agency Coordination**

Houston- Galveston Area Council

Harris County

October 27, 2011

Cheryl Mergo
Manager Sustainability Programs
Community & Environmental Planning Department
Houston-Galveston Area Council of Governments
P.O. Box 22777
Houston, TX 77227-2777

**Reference: Nexus Continuum, LLC
Nexus Material Recovery and Transfer Station
Harris County, Texas**

Dear Ms. Mergo:

Nexus Continuum, LLC (Nexus) has re-applied to the Texas Commission on Environmental Quality (TCEQ) for registration of a Type V Material Recovery and Transfer Station to be located on property located at 6124 Cunningham Road and 6131 Thomas Road, near the Sam Houston Tollway. The facility will be served by Little York Road and Tanner Road to the north and south, respectively. The facility will be known as the Nexus Material Recovery and Transfer Station. A letter was previously sent on January 10, 2011 along with Parts I and II. The TCEQ requested the application be withdrawn and resubmitted with all four parts. Therefore, we are informing you of this change. A copy of the revised Parts I and II of the registration application which was prepared by HDR Engineering, Inc. is enclosed for your review.

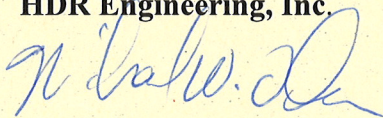
Nexus Disposal, LLC is a family-owned minority business that has operated a municipal solid waste (MSW) and recyclables collection business for more than 15 years in the Houston area. Their office is currently located at 6124 Cunningham Road. Nexus Continuum, LLC has been formed to own and operate the Nexus Material Recovery and Transfer Station. The facility will receive up to 5,000 cubic yards per day of municipal waste and recyclable materials, operating 24 hours a day, seven days per week. Recyclable components of the waste stream such as wood, paper, corrugated cardboard, gypsum board, various types of plastic, concrete and masonry rubble, aluminum, ferrous and non-ferrous metal, brush and tree waste, and other materials that are marketable, will be removed for recycling or reuse. The remaining waste will be consolidated into containers and taken to a permitted landfill.

Cheryl Mergo
Community & Environmental Planning Department
Houston-Galveston Area Council of Governments
October 27, 2011
Page 2

TCEQ regulations [30 TAC 330.61(p)] require that Parts I and II of the application be submitted for your review. The intent of this letter is to inform you of the proposed facility and request your response indicating that the facility as proposed will be in compliance with the regional solid waste plan.

Should you have any question regarding this project, please feel free to give me a call at 972-960-4479.

Sincerely,
HDR Engineering, Inc.

A handwritten signature in blue ink, appearing to read "Michael W. Oden", is written over the company name.

Michael W. Oden, P.E.
Project Manager

Attachments

CC: Efrain Gonzalez, Jr. – Nexus Continuum, LLC

October 27, 2011

Mr. Josh Stuckey
Harris County
Public Infrastructure Department
10555 NW Freeway
Suite 100
Houston, Texas 77092

**Reference: Nexus Continuum, LLC
Nexus Material Recovery and Transfer Station
Harris County, Texas**

Dear Mr. Stuckey,

This letter is to follow up on our meeting of November 2, 2010 in which we discussed the subject facility and subsequent letter dated January 10, 2011. Nexus Disposal, LLC is a family-owned minority business that has operated a municipal solid waste (MSW) and recyclables collection business for more than 15 years in the Houston area. Their office is currently located at 6124 Cunningham Road. Nexus Continuum, LLC has been formed to own and operate the Nexus Material Recovery and Transfer Station. The facility will receive up to 5,000 cubic yards per day of municipal waste and recyclable materials, operating 24 hours a day, seven days per week. Recyclable components of the waste stream such as wood, paper, corrugated cardboard, gypsum board, various types of plastic, concrete and masonry rubble, aluminum, ferrous and non-ferrous metal, brush and tree waste, and other materials that are marketable, will be removed for recycling or reuse. The remaining waste will be consolidated into containers and taken to a permitted landfill.

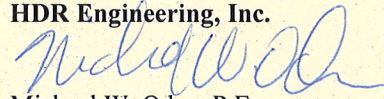
A letter was previously transmitted on January 10, 2011, however, the TCEQ requested the application be withdrawn and resubmitted. Therefore, we are informing you of this change.

Nexus has prepared the registration application for a new facility which will be on property they own located at 6124 Cunningham Road and 6131 Thomas Road in Harris County (see attached Location and Facility Layout Maps). Based on our meeting, Nexus understands that certain development permits will be required from Harris County for the proposed improvements. In particular, final construction plans must be submitted to your office for review that address driveway access, drainage, building regulation and storm water quality.

Once the TCEQ has granted the requested registration, Nexus will proceed with final design and obtain the required permits from Harris County. Attached are additional figures from the application for your information. If you have any questions or need additional information, please do not hesitate to contact me at 972-960-4479.

Sincerely,

HDR Engineering, Inc.



Michael W. Oden, P.E.
Project Manager

Attachments

CC: Efrain Gonzalez, Jr. – Nexus Continuum, LLC

GENERAL LOCATION MAP
NEXUS MATERIAL RECOVERY & TRANSFER STATION
 TYPE V MSW REGISTRATION
 NEXUS CONTINUUM LLC
 HARRIS CO, TX



LEGEND

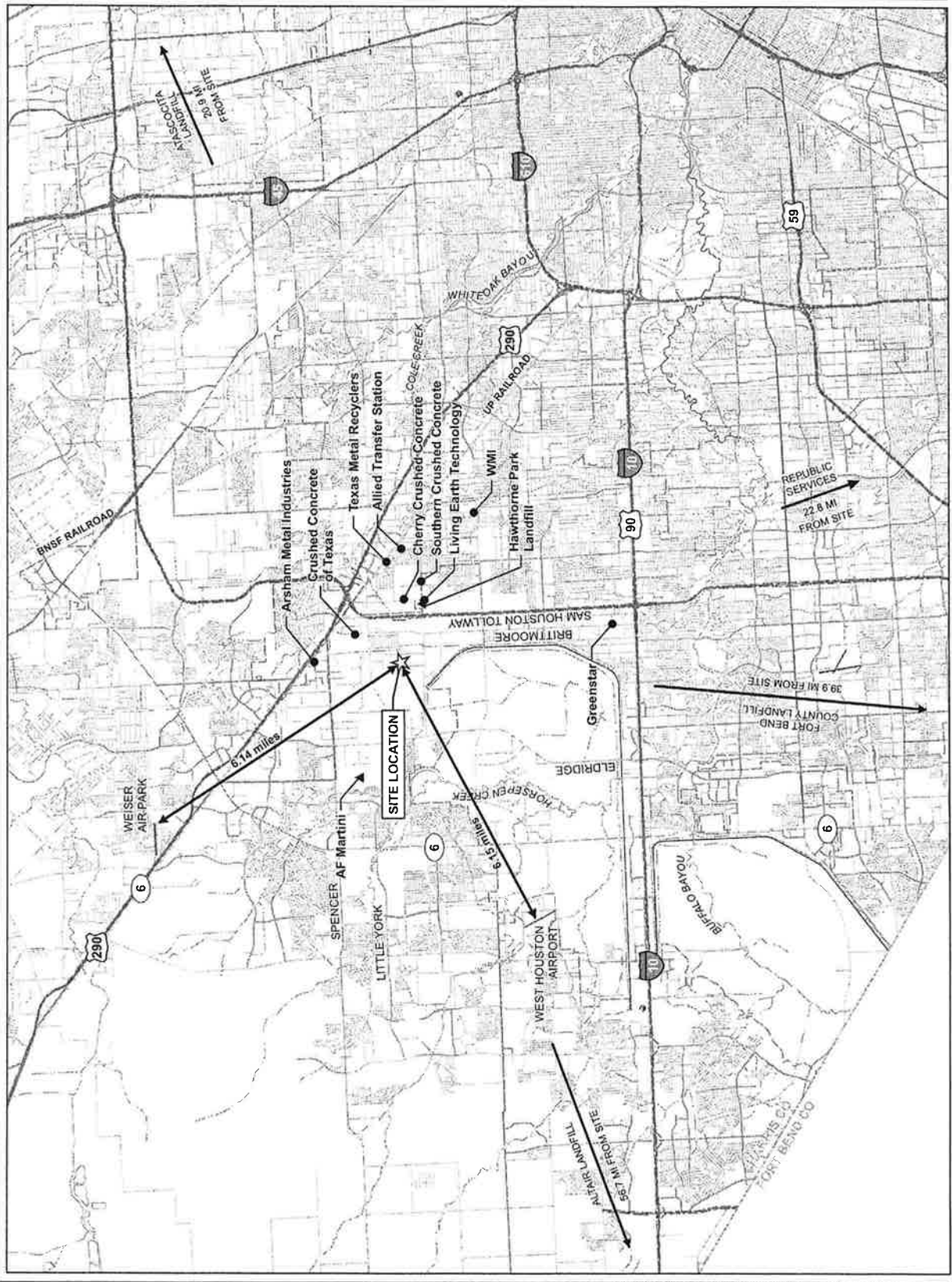
- ☆ SITE LOCATION
- ▲ PERMITTED LANDFILL
- RECYCLABLE MATERIALS
- MARKET



SOURCE: 1986 TXDOT URBAN FILE BY COUNTY, HARRIS COUNTY



PART I
 FIGURE 1



**DETAILED LOCATION MAP
NEXUS MATERIAL RECOVERY &
TRANSFER STATION**
TYPE V MSW REGISTRATION
NEXUS CONTINUUM LLC
HARRIS CO. TX



LEGEND

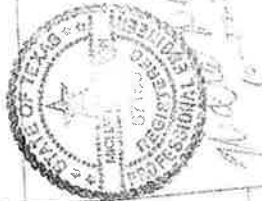
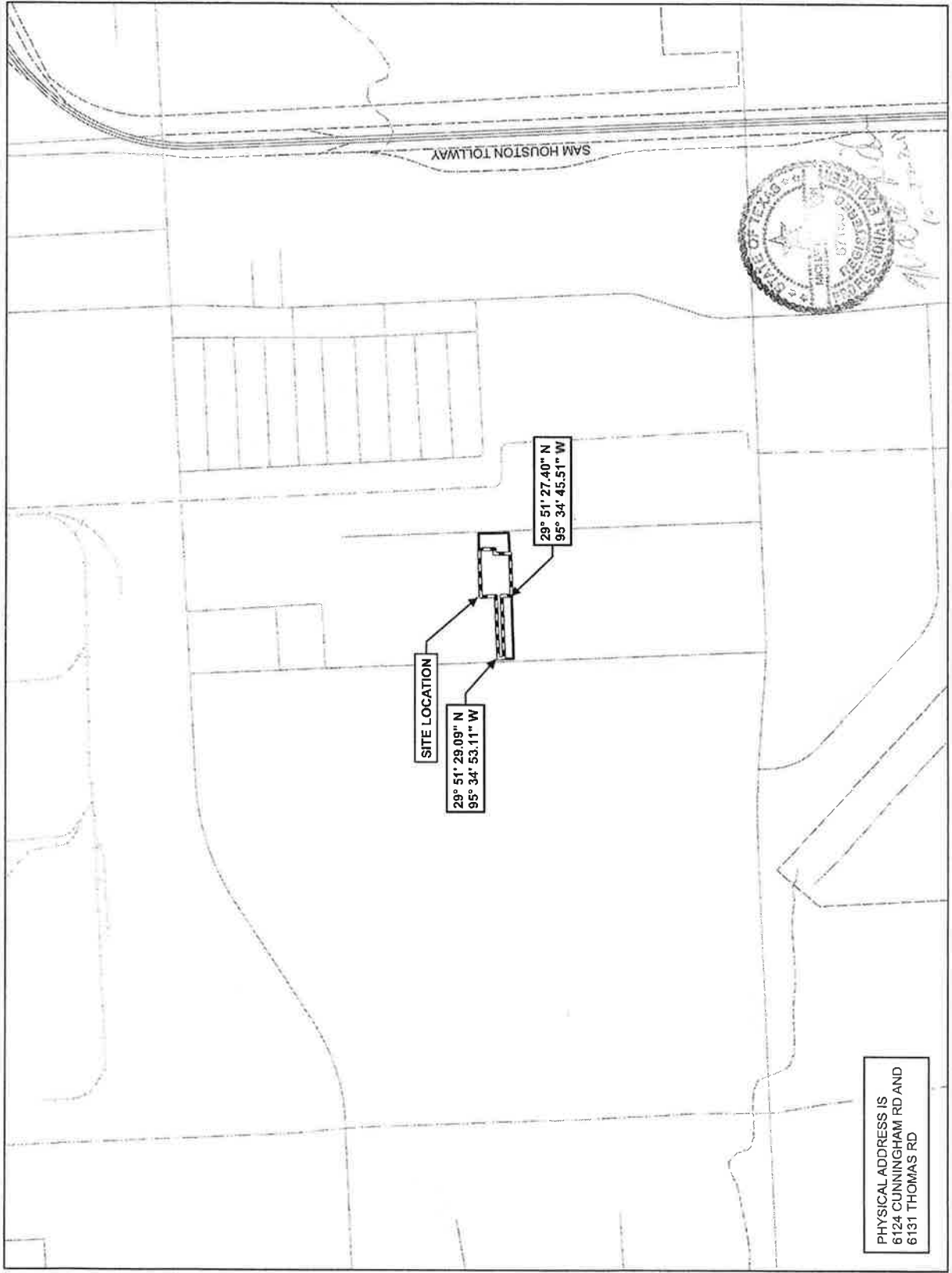
- REGISTRATION BOUNDARY
- PROPERTY BOUNDARY
- MAJOR ROAD
- MINOR ROAD
- RAILROAD
- STREAM / DRAINAGE
- CITY LIMIT

SOURCE: 1988 TYDOT URBAN FILE, BY COUNTY, HARRIS COUNTY

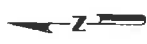


HDR
HDR Engineering, Inc.
1001 Lakeshore Blvd., Suite 200
Houston, Texas 77056
Tel: 281.443.2000
Fax: 281.443.2000

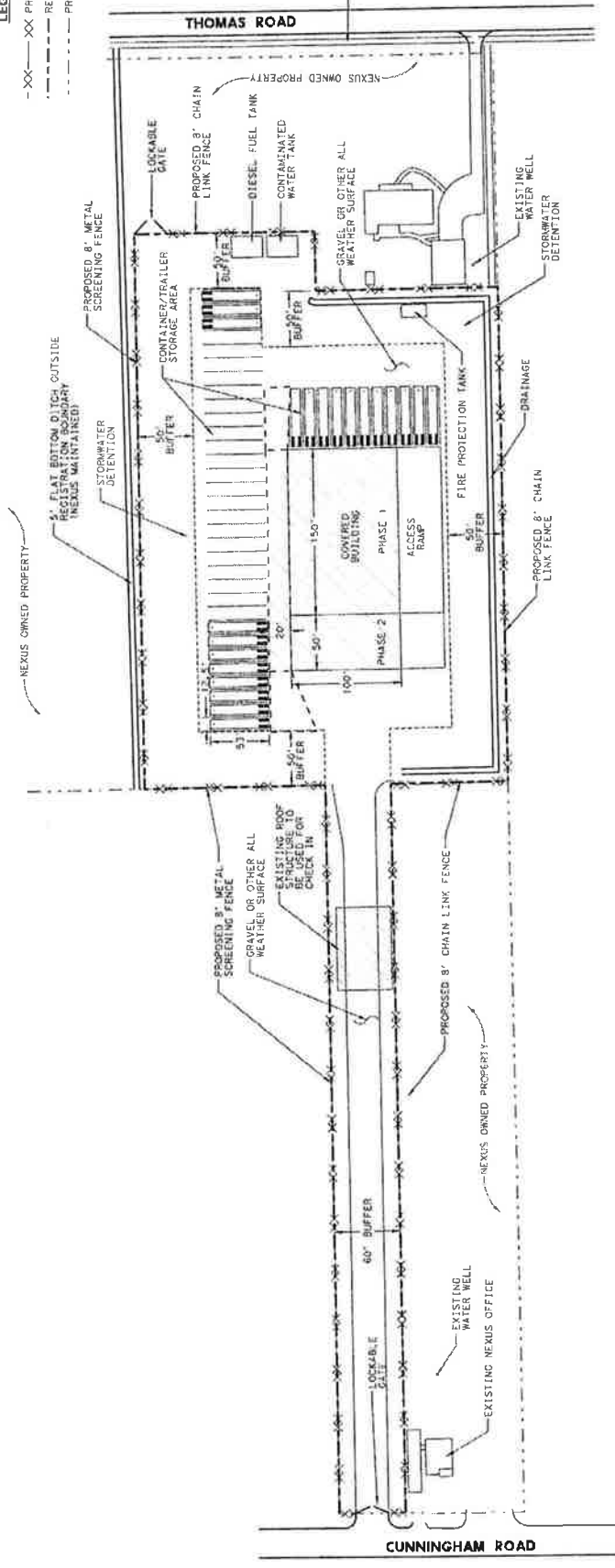
OCT 2011
PART I
FIGURE 2



PHYSICAL ADDRESS IS
6124 CUNNINGHAM RD AND
6131 THOMAS RD



LEGEND
 - XX - PROPOSED FENCE
 - - - - REGISTRATION BOUNDARY
 - - - - PROPERTY BOUNDARY



- NOTES:**
1. PROPERTY ADDRESS: 5124 CUNNINGHAM ROAD, 6121 THOMAS ROAD
 2. ALL DEVELOPMENT PERMITS REQUIRED BY HARRIS UNDER THIS REGISTRATION.
 3. STORAGE AREA FOR NEW AND RECYCLABLES IS SUFFICIENT FOR 43 125 G.Y. TRAILERS.



 HDR 1000 Lakeside Drive Houston, Texas 77002 www.hdr.com	 NEXUS CONTINUUM	FACILITY LAYOUT MATERIAL RECOVERY AND TRANSFER STATION	SHEET: PART 11 FIGURE 2
		PROJECT NUMBER: 142132	FILENAME: HWF11102.dwg SCALE:
FOR PERMITTING ONLY, NOT FOR BIDDING OR CONSTRUCTION Prepared by or under the Direct Supervision of MICHAEL W. ODEN, P.E. 8115 11/02/21		NEXUS CONTINUUM, LLC. HARRIS COUNTY, TEXAS	