| Fac/Perm/Co ID # | Date | Doc ID# |
|---|---|---|
| 32I | 12/18/09 | DIN 9080 |

**John A. K. Tucker, P.E.**
Consulting Engineer

July 25, 2006

Mr. Ed Mussler
Permitting Branch, Solid Waste Section
NC Division of Waste Management
P.O. Box 29603
Raleigh, North Carolina 27603

Subject: Land Clearing and Inert Debris Landfill
Durham County, North Carolina
Permit No. 32-I

Dear Mr. Mussler:

Currin Brothers, Inc. would like to renew the permit to operate for this facility. The landfill has been operating in compliance with the existing permit. Please find a copy of the operational plan enclosed.

I hope you will find this information satisfactory. Please do not hesitate to call if you have any questions.

With Best Regards,

John A.K. Tucker, P.E.

cc: Currin Bros.

*P.O. Box 297* *Fuquay-Varina* *North Carolina 27526*
*Voice (919) 567-0483* *Fax (919) 567-3611* *johnak@johntuckerpe.com*

OPERATIONS AND PROJECT MANUAL

# LAND CLEARING AND INERT DEBRIS LANDFILL

## DURHAM COUNTY, NORTH CAROLINA

CURRIN BROTHERS, INC.

RECEIVED

JAN 6 1995

SOLID WASTE MANAGEMENT
FAYETTEVILLE REGIONAL OFFICE

APPROVED
DIVISION OF SOLID WASTE MANAGEMENT
DATE 3/28/95 BY [illegible]
Rel. Central File Copy
32-I (Durham County)

29 NOVEMBER 1994

LITTLE & LITTLE

LANDSCAPE ARCHITECT / RE / PLANNING P.O. BOX 1448 RALEIGH, NORTH CAROLINA 27602 919/821-5645

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29 November 1994

**Currin Durham County LCID**
**Landfill Operational Plan**

Individual(s) Responsible for Operation and Maintenance of the Facility

Glenn and Allen Currin
c/o Currin Brothers, Inc.
Post Office Box 547
Fuquay–Varina, North Carolina 27526
Phone: 919-876-1138

Projected Land Use After Completion

Tree Farm and/or Park

Usage, Operation, Development and Closure of the Facility

The facility will be operated as a private landfill. Hours of operation will generally be from sunrise to sunset on weekdays and Saturdays. Operations on Sunday will be limited to as needed and special cases. Generally the facility will be closed on Sundays and holidays.

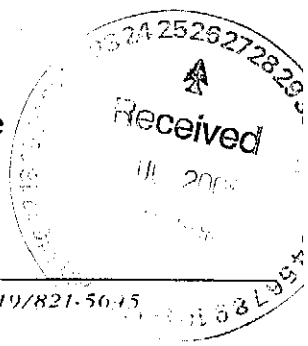
Usage of the landfill will be limited to Currin Brothers, Inc. and their assigns.

Access to the facility will be controlled through one entrance gate. The entrance gate will be secured and no admittance allowed except during hours of operation. The responsible party or his employee will be on site at all times while the facility is open.

The landfill will not commence operations until sediment and erosion control measures are installed as approved by Durham County. (See the construction sequence for site included in the S&E plans and the project manual.)

Operation of the fill areas will be conducted in an orderly manner, always providing positive drainage to the two sediment basins. Excavation in any of the areas will not be made closer than four (4) feet to ground water tables or rock. Should ground water or rock be encountered, excavation will cease and a minimum of four (4) feet of soil material placed over the rock or ground water.

No surface water will be allowed to pond on top of fill areas or be diverted through the landfill. All interim and finished grades will be established to provide positive runoff and prevent surface ponding. All off site drainage will be diverted around the facility (see plans for details).



As interim and/or final grades are obtained, those areas will be seeded and stabilized according to the approved erosion control plan. Any areas where vegetation fails to establish itself will be reseeded and fertilized until adequate cover is obtained. As finished grades are obtained in the several fill areas and ground cover established, pine seedling will be planted to complement the permanent cover. Areas holding at interim elevations will be protected per the erosion control plan.

State and local permits required for the landfill operation will be renewed as required by law. After the last fill area is excavated and backfilled with landfill materials, the facility will be brought to final grades and closed out. Final soil cover will be placed over debris to required depths. All fill dirt will be provided from on site. Once the soil cover is in place, vegetative cover will be provided per approved plans and specifications. With vegetation established, the permanent erosion control measures will be removed and those areas stabilized.

The owners will monitor the fill areas for settlement for 12 months after close out, repair any unvegetated areas, and backfill areas where surface ponding may have developed.

Waste to be Accepted

- Type: Materials to be disposed of will be land clearing waste, inert debris, untreated wood, and yard trash.
- Source: The anticipated service area of the facility is northwest, north, and northeast Durham County; the City of Durham; west and northwest Wake County; and northwest Raleigh. Most of the material will be from land clearing operations for public roads, residential lots, commercial development and other general development.
- Projected Quantities: 30 to 150 loads per day depending on economy and weather.
- Expected life of the facility: 2050.

Fire Fighting Procedures

Should a fire occur at the facility, there will be soil stockpiled in several areas which can be used to smother the flames. Equipment kept on the site will be used to spread the soil and extinguish the flames.

Emergency information with contact names and telephone numbers will be posted at the entrance to the facility. Local emergency medical, fire, and law enforcement telephone numbers will also be posted.

No Trespassing signage will be placed at frequent intervals around the perimeter of the landfill. Unauthorized entry or dumping will be prosecuted. Material left at the site which is not authorized for disposal will be segregated and disposed of in a proper facility.

CONSTRUCTION SEQUENCE

1. Obtain erosion control permit from Durham County.
2. Obtain driveway permit from NCDOT.
3. Install construction entrance and **Culvert 1.**
4. Install silt fence below the basins as shown on the plans.
5. Install **Sediment Traps B and C** and diversion ditches in Areas 3 and 9.
6. Clear and grubb portions of **Areas 3 & 9** and areas for Sediment Basins.
7. Install the two riser basins using soil from Areas 3 and 9 for the construction.
8. Install **Ditches 1, 2, & 3** and Sediment Trap A along northern property line.
9. Install **Temporary Phase 1 Diversion Ditch** from Coley Road toward South Sediment Basin.
10. Call for inspection of devices by Durham County Sediment & Erosion Control inspector.
11. Clear and grub area to be initially excavated (**Area 1** and a portion of **Area 3**).
12. Excavate **Area 1** and build the berm adjacent to SR 1900 and the northern property line installing **Ditch 4** along side of berm. Maintain Positive drainage from excavation in **Areas 1 and 3** to North Sediment Basin.
13. Stabilize the exterior slope of the berm per the seeding schedule on the plans.
14. Begin fill and grade operations for **Area 1** according to the plans as approved and permitted by the State. Borrow fill from **Area 3.**
15. Clear and grub next area of operations (uncleared portion of **Area 3** and a portion of **Area 5**).
16. Excavate remaining **Area 3** and stockpile in **Area 5.**
17. Begin fill and grade operations for **Area 3** according to the plans as approved and permitted by the State. Continue fill operations for Area 1. Borrow fill from **Area 5.**
18. Install **Ditches 5 & 6** during fill operations.
19. Stabilize the exterior slopes per the seeding schedule on the plans.
20. Maintain the sediment control devices according to the plans or as necessary to prevent overtopping and off site siltation.
21. Clear and grub next area to be excavated (**Area 2** and the remainder of **Area 5**).
22. Install **Culvert 2, Ditch 10,** and inlet and outlet protections.
23. Excavate **Area 2** and build the berm adjacent to SR 1900 over Culvert 2. Maintain Positive drainage from excavation to North Sediment Basin.
24. Begin fill and grade operations for **Area 2** according to the plans as approved and permitted by the State. Continue fill operations for Area 1. Borrow fill from **Area 5.**
25. As the fill is increased in the berm along Coley Road, extend **Ditch 4** along slope as shown on the plans.
26. Continue to stabilize the exterior slopes per the seeding schedule on the plans.
27. Maintain the sediment control devices according to the plans or as necessary to prevent overtopping and off site siltation.

28. Clear and grub next area to be excavated (uncleared portion of **Area 5, Area 4,** and a portion of **Area 6** adjacent to Area 5).
29. Begin fill and grade operations for **Area 5** according to the plans as approved and permitted by the State. Continue Fill operations for areas 2, and 3. Complete fill operations for Area 1. Borrow fill from **Area 4** and a portion of **Area 6** maintaining positive drainage to North Sediment Basin.
30. Stabilize the exterior slopes and Area 1 per the seeding schedule on the plans.
31. Maintain the sediment control devices according to the plans or as necessary to prevent overtopping and off site siltation.
32. Clear and grub next area to be excavated (uncleared portion of **Area 6**).
33. Begin fill and grade operations for **Area 4** according to the plans as approved and permitted by the State. Continue fill operatins for Area 2. Borrow fill from **Area 6.**
34. Install remainder or **Ditch 4** and **Ditches 8 & 9.**
35. Stabilize the exterior slopes per the seeding schedule on the plans.
36. Maintain the sediment control devices according to the plans or as necessary to prevent overtopping and off site siltation.
37. Clear and grub next area to be excavated (**Area 7**).
38. Begin fill and grade operations for **Area 6** according to the plans as approved and permitted by the State. Continue fill operations for Area 5. Conplete fill operations for Areas 2 & 4. Borrow fill from **Area 7.**
39. Stabilize the exterior slopes and Areas 2 & 4 per the seeding schedule on the plans.
40. Maintain the sediment control devices according to the plans or as necessary to prevent overtopping and off site siltation.
41. Install **Ditch 7.**
42. Clear and grub next area to be excavated (**Area 8**).
43. Begin fill and grade operations for **Area 7** according to the plans as approved and permitted by the State. Continue fill operations for area 5 and complete operations for Area 6. Borrow fill from **Area 8.**
44. Stabilize the exterior slopes and Area 6 per the seeding schedule on the plans.
45. Maintain the sediment control devices according to the plans or as necessary to prevent overtopping and off site siltation.
46. Install temporary diversion along clearing limits at Area 9.
47. Clear and grub remaining uncleared portion of **Area 9.**
48. Begin fill and grade operations for **Area 8** according to the plans as approved and permitted by the State. Complete fill operations for Areas 5 & 7. Borrow fill from **Area 9.**
49. Stabilize the exterior slopes and Areas 5 & 7 per the seeding schedule on the plans.
50. Maintain the sediment control devices according to the plans or as necessary to prevent overtopping and off site siltation.
51. Renew permits as required by law. Submit plans for **Areas 9, 10, 11, & 12** before proceeding with landfill operations in these Areas.

| Ditch # | Drain Area | Rational 'C', or TR-55 CN | Peak Flow | C-L Slope | RIPRAP LINING | | | | Construction Dimensions for Triangular 'V' Ditch with Riprap Lining | | | Reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Depth of Flow | Max. Vel. | 'n' | Tract. Force | Ht. x Top W | Side Slope | Lining | |
| # 1 | 9.66 Ac. | 0.3 'C' | 25.7 C.F.S. | 8.6% | 1.19 Ft. | 6.0 F.P.S. | 0.049 | 6.4 Lb/Sq.Ft. | 1.5' x 9' | 3 to 1 | NCDOT Class B Riprap 22" min. thickness | Install 1 permanent rock check dam |
| # 5 | 4.62 Ac. | 0.3 'C' | 12.3 C.F.S. | 16.6% | 0.83 Ft. | 5.9 F.P.S. | 0.055 | 8.6 Lb/Sq.Ft. | 1.25' x 7.5' | 3 to 1 | NCDOT Class B Riprap 22" min. thickness | Install 2 permanent rock check dams |
| # 7 | 3.78 Ac. | 0.3 'C' | 10.1 C.F.S. | 10.7% | 0.84 Ft. | 4.8 F.P.S. | 0.055 | 5.6 Lb/Sq.Ft. | 1.25' x 7.5' | 3 to 1 | NCDOT Class B Riprap 22" min. thickness | Install 1 permanent rock check dam |
| # 8 | 2.2 Ac. | 0.3 'C' | 10.0 C.F.S. | 10.0% | 0.85 Ft. | 4.7 F.P.S. | 0.055 | 5.3 Lb/Sq.Ft. | 1.25' x 7.5' | 3 to 1 | NCDOT Class B Riprap 22" min. thickness | Install 1 permanent rock check dam |
| # 10 | 9.83 Ac. | 0.4 'C' | 29.8 C.F.S. | 5.3% | 1.36 Ft. | 5.4 F.P.S. | 0.047 | 4.5 Lb/Sq.Ft. | 2' x 12' | 3 to 1 | NCDOT Class B Riprap 22" min. thickness | |

| Ditch # | Drain Area | Rational 'C', or TR-55 CN | Peak Flow | C-L Slope | #REFI | | | 'D' Retardance | | | Q-2 | | Construction Dimensions for Triangular 'V' Ditch with Grass Lining | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Depth of Flow | Max. Vel. | #REFI 'n' | Depth of Flow | Max. Vel. | 2"-6" 'n' | Max. Vel. | Tract. Force | Ht. x Top W | Side Slope | Lining |
| # 2 | 9.21 Ac. | 0.3 'C' | 24.5 C.F.S. | 2.9% | 1.42 Ft. | 4.1 F.P.S. | 0.048 | 1.31 Ft. | 4.8 F.P.S. | 0.039 | 4.7 F.P.S. | 2.1 Lb/Sq.Ft. | 2' x 12' | 3 to 1 | Grass with Excelsior Lining |
| # 3 | 8.34 Ac. | 0.3 'C' | 22.2 C.F.S. | 3.5% | 1.33 Ft. | 4.2 F.P.S. | 0.049 | 1.22 Ft. | 5.0 F.P.S. | 0.039 | 4.8 F.P.S. | 2.4 Lb/Sq.Ft. | 2' x 12' | 3 to 1 | Grass w/ 3-4 ft. strip excelsior lining |
| # 4 | 7.18 Ac. | 0.3 'C' | 19.1 C.F.S. | 2.5% | 1.39 Ft. | 3.3 F.P.S. | 0.054 | 1.27 Ft. | 4.0 F.P.S. | 0.042 | 4.1 F.P.S. | 1.7 Lb/Sq.Ft. | 2' x 12' | 3 to 1 | Grass w/ 3-4 ft. strip excelsior lining |
| # 6 | 2.64 Ac. | 0.3 'C' | 7.0 C.F.S. | 2.2% | 1.14 Ft. | 1.8 F.P.S. | 0.082 | 1.00 Ft. | 2.3 F.P.S. | 0.058 | 2.8 F.P.S. | 1.1 Lb/Sq.Ft. | 1.5' x 9' | 3 to 1 | Grass w/ 2-4 ft. strip excelsior lining |
| # 9 | 1.58 Ac. | 0.3 'C' | 4.2 C.F.S. | 10.0% | 0.72 Ft. | 2.7 F.P.S. | 0.084 | 0.63 Ft. | 3.6 F.P.S. | 0.059 | 3.8 F.P.S. | 3.3 Lb/Sq.Ft. | 1' x 6' | 3 to 1 | Grass w/ 2-4 ft. strip excelsior lining |
| # 11 | 6.8 Ac. | 0.4 'C' | 20.6 C.F.S. | 2.0% | 1.49 Ft. | 3.1 F.P.S. | 0.054 | 1.36 Ft. | 3.7 F.P.S. | 0.042 | 3.9 F.P.S. | 1.4 Lb/Sq.Ft. | 2' x 12' | 3 to 1 | Grass w/ 3-4 ft. strip excelsior lining |

# S.C.S. Soil Categories List

**Currin Landfill,** Durham County, North Carolina August 1, 1994

**Source:** Durham County Soil Survey: U.S.D.A. Soil Conservation Service

| Map Symbol | Soil Name | Slope Range | Hydrologic Soil Group |
|---|---|---|---|
| On Site | | | |
| CrB | Creedmoor sandy loam | 2-6% | C |
| CrC | Creedmoor sandy loam | 6-10% | C |
| PfC | Pinkston fine sandy loam | 2-10% | B |
| PfE | Pinkston fine sandy loam | 10-25% | B |
| WsE | White Store sandy loam | 10-25% | D |

# Rainfall Data/ Land Cover

Currin Landfill, Durham County, North Carolina
Rainfall Data and Land Cover Types August 1, 1994

RAINFALL DATA (map interpolated)
Source: Soil Conservation Service North Carolina Rainfall Data Maps (Rev. 6-70)

| 24 hr. Storm | Rainfall in inches |
|---|---|
| 1 Year | 2.95" |
| 2 Year | 3.56" |
| 5 Year | 4.68" |
| 10 Year | 5.51" |
| 25 Year | 6.33" |
| 50 Year | 7.14" |
| 100 Year | 7.93" |

LAND COVER TYPES with *CN* and *C* factors.

| Description | Soil Group | S.C.S. CN | Rational C |
|---|---|---|---|
| Woods (good) | B | 55 | 0.22 |
| Woods (good) | C | 70 | 0.30 |
| Woods (good) | D | 77 | 0.40 |
| Meadow | B | 58 | 0.24 |
| Meadow | C | 71 | 0.32 |
| Meadow | D | 78 | 0.45 |
| Grass Berms, Ditches, Seeded Areas | B | 65 | 0.28 |
| Grass Berms, Ditches, Seeded Areas | C | 77 | 0.40 |
| Grass Berms, Ditches, Seeded Areas | D | 82 | 0.76 |
| New graded areas (no vegetation) | B | 86 | 0.80 |
| New graded areas (no vegetation) | C | 91 | 0.90 |
| New graded areas (no vegetation) | D | 94 | 0.95 |
| Stone and dirt roads (excl R.O.W.) | B | 86 | 0.80 |
| Stone and dirt roads (excl R.O.W.) | C | 90 | 0.88 |
| Stone and dirt roads (excl R.O.W.) | D | 92 | 0.91 |
| Paved roads (incl R.O.W.) | B | 89 | 0.86 |
| Paved roads (incl R.O.W.) | C | 92 | 0.91 |
| Paved roads (incl R.O.W.) | D | 93 | 0.93 |
| Ponds | all | 98 | 0.98 |
| Roofs, Asphalt surfaces | all | 98 | 0.98 |

CN Factors determined from Tables 2-2a to 2-2C, Soil Conservation Service T.R. 55, June 1986 edition.
Rational C factors interpolated from multiple sources.

| | North Basin | South Basin |
|---|---|---|
| 25 Yr Peak Inflow Rate: | 85 C.F.S. | 60 C.F.S. |
| ***1 percent of Peak Rate*** | | |
| *expressed in acres:* | **0.85 Ac** | **0.60 Ac** |
| *expressed in feet:* | 37,026 sq.ft. | 26,136 sq.ft. |
| ***Pond Dimensions*** | | |
| Riser Inv elev: | El. 306.0 | El. 323.2 |
| Pond Depth (z): | 6.00 | 13.20 |
| Pond Surface Area (sq ft): | 39,224 sq.ft. | 28,215 sq.ft. |
| ***Pond Surface Area*** | | |
| *expressed in acres:* | **0.90 Ac** | **0.65 Ac** |
| *expressed in feet:* | 39,224 sq.ft. | 28,215 sq.ft. |

## PEAK DISCHARGE SUMMARY

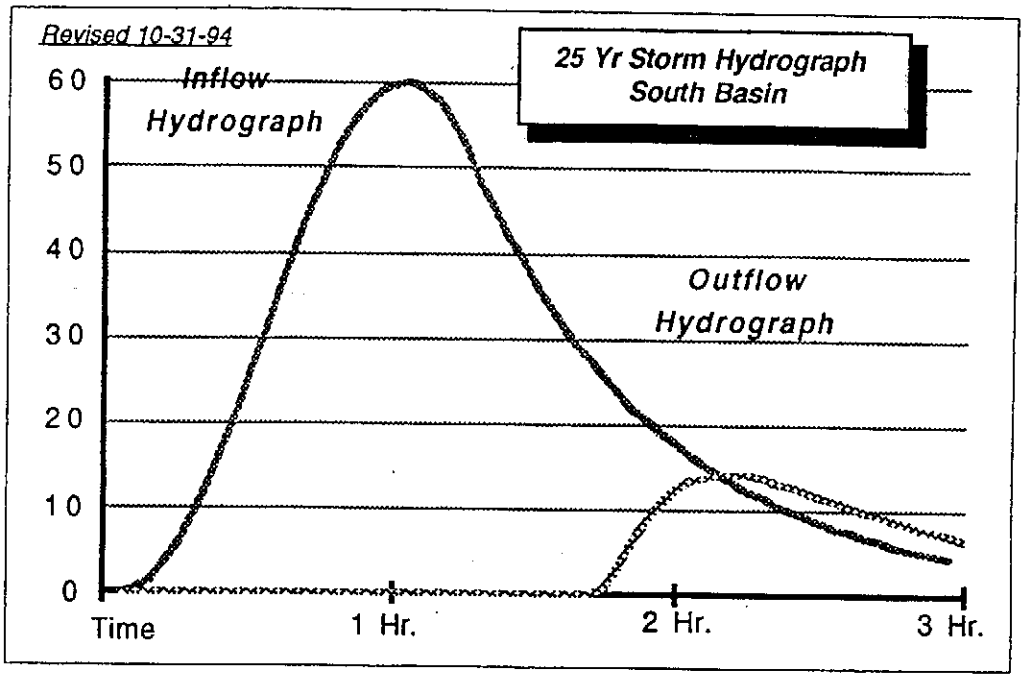
| JOB: | Currin Landfill | | | H.P. 30-July-94 |
|---|---|---|---|---|
| DRAINAGE AREA NAME: | SOUTH BASIN | | | |
| COVER DESCRIPTION | SOIL NAME | GROUP A,B,C,D? | CN from TABLE 2-2 | AREA (In acres) |
| Ponds | | - | 98 | 1.60 Ac. |
| Established Meadow | | B | 58 | 8.81 Ac. |
| Established Meadow | | C | 71 | 2.64 Ac. |
| Established Meadow | | D | 78 | |
| Woods | | B | 55 | 4.31 Ac. |
| Woods | | C | 70 | 1.80 Ac. |
| Woods | | D | 77 | |
| Paved Roads w/ROW | | C | 92 | 0.50 Ac. |
| Paved Roads w/ROW | | D | 93 | 0.85 Ac. |
| Crushed Stone Roads | | B | 86 | 0.79 Ac. |
| Unvegetated, disturbed | | B | 86 | 5.20 Ac. |
| Unvegetated, disturbed | | C | 91 | |
| | | AREA SUBTOTALS: | | 26.50 Ac. |

| Total Area In Acres = | 26.50 Ac. | Total Sheet Flow= | Total Shallow Flow= | Total Channel Flow = |
|---|---|---|---|---|
| Weighted CN = | 70 | 0.57 Hrs. | 0.00 Hrs. | 0.01 Hrs. |
| Time Of Concentration = | 0.58 Hrs. | RAINFALL TYPE II | | |
| Pond Factor = | 1 | | | |

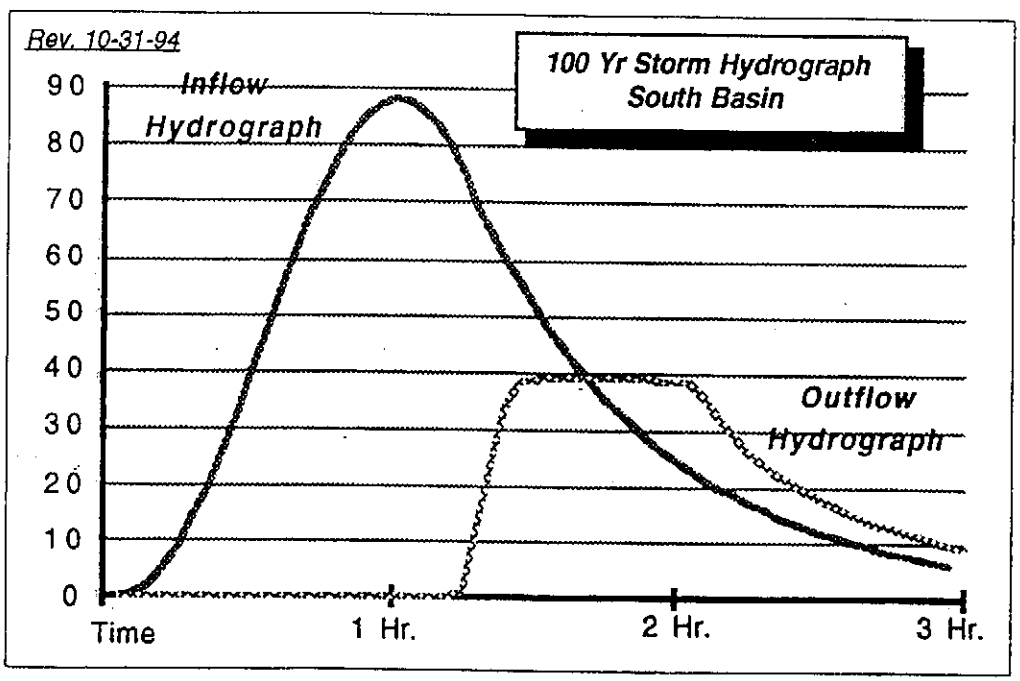
| STORM | *Precipitation (P) Inches | Runoff (Q) | Qp, PEAK DISCHARGE | TOTAL STORM Volumes |
|---|---|---|---|---|
| 1 Year | 3.0 In. | 0.7 In. | 11.6 CFS | 66,055 Cu. Ft. |
| 2 Year | 3.6 In. | 1.0 In. | 18.5 CFS | 100,557 Cu. Ft. |
| 5 Year | 4.7 In. | 1.8 In. | 34 CFS | 173,374 Cu. Ft. |
| 10 Year | 5.5 In. | 2.4 In. | 46 CFS | 232,983 Cu. Ft. |
| 25 Year | 6.3 In. | 3.1 In. | 60 CFS | 295,253 Cu. Ft. |
| 50 Year | 7.1 In. | 3.7 In. | 74 CFS | 359,295 Cu. Ft. |
| 100 Year | 7.9 In. | 4.4 In. | 88 CFS | 423,661 Cu. Ft. |

# 25 and 100 Year Hydrographs for the South Basin

| Currin Brothers South Basin | | | | Top of Dam El. 327.00 | Primary Outlets: 1 Riser/Barrel | INV. OU 30 In. Riser El. 323.20<br>INV. OU 24 In. Barrel El. 315.00 | | | Spillway Width=20 Ft. |
|---|---|---|---|---|---|---|---|---|---|
| | Time (minutes) | OVERLAN FLOW | TOTAL INFLOW | INCREMENTA Storage-CuF | Accumulate Storage Cu | Stage Feet | Elevation | TOTAL OUTFLOW | Outflow: Riser/Barrel | Max.Outflow: CMP-Barrel | Spillway Inv. El. 325.50 |
| MAXIMUM VALUES>> | 180.0 | 60 | 60 | 10,783 | 241,717 | 13.66 | 323.66 | 14.12 | 14.12 | 36.76 | 0.00 |
| | | | | | | 3.1 Ft. Below the Top of Dam. | | | | | |




| Currin Brothers South Basin | | | | Top of Dam El. 327.00 | Primary Outlets: 1 Riser/Barrel | INV. OU 30 In. Riser El. 323.20<br>INV. OU 24 In. Barrel El. 315.00 | | | Spillway Width=20 Ft. |
|---|---|---|---|---|---|---|---|---|---|
| | Time (minutes) | OVERLAN FLOW | TOTAL INFLOW | INCREMENTA Storage-CuF | Accumulate Storage Cu | Stage Feet | Elevation | TOTAL OUTFLOW | Outflow: Riser/Barrel | Max.Outflow: CMP-Barrel | Spillway Inv. El. 325.50 |
| MAXIMUM VALUES>> | 180.0 | 88 | 88 | 15,634 | 270,642 | 14.63 | 324.63 | 38.96 | 38.96 | 38.96 | 0.00 |
| | | | | | | 2.2 Ft. Below the Top of Dam. | | | | | |



| Rev. 10-31-94 | South Basin | | | | | El. 327.00 | | 1 Riser/Barrel | INV. OUT: | 24 in. Barrel | El. 315.00 | Width=20 Ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Storm volume by SCS: | | | | | | | | | | | | |
| Q*=(P-0.2S)^2/(P+0.8S) | Time | OVERLAND | TOTAL | INCREMENTAL | Accumulated | Stage | Elevation | TOTAL | Outflow: | Max.Outflow: | Spillway Inv. | |
| V=(Q*/12)*(Ac.*43560), In Cu.Ft. | (minutes) | FLOW | INFLOW | Storage-CuFt | Storage CuFt | Feet | | OUTFLOW | Riser/Barrel | CMP-Barrel | El. 325.50 | |
| Watershed Area = | 0.0 | 0 | 0 | 0 | 9,360 | 1.98 | 311.98 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 26.50 Acres | 3.0 | 0 | 0 | 70 | 9,360 | 1.98 | 311.98 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 25 Year Runoff = 3.05 In. | 6.0 | 2 | 2 | 278 | 9,430 | 1.99 | 311.99 | 0.00 | 0.00 | 0.00 | 0.00 | |
| | 9.0 | 3 | 3 | 618 | 9,707 | 2.03 | 312.03 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 25 Year Storm Volume = | 12.0 | 6 | 6 | 1,082 | 10,325 | 2.10 | 312.10 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 292,926 Cu. Ft. | 15.0 | 9 | 9 | 1,657 | 11,407 | 2.23 | 312.23 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 25 Year Qp by Scs in CFS = | 18.0 | 13 | 13 | 2,330 | 13,064 | 2.42 | 312.42 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 60.0 C.F.S. | 21.0 | 17 | 17 | 3,081 | 15,394 | 2.67 | 312.67 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Tp=Vol/(1.39Qp*60) in min | 24.0 | 22 | 22 | 3,893 | 18,475 | 2.98 | 312.98 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 56.54 Minutes | 27.0 | 26 | 26 | 4,744 | 22,368 | 3.34 | 313.34 | 0.00 | 0.00 | 0.00 | 0.00 | |
| TIME INCR IN SECONDS and MINUTES | 30.0 | 31 | 31 | 5,612 | 27,112 | 3.75 | 313.75 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 180 Seconds | 33.0 | 36 | 36 | 6,474 | 32,724 | 4.19 | 314.19 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3.0 Minutes | 36.0 | 41 | 41 | 7,308 | 39,198 | 4.67 | 314.67 | 0.00 | 0.00 | 0.00 | 0.00 | |
| | 39.0 | 45 | 45 | 8,094 | 46,507 | 5.17 | 315.17 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Stage-Storage Function: | 42.0 | 49 | 49 | 8,809 | 54,600 | 5.70 | 315.70 | 0.00 | 0.00 | 0.00 | 0.00 | |
| S=KsZ^b | 45.0 | 52 | 52 | 9,436 | 63,409 | 6.23 | 316.23 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Z=(S/Ks)^1/b | 48.0 | 55 | 55 | 9,959 | 72,846 | 6.77 | 316.77 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Ks= | 51.0 | 58 | 58 | 10,364 | 82,805 | 7.31 | 317.31 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2976.1953 | 54.0 | 59 | 59 | 10,641 | 93,169 | 7.84 | 317.84 | 0.00 | 0.00 | 0.00 | 0.00 | |
| b | 57.0 | 60 | 60 | 10,782 | 103,809 | 8.36 | 318.36 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1.6724 | 60.0 | 60 | 60 | 10,783 | 114,591 | 8.87 | 318.87 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1/b | 63.0 | 59 | 59 | 10,646 | 125,374 | 9.36 | 319.36 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 0.597943076 | 66.0 | 58 | 58 | 10,373 | 136,020 | 9.83 | 319.83 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Stage (Z) = 0 at Elev. ... | 69.0 | 55 | 55 | 9,971 | 146,393 | 10.27 | 320.27 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 310.0 | 72.0 | 53 | 53 | 9,451 | 156,364 | 10.68 | 320.68 | 0.00 | 0.00 | 0.00 | 0.00 | |
| | 75.0 | 49 | 49 | 8,743 | 165,816 | 11.07 | 321.07 | 0.00 | 0.00 | 0.00 | 0.00 | |
| | 78.0 | 45 | 45 | 8,130 | 174,558 | 11.41 | 321.41 | 0.00 | 0.00 | 0.00 | 0.00 | |
| | 81.0 | 42 | 42 | 7,559 | 182,688 | 11.73 | 321.73 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Runoff Calculation (fr. Rainfall) | 84.0 | 39 | 39 | 7,028 | 190,247 | 12.01 | 322.01 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Enter watershed's weighted CN below: | 87.0 | 36 | 36 | 6,535 | 197,275 | 12.28 | 322.28 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 70 | 90.0 | 34 | 34 | 6,076 | 203,810 | 12.52 | 322.52 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Enter 24 Hr. rainfall for storm event: | 93.0 | 31 | 31 | 5,650 | 209,887 | 12.74 | 322.74 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 8.3 In. | 96.0 | 29 | 29 | 5,253 | 215,537 | 12.94 | 322.94 | 0.00 | 0.00 | 0.00 | 0.00 | |
| *S= 4.29* | 99.0 | 27 | 27 | 4,885 | 220,790 | 13.13 | 323.13 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Runoff = 3.05 In. | 102.0 | 25 | 25 | 4,381 | 225,675 | 13.31 | 323.31 | 0.89 | 0.89 | 35.43 | 0.00 | |
| | 105.0 | 23 | 23 | 3,602 | 230,056 | 13.46 | 323.46 | 3.45 | 3.45 | 35.80 | 0.00 | |
| | 108.0 | 22 | 22 | 2,803 | 233,657 | 13.58 | 323.58 | 6.24 | 6.24 | 36.11 | 0.00 | |
| | 111.0 | 20 | 20 | 2,076 | 236,460 | 13.68 | 323.68 | 8.75 | 8.75 | 36.34 | 0.00 | |
| | 114.0 | 19 | 19 | 1,455 | 238,536 | 13.75 | 323.75 | 10.78 | 10.78 | 36.50 | 0.00 | |
| | 117.0 | 18 | 18 | 948 | 239,991 | 13.80 | 323.80 | 12.27 | 12.27 | 36.62 | 0.00 | |
| | 120.0 | 16 | 16 | 545 | 240,939 | 13.84 | 323.84 | 13.28 | 13.28 | 36.70 | 0.00 | |
| | 123.0 | 15 | 15 | 233 | 241,484 | 13.86 | 323.86 | 13.87 | 13.87 | 36.74 | 0.00 | |
| | 126.0 | 14 | 14 | -4 | 241,717 | 13.86 | 323.86 | 14.12 | 14.12 | 36.76 | 0.00 | |
| | 129.0 | 13 | 13 | -182 | 241,712 | 13.86 | 323.86 | 14.12 | 14.12 | 36.76 | 0.00 | |
| | 132.0 | 12 | 12 | -311 | 241,531 | 13.86 | 323.86 | 13.92 | 13.92 | 36.75 | 0.00 | |
| | 135.0 | 11 | 11 | -405 | 241,219 | 13.85 | 323.85 | 13.58 | 13.58 | 36.72 | 0.00 | |
| | 138.0 | 11 | 11 | -469 | 240,815 | 13.83 | 323.83 | 13.14 | 13.14 | 36.69 | 0.00 | |
| | 141.0 | 10 | 10 | -512 | 240,345 | 13.82 | 323.82 | 12.64 | 12.64 | 36.65 | 0.00 | |
| | 144.0 | 9 | 9 | -539 | 239,833 | 13.80 | 323.80 | 12.11 | 12.11 | 36.61 | 0.00 | |
| | 147.0 | 8 | 8 | -554 | 239,294 | 13.78 | 323.78 | 11.55 | 11.55 | 36.57 | 0.00 | |
| | 150.0 | 8 | 8 | -559 | 238,740 | 13.76 | 323.76 | 10.98 | 10.98 | 36.52 | 0.00 | |
| | 153.0 | 7 | 7 | -558 | 238,181 | 13.74 | 323.74 | 10.42 | 10.42 | 36.48 | 0.00 | |
| | 156.0 | 7 | 7 | -551 | 237,623 | 13.72 | 323.72 | 9.87 | 9.87 | 36.43 | 0.00 | |
| | 159.0 | 6 | 6 | -541 | 237,072 | 13.70 | 323.70 | 9.33 | 9.33 | 36.39 | 0.00 | |
| | 162.0 | 6 | 6 | -528 | 236,532 | 13.68 | 323.68 | 8.82 | 8.82 | 36.34 | 0.00 | |
| | 165.0 | 5 | 5 | -513 | 236,004 | 13.67 | 323.67 | 8.33 | 8.33 | 36.30 | 0.00 | |
| | 168.0 | 5 | 5 | -498 | 235,490 | 13.65 | 323.65 | 7.85 | 7.85 | 36.26 | 0.00 | |
| | 171.0 | 5 | 5 | -481 | 234,993 | 13.63 | 323.63 | 7.40 | 7.40 | 36.22 | 0.00 | |
| | 174.0 | 4 | 4 | -464 | 234,512 | 13.61 | 323.61 | 6.98 | 6.98 | 36.18 | 0.00 | |
| | 177.0 | 4 | 4 | -447 | 234,048 | 13.60 | 323.60 | 6.58 | 6.58 | 36.14 | 0.00 | |
| MAXIMUM VALUES>> | 180.0 | 60 | 60 | 10,783 | 241,717 | 13.86 | 323.86 | 14.12 | 14.12 | 36.76 | 0.00 | |

3.1 Ft. Below the Top of Dam.

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| Rev. 10-31-94 | South Basin | | | | El. 327.00 | | 1 Riser/Barrel | INV. OUT: | 24 In. Barrel | El. 315.00 | Width=20 Ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Storm volume by SCS: | | | | | | | | | | | |
| Q*=(P-0.2S)^2/(P+0.8S) | Time | OVERLAND | TOTAL | INCREMENTAL | Accumulated | Stage | Elevation | TOTAL | Outflow: | Max.Outflow: | Spillway Inv. |
| V=(Q*/12)*(Ac.*43560), in Cu.Ft. | (minutes) | FLOW | INFLOW | Storage-CuFt | Storage CuFt | Feet | | OUTFLOW | Riser/Barrel | CMP-Barrel | El. 325.50 |
| Watershed Area = | 0.0 | 0 | 0 | 0 | 9,360 | 1.98 | 311.98 | 0.00 | 0.00 | 0.00 | 0.00 |
| 26.50 Acres | 3.0 | 1 | 1 | 105 | 9,360 | 1.98 | 311.98 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100 Year Runoff = 4.40 In. | 6.0 | 2 | 2 | 418 | 9,465 | 2.00 | 312.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 9.0 | 5 | 5 | 931 | 9,884 | 2.05 | 312.05 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100 Year Storm Volume = | 12.0 | 9 | 9 | 1,630 | 10,815 | 2.16 | 312.16 | 0.00 | 0.00 | 0.00 | 0.00 |
| 423,661 Cu. Ft. | 15.0 | 14 | 14 | 2,496 | 12,445 | 2.35 | 312.35 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100 Year Qp by Scs In CFS = | 18.0 | 19 | 19 | 3,506 | 14,940 | 2.62 | 312.62 | 0.00 | 0.00 | 0.00 | 0.00 |
| 88.0 C.F.S. | 21.0 | 26 | 26 | 4,633 | 18,448 | 2.98 | 312.98 | 0.00 | 0.00 | 0.00 | 0.00 |
| Tp=Vol/(1.39Qp*60) in min | 24.0 | 32 | 32 | 5,848 | 23,080 | 3.40 | 313.40 | 0.00 | 0.00 | 0.00 | 0.00 |
| 57.73 Minutes | 27.0 | 40 | 40 | 7,118 | 28,928 | 3.90 | 313.90 | 0.00 | 0.00 | 0.00 | 0.00 |
| TIME INCR IN SECONDS and MINUTES | 30.0 | 47 | 47 | 8,410 | 36,046 | 4.44 | 314.44 | 0.00 | 0.00 | 0.00 | 0.00 |
| 180 Seconds | 33.0 | 54 | 54 | 9,688 | 44,456 | 5.04 | 315.04 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3.0 Minutes | 36.0 | 61 | 61 | 10,920 | 54,144 | 5.67 | 315.67 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 39.0 | 67 | 67 | 12,071 | 65,064 | 6.32 | 316.32 | 0.00 | 0.00 | 0.00 | 0.00 |
| Stage-Storage Function: | 42.0 | 73 | 73 | 13,112 | 77,135 | 7.00 | 317.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S=KsZ^b | 45.0 | 78 | 78 | 14,015 | 90,247 | 7.69 | 317.69 | 0.00 | 0.00 | 0.00 | 0.00 |
| Z=(S/Ks)^1/b | 48.0 | 82 | 82 | 14,756 | 104,262 | 8.39 | 318.39 | 0.00 | 0.00 | 0.00 | 0.00 |
| Ks= | 51.0 | 85 | 85 | 15,315 | 119,019 | 9.08 | 319.08 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2976.1953 | 54.0 | 87 | 87 | 15,678 | 134,334 | 9.76 | 319.76 | 0.00 | 0.00 | 0.00 | 0.00 |
| b | 57.0 | 88 | 88 | 15,834 | 150,012 | 10.42 | 320.42 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1.6724 | 60.0 | 88 | 88 | 15,779 | 165,846 | 11.07 | 321.07 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1/b | 63.0 | 86 | 86 | 15,516 | 181,625 | 11.69 | 321.69 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.597943076 | 66.0 | 84 | 84 | 15,050 | 197,141 | 12.27 | 322.27 | 0.00 | 0.00 | 0.00 | 0.00 |
| Stage (Z) = 0 at Elev. ... | 69.0 | 80 | 80 | 14,395 | 212,191 | 12.82 | 322.82 | 0.00 | 0.00 | 0.00 | 0.00 |
| 310.0 | 72.0 | 75 | 75 | 13,328 | 226,587 | 13.34 | 323.34 | 1.33 | 1.33 | 35.51 | 0.00 |
| | 75.0 | 69 | 69 | 10,292 | 239,915 | 13.80 | 323.80 | 12.19 | 12.19 | 36.62 | 0.00 |
| | 78.0 | 64 | 64 | 7,224 | 250,207 | 14.15 | 324.16 | 24.30 | 24.30 | 37.43 | 0.00 |
| | 81.0 | 60 | 60 | 4,622 | 257,431 | 14.40 | 324.40 | 34.17 | 34.17 | 37.98 | 0.00 |
| Runoff Calculation (fr. Rainfall) | 84.0 | 56 | 56 | 3,107 | 262,053 | 14.55 | 324.55 | 38.33 | 38.33 | 38.33 | 0.00 |
| Enter watershed's weighted CN below: | 87.0 | 52 | 52 | 2,354 | 265,160 | 14.65 | 324.65 | 38.56 | 38.56 | 38.56 | 0.00 |
| 70 | 90.0 | 48 | 48 | 1,661 | 267,514 | 14.73 | 324.73 | 38.73 | 38.73 | 38.73 | 0.00 |
| Enter 24 Hr. rainfall for storm event: | 93.0 | 45 | 45 | 1,025 | 269,175 | 14.78 | 324.78 | 38.86 | 38.86 | 38.86 | 0.00 |
| 7.0 In. | 96.0 | 41 | 41 | 442 | 270,201 | 14.82 | 324.82 | 38.93 | 38.93 | 38.93 | 0.00 |
| *S= 4.29* | 99.0 | 38 | 38 | -94 | 270,642 | 14.83 | 324.83 | 38.96 | 38.96 | 38.96 | 0.00 |
| Runoff = 4.40 In. | 102.0 | 36 | 36 | -585 | 270,548 | 14.83 | 324.83 | 38.95 | 38.95 | 38.95 | 0.00 |
| | 105.0 | 33 | 33 | -1,035 | 269,963 | 14.81 | 324.81 | 38.91 | 38.91 | 38.91 | 0.00 |
| | 108.0 | 31 | 31 | -1,446 | 268,928 | 14.78 | 324.78 | 38.84 | 38.84 | 38.84 | 0.00 |
| | 111.0 | 29 | 29 | -1,821 | 267,482 | 14.73 | 324.73 | 38.73 | 38.73 | 38.73 | 0.00 |
| | 114.0 | 27 | 27 | -2,164 | 265,661 | 14.67 | 324.67 | 38.60 | 38.60 | 38.60 | 0.00 |
| | 117.0 | 25 | 25 | -2,476 | 263,497 | 14.60 | 324.60 | 38.44 | 38.44 | 38.44 | 0.00 |
| | 120.0 | 23 | 23 | -2,758 | 261,022 | 14.51 | 324.51 | 38.25 | 38.25 | 38.25 | 0.00 |
| | 123.0 | 21 | 21 | -2,533 | 258,264 | 14.42 | 324.42 | 35.37 | 35.37 | 38.05 | 0.00 |
| | 126.0 | 20 | 20 | -2,155 | 255,731 | 14.34 | 324.34 | 31.76 | 31.76 | 37.86 | 0.00 |
| | 129.0 | 18 | 18 | -1,872 | 253,575 | 14.27 | 324.27 | 28.78 | 28.78 | 37.69 | 0.00 |
| | 132.0 | 17 | 17 | -1,655 | 251,703 | 14.20 | 324.20 | 26.26 | 26.26 | 37.55 | 0.00 |
| | 135.0 | 16 | 16 | -1,483 | 250,049 | 14.15 | 324.15 | 24.10 | 24.10 | 37.42 | 0.00 |
| | 138.0 | 15 | 15 | -1,346 | 248,565 | 14.10 | 324.10 | 22.20 | 22.20 | 37.30 | 0.00 |
| | 141.0 | 14 | 14 | -1,233 | 247,219 | 14.05 | 324.05 | 20.53 | 20.53 | 37.20 | 0.00 |
| | 144.0 | 13 | 13 | -1,138 | 245,987 | 14.01 | 324.01 | 19.03 | 19.03 | 37.10 | 0.00 |
| | 147.0 | 12 | 12 | -1,058 | 244,848 | 13.97 | 323.97 | 17.68 | 17.68 | 37.01 | 0.00 |
| | 150.0 | 11 | 11 | -988 | 243,791 | 13.93 | 323.93 | 16.45 | 16.45 | 36.93 | 0.00 |
| | 153.0 | 10 | 10 | -926 | 242,803 | 13.90 | 323.90 | 15.33 | 15.33 | 36.85 | 0.00 |
| | 156.0 | 9 | 9 | -871 | 241,877 | 13.87 | 323.87 | 14.30 | 14.30 | 36.77 | 0.00 |
| | 159.0 | 9 | 9 | -822 | 241,006 | 13.84 | 323.84 | 13.35 | 13.35 | 36.70 | 0.00 |
| | 162.0 | 8 | 8 | -776 | 240,185 | 13.81 | 323.81 | 12.47 | 12.47 | 36.64 | 0.00 |
| | 165.0 | 8 | 8 | -735 | 239,408 | 13.78 | 323.78 | 11.66 | 11.66 | 36.58 | 0.00 |
| | 168.0 | 7 | 7 | -697 | 238,673 | 13.76 | 323.76 | 10.91 | 10.91 | 36.52 | 0.00 |
| | 171.0 | 7 | 7 | -662 | 237,976 | 13.73 | 323.73 | 10.22 | 10.22 | 36.46 | 0.00 |
| | 174.0 | 6 | 6 | -629 | 237,314 | 13.71 | 323.71 | 9.57 | 9.57 | 36.41 | 0.00 |
| | 177.0 | 6 | 6 | -598 | 236,685 | 13.69 | 323.69 | 8.96 | 8.96 | 36.35 | 0.00 |
| MAXIMUM VALUES>> | 180.0 | 88 | 88 | 15,834 | 270,642 | 14.83 | 324.83 | 38.96 | 38.96 | 38.96 | 0.00 |
| | | | | | | 2.2 Ft. Below the Top of Dam. | | | | | |

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## PEAK DISCHARGE SUMMARY

| JOB: | Currin Landfill | | | H.P. |
|---|---|---|---|---|
| DRAINAGE AREA NAME: | NORTH BASIN | | | 30-July-94 |
| COVER DESCRIPTION | SOIL NAME | GROUP A,B,C,D? | CN from TABLE 2-2 | AREA (In acres) |
| Ponds | | - | 98 | 1.60 Ac. |
| Established Meadow | | B | 58 | 12.70 Ac. |
| Established Meadow | | C | 71 | 4.34 Ac. |
| Established Meadow | | D | 78 | 5.51 Ac. |
| Crushed Stone Roads | | B | 86 | 0.44 Ac. |
| Crushed Stone Roads | | D | 92 | 0.21 Ac. |
| | | | | |
| Paved Roads w/ROW | | C | 92 | |
| Paved Roads w/ROW | | D | 93 | |
| | | | | |
| Unvegetated, disturbed | | B | 86 | 6.90 Ac. |
| Unvegetated, disturbed | | C | 91 | |
| | | | AREA SUBTOTALS: | 31.70 Ac. |

| | | | | |
|---|---|---|---|---|
| Total Area In Acres = | 31.70 Ac. | Total Sheet Flow= | Total Shallow Flow= | Total Channel Flow = |
| Weighted CN = | 72 | 0.43 Hrs. | 0.04 Hrs. | 0.01 Hrs. |
| Time Of Concentration = | 0.48 Hrs. | RAINFALL TYPE II | | |
| Pond Factor = | 1 | | | |

| STORM | Precipitation (P) Inches | Runoff (Q) | Qp, PEAK DISCHARGE | TOTAL STORM Volumes |
|---|---|---|---|---|
| 1 Year | 3.0 In. | 0.8 In. | 17.8 CFS | 89,582 Cu. Ft. |
| 2 Year | 3.6 In. | 1.2 In. | 27.7 CFS | 133,522 Cu. Ft. |
| 5 Year | 4.7 In. | 2.0 In. | 49 CFS | 224,901 Cu. Ft. |
| 10 Year | 5.5 In. | 2.6 In. | 67 CFS | 298,905 Cu. Ft. |
| 25 Year | 6.3 In. | 3.3 In. | 85 CFS | 375,731 Cu. Ft. |
| 50 Year | 7.1 In. | 3.9 In. | 104 CFS | 454,373 Cu. Ft. |
| 100 Year | 7.9 In. | 4.6 In. | 124 CFS | 533,132 Cu. Ft. |

## PEAK DISCHARGE SUMMARY

| JOB: | Currin Landfill | | | H.P. |
|---|---|---|---|---|
| DRAINAGE AREA NAME: | NORTH BASIN | | | 30-July-94 |
| COVER DESCRIPTION | SOIL NAME | GROUP A,B,C,D? | CN from TABLE 2-2 | AREA (In acres) |
| Ponds | | - | 98 | 1.60 Ac. |
| Established Meadow | | B | 58 | 12.70 Ac. |
| Established Meadow | | C | 71 | 4.34 Ac. |
| Established Meadow | | D | 78 | 5.51 Ac. |
| Crushed Stone Roads | | B | 86 | 0.44 Ac. |
| Crushed Stone Roads | | D | 92 | 0.21 Ac. |
| | | | | |
| Paved Roads w/ROW | | C | 92 | |
| Paved Roads w/ROW | | D | 93 | |
| | | | | |
| Unvegetated, disturbed | | B | 86 | 6.90 Ac. |
| Unvegetated, disturbed | | C | 91 | |
| | | | AREA SUBTOTALS: | 31.70 Ac. |

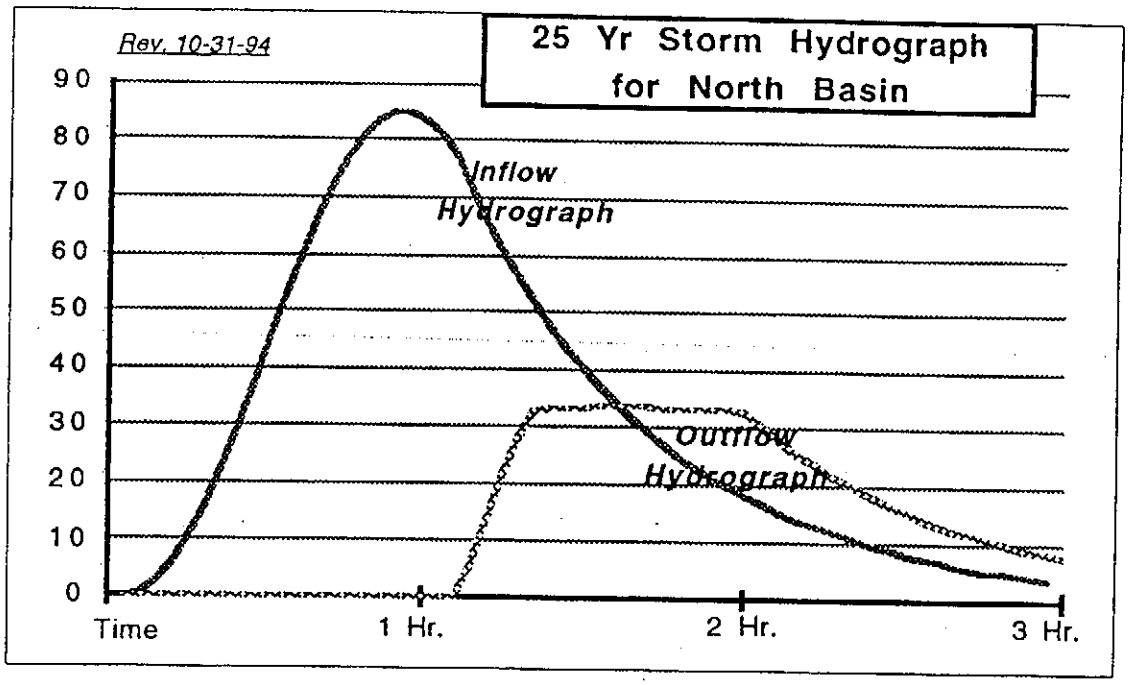
| Total Area In Acres = | 31.70 Ac. | Total Sheet Flow= | Total Shallow Flow= | Total Channel Flow = |
|---|---|---|---|---|
| Weighted CN = | 72 | | | |
| Time Of Concentration = | 0.48 Hrs. | 0.43 Hrs. | 0.04 Hrs. | 0.01 Hrs. |
| Pond Factor = | 1 | RAINFALL TYPE II | | |

| *STORM* | *Precipitation* (P) Inches | *Runoff* (Q) | Qp, PEAK DISCHARGE | TOTAL STORM Volumes |
|---|---|---|---|---|
| 1 Year | 3.0 In. | 0.8 In. | 17.8 CFS | 89,582 Cu. Ft. |
| 2 Year | 3.6 In. | 1.2 In. | 27.7 CFS | 133,522 Cu. Ft. |
| 5 Year | 4.7 In. | 2.0 In. | 49 CFS | 224,901 Cu. Ft. |
| 10 Year | 5.5 In. | 2.6 In. | 67 CFS | 298,905 Cu. Ft. |
| 25 Year | 6.3 In. | 3.3 In. | 85 CFS | 375,731 Cu. Ft. |
| 50 Year | 7.1 In. | 3.9 In. | 104 CFS | 454,373 Cu. Ft. |
| 100 Year | 7.9 In. | 4.6 In. | 124 CFS | 533,132 Cu. Ft. |

# 25 and 100 Year Hydrographs for the North Basin

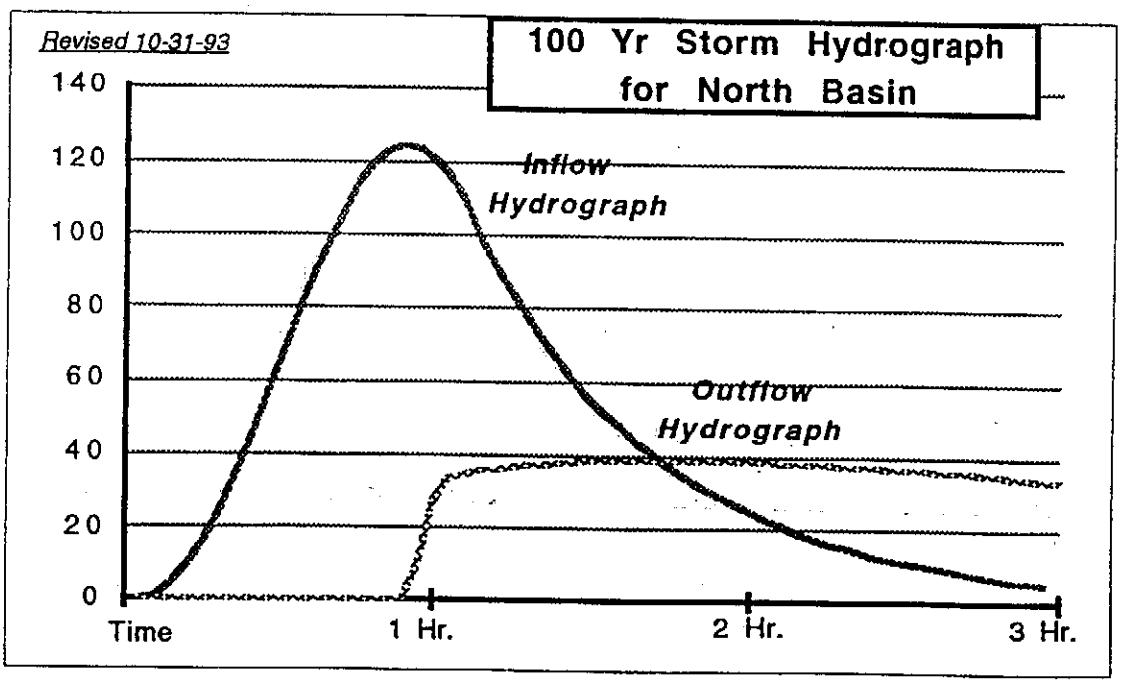
| Currin - Brothers North - Basin | Top of Dam EL. 312.00 | Primary - Outlets - 1 - Riser/Barrel | INV. - DU - 30 In. - Riser - El. 300.00 INV. - DU - 24 In. - Barrel - El. 300.00 | Spillway - Width=30 - Ft. |
|---|---|---|---|---|

| | Time (minutes) | OVERLAN FLOW | TOTAL INFLOW | INCREMENTA Storage-CuF | Accumulate Storage Cu | Stage Feet | Elevation | TOTAL OUTFLOW | Outflow: Riser/Barrel | Max.Outflow: CMP-Barrel | Spillway Inv. El. 310.50 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MAXIMUM VALUES>> | 180.0 | 85 | 85 | 15,273 | 247,920 | 7.41 | 307.41 | 33.20 | 33.20 | 33.20 | 0.00 |
| | | | | | | 4.6 Ft. Below the Top of Dam. | | | | | |




| Currin - Brothers North - Basin | Top of Dam EL. 312.00 | Primary - Outlets - 1 - Riser/Barrel | INV. - DU - 30 In. - Riser - El. 300.00 INV. - DU - 24 In. - Barrel - El. 300.00 | Spillway - Width=20 - Ft. |
|---|---|---|---|---|

| | Time (minutes) | OVERLAN FLOW | TOTAL INFLOW | INCREMENTA Storage-CuF | Accumulate Storage Cu | Stage Feet | Elevation | TOTAL OUTFLOW | Outflow: Riser/Barrel | Max.Outflow: CMP-Barrel | Spillway Inv. El. 310.50 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MAXIMUM VALUES>> | 180.0 | 124 | 124 | 22,314 | 338,797 | 9.55 | 308.55 | 38.34 | 38.34 | 38.34 | 0.00 |
| | | | | | | 2.4 Ft. Below the Top of Dam. | | | | | |



| Rev. 10-31-94 | North Basin | | | | El. 312.00 | | 1 Riser/Barrel | INV. OUT: | 24 In. Barrel | El. 300.00 | Width=20 Ft. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Storm volume by SCS: | | | | | | | | | | | |
| Q*=(P-0.2S)^2/(P+0.8S) | Time | OVERLAND | TOTAL | INCREMENTAL | Accumulated | Stage | Elevation | TOTAL | Outflow: | Max.Outflow: | Spillway Inv. |
| V=(Q*/12)*(Ac.*43560), In Cu.Ft. | (minutes) | FLOW | INFLOW | Storage-CuFt | Storage CuFt | Feet | | OUTFLOW | Riser/Barrel | CMP-Barrel | El. 310.50 |
| Watershed Area = | 0.0 | 0 | 0 | 0 | 12,420 | 0.65 | 300.65 | 0.00 | 0.00 | 0.00 | 0.00 |
| 31.70 Acres | 3.0 | 1 | 1 | 122 | 12,420 | 0.65 | 300.65 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 Year Runoff = 3.24 In. | 6.0 | 3 | 3 | 486 | 12,542 | 0.66 | 300.66 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 9.0 | 6 | 6 | 1,079 | 13,028 | 0.68 | 300.68 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 Year Storm Volume = | 12.0 | 10 | 10 | 1,882 | 14,107 | 0.72 | 300.72 | 0.00 | 0.00 | 0.00 | 0.00 |
| 372,866 Cu. Ft. | 15.0 | 16 | 16 | 2,870 | 15,990 | 0.80 | 300.80 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 Year Qp by Scs in CFS = | 18.0 | 22 | 22 | 4,011 | 18,860 | 0.92 | 300.92 | 0.00 | 0.00 | 0.00 | 0.00 |
| 85.0 C.F.S. | 21.0 | 29 | 29 | 5,269 | 22,871 | 1.07 | 301.07 | 0.00 | 0.00 | 0.00 | 0.00 |
| Tp=Vol/(1.39Qp*60) In min | 24.0 | 37 | 37 | 6,603 | 28,140 | 1.27 | 301.27 | 0.00 | 0.00 | 0.00 | 0.00 |
| 52.60 Minutes | 27.0 | 44 | 44 | 7,970 | 34,743 | 1.50 | 301.50 | 0.00 | 0.00 | 0.00 | 0.00 |
| TIME INCR IN SECONDS and MINUTES | 30.0 | 52 | 52 | 9,327 | 42,714 | 1.78 | 301.78 | 0.00 | 0.00 | 0.00 | 0.00 |
| 180 Seconds | 33.0 | 59 | 59 | 10,631 | 52,041 | 2.09 | 302.09 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3.0 Minutes | 36.0 | 66 | 66 | 11,839 | 62,672 | 2.43 | 302.43 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 39.0 | 72 | 72 | 12,913 | 74,511 | 2.79 | 302.79 | 0.00 | 0.00 | 0.00 | 0.00 |
| Stage-Storage Function: | 42.0 | 77 | 77 | 13,818 | 87,423 | 3.18 | 303.18 | 0.00 | 0.00 | 0.00 | 0.00 |
| S=KsZ^b | 45.0 | 81 | 81 | 14,526 | 101,241 | 3.58 | 303.58 | 0.00 | 0.00 | 0.00 | 0.00 |
| Z=(S/Ks)^1/b | 48.0 | 83 | 83 | 15,013 | 115,767 | 4.00 | 304.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Ks= | 51.0 | 85 | 85 | 15,265 | 130,780 | 4.41 | 304.41 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21014.5135 | 54.0 | 85 | 85 | 15,273 | 146,045 | 4.82 | 304.82 | 0.00 | 0.00 | 0.00 | 0.00 |
| b | 57.0 | 84 | 84 | 15,037 | 161,318 | 5.23 | 305.23 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1.2319 | 60.0 | 81 | 81 | 14,564 | 176,356 | 5.62 | 305.62 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1/b | 63.0 | 77 | 77 | 13,870 | 190,920 | 6.00 | 306.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.811754201 | 66.0 | 71 | 71 | 11,787 | 204,790 | 6.35 | 306.35 | 5.38 | 5.38 | 30.32 | 0.00 |
| Stage (Z) = 0 at Elev. ... | 69.0 | 65 | 65 | 9,333 | 216,577 | 6.64 | 306.64 | 13.49 | 13.49 | 31.14 | 0.00 |
| 300.0 | 72.0 | 60 | 60 | 6,995 | 225,910 | 6.87 | 306.87 | 21.40 | 21.40 | 31.78 | 0.00 |
| | 75.0 | 56 | 56 | 4,959 | 232,906 | 7.05 | 307.05 | 28.02 | 28.02 | 32.24 | 0.00 |
| | 78.0 | 51 | 51 | 3,364 | 237,865 | 7.17 | 307.17 | 32.56 | 32.56 | 32.56 | 0.00 |
| | 81.0 | 47 | 47 | 2,607 | 241,229 | 7.25 | 307.25 | 32.78 | 32.78 | 32.78 | 0.00 |
| Runoff Calculation (fr. Rainfall) | 84.0 | 44 | 44 | 1,916 | 243,836 | 7.31 | 307.31 | 32.94 | 32.94 | 32.94 | 0.00 |
| Enter watershed's weighted CN below: | 87.0 | 40 | 40 | 1,283 | 245,752 | 7.36 | 307.36 | 33.06 | 33.06 | 33.06 | 0.00 |
| 72 | 90.0 | 37 | 37 | 706 | 247,035 | 7.39 | 307.39 | 33.15 | 33.15 | 33.15 | 0.00 |
| Enter 24 Hr. rainfall for storm event: | 93.0 | 34 | 34 | 179 | 247,741 | 7.41 | 307.41 | 33.19 | 33.19 | 33.19 | 0.00 |
| 6.3 In. | 96.0 | 32 | 32 | -302 | 247,920 | 7.41 | 307.41 | 33.20 | 33.20 | 33.20 | 0.00 |
| *S= 3.89* | 99.0 | 29 | 29 | -740 | 247,618 | 7.41 | 307.41 | 33.18 | 33.18 | 33.18 | 0.00 |
| Runoff = 3.24 In. | 102.0 | 27 | 27 | -1,139 | 246,878 | 7.39 | 307.39 | 33.14 | 33.14 | 33.14 | 0.00 |
| | 105.0 | 25 | 25 | -1,501 | 245,740 | 7.36 | 307.36 | 33.06 | 33.06 | 33.06 | 0.00 |
| | 108.0 | 23 | 23 | -1,830 | 244,238 | 7.32 | 307.32 | 32.97 | 32.97 | 32.97 | 0.00 |
| | 111.0 | 21 | 21 | -2,129 | 242,408 | 7.28 | 307.28 | 32.85 | 32.85 | 32.85 | 0.00 |
| | 114.0 | 19 | 19 | -2,399 | 240,280 | 7.23 | 307.23 | 32.72 | 32.72 | 32.72 | 0.00 |
| | 117.0 | 18 | 18 | -2,642 | 237,881 | 7.17 | 307.17 | 32.56 | 32.56 | 32.56 | 0.00 |
| | 120.0 | 16 | 16 | -2,495 | 235,239 | 7.10 | 307.10 | 30.35 | 30.35 | 32.39 | 0.00 |
| | 123.0 | 15 | 15 | -2,278 | 232,744 | 7.04 | 307.04 | 27.86 | 27.86 | 32.23 | 0.00 |
| | 126.0 | 14 | 14 | -2,092 | 230,466 | 6.99 | 306.99 | 25.65 | 25.65 | 32.08 | 0.00 |
| | 129.0 | 13 | 13 | -1,932 | 228,374 | 6.94 | 306.94 | 23.67 | 23.67 | 31.94 | 0.00 |
| | 132.0 | 12 | 12 | -1,792 | 226,442 | 6.89 | 306.89 | 21.88 | 21.88 | 31.81 | 0.00 |
| | 135.0 | 11 | 11 | -1,668 | 224,650 | 6.84 | 306.84 | 20.27 | 20.27 | 31.69 | 0.00 |
| | 138.0 | 10 | 10 | -1,557 | 222,983 | 6.80 | 306.80 | 18.80 | 18.80 | 31.58 | 0.00 |
| | 141.0 | 9 | 9 | -1,458 | 221,425 | 6.76 | 306.76 | 17.46 | 17.46 | 31.47 | 0.00 |
| | 144.0 | 9 | 9 | -1,369 | 219,967 | 6.73 | 306.73 | 16.23 | 16.23 | 31.37 | 0.00 |
| | 147.0 | 8 | 8 | -1,287 | 218,598 | 6.69 | 306.69 | 15.11 | 15.11 | 31.28 | 0.00 |
| | 150.0 | 7 | 7 | -1,212 | 217,311 | 6.66 | 306.66 | 14.07 | 14.07 | 31.19 | 0.00 |
| | 153.0 | 7 | 7 | -1,144 | 216,099 | 6.63 | 306.63 | 13.12 | 13.12 | 31.11 | 0.00 |
| | 156.0 | 6 | 6 | -1,080 | 214,955 | 6.60 | 306.60 | 12.24 | 12.24 | 31.03 | 0.00 |
| | 159.0 | 6 | 6 | -1,022 | 213,874 | 6.58 | 306.58 | 11.43 | 11.43 | 30.96 | 0.00 |
| | 162.0 | 5 | 5 | -967 | 212,853 | 6.55 | 306.55 | 10.68 | 10.68 | 30.89 | 0.00 |
| | 165.0 | 5 | 5 | -916 | 211,885 | 6.53 | 306.53 | 9.98 | 9.98 | 30.82 | 0.00 |
| | 168.0 | 5 | 5 | -869 | 210,969 | 6.50 | 306.50 | 9.34 | 9.34 | 30.75 | 0.00 |
| | 171.0 | 4 | 4 | -824 | 210,101 | 6.48 | 306.48 | 8.74 | 8.74 | 30.69 | 0.00 |
| | 174.0 | 4 | 4 | -782 | 209,277 | 6.46 | 306.46 | 8.18 | 8.18 | 30.64 | 0.00 |
| | 177.0 | 4 | 4 | -743 | 208,494 | 6.44 | 306.44 | 7.67 | 7.67 | 30.58 | 0.00 |
| MAXIMUM VALUES>> | 180.0 | 85 | 85 | 15,273 | 247,920 | 7.41 | 307.41 | 33.20 | 33.20 | 33.20 | 0.00 |
| | | | | | | 4.6 Ft. Below the Top of Dam. | | | | | |



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| Rev. 10-31-94 | North Basin | | | | El. 312.00 | | 1 Riser/Barrel | INV. OUT- | 24 in. Barrel | El. 300.00 | Width=20 FT. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Storm volume by SCS: | | | | | | | | | | | |
| Q*=(P-0.2S)^2/(P+0.8S) | Time | OVERLAND | TOTAL | INCREMENTAL | Accumulated | Stage | Elevation | TOTAL | Outflow: | Max.Outflow: | Spillway Inv. |
| V=(Q*/12)*(Ac.*43560), in Cu.Ft. | (minutes) | FLOW | INFLOW | Storage-CuFt | Storage CuFt | Feet | | OUTFLOW | Riser/Barrel | CMP-Barrel | El. 310.50 |
| Watershed Area = | 0.0 | 0 | 0 | 0 | 12,420 | 0.65 | 300.65 | 0.00 | 0.00 | 0.00 | 0.00 |
| 31.70 Acres | 3.0 | 1 | 1 | 186 | 12,420 | 0.65 | 300.65 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100 Year Runoff = 4.63 In. | 6.0 | 4 | 4 | 738 | 12,606 | 0.66 | 300.66 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 9.0 | 9 | 9 | 1,637 | 13,344 | 0.69 | 300.69 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100 Year Storm Volume = | 12.0 | 16 | 16 | 2,853 | 14,981 | 0.76 | 300.76 | 0.00 | 0.00 | 0.00 | 0.00 |
| 533,132 Cu. Ft. | 15.0 | 24 | 24 | 4,347 | 17,834 | 0.88 | 300.88 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100 Year Qp by Scs in CFS = | 18.0 | 34 | 34 | 6,067 | 22,181 | 1.04 | 301.04 | 0.00 | 0.00 | 0.00 | 0.00 |
| 124.0 C.F.S. | 21.0 | 44 | 44 | 7,957 | 28,248 | 1.27 | 301.27 | 0.00 | 0.00 | 0.00 | 0.00 |
| Tp=Vol/(1.39Qp*60) In min | 24.0 | 55 | 55 | 9,954 | 36,205 | 1.56 | 301.56 | 0.00 | 0.00 | 0.00 | 0.00 |
| 51.55 Minutes | 27.0 | 67 | 67 | 11,992 | 46,160 | 1.89 | 301.89 | 0.00 | 0.00 | 0.00 | 0.00 |
| TIME INCR IN SECONDS and MINUTES | 30.0 | 78 | 78 | 14,001 | 58,152 | 2.28 | 302.28 | 0.00 | 0.00 | 0.00 | 0.00 |
| 180 Seconds | 33.0 | 88 | 88 | 15,916 | 72,153 | 2.72 | 302.72 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3.0 Minutes | 36.0 | 98 | 98 | 17,672 | 88,068 | 3.20 | 303.20 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 39.0 | 107 | 107 | 19,211 | 105,740 | 3.71 | 303.71 | 0.00 | 0.00 | 0.00 | 0.00 |
| Stage-Storage Function: | 42.0 | 114 | 114 | 20,482 | 124,951 | 4.25 | 304.25 | 0.00 | 0.00 | 0.00 | 0.00 |
| S=KsZ^b | 45.0 | 119 | 119 | 21,442 | 145,433 | 4.81 | 304.81 | 0.00 | 0.00 | 0.00 | 0.00 |
| Z=(S/Ks)^1/b | 48.0 | 123 | 123 | 22,060 | 166,875 | 5.38 | 305.38 | 0.00 | 0.00 | 0.00 | 0.00 |
| Ks= | 51.0 | 124 | 124 | 22,314 | 188,935 | 5.95 | 305.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21014.5135 | 54.0 | 123 | 123 | 20,480 | 211,249 | 6.51 | 306.51 | 9.53 | 9.53 | 30.77 | 0.00 |
| b | 57.0 | 121 | 121 | 16,874 | 231,729 | 7.02 | 307.02 | 26.87 | 26.87 | 32.16 | 0.00 |
| 1.2319 | 60.0 | 116 | 116 | 14,890 | 248,603 | 7.43 | 307.43 | 33.24 | 33.24 | 33.24 | 0.00 |
| 1/b | 63.0 | 110 | 110 | 13,564 | 263,493 | 7.79 | 307.79 | 34.16 | 34.16 | 34.16 | 0.00 |
| 0.811754201 | 66.0 | 100 | 100 | 11,623 | 277,057 | 8.11 | 308.11 | 34.97 | 34.97 | 34.97 | 0.00 |
| Stage (Z) = 0 at Elev. ... | 69.0 | 92 | 92 | 10,081 | 288,679 | 8.39 | 308.39 | 35.64 | 35.64 | 35.64 | 0.00 |
| 300.0 | 72.0 | 84 | 84 | 8,671 | 298,760 | 8.63 | 308.63 | 36.20 | 36.20 | 36.20 | 0.00 |
| | 75.0 | 78 | 78 | 7,380 | 307,431 | 8.83 | 308.83 | 36.68 | 36.68 | 36.68 | 0.00 |
| | 78.0 | 72 | 72 | 6,199 | 314,811 | 9.00 | 309.00 | 37.08 | 37.08 | 37.08 | 0.00 |
| | 81.0 | 66 | 66 | 5,118 | 321,010 | 9.14 | 309.14 | 37.41 | 37.41 | 37.41 | 0.00 |
| Runoff Calculation (fr. Rainfall) | 84.0 | 61 | 61 | 4,130 | 326,129 | 9.26 | 309.26 | 37.68 | 37.68 | 37.68 | 0.00 |
| Enter watershed's weighted CN below: | 87.0 | 56 | 56 | 3,225 | 330,258 | 9.36 | 309.36 | 37.90 | 37.90 | 37.90 | 0.00 |
| 72 | 90.0 | 51 | 51 | 2,398 | 333,484 | 9.43 | 309.43 | 38.07 | 38.07 | 38.07 | 0.00 |
| Enter 24 Hr. rainfall for storm event: | 93.0 | 47 | 47 | 1,642 | 335,882 | 9.49 | 309.49 | 38.19 | 38.19 | 38.19 | 0.00 |
| 7.9 In. | 96.0 | 44 | 44 | 952 | 337,524 | 9.52 | 309.52 | 38.27 | 38.27 | 38.27 | 0.00 |
| *S= 3.89* | 99.0 | 40 | 40 | 321 | 338,476 | 9.55 | 309.55 | 38.32 | 38.32 | 38.32 | 0.00 |
| Runoff = 4.63 In. | 102.0 | 37 | 37 | -255 | 338,797 | 9.55 | 309.55 | 38.34 | 38.34 | 38.34 | 0.00 |
| | 105.0 | 34 | 34 | -779 | 338,542 | 9.55 | 309.55 | 38.33 | 38.33 | 38.33 | 0.00 |
| | 108.0 | 31 | 31 | -1,258 | 337,763 | 9.53 | 309.53 | 38.29 | 38.29 | 38.29 | 0.00 |
| | 111.0 | 29 | 29 | -1,693 | 336,505 | 9.50 | 309.50 | 38.22 | 38.22 | 38.22 | 0.00 |
| | 114.0 | 27 | 27 | -2,088 | 334,813 | 9.46 | 309.46 | 38.13 | 38.13 | 38.13 | 0.00 |
| | 117.0 | 24 | 24 | -2,448 | 332,724 | 9.41 | 309.41 | 38.03 | 38.03 | 38.03 | 0.00 |
| | 120.0 | 22 | 22 | -2,774 | 330,276 | 9.36 | 309.36 | 37.90 | 37.90 | 37.90 | 0.00 |
| | 123.0 | 21 | 21 | -3,069 | 327,503 | 9.29 | 309.29 | 37.75 | 37.75 | 37.75 | 0.00 |
| | 126.0 | 19 | 19 | -3,335 | 324,434 | 9.22 | 309.22 | 37.59 | 37.59 | 37.59 | 0.00 |
| | 129.0 | 18 | 18 | -3,575 | 321,099 | 9.15 | 309.15 | 37.42 | 37.42 | 37.42 | 0.00 |
| | 132.0 | 16 | 16 | -3,792 | 317,524 | 9.06 | 309.06 | 37.23 | 37.23 | 37.23 | 0.00 |
| | 135.0 | 15 | 15 | -3,986 | 313,732 | 8.97 | 308.97 | 37.02 | 37.02 | 37.02 | 0.00 |
| | 138.0 | 14 | 14 | -4,159 | 309,746 | 8.88 | 308.88 | 36.81 | 36.81 | 36.81 | 0.00 |
| | 141.0 | 13 | 13 | -4,314 | 305,587 | 8.79 | 308.79 | 36.58 | 36.58 | 36.58 | 0.00 |
| | 144.0 | 12 | 12 | -4,451 | 301,273 | 8.68 | 308.68 | 36.34 | 36.34 | 36.34 | 0.00 |
| | 147.0 | 11 | 11 | -4,573 | 296,821 | 8.58 | 308.58 | 36.09 | 36.09 | 36.09 | 0.00 |
| | 150.0 | 10 | 10 | -4,679 | 292,249 | 8.47 | 308.47 | 35.84 | 35.84 | 35.84 | 0.00 |
| | 153.0 | 9 | 9 | -4,772 | 287,570 | 8.36 | 308.36 | 35.57 | 35.57 | 35.57 | 0.00 |
| | 156.0 | 8 | 8 | -4,852 | 282,798 | 8.25 | 308.25 | 35.30 | 35.30 | 35.30 | 0.00 |
| | 159.0 | 8 | 8 | -4,920 | 277,946 | 8.13 | 308.13 | 35.02 | 35.02 | 35.02 | 0.00 |
| | 162.0 | 7 | 7 | -4,978 | 273,026 | 8.02 | 308.02 | 34.73 | 34.73 | 34.73 | 0.00 |
| | 165.0 | 7 | 7 | -5,026 | 268,047 | 7.90 | 307.90 | 34.43 | 34.43 | 34.43 | 0.00 |
| | 168.0 | 6 | 6 | -5,065 | 263,022 | 7.78 | 307.78 | 34.13 | 34.13 | 34.13 | 0.00 |
| | 171.0 | 6 | 6 | -5,095 | 257,957 | 7.66 | 307.66 | 33.82 | 33.82 | 33.82 | 0.00 |
| | 174.0 | 5 | 5 | -5,117 | 252,862 | 7.53 | 307.53 | 33.51 | 33.51 | 33.51 | 0.00 |
| | 177.0 | 5 | 5 | -5,132 | 247,745 | 7.41 | 307.41 | 33.19 | 33.19 | 33.19 | 0.00 |
| MAXIMUM VALUES>> | 180.0 | 124 | 124 | 22,314 | 338,797 | 9.55 | 309.55 | 38.34 | 38.34 | 38.34 | 0.00 |
| | | | | | | 2.4 Ft. Below the Top of Dam. | | | | | |

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| | Top of Dam | | Basin Dimensions | | | | | Maximum Capacities | | | | | Peak Discharge Data | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A Top Width | B Top Elev: | C | D | E Riser Ht. | F Top of Riser El | G Bottom Elev | H Sediment Storage El. | Stormwater Runoff Storage | Basin Capacity to Riser Inv | Maximum Sediment Storage | Sediment Clean Out Level | J 25 Yr. Storm El | Q-25 Inflow+ Outflow | Q-100 Inflow+ Outflow |
| th | | | | | | | | | | | | 4.25 ft fr. top | | 85 CFS | 124 CFS |
| sin | 15 Ft | 312.0 | 1.5 Ft | 4.5 Ft | 6.0 Ft | 306.0 | 300.0 | 303.0 | 163,920 CuFt | 190,920 CuFt | 27,000 CuFt | trash rack | 307.4 | 33 CFS | 38 CFS |
| ıth | | | | | | | | | | | | 10 ft fr. top | | 60 CFS | 88 CFS |
| sin | 15 Ft | 327.0 | 1.5 Ft | 2.3 Ft | 8.2 Ft | 323.2 | 310.0 | 314.0 | 196,000 CuFt | 225,000 CuFt | 29,000 CuFt | trash rack | 323.9 | 14 CFS | 39 CFS |

Note: Bottom of South Basin Riser is at El. 315.0, 5 ft. above bottom of basin.

*Revised 10-28-94*

## Anti-Flotation Calculations for North and South Basins
## Currin Landfill, Durham County, NC

| | E Riser Ht. | Primary Outlet K Riser Dia. | Riser Gauge | B Buoyancy in Lbs. per Lin. Ft. | W Wt. in Lbs. per Lin. Ft. | Calculation Safety Factor = 58.4 (B-W) x Riser Ht / 58.4 | Req. Vol. of Concrete | Sq. dimensions for 3' thickness | Imbed Riser 8" into Base Concrete Riser Base | Actual Vol. of Concrete |
|---|---|---|---|---|---|---|---|---|---|---|
| North BASIN | 6.0 Ft | 30 In | 14 Gauge 30 " C.M.P. | 306.3 | 30.9 | (306.3-30.9) x 6 / 58.4 | 28.29 Cu.Ft. | 3.07 | 3'-3" x 3'-3" x 3'.0" | 31.69 Cu.Ft. |
| South BASIN | 8.2 Ft | 30 In | 14 Gauge 30 " C.M.P. | 306.3 | 30.9 | (306.3-30.9) x 8.2 / 58.4 | 38.67 Cu.Ft. | 3.59 | 3'-8" x 3'-8" x 3'.0" | 40.33 Cu.Ft. |

| Riser Ht. | | Buoyancy (lbs) | Weight of Base @2 tons/CuYd | Ratio: Base to Buoyancy |
|---|---|---|---|---|
| 6.0 Ft | North BASIN | 1652 lbs | 4690 lbs | 2.84 to 1 |
| 8.2 Ft | South BASIN | 2258 lbs | 5969 lbs | 2.64 to 1 |

Note: 2 tons/c.y.=148 lb/cu.ft.

# U.S. ARMY CORPS OF ENGINEERS
## WILMINGTON DISTRICT

Action ID. _____ County Durham

## GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION

Property Owner/Agent Currin Bros, Inc. c/o Allen Currin

Address 1610 Wolfpack Lane

Raleigh, N.C. 27609

Telephone No. (919) 876-1138

Size and Location of project (waterbody, road name/number, town, etc.) 62.948 acres on W side of Coley Rd. (S.R. 1900), about 2,500 ft. N of S.R. 1902, E of Durham, about ½ mile W of Durham / Wake County line, N.C.

Description of Activity

Construction of sediment basins & filling of less than ⅓ of an acre of creek channels (no wetlands on site).

✓ Section 404 (Clean Water Act, 33 USC 1344) only.

___ Section 10 (River and Harbor Act of 1899) only.

___ Section 404 and Section 10.

21a Regional General Permit or Nationwide Permit Number.

Any violation of the conditions of the Regional General or Nationwide Permit referenced above may subject the permittee to a stop work order, a restoration order, and/or appropriate legal action.

This Department of the Army Regional General/Nationwide Permit verification does not relieve the undersigned permittee of the responsibility to obtain any other required Federal, State, or local approvals/permits. The permittee may need to contact appropriate State and local agencies before beginning work.

By signature below, the permittee certifies an understanding and acceptance of all terms and conditions of this permit.

Property Owner/Authorized Agent Signature Currin Bros. Inc. By: C. Allen Currin

Regulatory Project Manager Signature Joan B. Mansfield

Date May 26, 1994 Expiration Date May 26, 1996

SURVEY PLATS, FIELD SKETCH, WETLAND DELINEATION FORM, ETC., MUST BE ATTACHED TO THE YELLOW (FILE) COPY OF THIS FORM, IF REQUIRED OR AVAILABLE.

**Durham City County Planning Department**

101 City Hall Plaza
Durham, NC 27701
(919) 560-4137
Fax 560-4641

March 16, 1994

Mr. Steve Deaton
6508 Falls of Neuse Road, Suite 100
Raleigh, NC 27615

Dear Mr. Deaton:

Based upon a letter dated February 28, 1994 from Jim Barber, Eastern Area Engineer of the Division of Solid Waste Management, Department of Environmental Health and Natural Resources, I have reviewed, via a request by Allen Currin, Currin Brothers, Inc., to determine the legality of a potential site for a Land Clearing and Inert Debris (LCID) permit for property located on Coley Road and further described on Tax Map 986, Block 1, Lot 4. This location has been submitted for consideration as a permitted use under the regulations of the Rural District zoning classification in the Durham County Zoning Ordinance prior to January 1, 1994.

Prior to January 1, 1994, a Land Clearing and Inert Debris (LCID) landfill was a permitted use in Rural District under the Durham County Zoning Ordinance. Therefore, since this location on Coley Road was under active consideration before January 1, 1994 for purchase, design, and permitting the Planning Department supports the final permit application conditioned upon State approval for conformance with North Carolina Solid Waste Management Rules (15A NCAC 13); Section .0500 - Disposal Sites, Paragraphs .0563 (Applicability Requirements for Land Clearing/Inert Debris Landfills); 0564 (Siting criteria for Land Clearing/Inert Debris Landfills); .0565 (Application Requirements for Land Clearing/Inert Debris Landfills) and .0566 (Operational Requirements for Land Clearing/Inert Debris Landfills).

For your information, the merged Durham Zoning Ordinance, effective December 31, 1993 at 11:59 p.m. prohibits land clearing/inert debris landfills in the City and County of Durham Watersheds except for Jordan District B and Eno River District B areas.

If I can be of further assistance, please call me at 560-4137.

Sincerely,

Gerald E. Kelley
Assistant Director

GEK/bd

cc: Jim Barber, Eastern Area Engineer
Fayetteville Regional Office
226 Green Street, Suite 601
Fayetteville, NC 28301

Allen Currin
Currin Brothers, Inc.
P. O. Box 547
Fuquay-Varina, NC 27526

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Parks & Recreation

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
Dr. Philip K. McKnelly, Director

July 29, 1994

Mr. Andy Otten
Little & Little
P.O. Box 1448
Raleigh, NC 27602

SUBJECT: Rare Species and Significant Natural Areas in the Proposed Project Area Near Falls Lake in Durham County, NC

Dear Mr. Otten:

The North Carolina Natural Heritage Program does not have records of known rare species, high quality natural communities, or significant natural areas occurring at the proposed project site. To our knowledge, this project area has not been systematically inventoried and we cannot definitively state that rare species or significant natural areas do not occur there.

This project site is located on Rocky Branch which flows into Falls Lake State Park. Because this project site occurs along Rocky Branch, we recommend that erosion and siltation control measures be taken to reduce impacts to Falls Lake.

Located adjacent to the northwestern portion of the project site is a parcel of land that belongs to Falls Lake State Park. Also, located less than 0.5 mile north of this site is a significant natural area referred to as Lick Creek Bottomland Forest. This site is a Registered Natural Heritage Area and is considered to be of Regional Significance. Located at this registered area is a population of Cardamine douglassii (Douglass's bittercress) which is significantly rare in North Carolina. Due to its proximity, it is possible that this species may also occur at the project site.

Enclosed is a list of rare species that are known to occur in Durham County. If suitable habitat for any of these species occurs in the project area, then those species may be present at the project site. If it is necessary to be certain that this site does not contain rare species, a field survey would need to be conducted.

P.O. Box 27687, Raleigh, North Carolina 27611-7687 Telephone 919-733-4181 FAX 919-715-3085
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Please contact me at the address below or call me at (919) 733-7701 if you have any questions or need further information.

Sincerely,

Inge Smith

Inge Smith
Information Specialist
Natural Heritage Program

/iks

Enclosures

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Parks & Recreation

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
Dr. Philip K. McKnelly, Director

DEHNR

RECEIVED
OCT 19 1994
LITTLE & LITTLE

October 13, 1994

Mr. Andy Otten
Little & Little
P.O. Box 1448
Raleigh, NC 27602

SUBJECT: Rare Species and Significant Natural Areas in the Proposed Project Area Near Falls Lake in Durham County, NC

Dear Mr. Otten:

The North Carolina Natural Heritage Program answered an information request from you on July 29, 1994 about a project site on Rocky Branch, near Falls Lake State Park. In this response, reference was made to a population of Cardamine douglassii (Douglass's bittercress), a significantly rare plant in North Carolina, that occurs about 0.5 mile from the project site.

Due to this population's proximity to the project site, it is possible that this species may occur at there. This plant usually occurs in bottomlands and rich lower slopes, which apparently are not present at the project site. We do not require that a survey be conducted for this species. However, we do recommend that erosion and siltation control measures be taken to reduce impacts to Rocky Branch and Falls Lake State Park.

Please contact me at the address below or call me at (919) 733-7701 if you have any questions or need further information.

Sincerely,

Inge Smith

Inge Smith
Information Specialist
Natural Heritage Program

/iks

Enclosures

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North Carolina Department of Cultural Resources

James B. Hunt Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
William S. Price, Jr., Director

August 3, 1994

J. Andy Otten
Little & Little
P.O. Box 1448
Raleigh, NC 27602

Re: Inert debris landfill, Durham County
ER 95-7098

Dear Mr. Otten:

Thank you for your letter of July 14, 1994, concerning the above project.

We have conducted a review of the project and are aware of no properties of architectural, historic, or archaeological significance which would be affected by the project. Therefore, we have no comment on the project as currently proposed.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act of 1966 and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

Sincerely,

David Brook

David Brook
Deputy State Historic Preservation Officer

DB:slw

# COUNTY OF DURHAM

SEDIMENTATION AND EROSION CONTROL

November 29, 1994

RECEIVED

DEC 5 1994

LITTLE & LITTLE

Currin Brothers, Inc.
P.O. Box 547
Fuquay-Varina, NC 27526
Attn: Glenn R. Currin

Dear Mr. Currin:

**RE: LETTER OF APPROVAL**
**Project Name:** LCID (Currin 2)
**JCN:** 1747-08
**Submitted By:** Little & Little
**Date Submitted:** 11/21/94
**New Submittal ( ) Revised (X)**

This office has reviewed the subject Sedimentation & Erosion Control Plan. We find the plan to be acceptable and hereby issue this letter of approval (if any stipulations or recommendations are applicable, a list is enclosed and is incorporated as a part of this letter of approval).

Please be advised that a copy of the approved plan must be on file at the job site, and a land disturbing permit must be obtained and prominently displayed. Pursuant to G.S. 113A-61(d) and Section 19 (a) and (c) of the Sedimentation and Erosion Control Ordinance you are hereby notified that the Sedimentation and Erosion Control Office has the right to inspect the site over the life of the project to insure compliance with the approved plan and ordinance.

The Durham County and City Sedimentation and Erosion Control program is performance oriented, requiring protection of the natural resources and adjoining properties. If following the commencement of this project it is determined that the Sedimentation & Erosion Control plan is inadequate to meet the requirements of the Sedimentation and Erosion Control Ordinance, this office may require revisions in the plan and its implementation to insure compliance with the Ordinance.

Recognizing the desirability of early coordination of Sedimentation Control, we believe that it would be beneficial if a preconstruction conference can be arranged to discuss the approved plan for this project. Please contact this office and let us know the date of construction start-up and the date of the preconstruction conference so that we may try to attend.

We look forward to working with you on this project.

Sincerely,

Thomas R. Kagarise
Erosion Control Officer