



July 18, 2008

Ms. Donna J. Wilson  
*Environmental Engineer*  
**NCDENR – Division of Waste Management**  
401 Oberlin Road, Suite 150  
Raleigh, North Carolina 27605

Re: **Response to Comments**  
**Application for Thornton Road Mixed Waste Transfer Station**  
**Shotwell Transfer Station, Inc.**

Dear Ms. Wilson

On behalf of Shotwell Transfer Station, Inc., Richardson Smith Gardner & Associates, Inc (RSG) has prepared this response to the comments issued in correspondence dated July 10, 2008 (**copy attached**). The following responses address each comment and reference any revisions to the application previously submitted on December 14, 2007. Please find each comment in *italics* and the associated response below.

**Comment No. 1**

*Please state the acreage of the property and the acreage of the facility in the property description.*

**Response No.1**

The language was revised in the Executive Summary as follows:

“The development is proposed on property owned by Dynasty Holdings, LLC. The complete tract is approximately 9.85 acres which is accessed from central portion of its southern boundary as shown in the Project Drawings provided in **Attachment K**.

The property is described in three (3) deed instruments as follows:

1. Wake County Deed Book 12249, Pages 225-227;
2. Wake County Deed Book 12876, Pages 394-397; and
3. Wake County Deed Book 12876, Pages 398-403.

The complete property is further clarified as “New Lot 3 Area” by a Recombination Plat described in Wake County Book of Maps 2007, Page 2838. It is noted that a series of property swaps occurred during the development of the site such that the complete property is resolved by adding and subtracting individual tracts from an initial “Old Lot Area” described in the Recombination Plat. Legal descriptions and the recombination map for this property is included in **Attachment A.**”

A revised Executive Summary is provided as **Appendix A** of this response.

**Comment No. 2**

*Please add the response to the comment in the section of the application which addresses grading over the existing closed LCID.*

**Response No.2**

Bullet points #3 and #4 of the Existing Closed Neuse Demolition Landfill section in the Executive Summary have been revised as follows:

“All grading activities shall be conducted to replace a minimum of one (1) foot of soil cover and shall not allow standing water inside the limits of the closed landfill.”

“Areas where LCID materials are encountered will be simply excavated and hauled to the Shotwell Landfill, Inc. C&D facility (NC Solid Waste Permit No. 92-26) for either grinding or disposal. If unacceptable non-hazardous, non-C&D or non-LCID wastes are encountered, they will be containerized and covered until a load is generated wherein it will be transported to a facility licensed to accept MSW materials such as South Wake Landfill (NC Solid Waste Permit No. 92-22). If hazardous wastes are encountered, construction operations will cease and will be assessed by a hazardous removal contractor wherein the Division of Waste Management will be notified and an appropriate response plan will be developed dependent on the nature of the hazard. All waste manifests shall be obtained and recorded.”

A revised Executive Summary is provided as **Appendix A** of this response.

**Comment No. 4**

*The required deeds were added; however, a short paragraph describing the property acquisition and the recombination of the lots should be added to the application for clarity.*

**Response No. 4**

See **Response No. 1** (above).

**Comment No. 10**

*The information on the accounting and tracking software (PDOX) only addresses overall tracking of waste entering and leaving the site. It did not explain how operations will manage the waste onsite to ensure that waste goes to proper landfill based on the service area of the landfill. Please provide that information and include it in the application.*

**Response No. 10**

The PDOX tracking software will be used to manage all wastes in and out of the transfer station facility. In summary, the following procedures are planned:

1. Each load that enters the site will be recorded for hauler, waste type, waste location/source, and weight as shown in “Example Report A – Individual Load Ticket” provided in **Appendix C** of this response.

2. Once this information is entered into the system, it allows management and sorting by waste type and by time received for any period of time or date as shown in "Example Report B – Load Summary Report" provided in **Appendix C** of this response.

As shown, waste entering the site will be categorized as MSW, C&D, or Recycled including the time it was received. These reports provide all information needed to identify the source and destination of each load for management of the facility.

For example, a C&D load, with its own identifier (ie. Company #), would be diverted to the C&D transfer area for direct push into the transfer vehicle, with its own identifier (ie. Vehicle #). The transfer vehicles are logged by "time in" and, once full, would be logged by "time out". The transfer vehicle would then pass over the scales where the attendant would print a load summary report (Example Report B) and a waste out summary (Example Report C – also provided in **Appendix C**) and provide a directive to the driver as to the appropriate destination facility, given the source(s) on his/her particular waste summary.

Under an alternate scenario, transfer truck "A" containing 100% Wake County (source) waste would be directed to the Shotwell C&D landfill. However, transfer truck "B" containing 90% Wake County (source) waste and 10% Franklin County (source) waste, the driver would be directed to the Red Rock Disposal C&D landfill as determined by the landfill's service area. Once the transfer vehicle leaves the scalehouse attendant the burden of source screening falls upon the destination disposal facility under their own operational scenarios. Upon request, the transfer driver can provide documentation as described above.

Section 2.6.4 Transfer Manifest Documentation has been added to the Operations Manual as follows:

"Shotwell employs a truck scale data management software program to track all inbound and outbound waste. Inbound traffic will follow procedures outlined in **Section 2.6.2**. Outbound transfer operations are anticipated as follows:

1. Once the transfer trailer is full, the driver will exit over the scales and scalehouse for weight;
2. The scalehouse attendant will prepare a load summary including weight and a source summary for all wastes received in that trailer's load. The attendant will then instruct the driver to the appropriate disposal facility as outlined in **Section 2.5.3** based on waste type and/or source summary."

A revised Operations Manual is provided as **Appendix B** of this response.

#### **Comment No. 11**

*The revised site plan did not show where brick and block to be recycled will be stored. Indicate on the site plan the "recycling area" that is mentioned for the storage of inert materials. Please clarify in the drawings or in the text of the report that engineered wood (such as particle board) will not be recycled. Show the storage area for concrete and brick on the site plan drawings, and provide the maximum size of storage. It should be stated that containers in the recycling storage area will be covered at the end of each day and during rain events.*

#### **Response No. 11**

Drawing No. S2 has been revised to identify the storage area for brick and block and is included in **Appendix D** of this response.

Section 2.2.3 has been revised to include specific mention, by footnote to clean wood, that engineered wood products may not be recycled as follows:

“Engineered wood products such as particle board or glue laminated timbers are not acceptable for recycling.”

A revised Operations Manual is provided as **Appendix B** of this response.

**Comment No. 12**

*Please add sentence to application report.*

**Response No. 12**

Section 2.7.3 has been revised as follows:

“The final destination of the recyclable materials separated from the waste may vary depending on market prices for such materials. However, final markets are anticipated as follows:

- a. Metals: TT&E, Wise Recycling, Raleigh Metals, etc.
- b. Pallets: Shotwell C&D Landfill for grinding to Craven County Waste to Energy (WTE) or McGill Environmental for compost.
- c. Clean Wood: Shotwell C&D Landfill for grinding to Craven County Waste to Energy (WTE) or McGill Environmental for compost.
- d. Cardboard: Paper Stock Dealers, Sonoco Products, etc.

No grinding or composting will be performed on-site.”

A revised Operations Manual is provided as **Appendix B** of this response.

**Comment No. 13**

*For wood recyclables including pallets, address how the material will be stored and managed such that no contaminated runoff enters groundwater or surface water. Section 2.7.2 should be corrected in that wood pallets and wood debris are not considered inert.*

**Response No. 13**

Section 2.7.2 has been revised as follows:

“All other recyclable waste products will be stored around the recycling area. These products will be maintained in discrete piles and/or containers as follows:

- Wood pallets will be delivered and containerized (~100 CY);
- Concrete/asphalt materials will be delivered and stockpiled (~100 CY); and
- Clean wood debris will be delivered and containerized (~100 CY).”

A revised Operations Manual is provided as **Appendix B** of this response.

**Comment No. 14**

*Please indicate in the report whether demolition debris will be sorted for recycling. Demolition debris could include materials that contain asbestos or other non-acceptable materials that were not properly sorted at the demolition site for disposal. If demolition debris is to be sorted in the recycling area, an asbestos screening plan is required.*

#### **Response No. 14**

Section 2.6.3 has been revised as follows:

- “1. The track hoe, loader, or laborers will separate materials to be recycled and/or processed from the loads before the waste is pushed into the open top transfer trailers. It is anticipated that most of the recyclables and materials to be separated will arrive at the transfer area as C&D waste. Demolition debris will not be recycled and/or processed and will be directly pushed into the transfer vehicle. Asbestos (known) containing C&D will not be accepted. MSW wastes will not be recycled and/or processed.”
- “2. Materials to be recycled and/or processed may stay on the floor of the building (not in containers) for no longer than the close of the business day. At the end of each day, all recyclable materials shall be transported by skid steer loader, etc. to the recycling area in appropriately labeled bins or roll-off containers. “
- “3. Treated wood and/or engineered wood products (any wood other than virgin wood) waste must be discarded in the C&D trailer. “
- “4. Materials, as defined in **Section 2.2.3**, to be recycled will be pulled from the C&D waste and loaded into roll-off containers in the transfer floor area or immediately outside the transfer station to the recycling area in appropriately labeled bins or roll-off containers. “
- “5. Cardboard will be transported to the recycling area into an appropriately labeled container.”
- “6. Concrete (cement and asphaltic/bituminous) may be delivered and stockpiled at the limits of the recycling area until a load is generated or it is removed from the site for sale as fill, aggregate, etc., as markets allow.”

A revised Operations Manual is provided as **Appendix B** of this response.

#### **Comment No. 15**

*A drawing of the building layout was requested, but wasn't provided in the response. Please provide a drawing of the building which includes operation areas that were mentioned in the application, drains and piping to leachate tank, any physical separations between operation areas. Section 2.6.3(5) states that cardboards will be loaded into a compactor and the response states that a cardboard compactor will not be used. Please clarify which is correct and make any appropriate changes to the application.*

#### **Response No. 15**

Please refer to Drawing No. S2 provided in **Appendix D** of this response which illustrates the tipping floor area and anticipated operations by drawing inset. Additionally, all leachate and runoff inside the transfer stations will be sloped to the transfer truck area. Floor drains are included at the entrance of the tipping floor and below the transfer trucks. All leachate drains flow to the concrete storage tank and piped via gravity to the City of Raleigh sewer system.

Section 2.6.3 (5) has been revised as shown in **Response No. 14**.

Section 3.3 has been revised as follows:

“The leachate management system for the proposed MSW & C&D transfer station consists of concrete tipping floor, collection trenches and leachate transmission piping, valve boxes, valves, and a leachate storage tank prior to either pump and hauling or direct connection to the City of Raleigh sewer system.

### **3.3.1 Leachate Collection**

Leachate from each transfer area unit is collected in perimeter floor drains that drain to low end(s) of each area. Leachate collected drains to a central leachate storage tank which flows by gravity via an HDPE force main to the City of Raleigh sewer system or pumped directly to a truck for hauling to a local publicly owned treatment works (POTW), as necessary. “

### **3.3.2 Operation and Maintenance of Leachate Management Systems**

Operation and maintenance of the leachate management system shall include routine inspections and maintenance to insure that accumulated solids are removed from the leachate storage tank, all floor drains are periodically cleaned of obstructions, and the system maintains a clear flow path into the City sewer system. The Solid Waste Manager or his designee will be responsible for following and documenting, as required, these activities.”

A revised Operations Manual is provided as **Appendix B** of this response.

### **Comment No. 16**

*The response indicates that a 100 CY trailer will be used for pallets, but the site plan states 40 CY. Please add this storage information to the text of the report. What is the maximum size of concrete and brick to be stored? Please clarify whether there is temporary recycle storage area in the building. If yes, what is the storage capacity of these areas? Section 2.6.3 indicates that recyclables will be stored in the building for up to 48 hours, and that roll-off containers will be in the transfer floor area. Please provide a sketch of the storage areas in the building and maximum size of each storage.*

### **Response No. 16**

Drawing No. S2 has been revised to include an area for concrete and brick which will include a maximum storage area of 100 CY. The reference for pallets has also been revised to 100 CY.

A temporary recycle storage area is located in the building as shown by inset on Drawing No. S2. Once a load is generated on the floor, the skid steer loader (<2 CY) will transport the specific material to an appropriate container. At the end of each day, all recyclable materials will be transported to an appropriate container. No material will be stored in the building at the end of each business day.

Section 2.6.3 has been revised as previously discussed in **Response No. 14**.

A revised Drawing No. S2 is provided as **Appendix D** of this response.

**Comment No. 17**

*Section 2.7—What is the “recycling area” that is used to store, separate, and contain commingled recyclables? Please differentiate in the report between the building sorting area and the recycling storage area north of the building.*

**Response No. 17**

The recycling area is located north of the transfer station to separate and maintain storage until they are transported off-site to an appropriate market. The inset shown in Drawing No. S2 identifies a temporary recycle storage area as described in **Response No. 16**. The recycling area to the north of the transfer station will be utilized as separate storage of materials as well as a stop for pre-sorted construction materials to be off-loaded directly from a truck.

Section 2.7 has been revised as follows:

“The facility’s recycling area located north of the transfer station is used to store, separate, and contain commingled recyclable materials from source separated from the transfer station and/or pre-sorted materials such as new C&D materials which may be directly off-loaded into an appropriate container. A temporary recycle storage area is included in the transfer station tipping floor prior to storage in this area which must be cleaned each day. The facility is equipped with equipment to facilitate hand sorting of materials, and bins for storage as defined in **Section 2.5.5**.”

A revised Operations Manual is provided as **Appendix B** of this response.

**Comment No. 18**

*Section 2.7.2 refers to the storage of inert materials. What are the inert “other re-usable new construction materials” that you are expecting to receive?*

**Response No. 18**

This section has been revised as provided in **Response No. 13**.

**Comment No. 20**

*Information requested was provided. Please put this information in the application.*

**Response No. 20**

This section has been revised as provided in **Response No. 12**.

**Comment No. 21**

*There wasn't a drawing L1 as indicated in the response. There is a drawing S3 which shows the profile from the leachate tank to the Raleigh sewer tie-in. Comparing 3.3 and the drawing—(1) There is no detail of the floor drain system on the pad showing that it drains to the leachate tank. Tipping floor is at 224' and the floor drain to tank is at 214'. How does it get there? The floor of the transfer station should be sloped to the floor drains, and this shown on a drawing. (2) 3.3.1 says leachate is pumped. Drawing S3 looks like gravity flow. (3) 3.3 states leachate may be pumped to a truck. Where is the connection for this in the facility? (4) How will filters and sludge from the leachate tank be disposed? Include information in application.*

**Response No. 21**

Drawing No. L1 has been revised to include appropriate numbering. An inset has been provided in Drawing No. S2 as discussed in **Response No. 15** includes anticipated floor drains to collect and route leachate to the storage tank. It is anticipated that this system will function under gravity conditions to the city sewer system. In the event, leachate is required to be pumped, liquids will be pumped using a vacuum truck directly from the tank. The vacuum truck will also have the ability to remove accumulated solids in the tank as necessary. Therefore, a separate pump or connection is not required nor shown.

A revised Drawing No. L1 is provided in **Appendix D** of this response.

**Comment No. 22**

*Please provide a notation in the legend to indicate which graphic refers to which ground cover.*

**Response No. 22**

Drawing No. S2 has been revised to include the notation in the legend. However, to avoid hatching the entire drawing, all areas not specifically hatched or labeled otherwise, are assumed as grass inside the limits of disturbance.

**Comment No. 23**

*Sections 3.4 and 3.5—MSW transfer stations require daily wash down.*

**Response No. 23**

Sections 3.4 and 3.5 have been revised as follows:

**“3.4 VECTOR CONTROL**

Control of insects, rodents, and birds will be accomplished by periodic cleaning of the facility. Spilled or wind-blown debris along the access road will be cleaned up daily and placed in the transfer truck. The transfer areas will be cleaned and swept daily and the MSW area washed down daily. If vector control becomes a problem, additional measures will be taken to ensure the protection of human health.”

**“3.5 ODOR CONTROL**

Odorous or potentially odorous materials will be pushed into the transfer truck covered as soon as possible to avoid odor problems. Additionally, the transfer areas will be cleaned and swept daily and the MSW area washed down daily. If odor control becomes a problem, additional measures will be taken to ensure odor control.”

**Comment No. 25**

*Add this information to the application as you did for the closed LCID. Who can we contact to ensure that the tires were properly disposed?*

**Response No. 25**

Bullet point # 5 of the Existing Closed Neuse Demolition Landfill in the Executive Summary has been revised to include this section as follows:

“All tires encountered will be disposed at the North Wake Landfill (NC Solid Waste Permit No. 92-09);

It is suggested that the previous owner, Mr. Lemuel Thornton, be contacted.

A revised Executive Summary is provided as **Appendix A** of this response.

**Comment No. 26**

*Please add this information to the application report.*

**Response No. 26**

The Executive Summary has been revised to include the following:

**“Existing Transfer Area Operations**

Most all of the new construction associated with this application will not interfere with existing operation. Once the new transfer station is ready for operations and approved by the Division, operations will transfer away from the existing area. This area will then be graded and placed into its final condition as shown on the Permit Drawings.”

A revised Executive Summary is provided as **Appendix A** of this response.

**Comment No. 27**

*Please address this issue in your application. Confirm that the software will calculate and compare the total weight of waste coming in versus the weight going out in both waste and recyclables.*

**Response No. 27**

Yes, the software can track this information as previously discussed in **Response No. 10**.

**Comment No. 28**

*Financial assurance is for the event of site abandonment or if the site is found in substantial non-compliance, so a worst case scenario is used for the cost estimate calculation, not the scenario that it would operate under normal conditions. The cost estimate should be equal to the cost to hire a third party to remove and clean up waste from the facility, haul, and dispose of the waste. The amount of waste used in the calculation should be equal to 5 days worth of transfer station volume plus the maximum amount of waste and product that could be stored at the facility at any time, including a full sorting pad. Costs should be calculated with everything, including the recycling area and inert area storage volumes, transported to an MSW landfill. Calculations should show distance to closest MSW landfill, gas and truck volume/trip estimates, current disposal cost of the nearest MSW landfill, site clean-up, and project management fees.*

**Response No. 28**

A revised financial assurance estimate is provided as **Appendix E** of this response.

**Comment No. 31**

*Is the site plan provided the final site plan? Have issues on the driveway location been resolved?*

**Response No. 31**

Yes, pending approval by the City of Raleigh for grading and building permits, the City of Raleigh sewer connection permits, and the NC DOT driveway permit. As previously noted in the June 3, 2008 response, Shotwell will pursue an updated driveway permit with the NC DOT following approval of the permit to construct (PTC) by the Division of Waste Management. Shotwell accepts requirements by NC DOT as condition of the PTC and intends to perform roadway improvements as necessary.

**Comment No. 32**

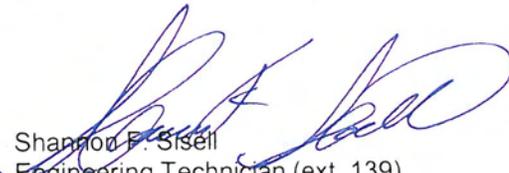
*Please edit document again. Check numbering of sections. (For example, there are two sections 1.2.2.) Ensure that references to sections are correct. (For example, section 1.12.1 references 1.10.2 for PPE. I believe the correct reference is 1.12.2).*

**Response No. 32**

The document has been reviewed again and has been revised as necessary and as noted throughout the discussions above.

Should you have any questions or require clarification, please contact us at your earliest convenience at (919) 828-0577 or by email listed below.

Sincerely,  
**Richardson Smith Gardner & Associates, Inc.**

  
Shannon P. Siseil  
Engineering Technician (ext. 139)  
[shannon@rsgengineers.com](mailto:shannon@rsgengineers.com)

  
Stacey A. Smith, P.E.  
Project Manager (ext. 127)  
[stacey@rsgengineers.com](mailto:stacey@rsgengineers.com)

Attachments

Cc: Mr. David King, Shotwell Transfer Station, Inc.  
Ms. Michelle Pearson, Debris Removal Partners  
Mr. Bradley Bailey, NCDENR  
File

H: Projects Shotwell Transfer Station(s) Thornton Road (North Raleigh) King 07-1 (Thornton Road Transfer) Response to Comments - NCDENR Response Letter7-17-08.doc



North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director

Division of Waste Management

Michael F. Easley, Governor  
William G. Ross Jr., Secretary

July 10, 2008

Mr. Stacey Smith, P.E.  
Richardson Smith Garner & Associates, Inc.  
14 N. Boylan Avenue  
Raleigh, NC 27603

Re: Application for Thornton Road Mixed Waste Transfer Station  
Shotwell Transfer Station, Inc.  
Transfer of permit from PCM Construction  
Permit No. 92-27T  
Wake County, Document ID No. 5141

Dear Mr. Smith:

We have reviewed the document you submitted on June 3, 2008, on the behalf of Shotwell Transfer Station, Inc. Your document addressed comments we made concerning the Thornton Road Mixed Waste Transfer Station application. While many of our comments were addressed satisfactorily, additional information and clarification are needed. The item numbers in the following list refer to our comment in the May 14, 2008, letter.

1. Please state the acreage of the property and the acreage of the facility in the property description.
2. Please add the response to comment in the section of the application which addresses grading over the existing closed LCID.
3. Information requested was provided.
4. The required deeds were added; however, a short paragraph describing the property acquisition and the recombination of the lots should be added to the application for clarity.
5. Information requested was provided.
6. Correction made.
7. Correction made.
8. Correction made.
9. Comment addressed and correction made.
10. The information on the accounting and tracking software (PDOX) only addresses overall tracking of waste entering and leaving the site. It did not explain how operations will

manage the waste onsite to ensure that waste goes to proper landfill based on the service area of the landfill. Please provide that information and include it in the application.

11. The revised site plan did not show where brick and block to be recycled will be stored. Indicate on the site plan the "recycling area" that is mentioned for the storage of inert materials. Please clarify in the drawings or in the text of the report that engineered wood (such as particle board) will not be recycled. Show the storage area for concrete and brick on the site plan drawings, and provide the maximum size of storage. It should be stated that containers in the recycling storage area will be covered at the end of each day and during rain events.
12. Please add sentence to application report.
13. For wood recyclables including pallets, address how the material will be stored and managed such that no contaminated runoff enters groundwater or surface water. Section 2.7.2 should be corrected in that wood pallets and wood debris are not considered inert.
14. Please indicate in the report whether demolition debris will be sorted for recycling. Demolition debris could include materials that contain asbestos or other non-acceptable materials that were not properly sorted at the demolition site for disposal. If demolition debris is to be sorted in the recycling area, an asbestos screening plan is required.

*(Responses to Comments 15 and 16 were not in the same order as the letter. Comment numbers below match the number in the letter of May 14, 2008.)*

15. A drawing of the building layout was requested, but wasn't provided in the response. Please provide a drawing of the building which includes operation areas that were mentioned in the application, drains and piping to leachate tank, any physical separations between operation areas. Section 2.6.3(5) states that cardboard will be loaded into a compactor and the response states that a cardboard compactor will not be used. Please clarify which is correct and make any appropriate changes to the application.
16. The response indicates that a 100 CY trailer will be used for pallets, but the site plan states 40 CY. Please add this storage information to the text of the report. What is the maximum size of concrete and brick to be stored? Please clarify whether there is temporary recycle storage area in the building. If yes, what is the storage capacity of these areas? Section 2.6.3 indicates that recyclables will be stored in the building for up to 48 hours, and that roll-off containers will be in the transfer floor area. Please provide a sketch of the storage areas in the building and maximum size of each storage.
17. Section 2.7 – What is the "recycling area" that is used to store, separate, and contain commingled recyclables? Please differentiate in the report between the building sorting area and the recycling storage area north of the building.
18. Section 2.7.2 refers to the storage of inert materials. What are the inert "other re-usable new construction materials" that you are expecting to receive?
19. Correction made.
20. Information requested was provided. Please put this information in the application.
21. There wasn't a drawing L1 as indicated in the response. There is a drawing S3 which shows the profile from the leachate tank to the Raleigh sewer tie-in. Comparing 3.3 and

the drawing – (1) There is no detail of the floor drain system on the pad showing that it drains to the leachate tank. Tipping floor is at 224' and floor drain to tank is at 214'. How does it get there? The floor of the transfer station should be sloped to the floor drains, and this shown on a drawing. (2) 3.3.1 says leachate is pumped. Drawing S3 looks like gravity flow. (3) 3.3 states leachate may be pumped to a truck. Where is the connection for this in the facility? (4) How will filters and sludge from the leachate tank be disposed? Include information in application.

22. Please provide a notation in the legend to indicate which graphic refers to which ground cover.
23. Sections 3.4 and 3.5 - MSW transfer stations require daily wash down.
24. Correction made.
25. Add this information to the application as you did for the closed LCID. Who can we contact to ensure that the tires were properly disposed?
26. Please add this information to the application report.
27. Please address this issue in your application. Confirm that the software will calculate and compare the total weight of waste coming in versus the weight going out in both waste and recyclables.
28. Financial assurance is for the event of site abandonment or if the site is found in substantial non-compliance, so a worst case scenario is used for the cost estimate calculation, not the scenario that it would operate under normal conditions. The cost estimate should be equal to the cost to hire a third party to remove and clean up waste from the facility, haul, and dispose of the waste. The amount of waste used in the calculation should be equal to 5 days worth of transfer station volume plus the maximum amount of waste and product that could be stored at the facility at any time, including a full sorting pad. Costs should be calculated with everything, including the recycling area and inert area storage volumes, transported to an MSW landfill. Calculations should show distance to closest MSW landfill, gas and truck volume/trip estimates, current disposal cost of the nearest MSW landfill, site clean-up, and project management fees.
29. Information provided.
30. Comment addressed. This could be a condition in the PTC.

#### **Additional comments**

31. Is the site plan provided the final site plan? Have issues on the driveway location been resolved?
32. Please edit document again. Check numbering of sections. (For example, there are two sections 1.2.2.) Ensure that references to sections are correct. (For example, section 1.12.1 references 1.10.2 for PPE. I believe the correct reference 1.12.2).

Please submit responses to comments as replacement pages to the December 2007 report. Replacement pages should list the date the submittal was prepared, the revision number, and page number. The cover sheet should be modified to include revision or final dates, and the

Mr. Stacey Smith. P.E.  
July 8, 2008  
Page 4 of 4

table of contents should be modified, if necessary. Only one paper copy is necessary, but an electronic copy is also needed, either sent by email, or on a CD.

If you have any questions or comments, please contact me at (919) 508-8542, or by email at [pat.backus@ncmail.net](mailto:pat.backus@ncmail.net).

Sincerely,

A handwritten signature in cursive script that reads "Pat Backus". The signature is enclosed in a large, thin, hand-drawn oval.

Patricia M. Backus, P.E.  
Environmental Engineer  
Solid Waste Section

cc: David King, Shotwell Transfer Station, Inc.  
Jason Watkins, Central Regional Supervisor, DWM  
Brad Bailey, Waste Management Specialist, DWM

Appendix A

Revised Executive Summary

**PERMIT APPLICATION**

**Thornton Road  
Mixed Waste Transfer & Recycling Center  
Raleigh, North Carolina**

Prepared for:

**Shotwell Transfer Station, Inc.**  
Raleigh, North Carolina

**November 2007  
Revised July 2008**

**PERMIT ISSUE DOCUMENTS**



## EXECUTIVE SUMMARY

### GENERAL

The following is a Transfer Facility Permit Application submitted on behalf of Shotwell Transfer Station, Inc. (Shotwell) for the construction and operation of a Mixed Waste Transfer Station and Recycling Center over the closed<sup>1</sup> Neuse Demolition Landfill and at the current location of Shotwell Transfer Station, Inc.<sup>2</sup> Construction Waste Transfer Facility (NC Solid Waste Permit No. 92-27T), *formerly known as PCM North Raleigh C&D Transfer Facility*, site in Wake County, North Carolina. It is the intent of Shotwell to expand the existing facility operations to include MSW and C&D transfer operations and recycling upon approval of this application.

This submittal focuses on the application and operational requirements of the proposed transfer and recycling facility. The attachments included herein comply with the submittal requirements under 15A NCAC 13B .0400 (Transfer Facilities), *Guidelines for the Preparation of Permit Applications for Transfer*, and applicable sections of Session Law 2007-550 (Solid Waste Management Act of 2007).

### REGULATORY REFERENCES

This submittal has been prepared in accordance with the requirements of the North Carolina Transfer Facilities Rules (15A NCAC 13B.0400), *Guidance for Preparation of Permit Applications for Transfer Facilities*, Wake County Stormwater Ordinances, and the North Carolina Sedimentation Control Rules (15A NCAC 4) which are enforced by the Division of Waste Management (DWM), Wake County Environmental Services, and the Division of Land Quality, respectively, of the North Carolina Department of Environment and Natural Resources.

Included in this document are the following attachments (*with applicable rule(s) in italics*):

Legal Description of the Property (.0401 (3));  
Erosion and Sediment Control Plan (.0401 (3));  
Landfill Closure Documentation (.0401 (3));  
Wetlands Determinations (.0401 (3));  
Zoning Documentation (.0401 (2));  
Operations Manual (.0402);  
Traffic Requirements (§130A-295.5);  
Financial Assurance (§130A-294 (b2)); and  
Project Drawings (.0401(1)).

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<sup>1</sup> Correspondence dated February 8, 1999 from Mr. Wayne Woodlief of Wake County to Mr. Wayne Adams of Neuse Landfill, Inc. accepting closure of the facility.

<sup>2</sup> Correspondence dated May 4, 2007 from Mr. J. Gardner of RSG to Mr. E. Mussler, NCDENR requesting change in owner/applicant/operator.

## PROPERTY DESCRIPTION

The development is proposed on property owned by Dynasty Holdings, LLC. The complete tract is approximately 9.85 acres which is accessed from central portion of its southern boundary as shown in the Project Drawings provided in **Attachment K**.

The property is described in three (3) deed instruments as follows:

1. Wake County Deed Book 12249, Pages 225-227;
2. Wake County Deed Book 12876, Pages 394-397; and
3. Wake County Deed Book 12876, Pages 398-403.

The complete property is further clarified as “New Lot 3 Area” by a Recombination Plat described in Wake County Book of Maps 2007, Page 2838. It is noted that a series of property swaps occurred during the development of the site such that the complete property is resolved by adding and subtracting individual tracts from an initial “Old Lot Area” described in the Recombination Plat. Legal descriptions for this property is included in **Attachment A**.

## PROPERTY OWNERSHIP AND OPERATION

The proposed facility will be operated by Shotwell Transfer Station, Inc. on property owned by Dynasty Holdings, LLC as described in correspondence to the Division dated May 4, 2007. A Landowner Authorization is provided as **Attachment B**. The owner of Dynasty formed Shotwell Transfer Station, Inc. to operate the facility. Articles of Incorporation for this new entity are also provided as **Attachment B**. *It is our understanding that the both the owner, Dynasty Holdings, LLC, and the operator, Shotwell Transfer Station, Inc., will be named on the permit.*

Owner and Operator: Dynasty Holdings, LLC & Shotwell Transfer Station, Inc.  
Contact: Mr. David King  
Address: 3209 Gresham Lake Road, Suite 115  
Raleigh, North Carolina 27615  
Phone: (919) 773-9899  
Email: [daviddebris@bellsouth.net](mailto:daviddebris@bellsouth.net)

## APPLICATION REQUIREMENTS

The following sections correspond with the permit application for a treatment and processing facility as outlined in the North Carolina Solid Waste Transfer Facilities Rules. The site plan drawing was prepared by a professional engineer duly registered in the State of North Carolina.

## SITING AND DESIGN STANDARDS

The following sections explain how the transfer and recycling facility complies with siting and design standards in Transfer Facilities Guidelines provided by the North Carolina Division of Waste Management and 15A NCAC 13B.0400.

## **Floodplain**

The transfer and recycling facility is not located within a floodplain. However, the floodplain boundaries which border the property are shown on the project site plan and a copy of the flood plain map is included in **Attachment C**.

## **Surface Water Quality Standards**

The facility is located over the closed Neuse Demolition Landfill and is bordered by wetlands and shallow surface water bodies (“beaver impoundments”) to the north. An un-named tributary is located to the northwest of the site that discharges into the Neuse River. All runoff within the facility boundary is controlled through channels and by two (2) sediment basins prior to discharge off site. All site development will be conducted in accordance with the Neuse River Basin - Nutrient Sensitive Waters Management Strategy (15A NCAC 2B .0235) and Wake County Stormwater Ordinances. The site does not include any wetlands within the development based on recent evaluation, currently under review by the Division of Water Quality and the Army Corps of Engineers. A copy of a preliminary wetlands evaluation determination by Jonathon Hopkins of Delineation Plus and surveyed by Murphy Geomatics is included in **Attachment D**.

## **Property Line Buffer**

Although transfer facilities do not have a minimum buffer requirement, City of Raleigh Zoning buffers exist as follows:

- 50 foot buffer from development along the road frontage
- 20 foot side yard buffer from development within the I-1 zoning district
- 40 foot transitional side yard buffer from development adjacent to the R-4 zoning district.

## **Residential and Well Buffers**

The nearest residence is approximately 500 feet from the transfer area. The transfer area, at its closed point, is greater than 300 feet from the property line bordering these residences.

## **Public Access**

The site will not allow uncontrolled public access. The entrance road to the site passes the guard house. The boundaries outside the transfer and recycling areas currently include wetlands to the north and east, Thornton Road to the south, and a residential property to the west. The site will be protected from uncontrolled access through the use of fencing and gates.

## **Sedimentation Pollution Control Law**

A Sedimentation and Erosion Control Plan and Stormwater Plan will be submitted to Wake County for approval. A preliminary plan is included in **Attachment E**. All future correspondence will be copied to the Division of Waste Management. This plan outlines measures to be taken during facility construction to minimize any sediment run-off due to land disturbance and will comply with both Wake County and City of Raleigh erosion control and stormwater ordinances.

## **Existing Closed Neuse Demolition Landfill**

The proposed development occurs over a closed land clearing and inert debris (LCID) landfill which will require additional design and management concerns as follows:

- All structures shall be equipped with gas monitoring equipment to detect, at a minimum, the presence of H<sub>2</sub>S and CH<sub>4</sub>;
- All sediment basins shall be lined with a low permeability liner to minimize infiltration;
- All grading activities shall be conducted to replace a minimum of one (1) foot of soil cover and shall not allow standing water inside the limits of the closed landfill.;
- Areas where LCID materials are encountered will be simply excavated and hauled to the Shotwell Landfill, Inc. C&D facility (NC Solid Waste Permit No. 92-26) for either grinding or disposal. If unacceptable non-hazardous, non-C&D or non-LCID wastes are encountered, they will be containerized and covered until a load is generated wherein it will be transported to a facility licensed to accept MSW materials such as South Wake Landfill (NC Solid Waste Permit No. 92-22). If hazardous wastes are encountered, construction operations will cease and will be assessed by a hazardous removal contractor wherein the Division of Waste Management will be notified and an appropriate response plan will be developed dependent on the nature of the hazard. All waste manifests shall be obtained and recorded.;
- All tires encountered will be disposed at the North Wake Landfill (NC Solid Waste Permit No. 92-09); and
- All structures shall be designed by a licensed Professional Engineer.

The Neuse Demolition Landfill was operated under a Wake County Solid Waste Permit and was closed in 1999. A copy of the landfill permit and the closure acceptance by Mr. Wayne Woodlief of Wake County is included as **Attachment F**.

## **Existing Transfer Area Operations**

Most all of the new construction associated with this application will not interfere with existing operation. Once the new transfer station is ready for operations and approved by the Division, operations will transfer away from the existing area. This area will then be graded and placed into its final condition as shown on the Permit Drawings.

## **ZONING**

A letter from the City of Raleigh Planning & Zoning Department, the agency having zoning jurisdiction, has been obtained for the proposed project and has been included in **Attachment G**. The proposed transfer and recycling activities are allowed within the existing zoning.

## **OPERATIONS MANUAL**

The Operations Manual outlines and describes protocols for facility operation and maintenance and was prepared to provide facility personnel with a clear understanding of how the Design Engineer assumed that the completed facility would be operated. Along with the Project Drawings, the Operations Manual has been prepared to comply with the requirements of 15A NCAC 13B.0402. A copy of the Operations Manual is included in **Attachment H**

## **TRAFFIC STUDY**

In accordance with Session Law 2007-550, documentation from Mr. J.W. Bowman, P.E., Division Engineer with the North Carolina Department of Transportation (DOT) has been obtained and has been included in **Attachment I**. The proposed transfer and recycling center will not have a substantial impact on the limited controlled access highway (US 1).

## **FINANCIAL ASSURANCE**

In accordance with Session Law 2007-550, an estimate has been provided for financial assurance of the transfer and recycling facility center. A copy of the estimate has been included in **Attachment J**.

Appendix B

Revised Operations Manual

# **Operations Manual**

**Thornton Road  
Mixed Waste Transfer & Recycling Center  
Raleigh, North Carolina**

Prepared for:  
**Shotwell Transfer Station, Inc.**  
Raleigh, North Carolina

**November 2007  
Revised July 2008**



**SHOTWELL TRANSFER STATION, INC.  
THORNTON ROAD MIXED WASTE TRANSFER & RECYCLING CENTER**

**OPERATIONS MANUAL**

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## SECTION 1.0 GENERAL FACILITY OPERATIONS

### 1.1 OVERVIEW

This Operations Manual was prepared for operations of the Thornton Road Mixed Waste Transfer Station facility (Permit No. 92-27T) located at 5565 Thornton Road (SR 2043) in Raleigh, North Carolina as shown in **Figure 1**. This document discusses the operation of the transfer station and other solid waste management activities as follows:

- C&D Transfer Station;
- MSW Transfer Station; and
- Recycling Center.

Refer to **Figure 2** for the general layout of the facility.

The information contained herein was prepared to provide personnel with an understanding of how the Design Engineer envisioned that the completed facility would be operated. While deviations from the operations outlined here may be acceptable, they should be reviewed and approved by the Design Engineer. Please refer to the appropriate permit application for a detailed discussion and calculations for the individual components of operation and process unit.

All personnel involved with the management or supervision of the facility shall review the documents and update from time to time as needed. A copy of this Operations Manual will be kept at the facility and will be available for use at all times.

### 1.2 CONTACT INFORMATION

All correspondence and questions concerning the operation of the Thornton Road Transfer Station should be directed to the appropriate company and regulatory personnel listed below. For fire or police emergencies dial 911.

#### 1.2.1 **Shotwell Transfer Station, Inc.** (Operator)

Shotwell Transfer Station, Inc.  
3209 Gresham Lake Road, Suite 115  
Raleigh, North Carolina, NC 27615  
Phone: (919) 773-9899  
Fax: (919) 773-9898

Contact: David King  
[daviddbris@bellsouth.net](mailto:daviddbris@bellsouth.net)

### **1.2.2 Dynasty Holdings, LLC (Owner)**

Dynasty Holdings, LLC  
3209 Gresham Lake Road, Suite 115  
Raleigh, North Carolina, NC 27615  
Phone: (919) 773-9899  
Fax: (919) 773-9898

Contact: David King  
[daviddbris@bellsouth.net](mailto:daviddbris@bellsouth.net)

### **1.2.3 Richardson Smith Gardner & Associates, Inc. (Design Engineer)**

Richardson Smith Gardner & Associates, Inc.  
14 N. Boylan Avenue  
Raleigh, North Carolina, NC 27603  
Phone: (919) 828-0577  
Fax: (919) 828-3899

Contact: Stacey A. Smith, P.E.  
[stacey@rsgengineers.com](mailto:stacey@rsgengineers.com)

### **1.2.4 North Carolina Department of Environment and Natural Resources**

North Carolina DENR - Raleigh Central Office  
401 Oberlin Road, Suite 150  
Raleigh, NC 27605  
Phone: (919) 508-8400  
Fax: (919) 715-3605

Division of Waste Management (DWM) - Solid Waste Section:

Field Operations Branch Head:	Mark Poindexter
Eastern Regional Supervisor:	Jason Watkins
Waste Management Specialist:	Bradley Bailey

## **1.3 ACCESS CONTROL**

Limiting access to the solid waste management facility is important for the following reasons:

- Unauthorized and illegal dumping of waste materials is prevented.
- Trespassing, and injury resulting therefrom, is discouraged.
- The risk of vandalism is greatly reduced.

Access to active areas of the transfer stations will be controlled by a combination of fences and natural barriers, and strictly enforced operating hours. An attendant will be on duty at all times

when the facility is open for public use to enforce access restrictions.

### **1.3.1 Physical Restraints**

The site will be accessed by an entrance on Thornton Road as shown on **Figure 2**. Scales and a scale house and office are provided at the entrance. All waste will have been weighed prior to being processed on the site. The entrance will have a gate which will be securely locked during non-operating hours.

### **1.3.2 Security**

Frequent inspections of gates and fences will be performed by facility personnel. Evidence of trespassing, vandalism, or illegal operation will be reported to the Owner.

## **1.4 SIGNAGE**

A prominent sign(s) containing the information required by the DWM will be placed at the main facility entrance. This sign(s) will provide information on operating hours, operating procedures, and acceptable wastes. Additional signage will be provided as necessary within the facility to distinctly distinguish the roadway to the transfer station and recycling area(s). Service and maintenance roads for use by operations personnel will be clearly marked and barriers (e.g., traffic cones, barrels, etc.) will be provided as required.

## **1.5 COMMUNICATIONS**

The scale house/office have telephones in case of emergency and for the conduct of day-to-day business. Emergency telephone numbers are displayed in the scale house and office.

## **1.6 FACILITY OPERATING HOURS**

Normal hours of operation will be 6:00 A.M. to 5:00 P.M. Monday to Friday and 7:00 A.M. to 2:00 P.M. Saturday. Facility will be closed on Sunday.

In the event of disaster or other emergency situations the supervisor will request approval from the commission's regional office to allow additional temporary operating hours.

## **1.7 LITTER CONTROL**

The Transfer Building and litter fencing within the site provide barriers against scattering litter; the perimeter fence acts as barrier to keep litter contained within the site. Transfer Station Operators pick up litter within the site daily and respond to weather and heavy wind conditions that may spread litter.

The litter control crew picks up litter outside the site fences and on access roads each weekday. Any load that is not secured in a manner that would prevent material from leaving the vehicle while it is in motion is subject to an additional fee. Transfer trailers are covered by heavy tarp

lids to minimize litter and potential for birds to enter the trailer and spread litter.

## **1.8 FIRE AND SAFETY**

### **1.8.1 Fire Control**

The possibility of fire within the transfer station or a piece of equipment must be anticipated in the daily operation of the facility. Fire suppression equipment shall be provided to control accidental fires and arrangements shall be made with the local fire protection agency. The transfer station building shall be equipped with hose bibs located on each wall of the facility an appropriate number of fire extinguishers to effectively control accidental fires. A combination of factory installed fire suppression systems and/or portable fire extinguishers will be operational on all heavy pieces of equipment at all times. For larger or more serious outbreaks, the local fire department will respond.

The Owner will verbally notify the DWM (see **Section 1.2**) within 24 hours of discovery of a fire within any transfer or recycling area. In addition, written documentation describing the fire, the actions carried out to extinguish the fire, and a strategy for preventing future occurrences will be provided to the DWM within 15 days following any such occurrence.

### **1.8.2 Safety**

All aspects of the operation of the facility were developed with the health and safety of operations staff, customers, and neighbors in mind. Prior to commencement of operations, a member of the operating staff will be designated site safety officer. This individual, together with the facility's management will modify the site safety and emergency response program to remain consistent with National Solid Waste Management Association and Occupational Safety and Health Administration (OSHA) guidance.

Safety equipment provided includes equipment rollover protective cabs, seat belts, audible reverse warning devices, hard hats, safety shoes, and first aid kits. All personnel will be encouraged to complete the American Red Cross Basic First Aid Course. Other safety requirements as designated by the Owner will also be implemented.

## **1.9 SEVERE WEATHER CONDITIONS**

Unusual weather conditions can directly affect the operation of the facility. Some of these weather conditions and recommended operational responses are as follows.

### **1.9.1 Ice Storms**

An ice storm can make access to the facility dangerous, prevent movement and, thus, may require closure of the facility until the ice is removed or has melted.

### **1.9.2 Heavy Rains**

Exposed soil surfaces can create a muddy situation in some portions of the facility during rainy periods. The control of drainage and use of crushed stone on unpaved roads should provide all-weather access for the site and promote drainage away from critical areas. In areas where the aggregate surface is washed away or otherwise damaged, new aggregate should be used for repair.

Intense rains can affect leachate managements systems. As applicable, staff shall maintain adequate temporary storage capacity in the leachate management systems. After such a rain event, inspection by personnel will be initiated and corrective measures taken to dispose of any additional leachate before the next rainfall.

### **1.9.3 Electrical Storms**

The open recycling areas of the facility are susceptible to the hazards of an electrical storm. If necessary, recycling activities will be temporarily suspended during such an event. To guarantee the safety of all field personnel, refuge will be taken in the on-site buildings or in rubber-tired vehicles.

### **1.9.4 Windy Conditions**

Facility operations during a particularly windy period may require that the active tipping area be temporarily shifted to a more sheltered area.

### **1.9.5 Violent Storms**

In the event of hurricane, tornado, or severe winter storm warning issued by the National Weather Service, facility operations may be temporarily suspended until the warning is lifted.

## **1.10 EQUIPMENT REQUIREMENTS**

The Owner will maintain on-site equipment required to perform the necessary transfer and recycling activities. Periodic maintenance of all equipment, and minor and major repair work will be performed at designated maintenance zones.

## **1.11 PERSONNEL REQUIREMENTS**

At least one member of the supervisory staff will be experienced in the management of transfer station operations. Each facility employee will go through an annual training course (led by supervisory staff). As part of this training, personnel learn to recognize loads which may contain prohibited wastes.

## **1.12 HEALTH AND SAFETY**

All aspects of the transfer and recycling center operations were developed with the health and safety of the operating staff, customers, and neighbors in mind. Prior to commencement of operations of the facility, a member of the operating staff will be designated site safety officer. This individual, together with the facility's management will modify the site safety and emergency response program to remain consistent with National Solid Waste Management Association and Occupational Safety and Health Administration (OSHA) guidance.

Safety equipment provided includes equipment rollover protective cabs, seat belts, audible reverse warning devices, hard hats, safety shoes, and first aid kits. Facility personnel will be encouraged to complete the American Red Cross Basic First Aid Course. Other safety requirements as designated by the Owner will also be implemented.

Each facility employee will go through annual training course in health and safety (led by supervisory staff). All training shall be documented and attested to by signatures of the trainer and trainee. The following are some general recommendations for the health and safety of workers at the Thornton Road Mixed Waste Transfer and Recycling Center.

### **1.12.1 Personal Hygiene**

The following items are recommended as a minimum of practice:

- Wash hands before eating, drinking, or smoking.
- Wear personal protective equipment as described in **Section 1.12.2**.
- Wash, disinfect, and bandage ANY cut, no matter how small it is. Any break in the skin can become a source of infection.
- Keep fingernails closely trimmed and clean (dirty nails can harbor pathogens).

### **1.12.2 Personal Protective Equipment**

Personal Protective Equipment (PPE) must be evaluated as to the level of protection necessary for particular operating conditions and then made available to facility employees. The list below includes the PPE typically used and/or required in a solid waste management facility workplace.

- Safety shoes with steel toes.
- Noise reduction protection should be used in areas where extended exposure to continuous high decibel levels are expected.
- Disposable rubber latex or chemical resistant gloves for handling and/or sampling of waste materials.
- Dust filter masks

Following use, PPE's should be disposed of or adequately cleaned, dried, or readied for reuse.

### **1.12.3 Mechanical Equipment Hazard Prevention**

The loaders and other equipment should be operated with care and caution. All safety equipment such as horns, backup alarms, and lights should be functional. A Lockout-Tagout program shall be used to identify equipment in need or under repair and insure that operation is “off-limits” prior to maintenance or repair. All operators shall be trained in the proper operation of equipment.

### **1.12.4 Employee Health and Safety**

Some general safety rules are:

- Consider safety first when planning and conducting activities.
- Review the equipment O&M Manual prior to attempting repairs/changes.
- Remember the buddy system in case of repair of mechanical equipment
- Post emergency contact phone numbers.
- Provide easy and visible access to the Right to Know materials.
- Provide easy and visible access to the first aid kit and fire extinguishers.

### **1.12.5 Physical Exposure**

Facility personnel may come in contact with the fluids, solids, and airborne constituents found at the transfer and recycling center. Routine training should be conducted regarding the individual and collective materials used in the recycling process and their associated hazards. Training concerning safe work practices around these potential exposures should use equipment and proper disposal procedures.

### **1.12.6 Material Safety Data Sheets**

Material Safety Data Sheets (MSDS) shall be collected on every waste (if available) that enters the facility. Information shall also be made available for all chemicals stored on site for use by the County. MSDS sheets shall be stored in a location with all other Right to Know information for the site.

## **1.13 UTILITIES**

Electrical power, water, and telephone will be provided at the scale house/office. Restrooms will be provided at the site.

## **1.14 RECORD KEEPING PROGRAM**

The Owner will maintain the following records in an operating record at the landfill:

- A. Waste inspection records (see **Section 2.4**);
- B. Daily tonnage records - including source of generation, scale certifications;
- C. Waste determination records;

- D. List of generators and haulers that have attempted to dispose of restricted wastes;
- E. Employee training procedures and records of training completed;
- F. Leachate records (see **Section 3.3.3**);
- G. Annual facility reports;
- H. Cost estimates or financial assurance documentation.

The operating record will be kept up to date by the Owner or his designee. It will be presented upon request to the DWM for inspection. A copy of this **Operations Manual** will be kept at the facility and will be available for use at all times.

## SECTION 2.0 WASTE HANDLING OPERATIONS

### 2.1 OVERVIEW

This section describes the required waste handling operations for the Thornton Road Transfer Station facility. In addition to the MSW and C&D waste received at this facility, the facility also processes recyclables new construction wastes such as lumber, ferrous and non-ferrous metals, etc. These materials are stored at the facility until there are sufficient quantities for pick up by various recycling contractors.

### 2.2 ACCEPTABLE WASTES

#### 2.2.1 MSW Transfer Station

Only the waste as defined by NC General Statute 130A-290 (a) (18a) may be received at the MSW transfer station.

#### 2.2.2 C&D Transfer Station

Only the following wastes may be received at the C&D transfer station:

- Construction and Demolition Debris Waste: (Waste or debris from construction, remodeling, repair, or demolition operations on pavement or other structures)
- Inert Debris Waste: (Concrete, brick, concrete block, uncontaminated soils and rock, untreated and unpainted wood, etc.)
- Land Clearing & Inert Debris: as defined by G.S. 130A-290 (a) (15), specifically, waste that is generated solely from land-clearing activities, such as stumps, trees, etc.
- Asphalt: in accordance with G.S. 130A-294 (m)
- Other Wastes as Approved by the Solid Waste Section of the Division of Waste Management.

#### 2.2.3 Recycling Area

Only the following wastes may be received at the facility recycling area or as source separated in the transfer area(s):

- Non-treated, non-painted clean wood (lumber)<sup>1</sup>;
- Pallets (damaged and un-damaged);
- Cardboard;
- Brick and block (undamaged and un-painted); and
- Metal (ferrous and non-ferrous).

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<sup>1</sup> Engineered wood products such as particle board or glue laminated timbers are not acceptable for recycling.

## 2.3 PROHIBITED WASTES

### 2.3.1 MSW Transfer Station

Only wastes as defined in **Section 2.2.1** above may be accepted in the MSW transfer station. No other wastes may be accepted including the following wastes:

- Whole Scrap Tires
- Used Oil
- White Goods
- Lead Acid Batteries
- Yard Waste
- Construction and Demolition Debris (C&D) (Except as allowed in the C&D transfer station)
- Discarded computer equipment
- Oyster Shells
- Rigid plastic containers
- Aluminum Cans

In addition, operating criteria prohibit other materials from receipt within the MSW transfer station. These materials include:

- Hazardous waste as defined by NC General Statute 130A-290 (a) (8), including hazardous waste from conditionally exempt small quantity generators.
- Polychlorinated biphenyls (PCB) wastes as defined in 40 CFR 761 with the exception of trace amounts found in materials such as consumer electronics.
- Bulk or non-containerized liquid wastes unless the waste is household waste other than septic waste and waste oil. A liquid determination will be performed by the paint filter test (see **Appendix A** for apparatus and procedure).
- Containers holding liquid wastes unless the waste is household waste.

### 2.3.2 C&D Transfer Station

Only wastes, as defined in **Section 2.2.2** above may be accepted in the C&D transfer station. No other wastes may be accepted.

## 2.4 WASTE SCREENING PROGRAMS

In order to assure that prohibited wastes are not entering the facility, screening programs have been implemented. Waste received at both the scale house entrance and waste taken to the tipping areas or recycling areas are by trained personnel. These individuals have been trained to spot indications of suspicious wastes, including: hazardous placarding or markings, liquids,

powders or dusts, sludges, bright or unusual colors, drums or commercial size containers, and "chemical" odors. Screening programs for visual and olfactory characteristics of prohibited wastes are an ongoing part of the facility operation.

#### **2.4.1 Waste Receiving and Inspection**

All vehicles must stop at the scale house located at the entrance of the facility and visitors are required to sign-in. All waste transportation vehicles are weighed and the content of the load assessed. The scale attendant(s) requests from the driver of the vehicle a description of the waste it is carrying to ensure that unacceptable waste is not allowed into the facility. The attendant(s) then visually checks the vehicle as it crosses the scale. Signs informing users of the acceptable and unacceptable types of waste are posted at the scale house. Once passing the scales, the vehicles are routed to the appropriate transfer or recycling area as appropriate.

Vehicles are randomly selected for screening on a regular basis, depending on personnel available. At least one vehicle per week will be randomly selected by inspection personnel. A random truck number and time will be selected (e.g., the tenth load after 10:00 a.m.) on the day of inspections. However, if something looks suspicious is spotted in any waste load, that load is inspected further.

Vehicles selected for inspection are directed to an area on the tipping floor where the vehicle will be unloaded. Waste is carefully spread using suitable equipment. An attendant trained to identify wastes that are unacceptable inspects the waste discharged at the screening area. If unacceptable waste is found, the load will be isolated, reloaded, and the generator/hauler will be logged and escorted out of the facility. For unacceptable wastes that are non-hazardous, the Owner will then notify officials of the DWM (see **Section 1.2**) within 24 hours of attempted disposal of any waste the facility is not permitted to receive in order to determine the proper course of action. The hauler is responsible for removing unacceptable waste from the facility property.

If no unacceptable waste is found, the load will be pushed into the transfer trailer and/or equipment. All random waste inspections will be documented by operations staff using the waste screening form provided in **Appendix B**.

In addition to random waste screening described above, waste unloaded on the tipping floor face will be inspected by the equipment operators, trained to spot unacceptable wastes, before and during pushing into the transfer trailer and/or equipment. Any suspicious looking waste is reported immediately to the designated primary inspector for further evaluation.

## **2.5 FACILITY OPERATIONS**

### **2.5.1 Operating Capacity**

The Operating Capacity for the transfer area is estimated to be approximately 1,000 tons per day of mixed waste (MSW and C&D wastes).

### **2.5.2 Service Area**

The anticipated service area for the transfer facility (subject to change) is generally anticipated to be concentrated in Wake County and its surrounding counties as follows: Johnston, Durham, Granville, Franklin, Nash, Harnett, and Chatham. Waste will not be accepted from out of state or from Orange County.

### **2.5.3 Disposal Facility**

The anticipated disposal facilities for the transfer station (subject to change) includes any facility in the State of North Carolina or the Commonwealth of Virginia that holds a solid waste permit for the specific waste disposed. However, is generally anticipated for disposal at the following facilities (In order of priority):

#### **MSW**

1. Upper Piedmont Regional Landfill (Permit No. 73-04)
2. Sampson County MSW Landfill (Permit No. 82-02)
3. South Wake MSW Landfill (Permit No. 92-22)

#### **C&D**

1. Shotwell C&D Landfill (Permit No. 92-26)
2. WCA Material Recovery C&D Landfill (Permit No. 92-31)
3. Red Rock Disposal C&D Landfill (Permit No. 92-28)

In the event that new disposal facility agreements are negotiated other than the list (above). Shotwell will provide a notice to the Division of Waste Management within 30 calendar days.

### **2.5.4 Personnel Requirements**

The anticipated personnel requirements for operation and maintenance of the site are listed in the following table.

<b>Description</b>	<b>Primary Function (Allocation)</b>
1) Site Manager	Overall management of the facility
2) Scale house Attendant	Receiving and weight for incoming loads
3) Operators (3)	Management of tipping floor and recycling areas
4) Commercial Drivers (4-6)*	Transfer of C&D and MSW Waste
5) Labor (3)	General labor and operational staff around the site

\* Commercial drivers subject to change in response to actual volume of waste received.

### 2.5.5 Equipment Requirements

The anticipated equipment requirements for operation and maintenance of the site are listed in the following table.

<b>Description</b>	<b>Primary Function (Allocation)</b>
1) Excavator	Recycling operations and sorting
2) Front End Loader	Loading, recycling, and site cleanup
3) Skid Steer Loader	Loading, recycling, and site cleanup
4) Transfer Trucks (4-6)*	Collection and transfer of C&D and MSW Waste
5) Compaction System	Package product system to achieve higher compaction rates of MSW in transfer operations
6) Dump Truck	Hauling material around site.

\* Commercial drivers subject to change in response to actual volume of waste received.

### 2.5.6 Building Features

The anticipated building features of the transfer area are listed in the following table.

<b>Description</b>	<b>MSW</b>	<b>C&amp;D</b>
1) Roof	Yes	Yes
2) Sides (3)	Yes	Yes
3) Concrete Floor	Yes	Yes
4) Leachate Collection and Storage	Yes	Yes
5) Ventilation	Yes	Yes
6) Water Supply	Yes	Yes
7) Lighting	Yes	Yes
8) Interior Office & Bathrooms	No	No
9) Explosive Gas Monitoring	Yes	Yes
10) Communications (Telephone, Radios, Cell Phones)	Yes	Yes
11) Fire Suppression/Sprinkler System	No	No

## **2.6 TRANSFER OPERATIONS**

### **2.6.1 Access**

Traffic will be clearly directed to the appropriate transfer or recycling area. For the transfer area(s). Traffic speed on the site should be less than 10 MPH. Rutting of gravel roadway surfaces must be repaired by placement of additional gravel on the roadway and not solely by grading the rut. This will maintain the separator geotextile placed below most gravel roadway surfaces.

### **2.6.2 General Procedures**

The transfer operations will be conducted in accordance with the approved Operation Plan and conditions of the Solid Waste Permit issued by the North Carolina Division of Solid Waste Management (DWM).

Facility operations are anticipated as follows:

1. Collection vehicles delivering waste to the facility will enter through the main entrance;
2. Pass by and over the scales and scalehouse for weight;
3. Continue along the access road until reaching the transfer station tipping area or recycling area;
4. The tipping area has “push” walls running along the interior of the building that direct the waste to feed “hoppers”overlying the transfer trailers and/or equipment on the lower level of the building. The building is divided into two separate tipping areas, one for MSW and one for C&D. The attendant will direct vehicles, waiting to unload, to back into the facility through the entrance. Adequate area is available in front of the transfer area for drivers to queue their vehicles into a backing maneuver. Station operating personnel will be on the station floor to direct and guide the vehicles.
5. The vehicles will back onto the tipping floor to an area designated by the attendant. MSW vehicles will be directed to one side of the floor, whereas C&D vehicles will be directed to the opposite portion of the building.
6. Once the vehicle is in position, the waste load will be discharged directly onto the tipping floor.
7. A spotter will inspect the discharged waste before it is mixed with other waste on the tipping floor and pushed by a rubber-tired loader into the open top transfer trailers, specifically designed for hauling MSW and C&D wastes, respectively, located in the lower level of the Transfer Station. All MSW waste will stay in the covered area of the transfer station.

### **2.6.3 Recycling/Source Separation**

As a means of capturing recyclable materials and/or waste screening, source separation will be conducted on the tipping floor as follows:

1. The track hoe, loader, or laborers will separate materials to be recycled and/or

processed from the loads before the waste is pushed into the open top transfer trailers. It is anticipated that most of the recyclables and materials to be separated will arrive at the transfer area as C&D waste. Demolition debris will not be recycled and/or processed and will be directly pushed into the transfer vehicle. Asbestos (known) containing C&D will not be accepted. MSW wastes will not be recycled and/or processed.

2. Materials to be recycled and/or processed may stay on the floor of the building (not in containers) for no longer than the close of the business day. At the end of each day, all recyclable materials shall be transported by skid steer loader, etc. to the recycling area in appropriately labeled bins or roll-off containers.
3. Treated wood and/or engineered wood products (any wood other than virgin wood) waste must be discarded in the C&D trailer.
4. Materials, as defined in **Section 2.2.3**, to be recycled will be pulled from the C&D waste and loaded into roll-off containers in the transfer floor area or immediately outside the transfer station to the recycling area in appropriately labeled bins or roll-off containers.
5. Cardboard will be transported to the recycling area into an appropriately labeled container.
6. Concrete (cement and asphaltic/bituminous) may be delivered and stockpiled at the limits of the recycling area until a load is generated or it is removed from the site for sale as fill, aggregate, etc., as markets allow.

#### **2.6.4 Transfer Manifest Documentation**

Shotwell employs a truck scale data management software program to track all inbound and outbound waste. Inbound traffic will follow procedures outlined in **Section 2.6.2**. Outbound transfer operations are anticipated as follows:

1. Once the transfer trailer is full, the driver will exit over the scales and scalehouse for weight;
2. The scalehouse attendant will prepare a load summary including weight and a source summary for all wastes received in that trailer's load. The attendant will then instruct the driver to the appropriate disposal facility as outlined in **Section 2.5.3** based on waste type and/or source summary.

### **2.7 RECYCLING AREA OPERATIONS**

The facility's recycling area located north of the transfer station is used to store, separate, and contain commingled recyclable materials from source separated from the transfer station and/or pre-sorted materials such as new C&D materials which may be directly off-loaded into an appropriate container. A temporary recycle storage area is included in the transfer station tipping floor prior to storage in this area which must be cleaned each day. The facility is

equipped with equipment to facilitate hand sorting of materials, and bins for storage as defined in **Section 2.5.5**.

### **2.7.1 Containers**

Containers (generally 8'x20' or 8'x15') holding various recyclable, separated, or other transfer related items will be stored in the recycling area. The containers will be removed from the site as they are filled.

### **2.7.2 Other Storage Areas**

All other recyclable waste products will be stored around the recycling area. These products will be maintained in discrete piles and/or containers as follows:

- Wood pallets will be delivered and containerized (~100 CY);
- Concrete/asphalt materials will be delivered and stockpiled (~100 CY); and
- Clean wood debris will be delivered and containerized (~100 CY).

### **2.7.3 Markets**

The final destination of the recyclable materials separated from the waste may vary depending on market prices for such materials. However, final markets are anticipated as follows:

- a. Metals: TT&E, Wise Recycling, Raleigh Metals, etc.
- b. Pallets: Shotwell C&D Landfill for grinding to Craven County Waste to Energy (WTE) or McGill Environmental for compost.
- c. Clean Wood: Shotwell C&D Landfill for grinding to Craven County Waste to Energy (WTE) or McGill Environmental for compost.
- d. Cardboard: Paper Stock Dealers, Sonoco Products, etc.

No grinding or composting will be performed on-site.

## **SECTION 3.0 ENVIRONMENTAL MANAGEMENT**

### **3.1 OVERVIEW**

This section reviews the overall environmental management tasks required for the successful operation of the facility.

### **3.2 SURFACE WATER CONTROL**

As used herein, the definition of “surface water” is water which results from precipitation or site run-on that has not contacted the waste.

Proper control of surface water at the transfer or recycling areas will accomplish the following goals:

- Prevent the run-on of surface water into waste handling area(s);
- Prevent the run-off of surface water that has come into contact with the waste (i.e. leachate);
- Limit the erosion caused by surface waters; and
- Limit sediments carried off-site by surface waters.

Separate erosion and sedimentation control plans are provided for the site to Wake County. These plans describe both short and long term engineered features and practices for preventing erosion and controlling sedimentation at this site.

#### **3.2.1 Erosion Control**

Erosion control measures have been taken within the drainage channels and at points of stormwater discharge. All site features should be inspected regularly for erosion damage and promptly repaired.

#### **3.2.2 Sedimentation Control**

Stormwater run-off from the site is conveyed to an on-site sediment basin and/or trap. The basin and/or trap should be inspected regularly for sediment build-up or erosion damage. The basin and/or trap should be cleaned out when sediment fills the lower half of the basin.

### **3.3 LEACHATE MANAGEMENT**

The leachate management system for the proposed MSW & C&D transfer station consists of concrete tipping floor, collection trenches and leachate transmission piping, valve boxes, valves, and a leachate storage tank prior to either pump and hauling or direct connection to the City of

Raleigh sewer system.

### **3.3.1 Leachate Collection**

Leachate from each transfer area unit is collected in perimeter floor drains that drain to low end(s) of each area. Leachate collected drains to a central leachate storage tank which flows by gravity via an HDPE force main to the City of Raleigh sewer system or pumped directly to a truck for hauling to a local publicly owned treatment works (POTW), as necessary.

### **3.3.2 Operation and Maintenance of Leachate Management Systems**

Operation and maintenance of the leachate management system shall include routine inspections and maintenance to insure that accumulated solids are removed from the leachate storage tank, all floor drains are periodically cleaned of obstructions, and the system maintains a clear flow path into the City sewer system. The Solid Waste Manager or his designee will be responsible for following and documenting, as required, these activities.

### **3.3.3 Record Keeping**

Accurate records will be maintained at the facility in accordance with **Section 1.14**.

## **3.4 VECTOR CONTROL**

Control of insects, rodents, and birds will be accomplished by periodic cleaning of the facility. Spilled or wind-blown debris along the access road will be cleaned up daily and placed in the transfer truck. The transfer areas will be cleaned and swept daily and the MSW area washed down daily. If vector control becomes a problem, additional measures will be taken to ensure the protection of human health.

## **3.5 ODOR CONTROL**

Odorous or potentially odorous materials will be pushed into the transfer truck covered as soon as possible to avoid odor problems. Additionally, the transfer areas will be cleaned and swept daily and the MSW area washed down daily. If odor control becomes a problem, additional measures will be taken to ensure odor control.

## **3.6 DUST CONTROL**

Dust related to waste hauler traffic on the access roads will be minimized by using a water truck or a sprinkler system to limit dust on the gravel portion of the road.

Attachment C

Example Reports

- A - Individual Load Ticket
- B - Load Summary Report
- C - Waste Out Summary

CMOC\*

SHOTWELL TRANSFER STATION, INC.  
3209 GRESHAM LAKE ROAD/SUITE 114-115  
RALEIGH, NC 27615  
919-790-1119

Waste In - Charge Scale Ticket

Ticket # : 6063 Operator: MH Date: 05/22/2008

Vehicle : 0691

\* Customer : 0419 DOWN HOME CONSTRUCTION, L

\* Material : DEMOLITION C&D

\* Source : WAKE WAKE COUNTY

Location : Units : 1.23 TONS

Time In : 11:48:35 Unit price:

Time Out : 11:56:23 -----

Net Amount: \$

Haul Chg: \$

Gross Wt : 13480 lb State Fee : \$

Tare Wt : 11020 lb MAN WT. Local Fee : \$

\* Net Wt : 2460 lb

=====

TOTAL DUE : \$

SIGNATURE: \_\_\_\_\_



Monday thru Friday - 7:00 4:00  
TRANSFER STATION PHONE  
(919) 872-5807 Phone  
(919) 872-5817 Fax

EXAMPLE

- A -

" INDIVIDUAL LOAD TICKET "

Transactions sorted by Material

Weigh-Tronix

From 07/15/2008 to 07/15/2008

Waste In

Report Date: 07/15/2008

Page 1

**TIME**  
**CUSTOMER**  
**MATERIAL**  
**SOURCE**  
**WEIGHT**

Ticket #	Date	Time	Company	Vehicle	Material	Location	Source	Gross	Tare	Net	Units	Unit Name	Unit Price	Net Price	Fees	Total Price	Chg	Oper	
Material:	DEMOLITION		C&D																
8290	7/15/2008	07:19:46	0284	1068	DEMOLITION		WAKE	25900	14120	11780	5.89	TONS					Y	MH	
8291	7/15/2008	07:21:23	999	CASH	DEMOLITION		WAKE	10780	9020	1760	.88	TONS					N	MH	
8292	7/15/2008	07:34:33	0419	0691	DEMOLITION		WAKE	15620	11400	4220	2.11	TONS					Y	MH	
8293	7/15/2008	07:55:47	0874	5100	DEMOLITION		WAKE	13340	10980	2360	1.18	TONS					Y	MH	
8296	7/15/2008	08:34:29	0284	0262	DEMOLITION		WAKE	21240	15620	5620	2.81	TONS					Y	MH	
8297	7/15/2008	08:34:32	0419	0830	DEMOLITION		WAKE	16080	11420	4660	2.33	TONS					Y	MH	
8298	7/15/2008	08:58:28	0680	0934	DEMOLITION		WAKE	18640	14660	3980	1.99	TONS					Y	MH	
8299	7/15/2008	08:59:48	0284	5023	DEMOLITION		WAKE	50900	40660	10240	5.12	TONS					Y	MH	
8300	7/15/2008	09:01:18	0856	5097	DEMOLITION		WAKE	23060	18020	5040	2.52	TONS					Y	MH	
8301	7/15/2008	09:07:38	0896	5091	DEMOLITION		WAKE	21280	14500	6780	3.39	TONS					Y	MH	
8302	7/15/2008	09:23:37	0896	5093	DEMOLITION		WAKE	21620	14960	6660	3.33	TONS					Y	MH	
8303	7/15/2008	09:25:30	0869	5030	DEMOLITION		WAKE	24360	19840	4520	2.26	TONS					Y	MH	
8304	7/15/2008	09:29:33	0851	5003	DEMOLITION		WAKE	25680	19660	6020	3.01	TONS					Y	MH	
8305	7/15/2008	09:32:57	0284	0914	DEMOLITION		WAKE	23880	14840	9040	4.52	TONS					Y	MH	
8306	7/15/2008	09:32:56	999	CHECK	DEMOLITION		WAKE	12520	9580	2940	1.47	TONS					N	MH	
8307	7/15/2008	09:56:29	0284	1054	DEMOLITION		WAKE	21940	18320	3620	1.81	TONS					Y	MH	
8308	7/15/2008	09:59:46	0039	1034	DEMOLITION		WAKE	23040	13540	9500	4.75	TONS					Y	MH	
8309	7/15/2008	10:10:39	0284	0931	DEMOLITION		WAKE	17980	14880	3100	1.55	TONS					Y	MH	
8310	7/15/2008	10:10:38	999	CHECK	DEMOLITION		WAKE	13940	12360	1580	.79	TONS					N	MH	
8311	7/15/2008	10:17:52	0284	0262	DEMOLITION		WAKE	20660	15620	5040	2.52	TONS					Y	MH	
8313	7/15/2008	10:27:43	0856	5097	DEMOLITION		WAKE	21780	16520	6760	3.38	TONS					Y	MH	
8314	7/15/2008	10:31:05	0284	5023	DEMOLITION		WAKE	46880	29660	14000	7.00	TONS					Y	MH	
8315	7/15/2008	10:42:30	0419	0830	DEMOLITION		WAKE	5870	1420	4400	2.20	TONS					Y	MH	
8317	7/15/2008	10:54:45	0896	5093	DEMOLITION		WAKE	23940	14960	8880	4.44	TONS					Y	MH	
8318	7/15/2008	10:54:44	999	CHECK	DEMOLITION		WAKE	1080	4840	220	.11	TONS					N	MH	
								546620	403900	142720	71.36								
								546620	403900	142720									

Total Tickets: 25

Grand Total Tickets:

25

**EXAMPLE**  
**B**  
**LOAD SUMMARY REPORT**

Transactions sorted by Material  
 Weigh-Tronic  
 From 07/15/2008 to 07/15/2008  
 Waste Out

Report Date: 07/15/2008

Page 1

Ticket #	Date	Time	Company	Vehicle	Material	Location	Source	Gross	Tare	Net	Units	Unit Name	Unit Price	Net Price	Fees	Total Price	Chg	Oper	
Material: CDOUT				C&D OUTBOUND															
8294	7/15/2008	08:10:01	9999	88	CDOUT		WAKE	71780	34860	36920	18.46	TONS						Y	MH
8312	7/15/2008	10:26:13	9999	88	CDOUT		WAKE	70880	34860	36020	18.01	TONS						Y	MH
8316	7/15/2008	10:45:04	9999	87	CDOUT		WAKE	70720	34160	36560	18.28	TONS						Y	MH
Total Tickets:		3						213380	103880	109500	54.75								
Material: RAWWOOD				CLEAN WOOD															
8295	7/15/2008	08:30:09	9999	87	RAWWOOD		WAKE	53560	34160	19400	9.70	TONS						Y	MH
Total Tickets:		1						53560	34160	19400	9.70								
Grand Total Tickets:		4						266940	138040	128900									

TIME

MATERIAL

SOURCE

WEIGHT

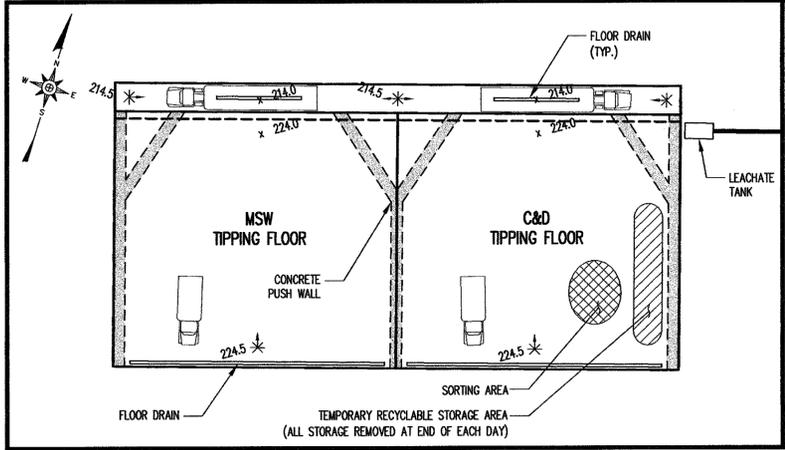
TRANSFER VEHICLE #

EXAMPLE

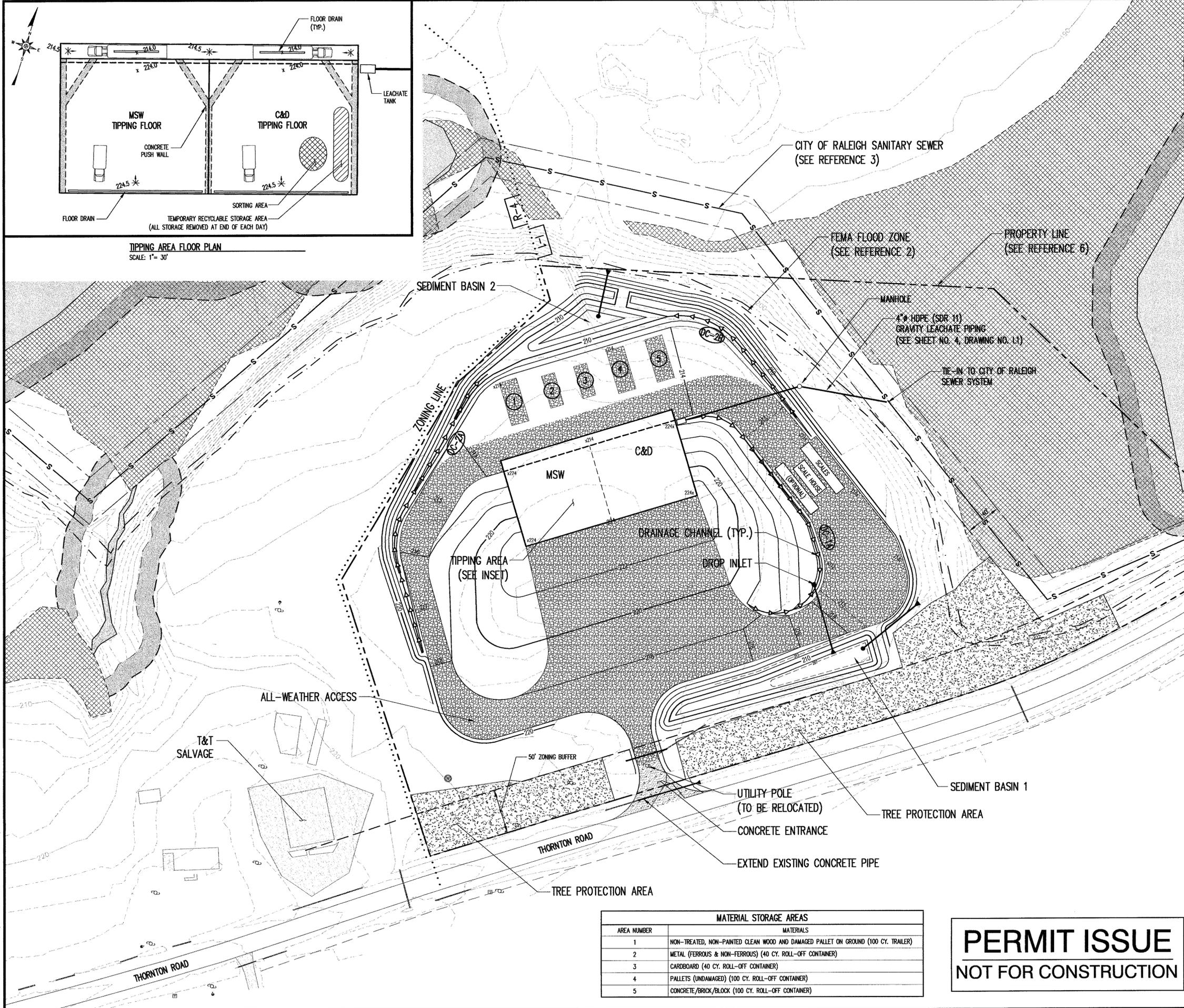
WASTE OUT SUMMARY

Appendix D

Revised Drawings



**TIPPING AREA FLOOR PLAN**  
SCALE: 1" = 30'



GROUND COVER SUMMARY	
GROUND COVER TYPE	AREA (ACRES)
IMPERVIOUS (ALL WEATHER ACCESS, CONCRETE ENTRANCE)	2.26
BUILDING FOOTPRINT	0.46
GRASS (ALL OTHER AREAS WITHIN LIMIT OF DISTURBANCE)	3.68

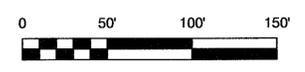
- LEGEND**
- 800 ——— EXISTING 10' CONTOUR (SEE REFERENCE 1)
  - EXISTING 2' CONTOUR
  - PROPOSED 10' CONTOUR
  - PROPOSED 2' CONTOUR
  - PROPOSED 1' CONTOUR (SEE NOTE 1)
  - DRAINAGE CHANNEL
  - PIPE (WITH OUTLET PROTECTION)
  - PROPERTY LINE
  - FEMA FLOOD ZONE "X" (SEE REFERENCE 2)
  - FEMA FLOOD ZONE "AE" (SEE REFERENCE 2)
  - NEUSE RIVER BUFFER
  - NEUSE RIVER BUFFER (DISTURBABLE LIMITS)
  - SURVEYED WETLANDS (SEE REFERENCE 5)
  - ..... ZONING LINE

- NOTES**
- PROPOSED CONTOURS AT 1' INTERVAL SHOWN FOR CLARITY ONLY IN AREAS NEEDED.

- REFERENCES**
- EXISTING TOPOGRAPHY PROVIDED BY STOCKS ENGINEERING, P.A., DATED OCTOBER 2007.
  - FLOOD ZONE LIMITS FROM FLOOD INSURANCE RATE MAP (FIRM) NUMBER 37201738004, PANEL 1738, EFFECTIVE DATE MAY 2, 2006.
  - CITY OF RALEIGH SANITARY SEWER LOCATIONS PROVIDED BY STOCKS ENGINEERING, P.A., DATED OCTOBER 2007.
  - ZONING LINES FROM SURVEY BY MURPHY GEOMATICS, PRESENTED IN DRAWING ENTITLED "RECOMBINATION PLAT FOR THORNTON II" DATED AUGUST 2006.
  - WETLAND DELINEATION FROM DRAWING ENTITLED "WETHOR PRELIMINARY WETLAND DELINEATION", PREPARED BY MURPHY GEOMATICS, DATED OCTOBER 29, 2007.
  - SITE PROPERTY LINE FROM DRAWING ENTITLED "RECOMBINATION PLAT FOR DYNASTY HOLDINGS, LLC" PREPARED BY MURPHY GEOMATICS, DATED NOVEMBER 2007.

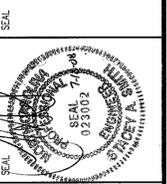
MATERIAL STORAGE AREAS	
AREA NUMBER	MATERIALS
1	NON-TREATED, NON-PAINTED CLEAN WOOD AND DAMAGED PALLET ON GROUND (100 CY. TRAILER)
2	METAL (FERROUS & NON-FERROUS) (40 CY. ROLL-OFF CONTAINER)
3	CARDBOARD (40 CY. ROLL-OFF CONTAINER)
4	PALLETS (UNDAMAGED) (100 CY. ROLL-OFF CONTAINER)
5	CONCRETE/BRICK/BLOCK (100 CY. ROLL-OFF CONTAINER)

**PERMIT ISSUE**  
**NOT FOR CONSTRUCTION**



DATE	NO.	REVISION
7/17/08	1	UPDATES
6/3/08	2	UPDATE PER CITY OF RALEIGH GRADING
	3	PLAN: ADDED SEWER TIE-IN

**RICHARDSON SMITH GARDNER & ASSOCIATES**  
www.rsgengineers.com  
14 N. Boylan Ave., Raleigh, N.C. 27603  
PH: 919-828-9877  
FAX: 919-828-9899

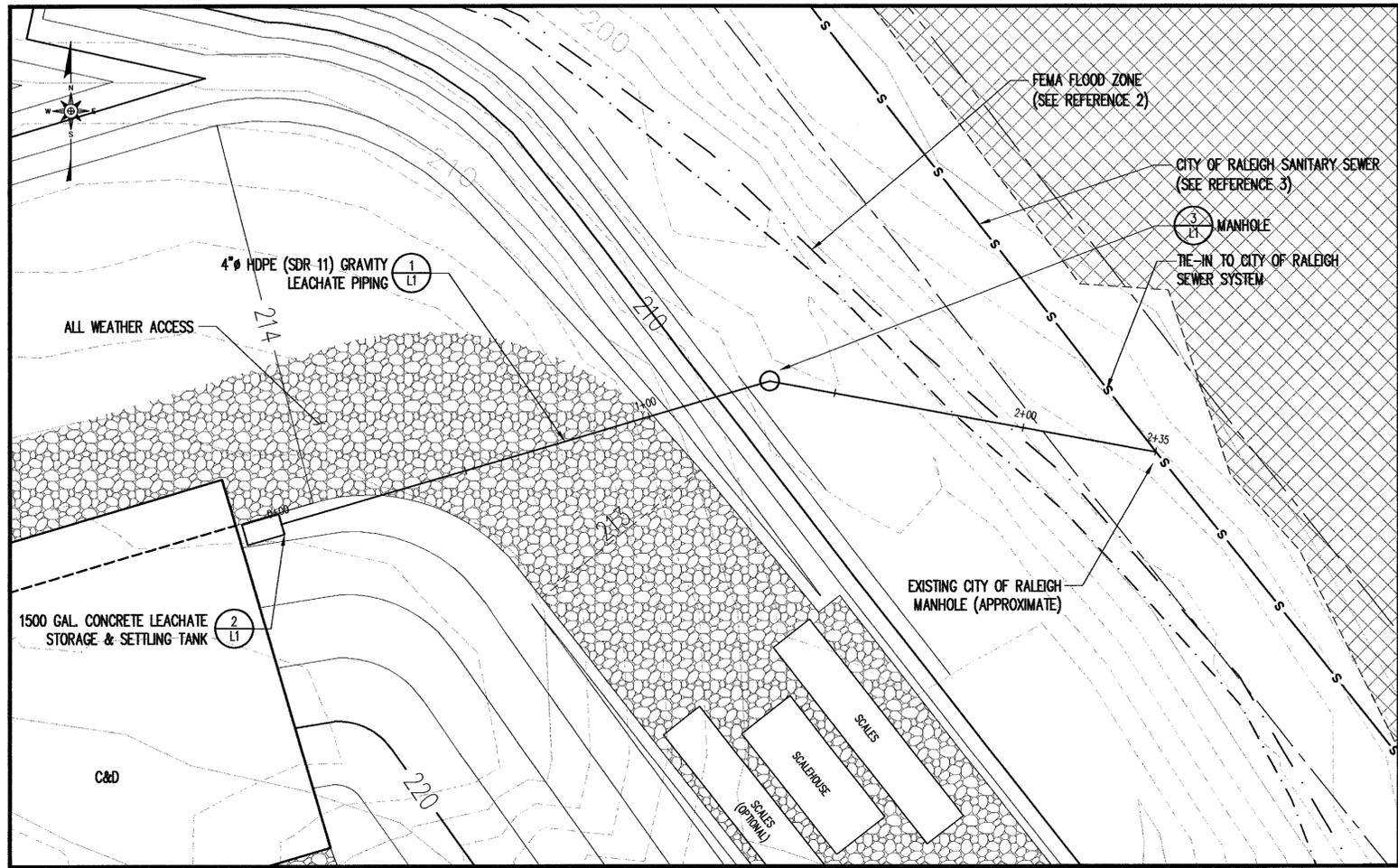


**THORNTON ROAD  
MIXED WASTE TRANSFER &  
RECYCLING CENTER  
SHOTWELL TRANSFER STATION, INC.**

**SITE PLAN**

DESIGNED BY: S.A.S.	DRAWN BY: C.T.J.
CHECKED BY: S.T.S.	PROJECT NO.: KING 07-1
SCALE: AS SHOWN	DATE: NOV. 2007
FILE NAME: KING-D0004B	DRAWING NO.:
SHEET NO.:	<b>3</b>
	<b>S2</b>

© CADD/Shotwell Transfer Station/07-1.dwg, 07/17/08, 10:02 AM



**LEGEND**

---	EXISTING 10' CONTOUR (SEE REFERENCE 1)
---	EXISTING 2' CONTOUR
---	PROPOSED 10' CONTOUR
---	PROPOSED 2' CONTOUR
---	PROPOSED 1' CONTOUR (SEE NOTE 1)
---	PROPERTY LINE
---	FEMA FLOOD ZONE "X" (SEE REFERENCE 2)
---	FEMA FLOOD ZONE "AE" (SEE REFERENCE 2)
---	NEUSE RIVER BUFFER
---	NEUSE RIVER BUFFER (DISTURBABLE LIMITS)
---	SURVEYED WETLANDS (SEE REFERENCE 5)
---	ZONING LINE

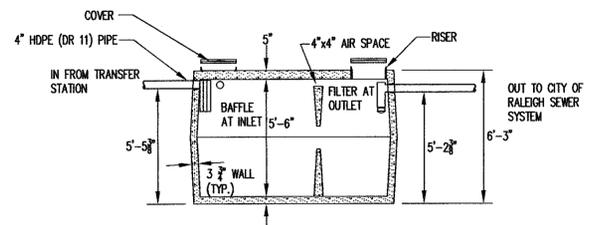
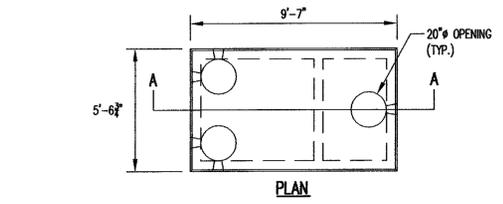
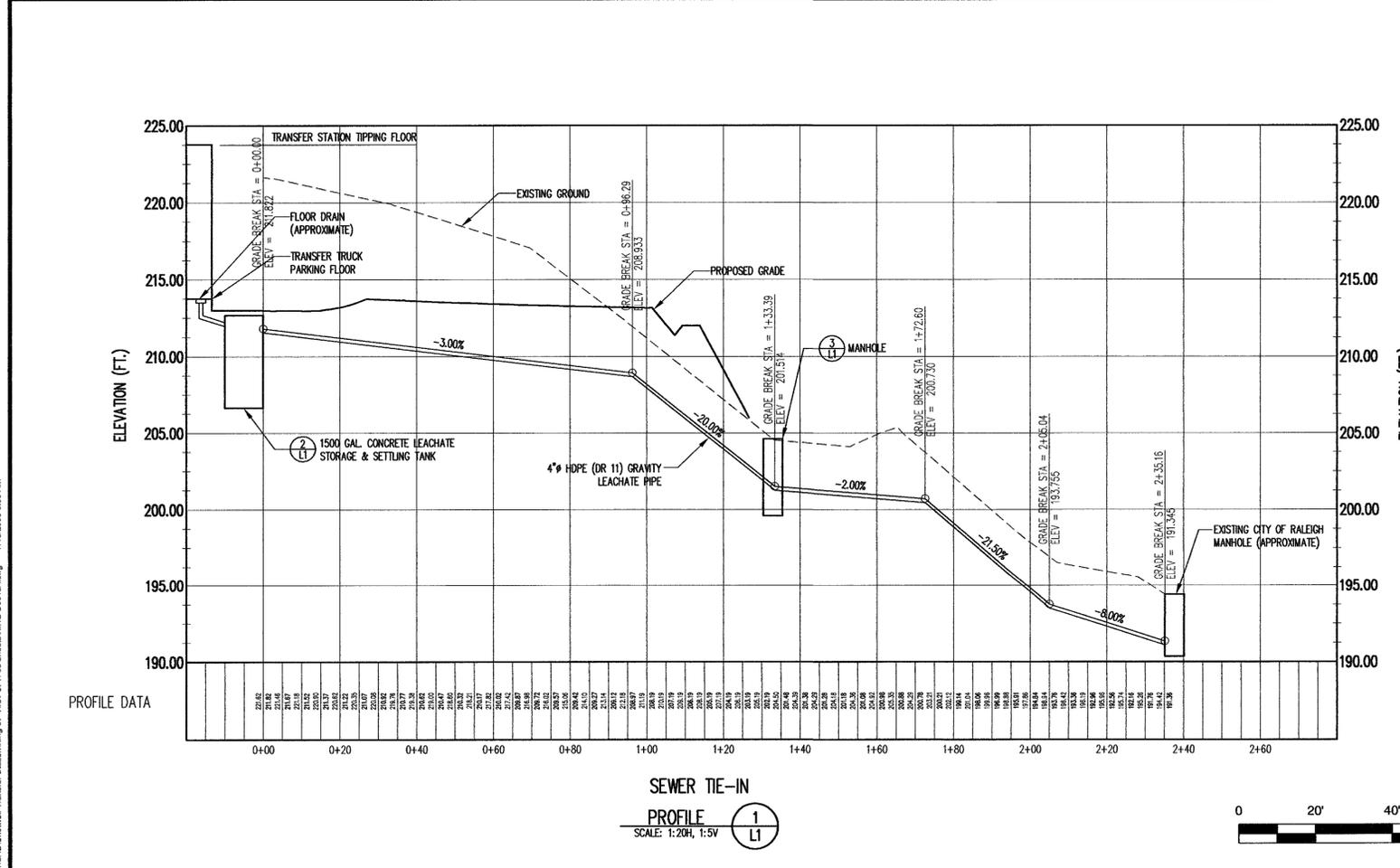
- NOTES**
1. PROPOSED CONTOURS AT 1' INTERVAL SHOWN FOR CLARITY ONLY IN AREAS NEEDED.
- REFERENCES**
1. EXISTING TOPOGRAPHY PROVIDED BY STOCKS ENGINEERING, P.A., DATED OCTOBER 2007.
  2. FLOOD ZONE LIMITS FROM FLOOD INSURANCE RATE MAP (FIRM) NUMBER 3720173800, PANEL 1738, EFFECTIVE DATE MAY 2, 2006.
  3. CITY OF RALEIGH SANITARY SEWER LOCATIONS PROVIDED BY STOCKS ENGINEERING, P.A., DATED OCTOBER 2007.
  4. ZONING LINES FROM SURVEY BY MURPHY GEOMATICS, PRESENTED IN DRAWING ENTITLED "RECOMBINATION PLAN FOR THORNTON II" DATED AUGUST 2006.
  5. WETLAND DELINEATION FROM DRAWING ENTITLED "WETBORG PRELIMINARY WETLAND DELINEATION", PREPARED BY MURPHY GEOMATICS, DATED OCTOBER 29, 2007.
  6. SITE PROPERTY LINE FROM DRAWING ENTITLED "RECOMBINATION PLAN FOR DYNASTY HOLDINGS, LLC" PREPARED BY MURPHY GEOMATICS, DATED NOVEMBER 2007.



**PERMIT ISSUE**  
**NOT FOR CONSTRUCTION**

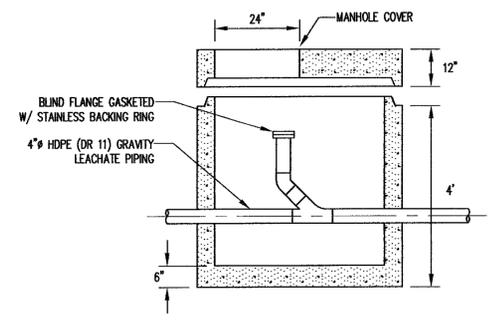
7/17/08	2	UPDATE
6/3/08	1	ADDED NEW SHEET
DATE	NO.	REVISION

**RICHARDSON SMITH GARDNER & ASSOCIATES**  
14 N. Boylston Ave.  
Raleigh, N.C. 27603  
ph: 919-828-0577  
fax: 919-828-3899  
www.rsgengineers.com

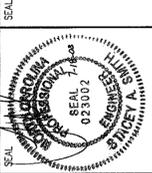


**SECTION A-A**  
**LEACHATE STORAGE & SETTLING TANK**  
**DETAIL 2**  
NOT TO SCALE

- NOTES:**
1. JOINT SEALANT IS BUTYL RUBBER MASTIC TYPE SEAL THAT CONFORMS TO LATEST AASHTO SPECIFICATION M-198. MEETS FEDERAL SPECIFICATION SS-S-002H(210-A).
  2. PIPE INLET AND OUTLET LOCATIONS SHALL BE SEALED WITH NONSHRINK WATER TIGHT GROUT.
  3. REINFORCING STEEL DEFORMED BARS CONFORM TO LATEST ASTM SPECIFICATION A615.
  4. REINFORCING STEEL WELDED WIRE FABRIC CONFORM TO LATEST ASTM SPECIFICATION A185.
  5. CONCRETE COMPRESSIVE STRENGTH- 4000 PSI AT 28 DAYS.
  6. METHOD OF MANUFACTURE: WET CAST.
  7. SECTIONS ARE MONOLITHIC.



**MANHOLE**  
**DETAIL 3**  
NOT TO SCALE



**THORTON ROAD**  
**MIXED WASTE TRANSFER & RECYCLING CENTER**  
**SHOTWELL TRANSFER STATION, INC.**

**SEWER TIE-IN**  
**PLAN AND PROFILE**

DESIGNED BY:	S.A.S.	DRAWN BY:	C.T.J.
CHECKED BY:	[Signature]	PROJECT NO.:	KING 07-1
SCALE:	AS SHOWN	DATE:	JUNE 2008
FILE NAME:	KING-D0015A		
SHEET NO.:	4	DRAWING NO.:	L1

C:\CAD\Shovel\Transfer Station\King 07-1\Draw\071708\sheet\KING-D0015A.dwg - 7/18/2008 8:59 AM

Appendix E

Revised Financial Assurance Estimate



DATE: 18-Jul-08  
 BY: SAS

**Financial Assurance**  
**Shotwell Transfer Station, Inc.**  
**Thornton Road Mixed Waste Transfer & Recycling Center**  
**Engineer's Remedial Cost Estimate (7-17-08 Revision)**

Item No.	Item Description	Unit	Contractor			Comments
			Quantity	Unit Price	Total Price	
<b>Facility Area (Horizontal Plan) ----&gt;</b>		<b>AC</b>	<b>8</b>			
<b>1.0</b>	<b>Pre-Remedial Response</b>			<b>Subtotal</b>	<b>\$4,000.00</b>	
1.1	Coordination, Contracts, and Management	AC	8	\$500.00	\$4,000.00	RSGA Estimate
<b>2.0</b>	<b>Remedial Response Activities</b>				<b>\$182,000.00</b>	Ref. 1
2.1	Surveys and Layout	AC	8	\$250.00	\$2,000.00	RSGA Estimate
2.2	Mobilization, Demobilization, and Project Closeout	AC	8	\$500.00	\$4,000.00	RSGA Estimate
2.3	Wash Down & Cleanup of the Transfer Station	DY	2	\$1,500.00	\$3,000.00	Assume single work crew per day.
2.4	Fencing & Concrete Barrier Protection	LF	200	\$15.00	\$3,000.00	Assume close transfer station door and place concrete barriers across wall.
2.5	Excess Waste Disposal (C&D & MSW)	TN	5,000	\$30.00	\$150,000.00	Five (5) days of waste as specified by NCDENR. at th South Wake Landfill fee.
2.6	Excess Recycling Disposal	CY	500	\$10.00	\$5,000.00	Assume cost of loading and transport.
2.7	Leachate Disposal	GAL	50,000	\$0.10	\$5,000.00	Assume one (1) week capacity of leachate
2.8	Erosion & Sediment Control (grading, silt fence, maintenance, etc.)	AC	8	\$500.00	\$4,000.00	RSGA Estimate
2.9	Revegetation	AC	4	\$1,500.00	\$6,000.00	RSGA Estimate
<b>3.0</b>	<b>Quality Assurance, Certification, &amp; Deed Notation</b>				<b>\$3,000.00</b>	
3.1	Engineering and Reporting	LS	1	\$2,500.00	\$2,500.00	RSGA Estimate
3.2	Surveying and Deed Notation	LS	1	\$500.00	\$500.00	RSGA Estimate
<b>Remedial Response Estimate ----&gt;</b>					<b>\$189,000</b>	
<b>10% Contingency ----&gt;</b>					<b>\$18,900</b>	
<b>Total Estimate ----&gt;</b>					<b>\$207,900 (2007\$)</b>	(See Note 1)

Notes:

- All costs are presented in current dollars and should be increased at an inflation rate of 1.5% if additional review is not performed annually.
- This ESTIMATE has been prepared for financial assurance purposes only and shall not be considered a replacement for an actual bid from a licensed contractor and is considered acceptable within a +/- 10% of the Total Estimate value.

References:

- Thornton Road Mixed Waste Transfer & Recycling Center Permit Application by Richardson Smith Gardner & Associates, Inc dated November 2007.

■ Denotes values calculated in spreadsheet.