

**Attachment 1**

**Secondary Containment Upgrade**









# USHER OIL - GRAND RIVER AVENUE

## ENGINEER'S OPINION OF PROBABLE COST FOR CONTAINMENT CONSTRUCTION

| 11/27/2003 Approved Scope<br>(CMAA-134, PG 6 of 22) |          |
|---|----------|
| Item  | Amount   |
| Engineering Design Phase                            |          |
| Engineering Design Phase                            | \$2,000  |
| Construction Phase                                  | \$3,700  |
| Construction Phase                                  | \$600    |
| Subtotal  | \$6,300  |
| Construction Phase                                  |          |
| Construction Phase                                  | \$1,000  |
| Construction Phase                                  | \$59,000 |
| Construction Phase                                  | \$3,200  |
| Construction Phase                                  | n/a      |
| Construction Phase                                  | \$5,000  |
| Construction Phase                                  | \$68,200 |
| Construction Phase                                  | \$4,600  |
| Construction Phase                                  | \$7,700  |
| Subtotal  | \$12,300 |

### CONTACTS:

• **Surveyors:**

Spalding DeDecker Associates  
Mike DeDecker  
(248) 844-5400

Milletics and Associates  
Mike Milletics  
(248) 473-7880

• **Earthwork:**

B & V  
Dave Rogers  
(810) 560-6054

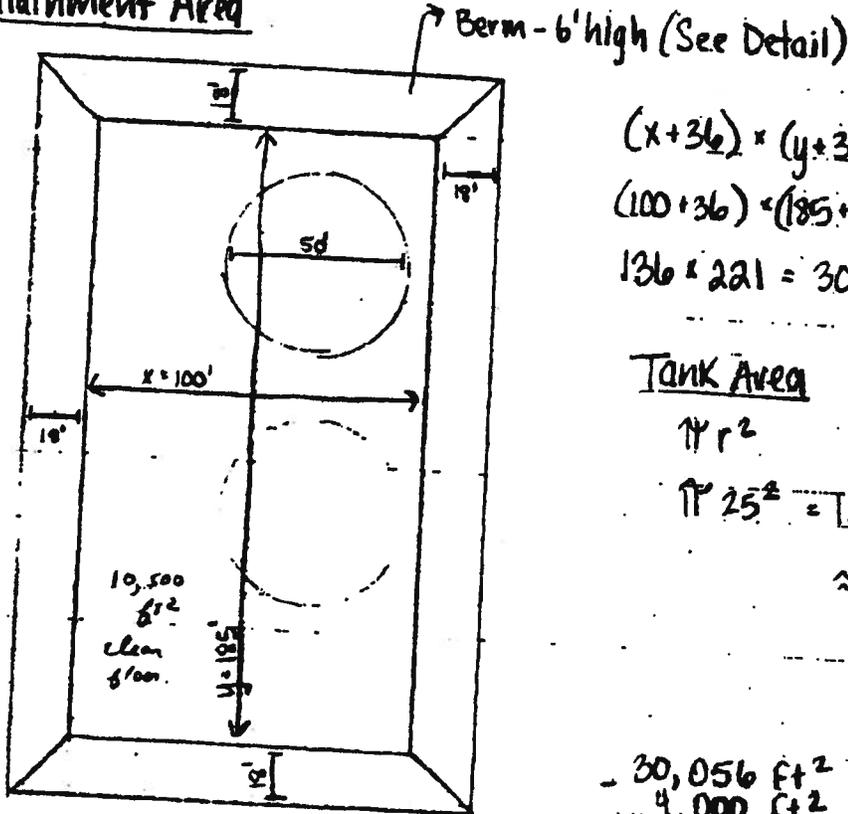




NTH Consultants, Ltd.  
Infrastructure Engineering  
and Environmental Services

Job Usher Oil - Grand River Project No. d3-000425-00 Sheet No. 1  
 Subject Containment By BMS Date 2/27/08  
 Area + Berm Coatings Checked By Date

Containment Area



$$(x+36) \times (y+36) = \text{Containment Area}$$

$$(100+36) \times (185+36) =$$

$$136 \times 221 = 30,056 \text{ ft}^2 - \text{Tank Area}$$

Tank Area

$$\pi r^2$$

$$\pi 25^2 = 1,962.5 \text{ ft}^2 \text{ per tank}$$

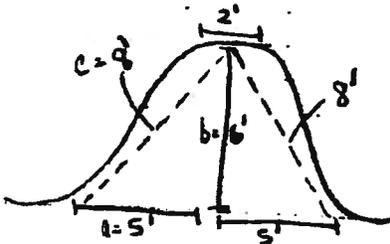
$$\approx 2,000 \text{ ft}^2 / \text{tank}$$

$$4,000 \text{ ft}^2 - \text{Tank Area}$$

$$\begin{array}{r} 30,056 \text{ ft}^2 \\ - 4,000 \text{ ft}^2 \end{array}$$

$$26,056 \text{ ft}^2 \sim 27,000 \text{ ft}^2$$

Berm Detail



$$a^2 + b^2 = c^2 \rightarrow 5^2 + 6^2 = c$$

$$c = 7.81 \approx 8'$$





**Attachment 2**

**Concrete Vault  
with High Level Switch  
and Remote Wireless Terminal**





ATTACHMENT 2

**MEMORANDUM**

**TO:** Mr. Lyle Salisbury – Usher Oil Company      **DATE:** October 23, 2008

**FROM:** Mr. Jesse L. Kolb, P.E. *JK*      **PROJECT NO:** 23-000425-00  
 Mr. Dave Lomas, P.E. *DL*

**SUBJECT:** Grand River Facility, Secondary Containment Area, Level Sensor and Remote Alarm

NTH Consultants, Ltd. (NTH) has developed an Engineer's Opinion of Probable Cost for a high level alarm and remote wireless terminal for the Grand River facility secondary containment stormwater management. The project includes a concrete vault, high level switch, remote wireless terminal (alarm), installation, electrical, engineering design and construction observation. These items are detailed in the following table.

| Item  | Cost            |
|---|-----------------|
| Engineering design  | \$4,800         |
| 6' x 6' x 6' concrete storm water vault (1,600 gallons)     | \$10,000        |
| High level float, remote wireless terminal and installation | \$7,300         |
| Electric supply and connections                             | \$5,200         |
| Construction Oversight and Start-up/Testing                 | \$2,800         |
| <b>Total</b>  | <b>\$30,000</b> |

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**Attachment 3**

**Tank Installation Process**





## **USHER OIL – ROSELAWN FACILITY**

### **ATTACHMENT 3 - TANK INSTALLATION PROCESS**

- Tanks will be built to UL 142 standard, single wall steel tanks compatible with oil with flashpoints of >200 degree Fahrenheit.
- The product being stored has a flashpoint of >200 degree Fahrenheit, thus the tanks are not regulated by the state of Michigan under the NFPA.
- The tanks will be primed at the factory and later painted on site with the facility colors.
- The containment floor is to be level within tank operating tolerances recommended by the manufacturer. Note: containment is drained of accumulated precipitation on an as needed basis.
- The tanks will be lifted and placed within the containment on rubber mats to mitigate corrosion and mechanical abrasion between the tank and the containment floor, as the tank is placed in position. Tanks will be placed at least three feet apart.
- Proper sized vents and overflow controls will be installed, along with a direct read mechanical float gage for depicting product volume.
- Piping from the tanks will be tied into the facility header system for unloading and loading operations.

