CITY OF RAPID CITY

RAPID CITY, SOUTH DAKOTA 57701-2724

PLANNING DEPARTMENT

300 Sixth Street

e-mail: jeff.gies@ci.rapid-city.sd.us
city web: www.ci.rapid-city.sd.us

Jeff Gies, Transportation Planning Coordinator
Transportation Planning Division
Phone: 605-394-4120
Fax: 605-394-6636

MEMORANDUM

To: Public Works Committee Members

From: Jeff Gies, Transportation Planning Coordinator

Date: November 6, 2000

Re: Acceptance of City of Rapid City Fugitive Dust Control Plan

Attached for your review and acceptance at the November 15, 2000 Public Works Committee Meeting is the 2000 Fugitive Dust Control Plan for the City of Rapid City. Pennington County Ordinance #12 Revised (Air Quality Ordinance) requires any continuous operating activity or construction operation which creates fugitive dust emissions, or is responsible for fugitive dust emissions being generated within its control limits, to submit a compliance plan every three years. Street sanding, street sweeping, landfill activities, and emissions from City-owned property fall under this definition. The City is also responsible for enforcing ordinances and regulations that pertain to fugitive dust control on private properties.

The Fugitive Dust Control Plan contains two parts: 1) a narrative explaining City operations policies and compliance progress; and, 2) a fugitive dust emissions inventory for all City operations. Much of the narrative describes the continued improvements that are being made regarding anti-skid (sanding) materials and procedures, paving of unpaved streets, and improvements in street sweeping equipment. Although this plan exceeds compliance requirements set forth by the Pennington County Air Quality Ordinance, City Staff will continue to work with the South Dakota Department of Environment and Natural Resources to further reduce and monitor fugitive dust emissions that fall under City jurisdiction.

Please let me know if you have any questions.

FUGITIVE DUST CONTROL PLAN

CITY OF RAPID CITY

RAPID CITY, SOUTH DAKOTA

A FUGITIVE DUST CONTROL COMPLIANCE PLAN AND COMPLIANCE SCHEDULE

PRESENTED TO:

THE PENNINGTON COUNTY AIR QUALITY REVIEW BOARD

AS REQUIRED BY THE

PENNINGTON COUNTY ORDINANCE #12 REVISED FUGITIVE DUST REGULATION

PREPARED BY:

RAPID CITY AREA TRANSPORTATION PLANNING PROCESS

November 6, 2000

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INTRODUCTION

On August 1, 1980, the City of Rapid City presented a Fugitive Dust Control Plan to the Pennington County Air Quality Review Board. The plan enumerated sources of fugitive dust under City control and presented recommendations for controlling particulate emissions.

The 1980 Fugitive Dust Control Plan has been updated in 1986, 1990, 1993, and 1996. In the time period between 1980 and September of 2000, 28.3 miles of unpaved streets have been paved. Over the past twenty years, the City has made great progress in reducing the amount of unpaved public streets. A considerable portion of paving funds have come from the contributions of developers and individuals, with a 40% match contribution from the City. The 1996 estimate for remaining unpaved public streets was 7.5 miles. Since 1996, one additional mile of unpaved street has been paved. However, recent annexations by the City have resulted in additional unpaved public streets coming into the City's jurisdiction, bringing the total miles of unpaved public streets to 10.27 miles. The City will continue to work with landowners and developers to bring these unpaved public streets into compliance with City design standards.

A principal recommendation enacted since 1980 was the passage of an ordinance concerning parking lot paving standards. This ordinance required parking lot paving for all new construction. The City has also paved all City-owned parking lots. City Staff continues to enforce the parking lot paving requirements as well as subdivision development regulations.

The City of Rapid City is responsible for minimizing dust generated on City property and by City operations. The City also has some control over the dust generated by certain private operations. This report will outline City policy, procedure, and results obtained in reducing fugitive dust emissions from City property, City operations, and City controlled private operations.

COMPLIANCE PROGRESS

CITY THOROUGHFARES

AIR QUALITY COMPLIANCE STATUS

In 1979, a study entitled Recommended Paving Priorities for Dust Abatement in the Rapid City Area, listed unpaved streets in the Rapid City Nonattainment area. At that time the Rapid City Nonattainment Area was a 10 mile by 11 mile area surrounding Rapid City and was classified nonattainment for Total Suspended Particulate matter (TSP). Air quality compliance is now measured by the annual National Ambient Air Quality Standard (NAAQS) for Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers (PM_{10}).

Rapid City presently has a classified rating for PM_{10} compliance for the area within the Rapid City Three Mile Limit. However, there have been past violations of the PM_{10} National Ambient Air Quality Standard set by the U.S. Environmental Protection Agency (EPA) within the Rapid City Air Quality Control Area (also referred to as the Three Mile Limit or that area three miles wide extending in an outward direction from the corporate limits of Rapid City). The City of Rapid City, in cooperation with the South Dakota Department of Environment and Natural Resources, continues to work with the EPA in addressing issues relative to air quality standards in the Rapid City Area. The State Department of Environment and Natural Resources is also collecting $PM_{2.5}$ data so that an assessment can be made regarding impacts of potential $PM_{2.5}$ mandates that the Rapid City Area could be required to meet in the future. The EPA's $PM_{2.5}$ standard is currently being litigated.

OUT OF THE DUST PROGRAM

To estimate the quantity of size specific particulate emissions due to traffic, the Environmental Protection Agency has developed an empirical expression to calculate an emission factor. This factor depends on the amount of material passing the #200 sieve, vehicle speed and size, and the number of days with precipitation. Paving has proven to significantly reduce particulate emissions caused by automobile traffic and is the most effective means of reducing fugitive emissions caused by vehicular traffic.

To encourage paving of residential streets, the City developed the Out-of-the-Dust Program. Under this program, the City pays part of the paving costs. Property owners whose land benefits from the improvement must agree to a ten-year assessment to pay the remaining costs. Formerly, Revenue Sharing funds were available, and the City paid 50% of the cost of paving streets and 25% of the cost of paving alleys. In recent years, Congress has eliminated Federal Revenue Sharing. Now, the City allocates approximately $50,000 per year for matching funds for the Out-of-the-Dust Program. The City pays 40%, and the property owners along the project share the remaining 60% of the costs. During years 1996 through 2000, the City contributed between $40,000 - $50,000 each year towards Out-of-the-Dust projects.

ALLEYS

The 1991 Alley Inventory Project conducted by the Transportation Planning Division identified 32.5 miles of alleys within the Air Quality Unclassified Area. At that time, 6.75 miles were paved and 25.75 miles of alleys were unpaved. Since 1991, an additional 8.55 miles of alleys have been paved, bringing the total miles of paved alleys to 15.3 miles, and unpaved alleys to 17.2

miles. Many of the alleys paved by the City have been in high traffic commercial and industrial areas.

In addition, the Street Department paves alley entrances (that portion of the alley between the curb line and the back of the sidewalk). So far, they have paved approximately 50 alley entrances in this manner. This paving program continues as funds allow.

CITY-OWNED PARKING LOTS

All existing and newly constructed City-owned parking lots are now paved.

CONTROL OF FUGITIVE DUST EMISSIONS ALONG CITY THOROUGHFARES

Paving is obviously the most effective means in reducing fugitive dust emissions from roads and parking lots. For those roads that are paved, the following control methods are applied subject to weather:

SOURCE	CONTROL METHOD APPLIED
Downtown Streets	Swept once a week with a vacuum sweeper, followed by a regenerative vacuum sweeper, and flushed on Monday night
Arterials and Collectors	Swept every 3-4 weeks with regenerative air vacuum sweepers and flushed when conditions allow
Local Streets	Swept every 6-8 weeks with mechanical, vacuum, or regenerative air vacuum sweepers
Alleys	Sweep downtown alleys when needed
City-owned parking lots	Swept once a month or as needed; All city-owned parking lots are paved

CITY OPERATIONS

LANDFILL OPERATIONS

Location. The Rapid City Sanitary Landfill is located approximately one-half mile south of the South Truck Route (US Highway 16-B) and is adjacent to the west side of SD Highway 79. Since prevailing winds are from a northwesterly direction, particulate emissions generated at the landfill do not usually pollute the City.

Use. Approximately 200 acres of the 365 acre landfill site are being utilized at this time. This includes roads, buildings, revegetated areas, and active sites. The active landfill uses approximately forty acres. Of the 40 active acres, 11 acres are open for solid waste, 6 acres are open for rubble and 14 acres are open for hydrocarbon soils. The remaining 9 active acres (7 acres are utilized for yard waste composting, and 2 acres for asbestos disposal) do not contribute to fugitive emissions, as they do not have exposed earth. Seeding of exposed cells or borrow areas continues as they become closed or inactive.

Burning. State regulations allow landfill burning twice per year. However, the City does not permit any burning at the Rapid City Landfill. The preferred method of processing is chipping and mulching. A yard waste composting program began formal operation in 1993.

Road Paving. Approximately one-half mile of the haul road was paved in 1990. An additional one-quarter mile was paved in 1993 and one-half mile of the haul road was repaved in 1996. Permanent haul roads are paved utilizing recycled asphalt and/or hot mix asphalt. Temporary roads utilize limestone rock and/or recycled asphalt, if appropriate. All parking and circulation has been paved around the Material Recovery Facility site as well.

STREET SWEEPING OPERATIONS

Sweeper Fleet. The City of Rapid City presently has a fleet of seven sweepers. Of the seven sweepers, four are vacuum sweepers which use a broom and vacuum to pick up debris, two are regenerative air vacuums (air is re-circulated within the hopper, thereby keeping fugitive dust emissions to a minimum) which are a very efficient version of the vacuum sweepers, and one is a conventional 3-wheeled mechanical sweepers which uses a broom and conveyer belt to pick up debris.

UNIT #	DESCRIPTION	YEAR PURCHASED
42	Schwarze / Aaplex regenerative	1996
44	Schwarze / Aaplex regenerative	1996
45	Elgin mechanical	1988
47	Johnston vacuum	2000
48	Johnston vacuum	1999
49	Elgin regenerative	1992
52	Elgin vacuum	1983

Sweeping Operations. The core area (that area from West Boulevard to East Boulevard and Omaha Street to Columbus Street) will be swept primarily with the regenerative air vacuum twice a week and will be flushed twice a week with high-pressure water from a flusher truck.

Regenerative air vacuum sweepers and/or flushing trucks will be used on arterial routes and major collector streets every three to four weeks. A mix of mechanical, vacuum, and regenerative air vacuum sweepers will continue to work the residential streets with a circuit of the City being completed every six to eight weeks, depending on the amount of material on the streets and weather conditions.

City parking lots are swept approximately once a month, or as needed.

In the winter, the Street Department sweeps when the weather permits and when there is no ice or snow on the streets. Crews do not sweep when the temperature will cause water used in sweeping operations to freeze either on the road or in the machine.

Following a heavy sanding operation, it takes six to eight weeks of good sweeping weather to recover the icing sand on all streets. Winter weather can easily delay the cleanup, and another storm can easily negate any prior work.

Contract Sweeping. In the past, the City of Rapid City has explored the concept of contract sweeping. The extent of the involvement of the private community, as well as the costs for providing these services were investigated.

The results of the study have shown that the private sector needs a long-term commitment (4-5 years) from the local agency. This commitment would specify that a single contractor would have the contract for the entire period. Also, during that time, the City would have to agree not to change back to City crews as long as the work was being performed in an acceptable manner.

In addition to performing the street cleaning operation, the street cleaning crews are a very critical part of all street maintenance, including snow service operations. Without them, the City would not have enough employees for normal street maintenance activities, or be able to meet the demand during snowstorms. Switching to a system where sweeping is performed exclusively on a contract basis would not meet the City's overall needs.

The private sector has not been eager to provide supplemental sweeping service on an "as needed" basis due to the large initial capital expenditure for the equipment and the continuing maintenance costs. Presently, only two contractors have a sweeper to rent on a per hour basis.

On a larger scale, the amount of tax dollars spent on street sweeping are committed by the City Council during the budget approval process. The ability to increase the amount of street sweeping completed in the City, either by contracted or City staff, is directly related to the funds available and an expansion of services would have to be approved by Council at budget time.

In summary, the question of whether the City can contract with the private sector to provide additional sweeping at various times in the City can only be properly addressed and answered after the need for the work has been identified and funds have been appropriated by Council.

STOCKPILES

Street sanding material is stockpiled inside storage domes at the Steel Avenue shop. The City also excavates and stockpiles fill material east of Cambell Street behind Taco John's. The majority of the excavated area and stockpiles are vegetated. A future material storage facility will be built on City-owned property that is adjacent to Catron Boulevard.

ANTI-SKID MATERIALS

In 1993, new specifications were written for ice sanding material, reducing the amount of calcite content by 50% to a maximum content of 25%. **However, the City has discontinued the use of sand or sand mixtures, unless there is a shortage of salt.** If sand is needed, river sand (which meets the maximum calcite content of 25%) is combined with approximately 20% salt and 70 gallons of Magnesium Chloride per nine cubic yard load. The City originally began using the liquid deicer Magnesium Chloride (also called Mag Water or identified by its chemical name as $MgCl_2$) in the downtown core area. This product performs very well on ice to one-quarter inch thick. On ice buildup or packed snow, a combination of Magnesium Chloride and salt will successfully melt through the buildup.

Experimentation with Magnesium Chloride has led to the following successful application methods: *1) Salt/Mag Chloride Combination*—Depending on the size of the truck, 35 to 70 gallons of Mag Chloride is added to the top of a load of straight salt. 2) *Sand/Salt/Mag Chloride Combination*—Depending on the size of the truck, 35 to 70 gallons of Mag Chloride is added to the top of a load of a sand/salt mixture. **The sand/salt mixture is used only if the Street Department's supply of salt becomes low**. Past experimentation with Magnesium Chloride during various snowfall and icing events has refined the application process for salt/Mag Chloride applications. The City will continue to experiment to determine the most effective use of these de-icing materials. Refer to *Appendix A* for the complete specifications of Magnesium Chloride liquid deicer.

In the downtown core area sand use has been discontinued; however, during periods of heavier snow pack some sand may be required as determined by the Director of Public Works. The amount of sand used per event has been significantly reduced on all City streets. In fact, **sand is no longer applied during any snowfall or icing event**, unless the supply of salt runs low or becomes unavailable. Any new application or reapplication of sand is based upon traffic safety conditions in a specific area.

During the 1995 snow season the City experimented with the anti-skid agent, Realite. Realite is a hard-baked shale product that is angular is shape. Due to the angular shape, it remains in place on the roadway requiring fewer repeat treatments. The chemical and physical composition deters the traffic-induced breakdown other sanding materials experience. The breakdown of material size is considered to be the largest cause of fugitive emissions. Results of Rapid City's experimentation with Realite were very positive, and met the City's expectations for the product. However, costs and availability have made the continued use unfeasible. The City will continue to examine new anti-skid products and methods that meet the criteria for traffic safety and for reducing fugitive emissions.

Specifications of Material. *Appendix B* contains the complete specifications for ice sanding material.

The following gradation is required:

SIEVE	%PASSING
3/8"	100%
1/4"	80-100%
# 4	65-95%
# 8	45-75%
# 16	40-55%
#200	0-2%

Limestone Use. The City has discontinued the use of limestone chips in sanding operations and sanding stockpiles containing limestone have been expended. If limestone chips are used in emergency situations for fuel spills or other special circumstances, the Street Superintendent reports limestone usage to Air Quality Staff. Except for material lost off roadway areas, all of the material is removed by street sweepers after the event.

Containment Structures for Sand and Salt. The City Street Department built the first sand/salt storage dome in 1996 at the City Street Department yard on Steele Avenue. A second sand/salt dome was completed on the Street Department site in 1999. A third facility is planned adjacent to Catron Boulevard.

TRUCK COVERS

Existing City Ordinance (Section 10.20.090) regulates the covering of trucks. Pennington County Ordinance #12 Revised also requires "that all vehicles that are transporting fugitive dust emitting materials within the Air Quality Three-Mile Limit on public roads shall be covered with a tarp to reduce such emissions or must use a method that is equally effective in reducing such emissions". Any violation of this requirement shall be subject to enforcement action. *Pennington County Ordinance No. 12 Revised (Air Quality Ordinance) is attached at the end of this plan as a reference.*

STREET REINTRAINMENT REQUIREMENTS

Section 3.03 (Street Reintrainment Requirements) of Pennington County Air Quality Ordinance #12 Revised describes reintrainment as: "A process in which particulate matter has been deposited from one place to another and then liberated into the ambient air by vehicular travel, wind, or other causes."

The following information is taken from Section 3.03 as it pertains to the Fugitive Dust Control Plan:

A. No person shall place any street sanding materials upon any road, highway, driveway, or parking lot to which the public has general access which is located in the area defined in Section 1.02 (1) which does note meet both of the following requirements:

    1. A durability or hardness as defined in Moh's Mineral Hardness Scale of greater than 6 for 70% of the material used.

2. No more than 3% of the total particle material content by weight may be smaller than the 200 sieve.

For street sanding material, these criteria apply only to the material prior to the addition of chemicals. Material of a lesser hardness may be used on steep roads unless it is determined that a material that meets the above standards and has the same effectiveness can be applied.

Any political subdivisions (public or private entities that maintain street operations within the Air Quality Three-Mile Limit) responsible for maintaining any public road inside the area in which road sanding materials are regulated, shall clean the center line and areas immediately adjacent to the travel lane. Cleaning shall commence under one or more of the following conditions:

1. When it has been determined by the Air Quality Director that the streets are sufficiently dry enough to commence street sweeping;

2. When the Air Quality Director has determined that there is a fugitive emissions problem due to street sanding material.

Street cleaning will not be required on public roads with restricted travel, when unusual weather or other circumstances prevent it. The political subdivision shall include in its compliance plan a street cleaning plan listing priority streets and schedules.

B. Any political subdivisions maintaining public roads inside the area in which road sanding materials are regulated shall water flush such roadways when it has been determined by the Air Quality Director that street sanding material is causing a fugitive emission problem. This will be conducted after street cleaning. Street water flushing is not required if it endangers public safety or water use restrictions are in effect. The political subdivision shall include in its compliance plan a water flushing plan.

C. All vehicles that are transporting fugitive dust emitting materials within the area designated in Section 1.02 (1) on public roads shall be covered with a tarp to reduce such emissions or must use a method that is equally effective in reducing such emissions.

D. Any material that is deposited, other than street sanding material, on any public roadway on which vehicular travel is not restricted, that could be reintrained as fugitive emissions shall be cleaned or removed within 24 hours of deposition. The cleaning or removal process shall be conducted so that minimal fugitive emissions are generated.

DUST PALLIATIVES

Appendix C contains the Dust Palliative Policy approved by the Rapid City Common Council in 1988. In summary, magnesium chloride may be used as a dust palliative if approved by Council under the following circumstances:

1. In a new subdivision prior to the hard surface applications.

2. Existing street within areas presently zoned industrial, light industrial, agriculture, or park forest.

3. Existing gravel streets in residential areas which serve primarily as an access route and do not function as a local residential street.

Those using dust palliatives must bond so that the City can bring the roadway back to normal conditions, if the road is not maintained to city standards. *Appendix D* contains a copy of the Dust Palliative Permit.

ASPHALT SURFACE TREATMENTS

Policy. The policy on asphalt surface treatments is as follows:

-Cover aggregate shall be wet before placement.
-Cover aggregate will not be spread if winds are greater than 5 mph.
-After placement of the cover aggregate, the street is watered to minimize dust.
-The street is broomed within seven days.
-The street is swept again as needed.

The same controls are applied to projects contracted out by the City as to projects undertaken by the City Street Department. *Appendix E* is a copy of Section 37, Asphalt Surface Treatment, from the City of Rapid City Standard Specifications for Public Works Construction. This section outlines the responsibilities of a contractor for a City project. Section 116 is also attached as part of *Appendix E* as it contains the specifications for the aggregates used for asphalt surface treatment.

CONTROL OF FUGITIVE EMISSIONS FROM CITY OPERATIONS

The following table summarizes control methods used in reducing fugitive dust emissions from City operations:

SOURCE	CONTROL METHOD APPLIED
Landfill Operations	Open areas are reclaimed on an ongoing basis. Three-quarters of a mile of the haul road is paved and any future roads will be paved.
Street Sweeper Fleet	The City continues to upgrade and expand its sweeper fleet by purchasing more efficient sweepers that generate fewer emissions during operation.
Anti-Skid Materials	The routine use of sand has been discontinued. More stringent sanding specifications have reduced calcium content, thereby reducing emissions from sanding if it must be used. City continues to experiment with and anti-skid mixtures to find the most efficient application means. Limestone use has been discontinued.
Sand and Salt Storage	All material is stored inside two containment structures. The City intends to build an additional containment structure.
City Ordinances	The City continues to enforce ordinances and policies relative to the control of fugitive emissions from City Operations and the use of public streets.

PRIVATE OPERATIONS

PRIVATE STREETS

Streets in certain developments are private, constructed and maintained by a homeowner's association. Two examples of developments with private streets within the City limits are Springbrook Acres and Woodridge Subdivision. The streets in Woodridge are paved, but many of the streets in Springbrook Acres are not. Since 1980, a blotter has been applied to 1.4 miles of private streets, but approximately 2.5 miles of streets are still gravel. Since these are existing private streets, the City has no control over requiring paving in these areas. However, when platting is requested on property that is adjacent to these unpaved private streets, the City requires the street section to be paved to a City design standard.

The Rapid City Subdivision Ordinance requires that newly platted private streets be designed and built according to City standards. At the final platting stage, a bond is required if the improvements have not been made. City policy discourages the creation of private streets because of problems that often occur years after original platting. One such example is the lack of control over street cleaning or sanding operations on private streets.

PARKING LOTS AND DRIVEWAYS

The Parking Lot Paving Ordinance of 1980 requires the paving of all new, improved, or converted parking lots within the City. *Appendix F* contains this ordinance.

In 1998, the Rapid City Common Council amended the Parking Ordinance, a copy of which is contained in *Appendix G.*

PARKING ON PUBLIC RIGHT-OF-WAY

In many areas of town, the right-of-way behind the curb is illegally used for parking. Often, this area is not paved. When new construction occurs, a paved parking lot is required to be located on private property. It is not permitted to use right-of-way for required parking or circulation.

UNSEEDED PRIVATE PROPERTY

The issue of unseeded private property has been addressed in two major ways:

1. Grading permits require seeding as a condition of obtaining an approved grading permit. A copy of the Grading Permit it attached as *Appendix H.*

2. New subdivisions require bonding for seeding at the time of platting. Please refer to *Appendix I* for seeding requirements.

CONSTRUCTION SITES

Pennington County requires an Air Quality Permit for all construction on an area of one acre or more in size within the Air Quality Three-Mile Limit. This requirement is adequate to enforce dust control on construction sites.

The City Grading Permit Process requires that a Pennington County Air Quality Permit be obtained prior to the grading permit being issued.

Appendix J contains Section 7.28 (Dirt/Dust Control) from the City of Rapid City's Standard Specifications for Public Works Construction. The beginning of this section includes the following statements relative to the control of dust on City projects:

> All activities associated with this contract shall conform to Pennington County Ordinance #12 Revised, "Fugitive Dust Regulation".
>
> The Contractor shall make every reasonable effort to minimize fugitive dirt or dust as a result of construction activities. The Engineer may require the Contractor to water or take other actions necessary to prevent blowing dirt and/or dust and other nuisance conditions at no additional cost to the owner.

CONTROL OF FUGITIVE EMISSIONS FROM PRIVATE OPERATIONS

The following table summarizes control methods used in reducing fugitive dust emissions from private operations:

SOURCE	CONTROL METHOD APPLIED
Private Streets	City Subdivision Ordinance requires newly platted streets to be built to City Standards.
Parking Lots	Parking Lot Paving Ordinance requires all new or expanded parking lots be paved.
Unseeded Property	New subdivisions require bonding at time of platting for seeding. Grading permits require seeding as a condition of obtaining an approved permit.
Construction Sites	City grading permit requires that a Pennington County Air Quality Permit is obtained prior to grading permit being issued.

CONCLUSIONS

The City of Rapid City continues to make progress in limiting sources of dust over which it has control. Only 10.27 miles of City Street remain unpaved. All City-owned parking lots have been paved. The City Street Department continues to experiment with anti-skid and deicing materials to find mixtures that are effective in reducing accidents and will also lower fugitive dust emissions. Furthermore, sand is no longer applied on any City Streets unless salt and/or magnesium chloride become unavailable. As the sweeper fleet is expanded and upgraded, the frequency and the efficiency of cleaning will increase. Reclamation work continues at the Landfill as new areas are opened for use and old areas are closed and seeded. The Landfill will continue to pave haul roads within the facility to help reduce emissions caused by vehicular traffic.

City Staff continues to enforce the Parking Lot Ordinance, the Parking Lot Paving Ordinance, and the Subdivision Regulations. Staff also continues to require dust control at construction sites and seeding as a condition of grading permits. City policy discourages the creation of private streets because of the dust control problems associated with their use.

The City will continue to be vigilant in improving the air quality in the Rapid City area. This will be accomplished by new and improved equipment and materials, the enforcement of policies and ordinances relating to dust control, and the continued efforts to implement new ordinances and amend existing ordinances which aid in reducing fugitive dust emissions.

EMISSIONS CALCULATIONS

Quantities of particulate emissions will be calculated for the sources of dust enumerated in this report.

Emissions factors used in the emissions calculations were taken from the following publications:

[*Reference 1*] EPA Control of Open Fugitive Dust Sources; September, 1988

[*Reference 2*] U.S. Environmental Protection Agency's report, compilation of Air Pollutant Emission Factors, 5th Edition (also know as AP-42); 1995

[*Reference 3*] National Emissions Data Systems Source Classification Codes and Emission Factor Listing for PM_{10}; August, 1988

PAVED STREETS

The following emissions factors are taken from Section 13.2.1.3 of *Reference #2*.

Emissions factor: $E = k\left(\frac{sL}{2}\right)^{0.65}\left(\frac{w}{3}\right)^{1.5}$

- E = particulate emission factor in grams **(see table below for road category**)
- k = base emission factor for particle size range and units of interest = **7.3 g/VMT for PM_{10} particle size**
- sL = road surface silt loading in g/m^2 **(see table below for road category)**
- W = vehicle weight in Metric Tons = **2.5** for Rapid City streets

** To convert the emissions factor from the above equation into pounds, the factor is divided by 454.

E = lbs. Per VMT	sL*	Road Category	ADT
0.004	0.3	High ADT Roads[b] 7 Non-Sanding Months	Principal Arterials = 16,740 vehicles/day Minor Arterials = 7480 vehicles/day Collectors = 5480 vehicles/day
0.010	1.5	Low ADT Roads[b] 7 Non-Sanding Months	300 vehicles/day
0.005	0.5	High ADT Roads 5 Winter Sanding Months	Principal Arterials = 16,740 vehicles/day Minor Arterials = 7480 vehicles/day Collectors = 5480 vehicles/day
0.016	3	Low ADT Roads 5 Winter Sanding Months	300 vehicles/day
0.014	2.5	Paved Alleys 12 months – No Sanding	30 vehicles/day

[a] 50th percentile estimates were used for silt loading values on all roads.

[b] High ADT (Average Daily Traffic) Roads are roadways with 5,000 vehicles per day or more. Low ADT roads are all roadways with less than 5,000 vehicles per day.

****** Although the downtown core area streets are not sanded, these roads were included in the winter sanding emissions equations. No emission reductions were figured for these roads.

After the emissions factor in pounds per Vehicle Mile Traveled (E = lbs. / VMT) was calculated for each road category as shown in the table on page 13, the next step is to calculate the annual Vehicle Miles Traveled (AVMT). Listed below is the formula for calculating AVMT. Pages 15-16 also show the breakdown by street class for calculation purposes. Annual Vehicle Miles Traveled are then used in the final calculations for emissions tonnages. The formula and calculations for emissions tonnages begin on page 15.

Formula for Calculating Annual Vehicle Miles Traveled:

ADT x mi./road class = vehicle miles/weekday x 252 weekdays/yr. = annual vehicle miles/weekdays

Vehicle miles/weekday x 0.7 x 113 non-weekdays/yr. = annual vehicle miles/non-weekdays

Annual veh.mi./weekdays x annual veh.mi./non-weekdays = **Annual Vehicle Miles Traveled (AVMT)**

ADT = Average Daily Traffic. This number was obtained by 1) Averaging all of the traffic counts taken on every individual street within each street class category. 2) Averaging the entire street class category. The ADT for each street class can be found in the table on page 13.

mi./road class = Miles of roadway for each class of street:

PRINCIPAL ARTERIALS =	70 miles Total
MINOR ARTERIALS =	25 miles Total
COLLECTORS =	31 miles Total
LOCAL STREETS =	231 miles Total
PAVED ALLEYS =	15.3 miles Total

252 weekdays/yr. = Number of weekdays in a year

0.7 = Non-weekday traffic volumes are approximately 70% of weekday traffic volumes

113 non-weekdays/yr. = Number of non-weekdays in a year

Calculations for Vehicle Miles Traveled per year:

Principal Arterials

16,740 x 70 = 1,171,800 x 252 = 295,293,600
1,171,800 x 0.7 x 113 = 92,689,380
295,293,6000 + 92,689,380 = **387,982,980 Annual VMT**

Minor Arterials

7,480 x 25 = 187,000 x 252 = 47,124,000
187,000 x 0.7 x 113 = 14,791,700
47,124,000 + 14,791,700 = **61,915,700 Total Annual VMT**

Collector Streets

5,480 x 31 = 169,880 x 252 = 42,809,760
169,880 x 0.7 x 113 = 13,437,508
42,809,760 + 13,437508 = **56,247,268 Annual VMT**

Local Streets

300 x 231 = 69,300 x 252 = 17,463,600
7,463,600 x 0.7 x 113 = 5,481,630
17,463,600 + 5,481,630 = **22,945,230 Total annual VMT**

Paved Alleys

30 x 15.3 = 459 x 252 = 115,668
459 x 0.7 x 113 = 36,307
115,668 + 36,307 = **151,975 Total annual VMT**

Formula and Calculations for Emissions Tonnages:

Winter months are assumed to occur for an average of 5 months out of the year when sanding material is applied to the streets (sanding operations have a separate emissions factor). Paved street emissions are calculated for the other 7 months when sanding does not occur. The yearly emissions tonnage for paved streets is the sum of paved streets emissions tonnages for the 7 months of the year when sanding does not occur plus the yearly emissions tonnages for the 5 winter months when sanding operations occur. The 5 winter month emissions calculations are based on the assumption that street sand is applied routinely during snowfall or icing events. However, this higher sanding emission factor **does not take into consideration the City's policy/practice of using street sand only during emergency situations**. Thus, actual emissions are presumably much lower that what has been calculated.

The following formula is used to figure pounds of fugitive dust emissions for each class of road:

***For the 7 summer months – NO SANDING*:**

$$\frac{\text{lbs./VMT}}{2000} \times \frac{\text{annual Vehicle Miles Traveled}}{1.714} = \text{Tons for the 7 summer months}$$

For the 5 winter months – SANDING:

$$\frac{\text{lbs./VMT}}{2000} \times \frac{\text{annual Vehicle Miles Traveled}}{2.4} = \text{Tons for the 5 winter sanding months}$$

NON-SANDING SEASON (7 MOS.)

HIGH ADT ROADS

Principal Arterials

$$\frac{0.004}{2000} \times \frac{387{,}982{,}980 \text{ miles/yr.}}{1.714} = 453 \text{ Tons}$$

Minor Arterials

$$\frac{0.004}{2000} \times \frac{61{,}915{,}700 \text{ miles/yr.}}{1.714} = 72 \text{ Tons}$$

Collectors

$$\frac{0.004}{2000} \times \frac{56{,}247{,}268 \text{ miles/yr.}}{1.714} = 66 \text{ Tons}$$

LOW ADT ROADS

$$\frac{0.010}{2000} \times \frac{22{,}945{,}230 \text{ miles/yr.}}{1.714} = 67 \text{ Tons}$$

= 658 Tons For Non-Sanding Season

SANDING SEASON (5 MOS.)

HIGH ADT ROADS

Principal Arterials

$$\frac{0.005}{2000} \times \frac{295{,}293{,}600 \text{ miles/yr.}}{2.4} = \textbf{308 Tons}$$

Minor Arterials

$$\frac{0.005}{2000} \times \frac{61{,}915{,}700 \text{ miles/yr.}}{2.4} = \textbf{65 Tons}$$

Collectors

$$\frac{0.005}{2000} \times \frac{56{,}247{,}268 \text{ miles/yr.}}{2.4} = \textbf{59 Tons}$$

LOW ADT ROADS

$$\frac{0.016}{2000} \times \frac{22{,}945{,}230 \text{ miles/yr.}}{2.4} = \textbf{76 Tons}$$

= 508 Tons For Sanding Season

PAVED ALLEYS

Because alleys are not sanded, an annual emissions factor is used:

$$\frac{0.014}{2000} \times 151{,}975 = \textbf{1 Ton}$$

TOTAL UNCONTROLLED EMISSIONS FROM ALL PAVED STREETS AND ALLEYS DURING THE ENTIRE YEAR (BOTH SANDING AND NON-SANDING MONTHS):

= 1167 Tons Per Year

UNPAVED STREETS

The following unpaved street emissions factors are taken from Section 13.2.1.3 of *Reference #2.*

Emissions factor: $E = k\left(\frac{sL}{2}\right)^{0.65}\left(\frac{w}{3}\right)^{1.5}$

E	=	particulate emission factor **(see table below for road category)**
k	=	base emission factor for particle size range and units of interest **= 7.3 g/VMT for PM_{10} particle size**
sL	=	road surface silt loading in g/m^2 **(70 g/m^2 for unpaved streets)**
W	=	average vehicle weight in Metric tons = **2.5** for Rapid City streets

****** To convert the emissions factor from the above equation into pounds, the factor is divided by 454.

PM_{10} Emissions Lbs./VMT	Road Category	Miles of Such Roads	Ave. Daily Traffic Vehicles/Day
0.123 #/VMT	unpaved local streets	10.27 miles	150 vehicles/day
0.123 #/VMT	unpaved alleys	17.20 miles	20 vehicles/day

Annual emissions are calculated by using the following formulas:

UNPAVED LOW ADT ROADS (Local Roads)

150 veh./day x 10.27 miles = 1,541 $\frac{\text{veh. mi.}}{\text{weekday}}$ x 252 = 388,332 $\frac{\text{mi.}}{\text{yr.}}$

1541 $\frac{\text{veh. mi.}}{\text{weekday}}$ x 0.7 x 113 $\frac{\text{days}}{\text{yr.}}$ = 121,893 $\frac{\text{mi.}}{\text{yr.}}$

Total Annual VMT = 388,332 + 121,893 = 510,225 miles/yr.

$\frac{0.123\,\#/\text{VMT}}{2000\,\text{lbs.}/\text{Ton}}$ x 510,225 = **31.4 Tons/yr.**

UNPAVED ALLEYS

20 veh./day x 17.2 miles = 344 $\frac{\text{veh. mi.}}{\text{weekday}}$ x 252 = 86,688 $\frac{\text{mi.}}{\text{yr.}}$

344 $\frac{\text{veh. mi.}}{\text{weekday}}$ x 0.7 x 113 $\frac{\text{days}}{\text{yr.}}$ = 27,210 $\frac{\text{mi.}}{\text{yr.}}$

Total Annual VMT = 86,688 + 27,210 = 113,898 miles/yr.

$\frac{0.123\,\#/\text{VMT}}{2000\,\text{lbs.}/\text{Ton}}$ x 113,898 = **7.0 Tons/yr.**

Total Emissions from unpaved roads and alleys = **38.40 TONS/YR.**

A 5% CONTROL FACTOR IS APPLIED TO UNPAVED ROADS AND ALLEYS SINCE STREETS ARE ESTIMATED TO BE WET OR SNOW COVERED 5% OF THE YEAR IN THIS REGION. THIS REDUCES EMISSIONS TO = 36.48 TONS/YR.

LANDFILL OPERATIONS

Landfill operations create dust by removing the natural vegetation cover and leaving large areas of earth exposed. Emissions from this type of operation would be similar to emissions from a construction site. At the present time, approximately 31 acres of the 365 acre landfill are open.

The following formula for determining emissions from daily construction operations is taken from *Reference #2:*

E_1 = 31 acres x 0.30 T/acre/month x 12 mo./yr. = 111.6 tons/year

E_1 = **111.6 tons per year** from landfill operations within the 31 acre open area.

Wind erosion emissions must also be considered within the disturbed 31 acre area. The remaining 325 acres of the landfill are vegetated or are covered by buildings. The following formulas used to determine those emissions are taken from Section 7.1.2.1.1 of *Reference #1*:

$E = (k)(a)(I)(K)(C)(L^1)(V^1)$

Where:

- E = PM_{10} wind erosion losses of disturbed soil areas
- k = The estimate fraction of Total Suspended Particulates which are PM_{10} = **0.5**
- a = Portion of total wind erosion losses that would be measured as suspended particulates = **0.025**
- I = Soil erodibility, tons/acre/year = **47 T/acre/year**
- K = Surface roughness factor, dimensionless = **1.0**
- C = climatic factor, dimensionless = **0.20**
- L = $\sqrt{acres\ x\ 43{,}560\ ft^2/acre}$ = ft. Estimate for L is then used to determine L^1 by referencing table on page 7-14 of *Reference #1*.
  = unsheltered field width factor, dimensionless = **0.71** for 31 acre disturbed area
- V = **0.0**
- V^1 = Vegetative cover factor, dimensionless = **1.0**

(0.5)(0.025)(47)(1.0)(0.20)(0.71)(1.0) = 0.0834 tons/acre/year

0.0834 x 31 acres = **2.59 ton/yr** total emissions from wind erosion within the 31 acre disturbed landfill area

Since 1993, all haul roads have been paved. All roads and circulation around the Material Recovery Facility (MRF) have also been paved. The MRF roads have been included in the calculations with the existing haul roads, bringing the landfill road network mileage up to 0.75 mile. The yearly average for single-axle vehicles remains at 44 trips/day and the yearly average for tandem axle vehicles is 104 trips/day. Average speed on landfill haul roads is approximately 30 miles per hour. The landfill is open an average of 11 hours a day.

The following emissions factors are taken from Section 13.2.1.3 and Table 13.2.1-1 (Paved Roads at Industrial Facilities) of *Reference #2*.

Emissions factor: $E = k\left(\frac{sL}{2}\right)^{0.65}\left(\frac{w}{3}\right)^{1.5}$

E = particulate emission factor = 0.0959 lbs. Per vehicle mile traveled
k = base emission factor for particle size range and units of interest = 7.3 g/VMT
sL = road surface silt loading in g/m^2 = 7.4 for solid waste landfills
W = average vehicle weight in Metric Tons = 5.6 average for landfill roads

****** To convert the emissions factor from the above equation into pounds, the factor is divided by 454.

148 trips/day x 0.75 mile = 111 Vehicle Miles Traveled/day

11 x 365 days/yr. = 40,515 Annual VMT

$\frac{0.0959 \text{ lbs./VMT}}{2000 \text{ lbs./Ton}}$ x 40,515 = **1.94 Tons/yr.**

TOTAL LANDFILL EMISSIONS =

111.60 Ton/yr. – Daily operations
2.59 Ton/yr. – Wind Erosion
1.94 Ton/yr. – Paved Haul Roads
TOTAL 116.13 Ton/yr.

EMISSIONS CONTROLS

The following table summarizes the yearly emissions total for paved streets and alleys before emissions controls are factored:

ROAD CATEGORY	ANNUAL AVE.	7 MOS. NO SAND	5 MOS. SANDING	TOTAL
High ADT Roads	--	591 Tons	432 Tons	1023 Tons/yr.
Low ADT Roads	--	67 Tons	76 Tons	143 Tons/yr.
Paved Alleys[a]	1.0 Tons	--	--	1.0 Tons/yr.
Unpaved Low ADT[a] Roads (Local Roads)	31.4 tons	--	--	31.4 Tons/yr.
Unpaved Alleys[a]	7.0 tons	--	--	7.0 Tons/yr.

[a] An annual emissions factor is used for Paved Alleys, Unpaved Local roads, and Unpaved Alleys since they are not sanded during the winter months.

TOTAL UNCONTROLLED EMISSIONS = **1205 TONS/YR**.

The following table summarizes the reduction in emissions after street sweeping is considered:

ROAD CATEGORY	UNCONTROLLED EMISSIONS Tons/Yr.	CONTROL[a] FACTOR %	EMISSIONS AFTER CONTROLS Tons/yr.
High ADT Roads	335.79 Tons/yr.	30% + 5% (wet factor)[b] = 35%	595 Tons/yr.
Low ADT Roads	127.94 Tons/yr.	20% + 5% = 25%	96 Tons/yr.
Paved Alleys	0.4937 Tons/yr.	5% (wet factor)	0.95 Tons/yr.
Unpaved Low ADT Roads (Local Roads)	22.91 Tons/yr.	5% (wet factor)	21.85 Tons/yr.
Unpaved Alleys	10.30 Tons/yr.	5% (wet factor)	6.65 Tons/yr.

[a] The % control is determined by the type of sweeper used and the frequency of sweeping operations

[b] 5% control for wet factor is added to the % control for street sweeping. It is estimated that streets are wet or snow covered 5% of the year in this region.

****** *40% control in the downtown core area was not factored into the emissions reduction calculations.*

TOTAL EMISSIONS BEFORE CONTROL APPLIED = **720.45 TONS/YR.**

TOTAL EMISSIONS REDUCTION AFTER CONTROL APPLIED = **484.55 TONS/YR.**

DETAILED SPECIFICATIONS FOR MAGNESIUM CHLORIDE (MGCL2) LIQUID ROAD DEICER

Magnesium Chloride (MgCL2) shall be furnished for the contract year as specified herein.

All Magnesium Chloride (MgCL2) purchased by the City of Rapid City shall conform to the following specifications.

Shall be a liquid solution capable of effective deicing at temperatures of + 11 degree F or less.

Solution shall have a primary component of 27% - 31% Magnesium Chloride (MgCL2) also containing a corrosion inhibitor to effectively reduce the corrosive action on mild steel.

Product to be effective in preventing salt induced scaling on all concrete surfaces.

Product shall not contain any solid particles large enough to be detrimental to the operation of pumps, valves and nozzles of deicing equipment.

Liquid deicer will be delivered within twelve (12) hours of an order being placed for bulk quantities of 3,000 to 5,000 gallon lots; or vendor will furnish a storage tank at the Street Division. Storage tank to be tank trailer and tank will be moved out in the spring. Product to be available at once and vendor will make sure location does not run out of product. Delivery time is within 24 hours. Vendor will buy back product that is not used, handling charge for buy back will be negotiated.

APPENDIX B

ICE SANDING MATERIAL
Street Division and Regional Airport

CITY OF RAPID CITY
RAPID CITY, SOUTH DAKOTA

November 17, 1997
2:30 P.M.

JIM SHAW
MAYOR

COUNCIL MEMBERS

Tom Johnson
Vess Steinburg
Clarence Knapp
Karen Bulman
Al Cornella

Stan Petrik
Todd Ossenfort
Steve Rolinger
Ron Kroeger
Dennis Catron

Jimmy A. Hilton, PE/LS
DIRECTOR OF PUBLIC WORKS
OPERATIONS

DETAILED SPECIFICATIONS
ICE SANDING MATERIAL

RAPID CITY STREET DIVISION

The sand to be used for ice conditions on the street shall conform to the following specifications:

GRADATION (fine)

SIEVE	PERCENT PASSING
3/8"	100%
1/4"	80-100%
#4	65-95%
#8	45-75%
#16	40-55%
#200	0-2%

1) Materials supplied shall be clean, durable and free of any deleterious substances.

2) Scale tickets showing weight and type of material will be submitted with each load.

3) Sand shall be all naturally deposited or partially impacted to meet specifications. No crushed limestone or crushed rock, other than a natural sand, will be permitted.

4) The liquid limit of the material shall not exceed 26 and the Plastic Index shall not exceed 3. The material shall not contain more than 25% calcite, as determined by x-ray defraction analysis.

5) The City will try to give the supplier as much advanced notification as possible on delivery but conditions may warrant that delivery on the sand request should begin within 24 hours.

6) Quality tests to determine the percentage of calcite contained in the material are required. Sand shall be sampled such that portions of the sample are taken from 3 to 5 different locations throughout the stockpile and thoroughly mixed. The sample shall be delivered to the Mineral Industries testing laboratory on the South Dakota School of Mines and Technology campus. The contact person there is: Briant Davis at 394-2496. Payment for this test shall be the responsibility of the bidder. Satisfactory test result shall be obtained and submitted with the bid.

APPENDIX C

POLICY ON DUST PALLIATIVE

FROM: PUBLIC WORKS DEPARTMENT
DATE: 3-17-88

SCOPE OF WORK

TO DETERMINE A SET POLICY ON THE APPLICATION OF A DUST PALLIATIVE WITHIN THE CITY OF RAPID CITY. THIS POLICY SHOULD SPECIFY THE FOLLOWING:

A. LOCATIONS WHERE DUST PALLIATIVES WOULD NOT BE PERMITTED
B. LOCATIONS WHERE DUST PALLIATIVES WOULD BE PERMITTED
C. CONDITIONS OR RESTRICTIONS THAT WOULD APPLY TO THE APPROVED LOCATIONS
D. TYPE OF APPROVED MATERIAL

SUMMARY OF RESULTS

1. DUE TO THE COSTS OF APPLYING, MAINTAINING, AND REAPPLYING DUST PALLIATIVES CITY-WIDE OR THE EXTREME DIFFICULTY IN ADMINISTRATING A PROGRAM OF PRIVATE APPLICATION OF THE TREATMENT, DUST PALLIATIVES WILL NOT BE ALLOWED AS A SUBSTITUTE FOR HARD SURFACE PAVEMENT IN EXISTING RESIDENTIAL OR COMMERCIAL AREAS OF TOWN.

   THIS RESTRICTION WOULD ALSO APPLY TO NEW ROADWAYS CREATED UNDER EXISTING SUBDIVISION REGULATIONS.

2. THERE ARE A LIMITED AMOUNT OF SPECIALIZED AREAS IN RAPID CITY WHERE THE APPLICATION OF AN APPROVED DUST PALLIATIVE WOULD BE MANAGEABLE AND WOULD SERVE TO HELP IN THE OVERALL IMPROVEMENT OF AIR QUALITY WITHIN RAPID CITY. THESE SPECIALIZED AREAS ARE FURTHER DEFINED LATER IN THE REPORT BUT CAN BE SUMMARIZED AS THE FOLLOWING:

   A. IN A NEW SUBDIVISION PRIOR TO THE HARD SURFACE APPLICATION

   B. EXISTING STREETS WITHIN AREAS PRESENTLY ZONED INDUSTRIAL, LIGHT INDUSTRIAL, AGRICULTURE, OR PARK FOREST

   C. EXISTING GRAVEL STREETS IN RESIDENTIAL AREAS WHICH SERVE PRIMARILY AS AN ACCESS ROUTE AND DO NOT FUNCTION AS A LOCAL RESIDENTIAL STREET

3. THROUGH THESE LIMITED AREAS OF APPLICATION, A COMPLETE REVIEW OF THIS PROCESS COULD BE ACCOMPLISHED AND THE RESULTS UTILIZED IN FUTURE EVALUATIONS OF THE POLICY.

4. TO AID IN THE AREAS WHERE THE DUST PALLIATIVES WOULD STILL BE PROHIBITED, THE COUNCIL SHOULD CONSIDER A RE-CREATION OF THE "OUT-OF-THE-DUST" PROGRAM WHERE THE CITY WOULD PARTICIPATE IN THE COST OF ASSESSED PAVING PROJECTS.

5. MAGNESIUM CHLORIDE IS THE ONLY TREATMENT THAT WOULD BE APPROVED FOR USE IN THE CITY OF RAPID CITY.

LOCATIONS AND CONDITIONS

A. IN A NEW SUBDIVISION PRIOR TO THE APPLICATION OF THE APPROVED HARD SURFACE PAVEMENT. THE SUBDIVIDER MUST PROVIDE THE FOLLOWING INFORMATION BEFORE APPROVAL IS GIVEN FOR THE DUST PALLIATIVE:

1. INCLUDED WITH THE BOND OR LETTER OF CREDIT FOR HARD SURFACE PAVEMENT SHALL BE THE COST INVOLVED IN THE FINAL CONSTRUCTION PREPARATION OF THE BASE COURSE WHICH HAS BEEN TREATED WITH THE DUST PALLIATIVE.

2. CERTIFICATION THAT THE DUST PALLIATIVE WOULD BE PLACED OVER A MINIMUM TWO INCH (2") DEPTH OF GRAVEL.

3. CERTIFICATION THAT THE TREATED BASE COURSE WOULD BE MAINTAINED ACCORDING TO CITY GRAVEL SURFACE STANDARDS AT THE EXPENSE OF THE SUBDIVIDER.

4. CERTIFICATION THAT IF NOTIFIED BY THE PUBLIC WORKS DIRECTOR OR HIS DESIGNEE THE SUBDIVIDER WOULD TAKE PROMPT AND CORRECTIVE ACTION ON REQUESTED ROAD MAINTENANCE. IF THIS ACTION WAS NOT TAKEN BY THE SUBDIVIDER WITHIN THE TIME AS SPECIFIED BY THE CITY, AT THE TIME OF FORMAL NOTIFICATION, THE SUBDIVIDER WOULD BE REQUIRED TO PROPERLY REGRADE THE TREATED BASE COURSE AND APPLY THE HARD SURFACE PAVEMENT. THE APPROVAL TO UTILIZE THE DUST PALLIATIVE FOR THAT SUBDIVISION WOULD SUBSEQUENTLY BE DENIED AND THE COSTS TO BRING THE BASE COURSE BACK TO APPROVED STANDARDS AND APPLYING THE HARD SURFACE PAVEMENT WOULD BE PAID BY THE SUBDIVIDER EITHER DIRECTLY OR THROUGH THE ABOVE MENTIONED BOND OR LETTER OF CREDIT.

5. THE TREATMENT COULD BE UTILIZED FOR A PERIOD NOT TO EXCEED ONE YEAR FROM THE TIME OF APPLICATION OF THE DUST PALLIATIVE AND FOR A PERIOD NOT TO EXCEED ONE AND ONE-HALF (1 1/2) YEARS FROM THE TIME OF APPROVAL OF THE CONSTRUCTION PLANS BY THE ENGINEERING DIVISION OF THE CITY.

B. AN EXISTING GRAVEL ROAD WITH THE ZONING DISTRICTS OF AGRICULTURAL, INDUSTRIAL, LIGHT INDUSTRIAL, OR PARK FOREST. THE PRIMARY USE OF AN EXISTING GRAVEL ROAD WITHIN AN EXISTING PLATTED RIGHT-OF-WAY SHOULD BE FOR THE INGRESS AND EGRESS OF COMMERCIAL AND INDUSTRIAL TYPE VEHICLES OR RELATED ACTIVITIES THAT WOULD BE COMPATIBLE WITH THE ADJACENT ZONING. ORGANIZATIONS REQUESTING THE DUST PALLIATIVE WOULD BE REQUIRED TO PROVIDE THE FOLLOWING:

1. A LETTER OF CREDIT OR BOND FOR AN AMOUNT THAT WOULD BE REQUIRED TO BRING THE ROADWAY BACK TO NORMAL CONDITIONS IF THE ROAD SURFACE, WHICH HAD RECEIVED THE DUST PALLIATIVE, WAS NOT PROPERLY MAINTAINED TO CITY STANDARDS.

2. CERTIFICATION THAT IF NOTIFIED OF CONDITIONS REQUIRING MAINTENANCE BY THE CITY PUBLIC WORKS DIRECTOR OR HIS DESIGNEE, THE ROAD SHALL BE BROUGHT UP TO THE MINIMUM STANDARDS WITHIN A REASONABLE TIME AS SPECIFIED BY THE CITY AT THE TIME OF FORMAL NOTIFICATION.

3. IF THESE CONDITIONS ARE NOT MET, THE DUST PALLIATIVE WILL NOT BE ALLOWED AND THE CITY SHALL DO WHATEVER IS REQUIRED TO BRING THE STREET UP TO FULL GRAVEL SURFACE STANDARDS INCLUDING UTILIZATION OF THE BOND OR LETTER OF CREDIT AS MENTIONED ABOVE.

C. RESIDENTIAL AREAS OF RAPID CITY WHERE AN EXISTING GRAVEL ROAD WITH AN EXISTING PLATTED RIGHT-OF-WAY IS USED EXCLUSIVELY AS A CONNECTING STREET PROVIDING ACCESS TO AND FROM A RESIDENTIAL SUBDIVISION AND OR A RESIDENTIAL HOME SITE(S) AND DOES NOT SERVE DIRECTLY AS A LOCAL RESIDENTIAL STREET. IN ORDER FOR THE APPROVED DUST PALLIATIVE TO BE USED THE FOLLOWING CONDITIONS SHALL BE MET:

1. A LETTER OF CREDIT OR BOND FOR AN AMOUNT REQUIRED TO BRING THE ROADWAY BACK TO NORMAL CONDITIONS IF THE ROAD SURFACE WITH THE DUST PALLIATIVE TREATMENT WAS NOT PROPERLY MAINTAINED.

2. CERTIFICATION THAT IF NOTIFIED OF CONDITIONS REQUIRING MAINTENANCE BY THE CITY PUBLIC WORKS DIRECTOR OR HIS DESIGNEE, THE ROAD SHALL BE BROUGHT UP TO THE MINIMUM STANDARDS WITHIN A REASONABLE TIME AS SPECIFIED BY THE CITY AT THE TIME OF FORMAL NOTIFICATION.

3. IF THESE CONDITIONS ARE NOT MET, THE DUST PALLIATIVE WILL NOT BE ALLOWED AND THE CITY SHALL DO WHATEVER IS REQUIRED TO BRING THE STREET UP TO FULL GRAVEL SURFACE STANDARDS INCLUDING UTILIZATION OF THE BOND OR LETTER OF CREDIT AS MENTIONED ABOVE.

APPROVED DUST PALLIATIVE MATERIAL

THE ONLY MATERIAL THAT THE CITY HAS APPROVED IS THE MAGNESIUM CHLORIDE TREATMENT. THIS TREATMENT IS ENVIRONMENTALLY SOUND AND HAS PROVEN TO BE EFFECTIVE IN THE LOCAL AREA.

THIS MATERIAL IS TO BE APPLIED ACCORDING TO SUPPLIERS RECOMMENDATIONS WHICH SPECIFIES A TEMPERATURE RANGE, TYPE OF SURFACE, CONDITION OF SURFACE, AND APPLICATION RATE.

ONCE APPLIED THE TREATMENT WILL REMAIN EFFECTIVE FOR A PERIOD OF THREE MONTHS TO TWO YEARS DEPENDING UPON THE AMOUNT OF TRAFFIC AND HOW EFFECTIVE THE ROADWAY HANDLES SURFACE DRAINAGE.

REAPPLICATION OF THE TREATMENT CAN BE ACCOMPLISHED BUT SURFACE PREPARATION USUALLY IS REQUIRED. THE EXTENT OF THIS SURFACE PREPARATION WILL VARY DEPENDING UPON THE SPECIFIC LOCATION. THIS PREPARATION COULD INVOLVE THE COMPLETE SCARIFYING OF THE EXISTING SURFACE AND REGRADING THE SURFACE WITH NEW MATERIAL ADDED AS NEEDED.

CITY OF RAPID CITY

Dust Palliative Permit

PERMITTEE: NAME _____

ADDRESS _____

PHONE _____

SITE DESCRIPTION /LOCATION: _____

_____

_____

_____

POLICY CRITERIA USED: _____

_____

_____

AREA TO BE TREATED: _____ SF

SURETY TO BE PROVIDED: $_____

The undersigned acknowledges that the policy regarding the application of magnesium chloride dust palliative has been read and thoroughly understood. The undersigned also agrees to the terms and conditions stated therein.

_____ _____ _____

NAME SIGNATURE DATE

_____ _____

CITY REPRESENTATIVE DATE

_____

COUNCIL APPROVAL

SKETCH

CC TO: City Engineer; Street Div. Mgr.; File

APPENDIX E

SECTION 37

ASPHALT SURFACE TREATMENT

37.1 MATERIALS

A. General: This work consists of an application of asphalt covered with a spread of cover aggregate.

B. Related Work:

Section 116 - Aggregates for Asphalt Surface Treatment
Section 118 - Asphalt Material
Section 119 - Mineral Aggregate

37.2 MATERIALS

A. Asphalt: Asphalt of the type and grade shown on the plans shall conform to the requirements of Section 118 and the following additional requirements:

When tested in accordance with SD 305 using Standard Aggregate (Sioux Falls Quartzite, from the Sioux Falls, South Dakota, area),the asphalt shall conform to the following requirements;

Coating Obtained, Min.....95% Agg. Surface Coated
Coating Retained, Min.....85% Agg. Surface Coated

This specification requirement (SD 305) will be applicable only to cutback asphalt (Rapid Curing Type).

B. Cover Aggregate: Cover aggregate of the type specified shall conform to the requirements of Section 116.

37.3 CONSTRUCTION REQUIREMENTS

A. Weather and Seasonal Requirements: The application of surface treatments will be permitted only during daylight hours when conditions are dry and when does not adversely affect the spraying operation.

Minimum temperatures and seasonal limitations are as follows:

COVER AGGREGATE	AIR AND SURFACE TEMP. (IN THE SHADE)	SEASONAL LIMITATIONS (DATES ARE INCLUSIVE)
Type 1	70 degrees F.	June 1 - October 1
Type 2	70 degrees F.	June 1 - October 1
Type 3A	60 degrees F.	June 1 - October 1
Type 3A	70 degrees F.	Sept. 1 - October 1
Type 3B	50 degrees F.	May 1 - December 1

B. Equipment: The following minimum equipment shall be furnished in good condition by the Contractor:

1. A vacuum power broom.

2. Equipment for heating and applying the asphalt shall conform to the requirements of Section 35.

3. A self-propelled aggregate spreader, with positive controls capable of depositing the required amount of aggregate uniformly over the full width of the asphalt application. When spreading Type 2 cover aggregate, the spreader shall be equipped with means of applying the larger aggregate to the surface ahead of the smaller aggregate. A tailgate spreader of the type approved by the Engineer may be substituted for the above-described spreader when applying Type 3B cover aggregate.

4. The rollers shall completely cover an overall surface width of at least sixty inches (60") and furnish a minimum uniform rolling pressure of two hundred fifty (250) pounds per inch of rolling width.

C. Surface Preparation: The surface to be treated shall be thoroughly swept with a vacuum power broom and cleaned of all loose and adhering foreign material. Appurtenances immediately adjacent to the surface to be treated shall be protected from the splatter of asphalt. Freshly primed bases shall be cured prior to the application of surface treatments.

D. Application of Asphalt: Adjacent appurtenances shall be protected from the splatter of asphalt. The Engineer will specify the temperature range within which the asphalt shall be maintained at the time of application. Asphalt shall be applied by means of a pressure distributor in a uniform and continuous manner. Specified rates shall be applied unless otherwise ordered by the Engineer. Unauthorized increases in rates will not be eligible for payment.

The angle of the spray nozzles and the height of the spray bar shall be set to obtain uniform distribution. A strip of building paper, at least three feet (3') in width and with a length equal to that of the spray bar plus one foot (1'), shall be used at the beginning of each spread. The distributor shall be traveling at the proper speed when the spray bar is opened. Skipped areas and deficiencies shall be corrected as soon as they are discovered. The edges of the spread shall not appreciably overlap. Areas inaccessible to the distributor shall be satisfactorily covered by hand spray methods.

Under no circumstances shall spraying operations proceed when it is evident the asphalt spread will not be covered with aggregate and rolled all in accordance with the prescribed schedule contained in the following sections.

E. Application of Cover Aggregate: Cover aggregate shall be spread immediately following application of the asphalt. Under calm wind

conditions, approximately five miles per hour (5 mph) or less, the spread of cover aggregate shall follow within eight (8) minutes of the application of the asphalt. When the wind velocities are greater, the maximum time between applications of asphalt and cover aggregate shall be reduced as determined by the Engineer.

The spreading of cover aggregate following the application of "High Float" Emulsified Asphalt may be adjusted by the Engineer from the time limitations as shown above to fit project conditions.

The Contractor shall protect the treated surface from damage by traffic by continually maintaining a complete aggregate coverage, except that a strip of asphalt application approximately four inches (4") wide along that side of the spread forming a longitudinal joint with the adjacent spread shall be left uncovered. The adjacent asphalt and cover aggregate application shall overlap this strip. In lieu of this procedure, a butt joint may be constructed using special end nozzles.

Longitudinal joints, other than at centerline, will not be permitted within the center twenty-four feet (24').

The cover aggregate shall be loaded in trucks to minimize segregation, eliminate oversize, and effectively break up or discard material bonded into chunks. When required, aggregate shall be uniformly moistened before or during loading.

Specified rates shall be applied unless otherwise ordered by the Engineer. Unauthorized increases in rates will not be eligible for payment.

Prior to rolling operations, the Engineer may order the Contractor to adjust inequalities in the spread of Type 3 cover aggregate by means of a drag broom.

F. Rolling Operations: Rolling shall begin immediately behind the spreader and shall consist of four (4) complete coverages using pneumatic tired rollers. Operations shall be scheduled to complete the rolling within forty (40) minutes after the cover aggregate is applied. Rollers shall not be operated at a speed in excess of five miles per hour (5 mph). The weight and tire pressures of the rollers shall be varied as directed by the Engineer to obtain the most satisfactory embedment of the cover material without undue crushing of the aggregate. Turning of rollers on the freshly treated surface is prohibited. Rolling at night or when light conditions would create a traffic hazard will not be allowed.

Alternate rolling procedures that provide a complete roller coverage directly behind the aggregate spread and completion of the four (4) complete roller coverages within the maximum time of forty (40) minutes may be used if approved by the Engineer.

G. Traffic Control: Construction operations shall be coordinated to result in the least delay of traffic. If traffic is permitted, it shall be controlled by flaggers or pilot car during application of the surface treatment on driving lanes. The traffic shall not exceed twenty miles per hour (20 mph) for a period of four (4) hours after application. The

minimum four (4) hour traffic control period may be reduced if ordered by the Engineer.

The width, arrangement, and sequence of the parallel application strips shall be governed so as not to unduly inconvenience traffic.

H. Maintenance and Repair: Areas of the surface treatment which may peel or otherwise be unsatisfactory for any reason shall be repaired with additional asphalt, cover aggregate, and rolling. Additional compensation for repair due to causes not the fault of the Contractor will be paid at the contract unit price for asphalt surface treatment.

The finished surface of the surface treatment shall be smooth riding and of uniform color. Lack of uniformity such as transverse or horizontal ridges, raveled spots, wheel marks, depressions, abrupt color changes, and other inequalities shall be corrected by the Contractor, as ordered by the Engineer. Payment will not be made for this correction work.

Special attention shall be given to the transverse and longitudinal joints during the process of the rolling work in order to insure a uniform appearance and smooth riding surface. The Contractor shall smooth and correct the appearance of these joints, as ordered by the Engineer, without additional compensation.

Any splatter of asphalt on roadway appurtenances shall be satisfactorily cleaned off by the Contractor.

The loose material left on the surface shall be lightly vacuumed off three (3) to five (5) day after sealing the road.

Vacuumed-off material shall be removed and disposed of by the Contractor without additional compensation.

37.4 METHOD OF MEASUREMENT

A. Asphalt for Surface Treatment: Asphalt for surface treatment will be measured to the nearest one-tenth (0.1) ton. Contractor shall provide Engineer with valid weigh tickets for asphalt, furnished and installed.

B. Cover Aggregate: Cover aggregate will be measured to the nearest one-tenth (0.1) ton. Contractor shall provide Engineer with valid weigh tickets for cover aggregate, furnished and installed.

37.5 BASIS OF PAYMENT

A. Asphalt for Surface Treatment: The accepted quantities of asphalt for surface treatment will be paid for at the contract price per ton, complete, in place. Weigh tickets will not be considered valid if received more than forty-eight hours after placement.

B. Cover Aggregate: The accepted quantities of cover aggregate of the type specified will be paid for at the contract price per ton, complete, in

place. Weigh tickets will not be considered valid if received more than forty-eight hours after placement.

SECTION 116

AGGREGATES FOR ASPHALT SURFACE TREATMENTS

116.1 GENERAL REQUIREMENTS

The cover aggregate for asphalt surface treatments shall be sand, crushed rock, or crushed gravel, free of dirt, vegetable, and other foreign material. The physical characteristics and quality of the materials shall conform to the specifications for the particular material required by the contract.

116.2 SPECIFIC REQUIREMENTS

Cover aggregates of the various types shall conform to the following table:

Requirement	Type I		Type 2		Type 3	
	A	B	A	B	A	B
Processing Req'd.			Crush	Crush	Crush	Crush
Passing 3/4" sieve						100
Passing 5/8" sieve					100	
Passing 1/2" sieve				100		
Passing 3/8" sieve	100	100	100	30-90		
Passing #4 sieve	80-100	45-90	20-70	0-50	40-75	40-75
Passing #10 sieve	55-90	0-20	0-20	0-15	0-60	0-60
Passing #40 sieve	5-45		0-4	0-5	0-35	0-35
Passing #200 sieve	0-7	0-4			0-18	0-18
Plast. Index, max.	3	3				
L.A. Ab. Loss, max.			40	40	40	40
Soundness Loss, max.			12	12		
Foot Notes			1 & 3	1	2	2 & 3

Foot Notes:

1. At least fifty percent (50%) of material retained on the No. 4 sieve shall have two (2) or more fractured faces produced by crushing.

2. P.I. shall not exceed six (6) when minus two hundred (200) is ten percent (10%) or more.

3. A tolerance of three percent (3%) in the amount passing the maximum size screen will be permitted providing all material passes a screen having one-fourth inch (1/4") larger openings.

116.3 SAMPLING AND TESTING

Sampling.....SD 201

Gradation.....SD 202
Plasticity Index.....SD 207
L.A. Abrasion Text.....AASHTO T 96
Soundness Test (Sodium Sulfate Solution,
Five Alternations).....AASHTO T 104
Crushed Particle Test.....SD 211

116.4 METHOD OF MEASUREMENT &
116.5 BASIS OF PAYMENT

Measurement and payment for various cover aggregates for asphalt surface treatments shall be in accordance with Sections 37 & 38.

APPENDIX F

ORDINANCE 1976

AN ORDINANCE AMENDING SECTION 5(B)(5) OF ARTICLE V OF APPENDIX A OF THE REVISED ORDINANCES OF THE CITY OF RAPID CITY TO REQUIRE ASPHALT OR PORTLAND CEMENT CONCRETE PAVING OF PARKING LOTS AND DRIVEWAYS.

BE IT ORDAINED by the City of Rapid City that Section 5(B)(5) of Article V of Appendix A of the Revised Ordinances of the City of Rapid City be amended to read as follows:

(b) All areas devoted to off-street parking shall be of sealed-surface construction and maintained in such manner that dust will not result from continuous use. From and after the 1st day of October, 1980, any parking lot or driveway constructed, improved, or otherwise converted for use as a parking lot or driveway shall be paved with asphalt or Portland cement concrete in accordance with the standards prescribed by the City Engineer, approved by the Common Council of the City of Rapid City on September 2, 1980, and on file in the office of the Finance Officer; provided, however, the City Engineer, may in his sound discretion and in conformance with sound engineering practice, approve the use of a single or multiple layer chip seal on an asphalt primed four inch compacted gravel base for low use intensity parking lots.

THE COMMON COUNCIL

Mayor

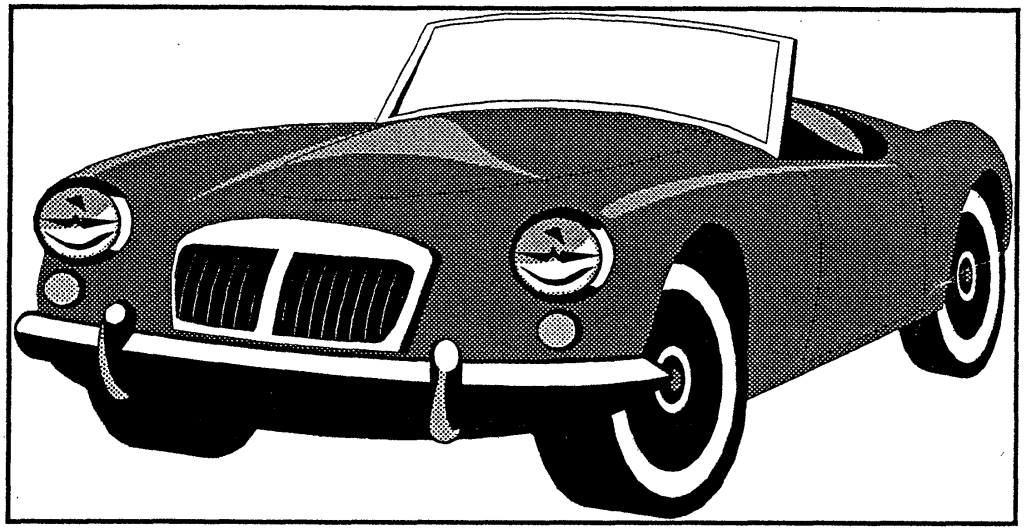
ATTEST:

Finance Officer

(SEAL)

First Reading: June 2, 1980
Second Reading: September 15, 1980
Published: September 19, 1980
Effective: October 9, 1980

PARKING



REGULATIONS

17.50.270 Minimum off-street parking requirements.

A. Duty to Provide and Maintain Off-Street Parking Spaces.

1. It is the duty of the owner or occupant of any real property outside the central business district (CBD), jointly and severally, to provide off-street parking in accordance with the standards established by this chapter. However, any parking that is optionally provided in the central business district must comply with subsection H, Parking for Persons with Disabilities, of this section.

2. Every building, or portion of building hereafter erected, and every initiation or expansion of use involving an existing building, shall be provided with permanently maintained parking space as provided in this chapter.

3. Prior to the issuance of a building permit for a multilevel parking facility, a planned commercial development (PCD) or planned light industrial development (PLID) shall be approved. As a part of the planned development review, pursuant to Sections 17.50.100 and 17.50.105 of this code, the Rapid City planning commission or Rapid City council may impose specific design or compatibility standards.

B. Initiation and Expansion of Use. Every building, structure or use with parking facilities which does not conform to the requirements of this title shall conform with the provisions of this section when a use is initiated or expanded.

1. A use is initiated when:

a. A building or structure is erected;

b. An existing property, structure, or portion thereof, changes from one standard industrial classification (SIC) two-digit code classification to another; or

c. An existing property, structure, or portion thereof, other than a single-family or duplex structure, is occupied after an intervening vacancy of at least one year.

2. A use is expanded when:

a. An existing building or structure is enlarged by twenty percent or more with respect to square feet of gross floor area (SFGFA);

b. An existing building or structure is modified internally to accommodate an increased occupant load of twenty percent or more, as determined by the Uniform Building Code adopted in Chapter 15.12 of this code;

c. A use is expanded by twenty percent or more as measured by area, employees, rooms, seats, dwelling units or occupants; or

d. A garage or carport is added to the structure.

C. Permit Required. A building permit is required for the construction or development of an off-street parking facility.

D. Minimum Required Off-Street Parking Spaces. The minimum number of off-street parking spaces shall be determined in accordance with the following table of parking spaces required:

AMENDED Ord# 3212 Date 8-11-95

AMENDED Ord# 3217 Date 9-1-95

Table 17.50.270 (D)

TABLE OF PARKING SPACES REQUIRED[a]
(SFGFA — Square Feet Gross Floor Area)[c]

Land Use Building Type	Parking Spaces Required
Assembly/Banquet Hall	25.00 per 1,000 SFGFA
Auto Repair With Gas Sales	13.00 per 1,000 SFGFA[d]
Auto Repair Without Gas Sales	10.00 per 1,000 SFGFA
Auto Sales, New or Used	3.00 per 1,000 SFGFA
Auto Towing, Body Repair and Painting	4.00 per 1,000 SFGFA
Bank/Savings and Loan Office	4.30 per 1,000 SFGFA
Bank/Savings and Loan	4.00 per 1,000 SFGFA
(With Drive-Up Teller)	plus 3.00 per drive-through lane[d]
Child Care	
Day Care Center	1.00 per full-time equivalent staff plus .1 per child and unloading zone[c]
Family Child Care	1.00 per nonresident full-time equivalent staff
Church/Synagogue	0.25 per each seat or 18" of linear bench
Cleaners, Retail	1.66 per 1,000 SFGFA
Cocktail Lounge/Nightclub/Tavern/Bar	10.00 per 1,000 SFGFA
Convenience Store With Gas Sales	11.50 per 1,000 SFGFA[d]
Convenience Store Without Gas Sales	7.50 per 1,000 SFGFA
Discount Store	4.45 per 1,000 SFGFA
Drive-through (specialty, film ATM, carwash)	3.00 per drivethrough lane[d]
Funeral Home	7.00 per 1,000 SFGFA
Furniture Store	2.60 per 1,000 SFGFA
Hardware Store/Home Center	3.20 per 1,000 SFGFA
Hospital	2.00 per bed
Hotel/Motel	1.00 per room
Industrial Structures:	
Less than 100,000 SFGFA	2.10 per 1,000 SFGFA
100,000 to 199,000 SFGFA	1.75 per 1,000 SFGFA
200,000 to 399,000 SFGFA	1.60 per 1,000 SFGFA
400,000 to 499,000 SFGFA	1.80 per 1,000 SFGFA
500,000 and greater SFGFA	2.00 per 1,000 SFGFA
Laundromat	5.00 per 1,000 SFGFA

Land Use Building Type	Parking Spaces Required
Library	2.20 per 1,000 SFGFA
Liquor Store (off sale)	4.00 per 1,000 SFGFA
Lumberyard/Mart	1.60 per 1,000 SFGFA
Manufacturing	2.10 per 1,000 SFGFA
Manufacturing, Jewelry	10.00 per 1,000 SFGFA
Medical Clinic Office	4.00 per 1,000 SFGFA
Mobile Home Sales, New or Used	5.00 per site
Museum	3.30 per 1,000 SFGFA
Nursing Home	0.50 per room
Office	5.00 per 1,000 SFGFA
Office, Undivided Common Work Area	8.00 per 1,000 SFGFA
Pawnshop	4.00 per 1,000 SFGFA
Public Utility/Sewage Treatment	2.50 per 1,000 SFGFA
Recreational:	
Bowling Alley	5.50 per lane
Miniature Golf	2.00 per hole
Recreation Center	4.00 per 1,000 SFGFA
Recreation Fad	20.00 per 1,000 SFGFA
Roller/Ice Skating Rink	5.00 per 1,000 SFGFA
Sports Club/Health Spa	7.00 per 1,000 SFGFA
Sports Stadium, Auditorium	0.33 per seat or 18" linear bench
Swimming Club, Pool	1.00 per 150 square feet water area
Tennis/Racquet Club	0.40 per 1,000 SFGFA
Residential Uses:	
Assisted Living Center Room	0.33 per unit
Assisted Living Center Suite	0.50 per unit
Apartment Complex	1.50 per dwelling unit
Condominium	2.00 per dwelling unit
Dormitory	1.00 per sleeping room
Duplex	2.00 per dwelling unit
Elderly Housing	0.50 per dwelling unit
Fraternity/Sorority	1.00 per member at maximum occupant load
Mobile Home Park	2.00 per unit
Single-Family/Duplex/Townhouse	2.00 per dwelling unit
Skilled Nursing Home	0.25 per unit plus 1 per shift employee
Restaurant, Drive-in	11.00 per 1,000 SFGFA plus 1.00 per serving stall
Restaurant, Fast Food	11.00 per 1,000 SFGFA plus 7.00 per drive-through lane[d]

Land Use Building Type	Parking Spaces Required
Restaurant, Table Service	11.00 per 1,000 SFGFA
Retail Sales/Service	5.00 per 1,000 SFGFA
Schools	
Preschool	1.40 per employee/staff
Grade School	1.40 per employee/staff
Middle School	1.00 per employee/staff plus 0.04 per student capacity
Senior High Schools	1.00 per employee/staff plus 0.33 per student capacity
Junior/Community/Tech College or University	0.50 per student capacity
Shopping Center I and Shopping Center II	4.50 per 1,000 SFGFA
Supermarket	5.00 per 1,000 SFGFA
Theaters	1.00 per 4 fixed seats
Used or Secondhand Sales	3.00 per 1,000 SF of display/storage area including outside display
Warehousing	0.25 per 1,000 SFGFA
Warehousing, Ministorage	30 feet of circulation aisle width immediately adjacent to area of building(s) with controlled access stalls or locker

Table 17.50.270 (D) Notes:

(a) Numbers include spaces required for employee and staff parking.

(b) Parking spaces used for customer and employee parking exclusive of automobile display area.

(c) Passenger unloading zones shall not conflict with parking stalls or aisles and shall have adequate ingress and egress.

(d) Stacking in drive-through lanes shall count as one space per twenty-three linear feet of striped stacking lane. Service windows or bays shall not be counted as stacking.

(e) Square footage shall be the total square footage of the combined usable floors as measured by outside building dimensions.

(f) Automotive repair business indoor and outdoor vehicle storage or repair areas that are not accessible to the public are exempt from the aisle width and access requirements of this chapter. Proposed vehicle storage or repair areas must be designated on the lot site plan and building floor plan.

E. Parking Requirements for Uses Not Specified.

1. Where the parking requirements for a use are not specifically defined herein, the parking requirements for such use shall be determined by the planning director. Such determination shall be based upon **Parking Generation** published by the Institute of Transportation Engineers (ITE).

2. Where new construction is proposed in a commercial or industrial district, but no definite use is specified, parking requirements shall be calculated as follows:

a. Commercial district: five parking spaces per one thousand square feet gross floor area;

b. Industrial district: one and three-quarters parking spaces per one thousand square feet gross floor area.

3. When a use is to be initiated or changed in any vacant or occupied building or portion thereof the parking required for the combined uses shall be reviewed by the planning department, based upon this title and **Parking Generation** published by the Institute of Transportation Engineers (ITE). The determination of the planning department shall establish the total number of parking spaces required.

F. General Requirements. The following general requirements shall apply to all parking spaces and areas:

1. Size and Access. Each off-street parking space shall be rectangular, and not less than nine feet in width and eighteen feet in length regardless of the angle of parking. Each commercial or multiple-family parking space shall be served by an aisle which meets or exceeds the standards set forth in these regulations. When curbs or curb stops are employed, up to two feet of the stall length may overhang the curb. Stalls may overhang sidewalks provided four-foot wide usable sidewalks are retained and public rights-of-way are not encroached upon.

2. Aisle Length. Parking lot aisles of over one hundred fifty feet in length shall have either an approved method of emergency vehicle egress deemed acceptable by the Rapid City Fire Marshal or a turnaround which will accommodate a thirty-foot vehicle with a forty-two-foot turning radius.

TABLE 17.50.270 (F) (2)

REQUIRED MINIMUM OFF-STREET PARKING DIMENSIONS

Parking Angle (Degrees)	Stall Length	Stall Width	Aisle Width (One-way)	Aisle Width (Two-way)
90°	18′	9′	26′	26′
60°	18′	9′	18′	20′
45°	18′	9′	12′	20′
30°	18′	9′	10′	20′
0° (parallel)	22′	9′	10′	20′

Exception: Ninety-degree parking immediately off an alley requires ten feet by twenty feet stalls and the aisle width of twenty feet being provided by the alley.

3. Locations.

a. Off-street parking facilities shall be located outside the public right-of-way and as hereinafter specified.

b. Parking facilities shall either be provided on the same parcel as the use it is to serve or within three hundred feet from the building's primary entrance or use it is to serve, using established sidewalks and crossings. Such distance shall be the walking distance measured from the nearest point of the parking facility to the building's primary entrance that such facility is required to serve.

4. Clear Sight Triangles.

a. A seventy-foot sight triangle and clear vision zone shall be maintained on each corner where a street intersects another street, other than alley or private drive. A twenty-five foot sight triangle shall be maintained on each corner where an alley or private drive intersects a street.

b. The three vertices of the sight triangle shall include the corner defined by the intersecting roadway limits, and the two points the given dimension distant from the corner, measured along the roadway edge which form the corner. The "clear vision zone"

is that section of the vertical projection of the sight triangle which lies between two and one-half and ten feet above the grade at the apparent edge of the roadway along the edge of the sight triangle.

c. No fence, barn, shed, wall, hedge, tree, bush, planter or other object shall be constructed, placed, grown or otherwise located so that it obstructs clear vision through the above-defined clear vision zone as defined in subsection F (4) (b) of this section.

d. A sight triangle and clear vision zone, as determined through the application of Section 15.44.040, shall be maintained where a street or roadway intersects a railroad right-of-way.

5. Mixed Occupancies in a Building. In the case of mixed uses in a building or on a lot, the total requirements for off-street parking facilities shall be the sum of the requirements for the various uses computed separately. Off-street parking facilities for one use shall not be considered as providing required parking facilities for any other use except as hereinafter specified for shared use.

6. Shared Parking Facilities.

a. The building inspection department upon application by the owner or lessee of any property and after review of the application by the planning director, may authorize the shared use of parking facilities under the conditions specified in this section:

i. Not more than fifty percent of the parking facilities required by this title will be provided by the shared parking facility;

ii. No substantial conflict in the operating hours of the buildings or uses for which the shared use of the parking facility is proposed will occur;

iii. The building or use utilizing the shared parking facilities is located within three hundred feet of such parking facility using established sidewalks and crosswalks where available.

b. Parking using shared off-street parking facilities shall evidence agreement for such shared use by a proper legal instrument approved by the city attorney as to form and content. Copies of such instrument, when approved as conforming to the provisions of this section, shall be filed in the building inspection department and copies thereof filed with the planning department.

G. Use and Maintenance of Off-Street Parking Area. Off-street parking space shall be maintained in accordance with the following specifications:

1. Entrances and Exits.

a. Driveways and curb cuts for ingress and egress shall be built in accordance with the engineering division's curb cut policy and as approved by the city engineer or his designee and in accordance with the city's off-street parking requirements. Entrances and exits shall in no case be less than ten feet nor more than forty feet in width or fourteen feet in vertical clearance.

b. Unpaved access to parking facilities is not permitted except for single-family and duplex uses. All commercial and industrial uses intending to utilize an unimproved access for parking facilities shall bear the cost of paving the access way to city minimum construction standards. This requirement is subject to waiver by common council only in cases where paving continuity would not be achieved and gravel segments would remain.

2. Circulation. Circulation within a parking area shall be such that a vehicle entering the parking area need not enter a public right-of-way to reach another aisle and that a vehicle need not enter a public right-of-way backwards. This provision shall not apply to off-street parking required for one or two-family dwelling units.

3. Surfacing. Off-street parking areas shall be paved and maintained so as to eliminate dust or mud. Paved parking facilities shall comply with standards established in Ordinance 1976, as approved by the common council on October 9, 1980, as administered by the city engineer, and on file in the finance office.

4. Dust Palliative. All commercial, light industrial and heavy industrial uses which involve outdoor storage shall apply a dust palliative approved by the city engineer to all unpaved areas utilized for storage. An approved dust palliative shall be applied annually or as directed by the engineering division. Vehicle or equipment maneuvering areas and approaches to permanent loading docks shall be paved

as set forth in "Minimum Standards for Construction of Parking Lots," June 16, 1980.

5. Drainage. Off-street parking areas shall be graded and drained as to dispose of all surface water with drainage directed toward curb cuts when possible. Parking facilities may be designed to function as metered stormwater detention facilities, when in connection with a master drainage plan and as approved by the city engineering division.

6. Markings. Except for one and two-family uses, all parking facilities shall be marked with striping paint as shown on the approved building permit. Aisles, approach lanes, stalls, handicapped stalls and designated no parking areas shall be clearly marked with direction arrows, lines and symbols to assure the safe and efficient movement of vehicles.

7. Border, Barricades, Screening and Landscaping. Off-street parking areas shall conform to the regulations set forth in the landscape ordinance, Section 17.50.300. Tree planting in the right-of-way is permitted as provided in Section 12.40.090 of this code, landscape requirements.

a. Every parking area that abuts a public or private sidewalk, public right-of-way, or building entrance or exit shall be provided with a wheel guard or curbs not less than six inches in height which shall be securely installed and maintained.

b. Every multiple-family or commercial parking area on a lot that abuts a single-family residential lot along a side lot line shall be set back a distance of not less than twelve feet. Not less than fifty percent of the required landscaping for the subject lot shall be placed within the parking lot or within twenty feet of the parking lot.

c. Every parking area on a lot which abuts the rear lot line of a lot within single-family residential district shall be set back a distance of not less than fifteen feet. Fifty percent or more of the required landscaping for the subject lot shall be located in the parking lot or within twenty feet of the parking lot.

d. Landscaping proposed to be located in the right-of-way between the property line and the street section may be applied to the requirements of the landscape ordinance in an amount not to exceed twenty-five percent of the total landscaping points required as determined pursuant to the formula in the landscape ordinance.

8. Lighting. All parking areas except single-family residential shall be provided with lighting when evening usage is anticipated. The lighting shall be arranged so as to provide security and to reflect light toward the parking area.

9. Bond for Completion. When the required off-street parking area cannot be paved at the time of issuance of the certificate of occupancy, the chief building official shall require a surety in an amount equal to the estimated cost of paving and improvements which will provide for and secure through an improvements agreement the paving completion within one paving season. All bonds and other methods of guarantee shall be approved by the city attorney.

H. Parking for Persons with Disabilities.

1. Provision of Parking. In addition to the general requirements for parking provided for under subsection G of this section, accessible parking facilities for persons with disabilities shall be provided in accordance with this subsection. Accessible parking for a particular building must be located on the shortest accessible route of travel from adjacent parking to an accessible entrance. If there are multiple accessible entrances to the building, the accessible spaces must be dispersed and located closest to the accessible entrances. For parking facilities which do not serve a specific use or building, the accessible parking shall be located on the shortest accessible route to the nearest accessible pedestrian entrance to the parking facility. Accessible spaces may be provided off-site in accordance with this chapter as long as accessibility is not jeopardized.

2. Accessible Route. A minimum of one accessible route meeting the requirements of this section must be provided between the building's accessible entrance and the accessible parking spaces, passenger loading zones, and public streets or sidewalks. An accessible route shall meet the following requirements:

a. To the maximum extent feasible, it shall coincide with the route for the general public;

b. It shall have a minimum clear width of thirty-six inches. If an obstruction turnaround is required then the minimum clear width must be provided as shown in Figures H.2(b)-1 and H.2(b)-2 of the technical drawings on file in the city planning department;

c. Passing spaces are required if the accessible route is less than sixty inches wide. Passing spaces shall be at least sixty inches by sixty inches and spaced at no more than two hundred foot intervals. A T-intersection of two walks is an acceptable passing space (see Figure H.2(c)-1 of the technical drawings on file in the city planning department);

d. A minimum of eighty inches of vertical headroom along the route must be provided. If less than eighty inches of vertical headroom exists in any area adjoining the accessible route, then barriers must be provided to warn blind or visually-impaired individuals (see Figures H.2(d)-1, and H.2(d)-2 of the technical drawings on file in the city planning department);

e. The ground surface of the accessible route shall be stable, firm and slip resistant. The accessible route may not include stairs, steps, or escalators. Changes in level of less than one-quarter inch do not require edge treatment. Changes in level between one-quarter and one-half inch shall be beveled with a slope no greater than 1:2. Changes in level greater than one-half inch shall require a ramp at least thirty-six inches wide and complying with all other ramp requirements (subsection (H)(3) of this section). Surface treatments involving carpeting or grating must meet specific ADA requirements;

f. An accessible route with a running slope of greater than 1:20 is a ramp and shall have a maximum slope of 1:12 and a minimum width of thirty-six inches and shall comply with all other ramp requirements (subsection (H)(3) of this section). Nowhere along the accessible route shall the cross slope exceed 1:50;

g. Curb ramps must be provided wherever an accessible route crosses a curb. Slope of curb ramps must be the least possible with a maximum slope for new construction of 1:12 and a maximum rise for any run of thirty inches. Curb ramps and exterior ramps to be constructed in areas which preclude the use of a 1:12 slope may have reduced slopes and rises as follows: (a) a slope between 1:10 and 1:12 is allowed for a maximum rise of six inches; and (b) a slope between 1:8 and 1:10 is allowed for a maximum rise of three inches. A slope steeper than 1:8 is not allowed (see Figures H.2(g)-1 through H.2(g)-4 of the technical drawings on file in the city planning department). The minimum clear width of a ramp shall be thirty-six inches. Ramps shall have level landings at the top and bottom of each ramp and each ramp run. These landings shall: (a) be twice as wide as the ramp run leading to it; (b) landing length shall be at least sixty inches clear; (c) if ramps change directions then the landing size shall be sixty by sixty inches; (d) if a doorway is located at a landing then the area in front of the doorway shall comply with 4.13.6 of ADA. Handrails shall be provided in compliance with 4.8.5 of ADA if a ramp run has a rise greater than six inches or a horizontal projection greater than seventy-two inches.

3. Ramps. The least possible slope shall be used for any ramp. The maximum rise for any run shall be thirty inches. The maximum slope for any new ramp shall be 1:12 unless otherwise allowed by this code. Curb ramps and other exterior ramps constructed in areas where space limitations prevent a 1:12 slope may have slopes and rises as follows: (a) a slope between 1:10 and 1:12 is allowed for a maximum rise of six inches; (b) a slope between 1:8 and 1:10 is allowed for a maximum rise of three inches. No slope steeper than 1:8 is allowed.

The minimum clear width of a ramp shall be thirty-six inches. Ramps shall have level landings at the top and bottom of each ramp and each ramp run. These landings shall: (a) be twice as wide as the ramp run leading to it; (b) landing length shall be at least sixty inches clear; (c) if ramps change directions then the landing size shall be sixty by sixty inches; (d) if a doorway is located at a landing, the area in front of the doorway shall comply with 4.15.6 of ADA. Handrails shall be provided in compliance with 4.8.5 of ADA if a ramp run has a rise

greater than six inches or a horizontal projection greater than seventy-two inches.

4. Spaces Required.

a. The following number of off-street parking spaces, based on the total required parking, are to be reserved for exclusive use by persons with disabilities. One in every eight accessible spaces but always at least one space must be van accessible. Parking spaces for persons with disabilities may be counted toward the total number of parking spaces required for the use.

Required Number of Accessible Spaces

Total Parking in Lot	Required Minimum # of Accessible Spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1,000	2% of total spaces
1,001 and over	20 plus 1 for each 100 over 1,000

Notes: 1. The required number of accessible spaces for out-patient medical facilities shall be ten percent of the total number of parking spaces.

2. The required number of accessible spaces for facilities that specialize in treatment or services for persons with mobility impairments shall be 20 percent of the total number of parking spaces.

5. Signage. Accessible parking spaces shall be designated as reserved by a sign showing the symbol of accessibility (see Figure H.5-1 of the technical drawings on file in the city planning department). Van accessible parking shall include this symbol of accessibility sign plus an additional "Van-Accessible" sign mounted below the symbol of accessibility sign. (see Figure H.5-2 of the technical drawings on file in the city planning department). Such signs must be located so they cannot be obscured by a vehicle parked in the space and so they are visible from the driver's seat of the vehicle parked in the space. Such signs must be located on a permanent supporting post or on an adjacent wall.

6. Parking Spaces.

a. Accessible Parking Spaces. Accessible parking spaces must be a minimum of ninety six inches in width. Parking access aisles shall be part of an accessible route to the building or facility entrance. Two accessible parking spaces may share a common access aisle. Parking spaces may not exceed a 1:50 slope in all directions. Accessible parking spaces may be angled as long as all other requirements specified in this section are met (see Figure H.6a-1 of the technical drawings on file in the city planning department). Access aisles adjacent to accessible spaces shall be a minimum of sixty inches in width. The spaces shall be eighteen feet in length.

b. Van Accessible Parking Spaces. Van accessible spaces shall be a minimum of ninety-six inches wide and eighteen feet in length and shall be served by an access aisle a minimum of ninety-six inches wide. The access aisle for a van-accessible space must be located on the driver's right hand side of the van as it would be parked in the space. The minimum vertical clearance for van accessible spaces and vehicle routes between van-accessible spaces and the site entrance/exit shall be ninety-eight inches. A sign alerting van users to the presence of the wider aisle is required but the space is not restricted to vans. Parking spaces may not exceed a 1:50 slope in all directions. Van accessible parking spaces may be angled as long as all other requirements specified in this section are met (see figure H.6b-2 of the technical drawings on file in the city planning department). A van accessible space and an accessible space may share an access aisle as long as that aisle is at least ninety-six inches wide.

c. Parking Access Aisles. Parking access aisles must be part of the accessible route to the building and must comply with the accessible route requirements (subsection (H)(2) of this section). Vehicle overhang may not reduce the required width of an accessible route.

d. Universal Parking. An alternative to the provision of separate van accessible spaces is the provision of "universal parking." Universal parking spaces shall be one hundred thirty-two inches wide with a sixty inch wide access aisle. These stalls do not have to be signed separately for van-accessibility but do need to meet signage requirements set forth in subsection (H)(5) of this section.

7. Protruding Objects. Objects projecting from walls with their leading edges between twenty-seven inches and eighty inches above the finished floor shall protrude no more than four inches into walks, passageways or aisles (see Figure H.7-1 of the technical drawings on file in the city planning department). Objects mounted with their leading edges at or below twenty-seven inches above the finished floor may protrude any amount (see Figures H.2d-1 and H.7-1 of the technical drawings on file in the city planning department). Freestanding objects mounted on posts or pylons may overhang a maximum of twelve inches from twenty-seven inches to eighty inches above the ground or finished floor. Protruding objects shall not reduce the clear width of an accessible route or maneuvering space (see Figure H.7-2 of the technical drawings on file in the city planning department).

8. Passenger Loading Zones. Passenger loading zones shall provide an access aisle at least sixty inches wide and twenty feet long adjacent and parallel to the vehicle pull-up space. If there are curbs between the access aisle and the vehicle pull-up space, then a curb ramp complying with subsection (H)(3) of this section shall be provided. Vehicle standing spaces and access aisles shall be level with surface slopes not exceeding 1:50 (two percent) in all directions. Any loading zone must maintain a minimum of one hundred fourteen inches of vertical headroom. This one hundred fourteen inch clearance is also required along at least one vehicle route from the passenger loading zone to the site entrance and exit. For purposes of this chapter, valet parking areas shall meet the same requirements as passenger loading zones.

I. Residential Requirements. New single-family residential off-street parking shall consist of a driveway, garage, or combination thereof. The parking areas shall be paved to accommodate at least two off-street parking spaces of nine feet by eighteen feet each. The hard surface improvements on driveways must begin at the street or curb line and either extend to the garage or parking slab or a minimum of fifty feet. All portions of the required paving for parking shall be outside of the public right-of-way. (Ord. 3424, 1998; Ord. 3263, 1996; Ord. 3254, 1996; Ord. 3212, 1995; Ord. 3216, 1995; Ord. 3217, 1995; Ord. 3198 (part), 1995; Ord. 3031, 1993; Ord. 2872 (part), 1991: prior code Appendix A, Art. V (§ 5))

17.50.280 Storage and parking of trailers and commercial vehicles.

A. Allowed Storage. Vehicles and trailers of all types, including commercial, travel, boat, camping, storage and hauling, shall not be parked or stored on any lot occupied by a dwelling or on any lot in any residential or commercial district except in accordance with the following provisions:

1. Number. Only one vehicle used principally for commercial purposes per family living on the premises shall be permitted.

2. Vehicle Size. Vehicles parked in residential districts shall not exceed a one-ton rating as specified by the manufacturers designated series. This shall not apply to recreational vehicles.

3. Commercial Vehicles. Commercial vehicles used for hauling explosives, gasoline, liquefied petroleum products, toxic or hazardous materials shall not be stored in or adjacent to a residential district. Parking is permitted only for the purposes of unloading or dispensing.

4. Stall Location. All recreational vehicles, travel trailers and hauling trailers shall be parked or stored behind front yard setback line(s) when they are to remain stationary for more than seventy-two hours. The vehicle(s) and trailer(s), when combined with the principal and accessory buildings, shall not occupy more of the lot than allowed for under the district lot coverage provisions. Further, vehicle and/or trailer parking/storage pads shall be graveled or hard surfaced to eliminate dust, mud or weeds.

Vehicles which are to remain stationary for more than seventy-two hours shall not serve as temporary or permanent sleeping quarters for any person.

5. Parking Conflicts. Off-street parking stalls required for passenger vehicle shall not be occupied by recreational vehicle, travel trailers or hauling trailers, resulting in increased on-street parking.

6. Clear Sight Triangle. At no time shall a motor vehicle, recreational vehicle, travel trailer or hauling trailer be parked in the boulevard, across a sidewalk, or within the ten-foot clear sight triangle as described in Section 17.50.270.

7. Parking of Commercial Vehicles. Any commercial truck or trailer, other than a construction trailer, used for the storage or transport of merchandise, equipment or business supplies shall be located on a commercial lot which contains an existing principal structure. Such a truck or trailer shall be screened by a six-foot opaque fence or plant materials from any abutting residential lots and public ways or housed in an enclosed building. (Ord. 2872 (part), 1991: prior code Appendix A, Art. V (§ 36))

17.50.290 Off-street loading and unloading requirements.

In all commercial or industrial districts, except the central business district (CBD), and on the same premises with every building devoted to retail trade, retail and wholesale food market, warehouse, supply houses, wholesale or manufacturing trade, hotels, hospitals, laundries, dry cleaning establishments, or other buildings where large amounts of goods are received or shipped, there shall be provided and maintained on the lot adequate space for vehicle standing, loading and unloading. The space shall be adjacent to the opening used for loading and unloading and situated to avoid undue interference with the use of streets, alleys and public access easements.

A. Loading Spaces Required. All commercial and industrial uses shall provide and maintain the following off-street loading spaces:

Use (square feet of gross floor area)	Loading Spaces
0 — 20,000	1
20,001 — 40,000	2
40,001 — 60,000	3
60,001 — 80,000	4
80,001 — 110,000	6
over 110,000	*

* There shall be provided one additional off-street loading and unloading space for each additional forty thousand square feet of gross flood area (SFGFA), or fraction thereof, in excess of one hundred ten thousand SFGFA.

B. Loading Space Layout and Access.

1. The minimum size of loading spaces shall be twelve feet in width, forty feet in length, and fourteen feet in vertical clearance.

2. All permanent off-street loading, unloading and maneuvering areas shall be paved per the "Minimum Standards for Construction of Parking Lots" approved June 16, 1980.

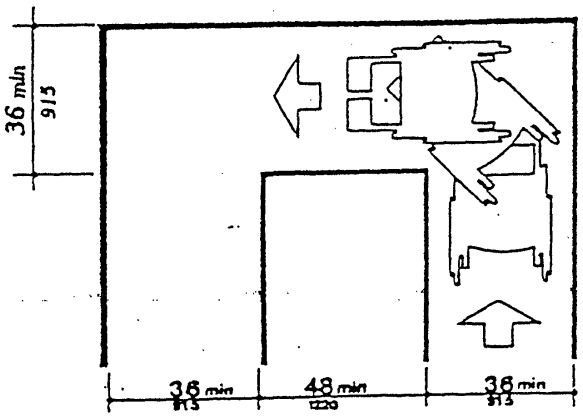
3. Off-street dock areas shall be located so that trucks using the docks do not encroach upon any public right-of-way, street or alley, and entrances and exits shall be located to minimize traffic congestion.

4. An off-street loading or unloading area for commercial and industrial vehicles shall be large enough to meet minimum turning radii of the outside wheel paths listed in the following table:

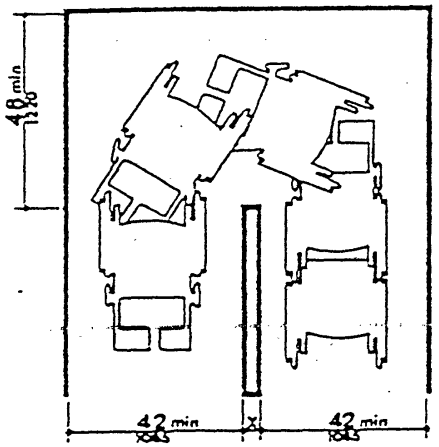
Vehicle Type	Outside Turning Radius
Single-unit truck	42′
Semitrailer (intermediate)	40′
Semitrailer	45′

(Ord. 2872 (part), 1991: prior code Appendix A, Art. V (§ 7))

Figures H.2(b)-1 and H.2(b)-2



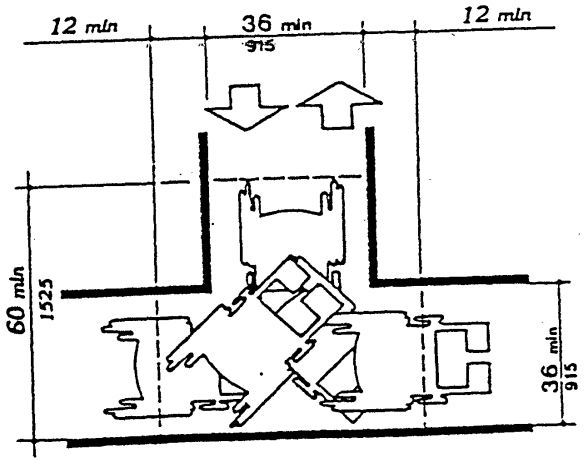
(a)
90° Turn



NOTE: Dimensions shown apply when x < 48 in (1220 mm).

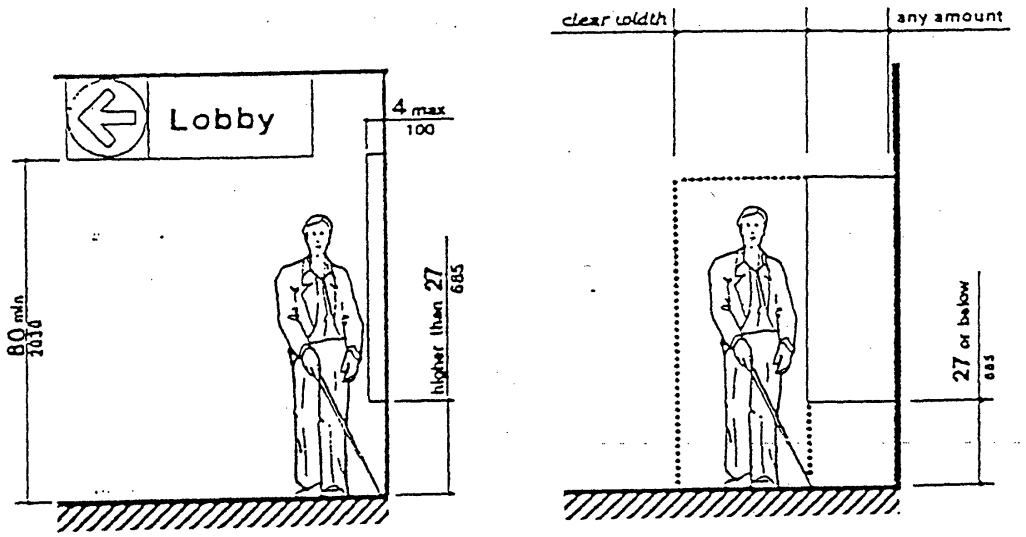
(b)
Turns around an Obstruction

Figures H.2(c)-1



T-Shaped Space for 180° Turns

Figure H.2(d)-1



Walking Parallel to a Wall

Figure H.2(d)-2

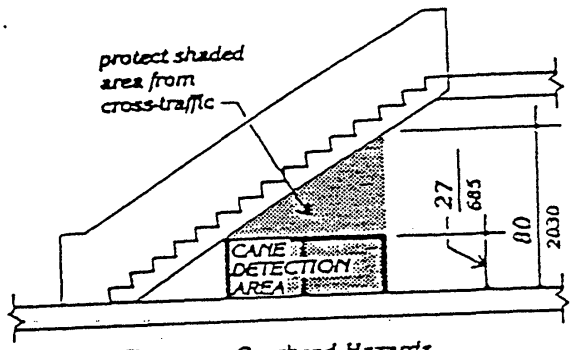
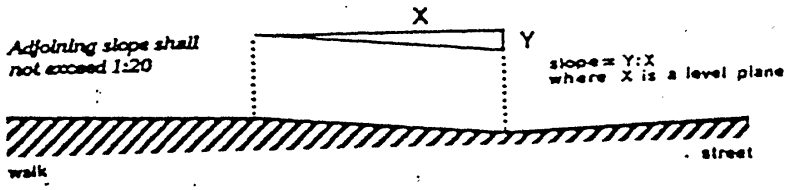
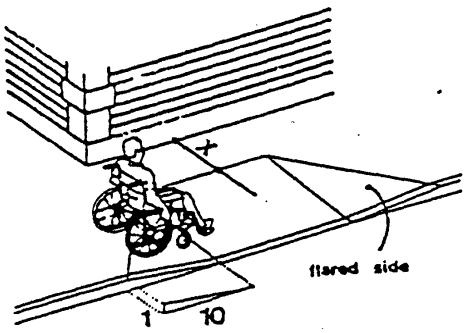


Fig. Overhead Hazards

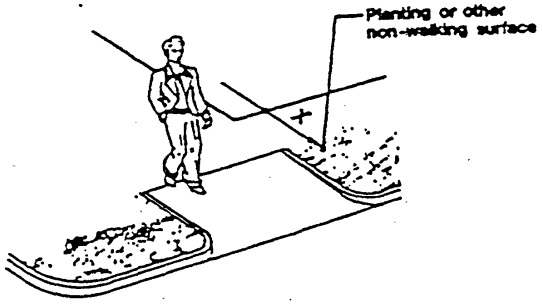
Figures H.2(g)1-(g)4



Measurement of Curb Ramp Slopes



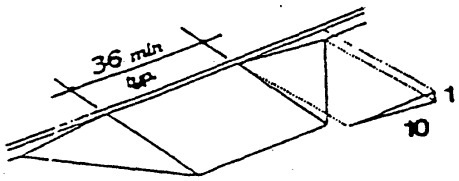
(a)
Flared Sides



(b)
Returned Curb

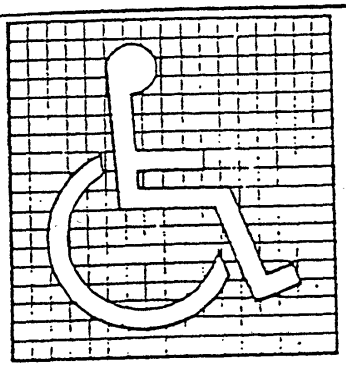
If X is less than 48 in, then the slope of the flared side shall not exceed 1:12.

Sides of Curb Ramps



Built-Up Curb Ramp

Figure H.5-1



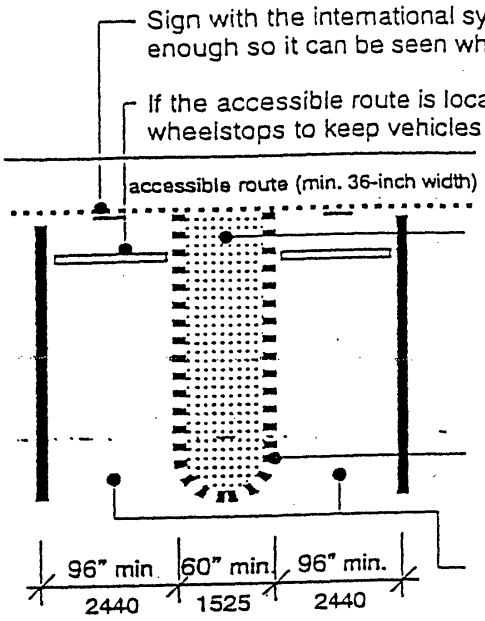
(a)
Proportions
International Symbol of Accessibility

(b)
Display Conditions
International Symbol of Accessibility

Figure H.5-2

Figure H.6a-1

Features of Accessible Parking Spaces for Cars



Sign with the international symbol of accessibility mounted high enough so it can be seen while a vehicle is parked in the space.

If the accessible route is located in front of the space, install wheelstops to keep vehicles from reducing width below 36 inches.

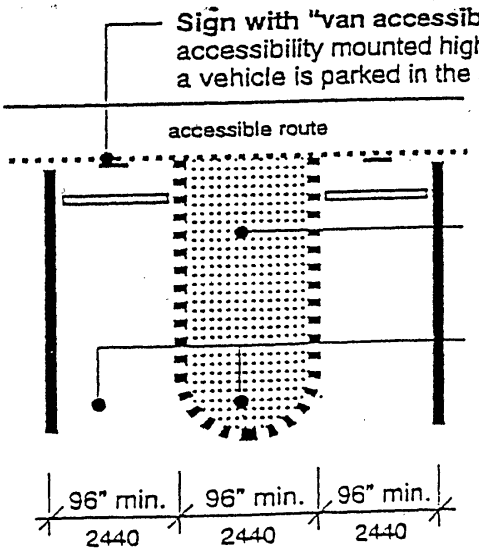
Access aisle of at least 60-inch width must be level (1:50 maximum slope in all directions), be the same length as the adjacent parking space(s) it serves and must connect to an accessible route to the building. Ramps must not extend into the access aisle.

Boundary of the access aisle must be marked. The end may be a squared or curved shape.

Two parking spaces may share an access aisle.

Figure H.6b-2

Three Additional Features for Van-Accessible Parking Spaces

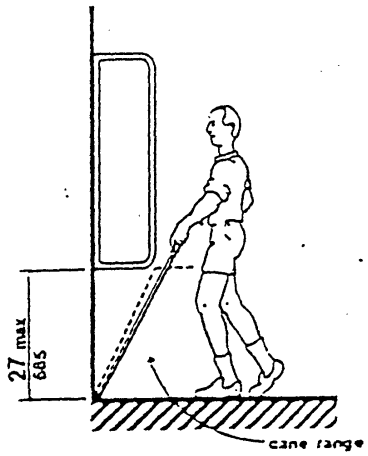


Sign with "van accessible" and the international symbol of accessibility mounted high enough so the sign can be seen when a vehicle is parked in the space

96" min. width access aisle, level (max. slope 1:50 in all directions), located beside the van parking space

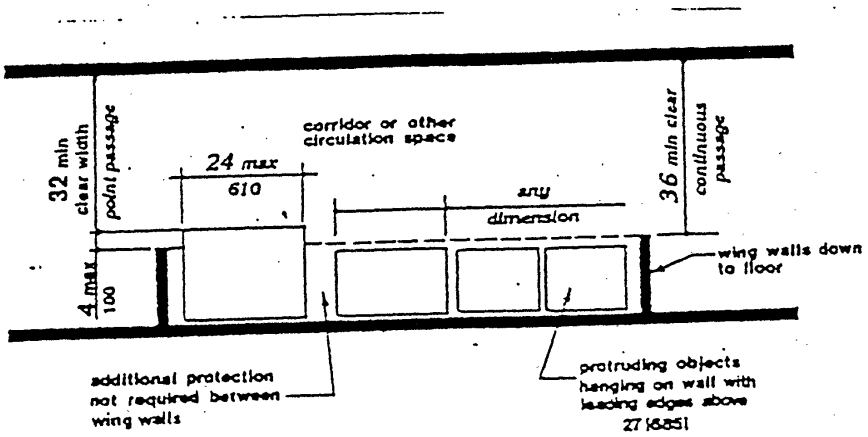
Min. 98-inch-high clearance at van parking space, access aisle, and on vehicular route to and from van space

Figure H.7-1



Walking Perpendicular to a Wall

Figure H.7-2



Example of Protection around Wall-Mounted Objects and Measurements of Clear Widths

ORDINANCE 1976

AN ORDINANCE AMENDING SECTION 5(B)(5) OF ARTICLE V OF APPENDIX A OF THE REVISED ORDINANCES OF THE CITY OF RAPID CITY TO REQUIRE ASPHALT OR PORTLAND CEMENT CONCRETE PAVING OF PARKING LOTS AND DRIVEWAYS.

BE IT ORDAINED by the City of Rapid City that Section 5(B)(5) of Article V of Appendix A of the Revised Ordinances of the City of Rapid City be amended to read as follows:

(b) All areas devoted to off-street parking shall be of sealed-surface construction and maintained in such manner that dust will not result from continuous use. From and after the 1st day of October, 1980, any parking lot or driveway constructed, improved, or otherwise converted for use as a parking lot or driveway shall be paved with asphalt or Portland cement concrete in accordance with the standards prescribed by the City Engineer, approved by the Common Council of the City of Rapid City on September 2, 1980, and on file in the office of the Finance Officer; provided, however, the City Engineer, may in his sound discretion and in conformance with sound engineering practice, approve the use of a single or multiple layer chip seal on an asphalt primed four inch compacted gravel base for low use intensity parking lots.

THE COMMON COUNCIL

Mayor

ATTEST:

Finance Officer

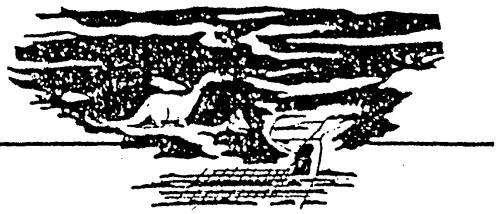
(SEAL)

First Reading: June 2, 1980
Second Reading: September 15, 1980
Published: September 19, 1980
Effective: October 9, 1980

CITY OF RAPID CITY
SOUTH DAKOTA 57701
In the Beautiful Black Hills

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
22 MAIN STREET
RAPID CITY, SOUTH DAKOTA 57701

Telephone: (605) 394-4154



PAVING STANDARDS FOR CONSTRUCTION
OF OFF-STREET PARKING AREAS

From and after the 1st day of July, 1980, all off-street parking areas paved or required to be paved shall be paved in conformance with the details shown on the attached sheet, "Minimum Standards for Construction of Parking Lots", dated June 16, 1980. Deviation shall be permitted only with the written approval of the City Engineer.

William R. Craig
City Engineer

Approved and adopted this 16TH day of JUNE, 1980.

THE COMMON COUNCIL

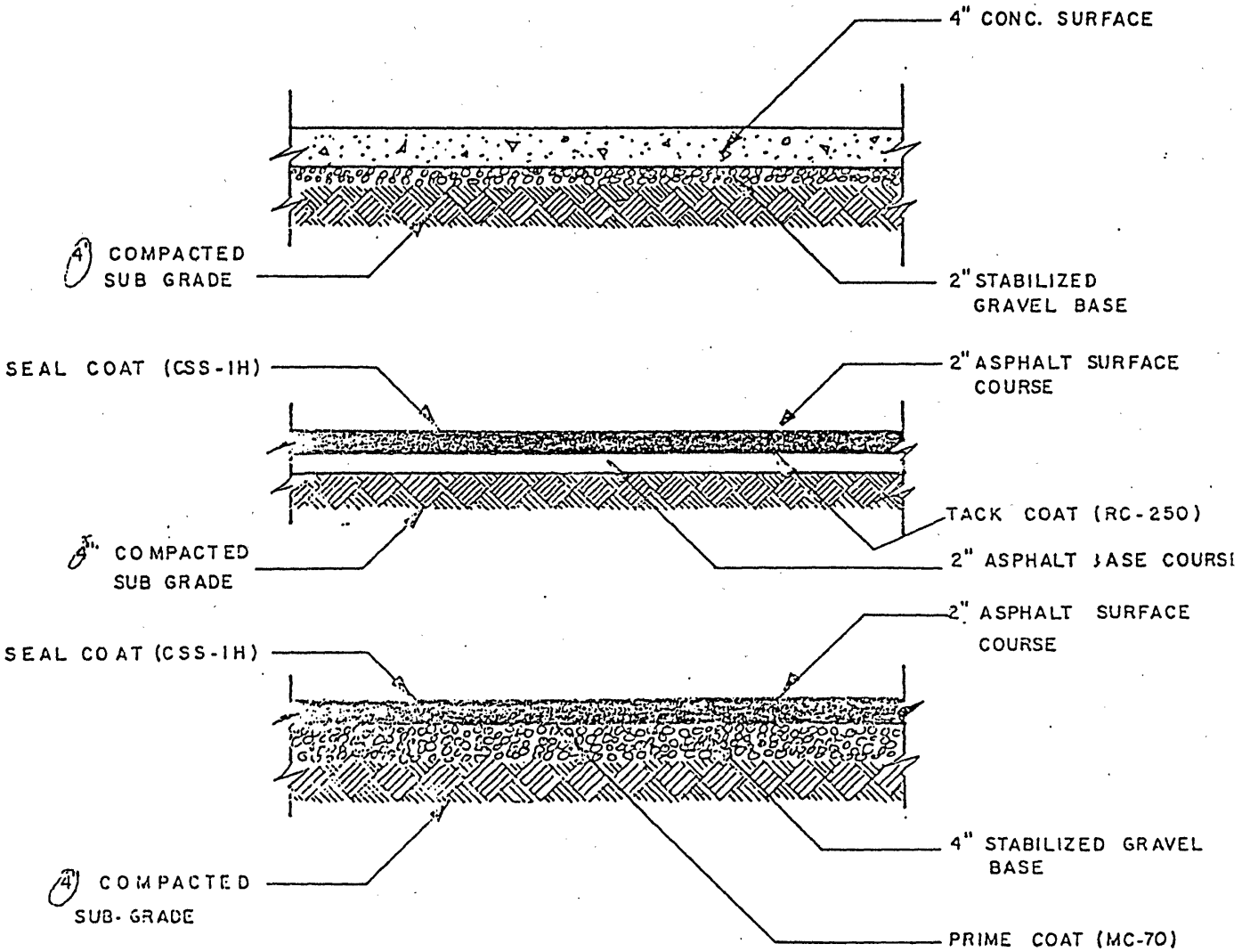
William R. Craig
Mayor

ATTEST:

Kent Bruggen
Finance Officer

(SEAL)

MINIMUM STANDARDS FOR CONSTRUCTION OF PARKING LOTS

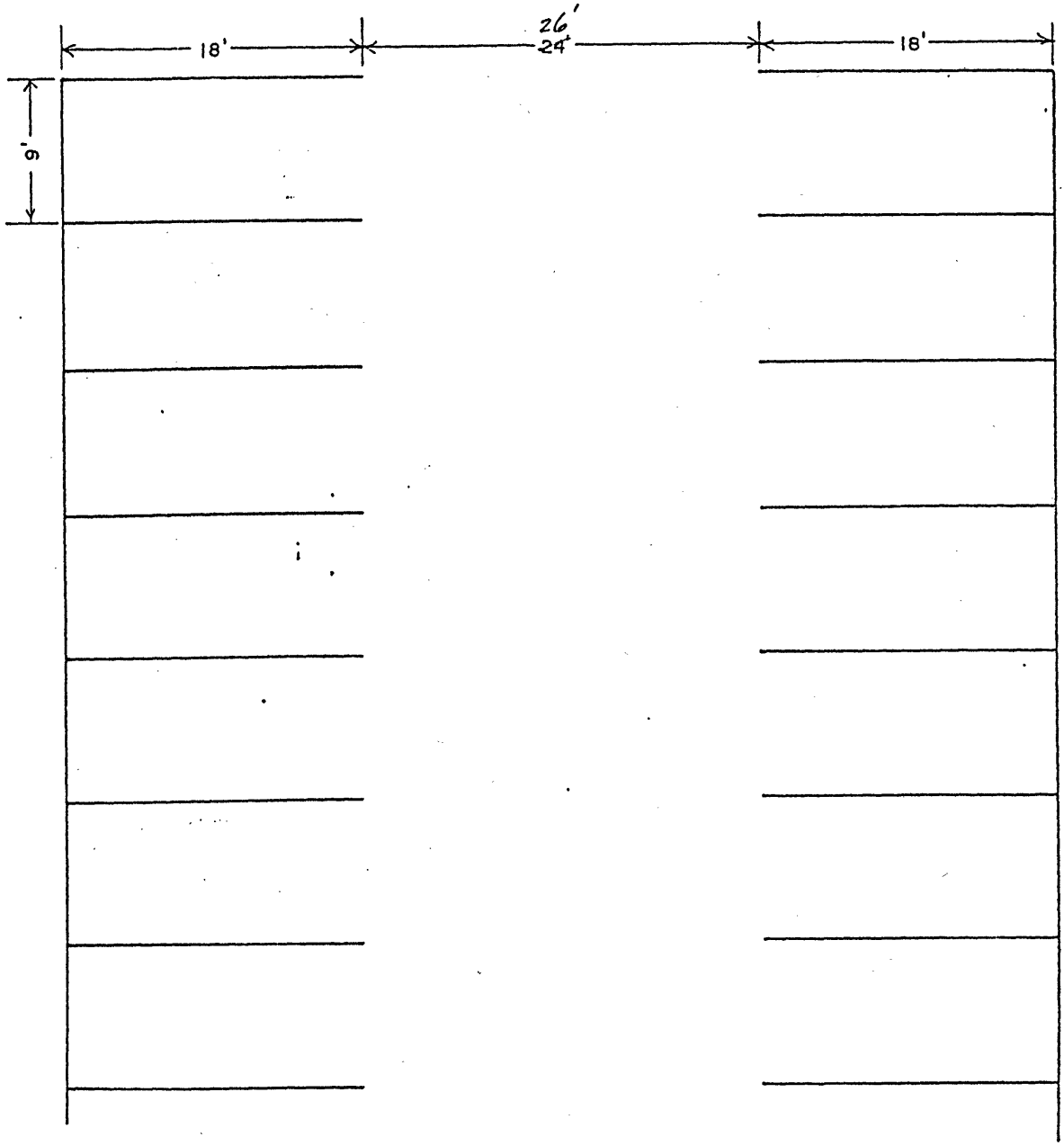


CITY OF RAPID CITY

DATE 6/16/80

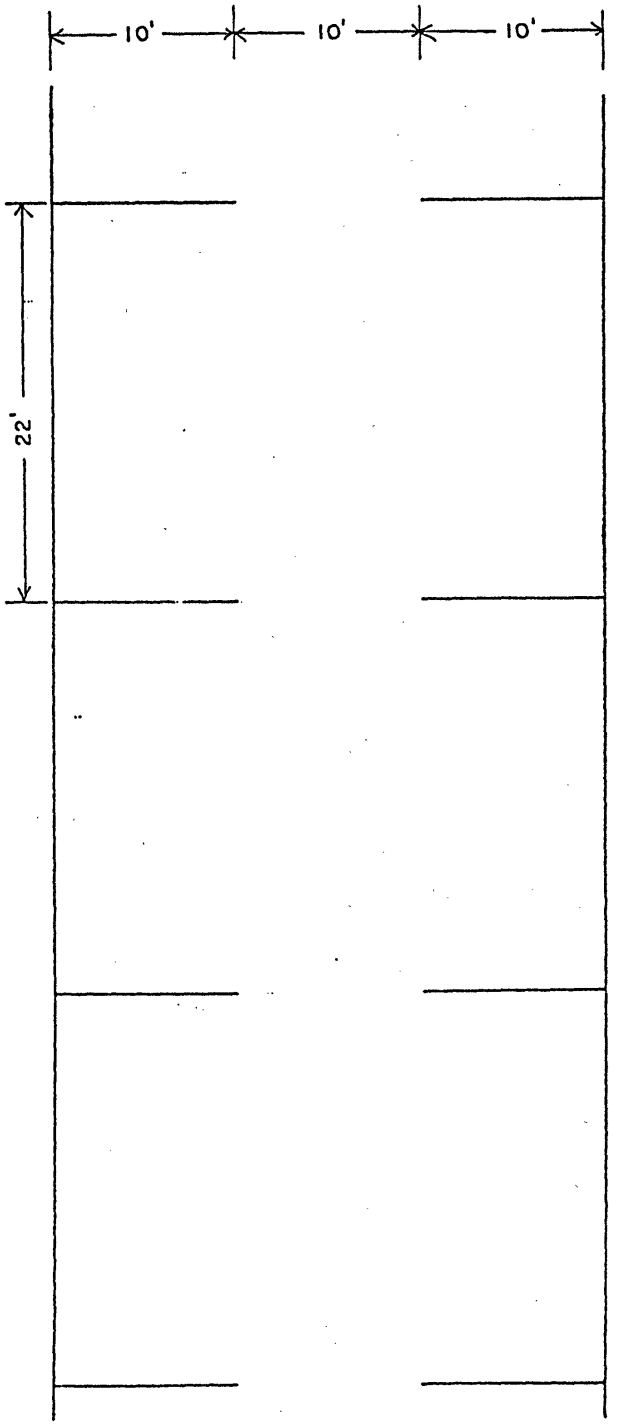
PARKING	STALL LENGTH	STALL WIDTH	AISLE STALL TO STALL
90°	18'	9'	26'

SCALE
1" = 10'



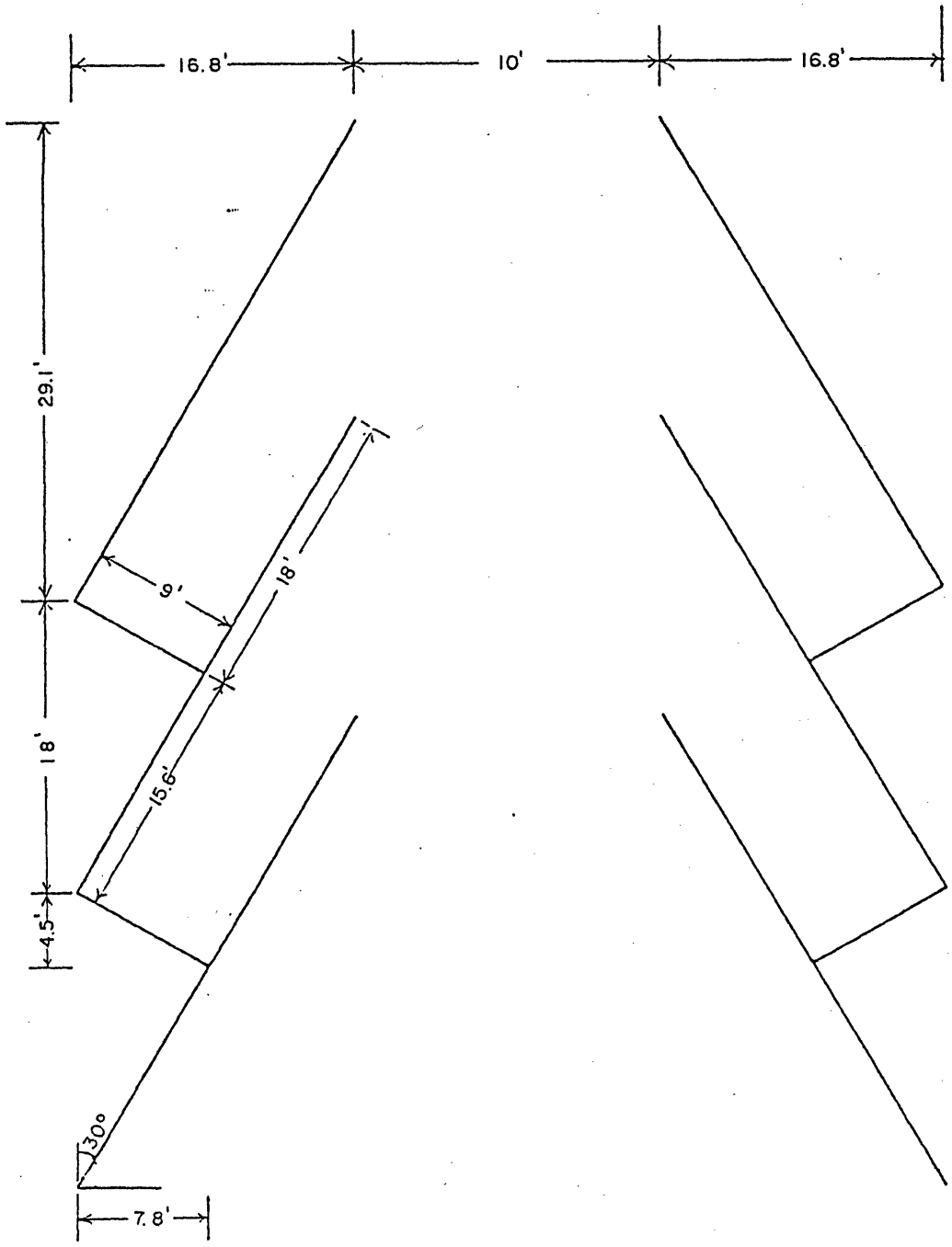
PARKING	STALL LENGTH	STALL WIDTH	AISLE STALL TO STALL
PARALLEL	22'	10'	10'

SCALE
1" = 10'



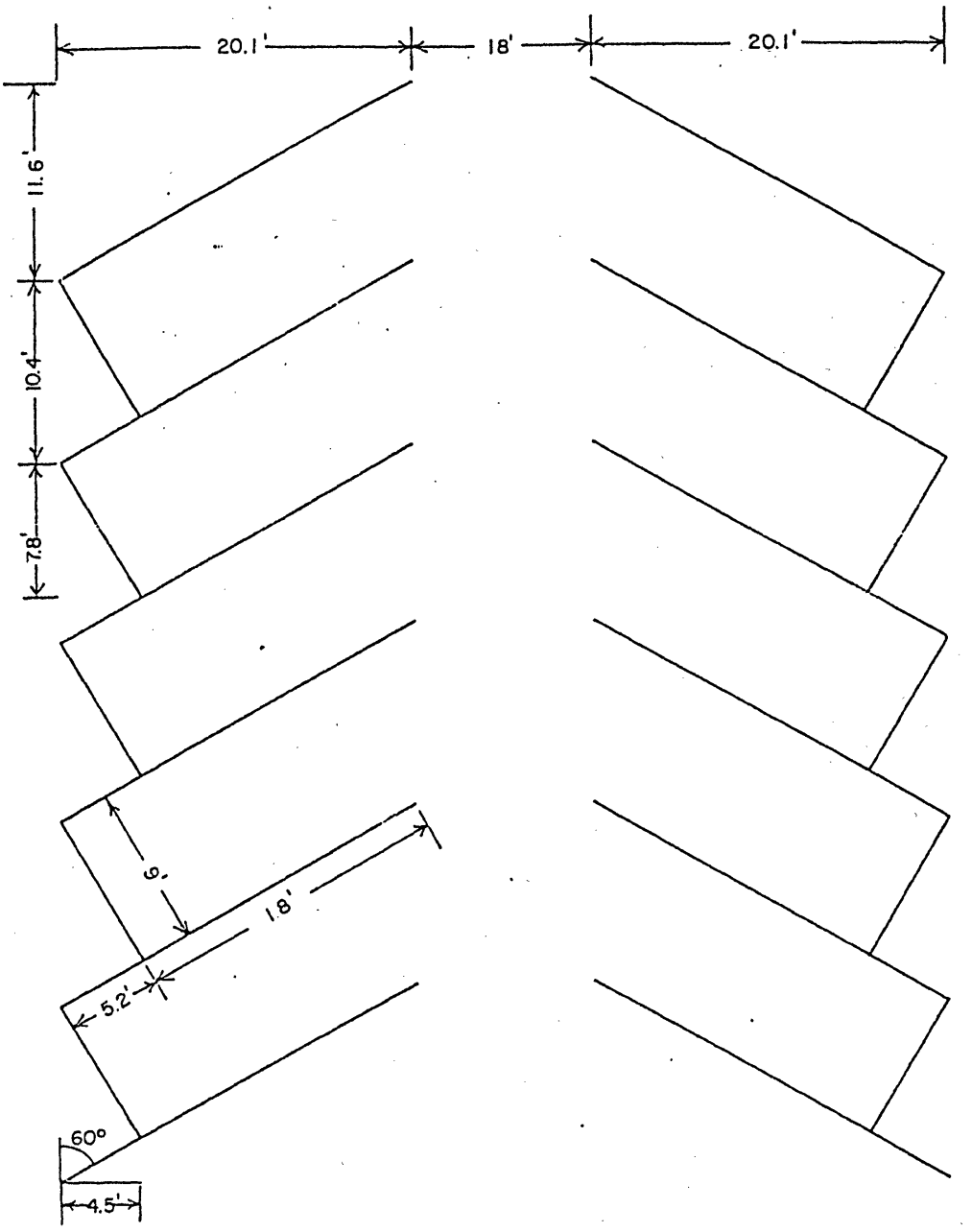
PARKING	STALL LENGTH	STALL WIDTH	AISLE STALL TO STALL
30°	18'	9'	18'

SCALE
1" = 10'



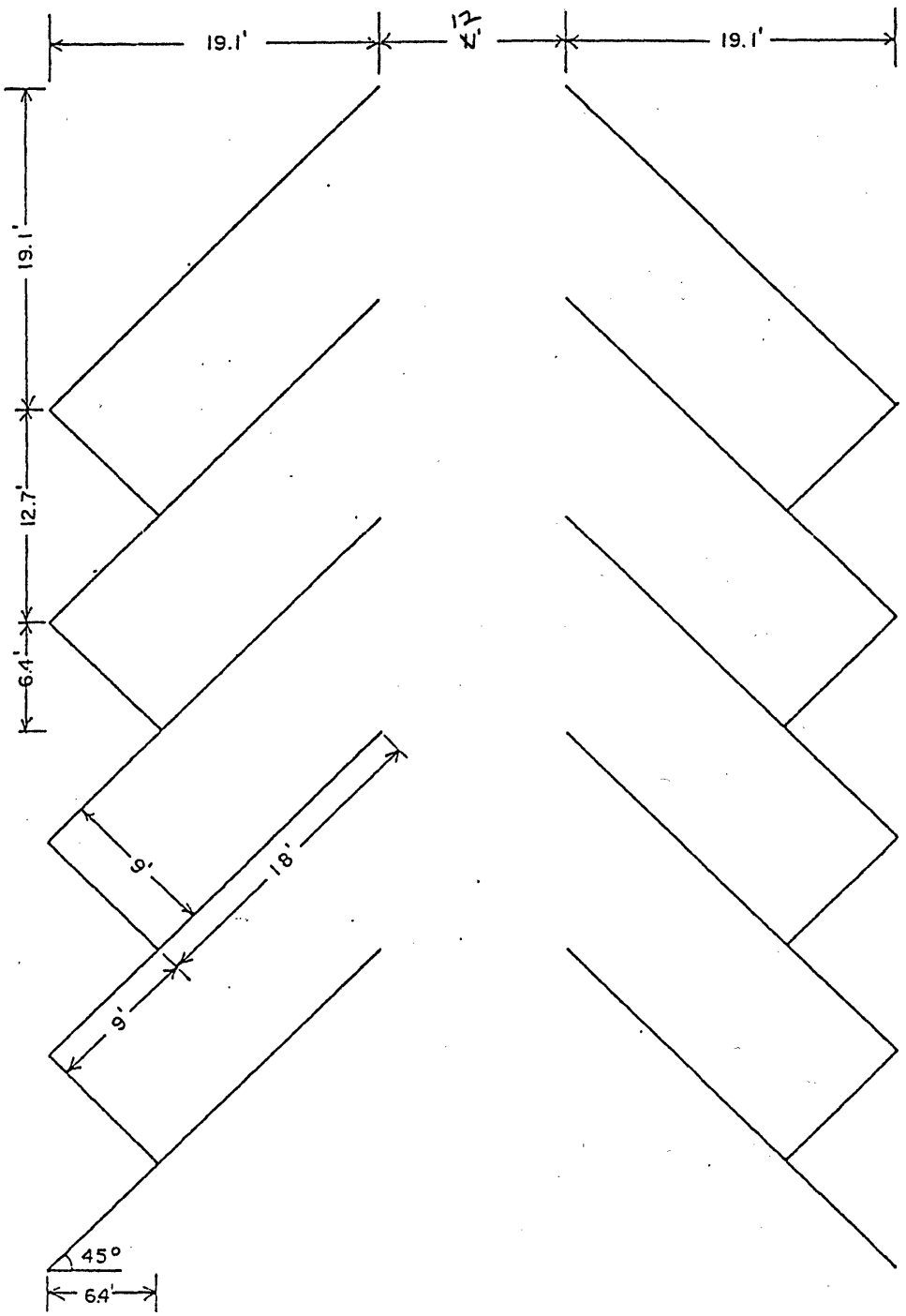
PARKING	STALL LENGTH	STALL WIDTH	AISLE STALL TO STALL
60°	18'	9'	10'

SCALE
1" = 10'



PARKING	STALL LENGTH	STALL WIDTH	AISLE STALL TO STALL
45°	18'	9'	11'

SCALE
1" = 10'



APPENDIX H

Permit Application
City of Rapid City

300 Sixth Street – Rapid City, SD 57701
(605) 394-4157

PERMIT NUMBER: _____
RECEIPT NUMBER: _____

RECEIVED BY: _____

ID NO: _____
PIN NO: _____
APPLICATION DATE: _____
DATE ISSUED: _____

PROPERTY INFORMATION

LOT ADDRESS _____
OWNER NAME _____
& ADDRESS _____
_____ TEL _____

LEGAL DESC _____
_____
_____
_____
ZONED _____ ACRES _____
_____

SETBACKS _____
EASEMENTS _____

ACCESS FROM _____
PERMIT TYPE _____
_____
OF BLDGS _____ # OF UNITS _____ # SQ FT _____

PLAN # _____ SIDEWALKS? _____
APPEAL # _____ DRAINAGE BASIN CODE _____
APPEAL # _____

TYPE OF CONSTRUCTION _____ _____ _____
OCCUPANCY GROUP/DIV _____ _____ _____

COMMENTS _____
_____

PVT SEWAGE? _____ WATER SRC _____
FLOOD PLAIN? _____ FLOOD CODE _____ MAP # _____
FLOOD INS? _____ EFF YEAR _____

APPLICANT INFORMATION

NAME _____
ADDRESS _____
CITY/STATE _____ TEL _____

RELATIONSHIP TO PROPERTY:
☐ OWNER ☐ CONTRACTOR ☐ OWNERS REPRESENTATIVE

_____ _____
SIGNATURE OF APPLICANT DATE

CONTRACTOR INFORMATION

CONTRACTOR _____
_____
_____ TEL _____

ARCHITECT/ _____
SURVEYOR _____
_____ TEL _____

ENGINEER _____
_____
_____ TEL _____

ELECTRICAL _____
_____
_____ TEL _____

PLUMBING _____
_____
_____ TEL _____

MECHANICAL _____
_____
_____ TEL _____

FEE INFORMATION

ESTIMATED COST/ICBO VALUE _____

PERMIT FEE	
PENALTY/REINSPECTION FEE	
ELECTRICAL FEE	
PLUMBING FEE	
MECHANICAL FEE	
REVIEW FEE	
BUILDING PERMIT FEE	
DITCHER/ELECT. CERTIF. FEE	
DRAINAGE BASIN IMPROVEMENTS	
TOTAL FEE	

_____ _____
ISSUED BY DATE

Sketch and/or describe work: (use separate sheet, or attach grading plan)

Will grading operation be located in the floodplain? _____ yes _____ no
If yes, have ordinance requirements been met? _____ yes _____ no

Will grading operation be located in a wetland or in waters of the United States? _____ yes _____ no
If so, has a Corps of Engineers 404 Permit been secured? _____ yes _____ no

Will drainage patterns be altered? _____ yes _____ no

Will grading operation take place in a geologically hazardous area? _____ yes _____ no
If yes, have proper precautions been taken?

Quantity of Grading or Excavation: _____ cubic yards.

Area to be disturbed by proposed work _____ acres.

For disturbed areas greater than one acre, a Pennington County Dust Control Permit is required. Has application been made? _____ yes _____ no _____ na

Type of erosion control to be applied (specify) _____

Provide traffic control per Manual on Uniform Traffic Control Devices.

Haul route:_____

_____

Source/Destination of Materials: _____

Buildings constructed on fill will be required to have foundations designed by a professional engineer, per SDCL 36-18 and the UBC as adopted by the Rapid City Municipal Code.

Bond required _____ yes _____ no. If yes, Bond is for _____.
$_____.

This permit will expire on:_____

The Engineering Division is to be notified upon start of work and completion of work for inspection purposes. (394-4154). The Engineering Division Inspector assigned to this location is _____.

The applicant hereby acknowledges receipt of applicable instructions and specifications and has thoroughly read and understands the terms and conditions required by this application.

Approved: _____. Rapid City Engineering Division

SECTION 70

SEEDING

70.1 DESCRIPTION

A. General: This work consists of preparing a seedbed and furnishing and planting seed on disturbed areas within limits of the work.

B. Related Work:

Section 71 - Fertilizing
Section 72 - Mulching

70.2 MATERIALS

A. General: The seed furnished shall be the best quality seed available for the kind and variety specified. The seed shall comply with the requirements of the South Dakota Seed Law and shall be "Blue Tag" certified governed by Federal Regulations.

B. Origin Limitations: Seed furnished shall have been grown in South Dakota or an area comparable to South Dakota's growing conditions.

C. Seed Testing: Seed shall be tested within eighteen (18) months prior to the planting date. Testing shall be performed by a commercial seed testing lab or a registered member of the Society of Commercial Seed Analysts (Registered Seed Technologist). The Contractor shall furnish the Engineer with a certified test report prior to the start of seeding operations. Seed not planted within the eighteen (18) month period shall be retested for dormant seed, hard seed, and germination. A new certified test report shall be furnished. Testing shall be the responsibility of the Contractor.

D. Labeling: Before seeding begins, the Engineer shall verify that each bag of seed delivered to the project bears a tag which shows the following information:

Name and address of supplier.

Project number for which the seed is to be used.

Suppliers lot number for each kind of seed in the mixture.

Origin (where grown) for each kind of seed.

Purity, germination, and other information required by South Dakota Seed Law for each kind of seed.

Pounds of bulk seed of each kind of seed in each bag.

Total pounds of bulk seed mixture in each bag.

Pounds of pure live seed (PLS) of each kind of seed in each bag.

Total pounds of pure live seed (PLS) mixture in each bag.

Dormant seed and hard seed.

When bulk seed is referred to, it is defined as total seed, including pure live seed (PLS), inert matter, crop seed, and weed seed.

E. Seed Mixes:

1. Irrigated Lawn Mix

30%	Kentucky Bluegrass
20%	Park Kentucky Bluegrass
30%	Derby or Pennant Perennial Rye Grass
20%	Creeping Red Fescue

The rate of application shall be 175 lbs. per acre.

2. Non-irrigated Lawn Mix

50%	Ephraim Crested Wheatgrass
30%	Perennial Rye Grass
15%	Annual Rye Grass
5%	Alsike Clover

The rate of application shall be 200 lbs. per acre.

3. Road Ditch Mix

30%	Kentucky Bluegrass
25%	Timothy
10%	Lincoln Bromegrass
10%	Regar Bromegrass
10%	Tall Fescue
10%	Alsike Clover
5%	Medium Red Clover

The rate of application shall be 50 lbs. per acre.

70.3 CONSTRUCTION REQUIREMENTS

A. General Requirements: Within seasonal limitations, seeding shall be done as soon as finish grading and topsoiling have been completed.

Seeding or related work shall not be done when the condition of the soil is such that a satisfactory seedbed or uniform seed placement cannot be obtained. Seed shall not be sown when the wind is strong enough to interfere with uniform seed application. Seed shall not be sown on areas under water.

Slopes shall be worked longitudinally, on contour, during the preparation of areas, drilling, and after seeding.

Fertilizing shall be provided as indicated in Section 71. Mulching shall be provided as indicated in Section 72.

The Engineer may approve necessary adjustment in the requirements outlined to obtain the most satisfactory results under varying conditions.

B. Seasonal Limitations: Seeding may be done when the ground is not frozen and condition of the soil permits preparation of a satisfactory seedbed. Seeding shall not be done without authorization from the Engineer.

The Contractor shall calibrate the drill or hydroseeder on each project. Calibration runs may be performed on areas to be seeded.

C. Equipment and Methods:

1. Seedbed Preparation: Initial preparation of newly graded areas for seeding shall be worked to a depth of approximately three inches (3"). Every effort shall be made to obtain this depth on the first pass with tillage equipment. The implement used shall be a tool carrier with rigid shanks and sweeps or chisels or a heavy duty disk as appropriate to the conditions. The implement shall have positive means of controlling depth of penetration.

   Lumps or clods exposed by the initial pass of tillage equipment over three inches (3") in diameter shall be broken up. The number of additional passes required to break up lumps or clods shall be kept to a minimum. Working the soil to a fine, pulverized condition shall be avoided.

   After seedbed preparation has been completed, the Contractor shall pick up and dispose of all loose stones or boulders having a vertical projection of two inches (2") or more above the soil surface. Logs, stumps, brush, weeds, cables, or other foreign material which might interfere with the proper operation of drills, mowers, or other implements shall be disposed of by the Contractor.

2. Reseeding of Previously Seeded Areas: Existing weeds and cover crop shall be preserved for its mulch value. The seed shall be drilled directly into existing cover if possible, or mowing and disking shall be provided to permit penetration of drill openers and placement of seed to the specified depth.

3. Drilling: The specified seed mixture shall be drilled in uniformly, using a press drill equipped with individually mounted, adjustable, spring-loaded, double-disk furrow openers, fitting with depth control bands or drums.

   The depth control bands or drums shall provide a loose planting

depth of one to one and one-half inches (1 - 1 1/2") (distance from band to edge of opener disk) before compaction by the press wheel and a final planting depth of three-fourths to one inch (3/4 - 1") behind the press wheel.

The press drill shall be mounted on rear press wheels which carry a major portion of the weight of the drill and having no weight carrying wheels at the ends of the seedbox. The press wheels shall be mounted independently of the furrow openers. A press wheel shall follow directly behind each opener to compact the soil over the drill row.

The seedbox shall be equipped with positive feed mechanisms which will accurately meter the seed to be planted and agitators which will prevent bridging in the seedbox and keep seeds uniformly mixed during drilling. The drill shall conform to the following:

Drill Width Maximums:

Single Units.....10 feet
Flex coupled side-by-side units.....16 feet
(max. two 8-foot members)

Each drill shall be equipped with a meter which will measure the area covered by the drill.

Each drill shall be equipped with fabricated baffles or partitions mounted a maximum of two feet (2') on centers and flush with the top of the seed box and extending downward to within four inches (4") of the bottom of the seed box.

On areas where a press drill cannot be operated satisfactorily, hydraulic, cyclone, knapsack hand-operated, or other broadcast type seeders may be used, when approved by the Engineer.

4. Hydroseeding: Drilling is the preferred method of seeding. The Contractor shall obtain written permission from the Engineer to hydroseed.

The specified seed mixture shall be hydroseeded uniformly, using a hydroseeder.

The hydroseeder shall be equipped with a gear-driven pump and a paddle agitator. Agitation by recirculation from the pump will not be allowed. Agitation shall be sufficient to produce a homogeneous slurry of seed and fertilizer in the designated proportions.

Fertilizer of the specified formulation shall be included at the specified rate.

Specified seed mixtures shall be included at the specified rate. No seed shall be added to the slurry until immediately prior to beginning the seeding operation.

Legume seed shall be pellet inoculated with the appropriate bacteria. Inoculation rates shall be four times that required for dry seeding.

The time allowed between placement of seed in the hydroseeder and emptying of the hydroseeder tank shall not exceed thirty (30) minutes.

Wood cellulose fiber mulch shall be degradable, green-dyed, wood cellulose fiber or one hundred percent (100%) recycled long-fiber pulp, free from weeds or other foreign matter toxic to seed germination and suitable for hydromulching.

D. Care During Construction and Final Inspection: The Contractor is responsible for smoothing dirt ridges which result from his operations or from traffic. Such ridges shall be smoothed so they will not interfere with future mowing.

Following completion of seeding operations, foot, vehicular, or equipment traffic over the seeded area shall be kept to a minimum.

Areas damaged from such traffic shall be reworked and reseeded as determined by the Engineer.

The Contractor shall, prior to acceptance of the project, reseed any area on which the original seed has been lost or displaced.

E. Watering: Immediately after seeding, the Contractor shall notify all affected property owners that they will be responsible for watering the newly seeded areas, except when the Contractor is required in the Detailed Specifications to water the newly seeded areas for the period of time specified therein.

70.4 METHOD OF MEASUREMENT

Seeding will be measured to the nearest square yard. Measurement for fertilizer and mulch will be the same as for the seeding. Tickets indicating the appropriate application rate has been met shall be furnished to the Engineer to verify this area.

70.5 BASIS OF PAYMENT

Seeding will be paid for at the contract unit price per square yard. This price will be full compensation for the preparation of the seed and for labor, tools, equipment, and incidentals necessary.

Payment for seeding, fertilizing, and mulch will all be included under the same bid item.

Appendix J

7.28 Dirt/Dust Control

All activities associated with this contract shall conform to Pennington County Ordinance #12, "Fugitive Dust Regulation". The Contractor shall obtain a dust control permit from the County Planning Office and furnish a copy to the Owner before beginning work on the project.

The Contractor shall make every reasonable effort to minimize fugitive dirt or dust as a result of construction of rock access pads at each designated access point to trap mud tracked from the construction zone, as described in the Drainage Criteria Manual. The Engineer may require the Contractor to water or take other actions necessary, such as constructing silt fences or ponds, windbreaks or dust traps or placing temporary or permanent erosion control vegetation or man-made materials, to prevent blowing dirt and/or dust and other nuisance conditions, at no additional cost to the Owner.

Upon substantial completion of construction at a given site or at any time prior to final project acceptance as directed by the Engineer, the Contractor shall clean up the project area(s) and remove all dirt and debris from the street and sidewalk surfaces to the satisfaction of the Engineer. In general, removal of the dirt and debris shall be conducted in such a way and/or at such a time as to minimize nuisance conditions of dirt and dust in the air, on vehicles, sidewalks, and buildings.

Specifically, the streets shall be swept with an approved, enclosed mechanical or vacuum-type sweeper which picks up the dirt and debris and stores it for hauling and disposal off-site. The Contractor shall utilize a private sweeper whenever possible. However, he may request that the City Street Department do the sweeping if a private sweeper is not available when required. When the Contractor elects to utilize the City sweeper, he shall give the Engineer at least 72 hours' notice prior to the time the sweeper is desired. If the City sweeper is utilized, the City Street Department will then bill the Contractor for the use of the sweeper at the current hourly rate for sweeper and operator. If, in the opinion of the Engineer, the Contractor fails to make reasonable effort to minimize fugitive dust as a result of his construction activities, or refuses to take action when requested by the Engineer, the Engineer may elect to hire a separate contractor or hire the City sweeper to provide cleanup. The City will bill the Contractor at one and one-half times (1 1/2) the cost of hiring the separate contractor, including administrative costs or at one and one-half times (1 1/2) the current hourly rate for the sweeper and operator, when City sweepers are used.

PENNINGTON COUNTY ORDINANCE NO. 12
REVISED
(3/9/99)

AIR QUALITY ORDINANCE

INDEX

INDEX

PENNINGTON COUNTY ORDINANCE NO. 12

"AIR QUALITY ORDINANCE"

Be it ordained by the Board of County Commissioners of Pennington County, South Dakota:

1.0 POLICY, APPLICABILITY AND DEFINITIONS OF ORDINANCE

1.01 Policy of County: In order to maintain a compliance status with the United State's Environmental Protection Agency's National Ambient Air Quality Standards and to prevent adverse health effects that result from fugitive emissions and smoke from wood burning, it is hereby declared to be the policy of Pennington County, South Dakota to achieve and maintain the PM_{10} and $PM_{2.5}$ National Ambient Air Quality Standards by controlling fugitive emissions, open burning and wood burning so as to protect the health and welfare of all the people who inhabit the county; to limit environmental damage to plant and animal life within the county; and to promote commercial and industrial development while limiting environmental degradation; and to educate the residents of the county on air quality issues. This policy is to be achieved and maintained through the development and implementation of programs of education, air pollution prevention, abatement and control. It is the purpose of this ordinance to provide for a program of fugitive emissions control by applying reasonable available control technology and solid fuel smoke abatement.

1.02 Applicability: This ordinance shall apply to:

1. The geographical portion of Pennington County, South Dakota, that encompasses the northwest corner of Section 15, Township 2N, Range 6E to the northeast corner of Section 14, Township 2N, Range 8E, to the southeast corner of Section 35, Township 1N, Range 8E to the southwest corner of Section 34, Township 1N, Range 6E, to the northwest corner of Section 15, Township 2N, Range 6E_subject to the jurisdiction of the Board of Commissioners of Pennington County, South Dakota;
2. Smoke from fuel burning sources;
3. Construction permits;
4. Compliance plans (paved and unpaved parking lots, streets sanding and cleaning operations);
5. Fugitive emissions requirements for industrial sources until permit conditions or regulations are established for industrial sources by the South Dakota Department of Environment and Natural Resources.

This ordinance applies to the sources listed above located in the area defined in Section 1.02 (1).

1.03 Definitions:

1. Air Quality Board: There is hereby created an Air Quality Board consisting of seven (7) voting members and three (3) ex-officio members.

   A. The composition and further requirements of the seven voting members are as follows:

      1. Two (2) members representing industry;
      2. One (1) member representing the engineering profession (member shall have graduated from an accredited college or university with an engineering degree);
      3. One (1) member representing environmental interests (member shall have an interest and knowledge in environmental issues, preferably air quality issues);
      4. One (1) member representing homeowners (member shall own a home in the regulated area);
      5. One (1) member representing the business community (member shall be associated with a business in the regulated area);
      6. One (1) member at large (member shall be selected at large).

      All voting members of the Air Quality Board shall be appointed by the Board of County Commissioners for a term of three (3) years on a staggered term basis.

      All voting members shall be residents of the regulated area as defined in Section 1.02 (1), and with the exception of the two industry members, shall not derive a majority of their income, either directly or indirectly, from a person, as defined by Section 1.03(26), who is subject to regulation by this ordinance. For purposes of this section, a person who is subject to regulation by this ordinance does not include one who is regulated solely for a parking lot, open burning, or a solid fuel burning device. Applicants for the above positions, except for industry representative, shall submit a signed statement that they do not derive a majority of their income from a person who is subject to regulation by this ordinance. Any further documentation which the Board of County Commissioners may require concerning the applicant's finances are to be considered confidential and shall not be made available to anyone other than the Board of Commissioners.

   B. The composition and professional associations of the three Ex-Officio Members are as follows:

1. One (1) member representing state government (Secretary of the Department of Environment and Natural Resources, or designee);
2. One (1) member representing the city of Rapid City, South Dakota (Mayor of Rapid City or designee);
3. One (1) member representing the Pennington County Board of Commissioners (Chairman of Board or designee).

The duties of the Air Quality Board shall be to supervise and give direction to the Air Quality Director, review and approve compliance plans, serve as an appeal board, act on enforcement action initiated by the Air Quality Director, and make recommendations to the Board of County Commissioners on policies related to the air quality of Pennington County. The purpose and goal of the decisions made and actions taken by the Air Quality Board shall be to protect and serve the public interest.

2. Air Quality Control Zone: That area as defined in Section 1.02(1).

3. Ambient Air: That portion of the atmosphere outside of buildings to which the general public has access.

4. Burning Season: That period of time from November 1st through March 31st in the following year.

5. Civil Action: In addition to the penalties set forth in this ordinance for a smoke abatement violation, the Air Quality Board may bring civil action for appropriate relief including a temporary or permanent injunction to enforce compliance with the provisions of this ordinance.

6. Commission: The Pennington County Board of Commissioners.

7. Construction Activity: Any temporary activity which involves the removal or alteration of the natural or pre-existing cover of one acre or more of land. Construction activity shall include but not be limited to stripping of topsoil, drilling, blasting, excavation, dredging, ditching, grading, street maintenance and repair, or earth moving. Construction activity is generally completed within one year.

8. Continuous Operating Activity: Any activity which may cause particulate fugitive emissions to be released into the ambient air and which is conducted on an on-going basis in

the same locality. Continuous operation is associated with winter sanding of paved parking lots and maintenance of unpaved parking lots of more than one acre in size and with street sanding and cleaning of streets, highways and roads.

9. Ecosystem Management: Those activities employed to maintain or enhance the floral or fauna habitat, or to reduce accumulated natural fuels in an area, and supervised by a local, state or federal land/wildlife management agency.

10. Entry on Property: Any duly authorized officer, employee or representative of any county agency responsible for enforcing this ordinance, after obtaining an escort and complying with safety regulations, may enter and inspect that part of any property, premises or place in which such officer, employer, or representative has reasonable grounds to believe is a source of air pollution or in which such officer, employee or representative has reasonable grounds to believe that the provisions of this ordinance are not being followed. The entry and inspection may be conducted at any reasonable time, without prior notice, for the purpose of investigating said pollution or of ascertaining the state of compliance with the ordinance. No person shall refuse entry or access to any authorized person who requests entry for the purpose of such an investigation, and who presents appropriate credentials, nor shall any person obstruct, hamper or interfere with any such investigation.

11. Fire Hazard: Any thing or act, including buildings or flammable materials, which increases or could cause an increase of the hazard or menace of fire to a greater degree than that customarily recognized as normal by persons in the general public.

12. Fire Department Personnel Training: Activities designed for the purpose of training fire department personnel and conducted by a fire department.

13. Fuel: Solid matter burned in a solid fuel burning device or under the conditions of open burning that is limited to the following: untreated dry wood and lumber, coal and products manufactured for the sole purpose as a fuel. Untreated wood or lumber shall mean wood in its natural state that has not been chemically soaked or treated.

14. Fugitive Emissions: Those particulate emissions which do not pass through a stack, chimney, vent, or other functionally

equivalent opening. In the event that any of the particulate emissions included by this definition are regulated by the state of South Dakota, the governmental entity which has the more strict and more extensive requirements for control of such emissions shall be enforced over the least restrictive requirements. Particulate emissions from rock crushers for which a permit to operate has been issued are excluded from this definition.

15. Inappropriate Fuel for Open Burning: Includes, but is not limited to: leaf piles, grass clippings, green plants, refuse, paper, rubbish, books, magazines, fiberboard, packaging, rags, fabrics, animal waste, liquid gelatinous hydrocarbons, tar, paints and solvents, chemically soaked or treated wood, plastic or rubber, the materials specified in Section 2.02(4), or other materials not listed in Section 1.03(13).

16. Inappropriate Fuel for Solid Fuel Burning Devices: Includes, but is not limited to: leaves, grass clippings, pine needles, green plants, refuse, paper, rubbish, books, magazines, fiberboard, packaging, rags, fabrics, animal waste, liquid or gelatinous hydrocarbons, tar, paints and solvents, chemically soaked or treated wood, plastic or rubber, the materials specified in Section 2.02(4), or other materials not listed in Section1.03(13).

17. National Ambient Air Quality Standards (for particulates): The national primary and secondary ambient air standards for particulate matter as described in the July 18, 1997 publication of the Code of Federal Regulations, Part 50, Volume 62, No. 138 are:

    a. PM2.5: 15.0 micrograms per cubic meter (ug/m^3), annual arithmetic mean concentration and 65 ug/m^3, 24-hour average concentration. The daily standard is based upon an annual 99^{th} percentile with a three year average of the 99^{th} percentiles.

    b. PM10: 50.0 ug/m^3, annual arithmetic mean concentration and 150.0 ug/m^3, 24-hour average concentration. The daily standard is based upon an annual 98^{th} percentile with a three year average of the 98^{th} percentiles.

18. Noxious Weed: Undesirable vegetation that is characterized by profuse seed production and/or an ability to spread

through rapid growth, making it difficult to control or eradicate through normal management operations.

19. Office of Air Quality: There is hereby created the Pennington County Office of Air Quality. The head of the will be the Air Quality Director. The Air Quality Director shall be responsible for the administration and the initiation of enforcement of this ordinance. The Air Quality Director shall receive direction from the Board to be outlined in the Office's operating procedures.

20. Opacity: The degree to which fugitive emissions reduce the transmission of a light source.

21. Open Burning: The burning of any matter in such a manner that the products of combustion resulting from the burning are emitted directly into the ambient air without passage through a stack, duct, or chimney.

22. Open Burning Form: A form produced by the Office of Air Quality and completed in cooperation with any person seeking approval to conduct open burning. The form provides relevant information regarding a planned open burning activity.

23. Parking Lot: Any parking lot to which street sanding material is applied and any unpaved parking lot to which the public has access that may generate fugitive emissions.

24. $PM_{2.5}$: Particulate matter with an aerodynamic diameter less than or equal to a nominal two and one-half micrometers.

25. PM_{10}: Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers.

26. Person: Any individual, partnership, firm, association, municipality, public or private corporation, subdivision or agency of the State, trust, estate or any other legal entity.

27. Political Subdivision: Any public or private entity that maintains street operations within then area designated in Section 1.02(1).

28. Reasonably Available Control Technology (RACT): The emission control technology determined on a case by case basis by the Air Quality Board to be feasible in meeting the

requirements of this ordinance, taking into account energy,environmental, economic impacts and other costs.

29. Reentrainment: A process in which particulate matter that has been deposited in one place, is then liberated into the ambient air by vehicular travel, wind, or other causes.

30. Smoke: Small airborne particles resulting from incomplete combustion consisting predominantly, but not exclusively, of carbon, ash, and other combustible materials, that form a visible plume.

31. Solid Fuel Burning Device: Any fireplace, fireplace insert, wood stove, wood burning heater, wood fired boiler, coal fired furnace, coal stove, or similar device burning any solid fuel used for aesthetic, cooking or space heating inside a building.

32. Wildfire: An uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures.

33. Wildfire Control Management: Activities, including open burning, that are conducted to reduce the potential for serious or wild fires.

2.0 SMOKE ABATEMENT

2.01 Restrictions on Solid Fuel Burning Devices

1. Inappropriate Fuels Burned in Solid Fuel Burning Device Prohibited: No person shall, at any time, burn inappropriate fuel as defined in this ordinance in any solid fuel burning device. No person shall use a fuel in a solid fuel burning device, except those that are recommended by the manufacturer, subject to any installation or operational restrictions imposed by the manufacturer.

2. Sale of New Solid Fuel Heating Devices: After July 1, 1991, no person shall sell or offer for sale, any new solid fuel heating device as defined by the United States Environmental Protection Agency in 40 CFR Part 60.530 through 60.539b, unless the solid fuel heating device has been emissions certified and labeled in accordance with those requirements. After July 1, 1991, no person shall sell or offer to sell any new solid fuel heating device that can not be certified under the aforementioned federal regulation unless the solid fuel heating device has an air to fuel ratio equal to or greater than 35 to 1 as determined by an independent testing laboratory.

2.02 Open Burning Rules:

1. **Open Burning Restricted**: No person shall, at any time, engage in open burning activities within the Air Quality Control Zone, except as allowed under the following conditions:

   a. Open burning of agricultural irrigation ditches;
   b. Open burning for noxious weed control;
   c. Open burning for wildfire control management;
   d. Open burning for ecosystem management;
   e. Open burning for fire department personnel training;
   f. Open burning of a fire hazard.

   Any inappropriate fuels, as defined in Section 1.03(15) present prior to open burning will be removed to the fullest extent possible prior to ignition.

2. Conditions for Open Burning Approval: Prior to ignition, a person requesting to open burn for the exceptions allowed under Section 2.02(1) must gain permission from one of the following fire control entities listed below, based upon the location of the proposed burning activity.

   A. Zones of Jurisdiction for Gaining Permission to Open Burn:

      1. The Black Hills Forest Fire Protection District: This includes all areas outside of the Rapid City city limits that are west of Interstate 90 to the north, and west of South Highway 79 to the south. Permission will be granted by the State Forester of the South Dakota Department of Agriculture, Resource Conservation and Forestry Division, or his designee.

      2. Rapid City: This includes all areas within the Rapid City city limits. Permission will be granted by the Rapid City Department of Fire and Emergency Services.

      3. All other portions of the Control Zone: This includes those areas served by the North Haines Volunteer Fire Department (VFD), the Box Elder VFD, the Rapid Valley VFD, except that portion west of South Highway 79, and those residents of the Black Hawk VFD who reside in that portion east of Interstate 90. Permission for these areas will be granted by the Air Quality Office in Rapid City.

   B. The following information, as outlined on the open burning form, will be provided to the appropriate fire control entity as described in Section 2.02(2)A:

      1. The type of burning as described in Section 2.02(1);

2. Size of burn;
3. Location of the site;
4. Anticipated time and date of burn;
5. Name and phone number of contact person;
6. Name of responsible party assuming liability for the burn;
7. A contingency plan to be implemented in the event that control of the burn is lost.

A copy of the open burning form is available at the Air Quality Office and at all fire departments whose territories are outside of the Black Hills Forest Fire Protection District and inside of the Air Quality Control Zone.

3. Basis for Approval: Approval may be granted following receipt of the open burning form, and will be contingent upon the following:

a. Current and forecast meteorological conditions;
b. Current ambient air quality data;
c. The volume of burning pending at the time of the request;
d. The information provided on the open burning form;
e. A site inspection, conducted at the discretion of the Air Quality Director.

Approval may be revoked or suspended by the Air Quality Director prior to the actual burn in order to protect public health and welfare. This determination would be based upon changing meteorological and/or ambient air conditions.

4. State Air Quality Regulations (ARSD 74:36:06) prohibit the following open burning practices:

a. A person may not burn waste oils, rubber, waste tires, tarpaper, or asphalt shingles. For the purposes of this regulation, waste oil means any oil that has been refined from crude oil, used and contaminated by physical or chemical impurities as a result of such use;
b. A municipality or county governmental agency may not burn municipal solid waste unless exempted by the small town exemption in accordance with ARSD 74:27:12:25:
c. A person may not conduct or permit the operation of a salvage operation by open burning, except as allowed in article 74:27;
d. A person may not burn railroad ties or wood treated with inorganic arsenicals, pentachlorophenol, or creosols.

3.00 CONSTRUCTION PERMITS AND COMPLIANCE PLANS:

3.01 Construction Permit Required: No person shall engage in any construction activity which may cause fugitive emissions to be released into the ambient air without first obtaining a construction permit from the Air Quality Director.

3.02 Compliance Plan Required: No person shall engage in any continuous operation which may cause fugitive emissions to be released into the ambient air without first having a compliance plan approved by the Air Quality Board. After approval of the compliance plan, a three (3) year operating permit shall be issued by the Air Quality Director. This operating permit allows the applicant to commence the operation thereunder.

A construction permit shall not be required for construction activity at a continuous operation activity facility if such construction activity is a part of the site's compliance plan.

3.03 Street Reentrainment Requirements:

A. No person shall place any street sanding materials upon any road, highway, driveway, or parking lot to which the public has general access located in the area defined in Section 1.02(1) which does not meet the following requirements:

1. A durability or hardness as defined in MOH of greater than 6 for 70% of the material used;
2. No more than 3% of the total particle material content by weight may be smaller than 200 sieve.

For street sanding material, these criteria apply only to the material prior to the addition of salt or chemicals. Material of a lesser hardness may be used on steep roads if it is the only effective option available.

Any political subdivisions responsible for maintaining any public road inside the area in which road sanding materials are regulated shall clean the center line and areas immediately adjacent to the travel lane. Cleaning shall commence under one or more of the following conditions:

1. When it has been determined by the Air Quality Director that the streets are sufficiently dry to commence street sweeping;
2. When it has been determined by the Air Quality Director that there is a fugitive emissions problem due to street sanding material.

Street cleaning will not be required on public roads with restricted travel, or when unusual weather or other circumstances prevent it. The political subdivision shall include in its compliance plan a street cleaning plan listing priority streets and schedules.

B. Any political subdivisions maintaining any public roads inside the area in which road sanding materials are regulated shall water flush such roadways when it has been determined by the Air Quality Director that street sanding material is causing a fugitive emissions problem. This will be conducted after street cleaning.

Street water flushing is not required if it endangers public safety or if water use restrictions are in effect. The political subdivision shall include in its compliance plan a water flushing plan.

C. All vehicles that are transporting fugitive dust emitting materials within the area designated in Section 1.02(1) on public roads shall be covered with a tarp to reduce such emissions or must use a method that is equally effective in reducing such emissions.

D. Any material that is deposited, other than street sanding material, on any public roadway on which vehicular travel is not restricted, that could be reentrained as fugitive emissions shall be cleaned or removed within 24 hours of deposition. The cleaning or removal process shall be conducted so that minimal fugitive emissions are generated.

3.04 Reasonably Available Control Technology Requirements: Any construction permit, continuous operation or political subdivision responsible for maintaining public roads shall provide for reasonably available control technology to prevent fugitive emissions from becoming airborne. Such controls may include, but not be limited to the following practices:

A. For activity involving the removal or alteration of natural or pre-existing ground cover including, but not limited to land clearing, excavating, grading, earthmoving, dredging, or demolition:

1. Wetting down;
2. Chemical stabilization;
3. Applying dust palliative;
4. Minimization of area disturbed;
5. Reclamation of disturbed area as soon as possible;
6. Vehicular speed limitation;
7. Cleaning of paved areas.

B. For paved and unpaved roads, alleyways and storage areas, construction, altering, yearly street or highway maintenance and repair of road surface:

1. Wetting down;
2. Chemical stabilization;
3. Applying dust palliative;
4. Vehicular speed limitation;
5. Movement of materials by enclosed vehicles or covered conveyance system;
6. Cleaning of paved areas;
7. Mechanical capture of fugitive emissions by vacuuming;
8. Water flushing (when safety is not jeopardized);
9. Wetting ahead of open sweepers on rural roads.

C. Paved and unpaved parking lots:

1. The paved parking lots shall be cleaned either by sweeping (mechanical or vacuum sweeper), water flushing (when safety is not jeopardized), or by any means possible to reduce sanding material reentrainment;
2. The unpaved parking lots shall be maintained by any means possible to reduce dust reentrainment, such as wetting down, chemical stabilization, and vehicular speed limitation.

D. For material screening, handling, storage, processing or transportation:

1. Installation of baghouses and other emission control and collection systems;
2. Enclosed conveyance systems;
3. Enclosing, covering, or applying dust suppressants on storage piles where practical;
4. Moisturizing or chemically treating the material during processing.
5. Cleaning of paved areas;
6. Movement of materials by enclosed vehicle or covered conveyance system.

E. For erosion control:

1. Planting of exposed area;
2. Installing wind screen or equivalent wind speed reduction device;
3. Chemical stabilization;
4. Covering with a non-erodible material;
5. Runoff control barriers and dams.

3.05 Contents of Application for Construction Permit, Compliance Plan or Amendment to a Compliance Plan: All applications shall be submitted to the Air Quality Office. The applications shall contain:

A. Name and address of the person making the application. If the applicant is a corporation, the name and address of its registered agent.

B. Legal description and location of the land affected.

C. Description of the proposed construction or proposed continuous operation activity including nature and description of equipment used.

D. Proposed date for both commencement and termination of operation.

E. Proposed date for both commencement and completion of reclamation plan including a detailed description of plan.

F. Necessity for state approval and, if so, an indication of:

1. If application been made;
2. When action on the application is expected;
3. Name, division and board or the state agency from whom approval is sought.

G. An overall description of the nature and scope of the construction or continuous operation activity and conditions which will result in fugitive emissions.

H. A plan of the Reasonably Available Control Technology required in Section 3.04 to be applied which will prevent fugitive emissions that exceed 20%.

I. Upon request by the Air Quality Director the following information may be required:

1. A listing of all sources of particulate fugitive emissions, stating in tons per year the uncontrolled emissions to be produced;
2. The control technology applied or proposed to be applied and the fugitive emissions expected in tons per year after the control technology has been applied;
3. The percentage of efficiency of the control technology.

The plan shall identify the sources of all emissions calculations or estimates and rovide documentation of the methods used to determine control efficiency.

J. Upon request by the Air Quality a discussion of the economic and technical reasonableness of the proposed fugitive emission controls, including data which will assist the Air Quality Board in determining if the control technology specified in the compliance plan will meet the requirements set forth in this ordinance, may be required.

The Air Quality Board shall have the authority to require the applicant to provide actual or proposed production data to the Air Quality Director. This information shall be used by the Air Quality Director for the purpose of processing the application, and determining if a compliance plan or compliance plan amendment will meet the requirements of this ordinance, and for no other purposes.

3.06 Records and Information Available to Public: Any records or information obtained by the Air Quality Director or Air Quality Board from owners or operators of an air contaminant source or sources shall be available to the public.

3.07 Application Procedure: The following are requirements for construction permits:

A. The Air Quality Director shall have (10) working days from the time a determination is made that the application is complete to either approve or reject the application and issue the construction permit. If the Air Quality Director determines the application is complete and is in compliance with the ordinance, a construction permit shall be issued. In the event that the application has not been approved or rejected within the (10) working day period, it shall be deemed to be approved.

B. No change in construction shall be allowed which would result in an increase of fugitive emissions from the construction site without first amending the construction permit. The amendment procedure is the same as set out in Section 3.07(A). The required fee for the amendment is described in Section 5.0.

C. The construction permit fee is as described in Section 5.0 . The fee is payable to the Air Quality Office, and shall be collected by Air Quality Director at the time an application is filed.

3.08 Application Procedure: The following are requirements for compliance plans:

A. All applications for a compliance plan or amendments to a compliance plan shall be submitted to the Air Quality Office at least fifteen working days before the regular monthly Air Quality Board Meeting at which it would be considered. The fifteen working day time period shall commence on the day after the date the application was submitted and shall include the day of a Board meeting if such a date is a working day. During the fifteen day period, the Air Quality Director shall determine if the application is complete. No application shall be submitted to the Air Quality Board that does not have all the information required by this ordinance. If an application is returned to the applicant as not being complete, the rejection notice shall be in writing and specifically state what information is missing or not contained in sufficient detail to meet the requirements of this ordinance.

B. No change in continuous operation activity shall be allowed which would result in an increase of fugitive emissions from that site without first amending the approved compliance plan permit.

Any amendments to a compliance plan will take effect upon approval by the Air Quality Board. The existing compliance plan will be amended to reflect the change and will be valid through the life of the initial permit. Fees for amendment will be charged in accordance with Section 5.0.

C. Once an application for a compliance plan or an amendment to accompliance plan has been submitted to the Air Quality Board, a 60 day review period shall commence. The Air Quality Board must act upon the proposed plan within 60 days or such plan shall be deemed as approved. If

the applicant is requested to provide additional information within a specified period of time and fails to act within such time period, the 60 day review period shall be extended by a like number of days.

3.09 Operating with a Compliance Plan: Upon approval of the compliance plan, a three (3) year permit shall be issued allowing the applicant to commence operation thereunder. The approved compliance plan shall become binding terms of the operation. Amendments to a compliance plan approved by the Air Quality Board are enforceable provisions of the permit.

Applications for a compliance plan renewal shall be submitted to the Air Quality Office sixty (60) days prior to the expiration, and shall follow the requirements as described in Section 3.05 of this ordinance.

Compliance plans shall be updated every three years, or three years from a plan's last review by the Air Quality Board, whichever is later. The update shall contain all changes, additions, modifications, and expansions which would result in an increase of fugitive emissions from the operation over the past three (3) years.

4.0 EMISSION STANDARDS, ENFORCEMENT AND APPEAL PRODEDURES

4.01 Emissions Standards for Construction or Compliance Plan Activities:

A. Facility boundary standard: The transportation of visible fugitive emissionsoff the property of a construction or continuous operation facility site for more than 10% of the time for any one hour period will be considered as an indication that the provisions of the construction permit or compliance plan are not being complied with and shall cause a determination to be made of the source of the visible fugitive emissions and an opacity reading to be made at such sources. Visible fugitive emissions limitations specified in this paragraph shall be determined by a certified observer using Tennessee Visible Emission Evaluation Method (40 CFR 52.2220 Part A 73 Method 4), Visual Determination of Fugitive Dust Emission Crossing a Property Line, approved by EPA Fed. Reg. V52, No. 10, January 15, 1987, Page 1628.

B. Fugitive emissions source standard: A fugitive emissions source shall not have a density greater than that designated as twenty percent (20%) opacity. Exceedance of this standard shall be considered a violation of the provisions of the construction permit or compliance and cause a review of the construction permit or compliance plan. Fugitive emissions limitations specified in this paragraph shall be determined by a certified observer using Tennessee Visible Emission Evaluation Method 1, (40 CFR 52.2220 Part A 50, 51 Method) Visual Determination of Opacity of Emission From Nontraditional Source, approved by the US EPA in Federal Register, Vol. 47, No. 235, December 7, 1982, page 54936, as amended, Federal Register Vol. 28, No. 51, March 15, 1983, page 10834, Federal Register Vol. 50, No.

78, April 23, 1985, page 15892; or by operation of equipment approved by the Air Quality Director that is known to produce equivalent or more accurate results.

No readings shall be made when wind velocity exceeds twenty-five (25) miles per hour during, or within thirty (30) minutes of the reading as determined by a qualified person, or by use of one or more anemometers at the site. Anemometers shall be used where practical. The property line of public or private rights-of-way through the construction or continuous operation facility site shall not be used for a measurement location.

4.02 Notice of Violation - Order for Corrective Action Included: Whenever two members of the Air Quality Board, based upon a written complaint or petition from the Air Quality Director, has reason to believe that a violation of any provision of this ordinance has occurred, the two members of the Board may cause written notice to be served upon the alleged violator or violators. The notice shall specify:

1. The provision(s) of this ordinance alleged to be violated;
2 The facts alleged to constitute a violation thereof.

The notice may include an order that necessary corrective action be taken within a reasonable time period.

The Air Quality Director shall execute or issue a written notice of violation and order to any person who violates any portion of this ordinance.

4.03 Penalties and Petition to Contest Notice of Violation: Any person violating any portion of this ordinance shall be subject to a fine not to exceed $100.00. Each calendar day a violation occurs shall be considered a separate offense. Any person who wishes to contest a notice of violation must request a hearing before the Air Quality Board within (15) days of receiving the notice of violation or it becomes final. A petition to contest a notice of violation to the Air Quality Board shall be heard at its next regularly scheduled meeting in which a decision on the notice of violation shall be rendered. The Air Quality Board's decision may be appealed to the Pennington County Commission in accordance with Sections 4.04 to 4.29 and must be petitioned within (15) days of the date the Air Quality Board's decision is rendered.

4.04 Petition to Initiate Contested Case: Any applicant or person wishing to contest a ecision of the Air Quality Board concerning a permit application or enforcement action shall file a petition for a contested case hearing before the Commission. The petition shall contain the following:

1. A statement of the petitioner's involvement in the matter;
2. A statement of the decision contested, if any, and the relief and decision requested from the Commission;

3. A statement alleging the relevant facts and issues known to the petitioner upon which he bases his contest;
4. A statement of the legal authority and jurisdiction under which the hearing would be held, if known;
5. A reference to the particular section of the ordinance involved, if known;
6. The signature of the petitioner or the petitioner's attorney(s).

The petitioner shall serve a copy of the petition upon the Air Quality Board and all known persons affected by the petitioner's request who shall be considered parties to the proceeding.

4.05 Notice and Hearing Required in Contested Cases: In a contested case, all parties shall be afforded an opportunity for hearing after reasonable notice.

4.06 Answer to Petition to Initiate Contested Case: Within ten (10) days of receipt of a petition of contested case, the party whose decision is being contested shall serve a written answer thereto on the petitioner and other parties of record. The answer shall respond to the allegations in the petition and state the desired decision of the Commission. Failure to answer an allegation in a petition shall constitute an admission of that fact. Further pleadings by parties in response to an answer shall not be required unless the prehearing examiner orders them for purposes of clarification of the issues involved in the contested case.

4.07 Pleadings to be Filed with Commission: The original of any petition, motion, or other pleading shall be filed with the Commission. The person filing the pleading shall mail copies thereof to the hearing chairman, hearing examiner if applicable, and all parties of record.

4.08 Appointment of Hearing Chairman: Upon the filing of a petition for a contested case, the chairman of the Commission shall appoint himself/herself or a member of the Commission to act as hearing chairman. The hearing chairman shall be responsible for all prehearing rulings, including motions to intervene, motions for a continuance, and any other motions necessary to ensure an orderly hearing process. Any decision made by the hearing chairman is a final decision of the Commission unless reversed by a majority of the Commission at the hearing on the matter. Notice of this appointment and of the date set for a prehearing conference shall be served on all parties by the Commission.

4.09 Prehearing Motions: Any party may make a prehearing motion by filing the same in writing with the Commission before the date set for the prehearing conference. Copies of the motion shall be served upon the prehearing examiner and all parties of record. The motion shall contain the factual and legal basis for the motion. The motion shall be heard and a decision thereon made by the prehearing examiner at the prehearing conference.

4.10 Prehearing Conference: The hearing chairman shall hold a prehearing conference within twenty (20) days of the filing of a petition for a contested case. The

prehearing examiner will decide all prehearing motions at this conference and will establish a reasonable discovery schedule. The prehearing examiner will also set the time and place of the hearing of the petition before the Commission. Any other issue properly discussed at a pretrial conference under the Rules of Civil Procedure of the state of South Dakota may be heard at the prehearing meeting.

4.11 Notice of Contested Case: The Commission shall issue a notice of a contested case proceeding. The notice shall reference the petition filed with the Commission and shall be served upon all parties of record.

4.12 Contents of Notice in Contested Case: The notice shall include:

1. A statement of the time, place, and nature of the hearing;
2. A statement of the legal authority and jurisdiction under which the hearing is to be held;
3. A reference to the relevant sections of the ordinance;
4. A short and plain statement of the matters asserted. If a party is unable to state the matters in detail at the time the notice is served, the initial notice may be limited to a statement of the issues involved. Thereafter, a more definite and detailed statement shall be furnished;
5. A statement of any action authorized by law, which may affect the parties, as a result of any decision made at the hearing, whether it be the revocation of a permit, enforcement action, or other effect;
6. A statement that the hearing is an adversary proceeding and that a party has the right at the hearing, to be present, to be represented by a lawyer, and that these and other due process rights will be forfeited if they are not exercised at the hearing;
7. A statement that the decision based on the hearing may be appealed to the Circuit Court and the State Supreme Court as provided by law.

4.13 Subpoenas: The hearing chairman shall issue any subpoena necessary for the conduct of the hearing. Any party wishing to obtain a subpoena shall submit a written request and a proposed subpoena to the hearing chairman prior to the rehearing conference.

4.14 Conduct of Hearing: The hearing chairman shall act as the chairman of the Commission for the contested case hearing and shall make all necessary evidentiary rulings during the proceeding.

4.15 Rights of Parties at Hearings on Contested Cases: Opportunity shall be afforded all parties to respond and present evidence on issues of fact and argument on issues of law or policy. A party to a contested case proceeding may appear in person or by counsel, or both, may be present during the giving of all evidence, may have reasonable opportunity to inspect all documentary evidence, may examine and cross-examine witnesses, may present evidence in support of the parties interest, and may have subpoenas issued to compel attendance of witnesses and production of evidence in the party's behalf.

4.16 Transcript in Contested Cases: A verbatim recording of all proceedings and testimony shall be kept by the Commission. Unless otherwise provided by law the Commission shall not be required to transcribe the record unless the requesting party tenders and pays the reasonable cost thereof. If transcribed, a copy of the record shall be furnished to any other party to the hearing at the request and expense of such other party.

4.17 Transcripts by Court Reporter: Any party wishing to obtain a transcript of a contested case hearing must make arrangements with a court reporter prior to the hearing. The Commission may, on their own motion, have a transcript of a contested case proceeding prepared; however, parties must obtain copies of the transcript from the court reporter at their own cost.

4.18 Means and Proof of Service: The service of all pleadings, notices, or orders may be made by certified mail or personal service. An affidavit of mailing or service copies of the receipts for delivery of certified mail, an admission of service, or other competent evidence shall be proof of service.

4.19 Degree of Proof Required: Whenever, under the provisions of this ordinance a person is required to find, demonstrate, show, or otherwise establish a fact, that fact must be established by a preponderance of the evidence.

4.20 Rules of Evidence in Contested Cases: Irrelevant, incompetent, immaterial, or unduly repetitious evidence shall be excluded. The rules of evidence as applied under statutory provisions and in the trial of civil cases in the Circuit Court of the State of South Dakota, or as may be provided in statutes relating to a specific agency, shall be followed.

4.21 Appointment of Hearing Examiner: The Chairman of the Commission may appoint a hearing examiner to conduct the hearing of the contested case. After hearing the proceeding, the hearing examiner shall make proposed findings of fact, conclusions of law, and an order to the Commission. A copy shall be served upon all parties of record. The Commission shall allow all parties to object in writing to the hearing examiner's decision and to present oral argument prior to the Commission rendering a final decision on the contested case proceeding.

4.22 Decision of Commission: A final decision in a contested case shall be that obtained by a majority vote from a quorum of the Commission. Any final decision and resulting orders shall be signed by the hearing chairman of the Commission.

4.23 Findings of Fact, Conclusions of Law, and Order: All parties to a contested case proceeding may present proposed findings of fact, conclusions of law, and an order to the Commission at the close of the hearing. The Commission shall adopt or reject findings, conclusions and an order in support of its decision which shall constitute the final decision of the Commission. The Commission shall serve

written notice of the findings, conclusions, and order upon all parties to the proceeding. A party may file written objections to the Commission's final decision within ten days of receipt of the notice, although the appeal time shall run from the date of receipt of the notice.

4.24 Contents of Record in Contested Cases: The record in a contested case shall include:

1. All pleadings, motions, intermediate rulings;
2. Evidence received and considered;
3. A statement of matters officially noticed which have been refuted;
4. Questions and offers of proof, objections, and rulings thereon;
5. Proposed findings and exceptions;
6. Any decision, opinion, or report by the officer presiding at the hearing.

4.25 Hearing Requested on Order For Correction Action-Time Allowed: Any order issued pursuant to Section 4.02_shall be final unless, no later than twentydays after the date the notice and order are served, the person or persons named therein request in writing a hearing before the Air Quality Board. Upon such request, the Air Quality Board shall proceed in the same manner as set forth for a contested case hearing before the Commission.

4.26 Contested Case Proceeding in Lieu of Order - Consent Agreement: In lieu of an order, the Air Quality Board chairman may schedule a contested case under this ordinance before the Air Quality Board. Nothing in this ordinance shall prevent the Air Quality Director from notifying an alleged violator of violations and negotiating a consent agreement instead of initiating proceedings under Section 4.02. Any consent agreement shall be approved by the Air Quality Board.

4.27 Air Quality Board Orders After Hearing: If, after proceedings held pursuant to 4.02 or 4.03, the Air Quality Board finds that a violation has occurred, it shall affirm or modify any order previously issued under Section 4.02_by the Air Quality Board chairman, or issue an appropriate order for the prevention, abatement or control of the emissions or air pollution involved. If, after proceedings on an order contained in a notice, the Air Quality Board finds that no violation is occurring, it shall rescind the order.

4.28 Time Allowed for Corrective Action in Air Quality Board Order: For any order issued as part of a notice or after proceedings under this ordinance, the Air Quality Board shall prescribe the date by which the violation shall cease and may prescribe timetables for necessary action in preventing, abating or controlling the implicated emissions or air pollution.

4.29 Appeals: Decisions of the Commission may be appealed to the Circuit Court as provided by law. Decisions of the Air Quality Board may be appealed to the

Commission, the review of which shall be limited to the record as established before the Air Quality Board.

4.30 Remedy Not Exclusive: Nothing in this ordinance shall be construed to abridge, limit or otherwise impair the right of any person to damages or other relief on account of injury to persons or property and to maintain any action or other appropriate proceedings for such relief.

4.31 Voluntary Compliance: Nothing in this ordinance shall prevent the Air Quality Director from making efforts to obtain voluntary compliance through warning, conferences, or any other appropriate means.

4.32 Consent Agreement: Nothing in this ordinance shall prevent the Air Quality Director from notifying an alleged violator of violations and negotiating a consent agreement. Any consent agreement shall be approved by the Air Quality Board.

5.0 FEES:

5.01 Application fees for permitting services are payable to Pennington County and shall be collected by the Air Quality Director at the time an application is filed. The city of Rapid City and county of Pennington County are exempt from paying fees. Fees administered by this office will be as follows:

1. Construction permit - for sites less than or equal to 5 acres: $75.00; for sites over 5 acres: $100.00;
2. Construction permit amendment - $25.00;
3. Compliance plan for paved parking lots larger than or equal to one acre: $15.00 per acre, not to exceed $75.00;
4. Compliance plan for unpaved parking lots larger than or equal to one acre: $25.00 per acre, not to exceed $150.00;
5. Open burning form – no charge.

Failure to submit the application and/or pay the permitting fee will result in a daily fine not to exceed $100.00. Each day in which the application and/or payment is not received, is considered a separate offense, and separate fines will be assessed. An air quality notice of violation will be attached to the deed of the property at the Register of Deeds office in the Pennington County Courthouse until the fines and permitting fees have been paid.

6.0 SEVERABILITY OF PROVISIONS AND APPLICATIONS

6.01 Severability of Provisions and Applications: If a part of this chapter is invalid, all valid parts that are severable from the invalid part remain in effect. If a part of this ordinance is invalid in one or more of its applications, the part remains in effect in all valid applications that are severable from the invalid application.

Delores Coffing, Chair

ATTEST:

Nancy Kuster, Deputy Auditor

First Reading: June 4, 1991
Second Reading: June 18, 1991
Adopted: June 18, 1991
Published: July 3, 1991
Effective Date: July 23, 1991

First Reading of the Amendments: March 17, 1992
Second Reading of the Amendments: April 7, 1992
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First Reading of the Amendments: April 5, 1994
Second Reading of the Amendments: April 19, 1994
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Effective Date: May 25, 1994

First Reading of the Amendments: August 4, 1998
Second Reading of the Amendments: September 1, 1998
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First Reading of the Amendments: January 17,1995
Second Reading of the Amendments: February 7, 1995
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First Reading of the Amendments: January 2, 1996
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First Reading of the Amendments: June 3, 1997
Second Reading of the Amendments: June 17, 1997
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First Reading of the Amendment: January 19, 1999
Second Reading of the Amendment: February 2, 1999
Published: February 17, 1999
Effective Date: March 9, 1999

Open Burning Application

Name of responsible party: _____ (assumes liability)
Address: _____
Phone: _____

Name of contact person: _____ (on site supervisor)
Address: _____
Phone: _____

Requested burning date: _____ Time of day: _____
Site location: _____
Size of area: _____
Type of burning:
___ Irrigation ditch used in agriculture
___ Noxious weed control
___ Wildfire control management
___ Ecosystem management
___ Fire department personnel training
___ Fire hazard

Description of fuel: _____

Contingency plan: (measures to be implemented in the event the fire gets unruly)*: _____
_____
_____
_____
_____

1. Any inappropriate fuels* present prior to open burning will be removed to the fullest extent possible prior to open burning
2. At no time should a planned burn be ignited when the general wind direction is toward Rapid City. Pay attention to wind direction and speed prior to planned ignition time.
3. Permission to burn may be revoked or suspended prior to actual burn in order to protect public health and welfare, based upon current meteorological and/or ambient air conditions. Stay tuned to weather information. If weather conditions change dramatically from the expected weather forecast, consult with your VFD or Air Quality Office prior to ignition.

*see reverse for additional information

ADDITIONAL INFORMATION AND MANDATORY SIGNATURES

1. A contingency plan is any plan of action that would be used if any given fire starts to get out of control. For a small back yard fire of brush and tree limbs, the contingency plan might be as simple as "having a garden hose available".

   For larger scale burns, it could b a water truck, neighbors on standby with tools and fire extinguisher, or the availability of a fire truck or fire crew. Contingency plans are based upon each situation, and it is very important that each open burn has a plan in place, in order to "be prepared for all contingencies".

2. Inappropriate fuels include, but are not limited to: leaves, grass clippings, green plants, refuse, paper, rubbish, books magazines, fiberboard, packaging, rags, fabrics, animal waste, liquid or gelatinous hydrocarbons, tar, paints, and solvents, plastic, vinyl or rubber, waste oils, waste tires, tarpaper, asphalt shingles, railroad ties, or any wood that has been soaked or treated with chemicals, including inorganic arsenicals, pentachlorophenols, or creosols.

3. Penalties assessed for the burning of inappropriate fuels, or for any violation of Ordinance No. 12, will be $100 per violation, per day. It is the responsibility of the citizen to have sufficient knowledge of this ordinance when engaged in any activity addressed by the ordinance.

I accept the conditions of this permit, and agree to abide by the stated conditions.

_____ _____

Responsible Party Date

_____ _____

Air Quality Director Date