



# CITY OF RAPID CITY

RAPID CITY, SOUTH DAKOTA 57701-2724

## PUBLIC WORKS DEPARTMENT

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### MEMORANDUM

TO: Public Works Committee

FROM: Dirk Jablonski, Public Works Director

DATE: September 21, 2005

CC: Honorable Mayor Shaw

RE: Litter Control Plan

A draft of the formal litter control plan has been submitted to the South Dakota Department of Environment and Natural Resources and has received tentative approval. The Council must now approve a plan. Attached is an executive summary of the plan.

If requested I will be able to review the highlights of the proposal during the meeting. Of special note is the Estimated Costs section. The list includes the items necessary to implement the plan and respective costs. Of the Operating Cost total of \$107,000 per year, \$31,000 is already budgeted. Capital costs are one time expenditures totaling \$188,000.

If the plan and funding for the plan are approved, the complete plan can be implemented within six months. Some items, such as litter control fences, additional labor for pick up and comprehensive cover efforts can happen immediately.

The location of the landfill is both advantageous and disadvantageous. The obvious advantage is the nearby service it provides to the citizens of Rapid City. The disadvantage is that extra effort is required to minimize the impact on adjoining properties. As the area continues to develop, this will only become a larger issue if it is not addressed now. Without a commitment to the resources necessary to implement the plan it will not be successful.

# Executive Summary

## RAPID CITY LANDFILL LITTER CONTROL PLAN

September 21, 2005

**RAPID CITY LANDFILL LITTER CONTROL**

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## **REQUIREMENTS**

The Rapid City Landfill is operated by the Solid Waste Division, Department of Public Works, City of Rapid City under South Dakota Department of Environment and Natural Resources Solid Waste Permit No. 02-12 dated May 1, 2002. At a minimum, operational procedures at the facility shall be in accordance with the Administrative Rules of South Dakota (ARSD) 74:27. The following rules pertain specifically to litter control:

### **ARSD Article 74:27 Solid Waste**

74:27:12:10 Litter Control Devices. A MSWLF (Municipal Solid Waste Landfill) must have litter control devices at the face of the unloading area and around the perimeter of the site. The litter control devices must be of sufficient size to control blowing litter.

74:27:13:06. Litter control. A facility shall control the scattering of paper and other refuse through the use of litter fences and periodic cleanup. Type I and IIA facilities shall provide daily litter cleanup. Type IIB, III and IV facilities shall provide litter cleanup at least weekly.

74:27:13:07 Working Face. A facility shall limit the working face of the active fill area to as small an area as practical and shall conduct its operations to confine windblown solid waste.

74:27:13:09 Daily Cover. A facility shall stockpile and protect for use during inclement weather sufficient cover material to ensure its availability for daily cover. A facility shall place a minimum of six inches of compacted cover material on all exposed solid waste at the end of each working day. Alternative daily cover materials may be approved by the secretary case by case.

## **LITTER CONTROL PLAN**

To be in compliance with the operating permit and to properly control litter, both operations and facility improvements will be addressed. The following plan shall be established:

### **DAILY OPERATIONS**

1. Litter control cages will be strategically placed at the face of the unloading area for primary litter control. (See Detailed Drawing #1)

2. Strategies will be implemented to limit the size of the working face (area where refuse is being placed).
3. Wind speeds and wind forecasts will be continuously monitored. (See following High Wind Plan)
4. Daily litter cleanup will be provided. (See following Litter Cleanup)
5. Daily cover or approved alternative daily cover will be placed on all exposed solid waste at the end of each working day.
6. Litter control operations will be monitored and logged in a daily journal by the Landfill Supervisor.

#### INTERMITTENT OPERATIONS

1. Welded wire fencing will be strategically placed in and around the operating area. The fencing will be adjusted throughout the year as the operating area moves to new locations. This includes traffic areas, unloading areas and the working face.
2. Landfill Supervisor and Solid Waste Manager will meet weekly to review previous and following week's litter control strategies and operations.
3. Landfill Supervisor, Solid Waste Manager and Public Works Director will meet monthly to review litter control operations.
4. Public Works Director will present annual report to the Public Works Committee on litter control operations.

#### FACILITY IMPROVEMENTS

1. Permanent boundary fencing (6500 feet) will be placed along the south, east and west boundaries of the recently acquired 'Johnson Property' on the south end of the landfill. (See Detailed Drawing #2)
2. Litter netting (1500 feet) will be extended from the south end of the existing litter netting along the south side of the future operating area. See Detailed Drawing #3)
3. Landscape improvements will be made along South Highway 79 adjacent to the current operating area. These improvements are not litter control measures, but will provide a buffer between the landfill operations and the general public.

## **HIGH WIND PLAN**

Wind speeds and wind forecasts will be continuously monitored.

STANDARD OPERATIONS - Less than 30 mph

REDUCED OPERATIONS - 30 to 50 mph (gusts or sustained)

1. Non-commercial vehicles, pickups, cars, and similar vehicles will be banned from the landfill.
2. The Material Recovery Facility (MRF) will not dispose oversized or reject material from MRF operations.
3. Commercial waste will be diverted to the MRF or bunched at the landfill operating face and sprayed with alternative daily cover.

SUSPENDED OPERATIONS – Greater than 50 mph

1. Commercial waste will be diverted to the MRF on a space available basis.
2. Unloading operations will be temporarily suspended. Commercial haulers will be notified.

### **TEMPORARY STORAGE**

The tipping floor of the Material Recovery Facility will be used to receive municipal solid waste to the maximum extent possible for temporary storage during high wind conditions.

## **LITTER CLEANUP**

The daily litter cleanup of landfill windblown litter will concentrate first on off-site litter followed by on-site litter. Department of Corrections inmates will be the primary source of labor for daily litter cleanup work. In the event of a significant litter clean up operation, additional inmates will be requested or City employees and temporary labor will be utilized.

The Rapid City Landfill will also recover highway litter lost by vehicles on South Highway 79 in the vicinity of the landfill property from approximately the Catron Boulevard overpass to two miles south of the landfill entrance on both sides of the highway.

**ESTIMATED COSTS**

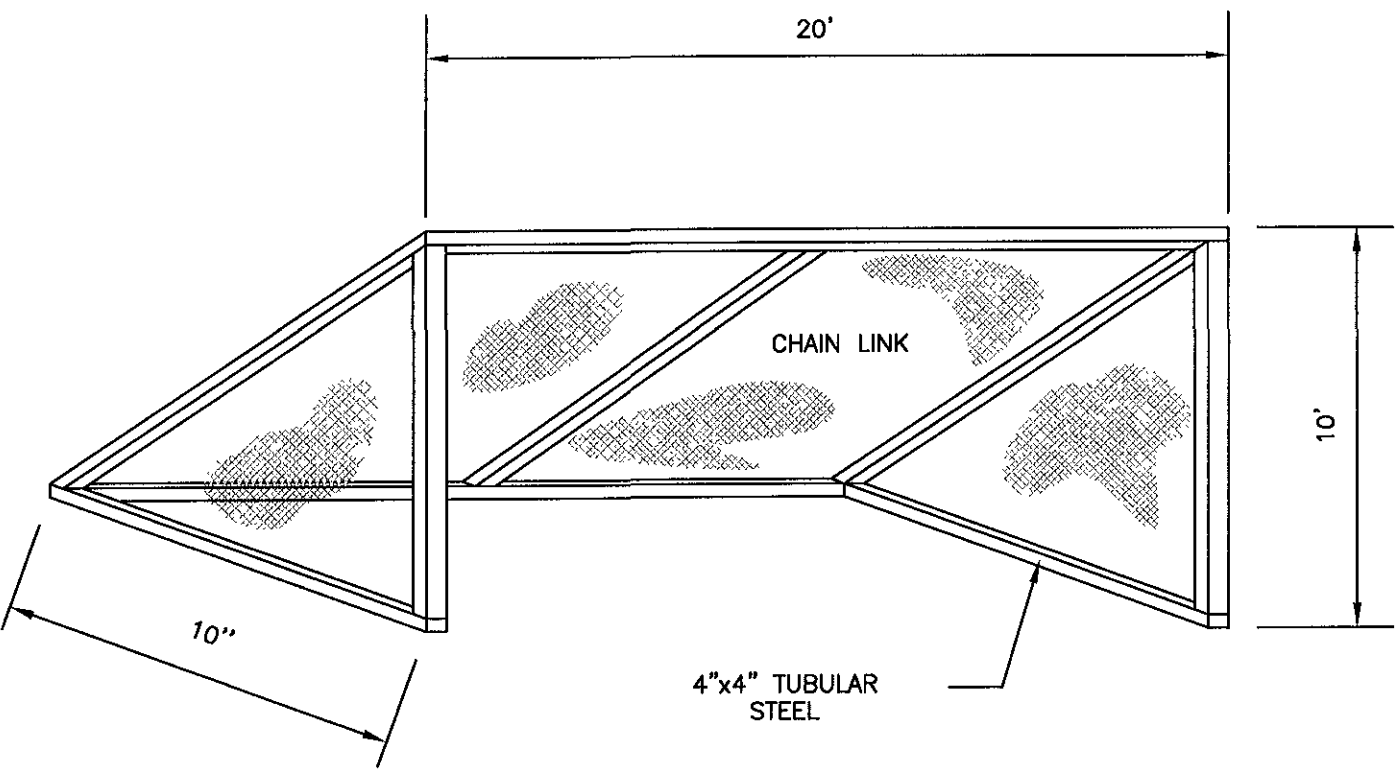
The estimated costs to implement the Litter Control Plan are as follows:

| <u>ITEM</u>                         | <u>DESCRIPTION</u>    | <u>COSTS</u>               |
|-------------------------------------|-----------------------|----------------------------|
| <b>OPERATING COSTS</b>              |                       |                            |
| 1. Litter Control Cages             | two per year @ \$3000 | \$6000/yr *                |
| 2. Litter cleanup                   | labor                 | \$25,000/yr *              |
| 3. Daily cover                      | operator<br>equipment | \$35,000/yr<br>\$40,000/yr |
| 4. Welded wire fencing              | materials             | \$1000/yr *                |
| <u>Total Annual Operating Costs</u> |                       | <u>\$107,000</u>           |
| <b>CAPITAL COSTS</b>                |                       |                            |
| 1. Boundary fencing                 | 6500 lineal feet      | \$100,000                  |
| 2. Litter netting                   | 1500 lineal feet      | \$45,000                   |
| 3. Wind monitoring                  | equipment             | \$3000                     |
| 4. Landscape improvements           | irrigation, trees     | \$40,000                   |
| <u>Total Capital Costs</u>          |                       | <u>\$188,000</u>           |

\* Currently Budgeted

**IMPLEMENTATION SCHEDULE**

This Litter Control Plan will be completely implemented within six months of approval by the Rapid City Common Council and the South Dakota Department of Environment and Natural Resources.



CITY OF RAPID CITY

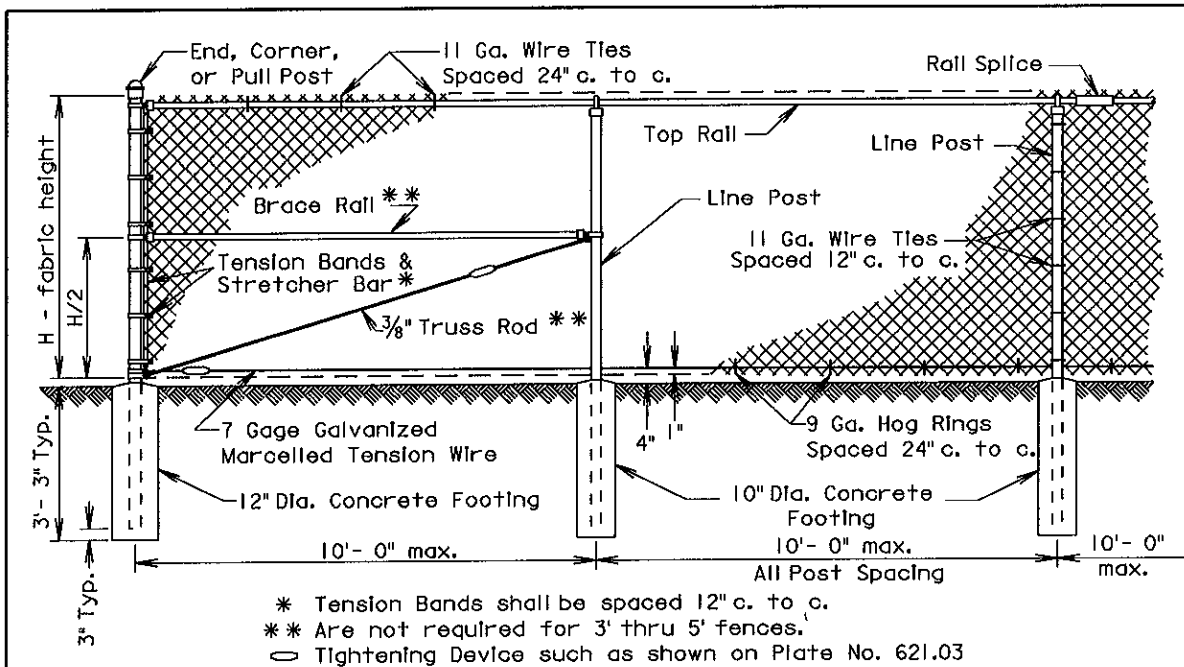
PUBLIC WORKS DEPARTMENT

LANDFILL LITTER CONTROL  
20' X 10' CAGE

DATE: 9-19-05

SEC. SHT.





| Component          | End, Corner & Pull Post |                   | Line Post          |               |              | Top & Brace Rail   |                   |
|--------------------|-------------------------|-------------------|--------------------|---------------|--------------|--------------------|-------------------|
|                    | Round Pipe Nominal      | Roll Formed Steel | Round Pipe Nominal | "C" Section   | H-Beam Steel | Round Pipe Nominal | Roll Formed Steel |
| Size               | 3.00" O. D.             | 3.5" x 3.5"       | 2.50" O. D.        | 1.875"x1.625" | 2.25"x1.70"  | 1.625" O. D.       | 1.625"x1.25"      |
| Weight (lb. / ft.) | 5.79 or 4.64            | 5.14              | 3.65 or 3.12       | 2.34          | 3.43         | 2.27 or 1.84       | 1.35              |

**GENERAL NOTES:**

Specific details of manufacture of component parts of the complete fence construction shall be subject to the approval of the Engineer. Commercially available items produced specifically for the use intended shall be used wherever possible in the construction of the fence.

"H" (Height of Fabric) shall be as shown on the Plans. Fabric is available in the the following heights: 36", 42", 48", 60", 72", 84", 96", 108", 120", & 144". Fabric heights 60 inches and under shall be knuckled at both selvages. Fabric heights 72 inches and over shall be knuckled at one selvage and twisted at the other selvage.

Chain Link Fabric shall be 2" mesh, No. 9 gage galvanized wire securely fastened to Tension Wire, Line Post, Rails, Braces and Stretcher Bars spaced as shown hereon.

Fence may be constructed with either Round Pipe, "C" Section, "H" Beam, or roll Formed Steel components as shown in the table above. Line post may be Round Pipe, "C" Section, or "H" Beam. The Corner Post and Rails shall be either Round Pipe or Roll Formed Steel. The type of components used shall have prior approval by the Engineer before construction.

Where fence must cross small bodies of water (such as drainage areas or ponds) that could freeze during the winter, use 11 gage Hog Rings. Provide only two ties per Tension Wire and Top Rail between line posts.

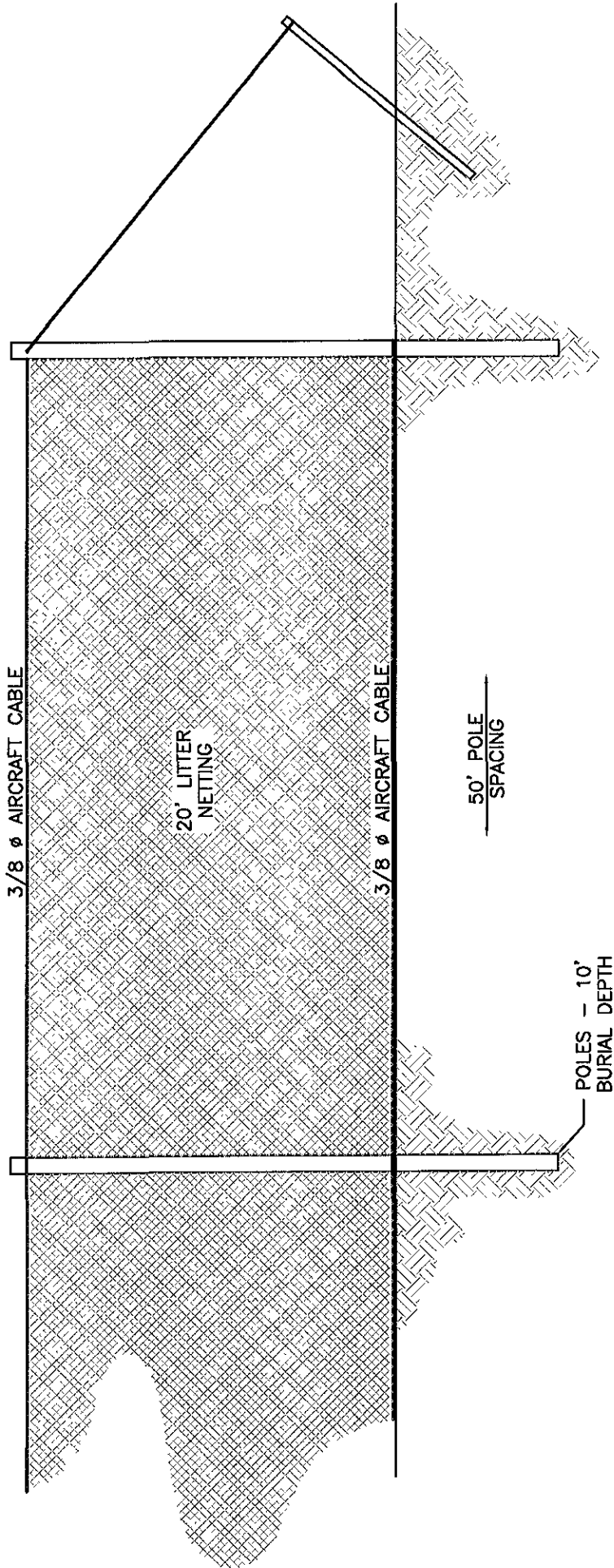
A suitable method of rail splicing shall be used to allow for expansion and contraction while maintaining proper position of the Top Rail.

March 31, 2000

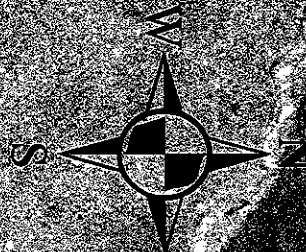
Published Date: 3rd Qtr. 2005

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T****CHAIN LINK FENCE WITH TOP RAIL****PLATE NUMBER  
621.01**

Sheet 1 of 1



|                                      |                         |      |
|--------------------------------------|-------------------------|------|
| CITY OF RAPID CITY                   | PUBLIC WORKS DEPARTMENT |      |
|                                      | DATE: 9-19-05           |      |
|                                      | SEC.                    | SHT. |
| LANDFILL LITTER CONTROL<br>20' FENCE |                         |      |



RAJAPATHY WASTE FACILITY

PROPOSED FENCE

SCALE 1:1000