

PART III
SITE DEVELOPMENT PLAN

City of Haskell, Texas

Municipal Transfer Station Haskell County, Texas

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Revision:

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Attachments

- 1 Site Development Drawings
 - 1A Main Plan, 1B Typical Building Section, 1C Predevelopment Contour,
 - 1D Post-Development Contour
- 2 Flow Diagram and Schematic

- Appendix III/ 1 Surface Water Drainage Report
- Appendix III/ 2 Closure Cost Estimate
- Appendix III/3 Financial Assurance Documents



SITE DEVELOPMENT PLAN

A. Transfer Station Method

The transfer station will use the standard method of a covered building, concrete tipping floor and a truck alley accessed via gated entry/exits from US Highway 380. All access occurs through one road from the property entrance and proceed to the scale house.

Waste Movement 330.63 (b) (2)/ Maximum time 330.63 (d)(1) (c)

The loads will be unload onto the tipping floor within the transfer station building. A front end loader will push the waste from the tipping floor into the waste transfer trailer. The trailer will be tarped and hauled to a TCEQ approved landfill.

The Site Operating Plan details the ventilation and odor control and the construction details of the transfer station. The effluent is collected and disposed of by the City to the sanitary sewer system via a manhole. Grease, oil and sludge are not stored on site.

Flow diagrams indicating the storage, processing, and disposal sequences for the various types of wastes is included in Attachment 2.

Schematic view drawings showing the various phases of collection, separation, processing, and disposal as applicable for the types of wastes received at the facility is included in Attachment 2.

The City will operate the facility in a manner to reduce potential nuisances. Ventilation is provided by natural breeze, open doors, ridgetop vents and fans.

B. Scale Facility

The Scale Facility is located within the permit boundary on the main entrance road. The Scale Facility is continuously staffed while the landfill and transfer station is accepting waste.

C. Waste Movement 330.63 (b) (2)/ Maximum time 330.63 (d)(1) (c)

The Site Operating Plan details the ventilation and odor control and the construction details of storage and processing units. The effluent is collected and disposed of by the City to the sanitary sewer system via a manhole. Grease, oil and sludge are not stored on site.

Flow diagrams indicating the storage, processing, and disposal sequences for the various types of wastes is included in Attachment 5

Schematic view drawings showing the various phases of collection, separation, processing, and disposal as applicable for the types of wastes received at the facility is included in Attachment 5

D. Odor Control and Vectors

Methods to control potential odors emanating from the site will vary depending on the odor source type and its location within the transfer station. An Odor Control Plan is part of the Site Operating Plan (SOP). These methods include the following, but are not limited to, the following items:

- Open burning of waste will not be permitted at this Facility.
- Unloading of wastes on the tipping floor will be consistent with procedures established in SOP.
- Spills of these wastes will be managed by collecting and transporting these wastes to the tipping floor for prompt processing.
- Waste received at the transfer station will be promptly loaded into transfer trailers and will be transported to a TCEQ approved landfill for disposal as soon as practical.

Tipping Floor

- Repair areas where floor has eroded.
- Minimize the size of the working floor space.
- Remove ponded water if creating objectionable odor.
- Identify potential odor sources at the gatehouse and alerting working face personnel about incoming material.
- Immediately cover the odorous material.
- Immediately clean up or covering odorous material spills.

- Properly dispose of dead animals received as outlined in the SOP.
- Periodically inspect and properly maintain the leachate collection and storage facilities.

Other Areas

- Prohibit the unloading of putrescible material in unauthorized areas.
- Non-paved storage areas will be maintained to prevent ponding that might produce objectionable odors.
- Paved storage areas will be periodically cleaned with street sweeping or similar equipment.

Disease Vector Control

The need for control of vectors such as rodents, flies, and mosquitoes at landfills will be minimized through daily site operations, which include the application of daily, intermediate, and final cover. The facility will also minimize the extent of the working face to control vectors.

If necessary, a licensed professional will apply pesticides for control of vectors to ensure that proper chemicals are used and that they are properly applied

E. All-Weather Operation and Roads

Proper access to and within the transfer station site area is provided by a gravel base roadway which extends from US 380 to the Scale/Gate Keeper building. It is approximately 30 feet wide with a base depth adequate to support the haul trucks fully loaded. Because of the nature of the sandy type soil, all-weather roads and wet weather operations will not be a problem as long as proper surface drainage is maintained. The gravel surface will be maintained on haul roads to insure all weather use.

At the present time there are 9 to 10 trucks loading to the site daily. The roadway is graded so that it will drain properly in rainy weather. No site distance problems exist at the entrance to the landfill. The maximum weight of "Roll Off" container trucks using the site is 45,000 pounds.

Interior access roads will be located as needed to allow proper ingress and egress. It is planned that these roadways would have a gravel base and

unpaved surface. Since the prevailing wind is from the South, the dust should not be a problem for trucks and cars driving through and to the highway. The gravel surface on the access road shall be well maintained to prevent any tracking of mud on to the Highway in wet weather. There is no problem at the present time with trucks tracking mud because the sandy material prevalent at the site and does not in general adhere to the haul trucks. The existing roadway system plus those to be constructed will allow the inspection of all side slopes and drainage ditches for signs of leachate migration and erosion.

A layout of the intersection of US 380 and the site entrance road is included in with the Site Development Drawing with Attachment 1 of this Development Plan.

F. Location and Types of Fences

The entire original 160 acre tract owned by the city is fenced with four strand barb wire boundary fencing. The proposed transfer station will continue to be within the same fence. The operation uses the earth embankments to limit wind blown materials. These boundary fences should prevent the entry of livestock and help protect the public from exposure to potential health and safety hazards. Also the fences should discourage unauthorized entry or uncontrolled disposal of hazardous materials.

- G. Design life: The transfer station is designed to meet increases in waste consistent with brush, construction or demolition waste is expected due to projected growth of the oil industry in Haskell. Intended subsequent use of site, may possibly be for light cattle grazing.

H. Drainage Facilities

The proposed transfer station is in the middle of the existing landfill site which is designed to manage the 25 year, 24 hour rainfall utilizing 2' foot perimeter berms to prevent run-on, active cell perimeter berms and elevated roadways. Any ponded water will be collected and discharge to the city sanitary sewer.

I. Ground Water Protection and Storm Runoff

The facility design complies with the requirements of §330.303 of this title (relating to Surface Water Drainage for Municipal Solid Waste Facilities)

1. Facility designed to prevent:

The design of this transfer station should prevent discharge of pollutants into water of the state by completely separating on site storm runoff and storm runoff that originates off the landfill site and drains through it from any waste material by the following means:

Any ponding of water that occurs over any portion of the site shall be eliminated as quickly as possible.

Any ponded water shall then be removed promptly by an approved wastewater hauler contracted by the City and pumped into a City-owned manhole to the city sewer treatment plant.

Diversion berms will prevent storm runoff from entering the transfer station building.

The entire landfill installation is situated above the 100 year flood level, therefore the transfer station will also be above the 100 year flood level so that no 100 year storm water will come in contact with waste material.

The design of this transfer station should prevent discharge of pollutants into waters of the United States by the same measure as outline in section 1 above.

There is no dredged or fill material as defined in Section 1 used in this landfill facility; therefore, there is no discharge into waters of the United States.

2. Nonpoint source pollution of waters of United States:

This type of pollution is prevented from this landfill as specified in Section 1 above.

Designs for drainage within the site and all sample calculations verifying that natural drainage patterns are not significantly altered are included in Attachment 6. Drainage calculations are based on the peak flow rate resulting from the 25-year, 24-hour storm event for the area

All drainage facilities are shown in Part III Surface Water Drainage Plan Appendix 1. Permanent drainage is discussed as follows:

- a) An element of the drainage system of the tract as it existed before development work began is the natural swale which drains the fields from south to north through the center of the tract. This natural drain will remain in service in its present location throughout the life of the MSWLF.
- b) An additional element of drainage for the site is the constructed drain way on the east side of the landfill site. A permanent roadway is in the 50' wide buffer strip on the east edge of the City land. This roadway is elevated to serve as a dike between the east drainage ditch and the private property lying to the east.

All drainage facilities are shown on Part III Appendix III/5 Surface Water Drainage Plan.

3. Handling Temporary Storage of Contaminated Surface Water and Spills:

Contaminated surface water will be temporarily stored in sumps. This contaminated water will be pumped and removed within five to seven days by an approved wastewater hauler or pumped to a portable steel tank for hauling. In no case should this contaminated water be left in the sump pit over seven calendar days. Wastewaters resulting from the process or from cleaning and washing will be collected and transported to the sanitary sewer. The collected wastewater will be treated at the permitted City wastewater plant in compliance with their permit.

Spills will be contained using available on site materials and commercial products (kitty litter, sphagnum and oil dry) immediately. Spill will be cleaned as soon as practicable on the same day and disposed of in accordance with RCRA and TCEQ rules.

Great care was taken in the planning and layout of the landfill site to restrict all landfill used to the land above the elevations calculated for the

limits of the 100 year frequency flood level. This will provide similar effects for the transfer station. This includes all excavation and soil storage either temporary or permanent. For this reason no levees or dikes are needed or specified. The maximum runoff calculations and the water shed contributing runoff through the landfill property is shown on Appendix III/5 Figure 1, Figure 2 and Figure 3. There is no known contaminated groundwater at the site.

4. Drinking Water Protection

Solid waste shall not be deposited where a hazard may result to a drinking water supply well (none), intake of a water treatment plant (none), or raw water intake which furnishes water for human consumption (none).

J. Land Use:

1. The transfer station is not located within the city limits of any city and is not within the limits of an extraterritorial jurisdiction of any city. Zoning is not required for the facility, and the facility does not require approval from any local government nor does it require a special use permit. Land use in the area is rural, and is mainly considered for ranching and farming. Some oil and gas wells are located within a 5 mile radius of the property; however, these operations are not extensive and are minimal in nature. No residences are located near the landfill, nor are churches or places where the public would gather or hold significant.
2. Land uses within one mile of the proposed facility are farming and ranching. The land lying adjacent to the site is light mesquite growth mixed with native grasses. Pasture land and some cultivation covers South of the site. There has been oil and gas production in the general area but in the immediate area it is plugged and abandoned.
3. Growth trends are favoring a flat to moderate increase for the past several years for the entire area based upon the TWDB projections. This is mainly due to increased oil activity for the West Texas region as a whole and recent 4 lane divided highways and bypasses on US

277. This trend may reverse itself as the oil activity changes and better match the Census trends of flat or negative growth.

The direction of major development in Haskell has been to the East with truck stops at US 380/277 intersection.

4. There are no residences and business establishments within one thousand feet of the proposed landfill facility. The nearest developed areas with churches and residents is over 4 miles in Haskell. There are no historic sites or structures, archaeological significant sites, or sites having exceptional aesthetic quality within one mile of the site.
5. The main access to the landfill site/transfer station is from US 380 which has a 26' wide paved surface with 2 traffic lane in each direction with an unimproved shoulder of 8 feet on each side of the travel lanes. Traffic volumes on US 380 according to the average daily 24 hour traffic counts is approximately 913 vehicles. The present volume of vehicular traffic on the access road into the landfill is estimated to be 20 or 30 trucks and cars per work day.
6. The Haskell landfill/transfer station site location is over four miles from the Haskell Municipal Airport which is the nearest airport. The method of operation used at the Colorado City Landfill such as prompt cover of all waste material and the elimination of watering points should to a large extent limit the bird hazard to airplanes flying in this area.

A buffer zone of 50 feet will be maintained between the disposal operation, and the adjacent private property on the east, south, and west side of the site. On all sides of this property an access inspection road will be constructed. There is a 50 foot buffer fence located along the east side of the permitted landfill.

There are no known pipelines, underground utilities, or electrical transmission line easements across this site.

7. Fire control Facilities: There is public water system serving the Haskell Landfill area, therefore, with a fire hydrant and storage tower available nearby. Earth stockpiles for fire fighting purposes are maintained at the adjacent landfill. Fire breaks will be cut when deemed necessary by dry weather. The Haskell Fire Department is

available for the control of fires at the site. The Fire Station is located about 4 miles from the Landfill Site. A telephone is available at the site should emergency situations arise such as fires or accidents.

K. Endangered Species:

The facility and the operation of the facility shall not result in the destruction of adverse modification of critical habitat of endangered or threatened species or cause or contribute to the taking on any endangered or threatened species. There are no threatened or endangered species likely to be impacted by this proposed landfill project. See the Biological Assessment Appendix for input from USFWS and TPWD.

L. Soil Data:

Per the USDA Soil Survey conducted of Haskell County, the following soil types appear in and around the site:

1. Tillman clay loam: 0 to 3 percent slope
2. Hollister clay loam: 0 to 1 percent slope
3. Vernon clay loam: 1 to 5 percent slopes

Permeability tests of the soils are shown in Appendix I/II Boring Plan Geology Report

M. Waste Management

Transfer Station -Design

The proposed facility has been designed and constructed in accordance with all applicable local building code and land development code requirements. The processing area and transport tunnel is fully covered by the station building. The entire facility, including the recycling and trailer storage area, is enclosed within the site's perimeter fence and lockable gates.

Solid waste will be transported into the facility in private vehicles and

commercial collection vehicles. The refuse will be discharged from the vehicles onto the facility tipping floor. Waste bound for the landfill will typically be loaded into an open top transfer trailer, while recyclable waste may be separated by hand or front-end loader and either baled, compacted or loaded into a designated open top container(s) before removal from the facility. The unloading of municipal solid waste will be confined to the tipping floor of the processing building. Portable wheel stops (bumpers) will be provided at the edge of the tipping floor before the transport trailer.

A separate area may be designated for recovery of marketable materials such as cardboard, aluminum, etc. In addition, marketable materials within the incoming waste loads may be separated for recycling. These separated materials will be stored properly to control odors, vectors and windblown waste. Storage of source-separated recyclable material will be separate from the transfer area.

Construction/demolition debris, brush, rubbish, and other similar "Type IV" materials, which are free of putrescible household waste, may be segregated for transportation to an authorized Type IV landfill facility.

The floor of the transfer station building will be constructed of reinforced concrete. Concrete containment curbs will be installed on three sides of the transfer station building. The ramp into the unloading area will be sloped, of sufficient size, and contains an adequate number of floor drains (three) to control and contain a worst-case release of contaminated water inside the transfer station building.

Equipment will be staged on the transfer station building floor and will move materials to the transfer trailer tunnel. The transfer station building will have an open ramp on its lower level to allow transfer trailer access. The remaining perimeter of the transfer station building floor will be surrounded by a concrete containment wall to limit both run-on to and potential run-off from the transfer station building. Part III Attachment 1A presents the Site Development Plan of the transfer station. Part III Attachment 1B presents the generalized design and details of the transfer station building.

Processing

Solid waste will be transported into the facility in private citizens' vehicles and commercial collection vehicles. The vehicles will access the processing building by an inclined ramp, where the refuse will be discharged from the vehicles onto the facility tipping floor. Waste

bound for the landfill will typically be loaded into an open top transfer

trailer, while recyclable waste may be separated by hand or front-end loader and either baled, compacted or loaded into a designated open top container(s) before removal from the facility.

The weight of solid waste material received at the facility will be determined upon arrival. Vehicles will be weighed prior to dumping the solid waste material on the tipping floor. The weight of waste received will be documented for each load and maintained in the facility operating record. In the event the facility scale becomes inoperable, facility personnel will measure the length, width, and depth of the solid waste in feet. This volume will be converted to cubic yards by dividing the calculated volume by 27 IU for every cubic yard. The weight equivalent of waste received will be determined using the standard conversion factors table presented in Part IV of this permit, where, the volume and weight equivalent of waste received will be documented for these loads and maintained in the facility operating record.

The unloading of municipal solid waste will be confined to the tipping floor of the processing building or trailer. The equipment operator will monitor all incoming loads of waste. The equipment operator and/or site supervisor will be on duty during regular operating hours at the transfer station to direct the unloading of waste. Appropriate signs will be used to indicate where vehicles are to unload. The equipment operator and/or site supervisor are not required to accept any solid waste that they determine will cause or may cause problems in maintaining full and continuous compliance with all regulations.

Waste streams will be inspected for unauthorized materials after unloading by the equipment operator. If unauthorized materials are unloaded at the site, the transporter will be required by the equipment operator and/or site supervisor to immediately remove the waste by reloading it onto the unloading vehicle along with any contaminated materials. The equipment operator and/or site supervisor will notify the appropriate local, state and federal agencies as necessary. All equipment operators, scale clerks, and the site supervisor have the authority and responsibility to reject loads and require the transporter to immediately remove rejected waste and contaminated materials from the site.

Large, heavy, or bulky items, which cannot be incorporated in the regular transfer trailers or are not specifically destined for recycling, will not be accepted. White goods and other used appliances will be accepted and consolidated in a designated area on-site adjacent to the processing building, which does not pose a nuisance to operations. Other economic recyclable material will also be accepted and processed in a designated area, which does not pose a nuisance to operations.

Appliances which once contained CFCs will either be certified that the CFCs have been recovered or will be segregated so that transfer station management can arrange for their CFC recovery prior to being processed for recycling.

The transfer station will only accept Class 2 and Class 3 industrial solid waste for processing if they can be routinely disposed of without special handling or processing. The transfer station will also accept special waste as defined specifically in Part IV of this permit. Special waste, Class 2 industrial solid waste, and Class 3 industrial solid waste accepted for processing at this facility must exhibit the same disposal characteristics as routine municipal solid waste. The management of these waste streams will in no way cause the operation of this facility to deviate from these Operational Standards or other applicable federal, state or local regulations.

The processing of waste will occur within a metal building. The landfill perimeter fence with gates will be locked when the facility is closed to secure the entire site (see Attachment 1-Site Layout Plan). The owner and facility employees or equipment operators of the facility will stress safety and will employ all safety provisions currently being practiced throughout the company. Equipment operators will be required to wear hard hats at all times on the tipping floor and in waste process areas. Regular safety meetings will be held to emphasize safe working conditions.

All working surfaces that come in contact with waste will be washed at least weekly. All wash waters will be kept within the processing building through sloping floors, grated floor drains (sump drains) and taken to the City of Haskell sanitary sewer. In the event the City of Haskell sanitary sewer becomes unavailable, all wash waters will be collected and disposed of in an authorized manner.

N. Geology Report - References to 330.63(e) are in the Boring Plan and Geology Report Part I/II Appendix 3.

O. Sanitation §330.63(b)(3)

The facility is designed to facilitate proper cleaning as follows:

§330.63(b)(3)(A)

Surface drainage in and around the facility has been designed and constructed to control and minimize storm water running onto, into, and off the processing area. All waste loading and unloading areas are within

an enclosed building. Storm water drainage has been designed to preclude surface water from entering the waste unloading/loading areas. Any minor run-on that might come in contact with waste inside the building will flow directly to the drain system and be taken to the City of Haskell sanitary sewer.

All wash waters will be kept within the building through sloping floors, grated floor drains (sump drains), and taken to the City of Haskell sanitary sewer. In the event the City of Haskell's sanitary sewer becomes unavailable, all wash waters will be collected and disposed of in an authorized manner. Wash waters will not be allowed to accumulate on-site without proper treatment to prevent the creation of odors or an attraction to vectors.

Any waters that come in contact with waste and/or leachate outside of the enclosed process area will be handled, stored, treated, and disposed of in accordance with §330.

The floor of the operating area (tipping floor) will be constructed of concrete. The walls of the operating area (enclosed building) will be constructed of masonry, metal, or concrete. Both the flooring and walls of the operating area will be constructed to be able to be hosed down and scrubbed as necessary.

All working surfaces that come in contact with waste will be washed at least weekly. Pressure washer equipped with hoses connected to a non-potable water supply will be available and maintained within the processing building to provide for the cleaning of the operating area.

All contaminated wash-down water will be kept within the enclosed building and discharged to grated floor drains (sump drains) and taken to the City of Haskell sanitary sewer. The grated floor drains are located just inside the tipping floor doorways and also in front of the ingress and egress doorways of the transfer trailer-loading bay.

P. Ventilation and Air Emissions §330.245(a), (b), (c)

The owner or operator will ensure that the facility does not violate any applicable requirement of the approved State Implementation Plan developed under the Clean Air Act, §110, as amended.

The facility is designed to prevent nuisance odors from leaving the property boundary of

the facility. This facility is located near the center of an existing landfill and a 160 acre property owned by the City of Haskell. Portable spray type air neutralizers may be used to control odors at the facility, if necessary.

On-site buffer zones will be used for odor control as the site will be in the center of a landfill.

With three walls and an open/closed 4th side, ventilation will be sufficient. Portable fans may be utilized to aid in air movement. The building will be oriented to capture prevailing winds as a means of ensuring ventilation.

Ventilation of the building will be in accordance with the appropriate TCEQ rules and regulations and all other applicable codes. This facility is subject to the TCEQ jurisdiction concerning air pollution control.

Q. Storage of Solid Waste

The transfer station will receive a maximum of 125 tons per day (tpd) of solid waste. The maximum amount of waste to be stored at one time inside the processing building will not exceed 125 tons. The maximum amount of waste to be stored at one time outside the building in tarped transfer trailers and/or roll-off containers will not exceed 125 tons. The combined total waste inside the processing building and tarped in transfer trailers in the parking area will not exceed 125 tons of waste.

Typically, the refuse may be temporarily stored at the site not to exceed a time period of 48 hours, except holidays and weekends. During holidays and/or weekends, the refuse may be temporarily stored at the site not to exceed a time period of 72 hours. The average length of time that solid waste will remain on-site will be approximately 12 hours. If stored, the municipal solid waste will be in the processing building or in a securely covered transfer trailer located within the building or parked in the designated parking area outside the building, so as not to attract vectors, cause odors around the storage area, or be susceptible to wet weather.

Normally, within 48 hours of refuse receipt, waste will be transported to an authorized landfill facility. The recyclables collected will be transported off-site to authorized recycling facilities, depending on the types and quantities of recyclables. Also, any other appropriate disposal facility that meets TCEQ requirements may be used in the future.

R. Noise Pollution §330.239

The site is located in the center of a 160 acre property owned by the City of

Haskell in an area of the county that has no zoning. There are no surrounding businesses or homes. Noise levels are not expected to increase, relative to its current and historic levels, as a result of the operation of this transfer station.

Since waste processing operations will primarily be conducted inside the transfer station building, the walls will minimize noise levels and adverse visual impacts.

S. EMPLOYEE SANITATION FACILITIES

Potable water and sanitary facilities are provided for all employees and visitors at the scale house at the entrance gate (see Part III Attachment 1A, Main Plan). The potable water and sanitary sewer service are provided by the City of Haskell.

All working surfaces in contact with waste shall be washed down on a weekly basis. Wash waters shall not be allowed to accumulate on site without proper treatment to prevent the creation of odors or an attraction to vectors.

All liquids resulting from the operation of the solid waste processing facility will be kept within the building and discharged to grated floor drains (sump drains) and taken to the City of Haskell sanitary sewer. The grated floor drains are located just inside the tipping floor doorways and also in front of the ingress and egress doorways of the transfer trailer-loading bay. Management of this discharge will be in accordance with the city requirements and all necessary authorizations and approvals will be obtained and retained within the operating record at the site. In the event the City of Haskell's sanitary sewer becomes unavailable, water that has come in contact with waste will be collected and disposed of in an authorized manner.

T. Closure Plan

§330.461(a) – (c)(3) At any point in its active life, the maximum amount of unprocessed materials (i.e. wastes) that may be temporarily stored on site at the Facility on a daily basis is 125 tons.

A detailed estimate in current dollars, of the cost of hiring a third-party to close the Facility at any time during the active life when the extent and manner of its operation would make closure most expensive, is included in the Engineer's Closure Cost Estimate (see Part III Appendix 2).

During the active life of the Facility, City of Haskell, the operator of the Facility, will annually adjust the Closure Cost Estimate and the amount of financial assurance for inflation in accordance with Chapter 37, Subchapter R of 30 TAC. The revised Closure Cost Estimate and evidence of any additional financial assurance will be provided to the TCEQ within 30 days after the annual anniversary date of the issuance of the permit document for the Facility.

No later than 90 days prior to the initiation of closure activities for the Facility, City of Haskell will provide written notification to the TCEQ of the intent to close the Facility. This Notice of Intent will be placed in the Operating Record. No later than 90 days prior to the initiation of a final closure, City of Haskell shall, through a public notice in the newspaper(s) of largest circulation in the vicinity of the Facility, provide public notice for final Facility closure.

This notice will include the name, address, and physical location of the Facility, the permit number, and the last date of intended receipt of materials for processing at the Facility. City of Haskell will also make available an adequate number of copies of the approved Final Closure Plan for public access and review.

The closure activities will be completed within 180 days following the initiation of these final closure activities. Upon notification to the TCEQ of final closure, the owner or operator shall:

- Post a minimum of one sign at the main entrance and all other frequently used points of access for the Facility notifying all persons who may utilize the Facility or site of the date of closing for the Facility and the prohibition against further receipt of waste materials after the stated date; and
- Install suitable barriers at all gates or access points to adequately prevent the unauthorized dumping of solid waste at the closed Facility.

In accordance with 30 TAC §330.461(c)(2) and (3), within 10 days after completion of final closure activities at the Facility, the owner and operator shall submit to the ED by registered mail a certification signed by an independent licensed professional engineer, verifying that final Facility closure has been completed in accordance with the approved Closure Plan. This submittal shall include all documentation necessary for certification of final Facility closure and within 10 days of completion of closure of the Facility, a request for voluntary revocation of the Facility permit will be requested by the owner.

Following receipt of the required final closure documents, as applicable, and an Inspection Report from the TCEQ's District Office verifying proper closure of the Facility according to the approved Final Closure Plan, the TCEQ may acknowledge the termination of operation and closure of the Facility and deem it properly closed. Once the Facility has been closed and all solid wastes removed from the property a revocation of the permit can be sought and the owner may request permission from the ED to remove the notification from the deed if all wastes have been removed from the Facility in accordance with 30 TAC §330.7(a).

U. Closure Plan for Storage and Processing Units; Plans for Evacuation of Material On-Site

§330.459(a) – (b) The Closure Plan for the Facility is to remove all waste, all

recovered materials, decontaminate the process unit (transfer station building and citizen's collection center). All materials on-site will be removed, and the Facility, transfer station building, and post-processing area will be decontaminated using a steam washer.

Acknowledgement of §330.459(c)

§330.459(c) It is understood if there is evidence of a release, then the ED may require an investigation, assessment, and/or corrective action in conjunction with site closure. All materials removed from the site (feedstock, in process, and processed) shall be transferred to a TCEQ-authorized Facility for disposal or processing.

Plan for Closure If Combustible Material Is Stored Outdoors

§330.459(d)(1) and (d)(2) The Closure Plan for the Facility is to remove all waste, all recovered materials, including all combustible materials, and transport those materials for recycling or disposal at a TCEQ approved Facility. After removal of all materials, the transfer station building, and postprocessing area will be decontaminated using a steam washer. The City of Haskell will provide for the closure plan to be implemented (if combustible material is stored outdoors) and completed within 180 days following the most recent acceptance of processed or unprocessed materials.

V. Cost Estimates for Closure

§330.63(j) Chapter 37, Subchapter R A copy of the financial assurance will be submitted to the TCEQ within sixty days prior to the receipt of waste. A Closure Cost Estimate for the Facility is provided in Appendix .

Storage and Processing Units – Cost Estimate to Closure Recycling Facility Stores Combustible Materials Outdoors

§330.505(a)(1) The Closure Cost Estimate provided in Appendix N includes the cost for removal and disposal of combustible materials.

Storage and Processing Units – Closure Cost Estimate Equals Costs of Closure of Facility, Including Disposition of Maximum Inventories, Processed and Unprocessed Combustible Materials Stored Outdoors

§330.505(a)(2)(A) The Closure Cost Estimate provided in Appendix N assumes disposal of three days of waste received at Facility at the maximum daily volume anticipated, and decontamination of the transfer station building and citizen's collection center.

Storage and Processing Units – Closure Cost Estimate Based on Costs of Hiring a Third Party, and Per Cubic Yard and/or Short Ton Measure for Collection and Disposition Costs

§330.505(a)(2)(B – C) The Closure Cost Estimate assumes third-party closure of the Facility including removal and disposal of three days of waste received at Facility at the maximum daily volume anticipated, and decontamination of the transfer station building and pad. The Closure Cost Estimate assumes third-party rental of all equipment for closure purposes.

Storage and Processing Units – Closure Cost Estimate & Financial Assurance to Be Increased During Active Life of Facility

§330.505(a)(3) It is understood that the cost estimate and financial assurance must be increased if conditions change which increase the closure cost during life of the Facility. Also, the value of the closure cost estimate must be annually adjusted for inflation per 30 TAC §37.131, and the value of this adjustment will be provided to the TCEQ within thirty days after the annual anniversary date of the issuance of the permit document for the Facility.

Storage and Processing Units – Reduction in Closure Cost Estimate and Amount of Financial Assurance

§330.505(a)(4)

A reduction in the Closure Cost Estimate and the amount of financial assurance, in accordance with 30 TAC §330.505(a)(4), may be applied for provided written detailed justification for the Closure Cost Estimate and the reduced amount of financial assurance is submitted to the ED. For the City of Haskell Type V-TS Facility, this reduction in the cost estimate and financial assurance will be considered a permit modification.

Storage and Processing Units – Maintenance of Financial Assurance for Recycling Facilities Store Combustible Materials Outdoors

§330.505(b)(1) and (b)(2) Chapter 37, Subchapter J It is understood that financial assurance must be maintained until closure is approved by the ED.

Storage and Processing Units – Maintenance of Financial Assurance until Closure is Approved

§330.505(b)(2) Additionally, it is understood that financial assurance must be maintained until closure is approved by the ED.

W. FINANCIAL ASSURANCE

§330.503(b) A copy of the financial assurance will be submitted to the TCEQ within sixty days prior to the receipt of waste.

HASKELL MSW TRANSFER STATION

Part III Attachments

Attachment #1A



8-9-21

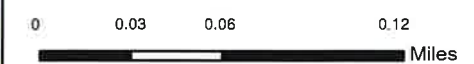
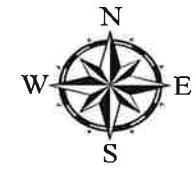
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8-9-21



- LEGEND
- Landfill Buffer
 - Road
 - Transfer Station
 - Fenced boundary
 - Landfill boundary
 - Transfer Station

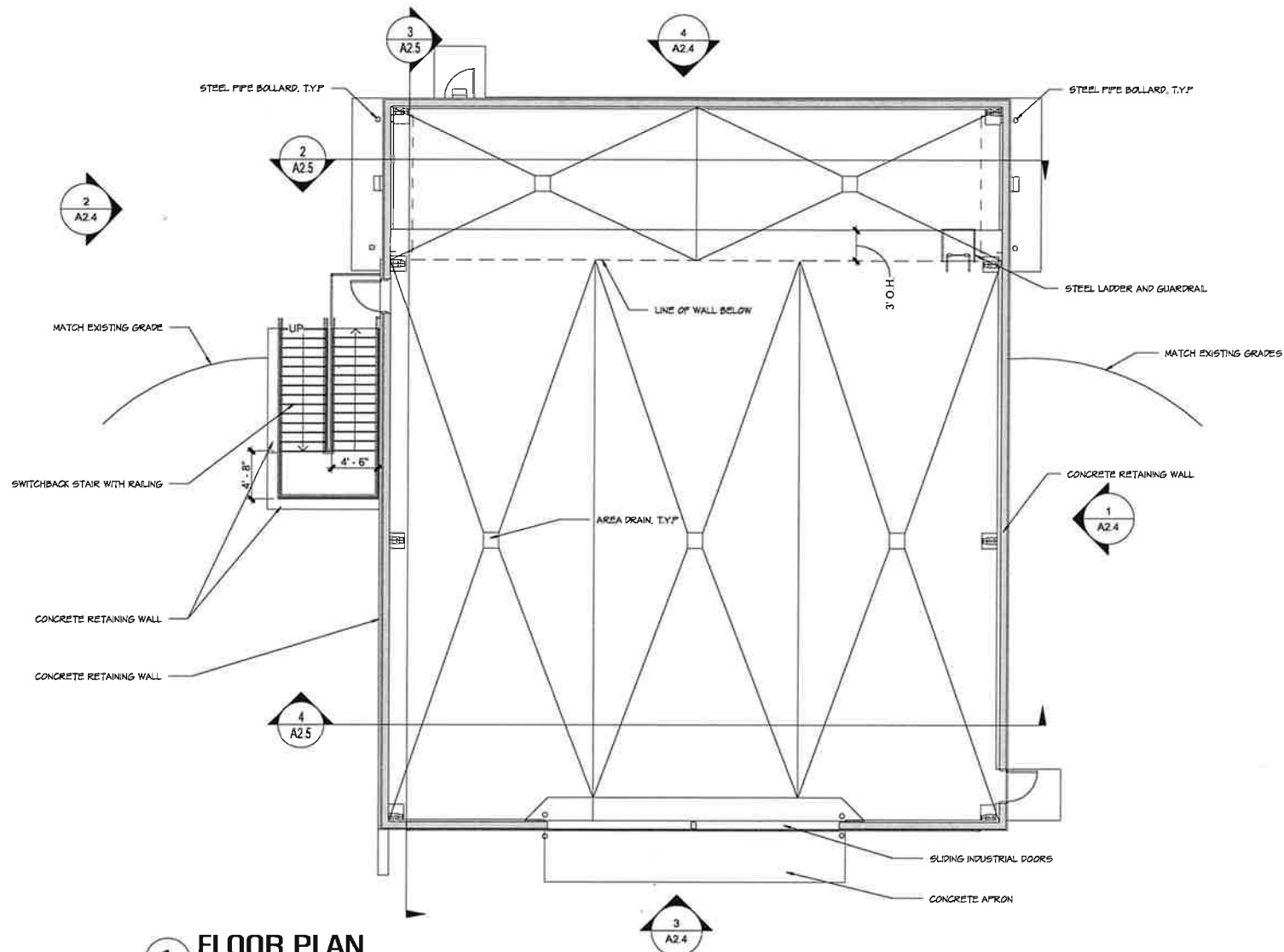
Main Plan
 Part III Attachment III/1A
 Page 3 August 2, 2021

Revision:
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 Longitude: -99.6451909°
 Benchmark: 1479.13' \oplus

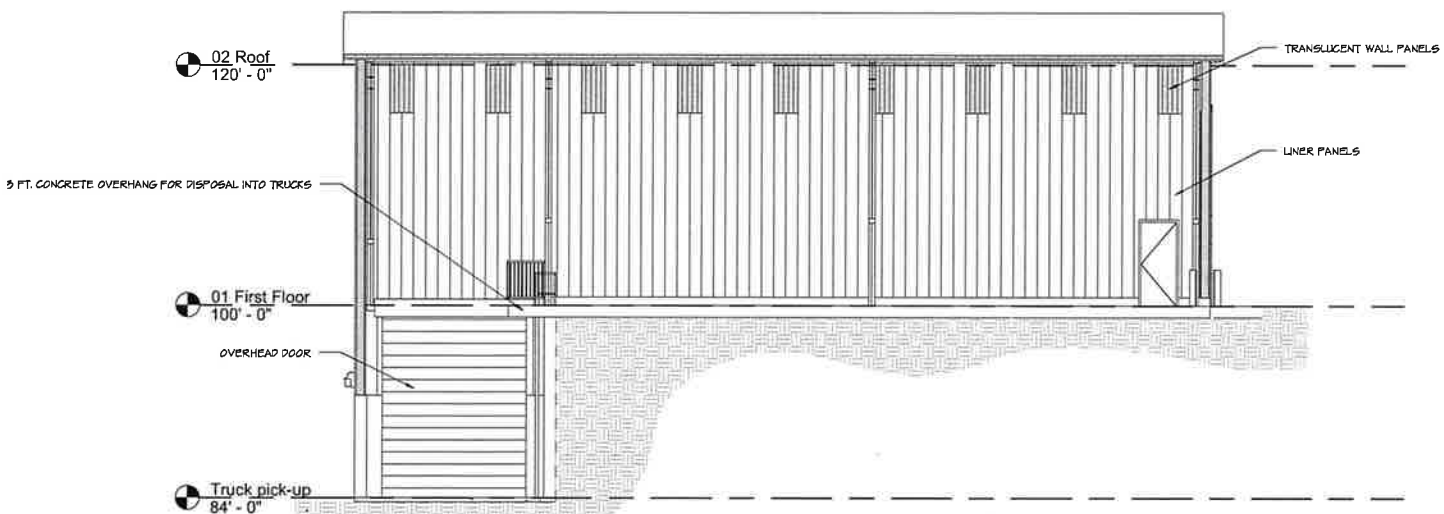


Haskell Transfer Station

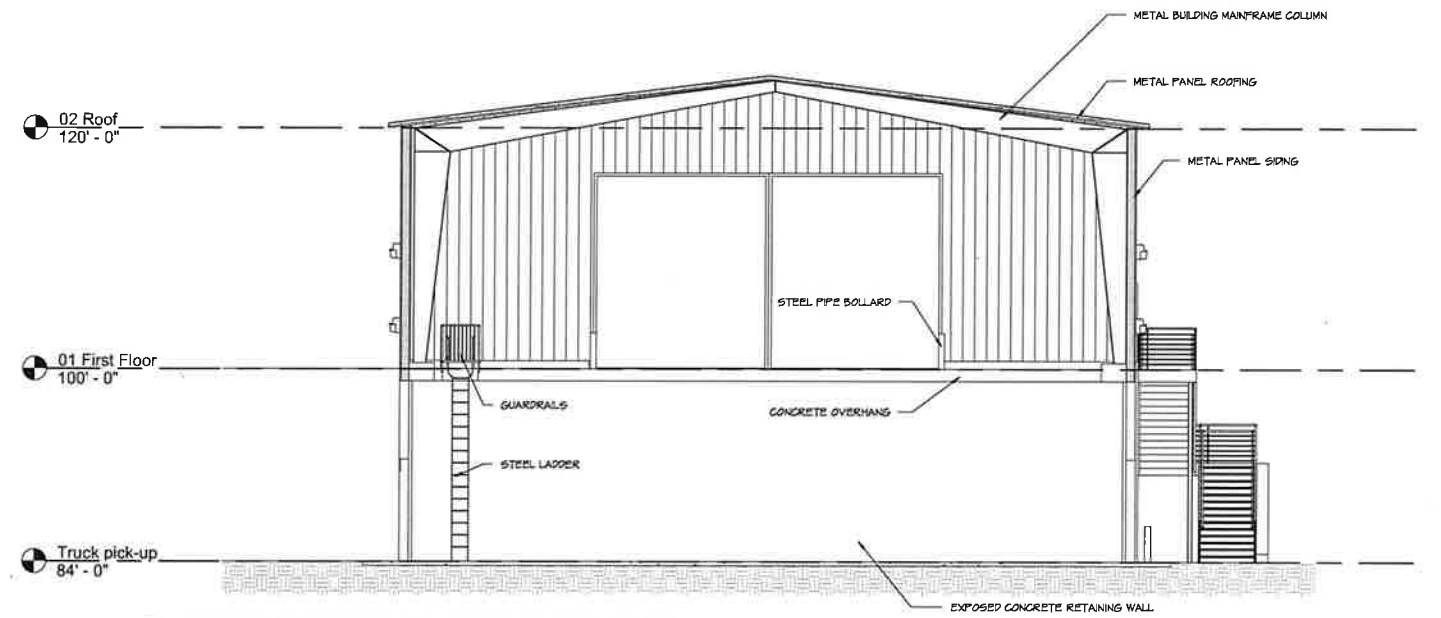




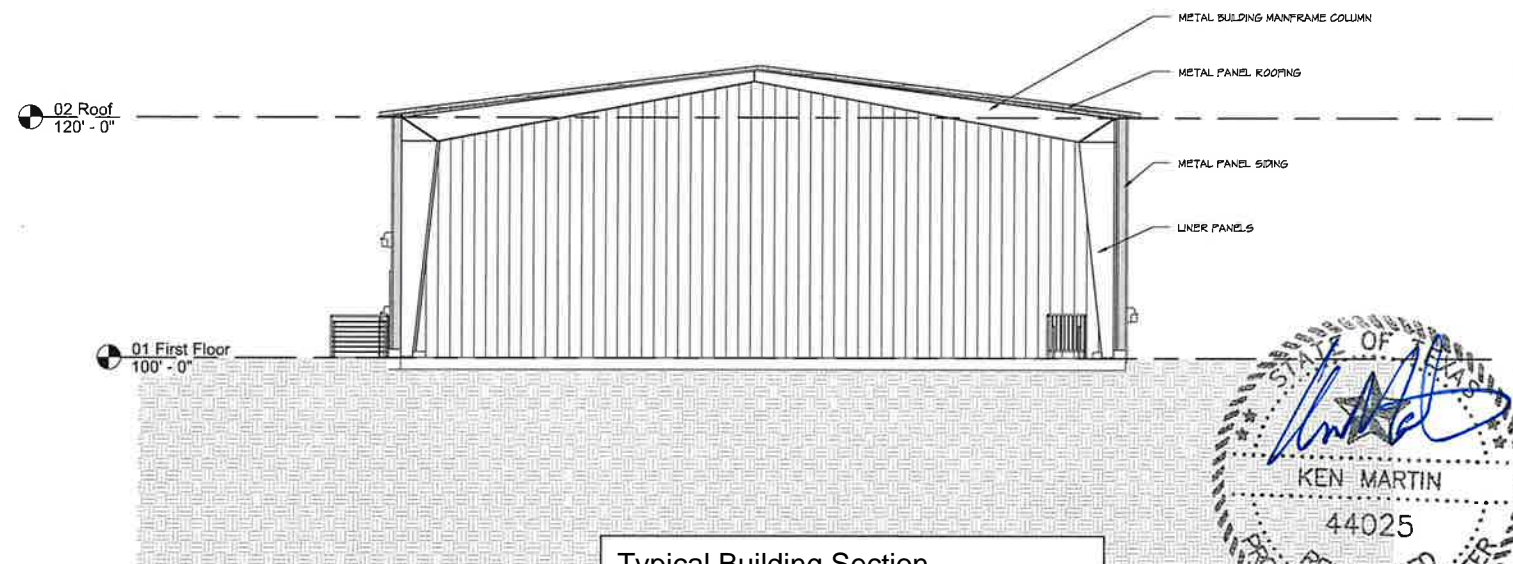
1 FLOOR PLAN
SCALE: 1/8" = 1'-0"



3 LONGITUDINAL SECTION
SCALE: 1/8" = 1'-0"



2 CROSS SECTION THROUGH PIT
SCALE: 1/8" = 1'-0"



4 CROSS SECTION
SCALE: 1/8" = 1'-0"

CITY OF HASKELL SOLID WASTE TRANSFER STATION FLOOR PLAN & SECTIONS

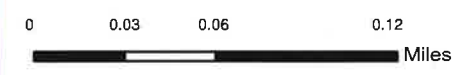
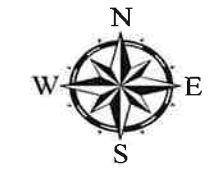
AUGUST 2021

Typical Building Section
Part III Attachment 1B Page 4

June 15 2021
Revision:
Latitude: 33.1734445°
Longitude: -99.6451909°
Benchmark: 1479.13'



This document is released for interim purposes only. It is incomplete and may not be used for regulatory approval, permit of construction, or other purposes. William R. Duncan II License 824500



- LEGEND
- Road
 - Fenced boundary
 - Landfill boundary

Pre-development Contour
 Part III Appendix 1C page 5
 August 2, 2021

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 Benchmark: 1479.13' \oplus



Haskell Transfer Station





- LEGEND
- Landfill Buffer
 - Road
 - Transfer Station
 - Fenced boundary
 - Landfill boundary
 - Transfer Station

Post-Development Phase
 Part III Attachment III/1D
 Page 6 August 2, 2021

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 Benchmark: 1479.13'



Haskell Transfer Station



HASKELL MSW TRANSFER STATION

Part III Attachments

Attachment #2



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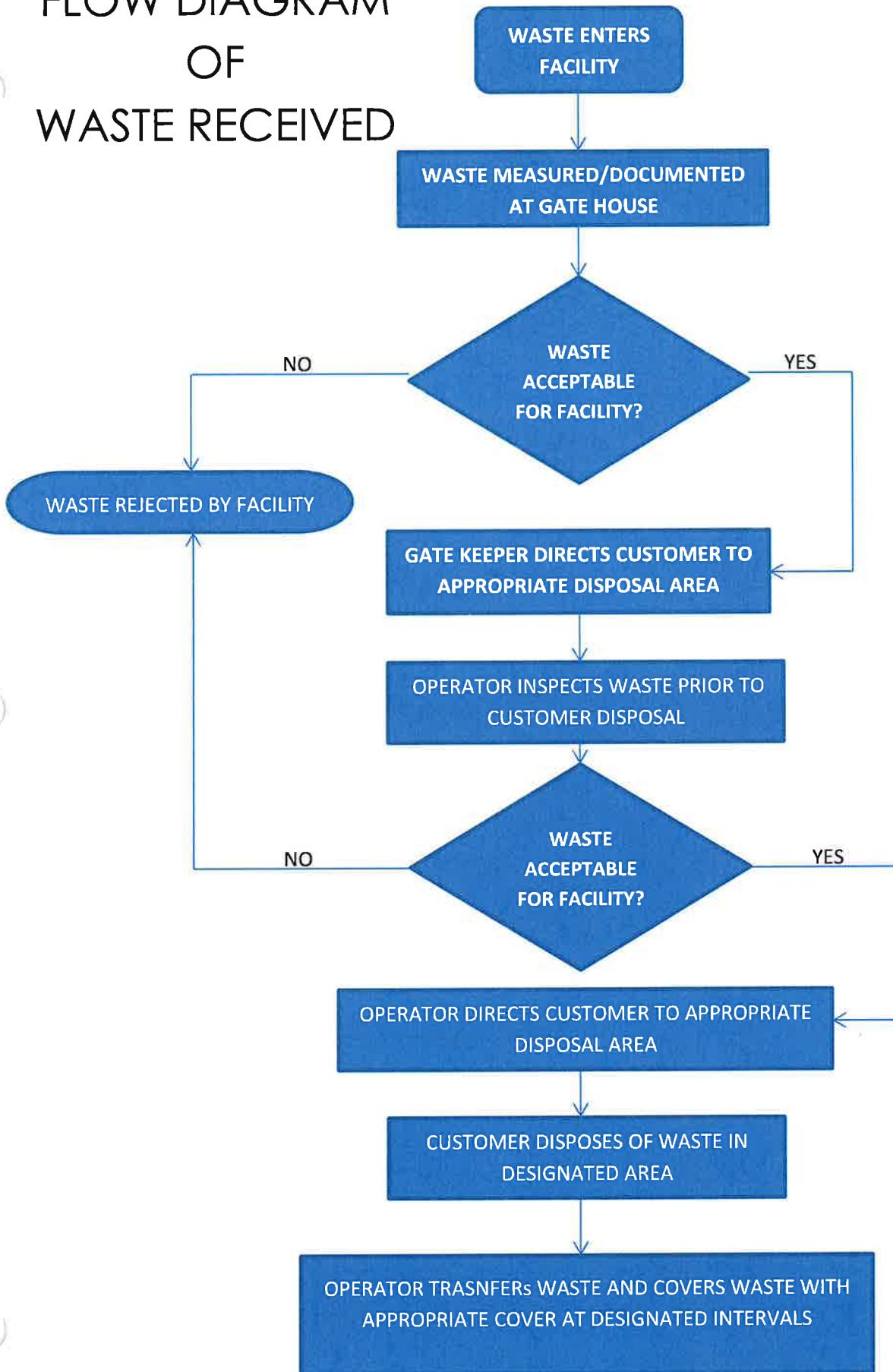
Flow Diagram.....2-3

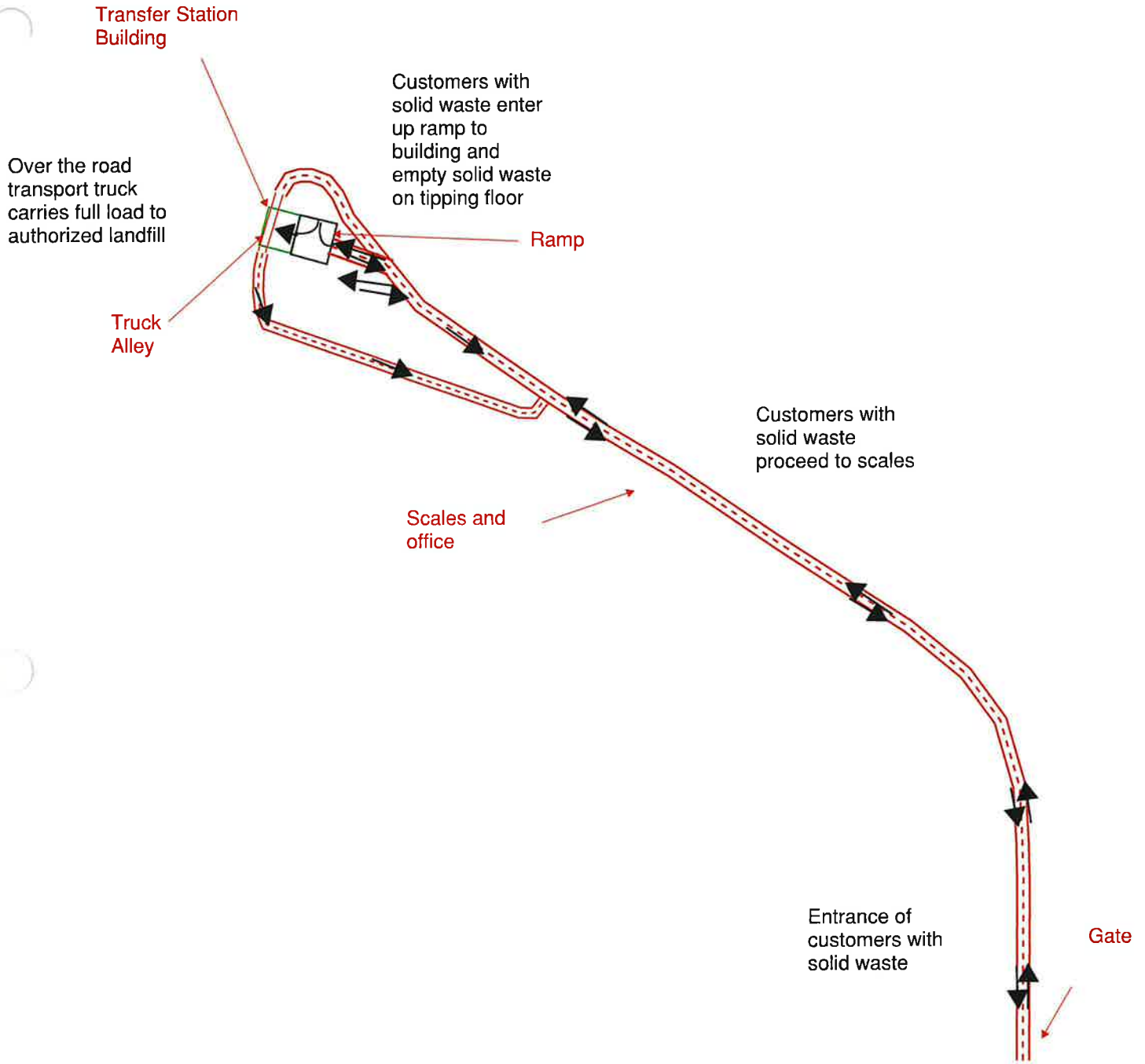
Schematic.....2-4



8-9-21

FLOW DIAGRAM OF WASTE RECEIVED





Proposed Transfer station
 Schematic
 Part III Attachment 2 Page 4
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HASKELL MSW TRANSFER STATION

Part III Appendices

Appendix #1



8-9-21

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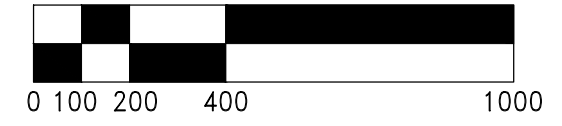


8-9-21

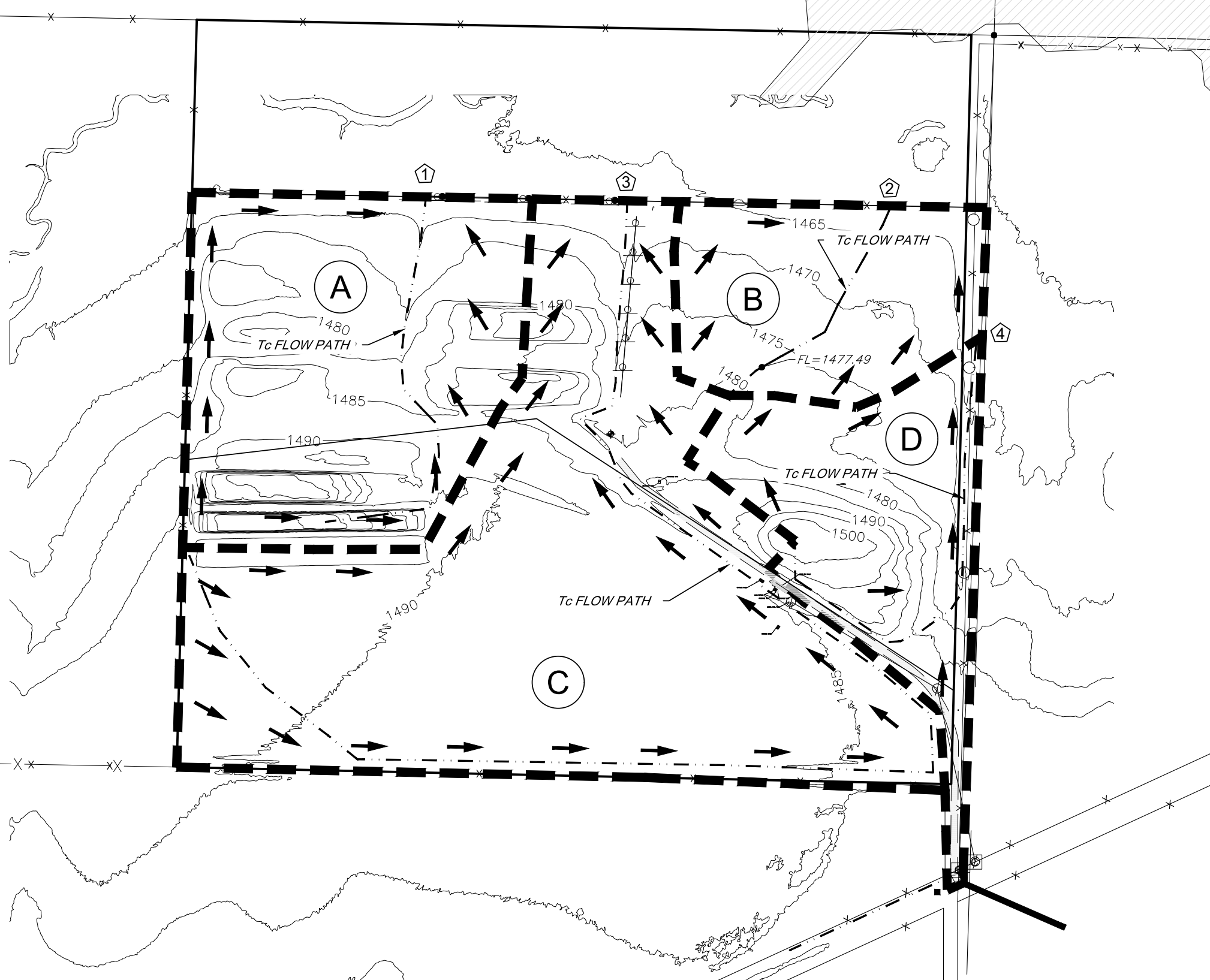
Pre-Development 25-Yr Runoff

$Q = C \cdot I \cdot A$

Draiage	Design	Area	Tc	Intensity	Runoff	Q ₂₅
Area	Point	[Acres]	[min.]	[in/hr]	Coefficient	[cfs]
A	1	31	23	5.01	0.35	54
B	2	16	23	5.01	0.35	27
C	3	63	101	1.92	0.35	43
D	4	18	17	5.87	0.35	37



SCALE: 1" = 400'



Proposed Transfer station
 Part III Appendix 1 Page 3
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 Benchmark: 1479.13'

LEGEND				
	SITE BOUNDARY			
	DRAINAGE AREA BOUNDARY			
	DRAINAGE AREA			
	DESIGN POINT			
	Tc FLOWPATH			
	FLOW ARROW			
	CONTOURS			

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 Plot Date: 7/26/2021 11:35:21 AM



07/28/21

3465 CURRY LANE
 ABILENE, TX 79606
 325-695-1070
 1508 SANTA FE DR, STE 204
 WEATHERFORD, TX 76086
 817-594-9880
 1014 BROADWAY STREET
 LUBBOCK, TX 79401
 806-368-6375

JACOB MARTIN



FIRM # F-2448

HASKELL, TEXAS
 MUNICIPAL LANDFILL
 PRE-DEVELOPMENT DRAINAGE AREA MAP

NO.	REVISION	DATE	SCALE	1"=400'	PROJECT #	21409	DESIGNED	RMJ	DRAWN	CH	CHECKED	KH

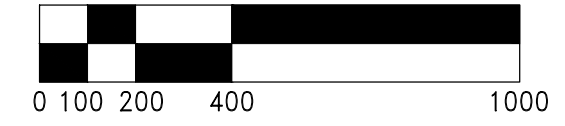
BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING.
 CHECK SCALE & ADJUST ACCORDINGLY.

SHEET 1
 SEQ. 1 OF 1

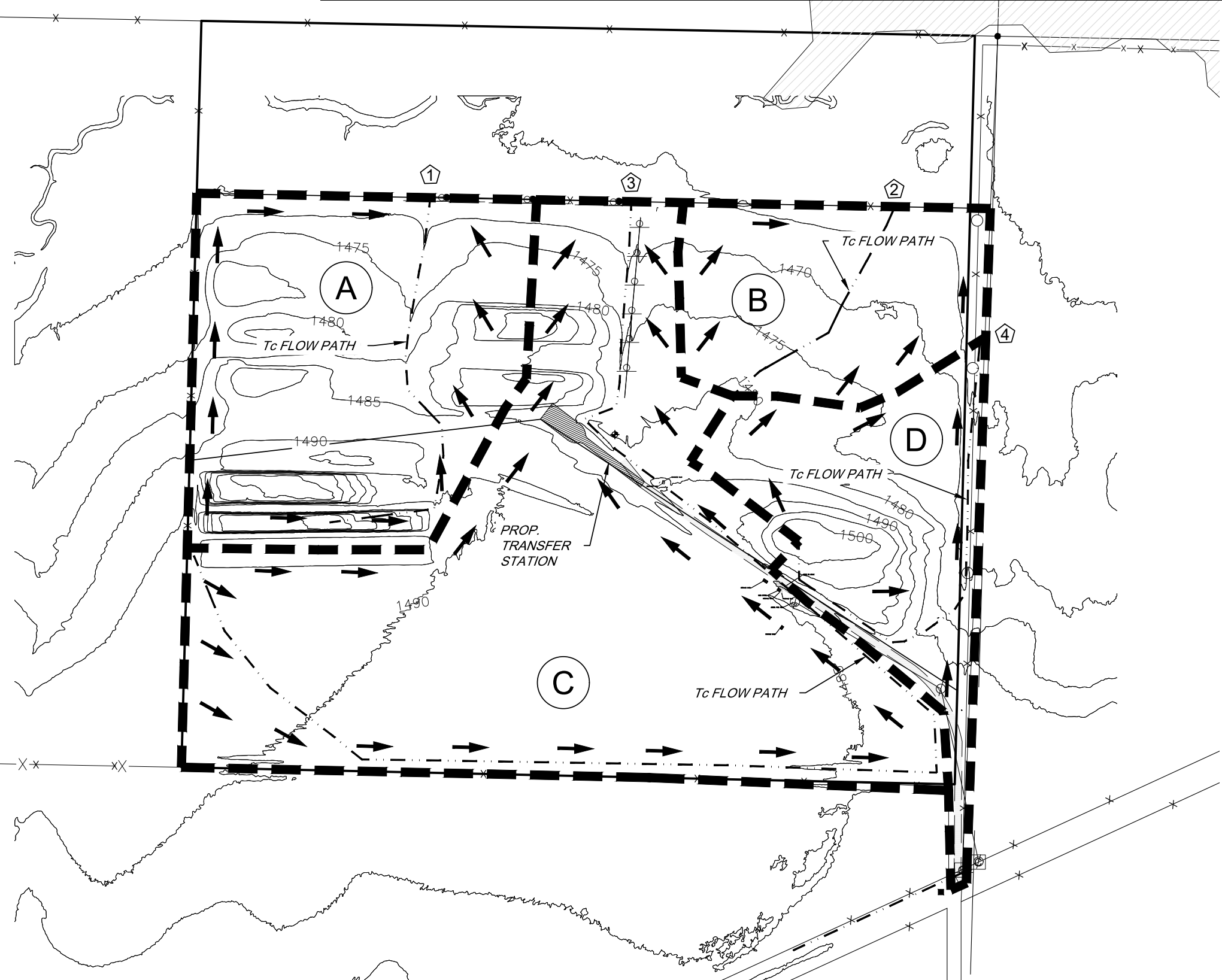
Post-Development 25-Yr Runoff

$Q = C * I * A$

Draiage	Design	Area	Tc	Intensity	Runoff	Q ₂₅
Area	Point	[Acres]	[min.]	[in/hr]	Coefficient	[cfs]
A	1	31	23	5.01	0.35	54
B	2	16	23	5.01	0.35	27
C	3	63	101	1.93	0.35	43
D	4	18	17	5.87	0.35	37



SCALE: 1" = 400'



Proposed Transfer station
 Part III Appendix 1 Page 4
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 Benchmark: 1479.13'

LEGEND

- SITE BOUNDARY
- DRAINAGE AREA BOUNDARY
- DRAINAGE AREA
- DESIGN POINT
- Tc FLOWPATH
- FLOW ARROW
- CONTOURS

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 Plot Date: 7/26/2021 11:35:28 AM



3465 CURRY LANE
 ABILENE, TX 79606
 325-695-1070
 1508 SANTA FE DR, STE 204
 WEATHERFORD, TX 76086
 817-594-9880
 1014 BROADWAY STREET
 LUBBOCK, TX 79401
 806-368-6375



HASKELL, TEXAS
 MUNICIPAL LANDFILL
 POST-DEVELOPMENT DRAINAGE AREA MAP

NO.	REVISION	DATE	SCALE	1"=400'
			PROJECT #	21409
			DESIGNED	RMJ
			DRAWN	CH
			CHECKED	KH
SHEET 1				
SEQ. 1 OF 1				

BAR IS ONE INCH IN LENGTH ON ORIGINAL DRAWING.
 CHECK SCALE & ADJUST ACCORDINGLY.



Rainfall Intensity-Duration-Frequency Coefficients for Texas

Based on "National Oceanic and Atmospheric Administration's (NOAA) Atlas 14
Precipitation-Frequency Atlas of the United States, Volume 1.1 Version 2.0: Texas" (Perica et al. 2018)

Parameter Selection

1. Select Units

English

2. Select Methodology

Partial Duration Series (PDS) ⓘ

3. Select County

HASKELL

4. Select County Zone

Zone-1 ⓘ

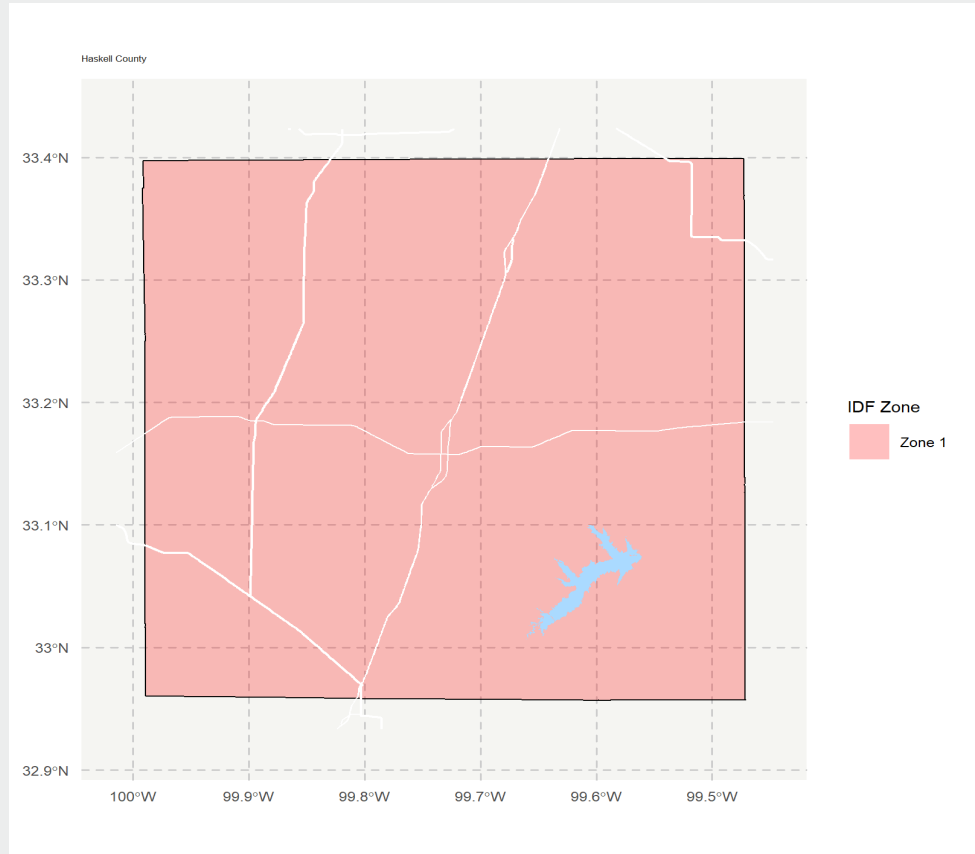
5. Select Time of Concentration (t_c)

18 Minute ⓘ

Design Annual Exceedance Probability (Design Annual Recurrence Interval)

Coefficient	50% (2-year)	20% (5-year)	10% (10-year)	4% (25-year)	2% (50-year)	1% (100-year)	0.2% (500-year)
e	0.8044	0.7980	0.7937	0.7888	0.7858	0.7824	0.7717
b	46.9779	57.3984	66.3495	79.0303	89.2963	99.6758	122.9847
d (min)	9.8358	9.7624	9.8395	10.0308	10.2758	10.5223	10.8274
Intensity (Inches/hour)	3.23	4.05	4.73	5.70	6.46	7.24	9.19

Note: Haskell County has 1 rainfall zone.



#N/A

Proposed Transfer station
 Part III Appendix 1 Page 5
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 Latitude: 33.1734445°
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Rainfall Intensity-Duration-Frequency Coefficients for Texas

Based on "National Oceanic and Atmospheric Administration's (NOAA) Atlas 14
Precipitation-Frequency Atlas of the United States, Volume 11 Version 2.0: Texas" (Perica et al. 2018)

Parameter Selection

1. Select Units

English

2. Select Methodology

Partial Duration Series (PDS)

3. Select County

HASKELL

4. Select County Zone

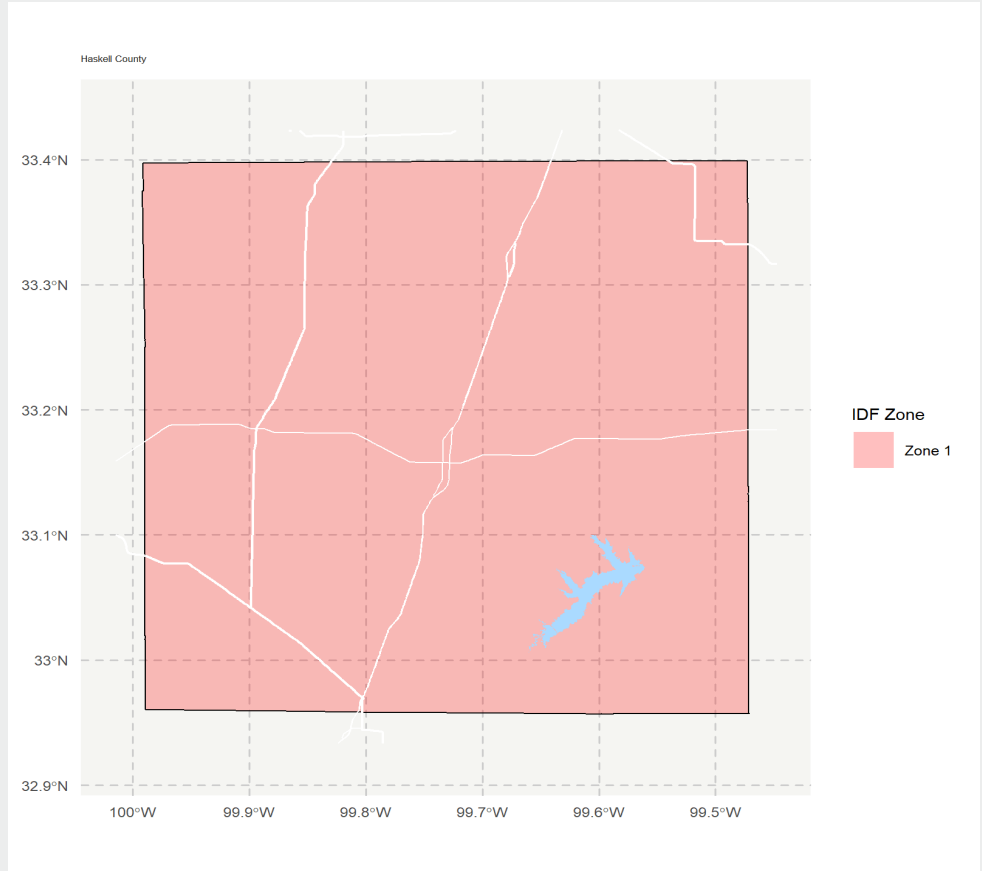
Zone-1

5. Select Time of Concentration (t_c)

101 Minute

Coefficient	Design Annual Exceedance Probability (Design Annual Recurrence Interval)						
	50% (2-year)	20% (5-year)	10% (10-year)	4% (25-year)	2% (50-year)	1% (100-year)	0.2% (500-year)
e	0.8044	0.7980	0.7937	0.7888	0.7858	0.7824	0.7717
b	46.9779	57.3984	66.3495	79.0303	89.2963	99.6758	122.9847
d (min)	9.8358	9.7624	9.8395	10.0308	10.2758	10.5223	10.8274
Intensity (Inches/hour)	1.06	1.34	1.58	1.92	2.20	2.49	3.23

Note: Haskell County has 1 rainfall zone.



Filename: ebdlkup-2019-vc6.2.10.xlsm

Proposed Transfer station
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Rainfall Intensity-Duration-Frequency Coefficients for Texas

Based on "National Oceanic and Atmospheric Administration's (NOAA) Atlas 14
Precipitation-Frequency Atlas of the United States, Volume 11 Version 2.0: Texas" (Perica et al. 2018)

Parameter Selection

1. Select Units

English

2. Select Methodology

Partial Duration Series (PDS)

3. Select County

HASKELL

4. Select County Zone

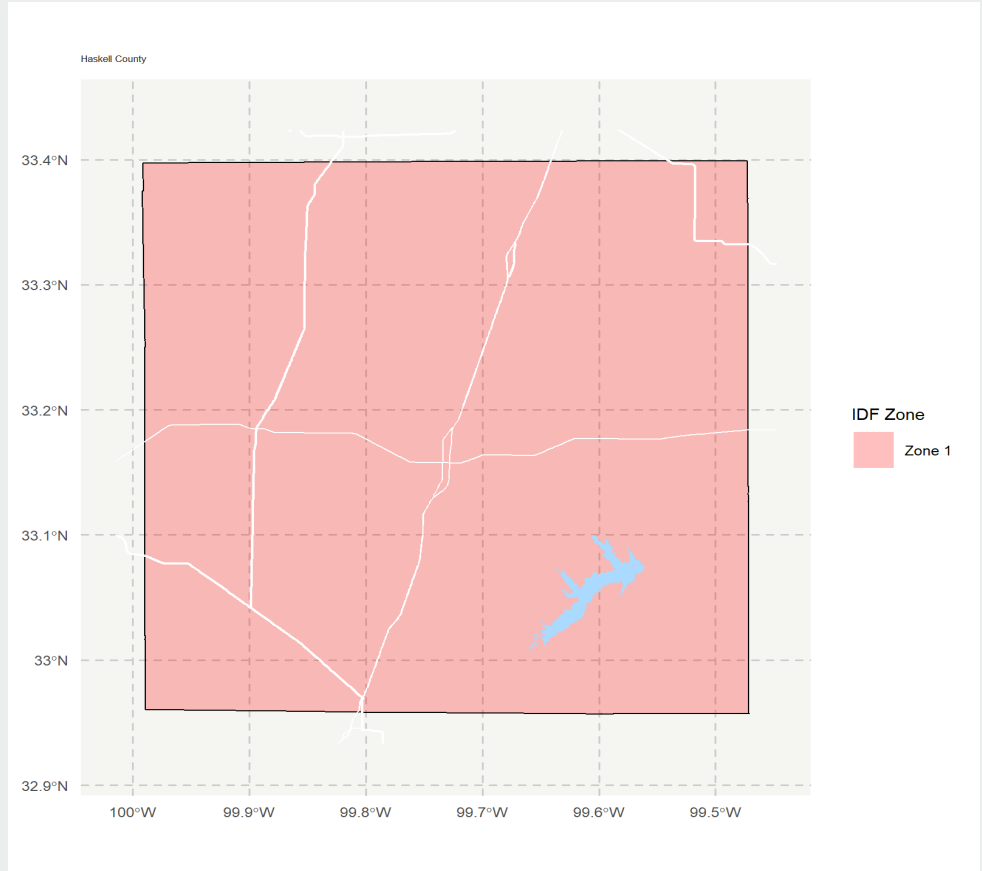
Zone-1

5. Select Time of Concentration (t_c)

17 Minute

Coefficient	Design Annual Exceedance Probability (Design Annual Recurrence Interval)						
	50% (2-year)	20% (5-year)	10% (10-year)	4% (25-year)	2% (50-year)	1% (100-year)	0.2% (500-year)
e	0.8044	0.7980	0.7937	0.7888	0.7858	0.7824	0.7717
b	46.9779	57.3984	66.3495	79.0303	89.2963	99.6758	122.9847
d (min)	9.8358	9.7624	9.8395	10.0308	10.2758	10.5223	10.8274
Intensity (Inches/hour)	3.33	4.17	4.87	5.87	6.65	7.45	9.44

Note: Haskell County has 1 rainfall zone.



Filename: POST-DEV TC Calc - 21409.xls

Proposed Transfer station
Part III Appendix 1 Page 7
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Rainfall Intensity-Duration-Frequency Coefficients for Texas

Based on "National Oceanic and Atmospheric Administration's (NOAA) Atlas 14
Precipitation-Frequency Atlas of the United States, Volume 11 Version 2.0: Texas" (Perica et al. 2018)

Parameter Selection

1. Select Units

English

2. Select Methodology

Partial Duration Series (PDS)

3. Select County

HASKELL

4. Select County Zone

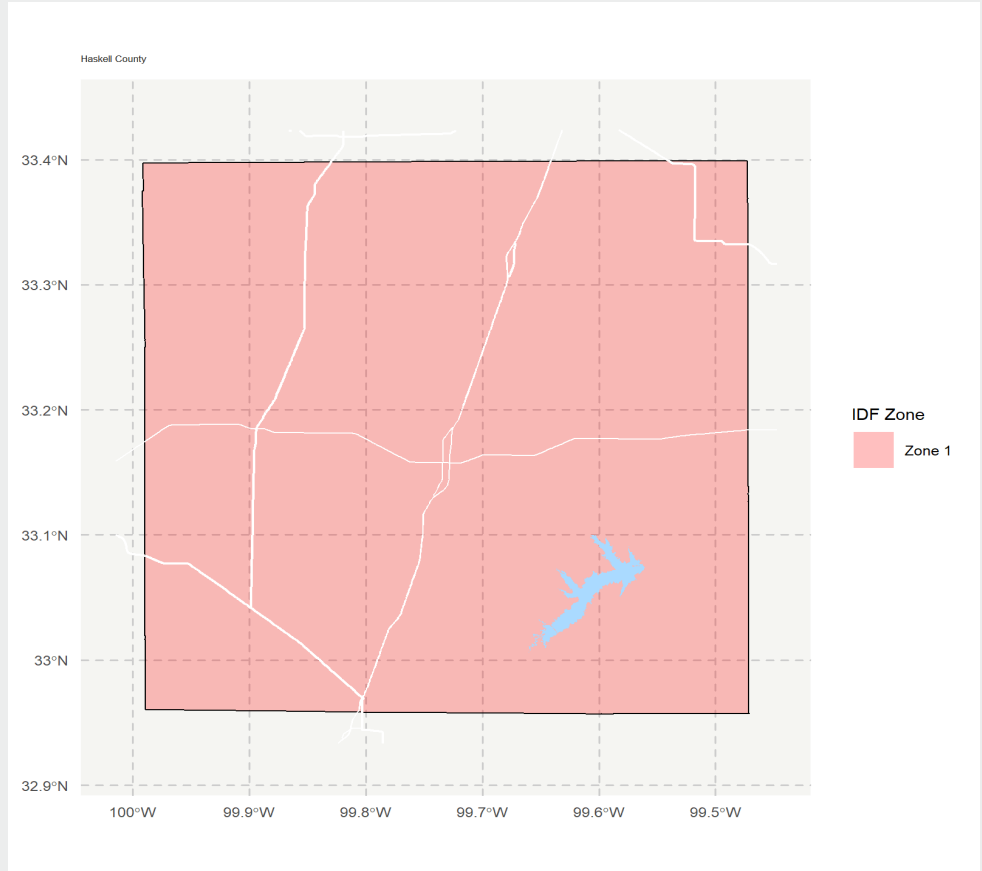
Zone-1

5. Select Time of Concentration (t_c)

23 Minute

Coefficient	Design Annual Exceedance Probability (Design Annual Recurrence Interval)						
	50% (2-year)	20% (5-year)	10% (10-year)	4% (25-year)	2% (50-year)	1% (100-year)	0.2% (500-year)
e	0.8044	0.7980	0.7937	0.7888	0.7858	0.7824	0.7717
b	46.9779	57.3984	66.3495	79.0303	89.2963	99.6758	122.9847
d (min)	9.8358	9.7624	9.8395	10.0308	10.2758	10.5223	10.8274
Intensity (Inches/hour)	2.83	3.54	4.15	5.01	5.68	6.38	8.12

Note: Haskell County has 1 rainfall zone.



Filename: ebdlkup-2019-vc6.2.10.xlsm

Proposed Transfer station
Part III Appendix 1 Page 8
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Latitude: 33.1734445°
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TIME OF CONCENTRATION CALCULATION

FROM TR-55, CHAPTER 3

PRE-DEVELOPMENT

PROJECT: Haskell City Landfill
 LOCATION: Haskell City, TX
 AREA: Design Point 1
 JOB NO: 21409

SHEET FLOW COMPONENT

LENGTH (FEET)	n	Delta Elevation (Ft)	SLOPE (FT/FT)	P2 (INCHES)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
150	0.200	5	0.0333	3.50	0.19	13.30	
0	0.000	0	0.0000	0.00	0.00	0.00	
0	0.000	0	0.0000	0.00	0.00	0.00	13.30

SHALLOW FLOW COMPONENT

COMPONENT	LENGTH (FEET)	Delta Elevation (Ft)	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
PAVED	0	0	0.0000	0.00	0.00	
UNPAVED	591	6	0.0102	1.63	6.06	6.06

PIPE FLOW COMPONENT

COMPONENT NUMBER	LENGTH (FEET)	DIAMETER (INCHES)	n	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
1	0	0	0.000	0.0000	0.00	0.00	
2	0	0	0.000	0.0000	0.00	0.00	
3	0	0	0.000	0.0000	0.00	0.00	0.00

CHANNEL FLOW COMPONENT

COMPONENT NUMBER	LENGTH (FEET)	BW (FEET)	DEPTH (FEET)	SS (H:V)	n	Delta Elevation (Ft)	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
1	766	5	1.0	3.0	0.050	16	0.0209	3.42	3.73	
2	0	0	0.0	0.0	0.000	0	0.0000	0.00	0.00	
3	0	0	0.0	0.0	0.000	0	0.0000	0.00	0.00	3.73

TOTAL LENGTH (FEET)	TIME OF CONC. (MINUTES)
1507	23.09

Proposed Transfer station
 Part III Appendix 1 Page 9
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 Longitude: -99.6451909°
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TIME OF CONCENTRATION CALCULATION

FROM TR-55, CHAPTER 3

PRE-DEVELOPMENT

PROJECT: Haskell City Landfill
 LOCATION: Haskell City, TX
 AREA: Design Point 2
 JOB NO: 21409

SHEET FLOW COMPONENT

LENGTH (FEET)	n	Delta Elevation (Ft)	SLOPE (FT/FT)	P2 (INCHES)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
150	0.200	2.51	0.0167	3.50	0.00	17.52	
0	0.000	0	0.0000	0.00	0.00	0.00	
0	0.000	0	0.0000	0.00	0.00	0.00	17.52

SHALLOW FLOW COMPONENT

COMPONENT	LENGTH (FEET)	Delta Elevation (Ft)	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
PAVED	0	0	0.0000	0.00	0.00	
UNPAVED	749	15.31	0.0204	2.31	5.41	5.41

PIPE FLOW COMPONENT

COMPONENT NUMBER	LENGTH (FEET)	DIAMETER (INCHES)	n	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
1	0	0	0.000	0.0000	0.00	0.00	
2	0	0	0.000	0.0000	0.00	0.00	
3	0	0	0.000	0.0000	0.00	0.00	0.00

CHANNEL FLOW COMPONENT

COMPONENT NUMBER	LENGTH (FEET)	BW (FEET)	DEPTH (FEET)	SS (H:V)	n	Delta Elevation (Ft)	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
1	0	5	2.0	0.0	0.000	0	0.0160	0.00	0.00	
2	0	0	0.0	0.0	0.000	0	0.0160	0.00	0.00	
3	0	0	0.0	0.0	0.000	0	0.0000	0.00	0.00	0.00

TOTAL LENGTH (FEET)	TIME OF CONC. (MINUTES)
899	22.93

Proposed Transfer station
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 Longitude: -99.6451909°
 Benchmark: 1479.13'

TIME OF CONCENTRATION CALCULATION

FROM TR-55, CHAPTER 3

PRE-DEVELOPMENT

PROJECT: Haskell City Landfill
 LOCATION: Haskell City, TX
 AREA: Design Point 3
 JOB NO: 21409

SHEET FLOW COMPONENT

LENGTH (FEET)	n	Delta Elevation (Ft)	SLOPE (FT/FT)	P2 (INCHES)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
150	0.200	0.47	0.0031	3.50	0.07	34.24	
0	0.000	0	0.0000	0.00	0.00	0.00	
0	0.000	0	0.0000	0.00	0.00	0.00	34.24

SHALLOW FLOW COMPONENT

COMPONENT	LENGTH (FEET)	Delta Elevation (Ft)	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
PAVED	0	0	0.0000	0.00	0.00	
UNPAVED	791	2.5	0.0032	0.91	14.53	14.53

PIPE FLOW COMPONENT

COMPONENT NUMBER	LENGTH (FEET)	DIAMETER (INCHES)	n	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
1	0	0	0.012	0.0000	0.00	0.00	
2	0	0	0.012	0.0000	0.00	0.00	
3	0	0	0.012	0.0000	0.00	0.00	0.00

CHANNEL FLOW COMPONENT

COMPONENT NUMBER	LENGTH (FEET)	BW (FEET)	DEPTH (FEET)	SS (H:V)	n	Delta Elevation (Ft)	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
1	2001	5	1.0	3.0	0.050	5	0.0025	1.18	28.22	
2	2650	5	1.0	3.0	0.050	16	0.0060	1.84	24.05	
3	0	0	0.0	0.0	0.000	0	0.0000	0.00	0.00	52.27

TOTAL LENGTH (FEET)	TIME OF CONC. (MINUTES)
5592	101.05

Proposed Transfer station
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 August 2 2021
 Revision:
 Latitude:33.1734445°
 Longitude:-99.6451909°
 Benchmark: 1479.13'

TIME OF CONCENTRATION CALCULATION

FROM TR-55, CHAPTER 3

PRE-DEVELOPMENT

PROJECT: Haskell City Landfill
 LOCATION: Haskell City, TX
 AREA: Design Point 4
 JOB NO: 21409

SHEET FLOW COMPONENT

LENGTH (FEET)	n	Delta Elevation (Ft)	SLOPE (FT/FT)	P2 (INCHES)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
134	0.200	12	0.0897	3.50	0.27	8.17	
0	0.000	0	0.0000	0.00	0.00	0.00	
0	0.000	0	0.0000	0.00	0.00	0.00	8.17

SHALLOW FLOW COMPONENT

COMPONENT	LENGTH (FEET)	Delta Elevation (Ft)	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
PAVED	0	0	0.0100	2.03	0.00	
UNPAVED	0	0	0.0270	2.65	0.00	0.00

PIPE FLOW COMPONENT

COMPONENT NUMBER	LENGTH (FEET)	DIAMETER (INCHES)	n	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
1	0		0.012		0.00	0.00	
2	0		0.012	0.0000	0.00	0.00	
3	0		0.012	0.0000	0.00	0.00	0.00

CHANNEL FLOW COMPONENT

COMPONENT NUMBER	LENGTH (FEET)	BW (FEET)	DEPTH (FEET)	SS (H:V)	n	Delta Elevation (Ft)	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
1	1585	5	1.0	3.0	0.050	28	0.0177	3.14	8.41	
2	0	0	0.0	0.0	0.000	0	0.0000	0.00	0.00	
3	0	0	0.0	0.0	0.000	0	0.0000	0.00	0.00	8.41

TOTAL LENGTH (FEET)	TIME OF CONC. (MINUTES)
1719	16.58

Proposed Transfer station
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Pre-Development 25-Yr Runoff

$$Q = C * I * A$$

Drairage Area	Design Point	Area [Acres]	Tc [min.]	Intensity [in/hr]	Runoff Coefficient	Q ₂₅ [cfs]
A	1	31	23	5.01	0.35	54
B	2	16	23	5.01	0.35	27
C	3	63	101	1.92	0.35	43
D	4	18	17	5.87	0.35	37

Proposed Transfer station
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TIME OF CONCENTRATION CALCULATION

FROM TR-55, CHAPTER 3

PRE-DEVELOPMENT

PROJECT: Haskell City Landfill
 LOCATION: Haskell City, TX
 AREA: Design Point 1
 JOB NO: 21409

SHEET FLOW COMPONENT

LENGTH (FEET)	n	Delta Elevation (Ft)	SLOPE (FT/FT)	P2 (INCHES)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
150	0.200	5	0.0333	3.50	0.19	13.30	
0	0.000	0	0.0000	0.00	0.00	0.00	
0	0.000	0	0.0000	0.00	0.00	0.00	13.30

SHALLOW FLOW COMPONENT

COMPONENT	LENGTH (FEET)	Delta Elevation (Ft)	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
PAVED	0	0	0.0000	0.00	0.00	
UNPAVED	591	6	0.0102	1.63	6.06	6.06

PIPE FLOW COMPONENT

COMPONENT NUMBER	LENGTH (FEET)	DIAMETER (INCHES)	n	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
1	0	0	0.000	0.0000	0.00	0.00	
2	0	0	0.000	0.0000	0.00	0.00	
3	0	0	0.000	0.0000	0.00	0.00	0.00

CHANNEL FLOW COMPONENT

COMPONENT NUMBER	LENGTH (FEET)	BW (FEET)	DEPTH (FEET)	SS (H:V)	n	Delta Elevation (Ft)	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
1	766	5	1.0	3.0	0.050	16	0.0209	3.42	3.73	
2	0	0	0.0	0.0	0.000	0	0.0000	0.00	0.00	
3	0	0	0.0	0.0	0.000	0	0.0000	0.00	0.00	3.73

TOTAL LENGTH (FEET)	TIME OF CONC. (MINUTES)
1507	23.09

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TIME OF CONCENTRATION CALCULATION

FROM TR-55, CHAPTER 3

PRE-DEVELOPMENT

PROJECT: Haskell City Landfill
 LOCATION: Haskell City, TX
 AREA: Design Point 2
 JOB NO: 21409

SHEET FLOW COMPONENT

LENGTH (FEET)	n	Delta Elevation (Ft)	SLOPE (FT/FT)	P2 (INCHES)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
150	0.200	2.51	0.0167	3.50	0.00	17.52	
0	0.000	0	0.0000	0.00	0.00	0.00	
0	0.000	0	0.0000	0.00	0.00	0.00	17.52

SHALLOW FLOW COMPONENT

COMPONENT	LENGTH (FEET)	Delta Elevation (Ft)	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
PAVED	0	0	0.0000	0.00	0.00	
UNPAVED	749	15.31	0.0204	2.31	5.41	5.41

PIPE FLOW COMPONENT

COMPONENT NUMBER	LENGTH (FEET)	DIAMETER (INCHES)	n	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
1	0	0	0.000	0.0000	0.00	0.00	
2	0	0	0.000	0.0000	0.00	0.00	
3	0	0	0.000	0.0000	0.00	0.00	0.00

CHANNEL FLOW COMPONENT

COMPONENT NUMBER	LENGTH (FEET)	BW (FEET)	DEPTH (FEET)	SS (H:V)	n	Delta Elevation (Ft)	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
1	0	5	2.0	0.0	0.000	0	0.0160	0.00	0.00	
2	0	0	0.0	0.0	0.000	0	0.0160	0.00	0.00	
3	0	0	0.0	0.0	0.000	0	0.0000	0.00	0.00	0.00

TOTAL LENGTH (FEET)	TIME OF CONC. (MINUTES)
899	22.93

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TIME OF CONCENTRATION CALCULATION

FROM TR-55, CHAPTER 3

PRE-DEVELOPMENT

PROJECT: Haskell City Landfill
 LOCATION: Haskell City, TX
 AREA: Design Point 3
 JOB NO: 21409

SHEET FLOW COMPONENT

LENGTH (FEET)	n	Delta Elevation (Ft)	SLOPE (FT/FT)	P2 (INCHES)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
150	0.200	0.47	0.0031	3.50	0.07	34.24	
0	0.000	0	0.0000	0.00	0.00	0.00	
0	0.000	0	0.0000	0.00	0.00	0.00	34.24

SHALLOW FLOW COMPONENT

COMPONENT	LENGTH (FEET)	Delta Elevation (Ft)	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
PAVED	0	0	0.0000	0.00	0.00	
UNPAVED	791	2.5	0.0032	0.91	14.53	14.53

PIPE FLOW COMPONENT

COMPONENT NUMBER	LENGTH (FEET)	DIAMETER (INCHES)	n	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
1	0	0	0.012	0.0000	0.00	0.00	
2	0	0	0.012	0.0000	0.00	0.00	
3	0	0	0.012	0.0000	0.00	0.00	0.00

CHANNEL FLOW COMPONENT

COMPONENT NUMBER	LENGTH (FEET)	BW (FEET)	DEPTH (FEET)	SS (H:V)	n	Delta Elevation (Ft)	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
1	2001	5	1.0	3.0	0.050	5	0.0025	1.18	28.22	
2	2631	5	1.0	3.0	0.050	16	0.0061	1.84	23.79	
3	0	0	0.0	0.0	0.000	0	0.0000	0.00	0.00	52.01

TOTAL LENGTH (FEET)	TIME OF CONC. (MINUTES)
5573	100.79

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TIME OF CONCENTRATION CALCULATION

FROM TR-55, CHAPTER 3

PRE-DEVELOPMENT

PROJECT: Haskell City Landfill
 LOCATION: Haskell City, TX
 AREA: Design Point 4
 JOB NO: 21409

SHEET FLOW COMPONENT

LENGTH (FEET)	n	Delta Elevation (Ft)	SLOPE (FT/FT)	P2 (INCHES)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
134	0.200	12	0.0897	3.50	0.27	8.17	
0	0.000	0	0.0000	0.00	0.00	0.00	
0	0.000	0	0.0000	0.00	0.00	0.00	8.17

SHALLOW FLOW COMPONENT

COMPONENT	LENGTH (FEET)	Delta Elevation (Ft)	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
PAVED	0	0	0.0100	2.03	0.00	
UNPAVED	0	0	0.0270	2.65	0.00	0.00

PIPE FLOW COMPONENT

COMPONENT NUMBER	LENGTH (FEET)	DIAMETER (INCHES)	n	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
1	0		0.012		0.00	0.00	
2	0		0.012	0.0000	0.00	0.00	
3	0		0.012	0.0000	0.00	0.00	0.00

CHANNEL FLOW COMPONENT

COMPONENT NUMBER	LENGTH (FEET)	BW (FEET)	DEPTH (FEET)	SS (H:V)	n	Delta Elevation (Ft)	SLOPE (FT/FT)	VELOCITY (FT/SEC)	TRAV. TIME (MINUTES)	TOTAL TRAVEL TIME (MINUTES)
1	1585	5	1.0	3.0	0.050	28	0.0177	3.14	8.41	
2	0	0	0.0	0.0	0.000	0	0.0000	0.00	0.00	
3	0	0	0.0	0.0	0.000	0	0.0000	0.00	0.00	8.41

TOTAL LENGTH (FEET)	TIME OF CONC. (MINUTES)
1719	16.58

Proposed Transfer station
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Post-Development 25-Yr Runoff

$$Q = C * I * A$$

Draiage Area	Design Point	Area [Acres]	Tc [min.]	Intensity [in/hr]	Runoff Coefficient	Q ₂₅ [cfs]
A	1	31	23	5.01	0.35	54
B	2	16	23	5.01	0.35	27
C	3	63	101	1.93	0.35	43
D	4	18	17	5.87	0.35	37

Proposed Transfer station
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Area	Totoal Area	Imp	Perv	C1	C2	Comp. C
C	2754941.86	17000.00	2737941.86	0.9	0.35	0.35

Proposed Transfer station
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Latitude:33.1734445°
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HASKELL MSW TRANSFER STATION

Part III Appendices

Appendix #2



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Closure Cost Estimate.....2-3



8-9-21

CLOSURE COST ESTIMATE						
CITY OF HASKELL TRANSFER STATION						
Item	Description	Quantity	Unit	Unit Cost	Extended Cost	Notes
A	State Administration of Site Closure					
1	Site survey and review files to determine closure activities	1	each	\$3,000.00	\$3,000.00	
2	Prepare engineering plans and specifications	10	Hr.	\$175.00	\$1,750.00	
3	Procurement of bids	10	Hr.	\$100.00	\$1,000.00	
4	Contract award and administration of contract	1	each	\$3,120.00	\$2,943.00	Equal to 5% of A-D
B	General Cleanup of Site and Process Units					
1	Cleanup and removal of wastes stored on-site	7	Days	\$500.00	\$3,500.00	Laborer and equipment (Includes front end loader and operator)
2	Transport of wastes by a properly authorized transporter	7	Days	\$1,800.00	\$12,600.00	
3	Disposal of wastes at a properly authorized facility	125	Tons	\$8.00	\$1,000.00	
4	General cleanup to include washdown and disinfection of facility. To include removal, transport, treatment, and disposal of all washdown waters and media	1	each	\$10,000.00	\$10,000.00	
5	Removal, treatment, and disposal of any contaminated soils, concrete, storm water, or any other contaminated materials on-site.	1	each	\$10,000.00	\$10,000.00	
6	Vector control procedures		each	\$2,000.00	\$2,000.00	
C	Secure Site					
1	Install locks and sign stating that the facility is closed. Make any needed repairs to fence and gates Secure all buildings and fences/gates.	1	each	\$1,500.00	\$1,500.00	
D	Certification of Abandonment and Completion of Cleanup					
	Sampling/testing/classification of wastes (ash, liquids, sludge, and other wastes not readily identifiable as garbage, trash, refuse). To include lab reports, chain of custody documentation, and quality assurance and quality control.		each.	\$7,500.00	\$7,500.00	
2	Perform site inspection and prepare certification of closure.		each	\$5,000.00	\$5,000.00	
				Subtotal	\$61,793.00	
				Sales Tax (8.25%)	\$0.00	
E	Contingency Cost					
				Contingency (20%)	\$12,358.60	
				Total	\$74,151.60	



HASKELL MSW TRANSFER STATION

Part III Appendices

Appendix #3



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Financial Assurance.....3-3



Part III Appendix 3 Financial Assurance

A copy of the financial assurance will be submitted to the TCEQ within sixty days prior to the receipt of waste under this registration in coordination with the existing MSW landfill financial assurance.