NEW BOSTON LANDFILL BOWIE COUNTY, TEXAS TCEQ PERMIT APPLICATION NO. MSW 576C

PERMIT AMENDMENT APPLICATION

PART III – FACILITY INVESTIGATION AND DESIGN ATTACHMENT B GENERAL FACILITY DESIGN

Prepared for

Waste Management of Texas, Inc.

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TEXAS BOARD OF PROFESSIONAL ENGINEERS FIRM REGISTRATION NO. F-256 TEXAS BOARD OF PROFESSIONAL GEOSCIENTISTS FIRM REGISTRATION NO. 50222

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1 FACILITY ACCESS

30 TAC §330.63(b)(1)

Access to the New Boston Landfill is controlled by an existing perimeter fence located along the permit boundary or property boundary, a locking gate at the site entrance, and natural barriers along Rice Creek. The existing fence, gate, and natural barriers prevent the entry of livestock, protect the public from exposure to potential health and safety hazards, and discourage unauthorized entry or uncontrolled disposal of solid waste or prohibited materials. Perimeter fencing consisting of barbed wire, woven wire, wooden fencing, plastic fencing, pipe fencing, or other suitable material will be provided. A gate constructed of suitable fencing materials is located on the entrance road. The gate will be locked when the landfill is not accepting waste. The perimeter fence and gate will be inspected twice monthly. Maintenance will be performed as necessary. Should a breach be detected during inspection or at any other time, every reasonable effort will be made to make repairs within 24 hours of detection. Should repairs require more than 24 hours, temporary repairs will be performed within the time specified to the TCEQ region office following notification. The TCEQ region office will be notified of the breach within 24 hours of detection unless permanent repairs are made within 8 hours of detection.

Access to the New Boston Landfill is provided from U.S. Highway 82. The entrance to the facility is via an asphalt paved roadway. Entrance to the facility is limited to the existing entrance road. Access control to the facility is provided by the existing perimeter fencing and gated site entrance. Access to the facility via the entrance road is provided at the gatehouse area. Entrance to the landfill is monitored by the gate attendant during site operating hours. Outside of waste acceptance hours, the gate to the site will be locked.

Entry to the active portion of the site will be restricted to designated personnel, approved waste haulers, properly identified persons whose entry is authorized by site management, and TCEQ personnel. Visitors may be allowed on the active area only when accompanied by a site representative. Signs will be located along the entrance road directing traffic to the gatehouse. The gate attendant will restrict site access to authorized vehicles and direct these vehicles appropriately. Waste hauling vehicles will be directed to appropriate fill areas by signs located along the landfill haul road and access road. These vehicles will deposit their loads and depart the site. Private, commercial, or public solid waste vehicles will not be allowed access to any areas other than the active portion of the landfill. Site personnel will provide traffic directions as necessary to facilitate safe movement of vehicles. Within the site, signs will be placed along the landfill haul road and access road at a frequency adequate for users to be able to determine the disposal area locations and which roads are to be used. Roads not being used for access to disposal areas will be blocked or otherwise marked for no entry.

2 WASTE MOVEMENT

30 TAC §330.63(b)(2)

The New Boston Landfill accepts household waste, yard waste, commercial waste, Class 2 and Class 3 nonhazardous industrial waste, construction-demolition waste, and special wastes including regulated asbestos-containing materials (RACM). Procedures for waste acceptance, handling, processing, and disposal are provided in Part IV – Site Operating Plan.

Waste disposal facilities will include the Type I waste disposal areas (West and North Disposal Areas) and the Type IV waste disposal area (South Disposal Area). On-site waste processing and/or storage facilities include the large item storage area, reusable materials staging area, citizen's disposal facility, and truck wheel wash. Appendix B1 includes schematic drawings and details that depict disposal, waste processing, and storage activities that are part of the New Boston Landfill.

Drawing B.1 is a flow diagram that provides the storage, processing, and disposal sequences for the various wastes accepted. Drawing B.2 is a schematic drawing of the facility that depicts the areas dedicated for waste disposal within the facility and identifies the waste processing activities to be conducted within the landfill footprint which include a large item storage area and a reusable materials staging area. Drawing B.3 depicts the location of processing and/or storage facilities that are located outside the landfill footprint; these processing and/or storage facilities include the citizen's convenience area, leachate storage facility, and truck wash facility. Schematic details of the processing and/or storage facilities are depicted on Drawings B.4 and B.5.

Waste enters the facility via the site entrance road. The gate attendant observes the incoming waste at the gatehouse, conducts waste screening and weighing, and documents incoming waste. The gate attendant is familiar with the rules and regulations governing the various types of waste that can or cannot be accepted into this facility and will direct the waste hauler to the appropriate waste disposal, storage, or processing area. These gatehouse personnel will also have the authority to reject prohibited wastes and have the rejected waste removed by the waste haul vehicle or transporter immediately upon discovery.

Trained personnel will observe waste unloading at the active working face, large item storage area, or RACM working face and will have the authority and responsibility to reject loads that contain prohibited wastes These working face personnel will also have the authority to have unauthorized and prohibited waste removed by the waste haul vehicle or transporter immediately upon discovery.

Waste Disposal

The proposed landfill liner, leachate collection, and final cover systems will meet all applicable Subtitle D requirements and TCEQ guidelines. Provisions addressing design and construction are addressed in the liner quality control plan, the leachate and contaminated water management plan, and the final cover quality control plan.

The waste disposal area will be excavated with side slopes no steeper than 3H:1V. The liner system will be constructed following excavation of a new waste disposal area. The proposed liner system for the facility is generally described below with layers listed from top to bottom.

| Liner System Component | Description | Thickness |
|---------------------------|---|--|
| v | Vest and North Disposal Areas Liner System | |
| Protective Cover | General earthfill | 24 inches minimum |
| Leachate Collection Layer | Single-sided geocomposite on floor Double-sided geocomposite on side slopes | 0.25 inches nominal 0.25 inches nominal |
| Geomembrane Liner | Smooth HDPE geomembrane on floor Textured HDPE geomembrane on side slopes | 60 mil nominal 60 mil nominal |
| Compacted Soil Liner | Compacted soil with a coefficient of permeability less than or equal to 1×10^{-7} cm/sec | 24 inches minimum |
| | South Disposal Area Liner System | |
| Protective Cover | General earthfill | 12 inches minimum |
| Compacted Soil Liner | Compacted soil with a coefficient of permeability less than or equal to 1×10^{-7} cm/sec | 36 inches minimum |

Table B-1 New Boston Landfill Components of the Liner Systems

Information regarding materials and construction quality assurance are included in Attachment D7 – Liner Quality Control Plan. Liner system details are included in Attachment D3 – Construction Design Details.

A leachate collection system (LCS) has been designed with a geocomposite drainage layer, leachate collection trenches, and leachate collection sumps to remove leachate from the landfill. The LCS layout and details are shown in Attachment D3 – Construction Design Details. Design of the LCS is discussed in Attachment D6 – Leachate and Contaminated Water Management Plan. Information regarding materials and construction quality assurance are included in Attachment D7 – Liner Quality Control Plans.

The proposed landfill development method for the site is a combination of the areaexcavation fill followed by aerial fill to the proposed landfill completion height. Landfill development will generally follow the sequence of development as shown in Part II, Appendix IIA on Drawings IIA.16 through IIA.24.

The aerial fill side slopes will not exceed 4H:1V, and the aerial fill top slope will be 6 percent. A composite final cover will be constructed over the remainder of the landfill. As shown in Attachment D3 – Construction Design Details, the final cover consists of the Subtitle D final cover system and is generally described below with layers from top to bottom.

Table B-2 New Boston Landfill Components of the Final Cover Systems

| Cover System Component | Description | Minimum Thickness | | | |
|-------------------------|---|----------------------|--|--|--|
| | West and North Disposal Areas Final Cover | | | | |
| TOPSLOPE | | | | | |
| Erosion Layer | Soil that is capable of sustaining native plant growth | 24 inches | | | |
| Cushion Layer | Geotextile | 8 oz | | | |
| Flexible Membrane Cover | Smooth LLDPE geomembrane | 40 mil nominal | | | |
| Infiltration Layer | Compacted soil with a coefficient of permeability less than or equal to 1×10^{-5} cm/sec | 18 inches | | | |
| SIDESLOPE OPTION A | | | | | |
| Erosion Layer | Soil that is capable of sustaining native plant growth | 24 inches | | | |
| Drainage Layer | Double-sided geocomposite | 0.2 inches nominal | | | |
| Flexible Membrane Cover | Textured LLDPE geomembrane | 40 mil nominal | | | |
| Infiltration Layer | Compacted soil with a coefficient of permeability less than or equal to 1×10^{-5} cm/sec | 18 inches | | | |
| SIDESLOPE OPTION B | | | | | |
| Erosion Layer | Soil that is capable of sustaining native plant growth | 24 inches | | | |
| Drainage Layer | Geotextile over studded geomembrane | 8 oz | | | |
| Flexible Membrane Cover | Textured LLDPE geomembrane with studs on top | 40 mil nominal | | | |
| Infiltration Layer | Compacted soil with a coefficient of permeability less than or equal to 1×10^{-5} cm/sec | 18 inches | | | |
| | South Disposal Area Final Cover System | | | | |
| Erosion Layer | Soil that is capable of sustaining native plant growth | 24 inches | | | |
| Infiltration Layer | Compacted soil with a coefficient of permeability less than or equal to 1×10^{-7} cm/sec | 18 inches | | | |

Final cover placement will generally follow the sequence of development as shown in Part II, Appendix IIA, Drawings IIA.16 through IIA.24, and will be ongoing as the site is developed. Sectors will be closed according to the closure plan provided in Attachment H - Closure Plan.

RACM

Regulated asbestos-containing material (RACM) may be accepted at the New Boston Landfill as defined in 40 Code of Federal Regulations Part 61 in accordance with 30 TAC §330.171(c)(3). The existing landfill has previously notified TCEQ of its intent to accept RACM. The New Boston Landfill, by inclusion of the requirements of §330.171(c)(3) in the Site Operating Plan, is providing written notification to the executive director of the

intent of the facility to continue to accept RACM. The landfill, in accordance with §330.171(c)(3)(A), dedicates all of the Type I Subtitle D landfill units as potentially receiving RACM. On days when RACM is accepted, a RACM unloading and disposal area will be provided separate from the active waste disposal area. Control will be used to confine the RACM area to a size consistent with the rate of incoming RACM, while allowing for safe and efficient operation. The procedures for recordkeeping, acceptance, and disposal of RACM at the facility are addressed in Part IV – Site Operating Plan.

Large Item Storage

A storage area for large items and white goods may be provided near the active working face. Large items and white goods include ovens, dishwashers, freezers, air conditioners, and other large items. Any rainfall runon or runoff from the area will be contained within the active area and handled as contaminated water, as discussed Part IV – Site Operating Plan. These items will be recycled or disposed of at the active working face within 180 days of acceptance at the facility. The procedures for the acceptance, storage, processing, and disposal of large items, including items containing chlorinated fluorocarbons, are addressed in Part IV – Site Operating Plan.

Recyclable Materials Staging Area

Inert materials such as brick, concrete, rubble, and aggregate; and non-inert materials such as reclaimed asphalt pavement and shingles are often received and staged at the facility for use on facility access roads, staging areas, and drainage structures. Shingles will not be used on facility access roads. The recyclable materials staging area for inert materials will be located within the waste disposal footprint and will be relocated periodically as the active working face moves. The recyclable materials staging area for non-inert materials will be located above existing lined areas and will be relocated as the active working face moves. The size of the stockpiles may vary depending on the amount of materials received at any given time. Since the brick, concrete, rubble, and aggregate materials are inert, their storage will not create a public health hazard or nuisance, and runon and runoff from rainfall will not be controlled in a special manner for these materials. Since reclaimed asphalt pavement and shingles are not inert materials. they will be managed in a manner that will prevent runoff of contaminated water, discharge of waste, or the creation of nuisance conditions. Shingles will not be used if they contain asbestos and will be disposed as special wastes, as required in Appendix IVB - Special Waste Acceptance Plan. Since these inert and non-inert materials will continuously be reused for site operations, there is no time limit on the storage of these materials.

Citizen's Convenience Area

A citizen's convenience area for waste drop-off is located as shown on Drawing B.3. An additional citizen's convenience center may be installed north of the existing convenience area. Rules of the area as required by §330.213(a) will be posted. Thirty to forty cubic yard roll-off containers as well as containers for recycled goods are provided. Full roll-off containers will be emptied at the active working face at the end of each day. Containers that are not full will be covered with a tarp at the end of each day. The containers will also be covered with tarps to prevent rainfall from accumulating

inside the containers and to prevent generation of contaminated waters. The elimination of contaminated water within the roll-off containers will minimize the potential for generating odors within the area. As stated, containers with waste will be emptied at the end of each day, also minimizing the potential for odors. Recycle containers will periodically be transported to an appropriate recycling facility.

The citizen's convenience center will receive municipal solid waste from the public. Any waste received will be loaded into steel roll-off containers. Each container is tarped to prevent rainfall from accumulating inside the containers. Full containers will be disposed of at the working face. Containers will be cleaned as needed by washing down the containers with water. The citizen's convenience center is constructed of reinforced concrete. Should waste materials spill onto the concrete surface, the materials will be picked up and disposed of at the working face. The concrete surfaces will be cleaned as needed by washing down with water. Wash water from the steel roll-off containers or concrete surfaces will be treated as contaminated water and disposed of in accordance with Attachment D6, Section 3.

Leachate Storage Facility

Primary leachate storage is provided by the leachate sumps, which are located within the landfill cells. Leachate is pumped from the sumps through a leachate forcemain to the leachate storage facility. Leachate can be temporarily stored in the storage tank or can be discharged to the sanitary sewer connection which conveys the leachate to a publicly owned treatment works (POTW).

The leachate storage facility is located south of the West Disposal Area. The storage facility consists of one 23,000-gallon storage tank. Attachment D6, Appendix D6-D demonstrates that the secondary containment area provides containment, with 6 inches of freeboard, for the storage tank and precipitation from the 25-year, 24-hour storm event.

Truck Wheel Wash Facility

The truck wheel wash facility is a concrete drive through structure that may be used to further minimize tracking onto public roads, as necessary. The accumulated mud will be periodically removed from the truck wheel wash and placed in the active working face. Water from the truck wheel wash facility will be managed as contaminated water in accordance with Attachment D6. The truck wheel wash facility provides mud removal from vehicles to prevent tracking of mud onto the entrance road or U.S. Highway 82. The existing truck wheel wash will be removed and a new truck wheel wash will be installed along the entrance road as shown on Drawing B.3.

30 TAC §330.63(b)(3)

The solid waste processing and/or storage facilities include the large item storage area, recyclable materials staging area, citizen's convenience area, leachate storage facility, and truck wheel wash facility. Each of these facilities is designed to facilitate proper cleaning. Refer to Section 2 - Waste Movement for a discussion of each of these facilities. Operational requirements for each facility are described in Part IV – Site Operating Plan, including a discussion of surface water controls, cleaning facilities, and contaminated water.

4 WATER POLLUTION CONTROL

30 TAC §330.63(b)(4)

The processing and/or storage facilities will be maintained and operated to manage runon and runoff during the peak discharge from the 25-year storm event and will prevent the off-site discharge of waste and feedstock material, including, but not limited to, processed or stored materials. Surface water in and around each processing and/or storage facility will be controlled to minimize surface water running onto, into, and off the processing and/or storage area. Since all contaminated water will be managed in a controlled manner, as discussed above, groundwater will be protected. The recyclable materials staging area for inert materials will not create a public health hazard or nuisance, and runon and runoff from rainfall will not be controlled in a special manner for these materials. Should the discharge of contaminated water become necessary, the landfill will obtain specific written authorization from the TCEQ prior to discharge. The landfill and its processing and/or storage facilities will be operated consistent with §330.15(h)(1)-(4) regarding discharge of solid wastes or pollutants into waters of the United States. Refer to Section 2 - Waste Movement for a discussion of the solid waste processing and/or storage facilities and Part IV - Site Operating Plan for a discussion of operational requirements, including management of contaminated water.

5 ENDANGERED SPECIES PROTECTION

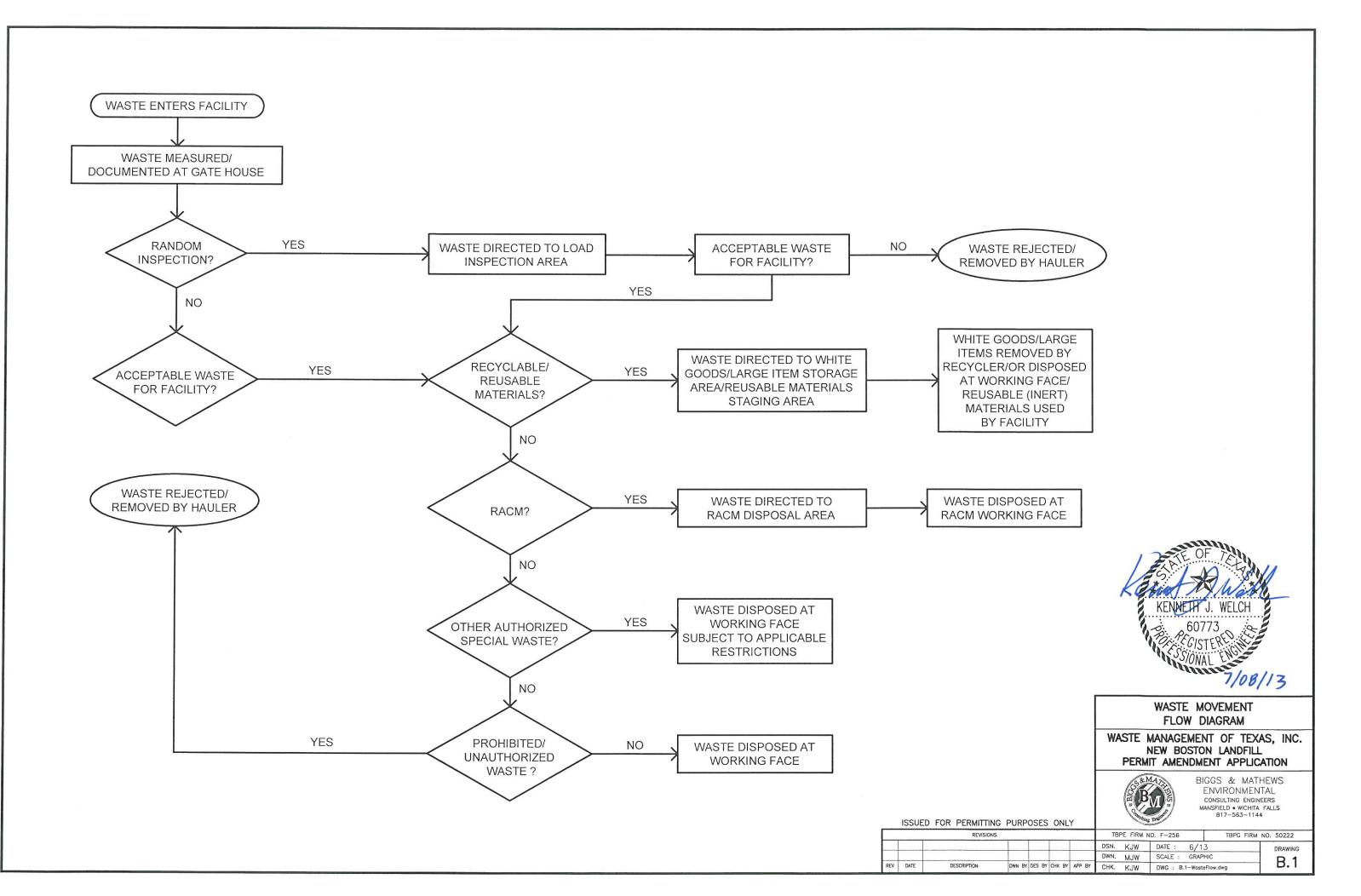
30 TAC §330.63(b)(5)

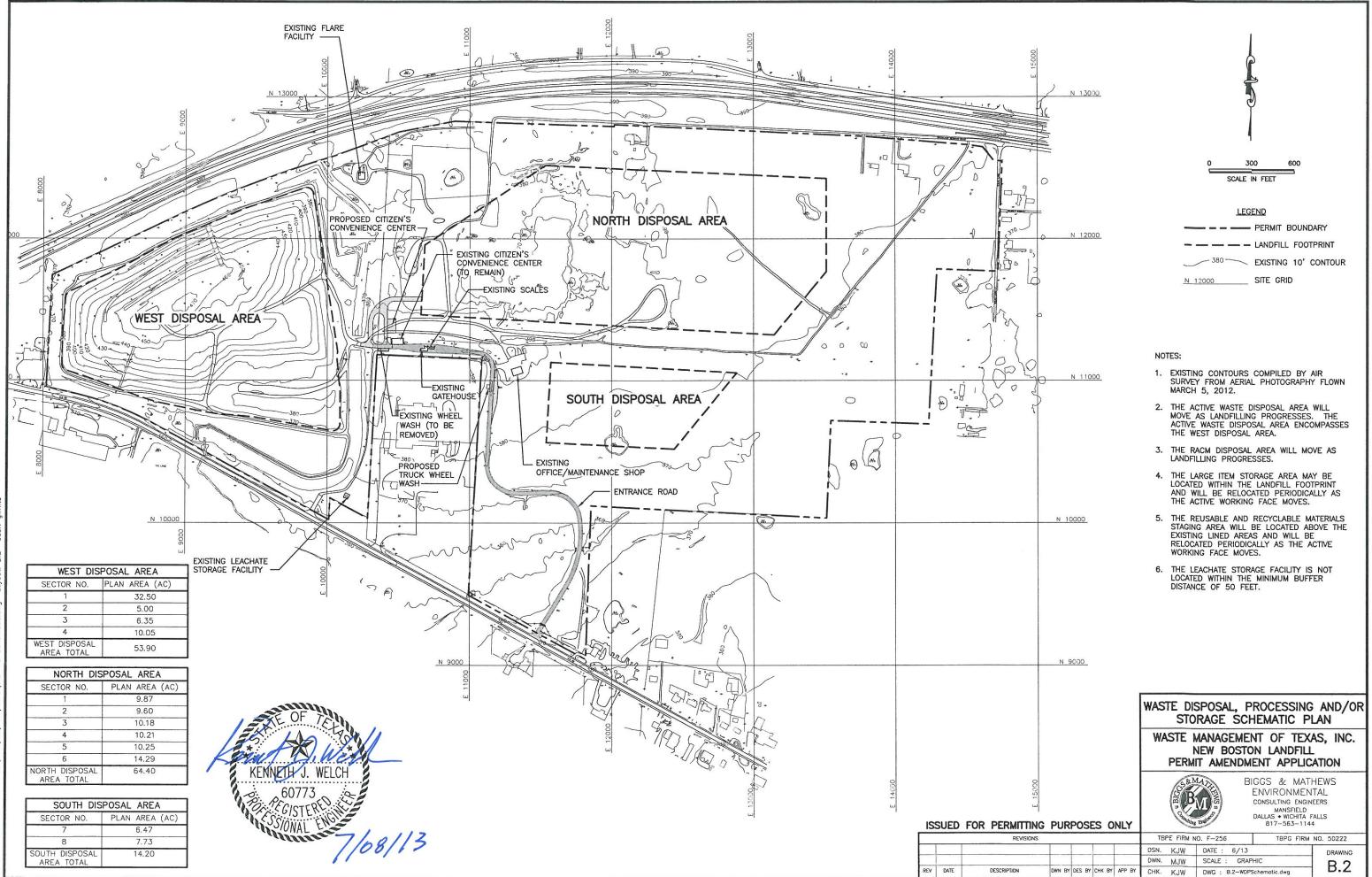
Halff Associates conducted a threatened and endangered species assessment of the proposed New Boston Landfill site. No endangered or threatened species have been documented at the site nor has a critical habitat for such species been identified at the site. Neither the facility nor its operation will result in the destruction or adverse modification of the critical habitat of endangered or threatened species, or cause the taking of any endangered or threatened species. Coordination with the United States Fish and Wildlife Service (USFWS) and Texas Parks and Wildlife Department (TPWD) supports that the activity, as proposed, will have no anticipated negative impact to rare species or natural communities. The endangered and threatened species report and documentation is included in Part II, Appendix IIE.

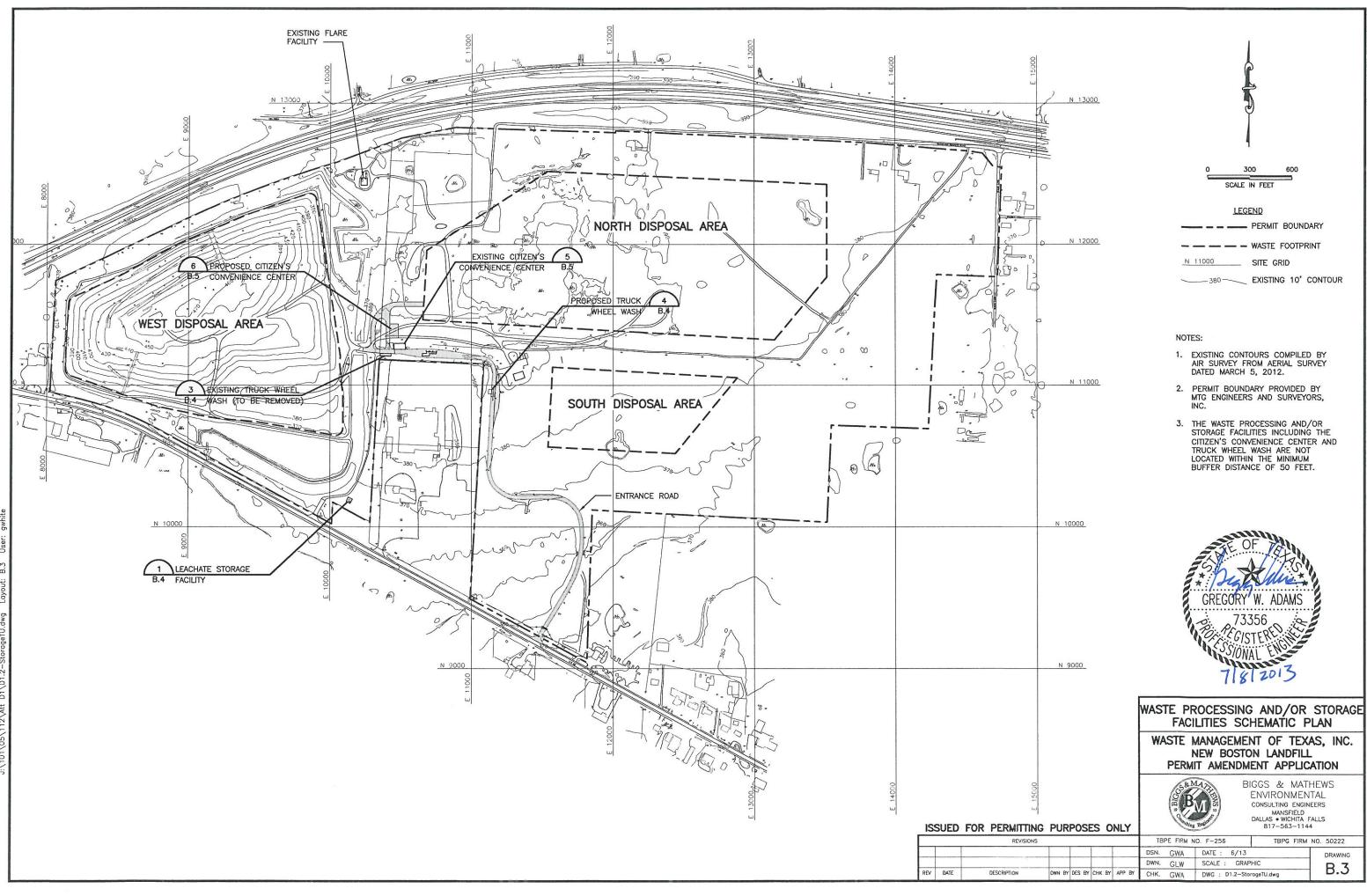
NEW BOSTON LANDFILL APPENDIX B1 DRAWINGS

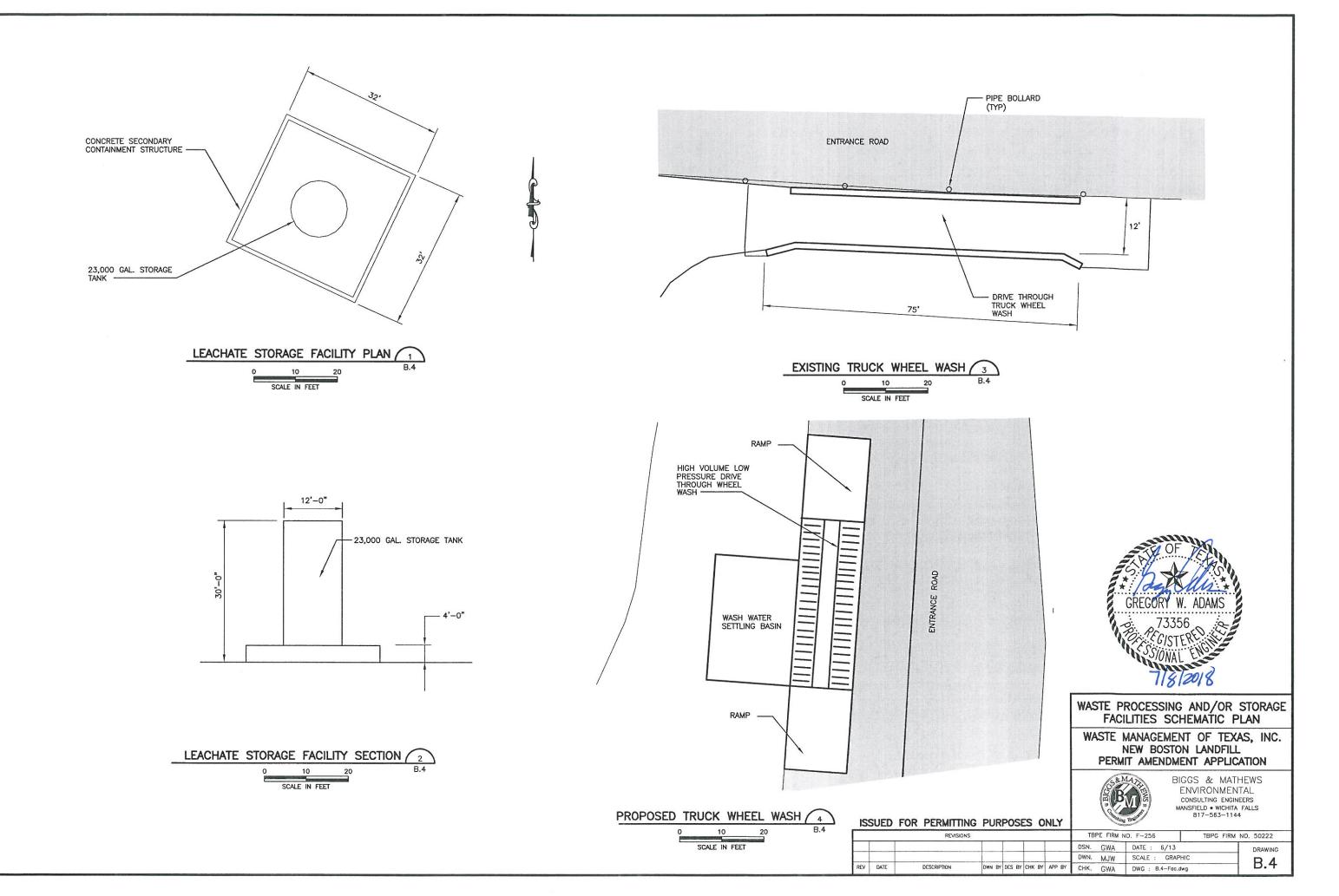
CONTENTS

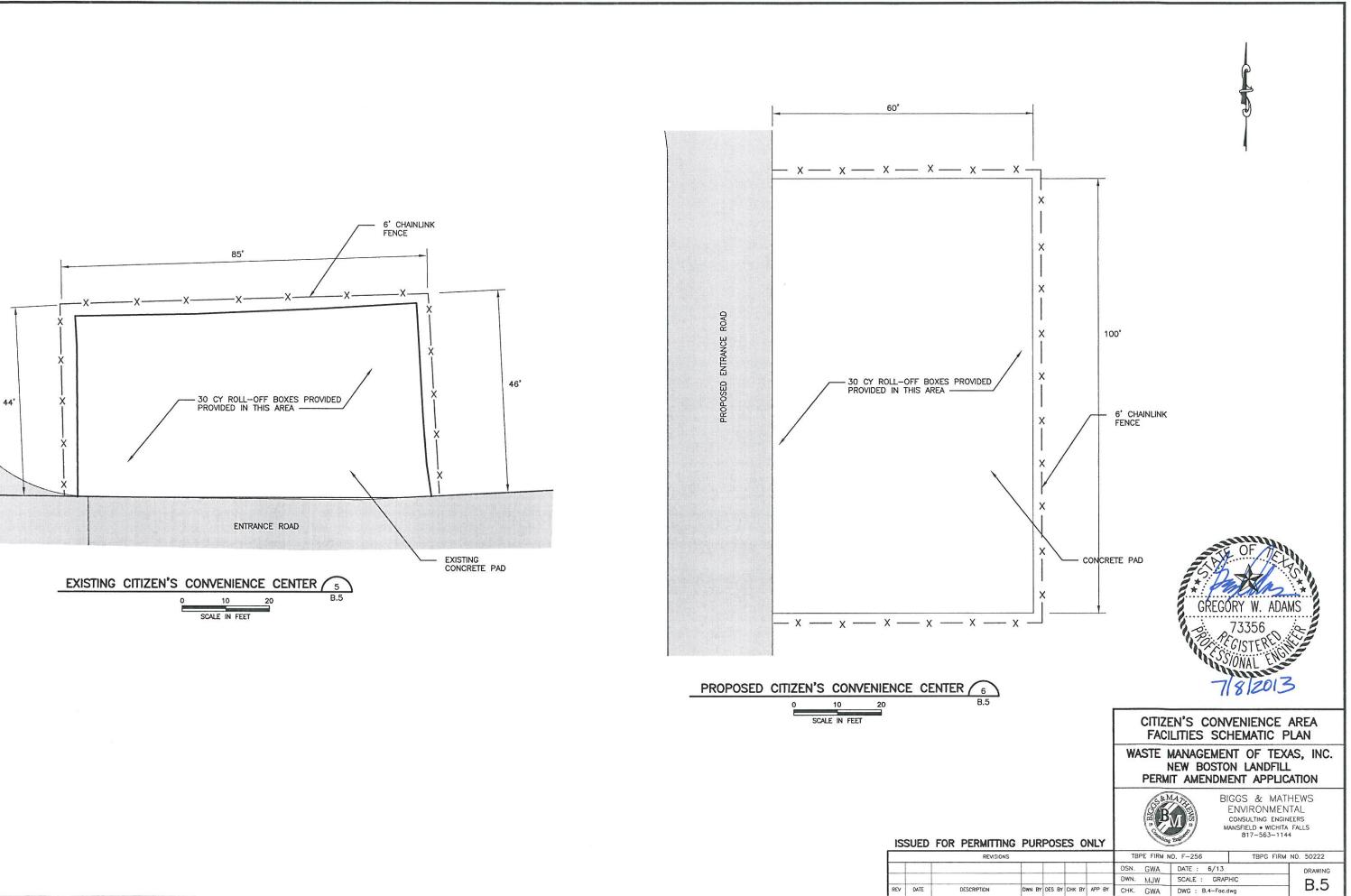
- IB.1 Waste Movement Flow Diagram
- IB.2 Waste Disposal, Processing, and/or Storage Schematic Plan
- IB.3 Waste Processing and/or Storage Facilities Schematic Plan
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