

# DIVISION OF CEMETERIES

STATE OF NEW YORK  
DEPARTMENT OF STATE  
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ANDREW M. CUOMO  
GOVERNOR

CEMETERY BOARD

ROSANNA ROSADO  
SECRETARY OF STATE  
CHAIR

LETITIA JAMES  
ATTORNEY GENERAL

DR. HOWARD A. ZUCKER  
COMMISSIONER OF HEALTH

TO: NEW YORK STATE CEMETERY BOARD

FROM: LEWIS A. POLISHOOK, Director

CC: ANTONIO MILILLO, Counsel

DATE: JUNE 24, 2020

RE: FERNCLIFF CEMETERY, NO. 60-006  
INSTALLATION OF LAWN CRYPTS

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By application dated May 27, 2020, Ferncliff Cemetery Association (the Cemetery) seeks confirmation that the New York State Cemetery Board does not object to its application to develop additional lawn crypts adjacent to a section, the Hillcrest Family Estate, approved by the New York State Cemetery Board in 2017. The Board stated that it did not object to the installation of lawn crypts at its June 9, 2020 meeting; this application is an extension of that project.

Ferncliff Cemetery consists of 76 acres (including a parcel of approximately 12 acres across Secor Road from the rest of the cemetery that contains no burials), and is located in the Town of Greenburgh, in Westchester County. It has a series of mausoleum buildings and a five-retort crematory, in addition to offering traditional in-ground burials and lawn crypts. The cemetery and crematory appear to be in compliance with all Division regulations; the cemetery is consistently well-maintained and generates few lot owner complaints.

The Cemetery maintains a conflict of interest policy. No related parties are involved in this transaction. An excerpt from the Cemetery's most recent 990 showing compensation is included as an exhibit. As of my visit on May 15, 2020, the Cemetery appeared very well maintained, despite the high volume of burials over the last two months.

## **Summary of Recommendation**

The Division recommends approval of the project. The cemetery has a demonstrated track record of selling such burial spaces profitably, and has built them before, so it is familiar with the additional engineering requirements of lawn crypts.

Note that the current application includes an area surrounding the 100-crypt installation that the Board considered at its June 9, 2020 meeting.

## **Exhibits**

- A. June 24, 2020 Report of Senior Accountant Vince Gimondo
- B. May 27, 2020 application by cemetery, attaching:
  1. Minutes approving the project
  2. Maps and Drawings, including
    - a. Aerial overview showing location
    - b. Rendering of lawn crypts installed
    - c. Technical drawings

3. Financial information, including
    - a. Schedule A (Four-Year Comparison of income, Expenses, and Fund Balances)
    - b. Projection of Annual Return
    - c. Excerpt from Cemetery 990 showing compensation
    - d. 2019 audited Annual Report
  4. Specifications for Lawn Crypts
    - a. May 13, 2020 Report on Lawn Crypt Specifications
    - b. Technical Drawings
    - c. March 3, 2020, Report of Tim Miller Associates re Soil Conditions
    - d. Report of Gary Munkelt, P.E., dated May 19, 2020, with technical drawings and calculations.
  5. Cemetery conflict of interest policy
- C. Additional certification of Creter Vault Corp.

**OVERVIEW OF FINANCES**

As the accompanying memorandum of Senior Accountant Vincent Gimondo indicates, the Cemetery estimates the total cost of the project at \$1,876,843 (including the \$220,785 cost of the lawn crypts put before the Board at the June 2020 meeting), and projects a return on sales, net of expenses, of \$5,794,657 (note that this includes contributions to the PM Fund from these sales). The Cemetery anticipates turning a profit in approximately two years and selling out this section in six years. Unfortunately, the Cemetery reports that the Covid-10 pandemic has increased demand.

**THE PROJECT**

The proposed extension of the Hillcrest Family Estate is located on a hillside that contains lawn crypts installed in 2017. The drawings and rendering show what the site will look like. I visited the Cemetery on May 15, 2020 and viewed the site. The current lawn crypts have, as expected, beautified the area which was previously a bare hillside. The area of new lawn crypts will be located north and west of the 2017 project, on a hillside sloping toward a road. The section will end before a row of trees that separates the Cemetery from its neighbors and will stop about 45 feet short of the property line. I anticipate that the extension of the section will continue this aesthetic of the 2017 section.

As noted above, the Cemetery reports increased sales this year, presumably as a result of the Covid-19 pandemic. Ferncliff lawn crypt sales have been as follows:

<b><u>Year</u></b>	<b><u>Sale</u></b>
2018	62
2019	83
2020 to date	51

The current project will add 523 lawn crypts (plus the 100 discussed at the June 2020 meeting). The Cemetery has 35 lawn crypts still available for sale plus four in contract **[update]**.

In addition to lawn crypts, this project includes a small number of cremation estates (18) and conventional two-grave (47), three-grave (5), and four-grave (2) plots.

**COMPLIANCE WITH 19 NYCRR SECTION 201.17**

**19 NYCRR §201.17(b)(1) (source of funds):** The Cemetery will finance the project from its General Fund. As of December 31, 2019, the Cemetery had \$156,811,862 (at cost) in its General Fund.

**19 NYCRR §201.17(b)(2) (method of drainage; results of percolation test):** Per the May 13, 2020 report of Diego Villareale, P.E., (part of Exhibit 4 to the Application), the existing soils in this portion of the Cemetery “exhibit moderate permeability characteristics suitable for cover over proposed lawn crypts” without further installation of drainage systems. More particularly, percolation tests showed a 1” drop in 60-77 minutes. A further description of the percolation tests performed can be found in the report.

**19 NYCRR § 201.17(b)(3) (certification):** The manufacturer of the lawn crypts, Creter Vault Corp., and its retained engineer, Gary Munkelt, P.E., have certified that the lawn crypts meet the design and performance standards of 19 NYCRR § 201.17(c).

**19 NYCRR § 201.17(c):** Per the May 19, 2020 report of Gary Munkelt, P.E., the project meets the design and performance standards specified by this subparagraph. More particularly:

1. The concrete will have a strength of at least 5,000 psi at the end of 28 days, exceeding the required 4,500 psi.
2. As certified by the manufacturer, entrained air will be five percent to nine percent by volume.
3. Per the Munkelt report at 2 and sheets 4, 5, 7, 9, 10, and 12, the live and dead load requirements of 19 NYCRR § 201.17(c)(3) are satisfied.
4. Per the Munkelt report sheets 9, 11, and 12, the standards for lateral earth pressure loads are satisfied.

## **EXHIBIT A**

# DIVISION OF CEMETERIES

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COMMISSIONER OF HEALTH

## MEMORANDUM

### DEPARTMENT OF STATE-DIVISION OF CEMETERIES

TO: LEWIS A. POLISHOOK, Director

FROM: VINCENT GIMONDO, Senior Accountant

SUBJECT: FERNCLIFF CEMETERY, No. 60-006

RE: MAJOR RENOVATION– HILLCREST WEST LAWN CRYPT INSTALLATION

DATE: June 24, 2020

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By application dated May 27, 2020, Ferncliff Cemetery Association (the Cemetery) seeks confirmation that the New York State Cemetery Board does not object to its application to develop additional lawn crypts adjacent to a section, the Hillcrest Family Estate, approved by the New York State Cemetery Board in 2017. The Board stated that it did not object to their pandemic related emergency application for the installation of 100 lawn crypts at its June 9, 2020 meeting; this application is an extension of that project. Ferncliff's application for the Hillside West project includes the revenue and cost of sales which were included in the emergency lawn crypt application that was approved at the June meeting.

Similar applications have been presented by Ferncliff in the past. Previously approved and developed sections have sold well. The cost of this \$1,876,813 project will be withdrawn from the General Fund, which had a balance of \$193,358,602 as of 12/31/2019. There are no Permanent Maintenance loans. Ferncliff Cemetery is current with annual filings, fees, and operates each year with large surpluses.

### **OVERVIEW OF FINANCES**

The Cemetery estimates the total cost of the project at \$1,876,843 (including the \$220,785 cost of the lawn crypts put before the Board at the June 2020 meeting), and projects a return on sales, net of expenses, of \$5,794,657 (note that this includes contributions to the PM Fund from these sales). The Cemetery anticipates recovering their investment two years and selling out this section in six years. While both applications are being viewed as one final application, for information purposes, this project without including the 100 preciously approved lawn crypts will generate \$6,821,500 of revenue, cost of \$1,656,058 and gross profit of \$5,165,442.

### **Gross Profit Expectations:**

2021	\$	888,129
2022	\$	913,298
2023	\$	991,518
2024	\$	995,096
2025	\$	1,026,557
2026	\$	980,009



Department  
of State

## **THE PROJECT**

The cemetery is comprised of 76 acres, 55 of which are sold, 21 of which are undeveloped and unsold, while 3 are developed and available. This active cemetery performs over 900 burials per year, and operates a crematory. Conflict of interest statements are signed by the cemetery's officers and trustees annually, and there are no related parties in this transaction. The cemetery is in compliance with all Division requirements. A review of the Federal 990 indicates a proper balance of cemetery-employed officers, and ones that are not.

Currently, the cemetery has a balance of \$58,651,734 in its Permanent Maintenance Fund. This translates to \$771,733 per acre sold.

### **Cemetery assets as of December 31, 2019 are as follows:**

General Funds	\$	193,358.02
Permanent Maintenance	\$	58,651,734
Perpetual Care	\$	447,626
Special Fund	\$	11,088
<b>TOTAL:</b>	<b>\$</b>	<b>252,469,050</b>

### **Return on Investment:**

The ROI= Gain from Investment-Cost of Investment divided by the Cost of investment.

With an investment of \$1,876,843, sales of \$7,671,647 and a profit of \$5,794,647,  $5,794,647 - 1,876,843 / 1,876,843 = 2.08$  times the initial investment of \$1,876,843. The cemetery will realize 2.08 times their investment of \$1,876,843. The cemetery expects to recover their investment within two years and sell out within six.

### **Recommendation:**

Note that the current application includes an area surrounding the 100-crypt installation that the Board considered at its June 9, 2020 meeting.

The current inventory of this product, which has historically sold well, is nearly depleted. Approval will give the cemetery an estimated six years of inventory. The investment of \$1,876,843 will result in sales of \$7,671,500. This is a good return on investment with minimal risk. The Division recommends approval of this project.

## **EXHIBIT B**

**New York State Cemetery Board**  
**Major Renovation Application**

**Hillcrest West Lawn Crypt Installation**

**Ferncliff Cemetery Association**

**May 27, 2020**



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May 27, 2020

**VIA ELECTRONIC MAIL**

Lewis Polishook, Esq., Director  
New York State Division of Cemeteries  
New York State Department of State  
One Commerce Plaza  
99 Washington Avenue, 11<sup>th</sup> Floor  
Albany, NY 12231-0001

**Re: Ferncliff Cemetery (60006)  
Major Renovation – Hillcrest West Lawn Crypts**

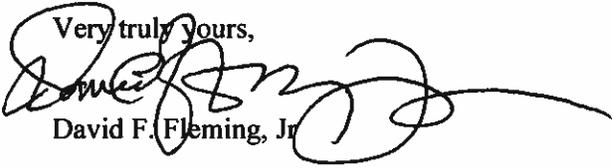
Dear Director Polishook:

Enclosed herewith please find the materials related to the above-referenced project. Ferncliff Cemetery Association is seeking expedited approval from the New York State Cemetery Board to expand their lawn crypt inventory through expansion of the Hillcrest West Project. The application for 100 emergency lawn crypts for the Cemetery is currently before the Board and is a segment of this full project.

Ferncliff stands ready to answer any questions you may have regarding this important project. As always, please feel free to contact me directly should you have any questions.

Thank you.

Very truly yours,

  
David F. Fleming, Jr.

# **Ferncliff Hillcrest West Application**

## **Lawn Crypt Inventory Extension**

### **Project Overview:**

Ferncliff Cemetery Association has been at the epicenter of cremation and cemetery response in southern Westchester during the COVID-19 pandemic. The Cemetery's available inventory of its primary in ground product - lawn crypt spaces - is rapidly deteriorating. They are in need of a quick response from the State Cemetery Board and Division to assist in this matter.

The Cemetery has already submitted an application for an emergency construction and extension of the existing lawn crypt development. Normally, 100 lawn crypts would be equivalent to approximately 13 months of sales. These lawn crypts are nearly gone.

This entire project scope for Hillcrest West would provide inventory through 2026 and represent additional buildout from existing, already approved lawn crypt space at the Cemetery. This project would include the 100 emergency lawn crypts before the State Cemetery Board and Division of Cemeteries.

The total cost for this project, including the 100 emergency lawn crypts before the Board is \$1,876,843. The gross return for the Cemetery is \$5,794,657. This project would be financed from the ample General Fund and would yield six more years of inventory and estimated sales of \$7,671,500.

### **Hillcrest West Overall Project:**

Lawn Crypts:	623
Cremation Estates:	18
2 Grave Plot:	47
3 Grave Plot:	5
4 Grave Plot	2

## **Ferncliff's Hillcrest West Project**

Hillcrest West Development Cost:	\$1,876,843
Sales of Burial Rights:	\$7,671,500
Gross Profit:	\$5,794,657

### **Annual Return on Project**

This project will pay for itself in just over two years.

Projected gross profit is as follows and as outlined in the detailed financials attached herewith:

2021	\$ 888,129
2022	\$ 913,298
2023	\$ 991,568
2024	\$ 995,096
2025	\$1,026,557
2026	\$ 980,009

***Project Gross Total: \$5,794,657***

# Hillcrest West

## Major Renovation Report

**Ferncliff Cemetery Association**  
**Westchester County, New York**

### **§201.16 Major Renovation Information:**

The Ferncliff Cemetery Association has provided unanimous consent to submit this application relative to the construction of the Hillcrest West project which is an expansion of the lawn crypts projects already approved by the State Cemetery Board. The project includes in total, the installation of 623 lawn crypts, 18 cremation estates, 47 2-grave plots, 5 3-grave plots, 2 4-grave plots. This is the full project which would include the pandemic related urgent need of 100 additional lawn crypts already before the Board. This project is adjacent to the existing previously approved projects.

The following is an outline of §201.16 required information related to the scope of this project.

#### **(c)(1): Any modification or interference with existing graves and markers, crypts, mausoleums, roadways, and pathways resulting from the project**

The renovation proposed will not result in any destruction, damage to, modification or interfere with existing graves and markers, crypts, mausoleums roadways or paths. There is a buffer areas between those graves not yet sold and the construction area. Once the installation is complete the area is returned to landscaped grave space.

#### **(c)(2) Location, design, and duration of the major renovation**

The location and design of the lawn crypts conform to the existing area and immediately adjacent to two other approved lawn crypt projects. The project would commence immediately and would be completed within the 2020 construction season (approximately a few months).

None of the construction work in this area will interfere with normal operations of the cemetery with the only exception being the excavation for the crypts themselves.

#### **(c)(3) Financial impact on the applicant**

This project will have a positive financial impact on the Cemetery generally as well as the PM fund from sales. The project estimated cost, including the 100 emergency lawn crypts before the Board is \$1,876,843. The gross return for the Cemetery is \$5,794,657. This project would be financed from the ample General Fund and would yield six more years of inventory and estimated sales of \$7,671,500.

**(c)(4) Impact on lot owners**

The lawn crypt installation will not interfere with any lot owners. There will be a positive financial benefit to the overall financial condition of the Ferncliff Cemetery Association.

**(c)(5) Appropriateness for cemetery purposes**

The renovation will be very appropriate for the cemetery's purposes as it is a continuation of existing burial inventory. The project will provide revenue for the care and maintenance of the Cemetery.

**(c)(6) Any adverse impact on the surrounding community**

The renovation will not have an adverse impact on the surrounding community.

**(c)(7) Effect on public health and safety, the environment, or natural resources**

This project will not have any potential to adversely affect the public health and safety, the environment or any natural resources.

**(c)(8) Measures taken to minimize or eliminate hazards to public health and safety, the environment, or natural resources.**

The implementation of this project will not have any potential to adversely affect the public health and safety, the environment or any natural resources.

**(d) Approvals and Permits**

Minutes of the Ferncliff Cemetery Association Board authorizing the project may be found attached as an exhibit.

Upon receipt of a favorable determination of this project by the Division for Cemeteries and the State Cemetery Board, an application will be made for any and all municipal building permits necessary for the installation of this project.

The Ferncliff Cemetery Board expects that as soon a favorable determination is received, construction would begin as soon as possible.

Hillcrest West Project  
Sales Projections

Projected Sales Revenue	Average Sales Price	Total Estimated Sales	Sales 2021		Sales 2022		Sales 2023		Sales 2024		Sales 2025		Sales 2026		Total Sales	
			Units	Dollars	Units	Dollars										
Lawn Crypts	8,500	5,295,500	92	782,000	96	816,000	102	867,000	109	926,500	114	969,000	110	935,000	623	5,295,500
Cremation Estates	22,000	396,000	3	66,000	3	66,000	3	66,000	3	66,000	3	66,000	3	66,000	18	396,000
2 Grave Plot	35,000	1,645,000	8	280,000	8	280,000	8	280,000	8	280,000	8	280,000	7	245,000	47	1,645,000
3 Grave Plot	45,000	225,000	1	45,000	1	45,000	1	45,000	1	45,000	1	45,000	0	0	5	225,000
4 Grave Plot	55,000	110,000	0	0	0	0	1	55,000	0	0	0	0	1	55,000	2	110,000
<b>Sales Revenue</b>		<b>7,671,500</b>		<b>1,173,000</b>		<b>1,207,000</b>		<b>1,313,000</b>		<b>1,317,500</b>		<b>1,360,000</b>		<b>1,301,000</b>	<b>0</b>	<b>7,671,500</b>

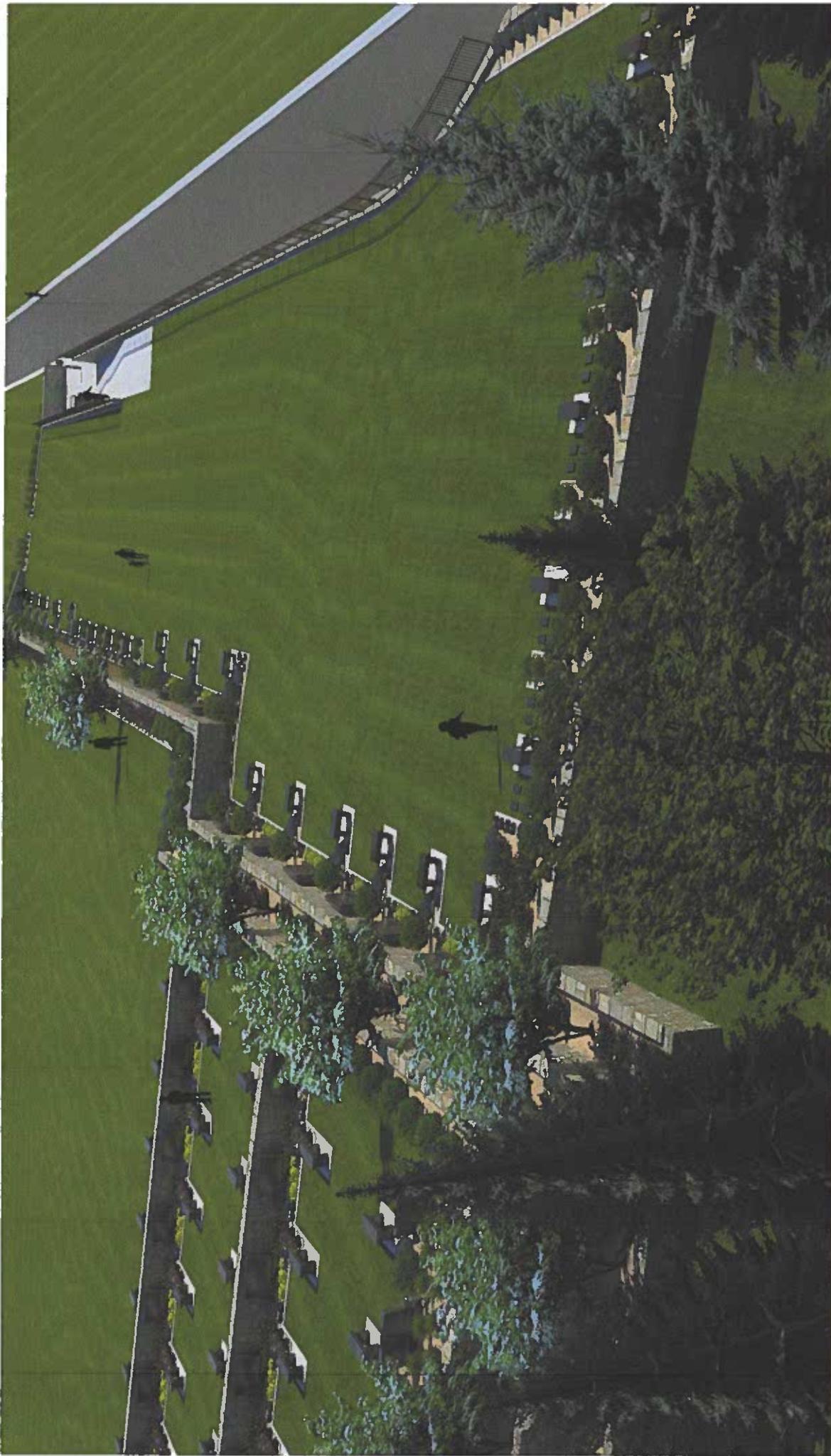
Cost of Sales	Sales 2021		Sales 2022		Sales 2023		Sales 2024		Sales 2025		Sales 2026		Total Sales	
	Units	Dollars	Units	Dollars										
Lawn Crypts	92	203,122	96	211,954	102	225,201	109	240,656	114	251,695	110	242,864	623	1,375,492
Cremation Estates	3	12,957	3	12,957	3	12,957	3	12,957	3	12,957	3	12,957	18	77,741
2 Grave Plot	8	57,930	8	57,930	8	57,930	8	57,930	8	57,930	7	50,688	47	340,336
3 Grave Plot	1	10,862	1	10,862	1	10,862	1	10,862	1	10,862	0	0	5	54,309
4 Grave Plot	0	0	0	0	1	14,482	0	0	0	0	1	14,482	2	28,965
<b>Total Cost of Sales</b>		<b>284,871</b>		<b>293,702</b>		<b>321,432</b>		<b>322,404</b>		<b>333,443</b>		<b>320,991</b>	<b>0</b>	<b>1,876,843</b>

Gross Profit on Burial Rights	Units	Dollars
	888,129	913,298
	995,096	1,026,557
	980,009	5,794,657



# Ferncliff Cemetery - Hillcrest West



# Ferncliff Cemetery - Hillcrest West

# **Exhibits Presented**

**Exhibit 1                    Minutes and Resolution Related to the Project and  
Authorization**

**Exhibit 2                    Map of the Cemetery and Location of Project**

**Exhibit 3                    Cemetery Financial Reports**

**Exhibit 4                    Specifications for Lawn Crypts**

**Exhibit 5                    Cemetery's Conflict of Interest Policy**

# **Exhibit 1**

## **Minutes and Resolution Related to the Project and Authorization**

## **RESOLUTION OF THE FERNCLIFF CEMETERY ASSOCIATION**

**May 7, 2020**

The following Resolution of the Board of Directors of the Ferncliff Cemetery Association authorizes the development of the Hillcrest West Section of lawn crypts including the immediate installation of one hundred individual lawn crypts within the Section prior to its full development to meet the increased and immediate demand for lawn crypt inventory created by the Covid-19 pandemic and to do so in accordance with the site plan documents and financial return projections presented to the Board of Directors.

**WHEREAS**, Ferncliff planned to supplement its existing but declining inventory of lawn crypts with the development of its new Hillcrest West Section in the summer of 2020;

**WHEREAS**, the Covid-19 pandemic has depleted that existing inventory of lawn crypts at twice the rate originally projected; and

**WHEREAS**, Ferncliff determined that one hundred new lawn crypts will be needed before the Hillcrest West Section can be completed to avoid the exhaustion of its existing lawn crypt inventory and to serve the needs of the victims of the Covid-19 pandemic; and

**WHEREAS**, the Development Committee of the Board of Directors, having reviewed the site plan documents and financial return projections, voted unanimously to recommend approval by the Board of Directors of the development of the Hillcrest West Section of lawn crypts and the immediate installation of one hundred individual lawn crypts within the Section prior to its full development; and

**WHEREAS**, each and every member of the Board of Directors has been presented with site plan documents and financial return projections for the development of the Hillcrest West Section of lawn crypts and the immediate installation of one hundred individual lawn crypts within the Section prior to its full development; and

**WHEREAS**, the Covid-19 pandemic has prevented the in person meeting of the Board of Directors of the Ferncliff Cemetery Association; and

**WHEREAS**, each and every member of the Board of Directors, having reviewed the site plan documents and financial return projections, voted via electronic mail to authorize the development of the Hillcrest West Section of lawn crypts and the immediate installation of one hundred individual lawn crypts within the Section prior to its full development; and

**WHEREAS**, the Hillcrest West Section is consistent with the Cemetery's development plans, would financially benefit the Cemetery, and serve the interest of the lot owners; and

**WHEREAS**, the Board of Directors has reviewed the budgeted cost of the development of the Hillcrest West Section and determined that these charges would be paid by the General Fund of the Ferncliff Cemetery Association; and

**WHEREAS**, it is the desire of the Board of Directors that this project commence as soon as possible to benefit the Cemetery and its lot owners but not until approval by the New York State Cemetery Board is secured;

**NOW, THEREFORE, IT IS**

**RESOLVED**, that the Board of Directors of the Corporation hereby authorizes the development of the Hillcrest West Section of lawn crypts and an immediate installation of one hundred individual lawn crypts within the Section prior to its full development as defined in the site plan documents and financial return projections presented to the Board of Directors.

**AND BE IT FURTHER RESOLVED**, that the Corporation President, Kevin M. Boyd, and Vice President, Philip J. Tassi, are hereby authorized, on behalf of the Board of Directors, to (i) file any and all applications and documentation with the New York State Cemetery Board and Division of Cemeteries necessary to secure approval of the development of Hillcrest West and the immediate installation of one hundred individual lawn crypts; and (ii) if such approval is secured, negotiate and execute any and all contracts necessary to implement the approved development and installation in accordance with the terms of this Resolution.

The preceding Resolution was unanimously approved via electronic mail by the Board of Directors of the Ferncliff Cemetery Association on this day, May 7, 2020.



Secretary



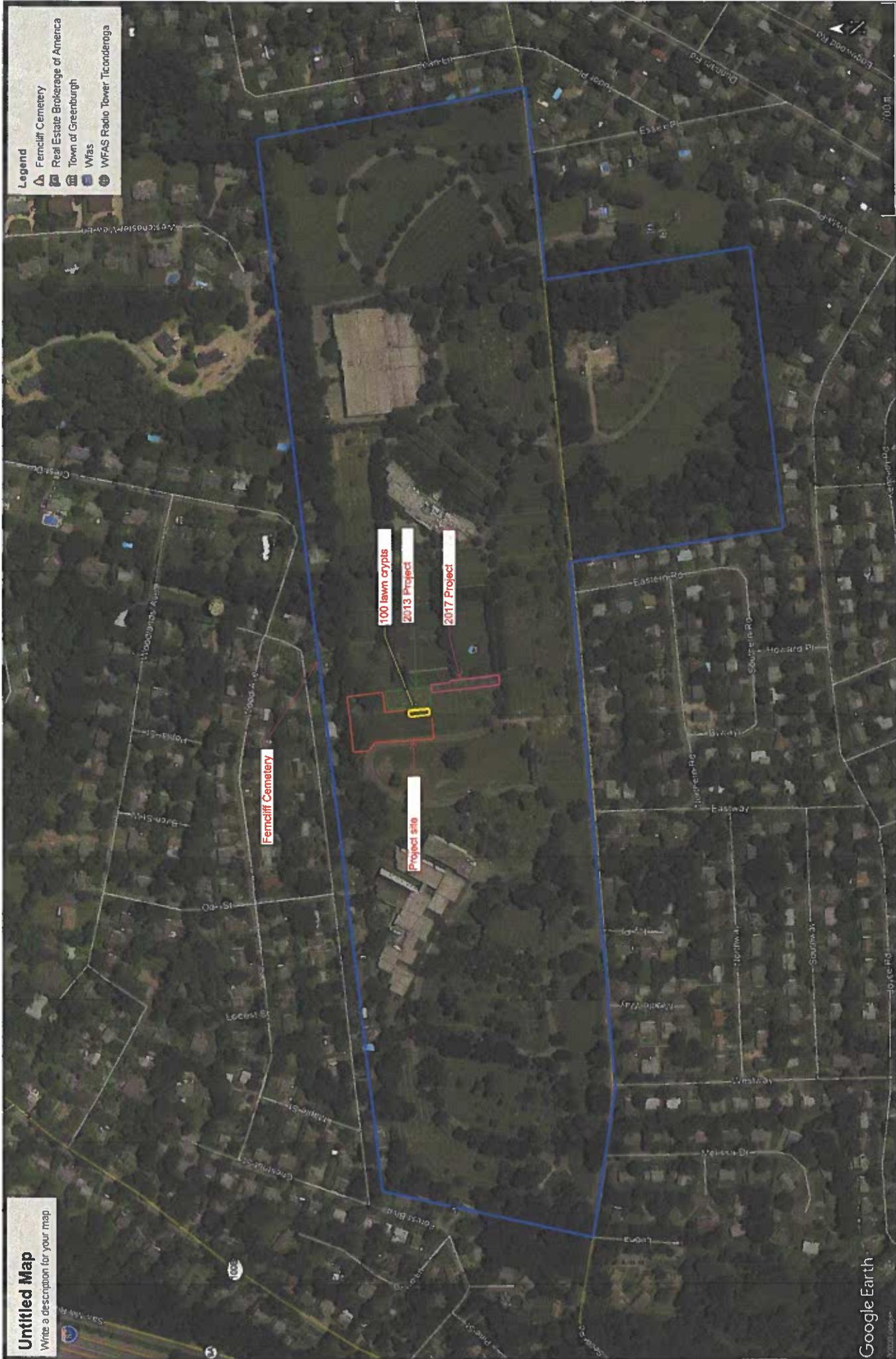
# **Exhibit 2**

## **Map of the Cemetery and Location of the Project**

# Untitled Map

Write a description for your map.

- Legend
- Fenciliff Cemetery
- Real Estate Brokerage of America
- Town of Greenburgh
- Wfas
- WFAS Radio Tower Ticonderoga



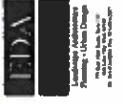


# Ferncliff Cemetery - Hillcrest West

2



- LEGEND**
- ① Retaining Wall, Typical
  - ② Decorative Safety Rail on Wall
  - ③ Curved Safety Rail, Typical
  - ④ Ornamental Edibles, Typical
  - ⑤ 2 Space Bench Edibles, Typical
  - ⑥ 3 Space Bench Edibles, Typical
  - ⑦ 4 Space Bench Edibles, Typical
  - ⑧ Granite Bench, Typical
  - ⑨ Granite Bench, Typical
  - ⑩ Concrete Bench, Typical
  - ⑪ Concrete Bench, Typical
  - ⑫ Stone and Perennial Planting, Typical
  - ⑬ Proposed Trees
  - ⑭ Existing Trees
  - ⑮ Existing Fence

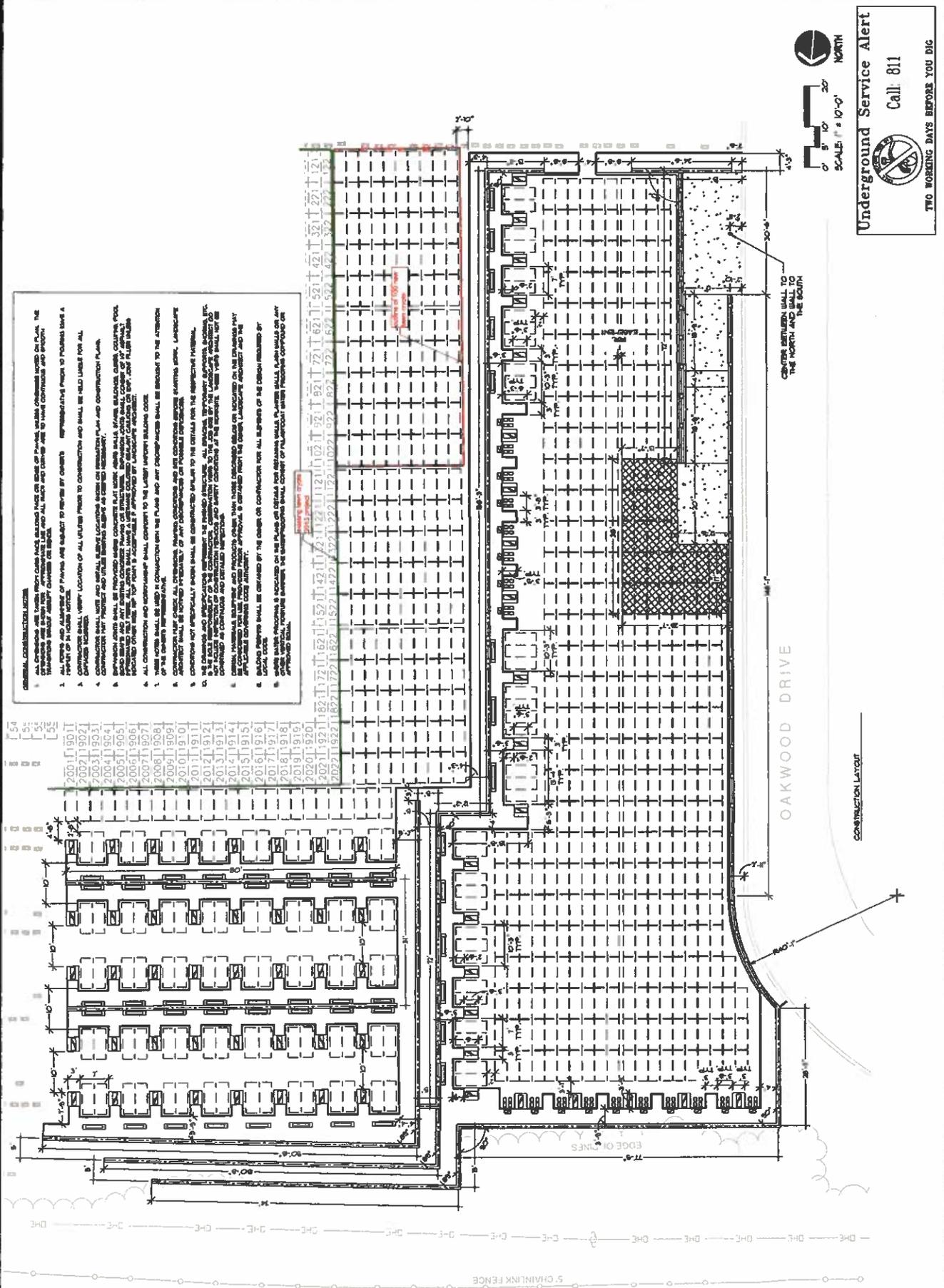


# HILLCREST WEST

## Ferncliff Cemetery

SCALE: 1" = 10'-0"  
March 20, 2020





- GENERAL CONSTRUCTION NOTES**
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ALAMEDA ORDINANCES AND THE PERMITS OBTAINED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF ALAMEDA AND THE CALIFORNIA DEPARTMENT OF PUBLIC WORKS.
  2. ALL UTILITIES AND SERVICES SHALL BE MAINTAINED AND PROTECTED AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES AND SERVICES PRIOR TO CONSTRUCTION AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UTILITIES AND SERVICES.
  3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ALAMEDA ORDINANCES AND THE PERMITS OBTAINED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF ALAMEDA AND THE CALIFORNIA DEPARTMENT OF PUBLIC WORKS.
  4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ALAMEDA ORDINANCES AND THE PERMITS OBTAINED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF ALAMEDA AND THE CALIFORNIA DEPARTMENT OF PUBLIC WORKS.
  5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ALAMEDA ORDINANCES AND THE PERMITS OBTAINED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF ALAMEDA AND THE CALIFORNIA DEPARTMENT OF PUBLIC WORKS.
  6. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ALAMEDA ORDINANCES AND THE PERMITS OBTAINED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF ALAMEDA AND THE CALIFORNIA DEPARTMENT OF PUBLIC WORKS.
  7. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ALAMEDA ORDINANCES AND THE PERMITS OBTAINED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF ALAMEDA AND THE CALIFORNIA DEPARTMENT OF PUBLIC WORKS.
  8. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ALAMEDA ORDINANCES AND THE PERMITS OBTAINED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF ALAMEDA AND THE CALIFORNIA DEPARTMENT OF PUBLIC WORKS.
  9. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ALAMEDA ORDINANCES AND THE PERMITS OBTAINED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF ALAMEDA AND THE CALIFORNIA DEPARTMENT OF PUBLIC WORKS.
  10. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ALAMEDA ORDINANCES AND THE PERMITS OBTAINED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF ALAMEDA AND THE CALIFORNIA DEPARTMENT OF PUBLIC WORKS.

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Use of these plans and specifications shall be void if they are prepared and published. EDA is not responsible for any errors or omissions in these plans and specifications. EDA is not responsible for any damage to property or persons caused by the use of these plans and specifications. EDA is not responsible for any damage to property or persons caused by the use of these plans and specifications. EDA is not responsible for any damage to property or persons caused by the use of these plans and specifications.

# **Exhibit 3**

## **Cemetery Financial Reports**



# Division of Cemeteries

Department of State  
**DIVISION OF CEMETERIES**  
 One Commerce Plaza  
 99 Washington Avenue  
 Albany, NY 12231-0001  
 Telephone: (518) 474-6226  
 www.dos.ny.gov

## SCHEDULE A – INCOME AND EXPENSES AND FUND BALANCES

For any income or expense category where there is a significant increase or decrease in income or expenses, please provide a brief explanation. Not all cemeteries will have income and expenses in all of these categories

Cemetery Name Ferncliff Cemetery Association	New York State Cemetery Five Digit ID Number 60 - 006
<b>YEAR ENDING</b>	<i>12/31/19</i> <i>12/31/18</i> <i>12/31/17</i> <i>12/31/16</i>

### SIZE AND INVENTORY

Acres-Total	76.00	76.00	76.00	76.00
Acres-Developed and Sold	55.00	55.00	55.00	55.00
Acres-Developed and Unsold	3.00	3.00	3.00	3.00

### BURIALS AND LOT SALES

Burials	928.00	938.00	901.00	1,059.00
Number of lots (graves, crypts, niches) sold	499.00	501.00	492.00	507.00

### INCOME (RECEIPTS)

Lots and grave sales	\$ 5,929,926.00	\$ 6,113,343.00	\$ 6,567,920.00	\$ 6,122,262.00
Interment fees	\$ 954,753.00	\$ 985,934.00	\$ 937,363.00	\$ 1,016,633.00
Foundations	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Dividends and interest	\$ 4,881,148.00	\$ 4,922,523.00	\$ 4,327,193.00	\$ 3,826,199.00
Donations	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Other-specify; See Schedule on Excel Attach attach additional sheet(s) as needed	\$ 28,025,304.00	-\$ 17,143,740.00	\$ 20,714,697.00	\$ 13,564,465.00
Other-specify; attach additional sheet(s) as needed				
Other-specify; attach additional sheet(s) as needed				
<b>TOTAL RECEIPTS</b>	<b>\$ 39,791,131.00</b>	<b>-\$ 5,121,940.00</b>	<b>\$ 32,547,173.00</b>	<b>\$ 24,529,559.00</b>

## SCHEDULE A – INCOME AND EXPENSES AND FUND BALANCES

Cemetery Name Ferncliff Cemetery Association	New York State Cemetery Five Digit ID Number 60 006
---	--

**YEAR ENDING**

**EXPENSES (DISBURSEMENTS)**     *12/31/19*     *12/31/17*     *12/31/17*     *12/31/16*

Employee Wages	\$ 2,719,307.00	\$ 2,659,383.00	\$ 2,602,181.00	\$ 2,695,684.00
Independent Contractor Grave Openings	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Independent Contractor Maintenance and Mowing	\$ 56,366.00	\$ 48,162.00	\$ 44,453.00	\$ 39,176.00
Salaries of Officers	\$ 910,238.00	\$ 869,939.00	\$ 863,828.00	\$ 845,305.00
Supplies and Repairs				
Equipment				
Insurance – General Liability	\$ 231,034.00	\$ 213,965.00	\$ 216,213.00	\$ 210,306.00
Workers Compensation	\$ 115,467.00	\$ 173,088.00	\$ 215,771.00	\$ 194,336.00
Commercial Crime/ Employee Dishonesty				
Vandalism and Assessment Fee	\$ 32,862.00	\$ 31,157.00	\$ 28,883.00	\$ 27,642.00
Other – specify; See Schedule Attached <small>attach additional sheet as needed</small>	\$ 7,540,157.00	\$ 7,711,210.00	\$ 9,153,043.00	\$ 9,313,452.00
Other – specify;  <small>attach additional sheet as needed</small>				
Other – specify;  <small>attach additional sheet as needed</small>				
<b>TOTAL DISBURSEMENTS</b>	<b>\$ 11,605,431.00</b>	<b>\$ 11,706,904.00</b>	<b>\$ 13,156,372.00</b>	<b>\$ 13,325,901.00</b>

<b>OPERATING SURPLUS (LOSS)</b>	<b>\$ 28,185,700.00</b>	<b>-\$ 16,828,844.00</b>	<b>\$ 19,390,801.00</b>	<b>\$ 11,203,658.00</b>
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**INTER-FUND TRANSFERS**

<b>Transfers To Operating Account</b>	<b>\$ 1,091,960.00</b>	<b>\$ 1,116,969.00</b>	<b>\$ 995,830.00</b>	<b>\$ 992,291.00</b>
From trust funds (retained income from previous years)	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
From other funds (i.e., special bequests, pre-need, etc.)	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
<b>TOTAL TRANSFERS FROM OTHER FUNDS TO OPERATING ACCOUNT</b>	<b>\$ 1,091,960.00</b>	<b>\$ 1,116,969.00</b>	<b>\$ 995,830.00</b>	<b>\$ 992,291.00</b>

## SCHEDULE A – INCOME AND EXPENSES AND FUND BALANCES

Cemetery Name Ferncliff Cemetery Association	New York State Cemetery Five Digit ID Number 60 006
---	--

**YEAR ENDING**

**FINANCIAL ASSETS  
(FUND BALANCES)**

*12/31/17      12/31/16      12/31/15      12/31/14*

General Fund	\$ 193,358,602.00	\$ 172,974,386.00	\$ 186,422,729.00	\$ 171,687,831.00
Permanent Maintenance Fund	\$ 58,651,734.00	\$ 50,919,902.00	\$ 54,271,204.00	\$ 49,657,377.00
Perpetual Care	\$ 447,626.00	\$ 378,729.00	\$ 407,941.00	\$ 366,163.00
Special Trust	\$ 11,088.00	\$ 10,333.00	\$ 10,320.00	\$ 10,021.00
Other	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
<b>TOTAL FINANCIAL ASSETS</b>	<b>\$ 252,469,050.00</b>	<b>\$ 224,283,350.00</b>	<b>\$ 241,112,194.00</b>	<b>\$ 221,721,392.00</b>

**PER ACRE ANALYSIS**

Total Income Per Developed Acre	\$ 723,475.11	-\$ 93,126.18	\$ 591,766.78	\$ 445,991.98
Total Expense Per Developed Acre	\$ 211,007.84	\$ 212,852.80	\$ 239,206.76	\$ 242,289.11
Net Income (Loss) Per Developed Acre	\$ 512,467.27	-\$ 305,978.98	\$ 352,560.02	\$ 203,702.87
Funds Per Developed Acre	\$ 4,590,346.36	\$ 4,077,879.09	\$ 4,383,858.07	\$ 4,031,298.04

**Permanent Maintenance Loan**

Approved Date	
Original Loan Amount	
Current Balance	

**NOTES:**

## Schedule of Other Income (Receipts) and Expenses

	12/31/2019	12/31/2018	12/31/2017	12/31/2016
<b>Income (Receipts)</b>				
Cremation Fees	1,466,096	1,350,514	1,233,613	1,087,330
Memorials and Vases	341,699	356,861	415,943	321,586
Grave Decorations and Flowers	122,758	124,387	126,823	127,524
Annual Care	5,011	5,263	5,465	5,979
Summer Plantings	119,779	121,424	120,903	127,485
Mausoleum Plant Sales	186,184	186,528	189,165	193,990
Inscriptions	215,588	233,666	211,434	232,773
Other	-8,462	18,997	7,078	5,890
Cameos	49,624	50,619	52,022	48,007
Urns	7,071	8,782	6,854	10,814
Contribution to PM Funds (Statutory)	620,386	639,114	683,615	641,980
Miscellaneous Revenues	44,347	10,680	39,515	2,224
Gain (Loss) on Alternative Investments	89,144	201,200	-78,235	10,127
Interest on Installment Contracts	22,520	24,316	19,653	9,028
Realized Gains on Investments	1,967,480	3,841,435	6,951,848	4,162,964
Unrealized Gain (Loss) on Investments	23,925,513	-23,173,867	11,726,759	7,384,088
Professional Services on Investments	-890,693	-885,976	-812,652	-694,254
Investment Software and Tools	-24,839	-23,241	-21,446	-20,425
Interest on Bank Loans	-233,902	-234,442	-163,660	-92,645
<b>Total Other Income (Receipts)</b>	<b>28,025,304</b>	<b>-17,143,740</b>	<b>20,714,697</b>	<b>13,564,465</b>
<b>Expenses and Cost of Sales</b>				
Amortization of Constuction Costs	1,596,423	1,663,167	1,923,420	1,811,838
Cost of Reacquired Space	76,451	33,881	42,033	57,789
Contribution to Permanent Maintenance Fund	620,386	639,114	683,615	641,980
Cost of Other Sales				
Memorials, Vases	179,697	166,074	177,906	155,325
Grave Decorations	58,281	58,314	47,598	61,115
Annual Care	2,506	2,632	0	1,678
Summer Planting	14,440	14,840	21,148	22,218
Mausoleum Plants	105,501	104,055	103,541	53,837
Inscriptions	89,719	83,582	76,039	143,932
Cameos	17,149	19,174	18,353	17,237
Urns	3,368	3,227	7,669	2,784
Cost of Other Services	767	492	1,533	163
Payroll Taxes	272,636	255,161	261,679	269,509
Employee Benefits				

Group Hospital, Life and Disability	699,782	685,069	602,960	594,836
Union Welfare, Pension	321,045	284,866	246,989	424,337
401K Safe Harbor and Profit Share	512,171	527,365	516,553	555,143
Union Pension Mass Withdrawal Expense	-331,746	0	1,214,000	730,266
Advertising	311,845	346,578	362,779	386,885
Holiday Expenses	28,574	27,711	28,258	28,389
Representatives Expenses	5,165	6,041	5,505	8,042
Meetings and Conventions	24,199	30,005	19,791	14,862
Contributions	12,155	9,625	8,165	8,660
Office Expense and Computer Software and Service	478,129	306,241	282,286	295,952
Professional Fees	163,907	145,174	138,365	170,151
Board of Director Fees	147,188	145,313	144,250	144,251
Employee Events and Functions	4,771	5,901	5,185	5,695
General Expenses	53,260	7,443	5,348	2,385
Real Estate Taxes	12,928	11,216	11,010	23,839
Bank Charges, Fees and Credit Card Fees	88,490	89,540	75,691	70,058
Utilities	563,354	645,698	589,143	574,311
Miscellaneous Expense	2,751	10,421	19,793	45,305
Maintenance, Service and Supplies				
Cemetery	264,398	274,494	262,732	251,368
Autos and Trucks	84,529	74,511	65,811	62,841
Mausoleum	108,861	99,054	84,325	81,326
Rosewood	151,490	137,802	152,842	142,079
Shrine	74,236	79,181	64,872	69,574
Crematory	13,107	12,452	15,616	9,258
Flowers/Plantings	6,025	6,671	9,185	6,932
Water	79,528	61,091	69,870	76,863
Depreciation	622,691	638,034	819,185	1,119,624
Income and Sales Tax Expense	0	0	0	170,815
<b>Total Other Expenses</b>	<b>7,540,157</b>	<b>7,711,210</b>	<b>9,185,043</b>	<b>9,313,452</b>

## **Annual Return on Project**

This is a temporary inventory project with sales duration of 100 crypts normally lasting approximately 13 months. The pandemic has accelerated sales. Therefore, it is estimated that the return will primarily occur within one year.

**Part VII Compensation of Officers, Directors, Trustees, Key Employees, Highest Compensated Employees, and Independent Contractors**

Check if Schedule O contains a response or note to any line in this Part VII

**Section A. Officers, Directors, Trustees, Key Employees, and Highest Compensated Employees**

1a Complete this table for all persons required to be listed. Report compensation for the calendar year ending with or within the organization's tax year.

- List all of the organization's current officers, directors, trustees (whether individuals or organizations), regardless of amount of compensation. Enter -0- in columns (D), (E), and (F) if no compensation was paid.
- List all of the organization's current key employees, if any. See instructions for definition of "key employee."
- List the organization's five current highest compensated employees (other than an officer, director, trustee, or key employee) who received reportable compensation (Box 5 of Form W-2 and/or Box 7 of Form 1099-MISC) of more than \$100,000 from the organization and any related organizations.
- List all of the organization's former officers, key employees, and highest compensated employees who received more than \$100,000 of reportable compensation from the organization and any related organizations.
- List all of the organization's former directors or trustees that received, in the capacity as a former director or trustee of the organization, more than \$10,000 of reportable compensation from the organization and any related organizations.

List persons in the following order: individual trustees or directors; institutional trustees; officers; key employees; highest compensated employees; and former such persons.

Check this box if neither the organization nor any related organization compensated any current officer, director, or trustee.

(A) Name and Title	(B) Average hours per week (list any hours for related organizations below dotted line)	(C) Position (do not check more than one box, unless person is both an officer and a director/trustee)						(D) Reportable compensation from the organization (W-2/1099-MISC)	(E) Reportable compensation from related organizations (W-2/1099-MISC)	(F) Estimated amount of other compensation from the organization and related organizations
		Individual trustee or director	Institutional trustee	Officer	Key employee	Highest compensated employee	Former			
(1) Kevin M Boyd President	35	X		X				338,012	92,372	
(2) Philip J Tassi VP/Treasurer/Board	35	X		X				334,948	92,372	
(3) Christopher Taylor Board/Audit Chair	4	X						32,438		
(4) Neal Bastable Jr Board	2	X						26,500		
(5) Edward M Foley Jr Board/Investment Chair	8	X						33,375		
(6) James Mullaney Director of Investments/Board	17.50	X						101,000		
(7) John J Ferguson Board	2	X						26,500		
(8) Steven G Sloane Board	2	X						26,500		
(9) Joanne Aliberto Vice President/Secretary	35			X				211,748	65,104	
(10) James Baumann Facilities Manager	40					X		139,947	71,610	
(11) Craig Burrows Sales Representative	35					X		142,282	60,902	
(12) Fernando Santos Sales Representative/Ind Cont	35					X		229,993	61,682	
(13) Michael Rizzi Sales Representative	35					X		154,005	75,472	
(14)										

# **Ferncliff Cemetery Association**

Financial Statements

December 31, 2019 and 2018

## **Independent Auditors' Report**

**Board of Directors**  
**Ferncliff Cemetery Association**

### **Report on the Financial Statements**

We have audited the accompanying financial statements of Ferncliff Cemetery Association, which comprise the statement of financial position as of December 31, 2019, and the related statements of activities and cash flows for the year then ended, and the related notes to the financial statements.

### ***Management's Responsibility for the Financial Statements***

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### ***Auditors' Responsibility***

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### ***Opinion***

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Ferncliff Cemetery Association as of December 31, 2019, and the changes in its net assets and its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

**Report on Summarized Comparative Information**

We have previously audited Ferndiff Cemetery Association's 2018 financial statements, and we expressed an unmodified audit opinion on those audited financial statements in our report dated March 26, 2019. In our opinion, the summarized comparative information presented herein as of and for the year ended December 31, 2018, is consistent in all material respects, with the audited financial statements from which it has been derived.

**Report on Supplementary Information**

Our audit was conducted for the purpose of forming an opinion on the financial statements as a whole. The accompanying information on pages 22 to 26 is presented for purposes of additional analysis and is not a required part of the financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the financial statements as a whole.

**Report on Compliance**

With respect to Rule of Procedure 200.4 of the New York State Cemetery Board and in connection with our audit, we confirmed with depositories all cash account balances and we confirmed with the custodians the investments held as of December 31, 2019. We also considered Ferndiff Cemetery Association's system of internal accounting control relative to cash and investments to the extent we considered necessary to evaluate the system as required by auditing standards generally accepted in the United States of America. The purpose of our consideration was to determine the nature, timing and extent of the auditing procedures necessary for expressing an opinion on Ferndiff Cemetery Association's financial statements taken as a whole. In connection with our audit, nothing came to our attention that would cause us to believe that Ferndiff Cemetery Association is not in compliance with Section 1507(c)(d) of the Not-For-Profit Corporation Law. However, it should be noted that our audit was not directed primarily toward obtaining knowledge of such compliance and we express no opinion or conclusion and provide no assurance on compliance.

**Other Matters**

Ferndiff Cemetery Association's records for the Permanent Maintenance Fund identifies separately cumulative principal reflecting allocations from the proceeds of the sales of lots, crypts and niches and cumulative capital gains or losses from investments. As more fully described in Note 2 to the financial statements, Ferndiff Cemetery Association reflects income in the form of interest and ordinary dividends ("investment income") earned on the investment of such funds in the operations of the General Fund as permitted by the New York State Cemetery Board. Accordingly, there is no cumulative investment income retained for use in future years.

Ferndiff Cemetery Association's records for the Perpetual Care Fund identify separately the cumulative principal for endowment, the cumulative capital gains or losses from investments and the cumulative income retained for use in future years.

*PKF O'Connor Davies, LLP*

March 25, 2020

**Fernclyff Cemetery Association**

Statement of Financial Position  
December 31, 2019  
(with summarized totals at December 31, 2018)

	2019				2018
	General Fund	Permanent Maintenance Fund	Perpetual Care Fund	Special Funds	Total
<b>ASSETS</b>					
Cash and cash equivalents	\$ 569,840	\$ 1,042,756	\$ 134,808	\$ -	\$ 1,747,404
Investments	173,432,878	57,746,994	449,754	11,088	231,640,714
Accounts receivable	3,674,828	-	-	-	3,674,828
Accrued income and prepaid expenses	999,568	64,482	58	-	1,064,108
Inventory of space, net	10,295,129	-	-	-	10,295,129
Property and equipment, net	13,937,181	-	-	-	13,937,181
Other assets	931,984	-	-	-	931,984
	<u>\$ 203,841,408</u>	<u>\$ 58,854,232</u>	<u>\$ 584,620</u>	<u>\$ 11,088</u>	<u>\$ 263,291,348</u>
					<u>\$ 236,214,522</u>
<b>LIABILITIES AND NET ASSETS</b>					
Liabilities					
Accounts payable and accrued expenses	\$ 1,440,446	\$ 202,498	\$ 136,994	\$ -	\$ 1,779,938
Loan payable	7,900,000	-	-	-	7,900,000
Other liabilities	47,940	-	-	-	47,940
Construction reserve	177,166	-	-	-	177,166
Accrued pension withdrawal liability	882,254	-	-	-	882,254
Non interest-bearing certificates of indebtedness	35,000	-	-	-	35,000
Total Liabilities	<u>10,482,806</u>	<u>202,498</u>	<u>136,994</u>	<u>-</u>	<u>10,822,298</u>
					<u>\$ 2,140,280</u>
					<u>8,200,000</u>
					<u>51,752</u>
					<u>290,140</u>
					<u>1,214,000</u>
					<u>35,000</u>
					<u>11,931,172</u>
Net Assets Without Donor Restrictions	193,358,602	-	-	-	193,358,602
Available for general operations	-	58,651,734	447,626	11,088	59,110,448
Restricted by state law	-	58,651,734	447,626	11,088	252,469,050
Total Net Assets Without Donor Restrictions	<u>193,358,602</u>	<u>58,651,734</u>	<u>447,626</u>	<u>11,088</u>	<u>252,469,050</u>
					<u>\$ 236,214,522</u>
Total Liabilities and Net Assets	<u>\$ 203,841,408</u>	<u>\$ 58,854,232</u>	<u>\$ 584,620</u>	<u>\$ 11,088</u>	<u>\$ 263,291,348</u>

See notes to financial statements

**Ferncliff Cemetery Association**

**Statement of Activities  
Year Ended December 31, 2019  
(with summarized totals for the year ended December 31, 2018)**

	2019				2018 Total
	General Fund	Permanent Maintenance Fund	Perpetual Care Fund	Special Funds	
<b>REVENUE</b>					
<b>OPERATING REVENUE</b>					
Sales of space	\$ 5,929,926	-	-	-	\$ 5,929,926
Cremation fees	1,466,096	-	-	-	1,466,096
Other sales	1,039,252	-	-	-	1,039,252
Other services	954,753	-	-	-	954,753
Total Operating Revenue	<u>9,390,027</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>9,390,027</u>
<b>COST OF SALES</b>					
Depletion of construction costs	1,596,423	-	-	-	1,596,423
Cost of private room construction	-	-	-	-	-
Cost of required space	76,451	-	-	-	76,451
Contribution to permanent maintenance fund	620,386	-	-	-	620,386
Cost of other sales	470,661	-	-	-	470,661
Cost of other services	767	-	-	-	767
Total Cost of Sales	<u>2,764,688</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>2,764,688</u>
Gross Profit on Operating Revenue	<u>6,625,339</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>6,625,339</u>
<b>OTHER SUPPORT</b>					
Required contribution from general fund	-	620,386	-	-	620,386
Miscellaneous revenues	43,057	1,290	-	-	44,347
Gain on alternative investments	89,144	-	-	-	89,144
Interest on installment contracts	22,520	-	-	-	22,520
Dividend and interest income, net	3,788,962	1,083,309	8,652	225	4,881,148
Realized gains on investments	394,311	1,573,156	-	13	1,967,480
Unrealized gains (loss) on investments	18,319,099	5,537,000	68,897	517	23,925,513
Professional services on investment activities	(890,693)	-	-	-	(890,693)
Investment software and tools	(24,839)	-	-	-	(24,839)
Interest on bank loan	(233,902)	-	-	-	(233,902)
Interfund Transfers	-	-	-	-	-
Interest and dividends	1,091,961	(1,083,309)	(8,652)	-	-
Total Other Support	<u>22,599,620</u>	<u>7,731,832</u>	<u>68,897</u>	<u>755</u>	<u>30,401,104</u>
Gross Profit and Other Support	<u>29,224,959</u>	<u>7,731,832</u>	<u>68,897</u>	<u>755</u>	<u>37,026,443</u>

See notes to financial statements

**Ferncliff Cemetery Association**

**Statement of Activities**  
**Year Ended December 31, 2019**  
 (with summarized totals for the year ended December 31, 2018)  
 (continued)

	2019				2018
	General Fund	Permanent Maintenance Fund	Perpetual Care Fund	Special Funds	Total
<b>EXPENSES</b>					
Cemetery program services	\$ 6,544,506	\$ -	\$ -	\$ -	\$ 6,544,506
Management and administrative	2,627,983	-	-	-	2,627,983
Total Expenses	<u>9,172,489</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>9,172,489</u>
Excess (Deficit) of Revenue over Expenses	20,052,470	7,731,832	68,897	755	27,853,954
Before Other Changes					(16,828,844)
<b>OTHER CHANGES</b>					
Union pension mass withdrawal change in estimate	331,746	-	-	-	331,746
Change in Net Assets	<u>20,384,216</u>	<u>7,731,832</u>	<u>68,897</u>	<u>755</u>	<u>28,185,700</u>
<b>NET ASSETS WITHOUT DONOR RESTRICTIONS</b>					
Beginning of year	172,974,386	50,919,902	378,729	10,333	224,283,350
End of year	<u>\$ 193,358,602</u>	<u>\$ 58,651,734</u>	<u>\$ 447,626</u>	<u>\$ 11,088</u>	<u>\$ 224,283,350</u>

See notes to financial statements

## Ferncliff Cemetery Association

### Statements of Cash Flows Year Ended December 31, 2019 (with comparative amounts for year ended December 31, 2018)

	2019	2018
<b>CASH FLOWS FROM OPERATING ACTIVITIES</b>		
Change in net assets	\$ 28,185,700	\$ (16,828,844)
Adjustments to reconcile change in net assets to net cash from operating activities		
Net realized gains on sales of investments/ gain on alternative investments	(2,056,624)	(4,042,635)
Unrealized (gains) loss on investments	(23,925,513)	23,173,867
Depletion	1,596,423	1,554,300
Depreciation	622,691	638,034
Union pension mass withdrawal change in estimate	(331,746)	-
Changes in operating assets and liabilities		
Accounts receivable	347,522	305,234
Accrued income and prepaid expenses	175,950	(236,007)
Inventory of space	(242,620)	(892,799)
Other assets	(40,990)	(34,371)
Accounts payable and accrued expenses	(360,342)	(246,874)
Other liabilities	(3,812)	(3,052)
Construction reserve	(112,974)	87,889
Net Cash from Operating Activities	3,853,665	3,474,742
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>		
Proceeds from the sale of investments	128,437,699	96,928,431
Purchases of investments	(130,329,870)	(98,822,296)
Capital expenditures	(1,871,243)	(1,437,529)
Net Cash from Investing Activities	(3,763,414)	(3,331,394)
<b>CASH FLOWS FROM FINANCING ACTIVITIES</b>		
Proceeds of loan payable	-	400,000
Repayment of loan payable	(300,000)	(400,000)
Net Cash from Financing Activities	(300,000)	-
Net Change in Cash and Cash Equivalents	(209,749)	143,348
<b>CASH AND CASH EQUIVALENTS</b>		
Beginning of year	1,957,153	1,813,805
End of year	\$ 1,747,404	\$ 1,957,153
<b>SUPPLEMENTARY CASH FLOW INFORMATION</b>		
Cash paid for interest	\$ 233,902	\$ 234,442
Cash paid for taxes	775	875

See notes to financial statements

## **Ferncliff Cemetery Association**

Notes to Financial Statements  
December 31, 2019 and 2018

### **1. Organization and Nature of Operations**

Ferncliff Cemetery Association ("Ferncliff") is a not-for-profit, nonsectarian cemetery corporation organized under the laws of the State of New York. Ferncliff is exempt from federal income tax under Internal Revenue Code section 501(c)(13), and subject to the provisions of the New York State Cemetery Law.

Ferncliff's primary business is the sale of space for interments and the performance of cremations. The cemetery has a memorial park as well as three community mausoleums (Ferncliff Mausoleum, Shrine of Memories, and Rosewood Mausoleum) available for interments. In addition, related sales and services are provided including funerals, receiving vault rentals, annual care, inscriptions, memorials and grave decorations. It is estimated that the remaining economic life of Ferncliff's burial space approximates 75 years.

### **2. Significant Accounting Policies**

#### ***Basis of Presentation and Use of Estimates***

The accompanying financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). The preparation of financial statements in accordance with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Net assets without donor restrictions consist of net assets that are not subject to donor-imposed restrictions and may be expended for any purpose in performing the primary objective of Ferncliff. Net assets without donor restrictions consist of the following:

Available for general operations: Include all resources of the General Fund, which are expendable for daily operations.

Restricted by state law: Include all resources of the Permanent Maintenance Fund, Perpetual Care Fund and Special Fund, which are required to remain in compliance with Section 1507 of the New York State Not-for-Profit Corporation Law.

Net assets with donor restrictions consist of net assets subject to stipulations imposed by donors. Some donor restrictions are temporary in nature or satisfied by the passage of time. Other donor restrictions are perpetual in nature, whereby the donor has stipulated the funds be held in perpetuity. Ferncliff does not have net assets with donor imposed restrictions.

## Ferncliff Cemetery Association

Notes to Financial Statements  
December 31, 2019 and 2018

### 2. Significant Accounting Policies (*continued*)

#### ***Adoption of New Revenue Recognition Guidance***

Effective January 1, 2019, Ferncliff adopted new U.S. GAAP revenue recognition guidance. Adoption of the new guidance did not result in a change to previously recognized revenue, nor any change in the way Ferncliff recognizes revenue. The only change is inclusion of the following informative disclosures:

The new revenue recognition guidance provides a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and supersedes most current revenue recognition guidance.

The core principle of the new guidance is that an entity should recognize revenue from the transfer of promised goods or services to customers in an amount that reflects the consideration the entity expects to receive for those promised goods or services to customers. The guidance includes a five-step framework to determine the timing and amount of revenue to recognize related to contracts with customers. The new framework had an overall immaterial impact. This guidance also requires new or expanded disclosures related to judgments made by entities when following this framework.

As shown on the statement of activities, Ferncliff has several revenue sources. Ferncliff has reviewed its various revenue sources and concluded that each of its contracts includes a single performance obligation that is satisfied either at a point in time or over time, which is satisfied over Ferncliff's year. Because no performance obligation spans beyond Ferncliff's year, all such obligations are satisfied by Ferncliff's year end.

The new guidance requires Ferncliff to not recognize revenue until it is probable of collection and, based on Ferncliff's strong collection experience, Ferncliff has concluded that all revenue recognized is probable of collection. As permitted by the guidance, Ferncliff has applied a portfolio approach to evaluating the customer's ability to pay, rather than evaluating each customer's ability to pay separately.

Revenue from the sale of burial rights is recorded as revenue at the time the sales contract is signed. Cost of space sold is expensed based on the cost of construction of the specific space.

All other related sales and services are recorded as revenue at the time services are performed.

#### ***Cash and Cash Equivalents***

Cash and cash equivalents consist of highly liquid debt instruments with maturities of three months or less at the time of purchase. Cash and cash equivalents do not include cash and investments whose use is limited or restricted cash.

#### ***Investments Valuation***

Investments are carried at fair value.

**Ferncliff Cemetery Association**

Notes to Financial Statements  
December 31, 2019 and 2018

**2. Significant Accounting Policies (continued)**

***Fair Value of Financial Instruments***

Ferncliff follows U.S. GAAP guidance on fair value measurements which defines fair value and establishes a fair value hierarchy organized into three levels based upon the input assumptions used in pricing assets. Level 1 inputs have the highest reliability and are related to assets with unadjusted quoted prices in active markets. Level 2 inputs relate to assets with other than quoted prices in active markets which may include quoted prices for similar assets or liabilities or other inputs which can be corroborated by observable market data. Level 3 inputs are unobservable inputs and are used to the extent that observable inputs do not exist.

Pursuant to U.S. GAAP guidance, alternative investments where fair value is measured using the Net Asset Value ("NAV") as a Practical Expedient for fair value are not categorized within the fair value hierarchy.

***Investments Income Recognition***

Purchases and sales of securities are recorded on a trade-date basis. Interest income is recorded on the accrual basis and dividends are recorded on the ex-dividend date. Realized and unrealized gains and losses are included in the determination of the change in net assets.

***Inventory***

Inventory is stated at the lower of developed cost (specific identification) or net realizable value.

***Property and Equipment***

Capital purchases greater than \$1,000 with a life in excess of 2 years are recorded as property and equipment at cost. Depreciation is computed using the straight-line method over the estimated useful lives of the asset as follows:

<u>Description of Assets</u>	<u>Estimated Useful Lives</u>
Buildings and improvements	40 years
General cemetery development	20 years
Equipment and furnishings	5 to 10 years

## Ferncliff Cemetery Association

Notes to Financial Statements  
December 31, 2019 and 2018

### 2. Significant Accounting Policies *(continued)*

#### ***Impairment of Long-Lived Assets***

Long-lived assets such as property and equipment are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Ferncliff records impairment losses on long-lived assets used in operations if the undiscounted cash flows estimated to be generated by those assets are less than the carrying amount of those assets. No impairment charges were recognized for the years ended December 31, 2019 and 2018.

#### ***Conditional Asset Retirement Obligations***

Ferncliff accounts for Conditional Asset Retirement Obligations ("CARO") in accordance with U.S. GAAP, which defines a conditional asset retirement obligation as a legal obligation to perform an asset retirement activity in which the timing and/or method of settlement are conditional on a future event that may or may not be within the control of the entity. Uncertainty with respect to the timing and/or method of settlement of the asset retirement obligation, does not defer recognition of a liability. The fair value of the CARO is recorded on a discounted basis and accreted over time for the change in fair value. Management has determined that there are no CARO liabilities that are required to be recorded at December 31, 2019 and 2018.

#### ***Funds***

Pursuant to Article 15, §1507 (Trust Funds) of New York State Not-for-Profit Corporation Law, not less than 10 percent of the proceeds from cemetery property sales must be deposited into permanent maintenance funds. The income in the form of interest and ordinary dividends from these funds is used for maintenance of the cemetery, but principal must generally be held in perpetuity. In addition, the board of Ferncliff may appropriate for expenditure, solely for the maintenance and preservation of the cemetery grounds, a portion of the net appreciation, in the fair value of the principal of the trust, as is prudent under the standards established by New York State law. In the event that Ferncliff seeks to appropriate any percentage of its net appreciation in its permanent maintenance fund, Ferncliff shall provide notice of such proposed appropriation by certified mail to the New York State Cemetery Board not less than sixty days in advance of such proposed appropriation. Ferncliff recognizes and withdraws currently all dividends and interest income earned to the extent that applicable expenses to maintain the property previously sold equals or exceeds the income generated.

Pursuant to Article 15, §1507 (Trust Funds) of New York State Not-for-Profit Corporation Law, Ferncliff has on occasion entered into agreements with lot owners, to perpetually care for specific lots, plots or parts thereof, to the extent that the income derived from the amount fixed in the agreement will permit. The income arising therefrom is used solely for the perpetual care and maintenance of the lots or plots or parts thereof for which such income has been provided.

## Ferncliff Cemetery Association

Notes to Financial Statements  
December 31, 2019 and 2018

### 2. Significant Accounting Policies *(continued)*

#### ***Funds (continued)***

Special funds are held in accordance with the laws of the State of New York pertaining to Perpetual Care Funds. These agreements were established to provide for specific requests for individual properties. The income arising therefrom, as well as principal as required, is used for the specific property.

#### ***Functional Allocation of Expenses***

The financial statements report certain categories of expenses that are attributable to the program or supporting functions of Ferncliff. Those expenses include depreciation, the administration office and grounds maintenance. Depreciation is allocated to program, except for administration equipment, the office expenses are allocated based on estimates of time and effort and certain costs of the grounds maintenance are allocated based on estimates of time and effort.

#### ***Advertising***

Advertising is expensed as it is incurred.

#### ***Accounting for Uncertainty in Income Taxes***

Ferncliff recognizes the effect of income tax positions only if those positions are more likely than not to be sustained. Management has determined that Ferncliff had no uncertain tax positions that would require financial statement recognition or disclosure. Ferncliff is no longer subject to examinations by applicable taxing jurisdictions for periods prior to December 31, 2016.

#### ***Subsequent Events Evaluation by Management***

Management has evaluated subsequent events for disclosure and/or recognition in the financial statements through the date that the financial statements were available to be issued, which date is March 25, 2020.

### 3. Investments

The objective of the investment program is to produce ordinary income and capital appreciation sufficient to maintain Ferncliff currently and in perpetuity. To achieve this objective, Ferncliff establishes and periodically reviews guidelines for the asset allocation within each fund, taking into account the current and future needs of Ferncliff and changing market conditions. The values of the investments will fluctuate as market conditions and asset allocations change and the amount of gain or loss in any subsequent period cannot be determined.

## Ferncliff Cemetery Association

### Notes to Financial Statements December 31, 2019 and 2018

#### 3. Investments (continued)

Investments, stated at fair value, are summarized as follows at December 31:

	2019		2018	
	Cost	Fair Value	Cost	Fair Value
<b>General Fund</b>				
Cash equivalents	\$ 14,597,209	\$ 14,597,209	\$ 19,347,305	\$ 19,347,305
Alternative investments	6,964,566	10,232,564	6,215,428	8,675,167
Marketable equity securities	90,004,411	102,438,658	89,235,890	86,021,021
Debt securities	45,245,676	46,164,447	40,077,266	39,134,313
<b>Total General Fund</b>	<b><u>\$ 156,811,862</u></b>	<b><u>\$ 173,432,878</u></b>	<b><u>\$ 154,875,889</u></b>	<b><u>\$ 153,177,806</u></b>
<b>Permanent Maintenance Fund</b>				
Cash equivalents	\$ 4,748,652	\$ 4,748,652	\$ 4,933,895	\$ 4,933,895
Alternative investments	2,216,156	2,750,698	1,884,559	2,010,334
Marketable equity securities	30,148,298	34,938,769	28,716,644	28,828,348
Debt securities	15,151,602	15,308,875	14,725,608	14,433,415
<b>Total Permanent Maintenance Fund</b>	<b><u>\$ 52,264,708</u></b>	<b><u>\$ 57,746,994</u></b>	<b><u>\$ 50,260,706</u></b>	<b><u>\$ 50,205,992</u></b>
<b>Perpetual Care Fund</b>				
Cash equivalents	\$ 70,881	\$ 70,881	\$ 62,299	\$ 62,299
Marketable equity securities	195,888	378,873	195,888	309,976
<b>Total Perpetual Care Fund</b>	<b><u>\$ 266,769</u></b>	<b><u>\$ 449,754</u></b>	<b><u>\$ 258,187</u></b>	<b><u>\$ 372,275</u></b>
<b>Special Funds</b>				
Cash equivalents	\$ 1	\$ 1	\$ 13	\$ 13
Debt securities	11,096	11,087	10,846	10,320
<b>Total Special Funds</b>	<b><u>\$ 11,097</u></b>	<b><u>\$ 11,088</u></b>	<b><u>\$ 10,859</u></b>	<b><u>\$ 10,333</u></b>
<b>All Funds</b>				
Cash equivalents	\$ 19,416,743	\$ 19,416,743	\$ 24,343,512	\$ 24,343,512
Alternative investments	9,180,722	12,983,262	8,099,987	10,685,501
Marketable equity securities	120,348,597	137,756,300	118,148,422	115,159,345
Debt securities	60,408,374	61,484,409	54,813,720	53,578,048
<b>Total All Funds</b>	<b><u>\$ 209,354,436</u></b>	<b><u>\$ 231,640,714</u></b>	<b><u>\$ 205,405,641</u></b>	<b><u>\$ 203,766,406</u></b>

Substantially all of Ferncliff's investments are under the control of a bank custodian. Dividend and interest income earned are reported in the statement of activities, net of investment advisor fees and custody fees of \$239,782 for 2019 and \$217,178 for 2018.

## Ferncliff Cemetery Association

Notes to Financial Statements  
December 31, 2019 and 2018

### 3. Investments *(continued)*

The following are major categories of investments at fair value categorized by the fair value hierarchy at December 31:

	2019	2018
Level 1 (Quoted Prices in Active Markets for Identical Assets)		
Equities		
U.S. common stock	\$ 88,232,671	\$ 69,482,381
Mid cap / small cap funds	8,781,830	10,638,506
International	34,262,494	29,991,502
Other equity	6,479,305	5,046,956
Total Level 1	137,756,300	115,159,345
Level 2 (Other Observable Inputs)		
Corporate bonds	31,346,006	30,028,468
U.S. Government Bonds/Agencies	29,227,226	20,829,851
International bonds	911,177	2,719,729
Total Level 2	61,484,409	53,578,048
Alternative investments (*)	12,983,262	10,685,501
Total at Fair Value	212,223,971	179,422,894
Cash equivalents, at cost	19,416,743	24,343,512
Total Investments	\$ 231,640,714	\$ 203,766,406

(\*) As discussed in note 2, investments valued at NAV are excluded from the fair value hierarchy

There were no transfers between levels of the fair value hierarchy during 2019 and 2018.

## Ferncliff Cemetery Association

Notes to Financial Statements  
December 31, 2019 and 2018

### 3. Investments (continued)

Information regarding investments valued at NAV at December 31, 2019 is as follows:

	Fair Value	Unfunded Commitments	Redemption Frequency (If Currently Eligible)	Redemption Notice Period
Private equity, venture capital and distressed debt alternative investments (see "a" below)	\$ 7,719,973	\$ 11,822,520	Quarterly	30 days
Macro hedge funds (see "b" below)	5,263,289	-	Quarterly	95 days
	<u>\$ 12,983,262</u>	<u>\$ 11,822,520</u>		

- a. This category includes eighteen private equity funds that invest primarily in U.S. domestic public and private companies, and two debt funds. Two private equity funds can only be redeemed after being held for six years. Management's plan for the funds has an estimate that the underlying assets of two funds will be liquidated over the next 1 to 2 years. The other sixteen private equity funds are estimated to have 4 to 12 years until final liquidation. The two debt funds have a three-year commitment period with an 8-year fund term after the commitment period of which two years remain on the commitment period and 7 years on the term.
- b. This category includes two long-short domestic funds (with the same manager) that seek to provide investors with substantial returns primarily through long and short equity investments in a diversified range of issuers.

Information regarding investments valued at NAV at December 31, 2018 is as follows:

	Fair Value	Unfunded Commitments	Redemption Frequency (if Currently Eligible)	Redemption Notice Period
Private equity, venture capital and distressed debt alternative investments (see "a" below)	\$ 6,786,357	\$ 7,284,209	Quarterly	30 days
Macro hedge funds (see "b" below)	3,899,144	-	Quarterly	95 days
	<u>\$ 10,685,501</u>	<u>\$ 7,284,209</u>		

- a. This category includes eight private equity funds that invest primarily in U.S. domestic public and private companies, and two debt funds. Two private equity funds can only be redeemed after being held for six years. Management's plan for the funds has an estimate that the underlying assets of two funds will be liquidated over the next 1 to 2 years. The other six private equity funds are estimated to have 5 to 12 years until final liquidation. The two debt funds have a three-year commitment period with an 8-year fund term after the commitment period.

## Ferncliff Cemetery Association

Notes to Financial Statements  
December 31, 2019 and 2018

### 3. Investments *(continued)*

b. This category includes two long-short domestic funds (with the same manager) that seek to provide investors with substantial returns primarily through long and short equity investments in a diversified range of issuers.

### 4. Inventory of Space

Inventory of space, net of accumulated depletion, consists of the following at December 31:

	2019	2018
Rosewood Mausoleum	\$ 8,607,839	\$ 9,684,284
Shrine of Memories	5,884	5,884
Ferncliff Mausoleum	661,697	681,637
Hickory Terrace	72,740	92,140
Knollwood Cremation Garden	570,874	588,968
Reacquired grave space and crypts	115,054	127,206
Hillcrest Garden	133,946	190,982
Wittenberg and Hillcrest Estate Garden	127,095	277,831
	\$ 10,295,129	\$ 11,648,932

### 5. Property and Equipment

Property and equipment consist of the following at December 31:

	2019	2018
Cemetery, Shrine, Rosewood and Mausoleum buildings	\$ 8,391,957	\$ 7,668,066
General cemetery development	12,157,131	11,846,501
Unimproved land	6,151,033	5,560,738
Crematory equipment	1,303,063	1,296,096
Cemetery equipment	1,749,614	1,700,614
Office equipment and furnishings	733,545	689,522
Office buildings	591,299	537,459
Mausoleum equipment and furnishings	1,153,042	1,119,522
Shrine equipment and furnishings	688,168	678,610
Rosewood equipment and furnishings	1,400,419	1,350,900
	34,319,271	32,448,028
Accumulated depreciation	(20,382,090)	(19,759,399)
Net Book Value	\$ 13,937,181	\$ 12,688,629

**Ferncliff Cemetery Association**

Notes to Financial Statements  
December 31, 2019 and 2018

**6. Loan Payable**

Ferncliff amended the revolving credit agreement of \$12,000,000, which expired June 6, 2019, with a new line of credit facility of \$10,000,000 expiring May 31, 2020. The loan is fully collateralized by investments of \$20,709,515 in a specified account. The loan bears interest calculated, at Ferncliff's option, using one of two variable interest rate bases.

At December 31, the following loans were outstanding:

2019			2018		
Maturity Date	Interest Rate	Principal	Maturity Date	Interest Rate	Principal
5/31/2020	2.4625%	\$ 7,900,000	1/10/2019	2.9875%	\$ 100,000
			1/24/2019	3.1125%	7,600,000
		-	1/31/2019	3.1125%	500,000
		<u>\$ 7,900,000</u>			<u>\$ 8,200,000</u>

Interest expense was \$233,902 and \$234,442 during 2019 and 2018.

**7. Pension Plans**

***Pension Union Mass Withdrawal***

On December 8, 2017, the trustees of the Cemetery Workers Supplemental Union Pension Fund (the "Fund") determined that (i) "substantially all" of the Fund's participating employers had withdrawn from the Fund; (ii) the Fund had, therefore, experienced a "mass withdrawal" as provided by Section 4219(c)(1)(D) of the Employee Retirement Income Security Act of 1974 (ERISA), as amended; and (iii) the "mass withdrawal valuation date" is December 31, 2017.

ERISA requires the Fund to calculate a "mass withdrawal liability" for any participating employer that withdraws from a multi-employer pension fund during a period of three (3) consecutive plan years within which "substantially all" employers have withdrawn from the fund presumably "pursuant to an agreement or arrangement to withdraw", a rebuttable presumption that may be disproven by an employer by a preponderance of the evidence.

Mass withdrawal liability consists of the sum of an employer's (i) initial (or standard) liability, (ii) redetermination liability, and (iii) reallocation liability. Redetermination and reallocation liabilities are only assessed following a declaration of a mass withdrawal.

## Fernclyff Cemetery Association

Notes to Financial Statements  
December 31, 2019 and 2018

### 7. Pension Plans (*continued*)

#### ***Pension Union Mass Withdrawal (continued)***

*Initial or standard liability* is assessed when an employer withdraws from a fund and is an employer's proportionate share of a fund's unfunded vested benefit ("UVB") calculated using the fund's standard rules and the fund actuary's actuarial assumptions. The employer's proportionate share (or "initial allocable share") of the UVB is its proportionate share or percentage of the fund's average annual "contribution base units" (participant weeks for this Fund) during the three plan years immediately preceding the employer's withdrawal.

*Redetermination liability* is assessed only after a mass withdrawal is declared and are the amounts deducted from an employer's initial withdrawal liability under both (i) the "de minimis" reduction (by which initial withdrawal liability can be reduced by up to \$50,000 if the initial withdrawal liability is not over \$150,000) and (ii) the 20-year cap on periodic initial withdrawal liability payments.

*Reallocation liability* is assessed only after a mass withdrawal is declared and is an employer's additional proportionate share of a fund's UVB and is generated by calculating the UVB using the more conservative actuarial assumptions of the Pension Benefit Guaranty Corporation ("PBGC") which must be used to calculate the UVB under a mass withdrawal and which results in a higher UVB than that calculated using a fund's standard rules and actuarial assumptions. As with the initial or standard withdrawal liability, the employer's proportionate share (or "initial allocable share") of the UVB is its proportionate share or percentage of the fund's average annual "contribution base units" (participant weeks for this Fund) during the three plan years immediately preceding the employer's withdrawal. Under a "substantially all" mass withdrawal, an employer is subject to reallocation liability if it withdrew pursuant to an agreement or arrangement to withdraw; it is not liable for relocation liability if it did not withdraw pursuant to such an agreement or arrangement.

Fernclyff withdrew from the Fund on December 30, 2016 under the collective bargaining agreement it executed with Local 74 (which administers the Fund) covering the period of January 1, 2016 through December 31, 2018.

## Ferncliff Cemetery Association

Notes to Financial Statements  
December 31, 2019 and 2018

### 7. Pension Plans (*continued*)

#### ***Pension Union Mass Withdrawal (continued)***

Ferncliff (i) was assessed an initial or standard withdrawal liability in February 2017 which it satisfied in a single sum payment in June 2017, such amount was \$730,266 and was accrued as of December 31, 2016; (ii) will not be subject to redetermination liability as its initial withdrawal liability was neither "de minimis" nor capped as its schedule of periodic initial withdrawal liability payments did not exceed 20 years; and (iii) will be assessed reallocation liability no later than January 30, 2020, as it must be assessed thirty (30) days after the date the Fund actuary calculates the amount of the reallocation liability which, in turn, must be calculated no later than one year after the Fund trustees declare the "reallocation record date" which must be no earlier than January 1, 2017 (the date of the actuarial report of the plan year in which the "substantially all" mass withdrawal was declared) and no later than December 31, 2018 (one year after the "mass withdrawal valuation date").

Ferncliff retained BPAS Actuarial & Pension Services ("BPAS") to estimate its reallocation liability by estimating the vested benefits of the Fund under mass withdrawal assumptions, the expense load and asset value of the Fund, the resultant unfunded vested benefit of the Fund, and Ferncliff's "initial allocable share" or proportionate share of the UVB. BPAS estimated Ferncliff's reallocation liability to be \$1,214,000, which has been recorded in accrued pension withdrawal liability on the statement of financial position as of December 31, 2018. On January 29, 2020, Ferncliff received from Local 74 United Service Workers Union the actual calculated reallocation liability of \$882,254, payable in 40 quarterly payments commencing April 1, 2020, and reduced the reallocation liability by \$331,746.

#### ***Defined Contribution Plan***

Ferncliff sponsors a 401(k) Profit Sharing Plan (the "Plan") covering substantially all of its employees (except those covered under a collective bargaining agreement). The Plan allows for employees to make elective deferral contributions equal to a portion of salary. Ferncliff has elected the 401(k) safe harbor provisions using Qualified Non-elective contributions ("QNEC") equal to 3% of salary for the Plan year for active participants. In 2019 and 2018, the QNEC contribution was \$68,151 and \$64,027. Additionally, Ferncliff may make additional contributions each plan year, determined annually by the Board of Directors, which may range from 0% to 22% of employee compensation. In 2019 and 2018, the Board authorized additional contributions of \$444,020 and \$463,338.

## Ferncliff Cemetery Association

Notes to Financial Statements  
December 31, 2019 and 2018

### 8. New York State Restricted Funds

Ferncliff maintains various New York State restricted funds for the purpose of maintaining and preserving the cemetery, including all lots, crypts, niches, plots and parts thereof. In classifying such funds for financial statement purposes as with or without donor restrictions, the Board of Directors looks to provisions of the laws of the State of New York. All New York State restricted funds are without donor restrictions. There are no board designated endowment funds. The interest and ordinary dividends of the Permanent Maintenance Fund is withdrawn and used to maintain and preserve the cemetery. The income from the Perpetual Care Fund and Special Funds is withdrawn based on cost of care and maintenance for which a perpetual care agreement has been made.

The following is a reconciliation of the activity in these funds:

	Permanent Maintenance Fund	Perpetual Care Fund	Special Funds	Total
Balance, December 31, 2017	\$ 54,271,204	\$ 407,941	\$ 10,320	\$ 54,689,465
Contributions and other	640,773			640,773
Interest and dividend income, net	1,109,195	7,774	256	1,117,225
Capital depreciation	(3,992,075)	(29,212)	(243)	(4,021,530)
Appropriation for expenditure	<u>(1,109,195)</u>	<u>(7,774)</u>	<u>-</u>	<u>(1,116,969)</u>
Balance, December 31, 2018	50,919,902	378,729	10,333	51,308,964
Contributions and other	621,676			621,676
Interest and dividend income, net	1,083,309	8,652	225	1,092,186
Capital appreciation	7,110,156	68,897	530	7,179,583
Appropriation for expenditure	<u>(1,083,309)</u>	<u>(8,652)</u>	<u>-</u>	<u>(1,091,961)</u>
Balance, December 31, 2019	<u>\$ 58,651,734</u>	<u>\$ 447,626</u>	<u>\$ 11,088</u>	<u>\$ 59,110,448</u>

## Ferncliff Cemetery Association

### Notes to Financial Statements December 31, 2019 and 2018

#### 9. Functional Expenses

The functional classification of expenses are as follows for the year ended December 31, 2019 (with summarized totals for the year ended December 31, 2018):

	2019			2018 Total
	Cemetery Program Services	Management and Administrative	Total	
Salaries and payroll taxes	\$ 2,675,007	\$ 1,342,641	\$ 4,017,648	\$ 3,957,571
Employee benefits	956,006	576,992	1,532,998	1,497,300
New York State interment assessment	12,027	-	12,027	11,037
Advertising	311,845	-	311,845	346,578
Christmas, Easter, holiday expenses	25,174	3,400	28,574	27,711
Representatives' expenses	2,148	-	2,148	3,078
Sales events and functions	3,017	-	3,017	2,963
Meetings and conventions	-	24,199	24,199	30,005
Contributions	-	12,155	12,155	9,625
Office expenses	278,086	200,043	478,129	306,241
Professional fees	99,680	64,227	163,907	145,174
Board of directors fees	-	147,188	147,188	145,313
Board of directors travel	-	13,333	13,333	-
Vandalism fund	20,835	-	20,835	20,120
General insurance	166,476	64,558	231,034	213,965
Employee events and functions	-	4,771	4,771	5,901
General expenses	-	39,927	39,927	7,443
Real estate taxes	12,928	-	12,928	11,216
Bank charges and fees	79,641	8,849	88,490	89,540
Utilities	505,929	57,425	563,354	645,698
Miscellaneous expenses and UBIT taxes	-	2,751	2,751	10,421
Maintenance, service and supplies	796,403	42,137	838,540	793,418
Depreciation	599,304	23,387	622,691	638,034
Total Expenses	<u>\$ 6,544,506</u>	<u>\$ 2,627,983</u>	<u>\$ 9,172,489</u>	<u>\$ 8,918,352</u>

#### 10. Concentration of Credit Risk

Financial instruments that potentially subject Ferncliff to concentrations of credit risk consist principally of cash and cash equivalents, investments and accounts receivable. At times, the cash balance may be in excess of the Federal Deposit Insurance Corporation ("FDIC") insurance limits. The cash deposits in excess of FDIC insurance were \$1,547,416 and \$1,757,165 at December 31, 2019 and 2018. Ferncliff does not believe that a significant risk of loss due to the failure of a financial institution presently exists. The investment portfolio is diversified by type and industry concentrations so that no individual or group of investments represents a significant concentration of credit risk. Accounts receivable arise from installment sales of Ferncliff and are expected to be collected in full.

## Ferncliff Cemetery Association

Notes to Financial Statements  
December 31, 2019 and 2018

### 11. Availability and Liquidity

The following represents Ferncliff's financial assets at December 31, 2019 and 2018:

Financial Assets at year end:	
Cash and cash equivalents	\$ 1,747,404
Accounts receivable	3,674,828
Investments	<u>231,640,714</u>
Total Financial Assets	<u>237,062,946</u>
Less amounts not available to be used within one year	
Investments restricted as loan collateral	20,709,515
Restricted for permanent maintenance fund	58,789,750
Restricted for perpetual care fund	584,562
Non liquid investments	<u>12,983,262</u>
Financial Assets Available to Meet General Expenditures Over the Next Twelve Months	<u>\$ 143,995,857</u>

Ferncliff's goal is generally to maintain financial assets to meet 60 days of operating expenses (approximately \$1,500,000). As part of its liquidity plan, excess cash is invested in short-term investments including money market accounts and U.S. Treasury Bills and Notes. Ferncliff also has a line of credit of \$10,000,000, of which \$2,100,000 is still available to be drawn to meet cash flow needs.

### 12. Subsequent Events

Subsequent to year end, the COVID-19 pandemic has resulted in substantial volatility in the global financial markets. As a result, Ferncliff's investment portfolio has incurred a significant decline in its fair value since December 31, 2019. Because the value of Ferncliff's individual investments have and will fluctuate in response to changing market conditions, the amount of losses, if any, that will be recognized in subsequent periods, cannot be determined.

\*\*\*\*\*

**Ferncliff Cemetery Association**

Supplementary Information

Years Ended December 31, 2019 and 2018



Fernclyff Cemetery Association

Schedule of Operating Revenue and Cost of Sales  
 Year Ended December 31, 2019  
 (with summarized totals for the year ended December 31, 2018)  
 (continued)

	2019				2018 Total
	General Fund	Permanent Maintenance Fund	Perpetual Care Fund	Special Funds	
Required Contribution from General Fund					
Cemetery	\$ -	\$ 144,846	\$ -	\$ -	\$ 141,264
Shrine	-	14,082	-	-	8,708
Mausoleum	-	-	-	-	446,596
Rosewood	-	405,043	-	-	9,436
Required grave space and crypts	-	23,340	-	-	33,110
Permanent maintenance interim fee	-	33,075	-	-	639,114
Total Required Contribution from General Fund	\$ -	\$ 620,386	\$ -	\$ -	\$ -
<b>COST OF SALES</b>					
Depletion of Construction Costs					
Mausoleum	\$ 19,940	\$ -	\$ -	\$ -	\$ 21,720
Rosewood	1,331,221	-	-	-	1,293,083
Wittenberg Estate, Hillcrest Estate and Knollwood Cremation Garden	168,826	-	-	-	161,498
Hickory Terrace	19,399	-	-	-	28,021
Hillcrest Garden B	57,037	-	-	-	49,978
Total Amortization of Construction Costs	\$ 1,596,423	\$ -	\$ -	\$ -	\$ 1,554,300
Cost of private room construction	-	-	-	-	108,867
Cost of required space sold	76,451	-	-	-	33,881
Contribution to Permanent Maintenance Fund					
Cemetery	\$ 144,846	\$ -	\$ -	\$ -	\$ 141,264
Shrine	14,082	-	-	-	8,708
Mausoleum	-	-	-	-	446,596
Rosewood	405,043	-	-	-	9,436
Required grave space and crypts	23,340	-	-	-	33,110
Permanent maintenance interim fee	33,075	-	-	-	639,114
Total Contribution to Permanent Maintenance Fund	\$ 620,386	\$ -	\$ -	\$ -	\$ -
Cost of Other Sales					
Memorials, vases and canisters	\$ 179,697	\$ -	\$ -	\$ -	\$ 186,074
Grave decorations and flowers	58,281	-	-	-	58,314
Annual care of plantings	2,506	-	-	-	2,632
Summer plantings	14,440	-	-	-	14,840
Mausoleum and Shrine plant sales	105,501	-	-	-	104,055
Inscriptions:					
Cemetery	1,743	-	-	-	1,772
Mausoleum	24,159	-	-	-	28,695
Shrine	22,873	-	-	-	19,368
Rosewood	40,944	-	-	-	33,747
Cameos	17,149	-	-	-	19,174
Urns	3,368	-	-	-	3,227
Total Cost of Other Sales	\$ 470,661	\$ -	\$ -	\$ -	\$ 451,898

See independent auditors' report

**Ferncliff Cemetery Association**

Schedule of Operating Revenue and Cost of Sales  
 Year Ended December 31, 2019  
 (with summarized totals for the year ended December 31, 2018)  
 (continued)

	2019				2018 Total
	General Fund	Permanent Maintenance Fund	Perpetual Care Fund	Special Funds	
<b>Cost of Other Services</b>					
Funerals:					
Cemetery	\$ 1,375	\$ -	\$ -	\$ -	\$ 1,375
Mausoleum	(882)	-	-	-	(882)
Shrine	137	-	-	-	137
Rosewood	137	-	-	-	137
<b>Total Cost of Services</b>	<b>\$ 767</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 767</b>
					<b>\$ 492</b>

See independent auditors' report

**Fernclyff Cemetery Association**

**Schedule of Select Expenses  
Year Ended December 31, 2019  
(with summarized totals for the year ended December 31, 2018)**

	2019				2018 Total
	General Fund	Permanent Maintenance Fund	Perpetual Care Fund	Special Funds	
<b>SALARIES AND PAYROLL TAXES</b>					
Salaries					
Officers	\$ 910,238	\$ -	\$ -	\$ -	\$ 869,939
Office	627,847	-	-	-	612,414
Sales	486,882	-	-	-	485,431
Supervisory	566,732	-	-	-	518,720
Operating	1,037,846	-	-	-	1,042,818
Total Salaries	3,629,545	-	-	-	3,529,322
Social security and Medicare	246,282	-	-	-	234,578
New York State unemployment insurance	11,994	-	-	-	6,555
NY Metropolitan commuter surcharge	12,563	-	-	-	12,072
Federal unemployment insurance	1,797	-	-	-	1,956
Workmen's compensation insurance	115,467	-	-	-	173,088
Total Salaries and Payroll Taxes	\$ 4,017,648	\$ -	\$ -	\$ -	\$ 3,957,571
<b>EMPLOYEE BENEFITS</b>					
Group hospital and group life insurance	\$ 672,757	\$ -	\$ -	\$ -	\$ 662,813
Disability insurance	27,025	-	-	-	22,256
Union welfare fund	289,552	-	-	-	253,080
Union pension fund	31,493	-	-	-	31,786
Safe harbor contribution	68,151	-	-	-	64,027
Profit sharing	444,020	-	-	-	463,338
Total Employee Benefits	\$ 1,532,998	\$ -	\$ -	\$ -	\$ 1,497,300
<b>OFFICE EXPENSES</b>					
Dues and subscriptions	\$ 18,877	\$ -	\$ -	\$ -	\$ 18,809
Computer service and supplies	47,426	-	-	-	41,188
Annual software maintenance	49,326	-	-	-	36,373
Computer programs and programming	241,170	-	-	-	74,804
Postage	25,805	-	-	-	24,075
Stationery, printing, office supplies	66,801	-	-	-	78,290
Telephone	28,724	-	-	-	32,702
Total Office Expenses	\$ 478,129	\$ -	\$ -	\$ -	\$ 306,241

See independent auditors' report

Fernclyff Cemetery Association

Schedule of Select Expense  
 Year Ended December 31, 2019  
 (with summarized totals for the year ended December 31, 2018) (continued)

	2019			2018 Total
	General Fund	Permanent Maintenance Fund	Perpetual Care Fund	
<b>PROFESSIONAL FEES</b>				
Accounting and audit	\$ 31,800	\$ -	\$ -	\$ 29,300
Legal	45,731	-	-	38,275
Consulting	56,165	-	-	57,699
Other	30,211	-	-	19,900
Total Professional Fees	\$ 163,907	\$ -	\$ -	\$ 145,174
<b>UTILITIES</b>				
Fuel for retorts	\$ 124,976	\$ -	\$ -	\$ 100,568
Heat and Electric:				
Mausoleum	114,852	-	-	136,972
Cemetery	-	-	-	1,500
Office	57,426	-	-	67,986
Rosewood	146,375	-	-	190,229
Shrine	119,725	-	-	149,443
Total Utilities	\$ 563,354	\$ -	\$ -	\$ 645,698
<b>MAINTENANCE, SERVICE AND SUPPLIES</b>				
Cemetery	\$ 320,764	\$ -	\$ -	\$ 322,656
Autos and Trucks	84,529	-	-	74,511
Mausoleum	108,861	-	-	99,054
Rosewood	151,490	-	-	137,802
Shrine	74,236	-	-	79,181
Crematory	13,107	-	-	12,452
Flowers/plantings	6,025	-	-	6,671
Water	79,528	-	-	61,091
Total Maintenance, Service and Supplies	\$ 838,540	\$ -	\$ -	\$ 793,418
<b>DEPRECIATION</b>				
Cemetery	\$ 208,535	\$ -	\$ -	\$ 239,833
Mausoleum	101,670	-	-	85,591
Shrine	64,808	-	-	62,858
Rosewood	172,600	-	-	180,727
Crematory	51,691	-	-	48,190
Administration	23,387	-	-	20,835
Total Depreciation Expense	\$ 622,691	\$ -	\$ -	\$ 638,034

See independent auditors' report

# **Exhibit 4**

## **Lawn Crypt Specifications**



Site Planning  
Civil Engineering  
Landscape Architecture  
Land Surveying  
Transportation Engineering

Environmental Studies  
Entitlements  
Construction Services  
3D Visualization  
Laser Scanning

## MEMORANDUM

**DATE:** May 13, 2020

**TO:** Mr. Kevin Boyd, President  
Ferncliff Cemetery Assoc.

**FROM:** Diego Villareale, PE  
James Caris, AICP

**RE:** JMC Project 16048  
Ferncliff Cemetery  
Hillcrest West Lawn Crypts  
280 Secor Road, Greenburgh, NY

**SUBJECT:** **Soil Percolation Testing Report**

In accordance with the requirements of the New York State Cemetery Board Regulations Section 201.17(b)(2), percolation tests were performed in the Hillcrest West section of Ferncliff Cemetery to determine the time required for 1" of stormwater infiltration into the existing soils. The results of the testing indicate that the existing soils exhibit moderate permeability characteristics suitable for cover over proposed lawn crypts. Detailed information is provided below.

**Location:** Ferncliff Cemetery, Hillcrest West Section

**Test Date:** May 5, 2020

**Type of Facility:** Proposed Lawn Crypts

**Proposed Action:** Installation of lawn crypts in an existing section of Ferncliff Cemetery grounds to accommodate for additional burials. New burials are to be subsurface crypts that will result in no additional impervious area.

**Existing Soils:** Based on both Westchester County GIS and USDA Natural Resources Conservation Service Web Soil Survey, the existing soils on Ferncliff Cemetery in the proposed expansion area are comprised of a Charlton-Chatfield Complex, CrC. This soil type typically has slopes ranging from 0-15% and is known to have moderate levels of permeability.

**Soil Testing Data:** Four soil infiltration tests were conducted in the proposed area. The depth at which these tests occurred was 30 inches. The basis of the test was to

confirm the ability of existing soils to convey stormwater and determine how long it will take stormwater to infiltrate one inch. The shortest observed time to obtain 1 inch of infiltration was 60 minutes while the longest was 77 minutes. See attached figure, A-1 "Percolation Test Locations", for the approximate location of each test hole.

The testing data sheet is provided on the next page.

**Conclusion:**

Based on the data obtained by the testing, the soil in the proposed lawn crypt area provided a moderate degree of permeability. For this application, with no proposed additional impervious coverage, these results indicate that the existing soils should be suitable to be used as cover and ultimately lawn over the proposed crypts. The contractor performing the installation of the lawn crypts should ensure that they are properly supported and backfilled per the manufacturer's specifications.

If additional information is required, please contact our office at 914-273-5225.

Sincerely,

JMC Planning Engineering Landscape Architecture & Land Surveying, PLLC



Diego Villareale, PE  
Associate Principal



Site Planning  
 Civil Engineering  
 Landscape Architecture  
 Land Surveying  
 Transportation Engineering

Environmental Studies  
 Entitlements  
 Construction Services  
 3D Visualization  
 Laser Scanning

**FERNCLIFF CEMETARY SOIL INFILTRATION TESTING DATA SHEET**

**JOB # 16048**

Owner Fernclyff Cemetery Association Address 280 Secor Road, Greenburgh, NY 10530  
 Located at (Street) Eastern Road  
 (Indicate nearest cross st.)  
 Municipality Greenburgh, NY Watershed Saw Mill River Basin

**SOIL INFILTRATION TEST DATA**

Presoak Date: N/A Run Date: 5/5/2020

Hole #	CLOCK TIME				INFILTRATION			
	Run No.	Start	Stop	Elapse Time Min.	Depth From Grd	To surface water	Water Level Drop In Inches	Soil Rate In/Hr Drop
1	1	9:58 AM	11:01 AM	63	30"	20"	1"	0.95
	2	11:01 AM	12:05 PM	64	30"	20"	1"	0.94
	3	12:06 PM	1:10 AM	64	30"	20"	1"	0.94
2	1	10:00 AM	11:15 AM	75	30"	20"	1"	0.80
	2	11:16 AM	12:33 PM	77	30"	20"	1"	0.78
	3	12:34 PM	1:51 AM	77	30"	20"	1"	0.78
3	1	10:03 AM	11:13 AM	70	30"	20"	1"	0.86
	2	11:14 AM	12:26 PM	72	30"	20"	1"	0.83
	3	12:28 PM	1:40 PM	72	30"	20"	1"	0.83
4	1	10:15 AM	11:14 AM	59	30"	20"	1"	1.02
	2	11:17 AM	12:17 PM	60	30"	20"	1"	1.00
	3	12:20 PM	1:20 PM	60	30"	20"	1"	1.00



**FERNCLIFF CEMETARY ASSOCIATION**  
 280 SECOR ROAD TOWN OF GREENBURGH, NY

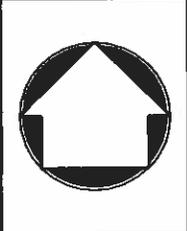
**PERCOLATION TEST LOCATIONS**

DATE: 05/07/2020

JMC PROJECT: 16048

FIGURE: A-1

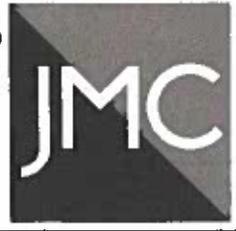
SCALE: 1" = 50'



120 BEDFORD RD  
 ARMONK  
 NY 10504

(914) 273-5225  
 fax 273-2102

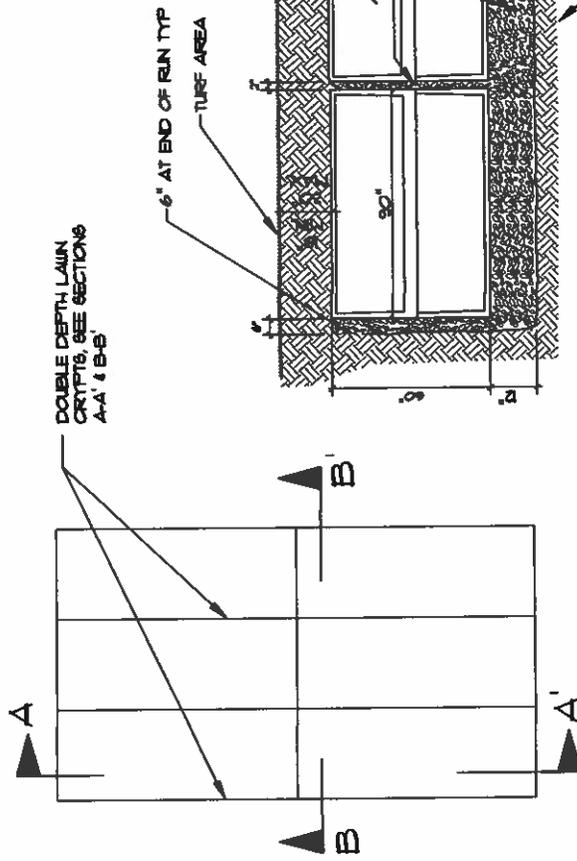
JMCPLLC.COM



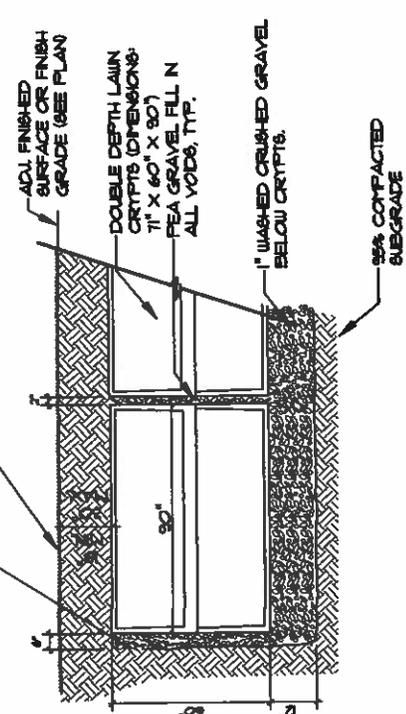
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NOTE:

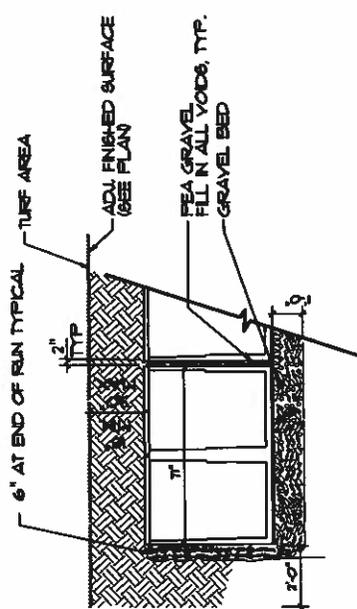
1. THERE SHALL BE NO LESS THAN 18" AND NO MORE THAN 48" OF EARTH COVER ABOVE EACH LAWN CRYPT (THIS PROJECT HAS A 30" MAX. COVER) AND NO LAWN CRYPT MAY BE WITHIN 6' OF THE EDGE OF A ROAD.
2. THE CONCRETE CYLINDER COMPRESSIVE STRENGTH MUST TEST 4500 PSI PLUS OR MINUS 10% 28 DAYS AFTER MANUFACTURE AND ENTRAINED AIR MUST BE 5% - 8% BY VOLUME.
3. THE MANUFACTURER OF THE LAWN CRYPTS MUST PROVIDE A CERTIFICATE SIGNED BY A PROFESSIONAL ENGINEER LICENSED BY THE STATE OF NEW YORK THAT THE LAWN CRYPT WILL PERFORM TO WITHSTAND THE DEAD, LIVE AND LATERAL EARTH PRESSURE LOADS DEFINED BELOW WHICH WILL PERMIT IT TO FUNCTION FOR THE PURPOSE OF A LAWN CRYPT:
  - A) DEAD LOADS CONSISTING OF THE WEIGHT OF THE STRUCTURE, EARTH FILL, SNOW LOADS, AND ANY OTHER MATERIAL THAT MAY PRODUCE A STATIC LOAD.
  - B) LIVE LOADS CONSISTING OF VEHICLE AND PEDESTRIAN LOADS NORMALLY ENCOUNTERED IN A CEMETERY AND A MINIMUM DESIGN WHEEL LOAD OF 4000 LBS.
  - C) LATERAL EARTH PRESSURE LOADS AS COMPUTED BY THE RANKINE METHOD USING THE APPROPRIATE SOIL PARAMETERS, AND THE MINIMUM EQUIVALENT PRESSURE USED SHALL BE 26 PSI PER FOOT DEPTH. LATERAL PRESSURE INDUCED BY LIVE LOADS ON THE GROUND SURFACE SHALL BE CONSIDERED TO BE EQUIVALENT TO THE 2FT. DEPTH OF EARTH.



PLAN VIEW  
SCALE: 1/4" = 1'-0"

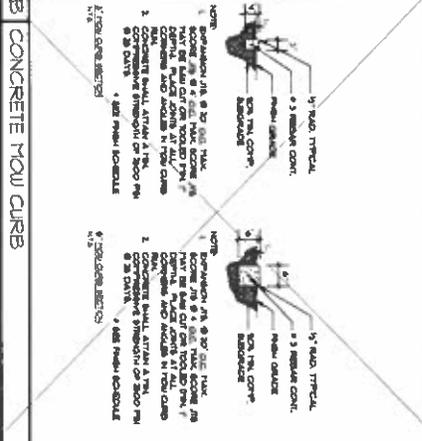
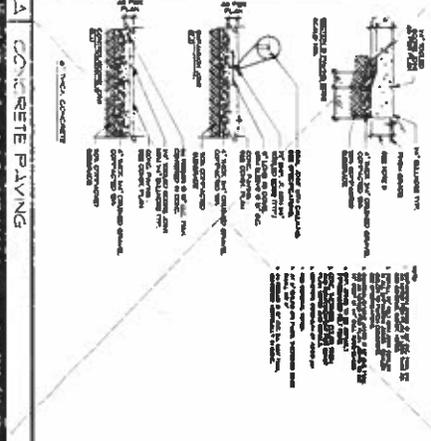
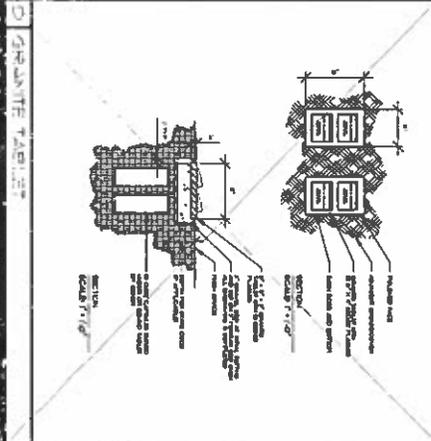
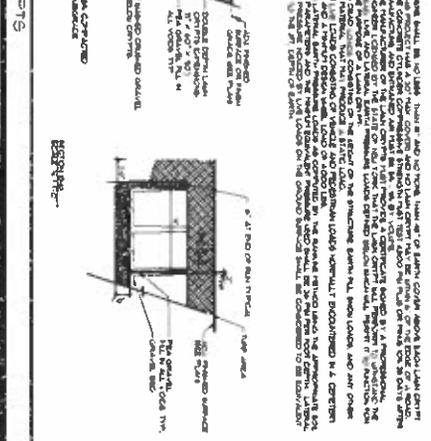
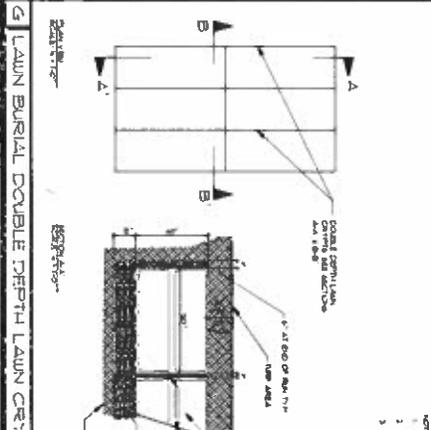
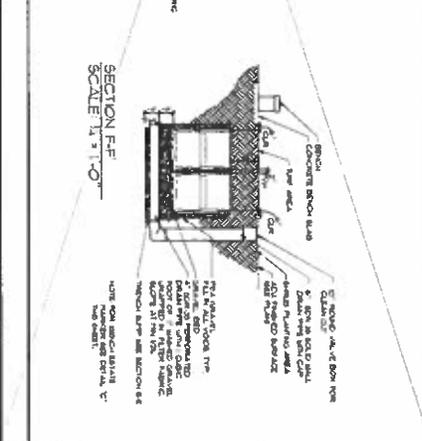
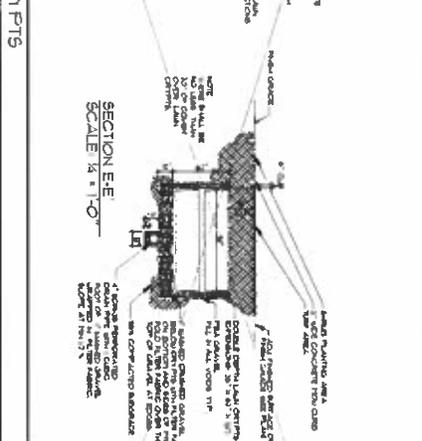
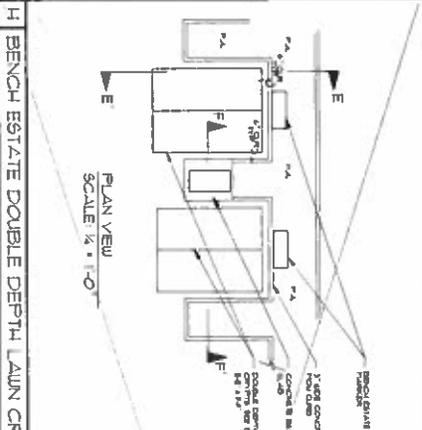
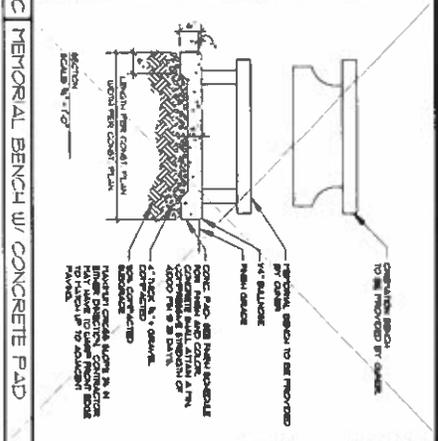
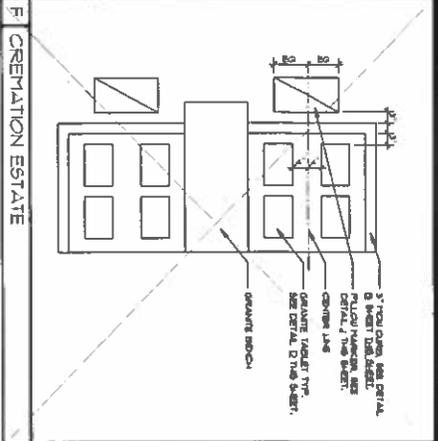
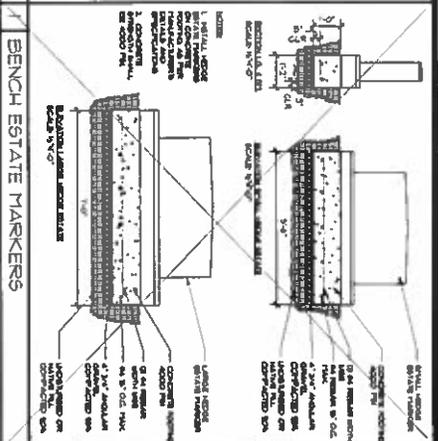
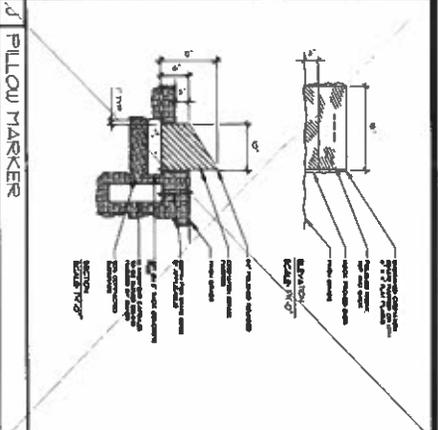


SECTION A-A'  
SCALE: 1/4" = 1'-0"



SECTION B-B'  
SCALE: 1/4" = 1'-0"

G LAWN BURIAL DOUBLE DEPTH LAWN CRYPTS



**EDA**  
 Engineering & Design Associates  
 11111 17th Street, Suite 100  
 Denver, CO 80202  
 Phone: 303.733.1111  
 Fax: 303.733.1112  
 www.eda.com

**PERNCLIFF CEMETERY  
 HILLCREST WEST  
 CONSTRUCTION  
 DETAILS**

Scale: PER DETAIL  
 Date: MAR 26, 2020  
 Drawn by: [Name]  
 Checked by: [Name]  
 Title: [Title]

**L41**  
 18-037  
 Sheet No. 4 of 9

Use of these plans and specifications shall be restricted to the project and for which they were prepared and no reproduction, publication or use in any other project without the express written consent of the Engineer. The Engineer shall not be responsible for any errors or omissions on these plans and specifications. The Engineer shall not be responsible for any errors or omissions on these plans and specifications. The Engineer shall not be responsible for any errors or omissions on these plans and specifications.

# TIM MILLER ASSOCIATES, INC.

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10 North Street, Cold Spring, NY 10516 (845) 265-4400 265-4418 fax [www.timillerassociates.com](http://www.timillerassociates.com)

March 3, 2020

Mr. Kevin Boyd  
Ferncliff Cemetery Association  
PO Box 217  
Hartsdale, NY 10530

Dear Mr. Boyd:

Tim Miller Associates, Inc. (TMA) conducted a subsurface drilling investigation on November 7, 2019, at the Ferncliff Cemetery Property in the Town of Hartsdale, New York. Soil borings were completed at the Hillcrest portion of the property and specifically in the western portion of the Hillcrest area directly east of Oakwood Drive. The drilling was done to assess soil, groundwater and bedrock conditions.

The subsurface investigation was conducted to characterize soil conditions and to determine the depth of bedrock and/or groundwater. Soil borings were completed at nine locations (9) locations in the Hillcrest portion of the site. The borings were completed using a GeoProbe drilling rig. Soil borings were spaced generally 50 feet apart and locations are shown on Figure 1 - Boring Location Map.

## Hillcrest Soil Borings

This area is generally located between a low stone wall on the east and Oakwood Drive on the west. The area measures approximately 80 feet in width and 190 feet in length. The ground slopes from east to west with lower elevations on Oakwood Drive.

The depth to bedrock at the west side of the Hillcrest area was quite consistent ranging from 8.5 feet to approximately 10 feet in depth. The depths to bedrock are provided in Table 1 below and on the attached Soil Boring Location Plan. At location B-6, the boring was ended at 10 feet without reaching refusal. Refusal or unyielding bedrock was found at the other eight locations. Groundwater was not encountered in any of the borings.

The soil was visually screened at locations B-4 and B-5. The soil observed was consistent with previous drilling done directly east of this area in 2013. Soil was characterized as: light brown fine to medium sand with some silt and clay and a trace of gravel. The lowest one foot to 1.5 feet of soil directly above the bedrock was grey and contained a higher percentage of gravel. No organic soils were observed.

Mr. Kevin Boyd  
March 3, 2020

The table below summarizes the depth to bedrock in each boring.

<b>Boring Number</b>	<b>Depth to Bedrock (ft bgs)</b>	<b>Notes</b>
B-1	10.0 refusal	Weathered rock at 9.0'
B-2	9.5 refusal	Weathered rock at 9.0'
B-3	8.5 refusal	
B-4	8.5 refusal	Gravel at 8.0'
B-5	10.0 refusal	Gravel and coarse sand at 9.0'
B-6	10.0	Boring was ended at 10' without refusal
B-7	9.0 refusal	
B-8	9.0 refusal	
B-9	8.5 refusal	

**Notes:**  
ft bgs - feet below ground surface;  
NA - No water observed in boring;  
\* - Composite soil samples were collected for sieve analysis in the interval between the topsoil layer and the grey silty-clay layer above bedrock.

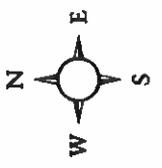
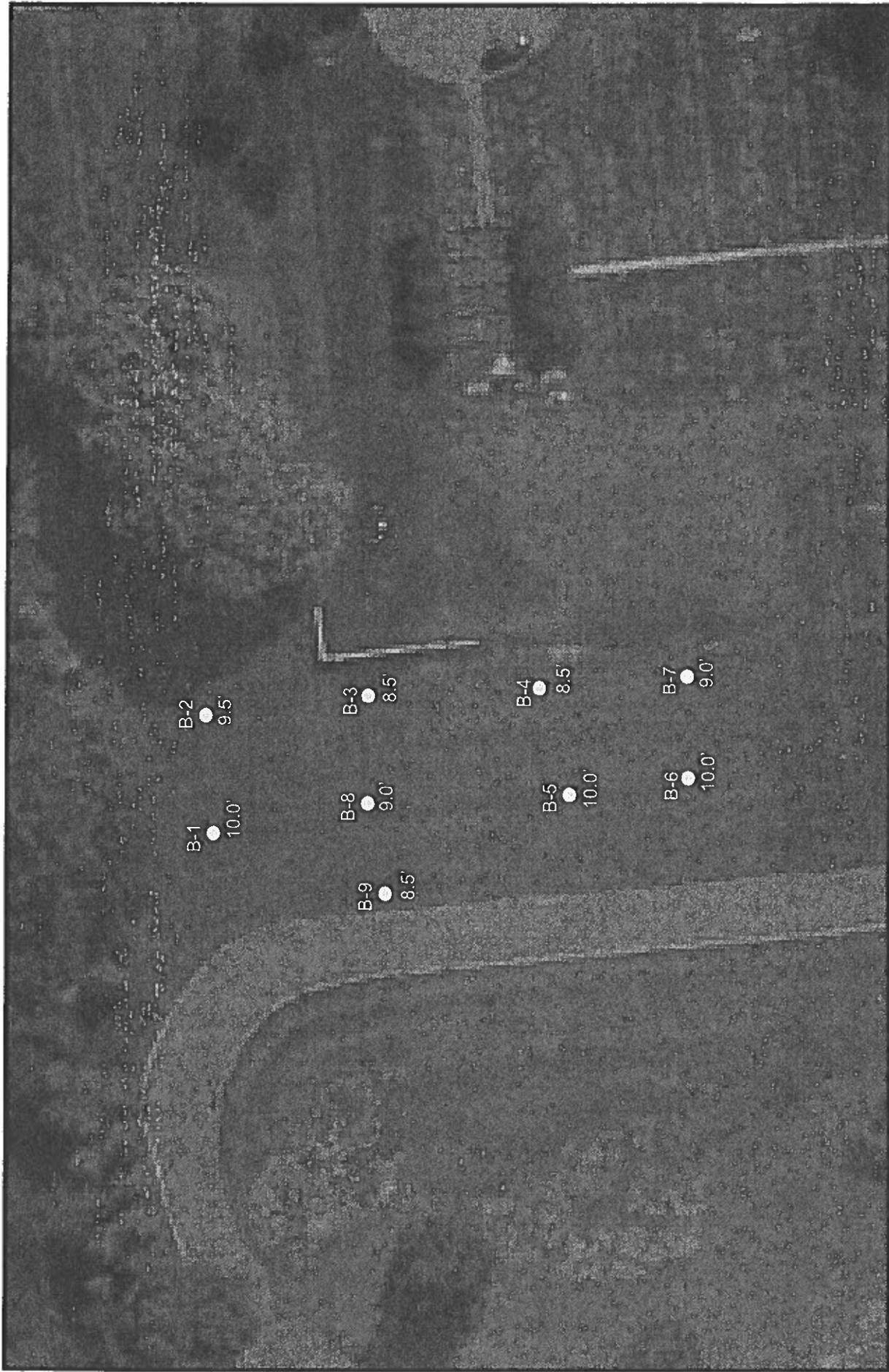
If you have any question please feel free to contact us.

Sincerely,



Jon P. Dahlgren  
Senior Geologist  
TIM MILLER ASSOCIATES, INC.

enclosure

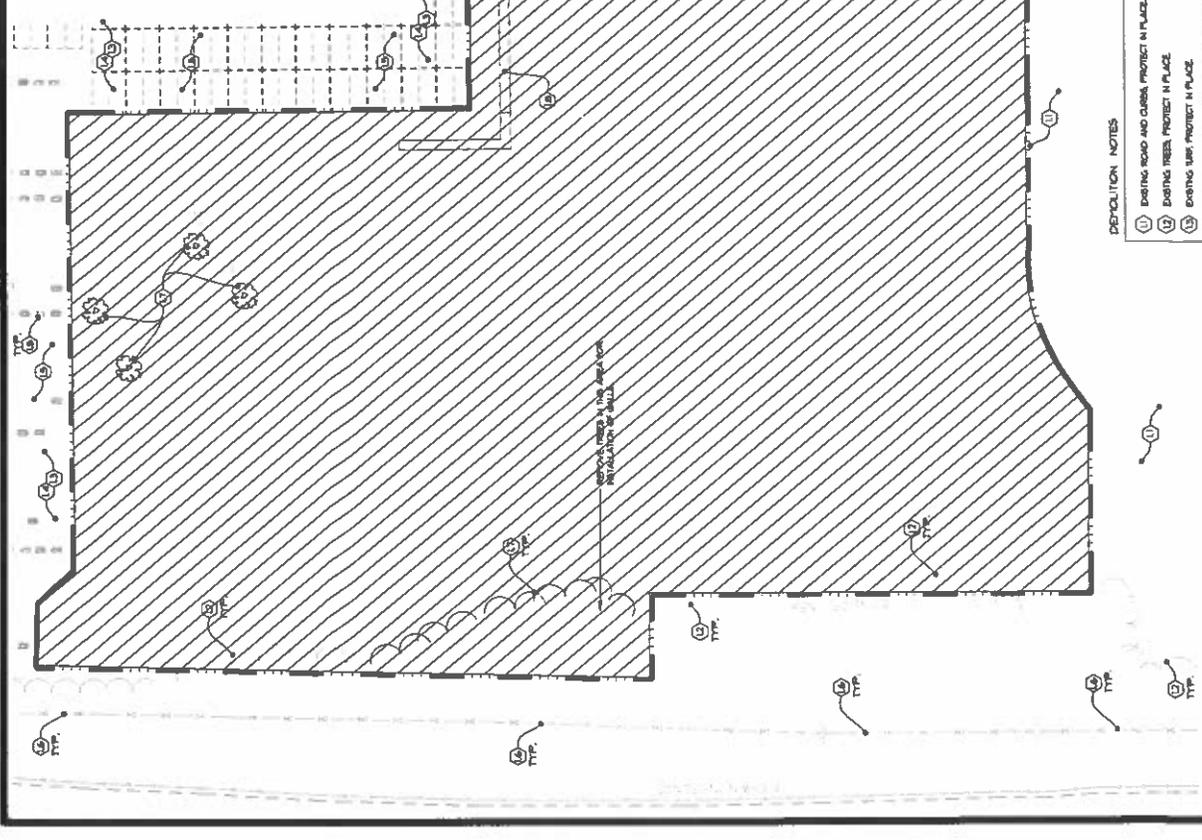


**Figure 1: Soil Boring Locations**  
**Ferncliff Cemetery**  
284 Secor Road, Hartsdale, New York  
Approx. Scale: 1 in. = 45 ft.  
Source: Google Maps



- DEMOLITION GENERAL NOTES**
- CONTRACTOR SHALL REMOVE BULKY & LIGHT MATERIAL AS DIRECTED BY LANDSCAPE ARCHITECT WITHIN THE LIMIT OF WORK AREA.
  - CONTRACTOR IS RESPONSIBLE FOR REMOVING BURIED FOOTINGS OF ITEMS SCHEDULED FOR REMOVAL. CONSTRUCTION SHALL USE EXTREME CARE TO PROTECT ALL EXISTING UTILITIES TO REMAIN AND NEW CONSTRUCTION IN PLACE.
  - ALL EXISTING TREES NOT SCHEDULED FOR REMOVAL SHALL REMAIN AND BE PROTECTED IN PLACE PER SPECIFICATIONS.
  - ANY TREES NOT SCHEDULED FOR REMOVAL BUT INTERFERING WITH NEW CONSTRUCTION SHALL BE REMOVED AS DIRECTED BY OWNER.
  - CONTRACTOR SHALL CLEAR SITE OF GRASS, ROCKS, RUBBER TIRE BUMPERS, USED CEMENT, PAINT, BRUSH, AND OTHER DEBRIS. ROOTS ONE INCH IN DIAMETER AND LARGER ROCKS AND TRUCKLANDS SHOULD REMAIN UNLESS OTHERWISE SPECIFIED.
  - PROTECT TREES WITHIN THE PROJECT SITE WHICH ARE INDICATED TO BE LEFT IN PLACE AND BRANCHES OF TREES TO BE REMOVED SHALL BE CUT TO THE GROUND. THE OUTER PERIMETER OF BRANCHES OF REMOVED TREES OR FOLLAGE SHALL BE PROTECTED BY CONTRACTOR. CONTRACTOR SHALL APPROVE PROTECTION PROCEDURES PRIOR TO INITIATION.
  - UTILITIES AND RELATED EQUIPMENT, REMOVE ALL CONDUITS, UTILITIES AS INDICATED AND AS SATISFACTORY BY OWNER. REMOVE PIPES AND RELATED EQUIPMENT AND DELIVER TO A LOCATION AS INSTRUCTED BY THE OWNER. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND INSTRUCTIONS OF OWNER.

- INSULATION VALVES RELATED PIPING AND MISC. REMOVE AS INDICATED ON DRAWINGS. REMOVABLE MATERIALS AS DETERMINED BY THE OWNER SHALL BE DELIVERED TO THE OWNER AT A LOCATION INDICATED BY THE OWNER.
- MATERIALS USED FOR PIPE TERMINATIONS AND REMOVAL CONNECTIONS SHALL BE THE SAME AS MATERIALS USED FOR THE ORIGINAL PIPE AND FLANGES SHALL BE OF IDENTICAL QUALITY UNLESS OTHERWISE SPECIFIED BY THE OWNER.
- REMOVAL AND ELECTRICAL SYSTEMS:
  - REMOVE TO THE EXISTING LOCATED ON DRAWINGS.
  - DEMOLITION WORK AFFECTING ON LONG SYSTEMS SHALL BE COORDINATED AND SCHEDULED WITH THE OWNER TO PREVENT DISRUPTION OF BUILDING OPERATION.
- DEMOLITION MATERIALS OR EQUIPMENT TO BE DEMOLISHED SHALL BECOME THE PROPERTY OF THE CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF SUCH ITEMS. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF SUCH ITEMS. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF SUCH ITEMS.
- REPLACEMENT: IN THE EVENT OF DEMOLITION OF ITEMS NOT SCHEDULED TO BE DEMOLISHED, CONTRACTOR SHALL OBTAIN THE APPROVAL OF OWNER AND AT NO ADDITIONAL COST TO THE PROJECT, REPLACE SUCH ITEMS TO THE APPROVAL OF OWNER AND AT NO ADDITIONAL COST TO THE PROJECT.
- DESIGN AND SUBMITTALS: REMOVE AND TRANSPORT DESIGN AND SUBMITTALS TO AN OFFICE OF THE ARCHITECT OR ENGINEER OF RECORD. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF SUCH ITEMS. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF SUCH ITEMS.
- DO NOT FORCE OR BURN MATERIALS ON SITE.



- DEMOLITION NOTES**
- EXISTING ROAD AND CURB PROTECT IN PLACE.
  - EXISTING TREES PROTECT IN PLACE.
  - EXISTING TREES REMOVE AND DISPOSE OF OFF SITE.
  - EXISTING WALL REMOVE AND DELIVER TO CEMENTRY YARD ON SOUTH SIDE OF SECOR.
  - EXISTING REGULATION LINES AND LEGION PROTECT IN PLACE.
  - EXISTING BULKHEAD, TANKERS AND PIPES PROTECT IN PLACE.
  - EXISTING UTILITY LINES PROTECT IN PLACE.
  - EXISTING TREES REMOVE AND DISPOSE OF OFF SITE.
  - EXISTING WALL REMOVE AND DELIVER TO CEMENTRY YARD ON SOUTH SIDE OF SECOR.

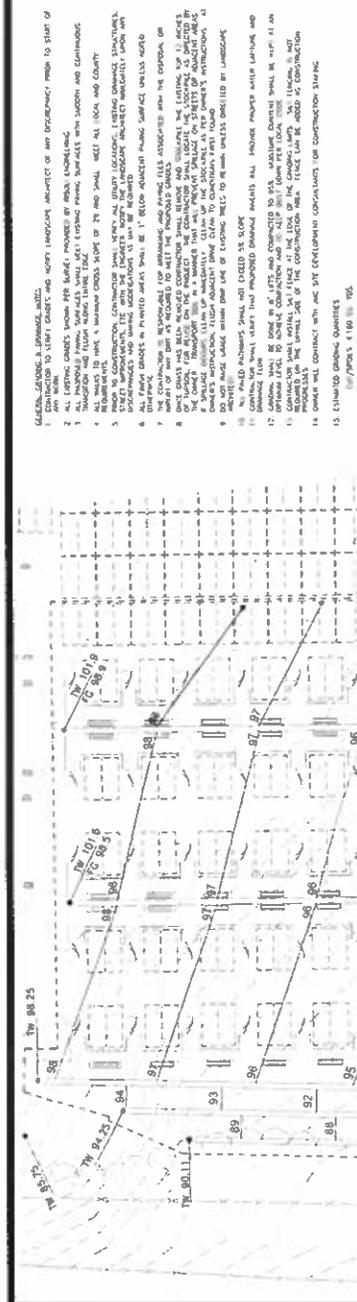
**Underground Service Alert**  
 Call: 811

**DEMOLITION LEGEND**  
 EXISTING UTILITIES, AREA  
 LIMIT OF WORK AREA  
 CLEAR AND GRAB LINE FROM THE AREA APPROX. 3000 FT.

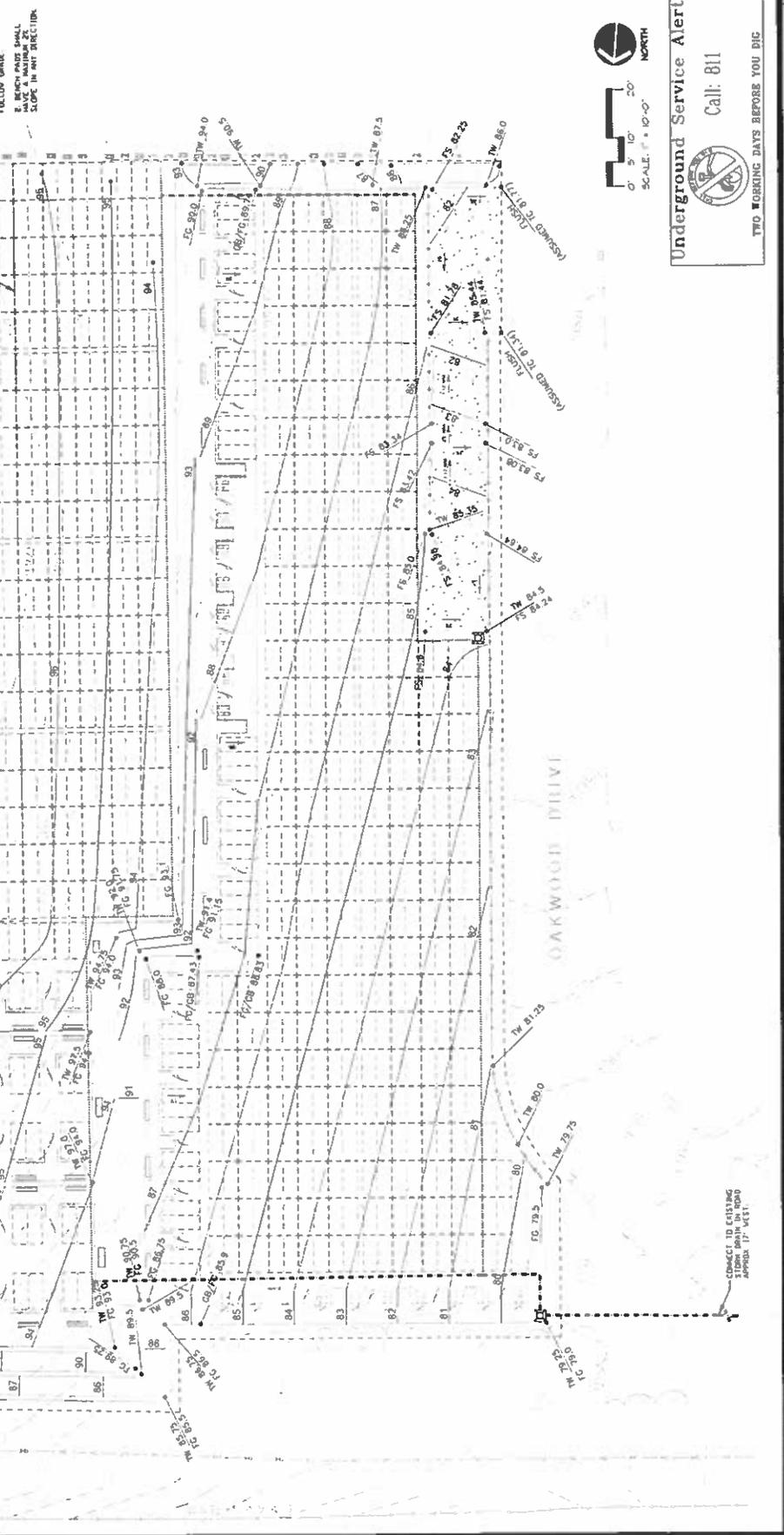
SCALE: 1" = 10'-0"  
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**TWO WORKING DAYS BEFORE YOU DIG**

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- NOTES**
1. EXISTING GRADE SHALL FOLLOW GRADE.
  2. EXISTING GRADE SHALL HAVE A MAXIMUM 2% SLOPE IN ANY DIRECTION.
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  15. EXISTING GRADE SHALL HAVE A MAXIMUM 2% SLOPE IN ANY DIRECTION.



**Underground Service Alert**  
 Call: 811  
 TWO WORKING DAYS BEFORE YOU DIG

CONTACT ID EXISTING  
 APPROX 17' MET.

This plan and specifications shall be construed in conjunction with the general contract documents and specifications. The contractor shall be responsible for obtaining all necessary permits and approvals. The contractor shall be responsible for obtaining all necessary permits and approvals. The contractor shall be responsible for obtaining all necessary permits and approvals.

**CONSTRUCTION NOTES**

1. CONCRETE FOR CURB AND BRICK PAVES SHALL RECEIVE PROTECTIVE FINISH, TYPICAL GRAY COLOR.

2. FINISH SHALL BE "CONCRETE" IN SQUARE AND REC. PATTERN ON VERTICAL SURFACES. FINISH SHALL BE "CONCRETE" ON HORIZONTAL SURFACES. FINISH SHALL BE "CONCRETE" ON CURB AND BRICK PAVES.

3. BRICK SHALL BE "CONCRETE" IN SQUARE AND REC. PATTERN ON VERTICAL SURFACES. FINISH SHALL BE "CONCRETE" ON HORIZONTAL SURFACES. FINISH SHALL BE "CONCRETE" ON CURB AND BRICK PAVES.

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**CONSTRUCTION NOTES**

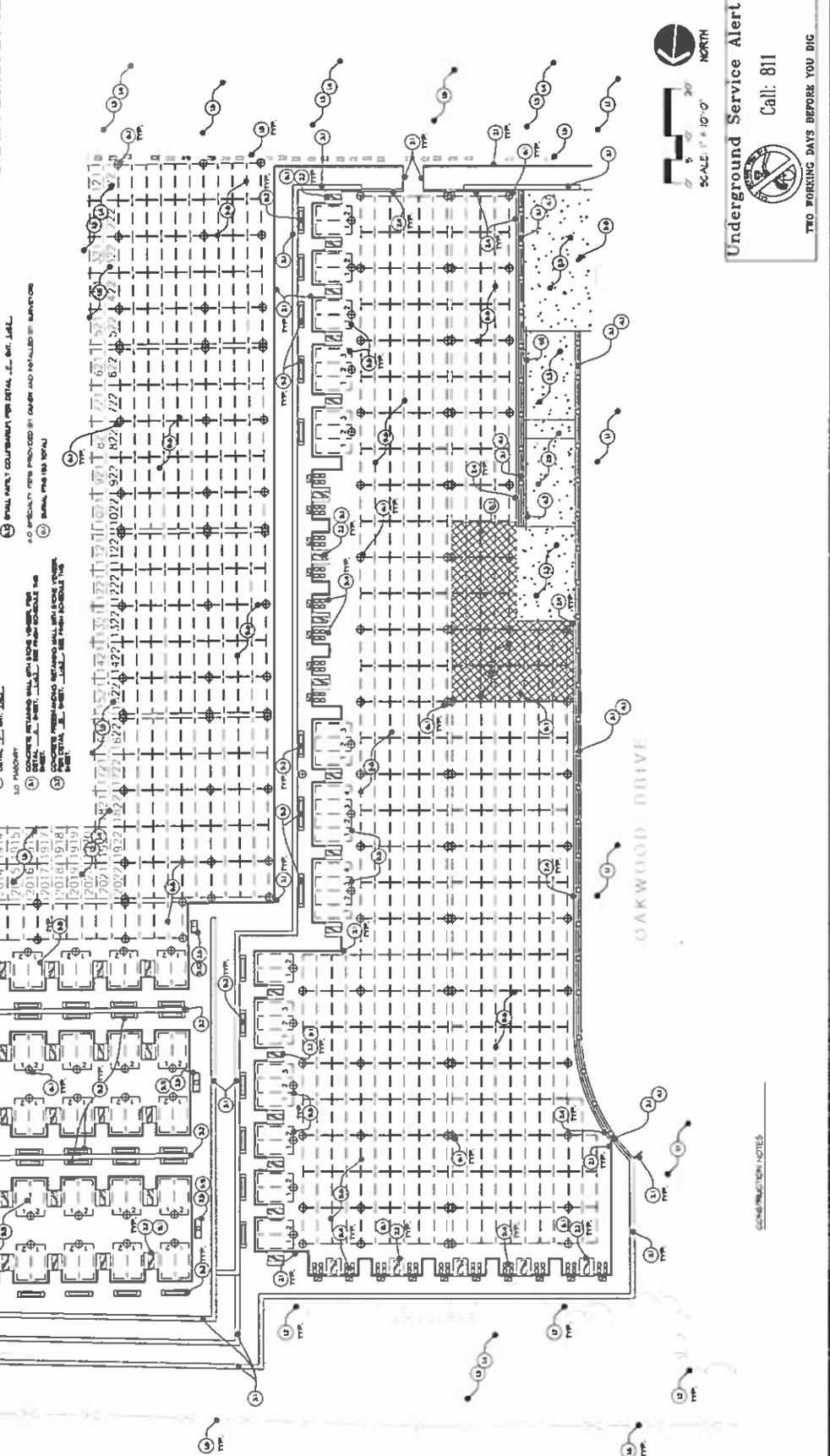
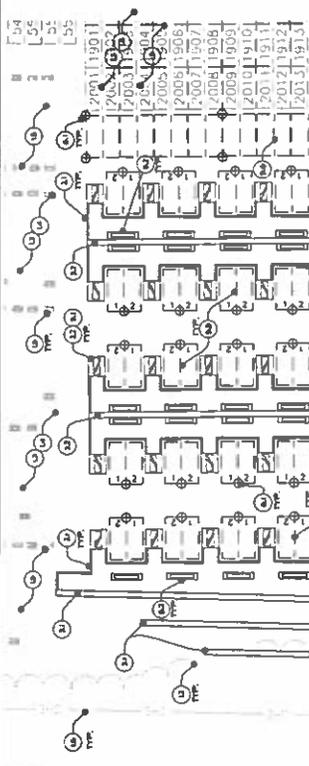
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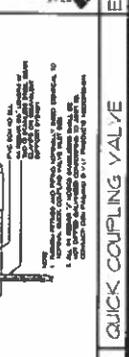
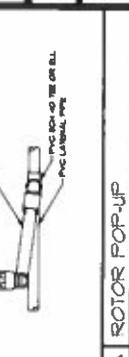
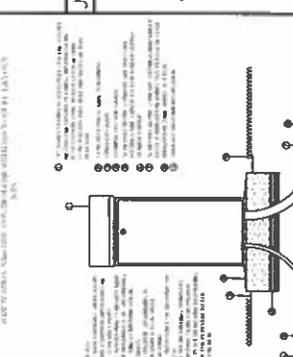
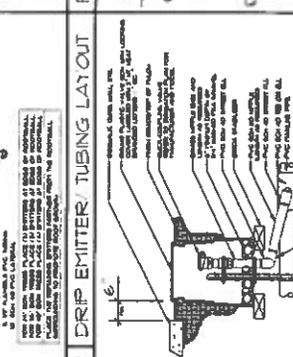
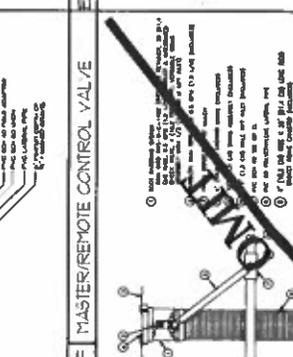
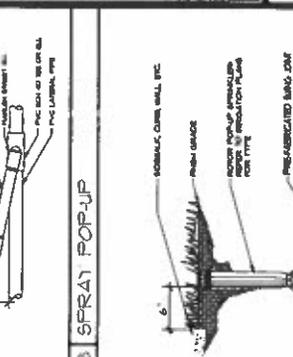
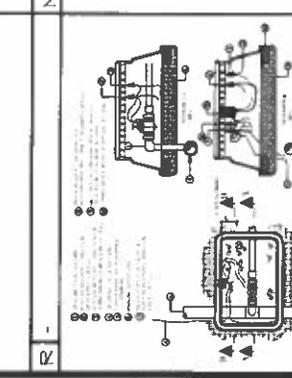
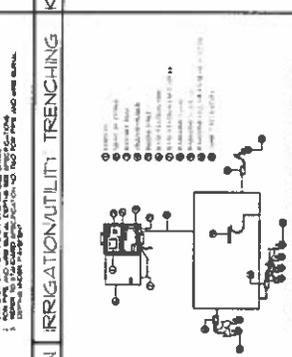
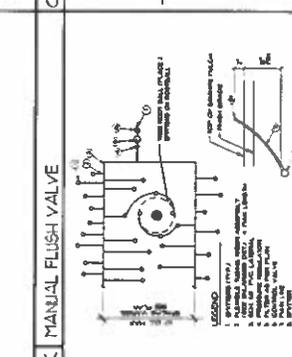
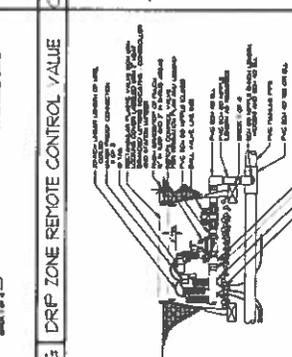
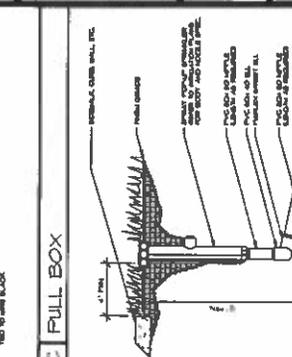
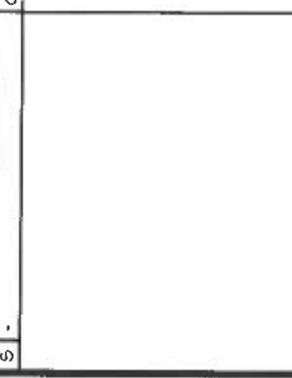
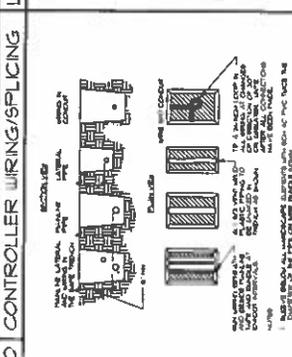
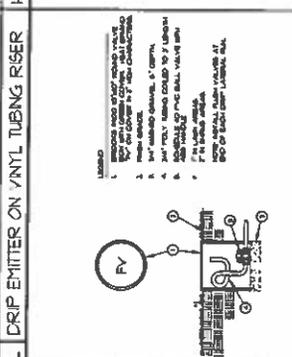
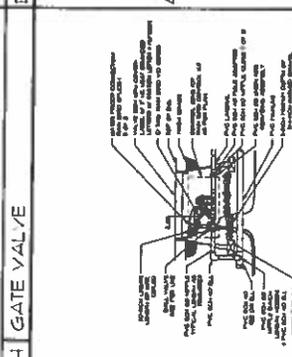
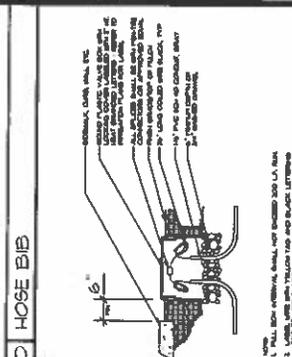
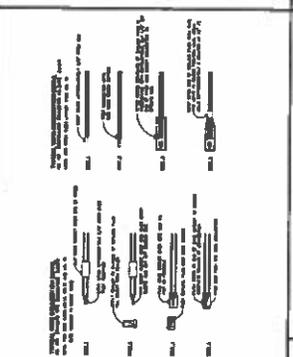
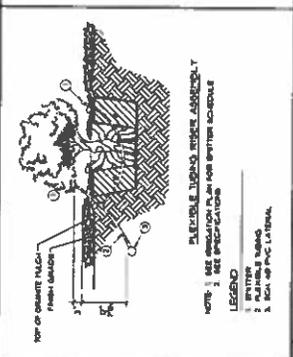
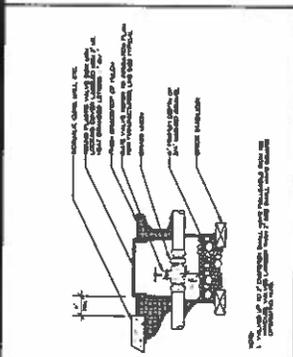
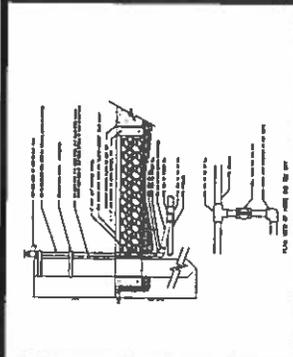




















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**PROJECT:** PRECAST CONCRETE BURIAL CRYPTS  
& OVERSIZED BURIAL CRYPTS

**CLIENT:** CRETER VAULT CORPORATION  
FLEMINGTON, NJ

**JOB:** FERNCLIFF CEMETERY  
HARTSDALE, NY



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Appendix C - Deflection Coefficients, PCA Literature	
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## Scope of Work

This report contains calculations to support the design of precast concrete burial crypts for the Ferncliff Cemetery in Hartsdale, NY.

The crypts will be placed adjacent to one another. Interior walls will only experience vertical loads from surface and top casket. Exterior crypts around the perimeter will be exposed to horizontal loads from the soil and from equipment at surface.

The crypts will be double deep and contain a removable shelf to support the upper casket.

Top slab will be removable and designed to carry 24 inches of soil plus weight of equipment (12,000 lb. axle load).

### Materials:

Concrete 28 day compressive strength  $f_c = 5,000$  psi

Reinforcing Steel, Rebar - Grade 60 (60 ksi)

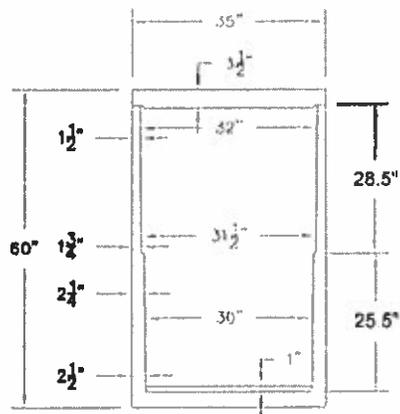
Reinforcing Steel, WWR - Grade 83 (83 ksi) - **Standard** Burial Crypts

Reinforcing Steel, WWR - Grade 70 (70 ksi) - **Oversize** Burial Crypts

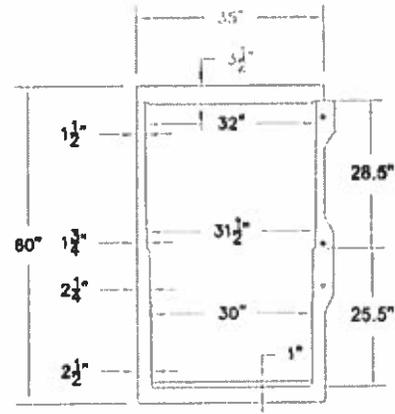
*The lawn crypts produced by Creter Vault meet the design and performance standards of subdivision (c) of section 201.17 Lawn Crypts of the New York Cemetery Law.*

The burial vaults will be subjected to a functional load test. Per the project specifications, the burial vaults will be "covered with 24 inches of soil or covered to the maximum depth as shown on the drawings, whichever is greater."

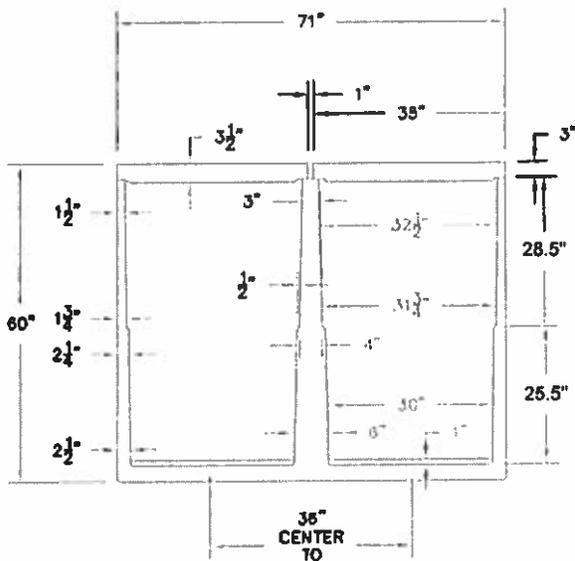
As such, these calculations will be based on 24" of soil cover.



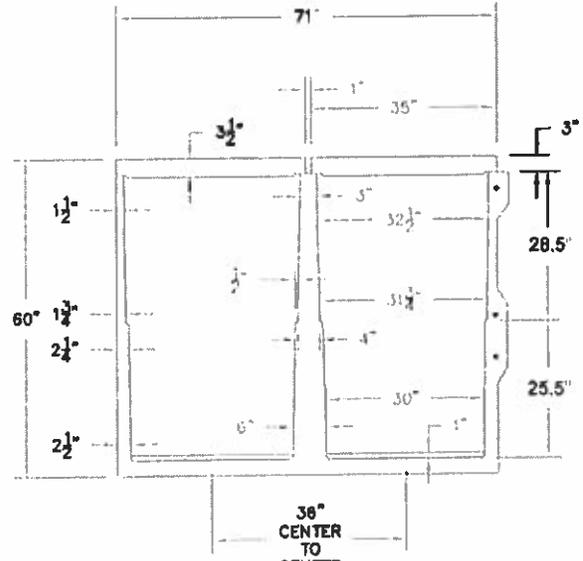
INTERIOR, DOUBLE  
SECTION VIEW



PERIMETER, DOUBLE  
SECTION VIEW



INTERIOR, QUAD  
SECTION VIEW



PERIMETER, QUAD  
SECTION VIEW

BURIAL CRYPT  
PRODUCT DESCRIPTION

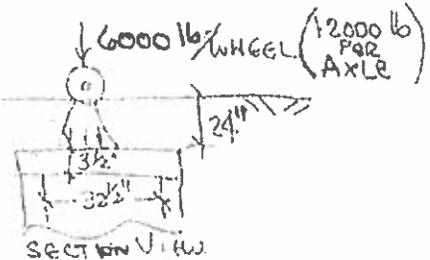
SHEET NO. 30	BURIAL CRYPT	SCALE:	REV NO.	DATE:
		DRAWN BY:		
		DATE:		
		FILE:		

**PROB. DETERMINING LOADS ON TOP SLAB**

**CASE I LOAD FROM SOIL & EQUIP.**

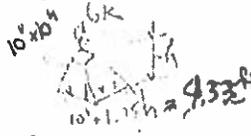
DL - WT of SOIL -  $120 \text{pcf} \times \frac{24}{12} = 240 \text{ psf}$   
 c. of TOP SLAB -  $150 \text{ pcf} \times \frac{3.5}{12} = 44$

ULT. DL -  $1.4 \times 284 \text{ psf} = 398 \text{ psf}$



LL - FREQUENCY OF WHEEL ON SLAB WILL BE LOW - EQUIPT WILL NOT BE MOVING AT 60 mph - NEGLECT IMPACT

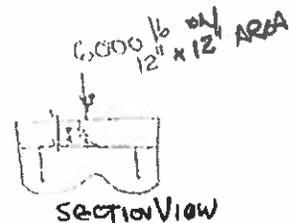
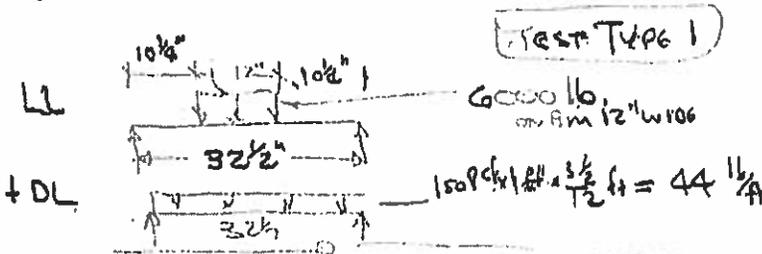
LOAD ON TOP OF SLAB  
 $= \frac{6000 \text{ lb}}{(0.834(1.75 \times 2.0))^2} = 320 \text{ lb/ft}^2$



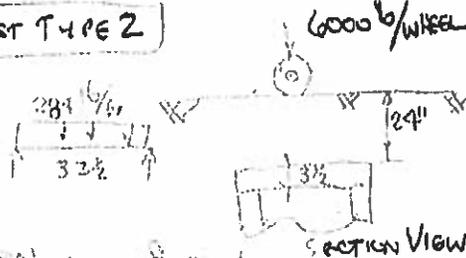
NOTE: 3 ft. PILE OF DIRT WILL BE HIGH  
 AV. OF 150 PSF

WORST CASE  $\rightarrow 320 \text{ lb/ft}^2 \times 1.7 = 544 \text{ lb/ft}^2$  ULT LL ON 12" WIDE RM.

**CASE II LOAD FOR TESTING**



SOIL DL -  $120 \times 2.0 \text{ ft} = 240 \text{ psf}$   
 CONCR. DL -  $150 \times \frac{3.5}{12} = 44$   
 284 psf



LL =  $\frac{6000}{(0.834(1.75 \times 2.0))^2} = 320 \text{ psf}$  ON AREA 4.33' x 4.33'  
 $320 \text{ lb/ft}^2$  ON 12" WIDE RM.

**Per. DETERMINE MOMENTS FOR TOP SLAB**

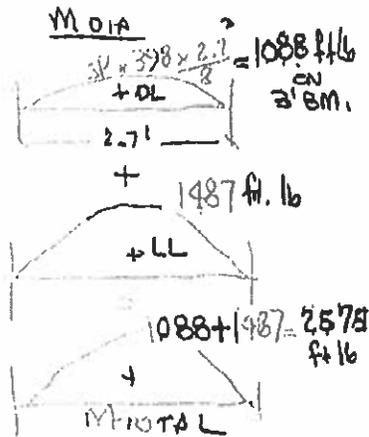
**CASE I**  
MOMENTS

→ DUE TO UUT LOADS

USE BEAM 36" WIDE (NEED DISTRIBUTION STEEL TO ACCOMPLISH THIS)

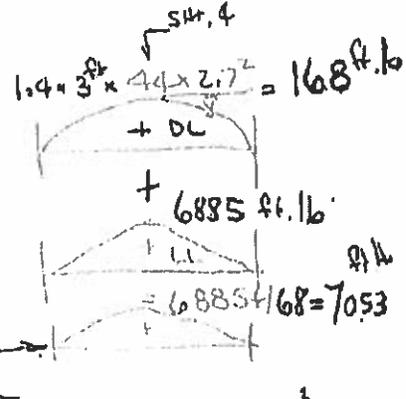
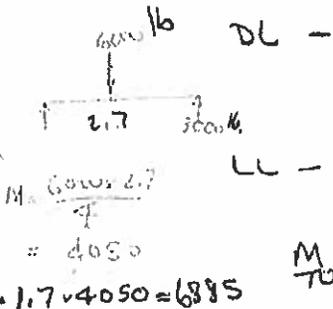
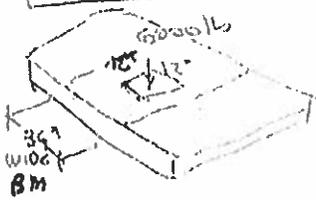


$$M_{max} = \frac{1632 \times 2.7^2}{8} = 1487 \text{ ft}\cdot\text{lb}$$

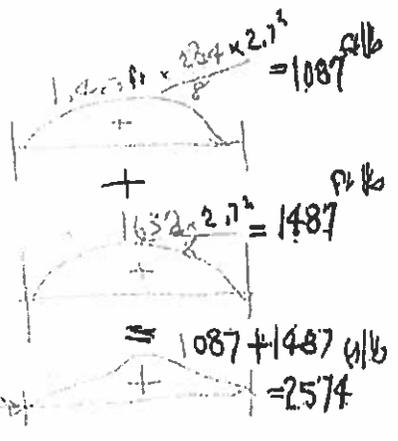
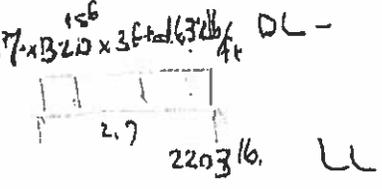
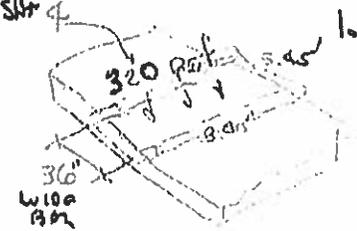


**CASE II**

**TEST TYPE 1**



**TEST TYPE 2**



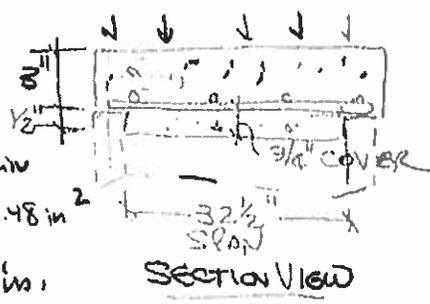
PROP DESIGN TOP SLAB

MAX. U.L.T. MOMENT = 7053 ft. lb. SHT 5

DESIGN AS 1WAY SLAB.  
 DISTRIBUTION STEEL RFRD.  
 TO ALUM b = 36"

For WWR 9.5 x 10 - D12 @ 12" OR EQUIV  
 $A_s = (10 \text{ wires}) \left( \frac{0.12 \text{ in}^2}{12 \text{ in}} \right) (36 \text{ in section}) = 0.48 \text{ in}^2$

$d = 3\frac{1}{2} - \frac{3}{4} - \frac{3}{16} = 2.56 \text{ in.}$



$q = \frac{83}{5} \times \frac{0.48}{36 \times 2.56} = 0.09$

$M_u = 0.9 \times 36 \times 2.56^2 \times 5000 \times 0.09 \cdot (1 - 0.59 \times 0.09) \div 12$   
 $= 7540 \text{ ft. lb} > 7053 \text{ ft. lb} - \text{OK}$

FOR DISTRIBUTION STEEL (250% of main steel)

- $A_{s, \text{main}} = (0.12 \text{ in}^2 \times 10 \text{ wires}) / (10 \text{ in full} / 12) = 0.16 \text{ in}^2/\text{ft}$
- $A_{s, \text{dist}} = (0.12 \text{ in}^2 \times 4 \text{ wires}) / (35 \text{ in wide} / 12) = 0.165 \text{ in}^2/\text{ft} \therefore \text{OK}$

FOR DIAGONAL SHEAR  $V_u = \frac{3 \times 398 \times 2.7}{2} + 2203 = 3815 \text{ lb.}$  SHT 5

$\phi V_n = 0.85 \times 2 \sqrt{5000} \times 36 \times 2.56 \text{ in} = 11078 \text{ lb}$

**PROB. DETERMINE LOADS ON INTERIOR WALLS**

SINGLE WIDE VAULT

DL-SOIL = 240  
 44 SURT 4

CONC = 284 psf

NET DL = 398 psf

AREA OF TOP SLAB =  $\frac{33 \text{ in} \times 90 \text{ in}}{144} = 21.9 \text{ ft}^2$

$21.9 \text{ ft}^2 \times 398 \text{ psf} = 8716 \text{ lb.}$

NEARLY  
 LOAD ON WALLS AROUND PERIMETER

$\frac{8716 \text{ lb}}{20.8 \text{ ft}} = 419 \text{ lb/ft}$

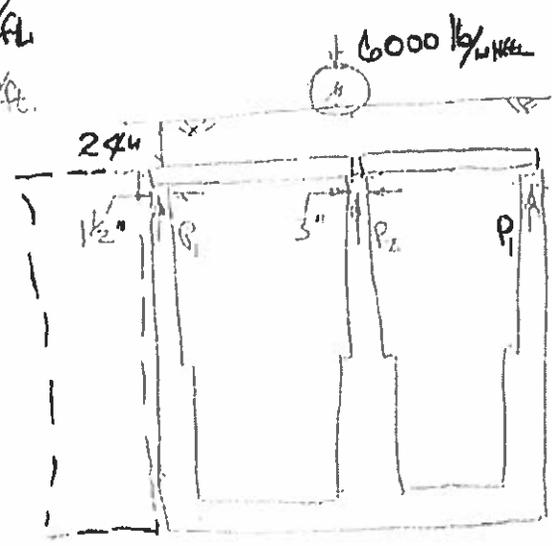
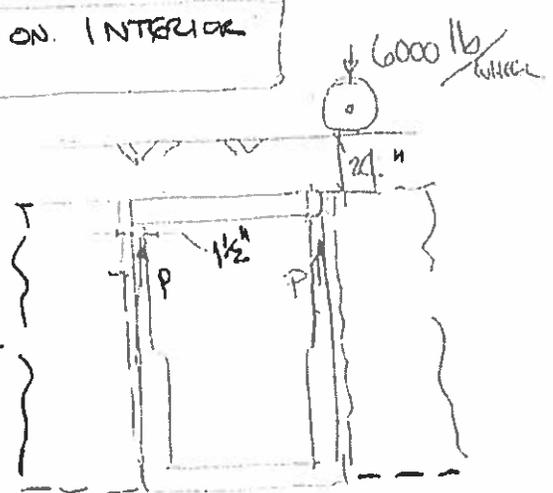
LL-  $\frac{1.7 \times 6000 \text{ lb}}{6 \text{ ft}} = 1700 \text{ lb/ft}$

$R_{UG} = 419 + 1700 = 2119 \text{ lb/ft.}$

DOUBLE WIDE VAULT

$R_{UG}$  - SAME AS ABOVE  
 $= 2119 \text{ lb/ft}$

$R_{UG} = 2 \times 398 \text{ lb/ft} + 1700 \text{ lb/ft}$   
 $= 2496 \text{ lb/ft}$



Prob - DISCUSS DESIGN OF INTERIOR VAULT WALLS

1. THESE WALLS WILL BE IN COMPRESSION FROM TOP DOWN.

OUTSIDE WALL of SINGLE WING & DOUBLE WING VAULT

$$\frac{2119 \text{ lb/ft}}{1.5' \times 12"} = 118 \text{ psi} < 0.9 \times 5000 = 4500 \text{ psi}$$

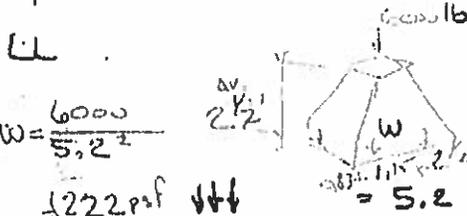
INNER WALL of DOUBLE WING VAULT

$$\frac{2496}{3.0 \times 12} = 69 \text{ psi} - \text{OK}$$

2. LONG WALLS ON INTERIOR VAULTS WILL EXPERIENCE COMPRESSION WITH NO BENDING. THEY ARE SUPPORTED Laterally AT EACH END BY END WALLS (7'-2" UNSUPPORTED LENGTH).

**PROB FIND LOADS ON PERIMETER VAULT WALLS**

ONE SIDE of PERIMETER VLTS  
 WILL BE EXPOSED TO SOIL  
 AND SURFACE SURCHARGE

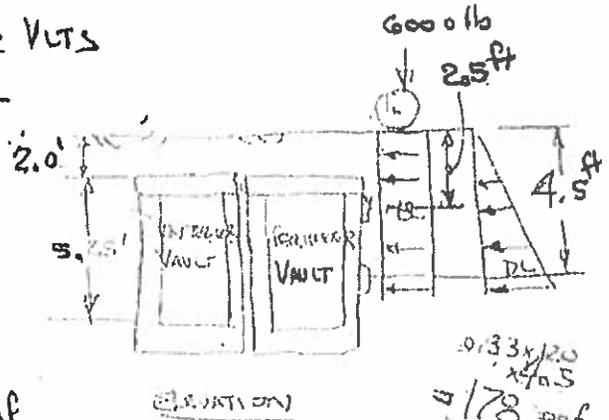


LL  
 $W = \frac{6000}{5.2^2}$   
 = 222 psf

For  $K_2 = 0.33$  psf

Hor. Load =  $0.33 \times 222 = 73$  psf

W. sur. / Hor. =  $1.7 \times 73 = 124$  psf - LL

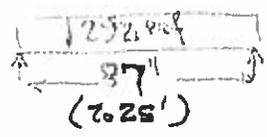


NOTE: PILE OF DIRT ADJACENT TO WALL  
 (APPENDIX WEIGHS 180 psf)  $(3.12 \times 6^2) = 5087 \text{ lb} < 6000 \text{ lb}$



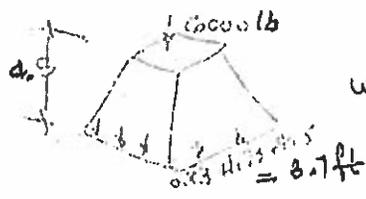
**BEAM AT TOP** WILL EXPERIENCE HOR. LOAD FROM SURCHARGE AT SURFACE + 2.5ft EARTH (WHEN TOP SLAB REMOVED)

$W_{TOTAL} = (1.7 \times 0.33 \times 220) + 124$  psf = 292 psf



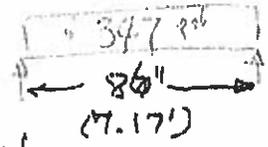
**BEAM AT 4 1/2 ft Below top**

$W_{TOTAL} = 1.7 \times 178$  psf + 44 psf = 347 psf



$W = \frac{6000}{8.7^2} = 79$  psf

Hor. Load:  $W_{SUR} = 1.7 \times 0.33 \times 79 = 44$  psf



**PROG. DESIGN BEAMS IN HEAVY WALL VAULTS**

**TOP BEAM** SUR 9  
 LOAD ON BW =  $292 \text{ psf} \times \left(\frac{28\frac{1}{2} + 3}{12}\right) = 414 \text{ lb/ft}$

U<sub>U</sub> Moment =  $414 \frac{\text{lb/ft}}{8} \times 7.25^2 = 2720 \text{ ft}\cdot\text{lb}$

ASSUME NO RESISTANCE FROM LIO

TRY ONE #5 BAR  $A_s = 0.31 \text{ in}^2$

$d = 3.5 - 0.75 - \left(\frac{5}{8}\right) = 2.44 \text{ in}$

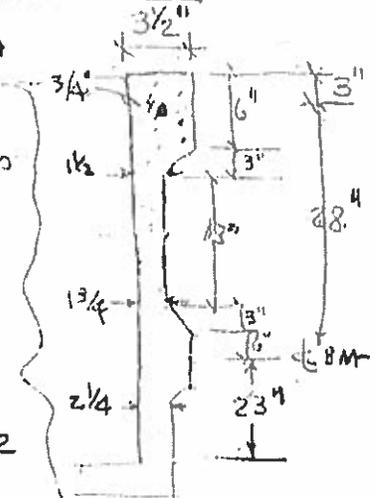
$b = 6 \text{ in}$

$\rho = \frac{60}{5} \times \frac{0.31}{6 \times 7.44} = 0.25$

$M_u = 0.9 \times 6 \times 2.44^2 \times 5000 \times 0.25 (1 - 0.59 \times 0.25) \div 12$   
 $= 2855 \text{ ft}\cdot\text{lb} > 2720 \text{ ft}\cdot\text{lb} - \text{OK}$

DIAG. SHEAR  $V_u = 414 \times 7.25/2 = 1500 \text{ lb}$

$\phi V_n = 0.85 \times 2 \sqrt{5000} \times 6 \times 2.44 = 1760 \text{ lb} > V_u \text{ OK}$



**MIDDEPTH BEAM**

LOAD ON Beam =  $347 \text{ psf} \left(\frac{2.3 + 28}{2 \times 12}\right)$

ACTUAL SUR 9  
 $M_u = \frac{737 \text{ lb/ft}}{8} \times 7.17^2 = 4736 \text{ ft}\cdot\text{lb}$

TRY TWO #5 BARS  $A_s = 0.62 \text{ in}^2$

$d = 3.5 - 0.75 - \frac{1}{2} \left(\frac{5}{8}\right) = 2.44 \text{ in}$

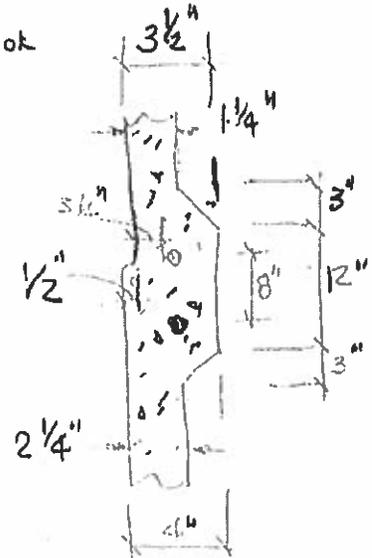
$b = 12 \text{ in}$

$\rho = \frac{60}{5} \times \frac{0.62}{12 \times 7.44} = 0.25$

ACTUAL  
 $M_u = 0.9 \times 12 \times 2.44^2 \times 5000 \times 0.25 (1 - 0.59 \times 0.25) \div 12$   
 $= 5710 \text{ ft}\cdot\text{lb} > 4736 \text{ ft}\cdot\text{lb} - \text{OK}$

DIAG. SHEAR  $V_u = 737 \times 7.17/2 = 2642 \text{ lb}$

$\phi V_n = 0.85 \times 2 \sqrt{5000} \times 12 \times 2.44 = 3520 \text{ lb} > V_u \text{ OK}$



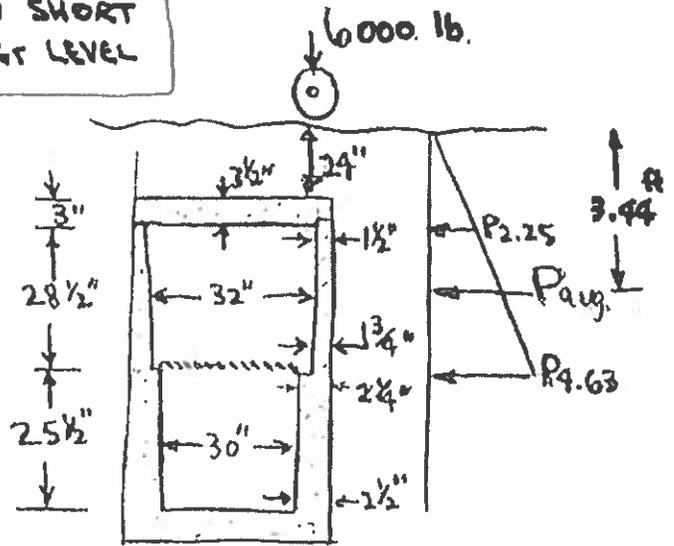
**PROBLEM: DESIGN SHORT WALL FOR UPPER CASKET LEVEL**

SOIL LOAD ON WALL:

$$P_{2.25} = 0.33 \times 120 \text{ psf} \times 2.25 \text{ ft} = 90 \text{ psf}$$

$$P_{4.63} = 0.33 \times 120 \text{ psf} \times 4.63 \text{ ft} = 183 \text{ psf}$$

$$P_{av} = 137 \text{ psf}$$



WALLS ARE CONTINUOUS AT CORNERS..

VIEW OF END WALL

$$M_{\text{neg}} = - \frac{137 \text{ psf} \times \left(\frac{32}{12}\right)^2}{12} = - 81 \text{ ft. lb/12 in.}$$

WALL THICKNESS  $AV(h) = 1.625 \text{ in}$   
 SECTION MODULUS  $= \frac{bh^2}{6} = \frac{12 \text{ in} \times 1.625^2 \text{ in}^2}{6} = 5.3 \text{ in}^3$

FROM  $M = f \cdot S$   $f = \frac{81 \text{ ft. lb} \times 12 \text{ in/ft}}{5.3 \text{ in}^3} = \boxed{183 \text{ PSI}}$

$f =$  STRESS AT OUTER SURFACE OF WALL

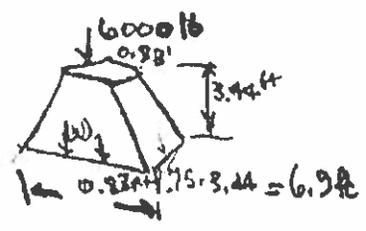
HOR. LOAD ON WALL DUE TO 6000 lb. CONCENTRATED LOAD

$$W = \frac{6000 \text{ lb}}{6.92 \text{ ft}} = 126 \text{ psf}$$

$$\text{HOR LOAD ON WALL} = 0.33 \times 126 \text{ psf} = 42 \text{ psf}$$

$$M_{\text{neg}} = - \frac{42 \times \left(\frac{32}{12}\right)^2}{12} = - 25 \text{ ft. lb}$$

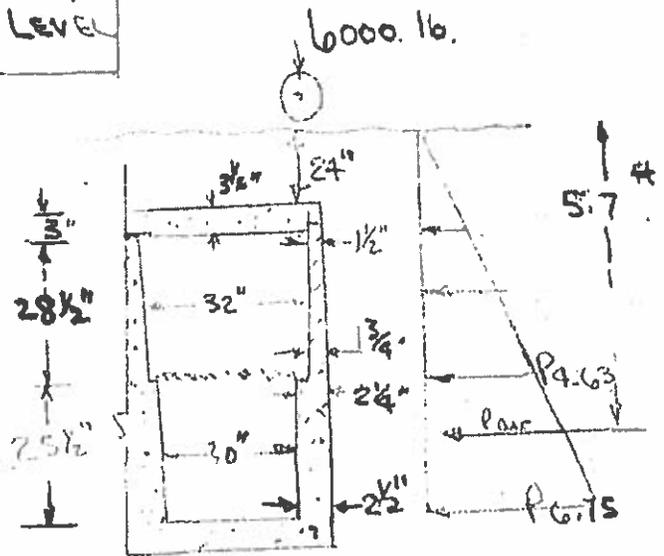
$$f = \frac{25 \times 12}{5.3} = \boxed{57 \text{ PSI}}$$



**PROBLEM: DESIGN SHORT WALL FOR LOWER CASKET LEVEL**

**SOIL LOAD ON WALL**

$P_{4.63} = 183 \text{ psf}$   
 $P_{6.75} = 0.33 \times 120 \times 6.75 \text{ ft} = 267 \text{ psf}$   
 $P_{AV} = 225 \text{ psf}$



END WALL IS CONTINUOUS AT TWO SIDES AND BOTTOM. SOME LOAD WILL GO TO BOTTOM SLAB. CONSERVATIVELY CONSIDER LOAD DISTRIBUTED ONLY TO SIDE WALLS.

NEG MOM.  $= - \frac{225 \text{ psf} \times \left(\frac{30}{12}\right)^2}{12} = -117 \text{ ft lb} / 12 \text{ in.}$

WALL THICKNESS  $AV (h) = 2.375 \text{ in}$

SECTION MODULUS  $= \frac{bh^2}{6} = \frac{12 \text{ in} \times 2.375^2 \text{ in}^2}{6} = 11.3 \text{ in}^3$

FROM  $M = fS$   $f = \frac{117 \text{ ft lb} \times 12 \text{ in/ft}}{11.3 \text{ in}^3} = 124 \text{ psi}$

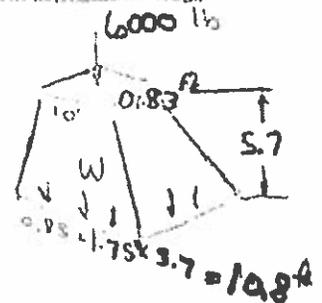
HOR. LOAD ON WALL DUE TO 6000 lb CONCENTRATED LOAD

$w = \frac{6000 \text{ lb}}{10 \text{ ft} \times 12 \text{ in}} = 51 \text{ psf}$

HOR. LOAD ON WALL  $= 0.33 \times 51 \text{ psf} = 17 \text{ psf}$

NEG MOM.  $= - \frac{17 \times \left(\frac{30}{12}\right)^2}{12} = 9 \text{ ft lb} / 12 \text{ in}$

$f = \frac{9 \times 12}{11.3} = 10 \text{ psi}$



## TENSION CAPACITY OF CONCRETE

MANY YEARS AGO ACI 214 PUBLISHED RESULTS OF RESEARCH AND TESTING TO INDICATE THAT A CONCRETE WITH COMPRESSIVE STRENGTH OF 5000 PSI HAD A TENSILE STRENGTH OF 400 PSI. THIS INFORMATION IS STILL PUBLISHED TODAY.

## SUMMARY OF STRESSES

### SOIL LOAD w. 2 FT FILL

LOCATION	ACTUAL TENSION	LOAD FACTOR ACI 318-14	FACTORED STRESS	ULTIMATE TENSION 5000 PSI CONC.
UPPER CASKET	183 psi	x 1.6	293 psi	400 psi
LOWER CASKET	124 psi	x 1.6	198 psi	400 psi

### SOIL LOAD w. 2 FT FILL + 6000 lb CONCENTRATED LOAD

LOCATION	ACTUAL TENSION	LOAD FACTOR ACI 318-14	FACTORED STRESS	ULT. TENSION 5000 PSI CONC.
UPPER CASKET	(183+57)	x 1.6	384 psi	400 psi
LOWER CASKET	(124+10)	x 1.6	214 psi	400 psi

THE READER NEEDS TO REMEMBER :

- ① COMPRESSIVE STRENGTH OF CONCRETE WILL CONTINUE TO INCREASE AFTER REACHING 5000 PSI IN 28 DAYS
- ② QUALITY CONTROL AT MANY PRECAST PLANTS NORMALLY RECORD 28 DAY COMPRESSIVE STRENGTHS EXCEEDING 6000 PSI

**PROB. FIND LOADS ON BOTTOM SLAB.**

21.9 ft<sup>2</sup>

$$DL_{\text{EMTH}} = 1.4 \times 2.0 \text{ ft} \times 120 \text{ pcf} \times 7.5 \text{ ft} \times 2.92 \text{ ft} = 7358 \text{ lb}$$

ULF      SOIL      Yearth

$$DL_{\text{TOP SUR}} = 1.4 \times \left(\frac{3.5}{12}\right) \times 150 \text{ pcf} \times 21.9 = 1341 \text{ lb}$$

Stair

$$DL_{\text{WALLS}} = \left(1.4 \times \left(\frac{2 \text{ in}}{12}\right) \times 150 \times 7.5 \times 4.5\right) 2 = 2363 \text{ lb}$$

$$+ \left(1.4 \times \frac{2}{12} \times 150 \times 2.92 \times 4.5\right) 2 = 920 \text{ lb}$$

$$LL_{\text{SHELF}} = 1.7 \times 40 \text{ lb/ft}^2 \times 30.5 \frac{5}{12} \times 86.5 \frac{5}{12} = 1245$$

ULF of  
C.A.S.C. or  
+ 9 W.C.L.

$$LL_{\text{-SURFACE}} = 1.7 \times 12000 = 20400$$

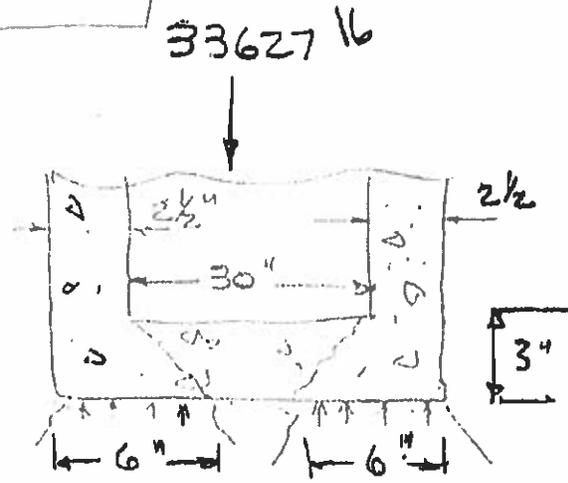
Assume 1 AXLE ON VAVLT

33627 lb.



**Prob. Design Bottom Slab**

SLABS WILL SIT ON 4" MIN - COMPACTED STONE SUBBASE PROVIDING HARD DENSE SURFACE. LOAD WILL GO FROM WALLS TO SOIL IN COMPRESSION



Area of SUBBASE LOADED:  
 $2.92' \times 7.5' - 1.92 \times 6.5 = 9.42 \text{ ft}^2$

LOAD ON STONE  $\frac{33627}{9.42} = 3570 \text{ psf} < 4000 \text{ psf}$   
 O.K.

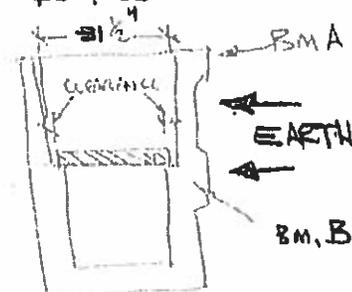
Note: Reinforcing fibers may be added to reduce handling stresses at the discretion of the precaster

Problem Check DEFLECTION IN LONG WALLS & COMPARE TO CLEARANCE of INTERMEDIATE SHELF

(A) For INTERIOR VAULTS THERE WILL BE NO DEFLECTION SINCE ONLY LOAD IS VERTICAL.

(B) For PERIMETRAL VAULTS CHECK DEFLECTION of HEAVY DUTY WALL WHEN LIO IS NOT INSTALLED.

WALL DEFLECTION CANNOT APPROACH "CLEARANCE" OR DIVIDER BEAM WILL NOT BE EASILY REMOVED.



$$\text{CLEARANCE} = (3\frac{1}{2}'' - \underbrace{3\frac{1}{4}''}_{\text{LENGTH OF HALF B.M.}}) \times \frac{1}{2} = \frac{1}{8}''$$

WALL CANNOT DEFLECT MORE THAN  $\frac{1}{8}'' = 0.125''$

LOAD WILL BE APPLIED TO ENTIRE WALL AND LOAD WILL BE DISTRIBUTED TO CORNERS & BOTTOM SLAB.

THIS TWO WAY ACTION WILL PROVIDE SOME STIFFNESS TO HELP CONTROL DEFLECTION.

THE UPPER HALF WALL IS  $\frac{3}{4}''$  THICK AND LOWER HALF  $2\frac{1}{4}''$  THICK WITH HOR. BEAM 12" WIDE RUNNING CORNER TO CORNER. SINCE TABLES ARE SET UP FOR A UNIFORM THICKNESS, CONSERVATIVELY USE 2" THICK WALL FOR DEFLECTION CALC.

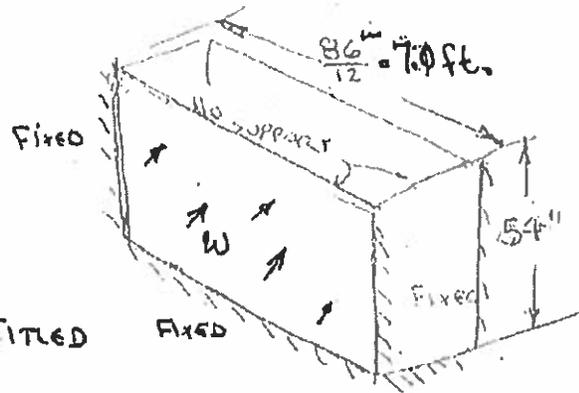
DEFLECTION cont.

$$E_c = 57000 \sqrt{5000} = 4.03 \times 10^6 \text{ psi}$$

$$\frac{b}{a} = \frac{7}{4.5} = 1.56$$

$$c/a = \frac{32}{54} = 0.6$$

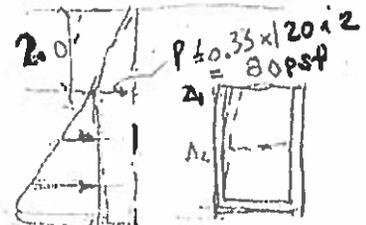
From PCA Book TITLED "RECTANGULAR CONCRETE TANKS"



CASE 3 From APPENDIX C1  
 FOR WALL WITH 2" UNIF. THICKNESS

$$\Delta_1 = 4.9 \times \frac{177 \text{ psf}}{1000 \times 2798611} \times 54^4 = 0.018 \text{ in}$$

$$\Delta_2 = 0.018 \times \frac{3-1}{4.9} = 0.012 \text{ in}$$

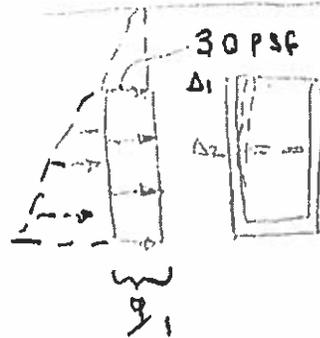


$$\Delta_2 = 0.33 \times 20 \times 6.5 - 80 = 177 \text{ psf}$$

CASE 7 From APPENDIX C2  
 FOR WALL WITH 2" UNIF. THICKNESS

$$\Delta_1 = 18.80 \times \frac{80}{1000 \times 2798611} \times 54^4 = 0.032 \text{ in}$$

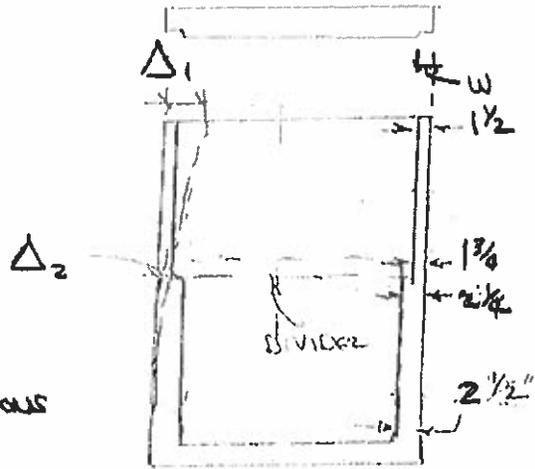
$$\Delta_2 = 0.032 \times \frac{9}{18.8} = 0.015 \text{ in}$$



DEFLECTION cont.

CONCLUSIONS - DEFLECTIONS

NOTE: CONCLUSIONS BELOW ARE BASED ON WALL BEING 2" THICK FOR WHOLE HEIGHT OF BOX. THE THICKER WALL IN BOTTOM HALF OF BOX WILL MAKE WALL STIFFER AND DEFLECTIONS BELOW SMALLER.



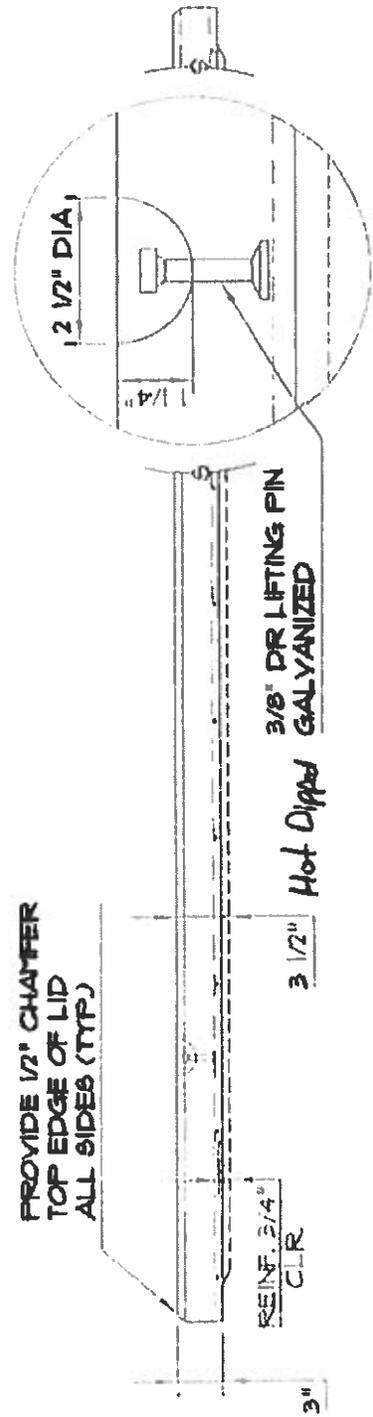
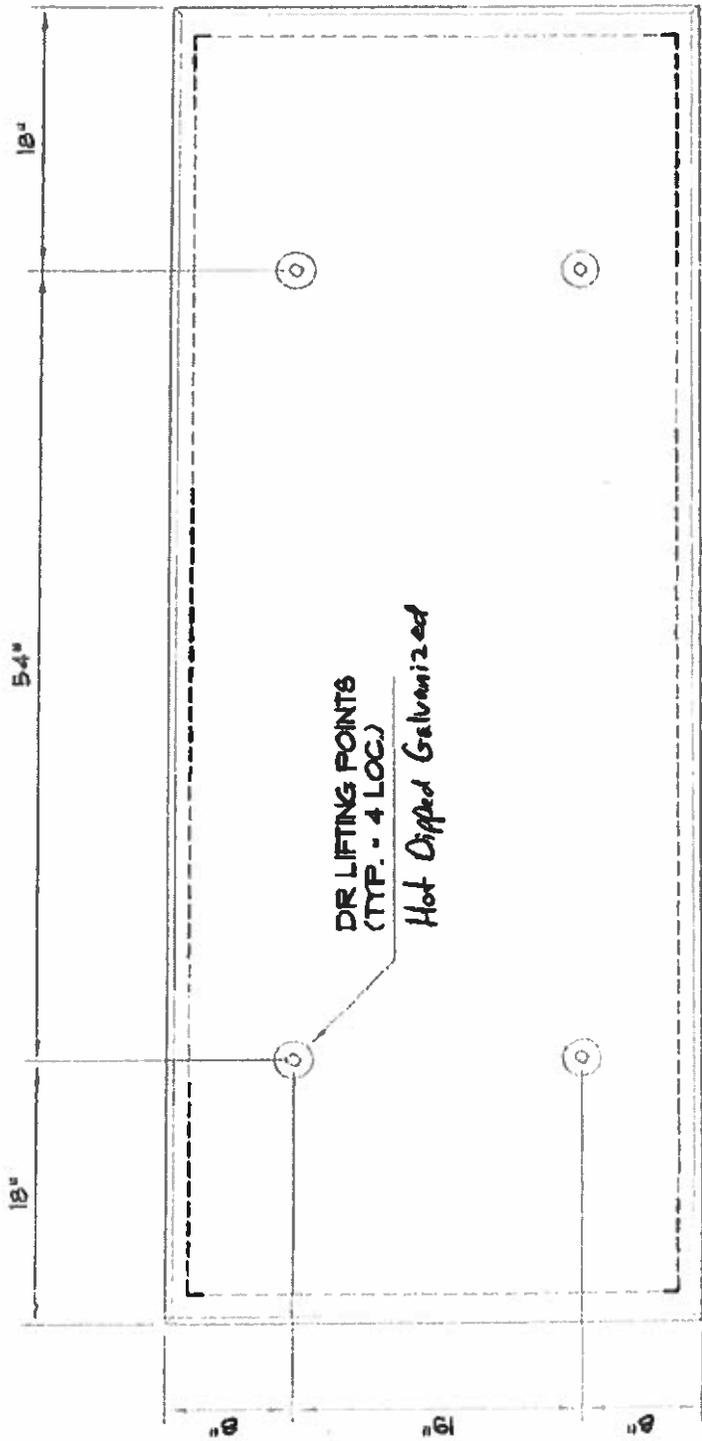
$$\Delta_1 = 0.018 \text{ in} + 0.032 \text{ in} = 0.050 \text{ in}$$

Dim. "W" IN TOP SLAB MUST BE GREATER THAN  $1.500" + 0.05" = 1.55$  ok

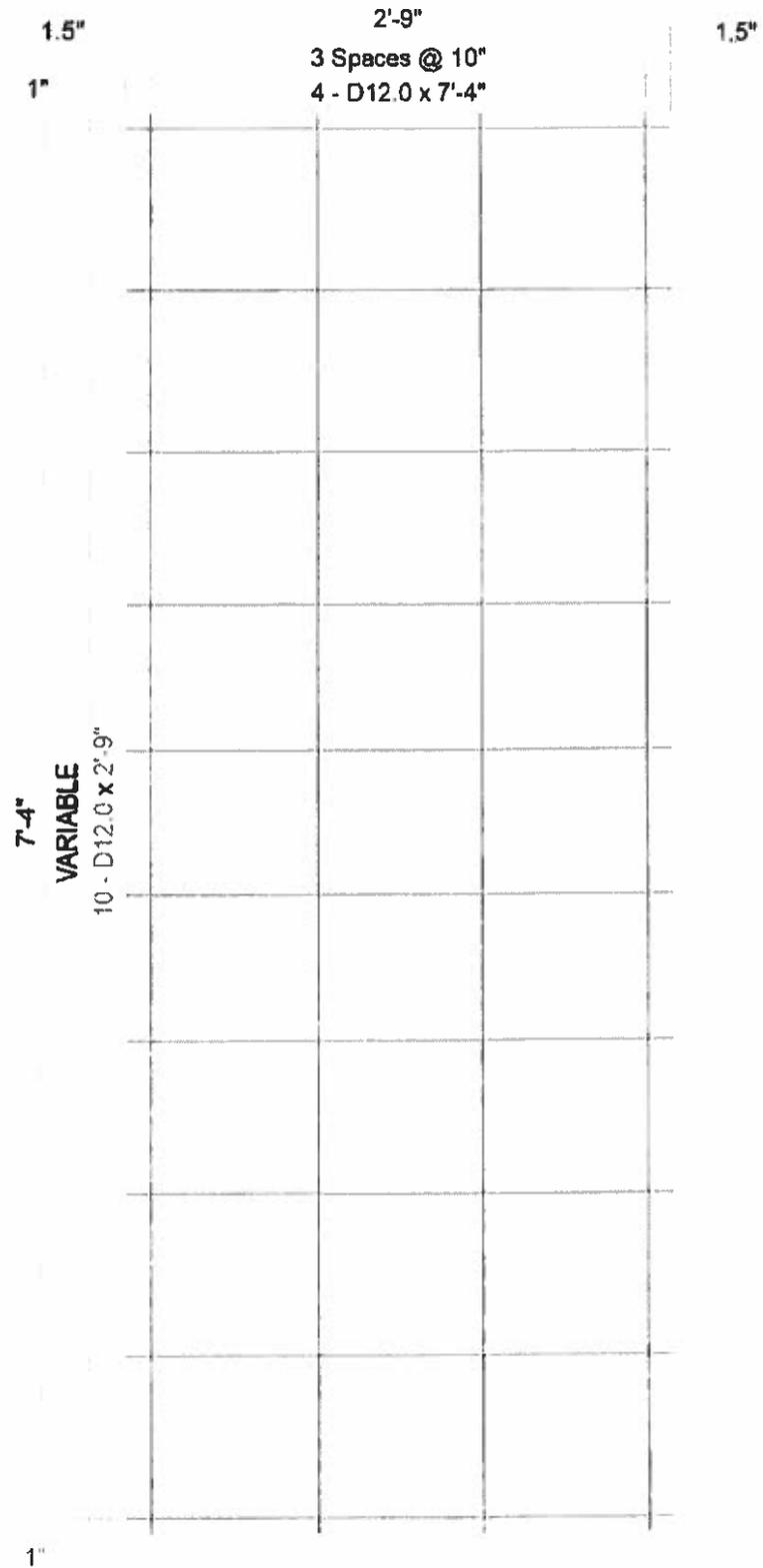
$$\Delta_2 = 0.012 \text{ in} + 0.015 \text{ in} = 0.027 \text{ in}$$

FROM PAGE 15  $\Delta < 0.125 \text{ in}$ .  
 TO AVOID PINCHING DIVIDER

SINCE  $\Delta_2 = 0.027 < 0.125 \text{ in}$  O.K.

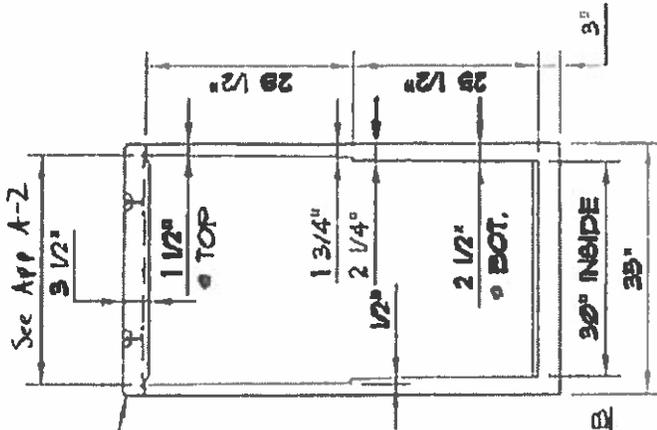


App. A-2

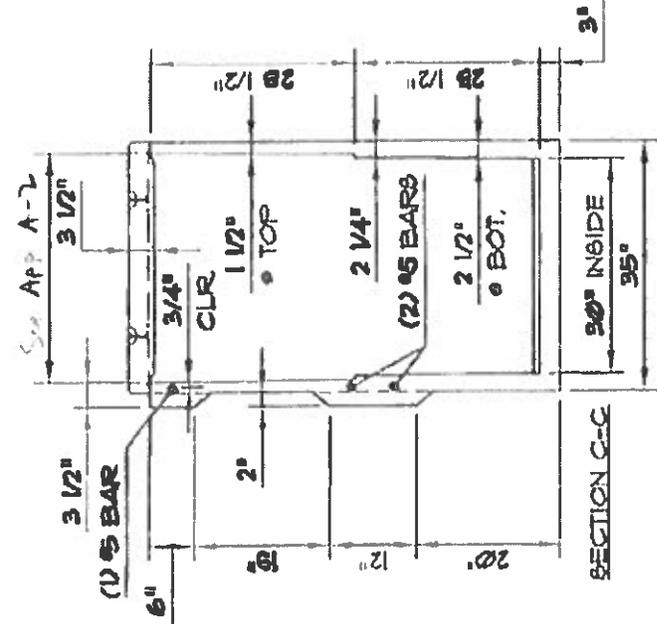


10 x VAR D12.0 / D12.0 (GRADE 83) 30(+1.5, +1.5) x 7'-4"(1, 1)  
VAR = 1" OH, 2@10", 1@9.5", 3@9", 1@9.5", 2@10", 1" OH

Double Crypt Design



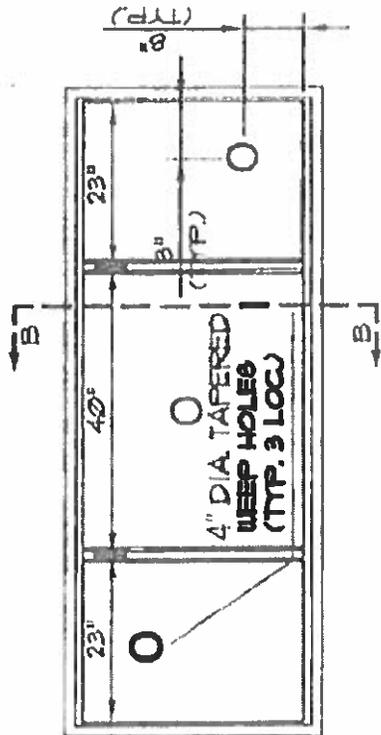
SECTION B-B



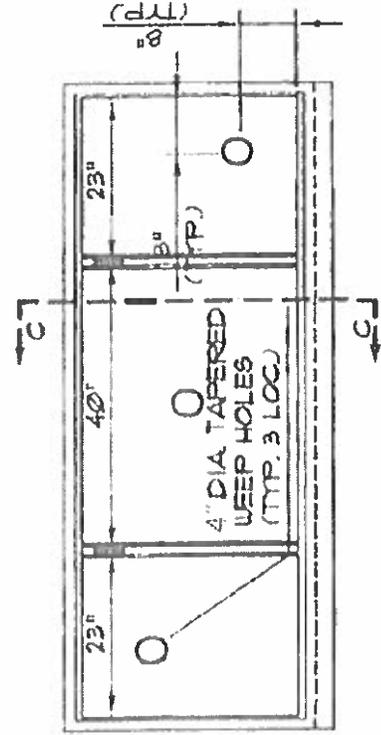
SECTION C-C

PROVIDE 1/2" CHAMFER  
 TOP EDGE OF LID  
 ALL SIDES (TYP.)

DBL CRYPTS

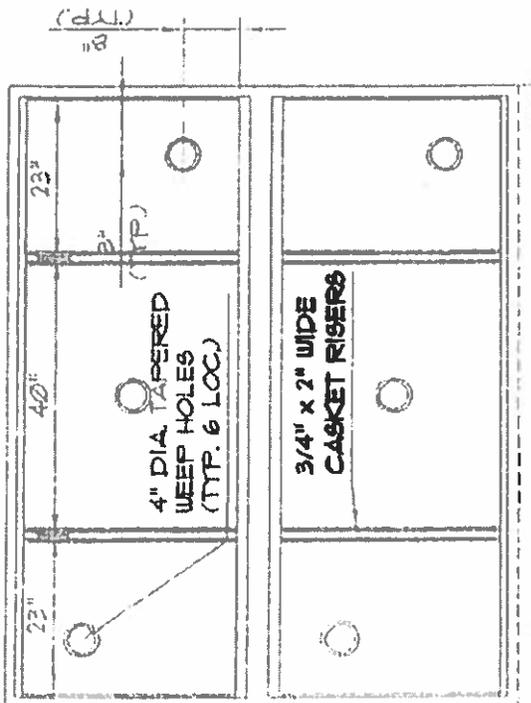


INTERIOR VAULT PLAN



EXTERIOR VAULT PLAN

Quad Vault Design

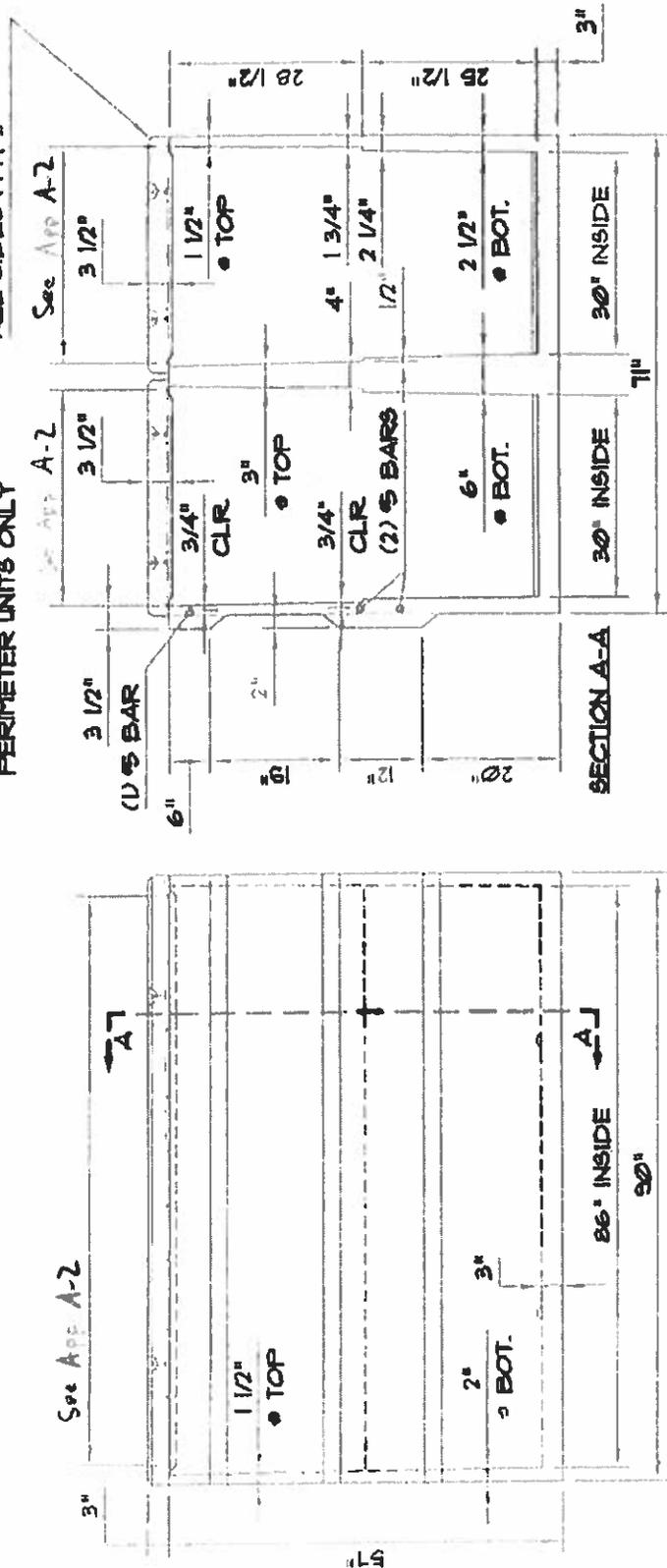


- NOTES:**
- CONCRETE FINISH - SMOOTH
  - TOLERANCE ± 0.125"
  - LIFTING HARDWARE - GALVANIZED
- WEIGHTS:**
- TOP SLAB - APPROX 940# EA X 2 PCS.
  - QUAD BOX - APPROX 6,592#
  - TOTAL - 8,472#

- CONCRETE:**
- 5000 PSI
  - 4 LBS/CU YD FIBER IN ALL BOX CONCRETE

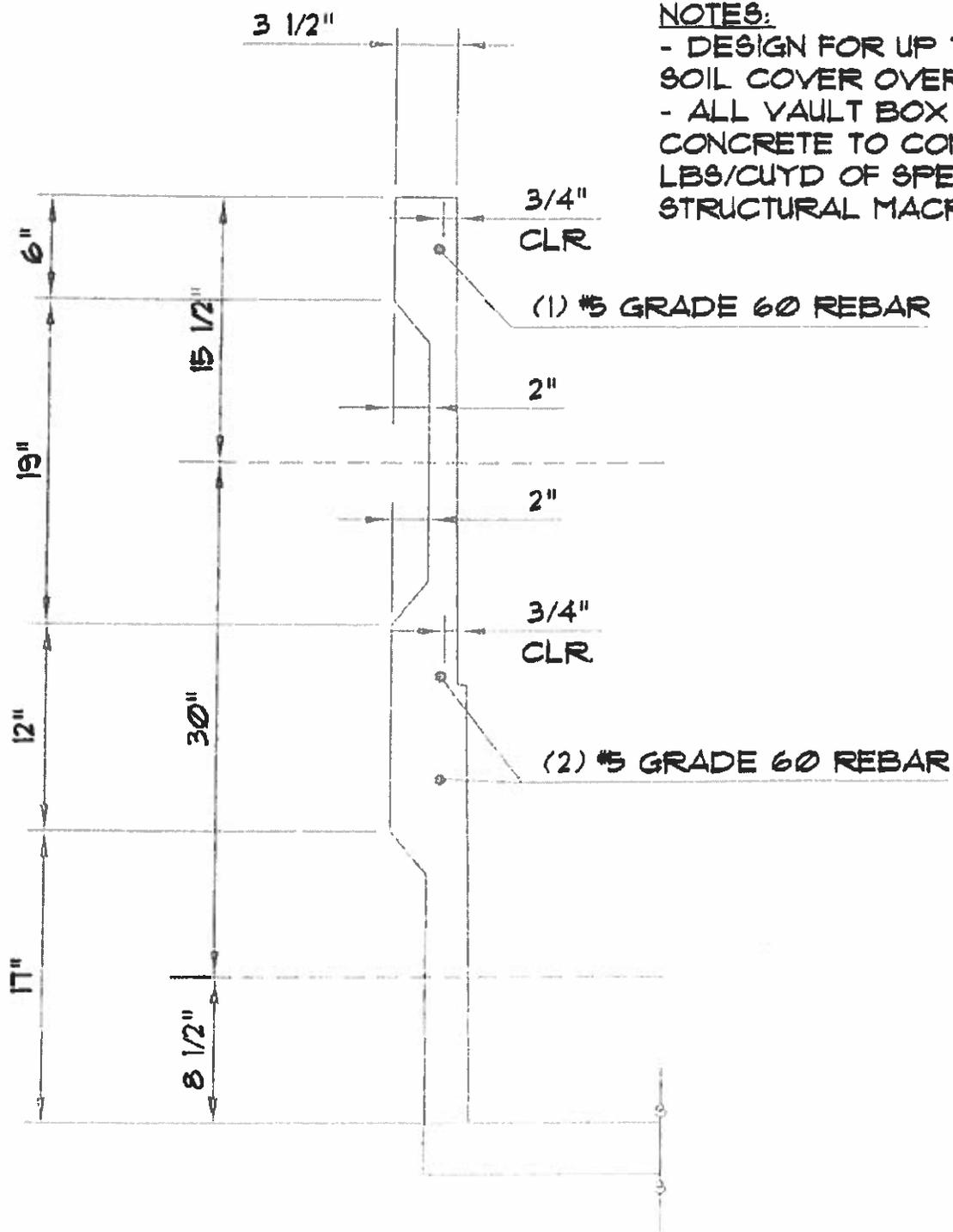
PROVIDE 1/2" CHAMFER TOP EDGE OF LID ALL SIDES (TYP.)

BEAMS & BARS PERIMETER UNITS ONLY



QUAD CRYPT

Quad Vault Design



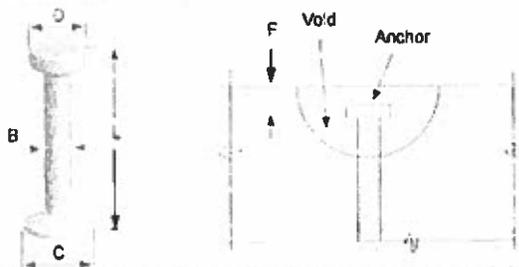
NOTES:

- DESIGN FOR UP TO 24" SOIL COVER OVER LID
- ALL VAULT BOX CONCRETE TO CONTAIN 4 LBS/CUYD OF SPECIFIED STRUCTURAL MACROFIBERS

# DR LIFTING

**CONAC**  
Concrete Product Solutions

## DR ANCHORS



*Hot Dipped Galvanized*

PART NUMBER	SYSTEM CODE	LENGTH (L)	SWL TENSION (TYP)	DRILL DISTANCE	BODY DIAMETER (B)	HEAD DIAMETER (D)	HEAD DIAMETER (D)	HEAD THICKNESS (C)
DRA01055HG	1.3	2-3/16"	0.76	3-3/4"	3/8"	1"	3/4"	3/8"
DRA01085HG	1.3	2-9/16"	0.88	4-1/2"	3/8"	1"	3/4"	3/8"
DRA01085HG	1.3	3-3/8"	1	5-3/4"	3/8"	1"	3/4"	3/8"
DRA01120HG	1.3	4-11/16"	1	7-3/4"	3/8"	1"	3/4"	3/8"
DRA01200HG	1.3	8"	1	14-3/4"	3/8"	1"	3/4"	3/8"
DRA02045HG	2.5	1-3/4"	0.63	3-1/2"	9/16"	1-3/8"	1"	7/16"
DRA02066HG	2.5	2-3/16"	0.83	4"	9/16"	1-3/8"	1"	7/16"
DRA02070HG	2.5	2-3/4"	1.2	4-3/4"	9/16"	1-3/8"	1"	7/16"
DRA02085HG	2.5	3-3/8"	1.84	5-3/4"	9/16"	1-3/8"	1"	7/16"
DRA02120HG	2.5	4-11/16"	2	7-3/4"	9/16"	1-3/8"	1"	7/16"
DRA02140HG	2.5	5-1/2"	2	8"	9/16"	1-3/8"	1"	7/16"
DRA02170HG	2.5	6-11/16"	2	10-3/4"	9/16"	1-3/8"	1"	7/16"
DRA02280HG	2.5	11"	2	12"	9/16"	1-3/8"	1"	7/16"
DRA04075HG	5	3"	1.54	5-1/4"	3/4"	2"	1-7/16"	5/8"
DRA04095HG	5	3-3/4"	2.21	6-1/2"	3/4"	2"	1-7/16"	5/8"
DRA04110HG	5	4-5/16"	2.8	7-1/2"	3/4"	2"	1-7/16"	5/8"
DRA04120HG	5	4-11/16"	3.22	8"	3/4"	2"	1-7/16"	5/8"
DRA04140HG	5	5-1/2"	4	9-1/4"	3/4"	2"	1-7/16"	5/8"
DRA04160HG	5	6-5/16"	4	10-1/4"	3/4"	2"	1-7/16"	5/8"
DRA04180HG	5	7-1/16"	4	11-1/2"	3/4"	2"	1-7/16"	5/8"
DRA04240HG	5	9-7/16"	4	15"	3/4"	2"	1-7/16"	5/8"
DRA08120HG	10	4-11/16"	3.44	7-3/4"	1-1/8"	2-3/4"	1-7/8"	5/8"
DRA08135HG	10	5-5/16"	4.17	8-3/4"	1-1/8"	2-3/4"	1-7/8"	5/8"
DRA08150HG	10	5-15/16"	4.98	9-3/4"	1-1/8"	2-3/4"	1-7/8"	5/8"
DRA08170HG	10	6-11/16"	6.11	10-3/4"	1-1/8"	2-3/4"	1-7/8"	5/8"
DRA08220HG	10	8-7/8"	8	13-3/4"	1-1/8"	2-3/4"	1-7/8"	5/8"
DRA08250HG	10	9-7/8"	8	15-1/2"	1-1/8"	2-3/4"	1-7/8"	5/8"
DRA08340HG	10	13-3/8"	8	21"	1-1/8"	2-3/4"	1-7/8"	5/8"
DRA16250HG	20	9-7/8"	12.86	15-1/2"	1-1/2"	3-7/8"	2-3/4"	5/8"
DRA16500HG	20	18-11/16"	16	30"	1-1/2"	3-7/8"	2-3/4"	5/8"

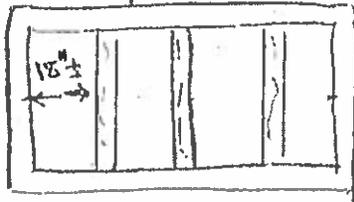
Allowable SWL based on 4:1 safety factor in 5,000 psi normal weight concrete.

# APPENDIX B-1

CALC BY: \_\_\_\_\_ CHECK BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_ REV: \_\_\_\_\_ PROJECT: \_\_\_\_\_

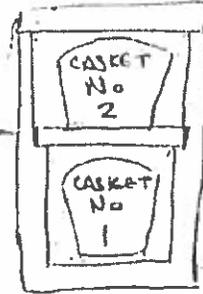
## PROBLEM: DESIGN DIVIDER BEAM

FROM APPENDIX



PLAN VIEW

DIVIDER BEAM  
 3REQD

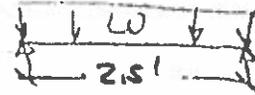


SECTION VIEW

### FIND LOAD ON EACH BEAM:

$$\frac{400 \text{ lb}}{5 \text{ BMS}} = 80 \text{ lb/BM}$$

$$w = \frac{80 \text{ lb}}{2.5 \text{ ft}} = 32 \text{ lb/ft.}$$



ACTUAL

$$M = \frac{32 \times 2.5^2}{8} = 25 \text{ ft. lb.}$$



DETAIL of DIVIDER BEAM.

### CHECK BENDING CAPACITY:

YIELD STRENGTH = 30000 psi

USE  $F_b = 0.5 \times 30000 \text{ psi} = 15000 \text{ psi}$       $S_x = 0.528 \text{ in}^3$

ALLOW MOMENT =  $15000 \text{ psi} \times 0.528 \text{ in}^3 \times \frac{1}{2} = 66 \text{ ft. lb}$



Structural Grade Composites

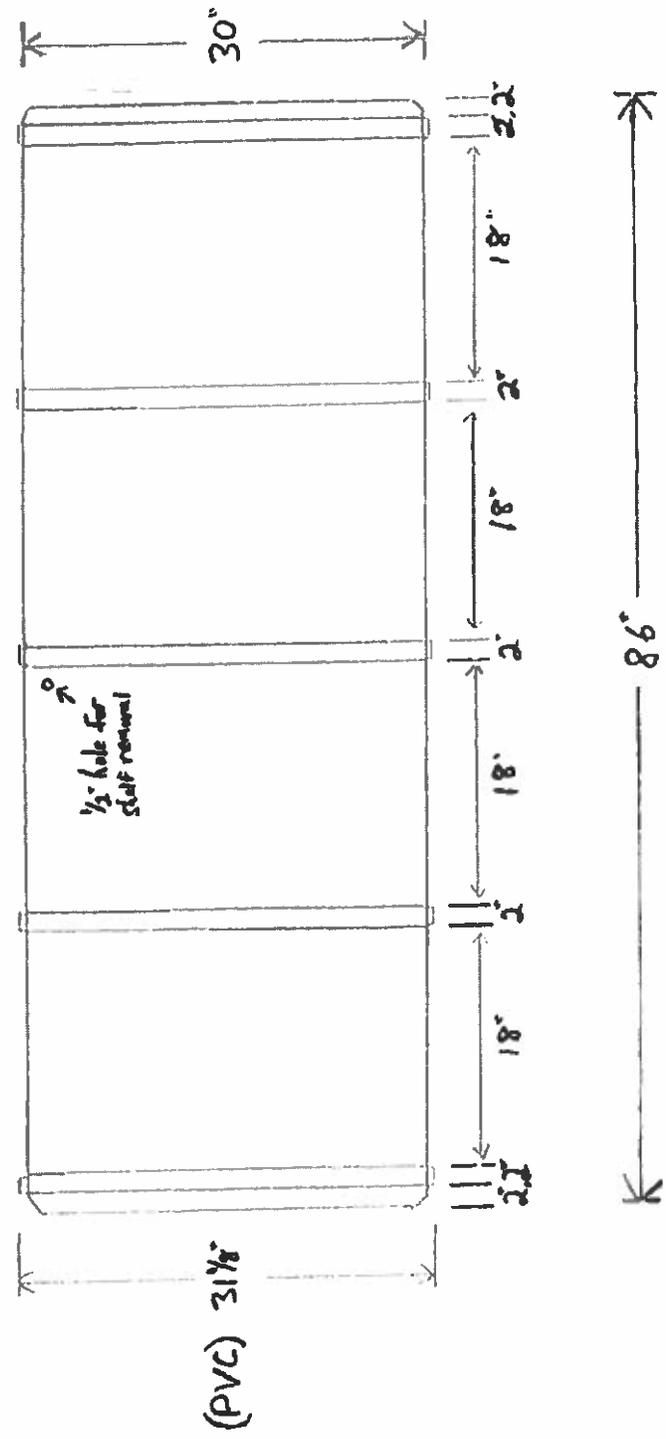
\* Fiberglass Profiles - Glass Rovings & Continuous Strand Mat Reinforced

Property	Test Method	Direction	Units	Typical Value
<b>Mechanical:</b>				
Tensile Strength	ASTM D-638	Longitudinal	psi	30,000 ← 30,000
Tensile Modulus	ASTM D-638	Transverse	psi	7,500 ← 7,500
Flexural Strength	ASTM D-790	Longitudinal	psi	2.3 x 10 <sup>6</sup>
		Transverse	psi	0.8 x 10 <sup>6</sup>
Flexural Modulus	ASTM D-790	Longitudinal	psi	30,000 ← 30,000
		Transverse	psi	10,000 ← 10,000
Compressive Strength	ASTM D-695	Longitudinal	psi	1.6 x 10 <sup>6</sup>
		Transverse	psi	0.8 x 10 <sup>6</sup>
Compressive Modulus	ASTM D-695	Longitudinal	psi	30,000
		Transverse	psi	15,000
Short Beam Shear (notched)	ASTM D-2344 ASTM D-2350	Longitudinal	psi	2.4 x 10 <sup>6</sup>
		Transverse	psi	1.0 x 10 <sup>6</sup>
Impact (notched)	ASTM D-2350	Longitudinal	ft.-lb/in.	4500
		Transverse	ft.-lb/in.	25
<b>Electrical:</b>				
Dielectric Strength	ASTM D-149	Parallel	KV/in.	35
Volume Resistivity	ASTM D-257	Parallel	ohm-in	200
		Perpendicular	ohm-in	1 x 10 <sup>13</sup>
<b>Other:</b>				
Barcol Hardness	---	---	---	45
Coefficient of Thermal Expansion	ASTM D-696	---	in./in./°F	5 x 10 <sup>-6</sup>
Thermal Conductivity	ASTM C 177	---	BTU-in/ft <sup>2</sup> hr-°F	4
Density	ASTM D-792	---	lbs/in <sup>3</sup>	.062 - .070
Water Absorption (24 hrs.)	ASTM D-570	---	% max.	0.5

**Note:** Fiberglass reinforced thermoset plastic composites are a non-homogeneous material, i.e., their behavior and properties are dependent upon the design of the composite with regards the fiber matrix and resin system.

Inside Shelf Design

The HDPE material is 30" wide X 86" long which provides a maximum visual barrier while not binding against the inside walls of the crypt. The five PVC pipes that are attached to the visual barrier sit on the lip within the crypt and hold the easel. They are 31 1/8" long. The visual barrier as well as the PVC pipes have a 1/4" of space all around and do not bind against the inside walls of the crypt.



Free Top  
Fixed Base

APPENDIX C-1

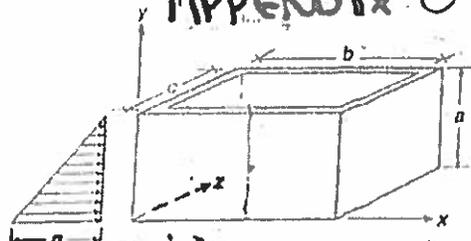
CASE 3

Wall  $t = 2''$   
 $\mu = 0.2$  For CONCRETE

$$\text{Deflection} = \frac{C_d q a^4}{1000 D}$$

$$D = \frac{E t^3}{12(1-\mu^2)}$$

$$= \frac{4.03 \times 10^6 \text{ psi} \times 2.0^3}{12(1-0.2^2)} = 2798611 \text{ in. lb.}$$



Deflection Coefficients,  $C_d$

11.52

Long Side - Along Midspan ( $x = b/2$ )

b/a	a/c	y	0	0.1a	0.2a	0.3a	0.4a	0.5a	0.6a	0.7a	0.8a	0.9a	1.0a
4.0	2.0	0	0	0.70	2.40	4.80	7.80	10.50	13.60	16.70	19.80	22.90	26.90
4.0	2.0	0	0	0.70	2.40	4.80	7.80	10.70	13.80	16.90	20.00	23.10	26.20
4.0	1.5	0	0	0.70	2.40	4.80	7.70	10.80	13.90	17.10	20.30	23.40	26.60
4.0	1.0	0	0	0.70	2.40	4.90	7.80	10.90	14.10	17.30	20.60	23.80	27.00
4.0	0.5	0	0	0.70	2.40	4.90	7.80	10.90	14.10	17.40	20.80	23.80	27.00
3.0	2.0	0	0	0.60	2.00	3.90	6.10	8.30	10.60	12.80	14.90	17.00	19.00
3.0	1.5	0	0	0.60	2.00	4.00	6.20	8.60	10.90	13.20	15.40	17.60	19.70
3.0	1.0	0	0	0.60	2.10	4.10	6.40	8.80	11.20	13.60	15.90	18.20	20.40
3.0	0.5	0	0	0.60	2.10	4.10	6.40	8.90	11.30	13.70	16.00	18.30	20.60
2.0	1.5	0	0	0.40	1.30	2.40	3.50	4.60	5.60	6.50	7.20	8.00	8.70
2.0	1.0	0	0	0.40	1.40	2.60	3.80	5.10	6.20	7.20	8.10	9.00	9.90
2.0	0.5	0	0	0.40	1.40	2.60	4.00	5.20	6.40	7.60	8.40	9.40	10.30
1.5	1.0	0	0	0.30	0.90	1.60	2.20	2.80	3.20	3.60	3.80	4.00	4.30
1.5	0.5	0	0	0.30	0.90	1.70	2.40	3.10	3.60	4.00	4.30	4.60	4.90
1.0	0.5	0	0	0.20	0.50	0.80	1.00	1.20	1.20	1.20	1.20	1.20	1.20

AT DIVIDER

Short Side - Along Midspan ( $x = c/2$ )

b/a	c/a	y	0	0.1a	0.2a	0.3a	0.4a	0.5a	0.6a	0.7a	0.8a	0.9a	1.0a
4.0	3.0	0	0	0.80	1.90	3.80	5.60	8.10	10.20	12.30	14.30	16.30	18.20
4.0	2.0	0	0	0.30	1.10	2.10	3.00	3.90	4.60	5.20	5.70	6.10	6.60
4.0	1.5	0	0	0.20	0.80	1.00	1.30	1.50	1.80	1.40	1.30	1.10	0.90
4.0	1.0	0	0	0.10	0.10	0.10	-0.10	-0.90	-0.60	-1.00	-1.30	-1.70	-2.10
4.0	0.5	0	0	0.00	-0.10	-0.30	-0.40	-0.80	-0.80	-1.00	-1.20	-1.30	-1.60
3.0	2.0	0	0	0.30	1.10	2.10	3.10	3.90	4.70	5.30	5.80	6.30	6.80
3.0	1.5	0	0	0.20	0.80	1.00	1.40	1.80	1.80	1.60	1.40	1.30	1.20
3.0	1.0	0	0	0.10	0.10	0.10	0.00	-0.20	-0.50	-0.90	-1.20	-1.60	-1.90
3.0	0.5	0	0	0.00	-0.10	-0.20	-0.40	-0.80	-0.80	-1.00	-1.10	-1.30	-1.40
2.0	1.5	0	0	0.20	-0.70	1.20	1.80	1.80	2.10	2.10	2.10	2.10	2.10
2.0	1.0	0	0	0.10	0.20	0.20	0.20	0.00	-0.20	-0.40	-0.70	-0.90	-1.20
2.0	0.5	0	0	0.00	-0.10	-0.20	-0.30	-0.60	-0.60	-0.80	-0.90	-1.00	-1.10
1.5	1.0	0	0	0.10	0.30	0.40	0.40	0.40	0.20	0.10	-0.10	-0.30	-0.40
1.5	0.5	0	0	0.00	-0.10	-0.10	-0.20	-0.40	-0.60	-0.60	-0.60	-0.70	-0.70
1.0	0.5	0	0	0.00	0.00	0.00	-0.10	-0.20	-0.20	-0.20	-0.30	-0.30	-0.30

Ref. "RECTANGULAR CONCRETE TANKS"  
BY PCA 5th EDITION

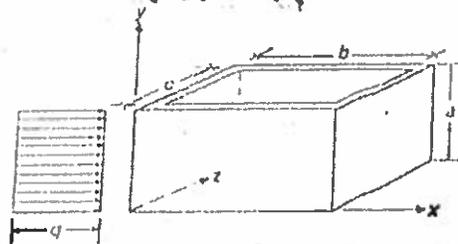
# APPENDIX C-2

Free Top  
Fixed Base

**CASE 7**

$$\text{Deflection} = \frac{C_d q a^4}{1000 D}$$

$$D = \frac{Et^3}{12(1-\mu^2)}$$



**Deflection Coefficients,  $C_d$**

Long Side - Along Midspan ( $x = b/2$ )

$b/a$	$c/a$	$y$	0	0.1a	0.2a	0.3a	0.4a	0.5a	0.6a	0.7a	0.8a	0.9a	1.0a
4.0	3.0	0	0	2.00	7.40	15.30	25.00	35.90	47.70	59.80	72.10	84.60	96.80
4.0	2.0	0	0	2.00	7.40	15.40	25.20	36.30	48.20	60.60	73.00	85.60	98.10
4.0	1.5	0	0	2.00	7.60	15.60	25.50	36.70	48.70	61.20	73.90	86.60	99.40
4.0	1.0	0	0	2.10	7.60	16.70	25.80	37.20	49.40	62.00	74.90	87.80	100.80
4.0	0.5	0	0	2.10	7.60	18.60	26.80	37.30	49.60	62.20	75.10	88.00	101.00
3.0	2.0	0	0	1.60	5.80	12.10	18.60	27.70	36.30	45.10	53.90	62.60	71.40
3.0	1.5	0	0	1.70	6.10	12.40	20.10	28.50	37.40	46.50	55.60	64.70	73.80
3.0	1.0	0	0	1.70	6.20	12.90	20.70	29.40	38.70	48.10	57.50	67.00	76.40
3.0	0.5	0	0	1.70	6.30	12.00	20.80	29.60	38.90	48.40	57.90	67.40	77.00
2.0	1.5	0	0	1.00	3.40	6.70	10.50	14.40	18.30	22.20	26.00	29.80	33.20
2.0	1.0	0	0	1.10	3.70	7.30	11.50	15.90	20.40	24.70	29.00	33.10	37.30
2.0	0.5	0	0	1.10	3.80	7.60	11.90	16.60	21.10	25.80	30.00	34.60	38.70
1.5	1.0	0	0	0.60	2.10	4.00	6.10	8.10	10.00	11.80	13.60	15.10	16.70
1.5	0.5	0	0	0.70	2.30	4.40	6.70	9.00	11.10	13.20	15.10	16.90	18.80
1.0	0.5	0	0	0.90	0.90	1.70	2.40	3.00	3.60	3.90	4.30	4.70	5.00

Short Side - Along Midspan ( $z = c/2$ )

$b/a$	$c/a$	$y$	0	0.1a	0.2a	0.3a	0.4a	0.5a	0.6a	0.7a	0.8a	0.9a	1.0a
4.0	3.0	0	0	1.60	6.70	11.70	16.90	22.80	35.00	43.40	51.80	60.10	68.50
4.0	2.0	0	0	0.60	2.80	5.50	8.60	11.60	14.60	17.30	20.00	22.60	25.30
4.0	1.5	0	0	0.30	1.10	1.90	2.70	3.30	3.80	4.10	4.30	4.40	4.60
4.0	1.0	0	0	0.00	-0.20	-0.60	-1.30	-2.00	-2.90	-3.90	-4.80	-5.60	-6.70
4.0	0.5	0	0	-0.10	-0.50	-1.00	-1.50	-2.20	-2.80	-3.50	-4.20	-4.80	-5.50
3.0	2.0	0	0	0.60	2.90	5.60	8.70	11.90	14.90	17.60	20.70	23.40	26.20
3.0	1.5	0	0	0.40	1.20	2.10	2.90	3.70	4.20	4.60	4.90	5.20	5.50
3.0	1.0	0	0	0.00	-0.20	-0.50	-1.10	-1.80	-2.60	-3.50	-4.30	-5.20	-6.00
3.0	0.5	0	0	-0.10	-0.50	-0.90	-1.50	-2.10	-2.70	-3.30	-3.90	-4.50	-5.10
2.0	1.5	0	0	0.40	1.40	2.60	3.90	5.00	5.90	6.60	7.50	8.20	8.90
2.0	1.0	0	0	0.00	0.00	-0.10	-0.40	-0.80	-1.30	-1.80	-2.40	-2.90	-3.40
2.0	0.5	0	0	-0.10	-0.40	-0.70	-1.20	-1.70	-2.10	-2.60	-3.00	-3.40	-3.90
1.5	1.0	0	0	0.10	0.30	0.40	0.50	0.40	0.20	0.00	-0.20	-0.50	-0.70
1.0	0.5	0	0	-0.10	-0.30	-0.50	-0.80	-1.20	-1.50	-1.80	-2.10	-2.30	-2.60
1.0	0.5	0	0	0.00	-0.10	-0.20	-0.40	-0.50	-0.60	-0.70	-0.80	-0.90	-1.00

**CALCULATIONS FOR  
OVERSIZE BURIAL CRYPTS**

*FERNCLIFF CEMETERY  
HARTSDALE, NY*

**TABLE OF CONTENTS**

<u>Title</u>	<u>Sheet</u>
Calculations	D-2 through D-13
Drawings	D-14 through D-19

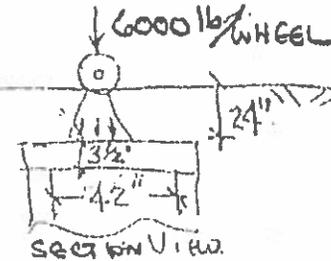
**PROB. DETERMINE LOADS ON TOP SLAB**

CASE I LOAD FROM SOIL & EQUIP.

DL - WT of SOIL -  $120 \text{pcf} \times \frac{24}{12} = 240 \text{psf}$   
 " of TOP SLAB -  $150 \text{pcf} \times 3 \times \frac{5}{12} = 44$

$284 \text{psf}$

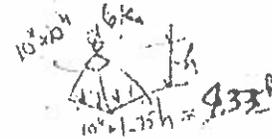
ULT. DL -  $1.4 \times 284 \text{psf} = 398 \text{psf}$



LL - FREQUENCY OF WHEEL ON SLAB WILL BE LOW - EQUIPT WILL NOT BE MOVING AT 60 mph - NEGLECT IMPACT

LOAD ON TOP OF SLAB  

$$= \frac{6000 \text{ lb}}{(0.834 + 1.75 \times 2.0)^2} = 320 \text{ lb/ft}^2$$

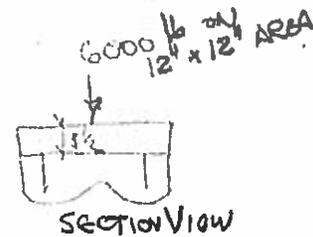
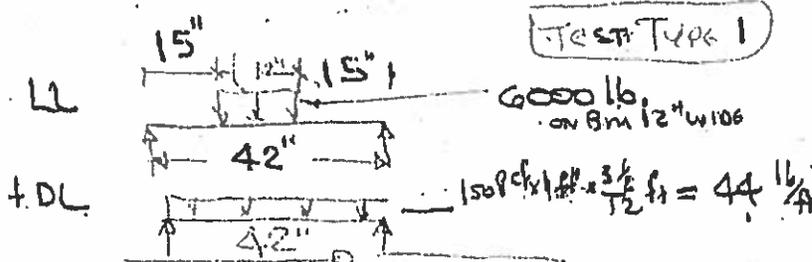


NOTE: 3 ft. PILE OF DIRT WILL WEIGH AN. of 180 psf

USE WORST CASE

$320 \text{ lb/ft}^2 \times 1.7 = 544 \text{ psf}$   
 OR 12" W 100 BM.

**CASE II LOAD FOR TESTING**



TEST TYPE 1

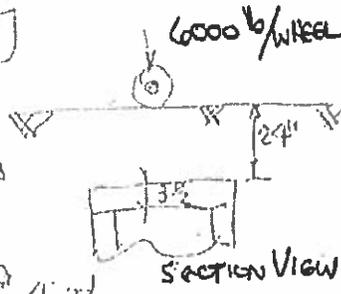
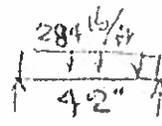
6000 lb ON 12" W 100

f. DL -  $150 \text{pcf} \times 1 \text{ft} \times 3 \times \frac{5}{12} \text{ft} = 44 \text{ lb/ft}^2$

TEST TYPE 2

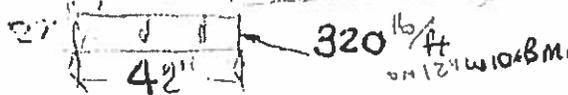
SOIL DL -  $120 \times 2.0 \text{ft} = 240 \text{psf}$

CONC. DL -  $150 \times \frac{3.5}{12} = 44$   
 $284 \text{psf}$



LL =  $\frac{6000}{(0.834 + 1.75 \times 2.0)^2} = 320 \text{ psf}$

ON AREA 4.33 x 4.33

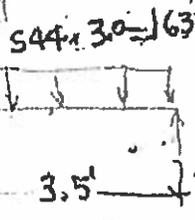
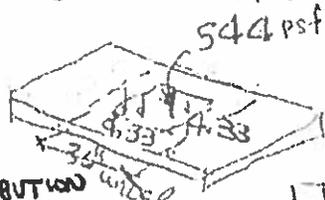


Per. DETERMINE MOMENTS For TOP Slab

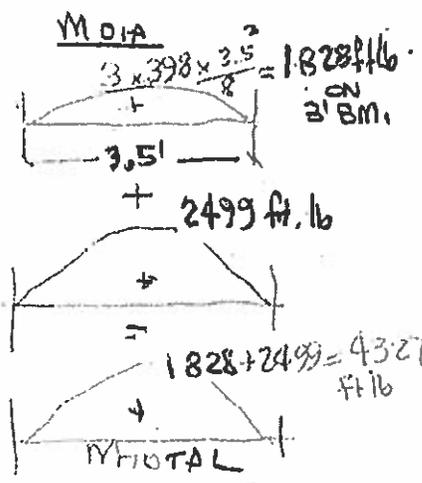
CASE I

MOMENTS DUE TO UNIF. LOADS

USE BEAM 36" WIDE (NEED DISTRIBUTION STEEL TO ACCOMPLISH THIS)

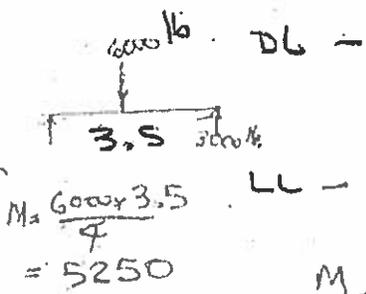
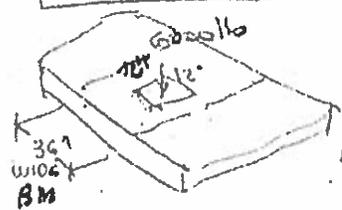


$$M_{MAX} = \frac{1632 \times 3.5^2}{8} = 2499 \text{ ft}\cdot\text{lb}$$

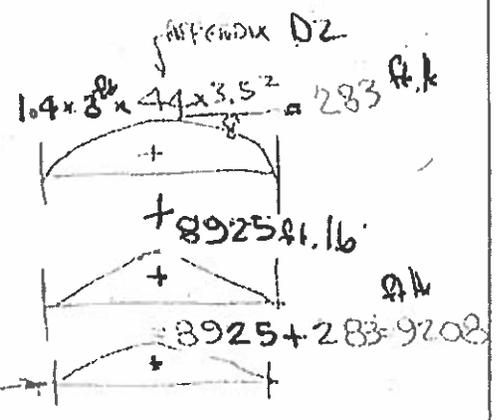


CASE II

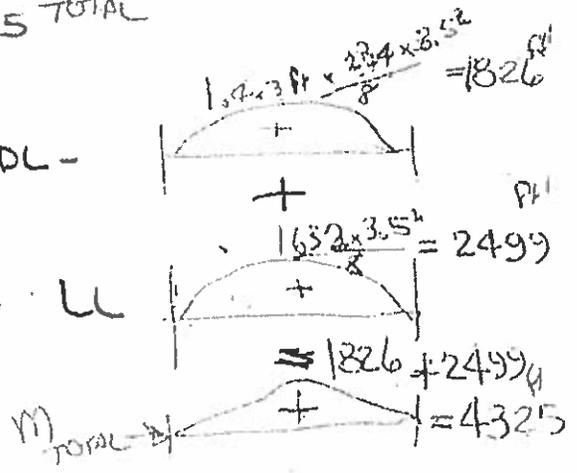
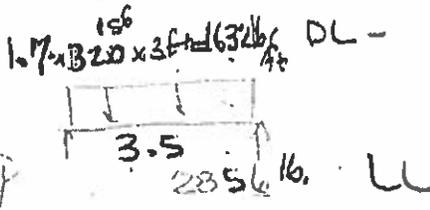
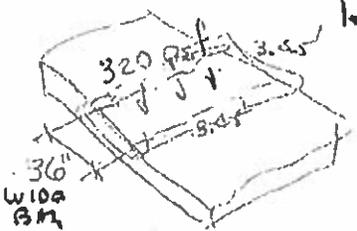
TEST TYPE 1



$$M_{TOT} = 1.7 \times 5250 = 8925$$



TEST TYPE 2

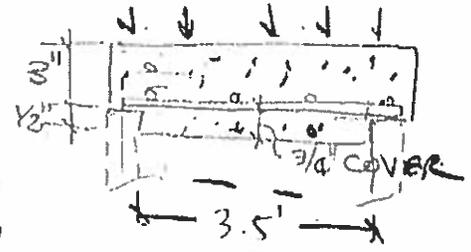


**PROG DESIGN TOP SLAB**

MAX. ULT. MOMENT = 9208 ft. lb

DESIGN AS 1WAY SLAB.  
 DISTRIBUTION STEEL REQ.  
 TO ALLOW  $b = 36"$

FOR  $W.W.F. 6 \times 10 / DIS \times D17$   
SHORT SPAN  
 $A_s = 0.30 \times \frac{w}{f_y} \times 3ft = 0.90$



$d = 3\frac{1}{2} - \frac{3}{4} - \frac{3}{16} = 2.56$  in.

SECTION VIEW

$q_s = \frac{70}{5} \times \frac{0.90}{36 \times 2.56} = 0.14$

$M_u = 0.9 \times 36 \times 2.56^2 \times 5000 \times 0.14 \times (1 - 0.59 \times 0.14) = 12$   
 $= 11363$  ft. lb  $> 9208$  ft. lb - ok

FOR DISTRIBUTION STEEL USE 50% OF SHORT SPAN  
 $W.W.F. 6 \times 10 / DIS \times D17$   
LONG SPAN  $A_s = 0.2 - \frac{w^2}{f_y}$   
 $0.5 \times 0.30 = 0.15$  in

FOR LONG SPAN STEEL  $A_s = 0.2$  is ok.  
 (RESISTS LIFTING.)

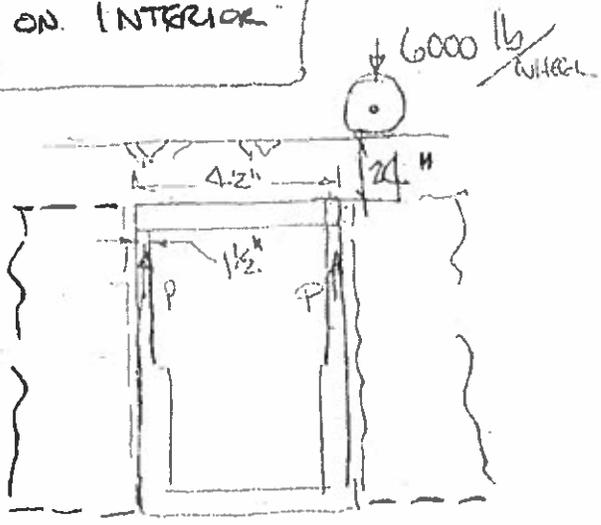
FOR DIAGONAL SHEAR  
 $V_u = \frac{DL}{2} \times 3.5 + UL = 4946$  lb.

$\phi V_n = 0.85 \times 2 \sqrt{5000} \times 36 \times 2.56 = 11078$  lb

**PROB. DETERMINE LOADS ON INTERIOR WALLS**

**SINGLE WIDE VAULT**

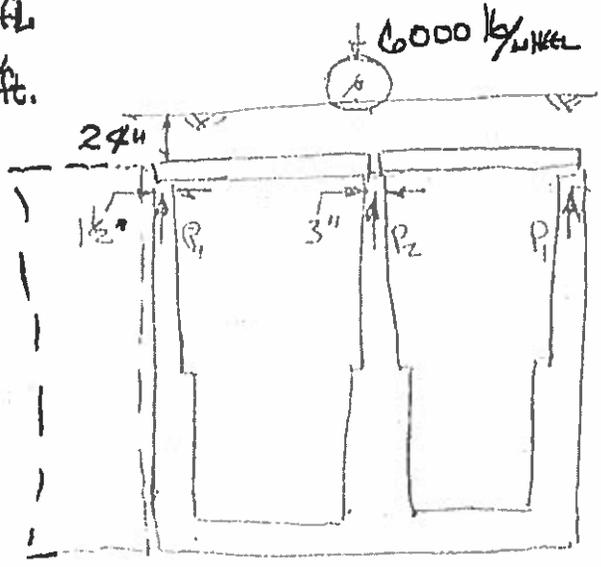
DL-SOIL = 240  
 CONC = 44  
 $\frac{284 \text{ psf}}{\text{ULT DL}} = 398 \text{ psf}$   
 AREA OF TOP SLAB =  $\frac{47' \times 99'}{144} = 32.3 \text{ ft}^2$   
 $32.3 \text{ ft}^2 \times 398 \text{ psf} = 12855 \text{ lb.}$   
 NEXT, LOAD ON WALLS AROUND PERIMETER  
 $\frac{12855 \text{ lb}}{22.4 \text{ ft}} = 574 \text{ lb/ft}$



LL-  $\frac{1.7 \times 6000 \text{ lb}}{\text{ULT } 7.57 \text{ ft}} = 1325 \text{ lb/ft}$   
 $P_{\text{UG}} = 574 + 1325 = 1899 \text{ lb/ft.}$

**DOUBLE WIDE VAULT**

$P_{\text{UG}} - \text{SAME AS ABOVE}$   
 $\text{ULT} = 1899 \text{ lb/ft}$   
 $P_{\text{UG}} = 2 \times 398 \text{ lb/ft} + 1325 \text{ lb/ft}$   
 $= 2121 \text{ lb/ft}$



PROB - DISCUSS DESIGN OF INTERIOR VAULT WALLS

1. THESE WALLS WILL BE IN COMPRESSION FROM TOP DOWN.

OUTSIDE WALL OF SINGLE WIDE & DOUBLE WIDE VAULT

$$\frac{1899 \text{ lb/ft}}{1.8' \times 12"} = 106 \text{ psi} < 0.9 \times 5000 = 4500 \text{ psi}$$

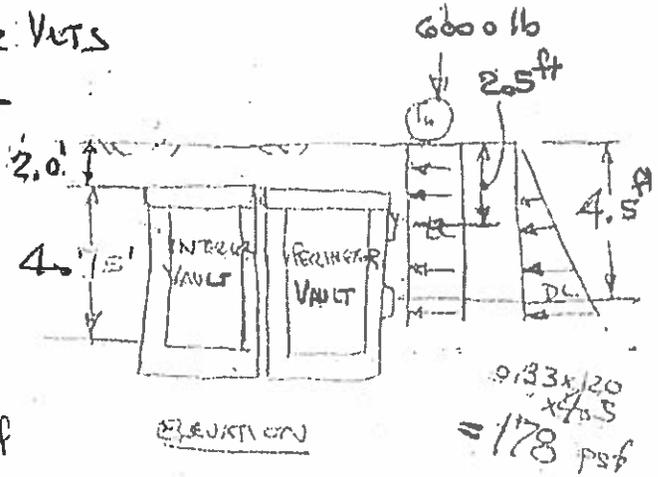
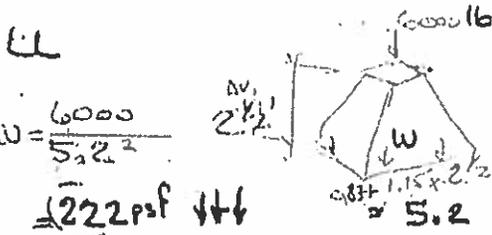
INNER WALL OF DOUBLE WIDE VAULT

$$\frac{2121}{3.0 \times 12} = 59 \text{ psi} - \text{ok}$$

2. <sup>LONG</sup> WALLS ON INTERIOR VAULTS WILL EXPERIENCE COMPRESSION WITH NO BENDING. THEY ARE SUPPORTED LATHELLY AT EACH END BY END WALLS (7'-2" UNSUPPORTED LENGTH).

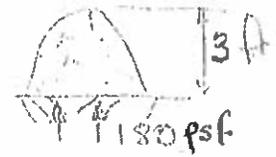
**PROG FIND LOADS ON PERIMETER VAULT WALLS**

ONE SIDE OF PERIMETER VAULTS  
 WILL BE EXPOSED TO SOIL  
 AND SURFACE SURCHARGE



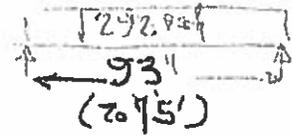
For  $K_2 = 0.33$  psf  
 $H_{or} W_{soil} = 0.33 \times 222 = 73$  psf  
 $W_{soil} = 1.7 \times 73 = 124 \text{ psf} - LL$

NOTE: PILE OF DIRT ADJACENT TO WALL  
 $180 \text{ psf} \times \left(\frac{3.14}{4} \times 6^2\right) = 5087 \text{ lb} < 6000 \text{ lb.}$



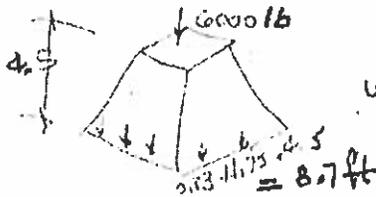
**BEAM AT TOP** WILL EXPERIENCE HOR. LOAD FROM SURCHARGE AT SURFACE + 2.5 FT. EARTH (WHEN TOP SLAB REMOVED)

$W_{TOTAL} = (1.7 \times 0.33 \times 25 \times 20) + 124 \text{ psf} = 292 \text{ psf.}$

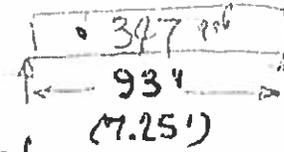


**BEAM AT 4 1/2 FT BELOW GRADE**

$W_{TOTAL} = 1.7 \times 178 \text{ psf} + 44 \text{ psf} = 347 \text{ psf}$



$W = \frac{6000}{8.7^2} = 79 \text{ psf}$   
 Horizontal  $W_{soil} = 1.7 \times 0.33 \times 79 = 44 \text{ psf}$



**Pres. DESIGN BEAMS IN HEAVY WALL VAULTS**

**TOP BEAM** LOAD ON BM =  $292 \text{ psf} \times \left(\frac{23\frac{1}{2} + 3}{12}\right) = 414 \text{ lb/ft}$

$U_L$  MOMENT =  $414 \text{ lb/ft} \times 7.75^2 = 3108 \text{ ft}\cdot\text{lb}$

ASSUME NO RESISTANCE FROM LID

TRY ONE #6 BAR  $A_s = 0.44 \text{ in}^2$

$d = 3.5 - 0.75 - \frac{1}{2}\left(\frac{6}{8}\right) = 2.38 \text{ in}$

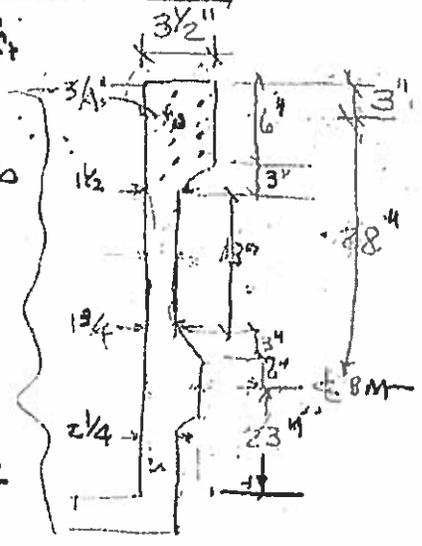
$b = 6 \text{ in}$

$\rho = \frac{A_s}{b \times d} = \frac{0.44}{6 \times 2.38} = 0.31$

ALLOW  $M_u = 0.9 \times 6 \times 7.75^2 \times 5000 \times 0.37 (1 - 0.59 \times 0.37) / 12 = 3686 \text{ ft}\cdot\text{lb} > 3108 \text{ ft}\cdot\text{lb} - \text{OK}$

DIAG. SHEAR  $V_u = 414 \times 7.75 / 2 = 1600 \text{ lb}$

$\phi V_n = 0.85 \times 2 \sqrt{5000} \times 6 \times 2.38 = 1717 \text{ lb} > V_u \text{ OK}$



**MID DEPTH BEAM** LOAD ON BM =  $347 \text{ psf} \times \left(\frac{23 + 29}{2 \times 12}\right) = 737 \text{ lb/ft}$

ACTUAL  $M_u = \frac{737 \text{ lb/ft} \times 7.25^2}{8} = 4842 \text{ ft}\cdot\text{lb}$

TRY TWO #6 BARS  $A_s = 0.88 \text{ in}^2$

$d = 3.5 - 0.75 - \frac{1}{2}\left(\frac{6}{8}\right) = 2.38$

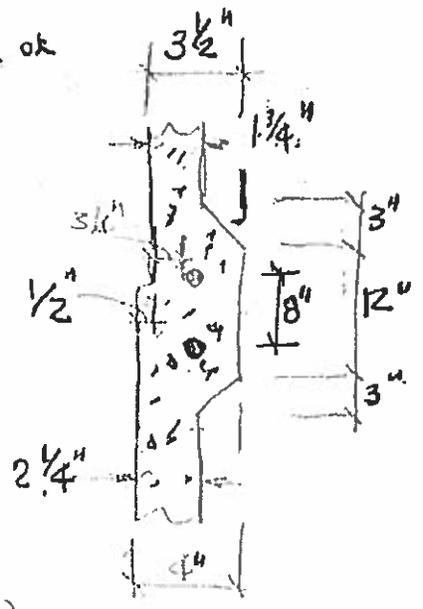
$b = 12 \text{ in}$

$\rho = \frac{A_s}{b \times d} = \frac{0.88}{12 \times 2.38} = 0.31$

ALLOW  $M_u = 0.9 \times 12 \times 7.25^2 \times 5000 \times 0.37 (1 - 0.59 \times 0.37) / 12 = 7372 \text{ ft}\cdot\text{lb} > 4842 \text{ ft}\cdot\text{lb} - \text{OK}$

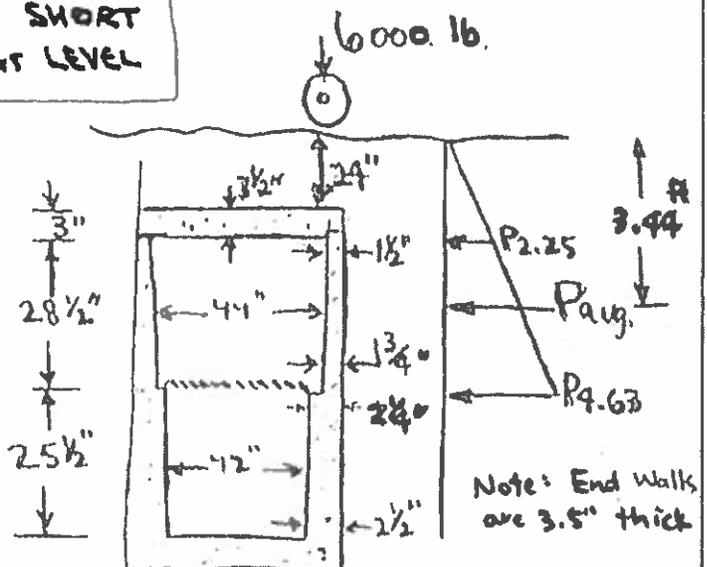
DIAG. SHEAR  $V_u = 737 \times 7.25 / 2 = 2672 \text{ lb}$

$\phi V_n = 0.85 \times 2 \sqrt{5000} \times 12 \times 2.38 = 3433 \text{ lb} > V_u \text{ OK}$



**PROBLEM: DESIGN SHORT WALL FOR UPPER CASSET LEVEL**

SOIL LOAD ON WALL:  
 $P_{2.25} = 0.33 \times 120 \times 2.25^2 = 90 \text{ psf}$   
 $P_{4.63} = 0.33 \times 120 \times 4.63^2 = 183 \text{ psf}$   
 $P_{avg} = 137 \text{ psf}$



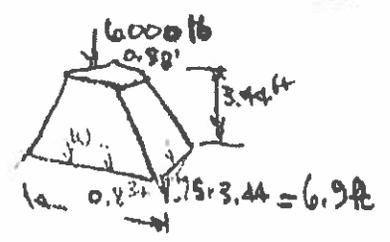
WALLS ARE CONTINUOUS AT CORNERS.

VIEW of END WALL  
 $M_{min} = -137 \times \frac{44^2}{12} = -153 \text{ ft. lb/12 in.}$

WALL THICKNESS:  $AV. (h) = 3.5 \text{ in.}$   
 SECTION MODULUS  $= \frac{b h^2}{6} = \frac{12 \text{ in.} \times 3.5^2}{6} = 24.5 \text{ in}^3$   
 FROM  $M = -f \cdot S$        $f = \frac{153 \text{ ft. lb} \cdot 12 \text{ in.}}{24.5 \text{ in}^3} = 75 \text{ PSI}$   
 f = STRESS AT OUTER SURFACE OF WALL

HOR. LOAD ON WALL DUE TO 6000 lb.

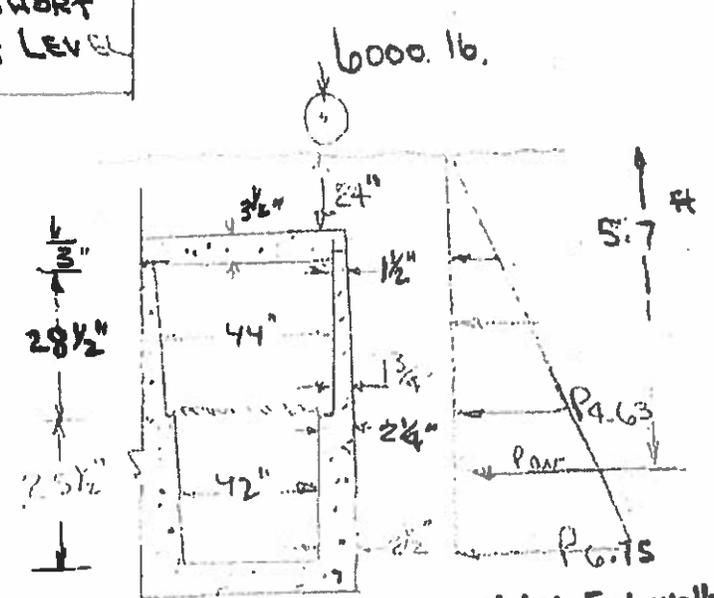
$W = \frac{6000 \text{ lb}}{60.9^2 \text{ ft}^2} = 126 \text{ psf}$   
 HOR LOAD ON WALL  $= 0.33 \times 126 = 42 \text{ psf}$   
 $M_{min} = -\frac{42 \cdot (44)^2}{12} = -47 \text{ ft. lb}$   
 $f = \frac{47 \times 12}{24.5} = 23 \text{ PSI}$



**PROBLEM: DESIGN SHORT WALL FOR LOWER CASKET LEVEL**

SOIL LOAD ON WALL

$P_{4.63} = 183 \text{ psf}$   
 $P_{6.75} = 0.33 \times 120 \times 6.78 = 267 \text{ psf}$   
 $P_{av} = 225 \text{ psf}$



VIEW OF END WALL

Note: End walls are 3.5" thick

END WALL IS CONTINUOUS AT TWO SIDES AND BOTTOM. SOME LOADS WILL GO TO BOTTOM. BEING CONSERVATIVELY CONSIDER LOAD DISTRIBUTED ONLY TO SIDE WALLS.

$M_{max} = \frac{-225 \text{ psf} \times (42)^2}{12} = -230 \text{ ft lb / 12 in.}$

WALL THICKNESS  $AV(h) = 3.5 \text{ in}$   
 SECTION MODULUS  $= \frac{b h^3}{6} = \frac{12 \times 3.5^3}{6} = 24.5 \text{ in}^3$

FROM  $M = f S$        $f = \frac{230 \text{ ft lb} \cdot 12 \text{ in / ft}}{24.5 \text{ in}^3} = \boxed{113 \text{ psi}}$

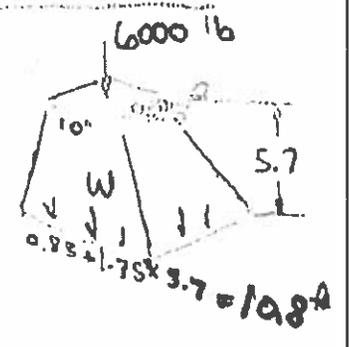
HOR. LOAD ON WALL DUE TO 6000 lb CONCENTRATED LOAD

$w = \frac{6000 \text{ lb}}{10.82 \text{ ft}} = 51 \text{ psf}$

HOR. LOAD ON WALL  $= 0.33 \times 51 \text{ psf} = 17 \text{ psf}$

$M_{max} = \frac{-17 \times (42)^2}{12} = 17 \text{ ft lb / 12 in}$

$f = \frac{17 \times 12}{24.5} = \boxed{8 \text{ psi}}$



## TENSION CAPACITY OF CONCRETE

MANY YEARS AGO ACI 214 PUBLISHED RESULTS OF RESEARCH AND TESTING TO INDICATE THAT A CONCRETE WITH COMPRESSIVE STRENGTH OF 5000 PSI HAD A TENSILE STRENGTH OF 400 PSI. THIS INFORMATION IS STILL PUBLISHED TODAY.

## SUMMARY OF STRESSES

### SOIL LOAD W. 2 FT FILL

LOCATION	ACTUAL TENSION	LOAD FACTOR ACI 318-14	FACTORED STRESS	ULTIMATE TENSION 5000 PSI CONC.
UPPER CASKET	75 psi	x 1.6	120 psi	400 psi
LOWER CASKET	113 psi	x 1.6	181 psi	400 psi

### SOIL LOAD W. 2 FT FILL + 6000 LB CONCENTRATED LOAD

LOCATION	ACTUAL TENSION	LOAD FACTOR ACI 318-14	FACTORED STRESS	ULT. TENSION 5000 PSI CONC.
UPPER CASKET	(75+23)	x 1.6	157 psi	400 psi
LOWER CASKET	(113+8)	x 1.6	194 psi	400 psi

THE READER NEEDS TO REMEMBER :

- ① COMPRESSIVE STRENGTH OF CONCRETE WILL CONTINUE TO INCREASE AFTER REACHING 5000 PSI IN 28 DAYS
- ② QUALITY CONTROL AT MANY PRECAST PLANTS NORMALLY RECORD 28 DAY COMPRESSIVE STRENGTHS EXCEEDING 6000 PSI

**PROB. FIND LOADS ON BOTTOM SLAB**      32 ft

$$DL_{\text{DEPTH}} = 1.4 \times 2.0 \text{ ft} \times 120 \text{ pcf} \times 3.92 \text{ ft} \times 8.25 \text{ ft} = 10866 \text{ lb}$$

ULF      SOIL      Depth

$$DL_{\text{TOP SLAB}} = 1.4 \times (3.5/2) \times 150 \text{ pcf} \times 32 = 1960 \text{ lb}$$

Depth

$$DL_{\text{WALLS}} = \left( 1.4 \times \left( \frac{2 \text{ ft}}{12} \right) \times 150 \times 8.25 \times 4.5 \right) 2 = 2600 \text{ lb}$$

$$+ \left( 1.4 \times \left( \frac{3.5}{12} \right) \times 150 \times 3.5 \times 4.5 \right) 2 = 965 \text{ lb}$$

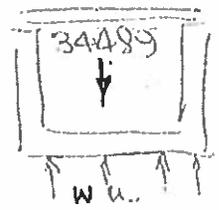
$$LL_{\text{SWELLS}} = 1.7 \times 40 \text{ lb/ft}^2 \times 42 \frac{1}{2} \times 9 \frac{1}{2} = 1025$$

Wt. of  
ASKET  
+ SWELL

$$LL_{\text{-SURFACE}} = 1.7 \times 12000 = 20400$$

Assume 1 AXLE ON VAVLT.

$$\underline{\underline{34489 \text{ lb.}}}$$

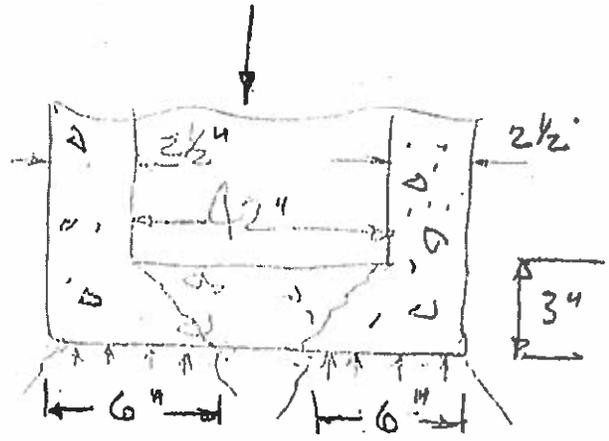


$$W_u = \frac{34489 \text{ lb}}{32 \text{ ft}^2} = 1080 \text{ psf}$$

Prob. Design Bottom  
 SLAB

34489 lb

SLABS WILL SIT ON 4" MIN - COMPACTED STONE SUBBASE PROVIDING HARD DENSE SURFACE. LOAD WILL GO FROM WALLS TO SOIL IN COMPRESSION



Area of SUBBASE LOADED:  
 $3.92^{ft} \times 8.25^{ft} - 2.92 \times 7.25 = 10.8 \text{ ft}^2$

LOAD ON STONE  $\frac{34489}{10.8} = 3193 \text{ psf} < 4000 \text{ psf}$   
 O.K.

Note: Reinforcing fibers may be added to reduce handling stresses at the discretion of the precaster

OVER SIZED  
BURIAL VAULT LID

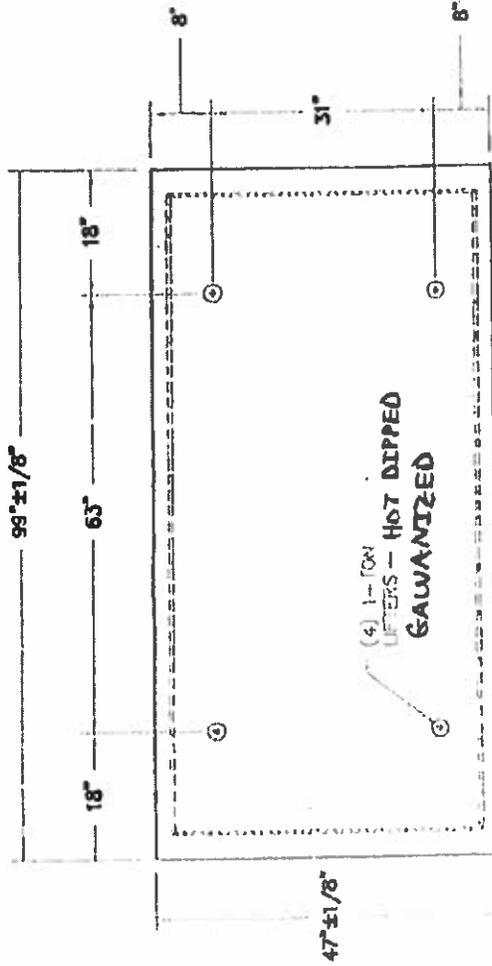
NOTES:

CONCRETE 5000 PSI  
WMA -  $F_y = 70$  KSI  
WMA 6 X 10 - 015 X D17

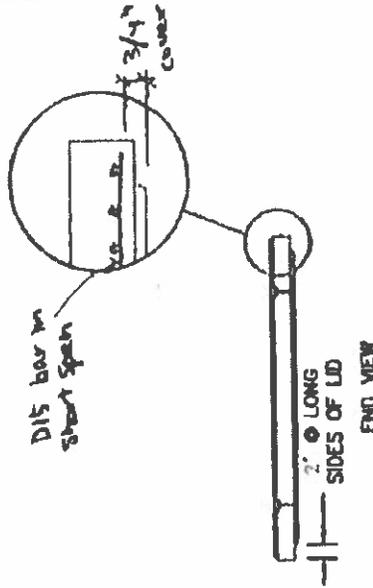
DESIGNED:  
FOR 24" SOIL COVER  
PLUS 12,000 LB. AXLE LOAD (EQUIP.)

WEIGHTS:  
TOP SLAB -- APPROX. 1,400# EA

ALL SURFACES TO BE SMOOTH FINISH



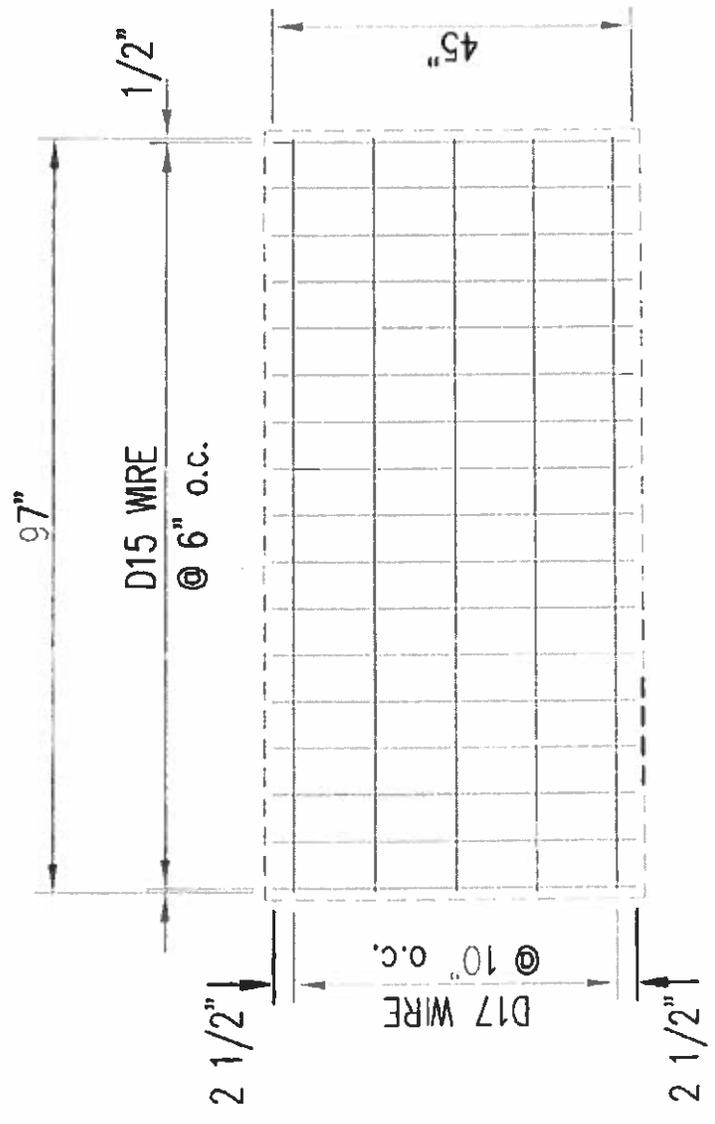
TOP VIEW



SIDE VIEW

END VIEW

OVERSIZED CRYPT LID



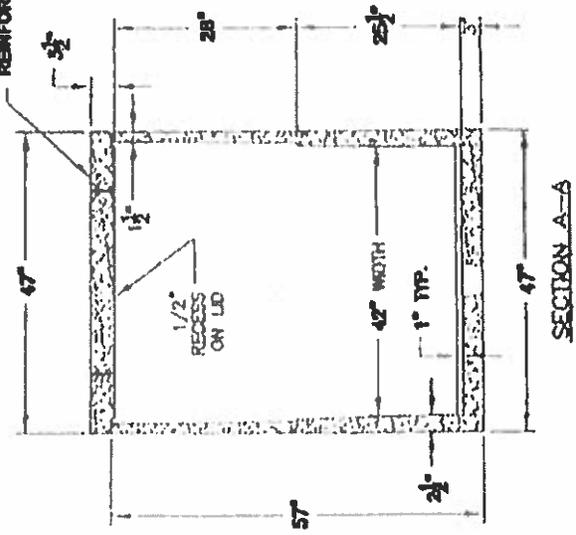
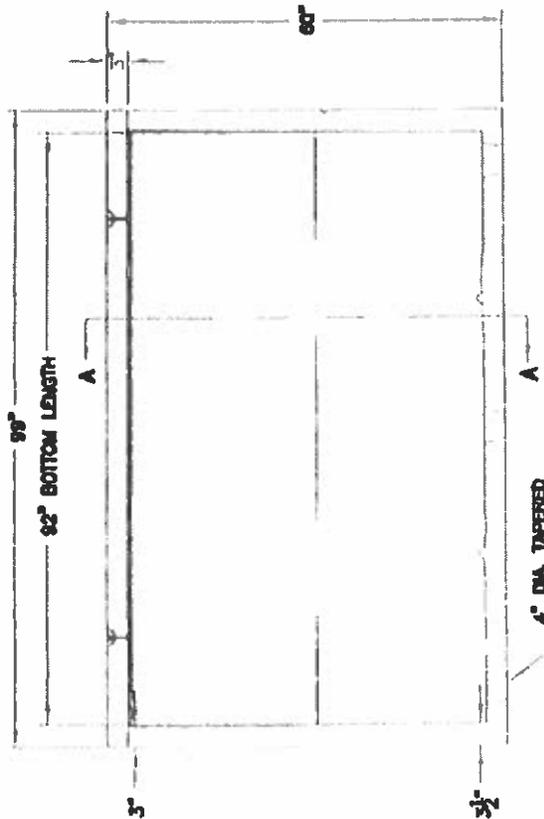
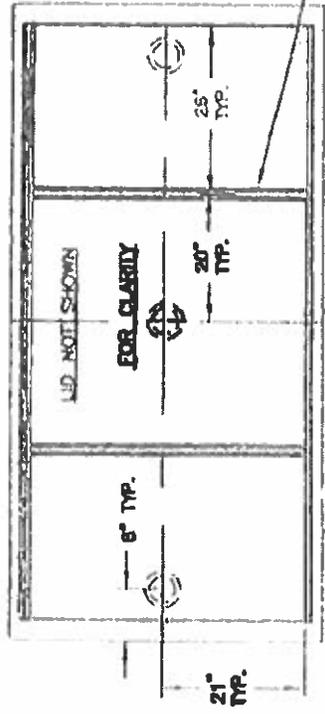
OVERSIZE LID REINFORCEMENT

- NOTES:
- WWR: 6x10-D15xD17
  - STEEL MINIMUM YIELD STRENGTH TO BE 70,000 PSI
  - REINFORCING TO MEET ASTM A1064

**INTERIOR OVER-SIZED BURIAL VAULT**

- NOTES:**
- CONCRETE FINISH - SMOOTH
  - TOLERANCE ±0.1875
  - LIFTING HARDWARE - HOT DIPPED GALVANIZED
- WEIGHTS:**
- TOP SLAB - APPROX. 1,400#
  - DOUBLE BOX - APPROX. 4,700#
  - TOTAL - 6,100#

SEE APP D-15 FOR TOP SLAB REINFORCING

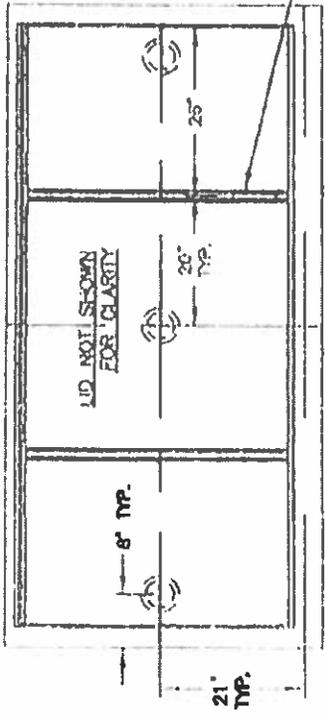


- NOTES:**
- CONCRETE: 5000 PSI
  - REBAR Fy = GRADE 60 (60 KSI)
- DESIGNED:**
- FOR 24" SOIL COVER
  - PLUS 12,000 LB AXLE LOAD (EQUIP.)
  - NO SOIL LOAD ON LONG WALLS

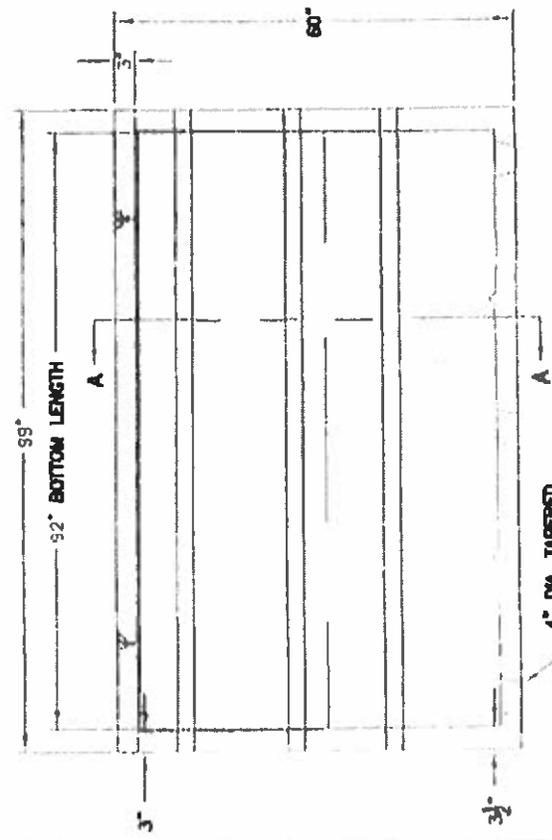
**INTERIOR OVERSIZED CRYPT**

**PERIMETER OVER-SIZED BURIAL VAULT**

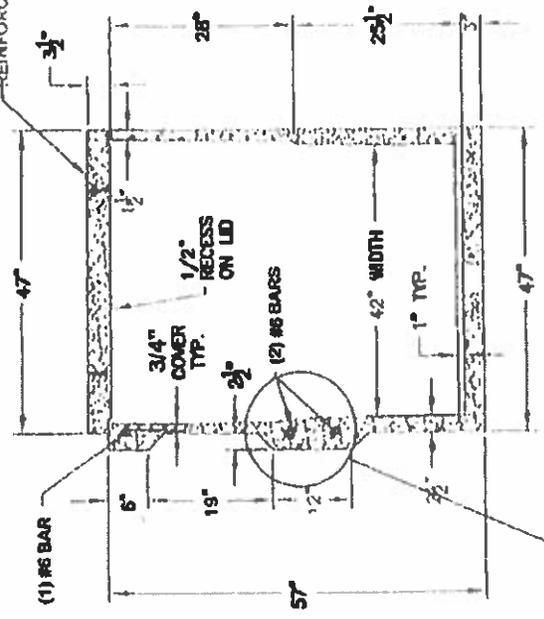
- NOTES:**
- CONCRETE: 5000 PSI
  - REBAR Fy = GRADE 60 (60 KSI)
- NOTES:**
- CONCRETE FINISH - SMOOTH
  - TOLERANCE SA.1875
  - LIFTING HARDWARE - HOT DIPPED GALVANIZED
- WEIGHTS:**
- TOP SLAB - APPROX. 1,400#
  - DOUBLE BOX - APPROX. 4,700#
  - TOTAL - 6,100#



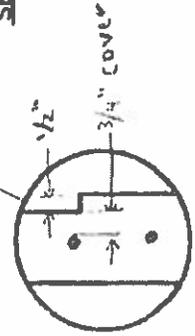
CASKET REST  
TYP. (2) PLACES



SEE APPD-15  
FOR TOP SLAB  
REINFORCING



SECTION A-A



- DESIGNED:**
- FOR 24" SOIL COVER
  - PLUS 12,000 LB AXLE LOAD (EQUIP.)
  - NO SOIL LOAD ON LONG WALL WITHOUT REBAR

**PERIMETER OVERSIZED CRYPT**

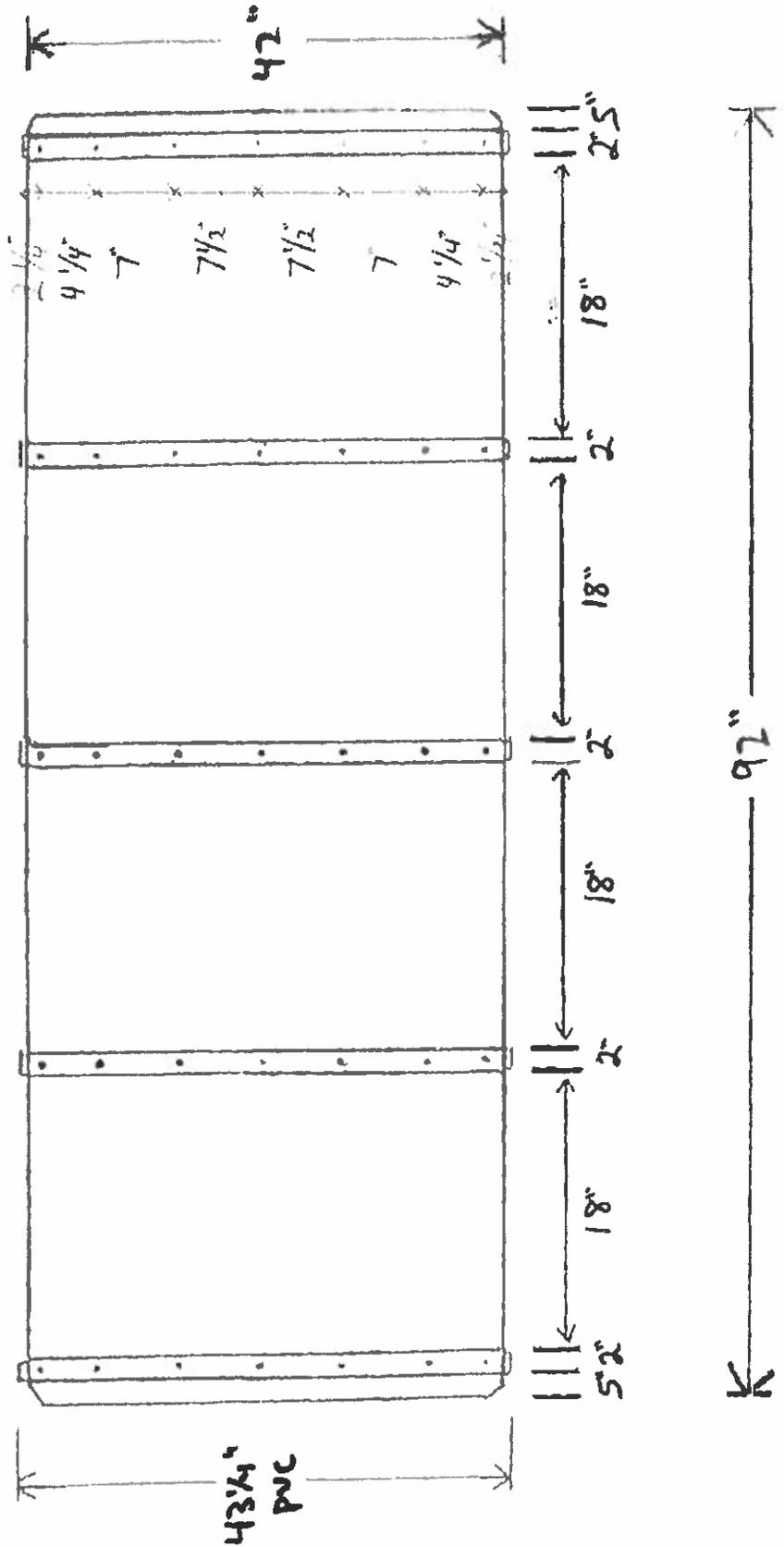
CALC BY: VC CHECK BY: \_\_\_\_\_ SHEET: D-18  
 DATE: 5/19/20 REVISED: \_\_\_\_\_ PROJECT: 2005025

## Divider Shelf

- HDPE Barrier with (5) 1½" Sch. 40 PVC Pipes
- 1½" Sch 40 PVC Pipe:
  - Yield Strength = 8,000 psi (tensile)
  - Area = 0.8 in<sup>2</sup>
  - Outside dia. = 1.9"
  - $S = 0.3262 \text{ in}^3$
  - Length = 42" = 3.5'
  - $\bar{y} = \frac{1.9''}{2} = 0.95''$
- Loading:
  - From Design Criteria in Appendix: "Capable of holding 400 lbs indefinitely"
  - $\frac{400 \text{ lb}}{(5 \text{ pipes})(3.5' \text{ long each})} = 23 \text{ plf}$
- Bending:
  - $M_{\max} = \frac{1}{8} wL^2 = \frac{1}{8} (23 \text{ plf})(3.5 \text{ ft})^2 = 35 \text{ lb-ft} = 420 \text{ lb-in}$
  - $\frac{M}{S} = \frac{420 \text{ lb-in}}{0.3262 \text{ in}^3} = 1,288 \text{ psi} < 8,000 \text{ psi} \therefore \text{Bending OK}$
- Tension in Extreme Fiber:
  - $T = \frac{420 \text{ lb-in}}{0.95 \text{ in}} = 442 \text{ lb tension}$
  - Tensile Capacity =  $\left( \frac{0.8 \text{ in}^2 \text{ area}}{2 \text{ sides}} \right) (8,000 \text{ psi tensile str.}) = 3,200 \text{ lb capacity}$   
 $\therefore 3,200 \text{ lb} > 442 \text{ lb} \therefore \text{Tension OK}$
  - $\left( n = \frac{3,200 \text{ lb}}{442 \text{ lb}} = 7.2 \right)$

Specification Section 03 48 21 1.7.C  
**Inside Shelf Design - Oversize**

The HDPE privacy shelf material is 42" wide X 92" long which provides a maximum visual barrier while not binding against the inside walls of the crypt. The five PVC pipes are attached to the visual barrier using self-drilling screws and sit on the lip within the crypt to hold the casket. Each PVC pipe is 43 1/4" long and is 1 1/4" diameter Schedule 40 pipe. The visual barrier as well as the PVC pipes have a 1/4" of space all around and do not bind against the inside walls of the crypt.



# **Exhibit 5**

## **Cemetery's Conflict of Interest Policy**

# FERNCLIFF CEMETERY ASSOCIATION

## CODE OF ETHICS AND CONFLICT OF INTEREST POLICY

Revised and Restated: March 11, 2020

### I. CORPORATE CREED

It is the creed and policy of Ferncliff Cemetery Association (the "Association") that the Association's affairs shall be conducted in accordance with high standards of integrity and business ethics. The Association is committed to conducting its business in strict accordance with all applicable federal, state and local laws. All directors, officers and employees of the Association and its affiliates are obligated to conduct themselves in a lawful and ethical manner and must not compromise these standards under any circumstance.

### II. PURPOSE

As of 2014, Not-for-Profit Corporation Law (N-PCL) § 715-a mandates all non-profits incorporated in New York to have a Conflict of Interest Policy. The purpose of the Conflict of Interest Policy is to set forth parameters in the event a director, officer, or other corporate insider has an outside interest or relationship that conflicts, or may conflict, with his or her ability to act strictly in the Association's best interests.

The Code of Ethics and Conflict of Interest Policy (the "Code") provides a framework for the conduct expected of all officers, directors and employees of the Association and its affiliates. It is expected that all such persons will not violate the specific guidelines nor conduct themselves in any manner which violates the spirit of the Code.

Each officer, director and key person of the Association has a fiduciary obligation to the Association and its membership when serving as an officer, director and/or board member. No individual shall use his or her position or the knowledge and information gain from being in such position, in any manner that is not in the best interest of the Association. All individuals are expected to use good business judgment and to conduct their affairs in such a manner as to avoid actual or potential conflicts between his or her personal interests and those interests of the Association.

### III. DEFINITIONS

Affiliate – Means a person or entity that directly or indirectly through one or more intermediaries, controls, or is controlled by or is under common control of the Association.

Affiliated Person – A person that is a director, officer or controlling person of the Association, or a member of the immediate family of any such person, as well as any company controlled by any such person.

Apparent Conflict of Interest – Involves a situation where a Conflict of Interest or potential conflict of interest is perceived to exist regardless of whether a Conflict of Interest or potential conflict of interest exists in fact. The definition recognizes that a person may perceive that a Conflict of Interest or potential conflict of interest exists based on evidence that may or may not be factual, verifiable or scientifically valid.

Business of the Company – Cemetery and crematory operations and sales encompass all business relationships of the Company including, but not limited to, those involving suppliers, services, trade associations, depositors, consultants, brokers, borrowers, and joint ventures.

Company – Has the meaning set forth in the New York State General Corporation Law or any successor statute or regulation and includes a corporation, partnership, business trust, association or similar organization.

Confidential Information – Information received by the Association from third parties in confidence or regarding any aspect of the business or technologies of the Company or of its customers or suppliers not generally known to the public.

Conflict of Interest – Refers to any event or situation within the scope of the corporate rules and regulations of the State of New York where the financial interests of a director, officer, Key Person, and/or Controlling Person, has a directly or indirectly through an immediate family member, with a person or entity that the Association is considering entering into any transaction or arrangement. It also includes any other interest that may influence the judgment of an officer or director. An affiliation does not necessarily constitute a Conflict of Interest.

Controlling Person – Includes any natural person or company that owns or controls 10 percent or more of the voting stock of the Company, or exercises apparent authority over the organization and/or the Association.

Gifts (including goods, services and related items) – Anything of value offered in connection with Association's business, including, but not limited to, payments, commissions, loans, (other than loans from other banks on customary terms to finance proper and unusual activities), material goods, services, rewards, entertainment, travel or other business favors except nominal gifts as defined below.

Improperly Influence – Shall have the same meaning as the Security and Exchange Commission ("SEC") in addressing improperly influencing audits: coercing, manipulating, misleading, or fraudulently influencing the decision-making when the officer, director or other person knew or should have known that the action, if successful, could result in the outcome which the officer or director could not deliberate or vote on directly.

Immediate family member – Includes a spouse, father, mother, children, brothers, sisters and grandchildren; the father, mother, brothers and sisters of such person's spouse; and the spouse of a child, brother or sister of such person.

Key Person – A person who is in a position to exercise substantial influence over the affairs of the Association including, but not limited to, the Executive Director, financial officers or employees of the Association.

Officer – Generally understood to encompass only those employees who possess significant managerial and policy-making authority as set forth in applicable resolutions of the Association.

Nominal Gift – Anything or service of incidental value which is unsolicited and which is not offered as a quid pro quo with respect to any business of the Company.

Potential Conflict of Interest – A situation that is likely to develop into or become a Conflict of Interest based on assumptions that a reasonably prudent officer, director, employee or other affiliated person would make in view of then-present circumstances.

#### **IV. CONFLICTS OF INTEREST**

General Policy. All Directors, Officers and employees of the Association, or persons who have the power to direct the Association's management or policies or who otherwise owe a fiduciary duty to the Association, shall not advance their own personal or business interests, or those of others with whom such persons have a personal or business relationship, at the expense of the Association or in conflict with any obligation owed to the Association.

Such Persons have a fundamental duty to avoid conflicts of interest, potential conflicts of interest and apparent conflicts of interest with the Association. For example, directors and employees may refer potential vendors to the Association but must not imply to either the Association staff or the vendor that preferential treatment will be given.

The following additional examples of conflicts are provided to clarify the scope of this Code provision, but are not intended to describe all situations that might be covered by this provision:

- i. A person who owes a fiduciary duty to the Association receives money or other benefits from a third party in return for the Association granting a construction contract to the third party;
- ii. A third party makes a payment or provides employment to a spouse, child, parent, sibling or business partner of an officer, director, employee or affiliated person of the Association to influence the Company's decision on hiring the third party for a construction or cemetery development project;
- iii. An Officer, Director, employee or other person who owes a fiduciary duty to the Association advocates a transaction between the Association and a company in which such person owns stock or serves as an officer or director, at the expense of the Association.

It is impossible to outline every factual circumstance involving possible application of this policy. Every position in the Association involves a degree of trust and responsibility which would be

compromised if such person was to solicit or receive personal advantage by reason of his/her position in the Association or by reason of the Association's relationship with a client, customer or supplier. What is required is a constant awareness of the policy and the exercise of good judgement in each particular situation.

Duty to Disclose. At the time of the adoption of this Conflict of Interest Policy by the Association, all directors, officers and key employees shall disclose in good faith and in writing to the Association any of the following:

- i. Any entity of which such person or family of such person is an officer, director, trustee, member, owner, employee or key person which the Association has a relationship with;
- ii. Any financial interest such person may have in any corporation, organization, partnership or other entity which provides professional or other goods or services to the Association for a fee or other compensation;
- iii. Any position or material relationship such director, officer or key employee or family of such person may have with any not-for-profit corporation with which the Association has a business relationship with.

A Conflict of Interest shall only exist if the Association's Board of Directors votes that a Conflict of Interest truly does exist. The Board of Directors shall promptly determine the existence of any actual or potential Conflict of Interest based upon the available material facts. The transaction in question may be approved only if a majority vote of the Association's Board of Directors concludes that:

- i. The proposed transaction is fair and reasonable to the Association;
- ii. The Association proposes to engage in the transaction for its own purposes and benefits;
- iii. The proposed transaction is the most beneficial arrangement that the Association could obtain in the circumstances with reasonable efforts.

The minutes of any meeting at which such a vote and/or determination regarding an actual or potential Conflict of Interest shall reference the Association's efforts to investigate and address the transaction in question.

In addition, the Director, Officer, employee or other Key Person of the Association who has disclosed the potential Conflict of Interest and who is an Affiliated Person to the transaction or arrangement must not be present for deliberations and/or voting on the transaction and/or arrangement in which he or she has a financial interest.

No director shall vote, act or improperly influence deliberations on any matter in which he or she has been determined by the Association's Board of Directors to have a financial interest. Any

attempt by an Affiliated Person or Director to vote, act or improperly influence deliberations on any matter in which such person has a financial interest may be grounds for removal from the Board or termination of any interest with the Association.

*Related Policies*

Receipt of Gifts and Related Items – No Director, Officer or employee of the Association shall seek or accept, directly or indirectly, any gift, other than a nominal gift, from any individual, corporation or other business entity doing or seeking to do business with the Company, or participate in a transaction with an affiliated person, without the prior disclosure to and approval of the Association, as provided in this Code. Any director, officer or employee who is offered or receives a gift from a customer must disclose to his/her immediate supervisor for a determination as to whether the director or employee may retain the gift consistent with applicable laws and the provisions of the Code.

Business with Affiliates and Relatives – Employment of the Association staff by other parties, especially with those with a relationship to the Association, or the making of any gift or provision or any service to the Association to influence the Association's decision whether to employ an immediate family member of such person is prohibited. No directors, officers or other employees of the Association shall conduct Association business with any corporation or other business entity in which he/she or any of his/her relatives has an ownership or other interest without the prior approval of the Association.

Borrowing from a Client or Customer – No Director, Officer or employee of the Association shall borrow money or any other item of no more than nominal value from any present or potential client, customer or supplier of the Association without the prior approval of the Association; provided, however, this provision shall not prohibit any Director of the Association from borrowing money or any other item from its employer, which may be a potential client, customer or supplier of the Association, in conformity with the established and consistently applied policies of its employer.

Compensation – In accordance with this Code, compensation to Directors and employees of the Association or any Association subsidiary or affiliate must not exceed what is reasonable and commensurate with their individual duties and responsibilities.

Usurpation of Corporation Opportunity – Neither an affiliate of the Association nor any of its Officers or Directors, may usurp any corporate opportunity that properly belongs to the Association. Usurpation of a corporate opportunity involves taking advantage of an opportunity that the Association may without any legal or other impediment, undertake for its own benefit. Usurpation of a corporate opportunity is deemed to be a breach of fiduciary duty. If an Affiliate of the Association is deemed to have usurped a corporate opportunity of the Association, the usurping affiliate shall immediately disgorge all profits gained to the Association. In addition, it is the policy of the Association that all of its affiliates, including directors and officers, take all steps necessary to avoid the appearance of usurping a corporate opportunity.

Referrals between Affiliates – Any referral arrangements between the Association and an Affiliate shall comply with all New York State and federal law, regulations and applicable policies.

## **V. PERSONAL FINANCES AND TRANSACTIONS WITH THE ASSOCIATION**

General – All Directors, Officers and employees of the Association are expected to conduct personal affairs in a manner which does not jeopardize the Association’s standing in the community. While the Company has the utmost respect for the privacy and other personal rights, the Company also realizes the improper handling of personal finances could undermine the credibility of an employee or Director and that a precarious financial position could be thought to influence actions or judgements of such persons in their official capacity. Accordingly, it is the Association’s policy to encourage all Directors, Officers and employees of the Association and its Affiliates to manage their personal finances in a manner that: (i) will not undermine their credibility with respect to the Association or its business; (ii) will not have a detrimental effect on the exercise of their judgement on Association-related business matters; and (iii) will not otherwise adversely affect or influence their conduct or actions made in their official capacity.

Loans From the Company – All loans and other transactions to, with or involving Directors, Officers, employees, Affiliates or Affiliated Persons of the Association must require that specified transactions be on terms and under circumstances, including credit standards, that are substantially the same, or at least as favorable to the Association, as those prevailing for comparable transactions with unaffiliated persons and companies. All loans with affiliates or affiliates persons of the Association must comply with applicable individual loan and aggregate loan limitations.

Real Estate Transactions – Consistent with the above-stated policy and state law and regulations regarding cemetery property, the sale or leasing of real estate to Affiliates or Affiliated Persons at preferential prices, preferential terms or preferential interest rates is prohibited.

Other Transactions Involving Directors, Officers, Employees, Affiliates and Affiliated Persons – Purchasing assets or services from the Association and selling assets or services to the Association are prohibited transaction without the prior approval of the Association.

Reimbursement of Employee Expenses – No Director, Officer, or employee of the Association shall use the Association’s petty cash or other funds on hand for personal uses. All expenses incurred during the course of business must conform to Association’s Employee-Related Expense Policy.

## **VI. BOARD CONSIDERATION OF TRANSACTIONS BY MANAGEMENT**

An individual shall not advance their own personal or business interests, or those of others with whom they have a personal or business relationship, at the expense of the Association. If such Officer or Director has an interest in a matter or transaction before the board of directors, such individual must disclose to the board all material non-privileged information relevant to the board’s decision on the matter or transaction, including: (i) the existence, nature and extent of their interest, and (ii) the facts known to the individual as to the matter or transaction under consideration. The individual shall also refrain from participating in the discussion of the matter or transaction and recuse himself from voting on the matter or transaction (if such individual is a Director).

## VII. CONFIDENTIALITY

Prohibition on Disclosure and Use – Any information regarding the Association’s business is confidential, must not be released to third parties and must not be used for the personal gain or purposes of any other individual or group. Confidential information includes, but is not limited to, customer account information and proprietary information about the business of the Association or its affiliates, including what is commonly known as “insider” information.

All Directors, Affiliated Persons, persons owing a fiduciary duty, officers and other employees of the Association or any of its Affiliates, are prohibited from disclosing or releasing any Confidential Information in the possession of the Association or any of its affiliates. Confidential Information may be disclosed only as follows: (i) to public agencies (e.g. New York State Cemetery Board or Division of Cemeteries); (ii) to investigative agencies, after notification to and receipt of the concurrence of legal counsel of the Association (e.g. law enforcement); or (iii) as required by law, (e.g., subpoena), only after notification to and receipt of the concurrence of legal counsel of the Association.

## VIII. OUTSIDE EMPLOYMENT AND OTHER ACTIVITIES

Outside Employment – All Directors, Officers and employees of the Association shall consult with their immediate supervisor or the general counsel before accepting any directorship, officership, offer or outside employment, etc. in an outside corporation or other business entity, where the entity does business or is likely to do business with the Association.

All Directors, Officers and employees of the Association shall manage their outside employment and other activities in accordance with all applicable laws, regulations and policy statements, including the regulations and policies prohibiting the usurpation of corporate opportunities. Usurpation of a corporate opportunity means among other things, that officer, directors, and other persons who have the power to direct the management or policies of a company, or otherwise owe a fiduciary duty to a company may not take advantage of corporate opportunities belonging to that company. An opportunity is viewed as belonging to a company if it is within the corporate powers of the company and is within present or potential practical advantage to the company. A person would not be viewed as taking advantage of a corporate opportunity if the person takes the opportunity after a disinterested majority of the board of directors is fully apprised of the opportunity and rejects it.

Civic Activities – The Association accepts responsibility as a member of the communities in which our officers are located to contribute to programs of civic, cultural and social betterment. Directors, Officers and employees of the Association are encouraged to exercise the rights and duties of citizens and to participate in local, civic and charitable activities. In some cases, however, it is improper for an Officer, Director or employee of the Association to serve as a member, director, officer or employee of a municipal corporation, agency, school board, library board or similar organization. All Officer, Directors and employees of the Association should consult with the general counsel of the Association before engaging in any outside activity that is likely to present a conflict under this Code or interfere with the performance of any duties owed to the Association.

It should be clear whether the employee or director is acting as a representative of the Company or in their individual capacity.

## **IX. SAFEGUARDING OF INSTITUTIONAL PROPERTY**

It is the responsibility of all Directors, Officers and employees of the Association to safeguard the property of the Association. Damaging the Association's, or a customer's, property or records or violating the confidentiality of such records is prohibited. Internal accounting controls, record keeping policies, security and investment policies, loan policies and underwriting standards and auditing policies have been established and disseminated by the Association to meet its business needs as well as the requirements of applicable laws and regulations, or any successor regulations. It is the responsibility of each Director, Officer and employee of the Association to adhere to these policies and procedures.

## **X. REPORTING OF QUESTIONABLE OR BUSINESS PRACTICES**

Corporate fraud is illegal and prohibited. Accordingly, the Association has imposed certain procedures for reporting questionable accounting or business practice.

Reporting - If any employee believes that the Association or any of its employees has engaged in any type of questionable accounting activity, or believes any employee has violated the Association's Code of Ethics and Conflict of Interest Policy, such employee should report the allegation to their immediate supervisor, Chief Financial Officer, Association President or the Chairman of the Audit Committee. If circumstances warrant, the employee should report directly to the Audit Committee Chairman. The name and contact information of the Chairman will be posted on Association's H/Drive and S/Drive in the folder marked "Audit Committee Chairman." Confidentiality and anonymity will be maintained in accordance with the law and the matter shall be fully investigated.

Protections - The Association will not retaliate against any employee who makes such a report or who assists in the investigation or processing of any such allegation of corporate fraud. The Association is committed to this principle.

## **XI. COMPLIANCE WITH LAWS AND REGULATIONS**

All Directors, Officers and employees of the Association shall carry out their responsibilities in accordance with all applicable laws, regulations and policy statements, including all applicable federal and state criminal laws governing fraud, bribery, embezzlement, conversion and conflicts of interest. Directors, Officers and employees of the Association must conduct their business affairs in a manner consistent with applicable safety and soundness standards and the requirements of this Code.

## **XII. CODE ADMINISTRATION AND ENFORCEMENT**

Responsibility to Report Code-Related Matters – All persons subject to this Code must report related matters in accordance with the procedures set forth herein. All Officers and employees

must promptly make reports of any related matters to their immediate supervisor. All supervisors receiving such reports must promptly advise the general counsel, even if such supervisor has reason to believe that the general counsel has already been advised.

The President of the Company, the Chairman of the Board of Directors and each director of the Company must promptly make reports of any Code-related matters to the general counsel. If an officer or employee does not believe that such Code-related matter can be resolved by his or her immediate supervisor or involves such immediate supervisor, the officer or employee may report such matter directly to the general counsel or the Chairman of the Audit Committee.

General Procedures for Resolving All Code-Related Matters – If the general counsel is unable to promptly resolve a Code-related matter consistent with this Code and applicable laws and regulations, the general counsel shall promptly confer with the President of the Company. If the general counsel and the President are unable to promptly resolve the matter to their mutual satisfaction consistent with this Code and applicable laws and regulations, the general counsel and the President shall promptly confer with the Audit Committee of the Board of Directors. If the general counsel, the President and the Audit Committee are unable to promptly resolve the matter to their mutual satisfaction consistent with this code and applicable laws and regulations, the general counsel, the President and the Audit Committee shall promptly confer with the Chairman of the Board of Directors to determine a mutually satisfactory resolution.

If a Code-related matter is brought directly to the Chairman of the Audit Committee and the Chairman is unable to promptly resolve the Code-related matter consistent with this Code and applicable law and regulations, the Chairman of the Audit Committee shall promptly confer with the other members of the Audit committee. If the Audit Committee is unable to promptly resolve the Code-related matter consistent with this Code and applicable law and regulations, then the Audit Committee shall promptly confer with the Chairman of the Board to determine a mutually satisfactory resolution.

The Chairman of the Board of Directors may confer with the full Board of Directors on any Code-related matter.

Sanctions for Code Violations – Failure to comply with the policies in this Code will result in disciplinary action, ranging from a reprimand to dismissal and possible civil and criminal prosecution. Disciplinary actions will be pursued by the Association against all of the following: (a) any Director, Officer or employee violating this Code; (b) any Director, Officer or employee of the Association deliberately withholding information regarding a Code Violation; (c) the manager or supervisor of a person who has committed an act under (a) or (b). In circumstances where such violation reflected poor supervision or lack of diligence; and (d) any director or employee who retaliates, directly or indirectly, against any employee who reports a suspected Code Violation. In addition, Code Violations may expose the offending Director or employee and the Association to monetary damages, regulatory penalties and criminal sanctions. The Association will ensure that all disciplinary actions taken to enforce this Code are applied consistently and in accordance with all applicable laws and regulations.

### **XIII. CODE-RELATED TRAINING**

The Association shall:

- a. Ensure that copies of this Code are distributed to all existing and newly hired or appointed Officers, Directors and employees of the Association and all existing and newly hired or appointed Directors and Officers of the Association's affiliates and shall ensure that all compliance materials related to this Code are distributed to all existing and newly hired management, administrative and professional personnel of the Association and its affiliates;
- b. Develop, review and, as required, update on a continuing basis this Code and any related compliance programs and policies;
- c. Form and review auditing procedures to confirm compliance with this Code.

### **XIV. INITIAL AND PERIODIC REVIEW AND CERTIFICATION OF COMPLIANCE**

The Association will maintain a copy of this Code as part of its permanent corporate records. The general counsel will maintain written records of any reports, disclosures or investigations made under this Code and resolutions of any such matters.

Initial Review – All Directors, Officer and employees of the Association shall be provided a copy of this Code as soon as practicable after its approval by the board of directors or at the time of (or as soon as practicable after) the person's initial association or employment with the Association. All such persons will certify that they have read this Code and that any questions regarding this Code have been answered by the Association representative to their satisfaction.

Annual Review – All Directors, Officers and employees of the Association must complete a Conflict of Interest Questionnaire approved by the board of directors relating to all duties and obligations of directors, officers and employees provided in this Code.

### **XV. MAINTENANCE OF CODE-RELATED RECORDS**

Copies of initial and annual certifications will be kept by the Association in each person's official personnel records and duplicate copies of all certifications shall be kept in separate, secure files maintained by the general counsel.

The general counsel shall separately maintain and secure the certifications and all other records, documents and other information relating to this Code and its administration and make such records, documents and other information promptly available to members of the Audit Committee of the board of directors, the President of the Association and the Chairman of the Board to assist them in executing their responsibilities under this Code and under other applicable laws and regulations.

**FERNCLIFF CEMETERY ASSOCIATION**  
**CONFLICT-OF-INTEREST DISCLOSURE**  
**2020**

**PRINTED NAME:**  
**POSITION:**

This disclosure statement must be completed by all board members, potential board members prior to election to the board, officers, employees, committee members and consultants, if applicable, of the Ferncliff Cemetery Association ("Association"). This document is to be completed based on the "Code of Ethics and Conflict of Interest Policy" provided to you and as adopted and implemented by the Board of the Association.

It is important that there be a response to all questions presented. If there is nothing to report based on the question presented, so indicate by the use of the word "none" or by checking the box marked "not applicable".

Responses presented in this document, except to the extent necessary for appropriate review, will be kept confidential. This completed questionnaire must be returned within two (2) weeks of receipt for the submission to the President of the Association. Those responses will be forwarded to the Chairman of the Audit Committee of the Board of Directors.

*All references to the "Association" shall mean the Ferncliff Cemetery Association ("FCA").*

1. List any and all positions you currently hold, including public offices or governmental activities, business dealings you have or financial interests, including, without limitation, any entity in which you are an officer, director, trustee, member, owner (as sole proprietor, partner or otherwise), or employee but not including former affiliations:

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_

2. In addition to those disclosed in Paragraph 1, above, do you have a family relationship or a business relationship with any officer, director or employee of the Association?

No

Yes (If yes, please describe the relationship):

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3. Have you or members of your family had any past, current or potential direct or indirect interest (financial or otherwise) in, or receive any compensation or income from, the Association or any entity with which the Association engages in business transactions? This should include a business, that to your knowledge, from which the Association secures goods or services.

- No
- Yes (If yes, please describe the transaction):

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4. As an officer or employee of the Association, in the last twelve (12) months, have you received any earned income for employment or services rendered to any entity or other person other than the Association?

- Not applicable
- No
- Yes (If yes, please describe the transaction and provide a copy of related W(2)):

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5. In the last twelve (12) months have you, your spouse or any dependent relative received any income, commissions, split fees or other compensations from any entity or person having a business relationship with the Association? Provided however, this provision shall not apply to any income commission, split of fees or other compensation received from the Association.

- No
- Yes (If yes, please provide the name(s) of such entity and the names of such person):

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6. Identify the nature and source of any gift having a value of more than \$100 received by you, your spouse or any dependent relative in the last twelve (12) months, including gifts of travel and entertainment, other than business meals, from any entity or person to your knowledge having a business relationship with the Association:

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7. Do you have any affiliation, investment or interest not disclosed above which might, in your judgement and in the exercise of good faith, involve or give the appearance of involving a conflict of interest as defined and explained in the "Code of Ethics and Conflict of Interest Policy"?

No

Yes (If yes, please provide the name(s) of such entity and the names of such person):

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8. As a Director, Officer, employee, or consultant or other Association associate with an ability or potential ability to influence Association decisions, I hereby acknowledge that I have received a copy of Association's Conflict of Interest Policy last amended February \_\_\_\_, 2020; I have read and understand the Policy; and I agree to comply with the Policy.

9. I certify that during the past twelve (12) months neither I nor any of my Immediate Family Members (as that term is defined in Section III of the Conflict of Interest Policy) or any entity in which I have an ownership or beneficial interest of have engaged in a transaction with the Association, except as disclosed in Paragraph 1, above, and except for making charitable contributions to the Association.

10. The answers to the foregoing questions are stated to the best of my knowledge and belief.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Title: \_\_\_\_\_

Employer: \_\_\_\_\_

## **EXHIBIT C**

# CRETER VAULT CORP.

Five Generations of Experience, Quality, Service



417 Route 202, Flemington, New Jersey 08822

Phone: 800-352-4890

908-782-7771

Fax: 908-782-4381

June 17, 2020

To whom it may concern,

The lawn crypts produced by Creter Vault for delivery to Ferncliff Cemetery meet the design and performance standards of subdivision (c) of section 201.17 Lawn Crypts of the New York Cemetery Law.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Matthew Creter', with a long horizontal flourish extending to the right.

Matthew Creter  
Vice President  
Creter Vault Corporation

