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File No. 41011

May 4, 2012

DELIVERED BY HAND

Edward S. Robertson, Chairman
Woburn Zoning Board of Appeals
10 Common Street
Woburn, MA 01801

Re: Woburn 38 Development, LLC
1042 Main Street, Woburn, Massachusetts

Dear Chairman Robertson:

Pursuant to the request of the Board, Woburn 38 Development, LLC (the "Applicant") had conducted an initial review of the amount of blasting to be done on the site, the amount of associated earth removal, and the number of truck trips necessary to remove all of the material from the site. As you may remember, the Applicant originally estimated that the amount of blasting material to be removed as a result of such blasting with the proposed modification would be 200,000 cubic yards. This figure was derived by starting with the 120,000 cubic yards that is referenced in the original Housing Appeals Committee decision and later a preliminary estimate was completed by Onyx Corporation which conservatively added 80,000 cubic yards, therefore providing an estimated total of 200,000 cubic yards. At the Board's request during the ZBA meeting on April 18, 2012, the Applicant agreed to have its consultant Onyx Corporation review their initial calculations, as concern was raised about the accuracy of the calculation for the original design and the proposed modification. After obtaining the latest information from Onyx Corporation, the Dolben Company, Inc. (proposed Developer) wanted to be sure accurate information would be delivered to the board and decided to have their pre-construction consultant / General Contractor, Callahan, Inc., of Bridgewater, Massachusetts, prepare and complete their own detailed independent review and calculations in an effort to confirm the information provided by Woburn 38, LLC and the Onyx Corporation was accurate. A copy of this information is enclosed.

Although in the end the latest information prepared by Onyx Corporation indicates an increase in the total blast quantity and materials removal from their original estimate, we believe the calculations and detailed tables prepared by Robert Sanda of Callahan, Inc., are most effective and more accurate in describing both the original plan and the proposed modification which includes the amount of ledge to be blasted (which is

Edward S. Robertson, Chairman
Woburn Zoning Board of Appeals
May 4, 2012
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what the original estimate and the revised estimate were based upon), and the amount of overburden (i.e. topsoil, subsoil and glacial till) to be removed incidental thereto. The analysis includes the amount of earth to be removed if on-site processing is not allowed, and the amount of earth to be removed if on-site processing is allowed. Additionally, the chart from Mr. Sanda calculates the total number of truck trips and the total number of days of earth removal based upon both whether on-site processing is allowed and whether it is prohibited. As you will see, the amount of ledge to be removed if processing is allowed is seventeen percent (17%) greater than the total amount of ledge blasted (because expansion will occur when the ledge is removed from the ground), while the amount of ledge to be removed if on-site processing is not allowed will increase by forty percent (40%). This is because each truck will contain less rock if processing is not allowed and some crushed rock is needed as a base for the paving of the parking area and access road (if on site crushing is not allowed a significant amount of rock would need to be carted away, crushed, and returned).

We would expect your consultant to review Mr. Sanda's submittal for accuracy and completeness.

Mr. Sanda will be present at the hearing scheduled for May 23, 2012 to answer any questions the Board or its peer review engineer may have. Thank you for your consideration in this matter.

Very truly yours,

REGNANTE, STERIO & OSBORNE LLP

By 

THEODORE C. REGNANTE, ESQ.
PAUL J. HAVERTY, ESQ.

Enclosures

cc: Steve Lopes, Manager, Woburn 38 Development, LLC (w/enclosures)
Brian H. Rehrig, Pres., Renco Management Inc. (w/enclosures)
Daniel Kerner, Commercial Property Capital (w/enclosures)
Bernard Saulnier, Jr. (w/enclosures)
Andrew Dolben, The Dolben Company, Inc. (w/enclosures)
John O'Connor, The Dolben Company, Inc. (w/enclosures)
Joseph Tarby, Esq. (w/enclosures)
Ellen Callahan Doucette, Esq. (w/enclosures)
Bob Sanda, Callahan, Inc. (w/enclosures)
John Durkin, Onyx Corporation (w/enclosures)
Alderman Michael Raymond (w/enclosures)

80 First Street
Bridgewater, MA 02324
Phone: 508-279-0012
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CALLAHAN

Memo

To: John O'Connor, The Dolben Company
From: Bob Sanda
CC: Pat Callahan
Date: April 30, 2012
Re: Ledges at Woburn - Earthwork Quantities – Woburn, Ma

As requested, Callahan has completed a cut and fill analyses for the earthworks associated with the proposed Ledges at Woburn development located at 1042 Main Street in Woburn, MA. We have analyzed two scenarios for the project. The first scenario includes the 2001 site plan which was approved by the Housing Appeals Committee and the second includes the 2012 site plan proposed by Woburn 38 Development LLC. The earthwork calculations are completed by using InSite Sitework software and all plan information is imported directly from AutoCAD files supplied by the civil engineer, Allen and Major Associates.

In each scenario the cut and fill analysis is approached using the following procedure:

- The existing condition topography is entered and used as the base plan.
- The geotechnical information (soil borings, test pits) is entered to determine the soil profile throughout the site. In this case, topsoil, subsoil, glacial till and ledge.
- The proposed condition topography and work areas (buildings, pavement, walkways, landscape areas, etc.) are entered into the software.
- The overburden material (topsoil and subsoil) are stripped from appropriate work areas.
- The cuts and fills are calculated by comparing existing topography after stripping to proposed topography and appropriate subgrade elevations/depths of the work areas. The cuts and fills are completed to subgrade only and do not include the additional thickness of items such as pavement, concrete walks, building slabs, gravel subbase, and topsoil replacement.

The results of each cut and fill scenario are presented in attached reports and break down the quantities of topsoil, subsoil, glacial till and ledge that must be removed from the site. The reports also include diagrams that indicate the stripping and subgrade areas and a cut-to-fill plan with cuts in green and fills in red. There are 3D diagrams of the existing and proposed subgrade elevations that clearly indicate the work limits and a visual indication of how the cuts and fills are calculated.

We have also prepared an earthwork quantities spreadsheet that summarizes the total export volumes (Table 1) and the total truck trips (Table 2). The tables include volumes for processed and unprocessed materials. The processed volumes represent the quantity of materials if you crush and process the ledge on site (ledge will have an expected swell factor of 17%). The unprocessed volumes represent the quantity of materials if the ledge is blasted and the shot rock is loaded directly on to trucks causing increased voids spaces (expected swell factor of 40%).

All information is attached to this memorandum. Please let us know if you have any questions regarding these results.

**Woburn Heights
 Woburn, MA
 Earthwork Quantities
 4/30/2012**

Table 1 - Total Export Volumes

| Soil Description | Shipping Quantity (CY) | Cut Quantity (CY) | Additional Cut from Overblast Areas (CY) | | | Total Quantity (CY) | Fill for On-Site Re-Use (CY) | Total Export Quantity (CY) | Export Expansion Factor | | Expanded Export (CY) | |
|---|------------------------|-------------------|--|-------------------------|------------------|---------------------|------------------------------|----------------------------|-------------------------|--------------|----------------------|----------------|
| | | | Foundation | Stormwater Infiltration | Utility/Trenches | | | | Processed | Un-Processed | Processed | Un-Processed |
| 2001 Site Plan - Approved Original Plans | | | | | | | | | | | | |
| Topsoil | 5,924 | 0 | 0 | 0 | 0 | 5,924 | 2,405 | 3,519 | 1.10 | 1.10 | 3,871 | 3,871 |
| Subsoil | 23,991 | 0 | 0 | 0 | 0 | 23,991 | 0 | 23,991 | 1.10 | 1.10 | 26,390 | 26,390 |
| Glacial Till | 0 | 17,678 | 0 | 0 | 0 | 17,678 | 5,176 | 12,502 | 1.10 | 1.10 | 13,752 | 13,752 |
| Ledge | 0 | 118,825 | 1,000 | 7,800 | 5,600 | 133,225 | 0 | 133,225 | 1.17 | 1.40 | 155,073 | 166,515 |
| Total Export Volume | | | | | | | | | | | 199,886 | 230,528 |
| 2012 Site Plan - Proposed Dolben Plans | | | | | | | | | | | | |
| Topsoil | 6,540 | 0 | 0 | 0 | 0 | 6,540 | 2,348 | 4,192 | 1.10 | 1.10 | 4,611 | 4,611 |
| Subsoil | 27,019 | 0 | 0 | 0 | 0 | 27,019 | 0 | 27,019 | 1.10 | 1.10 | 29,721 | 29,721 |
| Glacial Till | 0 | 20,091 | 0 | 0 | 0 | 20,091 | 6,563 | 13,436 | 1.10 | 1.10 | 14,782 | 14,782 |
| Ledge | 0 | 249,591 | 1,500 | 7,800 | 5,500 | 263,691 | 0 | 263,691 | 1.17 | 1.40 | 308,518 | 359,167 |
| Total Export Volume | | | | | | | | | | | 357,632 | 416,281 |

Table 2 - Total Truck Trips

| Soil Description | Expanded Export (CY) | | Processed Mat. To be Used or Import | Total Export (CY) | | Export Truck Trips (26 cy/trip) | | Import Truck Trips (26 cy/trip) | | Total Truck Trips (26 cy/trip) | | Total Days (60 trucks/day) | | |
|---|----------------------|--------------|-------------------------------------|-------------------|--------------|---------------------------------|--------------|---------------------------------|--------------|--------------------------------|---------------|----------------------------|---------------|---------------|
| | Processed | Un-Processed | | Processed | Un-Processed | Processed | Un-Processed | Processed | Un-Processed | Processed | Un-Processed | Processed | Un-Processed | |
| 2001 Site Plan - Approved Original Plans | | | | | | | | | | | | | | |
| Topsoil | 3,871 | 3,871 | 0 | 3,871 | 148 | 148 | 148 | 0 | 148 | 148 | 148 | 177 | 177 | |
| Subsoil | 26,390 | 26,390 | 0 | 26,390 | 1,015 | 1,015 | 1,015 | 0 | 1,015 | 1,015 | 1,015 | 1,143 | 1,143 | |
| Glacial Till | 13,752 | 13,752 | 0 | 13,752 | 529 | 529 | 529 | 0 | 529 | 529 | 529 | 589 | 589 | |
| Ledge | 166,515 | 166,515 | 10,000 | 145,873 | 5,611 | 7,174 | 0 | 0 | 5,611 | 5,611 | 7,174 | 14,199 | 14,199 | |
| Total Truck Trips | | | | | | | | | | | 385 | 385 | 7,303 | 9,251 |
| 2012 Site Plan - Proposed Dolben Plans | | | | | | | | | | | | | | |
| Topsoil | 4,611 | 4,611 | 0 | 4,611 | 177 | 177 | 177 | 0 | 177 | 177 | 177 | 177 | 177 | |
| Subsoil | 29,721 | 29,721 | 0 | 29,721 | 1,143 | 1,143 | 1,143 | 0 | 1,143 | 1,143 | 1,143 | 1,143 | 1,143 | |
| Glacial Till | 14,782 | 14,782 | 0 | 14,782 | 569 | 569 | 569 | 0 | 569 | 569 | 569 | 589 | 589 | |
| Ledge | 308,518 | 308,167 | 11,000 | 297,518 | 11,443 | 14,199 | 0 | 0 | 11,443 | 11,443 | 14,199 | 423 | 423 | |
| Total Truck Trips | | | | | | | | | | | 423 | 423 | 13,332 | 16,511 |
| Total Truck Trips | | | | | | | | | | | 13,332 | 16,511 | 223 | 276 |

Cut & Fill Report Worksheet

JOB: 0007 DESC: Woburn Heights REV SECTION: 07 DESC: Original

Soils Suitability:

| Strata Name | Available From Cut | Available From Stripping | Total Available Material | To Be Exported | Use As Fill | Use As Re-Spread Topsoil |
|-------------|--------------------|--------------------------|--------------------------|----------------|-------------|--------------------------|
| ▶ Topsoil | 133 | 5782 | 5915 | 3613 | 0 | 2302 |
| Subsoil | 243 | 23760 | 24003 | 24003 | 0 | |
| Till | 17802 | 0 | 17802 | 12626 | 5176 | |
| Rock | 121276 | 0 | 121276 | 121276 | 0 | |

Total Fill Required: 5411 Fill Imported: 235
 Obtained On Site: 5176

Replacement Topsoil Required: 2302 Topsoil Imported: 0
 Obtained On Site: 2302

NOTE: All quantities are compacted. Topsoil re-spread required has been adjusted to be in terms of fully compacted fill.

Shrinkage and Expansion:

| Strata Name | Shrinkage: Used as Fill | Expansion of Cut | Shrinkage: Used as Repl. Topsoil |
|-------------|-------------------------|------------------|----------------------------------|
| ▶ Topsoil | 0 | 0 | 0 |
| Subsoil | 0 | 0 | |
| Till | 0 | 0 | |
| Rock | 0 | 0 | |

Section Cut & Fill Report

JOB: 0007 Woburn Heights REV SECTION: 07 Original
 Grid Size: 3.00 X 3.00 Ft Subgrid Size: 1.50 X 1.50
 Section Size: 1085.5 X 862.6 Ft
 Area of Cut: 271708 SqFt Area of Fill: 53777 SqFt Total Work Area: 325670 SqFt
 (Cut Area Threshold: 0.01Ft Fill Area Threshold: 0.01Ft)

Section Balance Analysis

| | Bank (CY) | Compacted (CY) | Expanded (CY) |
|-------------------------------|-----------|----------------|---------------|
| Fill Required | | 5411 | |
| Repl Topsoil Rqd | | 2302 | |
| Stripping Total | 29534 | 29543 | 29543 |
| Cut Total | 139458 | 139455 | 139455 |
| Fill Obtained On Site | 5176 | 5176 | 5176 |
| Repl Topsoil Obtained On Site | 2302 | 2302 | 2302 |
| Import Repl Topsoil | | 0 | |
| Import Fill | | 235 | |
| Export Stripping | | 27241 | 27241 |
| Export Fill | | 134279 | 134279 |
| Total Export | | 161520 | 161520 |

Cut Quantity by Stratum

| | Topsoil | Subsoil | Till | Rock |
|---------------------|---------|---------|-------|--------|
| Bank Cut (CY) | 133 | 243 | 17802 | 121276 |
| Compacted Cut (CY) | 133 | 243 | 17802 | 121276 |
| Expanded Cut (CY) | 133 | 243 | 17802 | 121276 |
| Bank Strip (CY) | 5782 | 23760 | 0 | 0 |
| Cmpcted Strip (CY) | 5782 | 23760 | 0 | 0 |
| Expanded Strip (CY) | 5782 | 23760 | 0 | 0 |

Shrinkage and Expansion

| | Topsoil | Subsoil | Till | Rock |
|-------------------------|---------|---------|------|------|
| Shrinkage (%) | 0 | 0 | 0 | 0 |
| Expansion (%) | 0 | 0 | 0 | 0 |
| Repl Topsoil Shrink (%) | 0 | | | |

Section Strip Area Report

JOB: 0007 Woburn Heights REV SECTION: 07 Original

| # | Desc | Strip |
|---|------|---------|
| 1 | | Subsoil |

| | | | | |
|---------------------------|--------|-------------|-------------------------|----------|
| Totals for Strip Area # 1 | Area = | 360451 SqFt | Balance Change per Ft = | 13350 CY |
|---------------------------|--------|-------------|-------------------------|----------|

| Desc |
|-----------------|
| ALL Strip Areas |

| | | | |
|--------|-------------|-------------------------|----------|
| Area = | 360451 SqFt | Balance Change per Ft = | 13350 CY |
|--------|-------------|-------------------------|----------|

Section Subgrade Report

JOB: 0007 Woburn Heights REV SECTION: 07 Original

| # | Desc | Repl Top (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|---|---------|---------------|-----------|-----------------------------------|---------|---------|------|-------|
| 1 | Topsoil | .5 | 4110 | Bank 29498 Compacted 29498 | 116 | 198 | 4868 | 24315 |
| | | | | | 116 | 198 | 4868 | 24315 |

| | | | | | |
|----------|--------------|-----------|-------------------------|------|----|
| Area = | 124693 | SqFt | Balance Change per Ft = | 4618 | CY |
| Material | Thickness Ft | Volume CY | | | |
| Topsoil | .5 | 2309. | | | |

| | | | | | | |
|-------------------------|--------------|-----------|------|-------------------------|------|----|
| Totals for Subgrade # 1 | Area = | 124693 | SqFt | Balance Change per Ft = | 4618 | CY |
| Material | Thickness Ft | Volume CY | | | | |
| Topsoil | | 2309 | | | | |

| # | Desc | Depth (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|---|-------|------------|-----------|-----------------------------------|---------|---------|------|-------|
| 2 | Pvmnt | 1.25 | 1072 | Bank 52503 Compacted 52503 | 16 | 42 | 7617 | 44827 |
| | | | | | 16 | 42 | 7617 | 44827 |

| | | | | | |
|----------|--------------|-----------|-------------------------|------|----|
| Area = | 128221 | SqFt | Balance Change per Ft = | 4749 | CY |
| Material | Thickness Ft | Volume CY | | | |
| Asphalt | .25 | 1187. | | | |
| Gravel | 1. | 4749. | | | |

| | | | | | | |
|-------------------------|--------------|-----------|------|-------------------------|------|----|
| Totals for Subgrade # 2 | Area = | 128221 | SqFt | Balance Change per Ft = | 4749 | CY |
| Material | Thickness Ft | Volume CY | | | | |
| Asphalt | | 1187 | | | | |
| Gravel | | 4749 | | | | |

| # | Desc | Depth (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|---|-----------|------------|-----------|---------------------------------|---------|---------|------|------|
| 3 | Landscape | .5 | 5 | Bank 4061 Compacted 4061 | 0 | 0 | 527 | 3534 |
| | | | | | 0 | 0 | 527 | 3534 |

| | | | | | |
|----------|--------------|-----------|-------------------------|----|----|
| Area = | 2632 | SqFt | Balance Change per Ft = | 97 | CY |
| Material | Thickness Ft | Volume CY | | | |
| Topsoil | .5 | 49. | | | |

| | | | | | |
|----------|--------------|-----------|-------------------------|----|----|
| Area = | 2316 | SqFt | Balance Change per Ft = | 86 | CY |
| Material | Thickness Ft | Volume CY | | | |
| Topsoil | .5 | 43. | | | |

| | | | | | |
|----------|--------------|-----------|-------------------------|----|----|
| Area = | 2291 | SqFt | Balance Change per Ft = | 85 | CY |
| Material | Thickness Ft | Volume CY | | | |
| Topsoil | .5 | 42. | | | |

| | | | | | |
|----------|--------------|-----------|-------------------------|----|----|
| Area = | 318 | SqFt | Balance Change per Ft = | 12 | CY |
| Material | Thickness Ft | Volume CY | | | |

Section Subgrade Report

JOB: 0007 Woburn Heights REV SECTION: 07 Original
 Topsoil .5 6.

| | | | | |
|----------|--------------|-----------|-------------------------|-------|
| | Area = | 1171 SqFt | Balance Change per Ft = | 43 CY |
| Material | Thickness Ft | Volume CY | | |
| Topsoil | .5 | 22. | | |

| | | | | |
|-------------------------|--------------|-----------|-------------------------|--------|
| Totals for Subgrade # 3 | Area = | 8727 SqFt | Balance Change per Ft = | 323 CY |
| Material | Thickness Ft | Volume CY | | |
| Topsoil | | 162 | | |

| # | Desc | Depth (Ft) | Fill (CY) | | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|---|------------|------------|-----------|-----------|----------|---------|---------|------|------|
| 4 | Conc Walks | 1.42 | 223 | Bank | 6865 | 2 | 3 | 983 | 5878 |
| | | | | Compacted | 6865 | 2 | 3 | 983 | 5878 |

| | | | | |
|----------|--------------|-----------|-------------------------|--------|
| | Area = | 4889 SqFt | Balance Change per Ft = | 181 CY |
| Material | Thickness Ft | Volume CY | | |
| Concrete | .42 | 76. | | |
| Gravel | 1. | 181. | | |

| | | | | |
|----------|--------------|-----------|-------------------------|-------|
| | Area = | 265 SqFt | Balance Change per Ft = | 10 CY |
| Material | Thickness Ft | Volume CY | | |
| Concrete | .42 | 4. | | |
| Gravel | 1. | 10. | | |

| | | | | |
|----------|--------------|-----------|-------------------------|-------|
| | Area = | 1216 SqFt | Balance Change per Ft = | 45 CY |
| Material | Thickness Ft | Volume CY | | |
| Concrete | .42 | 19. | | |
| Gravel | 1. | 45. | | |

| | | | | |
|----------|--------------|-----------|-------------------------|--------|
| | Area = | 4296 SqFt | Balance Change per Ft = | 159 CY |
| Material | Thickness Ft | Volume CY | | |
| Concrete | .42 | 67. | | |
| Gravel | 1. | 159. | | |

| | | | | |
|----------|--------------|-----------|-------------------------|-------|
| | Area = | 265 SqFt | Balance Change per Ft = | 10 CY |
| Material | Thickness Ft | Volume CY | | |
| Concrete | .42 | 4. | | |
| Gravel | 1. | 10. | | |

| | | | | |
|----------|--------------|-----------|-------------------------|------|
| | Area = | 123 SqFt | Balance Change per Ft = | 5 CY |
| Material | Thickness Ft | Volume CY | | |
| Concrete | .42 | 2. | | |
| Gravel | 1. | 5. | | |

Section Subgrade Report

JOB: 0007 Woburn Heights REV SECTION: 07 Original

| | | | | |
|----------|--------------|-----------|-------------------------|-------|
| Area = | | 1115 SqFt | Balance Change per Ft = | 41 CY |
| Material | Thickness Ft | Volume CY | | |
| Concrete | .42 | 17. | | |
| Gravel | 1. | 41. | | |

| | | | | |
|----------|--------------|-----------|-------------------------|-------|
| Area = | | 448 SqFt | Balance Change per Ft = | 17 CY |
| Material | Thickness Ft | Volume CY | | |
| Concrete | .42 | 7. | | |
| Gravel | 1. | 17. | | |

| | | | | |
|----------|--------------|-----------|-------------------------|--------|
| Area = | | 3410 SqFt | Balance Change per Ft = | 126 CY |
| Material | Thickness Ft | Volume CY | | |
| Concrete | .42 | 53. | | |
| Gravel | 1. | 126. | | |

| | | | | |
|-------------------------|-----------|------------|-------------------------|--------|
| Totals for Subgrade # 4 | Area = | 16025 SqFt | Balance Change per Ft = | 594 CY |
| Material | Volume CY | | | |
| Concrete | 249 | | | |
| Gravel | 594 | | | |

| # | Desc | Depth (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|---|----------|------------|-----------|----------|---------|---------|------|------|
| 5 | Rec Area | 1. | 2 Bank | 222 | 0 | 0 | 153 | 69 |
| | | | Compacted | 222 | 0 | 0 | 153 | 69 |

| | | | | |
|----------|--------------|-----------|-------------------------|--------|
| Area = | | 5616 SqFt | Balance Change per Ft = | 208 CY |
| Material | Thickness Ft | Volume CY | | |
| Court | .33 | 69. | | |
| Gravel | .67 | 139. | | |

| | | | | |
|-------------------------|-----------|-----------|-------------------------|--------|
| Totals for Subgrade # 5 | Area = | 5616 SqFt | Balance Change per Ft = | 208 CY |
| Material | Volume CY | | | |
| Court | 69 | | | |
| Gravel | 139 | | | |

| # | Desc | Elevation (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|----|--------|----------------|-----------|----------|---------|---------|------|-------|
| 11 | Bldg 1 | 180. | 0 Bank | 14698 | 0 | 0 | 1431 | 13267 |
| | | | Compacted | 14698 | 0 | 0 | 1431 | 13267 |

| | | | | |
|--------------------------|--------|------------|-------------------------|--------|
| Totals for Subgrade # 11 | Area = | 13884 SqFt | Balance Change per Ft = | 514 CY |
|--------------------------|--------|------------|-------------------------|--------|

| # | Desc | Elevation (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|----|--------|----------------|-----------|----------|---------|---------|------|------|
| 12 | Bldg 2 | 170. | 0 Bank | 4438 | 0 | 0 | 513 | 3925 |
| | | | Compacted | 4438 | 0 | 0 | 513 | 3925 |

| | | | | |
|--------------------------|--------|-----------|-------------------------|--------|
| Totals for Subgrade # 12 | Area = | 5038 SqFt | Balance Change per Ft = | 187 CY |
|--------------------------|--------|-----------|-------------------------|--------|

| # | Desc | Elevation (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|----|--------|----------------|-----------|----------|---------|---------|------|-------|
| 13 | Bldg 4 | 150. | 0 Bank | 22193 | 0 | 0 | 1277 | 20916 |
| | | | Compacted | 22193 | 0 | 0 | 1277 | 20916 |

Section Subgrade Report

JOB: 0007 Woburn Heights REV SECTION: 07 Original

Totals for Subgrade # 13 Area = 18930 SqFt Balance Change per Ft = 701 CY

| # | Desc | Elevation (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|----|--------|----------------|-----------|----------|---------|---------|------|------|
| 14 | Bldg 3 | 160. | 0 Bank | 4978 | 0 | 0 | 432 | 4547 |
| | | | Compacted | 4978 | 0 | 0 | 432 | 4547 |

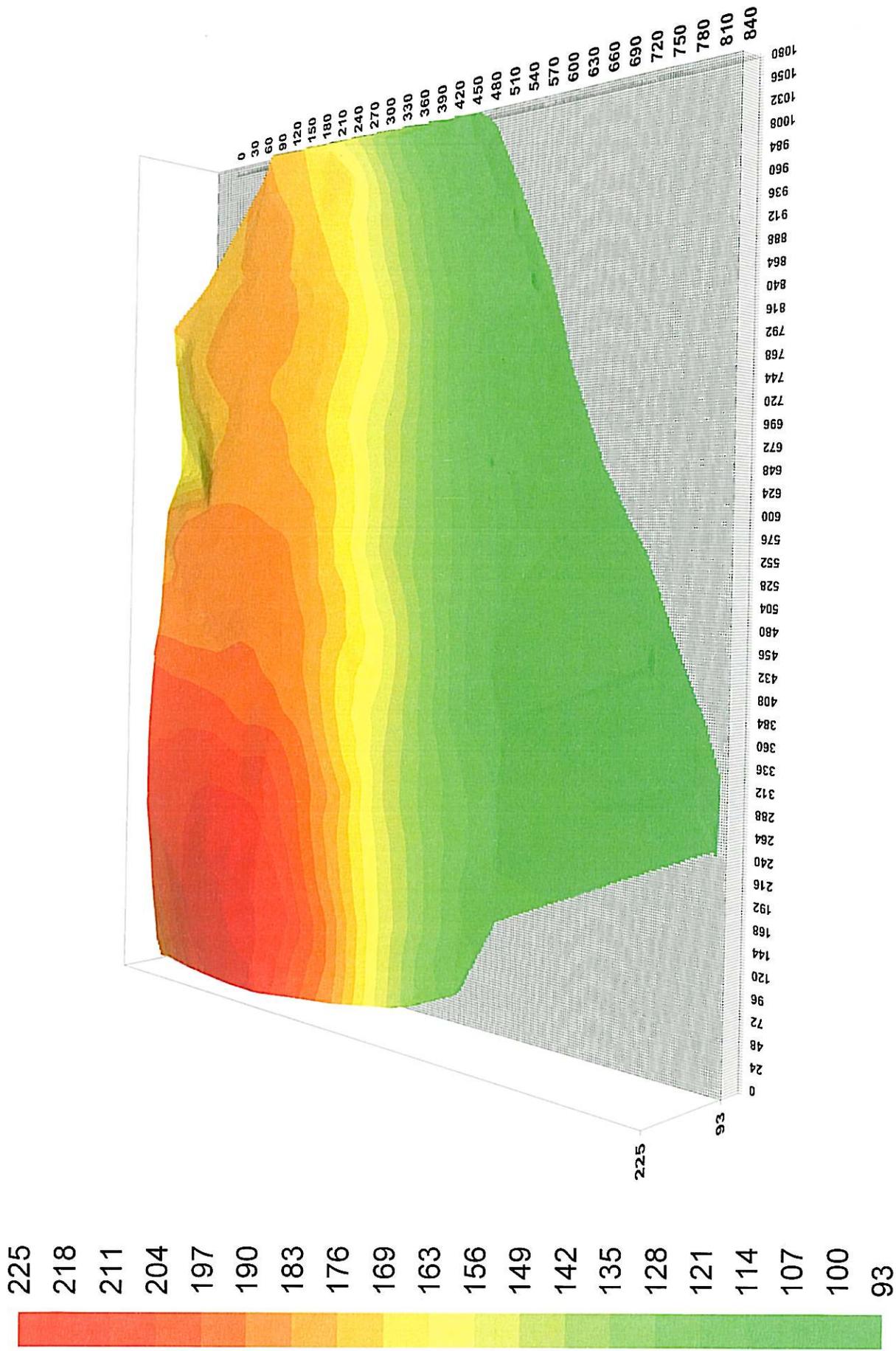
Totals for Subgrade # 14 Area = 4554 SqFt Balance Change per Ft = 169 CY

| Desc | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|---------------|-----------|----------|---------|---------|-------|--------|
| ALL Subgrades | 5411 Bank | 139457 | 134 | 243 | 17802 | 121278 |
| | Compacted | 139457 | 134 | 243 | 17802 | 121278 |

Area = 325689 SqFt Balance Change per Ft = 12063 CY

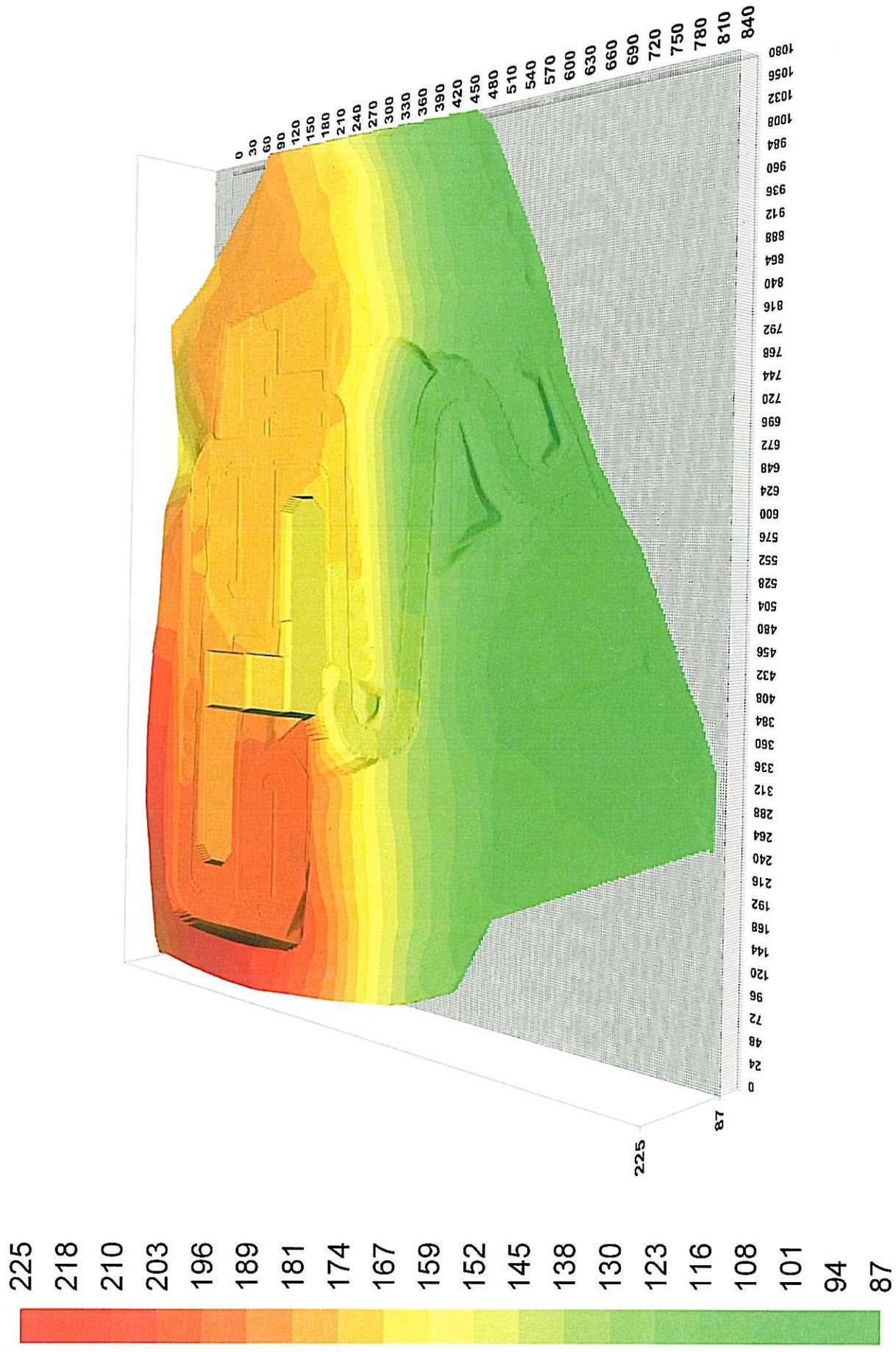
| Material | Volume CY |
|----------|-----------|
| Topsoil | 2471 |
| Asphalt | 1187 |
| Gravel | 5482 |
| Concrete | 249 |
| Court | 69 |

JOB: 0007 Woburn Heights REV SECTION: 07 Original



EXISTING GRADES

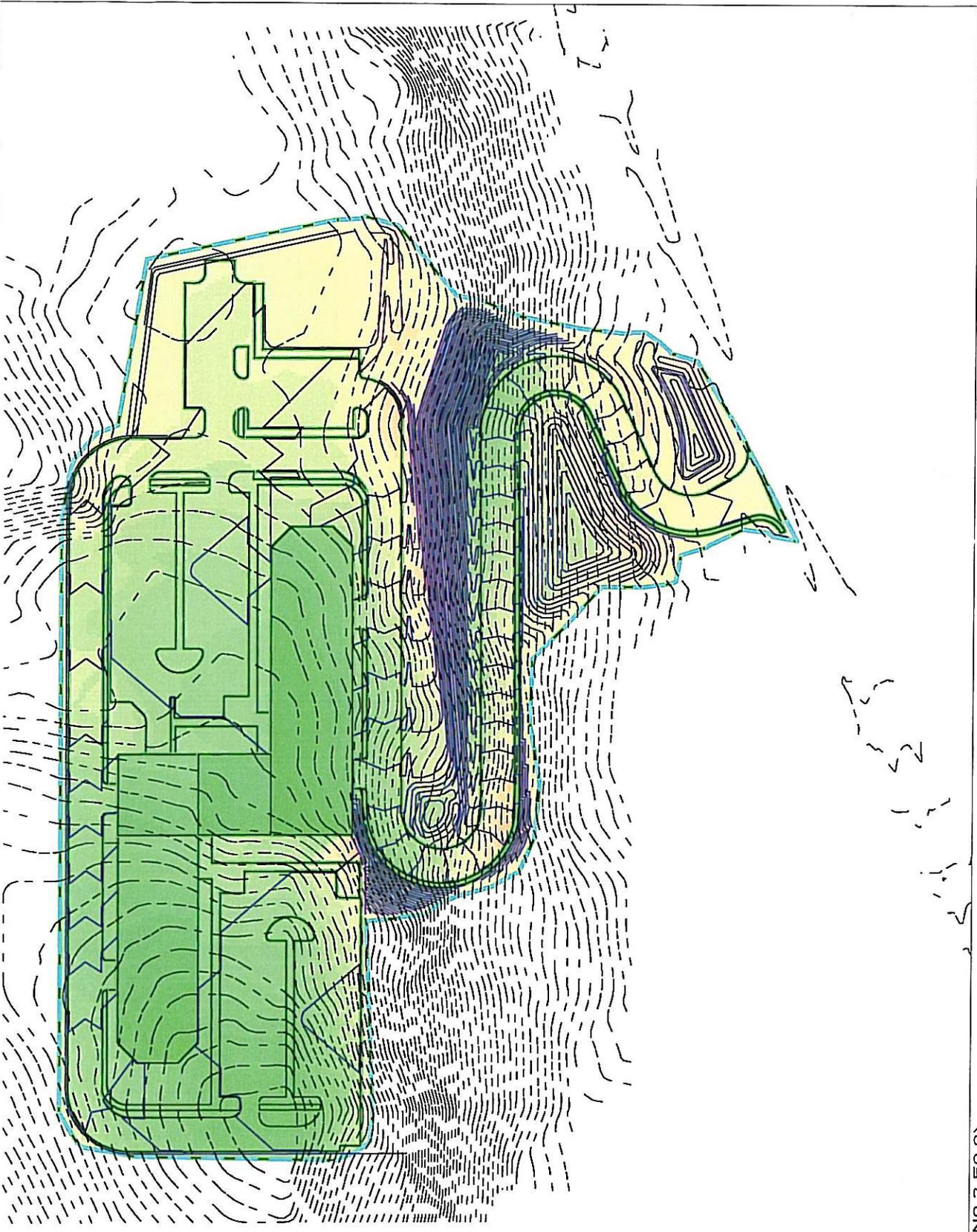
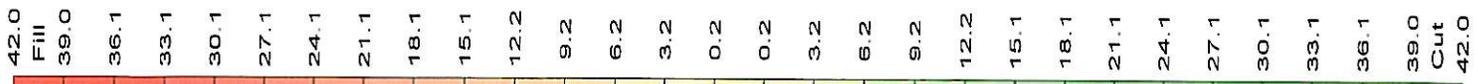
JOB: 0007 Woburn Heights REV SECTION: 07 Original



SUBGRADE GRADES

(N8662.6,E1085.3)

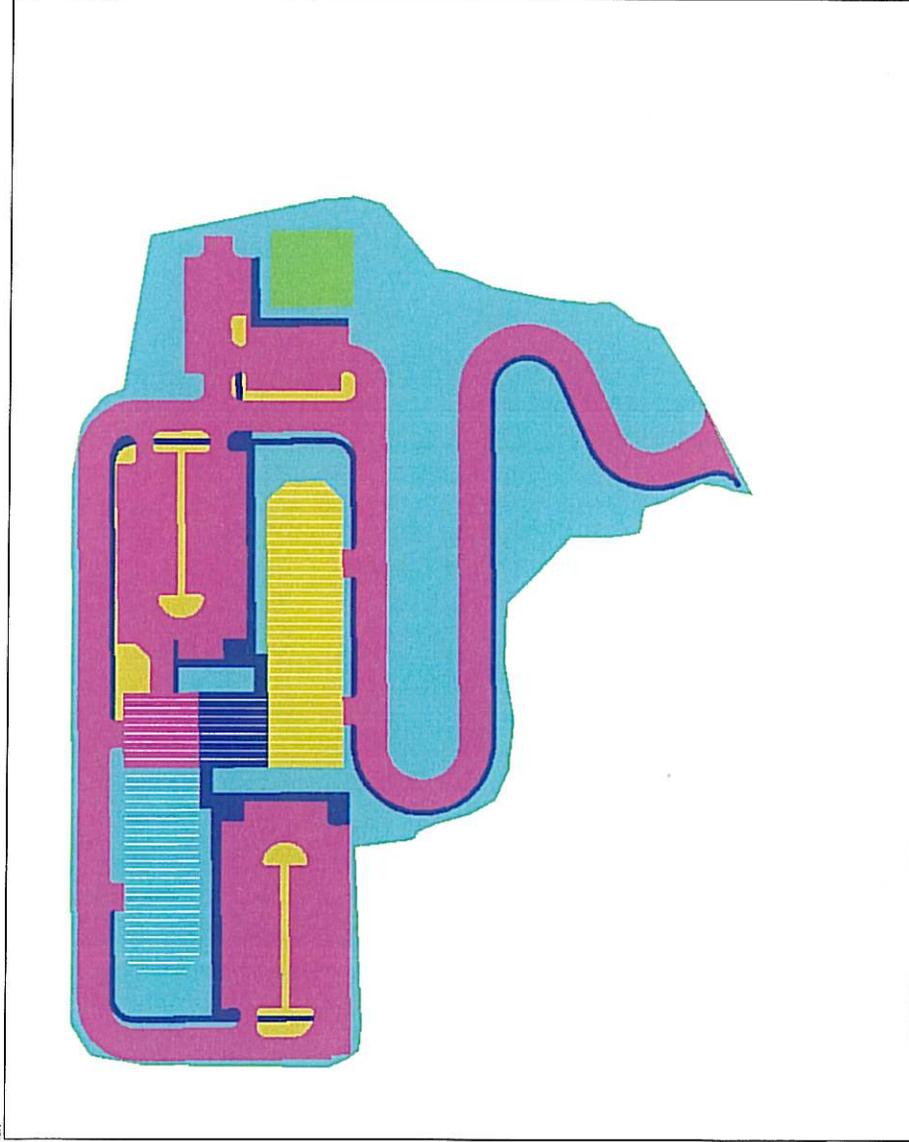
(N8662.6,E0.0)

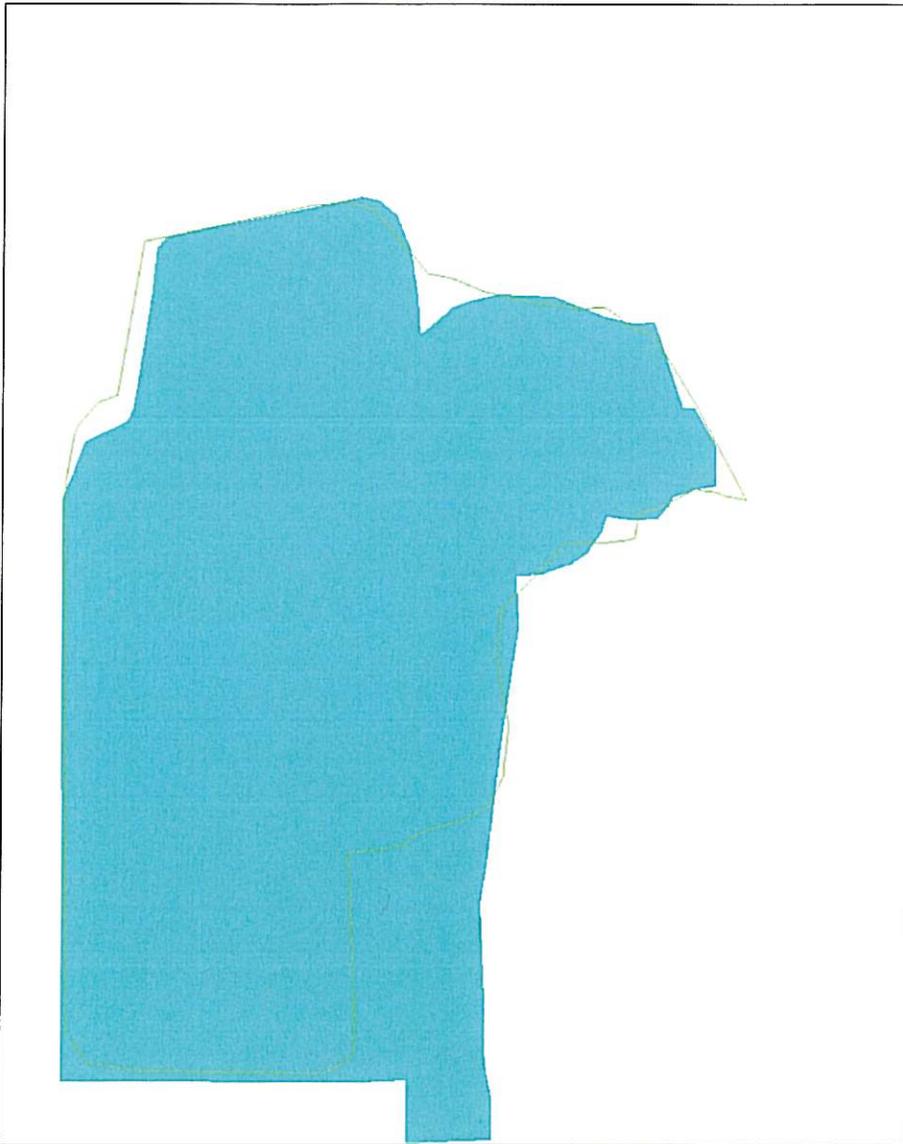


(NO.2,E0.0)

Existing
Proposed

JOB: 0007 Woburn Heights REV
SECTION: 07 Original
X-SCALE: 118.71 ft/in (Auto)
Y-SCALE: 118.71 ft/in (Auto)
RUN DATE: 05-01-2012 RUN TIME: 10:57:16
COMPANY: Callahan, Inc.
ESTIMATOR: R. Sanda





Cut & Fill Report Worksheet

JOB: 0007 DESC: Woburn Heights REV SECTION: 06 DESC: Ex to Pr

Soils Suitability:

| | Strata Name | Available From Cut | Available From Stripping | Total Available Material | To Be Exported | Use As Fill | Use As Re-Spread Topsoil |
|---|-------------|--------------------|--------------------------|--------------------------|----------------|-------------|--------------------------|
| ▶ | Topsoil | 6 | 6534 | 6540 | 4192 | 0 | 2348 |
| | Subsoil | 1 | 27018 | 27019 | 27019 | 0 | |
| | Till | 20091 | 0 | 20091 | 13438 | 6653 | |
| | Rock | 249591 | 0 | 249591 | 249591 | 0 | |

Total Fill Required: 6653 Fill Imported: 0
 Obtained On Site: 6653

Replacement Topsoil Required: 2348 Topsoil Imported: 0
 Obtained On Site: 2348

NOTE: All quantities are compacted. Topsoil re-spread required has been adjusted to be in terms of fully compacted fill.

Shrinkage and Expansion:

| | Strata Name | Shrinkage: Used as Fill | Expansion of Cut | Shrinkage: Used as Repl. Topsoil |
|---|-------------|-------------------------|------------------|----------------------------------|
| ▶ | Topsoil | 0 | 0 | 0 |
| | Subsoil | 0 | 0 | |
| | Till | 0 | 0 | |
| | Rock | 0 | 0 | |

Section Cut & Fill Report

JOB: 0007 Woburn Heights REV SECTION: 06 Ex to Pr
 Grid Size: 3.00 X 3.00 Ft Subgrid Size: 1.50 X 1.50
 Section Size: 1085.5 X 862.6 Ft
 Area of Cut: 304857 SqFt Area of Fill: 53413 SqFt Total Work Area: 358414 SqFt
 (Cut Area Threshold: 0.01Ft Fill Area Threshold: 0.01Ft)

Section Balance Analysis

| | Bank (CY) | Compacted (CY) | Expanded (CY) |
|-------------------------------|-----------|----------------|---------------|
| Fill Required | | 6653 | |
| Repl Topsoil Rqd | | 2348 | |
| Stripping Total | 33543 | 33552 | 33552 |
| Cut Total | 269696 | 269691 | 269691 |
| Fill Obtained On Site | 6653 | 6653 | 6653 |
| Repl Topsoil Obtained On Site | 2348 | 2348 | 2348 |
| Import Repl Topsoil | | 0 | |
| Import Fill | | 0 | |
| Export Stripping | | 31204 | 31204 |
| Export Fill | | 263038 | 263038 |
| Total Export | | 294242 | 294242 |

Cut Quantity by Stratum

| | Topsoil | Subsoil | Till | Rock |
|----------------------|---------|---------|-------|--------|
| Bank Cut (CY) | 6 | 1 | 20091 | 249591 |
| Compacted Cut (CY) | 6 | 1 | 20091 | 249591 |
| Expanded Cut (CY) | 6 | 1 | 20091 | 249591 |
| Bank Strip (CY) | 6534 | 27018 | 0 | 0 |
| Compacted Strip (CY) | 6534 | 27018 | 0 | 0 |
| Expanded Strip (CY) | 6534 | 27018 | 0 | 0 |

Shrinkage and Expansion

| | Topsoil | Subsoil | Till | Rock |
|-------------------------|---------|---------|------|------|
| Shrinkage (%) | 0 | 0 | 0 | 0 |
| Expansion (%) | 0 | 0 | 0 | 0 |
| Repl Topsoil Shrink (%) | 0 | | | |

Section Strip Area Report

JOB: 0007 Woburn Heights REV SECTION: 06 Ex to Pr

| # | Desc | Strip |
|---|------|---------|
| 1 | | Subsoil |

Totals for Strip Area # 1 Area = 360451 SqFt Balance Change per Ft = 13350 CY

| Desc |
|-----------------|
| ALL Strip Areas |

Area = 360451 SqFt Balance Change per Ft = 13350 CY

Section Subgrade Report

JOB: 0007 Woburn Heights REV SECTION: 06 Ex to Pr

| # | Desc | Repl Top (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|---|---------|---------------|-----------|----------|---------|---------|------|-------|
| 1 | Topsoil | .5 | 4932 | 58088 | 6 | 1 | 5417 | 52663 |
| | | | Bank | 58088 | 6 | 1 | 5417 | 52663 |
| | | | Compacted | 58088 | 6 | 1 | 5417 | 52663 |

| | | | | | |
|----------|--------------|-----------|-------------------------|------|----|
| Area = | 128703 | SqFt | Balance Change per Ft = | 4767 | CY |
| Material | Thickness Ft | Volume CY | | | |
| Topsoil | .5 | 2383. | | | |

| | | | | | | |
|-------------------------|----------|--------|-----------|-------------------------|------|----|
| Totals for Subgrade # 1 | Area = | 128703 | SqFt | Balance Change per Ft = | 4767 | CY |
| | Material | | Volume CY | | | |
| | Topsoil | | 2383 | | | |

| # | Desc | Depth (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|---|-------|------------|-----------|----------|---------|---------|------|--------|
| 2 | Pvmnt | 1.25 | 1331 | 108593 | 0 | 0 | 8382 | 100211 |
| | | | Bank | 108593 | 0 | 0 | 8382 | 100211 |
| | | | Compacted | 108593 | 0 | 0 | 8382 | 100211 |

| | | | | | |
|----------|--------------|-----------|-------------------------|------|----|
| Area = | 137058 | SqFt | Balance Change per Ft = | 5076 | CY |
| Material | Thickness Ft | Volume CY | | | |
| Asphalt | .25 | 1269. | | | |
| Gravel | 1. | 5076. | | | |

| | | | | | | |
|-------------------------|----------|--------|-----------|-------------------------|------|----|
| Totals for Subgrade # 2 | Area = | 137058 | SqFt | Balance Change per Ft = | 5076 | CY |
| | Material | | Volume CY | | | |
| | Asphalt | | 1269 | | | |
| | Gravel | | 5076 | | | |

| # | Desc | Depth (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|---|-----------|------------|-----------|----------|---------|---------|------|-------|
| 3 | Landscape | .5 | 0 | 16941 | 0 | 0 | 968 | 15973 |
| | | | Bank | 16941 | 0 | 0 | 968 | 15973 |
| | | | Compacted | 16941 | 0 | 0 | 968 | 15973 |

| | | | | | |
|----------|--------------|-----------|-------------------------|-----|----|
| Area = | 14978 | SqFt | Balance Change per Ft = | 555 | CY |
| Material | Thickness Ft | Volume CY | | | |
| Topsoil | .5 | 277. | | | |

| | | | | | | |
|-------------------------|----------|-------|-----------|-------------------------|-----|----|
| Totals for Subgrade # 3 | Area = | 14978 | SqFt | Balance Change per Ft = | 555 | CY |
| | Material | | Volume CY | | | |
| | Topsoil | | 277 | | | |

| # | Desc | Depth (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|---|------------|------------|-----------|----------|---------|---------|------|-------|
| 4 | Conc Walks | 1.42 | 0 | 12154 | 0 | 0 | 760 | 11394 |
| | | | Bank | 12154 | 0 | 0 | 760 | 11394 |
| | | | Compacted | 12154 | 0 | 0 | 760 | 11394 |

| | | | | | |
|----------|--------------|-----------|-------------------------|----|----|
| Area = | 617 | SqFt | Balance Change per Ft = | 23 | CY |
| Material | Thickness Ft | Volume CY | | | |
| Concrete | .42 | 10. | | | |

Section Subgrade Report

JOB: 0007 Woburn Heights REV SECTION: 06 Ex to Pr
Gravel 1. 23.

| Area = | | 827 SqFt | Balance Change per Ft = | 31 CY |
|----------|--------------|-----------|-------------------------|-------|
| Material | Thickness Ft | Volume CY | | |
| Concrete | .42 | 13. | | |
| Gravel | 1. | 31. | | |

| Area = | | 678 SqFt | Balance Change per Ft = | 25 CY |
|----------|--------------|-----------|-------------------------|-------|
| Material | Thickness Ft | Volume CY | | |
| Concrete | .42 | 11. | | |
| Gravel | 1. | 25. | | |

| Area = | | 425 SqFt | Balance Change per Ft = | 16 CY |
|----------|--------------|-----------|-------------------------|-------|
| Material | Thickness Ft | Volume CY | | |
| Concrete | .42 | 7. | | |
| Gravel | 1. | 16. | | |

| Area = | | 3000 SqFt | Balance Change per Ft = | 111 CY |
|----------|--------------|-----------|-------------------------|--------|
| Material | Thickness Ft | Volume CY | | |
| Concrete | .42 | 47. | | |
| Gravel | 1. | 111. | | |

| Area = | | 533 SqFt | Balance Change per Ft = | 20 CY |
|----------|--------------|-----------|-------------------------|-------|
| Material | Thickness Ft | Volume CY | | |
| Concrete | .42 | 8. | | |
| Gravel | 1. | 20. | | |

| Area = | | 2412 SqFt | Balance Change per Ft = | 89 CY |
|----------|--------------|-----------|-------------------------|-------|
| Material | Thickness Ft | Volume CY | | |
| Concrete | .42 | 38. | | |
| Gravel | 1. | 89. | | |

| Area = | | 693 SqFt | Balance Change per Ft = | 26 CY |
|----------|--------------|-----------|-------------------------|-------|
| Material | Thickness Ft | Volume CY | | |
| Concrete | .42 | 11. | | |
| Gravel | 1. | 26. | | |

| Area = | | 1157 SqFt | Balance Change per Ft = | 43 CY |
|----------|--------------|-----------|-------------------------|-------|
| Material | Thickness Ft | Volume CY | | |
| Concrete | .42 | 18. | | |
| Gravel | 1. | 43. | | |

| Totals for Subgrade # 4 | | Area = | 10343 SqFt | Balance Change per Ft = | 383 CY |
|-------------------------|--------------|-----------|------------|-------------------------|--------|
| Material | Thickness Ft | Volume CY | | | |
| | | | | | |

Section Subgrade Report

JOB: 0007 Woburn Heights REV SECTION: 06 Ex to Pr
 Concrete 161
 Gravel 383

| # | Desc | Depth (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|---|------------|------------|-----------|------------------|---------|---------|------|------|
| 5 | Asph Walks | .75 | 390 | Bank 3272 | 0 | 0 | 350 | 2922 |
| | | | | Compacted 3272 | 0 | 0 | 350 | 2922 |

| | | | |
|----------|--------------|-------------------------|-------|
| Area = | 1571 SqFt | Balance Change per Ft = | 58 CY |
| Material | Thickness Ft | Volume CY | |
| Asphalt | .25 | 15. | |
| Gravel | .5 | 29. | |

| | | | |
|----------|--------------|-------------------------|-------|
| Area = | 431 SqFt | Balance Change per Ft = | 16 CY |
| Material | Thickness Ft | Volume CY | |
| Asphalt | .25 | 4. | |
| Gravel | .5 | 8. | |

| | | | |
|----------|--------------|-------------------------|-------|
| Area = | 1581 SqFt | Balance Change per Ft = | 59 CY |
| Material | Thickness Ft | Volume CY | |
| Asphalt | .25 | 15. | |
| Gravel | .5 | 29. | |

| | | | |
|----------|--------------|-------------------------|--------|
| Area = | 6213 SqFt | Balance Change per Ft = | 230 CY |
| Material | Thickness Ft | Volume CY | |
| Asphalt | .25 | 58. | |
| Gravel | .5 | 115. | |

| | | | | |
|-------------------------|-----------|-----------|-------------------------|--------|
| Totals for Subgrade # 5 | Area = | 9796 SqFt | Balance Change per Ft = | 363 CY |
| Material | Volume CY | | | |
| Asphalt | 91 | | | |
| Gravel | 181 | | | |

| # | Desc | Depth (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|---|-------------|------------|-----------|------------------|---------|---------|------|------|
| 6 | Pool Pavers | 1. | 0 | Bank 1932 | 0 | 0 | 131 | 1801 |
| | | | | Compacted 1932 | 0 | 0 | 131 | 1801 |

| | | | |
|----------|--------------|-------------------------|-------|
| Area = | 1565 SqFt | Balance Change per Ft = | 58 CY |
| Material | Thickness Ft | Volume CY | |
| Pavers | .33 | 19. | |
| Gravel | .67 | 39. | |

| | | | | |
|-------------------------|-----------|-----------|-------------------------|-------|
| Totals for Subgrade # 6 | Area = | 1565 SqFt | Balance Change per Ft = | 58 CY |
| Material | Volume CY | | | |
| Pavers | 19 | | | |
| Gravel | 39 | | | |

| # | Desc | Depth (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|---|------|------------|-----------|-----------------|---------|---------|------|------|
| 7 | Pool | 6. | 0 | Bank 888 | 0 | 0 | 54 | 834 |
| | | | | Compacted 888 | 0 | 0 | 54 | 834 |

Section Subgrade Report

JOB: 0007 Woburn Heights REV SECTION: 06 Ex to Pr

| | | | |
|----------|--------------|-------------------------|-------|
| Area = | 600 SqFt | Balance Change per Ft = | 22 CY |
| Material | Thickness Ft | Volume CY | |
| Water | 6. | 133. | |

| | | | | |
|-------------------------|--------------|-----------|-------------------------|-------|
| Totals for Subgrade # 7 | Area = | 600 SqFt | Balance Change per Ft = | 22 CY |
| Material | Thickness Ft | Volume CY | | |
| Water | | 133 | | |

| # | Desc | Elevation (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|----|------|----------------|-----------|----------|---------|---------|------|------|
| 11 | BLDG | 170. | 0 Bank | 2025 | 0 | 0 | 94 | 1931 |
| | | | Compacted | 2025 | 0 | 0 | 94 | 1931 |

| | | | | |
|--------------------------|--------|-----------|-------------------------|-------|
| Totals for Subgrade # 11 | Area = | 1167 SqFt | Balance Change per Ft = | 43 CY |
|--------------------------|--------|-----------|-------------------------|-------|

| # | Desc | Elevation (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|----|------|----------------|-----------|----------|---------|---------|------|------|
| 12 | BLDG | 170. | 0 Bank | 2650 | 0 | 0 | 126 | 2525 |
| | | | Compacted | 2650 | 0 | 0 | 126 | 2525 |

| | | | | |
|--------------------------|--------|-----------|-------------------------|-------|
| Totals for Subgrade # 12 | Area = | 1628 SqFt | Balance Change per Ft = | 60 CY |
|--------------------------|--------|-----------|-------------------------|-------|

| # | Desc | Elevation (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|----|------|----------------|-----------|----------|---------|---------|------|------|
| 13 | BLDG | 170. | 0 Bank | 1745 | 0 | 0 | 114 | 1630 |
| | | | Compacted | 1745 | 0 | 0 | 114 | 1630 |

| | | | | |
|--------------------------|--------|-----------|-------------------------|-------|
| Totals for Subgrade # 13 | Area = | 1123 SqFt | Balance Change per Ft = | 42 CY |
|--------------------------|--------|-----------|-------------------------|-------|

| # | Desc | Elevation (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|----|------|----------------|-----------|----------|---------|---------|------|-------|
| 14 | BLDG | 159. | 0 Bank | 10459 | 0 | 0 | 378 | 10080 |
| | | | Compacted | 10459 | 0 | 0 | 378 | 10080 |

| | | | | |
|--------------------------|--------|-----------|-------------------------|--------|
| Totals for Subgrade # 14 | Area = | 4902 SqFt | Balance Change per Ft = | 182 CY |
|--------------------------|--------|-----------|-------------------------|--------|

| # | Desc | Elevation (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|----|------|----------------|-----------|----------|---------|---------|------|------|
| 15 | BLDG | 169. | 0 Bank | 4568 | 0 | 0 | 417 | 4152 |
| | | | Compacted | 4568 | 0 | 0 | 417 | 4152 |

| | | | | |
|--------------------------|--------|-----------|-------------------------|--------|
| Totals for Subgrade # 15 | Area = | 3943 SqFt | Balance Change per Ft = | 146 CY |
|--------------------------|--------|-----------|-------------------------|--------|

| # | Desc | Elevation (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|----|------|----------------|-----------|----------|---------|---------|------|------|
| 16 | BLDG | 158. | 0 Bank | 7623 | 0 | 0 | 514 | 7109 |
| | | | Compacted | 7623 | 0 | 0 | 514 | 7109 |

| | | | | |
|--------------------------|--------|-----------|-------------------------|--------|
| Totals for Subgrade # 16 | Area = | 4912 SqFt | Balance Change per Ft = | 182 CY |
|--------------------------|--------|-----------|-------------------------|--------|

| # | Desc | Elevation (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|----|------|----------------|-----------|----------|---------|---------|------|-------|
| 17 | BLDG | 158. | 0 Bank | 12925 | 0 | 0 | 780 | 12145 |
| | | | Compacted | 12925 | 0 | 0 | 780 | 12145 |

| | | | | |
|--------------------------|--------|------------|-------------------------|--------|
| Totals for Subgrade # 17 | Area = | 13383 SqFt | Balance Change per Ft = | 496 CY |
|--------------------------|--------|------------|-------------------------|--------|

| # | Desc | Elevation (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|----|------|----------------|-----------|----------|---------|---------|------|------|
| 18 | BLDG | 158.5 | 0 Bank | 5967 | 0 | 0 | 239 | 5728 |
| | | | Compacted | 5967 | 0 | 0 | 239 | 5728 |

Section Subgrade Report

JOB: 0007 Woburn Heights REV SECTION: 06 Ex to Pr

Totals for Subgrade # 18 Area = 3878 SqFt Balance Change per Ft = 144 CY

| # | Desc | Elevation (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|----|------|----------------|-----------|----------|---------|---------|------|------|
| 19 | BLDG | 148.5 | 0 Bank | 6954 | 0 | 0 | 284 | 6670 |
| | | | Compacted | 6954 | 0 | 0 | 284 | 6670 |

Totals for Subgrade # 19 Area = 4975 SqFt Balance Change per Ft = 184 CY

| # | Desc | Elevation (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|----|------|----------------|-----------|----------|---------|---------|------|------|
| 20 | BLDG | 158. | 0 Bank | 2373 | 0 | 0 | 148 | 2225 |
| | | | Compacted | 2373 | 0 | 0 | 148 | 2225 |

Totals for Subgrade # 20 Area = 1986 SqFt Balance Change per Ft = 74 CY

| # | Desc | Elevation (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|----|------|----------------|-----------|----------|---------|---------|------|------|
| 21 | BLDG | 147. | 0 Bank | 2959 | 0 | 0 | 171 | 2788 |
| | | | Compacted | 2959 | 0 | 0 | 171 | 2788 |

Totals for Subgrade # 21 Area = 2532 SqFt Balance Change per Ft = 94 CY

| # | Desc | Elevation (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|----|------|----------------|-----------|----------|---------|---------|------|------|
| 22 | CLUB | 158. | 0 Bank | 2686 | 0 | 0 | 239 | 2447 |
| | | | Compacted | 2686 | 0 | 0 | 239 | 2447 |

Totals for Subgrade # 22 Area = 2748 SqFt Balance Change per Ft = 102 CY

| # | Desc | Elevation (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|----|------|----------------|-----------|----------|---------|---------|------|------|
| 23 | BLDG | 154. | 0 Bank | 3446 | 0 | 0 | 307 | 3139 |
| | | | Compacted | 3446 | 0 | 0 | 307 | 3139 |

Totals for Subgrade # 23 Area = 5051 SqFt Balance Change per Ft = 187 CY

| # | Desc | Elevation (Ft) | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|----|------|----------------|-----------|----------|---------|---------|------|------|
| 24 | BLDG | 164. | 0 Bank | 1444 | 0 | 0 | 218 | 1226 |
| | | | Compacted | 1444 | 0 | 0 | 218 | 1226 |

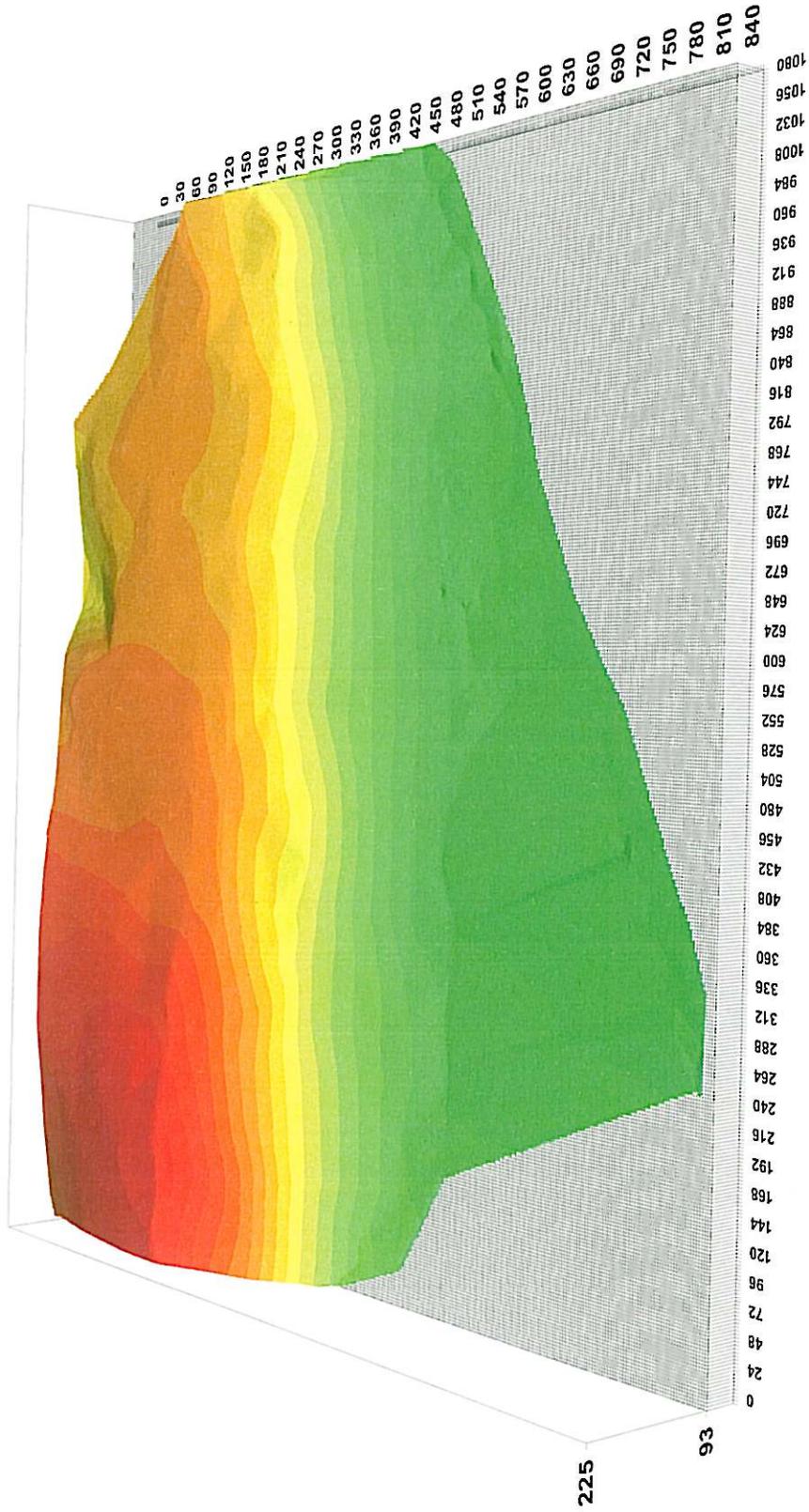
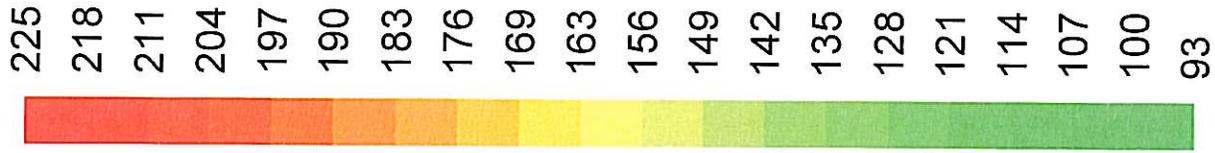
Totals for Subgrade # 24 Area = 3983 SqFt Balance Change per Ft = 148 CY

| Desc | Fill (CY) | Cut (CY) | Topsoil | Subsoil | Till | Rock |
|---------------|-----------|----------|---------|---------|-------|--------|
| ALL Subgrades | 6653 Bank | 269693 | 7 | 1 | 20092 | 249592 |
| | Compacted | 269693 | 7 | 1 | 20092 | 249592 |

Area = 359253 SqFt Balance Change per Ft = 13306 CY

| Material | Volume CY |
|----------|-----------|
| Topsoil | 2661 |
| Asphalt | 1360 |
| Gravel | 5680 |
| Concrete | 161 |
| Pavers | 19 |
| Water | 133 |

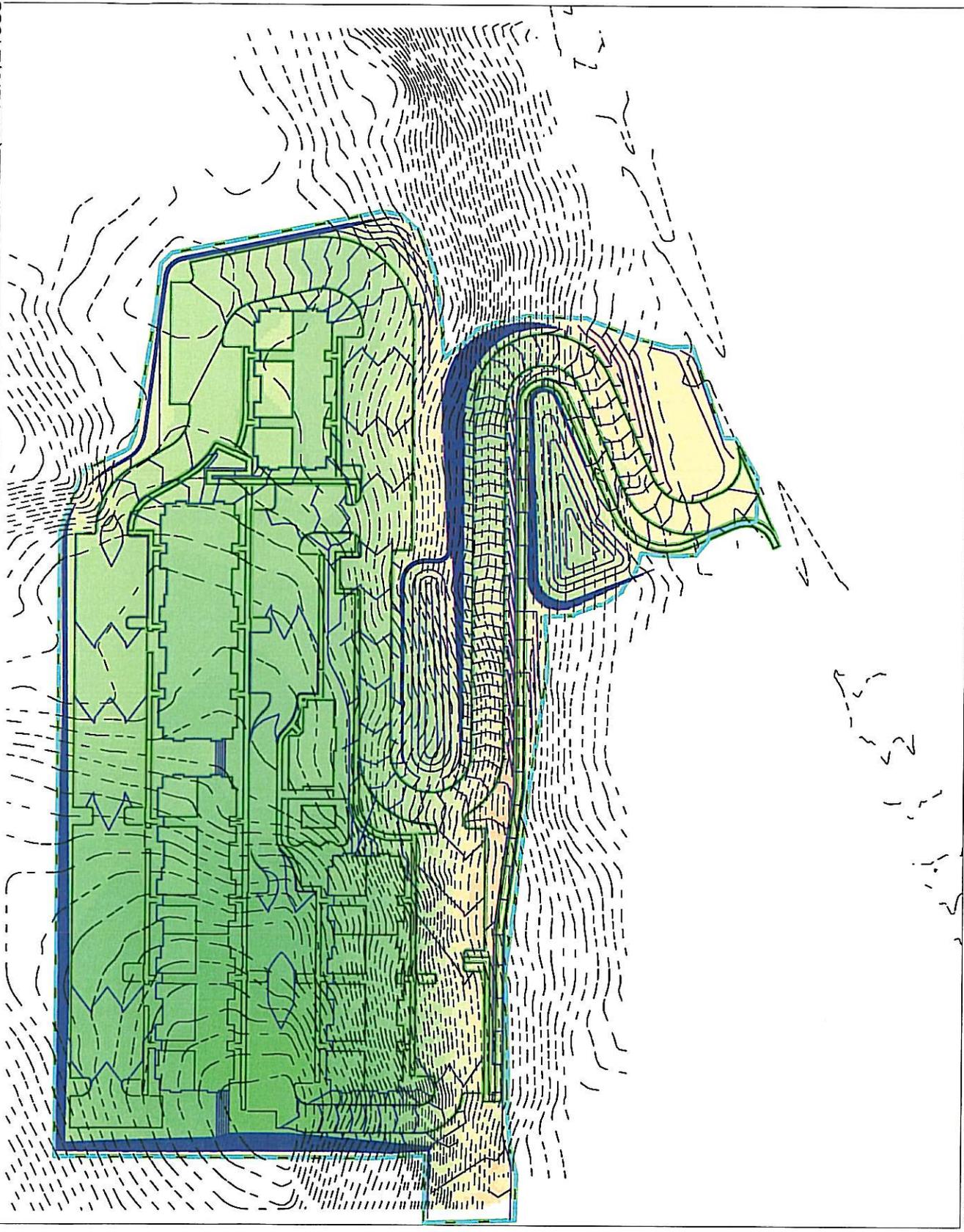
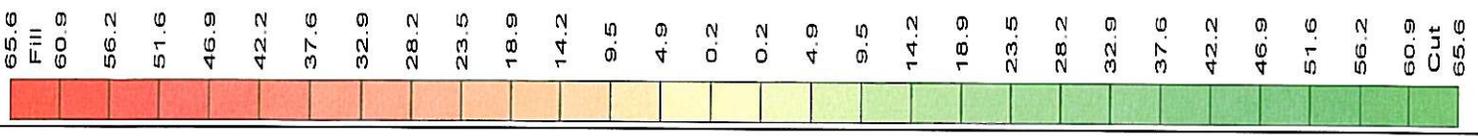
JOB: 0007 Woburn Heights REV SECTION: 06 Ex to Pr



EXISTING GRADES

(N862.6.E1085.3)

(N862.6.E0.0)



(NO.2.E0.0)

Existing
Proposed

JOB: 0007 Weburn Heights REV
SECTION: 06 Ex to Pr
X-SCALE: 118.71 ft/in (Auto)
Y-SCALE: 118.71 ft/in (Auto)
RUN DATE: 05-01-2012 RUN TIME: 10:53:32
COMPANY: Callahan, Inc.
ESTIMATOR: R. Sanda

