

CITY OF RAPID CITY
STUDY GUIDE

Sewer/Water & Trenching Licenses

TEST	STANDARD SPECIFICATION SECTIONS	UTILITY CONSTRUCTION CODE CHAPTERS	MUNICIPAL CODE	ONE-CALL STATE LAW
Trenching Contractor	Section 7.37 & 7.52 11.1 & 11.3 13.3 41.3 90.2 & 90.3 91.3	Chapter 2 Article1 2.1.1 2.1.4	Title 13 Chapter 13.24 13.24.010.H 13.24.010.M 13.24.060.B	State Statute 49-7A-5 49-7A-12
Trenching Journeyman	Section 7.37 & 7.52 11.1 & 11.3 13.3 41.3 90.2 & 90.3 91.3	Chapter 2 Article 1 2.1.1	Title 13 Chapter 13.24 13.24.060.B	State Statute 49-7A-5 49-7A-12
Sewer/Water Contractor	Section 7.37 & 7.52 8.1, 8.2, & 8.3 9.2 & 9.3 11.1 & 11.3 13.3 41.3 90.2 & 90.3 91.3	Chapter 2 Article1 2.1.1 2.1.4 Article 7	Title 13 Chapter 13.24 13.24.010.H 13.24.010.M 13.24.060.B 13.24.060.E	State Statute 49-7A-5 49-7A-12
Sewer/Water Journeyman	Section 7.37 & 7.52 8.1, 8.2, & 8.3 9.2 & 9.3 11.3 13.3 41.3 90.2 & 90.3 91.3	Chapter 2 Article1 2.1.1 2.1.4 Article 7	Title 13 Chapter 13.24 13.24.060.B 13.24.060.E	State Statute 49-7A-5 49-7A-12

SOUTH DAKOTA ONE CALL
State Statutes

CHAPTER 49-7A

ONE-CALL NOTIFICATION SYSTEM FOR EXCAVATION ACTIVITIES

49-7A-1	Definition of terms.
49-7A-2	Establishment of One-Call Notification Board.
49-7A-3	Governing board--Representation--Term of appointment.
49-7A-4	Rules--Operating procedures.
49-7A-5	Notification of proposed excavation.
49-7A-6	Repealed.
49-7A-6.1	Operator not to be billed when location of excavation on notice differs from location of operator's facility.
49-7A-7	Duties of one-call notification center.
49-7A-8	Location of underground facilities--Marking.
49-7A-9	Failure to provide timely location markings--Inadequate markings--Liability.
49-7A-10	Liability for damage to underground facility.
49-7A-11	Repealed.
49-7A-12	Notification of damage to underground facility--Repairs.
49-7A-13	Inability to locate underground facility.
49-7A-14	Local permit requirements unaffected.
49-7A-15	Landowner's private underground facilities unaffected.
49-7A-16	Repealed.
49-7A-17	Complaints--Rules of Practice.
49-7A-18	Penalties.
49-7A-19	Penalties for intentional violations.
49-7A-20	Each violation as separate offense.
49-7A-21	Complaint and order prerequisites for penalty--Time limit.
49-7A-22	Panel to determine existence of probable cause for violation--Recommendation to board.
49-7A-23	Panel to forward complaint to respondent.
49-7A-24	Respondent to satisfy or answer complaint--Procedure.
49-7A-25	Complaint, answer to be sole basis for probable cause determination.
49-7A-26	Factors considered in determining amount of penalty.
49-7A-27	Board to accept panel's recommendation--Exception when party requests hearing— Conduct of hearing.
49-7A-28	Action to recover penalty.
49-7A-29	Record and evidence in court action.
49-7A-30	Board to maintain docket and index.
49-7A-31	Board to keep transcript of proceedings--Certification.
49-7A-32	Removal of board member for conflict of interest.
49-7A-33	Demand for penalty required before suit brought.
49-7A-34	Board action has presumption of validity.

49-7A-1. Definition of terms. Terms used in this chapter mean:

(1) "Bar test survey," a leakage survey completed with a non-conductive piece of equipment made by driving or boring small holes in the ground at regular intervals along the route of an underground gas pipe for the purpose of extracting a sample of the ground atmosphere and testing the atmosphere in the holes with a combustible gas detector or other suitable device;

(2) "Board," One-Call Notification Board;

(3) "Emergency," an occurrence which demands immediate action to prevent significant environmental damage or loss of life, health, property, or essential public services including the reerecting of critically needed traffic control signs or devices;

(4) "Excavation," any operation in which earth, rock, or other material in or below the ground is moved or otherwise displaced by means of tools, equipment, or explosives, and includes grading, trenching, digging, ditching, drilling, augering, tunneling, scraping, and cable or pipe plowing or driving, except:

(a) Tilling of soil and gardening to a depth of twelve inches and the tilling of soil for agricultural purposes to a depth of eighteen inches;

(b) Pot hole repair and grading of an existing public road if the pot hole repair and grading does not extend more than eighteen inches below the finished roadway;

(c) Any vehicle operation or operation involving the use of any hand tool, other than a power tool, so long as such operation does not extend more than eighteen inches below the surface of the groundline within the right-of-way;

(d) Any road and ditch repair or road and ditch activity that does not extend more than eighteen inches below the surface of the original groundline within the right-of-way;

(e) Digging in a cemetery;

(f) Digging in a planned sanitary landfill; and

(g) Any bar test survey deemed necessary by an operator in response to a suspected natural gas, propane, or other combustible liquid or gas leak that is necessary to ensure public safety in an emergency;

(5) "Excavator," any person who performs excavation;

(6) "Member," any member of the one-call notification center;

(7) "One-call notification center," the statewide one-call notification center established by § 49-7A-2;

(8) "Operator," any person who operates an underground facility;

(9) "Person," an individual, partnership, limited liability company, association, municipality, state, county, political subdivision, utility, joint venture, or corporation, and includes the employer of an individual;

(10) "Underground facility," any item of personal property buried or placed below ground for use in connection with the storage or conveyance of water, sewage, electronic, telephonic or telegraphic communications, fiber optics, cablevision, electric energy, oil, gas, hazardous liquids, or other substances including pipes, sewers, conduits, cables, valves, lines, wires, manholes, and attachments.

49-7A-2. Establishment of One-Call Notification Board. The Statewide One-Call Notification Board is established as an agency of state government administered by the Public Utilities Commission and funded solely by revenue generated by the one-call notification center. Any interest earned on money in the state one-call fund shall be deposited in the fund. The money is continuously appropriated to the board to implement and administer the provisions of this chapter. The one-call notification center may be organized as a nonprofit corporation. The one-call notification center shall provide a service through which a person can notify the operators of underground facilities of plans to excavate and to request the marking of the facilities. All operators are subject to this chapter and the rules promulgated thereto. Any operator who fails to become a member of the one-call notification center or who fails to submit the locations of the operator's underground facilities to the center, as required by this chapter and rules of the board, is subject to applicable penalties under §§ 49-7A-18 and 49-7A-19 and is subject to civil liability for any damages caused by noncompliance with this chapter. Any penalties which may be assessed by the board under this chapter shall be collected as provided by law and deposited into the one-call fund.

49-7A-3. Governing board--Representation--Term of appointment. The one-call notification center shall be governed by an eleven member board who shall serve without pay. The board shall consist of one member representing telecommunication companies offering local exchange service to less than fifty thousand subscribers; one member representing telecommunication companies offering local exchange service to fifty thousand or more subscribers; one member representing rural water systems; one member representing rural electric cooperatives; one member representing investor-owned electric utilities; one member representing investor-owned natural gas utilities; one member representing community antenna television systems; one member representing municipalities; one member representing underground interstate carriers of gas or petroleum; and two members representing contractors who perform excavation services. The board shall be appointed by the Governor and shall serve staggered three-year terms.

49-7A-4. Rules--Operating procedures. The One-Call Notification Board shall by rules, promulgated pursuant to chapter 1-26, establish the procedures to operate a nonprofit one-call notification center, establish the procedures that regulate the notification process and marking of underground facilities to prevent damage to underground facilities, establish the procedures for gathering information from facility operators that could further improve the ability to reduce damage to underground facilities, establish a competitive bidding procedure to select a vendor to provide the notification service, and establish a procedure whereby members of the one-call notification center share in the costs of the one-call notification center.

49-7A-5. Notification of proposed excavation. No excavator may begin any excavation without first notifying the one-call notification center of the proposed excavation. The excavator shall give notice by telephone or by other methods approved by the board pursuant to rules promulgated pursuant to

chapter 1-26 to the one-call notification center at least forty-eight hours prior to the commencement of the excavation, excluding Saturdays, Sundays, and legal holidays of the state. The board may promulgate rules to reduce the forty-eight-hour interval for emergency or subsequent inquiries to the original locate request and may lengthen the forty-eight-hour interval for nonexcavation requests.

49-7A-6. Repealed by SL 2002, ch 211, § 4.

49-7A-6.1. Operator not to be billed when location of excavation on notice differs from location of operator's facility. No operator may be billed for the costs of any notification of excavation if the location of the excavation described in the notice is different than the one call center's record of the description of the location of the operator's underground facilities.

49-7A-7. Duties of one-call notification center. The one-call notification center shall:

- (1) File with the register of deeds of each county the toll-free telephone number for notification of planned excavation activities in its area;
- (2) Maintain adequate records documenting compliance with the requirements of this chapter, including records of all telephone calls and records of all location requests for the preceding forty-eight months which can be obtained by request of either a member or excavator;
- (3) Provide the service at minimum, during normal working hours, on business days;
- (4) For calls received after normal working hours for the one-call notification center, or on nonbusiness days, provide information for callers which explains emergency notification and excavation procedures; and
- (5) Provide a timely method for notifying participating members of the information received regarding proposed excavation activities. The method of notification is to be determined by the one-call notification center and its members.

49-7A-8. Location of underground facilities--Marking. An operator shall, upon receipt of the notice, advise the excavator of the location of underground facilities in the proposed excavation area by marking the location of the facilities with stakes, flags, paint, or other clearly identifiable marking within eighteen inches horizontally from the exterior sides of the underground facilities. The board shall promulgate rules, pursuant to chapter 1-26, to establish the response time for operators to mark the underground facilities. The response time shall be no later than forty-eight hours after the receipt of the notice, excluding Saturdays, Sundays, and legal holidays of the state or the excavation start time provided by the excavator, whichever is later. The response time may be less than forty-eight hours for emergency or subsequent inquiries to the original locate request and may be longer than forty-eight hours for nonexcavation requests. Excavators shall maintain a minimum horizontal clearance of eighteen inches between a marked underground facility and the cutting edge of any mechanical equipment. If excavation is required within eighteen inches, horizontally, the excavator shall expose the facility with hand tools or noninvasive methods approved pursuant to rule and shall protect and support the facility prior to further excavation with mechanical equipment.

49-7A-9. Failure to provide timely location markings--Inadequate markings--Liability. If location markings requested by an excavator are not provided within the time specified by § 49-7A-8 or any rule promulgated pursuant to § 49-7A-8, or if the location markings provided fail to identify the location of the underground facilities in accordance with statute and rule, any excavator damaging

or injuring underground facilities is not liable for such damage or injury except on proof of negligence.

49-7A-10. Liability for damage to underground facility. Compliance with this chapter and the rules promulgated pursuant thereto does not excuse a person from acting in a careful and prudent manner nor does compliance with this chapter and the rules promulgated pursuant thereto affect any civil remedies otherwise provided by law for personal injury or for property damage except as specifically provided in this chapter. If information requested pursuant to statute or rule, is provided within the time specified and if the information provided sufficiently identifies the location of the underground facilities in accordance with § 49-7A-8 or any rule promulgated pursuant to § 49-7A-8, any excavator damaging or injuring the underground facilities is strictly liable for all damage proximately caused thereby.

49-7A-11. Repealed by SL 2002, ch 211, § 9.

49-7A-12. Notification of damage to underground facility--Repairs. If any underground facility is damaged, dislocated, or disturbed in advance of or during excavation work, the excavator shall immediately notify the operator of the facility, or, if unknown, the one-call notification center of such damage, dislocation, or disturbance. No excavator may conceal or attempt to conceal such damage, dislocation, or disturbance, nor may that excavator attempt to make repairs to the facility unless authorized by the operator of the facility.

49-7A-13. Inability to locate underground facility. If in the course of excavation the excavator is unable to locate the underground facility or discovers that the operator of the underground facility has incorrectly located the underground facility, he shall promptly notify the operator, or, if unknown, the one-call notification center.

49-7A-14. Local permit requirements unaffected. This chapter does not affect or impair any local ordinances or other provisions of law requiring permits to be obtained before excavation. However, a permit issued by any governing body does not relieve the excavator from complying with the requirements of this chapter.

49-7A-15. Landowner's private underground facilities unaffected. Underground facilities owned or operated by the landowner on his own land which do not extend beyond the boundary of the private property are not subject to the provisions of this chapter.

49-7A-16. Repealed by SL 1997, ch 263, § 7.

49-7A-17. Complaints--Rules of Practice. Any person with a complaint against a party who violates or with a complaint against a party who procures, aids, or abets in the violation of § 49-7A-2, 49-7A-5, 49-7A-8, or 49-7A-12, or any rules promulgated pursuant to § 49-7A-2, 49-7A-5, or 49-7A-8, may apply to the board for relief. No complaint may be dismissed because of the absence of direct damage to the complainant or petitioner. The board may promulgate rules of practice prescribing the form for complaints in accordance with chapter 1-26.

49-7A-18. Penalties. Except as provided in § 49-7A-19 and in addition to all other penalties provided by law, any person who violates or who procures, aids, or abets in the violation of § 49-7A-2, 49-7A-5, 49-7A-8, or 49-7A-12, or any rules promulgated pursuant to § 49-7A-2, 49-7A-5, or 49-7A-8 may be assessed a penalty of up to one thousand dollars for the first violation and up to five thousand dollars for each subsequent violation that occurs within twelve months of the initial violation.

49-7A-19. Penalties for intentional violations. In addition to all other penalties provided by law, any person who intentionally violates or who intentionally procures, aids, or abets in the violation of

§ 49-7A-2, 49-7A-5, 49-7A-8, or 49-7A-12, or any rules promulgated pursuant to § 49-7A-2, 49-7A-5, or 49-7A-8 may be assessed a penalty of up to five thousand dollars for the first violation and up to ten thousand dollars for each subsequent violation that occurs within twelve months of the initial violation.

49-7A-20. Each violation as separate offense. Each violation of any statute or rule of the Statewide One-Call Notification Board constitutes a separate offense. In the case of a continuing violation, each day that the violation continues constitutes a separate violation.

49-7A-21. Complaint and order prerequisites for penalty--Time limit. No penalty may be imposed pursuant to §§ 49-7A-18 and 49-7A-19 except by order following a complaint pursuant to § 49-7A-17. A complaint alleging a violation of any statute, except § 49-7A-12, or alleging a violation of any rule of the Statewide One-Call Notification Board shall be brought not later than ninety days after the discovery of the alleged violation, but in no case may the complaint be brought more than one year after the date of the alleged violation. Any complaint alleging a violation of § 49-7A-12 shall be brought within one year of discovery of the alleged violation.

49-7A-22. Panel to determine existence of probable cause for violation--Recommendation to board. Upon the initiation of a complaint pursuant to § 49-7A-17, a panel of three or five members of the Statewide One-Call Notification Board shall be appointed by the chair for the purpose of determining whether there is probable cause to believe there has been a violation of any statute or rule of the board. A determination of whether there is probable cause to believe there has been a violation shall be determined by a majority vote of the panel. The panel shall then recommend to the board that the complaint be dismissed for lack of probable cause, or recommend to the board that there is probable cause to believe that there has been a violation and recommend what penalty, if any, should be imposed pursuant to the provisions of § 49-7A-18 or 49-7A-19.

49-7A-23. Panel to forward complaint to respondent. Upon receipt of a complaint and the appointment of a panel, the panel shall forward to the respondent a statement of the complaint and a notice requiring the respondent to satisfy the complaint or answer it in writing within twenty days from the date of service of the notice or within such further time as may be specified by the board.

49-7A-24. Respondent to satisfy or answer complaint--Procedure. The respondent shall, within the time fixed by the notice served upon it, satisfy the complaint or answer the complaint by filing the original and two copies of the answer in the office of the board and serving a copy on each complainant.

49-7A-25. Complaint, answer to be sole basis for probable cause determination. A determination of probable cause shall be made by the panel solely on these submissions and no other evidence shall be considered.

49-7A-26. Factors considered in determining amount of penalty. The amount of recommended penalty shall be determined by a majority vote of the panel. Factors to be considered in determining the amount of the penalty shall be:

- (1) The amount of damage, degree of threat to the public safety, and inconvenience caused;
- (2) The respondent's plans and procedures to insure future compliance with statute and rules;
- (3) Any history of previous violations;
- (4) Other matters as justice requires.

49-7A-27. Board to accept panel's recommendation--Exception when party requests hearing--Conduct of hearing. The board shall accept the recommendations of the panel unless either party requests a hearing. A party requests a hearing by rejecting the panel's recommendation within twenty days from the date of service of the notice. However, the board may extend the time period for requesting a hearing. Failure to request a hearing is considered acceptance of the panel's recommendation. If a hearing is held, the hearing shall be conducted before the board as a contested case under chapter 1-26. Following the hearing, the board shall either render a decision dismissing the complaint for insufficient evidence or shall impose a penalty pursuant to the provisions of § 49-7A-18 or 49-7A-19.

49-7A-28. Action to recover penalty. If the amount of the penalty is not paid to the board, the Public Utilities Commission, at the request of the board, shall bring an action in the name of the State of South Dakota to recover the penalty in accordance with § 49-7A-33. No action may be commenced until after the time has expired for an appeal from the findings, conclusions, and order of the board. The costs and expenses on the part of the commission shall be paid by the board.

49-7A-29. Record and evidence in court action. In the trial of an action pursuant to § 49-7A-28, the evidence introduced in the proceedings before the board shall constitute the record and evidence on the trial of the case in court. No additional evidence other than that introduced before the board may be introduced at the court trial. The report and order of the board shall be taken and held to be prima facie evidence of the facts stated therein.

49-7A-30. Board to maintain docket and index. The board shall keep a docket in which shall be entered all matters coming before it for determination, with the date of the filing of each paper and the final action of the board in the matter. In connection with such docket, there shall be kept a carefully prepared index in which the names of the parties shall be cross-indexed under the names of both the plaintiff and defendant.

49-7A-31. Board to keep transcript of proceedings--Certification. In any action or proceeding based upon a complaint which comes before the board, the board shall keep a full, true, and verbatim record of all evidence introduced at any hearing or trial and prepare and file as a part of its record in the action or proceeding a true and correct transcript of the evidence, and attach all exhibits introduced at the trial. There shall be attached to the transcript a certificate from the recording secretary to the effect that it is a true and correct transcript of all testimony introduced at the trial.

49-7A-32. Removal of board member for conflict of interest. Either party may request the removal of a board member from any hearing based on a conflict of interest.

49-7A-33. Demand for penalty required before suit brought. A demand in writing on the party shall be made for the assessed penalty before suit is brought for recovery under § 49-7A-28. No suit may be brought until the expiration of thirty days after the demand.

49-7A-34. Board action has presumption of validity. Any action or proceeding or order of the Statewide One-Call Notification Board raises a presumption of validity. The burden is upon the party claiming the order to be invalid to plead and prove the facts establishing the invalidity.

UTILITY CONSTRUCTION CODE

CHAPTER 2

Permits

Article	1	Right-to-Work Permit
Article	2	Water Connection Permit
Article	3	Sewer Connection Permit
Article	4	State Highway & Railroad Crossing Permit
Article	5	Blasting Permit
Article	6	Two Year Warranty
Article	7	Inspection

2.1.1 Requirements

Right-to-work permits are required by any person, firm or corporation to work, tunnel, or excavate in the public right-of-way (streets, alleys or public places). Right-to-Work permits will be issued only to a licensed Contractor or his employee. (Rev. 4-85)

If work has commenced without a valid right-to work permit, the contractor will be charged a late fee of \$50.00 in addition to any other penalty arising from violation of the Utility Construction Code. (Rev. 12-83)

Information required on the permit is as follows:

- A. Location of work
- B. Size of tunnel or excavation
- C. Purpose
- D. Name of person, firm or corporation doing the work.
- E. Name of person, firm or corporation for whom work is being done.
- F. An agreement that the applicant will comply with all ordinances and laws relating to the work.

2.1.2 Inspection Fees

Fees are to be paid for at the time the Right-To-Work Permit is applied for (Franchise utilities shall be exempt from this fee.)

Fees are as follows:

- A. Cuts into curb and gutter or sidewalks
 - 0 to 5 lineal feet = \$10.00
 - 6 to 50 lineal feet = \$15.00
 - 51 to 200 lineal feet = \$25.00
 - 201 to 500 lineal feet = \$35.00

Each additional 100 lineal feet or part thereof is
= \$3.00

- B. Excavations in concrete or asphalt pavement
 - 0 to 70 square feet = \$20.00
 - 71 to 350 square feet = \$30.00
 - 351 to 1000 square feet = \$40.00
 - 1001 to 2000 square feet = \$50.00

Each additional 100 square feet or part thereof
= \$1.00

- C. Excavation in unimproved public right-of-way
 - 0 to 70 square feet = \$15.00
 - 71 to 350 square feet = \$20.00
 - 351 to 1000 square feet = \$30.00
 - 1001 to 2000 square feet = \$40.00

Each additional 100 square feet or part thereof
= \$1.00

Fees shall be determined as one cut, or excavation, provided that it is one continuous trenching operation or under one contract and within a 400 foot radius.

Unimproved streets shall be repaired in accordance with reasonable requirements of the City Engineer.

2.1.3 Additional Inspection Fees for Noncompliance

If the work performed under the permit fails an inspection, and the Director of Public Works, or his designee, determines that additional inspections are necessary, a ten dollar (\$10.00) fee will be assessed for each inspection.

The City Finance Office will bill the permittee the amount to be assessed at the time the work is completed, and approved by the Director of Public Works, or his designee.

This assessment shall be paid prior to issuance of any additional permits, and in no case later than thirty (30) calendar days after project completion.

2.1.4 Liability

If any settlement occurs in or under the surface or pavement within two (2) years, it shall be presumed that the project was not done properly. The Director of Public Works will send a notice by registered mail to the person, firm or corporation having obtained the permit for said work. The permittee will have ten (10) days upon receipt of the notification to correct the deficiencies, or the City shall cause to have the work done.

If the City must cause to have the work done, the permittee will be assessed a fee of one and one-half (1 1/2) times the costs incurred. This assessment shall be paid prior to issuance of any additional permits, and in no case later than thirty (30) calendar days after project completion.

Article	2	<u>Water Connection Permits</u> Refer to Section 4.1.3
Article	3	<u>Sewer Connection Permit</u> Refer to Section 6.1.3
Article	4	<u>State Highway & Railroad Crossing Permit</u> Refer to Section 3.1.8
Article	5	<u>Blasting Permit</u>

2.5.1 Permit Availability

A permit is to be obtained from the Rapid City Fire Department.

Two Year Warranty (12/83)

During a period of two years after the right-to-work permit is issued or the completion of work, whichever is later, the Contractor shall make all needed repairs arising out of settled ditches, defective workmanship and/or materials furnished by the contractor. (Rev. 4-85)

The City is hereby authorized to make such repairs at the contractor's expense if within ten (10) days after the receipt of a written notice to the contractor or his agent, the repairs are not made. Further, in the case of an emergency, where in the judgment of the City delay would cause serious loss or damage, repairs may be made without notice to the contractor. (Rev. 12/83)

If the City must cause to have the work done after due notice is given, the contractor will be assessed at one and one-half (1 1/2) times the cost incurred. If repairs are made due to an emergency, the contractor shall pay only the actual cost incurred. The assessment shall be paid prior to issuance of any additional permits, and in no case later than thirty (30) calendar days after completion of the work. (Added 4/83)

The City reserves the right to extend the warranty period if excessive problems develop during the initial two year period. (Rev. 12/83)

Inspection

All new water and/or sewer mains and appurtenances installed within the three mile limit and connected to City water and or sewer mains shall be inspected and shall meet all the applicable City Codes. (Add. 4-85)

3.1.5 Required Minimal Traffic Control

Exclusive of requirements of other authorized agencies, minimum traffic control on Rapid City street right-of-way shall be in compliance with minimums established and illustrated in Chapter 8 of this Code.

3.1.6 Street Closing

When traffic conditions permit, the Director of Public Works or his designee, may by written approval, allow the complete closure of streets to traffic, for a period of time prescribed by him.

Such written approval will require that the Trenching Contractor give notification to various public agencies and to the general public. In no case will written approval be valid until such notice is given.

Before any person may close a street or alley, the Contractor must notify the Rapid City Police Department and the Rapid City Fire Department as to the location and duration of the proposed closure.

3.1.7 Barricades and Traffic Control

The City of Rapid City shall adopt for purposes of uniform traffic control in work areas on street right-of-ways, Part V of "South Dakota Manual of Traffic Control Devices". All signs, barricades, cones, vertical panels, flashers and other traffic control devices shall conform in shape, placement and design as specified in Part V of "South Dakota Manual of Uniform Traffic Control Devices". Said "Traffic Controls for Construction & Maintenance Operations" shall be on file at the City Engineering Department and the City Finance Office.

* 3.1.8 State Highway & Railroad Crossings

Excavations within State Highway or Railroad right-of-way shall conform to the requirements of the excavation permit issued by the State Highway Department, or the Railroad Company, as the case may be.

3.1.9 Tunneling, Boring or Jacking

Excavation shall be by open cut method where the absence of improvements make open cuts desirable. Where depth of trench and conditions will allow, tunneling, boring or jacking will be required under sidewalks, curb & gutter, street pavement, railroad tracks or other surface structures unless approval to do otherwise is first obtained from the Director of Public Works or his designee.

Article 1 General Information

4.1.1 Definition of a Water Service Line

Water service line shall mean the line from the City main to within five feet (5') of the building.

4.1.2 Requirements

New service lines shall serve only one building. Connection of new service lines to existing water service lines are prohibited unless written approval is obtained from the Water Superintendent or his designee.

Curb stops with boxes shall be placed on each new service line, seven feet (7') from the property line and in the public right-of-way unless exemption is approved by the Water Superintendent or his designee.

Curb stops are to be set at the proper grade and location as staked by the engineer, turned off, and operational at the time of completion.

* 4.1.3 Water Connection Permit & Tapping Fees

Permits will be required for all connections to the Rapid City water system.

Information and requirements for this permit are as follows:

- A. Applicants must hold a City Sewer & Water Installer Contractor's License. (Chapter 1, Article 2). In addition, the applicant must have in his possession a valid right-to-work permit. (Rev. 4/83)
- B. Excavation work shall be done by a licensed Trenching Contractor (Chapter 1, Article 2) and he must have obtained a right-to-work permit (Chapter 2)
- C. Permit fee of twenty dollars (\$20.00) plus a tapping fee shall be charged for each service as follows:

3/4"	\$40.00
1"	\$45.00
1 1/4"	\$30.00
1 1/2"	\$30.00
2"	\$30.00
4" & 6"	\$125.00
8" & Over	\$150.00

(Rev. 4/85)

- D. Size of Tap
- E. Type of Material to be used
- F. Legal Description of Property
- G. Application must be approved by the Water Superintendent two (2) days prior to commencing work. (Rev. 4-85)

Permits may be obtained from the Rapid City Water Department.

Violators of this permit will be required to correct any deficiencies the Water Superintendent feels there may be, and will have their licenses reviewed by the Trenching Contractor's Board of Review.

4.1.4 Tapping Cast Iron Mains

Maximum size taps are as follows:

Direct Tap

Size of Pipe	Size of Tap
4" (or larger)	1"

Using Tapping Saddles

4" (or larger)	1-1/2"
6" (or larger)	2"

Tapping Saddles shall be double strap and all bronze construction or stainless steel with 2" or wider band.

Four inch (4") or larger taps shall be made with a tapping sleeve and valve.

4.1.5 Tapping Asbestos Cement Mains

Maximum size taps are as follows:

Direct Tap

Size of Pipe	Size of Tap
4" (or larger)	3/4"
8" (or larger)	1"

5. The sewer service line shall be root proof and water tight and tested with a 10' head of water or equivalent.
6. Service line materials shall consist of the following (Rev. 9/81)
 - Sewer Service-PVC (ASTM 3034, SDR 35 or better)
 - Water Service-Type "K" Copper

Should the situation arise where the depth of the sewer main requires that the sewer service line is at a higher elevation than the water service line, two separate ditches at least 10' apart will be required.

Sewer service lines crossing above a water main or water service line shall be constructed of approved water pipe for a minimum distance of 10' on each side of the water line being crossed.

Clean-outs shall be located at all changes in horizontal alignment of greater than 45 degrees, but no more than 75 feet (Rev. 4/83) apart, including riser, in 4" nominal diameter sewer piping and 100' apart, including riser, in 6" nominal diameter sewer piping. Unless approval is obtained from the Director of Public Works or his designee, cleanouts shall be located within 5' of the outside of the building. Sewer service lines shall have a minimum cover of 3 1/2 feet. (Rev. 9/81)

Installation of sewer service lines shall be in compliance with the South Dakota Plumbing Code.

Any deviation from the code must be approved in writing by the Director of Public Works or his designee.

* 6.1.3

Sewer Connection Permits & Fees

Permits will be required for all connection to the Rapid City sewer system.

Information required on the permit and the requirements for securing the permit are as follows:

- A. Applicant must hold a valid City Sewer & Water Installer Contractor's License (Chapter 1, Article 2)
- B. Excavation work shall be done by a licensed Trenching Contractor (Chapter 1, Article 2) who must have first obtained a right-to-work permit (Chapter 2)
- C. A permit fee of \$20.00 plus a tapping fee shall be charged for each service as follows:

4 inch tap	\$55.00
6 inch tap	\$70.00

(Rev. 4-85)

1. 4" tap = \$40.00
2. 6" tap = \$45.00 (Rev. 4/83)

Costs of the tapping saddle is included in the fee.

- D. Size of the tap must be shown on the permit.
- E. Type of material to be used must be shown on the permit.
- F. Legal description of property must be shown on the permit.
- G. Application must be approved by the Water Superintendent two (2) days prior to commencing work. (Rev. 4-85)

Permits may be obtained from the Rapid City Water Department.

Violators of this permit will be required to correct any deficiencies the Water Superintendent feels may exist and will have their license reviewed by the Trenching Contractor's Board of Review.

6.1.4 Tapping of Sewer Mains

All taps to the sanitary sewer main shall be made by City personnel. No tap larger than 4" shall be made on a 6" sewer line, and no tap larger than 6" shall be made on an 8" sewer line.

Sewer service line connections 8" or larger must be made by means of a manhole.

Manholes and manhole castings shall conform to city specifications. (Refer to Section 7.2.6)

6.1.5 Type of Pipe

Type of pipe shall meet the same specifications as required for sewer mains. (Refer to Article 2 of Chapter 7)

6.1.6 Trenching

Trenching shall comply with:

General Information	Chapter 3-Article 1
Foundation	Chapter 3-Article 2
Bedding	Chapter 3-Article 3
Backfilling	Chapter 3-Article 4
Compaction	Chapter 3-Article 5

RAPID CITY MUNICIPAL CODE

TITLE 13

Chapter 13.24

Trenching Contractor's Licenses

CHAPTER 13.24: TRENCHING CONTRACTOR'S LICENSES

Section

<u>13.24.010</u>	Definitions.
<u>13.24.020</u>	License required.
<u>13.24.030</u>	License application.
<u>13.24.040</u>	License fees and renewal.
<u>13.24.050</u>	Requirements for issuance.
<u>13.24.060</u>	Limitations on licenses generally.
<u>13.24.070</u>	City of Rapid City Infrastructure Criteria Manual
<u>13.24.080</u>	Rapid City Trenching Board.
<u>13.24.090</u>	License – Revocation, Suspension, or Probation
<u>13.24.100</u>	Criminal Penalty

13.24.010 Definitions.

The following words, terms and phrases are defined and shall be interpreted as such throughout this chapter. Terms not defined in this section shall have the meaning customarily assigned to them:

- A. **CONTRACTOR.** A licensed sewer and water contractor or licensed trenching contractor as defined in this section.
- B. **DIRECTOR.** City of Rapid City Director of Public Works.
- C. **EMPLOYEE.** A person whose compensation for construction work is reported by the employer on an Internal Revenue Service W-2 form and is also otherwise considered an employee under applicable law.
- D. **EXCAVATING.** Any operation in which earth, rock or other material in the ground is moved or otherwise displaced and/or replaced at a depth of 12 inches or greater below the surface by means of tools, equipment or explosives, and includes trenching, digging, ditching, drilling, tunneling and cable or pipe plowing for the purpose of installing cable, conduit or pipe other than water, sanitary sewer or storm sewer pipe. *EXCAVATING* shall not include grading or scraping for street construction or reconstruction, drilling or auguring for installation of utility poles, light poles, sign posts, or mailboxes, or tilling of soil for landscaping purposes to a depth of 12 inches or less.

- E. **PERSON.** A person or an organization including, but not limited to, a sole proprietorship, partnership, corporation or limited liability company.
- F. **PLUMBER'S RIDER.** A plumbing contractor licensed and permitted under Chapter 15.24 of the Rapid City Municipal Code that has secured a trenching contractor's license and paid the applicable fess for such license.
- G. **SEWER and WATER CONTRACTOR.** A sole proprietorship, partnership or corporation, who undertakes or offers to undertake sewer and water installations.
- H. **SEWER and WATER INSTALLATION.** The new construction, alteration, repair or improvement of water mains and appurtenances, water service lines and appurtenances, water treatment plant piping and equipment; sewer mains and appurtenances, sanitary sewer services, sewer treatment plant piping and equipment; and storm sewers, and the placement of sewer and water pipe into a building sufficient distance to allow connection to the building plumbing. *SEWER and WATER INSTALLATION* does not include the minor adjustment of rnanhole castings, valve boxes and curb boxes to finish grade for street construction.
- I. **SEWER and WATER INSTALLER.** A person other than a contractor, who is engaged as an employee of, or is otherwise working under the direction of, a sewer and water contractor in sewer and water installation, and when present at a job site has direct supervision over work being performed.
- J. **STANDARD SPECIFICATIONS.** City of Rapid City Standard Specifications for Public Works Construction, as adopted by the City.
- K. **STATE LICENSE.** Either a sewer and water contractor's, installer's or plumbing license issued by the State of South Dakota in accordance with the provisions of Administrative Rules of South Dakota Chapter 20:53:06, or, a plumber's license issued by the State of South Dakota in accordance with the provisions of SDCL Chapter 36-25.
- L. **STORM SEWERS.** All pipes, culverts, catch basins, inlets, detention pond inlet and outlet piping, and storm sewer appurtenances which will become an integral part of the public storm sewer system, whether located in public right-of-way or drainage easements, except parking lot drainage pipes and appurtenances are not considered *STORM SEWERS* for purposes of this chapter.
- M. **TRENCHING CONTRACTOR.** A person who undertakes or offers to undertake excavating in the public right-of-way (streets, alleys, or other public places) for any purpose.
- N. **TRENCHING JOURNEYMAN.** A person other than a contractor, who is engaged as an employee of, or is otherwise working under the direction of a trenching contractor in excavating work, and when present at a job site, has direct supervision over work being performed.

13.24.020 License Required.

- A. *Sewer and water contractor.* It is unlawful for any person to conduct, carry on or engage in the business of sewer and water main installation, or to act in the capacity of a sewer and water contractor, without having first secured a City sewer and water contractor's license.
- B. *Sewer and water installer.* It is unlawful for any person to act, or to give the appearance of acting as a sewer and water installer without having first secured a City sewer and water installer's license.
- C. *Trenching contractor.* It is unlawful for any person to, in any manner, engage in the business of excavating in the public right-of-way (streets, alleys or other public places), or in City infrastructure easements, or act or give the appearance of acting as a trenching contractor without having first secured a City trenching contractor's license. A licensed sewer and water contractor may also act as a trenching contractor.
- D. *Trenching journeyman.* It is unlawful for any person to act or give the appearance of acting as a trenching journeyman without having first secured a City trenching journeyman's license. A licensed sewer and water installer may also act as a trenching journeyman.

13.24.030 License application.

- A. *Public Works Department to administer provisions.* The Public Works Department shall administer the provisions of this chapter. Before a contractor's, installer's or journeyman's license may be issued, the applicant shall be required to complete an application form. The Board shall determine the applicant's eligibility to take the required exam based on the information provided on the application. The examination shall be given under the direction of the Trenching Board.
- B. *Examination and reexamination.* Any applicant who fails to pass the examination may apply for reexamination after 30 days from the date of the previous examination without payment of an additional exam fee. Should any applicant fail to pass a second time, the Board may refuse to permit a third examination until after the expiration of 6 months. License fees shall not be refunded if an applicant fails to pass the examination. No reexamination will be permitted more than 1 year from the date of the first failed examination without a new application and payment of the full examination fee.
- C. *State license required.* Applicants for both sewer and water contractor, and sewer and water installer licenses must possess a current state license of a class at least equal to the class of city license for which they have applied. Applicants for trenching contractor, and trenching journeyman licenses are not required to possess a state license.

13.24.040 License fees and renewal.

A. *Fee schedule.*

1. Every person making application for a license shall pay to the Finance Officer a nonrefundable fee as follows:

Applicant	Initial Fee	Renewal Fee
Sewer and Water Contractor	\$200	\$100
Sewer and Water Installer	\$40	\$20
Trenching Contractor	\$200	\$100
Trenching Contractor (plumber's rider)	\$200	\$100
Trenching Journeyman	\$40	\$20

2. *City Standard Specifications for Public Works Construction* shall be included with the initial contractor license fee only.

- B. *License term and renewal.* All licenses issued under this chapter shall expire on February 28 of the next even-numbered year following its issuance. Any license not renewed by the last business day in March in such even-numbered year shall be ineligible for renewal. In order to obtain a license after the grace period, the applicant shall be required to complete the application requirements for a new license. If an applicant applies for an initial license within 4 months of the time for renewals, the license issued shall be issued for a term extending to February 28 of the second even-numbered year following its issuance.

13.24.050 Requirements for issuance.

- A. *Sewer and water contractor's license.* License may be issued only to a person who makes application therefore, pays the application fee, meets the requirements stated in this chapter, including passing the required examination, presenting to the City Finance Office a valid current state license, and the following additional requirements:

1. *Liability insurance.* Liability insurance shall be required of every contractor. Every applicant for a sewer and water contractor's license shall present to the City Finance Office for their review, a valid certificate of insurance at the time of application. It shall be the duty of every sewer and water contractor to continually maintain valid liability insurance. The minimum required general aggregate liability shall be \$2,000,000, with \$50,000 fire damage and \$1,000,000 each occurrence;
2. *Worker's compensation insurance.* In accordance with South Dakota State Law, proof of worker's compensation insurance shall be provided prior to the issuance of a contractor's license;

3. *Proof of excise tax number.* Applicants for contractor's license shall be required to supply their excise tax number.
 4. *Previous utility main installation experience.* Applicants for sewer and water contractor's license shall be required to show at least one year of previous experience installing utility mains.
- B. *Trenching contractor's license.* License may be issued only to a person who takes application therefore, pays the application fee, meets the requirements stated in this chapter, including passing the required examination, and the following additional requirements:
1. *Liability insurance.* Liability insurance shall be required of every contractor. Every applicant for a trenching contractor's license shall present to the City Finance Office for their review, a valid certificate of insurance at the time of application. It shall be the duty of every trenching contractor to continually maintain valid liability insurance. The minimum required general aggregate liability shall be \$300,000, with \$50,000 fire damage and \$300,00 each occurrence;
 2. *Worker's compensation insurance.* In accordance with South Dakota state law, proof of worker's compensation insurance shall be provided prior to the issuance of a contractor's license;
 3. *Proof of excise tax number.* Applicants for .contractor's license shall be required to supply their excise tax number.
- C. *Installer and Journeyman license.*
1. *Sewer and water installer.* License may be issued only to the person who meets the requirements in this chapter, including passing the required examination and presenting to the Trenching Board a valid current state license.
 2. *Trenching journeyman.* License may be issued only to the person who meets the requirements in this chapter including passing the required examination.
- D. *Age at time of application.* Applicants for any license issued under this chapter must have attained at least 18 years of age, at the time of making application therefore.

13.24.060 Limitations on licenses generally.

- A. For the first 12 months after issuance of any license, or upon order of the Board pursuant to § 13.24.090, the holder of such a license shall be under a probationary status to allow both the City and the Trenching Board to review the performance of the licensee.

- B. During the 12-month probationary period, any water and sewer contractor or trenching contractor will be allowed to have 1 right-to-work permit active at any given time. Any other exception to this policy may be granted only after review by the City Council upon recommendation of the Trenching Board.
- C. The probationary status may be extended if the Trenching Board determines that the licensee has not completed enough work to allow for proper evaluation.
- D. Each person to whom a sewer and water contractor's license or trenching contractor's license is issued shall designate at least 1 individual employee who must take and pass the contractor's examination. Upon passage of the contractor's examination, the issued license shall be held jointly by the individual who passed the examination and the person to whom a sewer and water contractor's license or trenching contractor's license was issued. If the person designates only 1 individual, and the individual's employment is terminated or ends for any reason, the person holding the contractor's license must designate, within 60 days, another individual to take and pass the contractor's examination. No additional fee or application will be required for said individual. Failure to designate another individual to take and pass the contractor's examination within 60 days will result in automatic expiration of the contractor's license and no additional permits will be issued. Reactivation of the license will occur only upon the completion of a new application, payment of any applicable application fees, and the passage of the contractor's examination by a designated individual.
- E. It is unlawful for any person to perform, or allow to be performed, any work for which they are licensed without having a licensed person present at the job site with direct supervision over all aspects of the work at all times when work is being performed. Permitted persons to exercise such supervision include:
 - 1. The contractor;
 - 2. A designated individual who has passed the contractor's examination; or
 - 3. A licensed installer or journeyman who is an employee of the contractor.
- F. No person to whom a license is issued shall allow any other person, or non-designated individual, to operate thereunder.
- G. A Sewer and Water Installer or Trenching Journeyman license shall be the property of person to whom the license is issued and shall not be transferable.
- H. The following are exceptions:
 - 1. Plumbing contractors licensed and permitted under Chapter 15.24 of the Rapid City Municipal Code are not governed by this chapter, except when performing excavation in public right-of-way or performing new construction, alteration, repair or improvement of water or sewer mains and appurtenances. A plumbing contractor may excavate in the public right-of-way for the purposes of installing service lines only, provided he or she has secured a trenching contractor's license and paid an initial fee of \$50 for the license. (Trenching contractor-plumber's rider).

2. Private utility companies, or the City, when excavating in the public right-of-way for the purposes of repairing, altering or maintaining their facilities, are exempt from the licensing requirements of this chapter. This exemption shall not apply to installation of new facilities or replacement of existing facilities.

13.24.070 Rapid City Infrastructure Criteria Manual

All work completed by a licensee must meet the criteria set out in the current edition of the Rapid City Infrastructure Criteria Manual.

13.24.080 Rapid City Trenching Board.

There is established the Rapid City Trenching Board. The Board shall consist of 6 members composed of Public Works Director, a registered professional engineer engaged in consulting business within the city, an employee of a nongovernmental utility company other than telecommunications having underground utilities within the city, representatives of 2 licensed contractors, and a representative from the telecommunications industry. Members shall be appointed for 2-year staggered terms by the Mayor subject to confirmation by the Council at its first regular meeting in January. The members of the Board, except for city staff, shall serve without compensation for the service. The Board shall be assisted by city staff as directed by the Director.

- A. *Purpose of the Board.* The purpose of the Board is to protect the public health, safety and welfare, and to guard against unsafe, unstable or short-lived products or services related to installation of utility systems, and to excavating in the public right-of-way. The Board shall also insure new or small volume contractors are able to obtain a license without hardship.
- B. *Powers and duties of the Board.*
 1. The Board is authorized to adopt the rules and regulations as shall become necessary with the approval of the Council. The Board shall notify all license holders of the proposed rules and regulations within 30 days prior to the delivery of the rules and regulations to the Council.
 2. The Board shall hold meetings as necessary for transaction of business; for examination of applicants, to determine the qualifications and fitness of all applicants; and to grant approval for licenses and renewals to applicants who show proper qualifications and documentation.
 3. The Board shall have the power to review any license issued hereunder at any time.
 4. The Board may hear appeals from determination of the Public Works Director on interpretation and application of licensing ordinances. All decisions of the Board shall be eligible for final review by the Council.

13.24.090 License - Revocation, suspension or probation.

- A. The Board, in its discretion, may revoke, suspend, or place on probation any license for reasons including, but not limited to the following: performance of work without a permit; performance of (consistently substandard work; violation of any applicable federal, state or local statute, ordinance, rule or regulation; violation of any provision of this chapter; or demonstrated inability or unfitness to perform the work for which he or she has been licensed.
 - 1. The penalty of license revocation shall continue for a period of one year from the date the revocation became effective. Once the period of revocation has ended a licensee upon which the penalty of revocation has been imposed may apply for a new license, subject to the probationary period set forth in § 13.24.060 A, B, and C.
 - 2. The penalty of license suspension shall continue for a period not to exceed 30 days from the date the suspension became effective. Once the period of suspension has ended, the Board may, at its discretion, place the licensee on probation, as set forth in § 13.24.060 A, B, and C.
 - 3. The penalty of license probation shall operate as set forth in § 13.24.060 A, B, and C.
- B. The penalties of license revocation, suspension or probation shall be imposed only after licensee has had notice and an opportunity to be heard.
 - 1. The notice of intent to impose penalty shall be sent by first class mail to the licensee's address of record on file with the Board. The Board shall mail the notice of intent to impose penalty no later than 14 days prior to the hearing date.
 - 2. The penalty hearing will take place at a regular or special Board meeting, at the discretion of the Board, provided the notice of intent is mailed no later than 14 days prior to the meeting date. A vote of a majority of Board members present shall be required to impose penalty.
 - 3. The Board shall provide written notice of its decision, to be sent by first class mail to the licensee's address of record on file with the Board. The effective date of any penalty imposed shall be 14 days from the date of mailing of the Board's written notice of decision.
- C. Should any applicant or licensee be aggrieved by a decision of the Board, he or she may, within 10 days, provide written notice to the Director of Public Works of his or her intent to appeal the decision to the Council After the aggrieved applicant or licensee has provided written notice, he or she will have a hearing before the Council The Council may affirm, modify or reverse the action of the Trenching Board. All decisions of the Council shall be final.
- D. Any licensee subject to investigation by the Board shall cooperate fully with the Board. Failure to cooperate fully with the Board is a basis for license probation, revocation or suspension.

13.24.100 Criminal Penalty.

Any person violating this chapter shall be subject to the general penalty provision of § 1.12.010.

STANDARD SPECIFICATIONS
SECTIONS

SECTION 7

GENERAL CONDITIONS

7.1 DEFINITIONS AND TERMS

That whenever any word or expression defined herein, or pronoun used in its stead, occurs in these specifications or other Contract documents, it shall have and is mutually understood to have the meaning herein given:

- A. "Addendum" or "Addenda" shall mean a change or changes to the bid proposal documents issued by the City of Rapid City prior to the time of opening of the proposals.
- B. "Advertisement" shall mean the public announcement inviting bids for work to be performed or materials to be provided.
- C. "Award" shall mean the acceptance of a bid proposal by the City of Rapid City Council.
- D. "Bidder" shall mean the individual, partnership, firm, corporation, or an acceptable combination thereof, such as a joint venture that is submitting a proposal.
- E. "Bid Proposal", "Bid" or "Proposal" shall mean the written offer of a bidder, on the prescribed form, to perform the work at the prices quoted.
- F. "Bid Schedule" shall mean the list of bid items, together with estimated quantities appearing in the proposal form.
- G. "Calendar Day(s)," unless herein otherwise expressly defined, shall mean a day or days of twenty-four hours each, beginning and ending at midnight.
- H. "Change Order" shall mean a written order issued by the Engineer to the Contractor, covering changes in the plans, specifications, or quantities within the scope of the Contract and establishing the basis of payment and time adjustments for the work affected by the changes.
- I. "Contract" or "Contract Documents" shall mean the written agreement between the Owner and the Contractor setting forth the obligations of the parties for the performance of the prescribed work.

The Contract shall include: Notice for Bids; Instructions to Bidders; Bid Proposal; Contract Form and Contract Bond; Notices; Insurance; Performance Bond; Special Conditions; General Conditions; Special Provisions; Standard Specifications;

Detailed Specifications; Standard Drawings; Detailed Plans; Plans Drawings; Addendum; Change Orders; and agreements that are required to complete construction of the work, all of which constitute one instrument.

Detailed plans and/or specifications that are furnished by the Contractor to clarify or define the Owners contract must be approved by the Engineer prior to use. Upon approval, said plans and/or specifications shall be considered a part of this Contract.

- J. "Contract Item", "Bid Item" or "Pay Item" shall mean a specific unit of work for which a price is provide in the Contract.
- K. "Contract Performance Bond" shall mean the security executed by the Contractor and furnished to the Owner to guarantee performance of the work in accordance with the Contract.
- L. "Contract Time" or "Contract Days" shall mean the number of working days allowed for performance and completion of the Contract or date work is to be completed, as stated in the Proposal and Contract.
- M. "Contractor", "Prime Contractor" or the words "Party of the Second Part" shall mean the individual, partnership, firm, corporation, or joint venture contracting with the City of Rapid City for performance of the prescribed work covered by the Contract and his duly authorized agents or legal representatives.
- N. "Contract Date" or words equivalent thereto, shall mean the date upon which this Contract, executed by the Contractor, is signed by the Owner.
- O. "Delay" shall mean an increase in the time required for completion of the contract work beyond that originally contemplated by the parties at the time the Contract was signed.
- P. "Excusable Delay" shall mean unforeseeable delay, which excuses the Contractor's obligation to complete the work on time by extending performance time for contractually specified reasons.
- Q. "Inexcusable Delay" shall mean delay for which the Contractor is not entitled to a time extension or monetary compensation and may even be liable in damages to the Owner.
- R. "Compensable Delay" shall mean delay for which the Owner is liable in damages to the Contractor. Compensable delay is a subcategory of excusable delay, since all compensable delays will also be excusable delays. However, not all excusable delay is compensable.
- S. "Engineer" shall mean the Director of Public Works, who has been employed by the Owner for this work, acting directly or through his duly authorized agents, such agents acting severally within the scope of the particular duties entrusted to them, responsible for engineering inspection of the Contract work.

- T. "Equipment" shall mean any machinery, tools, implements or apparatus together with supplies for maintenance and upkeep, necessary for the construction and completion of the Contract work.
- U. "Extra Work" shall mean an item of work not provided for in the Contract as awarded, but found by the Engineer to be essential to the satisfactory completion of the Contract within its intended scope.
- V. "Holiday" shall mean the first day of January, commonly known as New Year's Day; the Friday immediately preceding Easter, commonly known as Good Friday; the last Monday in May, commonly known as Memorial Day; the fourth day of July, commonly known as Independence Day; the first Monday in September, commonly known as Labor Day; the eleventh day of November, commonly known as Veteran's Day; the fourth Thursday in November, commonly known as Thanksgiving Day; the Friday immediately following Thanksgiving Day; the twenty-fifth of December, commonly known as Christmas Day; and any other day declared by the City to be a holiday.

If the day of observance of the foregoing holidays is changed by enacted laws of the State of South Dakota, such day will be the day of observance of such holiday. Whenever any of the foregoing holidays fall on Sunday, the Monday immediately following shall also be observed as a holiday. Whenever any of the foregoing holidays fall on Saturday, the Friday immediately preceding shall also be observed as a holiday. Saturdays and Sundays will be considered the same as Holidays.
- W. "Incidental Items" or "Incidental Work" shall mean items of work, as shown on the plans and/or in the specifications, for which there are no bid items in the Bidder's Proposal. If no bid item for "Incidental Work" is included in the bid proposal, the cost of these items shall be included in the contract bid price for related work items.

If a bid item for "Incidental Work" is included in the bid proposal, such work shall be included as a part of this work item.
- X. "Inspector" shall mean the engineer's authorized representative or representatives assigned to make detailed inspections of contract performance, limited to the particular duties entrusted to them.
- Z. "Owner", "City", "City of Rapid City", or "Party of the First Part" shall mean the City of Rapid City acting through its authorized representatives.
- AA. "Materials" shall mean substances specified for use in the construction of the project.
- AB. "Notice to Proceed" shall mean the written authorization to begin work on the project.
- AC. The "Plans" shall mean the Contract drawings which show the location, character, and dimensions of the prescribed work, including layouts, profiles, cross sections, and all drawings submitted by the successful bidder with his Proposal and by the

Contractor to the Owner, if and when approved by the Engineer; and all drawings submitted by the Owner to the Contractor during the progress of the work, as provided for herein.

- AD. "Project" shall mean the specific section of street, road, property together with all appurtenances and construction to be performed under the Contract.
- AE. "Provide" shall be interpreted to mean both furnish and install.
- AF. "Special Provisions" shall mean additions and revisions to the standard and supplemental specifications applicable to the individual project.
- AG. "Specialty Items" shall mean those items of work specified in the proposal requiring special equipment, materials, or skills not normally required in typical construction work.
- AH. "Specifications" is a general term applied to all directions, provisions, and requirements pertaining to performance of the work.
- AI. "Standard Specifications" is the book of specifications approved by the Owner for general applications and repetitive use.
- AJ. "Subcontractor" shall mean an individual, partnership, firm, corporation, or joint venture, to which the Contractor sublets a portion of the Contract.
- AK. "Submittals" shall include all drawings, diagrams, descriptive literature, illustrations, instructions, schedules, safety plans, operating plans, performance and test data, product data sheets, material safety data sheets, and similar materials prepared by the Contractor or a supplier to illustrate material or equipment or some portion of the work.
- AL. "Substantial Completion" shall mean: a) the Contractor is prosecuting the remaining work in a manner satisfactory to the Engineer; b) the project is or could be used for the purposes intended; and c) pedestrian or vehicular traffic will not be inconvenienced by prosecution of the remaining work.
- AM. "Superintendent" shall mean the Contractor's authorized representative in responsible charge of all of the Contract work.
- AN. "Supplemental Specifications" shall mean approved additions and revisions to the Standard Specifications.
- AO. "Work" shall mean the furnishing of all labor, materials, equipment, and other incidentals necessary to the successful completion of the project.
- AP. "Working Day" shall mean a calendar day, other than holidays or Sundays, except as permitted in writing by the Engineer, on which weather and other conditions not under the control of the Contractor will permit construction operations to proceed for

at least five (5) hours, with the normal working force engaged in performing the controlling item or items of work which would be in progress at that time.

- AQ. "Written Notice" shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered mail to the last business address known to him who gives the notice.

That whenever in these Contract documents the words "as ordered," "as directed," "as required," "as permitted," "as allowed," or words or phrases of like import are used, it shall be understood that the order, direction, requirements, permission, or allowance of the Owner and the Engineer is intended.

Similarly, the words "approve," "reasonable," "suitable," or "acceptable," otherwise particularly specified herein, shall mean approved, reasonable, suitable, acceptable, proper, or satisfactory in the judgment of the Owner and Engineer.

7.2 ABBREVIATIONS

Whenever the following abbreviations are used in these specifications or on other Contract Documents, they are to be construed the same as the respective expressions and to mean the code or standard that is in effect at the date of advertisement for bids:

AAN	American Association of Nurserymen
AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
AGC	Associated General Contractors of America
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
ARA	American Railway Association
AREA	American Railway Engineering Association
ASCE	American Society of Civil Engineers
ASLA	American Society of Landscape Architects
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers' Association
AWWA	American Water Works Association
AWS	American Welding Society
FHWA	Federal Highway Association
FAA	Federal Aviation Administration
FSS	Federal Specifications and Standards
GSA	General Services Administration
ICC	Interstate Commerce Commission
IPECA	Insulated Power Cable Engineer's Association
ITE	Institute of Transportation Engineers
MUTCD	Manual of Uniform Traffic Control Devices

NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association
RETMA	Radio Electronic Television Manufacturer's Association
SAE	Society of Automotive Engineers
SSPC	Steel Structures Painting Council
UL	Underwriters Laboratory

7.3 SUBHEADINGS AND TITLES

The titles or subheadings used in this contract and on the contract plans and drawings and in the specifications, are understood to be for convenience of reference only, and shall not be taken or considered as being a part thereof, or as having any bearing on the interpretation thereof.

7.4 NATURE AND LOCATION OF WORK

It is understood and agreed that the Contractor has, by careful examination, satisfied himself as to the nature and location of the work, the conformation of the ground, the character of equipment and facilities needed preliminary to and during the execution of the work, the general and local conditions, and all other matters which can in any way affect the work under this Contract.

7.5 VERBAL STATEMENTS NOT BINDING

It is understood and agreed that the written terms and provisions of the Contract Documents shall supersede all verbal statements of the Engineer or other representatives of the City, and such statements shall not be effective or be construed as entering into, or forming a part of, or altering in any way whatsoever the written Contract.

7.6 SCOPE, NATURE, AND INTENT OF CONTRACT PLANS AND SPECIFICATIONS

The Contractor shall, in good and first-class workmanlike manner, and at his own cost and expense, furnish all of the labor, tools, materials, and equipment necessary to complete, ready for use, all of the work as designated and as described by the Contract Documents on file with the Finance Officer of the City of Rapid City, Rapid City, South Dakota.

The said specifications, plans, and contract are intended to supplement, but not necessarily duplicate, each other and together constitute one complete set, so that any work covered in the one and not in the other shall be executed just as if it had been set forth in the Contract, in order that the work shall be completed according to the complete design or designs as decided and determined by the Engineer. It is understood and

agreed that the work shall be performed and completed according to the true spirit, meaning, and intent, of the contract and specifications.

The Contractor agrees that in undertaking to complete the work within the time herein fixed, he has taken into consideration and made allowances for all of the ordinary delays and hindrances incidental to such work, whether or not growing out of delays in securing materials or equipment. Compensation for delays due to no fault of the Contractor may be negotiated.

The Contractor also agrees that all time limits stated in the Contract Documents are of the essence of the Contract.

All the work shall be done under the direct observation of the Engineer and to the entire satisfaction of the Engineer and the Owner and in accordance with the laws of the State of South Dakota and the Ordinances and Codes of the City of Rapid City.

7.7 DUTIES AND POWERS OF INSPECTORS

Properly authorized inspectors shall be considered to be the representatives of the Engineer, limited to the duties and powers entrusted to him. It shall be their duty to inspect the materials and workmanship of those portions of the work to which they are assigned, either individually or collectively, under instructions of the Engineer and to report any and all deviations from the plans, specifications, and other contract provisions which may come to their notice. Any Inspector shall have the right to order the work entrusted to his supervision stopped if in his opinion such action becomes necessary, until the Engineer is notified and he has determined and ordered that the work shall proceed in due fulfillment of all contract requirements. The Engineer and his representatives shall at all times have access to the work wherever it is in preparation or progress and the Contractor shall provide proper facilities for such access and for inspection.

7.8 SEPARATE CONTRACTS

The Owner reserves the right to let other contracts in connection with this work. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate his work with theirs.

If any part of the Contractor's work depends for proper execution or results upon the work of any other contractor, the Contractor shall inspect and promptly report to the Engineer any defects in such work that render it unsuitable for such proper execution and results. His failure so to inspect and report shall constitute an acceptance of the other contractors work as fit and proper for the reception of his work, except as to defects which may develop in the other contractors work after the execution of his work.

To insure the proper execution of his subsequent work, the Contractor shall measure work already in place and shall at once report to the Engineer any discrepancy between the executed work and the Drawings.

7.9 CONTRACT EXECUTION

The Bidder agrees that he will execute the contract in accordance with the proposal as accepted and secure and furnish the required bonds and insurance within ten (10) calendar days from the date of mailing of said notice of bid award to him at his address as given on the proposal or within such additional time as may be allowed by the Engineer; and that, upon his failure or refusal to do so within said time, the certified or cashier's check or bidder's bond accompanying this bid and the money payable thereon shall be forfeited to and become the property of the City of Rapid City as liquidated damages for such failure or refusal.

7.10 COPIES OF CONTRACT

Not less than four (4) copies (and as many more as may be required) of the bound volumes of the proposal, contract, and specifications shall be prepared, each shall contain an exact copy of the Contract signed by both parties thereto. Two (2) executed copies shall be filed with the City. Additional copies shall be filed where and as may be required.

7.11 RESPONSIBILITY OF CONTRACTOR

General Responsibility: The Contractor shall furnish all transportation, ways, works, machinery, and plant, and all suitable appliances required for the safe, proper, and lawful construction, maintenance, and use thereof. The Contractor shall be fully responsible for the materials and equipment used for the work and for safeguarding the work against damage or destruction until its final acceptance by the Engineer. The Contractor agrees to make no claims for damage to the work prior to final acceptance and will make no claims for damage to the materials except through negligence or willful act of the Owner.

Before the completion and acceptance of this Contract shall be made good by him, he shall be solely answerable for all damage to the Owner or the property of the Owner; to other Contractors, or other employees of the Owner; to the neighboring premises or to any private or personal property due to improper, illegal, or negligent conduct of himself or his subcontractors; employees or agents in and about said work or in the execution of the work covered by this Contract or any extra work undertaken herein provided; or to any defect in, or the improper use of, any scaffolding, shoring, apparatus, ways, works, machinery or plant. He shall indemnify and save harmless the Owner and its officers and agents from all claims relating to labor, materials, and methods used in executing the work.

7.12 PERSONS IN RESPONSIBLE CHARGE

The Contractor shall have on the site at all times a superintendent or a person in his employ who shall be in responsible charge of all work. The Contractor shall, in writing, give the Engineer the name of the person in responsible charge prior to beginning any work. Changes of persons in responsible charge during the course of performing the work shall be submitted, in writing, to the Engineer prior to instituting the change.

7.13 ORDER OF COMPLETION OF WORK

The Contractor shall, within ten (10) days after being instructed to do so in a written notice from the Engineer, commence the work to be done under this contract; and the rate of progress shall be such that work shall have been completed in accordance with the terms of this Contract, on or before the date of completion named in the proposal hereof.

7.14 CONTRACTOR TO CHECK SPECIFICATIONS AND SCHEDULE

The Contractor shall check all specifications, quantities, and schedules given to him by the Engineer and shall, upon discovery, notify the Engineer in writing of any discrepancy which he may discover between the plans and specifications or between either plans and specifications and physical site conditions; or if he observes site conditions not usually encountered on this type of work; or if he believes the plans and specifications require work which would violate laws, ordinances, or codes. Failure to follow this procedure shall preclude the Contractor from making any claim for damages resulting from the alleged discrepancy.

Should anything be omitted from the specifications, plans, and/or contract which is necessary to the clear understanding of the work, or should it appear various instructions are in conflict, then the Contractor shall secure written instructions from the Engineer before proceeding with the construction affected by such omissions or discrepancies. Failure to request written instructions shall constitute a waiver to any and all claims associated with the omission or conflict.

The Contractor will not be allowed to take advantage of any error or omission in the plans, specifications or contract documents, as full written instructions will be furnished by the Engineer, should such error or omission be discovered, and the Contractor shall carry out such instructions as if originally specified.

7.15 CALCULATED DIMENSIONS TO GOVERN

In case of discrepancy, calculated dimensions will govern over scaled dimensions.

7.16 DRAWINGS FURNISHED BY CONTRACTOR

The Contractor shall supply such working specifications and drawings of devices, castings and composite materials to be furnished under this Contract as are called for herein or are required by the Engineer to make clear the details of equipment and of devices.

7.17 PATENTS

It is further agreed that all royalties for patents or patent infringement claims, whether such patents are for processes or devices, that might be involved in the construction or use of the work, shall be included in the Contract amount and the Contractor shall satisfy all demands that may be made at any time for such, and shall be liable for any damages or claims for patent infringements; and the Contractor shall, at his own expense, defend any and all suits or proceedings that might be instituted at any time against the Owner for infringement or alleged infringement of any patent or patents involved in the work; and in case of an award of damages, the said Contractor shall pay such award; final payment to the Contractor by the Owner will not be made while any such suits or claims remain unsettled.

7.18 INDEMNITY

The Contractor shall indemnify and save harmless the Owner from and against all losses and all claims, demands, payments, suits, actions, recoveries, and judgments of every nature and description brought or recovered against him, by reason of any act or omission of the said Contractor, his agents or employees, in the execution of the work or in the guarding of it and this shall include acts or omission of subcontractor.

The Contractor shall, and is hereby authorized to, maintain any part for such insurance, issued in the name of the Owner, as will protect the Owner from his contingent liability under this Contract, and the Owners right to enforce against the Contractor any provision of this Section shall be contingent upon the full compliance by the Owner with the terms of applicable insurance policy or policies, a copy of which shall be deposited with the Owner.

7.19 INSURANCE

The Contractor shall secure policies of insurance in amounts, form and companies satisfactory to the Owner, and as specified in Forms A & B of the Contract.

7.20 GUARANTEES

The Contractor and any sureties under the Performance Bond guarantee to complete the project as specified and agree that loss as a result of any occurrence including acts of God, shall not relieve them of their obligation.

7.21 CONTRACTOR LIABILITY INSURANCE

The Contractor shall maintain insurance as will protect him from claims under Workmen's compensation acts and from any other claims for damages for personal injury, including death, which may arise from or by any subcontractor or anyone directly or indirectly employed by either of them.

7.22 PERFORMANCE BOND

The surety bond executed by the Contractor, issued to the Owner, shall be a guarantee:

- A. For the faithful performance and completion of the work in strict accordance with the terms of the contract, specifications, and detailed plans;
- B. For the payment to the Owner of all sums due or which may become due by the terms of the contract; as well as by reason of any violation thereof by the Contractor;
- C. For the payment of all bills, including the hire, rental or lease of equipment or machinery, and the operators thereof, used on the work, and for all materials, lubricants, oils and gasoline used in or consumed in the construction of such work and for all labor performed in such work whether by sub-contract or otherwise;
- D. The payment of any and all judgments and costs of suits and actions brought against the Owner or officials thereof, for any cause whatsoever, arising from or on account of any injuries or damages to life or property suffered or sustained by any person, firm or corporation, caused by the Contractor, his or its agents, servants or employees in the construction of said work, or by or in consequence of any negligence, carelessness or misconduct in guarding or protecting the same, or any act or omission of the said Contractor his agents, servants, employees;
- E. And for the protection of the Owner against all suits and claims for infringements or alleged infringements of patent rights processes.

This section shall in no way be construed as limiting the obligation under the Performance Bond actually furnished, but may be an addition thereto.

The Owner agrees to mail a notice to the Contractor, calling his attention to any failure to comply with the requirements of the bond, not more than ten (10) days before notifying his bondsmen of such failure to comply with the terms of said bond.

7.23 UNEMPLOYMENT COMPENSATION

The Contractor to whom the Contract is awarded, will pay the Department of Manpower Affairs of South Dakota, all contributions and interest due under the Unemployment Compensation Law of South Dakota. Further, it is required that the Contractor furnish a certificate, prior to final payment, from the Department of Manpower Affairs that all contributions and interest due to the department in performance of that Contract have been paid.

7.24 DISCRIMINATION

The Contractor will not discriminate against any employee or applicant for employment because of race, sex, creed, color or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated fairly during employment, without regard to their race, sex, creed, color, or national origin. Such action shall include, but is not limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

The Contractor will state, in all solicitations or advertisements for employees placed by or on behalf of the City, that all qualified applicants will receive consideration for employment without regard to race, sex, creed, color, or national origin.

The Contractor will send, to each labor union or representative or workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, of the rules, regulations, and relevant orders of the Secretary of Labor.

The Contractor will furnish all information and reports required by Executive order No. 11246 of September 24, 1965, and by the rules, regulations, and order of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

In the event of the Contractor's noncompliance with the discrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

The Contractor will include the provisions of Section 7.21 in every subcontract or purchase order unless exemption by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance: provided, however, that in the event the Contractor becomes involved, in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the contractor may request the United States and the City to enter into such litigation to protect the interest of the United States and the City.

7.25 LABOR AND DISMISSAL OF EMPLOYEES

The Contractor shall employ only persons who are competent and skillful in their respective lines of work, and local labor shall be given preference. Whenever the Engineer shall notify the Contractor that any person on the work is, in his opinion, incompetent, unfaithful, disorderly or under the influence of intoxicating substances, or refuses to carry out the provisions of this contract or uses threatening or abusive language to any persons, shall be immediately discharged from the work and shall not be re-employed thereon except with the consent of the Engineer.

7.26 LAWS AND ORDINANCE

The Contractor shall keep himself fully informed of all existing and current regulations of the Owner, and County, State, and National Laws which in any way limit or control the actions or operations of those engaged upon the work, or affecting the materials supplied to or by them. He shall at all times observe and comply with, all ordinances, laws, rules and regulations and shall protect and indemnify the Owner and the Owner's officers and agents against any claims or liability arising from or based on any violation of the same. The Contractor shall give all notices and comply with all laws, ordinances,

rules, and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the Drawings and Specifications are at variance therewith, he shall promptly notify the Engineer in writing and any necessary changes shall be adjusted as provided in the Contract for changes in the work. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules, and regulations and without such notice to the Engineer, he shall bear all costs arising therefrom. Such performance shall constitute a waiver of any and all claims associated with the work.

7.27 PERMITS AND LICENSES

Unless otherwise specified, permits and licenses of a temporary nature necessary for the prosecution of the work shall be secured and paid for by the Contractor. Permits, licenses, and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the Owner, unless otherwise specified.

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 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.

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 schedule the City sweeper

to provide cleanup. The City street Department will bill the Contractor at one and one-half times (1 1/2) the current hourly rate for the sweeper and operator.

7.29 CLAIMS AND DAMAGES

Any claim for damage arising under this contract shall be made in writing to the party liable within ten (10) calendar days of the first observance of such damage, except as expressly stipulated otherwise, and shall be adjusted by agreement or by arbitration. Failure to comply with the notice requirement will result in denial of the claim.

In general, the Contractor may not recover for claims, which did not impact the critical path of the project.

The Contractor shall document his claim(s) in the following manner:

- A. Provide an introduction and summary.
- B. Provide a listing and explanation of subsurface information available in the bidding documents and/or through a reasonable site investigation.
- C. Provide a report of the Contractor's site investigation.
- D. Explain the conditions actually encountered.
- E. Discuss the difference between actually encountered and anticipated conditions with emphasis on the impact of such things as delay, interference, disruption, changes in construction methods, and additional direct labor and equipment requirements.
- F. Summarize the applicable laws and/or contract clauses.
- G. Set forth the time extension claim with rational, detailed calculations.
- H. Set forth the cost claim broken down to the smallest elements possible.

7.30 LIENS

Neither the final payment nor any part of the retained percentage shall become due until the Contractor, if required, shall deliver to the Owner a complete release of all liens arising out of this Contract, or receipts in full in lieu thereof and, if required in either case, an affidavit that so far as he has knowledge or information the releases and receipts include all labor and materials for which a lien could be filed; but the Contractor may, if any subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the Engineer, to indemnify the Owner against any lien. If any lien remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all monies that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.

7.31 USE TAX LIABILITY

The Contractor shall be liable to pay the use tax on tangible personal property that is supplied by the City to the Contractor for performance of the Contractor. The value of said personal property will be as indicated in Section 2.20 of the Contract. The Contractor shall be liable to pay all Federal, State, County, or local taxes required for labor and/or materials included in this Contract.

7.32 WORK MODIFICATIONS

The Owner, without invalidating the Contract, may order extra work or make changes by altering, adding to, or deducting from the work, the Contract Sum being adjusted accordingly. All such work shall be executed under the conditions of the original Contract except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such change.

In giving instructions, the Engineer shall have authority to verbally make minor changes in the work; but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order by the Engineer, and no claim for an addition to the Contract Sum shall be valid unless so ordered and approved by the Council.

The value of any such extra work or change shall be determined in one or more of the following ways:

- (a) By estimate and acceptance in a lump sum.
- (b) By unit prices named in the Contract or subsequently agreed upon.
- (c) By cost and percentage or by cost and a fixed fee.

If none of these methods is agreed upon, the Contractor, provided he receives an order as above, shall proceed with the work. In such case and also under case (c), he shall keep and present in such form as the Engineer may direct, a correct account of the net cost of labor and materials, together with vouchers. In any case, the Engineer shall certify to the amount including reasonable allowance for overhead and profit, due to the contract, or pending final determination of value, payments on account of changes shall be made on the Engineer's Estimate. Work done on a Force Account basis shall be as follows:

A. Labor

For labor and supervisor in direct charge of the specific operations, the Contractor shall receive the rate of wage agreed upon in writing before beginning work or the actual rate paid in the event it is less than the agreed rate, for each and every hour that said labor and supervisor are actually engaged in such work.

If a laborer or supervisor is paid for "overtime" during a calendar week in which he is employed for part of that period on force account work, the Owner will pay to the Contractor a percentage of that portion of the overtime payment. For each such employee, this percentage will be the ratio, which the total hours he worked on force account during the week bears to the total hours he worked during that week.

Overtime incurred due to the City requiring the Contractor to do force account work, during periods not normally worked, will be paid one hundred percent (100%) by the City. In order that the Engineer may verify wages paid and pro-rate overtime, the Contractor shall furnish to the Engineer certified payrolls during the period force account work is in progress.

An amount equal to fifteen percent (15%) of the sum for labor will also be paid the Contractor as compensation for administrative and overhead costs.

B. Bond, Insurance, and Tax:

For property damage, liability, and workmen's compensation insurance premiums, unemployment insurance contributions, excise taxes, and social security taxes on the force account work, the Contractor shall receive the actual cost, to which no percentage will be added. The Contractor shall furnish satisfactory evidence of the rate or rates paid for such bond, insurance, and tax. In lieu of furnishing itemized statements to substantiate these costs, of property damage, liability and workmen's compensation insurance premiums, unemployment insurance contributions and Social Security tax, the Contractor may elect to receive an amount equal to twenty-five percent (25%) of the actual labor costs (excluding the fifteen percent [15%] for administrative and overhead costs) as compensation for those costs.

C. Materials

For materials accepted by the Engineer and incorporated into the project, the Contractor shall receive the actual cost of such materials delivered onto the worksite, including transportation charges paid (exclusive of machinery rentals as hereinafter set forth), to which cost fifteen percent (15%) will be added as compensation for administrative and overhead costs.

D. Equipment

For machinery or special equipment, including fuel and lubricants, plus transportation costs, the use of which has been directed or authorized by the Engineer, the

Contractor shall be paid at an agreed upon rate; or, failing mutual agreement, in accordance with provisions and rates set forth in the current edition of the South Dakota Department of Transportation Equipment Rental Rates, for actual time such equipment is in operation on the work, except that standby costs will not be paid. Nor will additional amounts be added for administration and overhead cost.

E. Miscellaneous

Additional allowance will not be made for general superintendence, cost of maintaining home office, standby costs, or other costs for which no specific allowance is herein provided.

F. Compensation

The Contractor's representative and the Engineer shall compare records of the cost of work done as ordered on a force account basis.

G. Statements

Payment will be made for work performed by force account based on itemized statements of the cost of such force account work detailed as follows:

1. Certified payrolls showing worker name, classification, date, daily hours, total hours, rate, and extension for each laborer and foreman;
2. Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment;
3. Quantities of materials, prices and extensions;
4. Transportation of materials; and
5. Cost of property damage, liability and workmen's compensation insurance premiums, unemployment insurance contributions, and social security tax.

Statements shall be accompanied and supported by receipted invoices for materials used and transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then, in lieu of the invoices, the Contractor shall furnish an affidavit certifying that such materials were taken from his stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

H. To the sum of items A through C, shall be added ten percent (10%) for profit.

7.33 EXTRA WORK A PART OF CONTRACT

If extra work orders are in accordance with the provisions of this Contract, such work shall be considered a part hereof and subject to each and all of its terms and requirements.

7.34 UNKNOWN OR CONCEALED CONDITIONS

Whenever, during excavating operations, the Contractor encounters a heretofore unknown underground utility or other unknown or unexpected physical condition, the existence of which could not have reasonably been foreseen or anticipated and which causes a significant delay and/or expense to the Contractor, he shall contact the Engineer, before such conditions are disturbed, for a determination as to whether compensation will be allowed.

Compensation may consist of a payment to the Contractor and/or an extension of contract time. However, no compensation will be allowed unless notice is given prior to disturbing the condition. Should the Engineer allow payment, he will pay for reasonable and justifiable costs involved in dealing with the condition as specified in Section 7.29 of these specifications.

Extra contract time shall be based on the actual time of the delay caused by encountering the condition.

7.35 SUSPENSION AND ANNULMENT OF CONTRACT

If the equipment, material, or work to be furnished under this contract shall be abandoned by the Contractor, or if this Contract shall be assigned or the work sublet by him, or if at any time the Engineer shall be of the opinion, and shall so certify in writing to the Owner, the performance of this Contract is unnecessarily delayed, or that the Contractor is willfully violating any of the conditions or covenants of this Contract or of the specifications, or is executing the same in bad faith or not in accordance with the terms of said Contract, or if the work be not fully completed within the time named in this Contract for its completion, or within the time to which the completion of this Contract may be extended, the Owner may notify the Contractor to discontinue all work, or any part thereof, then the Owner is hereby empowered to suspend or annul this Contract.

If this Contract be so annulled or suspended, the Contractor shall not be entitled to anything on account thereby, nor shall such annulment or suspension in any way affect the right of the owner to damages claimed by it on account of the failure of the Contractor, but such annulment must be ratified by the Owner before being of any force or effect. In the case of annulment of this Contract before completion from any cause whatever, the Contractor, if notified to do so by the Owner, shall promptly remove any part or all of this equipment and supplies from the property of the Owner, failing which,

the Owner shall have the right to remove such equipment and supplies at the expense of the Contractor.

7.36 CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT

If the work should be stopped under an order of any court, or other public authority, for a period of three months, through no act or fault of the Contractor or of anyone employed by him, then the Contractor may, upon seven (7) days' notice in writing to the Owner and the Engineer, stop work or terminate this Contract and recover from the Owner payment for all work executed and partially executed and reasonable profit.

7.37 ENGINEER'S RIGHT TO STOP WORK

Should traffic, weather, or conditions caused by the actions or inactions of the Contractor dictate, the Engineer may issue a Stop Work Order to the Contractor. Upon receiving a Stop Work Order, the Contractor shall stop working and shall backfill and compact all open holes and/or trenches, properly sign, identify, and clean up the project to the satisfaction of the Engineer. When conditions improve, the Engineer will issue a Notice to Proceed for the remainder of the project. The Contractor will then have a ten (10) day equipment-ready period before contract time resumes. Remaining work shall be completed within the contract time.

7.38 ARBITRATION

A. Demand for Arbitration

Any decision of the Engineer, which is subject to arbitration shall be submitted to arbitration upon the demand of either party of the dispute.

The Contractor shall not cause a delay of the work because of the pendency of arbitration proceedings, except with the written permission of the Engineer, and then only until the arbitrators shall have an opportunity to determine whether or not the work shall continue until they decide the matters in dispute.

The demand for arbitration shall be delivered in writing to the Engineer and the adverse party, either personally or by registered mail to the last known address of each, within ten (10) days of the receipt of the Engineer's decision, and in no case after final payment has been accepted except as otherwise expressly stipulated in the Contract Documents. If the Engineer fails to make a decision within a reasonable time, a demand for arbitration may be made as if his decision had been rendered against the demanding party.

B. Arbitrators

No one shall be nominated or act as an arbitrator who is in any way financially interested in this Contract or in the business affairs of the Owner, or the Contractor, or the Engineer, or otherwise connected with any of them. Each arbitrator shall be a person in general familiar with the work or the problem involved in the dispute submitted to arbitration.

Unless otherwise provided by controlling statutes, the parties may agree upon one arbitrator; otherwise there shall be three, one named in writing by each party to this Contract, to the other party, and the third chosen by those two arbitrators, or if they should fail to select a third within fifteen days, then he shall be appointed by the presiding officer, if a disinterested party, of the Bar Association nearest the location of the work. Should the party demanding arbitration fail to name an arbitrator within said ten days, then said presiding officer shall appoint such arbitrator within ten days, and upon his failure to do so then such arbitrator shall be appointed on the petition of the party demanding arbitration by a judge of the Federal court in the district where such arbitration is to be held.

The said presiding officer shall have the power to declare the positions of any arbitrator vacant by reason of refusal or inability to act; sickness, death, resignation, absence or neglect. Any vacancy shall be filled by the party making the original appointment, and unless so filled within five days after the same has been declared, it shall be filled by the said presiding officer. If testimony has been taken before a vacancy has been filled, the matter must be reheard unless a rehearing is waived in the submission or by the written consent of the parties.

If there be one arbitrator, his decision shall be binding. If three, the decision of any two shall be binding in respect to both the matters submitted to and the procedure followed during the arbitration. Such decision shall be a condition precedent to any right of legal action.

C. Arbitration Procedure

The arbitrators shall deliver a written notice to each of the parties and to the Engineer, either personally or by registered mail to the last known address of each of the time and place for the beginning of the hearing of the matters submitted to them. Each party may submit to the arbitrators such evidence and argument as he may desire and the arbitrators may consider pertinent. The arbitrators shall, however, be the judges of all matters of law and fact relating to both the subject matters of and the procedure during arbitration and shall not be bound by technical rules of law or procedure. They may hear evidence in whatever form they desire. The parties may be represented before them by such person as each may select, subject to the disciplinary power of the arbitrators if such representative shall interfere with the orderly or speedy conduct of the proceeding.

Each party and the Engineer shall supply the arbitrators with such papers and information as they may demand, or with any witness whose movements are subject

to their respective control, and upon refusal or neglect to comply with such demands the arbitrators may render their decision without the evidence which might have been elicited therefrom and the absence of such evidence shall afford no grounds for challenge of the award of the party refusing or neglecting to comply with such demand.

The submission to arbitration (the statement of the matters in dispute between the parties to be passed upon by the arbitrators) shall be in writing duly acknowledged before a notary. Unless waived in writing by both parties to the arbitration, the arbitrators, before hearing testimony, shall be sworn by an officer authorized by law to administer an oath, faithfully and fairly to hear and examine the matters in controversy and to make a just award according to the best of their understanding.

The arbitrators, if they deem the case demands it, are authorized to award to the party whose contention is sustained such sums as they shall assess the costs and charges of the arbitration upon either or both parties.

The award of the Arbitrators shall be in writing and acknowledged like a deed to be recorded, and a duplicate shall be delivered personally or by registered mail, forthwith upon its rendition, to each of the parties to the controversy and to the Engineer. Judgment may be rendered upon the award by the Federal Court or the highest State Court having jurisdiction to render same.

The award of the arbitrators shall not be opened to objection on account of the form of the proceedings or the award, unless otherwise provided by the controlling statutes. In the event of such statutes providing otherwise than as previously specified herein, the method of procedure throughout and the legal effect of the award shall be wholly in accord with said statutes, it being the intention hereby to lay down a principle of action to be followed, leaving its local application to be adapted to the legal requirements of the jurisdiction having authority over the arbitration.

The Engineer shall not be deemed a party to the dispute. He is given the right to appear before the arbitrators to explain the basis of his decision and give such evidence as they may require.

7.39 SUGGESTIONS TO CONTRACTOR ADOPTED AT HIS OWN RISK

Any plan or method of work suggested by the Engineer to the Contractor, not specified or required in the contract, adopted or followed by the Contractor in whole or in part, shall be used at the risk and responsibility of the Contractor; and the Engineer and the Owner shall assume no responsibility therefore.

7.40 SUBLETTING OF CONTRACT

The Contractor shall perform, with his own organization, work amounting to not less than fifty (50) percent of the original total contract price, except that any items designated by

the City as "Specialty Items" so performed may be deducted from the original contract price before computing the amount of work required to be performed by the Contractor with his own organization.

Any items that have been selected as "Specialty Items" for the contract are listed as such in the proposal.

No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the Engineer. The Contractor shall request permission, in writing, to sublet, assign or otherwise dispose of any portion of the contract and shall list the names and addresses of proposed subcontractors. The Contractor shall provide a statement that the organization(s) which will perform the work is (are) particularly experienced and equipped for such work and shall provide proof that the proposed subcontractor(s) is (are) licensed to perform the work in South Dakota. The Contractor shall give assurance that all pertinent provisions of the prime contract, including the minimum wage for labor as stated in his proposal, shall apply to all work sublet, assigned or otherwise disposed of in any way. Such assurance shall be accomplished in the manner required by the Engineer. Consent to sublet, assign or otherwise dispose of any portion of the contract shall not be construed to relieve the Contractor of any responsibility for the fulfillment of the Contract.

It will not be permissible for a Subcontractor to sublet work, but any work sublet to a Subcontractor can be canceled or reassigned upon request from the prime Contractor and approval of the Engineer.

The Contractor shall accept full responsibility for actions or omissions of his subcontractors and their employees as he would if they were his own. See paragraph 7.12 of these Specifications.

If evidence and investigation establish beyond reasonable doubt that a violation of the fifty percent (50%) subcontract rule is being or has been attempted through subterfuge whereby one Contractor's equipment is directly or indirectly leased to another Contractor, or whereby a significant part of one Contractor's regular working force is placed on the payroll of another Contractor, such a conclusion shall constitute a violation of the subcontract rule. This provision shall not be construed to include in the fifty percent (50%) limitation the lease of or use of equipment of a corporation or company wholly owned by the Prime Contractor.

In the case of violation of the subcontract rule, the Rapid City Council may suspend the bidding qualifications of such Contractors for a period of up to one year.

The value of work proposed for subcontract will be determined by multiplying that portion of the original contract item quantities to be sublet by the corresponding unit price as set forth in the contract.

If any phase of work involved on a contract item is sublet, the entire contract unit cost of the item will be used for determining the value of work. Materials provided by the

Contractor for a subcontractor on a particular work item will not qualify that item as work done by the Contractor.

Work performed with equipment not owned by the Prime Contractor will be considered subcontract work unless the origin of such equipment meets one of the following conditions:

1. Equipment supplied by an established equipment dealer on a rental or rental purchase agreement.
2. An occasional piece of equipment temporarily obtained from another Contractor or from an individual or company engaged in similar work.
3. Special equipment, not normally owned for the type of work involved.
4. Trucks used to haul gravel or other materials to the project.

Equipment used by a Subcontractor, must be owned by the Subcontractor or Prime Contractor, except that equipment listed above.

Should any subcontractor fail to perform in a satisfactory manner the work undertaken by him, such subcontract shall be immediately terminated by the Contractor upon written notice from the Owner.

Nothing contained in the contract documents will create a contractual relation between the City and any subcontractor.

7.41 PUBLIC SAFETY AND WORK PROTECTION

Whenever, in the opinion of the Engineer, the Contractor has not taken sufficient precaution for the safety of public or the protection of the work to be constructed under this contract, or of adjacent structures or property which may be injured by process of construction on account of such neglect, and whenever, in the opinion of the Engineer, an emergency shall arise and immediate action shall be considered necessary in order to protect the public or private personal property interest, then, the Engineer, with or without notice to the Contractor, may provide suitable protection to the said interests by causing such work to be done and material to be furnished and placed as the Engineer may consider necessary and adequate. The cost and expense of such work and material so furnished shall be borne by the Contractor, and if the same shall not be paid on presentation of the bills therefore, then such costs shall be deducted from any amounts due or to become due the Contractor. The performance of such emergency work under the direction of the Engineer shall in no way relieve the Contractor of responsibility for damages which may occur during or after such precaution has been duly taken by the Engineer.

7.42 BARRICADES AND WARNING SIGNS

The Contractor shall provide, erect, and maintain all necessary barricades, suitable and sufficient lights, danger signals, signs, and other traffic control devices, and shall take all necessary precautions for the protection of the work and safety of the public. Highways closed to traffic shall be protected by effective barricades, and obstructions shall be illuminated during hours of darkness. Suitable signs shall be provided to properly control and direct traffic.

The Contractor shall erect warning signs in advance of any place on the project where operations may interfere with the use of the road by traffic, and at all intermediate points where the new work crosses or coincides with an existing road.

It shall be the Contractor's responsibility to clear the work area of private vehicles as necessary.

All barricades, warning signs, lights, temporary signals, and other protective devices must conform with the current Manual of Uniform Traffic Control Devices.

7.43 USE OF EXPLOSIVES

When the use of explosives is necessary for the prosecution of the work, the Contractor shall exercise the utmost care not to endanger life or property, including new work. The Contractor shall be responsible for all damage resulting from the use of explosives and shall meet all local, State, and Federal laws and requirements pertaining to explosives as well as Title 29 and Title 30, Code of Federal Regulations, Part 1926, Occupational Safety and Health Act regulations for construction (OSHA), whichever is most restrictive, in the use, loading, transportation, and storage of explosives and blasting agents.

The Contractor shall obtain a blasting permit from the Rapid City Fire Department prior to the use of any explosives. The Fire Department may impose restrictions on the quantities, methods, and materials utilized for blasting.

The Contractor shall notify property owners and public and private utility companies having structures or facilities in proximity to the site of the work of their intention to use explosive. Such notice shall be given sufficiently in advance to enable them to protect their property from injury. In no case shall notice be given less than five (5) calendar days prior to the desired date of usage.

The Engineer may require the Contractor to monitor certain properties during actual blasting in order to determine effects of blasting. In some cases, the Engineer may require the use of a seismograph to document the forces of blasting.

It is recommended that, prior to blasting, the Contractor document the condition of structures in the vicinity of the work.

7.44 PROTECTION OF UTILITIES AND PROPERTY

The type, size, location, and number of all known underground utilities are approximate when shown on the plans. The Contractor shall be responsible for determining and verifying the existence, depth, and location of all underground utilities within the work limits.

The Contractor shall give reasonable notice to the owner or owners of steam, gas, water, sewer, and other pipe lines, or conduits, overhead and underground wire or other structures, either public or private, railroads and other owners of property, when such property is liable to injury or damage of the execution of the work, in order that the owner or owners of such utility or other property may locate, relocate, remove or protect the same.

If the Owner or owners of any private or public property liable to be affected, endangered, or damaged by the construction of this work, does not protect its or their property, then the Contractor shall do so.

The Contractor shall use every precaution on the work to prevent harm or accident to the property, passengers, employees, or patrons of utilities, either publicly or privately owned, and to any other person legitimately employed on the premises, and the Contractor shall assume all liability for damages accruing from any accident, which may be due to his carelessness, omission or neglect; he shall pursue the work under and along and near such property as may be liable to damage thereby, as rapidly as possible when once the work is begun.

The Contractor shall satisfactorily shore, support and protect any and all pipe and other structures or utilities and shall not be entitled to any damage or extra pay on account of any postponement, interference, or delay caused by any such structures being on the line of the work, whether such structures are shown on the plans or not. Contractor shall save Owner harmless from any and all liability or expense for injuries, damages, or repair to any public or private property.

7.45 CONDEMNED MATERIALS AND STRUCTURES

The Contractor, at his own expense, shall remove from the site of the work, without delay, all rejected and condemned materials or structures of any kind whether or not incorporated into the work and shall promptly remove and re-execute all condemned work and will bear the expense of making good any work destroyed or damaged by removal of defective work, and upon his failure to do so or to make satisfactory progress in so doing, within forty-eight (48) hours after the service of a written notice for the Engineer ordering such removal, the condemned materials, work, or structure may be removed by the Owner and the cost of such removal be taken out of the money that may be due or may become due the Contractor on account of or by virtue of this contract. No

such rejected or condemned material shall again be offered for use by the Contractor under this or other contract under this project.

7.46 MAIL BOXES

When necessary, mail boxes shall be removed and reset in a manner prescribed by the Postmaster of the Federal Post Office, Rapid City, South Dakota. A copy of the postal regulations can be obtained from the Postmaster.

It is expected that the Contractor shall give his full cooperation to the postal department concerning mail delivery during the construction of this project.

The owner of any structurally unsound mail box post shall furnish a new post at his expense. However, the Contractor shall not remove such a post until he has notified the project inspector.

Costs associated with this item shall be incidental to the project.

7.47 PROVIDING ACCESS

The Contractor shall conduct construction activities in such a manner as to provide continuous access to all affected properties during the duration of the project, unless the specific activity precludes continuous access. At no time shall the Contractor park equipment in front of or in any other way block a driveway or other entrance such that there is no means of ingress and/or egress to or from a property. Should such a situation occur, the Contractor shall take the necessary steps to provide immediate and safe access to or from the property.

Failure to provide access in a timely manner will cause the Owner to take the necessary action and bill the Contractor one and one-half (1 and 1/2) times the cost incurred.

7.48 SATURDAY, SUNDAY, HOLIDAY, AND NIGHT WORK

No work shall be done on Sundays and legal holidays, except such work as is necessary for the proper care and protection of work already performed, and, in any case only with the written permission of the Engineer; or, in case of emergency, which also requires the immediate notification of the Engineer. The Contractor shall request, and must receive, in writing, permission from the Engineer to enable work on Sundays and legal Holidays, except such work as noted above.

No work shall be done on Saturdays, except for emergencies, without the permission of the Engineer. The Contractor shall request permission from the Engineer to work on a given Saturday a minimum of 24 hours in advance, except such work as noted above.

No work, except for emergencies, shall be done between the hours of 9 P.M. and 6 A.M. unless the Contractor first obtains the written permission of the Engineer; such permission may be revoked at any time by the Engineer if the Contractor fails to maintain, at night, adequate force and equipment for reasonable prosecution and supervision of the work, or if Contractor's operations are unnecessarily disruptive to the public.

7.49 WORK DONE WITHOUT LINES, GRADES, OR INSPECTION

Any work done without lines or grades or without the inspection of an Inspector or other representative of the Engineer may be ordered removed and replaced at the Contractor's cost and expense. In-place testing or other verification data can be requested by the Engineer at the Contractor's expense. Disregard of this requirement shall result in a Stop Work Order being issued until the Contractor provides the Engineer with an acceptable plan of prior notification procedures.

7.50 STAKING WORK

The Engineer shall furnish all necessary labor and materials to set the necessary stakes for grade and alignment for all work, but it will be the Contractor's responsibility to preserve such stakes after they are once set by the Engineer. Stakes removed, damaged, etc. by Contractor negligence shall be replaced at Contractor expense. The Engineer may require the Contractor to replace the stakes or may elect to replace the stakes and charge the Contractor for the associated costs.

All work done under this Contract shall be done to the lines and grades shown on the plans or as staked by the Engineer. The Contractor shall keep the Engineer informed, a reasonable time in advance, nominally a period of one (1) full working day, of the times and places at which he wishes to do work, in order that lines and grades may be furnished, and necessary measurements for record and payment may be made with the minimum of inconvenience to the Engineer and of delay to the Contractor. The Contractor shall determine the meaning and intent of all stakes, measurements, and marks prior to commencing work. Contractor shall be responsible for protecting stakes from displacement.

7.51 MATERIALS

A. General

The Contractor shall furnish only new and best commercial quality material, equipment, appliances, and supplies for the work. Bid prices shall include all sales and other taxes payable on all items incorporated in the permanent work.

Anything specified by manufacturer's name or proprietary name shall be furnished exactly as called for unless followed by the words "or approved equivalent". The decision of equity, will be made by the Engineer.

B. Samples

When requested by the Engineer, samples or test specimens of materials to be used or offered for use in connection with this work shall be prepared at the expense of the Contractor and furnished by him in such quantities and sizes as may be required for proper examination and test, with all carriage charges prepaid and with information as to their sources. All samples shall be submitted in ample time to permit the making of proper tests, analyses, or examination before the time at which it is desired to incorporate the material into the work. The cost of making all tests, and the cost of materials used in such tests, shall be paid by the Contractor, unless otherwise specified. Tests other than those which can be made in the field by the Engineer or can be arranged to be made by him elsewhere, shall be made by a properly equipped laboratory of established reputation. Reports of all tests shall be mailed to the Owner, to the Engineer, and to the Contractor.

C. Warranty

The Contractor warrants to the Owner that all materials and equipment furnished and installed under this contract will be new unless otherwise specified, and shall be of good quality, free from defects, and in conformance with the plans and specifications. All materials not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. If required by the Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

7.52 CLEANUP AND RESTORATION

The Contractor shall not allow the site of the work to become littered with trash and waste material, but shall maintain the same in a neat and orderly condition throughout the construction period. The Engineer shall have the right to determine what is or is not waste material or rubbish and the manner and place of disposal.

The Owner reserves the right to require the Contractor to clean up all or any portion(s) of the project at any time prior to final project acceptance.

On or before the end of contract time, the Contractor shall, at his own expense, dismantle and/or remove all temporary structures built or furnished by him and shall replace or repair all areas disturbed as a result of this project to original condition or better.

If all other work has been completed, and winter weather, availability of materials such as hot mix asphalt or sod, or other conditions prevent complete cleanup and restoration, the Contractor shall clean up the project area(s) to the satisfaction of the Engineer prior

to suspending work. After cleanup has been approved, the Engineer will issue a Stop Work Order, and contract time will stop. When conditions are once again suitable and/or materials are available, the Engineer will issue a Notice to Proceed, giving the Contractor ten (10) calendar days to resume cleanup and restoration.

All cleanup and restoration shall be completed within the remaining Contract time. If additional contract time is necessary, the Contractor shall request a time extension as set forth in these General Conditions.

If complete cleanup and restoration is not possible, for whatever reason, the Contractor will be responsible for satisfactorily maintaining all disturbed areas until such time as they are restored. Should any maintenance work be required on any portion of the project prior to issuance of the acceptance letter, the Contractor shall do so within forty-eight (48) hours of receiving notice from the Engineer. Failure to do so will cause the Owner to do the necessary work and bill the Contractor one and one-half (1 1/2) times the cost incurred.

7.53 TESTING OF COMPLETED WORK

Before final acceptance, all parts of the work shall be tested and each part shall be in good condition and proper working order or shall be placed in such condition and order at the expense of the Contractor, unless otherwise specified. All tests of completed work required under this contract shall be made under the direction of the Engineer by and at the expense of the Contractor, who shall repair at his own expense all damage resulting therefrom.

7.54 PLACING WORK IN SERVICE

If desired by the Owner, portions of the work, as substantially completed, may be placed in service, the Contractor to give proper access to the work for this purpose; but such use and operation shall not constitute an acceptance of the work, and the Contractor shall warrant the work as specified in Section 7.51. If such prior use increases the cost of or delays the work, the Contractor shall be entitled to such extra compensation, or extension of time, or both, as the Owner may determine.

7.55 COMPLETION AND ACCEPTANCE OF WORK

The Engineer, upon completion of the contract work, shall satisfy himself by examination and test that the work has been finally and fully completed in accordance with the Specifications and Contract, and report such completion to the Owner.

7.56 ESTIMATED QUANTITIES

The Contractor agrees that the quantities of work as stated in the Bid Proposal or indicated on the plans are only approximate, and that during the progress of the work the Owner may find it advisable, and shall have the right to omit portions of the work and to increase or decrease the quantities, and that the Owner reserves the right to add or to take from any items as may be deemed necessary or desirable. Under no circumstances or conditions will the Contractor be paid anything on account of anticipated profits upon the work or any portion thereof covered by this contract, which is not actually performed and which has not actually entered into the construction of said improvement.

7.57 METHOD OF MEASUREMENT

Unless specifically stated otherwise in this Contract, no extra measurement or measurements according to local custom of any kind shall be allowed in measuring the work under this Contract, but only the length, area, solid contents, number, weight, or time in standard units, as the case may be, shall be considered. The Contractor will be required at his expense to furnish all scales and equipment to properly weigh and measure the various units.

7.58 PAYMENT**A. General**

In consideration of the faithful performance by the Contractor and of all the conditions, provisions, and covenants of this Contract and the Specifications to the satisfaction of the Owner, the Owner shall pay and the Contractor shall receive the prices stipulated in his Bid Proposal attached hereto and made a part hereof, as full compensation for everything furnished or done by the Contractor under this Contract. The Owner also agrees to pay in addition such amounts as may be agreed upon for alteration in accordance with Section 7.32 and for extra work in accordance with Section 7.33.

Unless otherwise specified, lump sum bid items will be paid for in one lump sum following 100 percent (100%) completion and acceptance of the item by the Engineer.

B. Mobilization

When there is a bid item for "Mobilization" in the Bid Proposal, payment for this item will be made for preparatory work and operations performed by the Contractor, including, but not limited to those necessary for the movement of his personnel, equipment, supplies, and incidentals to the project site; for the establishment of all

offices, buildings, and other facilities necessary for work on the project; and for other work operations that must be performed, or for cost incurred before beginning work on the various items on the project site.

Cost of premiums on bonds and insurance for the contract are not to be included in mobilization. No separate measurement will be made for this item. Partial payment, when allowed, shall be made according to the following schedule:

1. Twenty-five percent (25%) of the amount bid for mobilization shall be paid when five percent (5%) of the original contract amount is paid.
2. An additional twenty-five percent (25%) of the amount bid for mobilization will be paid when ten percent (10%) of the original contract amount is paid.
3. An additional ten percent (10%) of the amount bid for mobilization will be paid when twenty-five percent (25%) of the original contract amount is paid.
4. The remaining forty percent (40%) of the amount bid for mobilization will be paid when fifty percent (50%) of the original contract amount is paid.

When no bid item for "Mobilization" is included in the Bid Proposal, such costs shall be considered incidental to the various work items. In such case, no additional payment will be made for mobilization.

7.59 PROJECT PAYMENT

A. Partial Payment Project

For a project specified as a Partial Payment Project in Section 2, INFORMATION AND INSTRUCTIONS TO BIDDERS, payments will be made once each month as the work progresses or as requested by the Contractor, whichever is longer. Said payments will be based upon estimates prepared by the Engineer of the value of the work performed and materials complete, in place, and for materials delivered, in accordance with the Contract.

No partial payment will be made when the total value of the work done since the last estimate amounts to less than \$2,500.00.

From the total of the amounts ascertained as payable, an amount equivalent to 12% of the amount on the Contract up to \$50,000.00; 5% of the next \$200,000.00; and 2 1/2% of the amount of the Contract in excess of \$250,000.00 will be deducted and retained by the City until after completion of the entire Contract in an acceptable manner. The balance, less all previous payment, shall be certified for payment.

When the work under Contract has been completed and accepted, and it is anticipated that preparation of the final estimate will not be completed within ninety (90) days of when the work has been substantially completed to the extent that only

minor or incidental operations remain to fully complete all of the work under the Contract. If the completion of such work is deferred or delayed in compliance with Contract provisions or, upon order of the Engineer, suspending operations by virtue of weather or climactic conditions or because of seasonal restrictions provided for in the Contract, upon written request of the Contractor and consent of the surety provider, the Engineer may prepare an estimate as figured from Contract unit prices.

Payment, either in full or partial, for materials delivered to or stockpiled on the project and not yet incorporated in the work in their final position shall be as specified in Section 2, INFORMATION AND INSTRUCTION TO BIDDERS.

Partial progress payments will be made upon written request by the Contractor on specific items, as listed herein, which are stockpiled in a manner and location satisfactory to the Engineer.

B. Single Payment - Assessed Projects

For a project specified as a Single Payment - Assessed Project in Section 2, INFORMATION AND INSTRUCTIONS TO BIDDERS, there will be no partial payments under the Contract, but only one final payment when the work is fully completed; accepted by the Owner; final estimate determined; assessment roll issued and approved; and the assessment bonds issued by the Owner to cover the entire cost of the project.

As soon as the work has reached a point where the Engineer can finally determine the exact cost of the construction, the Engineer will make out his final estimate and assessment roll and determine the full costs of the work and submit them for approval. After the final approval of the final estimate and assessment roll, the Owner shall, as quickly as practical, sell the special assessment bond for the work.

After the above-outlined procedures have been completed, and upon full completion of the work by the Contractor and acceptance of the work by the Engineer as filed with the Owner, the Owner shall pay to the Contractor, in cash, the full amount of his final estimate.

C. Single Payment - Non-Assessed Projects

For a project specified as a Single Payment - Non-Assessed Project in Section 2, INFORMATION AND INSTRUCTIONS TO BIDDERS, one (1) lump sum final payment will be made after completion of the work, acceptance by the Engineer, and formal acceptance by the Owner.

7.60 DEDUCTION FOR UNCORRECTED WORK

If the Engineer determines it inexpedient to correct damaged or nonconforming work, an equitable deduction from the contract price can be made upon certification of the amount by the Engineer.

7.61 PAYMENTS WITHHELD

The Owner may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any pay certificate to such extent as may be necessary to protect himself from loss on account of:

- A. Defective work not remedied.
- B. Claims or liens filed or reasonable evidence indicating probable filing of claims or liens.
- C. Failure of the Contractor to make payments properly to subcontractors or for material, labor, or equipment.
- D. A reasonable doubt that the Contract can be completed for the balance then unpaid.
- E. Damage to another Contractor, work, or property.
- F. Reasonable doubt that Contractor can complete the work within the stipulated contracted time.
- G. The cost to the Owner resulting from failure to complete the work on time.
- H. Failure to provide revised project schedules when requested by the Engineer.
- I. Failure to provide acceptable construction and labor rate schedules.
- J. Failure to provide a job superintendent who is in responsible charge of all work of the project and is on the job site when work is being performed.

When the above grounds are removed, payment shall be made for amounts withheld because of them.

7.62 VALUE ENGINEERING INCENTIVE

A. General

Value Engineering Incentive applies to those cost reduction proposals initiated and developed by the Contractor for changing the drawings, designs, specifications, or other requirements of the contract. It does not apply to such proposal unless it is identified by the Contractor at the time of submission to the Owner as a Value Engineering Incentive proposal.

The cost reduction proposals contemplated are those that:

1. Would require a change order to this contract.

2. Would result in savings to the City by providing less costly items or methods than those specified in the contract without impairing any of their essential functions and characteristics such as service life, reliability, economy of operation, ease of maintenance, and necessary standardized features.
- B. Cost reduction proposals shall be processed in the same manner as prescribed for any proposal, which would require a change order. As a minimum, the following information shall be, submitted by the Contractor with each proposal:
1. A statement that this proposal is submitted as a Value Engineering Incentive.
 2. A description of the proposal.
 3. An itemization of the requirements of the contract, which would require a change and a recommendation of how to make each change.
 4. An estimate of the reduction in performance costs that will result from adoption of the proposal.
 5. A prediction of any effects the proposed change would have on other costs to the City.
 6. A statement of the time the change order must be issued to obtain the maximum cost reduction during the remainder of the contract and the reason for this time schedule.
 7. The dates of any previous submission of the proposals, including contract numbers and the actions of the City.
 8. A statement as to the effect the proposal would have on the time for completion of the project.
- C. The City shall not be liable for delay in acting upon a proposal submitted. The decision of the Engineer as to the acceptance of any such proposal shall be final and shall not be subject to Section (5.17). The Engineer may accept, in whole or in part, cost reduction proposals submitted by issuing a change order.

If a cost reduction proposal is accepted, an equitable price adjustment in the contract price and in other affected provisions of this contract shall be made in accordance with this Specification or other applicable provisions in this contract. The equitable adjustment shall be established by determining the effect of the proposal on the Contractor's cost of performance. When the cost of performance of this contract is decreased as a result of the change, the contract price shall be reduced by the following amount: The total estimated decrease in the Contractor's cost of performance less fifty percent (50%) of the difference between the amount of such total estimated decrease and net increase to the City which must reasonably be incurred as a result of application of the cost reduction proposal to this contract. If

the change order results in an increase in the cost of performing the contract, this Specification shall not apply, and the increase shall be determined in accordance with Section 4.

- D. The substitution of one bid item for another bid item resulting in a decrease in the contract amount will not be considered as a saving under Value Engineering Incentive. When change involves the increase of one bid item and the decrease of another bid item, the change order will be made in conformance with the applicable clauses of Section 7.
- E. The Contractor may restrict the City's right to use or disclose the information submitted with a Value Engineering proposal for other purposes. Such restrictions must be in writing and be submitted with the proposal.
- F. If the proposal is accepted, this restriction shall be void, and the City may use, duplicate, or disclose, in whole or in part, data necessary to utilize such proposal.

7.63 DETERMINATION AND EXTENSION OF CONTRACT TIME

The "Contract Time," or number of days allowed for the performance and completion of the work included in the contract, will be stated in the proposal and contract.

When the contract time is on a working day basis, the contract time will begin on the date determined in the Notice to Proceed and continue at the rate of one contract day charged for each day of the normal working week, Monday through Friday, except as described herein, until the work is complete. Holidays, Saturdays, and Sundays will not be included in the count of working days, except those days the Contractor has requested and been granted permission to work. No working day shall be charged when conditions beyond the control of the Contractor preclude prosecution of the work. Working days will be charged if the Contractor permits construction operations to proceed for five (5) or more hours of the day during the normal working week, or if the Contractor has requested, and been granted, permission to work on Holidays, Saturdays, or Sundays, and if, in the opinion of the Engineer, conditions allow progress of work on items essential to the completion of the project for a period of five (5) or more hours of the day.

When the contract is on a calendar day basis, contract time shall be the time from the date determined in the Notice To Proceed to the date on which all work on the project shall be completed. Holidays, Saturdays and Sundays will be included in the count of calendar days. No calendar day shall be charged when conditions beyond the control of the contractor preclude prosecution of the work. Calendar days will be charged if the Contractor permits construction operations to proceed for five (5) or more hours of the day or if, in the opinion of the Engineer, conditions allow progress of work on items essential to the completion of the project for a period of five (5) or more hours of the day.

The Engineer will, upon written request, furnish the Contractor a statement showing the number of days charged to the contract. The Contractor will be allowed seven (7)

calendar days from receipt in which to file a written protest setting forth in what respect said statement is incorrect; otherwise, the statement shall be deemed to have been accepted by the Contractor as correct. If the Engineer and the Contractor fail to reach an agreement on any statement of working days, the Engineer shall refer the statement in question to the Director of Public Works for his review and final decision.

When the contract completion time is a fixed calendar date, it shall be the date on which all work on the project shall be substantially completed. If work is not completed by the date specified, the Engineer will keep a record of working days charged after that date and will charge the Contractor on a working day basis.

Holidays, Saturdays, and Sundays will be excluded from the count of working days unless the Contractor has been granted permission to and/or utilizes such a day for construction work for five (5) or more hours of the day or if, in the opinion of the Engineer, conditions allow progress of work on items essential to the completion of the project for a period of five (5) or more hours of the day. The Contractor shall not carry on construction operations on Sundays or holidays without written permission from the Engineer, except for purposes of making emergency repairs and providing proper protection of the work, such as curing of concrete.

Days on which the work has been suspended by an action, non-action, or an omission made by the City, but through no fault of the Contractor, and days not worked because of strikes, lockouts, unusual delays in transportation, or any condition over which the Contractor has no control, shall not be counted against the contract time.

The number of days for performance allowed in the contract as awarded is based on the original quantities as outlined in the Bidder's Proposal. If satisfactory fulfillment of the contract requires performance of extra work or work on items with an increase in quantities that will take additional time to complete, the number of days allowed for performance shall be increased in the same proportion as the cost of increased work bears to the total original contract amount. Should the Contractor feel that the extension based on a monetary basis is insufficient for the increased work involved, he may submit written information, which will justify additional time. Such information must show how the increased work delays the overall completion of the entire project. Information shall be submitted as soon as possible after the increased work has been performed. If, in the opinion of the Engineer, the information submitted justifies additional time, a Construction Change Order increasing the contract time will be prepared.

When the Contractor wishes to suspend contract time due to weather, he shall make a written request to the Engineer within ten (10) working days of the first weather day for which he desires a time suspension. Failure to comply with this notice requirement could result in denial of that request.

If the Contractor finds it impossible, for reasons beyond his control, fault, or negligence, to complete the work within the contract time as specified or as extended in accordance with the provisions of this subsection, he may, at any time, request to the Engineer for an extension of time, setting forth therein the reasons which he believes will justify the granting of his request. Such request shall be submitted within ten (10) days of the start

of each occurrence for which an extension is desired. Failure to comply with notice requirements shall constitute a waiver, and failure to file a claim for additional compensation due to the delay at the time the Contractor requests the time extension bars him from claiming additional compensation for it.

The Contractor's plea that insufficient time was specified is not a valid reason for extension of time.

If the Engineer finds that the work was delayed because of conditions beyond the control and without the fault of the Contractor, he may extend the time for completion in such amount as the conditions justify. Extension of contract time will be made when unanticipated delays (beyond the control of the Contractor) in delivery of critical materials results in a delay of the work. The Contractor shall notify the Engineer immediately when it becomes evident that there will be a delay in obtaining critical materials. The extended time for completion shall then be in force and effect the same as though it were the original time for completion.

When final acceptance has been duly made as prescribed in Section 7.55, the daily time charge will cease.

7.64 LIQUIDATED DAMAGES

For each working day, as specified, that any work shall remain uncompleted after the contract time specified for the completion of the work provided for in the contract, the sum specified in the following schedule will be deducted from any money due the Contractor not as a penalty but as liquidated damages; provided, however, that due amount will be taken off any adjustment of the contract time. Liquidated damages shall be understood to be compensation to the Owner for costs incurred directly by the Owner or indirectly by the users of the facility for the delay in completion of the work. These costs include, but are not limited to, increased travel times; loss of access to homes or businesses; inconvenience from loss of sewer or water uses; fire protection, etc., beyond those circumstances anticipated for timely completion of the work.

SCHEDULE OF LIQUIDATED DAMAGES

ORIGINAL CONTRACT AMOUNT		AMOUNT OF LIQUIDATED DAMAGES PER WORKING DAY
From more than:	To and including:	
\$ 0	\$ 50,000	\$ 200.00
50,000	100,000	250.00
100,000	500,000	450.00
500,000	1,000,000	650.00
1,000,000	2,000,000	800.00
2,000,000	and up	1,300.00

Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the Owner of any of its rights under the Contract.

The Council may waive such portion of the liquidated damages as may accrue after the work is in condition for safe and convenient use by the public.

7.65 PROJECT ACCEPTANCE AND WARRANTY PERIOD

Final acceptance of the project by the Owner will be documented by the issuance of an acceptance letter, which is issued according to the following criteria:

- 1) Construction has been substantially completed and the facilities can be put to their intended use.
- 2) All testing has been completed, and the required results have been met.
- 3) A warranty bond, or other equivalent surety, in an amount equivalent to ten percent (10%) of the total cost of the project/improvement has been provided to the City to secure the warranty for a period of two years.

The date of the acceptance letter documents the start of the two-year warranty period, during which the Contractor/Subdivider/Developer shall be notified in writing of any defects in the project and shall submit to the Public Works Dept. a construction schedule to correct the defects at their expense within ten (10) days of receipt of the notice. Failure to correct or undertake, with due diligence, to correct the deficiencies within the specified time may cause the Owner to make the necessary repairs and bill the Contractor/Subdivider/Developer one and one-half (1 1/2) times the costs incurred; providing, however, that in case of an emergency, where, in the judgment of the Owner, delay would cause serious loss or damage, repairs may be made without notice being sent to the Contractor/Subdivider/Developer, and the Contractor/Subdivider/Developer shall pay the cost thereof.

The Owner reserves the right to extend the warranty period if excessive problems are apparent during the initial two-year period.

During a period of two years after the completion of the work covered by this contract and the final acceptance in writing thereof by the Owner, the Contractor shall make all needed repairs arising out of defective workmanship or materials furnished by the Contractor; or both, which in the judgment of the Owner shall become necessary during said period. The Owner is hereby authorized to make such repairs at the Contractor's expense, if within ten days after the receipt of a written notice to the Contractor, or his agent, the said Contractor shall neglect to make, or undertake with due diligence to make, the aforesaid repairs; providing, however, that in case of an emergency, where in the judgment of the Owner, delay would cause serious loss or damage, repairs may be

made without notice being sent to the Contractor and the Contractor shall pay the cost thereof.

7.66 RELEASE OF LIABILITY

No person, firm, or corporation other than the signer of this Contract as Contractor, now has any interest hereunder, and no claims shall be valid, and neither the Owner or any employee or agent thereof, shall be liable or held to pay any money except as herein provided. The acceptance by the Contractor of the payment shall operate as, and shall be a release to the Owner and every officer and agent thereof, from all claims and liability to the Contractor for anything done or furnished for or relating to the work or for any act or neglect of the Owner or any person relating to or affecting the work.

7.67 DETAIL DRAWINGS AND INSTRUCTIONS

The Engineer shall furnish with reasonable promptness, additional instructions, by means of drawings or otherwise, necessary for the proper execution of the work. All such drawings and instructions shall be consistent with the Contract Documents.

Unless otherwise provided in the Contract Documents, the Engineer, if requested, will furnish to the Contractor, free of charge, five (5) copies of drawings and specifications necessary for the execution of the work. The Contractor shall pay the Engineer for the cost of printing any additional copies of drawings and specifications to be furnished by the Engineer and requested by the Contractor.

The Contractor shall keep one copy of all drawings and specifications on the work site, in good order, available to the Engineer and to his representatives.

The drawings, specifications, and copies thereof furnished by the Engineer are his property. They are not to be used on other work, and with the exception of the signed Contract set, are to be returned to him on request, at the completion of the work.

7.68 WAIVER OF RIGHTS

Neither the inspection by the Owner or Engineer or any of their employees, nor any order by the Owner for payment of money, nor any payment for, or acceptance of, the whole or any part of the equipment, material, or work by the Owner or Engineer, nor any extension of time, nor any possession taken by the Owner or its employees, shall operate as a waiver of any provision of this Contract, or of any power herein reserved to the Owner or any right to damages herein provided, nor shall any waiver of any breach in this Contract be held to be a waiver of any other or subsequent breach.

7.69 RAPID CITY UTILITY CONSTRUCTION CODE

Unless otherwise specified herein, all work done by the Contractor under this contract shall meet the applicable requirements of the Rapid City Utility Construction Code. A copy of this code may be obtained at the Engineering Department, 300 6th Street, Rapid City, South Dakota, at a cost of \$5.00 per copy.

7.70 PRECONSTRUCTION MEETING

Before the Contractor begins work under a City contract and before issuance of a Notice to Proceed, the Engineer will conduct a preconstruction meeting with the Contractor to establish project schedules and administrative requirements.

At the preconstruction meeting, the Contractor shall submit an acceptable written schedule, tentatively detailing the timing and sequence of major project components and showing critical construction activities and their interdependence. The Contractor, upon signing of the contract shall be required to furnish the Engineer a tentative schedule setting forth in detail the procedure he proposes to follow and giving the dates on which he expects to start and to complete separate portions of the work. If, at any time, in the opinion of the Engineer, proper progress is not being maintained, such changes shall be made in the schedule of operations as the Engineer shall direct or approve.

In addition, the Contractor shall submit a labor rate schedule for all anticipated personnel to be utilized on the project. The rate schedule shall be valid for the duration of the contract.

Submission of acceptable construction and labor rate schedules shall be a prerequisite for processing the first pay request.

The Contractor shall submit revised construction schedules periodically as directed by the Engineer to allow for changes in scheduling or whenever the present project status of critical path work items differs from the existing project schedule by more than one week. Revised schedules shall be submitted as a prerequisite for processing the subsequent pay request.

SECTION 11

UTILITY EXCAVATION AND BACKFILL

11.1 DESCRIPTION

A. General:

This work consists of excavation, backfill and compaction of trenches for installation of underground utilities, which includes Private Utility Installations, Water Piping Systems, Sanitary Sewers, and Storm Sewers and Pipe Culverts. This includes, but is not limited to, dewatering, rock and/or muck excavation and disposal, bedding, and shoring and bracing.

B. Related Work:

Section 7	General Conditions
Section 8	Water Piping Systems
Section 9	Sanitary Sewer
Section 10	Clearing and Grubbing
Section 13	Removal Items
Section 14	Embankment
Section 15	Disposal of Surplus Excavation and Waste
Section 17	Salvaging, Stockpiling, and Placing Topsoil
Section 18	Erosion and Water Pollution Control
Section 19	Incidental Work
Section 41	Utility Trench Resurfacing
Section 54	Pipe Culverts
Section 90	Traffic Control
Section 112	Select Granular Backfill
Section 120	Reinforced Concrete Pipe
Section 121	Corrugated Metal Pipe
Section 117	Aggregates for Granular Bases and Surfacing
Section 200	Controlled Low Strength Material

C. License and Permit Requirements

1. Any person or Contractor engaging in the business of excavating in the public right-of-way (ROW) shall comply with the provisions of the Rapid City Municipal Code, Chapter 13.10, "Trenching Contractor's Licenses". The Contractor shall refer to Chapter 13.10 for the actual definition of work covered under the code.
2. Any person or Contractor engaging in the business of excavating in the public ROW for such purposes of constructing, altering, repairing or improving water and sewer mains; appurtenances and/or service lines and storm sewers shall comply with the provisions of the Rapid City Municipal Code, Chapter 13.10,

- “Trenching Contractor’s Licenses”. The Contractor shall refer to Chapter 13.10 for the actual definition of work covered under the code.
3. Dirt/dust control shall be as specified in Section 7.28.
 4. City of Rapid City, South Dakota Department of Transportation (SDDOT) and Railroad Right-to-Work Permits are required from the same when working within their ROW.
 5. A Right to Work permit, if applicable, is required from the City of Rapid City Utility Maintenance Group (Utility Maintenance).
 6. Tapping fees for the taps themselves shall be paid for at the time the Right to Work permit is obtained from Utility Maintenance.
 7. New Account Set-up inspection permits (tapping permits), if applicable, are required from Utility Maintenance.
 8. Blasting and the use of explosives
 - a. The Contractor shall comply with all Federal Regulations and OSHA provisions.
 - b. The Contractor shall comply with Section 7.43 – General Conditions, “Use of Explosives”.
 - c. A permit for use of explosives shall be obtained from the Rapid City Fire Department.

D. Submittals/Test Samples

1. Soil tests

The Contractor shall provide the Engineer with the results of a modified proctor soil compaction test, as determined by the AASHTO T180 test, for those locations and depths determined by the Engineer. When requested, the Contractor shall provide the Engineer with no less than 25 pounds of each sample appropriately labeled with the project title, the location from which the sample was obtained and the date of sample collection. A City Construction Observer shall be present during sample collection. Soil samples shall be submitted to a certified soils testing lab within 24 hours of the Engineer’s request. Failure to do so will cause the City to submit the samples and charge the Contractor at one and a half (1½) times the cost incurred. Results shall be delivered to the City directly from the testing Laboratory.

2. The Contractor shall submit to the Engineer a Traffic Control Plan for the proposed construction activity unless waived by the Engineer. The Traffic Control Plan shall conform to Standard Specifications.

3. The Contractor shall provide a submittal to the Engineer for the materials proposed for use under Section 112 - Select Granular Backfill unless waived by the Engineer.
4. The Contractor shall provide a submittal to the Engineer for the materials proposed for use under Section 200 - Controlled Low Strength Material unless waived by the Engineer.

11.2 MATERIALS

- A. Select granular backfill and bedding shall be in accordance with Section 112 - Select Granular Backfill.
- B. Controlled low strength material used for bedding or backfill shall be in accordance with Section 200 - Controlled Low Strength Material.

11.3 CONSTRUCTION REQUIREMENTS

- A. The Contractor shall contact SD One Call for the locations of public and private utilities prior to any excavation. Underground utilities shown on the plans are not necessarily exact and, therefore, must be located by the individual utility company prior to excavation activities. The Contractor shall attempt to contact the local residents/owners whenever any excavation may affect their property.
- B. Trenching
 1. Methods

Under ordinary conditions and where the depth of excavation and soil conditions will allow, excavation shall be by open cut from the surface. Tunneling or boring may be required under sidewalks, curb and gutter, or other surface structures. However, no additional compensation will be allowed for such tunneling or boring.

Where surface conditions allow, the Contractor will be permitted to slope or bench the trench sidewalls from a point three inches above the top of the pipe barrel. Below this point, the trench walls shall be vertical. Contractor shall shore as necessary. This requirement does not relieve the Contractor of the responsibility of meeting all applicable OSHA requirements.

Excavated material suitable for backfill shall be deposited sufficiently distant along the sides of the trench to limit the potential for cave-in and shall be so deposited that the public shall be inconvenienced as little as possible.

All excavated material not required for backfill shall be removed from the project by and at the expense of the Contractor as directed by the Engineer.

All rock, including excavated bedrock and large loose rock such as boulders or fieldstone, muck or other unsuitable material, which cannot be used as backfill, shall be segregated from the rest of the excavated material and removed from the project by and at the expense of the Contractor. Unsuitable material, which cannot be used for backfill, shall be determined by the Engineer. Established drainage in the street, alley, or drainage ditch, must be maintained by the Contractor during his construction operations to limit further damage and unnecessary removals.

Streets that utilize an engineering fabric underlayment shall be excavated down to the underlayment by hand, or other method that will prevent damage to the fabric. The first pavement saw cuts shall be a minimum width of six feet centered over the utility (see Standard Detail). Care shall be taken to leave the fabric undamaged. The fabric shall be slit lengthwise centered over the utility, the fabric laid back, and the trench excavated and backfilled in normal fashion. When the backfill is completed to the elevation of the original fabric, the slit fabric ends shall be placed back on the backfilled material; a minimum six foot wide piece of similar material shall be placed centered over the top of the existing slit fabric; and a minimum geogrid/fabric overlap of three feet shall be maintained. The geogrid/fabric repair shall be inspected by the Engineer prior to placing base course or cushion. After inspection of the geogrid/fabric, it may be covered with base course to the existing paving base grade. The base course can then be compacted and readied for pavement. Just prior to pavement replacement, a second saw cut shall be completed at a minimum of 12 inches away from the first saw cut (see Standard Detail).

Where the proposed trench intersects a sub drain or an edge drain, the sub or edge drain shall be repaired with a like drain material to a width one foot on either side of the trench width. The joints shall utilize a factory repair joint or shall be properly overlapped, wrapped with fabric and repair tape. New clean rock drainage material shall be placed across the trench intersection and backfilled with appropriate material outside of the sub or edge drain limits. The drain repair shall be inspected by the Engineer prior to placing the clean rock.

When either engineering fabric or sub or edge drains are inadvertently encountered and damaged, the Contractor is responsible to notify the Engineer as soon as practical. No further excavation or repairs of the area shall be effected without the knowledge of the Engineer.

Damage to the property of others, such as engineering fabric, edge or sub drains, private or public utilities, fences, trees, shrubs, lawns, sidewalks, etc. shall be repaired or replaced the Contractor's expense unless removal of such is shown on the plans or written permission was first obtained from the Engineer.

2. Protection of the excavation

The Contractor shall be solely responsible for providing a safe trenching operation and shall, as a minimum, comply with all OSHA regulations, regardless of limits of trench width imposed by project plans work limits, site constraints or the direction of the Engineer.

The Contractor shall employ qualified, properly trained personnel to design, place and maintain shoring during progress of work until the trench is backfilled.

Failure to properly shore and/or brace excavations shall be at the risk of the Contractor and any damage to pipes, curb and gutter, street pavement, grassed areas, storm sewer and appurtenances, gas mains, and/or other public or private property occurring through settlements, heaving, water or earth pressures, slides, caving, or other causes due to failure of shoring, improper shoring, or lack of shoring, or due to negligence on the part of the Contractor, shall be repaired by the Contractor at his own expense and to the satisfaction of the Engineer.

When utilized, the shoring shall be arranged so as not to place any stress on portions of the completed work until the general construction thereof has progressed far enough to provide adequate strength. Unless left in place by written order of the Engineer, shoring shall be removed as work progresses. Shoring devices and methods of construction utilizing shoring devices are the sole responsibility of the Contractor.

3. Dewatering

The Contractor shall be responsible for evaluating soil and groundwater conditions and for furnishing and maintaining necessary and suitable dewatering devices and equipment.

The Contractor shall provide for positive drainage away from the excavation or otherwise take steps to protect the excavation and backfill from becoming excessively wet prior to placing the finished surface.

If the Engineer determines that any portion of the backfill or trench has become excessively wet during excavation and/or backfill operations, the Contractor shall, at his own expense, remove the material to the satisfaction of the Engineer and furnish an approved backfill and/or bedding material that meets specifications.

At all times, the Contractor shall provide and maintain ample means and devices, with which to remove promptly and properly dispose of all water that enters the excavation.

The Contractor shall dispose of water in a suitable manner without damage to adjacent property or without creating a health hazard or nuisance condition. Water may not be discharged to private property or to irrigation ditches without prior approval from the affected property owner or ditch company. No water shall be drained into work built or under construction without prior consent of the Engineer.

Dewatering shall be accomplished by placing well points, sumps or any other acceptable method, which will insure a dewatered trench. Any proposed dewatering method shall be subject to the approval of the Engineer. The Contractor will not be permitted to allow groundwater to drain through completed sewers. The Contractor will be required to thoroughly clean all debris and sediment from newly installed sewers as directed by the Engineer.

The Contractor shall provide for positive drainage of water away from the excavation and take the necessary action to protect the excavation and backfill from becoming excessively wet prior to placing the finished surface. If the Engineer determines that any portion of the backfill or trench has become excessively wet due to actions or inactions of the Contractor after the initial excavation, the Contractor shall remove the soil and/or pipe or appurtenance(s) to the satisfaction of the Engineer and furnish an approved backfill material that meets specifications and reinstall the pipe and/or appurtenance(s) as specified herein, all at no expense to the City.

4. Trench Dimensions

The following table shall be used to determine the acceptable minimum trench widths for the City. The table in general is a compilation of AWWA criteria and Uni-Bell criteria. The criteria used in compiling this table are presented in Paragraphs a. and b. For purposes of establishing acceptable minimum trench widths, the dimensions in the table shall govern unless specifically indicated otherwise on the drawings.

TABLE 11-1

MINIMUM TRENCH WIDTH TABLE

<u>Pipe Diameter</u>	<u>Minimum Width</u>
<8 in	24 in
8 in -12 in	30 in
14 in –18 in	36 in
20 in -21 in	42 in
24 in –36 in	1.25(Pipe OD) plus 12 in
>36 in	Per plans

The Contractor shall adhere as closely as possible to the minimum trench widths.

The Contractor will not be allowed to excavate excessive trench width in lieu of adequate dewatering or shoring.

- a. Pressure Pipe Installation (Water and Force Main)
For reference, only Table 11-1 will be enforced.

Minimum Trench Width: The minimum clear trench width measured at a point three inches above the top of the pipe barrel shall not be less than 18 inches or the outside pipe diameter, plus 12 inches, whichever is greater or such width as approved by the Engineer.

b. Non-Pressure Pipe Installation (Gravity Sewer Main)

For reference, only Table 11-1 will be enforced.

1) Minimum Trench Width: The minimum clear trench width measured at a point three (3) inches above the top of the pipe barrel shall not be less than the greater of:

- a) Minimum of eighteen (18) inches, or
- b) The outside pipe diameter, plus sixteen (16) inches, or
- c) The outside pipe diameter multiplied by 1.25, plus (12) inches, or
- d) Such width as approved by the Engineer.

c. Maximum Trench Length: Not more than 300 linear feet of trench shall be open at any one time in the public Right-of-Way, in easements that contain City owned utilities, or near roadways..

5. Foundations: Foundations shall be considered as that material which is neither bedding nor backfill, but is used under the pipe or conduit for support in the bottom of the trench.

a. Normal Trench Bottom: The bottom of the normal trench where the undisturbed soil is of a supportive nature for the pipe or conduit laid, as determined by the Engineer, shall be accurate for line and grade to provide uniform bearing and support for each section of pipe or conduit. Bell holes and depressions for joints shall be dug after the trench bottom is graded, and shall be no greater in length, depth, and width than required for making the joint. The undisturbed trench bottom shall be at least 3 inches below the pipe invert, to allow for the placement of Type 1 Bedding material.

b. Rock Trench Bottom: When solid rock, large loose rock, such as field stone, very coarse gravel, or any other material of a similar nature that is stable but will not allow a proper foundation for the pipe or conduit, is encountered at the trench bottom, it shall be excavated to a sufficient depth to allow refilling under the body and joints of pipe or conduit. The undisturbed trench bottom shall be at least 3 inches below the pipe invert, to allow for the placement of Type 1 Bedding material.

c. Unstable Trench Bottom: When the trench bottom is earth that will not support the pipe or conduit, the earth shall be considered an unstable foundation and shall be excavated below grade as directed by the Engineer. A solid foundation shall be built with select granular backfill material or with controlled low strength material.

The amount and type of foundation material required will vary depending upon the soil encountered. Generally, foundation material shall be Type 1 Bedding Material or Type 2 Foundation Material, per Section 112 or Controlled Low Strength Material per Section 200.

In some circumstances, larger foundation material may be necessary and in these cases Type 3 or 4 Foundation Material or Stabilization Rock maybe used per Section 112. If Type 3 or 4 Foundation Material or Stabilization Rock is used, then a minimum 6 inches of Type 2 Foundation Material shall be placed directly above the material and prior to the placement of the Type 1 Bedding Material. This helps to minimize the potential for the Type 1 Bedding material to migrate into the larger foundation material and result in loss of pipe support. The Engineer shall determine the use of Controlled Low Strength Material or Foundation materials, in cases of unstable trench bottom.

Foundation material shall be compacted and placed in separate lifts from the trench bottom up to three inches below the pipe invert. Foundation material lifts shall not exceed eight inches and each lift shall be compacted separately.

6. Rock Excavation: Rock excavation shall include solid rock in ledges, bedded deposits, un-stratified masses and conglomerate deposits so firmly cemented as to present the characteristics of solid rock, which must be removed by drilling, blasting, jack hammering, hydraulic ripper, or similar methods. Shale, regardless of the nature of deposit, or loose boulders or large fieldstone will not be considered rock excavation unless so designated on the plans. The responsibility and cost of satisfactorily demonstrating to the Engineer that the material being considered for rock excavation cannot be removed by means other than drilling, blasting, jack hammering, hydraulic ripper, or similar methods shall be the obligation of the Contractor.

At a minimum, it shall be demonstrated that a normal excavating machine being skillfully operated cannot effectively remove said material. "Effectively removed" shall be defined as, the normal production rate being reduced to 25% of normal. A normal excavating machine will be considered to be a +230 HP hydraulic excavator, crawler weighing +78,000 pounds with a – 1 CY bucket equipped with rock or ripper teeth.

The Contractor shall dispose of all unsuitable excavated material. The Contractor shall provide a disposal site for unsuitable backfill materials. The disposal site shall be approved by the Engineer.

The Contractor shall furnish an approved backfill material to fill the void left by rock excavation. He shall also provide the results of a modified proctor (AASHTO T-180) test for the furnished backfill.

The Contractor shall keep accurate daily records of the quantity of rock removed so a comparison can be made with the Inspector's records. The Contractor shall

deliver his records of Rock Excavation to the Engineer or his representative within 48 hours. Records of Rock Excavation delivered after this period shall be declared invalid and no payment for Rock Excavation will be made.

7. Blasting and the Use of Explosives

All materials removed by blasting which cannot be shoveled as earth shall be deemed unsuitable and shall be handled and disposed of separately from other suitable backfill materials as directed by the Engineer. The Contractor shall provide a disposal site for unsuitable backfill materials. The disposal site shall be approved by the Engineer.

Where blasting is necessary, the Contractor shall comply with the laws, ordinances, and applicable safety code requirements relative to the handling, storage and use of explosives and the protection of life and property. Suitable covering or shielding shall be provided to confine all materials lifted by blasting, within the limits of the trench of excavation, and prevent injury to property or life. The Contractor shall be responsible for all damages caused by his blasting operations. The Contractor will demonstrate that he is in compliance with applicable laws, rules, and regulations, and that he has the required expertise in advance of any blasting work. The Contractor shall notify all governmental agencies, property owners and utility owners that may be affected by the blast 48 hours in advance.

The Contractor shall receive "approval", in writing, for any proposed blasting in the public Right of Way, an easement, or that is within 100 feet of an underground public utility. The Contractor shall refer to the sub-section titled "Use of Explosives" in Section 7 - General Conditions, for additional requirements when blasting. The Contractor shall request the "approval" at least 48 hours prior to blasting. The Contractor shall be responsible for any safeguards or monitoring required by the Engineer for the blasting operations and shall be responsible for any and all damages resulting from the blasting operations.

8. Unsuitable Backfill Material Excavation: Unsuitable Backfill Material Excavation shall consist of the removal and disposal of unsuitable material, which in the opinion of the Engineer is not suitable as backfill material. The Contractor shall provide an approved disposal site for unsuitable material. The Contractor shall provide and use any necessary shoring devices necessary to maintain trench walls.

The shortage of backfill material created by the removal of the unsuitable material shall be replaced by the Contractor with an approved imported backfill material meeting specifications. Payment for imported backfill will be considered if the Contractor has not wasted suitable material from the project. The Contractor shall provide the results of a modified proctor analysis (AASHTO T-180) for all furnished imported backfill material, except Controlled Low Strength Material.

C. Pipe Bedding

Water and Sewer pipe, appurtenances, and service lines shall be installed as per Sections 8 and 9 and as described below:

1. All water and sanitary sewer pipe, appurtenances, and service lines; except copper water services shall be bedded with Type 1 Bedding material from 3 inches below the pipe invert to 3 inches above the pipe crown over the full width of the trench. Type 1 Bedding Material shall meet the requirements of Section 112.

Copper water services shall be bedded from three inches below the pipe invert to three inches above the pipe crown over the full width of the trench. The bedding shall be Type 1 Bedding Material, or in lieu of Type 1 Bedding Material, washed sand or crusher fines may be used.

- a. Type 1 Bedding shall be compacted and placed as a separate lift from the trench bottom, or top of Foundation material, to the pipe invert and shall be placed and compacted prior to the pipe or appurtenance being placed in the trench.
 - b. Type 1 Bedding shall be hand tamped and placed as a separate lift from the pipe invert to the pipe spring line. The Type 1 Bedding shall be placed in lifts and the maximum lift shall not exceed 6 inches.
 - c. Type 1 Bedding shall be hand tamped and placed as a separate lift from the pipe spring line to 3 inches above the pipe crown. The Type 1 Bedding shall be placed in lifts and the maximum lift shall not exceed 6 inches.
 - d. Type 1 bedding material shall be incidental to water and sewer pipe per sections 8 and 9. Prior to commencing installation of water and sewer pipes, the Contractor and Engineer shall determine the rates of material to be used for each diameter of pipe being installed, in conjunction with the Contractor's proposed excavator bucket width (maximum trench width). These rates of material use shall be used as a method of quantifying the minimum amount of bedding material required for the project. The Contractor and Engineer shall, on a daily basis, quantify the amount of Type 1 bedding material installed, along with the corresponding quantity of water and sewer pipe. The Contractor shall submit weigh tickets for Type 1 bedding material to the Engineer daily. The weigh tickets shall clearly state, "Type 1 bedding material, incidental." All stockpiled bedding material used for water and sewer pipe installation shall be clearly identified on the project.
2. Bedding material from 3 inches above the pipe crown to 12 inches above the pipe crown shall be Select Bedding Material. Select Bedding Material may include loam, clay, sand, and gravel, but shall be free of cinder, ashes, refuse, organic matter, rock or material determined unsuitable by the Engineer. No

material larger than one (1) inch in size shall be permitted. Frozen material shall not be used.

Select Bedding Material maybe native excavated material or material brought from offsite. Select Bedding Material shall be hand-tamped in the trench for its full width on each side of the pipe, simultaneously. Mechanical tampers may be used if pipe damage will not occur.

3. Controlled Low Strength Material maybe used in lieu of Type 1 Bedding or Select Bedding Material as approved by the Engineer or as required on the drawings or specifications. Controlled Low Strength Material shall be installed in accordance with Section 200.
4. Check Dam Installation – Check dam installation shall be as indicated on the drawings or in the detailed specifications. However, at a minimum, check dams shall be installed every 450 feet of water and sewer main installed, at all laterals (tees and crosses), and at service lines, where they connect to the main.

The check dams shall extend vertically from the bottom of the excavation through the bedding material to the “normal backfill” zone and shall extend horizontally from trench sidewall to trench sidewall. The check dam shall seal the bedding material to prevent ground water movement in the bedding material along the trench. Check dam material shall be on site cohesive material compacted to the density of surrounding soil of the trench. Check dam installation and material shall be considered to be incidental to the installation of the main or service.

- D. Backfilling and Compaction - Backfill shall start one (1) foot above the pipe or conduit crown and continue to the surface of the trench. The Contractor shall take precautions to backfill trenches in a manner that installed pipe or conduit will not be disturbed.

All backfill material shall be free from cinders, ashes, refuse, vegetable or organic material, boulders, rocks, or stones, or other material, which the Engineer determines to be unsuitable. From one foot above the pipe or conduit crown to two feet above the pipe or conduit crown, the maximum stone size shall be limited to three inches in diameter. From two feet above the top of the pipe, stones up to twelve inches along their longest dimension may be included in the backfill, unless otherwise specified.

When the type of backfill material is not specified, the Contractor may backfill with the excavated material provided that the Engineer determines that it is suitable. Where excavated material is deemed unsuitable, or where there is a shortage of backfill material, the Contractor shall furnish an approved Imported Backfill unless otherwise specified. Controlled Low Strength Material will be considered acceptable as backfill material when installed in accordance with Section 200 or as directed by the Engineer.

Should the Contractor cause the trench to be excavated to a greater depth or width than that designated of the drawings, herein, or as directed by the Engineer, the Contractor shall refill to grade, at his own expense, with an approved material, notwithstanding that it may be necessary to bring such material from other localities or to purchase suitable material with which to form a solid bed for the pipe.

Frozen material shall not be permitted as trench backfill.

Prior to backfilling, the Contractor shall not sell, remove, or permit to be removed, suitable backfill material required to complete the project, provided a designated stockpile location is provided. If suitable backfill material is removed, the Contractor shall document the quantity of material removed and provide this information to the Engineer within 24 hours of its removal.

E. Embankment

Where embankment is necessary to support pipe or to cover or protect it in any way, it shall be placed to the dimensions shown on the plans or as directed by the Engineer. The surface of the ground receiving the embankment shall be cleared of all unsuitable material and scarified, or loosened with a disc or multi-toothed hydraulic ripper; moisture adjusted and re-compacted as directed by the Engineer. Embankment shall then be formed of an approved material and compacted to the densities specified herein unless otherwise specified. Embankment shall be placed prior to laying pipe. Unless otherwise approved, pipe laid in embankment shall be trenched in.

F. Compaction

The Contractor shall compact all backfill to the following densities, unless modified by the Detailed Specifications or by the direction of the Engineer:

<u>SOIL TYPE</u>	<u>BACKFILL MOISTURE CONTENT</u>	<u>% OF MAXIMUM DRY DENSITY</u>
Cohesive	3% Below to 8% Above Optimum	92% Minimum
Non-cohesive	Workable	95% Minimum

Maximum dry density and optimum moisture content shall be determined by the AASHTO T-180, Modified Proctor Test.

Backfill moisture and density shall be determined at least every 200 feet horizontally and every three (3) feet vertically in pipe line trenches. However, the Engineer may take moisture and density tests at any location and depth he desires. The Contractor shall, at his own expense, excavate the backfill at those locations and to those depths required by the Engineer to conduct moisture/density tests.

When specified moisture contents are not met, the Contractor has the options of drying wet soil, furnishing approved materials meeting specifications, or adding water as necessary, to soils that are too dry to meet specifications. If water is added to dry soil, it must be thoroughly mixed with the soil to provide uniform moisture content prior to backfilling.

Backfill material not meeting specified densities shall receive additional compaction or shall be removed and replaced at the Contractor's expense as necessary to meet specified densities. Wet soils that otherwise meet the requirements for backfill do not necessarily constitute unsuitable material. It is the contractor's responsibility to either dry the material or furnish other approved material at his expense, unless otherwise specified herein. When the Contractor furnishes backfill material, he shall also furnish the results of the AASHTO T-180 test for the furnished material.

Controlled Low Strength Material installed in accordance with Section 200 or as directed by the Engineer will not require compaction testing.

The Contractor shall not place the finished surface (asphalt, curb and gutter, grass, etc.) until the specified densities are met at each test location and the Engineer gives his approval for placement.

Trench flooding, with water, as a method of compaction is prohibited.

G. Frost

When frost in the ground becomes deep enough to inhibit excavation, the Contractor may request a stop work order. However, it shall be the Contractor's responsibility to prove to the Engineer that the cost of excavation due to the frost is excessive and a stop work order is justified. The request for the stop work order shall be made in writing. Regardless of when the request is made, contract time will not stop until the stop work order is issued, i.e. the order will not be retroactive. Stop work orders shall be made in accordance with Section 7 unless otherwise modified herein.

As a prerequisite to issuance of the stop work order, the Contractor shall backfill and compact all open excavations and clean up the project to the satisfaction of the Engineer.

The Engineer may issue a Notice to Proceed when conditions improve to the point where frost does not inhibit excavation and a resumption of work is possible. The resumption of work and Notice to Proceed shall be made in accordance with Section 7 unless otherwise modified herein.

H. Cleanup

Trenches located in public right-of-way shall be backfilled, compacted, and restored to original condition as soon as practicable. In cases where the permanent surfacing will not be placed within 24 hours of backfill, the Engineer may require temporary surfacing. Temporary surfacing shall be considered as incidental to the bid item for

the pipe or conduit for which it pertains unless a bid item is specifically provided for Temporary Surfacing.

Temporary Surfacing shall consist of materials as specified in Section 112, Section 117, or asphalt millings.

I. Bedding Boxes and other similar devices

If bedding material is a unit price pay item the contractor shall use a bedding box or other similar device for the storage of Type 1 Bedding Material and Select Granular Backfill Materials. The bedding box shall follow the progression of work and shall be used to store the materials prior to their placement in the trench. The use of such devices will minimize contamination and waste of the material. The Engineer may make a deduction in the quantity, for payment purposes, of Type 1 Bedding Material and/or Select Granular Backfill Material if the material is being contaminated or wasted.

J. Underground Obstructions

The location of underground public or private utilities may be shown on the plans, as reported by the various utility companies and the City, but this does not relieve the Contractor of the responsibility of determining the accuracy or completeness of said locations. The Contractor shall determine the location of all underground ducts, conduits, pipes, cables or structures that will be affected by the work, and shall take steps necessary to support and protect said structures by any means suitable to the owners of the structure involved and the Engineer. When necessary, the Contractor shall conduct operations as to permit access to the work site and provide time for utility work to be accomplished during the progress of the work.

Portions of existing utilities, which are found to interfere with the line and / or grade of the proposed utility, will be relocated, altered or reconstructed by the utility companies, or the Engineer may order changes in the work to avoid interference. Such changes will be considered to be extra work and will be paid for through a change order. When the plans or specifications provide for the Contractor to alter, relocate, or reconstruct an existing utility, all costs for such work shall be included in the bid for the items of work necessitating such work unless a separate bid item is provided. Temporary or permanent relocation or alteration of existing utilities requested by the Contractor for the Contractor's convenience shall be the Contractor's responsibility, and the Contractor shall make all arrangements and bear all costs. In those instances where existing utility relocation or reconstruction is impractical, the Engineer may order a deviation from line and grade.

The Contractor shall be responsible for notifying the various utility companies if the Contractor's work will expose, affect or endanger any existing utility. All cost of investigation and any necessary protection, support, removal or relocation of said structures shall be included in the contract bid price for installing pipe manholes, etc. The Contractor shall not begin construction until all utility companies have been contacted and their respective underground utilities have been located and marked.

All costs for exploratory investigation/excavation necessary for determining the location and depth of utilities shall be included in the contract bid price for installing the proposed utility.

11.4 METHOD OF MEASUREMENT

A. Protection of the Excavation

No measurement will be made, as these items are considered to be incidental to utility being installed, unless specifically indicated otherwise.

B. Dewatering

No measurement will be made, as this item is considered to be incidental to utility being installed, unless specifically indicated otherwise.

C. Rock Excavation

Measurement will be based on the measured and/or calculated volume of the open trench to the nearest whole cubic yard and will be limited to a maximum trench width of six (6) feet. At Manholes the allowable trench width for computation will be increased from 6 ft. to 10 ft. wide for a distance 7 ft. each side of the manhole center.

D. Select Granular Backfill Materials

Measurement for Select Granular Backfill materials will be in accordance with Section 112 except as further defined below.

Type 1 bedding material for water and sewer pipe installations described in specification sections 8 and 9 shall be considered to be incidental to the pipe being installed. The Contractor and Engineer shall, on a daily basis, quantify the amount of Type 1 bedding material installed, along with the corresponding quantity of water and sewer pipe. The Contractor shall submit weigh ticket for the Type 1 bedding material daily to the Engineer. The weigh tickets shall clearly state, "Type 1 bedding material, incidental." All stockpiled bedding material to be used for water and sewer pipe installation on the project shall be clearly identified.

Type 1 bedding material used as foundation material or for uses other than water and sewer pipe installation shall be measured in accordance with section 112..

E. Imported Backfill

When unsuitable material is encountered during trench excavation, the unsuitable material shall be removed and disposed as previously specified. If the unsuitable material removal and disposal creates a shortage of material, and the Contractor has not wasted suitable material from the project, Imported Backfill will be used to eliminate the shortage of available suitable backfill material. Measurement of the Imported Backfill,

unless otherwise stated in the Detailed Specifications will be to the nearest compacted cubic yard as placed in the trench. If suitable material was wasted from the project prior to encountering unsuitable material, measurement and payment for Imported Backfill will not be considered provided a designated stockpile location was identified.

F. AASHTO T-180 Soil Test

This item will be measured per each as submitted to a certified lab and approved by the Engineer.

11.5 BASIS OF PAYMENT

A. Protection of the Excavation

No payment will be made, as these items are considered to be incidental to utility being installed, unless specifically indicated otherwise.

B. Dewatering

No payment will be made, as this item is considered to be incidental to utility being installed, unless specifically indicated otherwise.

C. Rock Excavation

Payment for rock excavation will be made under the bid item Rock Excavation. When no bid item exists and the Engineer agrees to pay for rock excavation, a unit price shall be negotiated.

D. Select Granular Backfill Materials

Payment for Select Granular Backfill materials will be in accordance with Section 112 except as further defined below.

Type 1 bedding material for water and sewer pipe installations described in sections 8 and 9 shall be considered incidental to the pipe being installed. And no direct payment for Type 1 bedding material will be made. Type 1 bedding material used as foundation material or for some use other than bedding for water or sewer pipes shall be paid for in accordance to section 112.

E. Imported Backfill

Payment for Imported Backfill will be made under the appropriate bid item for the material furnished and installed. Payment for Imported Backfill shall include all associated costs of excavation and disposal of excavated material unless otherwise called for in the Plans or Detailed Specifications. If suitable material was wasted from the project prior to encountering unsuitable material, measurement and payment for

imported backfill material will not be considered, provided a designated stockpile location was identified.

F. AASHTO T-180 Soil Test

Payment for providing the results of the AASHTO T-180 test shall be made under the bid item Modified Proctor Soil Test, Each and shall be full compensation for obtaining the soil sample, delivering it to the certified lab, conducting the test, and providing the Engineer with the results. Payment will be made for only those Proctor tests required by the Engineer.

END OF SECTION

SECTION 13

REMOVAL ITEMS

13.1 DESCRIPTION

A. General:

This work shall include, but not be limited to: the removal and disposal of buildings, fences, structures, pavements; sawing of pavements prior to removal; and removal and disposal or salvage of abandoned pipe lines, pipe culverts, and other obstructions which are not designated or permitted to remain, except for obstructions to be removed and disposed of under other items in the contract. It shall also include the salvaging of designated materials and backfilling the resulting trenches, holes, and pits. When the proposal does not include pay items for removal items as set out in this section, such work shall be performed under various other contract items.

B. Related Items:

Section 15 - Disposal of Surplus Excavation and Waste
Section 19 - Incidental Work
Section 90 - Traffic Control

13.2 MATERIALS (not specified)

13.3 CONSTRUCTION REQUIREMENTS

A. Structure Removal:

Designated salvageable material shall be removed without unnecessary damage in sections or pieces, which may be readily transported and shall be stored by the Contractor at specified places. Unusable perishable material shall be destroyed or disposed of off the project. Nonperishable material may be disposed of outside the limits of view from the project with written permission of the property owner and in accordance with City Ordinance.

Basements or similar cavities left by structure removal shall be filled to the level of the surrounding ground and shall be compacted to the satisfaction of the Engineer under the same specifications as the embankment. Concrete basement floors and similar structures shall be broken up to prevent entrapment of water.

Bridges, culverts, and other drainage structures designated for removal and in use by traffic shall not be removed until satisfactory arrangements have been made to accommodate traffic.

Unless otherwise directed, the substructures of existing bridges, culverts, and other drainage structures shall be removed down to the flow line of watercourse. Those parts outside of the stream shall be removed one (1) foot below natural ground surface. Where such portions of existing structures are within the limits of a new structure, they shall be removed as necessary to accommodate the construction of the proposed structure.

Steel bridges and wood bridges, if designated, shall be dismantled without damage. Structures designated to become the property of the Contractor shall be removed to an approved site.

Blasting or other operations necessary for the removal of an existing structure or obstruction, which may damage new construction, shall be completed prior to placing the new work. Blasting shall be accomplished according to the requirements stated in Section 7.

Pipe to be re-laid shall be removed, transported to a location approved by the Engineer and stored, when necessary, so that there will be no damage before relaying. The Contractor will be required to replace sections of pipe damaged by his negligence.

In removing manholes, catch basins, and drop inlets, any live sewers connected with them shall be rebuilt and properly reconnected. Satisfactory by-pass service shall be maintained during such construction operations. Any work on or removal of sanitary sewer or water facilities shall conform to Sections 8, 9, and 11.

- B. Paving Surface Removal: In removing pavement, curb, gutter, sidewalk, and similar structures where portions of the existing structures are to be left in the finished work, the old structure shall be removed to an existing joint or saw cut, and chipped, if necessary, to a true line with a vertical face. Openings in the existing pavement shall be made, by sawing to full depth of the pavement.

Protection of Existing Surface: Use of steel faced or shod equipment without adequate padding to prevent damage to the existing pavement shall be at the Contractor's risk. Extra care shall be taken to prevent damage from excavator, loader bucket, or other equipment edges/teeth when placing or removing trench spoil or materials piles. Damaged pavement because of the Contractor's equipment shall be repaired or replaced at no additional cost to the City.

Saw cutting of the pavement structure ahead of excavation operations shall be required to confine pavement damage to the limits of the trench or excavation. Initial saw cuts shall be made a minimum of one foot outside of the anticipated trench width or removal area. Asphalt or Portland concrete pavement shall be cut to full depth. Pavement removal limits shall be approved by the Engineer prior to sawing.

A second saw cut located one foot outside the trench limits will be required for all asphalt concrete removals. These second, final pavement saw cuts shall be full depth and shall be one (1) foot outside the initial cut. Final saw cuts shall provide a

smooth vertical face, against which to resurface. Care shall be taken to prevent damage to the newly cut edge.

Final removal area limits for Portland cement concrete excavation shall be as approved by of the Engineer. Minimum width of final removal shall be ½ panel on large panels and full panel on small panels.

If undermining of the asphalt concrete pavement edge occurs at any time during the construction, such undermined pavement must be saw cut back and removed to form a square edge and a straight and even alignment to a horizontal distance of at least one (1) foot beyond the edge of the undermined area. Removals for Portland cement concrete that has become undermined shall be as directed by the Engineer.

Where the existing street contains special subsurface drains or soil support fabric and where plans call for portions of such to remain, be extended, or be repaired, special removal techniques shall be as follows:

Streets that utilize basecourse over an engineering soil support fabric shall, upon removal of the asphalt or concrete pavement, be generally excavated down to the fabric with sufficient care to leave the fabric undamaged. Once the basecourse is removed, the fabric shall be cut allowing sufficient material to patch or connect to, the fabric laid back and the area excavated and backfilled with care to prevent damage to the fabric. When backfill is complete to the level of the fabric, the laid back fabric edges shall be laid flat over the backfilled area and covered with a new piece of similar fabric so that the edge of existing fabric is overlapped with new fabric to a minimum width of one and one half (1 ½) feet on either side of the undamaged, existing fabric edge. If the soils support fabric is inadvertently damaged by the Contractor, the Contractor shall notify the Engineer of the damage so that the Engineer may examine the extent of damage and direct the repair. Such repair shall be performed to the satisfaction of the Engineer and at the expense of the Contractor.

Special subsurface drains damaged by construction shall be repaired in kind at no expense to the City unless otherwise indicated in the Contract Documents.

Established drainage in the street, alley, or drainage ditch must be maintained by the Contractor during his construction operations. Contractor shall take necessary precautions to prevent drainage from running into the excavation.

Street and traffic signs within the excavation area shall be removed by the Contractor and delivered to the Rapid City Sign Shop. Care shall be taken to prevent damage to the signs, posts or hardware. New signs not specifically called out in the plans to be installed by the Contractor shall be erected by Sign Shop Personnel upon notification by the Contractor to the Traffic Operations Engineer that construction is sufficiently completed to enable sign installation. The Contractor shall give no less than twenty-four (24) hours' notice to the Traffic Operations Engineer.

Monuments, property pins, survey referenced points, and benchmarks shall not be disturbed without specific written permission from the Engineer. Any such markers disturbed without permission shall be replaced at the Contractor's expense by a licensed land surveyor.

City construction project plans will indicate known, existing monuments that are scheduled to be disturbed, demolished or removed.

Damage to the property of others, such as fences, trees, shrubs, lawns, sidewalks, etc. shall be repaired or replaced at the Contractor's expense, unless removal of such is shown on the plans or written permission was first obtained from the Engineer.

Monuments, property pins, survey referenced points, and benchmarks shall not be disturbed without written permission from the Engineer. Any such markers disturbed without permission, shall be replaced at the Contractor's expense, by a licensed land surveyor.

C. Dirt/Dust Control

All activities associated with this contract shall conform to Rapid City Municipal Ordinance Chapters 8.34 through 8.44 and/or Pennington County Ordinance No. 12. The Contractor shall make every reasonable effort to minimize fugitive dirt or dust from 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.

13.4 METHOD OF MEASUREMENT

When the contract stipulates that payment will be made for removal of obstructions on a lump sum basis, the plans will list in detail the items to be removed.

When the contract stipulates that payment will be made for the removal of specific items on a unit basis, measurement will be made by the unit, stipulated in the contract.

When removal of pipe is to be made on a unit basis, the quantity will be measured in linear feet to the nearest tenth (0.1) foot. Quantities will be determined by measuring in place prior to removal. Flared end sections will be measured in linear feet at the flow line as part of overall length of pipe.

When removal of AC or PCC pavement or sidewalk is to be made on a unit basis, the quantity will be measured in square feet or square yards to the square foot or nearest tenth (0.1) square yard. Quantities will be determined by measuring in place prior to removal.

Where curb and/or gutter is adjoining Portland Cement Concrete pavement to be removed, it will be considered as pavement and will be measured as such.

When removal of obstructions will be on a unit basis, pavement sawing will be measured and paid for separately. Measurement for sawing of pavement shall be by the linear foot. Sawing limits shall be approved by the Engineer prior to sawing.

13.5 BASIS OF PAYMENT

Payment for removal of obstructions on a lump sum basis will be as set forth in Section 19.

Pipe removal, will be considered as Incidental Work unless a bid item for the removal is provided. Variance from pipe removal quantities, locations, or dimensions shown on the plans or specified herein will not be cause for adjustments in payment for Incidental Work.

Payment for removal of obstructions on a unit basis will be made under the appropriate bid item. Unless otherwise indicated the measurement of the unit will be to the nearest whole unit.

Payment for removal of obstructions by the Incidental work item, lump sum, or on a unit basis will be full compensation for removal and disposal of such items, excavation and subsequent backfill incidental to their removal. This payment will also include salvage of materials removed, their custody, preservation, storage, and disposal as provided herein or on the plans.

When there is a bid item provided, payment for sawing will be at the contract unit price per linear foot sawed. When no bid item is provided, sawing will be considered as incidental to the bid item for which it pertains.

END OF SECTION

SECTION 41

UTILITY TRENCH RESURFACING

41.1 DESCRIPTION

A. General:

This work consists of furnishing and installing surface patching of utility trenches. This includes all equipment, tools, materials, labor, and other incidentals to provide utility trench patching, complete and ready for continuous use.

Patching of trenches will be matching the in-place surface material with asphalt, concrete, gravel, grass, etc. or as specified by the Engineer.

B. Related Work:

Section 20	Granular Materials
Section 31	Asphalt Concrete - General
Section 33	Asphalt Concrete - Class G
Section 39	Cold Mix Asphalt Concrete
Section 40	Portland Cement Concrete Pavement
Section 70	Seeding
Section 73	Sodding
Section 90	Traffic Control
Section 117	Aggregates for Granular Bases and Surfacing
Section 202	Engineering Fabric

C. Submittals:

Submittals shall be required unless otherwise specified in the Detailed Specifications.

The term "Submittals" includes manufacturer's product data sheets of pipe and fittings and supplier certification for asphalt mix, concrete mix, gravel base, granular backfill to be used on the project.

At least five (5) working days before his need for approval, the Contractor shall forward to the Engineer three (3) copies of submittals for all products. Submittals will be accepted only from the Contractor.

The Engineer will indicate his approval or disapproval of each submittal and, if he does not approve the submittal as submitted, will indicate his reasons therefore. Any work done prior to approval shall be at the Contractor's own risk. Approvals shall not relieve the Contractor from responsibility for complying with the requirements of the contract documents.

Re-submittals shall be made the same as for original submittals, with changes from the previous submittal clearly shown.

41.2 MATERIALS (Not specified)

41.3 CONSTRUCTION REQUIREMENTS

A. Sub grade Preparation:

Contractor shall not resurface the trench until all density tests have been met and the Engineer gives approval.

The sub grade shall be brought to proper grade elevation, for the specified depth of surfacing to be placed. The sub grade surface shall be smooth and level, with no loose material.

B. Resurfacing:

1. Saw cut of pavement edges:

Initial saw cuts shall be placed a minimum of one foot outside the proposed trench wall width on both sides. The width between initial pavement saw cuts should not be less than six feet. The second, or final, saw cuts shall be a minimum of one foot outside of any pavement damage beyond the initial saw cuts..

2. Asphalt street:

The asphalt patch shall be placed to a minimum depth of five (5) inches. If the existing pavement is greater than five (5) inches thick, the patch shall be placed to a depth matching the existing pavement. The asphalt base shall be Class G, Type 1, and/or class G type II, as approved by the Engineer. The asphalt patching shall be in accordance with Sections 33 and 39.

3. Cold Mix Asphalt:

A temporary asphalt patch shall be placed when hot asphalt is not available and/or the Engineer gives approval. The Contractor shall be responsible for maintenance of the temporary patch at no extra cost to the City. The depth of the temporary patch shall be a minimum of five (5) inches. The cold mix shall be in accordance with Section 39.

4. Concrete street with asphalt overlay:

After saw cutting per specifications, the concrete base patch shall be poured to the depth of the existing concrete. The concrete shall be allowed to attain a

compressive strength of 4000 psi, or the Engineer has given approval, before the asphalt overlay can be accomplished. The asphalt overlay shall be Class G, Type I and/or Class G, type II as approved by the Engineer. The concrete and asphalt patch shall be in accordance with Sections 31, 33, and 40.

5. Concrete street:

After saw cutting as per specifications, the concrete pavement patch shall be installed in accordance with Section 40.3T. The pavement patch shall not be opened to traffic until the concrete has attained a compressive strength of 4000 psi. The concrete patch shall be in accordance with Section 40.

6. Asphalt blotter street:

The specifications for asphalt street shall apply, except the depth of the asphalt patch shall be the depth of the existing blotter, or three inches whichever is greater, or as approved by the Engineer.

7. Gravel resurfacing:

The gravel shall be placed to a thickness equal to the in-place gravel thickness or five inches, whichever is greater, or as approved by the Engineer. The gravel surface material and placement shall be in accordance with Section 20 and Section 117.

8. Seeding:

The area to be seeded shall be as specified on the plans and specifications and/or by the Engineer. The seeding shall be in accordance with Section 70.

9. Sodding:

The area to be sodded shall be as specified on the plans and specifications and/or by the Engineer. The sodding shall be in accordance with Section 73.

10. Engineering Geogrid/Fabric:

If Engineering fabric is encountered during excavation, the Contractor shall immediately notify the Engineer. Damaged fabric shall be repaired as shown on the appropriate standard detail or as directed by the Engineer. Final saw cuts shall be as specified above in 41.2.,B.1. Also see Section 202 Engineering Fabric.

11. Under-drains:

If subsurface or edge drains are encountered during excavation, the Contractor shall immediately notify the Engineer. Subsurface or edge drains shall be repaired as shown on the appropriate standard detail or as directed by the

Engineer. Final saw cuts shall be as specified above in 41.2.B.1. Also see section 64 Under-drains.

41.4 METHOD OF MEASUREMENT

A. Asphalt patch:

All asphalt patching shall be measured to the nearest tenth (0.1) ton of material placed.

B. Concrete patch:

All concrete patching shall be measured to the nearest whole square yard of patch surface.

C. Gravel surface:

All gravel replacement shall be in accordance with Section 20.

D. Seeding:

All seeding shall be measured to the nearest whole square yard of area seeded.

E. Sodding:

All sodding shall be measured to the nearest whole square yard of area sodded.

F. Engineering Fabric:

All engineering fabric shall be measured to the nearest whole square yard of surface covered, exclusive of overlap.

41.5 BASIS OF PAYMENT

All resurfacing shall be paid for in accordance with the respective section as indicated in the "Basis of Payment" in that section.

END OF SECTION

SECTION 90

TRAFFIC CONTROL

90.1 DESCRIPTION

A. General

This work consists of furnishing, installing and maintaining required traffic control devices.

B. Related Work

Section 91 Traffic Control Devices
Section 92 Traffic Signals and Roadway Lighting
Section 93 Pavement Marking and Permanent Signage

90.2 MATERIALS

High Intensity Reflective Sheeting Type III or higher will be required for use on all signs and other traffic control devices utilized for nighttime operations. Engineering Grade Medium-Intensity reflective sheeting will be allowed for daytime use only.

Metallic Barrels or Drums will not be allowed as traffic control devices.

Traffic control devices shall conform to the requirements of the Manual on Uniform Traffic Control Devices (MUTCD).

90.3 CONSTRUCTION REQUIREMENTS

A. General

The Contractor shall furnish, install, and maintain required pavement marking material, barricades, lighting devices, flags, channeling devices, signals, signs and delineators; provide a sufficient number of watchmen and flaggers, and take the necessary precautions for protection of the workers, work area, and the safety of the traveling public.

Standard for flaggers and flagging practices shall be as set forth in Part VI of the MUTCD. The Contractor shall provide each flagger with a copy of the "Traffic Flagging Handbook" booklet. These booklets are available from the South Dakota Department of Transportation (SDDOT).

All existing traffic control devices shall remain the property of the City. All signs/posts shall be removed by the Contractor, unless otherwise directed on the plan sheets or by the Engineer. All signs/posts removed shall be delivered to the City of Rapid City, Traffic Operations yard at 709 Steele Avenue. A receipt is to be provided by the Contractor to the project inspector for all signs delivered to the Traffic Operations yard. Any sign/post damaged by the Contractor due to removal or transport shall be replaced at the sole expense of the Contractor.

The Contractor shall change the location of traffic control devices to keep them current with construction requirements.

The Contractor designate a person in his employ who shall be responsible for the inspection, repair, reinstallation, removal, relocation, or other work needed to maintain necessary traffic controls. The Contractor shall provide for inspection of all traffic controls at least once every calendar day throughout the project time. The Contractor shall keep records of this work, including, at a minimum, inspector name, date and time of inspection, and notation of all items inspected or repaired.

Shadow vehicles shall be used for brooming operations unless otherwise directed. They shall be a four-wheel motor vehicle with a flashing amber light arrow board and shall have a "ROAD MACHINERY AHEAD" sign mounted in a prominent position, visible to approaching traffic. The broom shall be equipped with a flashing amber light.

Barricades, delineators, vertical panels, cones, drums, tubular markers, and temporary road markers used to separate opposing traffic shall be bi-directional.

Traffic control devices shall be promptly removed, covered, or turned to face away from the traffic when the need for such devices no longer exists. Portable signs, which are turned to face away from the roadway, shall be moved off the shoulder area as a safety precaution. Signs shall not be visible from another travel direction.

Warning lights, when required, shall be a minimum eight inches in diameter and operate during hours when the hazard or need for regulation exists.

Warning lights may be operated singly or in groups containing more than one unit. When more than one unit is used, they shall be horizontally aligned and flashed simultaneously or vertically aligned and flashed alternately.

When used in conjunction with signs, the light shall not be located within the face of the sign nor more than 12 inches above the top of the sign. When used with barriers and channelizing devices, the beacon shall be at least three feet and not more than six feet above the pavement.

B. Temporary Pavement Marking

Temporary Pavement Marking Tape Type 1 will generally be limited to temporary striping and temporary marking on pavement that will be removed or covered with an additional lift or for other uses that do not require removal of the tape. It may also be used and subsequently removed on tangent sections along normal lane line locations.

Temporary Pavement marking Tape Type 2 will be required for all striping, involving pavement that is the final driving surface.

Temporary road markers, when used, shall be either yellow or white, as specified on the plans.

Temporary or permanent centerline marking and, on multi-lane sections, temporary or permanent lane lines, shall be placed prior to opening to traffic newly paved or roto-milled surfaces, asphalt surface treatments, seal, prime, and tack coats. Marking of edge lines are not required.

Temporary marking shall be accomplished with Temporary Pavement Marking Tape of the type specified or with Temporary Road Markers.

Temporary markings shall be of the color specified on the plans or as directed by the Engineer.

Temporary Pavement Marking Tape shall be applied in accordance with the manufacturer's recommendations. Tape used for centerline marking shall be applied in four inch width, 12 inches long at intervals not to exceed 40 feet. Solid stripes specified on the plans shall consist of tape applied in four inch widths for the length shown. Solid stripes are required for all longitudinal lines for 150 feet in advance of any traffic signal.

Temporary Road Markers shall be applied in accordance with the manufacturer's recommendations. The markers shall be applied at intervals not to exceed 40 feet when used for a centerline marking. Markers used for a required solid strip shall be applied at intervals not to exceed eight feet. Temporary Road Markers shall not be placed more than 24 hours prior to covering the in-place markings on the surface, unless otherwise allowed by the Engineer. The protective covers shall not be removed until after all oil, within two feet of them, has been applied and rolling has been completed.

Temporary markings shall be maintained in good condition until the permanent striping is in place. Temporary markings, which the Engineer determines to be no longer applicable shall be completely removed and obliterated at no expense to the City.

The City will furnish "NO PAVEMENT MARKING" signs and mileage plates for installation by the Contractor at locations shown on the traffic control plan sheets.

These signs shall be installed when striping has been obliterated. These signs, when required, shall be used in conjunction with temporary markings. Required posts, hardware, and incidentals necessary for the installation of the signs shall be furnished by the Contractor and will become the property of the City upon completion of the project. These signs will be removed, by the City after permanent pavement markings are in place.

C. Removal of Pavement Markings

Traffic stripes and pavement markings not matching current traffic flows, or as designated by the Engineer, shall be completely removed and obliterated.

Pavement markings shall be removed to the fullest extent possible from the pavement by any method that does not damage the surface or texture of the pavement. Sand or other material deposited on the pavement because of removing markings shall be removed as work progresses. Accumulations of sand or other material, which might interfere with drainage or might constitute a hazard to traffic, will not be permitted. Pavement markings shall be removed before any change is made in the traffic pattern. Covering the markings is not acceptable removal.

Where blast cleaning is used for the removal of pavement markings or for removal of objectionable material, and such removal operation is being performed within 10 feet of a lane occupied by the traveling public, the residue, including dust, shall be removed immediately after contact between the sand and the surface being treated. Removal shall be by a vacuum attachment operating concurrently with the blast cleaning operation or by other methods approved by the Engineer.

Damage to the pavement or surfacing caused by pavement marking removal shall be repaired at the Contractor's expense by methods acceptable to the Engineer.

All construction traffic controls remaining on the site following project acceptance shall become the property of the City.

90.4 METHOD OF MEASUREMENT

Field measurement for the item "Traffic Control" will not be required.

90.5 BASIS OF PAYMENT

When an item for Traffic Control is included in the proposal, payment will be made at the lump sum contract price and shall be considered as full compensation for costs incidental thereto. Payment will be full compensation for installation, maintenance, relocation, and removal of the traffic control devices. Based on the lump sum contract price for Traffic Control, partial payments will be considered based on the following schedule:

Necessary signs furnished to site	50% of bid amount
20% of original contract amount earned	60% of bid amount
40% of original contract amount earned	70% of bid amount
60% of original contract amount earned	80% of bid amount
80% of original contract amount earned	90% of bid amount
90% of original contract amount earned	100% of bid amount

The cost of shadow vehicles, Type I and Type II barricades, cones, tubular markers, vertical panels, drums, lighting devices, flags, delineators, watchman, installation of "NO PAVEMENT MARKING" signs, and other items noted on the plans shall be included in the lump sum price bid for Traffic Control.

At locations shown on the plans to be paid for on a linear foot basis, payment for temporary markings will be made at the contract unit price per linear foot. At all other locations, the cost of temporary markings shall be included in the lump sum bid for Traffic Control. If a Traffic Control bid item is not provided, payment for these items will be absorbed in the other contract items.

The number of flagging hours will be paid for in accordance with the bid item "Flagging" as agreed to by the Engineer.

END OF SECTION

SECTION 91

TRAFFIC CONTROL DEVICES

91.1 DESCRIPTION

A. General

Signs, barricades, barrels, delineators, vertical panels and other traffic control devices, except signs or cones used only during daylight hours, shall be reflectorized with high intensity (Type III or higher) sheeting applied to a satisfactory backing. Signs, barricade, delineators and vertical panels shall be readable to the traveling public. The contractor shall certify that the sheeting meets the requirements of AASHTO M 268.

B. Related Work:

Section 90 Traffic Control
Section 92 Traffic Signals and Roadway Lighting
Section 93 Pavement Marking and Permanent Signage

91.2 FABRICATION

A. Background colors shall be as specified in Part VI of the MUTCD or as specified by the Engineer.

B. Legend

Message and borders shall be copy of the color specified in Part VI of the MUTCD. The non-removable copy may be Screened Processed or Direct Applied. Mounting holes will not be drilled or punched in any part of the non-removable copy.

1. Screened Process

Message borders shall be processed on reflective sheeting using mechanical equipment, materials and operational methods and procedures as prescribed by the manufacturer. Processing shall be accomplished by the direct or reverse screen method using opaque or transparent processing material. Screening may be accomplished either before or after application of the sheeting to the base panels. Free-hand painting will not be permitted on any part of the finished sign face.

2. Direct Applied

Cutout message and borders shall be reflective sheeting or opaque lettering film applied directly to clean, dust free, reflective sheeting background. Message and borders shall be, in accordance with the operational methods and procedures prescribed by the sheeting manufacturer. The finished letter, numerals, symbols and borders shall be cut with smooth regular outline, free from ragged or torn edges.

3. Removable copy will be allowed only if approved by the Engineer. Removable copy shall be of design so as not to become tilted or partially or wholly removed by wind, moisture, or other natural disturbances. Removable copy not bolted to the overall sign shall not be allowed during the hours of darkness.

91.3 TRAFFIC CONTROL DEVICE STANDARDS

All types of traffic control devices shall be maintained in satisfactory condition.

- A. Barricades shall conform to the requirements in Table I:

TABLE I

	BARRICADE CHARACTERISTICS		
	TYPE I (Single Rail)	TYPE II (Double Rail)	TYPE III (Triple Rail)
Width of Rail	8 in. min. - 12 in. max.	8 in. min. - 12 in. max.	8 in. min. -12 in. max.
Length of Rail	2 ft. min.	2 ft min	4 ft min
Width of Stripes*	6 in.	6 in.	6 in.
Height	3 ft. min.	3 ft. min.	3 ft. min.
No. of Reflectorized Rail Faces	2 (1 ea. direction)	4 (2 ea. direction)	3 (if facing traffic in 1 direction); OR 6 (if facing traffic in 2 directions)

*For rails less than 3 feet long, 4-inch wide stripes shall be used.

For wooden barricades, nominal lumber dimensions will be satisfactory.

Barricades may be fabricated from lumber, metal or other suitable material and shall be frangible when struck by a vehicle at 35 mph. Markings for barricade rails shall be alternate reflectorized white and orange. Stripes shall slope downward at an angle of 45 degrees from the vertical in the direction traffic is to pass.

Striping material shall be high intensity (Type III).

- B. Flashing Beacons (Flashing Electric Lights) shall be power- operated (excludes batteries) and shall follow the design specifications for standard traffic signals, which include the following.
1. Each signal unit lens shall have a visible diameter of not less than eight inches, pursuant to requirements of Part IV, MUTCD.
 2. The illuminating element, lens, reflector and visor shall render the beacon clearly visible to drivers it faces for a distance of at least 1/4 mile under normal atmospheric conditions unless obstructed.
 3. The color of the lens shall be red for a stop condition or yellow for a warning condition. The lens colors shall be in accordance with the requirements of the Institute of Traffic Engineers Standard for Adjustable Face Vehicle Traffic Control Signal Heads.

The flashing beacon shall be controlled by a device located in a separate housing unit located in a protected location. The flasher mechanism shall provide the continuous intermittent illumination of the lens or lenses of the beacon. Flashing contacts shall be equipped with filters for suppression of radio interference.

Beacons shall flash not less than 50, nor more than 60 times per minute. The illuminated period of each flash shall be not less than 1/2 and no more than 2/3 of the total cycle.

- C. Barricade Warning Lights shall be portable, lens directed, enclosed lights meeting the requirements of Table II. The lens of the unit shall not be less than seven inches in diameter and shall be amber in color. They may be used in either steady burn or flashing mode.

Barricade warning lights shall be in accordance with the requirements of "ITE Standard for Flashing and Steady-Burn Barricade Warning Lights" and MUTCD, and shall be certified by the manufacturer based on results of tests made by an independent testing laboratory.

TABLE II

	TYPE A (Low Intensity)	TYPE BI (High Intensity)	TYPE C (Steady Burn)
Lens Directional Faces	1 or 2	1	1 or 2
Flash Rate/min	55 to 75	55 to 75	Constant
Flash Duration*	10%	8%	Constant
Min. Effective Intensity**	4.0 Candela	35 Candela	
Min. Beam Candle Power**			2 Candles
Hours of Operation	Dusk to Dawn	24 hr/day	Dusk to Dawn

* Length of time that instantaneous intensity is equal to or greater than effective intensity.

** These values must be maintained within an elliptical pattern 9 degrees on each side of the vertical axis and 5 degrees above and below the horizontal axis.

Barricade warning lights shall flash (Type A or B) when mounted on a barricade or sign used to identify a hazard or hazardous condition. Signs or barricades used along a traveled way to identify a change in alignment shall have steady burn (Type C) warning lights.

D. Hazard Warning Lights, when mounted shall be as follows:

1. Barricades and portable standards
A minimum height of 36 inches from the bottom of the lens to the roadway.
2. Signs
The light shall be above the center of the sign and not be more than 24 inches above the top of the sign. The light or its housing shall not obstruct the face of the sign.
3. Vertical channelizing devices and independent supports
The light shall be a minimum height of 36 inches above the pavement.

E. Cones and Vertical Panels shall be in accordance with the following requirements:

1. Traffic cones and tubular markers of various configurations shall be a minimum of 18 inches in height for daytime use, with a broadened base and shall withstand impact without damage to themselves or to vehicles. Orange shall be the predominate color of these devices.

Traffic cones and tubular markers shall be a minimum of 28 inches in height when used on interstate highways or when used on any highway at night.

For nighttime use, cones shall be reflectorized or equipped with lighting devices for maximum visibility. Reflectorized material shall have a smooth, sealed outer surface, which will display the same color day and night.

Reflectorization of tubular markers shall be a minimum of two, 3-inch white bands placed a maximum of two inches from the top with a maximum of six inches between the bands. Reflectorization of cones shall be provided by a minimum 6-inch white band placed a maximum of three inches from the top and a 4-inch white band spaced a minimum two inches below the 6-inch band.

2. Vertical panels shall be 8 to 12 inches in width and a minimum of 24 inches in height. The stripes shall be alternating reflectorized white and orange slanting downward at 45° degrees from the vertical toward the side on which traffic is to pass. For panels less than three feet in height, 4-inch stripes shall be used.

Mounting shall be on a single, frangible or breakaway support assembly. The mounting and base support shall be constructed to minimize hazards to motorists.

The panel shall be mounted with the top a minimum of 36 inches above the roadway.

- F. Mounting posts for construction signs shall yield upon impact to minimize hazards to motorists and shall be of a height adequate to properly display the signs. Wood posts with a cross sectional area greater than 24 square inches shall be drilled to provide breakaway capability.

Portable frames for mounting traffic control signs may be used where sign mobility is required. The portable frames shall provide a minimum sign mounting height of 1 foot above the roadway and shall be frangible when struck by a vehicle at 35 mph.

- G. Pilot cars shall be four-wheel motor vehicles with appropriate signing.
- H. Temporary Pavement Marking Tape shall be provided on all roads open to traffic and shall be applied in accordance with the manufacturer's recommendations and meet the following requirements:
 1. Temporary Pavement Marking Tape - Type 1 shall consist of a retro-reflective film on a conformable backing, pre-coated with a pressure sensitive adhesive. The adhesive shall retain the tape on the pavement under project traffic and climatic conditions for required service life for the project. The film shall retain retro-reflective characteristics during the required service life.
 2. Temporary Pavement Marking Tape - Type 2 shall meet physical requirements of Temporary Pavement Marking Tape Type 1 and shall be removable without scarring

or damaging the roadway surface. The contractor shall provide assurance that the tape is removable as noted on product literature or through field-testing.

- I. Temporary Road Markers shall consist of a yellow or white plastic body providing a vertical area + 3 1/2 inches in width and + 2 inches in height with an adequate base for bonding to the pavement.

A strip of reflective tape 1/4-inch minimum width shall be bonded horizontally along the top of the vertical area.

The marker shall yield when contacted by a vehicle tire and return to a vertical position after the tire has passed over it.

The marker base shall be provided with an adhesive to securely bond the marker to the pavement. The adhesive shall be resistant to the effects of weather and capable of retaining the marker in position during the time it is required to function.

The plastic shall be polyurethane or other suitable plastic material.

The reflective tape shall be acrylic baked metalized polycarbonate micro prism retro-reflective material or equal. The tape shall have a minimum reflectance of 1,800 candlepower per foot-candle per square foot at 1/10 degree observation and 0-degree entrance angle.

91.4 METHOD OF MEASUREMENT

Field measurement for the item "Traffic Control Devices" will not be made.

91.5 BASIS OF PAYMENT

When an item for Traffic Control is included in the proposal, payment will be made at the lump sum contract price and shall be considered as full compensation for costs incidental thereto. Payment will be full compensation for installation, maintenance, relocation, and removal of the traffic control devices.

END OF SECTION