



**SPECIFICATIONS  
AND  
BID DOCUMENTS**

**PARKS &  
RECREATION  
DEPARTMENT**

**RYDER PARK  
PARKING LOT  
IMPROVEMENTS**

**PARKS DIVISION**

City Hall  
Box 1968  
Grand Island, NE 68802  
(308) 389-0290

**2023**

**RYDER PARK PARKING LOT IMPROVEMENTS  
PARKS & RECREATION DEPARTMENT**

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**CITY OF GRAND ISLAND, NEBRASKA**

**TABLE OF CONTENTS**

Bidders Check List

Advertisement for Bidders

Instructions to Bidders

Contractor's Bid Form

Form of Contract Agreement

Insurance Requirements

Form of Purchasing Agent Appointment

Form of Exempt Sale Certificate

Scope of Work/Special Provisions

General Specification – Division I

Portland Cement Concrete Pavement – Division II

Curb & Gutter, Sidewalks and Driveways – Division III

Storm and Sanitary Sewer – Division V

Drawings/Plans

**BIDDER'S CHECKLIST FOR**

**Ryder Park Parking Improvements  
Parks & Recreation Department**

**Bids must be received by the City Clerk before 2:00 p.m. (local time) on September 12, 2023.**

The following items must be completed for your bid to be considered.

- A signed original and one copy of the bid document. (Instruction to Bidders page 1 and the Contractors Bid pages 1, 2 and 3).
- A signed original of the bidders checklist.
- Acknowledgment of Addenda Number(s) \_\_\_\_\_.
- A certified check, cashiers check or bid bond in a **(separate envelope) attached to the outside of the envelope containing the bid.** Each envelope must be clearly marked indicating its contents. Failure to submit the necessary qualifying information in clearly marked and separate envelopes will result in your bid not being opened.

Signed by \_\_\_\_\_  
Bidder Only

**ADVERTISEMENT TO BIDDERS  
FOR  
RYDER PARK PARKING LOT IMPROVEMENTS  
PARKS & RECREATION DEPARTMENT  
FOR  
CITY OF GRAND ISLAND, NEBRASKA**

Sealed bids will be **received at the office of the City Clerk**, 100 E. First St., Grand Island, NE 68801 or P.O. Box 1968, Grand Island, Nebraska, 68802 until **2:00 PM (Local Time), September 12, 2023 for Ryder Park Parking Lot Improvements** FOB the City of Grand Island. Bids will be publicly opened at this time in the Conference Room #1 located on 1st floor of City Hall. Bids received after specified time will be returned unopened to sender.

Specifications, drawings, and forms for use in preparing bids may be obtained from the Parks & Recreation office, located in City Hall, 2nd floor, 100 East First Street, Grand Island, NE 68801, from 8:00 am - 5:00 pm; Monday through Friday. Bids shall be submitted on forms which will be furnished by the City.

The construction will be located in Ryder Park, 202 N. Custer Ave, Grand Island, Nebraska.

The project is for furnishing all labor, equipment and materials for the parking lot improvements in Ryder Park.

Bid documents, plans, and specifications for use in preparing bid may be downloaded from the Quest CDN website, [www.QuestCDN.com](http://www.QuestCDN.com) for a forty two dollar (\$42) fee. Bids must be uploaded to the Quest CDN website and received before the specified time to be considered.

Bids shall be submitted on forms which will be furnished by the City. Each bidder shall submit with their bid a certified check, a cashiers check or bid bond payable to the City Treasurer in an amount no less than five percent (5%) of the bid price which shall guarantee good faith on the part of the bidder and the entering into a contract within thirty (30) days, at the bid price, if accepted by the City. **Your certified check, cashiers check or bid bond must be submitted in a separate envelope attached to the outside of the envelope containing the bid. Each envelope must be clearly marked indicating its contents. Failure to submit the necessary qualifying information in clearly marked and separate envelopes will result in your bid not being opened or considered.** Bid bonds must be issued by surety companies authorized to do business in the State of Nebraska.

The successful bidder will be required to comply with fair labor standards as required by Nebraska R.R.S. 73-102 and comply with Nebraska R.R.S. 48-657 pertaining to contributions to the Unemployment Compensation Fund of the State of Nebraska.

The successful bidder will be required to provide:

- A. **A performance bond** satisfactory to the City, executed by a surety company authorized to do business in the State of Nebraska or otherwise secured in a manner satisfactory to the City, in an amount equal to 100% of the price specified in the contract.
- B. **A payment bond** satisfactory to the City, executed by a surety company authorized to do business in the State of Nebraska or otherwise secured in a manner satisfactory to the City, for the protection of all persons supplying labor and material to the contractor or its subcontractors for the performance of the work provided for in the contract. The bond shall be in an amount equal to 100% of the price specified in the contract.

The award-winning bidder will be required to comply with the City's insurance requirements.

Bids will be evaluated by the Purchaser based on price, quality, adherence to schedule, plan and specifications, economy and efficiency of operation, experience and reputation of bidder, ability, capacity, and skill of the bidder to perform contract required and adaptability of the particular items to the specific use intended.

The Purchaser reserves the right to reject any or all bids and to waive technicalities, and to accept whichever bid that may be in the best interest of the City, at its sole discretion. All bidders must agree that such rejection shall be without liability on the part of the Purchaser or their consultant for any penalty brought by any bidder because of such rejections, nor shall the bidders seek recourse of any kind against the Purchaser or their Consultant because of such rejections. The filing of any bid in response to this invitation shall constitute an agreement of the bidder of these conditions.

No bidder may withdraw their bid for a period of thirty (30) days after date of opening bids.

RaNae Edwards, City Clerk

**CITY OF GRAND ISLAND, NEBRASKA  
INSTRUCTIONS TO BIDDERS  
PARKS & RECREATION DEPARTMENT  
RYDER PARK PARKING LOT IMPROVEMENTS**

**EXCEPTIONS TO SPECIFICATIONS:** Each bidder shall carefully check all requirements herein set forth and shall offer items which fully comply with these requirements or shall plainly set forth all points, features, conditions, specifications, etc., wherein his/her items offered do not meet these specifications. Such exceptions as are made shall be listed by page number in the following blanks and shall be marked in ink on the pages of these specifications. If additional space is required for exception explanation, please reference and attach a letter to bid. Reference shall not be made to other attachments for exceptions and supplementary terms. Failure to outline such exceptions as specifically stated herein will require the successful bidder to comply with these specifications. In case of conflict between the bid and these specifications, these specifications shall govern unless specific exceptions are listed by the bidder.

Exceptions to specifications, pages \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**SUBMISSION OF BIDS:** All bids shall be submitted on the bid forms hereto attached, which shall remain with the complete Contract Documents as originally issued and **be addressed to the City Clerk** and plainly marked, **"BID FOR RYDER PARK PARKING LOT IMPROVEMENTS"**. **Please send one (1) original and one (1) copy of bid form.**

**INSURANCE COVERAGE:** The Contractor shall purchase and maintain at his/her expense as a minimum insurance coverage of such types and in such amounts as are specified herein to protect Contractor and the interest of Owner and others from claims which may arise out of or result from Contractor's operations under the Contract Documents, whether such operations be by Contractor or by any subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. Failure of Contractor to maintain proper insurance coverage shall not relieve him/her of any contractual responsibility or obligation.

**BASE BID:** The bidder is expected to base his/her bids on materials and items complying fully with these specifications, and in the event he/she names in his/her bid materials or items which do not conform, he/she will be responsible for furnishing materials and items which fully conform at no change in his/her bid price.

**ALTERNATE BIDS:** It is the desire of the Owner that the bidder base his/her bid price for this project on the written specifications. If an alternate bid or bids are submitted by a bidder, it is desired that he/she first submit a bid price as above described and then describe his/her alternate bid. Failure to do so may be reason for not extending any consideration to alternate bids.

**BIDDER QUALIFICATION:** Bids will be received only from qualified bidders. A bidder will be considered qualified if he/she is a recognized manufacturer or supplier of materials and items similar to that specified herein with complete factory facilities in the United States and has had experience in the design and manufacture of items of equal or greater size than that specified herein. If requested, the Bidder shall supply experience data. Such data will be used to assist in determining the qualifications of the Bidder. Bidder must comply with all applicable Federal, State and Local rules and regulations.

**PERFORMANCE BOND:** When required, on award of the Contract, the successful Contractor shall furnish a Performance Bond which shall be in an amount equal to the full Contract price, guaranteeing faithful compliance with all requirements of the Contract Documents and complete fulfillment of the Contract, and payment of all labor, material and other bills incurred in carrying out this Contract. According to Nebraska Law, the surety company executing the Performance Bond must be authorized to do business in the State of Nebraska.

**PAYMENT BOND:** When required, on award of the Contract, the successful Contractor shall furnish a Payment Bond which shall be in an amount equal to the full Contract price, guaranteeing protection of all persons supplying labor and materials to the Contractor or its subcontractors for the performance of the work provided for in the Contract. In accordance with Nebraska Law, the surety company executing the Payment Bond must be authorized to do business in the State of Nebraska.

**TAXES:** The City of Grand Island is exempt from paying local City and State Sales Tax. Refer to Exempt Sale Certificate enclosed for your information. Contractor must pay any other tax which might be applicable.

**REQUESTS FOR PAYMENT:** The City of Grand Island will make payments only after approval at regularly scheduled City Council meetings. These meetings typically occur the second and fourth Tuesday each month. Requests for payment must be received no less than eleven (11) working days prior to the designated meeting to allow for proper review and consideration. Payments will only be made after final completion of the project to City's satisfaction unless otherwise stated in bidding documents.

**REQUEST FOR INTERPRETATION:** If any person contemplating submitting a bid for this Contract is in doubt as to the true meaning of any part of the specifications or other proposed Contract documents, he/she may submit to the Purchasing Department a written request for an interpretation thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation of the proposed documents will be made by addendum only duly issued and/or delivered to each person receiving a set of such documents. The addenda upon closing shall become a part of the Contract. The Purchasing Department will not be responsible for any other explanation or interpretation of the proposed documents.

**TIME OF COMPLETION:** Time of completion is the essence of this Contract, and all work shall be completed no later than April 15, 2024.

**CANCELLATION CLAUSE:** The City of Grand Island, Nebraska operates on a fiscal year beginning October 1<sup>st</sup> and ending on the following September 30<sup>th</sup>. It is understood and agreed that any portion of this agreement which will be performed in a future fiscal year is contingent upon the City Council adopting budget statements and appropriations sufficient to fund such performance.

The City reserves the right to cancel the contract for the City's convenience. In that event, the contractor will be paid for goods and services actually performed and provided at the time of cancellation.

**CLEANING UP:** Contractor shall maintain a clean and safe work area while on site.

**ADDENDA:** Any addendum to the specifications issued during the time allowed for preparation of bids shall be covered in the bid and shall become a part of the specifications. One copy of each addendum issued before the date of the letting will be sent to all bidders. One signed copy is to be returned immediately to the Purchasing Department (or other department if so designated in the Addendum) as acknowledgement of receipt.

**GRATUITIES AND KICKBACKS:** City Code states that it is unethical for any person to offer, give, or agree to give any City employee or former City employee, or for any City employee or former City employee to solicit, demand, accept, or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, or preparation of any part of a program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy, or other particular matter, pertaining to any program requirement or a contract or subcontract, or to any solicitation or proposal therefor. It shall be unethical for any payment, gratuity, or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor or any person associated therewith, as an inducement for the award of a subcontract or order.

**MODIFICATION OF BIDS:** Bids may be modified or withdrawn by an appropriate document duly executed in the manner that a bid must be executed and delivered to the place where bids are to be submitted at any time prior to the final time set for receiving bids. Bidders may modify or withdraw bids by Fax communication at any time prior to the time set for receiving bids provided this instruction is positively identified. Any Fax modification should not reveal the amended bid price but should provide only the addition, subtraction or other modifications. A duly-executed document confirming the Fax modification shall be submitted within three days after bids are opened.

**BID DATA:** Bidders shall submit bid data, if required, on items offered in the Bid by filling in one set of data sheets supplied by the Purchasing Department. The bid sheets shall be filled out legibly in ink to permit reproduction.

**FINANCIAL STATEMENT:** The bidder shall furnish upon request a complete financial statement signed by the bidder, if an individual, by all partners if the bidder is a partnership and, by the President or Secretary, if the bidder is a corporation.

**EQUAL EMPLOYMENT OPPORTUNITY:** The Contractor agrees that during the performance of this Contract not to discriminate in hiring or any other employment practice on the basis of race, color, religion, sex, disability, age or national origin, and to comply with Executive Order 11,246 of September 24, 1965, and the rules, regulations and relevant orders of the Secretary of Labor, and Chapter 20 of the Reissue Revised Statutes of the State of Nebraska. Every public contractor and his, her or its subcontractors who are awarded a contract by the City for the physical performance of services within the State of Nebraska shall register with and use a federal immigration verification system to determine the work eligibility status of new employees physically performing services with the State of Nebraska.

**LOCAL CONDITIONS:** Each bidder shall have an authorized representative visit the site of the work and thoroughly inform himself/herself of all conditions and factors which would affect the work and the cost thereof, including the arrangement and conditions of existing or proposed structures affecting or affected by the proposed work; the procedure necessary for maintenance of uninterrupted operation; the availability and cost of labor and facilities for transportation, handling, and storage of materials and equipment.

It must be understood and agreed that all such factors have been investigated and considered in the preparation of every bid submitted. No claims for financial adjustment to any Contract awarded for the work under these Specifications and documents will be permitted by the City, which are based on lack of such prior information, or its effect on the cost of the work.

**CORRESPONDENCE:** Correspondence regarding drawings, instruction manuals, and other engineering data shall be clearly marked "FOR PARKS & RECREATION DEPARTMENT" and sent through:

Todd McCoy  
City of Grand Island  
Parks & Recreation Department  
P.O. Box 1968  
Grand Island, NE 68802-1968  
(308) 385-5444, Extension 290

**LOCAL BIDDER PREFERENCE:** In case of tied low bids, all other things being equal, preference shall be given in the following order:

1. To those bidders who manufacture their products within the limits of the City of Grand Island.
2. To those bidders who manufacture their products within the limits of the County of Hall.
3. To those bidders who package, process, or through some other substantial operation have employees and facilities for these purposes in the City of Grand Island.
4. To those bidders who package, process, or through some other substantial operation have employees and facilities for these purposes in the County of Hall.

5. To those bidders who maintain a bona fide business office in the City of Grand Island, whose products may be made outside the confines of the City of Grand Island.
6. To those bidders who maintain a bona fide business office in the County of Hall, whose products may be made outside the confines of the County of Hall.
7. To those bidders whose commodities are manufactured, mined, produced, or grown within the state of Nebraska, and to all firms, corporations, or individuals doing business as Nebraska firms, corporations or individuals, when quality is equal or better, and delivered price is the same or less than the other bids received.
8. To those bidders whose commodities are manufactured, mined, produced, or grown within the United States of America, and to all firms, corporations, or individuals doing business as firms registered in states other than Nebraska, when quality is equal or better, and delivered price is the same or less than the other bids received.

**RYDER PARK PARKING LOT IMPROVEMENTS  
PARKS & RECREATION DEPARTMENT  
CITY OF GRAND ISLAND, NEBRASKA**

**CONTRACTOR'S BID**

TO THE MEMBERS OF THE COUNCIL  
CITY OF GRAND ISLAND  
GRAND ISLAND, NEBRASKA

THE UNDERSIGNED BIDDER, having examined the plans, specifications, general and special conditions, and other proposed contract documents, and all addenda thereto and being acquainted with and fully understanding (a) the extent and character of the work covered by this Bid, (b) the location, arrangement, and specified requirements for the proposed work, (c) the location, character, and condition of existing streets, roads, highways, railroad, pavements, surfacing, walks, driveways, curbs, gutters, trees, sewers, utilities, drainage courses and structures, and other installations, both surface and underground which may affect or be affected by the proposed work, (d) the nature and extent of the excavations to be made and the handling and re-handling of excavated materials, (e) the location and extent of necessary or probable dewatering requirements, (f) the difficulties and hazards to the work which might be caused by storm and flood water, (g) local conditions relative to labor, transportation, hauling and rail delivery facilities, and (h) all other factors and conditions affecting or which may be affected by the work.

HEREBY PROPOSES to furnish all required materials, supplies, equipment, tools and plans, to perform all necessary labor and supervision, and to construct, install, erect, equip and complete all work stipulated in, required by and in accordance with the contract documents and the plans, specifications and other documents referred to therein (as altered, amended or modified by all addenda thereto) for and in consideration of the following prices:

ITEM NO.	DESCRIPTION	UNIT	QTY.	UNIT PRICE	TOTAL PRICE
1	MOBILIZATION	LS	1		
2	EARTHWORK	LS	1		
3	OVEREXCAVATION	CY	2200		
4	REMOVAL & REPLACEMENT OF UNSUITABLE MATERIAL	CY	200		
5	REMOVE CONCRETE PAVEMENT	SY	124		
6	REMOVE SIGN	EA	1		
7	REMOVE STORM PIPE	LF	109		
8	6" CONCRETE PAVEMENT W/CURB	SY	8722		
9	SUBGRADE PREP	SY	8722		
10	5" CONCRETE SIDEWALK	SF	3614		
11	DETECTABLE WARNING PLATE	SF	60		
12	8" CONCRETE SIDEWALK	SF	401		
13	15" STORM PIPE	LF	94		
14	8" STORM PIPE	LF	11		
15	CATCH BASIN	EA	1		
16	TAP EXISTING RC PIPE	EA	1		
17	TAP EXISTING MANHOLE	EA	1		
18	15" FLARE-END SECTION	EA	1		
19	12" X 10" TRENCH DRAIN	LF	6		
20	12" X 5.5" TRENCH DRAIN	LF	26		
21	DRAINAGE FLUME	EA	5		
22	ADJUST MANHOLE TO GRADE	EA	2		

23	4" CONDUIT	LF	194		
24	ADA SIGN	EA	6		
25	PARKING TIRE STOP	EA	9		
26	STRIPING	LS	1		
27	CONSTRUCTION ENTRANCE	EA	1		
28	LINEAL EROSION CONTROL	LF	70		
29	INLET EROSION PROTECTION	EA	2		
30	TYPE DS LUMINAIRE/POLE ASSEMBLY WITH CONCRETE BASE	EA	4		
31	TYPE S3 LUMINAIRE/POLE ASSEMBLY WITH CONCRETE BASE	EA	1		
32	TYPE P2 LUMINAIRE/POLE ASSEMBLY WITH CONCRETE BASE	EA	1		
33	#10 600V THWN STRANDED Cu.	LF	2175		
34	1" SCHED 40 PVC	LF	715		
35	1" RIGID STEEL CONDUIT	LF	10		
36	TRENCHING/COMPACTING	LF	715		
37	BREAKER. ELECTRICAL CONNECTION TO EXISTING PANEL	LS	1		
38	DOUBLE POLE LIGHT SWITCH	LS	1		

TOTAL BID \$ \_\_\_\_\_

ALTERNATE BID

ITEM NO.	DESCRIPTION	UNIT	QTY.	UNIT PRICE	TOTAL PRICE
1	5" CONCRETE PLAYGROUND SIDEWALK	SF	9552		
2	REMOVE CONCRETE PAVEMENT	SY	218		
3	SIDEALK EARTHWORK	LS	1		
4	SIDEWALK GRANULAR FOUNDATION COURSE	TON	150		

TOTAL ALTERNATE BID \$ \_\_\_\_\_

EXPERIENCE DATA:

All projects shall have been completed a minimum of three (3) years prior.

Each bidder shall supply the following data on his/her experience:

Name of Bidder: \_\_\_\_\_

Project Owner/Contact/Phone No. \_\_\_\_\_ Project Location \_\_\_\_\_ Completion Date \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Additional Data: \_\_\_\_\_

\_\_\_\_\_

ADDENDA:

Bidder acknowledges that Addenda Number(s) \_\_\_\_\_ were received and considered in Bid preparation.

The undersigned bidder agrees to furnish the required bonds and to enter into a contract immediately after acceptance of this Bid, and further agrees to complete all work covered by the foregoing bid in accordance with specified requirements. The proposed work will commence as soon as possible after the contract is fully executed, with a completion date no later than April 15, 2024. **No work shall commence until the certificate of insurance and bonds (when required) are approved by the City and the contract is executed.** It is understood and agreed that time is the essence of the contract.

In submitting this bid it is understood that the right is reserved by the City to reject any and all bids; to waive irregularities therein and to accept whichever bid that may be in the best interest of the City. It is understood that this bid may not be withdrawn until after thirty (30) days from bid opening.

In submitting this bid, the bidder states that bidder fully complies with, and will continue to comply with, applicable State fair labor standards as required by section 73-102 R.R.S., 1943 and also complies with, and will continue to comply with, section 48-657 R.R.S., 1943 pertaining to contributions to the Unemployment Compensation Fund of the State of Nebraska.

The undersigned bidder hereby certifies (a) that this bid is genuine and is not made in the interest of or in the behalf of any undisclosed person, firm or corporation, and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation, (b) that he/she has not directly or indirectly induced or solicited any person, firm or corporation to refrain from bidding, (c) that he/she has not sought, by collusion or otherwise, to obtain for himself/herself an advantage over any other bidder or over the City of Grand Island, and (d) that he/she has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid.

DATED \_\_\_\_\_

SIGNATURE OF BIDDER:

If an Individual: \_\_\_\_\_ doing business

as \_\_\_\_\_

If a Partnership: \_\_\_\_\_

by \_\_\_\_\_, member of firm.

If a Corporation: \_\_\_\_\_

by \_\_\_\_\_ (Seal)

Title \_\_\_\_\_

Business Address of Bidder \_\_\_\_\_

Telephone Number of Bidder \_\_\_\_\_ email address of Bidder \_\_\_\_\_

## CONTRACT AGREEMENT

THIS AGREEMENT made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, by and between \_\_\_\_\_ hereinafter called the Contractor, and the City of Grand Island, Nebraska, hereinafter called the City.

WITNESSETH:

THAT, WHEREAS, in accordance with law, the City has caused contract documents to be prepared and an advertisement calling for bids to be published, for **RYDER PARK PARKING LOT IMPROVEMENTS**; and

WHEREAS, the City, in the manner prescribed by law, has publicly opened, examined, and canvassed the bids submitted, and has determined the aforesaid Contractor to be the lowest responsive and responsible bidder, and has duly awarded to the said Contractor a contract therefore, for the sum or sums named in the Contractor's bid, a copy thereof being attached to and made a part of this contract;

NOW, THEREFORE, in consideration of the compensation to be paid to the Contractor and of the mutual agreements herein contained, the parties have agreed and hereby agree, the City for itself and its successors, and the Contractor for itself, himself, or themselves, and its, his, or their successors, as follows:

ARTICLE I. That the Contractor shall (a) furnish all tools, equipment, superintendence, transportation, and other construction materials, services and facilities; (b) furnish, as agent for the City, all materials, supplies and equipment specified and required to be incorporated in and form a permanent part of the completed work; (c) provide and perform all necessary labor; and (d) in a good substantial and workmanlike manner and in accordance with the requirements, stipulations, provisions, and conditions of the contract documents as listed in the attached General Specifications, said documents forming the contract and being as fully a part thereof as if repeated verbatim herein, perform, execute, construct and complete all work included in and covered by the City's official award of this contract to the said Contractor, such award being based on the acceptance by the City of the Contractor's bid;

ARTICLE II. That the City shall pay to the contractor for the performance of the work embraced in this contract and the contractor will accept as full compensation therefore the sum (subject to adjustment as provided by the contract) of \_\_\_\_\_ Dollars \$ \_\_\_\_\_ for all services, materials, and work covered by and included in the contract award and designated in the foregoing Article I; payments thereof to be made in cash or its equivalent in the manner provided in the General Specifications. The City of Grand Island, Nebraska operates on a fiscal year beginning October 1<sup>st</sup> and ending on the following September 30<sup>th</sup>. It is understood and agreed that any portion of this agreement which will be performed in a future fiscal year is contingent upon the City Council adopting budget statements and appropriations sufficient to fund such performance.

ARTICLE III. The contractor hereby agrees to act as agent for the City in purchasing materials and supplies for the City for this project. The City shall be obligated to the vendor of the materials and supplies for the purchase price, but the contractor shall handle all payments hereunder on behalf of the City. The vendor shall make demand or claim for payment of the purchase price from the City by submitting an invoice to the contractor. Title to all materials and supplies purchased hereunder shall vest in the City directly from the vendor. Regardless of the method of payment, title shall vest immediately in the City. The contractor shall not acquire title to any materials and supplies incorporated into the project. All invoices shall bear the contractor's name as agent for the City. This paragraph will apply only to these materials and supplies actually incorporated into and becoming a part of the finished product of the **RYDER PARK PARKING LOT IMPROVEMENTS**.

ARTICLE IV. That the contractor shall start work as soon as possible after the contract is signed and the required bonds and insurance are approved, and that the Contractor shall complete the work no later than April 15, 2024. It is understood and agreed that time is the essence of the contract.

CONTRACT AGREEMENT (Continued)

ARTICLE V. The Contractor agrees to comply with all applicable State fair labor standards in the execution of this contract as required by Section 73-102, R.R.S. 1943. The Contractor further agrees to comply with the provisions of Section 48-657, R.R.S. 1943, pertaining to contributions to the Unemployment Compensation Fund of the State of Nebraska. During the performance of this contract, the contractor and all subcontractors agree not to discriminate in hiring or any other employment practice on the basis of race, color, religion, sex, national origin, age or disability. The Contractor agrees to comply with all applicable Local, State and Federal rules and regulations. Every public contractor and his, her or its subcontractors who are awarded a contract by the City for the physical performance of services within the State of Nebraska shall register with and use a federal immigration verification system to determine the work eligibility status of new employees physically performing services within the state of Nebraska.

ARTICLE VI. City Code states that it is unethical for any person to offer, give or agree to give any City employee or former City employee, or for any City employee or former City employee to solicit, demand, accept, or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, or preparation of any part of a program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy, or other particular matter, pertaining to any program requirement or a contract or subcontract, or to any solicitation or proposal therefore. It shall be unethical for any payment, gratuity, or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor or any person associated therewith, as an inducement for the award of a subcontract or order.

IN WITNESS WHEREOF, the parties hereto have executed this Contract Agreement as of the date and year first above written.

Contractor \_\_\_\_\_

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

CITY OF GRAND ISLAND, NEBRASKA,

By \_\_\_\_\_

Date \_\_\_\_\_

Mayor

Attest: \_\_\_\_\_

City Clerk

The contract, bonds and insurance requirements are in due form according to law and are hereby approved.

\_\_\_\_\_  
Attorney for the City

Date \_\_\_\_\_

**MINIMUM INSURANCE REQUIREMENTS**  
**CITY OF GRAND ISLAND, NEBRASKA**

The successful bidder shall obtain insurance from companies authorized to do business in Nebraska of such types and in such amounts as may be necessary to protect the bidder and the interests of the City against hazards or risks of loss as hereinafter specified. This insurance shall cover all aspects of the Bidder's operations and completed operations. Failure to maintain adequate coverage shall not relieve bidder of any contractual responsibility or obligation. Minimum insurance coverage shall be the amounts stated herein or the amounts required by applicable law, whichever are greater.

**1. WORKERS COMPENSATION AND EMPLOYER'S LIABILITY**

This insurance shall protect the Bidder against all claims under applicable State workers compensation laws. This insurance shall provide coverage in every state in which work for this project might be conducted. The liability limits shall not be less than the following:

Workers Compensation	Statutory Limits
Employers Liability	\$100,000 each accident
	\$100,000 each employee
	\$500,000 policy limit

**2. BUSINESS AUTOMOBILE LIABILITY**

This insurance shall be written in comprehensive form and shall protect the Bidder, Bidder's employees, or subcontractors from claims due to the ownership, maintenance, or use of a motor vehicle. The liability limits shall not be less than the following:

Bodily Injury & Property Damage	\$500,000 Combined Single Limit
---------------------------------	---------------------------------

**3. COMPREHENSIVE GENERAL LIABILITY**

The comprehensive general liability coverage shall contain no exclusion relative to explosion, collapse, or underground property. The liability limits shall not be less than the following:

Bodily Injury & Property Damage	\$ 500,000 each occurrence
	\$1,000,000 aggregate

**4. UMBRELLA LIABILITY INSURANCE**

This insurance shall protect the Bidder against claims in excess of the limits provided under employer's liability, comprehensive automobile liability, and commercial general liability policies. The umbrella policy shall follow the form of the primary insurance, including the application of the primary limits. The liability limits shall not be less than the following:

Bodily Injury & Property Damage	\$1,000,000 each occurrence
	\$1,000,000 general aggregate

**5. ADDITIONAL REQUIREMENTS**

The City may require insurance covering a Bidder or subcontractor more or less than the standard requirements set forth herein depending upon the character and extent of the work to be performed by such Bidder or subcontractor.

Insurance as herein required shall be maintained in force until the City releases the Bidder of all obligations under the Contract.

The Bidder shall provide and carry any additional insurance as may be required by special provisions of these specifications.

**6. CERTIFICATE OF INSURANCE**

Satisfactory certificates of insurance shall be filed with the City prior to starting any work on this Contract. **The certificates shall show the City as an additional insured on all coverage except Workers Compensation. The certificate shall state that thirty (30) days written notice shall be given to the City before any policy is cancelled (strike the "endeavor to" wording often shown on certificate forms). If the bidder cannot have the "endeavor to" language stricken, the bidder may elect to provide a new certificate of insurance every 30 days during the contract. Bidder shall immediately notify the City if there is any reduction of coverage because of revised limits or claims paid which affect the aggregate of any policy.**

# Purchasing Agent Appointment and Delegation of Authority for Sales and Use Tax

**Section A – Purchasing Agent Appointment**

<b>Name and Address of Contractor</b>			<b>Name and Address of Exempt Governmental Unit or Exempt Organization</b>		
Name			Name		
Street or Other Mailing Address			Street or Other Mailing Address		
City	State	Zip Code	City	State	Zip Code
			City of Grand Island		
			PO Box 1968		
			Grand Island		
			NE		
			68802-1968		
<b>Name and Location of Project</b>			<b>Appointment Information</b>		
Name			Effective Date (See instructions)		
Street Address			Expiration Date		
City	State	Zip Code	Nebraska Exemption Number (Exempt Organizations Only)		
			21-0244767		

Provide the contract name, number, and a description of the project.

The undersigned governmental unit or exempt organization appoints the above-named contractor and the contractor's delegated subcontractors as its agent to purchase and pay for building materials that will be annexed to real estate by them into the tax exempt construction project identified above.

**sign here**

Authorized Signature of Exempt Governmental Unit or Exempt Organization \_\_\_\_\_ Assistant City Attorney \_\_\_\_\_ Date \_\_\_\_\_  
Title

**Section B — Delegation of Contractor's Authority  
 A contractor can delegate its authority to its subcontractor.**

<b>Name and Address of Subcontractor</b>			<b>Delegation Information for the Project Identified in Section A</b>		
Name			Effective Date		
Street or Other Mailing Address			Expiration Date		
City	State	Zip Code	Portion of Project		

The undersigned contractor hereby delegates authority to the above-named subcontractor to act as the purchasing agent of the named governmental unit or exempt nonprofit organization.

**sign here**

Signature of Contractor or Authorized Representative \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_

<b>Name and Address of Subcontractor</b>			<b>Delegation Information for the Project Identified in Section A</b>		
Name			Effective Date		
Street or Other Mailing Address			Expiration Date		
City	State	Zip Code	Portion of Project		

The undersigned contractor hereby delegates authority to the above-named subcontractor to act as the purchasing agent of the named governmental unit or exempt nonprofit organization.

**sign here**

Signature of Subcontractor or Authorized Representative \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_

<b>Name and Address of Subcontractor</b>			<b>Delegation Information for the Project Identified in Section A</b>		
Name			Effective Date		
Street or Other Mailing Address			Expiration Date		
City	State	Zip Code	Portion of Project		

The undersigned contractor hereby delegates authority to the above-named subcontractor to act as the purchasing agent of the named governmental unit or exempt nonprofit organization.

**sign here**

Signature of Subcontractor or Authorized Representative \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_

# Nebraska Resale or Exempt Sale Certificate for Sales Tax Exemption

**FORM  
13**

Name and Mailing Address of Purchaser			Name and Mailing Address of Seller		
Name <b>City of Grand Island</b>			Name		
Legal Name					
Street or Other Mailing Address <b>PO BOX 1968</b>			Street or Other Mailing Address		
City <b>GRAND ISLAND</b>	State <b>NE</b>	Zip Code <b>68802-1968</b>	City	State	Zip Code

**Check Type of Certificate**

- Single Purchase    If single purchase is checked, enter the related invoice or purchase order number \_\_\_\_\_.
- Blanket            If blanket is checked, this certificate is valid until revoked in writing by the purchaser.

I hereby certify that the purchase, lease, or rental by the above purchaser is exempt from the Nebraska sales tax for the following reason:

- Check One**     Purchase for Resale (Complete Section A.)     Exempt Purchase (Complete Section B.)     Contractor (Complete Section C.)

**Section A—Nebraska Resale Certificate**

Description of Property or Service Purchased

I hereby certify that the purchase, lease, or rental of \_\_\_\_\_ from the seller listed above is exempt from the Nebraska sales tax as a purchase for resale, rental, or lease in the normal course of our business. The property or service will be resold either in the form or condition in which it was purchased, or as an ingredient or component part of other property or service to be resold.

I further certify that we are engaged in business as a:     Wholesaler     Retailer     Manufacturer     Lessor

Description of Product Sold, Leased, or Rented

of \_\_\_\_\_

My Nebraska Sales Tax ID Number is 01-\_\_\_\_\_.

If none, state the reason \_\_\_\_\_.

or Foreign State Sales Tax Number \_\_\_\_\_ State \_\_\_\_\_.

**Section B—Nebraska Exempt Sale Certificate**

The basis for this exemption is exemption category 1 (See the list of Exemption Categories and corresponding numbers on reverse side).

If exemption category 2 or 5 is claimed, enter the following information:

Description of Property or Service Purchased	Intended Use of Property or Service Purchased
--	---

If exemption category 3 or 4 is claimed, enter your Nebraska Certificate of Exemption State ID number. 05-\_\_\_\_\_ Do not enter your Federal Employer ID Number.

If exemption category 6 is claimed, the seller must enter the following information and sign this form below:

Description of Items Sold	Date of Seller's Original Purchase	Was tax paid when purchased by seller? <input type="checkbox"/> Yes <input type="checkbox"/> No	Was item depreciable? <input type="checkbox"/> Yes <input type="checkbox"/> No
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**Section C—For Contractors Only**

**1. Purchase of building materials or fixtures.**

As an Option 1 or Option 3 contractor, I hereby certify that the purchase of building materials and fixtures from the seller listed above are exempt from Nebraska sales tax. My Nebraska Sales or Use Tax ID Number is: \_\_\_\_\_.

**2. Purchases made by an Option 2 contractor under a Purchasing Agent Appointment on behalf of \_\_\_\_\_ (exempt entity)**

As an Option 2 contractor, I hereby certify that the purchase of building materials and fixtures from the seller listed above is exempt from Nebraska sales tax pursuant to the attached Purchasing Agent Appointment and Delegation of Authority for Sales and Use Tax, Form 17.

Any purchaser, agent, or other person who completes this certificate for any purchase which is not for resale, lease, or rental in the regular course of the purchaser's business, or is not otherwise exempted from sales and use taxes is subject to a penalty of \$100 or ten times the tax, whichever amount is larger, for each instance of presentation and misuse. With regard to a blanket certificate, this penalty applies to each purchase made during the period the blanket certificate is in effect. Under penalties of law, I declare that I am authorized to sign this certificate, and to the best of my knowledge and belief, it is correct and complete.

**sign  
here** →

Authorized Signature \_\_\_\_\_

**Stacy R. Nonhof**

Authorized Signature Name (please print)

Assistant City Attorney

Title

Date

**Do not send this certificate to the Nebraska Department of Revenue. Keep it as part of your records.  
Sellers cannot accept incomplete certificates.**

**The Department is committed to the fair administration of the Nebraska tax laws. It is unlawful to claim an exemption for purchases of property or services that are subject to tax. Sellers are encouraged to notify the Department of any unlawful use of this form.  
revenue.nebraska.gov, 800-742-7474 (NE and IA), 402-471-5729**

# RYDER PARK PARKING LOT IMPROVEMENTS

Contact Person: Todd McCoy, Parks & Recreation Director  
PO Box 1968  
Grand Island, NE 68802  
308-389-0290

## SCOPE OF WORK

### SCOPE

The project is for furnishing all labor, equipment and materials for Ryder Park Parking Lot Improvements. Ryder Park is located at 202 N Custer Avenue, Grand Island, Nebraska.

The work is intended to be prosecuted in an orderly manner, such that the project is completed as early as possible.

It is expected that the project will not proceed until all permits by the permitting agencies have been issued. Contractor shall obtain and pay the cost of all required permits and fees.

City will notify the CONTRACTOR when the project can begin.

The contractor shall complete the work no later than April 15, 2024.

## GENERAL REQUIREMENTS & PARKING IMPROVEMENT SPECIALS

### *Table of Contents*

	<u>Page No.</u>
SP 100. GENERAL REQUIREMENTS .....	2
SP 200. SURFACING SPECIALS.....	10
SP 300. STORM SEWER AND UTILITY SPECIALS.....	11
SP 400. GRADING AND REMOVALS SPECIALS.....	12
SP 500. MEASUREMENT AND PAYMENT.....	15

## **SP 100. GENERAL REQUIREMENTS**

### **SP 101. SPECIFICATIONS AND STANDARD PLAN DRAWINGS**

The work as detailed on the plans shall be completed in accordance with the requirements of the City of Grand Island Standard Specifications as supplemented by the Nebraska Department of Transportation 2017 English Edition of the Standard Specifications for Highway Construction. The City of Grand Island Standard Specifications, the Nebraska Department of Transportation 2017 English Edition of the Standard Specifications for Highway Construction, including all amendments and additions thereto effective at the date of the contract, the Special Provisions and plans shall be considered a part of this Contract, whether or not attached into these specifications, and it shall be the Contractor's responsibility to comply with all requirements thereof. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete project.

In case of a discrepancy:

1. The City of Grand Island Standard Specifications shall govern over the Nebraska Department of Transportation 2017 English Edition of the Standard Specifications for Highway Construction.
2. Special Provisions shall govern over the City of Grand Island Standard Specifications.
3. The plans shall govern over the Special Provisions.

The Contractor shall not take advantage of any apparent error or omission in the plans or specifications. Upon discovery of such an error or omission, the Contractor shall notify the Engineer immediately. The Engineer will then make such corrections or interpretations as necessary to fulfill the intent of the plans and specifications.

Any reference to the NDOT (Nebraska Department of Transportation) in the Standard Specifications or Special Provisions shall be considered reference to the City of Grand Island, its employees, or representatives hired by the City of Grand Island as a consultant for construction project management.

### **SP 102. PAYMENT & PERFORMANCE BOND**

Payment and performance bond shall be required for the contractual work.

### **SP 103. EXEMPT SALES CERTIFICATE**

Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work. It is the responsibility of the Contractor to understand the tax laws and pay taxes in accordance with these laws.

The Contractor performing work under this contract will be issued a Purchasing Agent Appointment and Exempt Sales Certificate signed by the authorized

representative of the City. This is to be used by the Contractor when purchasing tangible property to be actually incorporated into the contract work. It does not apply to either (1) the purchase of materials to be used but not incorporated into the contract work, including but not limited to form lumber, scaffolding, etc., or (2) the purchase or rental of machinery, equipment or tools owned or leased by the Contractor and used in performing the contract work. The Contractor may reproduce copies of the Purchasing Agent Appointment and Exempt Sales Certificate to furnish their suppliers on each invoice or order.

#### **SP 104. SUBMITTALS**

Complete shop drawings are required for all materials proposed to be incorporated in the work. The Contractor shall submit two hard copies, or one digital PDF copy, to the Engineer for approval. Drawings and listings shall be submitted immediately after the contract is executed. No equipment or materials shall be incorporated into the work until reviewed by the Engineer.

Per [City of Grand Island standard specifications section 5.02](#), the Contractor shall hereby have the option to submit 11"x17" PDF shop plans upon request and approval by the Engineer.

Shop drawings shall be clear and distinct and acceptable to the Engineer.

Each submittal shall be accompanied by a letter of transmittal and shall further reference the applicable section(s) of the specifications and plans in which the submittal corresponds to.

Neither review nor acceptance of submittals by the Engineer shall relieve the Contractor from responsibility for errors, omissions, or deviations from the Contract Documents, unless such deviations were specifically called to the attention of the Engineer in the letter of transmittal. The Contractor shall be responsible for the correctness of the submittal. The Contractor shall allow a minimum of fourteen (14) working days for review of submittals unless otherwise specified. The Engineer will provide a PDF copy of the reviewed shop drawings/submittals with comments to the Contractor. Hard copies of the reviewed shop drawings/submittals will only be provided upon request by the Contractor.

Contractor shall keep a master copy set of all reviewed shop drawings on the project site at all times for review/use by Contractor employees, City employees, Subcontractor employees, and the Engineer. The master copy set shall be kept in a location that is easily accessible by all parties at all times (typically the 'job trailer').

#### **SP 105. SANITATION**

The Contractor shall provide and maintain enclosed toilets for the use of employees and public engaged in the Work Area. These accommodations shall be maintained in a neat and sanitary condition. They shall also comply with all applicable laws, ordinances, and regulations pertaining to public health and sanitation of dwellings and camps.

Wastewater shall not be interrupted. Should the Contractor disrupt existing sewer facilities, sewage shall be conveyed in closed conduits and disposed of in a sanitary sewer system. Sewage shall not be permitted to flow in trenches or be covered by backfill.

#### **SP 106. TEMPORARY LIGHT, POWER, AND WATER**

The Contractor shall furnish, install, maintain, and remove all temporary light, power, and water at its own expense. These include piping, wiring, lamps, and other equipment necessary for the Work. The Contractor shall not draw water from any fire hydrant, without obtaining written authorization, payment of fees, and backflow connection devices from the water agency concerned.

For any work required to be completed at night, the Contractor shall provide supplemental construction lighting when the existing surrounding area lights do not provide acceptable illumination. The lighting shall be as required to provide a safe environment for all personnel on site, but as to not interfere with surrounding homes and businesses. The construction areas lighting shall illuminate construction work areas, haul routes, staging areas as required. The lighting shall conform to OSHA (Occupational Safety & Health Administration) standards, 29 CFR, Part 1926, Safety and Health Regulations, including the minimum illumination intensities as outlined in Sub-Part 1926.56, Table D-3. The Owner reserves the right to limit or restrict the height/location of all temporary construction lighting.

#### **SP 107. PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS**

Contractor shall be responsible for the protection of public and private property adjacent to the Work and shall exercise due caution to avoid damage to such property. All property and structures shall be protected unless their removal is shown on the Contract drawings or authorized by the City.

The Contractor shall repair or replace all existing improvements within the right-of-way which are designated or not designated for removal (e.g., curbs, sidewalks, driveways, fences, walls, signs, utility installations, pavement, structures, etc.) which are damaged or removed as a result of its operations. When a portion of a sprinkler system within the right-of-way must be removed, the heads shall be salvaged to the owner and the remaining lines shall be capped such that the system can still be used.

Trees, lawns, and shrubbery that are not to be removed shall be protected from damage or injury. If damaged or removed due to Contractor's operations, they shall be restored or replaced in as nearly the original condition and location as is reasonably possible.

All costs to the Contractor for protecting, removing, and restoring existing improvements shall be included in the Bid.

#### **SP 108. PUBLIC CONVENIENCE AND SAFETY**

Public relations are a very important part of this type of work. The Contractor and its employees need to recognize the necessity to be courteous to the public and especially to landowners on whose property or near whose property they are working.

The Contractor's operations shall cause no unnecessary inconvenience. The access rights of the public shall be considered at all times. Unless otherwise authorized, traffic shall be permitted to access each property in some way, or an approved detour shall be provided. The contractor is responsible for coordinating with the City, residents, and businesses within the project area to provide temporary access as needed.

Safe and adequate pedestrian and vehicular access shall be provided and maintained to fire hydrants, sanitation services, mail distribution, commercial and industrial establishments, and circulations of similar nature. Access to these facilities shall be continuous and unobstructed unless otherwise approved by the Engineer.

The Contractor shall include in its Bid all costs for the above requirements.

#### **SP 109. SCHEDULE AND PHASING**

The Contractor shall develop a construction schedule and phasing plan in accordance with the plans and these shall be submitted to the Engineer for approval prior to starting work on the project. The Contractor's schedule shall outline the anticipated start and completion dates for the various tasks required to substantially complete the various segments of the project as well as the proposed final completion date for the project. The schedule shall breakdown the work to outline all major construction activities including grading, paving, storm sewer work, and final grading. The Contractor's schedule shall be developed with consideration given to minimizing disruption to adjacent property owners and businesses.

#### **SP 110. CONSTRUCTION FENCING AND BARRICADES**

The Contractor shall secure the work area from the rest of the park with a construction and place barricades as needed. All costs involved shall be considered subsidiary for applicable bids items.

#### **SP 111. NPDES/SWPPP & BEST MANAGEMENT PRACTICES**

This project will require the Contractor to ensure compliance with all aspects of the National Pollutant Discharge Elimination System (NPDES) General NPDES Permit Number NER110000 for Storm Water Discharges from Construction Sites to Waters of the State of Nebraska and the City's Code Chapter 40 Storm Water Management. The Contractor shall exercise every reasonable precaution to protect channels, storm drains, and bodies of water from pollution. It shall conduct and schedule operations so as to minimize or avoid muddying and silting of said channels, drains, and waters. Water pollution control work shall consist of

constructing those facilities which may be required to provide prevention, control, and abatement of water pollution.

A construction site storm water permit Notice of Intent for this project will be prepared by the Owner and Engineer. The Owner and Contractor shall be listed as permittees and shall be required to sign the Notice of Intent. The Permit is issued under the General Permit of the National Pollutant Discharge Elimination System for Storm Water Discharges.

The Owner and Engineer shall develop a Storm Water Pollution Prevention Plan (SWPPP) and the Contractor shall implement the SWPPP to: minimize erosion on disturbed areas; minimize the discharge of sediment and other pollutants in storm water runoff; and maintain compliance with the requirements of NPDES Permit. The Contractor shall familiarize himself with the requirements of NPDES Permit, monitoring requirements and procedures, and periodic reporting and record keeping requirements respectively. The word "permittee" shall be replaced with "Contractor" in the above referenced sections of NPDES Permit. Physical erosion and sediment control structures used at the site shall be sufficient to comply with the requirements of the permit.

The Contractor will install and maintain Best Management Practices (BMPs) to include silt fence, construction rock entrances or silt checks if needed. Any delay in the replacement or maintenance of nonfunctional BMPs beyond seven (7) calendar days shall be documented in the SWPPP with sufficient detail as to explain the reason for the delay. (See City of Grand Island's SWPPP Review Checklist). The Contractor shall be responsible for ensuring that final stabilization is accomplished on all non-impervious surfaces of the authorized construction site prior to submitting form CSW-NOT. A uniform perennial vegetative cover with a minimum density of 70 percent of the native background vegetative cover is required for final stabilization.

The City may perform periodic drive-by inspections and provide the Contractor any findings, but the contractor will be responsible for the routine/rain fall event inspections.

## **SP 112. UTILITY MANAGEMENT**

Existing underground installations (such as water mains, gas mains, sewers, telephone lines, power lines, and buried structures) in the vicinity of the work are to be verified by the Contractor. The Contractor shall be solely responsible for locating all existing underground installations which includes any additional potholing to verify depths. The Contractor shall use their own information and shall not solely rely upon any information indicated on the drawings concerning existing underground installations.

The Contractor shall proceed with caution in the excavation and preparation of the trench so that the exact location of all such utilities, both known and unknown may be determined, and the Contractor shall be held responsible for the repair of such utilities when broken or otherwise damaged. All such utilities shall be accurately

located, including hand excavating by the Contractor as required, as incidental to the Contract and performed prior to machine excavation in the vicinity.

Any delay, additional work, or extra cost to the Contractor caused by existing installations shall not constitute a claim for extra work, additional payment or damages.

#### **SP 113. POWER LINES**

There are existing energized high-voltage electric power lines in the work area for this Contract. The Contractor shall use extreme caution such that personal safety is not jeopardized, and electric continuity is maintained. Due to soil conditions and proximity, all poles and underground cables shall be supported during excavation, properly backfilled and compacted to protect from damage.

The Contractor shall be required to notify the appropriate authority having jurisdiction and ownership, a minimum of seven (7) days prior to any work being performed adjacent or underneath the power line.

#### **SP 114. SOIL TESTING**

The Contractor will be responsible for the coordination of construction testing required by the Grand Island specifications and these special provisions. The City has hired Olsson to do soil testing and the Contractor shall work with Olsson to make them aware of timeline. The Contractor shall be responsible for scheduling of all services required.

Summary of Required Testing:

1. Soil Moisture-Density Relationship Curves (One for Each Soil Type Used)
2. Subgrade Moisture & Density Nuclear Gauge Tests
3. Subgrade Proof-Rolling Observation (Proof-Roll by Contractor)

The testing agency shall provide subgrade density tests reports for approval by Engineer prior to any concrete being placed. The Engineer shall be notified and allowed to witness proof rolling of subgrade and location of stringline prior to placement of concrete.

#### **SP 115. CONCRETE TESTING**

The City shall hire an engineering laboratory(olsson) to sample, test, inspect, and document the delivery and placement of all cementitious materials.

All sampling procedures for concrete and related materials shall be performed in accordance with current ASTM standard test methods, unless otherwise approved by the Engineer. Laboratory testing, field sampling and testing, and inspection or observations, shall be performed by ACI, NICET, or ICC certified personnel only, unless otherwise approved by the Engineering Department.

Testing agency shall submit reports in accordance with work assigned, for conformance with City of Grand Island plans, specifications, Additionally conduct

and interpret tests and inspections and state in each report whether; (1) test specimens and observations comply with Contract Documents, and specifically state any deviations, (2) record work required and performed, (3) record types and locations of defects found in work, (4) Bring non-conforming items to the immediate attention of the Contractor, and if uncorrected to the Engineer, (5) Submit test and/or inspection reports to the Engineer, the Contractor and other designated persons.

Delivery Tickets must have the following information at the time of delivery; Plant or manufacture name and location, Project name, and location of delivery, Material batched: Mix # (Product code), including all additives, Date and Time batched, Time of arrival at site, Weight or cubic yards of material batched into truck, Truck number or license, Driver name, Gallons of water added after leaving the batch plant, including on-site, Signature by the Contractor's representative acknowledging receipt of the product, A copy of the delivery ticket shall be given to the Engineer or their representative at the time of delivery.

The testing frequency shall at minimum establish; four (4) test cylinders per day and every two hundred (200) cubic yards of cementitious materials placement.

#### **SP 116. SURVEYING**

The City's surveying agency (Olsson) will perform and be responsible for the accuracy of surveying adequate for construction. The agency shall provide field surveying and staking services for all utility, storm sewer drainage and pavement locations as identified in plan drawings. Contractor shall provide a minimum of two (2) days' notice to surveying agency prior to need of stakes to allow for scheduling. Agency shall notify Owner/Engineer of a staking section to provide for Owner/Engineer review and compliance check.

Surveying agency shall provide stakes, lath, sledges, hand tools, transportation, and such other supplies, assistance, and equipment as required in staking out the work. Each staking location shall be clearly marked.

The Contractor shall preserve construction survey stakes and marks for the duration of their usefulness. Stakes, once installed, shall become the responsibility of the Contractor. Replacement, because of loss or damage, shall be done at the expense of the Contractor.

The Contractor shall dig all holes necessary for line and grade stakes. Unless otherwise specified, stakes will be set and stationed for pavement, curbs, headers, sewers, storm drains, structures, and rough grade. A corresponding cut or fill to finished grade (or flowline) will be indicated on a grade stake. All work shall conform to the lines, elevations, and grades shown on the Plans. Grades for underground conduits will be set at the surface of the ground.

**SP 110. INSPECTION**

The Work is subject to inspection and approval by the Engineer or Engineer's representative. The Contractor shall notify the Engineer before noon of the working day before inspection is required. Work inspection shall be done only in the presence of the Engineer, unless otherwise authorized. Any work done without proper inspection will be subject to rejection. The Engineer and any authorized representatives shall at all times have access to the work during its construction at shops and yards as well as the project site. The Contractor shall provide every reasonable facility for ascertaining that the materials and workmanship are in accordance with these specifications. Inspection of the work shall not relieve the Contractor of the obligation to fulfill all conditions of the Contract.

## **SP 200. SURFACING SPECIALS**

### **SP 201. CONCRETE MIX**

Concrete parking lot shall be NDOT 47B-3500 and sidewalk concrete shall be NDOT BX-3500 or 47B-3500 utilizing NDOT approved Type IP or IS cement, with a maximum water/cement ratio, air content range, minimum cementitious materials and total aggregates per Table 1002.02 as documented within the current NDOT 2017 Edition of Nebraska Dept. of Transportation Standard Specifications for Highway Construction.

All materials contained in the concrete mix design shall be from NDOT approved product list and shall conform to material requirements (including aggregates) as specified in the NDOT specifications.

### **SP 202. SUBGRADE PREPARATION**

The subgrade shall be prepared according to the recommendation within the Report of Geotechnical Exploration for this project located in the appendix. To prepare the subgrade, the top 6-12 inches (as indicated in the typical sections) of the subgrade should be scarified and re-compacted to a minimum of 98 percent of the maximum dry density as determined by ASTM D698, Standard Proctor. The moisture content shall be between -1 and +3 percent of optimum content as determined by ASTM D698 Standard Proctor.

### **SP 203. DOWEL AND TIE BARS**

Dowel bars shall be plain **epoxy coated** steel bars conforming to ASTM A615 or ASTM A996 and shall be free from burring or other deformation restricting slippage in the concrete. Before delivery to the construction site each dowel bar shall be epoxy coated per ASTM A775. The dowels shall be coated with a bond-breaker recommended by the manufacturer. Grout retention rings shall be fully circular metal or plastic devices capable of supporting the dowel until the epoxy hardens. Dowel sleeves or inserts are not permitted.

Tie bars shall be deformed **epoxy coated** steel bars and conform to the requirements of ASTM A615 or ASTM A996, except that rail steel bars, Grade 60, shall not be used for tie bars that are to be bent or re-straightened during construction. Tie bars designated as Grade 40 in ASTM A615 can be used for construction requiring bent bars.

### **SP 204. SIDEWALK RAMPS**

Sidewalk ramps, as indicated within the construction plan details, are not specifically called out as a separate item of measurement and payment within the construction drawings. 47B-3500 concrete, thickened concrete to match adjacent roadway and/or driveway depths and expansion joint material shall be considered incidental to the measurement and payment of sidewalk construction.

### **SP 205. PARKING TIRE STOP**

Parking tire stops shall be fabricated reflective rubber 4" curb, a minimum of 6' long, and installed securely on the pavement with lag bolts per manufacture specifications. It shall be Superior Manufacturing Park It Rubber Parking Curb or approved equivalent.

## **SP 300. STORM SEWER AND UTILITY SPECIALS**

### **SP 301. PRECAST STORM SEWER MANHOLE, CURB AND AREA INLET**

Precast structures are acceptable.

### **SP 302. Catch Basin**

NDS Catch basin shall be installed according to the detail in the plans and manufacture specifications. Any pipe adaptors shall be considered subsidiary. Equivalent catch / drain basins will be acceptable upon approval of the engineer.

A detailed shop drawing shall be submitted for the structures for review prior to production. Contractor will still be responsible for constructability and verification of the dimensions of the shop drawings. No additional payment will be allowed for field adjustments of the structures, this shall include adjustments required for accommodation of existing utilities or any other existing condition or paving operations.

### **SP 303. MOISTURE AND DENSITY REQUIREMENTS – TRENCHES**

Each layer of embankment and backfill material shall be compacted to 98%. Water required shall be sufficient to obtain optimum moisture content shall be in the range of minus 1% to plus 3%. Cost of Contractor's compaction, rolling, and watering is incidental to the work.

### **SP 304. TV INSPECTION**

The TV inspection will be completed after thirty (30) days has elapsed of sewer line construction completion, and discontinuance of dewatering. Final payment for sewer line construction will not be made until after completion of TV inspection and repair of any defects found.

Television inspection for the various gravity sewers will be performed by the City Wastewater Division. The City's Wastewater Division shall perform the 1<sup>st</sup> television inspection free of charge. If any additional television inspections are required due to construction issues with the sewer line the City will bill the Contractor for such services based on the current fee schedule for Television inspections. The 2020 fee schedule for Television Inspection is \$1.50 per linear foot with a minimum billable fee of \$150.00. Re-inspections and Contractor special requests shall be billed accordingly.

The sanitary/storm sewer Contractor is responsible for cleaning of all sewer lines prior to testing. No soil or debris shall be allowed to be flushed downstream. No additional payment shall be made to the contractor for this testing and these costs shall be considered subsidiary to applicable pipe installation bid items.

## **SP 400. GRADING, AND REMOVAL SPECIALS**

### **SP 401. REMOVE AND REPLACE EXISTING**

Where it is necessary in the construction of this improvement to remove or disturb existing structures, landscaping, borders, fences, or other improvements, said structures, fences, or other improvements shall be stored, and restored promptly and to as good a condition as that existing prior to being disturbed. All trees, shrubs, gardens, lawns, drives and other such surface objects shall be protected and preserved as much as possible and where disturbed shall be replaced or repaired and left in as good condition as before the work was started. The Contractor shall not request additional compensation for such work.

### **SP 402. CLEARING AND GRUBBING**

Clearing and grubbing of stumps, shrubs, trees (all sizes), and grasses shall be considered subsidiary to Earthwork item. This work shall include, but not be limited to, the removal and disposal all stumps, shrubs, trees, and weeds within the limits of construction necessary for roadway construction.

### **SP 403. STRIPPING/SPREADING OF TOPSOIL**

Topsoil shall be salvaged from areas requiring excavations where current vegetation exists (everywhere not paved) and it shall be stockpiled and replaced after construction. Topsoil shall consist of friable surface soil up to one foot (1') in depth, reasonably free of grass, roots, weeds, sticks, stones, and other objects. Topsoil shall be stockpiled after areas have been cleaned and grubbed.

Topsoil shall not be spread when the ground or topsoil is frozen, excessively wet or otherwise in a condition detrimental to work. Surfaces designated to be covered shall be lightly scarified just prior to the spreading operation. Where compacted fill is designated to be covered by topsoil, the topsoil shall be placed concurrently with the fill and shall be bonded to the compacted fill with the compacting equipment.

No separate payment shall be made for salvaging and spreading topsoil. Salvaging and spreading topsoil shall be considered subsidiary to items for which separate payment is made.

### **SP 404. EARTHWORK**

Site grading including general excavation and embankment construction shall be completed as shown on the plans. The Contractor shall strip and stockpile the existing topsoil for redistribution during final grading over areas to be sodded or seeded. All fills, and areas to receive surfacing shall be prepared and compacted to the minimum densities shown on the plans and special provisions.

Where feasible, any areas in the construction area to receive borrow should be proofrolled with a loaded dump truck, scraper, or similar rubber-tired equipment weighing at least 15 tons. Proofrolling should also be performed in areas requiring mass excavation after rough finished subgrade elevation is achieved. Proofrolling operations should be

observed by the Engineer. Unstable and unsuitable soils which are revealed by proofrolling, and which cannot be adequately densified in place, should be removed under the direction of the Engineer. It may be necessary to perform selective removal of soft, wet soils and/or stabilize existing soft soils in-place.

The recommendation generally provided during construction for dealing with surficial wet conditions would be to scarify the top 12 inches of soil and allow the soils to dry back to a moisture content suitable for obtaining the required compaction. This work shall be considered subsidiary to Earthwork item if required.

Payment for general site grading including excavation and construction of embankments shall be paid for at the contract unit price bid per lump sum for the pay item "Earthwork". Below are approximate quantities:

Excavation = 1,200 CY

Embankment = 600 CY

These quantities shall be considered established quantities utilizing a balance factor of 1.0, and no additional measurement or compensation will be made. This work shall include all items of work associated with the general roadway and trail grading including stripping and stockpiling topsoil, furnishing off site borrow, disposal of excess excavated materials, hauling, placement, compaction, water required to achieve compaction, and final grading (including redistribution of topsoil).

#### **SP 405. STRUCTURAL FILL**

During construction, we recommend that fill materials have a liquid limit of less than 45, and a plasticity index of less than 25. Silty sand, clayey sand, and poorly graded sand would be suitable for structural fill material as well. Whenever possible, highly plastic silt (MH) or clay (CH) fill soils should not be placed within the upper 4 feet of the final ground elevation. Soils which have a liquid limit greater than 45 and a plasticity index greater than 25 will typically require removal or blending with less plastic materials to result in lower Atterberg limits.

In addition to the plasticity characteristics, the fill soils should also be relatively free of organic materials (less than about two hundredths by weight), other deleterious material and should not contain particle sizes larger than three inches. Imported fill material should be tested prior to placement at the site to verify it complies with the criteria stated in this section of the report. Samples of the proposed imported structural fill should be submitted at least three days prior to placement so the necessary laboratory tests can be performed.

Suitable fill material should be placed in thin lifts (lift thickness depends on type of compaction equipment, but in general, lifts of 8 inches loose measurement is recommended). The soil should be compacted by heavy compaction equipment such as a Caterpillar 815 sheepsfoot roller. Within small excavations, such as in utility trenches (less than 24 inches in width), around manholes or behind retaining walls, we recommend the use of "wacker packers", "Rammax" compactors, or vibrating plate compactors to

achieve the specified compaction. Loose lift thickness of 4 inches are recommended in small area fills.

**SP 406. OVEREXCAVATION**

The Contractor shall overexcavate 12" below the top of the gravel surface in areas of fill and minimal cut areas and then scarify an additional 6" and re-compact. The suitable overexcavated material shall then be placed and re-compacted. This material below the base of the pavement in these areas should be compacted to a minimum of 98 percent of the maximum dry density as determined by ASTM-698, Standard Proctor, Moisture Density Relationship.

**SP 410. REMOVAL & REPLACEMENT OF UNSUITABLE MATERIAL**

The Contractor shall excavate and dispose of unsuitable materials that are encountered below areas to receive pavement and replace it with offsite borrow material as directed by the Engineer. Any imported fill materials shall meet the requirements of the structural fill section. The quantity of overexcavated material shall be measured based upon the field survey of the excavated area and the final grades and lines shown on the cross sections.

Payment for overexcavation of unsuitable material shall be made at the contract unit price bid per cubic yard for the pay item "Removal & Replacement of Unsuitable Material". This payment shall be full compensation for all excavation and removal of unsuitable material including disposal of unsuitable material and furnishing, placement and compaction of offsite borrow material to replace the unsuitable material as directed by the Engineer.

**SP 410. EROSION CONTROL ITEMS**

All erosion control shall be NDOT approved products.

**SP 407. SIDEWALK EARTHWORK**

Sidewalk grading including general excavation and embankment construction shall be completed as shown on the plans. Sidewalk grade will generally match the existing grade. The Contractor shall strip and stockpile the existing topsoil for redistribution during final grading over areas to be sodded or seeded. All fills, and areas to receive surfacing shall be prepared and compacted to the minimum densities shown on the plans and special provisions.

Borrow needed to bring the sidewalk to grade after stripping shall be paid for as Sidewalk Granular Foundation Course.

## **SP 500. MEASUREMENT AND PAYMENT**

1. Mobilization. Shall include all costs for bonding and insurance, establishing temporary facilities, as required, temporary construction fencing, barricades, job trailers, prospecting for and exposing existing utilities, moving construction equipment and materials to and from the site, installation, start-up, and all appurtenances related to the work not otherwise specifically called out. The pay item is lump sum, with an equitable amount to be withheld until demobilization after final completion of the work. The pay item is one (1) lump sum.
2. Earthwork. Shall include all labor, materials, equipment, excavation, borrow, backfilling, stripping and stockpiling topsoil, general clearing and grubbing, shouldering, and incidental items for excavation or embankment. This item shall also include transportation to haul excess material away from the site, and the importing/placing of suitable fill material all in accordance with the plans and specifications. The approximate quantities of cut and fill are shown on the plans and special provisions. The pay item is one (1) lump sum.
3. Over-excavation. Shall include labor, materials, equipment, and incidental items for excavation to a depth of 12" below the existing gravel surface, scarifying, and backfilling to the bottom of the pavement. The pay item is one (1) cubic yard. This is established quantity that may decrease if unsuitable material is encountered and paid for as Removal & Replacement of Unsuitable Material.
4. Removal & Replacement of Unsuitable Material. Shall include labor, materials, equipment, and incidental items compensation for all excavation and removal of unsuitable material including disposal of unsuitable material and furnishing, placement and compaction of offsite borrow material to replace the unsuitable material as directed by the Engineer. The pay item is one (1) cubic yard. The Engineer reserves the right to increase or decrease this quantity any amount based on field conditions during construction.
5. Remove Pavement. Shall include all labor, materials, equipment, unclassified excavation, breaking concrete/asphalt, saw cutting, hauling, disposal, backfill, grading, and incidental items for removing pavement all in accordance with the plans and specifications. The pay item is one (1) square yard.
6. Remove Storm Sewer Pipe. Shall include all labor, materials, excavation, equipment, demolition, removal, hoisting, hauling, disposal, and incidental items for removing an existing storm sewer pipe all in accordance with the plans and specifications. The pay item is one (1) linear foot.
7. Concrete Pavement. The measurement and payment for this item will be the actual number of square yards of concrete placed and accepted; including forming, reinforcement, reinforcing chairs or supports, concrete, doweling; curing compounds; contraction and expansion joints where required, including partial depth sawcuts; joint sealing compounds; concrete additives; finishing and edging; furnishing, transporting, installing, and compaction of all materials required for a

stable subbase; and all other related and necessary materials, work and equipment required to construct the pavement. Any panels that contain random cracking will be considered unacceptable. The engineer will decide whether to replace or repair the panel. The contractor shall replace or repair these panels at the direction of the engineer at no cost to the owner. A 20% deduction will be assessed on a repaired panel. Any panel that is replaced will not be assessed a 20% deduction. The pay item is one (1) square yard.

8. Subgrade Preparation. Shall include all necessary materials, soil, labor, equipment, hauling, loading, compaction, grading, and all subsidiary items of work for Subgrade Preparation, in accordance with the plans and specifications. The quantity for payment of Subgrade Preparation will be the number of overlying square yards of parking lot pavement. The areas outside the plan typical cross sections, except intersections, will not be measured for payment but shall be considered subsidiary to "Subgrade Preparation". The pay item is per one (1) square yard.
9. Concrete Sidewalk. shall include all labor, materials, equipment, unclassified excavation, backfill, subgrade preparation, compaction, Portland Cement concrete, formwork, finishing, jointing, expansion materials, joint sealant, saw cutting, construction of handicap ramp, and incidental items for placing Portland Cement concrete sidewalk all in accordance with the plans and specifications. Any panels that contain random cracking will be considered unacceptable. The engineer will decide whether to replace or repair the panel. The contractor shall replace or repair these panels at the direction of the engineer at no cost to the owner. A 20% deduction will be assessed on a repaired panel. Any panel that is replaced will not be assessed a 20% deduction. The pay item is one (1) square feet constructed.
10. Detectable Warning Panel. Shall include all necessary materials, labor, joint sealers, finishing, and all subsidiary items of work for Detectable Warning Panels, in accordance with the plans and specifications. The pay item is per one (1) square foot.
11. Storm Sewer Pipe. Shall include all labor, materials, equipment, hauling, delivery, joint material, storm sewer pipe, unclassified excavation, backfill, bedding, sand backfill to springline, and incidental items for constructing storm sewer pipe of the type(s) and sizes(s) listed on the bid form and shown on the plans and specifications. The pay is one (1) linear foot of storm sewer pipe installed.
12. Catch Basin. Shall include all labor, materials, equipment, removal and disposal of excavated materials backfill with approved materials, compaction, bedding, concrete, pre-fabricated structure, and incidental items for constructing structures all in accordance with the plans and specifications. The pay item is one (1) each.
13. Storm Sewer Tap. Shall include all labor, materials, equipment, backfill, compaction, fine grading, roofing felt paper, reinforcement, concrete, and incidental items for constructing a storm sewer concrete tap all in accordance with the plans and specifications. The pay item is one (1) each.

14. Trench Drain. Shall include all labor, materials, equipment, hauling, delivery, trench drain, unclassified excavation, backfill, bedding, additional concrete, and incidental items for constructing trench drain of the type(s) and sizes(s) listed on the bid form and shown on the plans. The pay is one (1) linear foot of trench drain installed.
15. Flared End Section. Shall include all labor, materials, equipment, hauling, delivery, unclassified excavation, backfill, and incidental items for installing storm flared end section of the type(s) and sizes(s) listed on the bid form and shown on the plans and specifications. The pay is one (1) each of flared end section installed.
16. Drainage Flume. Shall include all labor, materials, equipment, compaction, bedding, concrete, castings, formwork, and incidental items for constructing drainage flume all in accordance with the plans and specifications. The pay item is one (1) each.
17. Adjust Manhole to Grade. shall include all labor, materials, equipment, adjusting rings, backfill, Portland Cement concrete slab around manhole casting, forming, finishing, and incidental items for adjusting manhole to proposed pavement grade all in accordance with the plans and specifications. The pay item is one (1) each.
18. Conduit. Shall consist of furnishing, trenching, backfilling, and installing the size and type (Schedule 40) of conduit called for in the plans. The pay item is one (1) linear foot.
19. ADA Sign Shall be considered full compensation of this item required to professionally furnish and transport all materials and equipment as specified; install, and provide any other necessary materials, labor and equipment required to properly attach a sign to sign post all in accordance with the plans and specifications. The pay item is one (1) each.
20. Tire Stop. Shall include all labor, materials, equipment, hauling, delivery, , and incidental items for installing parking tire stop on the bid form and shown on the plans and specifications. The pay is one (1) each of tire stop installed.
21. Striping. Shall include all of the work including surface preparation and equipment, and all other related and necessary materials, required to professionally install parking lot pavement markings in type, size and material as shown on the plans. The pay item is one (1) lump sum.
22. Construction Entrance Shall include all necessary materials, labor, equipment, aggregate, removal of temporary rock, hauling, placement, finishing, rough grading, and all subsidiary items of work for constructing Construction Entrance, in accordance with the plans and specifications. The pay item is per one (1) each.
23. Erosion Control Linear. shall include all labor, materials, equipment, posts, staples, ties, straps, silt fence, wattles, installation, upkeep, maintenance, and incidental items necessary to furnish, install, and maintain silt fence or wattles to prevent sediment from collecting outside of the work area during construction. The pay item is one (1) linear foot.

24. Inlet Erosion Protection. Shall include all labor, equipment, materials, unclassified excavation, installation, maintenance, disposal, disposal fees, cleanup, and incidental items necessary for the placement of silt fence and sediment filter to prevent sediment from collecting in the storm sewer system during construction, maintenance of the silt fence and sediment filter, removal of silt fence and sediment filter when no longer necessary, for Inlet Protection all in accordance with the plans and specifications. The pay item is one (1) each.
25. Sidewalk Earthwork. Shall include all labor, materials, equipment, excavation, backfilling, stripping and stockpiling topsoil, shouldering and incidental items for excavation or embankment. This item shall also include transportation to haul excess material away from the site. The approximate quantities of cut and fill are shown on the plans and special provisions. The pay item is one (1) lump sum.
26. Sidewalk Granular Foundation Course. Shall include all necessary materials, equipment, hauling, loading, material, placement, compaction, and all subsidiary items of work for Foundation Course. Granular material shall be sand, gravel, or crushed concrete to bring the sub base to grade after stripping. The pay item is per one (1) ton of foundation course.

# **DIVISION I**

## **GENERAL SPECIFICATIONS**

**APPLICABLE TO ALL  
CONSTRUCTION CONTRACTS**

**DIVISION I  
GENERAL SPECIFICATIONS**

**C O N T E N T S**

Section	Description
<b>1</b>	<b>DEFINITIONS OF WORDS AND TERMS</b>
1.01	Abbreviations
1.02	Advertisement
1.03	Award
1.04	Backslope
1.05	Bidder
1.06	Calendar Day
1.07	Change Order
1.08	City
1.09	Contract
1.10	Contract or Performance Bond
1.11	Contract Item
1.12	Contract Period
1.13	Contractor
1.14	Cul-de-sac Street
1.15	Culvert
1.16	Easement (Right-of-way)
1.17	Employee
1.18	Engineer
1.19	Extra Work
1.20	Holidays
1.21	Inspector
1.22	Laboratory
1.23	Notice to Bidders
1.24	Plans
1.25	Project
1.26	Bid
1.27	Bid Form
1.28	Bid Guarantee
1.29	Right-of-way
1.30	Special Provisions
1.31	Specifications
1.32	Subcontractor
1.33	Superintendent
1.34	Supplemental Agreements
1.35	Supplemental Specifications
1.36	Surety
1.37	Work
1.38	Working Day
1.39	Working Drawings
1.40	Work Order
1.41	Completion of the Work and Formal Acceptance by the City
1.42	Final Acceptance of the Work

**Revised 1-25-2011**

Section	Description
<b>2</b>	<b>BID REQUIREMENTS AND CONDITIONS</b>
2.01	Contents of Bid Forms
2.02	Interpretation of Quantities in Bid Forms
2.03	Examination of Plans, Specifications, Special Provisions and Site of Work
2.04	Preparation of Bid
2.05	Statement of Bidder's Plant and Financial Conditions
2.06	Certified, Check, Cashier's Check, or Bid Bond
2.07	Filing of Bid
2.08	Withdrawal of Bid
2.09	Public Opening of Bids
2.10	Material Guarantee
<b>3</b>	<b>AWARD AND EXECUTION OF THE CONTRACT</b>
3.01	Consideration of Bids
3.02	Award of Contract
3.03	Cancellation of Award
3.04	Return of Bid Guarantee
3.05	Performance Bond
3.06	Contract Documents
	<b>Revised 1-25-2011</b>
3.07	Failure to Execute Contract
<b>4</b>	<b>SCOPE OF WORK</b>
4.01	Intent of Plans and Specifications
4.02	Special Work
4.03	Increased or Decreased Quantities of Work
	<b>Revised 1-25-2011</b>
4.04	Extra Work
4.05	Maintenance of Detours
4.06	Temporary Traffic Control
	<b>Revised 1-25-2011</b>
4.07	Maintenance of Traffic
4.08	Street Closing
4.09	Miscellaneous Removal Items
4.10	Removal and Replacement of Property Stakes
4.11	Removal and Disposal of Structures and Obstructions
4.12	Rights In and Use of Materials Found on the Right-of-Way
4.13	Construction and Demolition Debris
4.14	Final Cleaning Up
4.15	Right-of-way
4.16	Railroad Crossings
4.17	Safety and Health Regulations for Constructions
<b>5</b>	<b>CONTROL OF WORK</b>
5.01	Authority of Engineer
5.02	Plans and Working Drawings
5.03	Alteration of Plans or of Character of Work
5.04	Coordination of Plans, Specifications, Special Provisions, and Supplemental Specifications
5.05	Cooperation of Contractor

Section	Description
5.06	Surveys
5.07	Authority and Duties of Inspector
5.08	Inspection of Work
5.09	Removal of Defective Work
5.10	Final Inspection
<b>6</b>	<b>CONTROL OF MATERIALS</b>
6.01	Source of Supply and Quality Requirements
6.02	Methods of Sampling and Testing, and Cited Specifications
6.03	Storage of Materials
6.04	Unacceptable Materials
6.05	Guarantee
6.06	"Or Equal" Clause
<b>7</b>	<b>LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC</b>
7.01	Laws to be Observed
7.02	State and City Fair Labor Standards
7.03	Anti-discrimination
7.04	Permits
7.05	Patents
7.06	Restoration of Surface Opened by Permit
7.07	Safety, Health, and Sanitation
7.08	Barricades and Warning Signs
7.09	Use of Explosives
7.10	Claims for Labor and Materials
7.11	Contractor's Insurance
7.12	Proof of Carriage of Insurance
7.13	Contractor's Responsibility for Utility Property and Services
7.14	No Waiver of Legal Rights
7.15	Exposure of Pipe or Manholes
<b>8</b>	<b>PROSECUTION AND PROGRESS</b>
8.01	Subletting or Assigning of Contract
8.02	Prosecution of Work
8.03	Limitations of Operations
8.04	Methods and Equipment
8.05	Temporary Suspension of Work
8.06	Liquidated Damages
8.07	Extension of Contract Period
8.08	Abrogation
8.09	Termination of Contractor's Responsibility
<b>9</b>	<b>MEASUREMENT AND PAYMENT</b>
9.01	Payments
9.02	Payments Withheld
9.03	Acceptance and Final Payment
9.04	Payment for Extra Work

**DIVISION I  
GENERAL SPECIFICATIONS**

**SECTION 1 - DEFINITIONS OF WORDS AND TERMS**

Wherever in these specifications or in other contract documents the following terms or pronouns in place of them are used, the intent and meaning shall be interpreted as follows:

1.01      Abbreviations.

AASHTO	American Association of State Highway And Transportation Officials
ASTM	American Society for Testing and Materials
ANSI	American National Standards Institute
AWWA	American Water Works Association
AREA	American Railway Engineering Association
AWS	American Welding Society
AAN	American Association of Nurserymen

1.02      Advertisement. The advertisement for work or materials on which bids are to be received.

1.03      Award. The decision of the City to accept the bid of the lowest responsible bidder for the work, subject to the execution and approval of a satisfactory contract therefor and bond to secure the performance thereof and to such other conditions as may be specified or otherwise required by law.

1.04      Backslope. The sloping surface of a cut, the downward inclination of which is toward the roadbed.

1.05      Bidder. Any individual, firm, or corporation formally submitting a bid for the work contemplated, acting directly or through a duly authorized representative.

1.06      Calendar Day. Every day shown on the calendar, Sundays and holidays included.

1.07      Change Order. A written order to the Contractor, signed by the Engineer, ordering a change in the work from that originally shown in the plans and specifications.

1.08      City. The word "City" as used in these specifications refers to the City of Grand Island, Nebraska, acting through its City Council.

1.09      Contract. The written agreement executed between the City and the Contractor, covering the performance of the work and the furnishing of labor and materials, by which the Contractor is bound to perform the work and furnish the labor and materials, and by which the City is obligated to compensate Contractor therefor at the mutually established and accepted rate or price.

The contract shall include the "Notice to Bidders", these specifications, the Contractor's bond, the general and detailed plans, the bid, special provisions, and supplemental agreements.

1.10 Contract or Performance Bond. The approved form of security, executed by the Contractor and their surety or sureties, guaranteeing complete execution of the contract and all supplemental agreements pertaining thereto and the payment of all legal debts pertaining to the construction of the project.

1.11 Contract Item. An item of work specifically described and for which a price, either unit or lump sum, is provided. It includes the performance of all work and the furnishing of all labor, equipment, and materials described in the text of a specification item included in the contract or described in any subdivision of the text of the supplemental specification or special provision of the contract.

1.12 Contract Period. The period from the date specified in the contract for the commencement of the work to the date specified for its completion, both dates inclusive.

1.13 Contractor. The party of the second part to the contract; the individual, firm, or corporation undertaking the execution of the work under the terms of the contract and acting directly or through Contractor's agents or authorized employees.

1.14 Cul-de-sac Street. A local street open at one end only and with special provision for turning around.

1.15 Culvert. Any structure not classified as a bridge which provides an opening under any street.

1.16 Easement (Right-of-way). A right acquired by public authority to use or control property for a designated purpose.

1.17 Employee. Any person working on the project mentioned in the contract of which these specifications are a part, and who is under the direction or control or receives compensation from the Contractor or Contractor's subcontractor.

1.18 Engineer. The City Engineer, acting either directly or through an assistant or other representative duly authorized by the City Engineer, such assistant or representative acting within the scope of the particular duties assigned or with the authority given.

1.19 Extra Work. Work performed by the Contractor in order to complete the contract in an acceptable manner but for which there is no basis of payment provided in the contract.

1.20 Holidays. In the State of Nebraska, holidays occur on: January 1, Martin Luther King, Jr. Day in January, Presidents' Day in February, Arbor Day in April, Memorial Day in May, July 4, Labor Day in September, Columbus Day in October, Veterans Day and Thanksgiving Day in November, and December 25. If any of said dates fall on Sunday, the following Monday shall be a holiday. If any of said dates fall on Saturday, the previous Friday shall be a holiday.

1.21 Inspector. An authorized representative of the Engineer assigned to make detailed inspection of any or all portions of the work performed and materials furnished by the Contractor.

1.22 Laboratory. The testing laboratory of the City or any other testing laboratory which may be designated by the Engineer.

1.23 Notice to Bidders. The provisions, requirements, and instructions pertaining to the work to be awarded, manner and time of submitting bids , quantities of the major items or work required, as prepared for the information of bidders.

1.24 Plans. The official plans, profiles, typical cross sections, general cross sections, working drawings, and supplemental drawings, or exact reproductions thereof, approved by the Engineer, which show the location, character, dimensions, and details of the work to be done, and which are to be considered as a part of the contract supplementary to these specifications.

1.25 Project. All work necessary to be performed under the contract.

1.26 Bid. The offer of the bidder, submitted on the prescribed bid form, to perform the work and to furnish the labor and materials at the prices quoted by the bidder.

1.27 Bid Form. The approved form on which the City requires formal bids be prepared and submitted.

1.28 Bid Guarantee. The security furnished by the Bidder with Bidder's bid for a project as a guarantee that Bidder will enter into a contract for the work if said bid is accepted.

1.29 Right-of-way. The land area which is reserved or secured by the City for constructing the work or for obtaining material therefor.

1.30 Special Provisions. Special directions, provisions, or requirements peculiar to the project under consideration and not otherwise thoroughly or satisfactorily detailed or set forth in the specifications.

1.31 Specifications. The general term comprising all the directions, provisions, and requirements contained herein, together with such as may be added or adopted as supplemental specifications or special provisions, all of which are necessary for the proper performance of the contract.

1.32 Subcontractor. Any individual, firm, or corporation to whom the Contractor, with the written consent of the City, sublets any part of the contract.

1.33 Superintendent. The representative of the Contractor, present on the work at all times during progress, authorized to receive and fulfill instructions from the Engineer and capable of superintending the work efficiently.

1.34 Supplemental Agreements. Written agreements executed by the Contractor and the City subsequent to having entered into the contract, covering alterations in the plans or unforeseen items of construction.

1.35 Supplemental Specifications. Specifications adopted subsequent to the publication of this book. They generally involve new construction items or substantial changes in the approved specifications. Supplemental specifications shall prevail over those published in this book whenever in conflict therewith.

1.36 Surety. The corporate body bound with and for the Contractor for the acceptable performance of the contract, the completion of the work, and for payment of all just claims arising therefrom.

1.37 Work. Work shall be understood to mean the furnishing of all labor, materials, equipment, and other incidentals necessary or convenient to the successful completion of the project by the Contractor and the carrying out of all the duties and obligations imposed by the contract.

1.38 Working Day. Any day, except Saturdays, Sundays, and Nebraska holidays, on which the Contractor is not prevented by weather, soil conditions, or other conditions beyond the Contractor's control, adverse to the current controlling operation or operations, as determined by the Engineer, from proceeding with at least 80 percent of the labor and equipment force normally engaged in such operation or operations for at least 50 percent of the full number of hours in Contractor's normal daily schedule. Also, a Saturday, Sunday, or Nebraska holiday on which any work is performed on the current controlling operation or operations unless the Contractor is prevented by weather, soil conditions, or other conditions beyond the Contractor's control as determined by the Engineer, from proceeding for at least 50 percent of the full number of hours in their normal schedule with 80 percent of the normal working force.

1.39 Working Drawings. Stress sheets, shop drawings, erection plans, falsework plans, framework plans, cofferdam plans, bending diagrams for reinforcing steel, or any other supplementary plans for similar data which the Contractor is required to submit to the Engineer for approval.

1.40 Work Order. A written order signed by the Engineer, of a contractual status requiring performance by the Contractor without negotiation of any sort and may involve starting, resuming, or the suspension of work. (Not to be confused with extra work order).

1.41 Completion of the Work and Formal Acceptance by the City. Whenever the term "completion of the work and formal acceptance by the City" is used, it refers to and means the formal acceptance of the work by the Engineer and the City at the time the Contractor has all work under the contract completed and in place.

1.42 Final Acceptance of the Work. Whenever the term "final acceptance of the work" is used, it refers to and means the time when the Engineer and the City finally accept the work. The contractor guarantee shall remain in force from the City's final acceptance for a period of one year.

**Revised 1-25-2011**

## **SECTION 2 – BID REQUIREMENTS AND CONDITIONS**

2.01 Contents of Bid Forms. Bidders will be furnished with bid forms which will state the location and description of the contemplated work and will show the estimate of the various quantities and kinds of work to be performed or materials to be furnished, with a schedule of items for which unit bid prices are asked, the time in which the work must be completed and the date, time, and place of opening bids. All special provisions and required provisions will be grouped together and bound with or included through reference in the bid form.

2.02 Interpretation of Quantities in Bid Forms. The quantities listed in the bid forms are to be considered as approximate, unless otherwise provided by special provision. It is understood that the quantities of work to be done and materials to be furnished may each be increased, diminished, or omitted as hereinafter provided without in any way invalidating the unit bid prices, except as provided in the section in these specifications entitled Increased or Decreased Quantities of Work.

2.03 Examination of Plans, Specifications, Special Provisions, and Site of Work. The bidder is required to examine carefully the site, the bid, plans, specifications, special provisions, and contract form for the work contemplated, and it will be assumed that the bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and quantities of work to be performed and materials to be furnished and as to the requirements of these specifications, the special provisions, and contract. It is mutually agreed that the submission of a bid shall be considered prima facie evidence that the bidder has made such examination.

2.04 Preparation of Bid. Bidders shall submit their bids on blank forms furnished by the Engineer with the full name and address and the place of business or residence of the bidder. If the bidder is co-partnership, the signature shall be by a member of the firm with the names and addresses of each member. If the bidder is a corporation, the signature shall be by an officer of the corporation in the corporate name and with the corporate name and the corporate seal attached thereto.

All blank spaces in the form shall be fully filled; numbers shall be stated in legible figures and writing when required; the signature shall be longhand; and the complete form shall be without interlineation, alteration, or erasure.

No oral, telegraphic, or telephonic bids or modifications will be considered.

When certain alternative prices, for both increasing and decreasing the cost, are required, as called for in the bid sheet, it must be understood that all materials and workmanship required shall be the best of their respective kinds and in all cases shall correspond with similar work herein specified and, if accepted, the work shall be done under the general terms of the specifications.

2.05 Statement of Bidder's Plant and Financial Conditions. Each bidder may submit with bid and, in any event, the City may, after bids are opened and prior to award of contract, require any bidder to submit the following data:

1. A statement that the bidder maintains a permanent place of business and address thereof;
2. A statement of equipment which the bidder proposes to use on the project, together with a statement noting that equipment previously mentioned which the bidder owns and that which bidder does not own but is certain bidder will be able to rent or otherwise procure for use on the project;
3. A financial statement, duly sworn to in a form approved by the City, listing assets and liabilities;
4. Statement listing projects of similar nature which the bidder has constructed or in the construction of which the bidder was actively engaged in a responsible capacity. Any bidder may be required by the City to submit additional data to satisfy the City that such bidder is prepared to fulfill the contract if it is awarded to them.

2.06 Certified Check, Cashier's Check, or Bid Bond. Each bidder must submit with the bid a certified check, cashier's check, or bid bond in the amount of not less than five percent (5%) of the amount bid, drawn to the order of the City Treasurer, Grand Island, Nebraska, guaranteeing the execution of the contract and bond required within ten (10) days of the notification of award. Any certified check must be issued by a bank in the State of Nebraska.

2.07 Filing of Bid. Bidders shall submit bid data on items offered in the Bid by filling in one set of data sheets supplied by the Engineering Department. The bid sheets shall be filled out legibly in black ink to permit reproduction.

Bidder security, when required, shall be enclosed in a special envelope marked, "BIDDER SECURITY/BID FOR \_\_\_\_\_." The envelope shall contain only a cashier's check or bidder's bond. This special envelope shall be attached to a sealed envelope containing the bid, filled out specifications, descriptive information drawings, qualification list and any other bid materials. This second envelope shall be marked "BID FOR \_\_\_\_\_." Bids of an incomplete nature or subject to multiple interpretations may, at the option of the Purchaser, be rejected as being irregular.

All bids shall be filed with the City at the place designated in the Notice to Bidders, prior to the time advertised for the opening of bids.

2.08 Withdrawal of Bid. A bidder will be permitted to withdraw said bid unopened after it has been submitted, if bidder's request for withdrawal is made in writing and delivered personally by the bidder or bidders' authorized representative prior to the time specified for opening of bids.

2.09 Public Opening of Bids. Bids will be publicly opened and read at the time and place stipulated in the Notice to Bidders.

2.10 Material Guarantee. Before any contract is awarded, the bidder may be required to furnish a complete statement of the origin, composition, and manufacture of any or all materials to be used in the construction of the work together with samples, which samples may be subjected to the test provided for in these specifications to determine their quality and fitness for the work.

### **SECTION 3 - AWARD AND EXECUTION OF THE CONTRACT**

3.01 Consideration of Bids. After the bids are opened and read, they will be compared on the basis of the summation of the products and the quantities shown in the bid schedule by the unit bid prices. The results of such comparisons will be immediately available to the public.

The right is reserved to reject any and all bids and to waive technical errors as may be deemed best for the interest of the City.

3.02 Award of Contract. In the award of contract, consideration will be given not only to the prices bid but also the mechanical and other equipment available to the bidder, the financial responsibility of the bidder, and bidder's ability and experience in the performance of like or similar contracts.

Award of contracts will be made as promptly as practical after bids have been opened and read. The City reserves the right to delay the award for such time as is needed for the consideration of the bids and for the receipt of concurrence in recommended contract awards from other governmental agencies whose concurrence may be required.

3.03 Cancellation of Award. The City reserves the right to cancel the award of any contract at any time before execution of the said contract by all parties without any liability against the City.

3.04 Return of Bid Guarantee. Bid guarantees will be returned to the unsuccessful bidders by mail promptly after the signing of the contract has been made. Return to the successful bidder will be made after the signing of the contract and filing of the contract bond.

3.05 Performance Bond. The Contractor shall furnish a performance bond with a company having the approval of the City in an amount of 100 percent of the contract price guaranteeing complete and faithful performance of the contract, payment of all bills of whatever nature which could become a lien against the property, and guaranteeing replacement of defective materials and workmanship for a period of one year after completion of the contract.

3.06 Contract Documents. Three (3) copies of Contract Documents shall be made, executed, and distributed as follows:

One copy to City Clerk  
One copy to Contractor      One copy to Engineer

The following documents are a part of the contract:

*Notice to Bidders	*General Specifications
*Instructions to Bidders	*Special Provisions
*Bid	*Supplemental Specifications
*Detailed Specifications	*Performance Bond
*Contract	*Additional Drawings as required to make clear the intent of the contract

**Revised 1-25-2011**

3.07 Failure to Execute Contract. Failure to execute a contract and file an acceptable performance bond as provided herein within ten (10) days from date of award shall be just cause for the annulment of the award and the forfeiture of the certified check or cashier's check to the City, not as a penalty but in liquidation of damages sustained.

## **SECTION 4 - SCOPE OF WORK**

4.01 Intent of Plans and Specifications. The intent of the plans and specifications is to provide for the construction and completion of every detail of the work described therein. It shall be understood by the Contractor that Contractor will furnish all labor, materials, tools, transportation, and supplies required for all or any part of the work to make each item complete in accordance with the spirit of the contract. It is understood that the apparent silence of the specifications as to any detail or the apparent omission of a detailed description concerning any point shall be regarded as meaning that only the best general practice is to prevail and that only materials and workmanship of the first quality are to be used.

For the purpose of design and the preparation of the Engineer's Estimate, the City may perform a reasonable amount of exploratory work to gain information relative to surface and subsurface conditions relating to type of soil, moisture content, and types and extent of rock strata.

This information when shown on the plan represents to the best of the City's knowledge conditions as of the date the survey was made. The appearance of this information on the plan will not constitute a guarantee that conditions other than those indicated will not be encountered at the time of construction.

The bidder may utilize this information as they see fit. Any bidder interested in the work is authorized to make whatever investigation they considers advisable.

In making such additional investigation, the bidder is directed to the Engineer for information relating to available right-of-way. If there are, at that time, any parcels of land over which the City does not have jurisdiction, right of entry must be secured by the prospective bidder from those authorized to grant such permission. Investigational work, performed by a prospective bidder on existing streets open to traffic, shall be performed in compliance with the

requirements of the current Manual on Uniform Control Devices for Street and Highways. All such additional investigational work shall be performed without costing or obligating the City in any way.

4.02 Special Work. Any conditions not covered by these standard specifications are stated in the special provisions.

4.03 Increased or Decreased Quantities of Work. The Engineer reserves the right to alter the quantities of contract items for which there are bid prices. Such increases or decreases in quantities shall be made as the City considers necessary or desirable without waiving or invalidating any of the provisions of the contract. All such alterations must be ordered in writing and a supplemental agreement must be executed with the Contractor for the item or items involved when such alterations involve an increase or decrease of more than 20 percent of the total cost of the work of any group of the contract calculated from the original bid quantities and the contract unit prices. The Contractor shall not start work on any alteration requiring a supplemental agreement until the agreement setting forth an equitable adjustment of compensation, satisfactory to both parties, shall have been executed by the Engineer and the Contractor and approved by City Council.

**Revised 1-25-2011**

4.04 Extra Work. The City reserves the right to order the performance of work of a class not contemplated in the bid but which may be considered necessary to complete satisfactorily the work included in the contract. Such extra work will be paid for as provided in these specifications under section entitled Payment for Extra Work.

4.05 Maintenance of Detours. Unless so required by the plans or the special provisions, the Contractor will not be required to assume any responsibility in connection with the maintenance or marking of suitable detours.

4.06 Temporary Traffic Control. Part VI of the Manual of Uniform Traffic Control Devices (MUTCD) is the national standard for work zone traffic control. The current version that has been adopted by the Nebraska Department of Roads is also applicable to the City of Grand Island and shall be followed.

Any City crews, contractors, utility company, or any other person, firm or corporation performing work within the right-of-way of any public street, public way, or alley in the City of Grand Island shall install and maintain Temporary Traffic Control (TTC) in accordance with the standards of the MUTCD.

The Public Works Director or their representative shall have the authority to direct corrective actions for any TTC not in compliance with the MUTCD and these provisions. These actions may include suspending operations and requiring removal of all equipment or materials from the right-of-way.

If the TTC is left in place longer than four (4) hours and no personnel are on the site, the individual responsible for installing the TTC shall provide telephone numbers of personnel who will be available on a 24 hours per day, seven days per week basis to the Public Works Director. These individuals shall be responsible for repair, correction, replacement and maintenance of the traffic control devices. These individuals shall perform inspections of the TTC at the site a minimum of twice during the day and once during the night every day until the work is completed and the right-of-way is cleared.

Subsidiary: Unless contract pay items are included with the bid specifications, direct payment for providing, installing, maintaining, and performing site inspections of TTC devices will not be made but are considered subsidiary to other items for which direct payment is

provided. When the contract contains a pay item for TTC, the NDOR standard items, specifications, etc. will be used.

**Revised 1-25-2011**

4.07 Maintenance of Traffic. The Contractor shall conduct the work so as to interfere as little as possible with public travel, whether vehicular or pedestrian. Whenever it is necessary to cross, obstruct, or close roads, driveways, and walks, whether public or private, the Contractor shall, at Contractor's expense, provide and maintain suitable and safe bridges, detours, or other temporary expedients for the accommodation of public and private travel, and shall give reasonable notice to owners of private drives before interfering with them. Such maintenance of travel will not be required when the Contractor has obtained permission from the owner or tenant of private property or from the authority having jurisdiction over public property involved to obstruct traffic at the designated area.

4.08 Street Closing. In the event it is deemed necessary for the Contractor to close any streets during the execution of said work, the Contractor shall notify the owner of such street closing 72 hours in advance, prior to any street closing due to open cut street crossing.

4.09 Miscellaneous Removal Items. The Contractor shall inform the Engineer sufficiently ahead of construction so landowners can be notified to remove small trees, shrubs, and fences from the construction limits if the landowners desire to save them.

4.10 Removal and Replacement of Property Stakes. If it is necessary to remove any property corners or markers during construction operations, the Contractor shall notify the Engineer so the Engineer can establish reference ties. Any markers removed without notice to the Engineer shall be replaced at the Contractor's expense in accordance with the proper land surveying techniques.

4.11 Removal and Disposal of Structures and Obstructions. The Contractor for bridge and culvert work shall remove any existing structure or part of structure that in any way interferes with the new construction. If specific payment for such work has not been provided in the contract, it will be paid for as extra work.

The Contractor shall remove any materials or structures found on the right-of-way which are not to remain in place or which have not been designated for use in the new construction. The removal and disposal of pipe culverts will not be paid for directly but shall be considered as incidental work, and the cost of such removal and disposal shall be considered to be included in the contract price for other items. Pipe culverts shall be removed by methods that will cause a minimum of damage to the pipe culverts. The removal and disposal of bridges or other masonry or monolithic concrete construction will be paid for. If the contract does not contain an item for such work, it will be paid for as extra work.

4.12 Rights In and Use of Materials Found on the Right-of-way. Unless stated to the contrary in the contract documents, all materials, such as stone, gravel, sand, timber, and structures or parts of structures, found on the right-of-way of the street or on land acquired for the work, are the property of the City or the owner of the fee title to the land, and shall not be used or destroyed by the Contractor without special permission from the Engineer. When the Contractor is permitted to use materials found on the right-of-way, any excavations that they make below the grade elevation shall be backfilled with other suitable materials so the finished street will conform to the grade shown on the plans. No extra compensation will be allowed for such backfilling.

When rock excavation is encountered, any portion of rock excavation which would otherwise be deposited in waste areas and not be incorporated in the embankments may be processed and used, royalty free, by the Contractor in any other portion of the construction in which material of that quality would be acceptable. No deduction will be made from excavation quantities for rock so used.

4.13 Construction and Demolition Debris. Debris from any City awarded project, as well as Municipal Solid Waste (that is not recycled), shall be disposed of at the City's Solid Waste facilities.

4.14 Final Cleaning Up. Upon completion of the work and before acceptance and final payment, the Contractor shall clean the street, borrow pits, and all ground occupied by Contractor in connection with the work of all rubbish, excess materials, falsework, temporary structures, and equipment, and all parts of the work, shall be left in a neat and presentable condition.

When required in the plans, the Contractor shall, at Contractor's expense, replace waste material or stripping back into borrow and material pits as directed by the Engineer. Trees, tree stumps and material placed on property adjacent to the street during the execution of the work shall be disposed of by the Contractor.

4.15 Right-of-way. Right-of-way for the work will be provided without cost to the Contractor. Right-of-way will be made available to the Contractor on or before the date specified for the commencement of the work unless a later date for the right-of-way to be made available to the Contractor is designated in the contract documents.

4.16 Railroad Crossings. Whenever the work involves construction with which railroad companies are concerned, the performance of the work is contingent upon arrangements with the railroad companies for the proposed construction. No claims will be allowed for loss or damage caused by failure to complete such arrangements.

4.17 Safety and Health Regulations for Construction. Occupational Safety and Health Standards for the Construction Industry (29 CFR Part 1926) with amendments as of February 1, 1999 promulgated by the Occupational Safety and Health Administration, United States Department of Labor, Washington, D.C. are incorporated herein as a part of the contract documents.

## **SECTION 5 - CONTROL OF WORK**

5.01 Authority of Engineer. The Engineer will have general supervision of the work and will decide any questions that arise with reference to the intent of the contract documents and compliance therewith. Said Engineer will relay all questions relating to materials, work, progress, disputes and mutual rights between contractors, fulfillment of contract, and compensation, in accordance with the provisions of these specifications.

5.02 Plans and Working Drawings. The approved plans will be supplemented by such working drawings as are necessary to adequately control the work. It is mutually agreed that all authorized alterations affecting the requirements and information given in the approved plans shall be in writing.

Working drawings for any structure shall consist of such detailed plans as may be required of the Contractor for the prosecution of the work. These are not included in the plans

furnished by the Engineer. They shall include shop details, erection plans, masonry, and form work. The Engineer's prior approval of the shop details must be obtained before any fabrication work involving these plans is performed. Erection plans, masonry layout diagrams, and plans for cribs, cofferdams, falsework, centering, and form work, as well as any other working drawings not previously mentioned, may be required of the Contractor and shall be subject to the Engineer's approval.

No changes shall be made in any plan or drawing after it has been approved except by consent or direction of the Engineer in writing. It is expressly understood that the approval by the Engineer of the Contractor's working drawings will not relieve the Contractor from any responsibility.

The contract price shall include the cost of furnishing all working drawings, and the Contractor will be allowed no extra compensation for such drawings.

Shop plans shall be made on 22"x36" sheet with 1/2" margin on all sides except the left which shall be 2". The margin lines shall measure 21"x33 1/2". The marking shall be in accordance with the special plans or as may be required by the Engineer. All blueprint plans which are furnished to the Engineer shall be clear and distinct and acceptable to the Engineer and shall be neatly trimmed. The Contractor shall furnish the Engineer as many extra copies of working drawings as the Engineer may direct.

The Engineer may require reproducible prints of all approved shop plans, which shall be furnished by the Contractor without cost to the Engineer. Such reproducible prints shall not be folded but shall be mailed in tubes sized to accommodate these plans without injuring them. No preliminary working drawings will be accepted by the Engineer unless they have been carefully checked by the Contractor. Drawings showing gross errors will be returned for recheck before examination by the Engineer. The name of the shop or company furnishing the drawings shall be on the tracing.

5.03 Alteration of Plans or of Character of Work. The Engineer shall have the right to make alterations in plans or character of work as may be considered necessary or desirable during the progress of the work to satisfactorily complete the proposed construction. Such alterations shall not be considered as a waiver of any conditions of the contract or invalidate any of the provisions thereof.

5.04 Coordination of Plans, Specifications, Special Provisions, and Supplemental Specifications. These specifications, the supplemental specifications, the plans, special provisions, and all supplementary documents are essential parts of the contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of discrepancy, figured dimensions shall govern over scaled dimensions, plans shall govern over specifications, special plans shall govern over standard plans, supplemental specifications shall govern over standard specifications, and special provisions shall govern over specifications, supplemental specifications, and the plans.

5.05 Cooperation of Contractor. The Contractor will be supplied with a minimum of two sets of approved plans and contract assemblies, including special provisions, one set of which the Contractor shall keep available on the work at all times.

The Contractor shall give the work the constant attention necessary to facilitate the progress thereof and shall cooperate with the Engineer and other contractors in every way possible.

The Contractor shall at all times have at the work site, as Contractor's agent, a competent superintendent capable of reading and thoroughly understanding the plans and specifications, thoroughly experienced in the type of work being performed, who shall receive

instructions from the Engineer or Engineer's authorized representatives. The superintendent shall have full authority to execute the orders or directions of the Engineer without delay, and to promptly supply materials, equipment, tools, labor, and incidentals as may be required. Such superintendence shall be furnished irrespective of the amount of work sublet.

5.06 Surveys. Lines and elevations shall be established by the Engineer before the work commences and the Contractor shall obtain lines and elevations from the points so set by the Engineer. The Contractor shall furnish all stakes necessary for lines and elevations and cooperate with the Engineer in setting same.

5.07 Authority and Duties of Inspector. The City may appoint inspectors to represent the Engineer in the inspection of all materials used in and all work done under the contract. Such inspection may extend to any part of the work and to the preparation or manufacture of the materials to be used. The inspector will not be permitted to modify in any way the provisions of the contract documents, nor to delay the work by failing to inspect materials and work with reasonable promptness. An inspector is placed at the work site to keep the Engineer informed as to its progress and the manner in which it is being done and to call the Contractor's attention to any infringements of the contract documents. The inspector will not act as foreman or perform other duties for the Contractor nor improperly interfere with the management of the work. They will not be authorized to approve or accept any portion of the work. In case of dispute between the Contractor and the inspector as to quality of materials or the manner of performing the work, the inspector shall have the authority to reject materials or suspend the work until the question at issue can be decided by the Engineer. Written notice of the suspension of work will be given to the Engineer and the Contractor.

5.08 Inspection of Work. The Contractor shall furnish the Engineer with every reasonable facility for ascertaining whether the work is being performed in conformance with the contract documents. At any time before acceptance of the work, upon request of the Engineer, the Contractor shall remove or uncover such portions of the finished work as the Engineer may direct. After examination has been made, the Contractor shall restore such portions of the work to the standard required by the contract documents.

If the work thus exposed or examined proves acceptable, the uncovering or removing and replacing of the covering or the restoring of the parts removed shall be paid for as extra work, except that no payment will be made for the work involved in checking the smoothness of pavement surfaces. If the work thus exposed and examined proves unacceptable, the Contractor shall replace the defective work in accordance with the specifications and will be paid only the contract price for the work as finally accepted. Work done or materials used without the Engineer having been afforded ample opportunity to provide suitable inspection may be ordered removed and replaced at the Contractor's expense or may be excluded from the quantities measured for payment.

5.09 Removal of Defective Work. Any defective work shall be removed and replaced at the Contractor's expense. Should the Contractor fail or refuse to remove defective work when so ordered by the Engineer, the Engineer shall have authority to order the Contractor to suspend further operations and may withhold payment on estimates until such defective work has been removed and replaced in accordance with the plans and specifications. Continued failure or refusal on the part of the Contractor to correct defective work promptly shall be sufficient cause for the City to declare the contract in default and to proceed to have the work completed in accordance with these specifications under section entitled Abrogation.

5.10 Final Inspection. Upon notification by the Contractor or Contractor's authorized representative that the work is completed, the Engineer shall make prompt final inspection of each item of work included in the contract. If the work is found to not be in accordance with the contract documents, the Contractor will be advised as to the particular defects to be remedied.

## **SECTION 6 - CONTROL OF MATERIALS**

6.01 Source of Supply and Quality Requirements. The materials used on the work shall meet all quality requirements of the contract. In order to expedite the inspection and testing of materials, the Contractor shall notify the Engineer of Contractor's proposed sources of materials prior to delivery. At the option of the Engineer, approval of the source or approval of materials at the source prior to delivery may be required. If it is found after trial that sources of supply for previously approved materials do not produce specified products or when conditions are such that the use of unfit materials cannot be prevented except by extraordinary inspection methods, the Contractor shall furnish materials from other sources. Before delivery is started and at any time during the process of preparation and use, the materials shall be subject to the approval of the Engineer.

6.02 Methods of Sampling and Testing, and Cited Specifications. Sampling and testing of all materials and the laboratory methods and testing equipment required under these specifications shall be in accordance with the latest published standard method of the AASHTO, except as otherwise provided.

The sampling and testing of all materials not covered by the AASHTO, but not otherwise provided for, shall conform to the latest published standard or tentative methods of the ASTM.

6.03 Storage of Materials. The Contractor shall be responsible for the care and storage of materials delivered at the work site or purchased for use thereon. Any material that has been delivered to the work site and has become damaged before actual incorporation in the work may be rejected by the Engineer even though it may previously have been accepted. Stored materials shall be so located as to facilitate thorough inspection.

6.04 Unacceptable Materials. All materials not conforming to the requirements of the specifications at the time they are to be used shall be considered as unacceptable, and all such materials will be rejected and shall be removed immediately from the site of the work unless otherwise instructed by the Engineer. No rejected materials, the defects of which have been corrected, shall be used until approval has been given.

6.05 Guarantee. The Contractor shall be responsible for any and all defects which may develop in any part of the entire installation furnished by said Contractor and, upon receipt of written notice from the Engineer, shall immediately replace and make good without expense to the City any such faulty part or parts and damage done by reason of same during a period of one (1) year from the date of formal acceptance of the installation (except when specific guarantee for another length of time is elsewhere specified).

The acceptance of the installation, or any part of it, shall not act to waive this liability on the part of the Contractor.

Upon completion and formal acceptance of the work, the Contractor may furnish a satisfactory bond in an amount of fifteen percent (15%) of contract price to insure the provisions of this guarantee. Otherwise, the original bond shall remain in full force and effect until final acceptance of the work, which acceptance shall be made one (1) year after the formal acceptance of the work as provided herein.

6.06 "Or Equal" Clause. Whenever, in any section of the contract documents, plans, or specifications, any article, material, or equipment is defined by describing a proprietary product or by using the name of a manufacturer or vendor, the term "or approved equal", if not inserted, shall be implied. The specific article, material, or equipment mentioned shall be understood as indicating the type, function, minimum standard or design, efficiency, and quality desired and shall not be construed in such a manner as to exclude manufacturer's products of comparable quality, design, and efficiency. The Engineer shall determine the acceptability of articles, materials, or equipment proposed as equals.

## **SECTION 7 - LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC**

7.01 Laws to be Observed. The Contractor shall keep fully informed of and, at all times, shall observe and comply with all Federal and State laws, all local bylaws, ordinances, and regulations, and all orders and decrees of bodies or tribunals having any jurisdiction or authority which in any manner affect those engaged or employed on the project, or which in any way affect the project. The Contractor shall protect and indemnify the City and its representatives against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by said Contractor or Contractor's employees. It shall be the responsibility of the Contractor to provide all safeguards, safety devices, and protective equipment and to take any other needed actions as are reasonably necessary to protect the life and health of employees on the project.

7.02 State and City Fair Labor Standards. The Contractor agrees to comply with all applicable State and City fair labor standards in the execution of the contract, including compliance with Section 73-102, R.R.S. 1943. The Contractor further agrees to comply with the provisions of Section 48-657, R.R.S. 1943, pertaining to contributions to the Unemployment Compensation Fund of the State of Nebraska. In addition, the Contractor agrees to comply with the provisions of Section 52-118, R.R.S. 1948, pertaining to payment of all labor performed and for payment for materials and equipment rental which is actually used in performing this contract.

7.03 Anti-discrimination. During the performance of the work, the Contractor agrees not to discriminate against any employee or application for employment because of race, color, age, religion, sex, or national origin.

7.04 Permits. The Contractor shall procure and pay for all permits, licenses, and bonds necessary for the prosecution of Contractor's work and/or required for municipal, State, and Federal regulations and laws.

7.05 Patents. The Contractor and the surety in all cases shall indemnify and save harmless the City for any costs, expenses, and damages which it may be obligated to pay by reason of any such infringement at any time during the prosecution of or after the completion of the project.

7.06 Restoration of Surfaces Opened by Permit. Upon the presentation of a duly authorized and satisfactory permit from the City which provides that all necessary repair work will be paid for by the party to whom such permit is issued, the Engineer may authorize the Contractor to allow parties bearing such permits to make openings in the street. The Contractor shall, when ordered by the Engineer in writing, make in an acceptable manner all necessary repairs due to such openings, and such necessary work ordered by the Engineer shall be paid for on the basis of "Extra Work" as provided for in these specifications and shall be subject to the same conditions as original work performed.

7.07 Safety, Health, and Sanitation. In the performance of the contract, the Contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation. The Contractor shall furnish such additional safeguards, safety devices, and protective equipment and shall take actions as the Engineer may determine as being reasonably necessary to protect the life and health of Contractor's employees and the public.

7.08 Barricades and Warning Signs. Except as otherwise provided specifically in this section, the Contractor shall provide and maintain barricades, danger and warning signs, and suitable and efficient lights, and shall take every reasonable precaution to prevent accidents. The name of the Contractor shall be clearly visible on the barricades. The Contractor shall provide, at their own expense, such watchmen as are necessary to protect their equipment and to maintain proper lights.

Watchmen who may be necessary to direct traffic or prevent travel on any portion of the street shall be provided by the Contractor on written order from the Engineer. Unless the contract specifically provides that such watchmen are to be furnished by the Contractor, this expense shall be paid for as provided in "Extra Work."

7.09 Use of Explosives. When the use of explosives is necessary for the prosecution of the work, the Contractor shall use the utmost care not to endanger life or property. All explosives shall be stored in a secure manner, and storage places shall be clearly marked "DANGER--EXPLOSIVES."

7.10 Claims for Labor and Materials. The Contractor shall indemnify and save harmless the City from all claims for labor and materials furnished under this contract. When requested by the City, the Contractor shall submit satisfactory evidence that all persons, firms, or corporations who have done work or furnished materials under this contract, for which the City may become liable under the laws of the State, have been fully paid or satisfactorily secured. In case such evidence is not furnished or is not satisfactory, an amount will be retained from money due the Contractor which, in addition to any other sums that may be retained, will be sufficient, in the opinion of the City, to meet all claims of the persons, firms, and corporations as aforesaid. Such sum shall be retained until the liabilities as aforesaid are fully discharged or satisfactorily secured.

7.11 Contractor's Insurance. The Contractor shall secure and maintain throughout the duration of this contract insurance, from companies authorized to do business in Nebraska, of such types and in such amounts as may be necessary to protect themselves and the interests of the City against all hazards or risks of loss as hereinafter specified. This insurance shall cover all aspects of the Contractor's operations and completed operations. The form and limits of such insurance, together with the underwriter thereof in each case, shall be approved by the City, but regardless of such approval it shall be the responsibility of the Contractor to maintain adequate insurance coverage at all times. Failure of the Contractor to maintain adequate coverage shall not relieve them of any contractual responsibility or obligation. Minimum insurance coverage shall be the amounts stated herein or the amounts required by applicable law, whichever are greater.

1. "Worker's Compensation and Employer's Liability." This insurance shall protect the Contractor against all claims under applicable State worker's compensation laws. This insurance shall provide coverage in every state in which work for this project might be conducted. The Contractor shall also be protected against claims for injury, disease, or death of employees which, for any reason, may not fall within the provisions of a worker's compensation

law. This policy shall include an "all states" endorsement. The liability limits shall be not less than the following:

<b>Worker's Compensation Employer's Liability</b>	<b>Statutory Limits \$100,000 each accident \$100,000 each employee \$500,000 policy limit</b>
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2. "Business Automobile Liability." This insurance shall be written in comprehensive form and shall protect the Contractor, Contractor's employees, or subcontractors from claims due to the ownership, maintenance, or use of a motor vehicle. The liability limits shall be not less than the following:

<b>Bodily Injury &amp; Property Damage</b>	<b>\$500,000 Combined Single Limit</b>
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3. "Comprehensive General Liability." The comprehensive general liability coverage shall contain no exclusion relative to explosion, collapse, or underground property. The liability limits shall be not less than the following:

<b>Bodily Injury &amp; Property Damage</b>	<b>\$ 500,000 each occurrence \$1,000,000 aggregate</b>
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4. "Umbrella Liability Insurance." This insurance shall protect the Contractor against claims in excess of the limits provided under employer's liability, comprehensive automobile liability, and commercial general liability policies. The umbrella policy shall follow the form of the primary insurance, including the application of the primary limits. The liability limits shall not be less than the following:

<b>Bodily Injury &amp; Property Damage</b>	<b>\$1,000,000 each occurrence \$1,000,000 general aggregate</b>
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5. Additional Requirements. The City may require insurance covering a Contractor or Subcontractor more or less than the standard requirements set forth herein depending upon the character and extent of the work to be performed by such Contractor or Subcontractor.

Insurance as herein required shall be maintained in force until the City releases the Contractor of all obligations under the contract.

The Contractor shall provide and carry any additional insurance as may be required by special provisions of these specifications.

6. Certificate of Insurance. Satisfactory certificates of insurance shall be filed with the City prior to starting any work on this contract. The certificates shall show the City as an additional insured on all coverage except Workers Compensation. The certificate shall state that thirty (30) days written notice shall be given to the City before any policy is cancelled (strike the "endeavor to" wording often shown on certificate forms). If the Contractor cannot have the "endeavor to" language stricken, the Contractor may elect to provide a new certificate of insurance every thirty (30) days during the contract. The Contractor shall immediately notify the City if there is any reduction of coverage because of revised limits or claims paid which affect the aggregate of any policy.

7.12 Proof of Carriage of Insurance. Satisfactory certificates of insurance shall be filed with the City prior to starting any construction work on this contract. The certificates shall show the City as "Additionally Insured." The certificates shall state that thirty (30) days written notice shall be given to the City before any policy covered thereby is changed or canceled (strike the "endeavor to" wording often shown on certificate forms).

7.13 Contractor's Responsibility for Utility Property and Services. At points where the Contractor's operations are adjacent to properties of railway, telegraph, telephone, and power companies or adjacent to other property to which damage might result, work shall not be commenced until all arrangements necessary for the protection thereof have been made.

The Contractor shall cooperate with the owners of any underground or overhead utility lines in their removal and rearrangement operations in order that these operations may progress in a reasonable manner, that duplication of rearrangement work may be reduced to a minimum, and that services rendered by those parties will not be unnecessarily interrupted.

In the event of interruption to water or utility services as a result of accidental breakage or as result of being exposed or unsupported, the Contractor shall promptly notify the proper authority. Contractor shall cooperate with said authority in the restoration of service as promptly as possible. In no case shall interruption to water service be allowed to exist outside of working hours. Fire hydrants shall be kept accessible to the Fire Department at all times and no materials shall be kept or stockpiled within fifteen (15) feet of any fire hydrant.

The Contractor must cooperate with the utility companies and schedule work in such a manner as to protect the existing utility facilities until the facilities are abandoned or replacement facilities are completed. In instances where partial grading is necessary before a utility can install its facilities, the Contractor shall consult with the utility and plan the work so reasonable time can be allowed the utility for completing its work.

7.14 No Waiver of Legal Rights. The City shall not be precluded or estopped by any measurement, estimate, or certificate made either before or after the completion and acceptance of the work and payment therefor from showing the true amount and character of the work performed and materials furnished by the Contractor, nor from showing that such measurement, estimate, or certificate is untrue or is incorrectly made, nor that the work or materials do not in fact conform to the contract. The City shall not be precluded or estopped, notwithstanding any such measurement, estimate, or certificate and payment in accordance therewith, from recovering from the Contractor or Contractor's sureties, or both, such damage as it may sustain by reason of Contractor's failure to comply with the terms of the contract. Neither the acceptance by the City or any representative of the City, nor any payment for or acceptance of the whole or any part of the work, nor any extension of time, nor any possession taken by the City shall operate as a waiver of any portion of the contract or of any power herein reserved or of any right to damages. A waiver of any breach of the contract shall not be held to be a waiver of any other or subsequent breach.

7.15 Exposure of Pipe or Manholes. The Contractor shall conduct the work at all times in such a manner as will insure no disruption to the normal function of the sanitary sewer collection system. Particular attention shall be paid to the threat of introduction of storm water or other waters to the piping and manholes of the collection system. The Contractor shall take whatever precautions are necessary, such as, but not limited to installation of plugs in exposed pipes and manholes when work is not in progress or when leaving the work site. The Contractor will be held responsible for damages which may occur to either the collection system or to private property through introduction of storm water or other waters to exposed piping or manholes relating to the construction work.

## **SECTION 8 - PROSECUTION AND PROGRESS**

8.01 Subletting or Assigning of Contract. The Contractor will not be permitted to sublet, assign, sell, transfer, or otherwise dispose of the contract or any portion thereof or Contractor's right, title, or interest therein or to either legally or equitably assign any of the money payable under Contractor's contract or claim thereto without the written consent of Contractor's surety and the Engineer. The Contractor will not be relieved of any responsibility through any of the above actions.

8.02 Prosecution of Work. The bid for each project will show the contract period. The progress of the work shall be at a rate sufficient to complete the contract within the contract period. If it appears that the rate of progress is such that the contract will not be completed within the contract period or if the work is not being executed in a satisfactory and workmanlike manner, the City may order the Contractor to take such steps as it considers necessary to complete the contract within the period of time specified or to prosecute the work in a satisfactory manner. If the Contractor fails to comply with such order within two (2) weeks after receipt of the order, Contractor shall automatically be disqualified from receiving any additional contract awards, and the City shall have the right to declare the contract in default and to complete the work in accordance with these specifications under section entitled Abrogation.

The Contractor's sequence of operations shall be such as to cause as little inconvenience to the general public as possible.

The Contractor will be granted additional and suitable time for the prosecution of the work, as was lost by reason of a delay or delays attributable to other parties authorized to do work on the project over which the Contractor had no control or jurisdiction, as provided in these specifications under section entitled Extension of Contract Period.

8.03 Limitations of Operations. The Contractor shall conduct the work at all times in such a manner and in such sequence as will insure the least interference with traffic. Contractor shall have due regard to the location of detours and to the provisions of handling traffic. Contractor shall not open up work to the prejudice of work already started, and the Engineer may require the Contractor to finish a section on which work is in progress before work is started on any additional section. The Contractor shall so conduct operations and maintain the work in such condition that adequate drainage shall be in effect at all times.

8.04 Methods and Equipment. The methods, equipment, and appliances used shall produce a satisfactory quality of work and shall be adequate to maintain the schedule of progress specified. Equipment used on any portion of the project shall be such that no injury to the roadway, adjacent property, or other streets will result from its use.

When the methods and equipment to be used by the Contractor in accomplishing the construction are not prescribed in the contract, the Contractor is free to use any methods or equipment that is demonstrated to accomplish the contract work in conformity with the requirements of the contract to the satisfaction of the Engineer.

When the contract specifies that the construction be performed by the use of certain methods and equipment, such methods and equipment shall be used unless others are authorized by the Engineer. If the Contractor desires to use a method or type of equipment other than those specified in the contract, a request may be made to the Engineer for authority to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed to be used and an explanation of the reasons for desiring to make the change. If approval is given, it will be on the condition that the contractor will be fully responsible for producing construction work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the Engineer determines that the work produced does not

meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining construction with the specified methods and equipment. The Contractor shall remove the deficient work and replace it with work of specified quality or take such other corrective action as the Engineer may direct. No change will be made in basis of payment for the construction items involved nor in contract time as result of authorizing a change in methods or equipment under these provisions.

8.05 Temporary Suspension of Work. Work shall be suspended wholly or in part when, in the opinion of the Engineer, weather or other conditions are unfavorable to its satisfactory prosecution. Work shall also be suspended at the direction of the Engineer pending settlement of disputes arising out of failure of the Contractor to comply with the provisions of the contract. Written notice of suspension of work shall be given by the Engineer. When the conditions causing suspension no longer exist, such written notice shall be given to the Contractor by the Engineer. Promptly after such written notice, the Contractor shall resume prosecution of the work as provided in these specifications under section entitled Prosecution of Work.

8.06 Liquidated Damages. Time is an essential element of the contract, and it is important that the work be pressed vigorously to completion.

For each calendar day that any work shall remain uncompleted after the end of the contract period, the amount per calendar day specified in the bid form will be assessed, not as a penalty but as predetermined and agreed liquidated damages. The City will prepare and forward to the Contractor an invoice for such liquidated damages. The final payment will be withheld until payment shall have been made of this invoice.

Due account shall be taken of any adjustment of the contract period granted under the section of these specifications entitled Extension of Contract Period.

The assessment of liquidated damages for failure to complete the work within the contract period shall not constitute a waiver of the City's right to collect any additional damages which the City may sustain by failure of the Contractor to carry out the terms of the contract.

8.07 Extension of Contract Period. An extension of the contract period may be granted by the City for any of the following reasons:

1. Additional work resulting from a modification of the plans for the project
2. Delays caused by the City
3. Other reasons beyond the control of the Contractor which, in the City's judgment, would justify such extension.

No extension of contract period will be allowed for variations between contract quantities and actual quantities which cannot be predetermined and which amount to less than twenty percent (20%) of the contract quantities.

8.08 Abrogation. If the Contractor abandons, sublets, or assigns the work under this contract without the consent of the City, or if Contractor fails to give - personal attention to it, or if it is the Engineer's opinion, and is so certified in writing to the Contractor and the City, that the Contractor is violating any of the provisions of this contract or that Contractor is not prosecuting the work in good faith or at the rate of progress specified, or that Contractor has unnecessarily or unreasonably delayed or neglected the work or any part of it, written notice to that effect is to be given to the Contractor by the Engineer. After such notice, no materials or equipment shall be removed from the work. If, within five (5) days thereafter, the Contractor does not take steps, which in the judgment of the Engineer will insure the satisfactory completion of the work, then the City may declare this contract null and void and the security forfeited and may notify the Contractor in writing to discontinue the work or any part of it; thereupon ceasing the Contractor's right of possession of the ground and of all materials and equipment thereon. The City then, at

their option, may enter upon and take possession of the work with all materials, supplies, and equipment remaining thereon and by contract or otherwise, as the City may determine, may complete the work or the part of it designated and charge the expense thereof to the Contractor using any materials or equipment found on the site. The expense so charged, together with all damages incurred, will be deducted from any funds due or to become due under this contract and, should the unexpended balance of these funds be insufficient, the excess shall be at the cost of the Contractor and sureties on the Contractor's bond. Neither completion of a part of the work nor the extension for any reason of the time of the completion of the work is to be considered a waiver of this right to abrogate the contract for abandonment, delay, or unsatisfactory work.

8.09 Termination of Contractor's Responsibility. The contract shall be considered completed when the work has been accepted in writing by the City. Such acceptance shall release the Contractor from all further obligation with respect thereto, except as to conditions and requirement set forth in Contractor's bond.

## **SECTION 9 - MEASUREMENT AND PAYMENT**

9.01 Payments. Payments for estimated work completed will be made only on certificates of the Engineer at a regular City Council meeting.

The City, at its discretion, may include in such estimates payments for materials that will eventually be incorporated in the project, provided that such materials are suitably stored on the site of the project at the time of preparing estimates for payment. Such payment is to be based upon the estimated value thereof as ascertained by the Engineer. Such material when so paid for by the City shall not be removed from the project without consent of the City and, in case of default on the part of the Contractor; the City may use or cause to be used by others these materials in construction of the project.

The City will retain five percent (5%) of the estimated amount of work executed in an approved manner and of the approved materials and apparatus suitably stored on the site.

Payment of the retained five percent (5%) will be made within sixty (60) days after the formal approval and acceptance by the Engineer of all apparatus, materials, and work embraced in the contract.

9.02 Payments Withheld. The City may withhold or, on account of subsequently discovered evidence, nullify the whole or a part of any certificate to such extent as may be necessary to protect itself from loss on account of:

1. Defective work not remedied
2. Claims filed or reasonable evidence indicating probable filing of claims
3. Failure of the Contractor to make payments properly to subcontractors or for materials or labor
4. A reasonable doubt that the contract can be completed for the balance then unpaid
5. Damage to another contractor.

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

9.03 Acceptance and Final Payment. If final inspection reveals that all details of the work have been completed satisfactorily, the Engineer shall tentatively accept the work, in writing, relieving the Contractor of further responsibility for the care and maintenance of the completed work and, provided that all equipment and materials have been removed from the right-of-way, shall also relieve the Contractor of further public liability. As soon as possible after tentative

acceptance of the work, the Engineer shall measure the completed work and compute the quantities of work for which payment is to be made. Before final settlement is made, the City shall be satisfied with the completed work. When the Engineer is satisfied that all items of the work have been found to be consistent with the terms of the contract and specifications, a final estimate including the retained percentage due the Contractor shall be released for payment. Release of the final estimate shall constitute final acceptance of the work.

All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

Extra work - See these specifications under section entitled Extra Work.

9.04 Payment for Extra Work. The Contractor will receive and accept payment for work performed under the contract as follows:

1. Items of work performed which are covered by definite prices stipulated in the contract. For all items of work performed which are covered by definite unit prices or lump sum amounts specified in the contract, the Contractor shall receive and accept compensation at the rate specified in the contract.

2. Extra work ordered by the Engineer, of a quality or class not covered by the contract, will be paid for at an agreed price. For extra work ordered by the Engineer and performed on an agreed price basis, the Engineer and the Contractor shall enter into a written agreement, and have City Council approval, before such work is undertaken. This written agreement shall describe the extra work that is to be done and shall specify the agreed price or prices therefore.

**Revised 1-25-2011**

# **DIVISION II**

## **PORTLAND CEMENT CONCRETE PAVEMENT**

**DIVISION II  
PORTLAND CEMENT CONCRETE PAVEMENT**

**C O N T E N T S**

Section	Description
<b>10</b>	<b>SCOPE OF WORK</b>
<b>11</b>	<b>MATERIALS</b>
11.04	Cement--47-B (Modified) and ABX (Modified) Concrete
11.02	Portland Cement
11.03	Mixing Water
11.04	Fine Aggregate for 47-B (Modified) Concrete
11.05	Coarse Aggregate for 47-B (Modified) Concrete
11.06	Aggregate for ABX (Modified) Concrete
11.07	Granular Foundation Course
11.08	Joint Filler
11.09	Joint Sealing Material
11.10	Curing Compound
<b>12</b>	<b>CONSTRUCTION METHODS</b>
12.01	Clearing and Grubbing
12.02	Site Preparation
	<b>Revised 1-18-2010</b>
12.03	Subgrade Preparation
12.04	Water Main and Sanitary Sewer Pipe Bedding and Backfill
12.05	Granular Foundation Course
12.06	Surplus Earth
12.07	Adjustment of Manholes
	<b>Revised 1-18-2010</b>
12.08	Adjustment of Storm Sewer Inlets
12.09	Integral Curb
<b>13</b>	<b>CONCRETE CONSTRUCTION</b>
13.01	Forms and Form Setting
13.02	Air Entraining
13.03	Consistency
13.04	Mixing
13.05	Placing and Finishing
13.06	Surface Test
13.07	Headers
13.08	Transverse Construction Joints
13.9	Transverse Expansion Joints
13.10	Transverse Contraction Joints
13.11	Longitudinal Joints
13.12	Curing
13.13	Sealing of Joints
13.14	Protection
13.15	Opening to Traffic
13.16	Acceptance

Section	Description
<b>14</b>	<b>METHOD OF MEASUREMENT AND BASIS OF PAYMENT</b>
14.01	Clearing and Grubbing
14.02	Site Preparation
14.03	Grading, Surplus Earth, Embankment
14.04	Granular Foundation Course
14.05	Manholes
14.06	Storm Sewer Inlets
14.07	Integral Cub
14.08	Concrete Pavement
14.09	Beams
14.10	Headers
14.11	Transverse Expansion and Miscellaneous Joints
14.12	Concrete Test Cylinders
14.13	Testing
14.14	Miscellaneous

**DIVISION II  
PORTLAND CEMENT CONCRETE PAVEMENT**

**SECTION 10 - SCOPE OF WORK**

The work covered by this division of the specifications consists of furnishing all labor, plant, equipment, appliances, and materials and performing all operations necessary to construct and complete concrete pavement and appurtenances in strict accordance with these specifications, the applicable drawings, and subject to the terms and conditions of the contract.

**SECTION 11 - MATERIALS**

11.01 Cement - 47-B (Modified) and ABX (Modified) Concrete. The specifications for 47-B (Modified) and ABX (Modified) concrete shall be as specified in Section 1002 "Portland Cement Concrete" of the most current State of Nebraska Department of Roads Standard Specifications for Highway Construction with the following exceptions.

1. Paragraph 1 of Section 1002.04 is deleted and the following added:

For 47-B (Modified) concrete no more than 50 lbs. of total water will be added for each 100 lbs. of cement (water to cement ratio not to exceed 0.50). For ABX (Modified) concrete no more than 47 lbs. of total water will be added for each 100 lbs. of cement (water to cement ratio not to exceed 0.47).

Concrete with water to cement ratios greater than specified above will be rejected. If any water is added to the concrete at any time without the permission of the Engineer, the concrete will be rejected.

2. Portland Cement Concrete for pavement shall meet the following requirements:

<u>Class of Concrete</u>	<u>Compressive Strength Requirements in Pounds per Square Inch</u>	
	<u>7 days</u>	<u>28 days</u>
47-B (Modified)	2100	3600
ABX (Modified)	2300	3800

11.02 Portland Cement. Shall be as specified in Section 1004 "Portland Cement" of the most current Nebraska Department of Roads specifications.

11.03 Mixing Water. Shall be as specified in Section 1005 "Water for Concrete" of the most current Nebraska Department of Roads specifications.

11.04 Fine Aggregate for 47-B (Modified) Concrete. Shall be as specified in Section 1033 "Aggregates", Table 1033.02A "Gradation Limits" of the most current Nebraska Department of Roads specifications.

11.05 Coarse Aggregate for 47-B (Modified) Concrete. Shall be as specified in Section 1033 "Aggregates", Table 1033.03A, of the most current Nebraska Department of Roads specifications.

11.06 Aggregate for ABX (Modified) Concrete. Shall be as specified in Section 1033 "Aggregates" of the most current Nebraska Department of Roads specifications with below noted additions.

It shall be the responsibility of the Contractor to submit test results conforming to ASTM C295 that indicate the aggregate to be used in ABX Modified concrete is non-reactive with the alkalis in cement. If the results of this test are not conclusive, then results shall be submitted that conform to ASTM C227 (Mortar Bar) which remove all doubt as to the acceptability of the aggregate for Portland cement concrete.

These results must be submitted prior to any concrete being used from any source of aggregate. New test results must be submitted each time the aggregate comes from a new source or for each 700 cubic yards of concrete poured.

In the event that non-reactive aggregate is not available, the Contractor will not be allowed to use the sand-gravel mix but will be required to use 47-B Modified Portland cement concrete as specified in these specifications under section entitled Cement - 47-B (Modified) and ABX (Modified) Concrete.

11.07 Granular Foundation Course. The granular materials shall be sand from local pits that are shown on the plans, or it may be a coarse sand, fine sand, loamy soil, or any mixture of any of these materials that conforms to the following requirements:

	<u>Minimum</u>	<u>Maximum</u>
Total Percent Retained on #200 Sieve	80	92
Plasticity Index		6

11.08 Joint Filler. Joint filler shall consist of premoulded bituminous fiber uniformly impregnated with between 35% and 50% durable asphalt by weight and be furnished in strips of the dimensions specified in the plans. A one (1) inch thick sample when compressed to 50% of original thickness at rate of 1/10 inch per minute and released shall show at least 70% recovery within one hour after compression and shall not have required more than 500 pounds per square inch compression load and extrusion of not more than 1/8 inch.

11.09 Joint Sealing Material. The hot pour joint material shall be of the rubber-asphalt type and shall be melted in a double jacket kettle equipped with an agitator for stirring the material during melting and pouring. The rubber-asphalt shall meet Federal Specification SS-S-164 or subsequent revisions.

11.10 Curing Compound. The curing compound shall consist of a nonbituminous pigmented liquid conforming to AASHTO Designation M148-49 or subsequent revisions.

## **SECTION 12 - CONSTRUCTION METHODS**

12.01 Clearing and Grubbing. Except for trees, shrubs, and grasses which are to be preserved as indicated on the plans or as designated by the Engineer, all trees, stumps, hedges, shrubs, weeds, grass, other herbaceous vegetation, and rubbish shall be removed from the right-of-way and from borrow pits furnished by the contracting authority. This work shall be classified as follows:

Clearing shall consist of the cutting, removal, and disposal of trees six (6) inches or more in diameter.

Grubbing shall consist of the removal and disposal of stumps, including roots.

Hedge removal shall consist of the pulling or grubbing and disposal of hedges or other shrubs planted close together in rows. If any individual tree of those composing a hedge has a diameter greater than four (4) inches, it shall be measured separately as a tree.

Weed and rubbish removal shall consist of the removal and disposal of all weeds, grass, other herbaceous vegetation, and all rubbish encountered on the work.

12.02 Site Preparation. This work shall consist of removal and disposal of all crosswalks, private walks, driveway approaches, curbs, curb and gutter, and headers as indicated on the plans or as directed by the Engineer.

Topsoil shall be carefully removed and deposited in storage piles convenient to the area which will subsequently receive topsoil. Topsoil shall be kept separate from other excavated materials and shall be piled free from roots, stones, and other undesirable materials.

The backfill over all existing utility lines shall be consolidated when shown on the plans or directed by the Engineer. This shall be done by water jetting and vibration to the full depth of the utility lines unless other methods are approved by the Engineer. When compaction over existing utility lines is not shown on the plans or is not a bid item and is directed to be done by the Engineer, the work shall be negotiated for in writing before any work is commenced and will be paid for as a single unit.

All sanitary and storm sewers will be televised before a street is paved or repaved to insure that the street will not have to be torn up to repair the sewer in the near future.

**Revised 1-18-2010**

12.03 Subgrade Preparation. All paving subgrade shall be brought to the exact lines, grades, and cross sections shown on the plans or as directed by the Engineer.

The subgrade shall be constructed to have a uniform density throughout its entire width. All soft or yielding material and other portions of the subgrade which will not compact readily shall be removed as directed. All hollow places, settlements, or other imperfections shall be filled with approved material and compacted.

In all places where embankment may be required to bring the subgrade to the required height, it shall be constructed in horizontal layers not to exceed six (6) inches in depth before rolling. Each successive layer of material placed as described shall be wetted to within 3% of the optimum moisture content and compacted to at least 95% of the maximum dry density obtained at optimum moisture content as determined by AASHTO Method T99.

In all embankment areas where highly expansive soils are encountered, materials shall be wetted at one percent (1%) to three percent (3%) above optimum moisture.

In cuts when the undisturbed earth is suitable for the subgrade, manipulation other than rolling will not be required, provided the upper three (3) inches is at 95% maximum dry density as called for in embankments.

12.04 Water Main, Storm and Sanitary Sewer Pipe Bedding and Backfill. The pipe bedding and backfill shall be Type "C" as required by Division V, Pipe Bedding, Trench Backfill, and Nonshrinkable Backfill. The completion of the trench backfill under pavement shall be adequate to provide 95% of maximum dry density and shall be wetted to within 3% optimum moisture as specified in this division under Subgrade Preparation.

12.05 Granular Foundation Course. This work shall consist of the construction of a compacted foundation course of granular material to the lines, grade, and dimensions shown on the plans on a previously prepared and approved subgrade.

12.06 Surplus Earth. All surplus earth shall be stockpiled by the Contractor at the location or locations designated on the plans or as the Engineer shall direct.

12.07 Adjustment of Manholes. All manholes encountered whether shown on the plans or not shall be brought to the proper grade by removing the castings and adjusting the tops of the existing manholes by removal or addition of concrete or brick, as the case may be, and resetting the frames and covers.

Brick masonry shall consist of the type of brick satisfactory to the Engineer, laid in 1:2 cement mortar. All brick must be wetted before being laid. All joints shall be completely filled with mortar and shall not be less than 1/4 inch and not more than 1/2 inch in thickness.

Contractors are instructed to use plastic or concrete risers to bring manhole ring and covers to grade. Using pieces of wood, concrete or bricks and then filing with concrete mortar will no longer be accepted.

All manholes will be inspected before and after a concrete or asphalt street is laid down to insure that no foreign material is in the flow line or at the bottom of a manhole.

**Revised 1-18-2010**

12.08 Adjustment of Storm Sewer Inlets. All storm sewer inlets shall be adjusted to line and grade by removing the castings and adjusting the tops of the existing storm sewer inlets by removing or adding concrete or bricks, as the case may be, and resetting the castings.

Brick masonry shall consist of the type of brick satisfactory to the Engineer, laid in 1:2 cement mortar. All brick must be wetted before being laid. All joints shall be completely filled with mortar and shall not be less than 1/4 inch and not more than 1/2 inch in thickness.

12.09 Integral Curb. Integral curb shall be constructed on the edge of the concrete slab in accordance with the plans and typical cross section. This curb shall be placed immediately after the concrete on the pavement has been placed and finished and before it takes its initial set. That part of the pavement which is to be covered by the integral curb shall be cleaned of all laitance and shall be roughened. Integral Curb will be required on all new pavement construction. If construction is a very short section, the Director of Public Works may allow an exception upon written request.

## SECTION 13 - CONCRETE CONSTRUCTION

13.01 Forms and Form Setting. On all new mainline pavement construction, slip form process will be required. If the Contractor wants to use standard forms rather than slip forms because the area is small, they must submit a written request to the Director of Public Works for an exception. If the request is granted, the contractor will be required to meet certain requirements as listed herein. Outside forms shall be metal, of depth equal to the design thickness of the pavement at its edge, and straight and free from warp. When integral curb is required, the additional height represented by the curb may be obtained by bolting extra forms upon the top of the main form. Wood forms or flexible or curbed metal forms of proper radii shall be used for curves having radii of less than 100 feet. The forms shall be neatly, tightly, and securely pinned and staked to the line and grade furnished by the Engineer. They shall not at any time show a variation of more than 1/8 inch in a ten (10) foot length from the true plane of top of forms. Shimming with loose earth, pebbles, etc. will not be permitted.

Forms shall be cleaned and oiled before concrete is placed against them.

When pavement is being laid contiguous to previously finished concrete pavement of the same finish grade elevation or contiguous to previously finished independent curb and gutter, such finished pavement or curb and gutter may be made to serve as side forms and as a guide for striking, tamping, and finishing equipment.

13.02 Air Entraining. When using specifications for State of Nebraska 47-B concrete, the total air content shall be 6% plus or minus 1-1/2% by volume of the wet concrete as determined by AASHTO Standard Method T-121 or ASTM Method C-231 and up to 9% for sand and gravel mix.

13.03 Consistency. The quantity of water shall be determined by the Engineer in accordance with these specifications under section entitled Cement - 47-B (Modified) and ABX (Modified) Concrete and not varied without the Engineer's consent. The Contractor shall furnish and use with the mixer an approved adjustable water measuring device which will prevent excess water flowing into the mixer so the consistency may be under positive control and all batches may be of the same consistency.

In general, the minimum amount of water shall be used which will produce the required workability. The mortar shall cling to the coarse aggregate and shall show no free water when removed from the mixer. The upper surface of the set concrete shall show a cement film upon the surface and shall be free from all laitance. In no case shall an amount of water be used sufficient to cause the collection of a surplus on the surface or to cause segregation during the transportation to place of deposit. The concrete must be of workable consistency when placed.

13.04 Mixing. The mixing shall be done in a batch-mixer of approved type which will insure the uniform distribution of the material throughout the mass so the mixture is uniform in color and smooth in appearance. No mixer which has a capacity of less than one-sack batch shall be used on any work. The concrete shall be mixed in quantities required for immediate use. Concrete which has developed initial set or is not in place within thirty (30) minutes after the water has been added shall not be used. Retempering concrete by adding water or by other means will not be permitted.

The concrete shall be mixed for a period of at least one (1) minute after all the ingredients are assembled in the drum with the drum revolving at a rate for which the mixer was designed but, in no case, shall it be less than twelve (12) nor more than twenty (20) revolutions per minute. The mixer shall be equipped with an attachment for satisfactorily locking the discharging device to prevent the emptying before the minimum time required. The entire contents of the drum shall be discharged before any materials for the succeeding batch are placed therein.

No concrete shall be mixed while the air temperature is at or below 40 degrees Fahrenheit, except when specifically permitted by the Engineer. In such case, all water used for mixing concrete shall be heated to a temperature of at least 70 degrees but not over 150 degrees Fahrenheit. When artificial heat is applied and the air temperature is above 32 degrees Fahrenheit, the mixed concrete shall not be less than 70 degrees Fahrenheit at the time of the placing in the forms, and no concrete shall be placed in the forms when the air temperature is below 32 degrees Fahrenheit. In no case shall material containing frost or lumps of hardened material be used. When ready-mixed concrete is to be produced, the Contractor shall notify the Engineer in writing at least fourteen (14) days in advance of mixing operations as to location, type of plant and equipment which they propose to use in proportioning, mixing, and hauling concrete.

The Contractor shall furnish at least eight (8) standard 50 pound weights for calibrating and testing scales used in weighing aggregates and cement.

Ready-mixed concrete shall be mixed and delivered to the site of work by means of one of the following combinations of operations:

1. Mixed completely at a central mixing plant and the mixed concrete transported to the point of delivery in a truck agitator or in a truck mixer operating at agitator speed or in approved non-agitating equipment (known as central-mixed concrete).
2. Mixed partially at a central mixing plant and mixing completed in a truck mixer (known as transit-mixed concrete).
3. Aggregates and cement proportioned in a central plant and mixed completely in a truck mixer (known as transit-mixed concrete).

All mixers and agitators shall be operated within the limits of the manufacturer's rated capacity. They shall be operated at the speed of rotation for which the equipment was designed. Attached to each truck mixer and truck agitator shall be a metal plate on which is stated the manufacturer's capacities in terms of volume of mixed concrete and the manufacturer's stated speed of rotation for both mixing and agitation.

The truck mixer or agitator shall consist of a closed water-tight revolving drum suitably mounted and fitted with adequate revolving blades. Truck mixers shall be capable of combining aggregates, cement, and water into a thoroughly mixed and uniform mass of concrete and of discharging the concrete without segregation. Truck agitators shall be capable of transporting and discharging concrete without segregation.

For revolving drum type mixers the mixing speed shall not be less than seven (7) revolutions per minute of the drum nor greater than that which will produce a peripheral velocity of more than 225 feet per minute. For revolving blade type mixers, the mixer speed shall not be less than six (6) nor more than sixteen (16) revolutions per minute of the mixing blades. Agitation speed shall not be less than two (2) nor more than six (6) revolutions per minute of the drum or mixing blades.

Concrete transported without agitation shall not be used if the period elapsed between the time the concrete is discharged from the mixer and the time it is placed is greater than thirty (30) minutes. Concrete transported with agitation shall not be used when the cement has been in contact with the aggregate more than 1-1/2 hours before it is placed.

13.05 Placing and Finishing. The concrete shall be deposited on the prepared subgrade or on the granular foundation course so there shall be no separation of the mortar and the aggregate, and then shall be spread to the required depth and for the entire width of the pavement by approved methods, struck off, and finished. The subgrade templet shall be drawn over the subgrade or foundation course ahead of the point where concrete is being placed and shall be kept in position while the concrete is being placed. The concrete shall be deposited on the subgrade or granular foundation course between the forms in position and in such quantity as to make a uniform layer of about one (1) inch greater than the required thickness. During the operation of striking off the concrete, a uniform ridge of concrete at least three (3) inches in depth shall be maintained ahead of the vibratory strike-off screed for its entire length. After being deposited, it shall be consolidated along the forms and along all joints. At the end of the day or in case of unavoidable interruption of more than thirty (30) minutes, a transverse construction joint shall be placed at the point of stopping work, provided the section on which the work has been suspended shall not be less than ten (10) feet in length. The working edge of the screed shall be shaped to the required cross section of the pavement. After the concrete has been properly consolidated and struck off, the entire surface shall be floated longitudinally, from bridges, with a float at least twelve (12) feet long and twelve (12) inches wide. If made of wood, this float shall be two (2) inches thick. If made of metal, it shall have a weight approximately equal to a similar float made of two (2) inch plank and shall be lined on its bottom face with wood, having rounded edges. The float shall be operated by two men, one at each end, each man standing on a bridge spanning the pavement. The longitudinal and transverse motion shall be passed slowly from one side of the pavement to the other a sufficient number of times, at least twice, until the float on its last passage shall show contact with the concrete throughout its entire length. The bottom surface of the float shall remain flat on the surface of the concrete during the entire operation of longitudinal floating. The next section to be floated shall overlap the one previously floated by half the length of the float.

After the concrete has been floated longitudinally, the surface shall be floated transversely using a float of 1"x12" material three (3) to four (4) feet in length and fitted with a handle of sufficient length to permit the float to reach just beyond the center line. Any high or low areas exposed as a result of this floating shall be corrected prior to belt finishing.

After the concrete has been floated transversely and the water sheen has disappeared from the surface of the pavement, the final finish shall be given with a canvas or rubber belt, burlap drag or brooming, or any combination of the above as directed by the Engineer.

If belting is selected, it shall be accomplished with a belt of two to four ply having a width of not less than six (6) inches and a length at least two (2) feet greater than the width of the pavement. The belt shall be operated with a combined crosswise and longitudinal motion, care being taken not to work the crown out of the pavement or to permit the edges of the belt to dip into the surface of the concrete.

If a broom finish is selected, it shall be accomplished by drawing a broom across the surface from the center line toward each side with the broom held perpendicular to the surface with only one stroke of the broom on each portion of the surface. (If the pavement is being constructed lane-at-a-time, the broom shall be drawn across the full width of each lane in one operation.) The broom shall be of the push broom type not less than 18" wide made from bass or bassine fiber not more than five (5) inches long and with a handle at least one (1) foot longer than the width of pavement being broomed in one operation. The brooming operations shall be executed so the corrugation will be uniform in appearance and not more than 1/16 inch in depth.

If a burlap drag finish is selected, it shall be accomplished by drawing a wet burlap, carpet, or canvas drag over the surface in a longitudinal direction. The drag shall be at least two (2) feet longer than the width of the slab being placed and shall be wide enough so about three (3) feet will be in contact with the pavement while it is in use. If burlap is used, the drag shall consist of not less than two (2) layers. Drags shall be rinsed or washed as often as necessary to remove hardened particles which would mar the uniform surface that would be obtained with a clean drag.

13.06 Surface Test. Before final finishing and previous to initial set, the surface of the pavement shall be tested under the supervision of the Engineer. All irregularities or undulations not within the tolerance of the following test shall be corrected with fresh concrete and the affected surface brought within the requirement of the test and refinished if necessary. The test shall be made with a transverse testing templet and straightedge at least ten (10) feet long. The templet shall be accurately shaped in conformity with the typical cross section and shall be subject to the approval of the Engineer. The templet shall be used to test the shape of the surface transversely, the straightedge for longitudinal trueness. The straightedge shall be placed parallel to the center line so as to bridge any depressions and touch any high spots. Ordinates exceeding one fourth inch measured from the face of the templet or straightedge when in position at any point shall be eliminated by means of a long-handled wood float.

As soon as the pavement has set sufficiently to permit walking on it and not later than 10:00 a.m. of the day following the placing of the concrete, it shall be thoroughly checked by the inspector with a straightedge. All variations in excess of one fourth inch measured from the surface of the straightedge when it is placed parallel to the center line shall be plainly marked. The Contractor shall at once eliminate such variations by the use of approved grinding tools or carborundum brick and water. The work of grinding or rubbing shall not be performed in such manner or carried to such extremes that the bond of the concrete shall be broken. The use of brush hammer or similar device to remove irregularities after the concrete has taken its final set will not be permitted. All templates, straightedges, and other testing devices shall be furnished by the Contractor.

13.07 Headers. Concrete headers extending to full depth and width of the pavement shall be constructed at locations shown on the plans. They shall be constructed to the dimensions and design called for in the plans.

13.08 Transverse Construction Joints. Whenever concreting is stopped for a period of over thirty (30) minutes, a transverse construction joint shall be formed by finishing the concrete to a bulkhead made of two (2) inch material cut to the exact cross section of the pavement slab, as shown in the plans. When the concreting is resumed, the bulkhead shall be moved taking care not to disturb any concrete placed. The joints shall be constructed perpendicular to both the center line and the surface of the pavement. In no case shall an emergency construction joint be allowed within ten (10) feet after placing a regular expansion or construction joint. If the joint falls within this limit, the concrete shall be removed back to the previously installed joint.

When a construction joint is placed at a location where integral curb is being constructed, a piece of pre-formed joint material one half inch in thickness and conforming to the cross section of the curb shall be placed through the curb at the construction joint. The edges of the concrete shall be rounded to a radius of not more than one fourth inch.

13.9 Transverse Expansion Joints. Expansion joints shall be of a premoulded bituminous fiber type conforming to these specifications under the section entitled Joint Filler.

The joint shall extend entirely through the pavement and the joint filler shall be placed so the top edge will be one half inch below the surface of the finished pavement. No section of the joint material shall be shorter than the width of pavement strip between longitudinal joints. Before the pavement is opened to traffic, this space shall be swept, cleaned, and filled with approved joint sealing material.

The pre-formed expansion joint material shall be held securely by means of a special metal joint holder and removable cap, perpendicular to both the center line and the surface of the pavement. The metal joint holder and cap shall remain in place until after the passage of the concrete spreader. After the concrete has been finished, the metal joint holder and cap shall be removed and the edge of the concrete rounded to a radius of not more than one fourth inch. When integral curb is being constructed, an additional piece of pre-formed material of the same cross section as the curb shall be extended through the curb and to the top surface of the pavement. The joints shall be so installed and finished to insure complete separation of the slabs.

13.10 Transverse Contraction Joints. Transverse contraction joints shall be constructed at intervals of not less than ten (10) feet or more than sixteen (16) feet. The joints shall be true and straight to the center line and surface of the pavement. Variation of more than one half inch in ten (10) feet from a straight line will not be permitted. The joint shall be placed so its junction with the longitudinal joint will be a neat fitting connection. All transverse contraction joints shall be done by the saw cut method. To prevent the development of random cracks, joints at approximately eighty (80) feet intervals shall be sawed the same day as the pour is made. All other transverse contraction joints shall be sawed the following afternoon.

13.11 Longitudinal Joints. Longitudinal contraction joints, when required, shall be in accordance with the requirements for transverse contraction joints.

All sawed longitudinal joints shall be sawed before the concrete has attained an age of seven (7) days and before the pavement is opened to any vehicular traffic.

13.12 Curing. As soon as the concrete has hardened sufficiently to prevent excessive marring of the surface or adherence thereto, the concrete shall be protected with a single covering of burlap, placed and kept saturated for at least twelve (12) hours. As soon as the burlap is removed, the top surface and the edges of the pavement shall be covered with a continuous uniform nonbituminous impervious coating. The curing compound may be applied in either one or two applications in accordance with the directions of the manufacturer. However, if applied in two coatings, the second shall be applied not later than thirty (30) minutes after the first. In no case shall the rate of application be less than one (1) gallon per fifteen (15) square yards of surface area.

The sides of the pavement slab or back side of integral curb shall be covered with the curing compound within thirty (30) minutes after removal of the form.

When wet cotton mats, wet jute felt mats, paper, or any other method than curing compound is to be used for curing, the Contractor shall notify the Engineer in writing at least fourteen (14) days in advance giving the type and specifications of material and method to be used.

When it is expected that during the progress of the work the temperature may fall below 40 degrees Fahrenheit, a sufficient supply of straw, hay, grass, or other material suitable, in the judgment of the Engineer, must be maintained on hand to cover the concrete and to sufficiently protect the surface and edges against freezing until it is at least ten (10) days old. In such case, at the discretion of the Engineer, wetting and spraying may be omitted. Manure shall not be used as a protection for green concrete. Whenever the temperature falls below 40 degrees Fahrenheit, freshly finished concrete shall be protected by frames enclosed by canvas or other type of housing and the temperature of the air surrounding the concrete shall be maintained at not less than 45 degrees Fahrenheit. Sufficient heating apparatus, such as lanterns, suitable stoves, or steam equipment, shall be furnished and maintained by the Contractor. Any concrete showing injury by freezing on uncovering shall be removed and replaced at the expense of the Contractor.

13.13 Sealing of Joints. Joint sealing operations shall not be started until after final curing is completed. All joints which require sealing shall be thoroughly cleaned by a jet of compressed air. Any excess mortar or concrete shall be cut out with chisels. Joints shall be filled only when completely dry. The filler used shall be material as specified in these specifications under the section entitled Joint Sealing Material. The cleaning and filling shall be carefully done with proper equipment and a neat workmanlike joint obtained, free from excess and unsightly filler.

The joint sealing material shall be melted uniformly and with constant stirring in an asphalt kettle of such design that direct flames are not applied to the immediate surfaces of the kettle which are in contact with the joint sealing material. The material shall be furnished or prepared in pieces of such size and shape that the material can be melted readily to the proper pouring consistency. The heating of the material shall be arranged to minimize the length of time during which the temperature of the material exceeds 350 degrees Fahrenheit. In no case shall the temperature exceed the maximum recommended by the manufacturer. The joints shall be filled with the use of a pouring device which is satisfactory to the Engineer. Precautions shall be taken to prevent spilling material on surfaces of the pavement adjacent to the joint.

13.14 Protection. The Contractor shall provide and maintain substantial barricades, warning signs, and flares to provide the public and the construction work adequate protection and keep all traffic off the pavement.

13.15 Opening to Traffic. Before any traffic is permitted on the concrete, all curing and protecting materials other than membrane shall be carefully removed from the finished work and the concrete shall be swept clean. No section of pavement shall be opened to traffic until the concrete has reached a minimum age of fourteen (14) days or compression strength of 3000 psi.

The Contractor's forces may be allowed on the pavement for the purpose of clean up work any time after the concrete has reached a minimum age of seven (7) days.

13.16 Acceptance. The Contractor shall furnish a minimum of two (2) cores at locations designated by the Engineer for each 1000 square yards of pavement placed, and the acceptance of the pavement may be governed by the quality and thickness as shown by the cores. Slabs of pavement which are found to be more than one half inch short of the specified thickness shall be removed and replaced at the Contractor's expense with concrete of specified quality and thickness. If, however, in the opinion of the Engineer, there is no probability of immediate failure of such deficient slabs, they may allow the Contractor the choice of leaving the defective slabs in place and receiving no compensation or payment for the same or of replacing the pavement slab as provided above.

If the average strength of test cores or test cylinders, cured at a temperature within the range of 60 to 80 degrees Fahrenheit, is more than ten percent (10%) below the required strength, the Engineer may elect either to permit such pavement to remain in place and limit the payment for such defective work to a maximum of 90% of the contract unit price or require the Contractor, at Contractor's expense, to remove the pavement area deficient in the specified strength and replace it with pavement of satisfactory quality.

## **SECTION 14 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

14.01 Clearing and Grubbing. Clearing and grubbing of trees larger than six (6) inches in diameter will be measured for payment by counting the actual number of trees removed. The diameters of trees will be computed by measuring the circumference and dividing by 3.14. Payment shall be made at the contract unit price per each tree at the diameter or group of diameters shown in the bid.

Stumps will be measured for payment by taking the average diameter at cutoff. Payment shall be made at the contract unit price per each stump at the diameter or group of diameters shown in the bid.

Hedge removal will be measured for payment in lineal feet of a row of hedges.

Weeds, rubbish, and other herbaceous vegetation will not be measured for payment but will be considered as subsidiary to the contract work.

14.02 Site Preparation. Crosswalks and private walks to be removed within the area between construction lines will be measured for payment in square feet in their original position. Driveway approaches will be measured for payment in square yards in their original position.

Existing straight curb and curb and gutter to be removed will be measured for payment by length in lineal feet. Measurements for the straight curb will be made along the front face of the curb. Measurements for curb and gutter will be made along the flow line of the gutter.

Removal of existing pavement headers will be measured for payment by length in lineal feet.

Compaction over all existing utility lines will be measured for payment as a single unit except when in clay soil. In clay soil, excavation, additional materials, and recompaction over utility lines will be paid for as additional excavation.

14.03 Grading, Surplus Earth, Embankment. All grading, removal of surplus earth, and embankment will not be measured for payment but shall be subsidiary to the paving.

14.04 Granular Foundation Course. Granular foundation course will be measured for payment by area in square yards or cubic yards.

14.05 Manholes. Adjusting manholes to grade will be measured for payment as a single unit for each manhole that is adjusted to grade as shown in the plans or as directed by the Engineer.

14.06 Storm Sewer Inlets. Adjusting storm sewer inlets to line and grade will be measured for payment as a single unit.

14.07 Integral Curb. Integral curb will be measured for payment by length in lineal feet. Measurement will be made along the back side of the curb.

14.08 Concrete Pavement. Concrete pavement will be measured for payment by area in square yards. Concrete pavement shall include all joints, curing, sealing, etc. not specifically designated as separate items.

14.09 Beams. Concrete pavement beams will be measured for payment by length in lineal feet.

14.10 Headers. Concrete headers constructed as part of the project will be measured for payment by length in lineal feet.

14.11 Transverse Expansion and Miscellaneous Joints. Transverse expansion joints and all miscellaneous joints using premoulded bituminous fiber will be considered incidental to the paving construction and not as a separate pay item.

14.12 Concrete Test Cylinders. Three (3) concrete test cylinders shall be required for each block of concrete pavement placed or as directed by the Engineer.

14.13 Testing. The Engineer may require testing of coarse and fine aggregates and cement before they are used in the work. If so ordered, the Contractor shall pay the cost thereof.

The testing of cylinders shall be paid for by the Contractor.

14.14 Miscellaneous. Any item listed in the Engineer's Estimate and not covered in the specifications will be measured in the most workmanlike manner for payment according to the designation listed such as cubic yards, square feet, square yards, lineal feet, gallons, each, etc.

## **DIVISION III**

# **CURB AND GUTTER SIDEWALKS, AND DRIVEWAYS**

**DIVISION III  
CURB AND GUTTER,  
SIDEWALKS AND DRIVEWAYS**

**C O N T E N T S**

Section	Description
<b>15</b>	<b>SCOPE OF WORK</b>
<b>16</b>	<b>MATERIALS</b>
16.01	Cement
16.02	Sand-Gravel
16.03	Fine Sand and Coarse Aggregate
16.04	Water
16.05	Joint Filter
16.06	Joint Sealing Material
<b>17</b>	<b>CONSTRUCTION METHODS</b>
17.01	Subgrade Preparation
17.02	Forms and Form Setting
17.03	Concrete
17.04	Expansion Joints
17.05	Clean Up
<b>18</b>	<b>CURB AND GUTTER</b>
<b>19</b>	<b>SIDEWALKS</b>
<b>20</b>	<b>DRIVEWAYS</b>
<b>21</b>	<b>METHOD OF MEASUREMENT AND BASIS OF PAYMENT</b>
21.01	Curb and Gutter
21.02	Sidewalks
21.03	Driveways
21.04	Expansion and Miscellaneous Joints
21.05	Acceptance

**DIVISION III  
CURB AND GUTTER,  
SIDEWALKS AND DRIVEWAYS**

This division is written so that ordinarily the type of construction described is complete, but, where applicable, other divisions are considered a part of these specifications.

**SECTION 15 - SCOPE OF WORK**

This work shall consist of constructing curb and gutter, sidewalks, and driveways of Portland cement concrete on an approved, prepared subgrade in strict accordance with these specifications and in conformity with the lines, grades, and applicable drawings. All curb and gutter districts constructed shall conform to Division II, Portland Cement Concrete, as well as these specifications.

**SECTION 16 - MATERIALS**

16.01 Cement - Portland cement shall conform to all requirements of ASTM C-150, Type I, "Specifications for Portland Cement", with subsequent additions and amendments thereto, and also the following general requirements.

Cement shall be stored to provide adequate protection against dampness, and no cement shall be used that has become caked or lumpy. No reclaimed cement shall be used. No cement which has been left in storage more than ninety (90) days after shipment from the mill shall be used unless retested and, if failing to meet the requirements specified, shall be rejected. Normally, cement purchased from local dealers shall be considered satisfactory.

16.02 Sand-Gravel - Sand-gravel for concrete shall be a mixture of sand and gravel composed of clean, hard, durable, uncoated pebbles free from injurious amounts of soft or flaky particles, shale, alkali, organic matter, or other deleterious materials. The following materials shall be considered objectionable and percentage by weight shall not be greater than:

Clay lumps	0.5
Coal and carbonaceous shale	0.5
Unsound chert particles retained on 3/8" sieve	3.0

Gradation requirements for sand-gravel aggregates for concrete are as follows:

	<u>Minimum</u>	<u>Maximum</u>
Total % retained on 1" sieve	--	0
Total % retained on #4 sieve	10	35
Total % retained on #10 sieve	45	65
Total % retained on #20 sieve	65	85
Total % retained on #30 sieve	75	85
Total % retained on #100 sieve	95	100
Total % retained on #200 sieve	97	100

Platte River sand-gravel meeting the above gradation is considered satisfactory.

16.03 Fine Sand and Coarse Aggregate. When 47-B concrete is required, see Division II, Portland Cement Concrete Pavement, for specifications.

16.04 Water. Water used for mixing concrete shall be free from oil, acid, alkali, organic matter, or other deleterious materials. Water from wells or City mains shall be considered satisfactory.

16.05 Joint Filter. Joint filter shall consist of premolded bituminous fiber uniformly impregnated with between 35% and 50% durable asphalt by weight and being furnished in strips of the dimensions specified in the plans. A one (1) inch thick sample when compressed to 50% of original thickness at a rate of 1/10 inch per minute and released shall show at least 70T recovery within one hour after compression and shall not have required more than 500 pounds per square inch compression load and extrusion of not more than 1/8 inch.

Expansion joint material shall be 3/4 inch or more in thickness and shall conform to AASHTO M33-48 (Pre-formed Expansion Joint Filler for Concrete).

16.06 Joint Sealing Material. The hot pour paving joint materials shall be of the rubber-asphalt type and shall be melted in a double jacket kettle equipped with an agitator for stirring the material during melting and pouring. The rubber-asphalt shall meet Federal Specifications SS-S-164 or subsequent revisions.

## **SECTION 17 - CONSTRUCTION METHODS**

17.01 Subgrade Preparation. The subgrade shall be prepared by excavating or filling to the required elevation for bottom of concrete. The subgrade shall be thoroughly tamped or otherwise compacted to insure stability. In fills, the subgrade shall be made at least one foot wider on each side than required by the curb and gutter, sidewalk, or driveway.

Stakes will be set by the City Engineering Division of the Public Works Department for line and grade after a sidewalk permit has been issued by the Public Works Department. The subgrade shall slope toward the street curb on a grade of not less than one-fourth inch per foot.

Where fill is required, it will be laid in six (6) inch layers and thoroughly tamped to the satisfaction of the Engineer. Mushy or spongy material will not be used for fill material. Soft and spongy material will be removed and replaced with suitable backfill material.

Trees that are in the way of the sidewalk will be removed including the stump. Roots of trees that are located outside the sidewalk but extend under the sidewalk shall be cut off at least six (6) inches below the sidewalk.

17.02 Forms and Form Setting. The forms shall be of wood or metal, straight and free from warp, and of sufficient strength to resist springing during the process of depositing concrete against them. All forms shall be securely staked, braced, and held firmly to the required line and grade. All forms shall be thoroughly cleaned and oiled before concrete is placed against them.

Wood forms shall be not less than 1-5/8 inches in thickness except for curvilinear sections where properly braced forms of lesser thickness may be used.

Tolerances of 1/8 to 1/4 inch shall be maintained for form alignment and vertical elevation.

**17.03 Concrete.** Concrete shall conform to Division II, Portland Cement Concrete Pavement.

Concrete shall be mixed in an approved mixer with sufficient water added to produce a workable mix. In no case shall so much water be used as to cause the collection of a surplus on the surface or to cause segregation during transportation to place of deposit. All materials shall be accurately weighed or measured, and mixing shall continue for a full minute after all materials are in the drum of the mixer. Any concrete which is not in place within thirty (30) minutes after the water has been added shall not be used.

The operation of depositing and compacting concrete shall be conducted so as to form a compact, dense, artificial stone of uniform texture which shall show smooth faces on all exposed surfaces.

Transit-mixed or ready-mixed concrete may be used provided the concrete is placed in the forms before it has developed initial set and shall comply with ASTM C95-58 and the requirements of these specifications. Such concrete must be transported in such a way as to prevent segregation between the aggregates and the cement. Concrete shall develop an ultimate compressive strength of not less than figures shown in Section 11.01 when tested in standard 6" x 12" cylinders at an age of twenty-eight (28) days in accordance with ASTM C39-56T.

Hand mixing of concrete will not be permitted except with specific permission of the City Engineer on very small jobs or in case of emergency.

The concrete surface shall be treated with a liquid treatment for curing such as Tri-Kote or approved equal or burlap cure or plastic covering may be used in the concrete cure. The plastic film used for curing concrete or subgrade insulating material shall be tough, pliable, moisture-proof, and sufficiently durable to retain its moisture-proof properties. The plastic film can be a polyethylene film not less than 0.001 inch thick. Reinforcement materials where required or as shown on the plans and wire mesh shall comply with ASTM A-185 and reinforcing bars where required shall conform to ASTM A-15 or A305.

Air entrained concrete shall be obtained by using air-entrained Portland cement or air-entraining admixtures. Air content of fresh concrete shall measure six (6) to nine (9) percent. Air entrained concrete shall be used for all sidewalks, driveways, and curb and gutter.

The use of high-early strength Portland cement concrete will not be required unless stipulated in the plans and in the Special Provisions on certain contracts.

Concrete shall not be placed when inclement weather prevents good workmanship. Concrete shall not be placed when temperature is below 40 degrees F without specific permission of the Engineer.

The surface shall be wood floated to give a proper roughness to prevent foot slippage for normal foot traffic.

The cross slope shall be 1/4 inch per foot of width of sidewalk.

The sidewalk after pouring shall be protected from foot traffic for twenty-four (24) hours and vehicle traffic for seven (7) days.

17.04 Expansion Joints. Expansion joints shall be placed as indicated on the drawings or at each location where new construction connects with existing construction. Specifically, joints shall be placed where new curb and gutter joins existing curb and gutter, where sidewalks connect to curb and gutter, and at such other locations as the Engineer may direct. On long runs of new construction, joints shall be placed as directed. In no case shall the spacing between expansion joints exceed one hundred (100) feet.

## **SECTION 18 - CURB AND GUTTER**

Concrete curb and gutter shall be constructed to the lines, grades, dimensions and design as called for in the drawings.

There shall be installed every six (6) feet a separator true to the dimensions and cross-section of the combined curb and gutter. This separator shall be removed after the concrete has taken its initial set and the joint properly edged to provide a neat joint. In finishing joints prior to and after removal of separators, extreme care shall be exercised to avoid raising the edge of the joint causing water pockets in the gutter flow line. Separators shall not exceed 1/8 inch in thickness. Immediately following finished operations and before the concrete has taken its final set, the gutter flow line shall be checked with a straightedge not less than ten (10) feet in length and approved by the Engineer.

The maximum deviation from true grade shall not exceed 1/4 inch and any irregularities shall be corrected immediately.

## **SECTION 19 - SIDEWALKS**

Concrete sidewalks shall be constructed to the lines and grades determined by the Engineer. Sidewalks shall have a minimum width of four (4) feet and a depth of four (4) inches and shall be constructed with a side slope of 1/4 inch per foot unless otherwise approved by the Engineer or Engineer's representative. Surfaces shall be marked off in square blocks having an area of not less than sixteen (16) nor more than thirty-six (36) feet. On these lines, the concrete shall be cut through not less than 1/4 inch thickness with a pointed trowel or suitable spading tool and the concrete edged on both sides.

Sidewalks that are being constructed across driveway openings shall have a minimum depth of five (5) inches.

The surface shall be floated with a steel float just enough to produce a smooth surface, free from irregularities. All edges and joints shall be rounded to a radius of 1/4 inch with an approved finishing tool. The surface shall then be brushed with a fine bristle broom or wood float to slightly roughen the surface and remove the finishing tool marks.

## **SECTION 20 - DRIVEWAYS**

Driveway approaches connecting private driveways to City streets shall be constructed with Portland cement concrete except where the private driveway connects to a full depth asphalt street. Where the driveway connects to a full depth asphalt street, asphaltic concrete may be used in construction of the driveway approach.

Driveway approaches shall be constructed to the lines and grade set by the Engineer. The minimum depth of both Portland cement concrete and asphaltic concrete for driveway approaches shall be five (5) inches and, in the event heavy loads are anticipated, the depth shall be increased to handle the expected loads.

## **SECTION 21 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

21.01 Curb and Gutter. Combination curb and gutter will be measured for payment by length in linear feet. Measurements will be made along the flow line of the gutter.

21.02 Sidewalks. Sidewalks will be measured for payment by area in square feet.

21.03 Driveways. Driveways as referred to in this paragraph are that portion of existing driveway approaches having to be removed behind the construction lines of pavement due to the driveway approach lying partly within the area between construction lines. Driveways will be measured for payment in area in square yards.

21.04 Expansion and Miscellaneous Joints. Expansion joints and all miscellaneous joints using pre-molded bituminous fiber will be considered incidental to the construction and not as a separate pay item.

21.05 Acceptance. Upon completion of a job, the Engineer shall be notified, and they shall make an inspection of the work. The Contractor will be notified in writing as to the acceptability of the work.

# **DIVISION V**

## **STORM AND SANITARY SEWER**

**DIVISION V  
STORM AND SANITARY SEWERS**

**C O N T E N T S**

<b>SECTION</b>	<b>DESCRIPTION</b>
<b>25</b>	<b>SCOPE OF WORK</b>
<b>26</b>	<b>MATERIALS</b>
26.01	Reinforced Concrete Pipe
26.02	Concrete Pipe Joints
26.03	Vitrified Clay Pipe
26.04	Vitrified Clay Pipe Factory-Fabricated Joints
26.05	Cast Iron Pipe and Fittings
26.06	Cast Iron Pipe Joints
26.07	Portland Cement Concrete
26.08	Reinforcement
26.09	Structural Brick
26.10	Storm Sewer Inlet Frames and Grates
26.11	Manhole Rings and Cover
26.12	Grout
26.13	Manholes
26.14	Core Drilling
26.15	Sulfate Resistance Concrete Specifications
<b>27</b>	<b>CONSTRUCTION METHODS</b>
27.01	Excavation
27.02	Protection of Existing Utilities
27.03	Pipe Laying and Jointing
27.04	Manholes <span style="float:right"><b>Revised 1-6-2023</b></span>
27.05	Storm Sewer Inlets
27.06	Pipe Bedding
27.07	Trench Backfill
27.08	Backfilling Under Pavement <span style="float:right"><b>Revised 6-25-2021</b></span>
27.09	Nonshrinkable Backfill <span style="float:right"><b>Revised 6-25-2021</b></span>
27.10	Stacks
27.11	Separation from Water Mains
27.12	Testing
27.13	Exfiltration and Air Testing
27.14	Television Inspection
27.15	Exposure of Pipe or Manholes
<b>28</b>	<b>DRAINAGE STRUCTURE CONSTRUCTION</b>
28.01	Concrete Work
28.02	Brick Work
28.03	Precast Manhole Sections
28.04	Acceptance
<b>29</b>	<b>METHOD OF MEASUREMENT AND BASIS OF PAYMENT</b>
29.01	Sewer Pipe in Place
29.02	Service Tees <span style="float:right"><b>Revised 1-31-2023</b></span>
29.03	Manholes
29.04	Storm Sewer Inlets

## DIVISION V STORM AND SANITARY SEWERS

This division is written so that ordinarily the type of construction described is complete but, where applicable, other divisions are considered a part of this specification.

### SECTION 25 - SCOPE OF WORK

The work covered by this division of the specifications consists of furnishing all labor, plant, equipment, appliances, and materials and performing all operations necessary to construct and complete storm and sanitary sewers and appurtenances in strict accordance with these specifications, the applicable drawings, and subject to the terms and conditions of the contract.

### SECTION 26 - MATERIALS

26.01 Reinforced Concrete Pipe. All reinforced concrete pipe shall meet the requirements and specifications of Reinforced Concrete Culvert, Storm Drain and Sewer Pipe, ASTM C76, Class III, and subsequent revisions, or as otherwise shown in the plans.

#### 26.02 Concrete Pipe Joints.

1. Rubber Joint Filler. Rubber based joint filler shall be used on all concrete pipe joints unless otherwise specified.
2. Gasket Type Joints. When gasket type joints are required, they shall be as follows: Bell and Spigot Pipe Joints, ASTM C361, and subsequent revisions  
Tongue and Groove Pipe Joints, ASTM C443, and subsequent revisions.  
All new storm sewer piping will be plastic or concrete where possible.

26.03 Vitrified Clay Pipe. All vitrified clay pipe shall meet the requirements and specifications for Extra Strength Clay Sewer Pipe conforming to ASTM C700 or C425 compression joint and subsequent revisions or as otherwise shown on the plans.

26.04 Vitrified Clay Pipe Factory-Fabricated Joints. All vitrified clay pipe shall have O-ring gasket factory-fabricated joints that meet the requirements and specifications for Vitrified Clay Pipe Joints Using Materials Having Resilient Properties, ASTM C700 and subsequent revisions or as otherwise shown on the plans.

26.05 Cast Iron Pipe and Fittings. See Division VI, Water Mains.

26.06 Cast Iron Pipe Joints. See Division VI, Water Mains.

26.07 Portland Cement Concrete. The concrete shall be air-entrained as specified in Division III, Curb and Gutter, Sidewalks, and Driveways, in the section entitled Materials -- Sand-Gravel.

26.08 Reinforcement. The deformed bars that are used in reinforcing shall be Type B, Grade 2.

26.09 Structural Brick. Bricks shall be of the type that are satisfactory to the Engineer and shall be laid in 1:2 cement mortar.

26.10 Storm Sewer Inlet Frames and Grates. The frames and grates shall be of cast iron with tensile strength test not less than Class 25.

26.11 Manhole Rings and Covers. Unless shown otherwise on the plans, the rings and covers for manholes shall be 450 pound cast iron machined rings and covers with tensile strength test not less than Class 25.

All manholes will be inspected when any work is being done around the manhole ring and/or cover.

26.12 Grout. Grout, where required, shall consist of equal parts of sand and cement with sufficient water to produce the proper consistency.

26.13 Manholes. All concrete used in the construction of manholes shall be in accordance with the following Sulfate Resistant Concrete Specifications, Section 26.15, dated March 20, 2002. This shall include all concrete used in the construction of pre-case manholes, manhole bases, and manhole inverts.

26.14 Core Drilling. If a sewer service is installed by core drilling into the public sanitary sewer main, the connection will be televised at the Contractor's expense prior to acceptance by the City.

#### 26.15 Sulfate Resistant Concrete Specifications

March 20, 2002  
SUBMITTALS

##### A. Shop Drawings:

1. Curing compound data
2. Complete data on the concrete mix, including aggregate gradations and admixtures, in accordance with ASTM C94

##### B. Quality Control Submittals:

1. Manufacturer's application instructions for curing compound.
2. Ready-mix delivery tickets for each truck in accordance with ASTM C94.

#### QUALITY ASSURANCE

- A. Concrete and Reinforcement: Unless otherwise specified. Meet the requirements of ACI 301 and 318/318R
- B. Precast Reinforced Concrete: Unless otherwise specified. Meet the requirements of ASTM C478
- C. Formwork: Unless otherwise specified, follow the recommendations of ACI 347.
- D. Hot Weather Concreting: Conform to ACI 305R
- E. Cold Weather Concreting: Conform to ACI 306R

## ENVIRONMENTAL REQUIREMENTS

- A. Do not place Concrete when the ambient temperature is below 40 degrees F or approaching 40 degrees F and air temperature less than 40 degrees F for the first 7 days, without special protection to keep Concrete above 40 degrees F.
- B. Do not use curing compound where solvents in the curing compounds are prohibited by state or federal air quality laws. Use only water curing methods.

## CONCRETE

- A. Ready-mixed meeting ASTM C94, Option A.
- B. Portland Cement: ASTM C595, Type IP containing less than 8 percent tricalcium aluminate.
- C. Admixtures:
  - 1. Air-Entraining; ASTM C260.
  - 2. Water-Reducing; ASTM C494, Type A or D.
  - 3. Superplasticizer: ASTM C494, Type for G.
  - 4. Fly Ash: ASTM C618, Class C or F; not to exceed 25% total pozzolan by weight.
- D. Mix Design:
  - 1. Minimum Allowable 28 day Compressive Field Strength: 4,000 psi when cured and tested in accordance with ASTM C31 and C39.
  - 2. Coarse Aggregate Size: 0.5-inch and smaller, 40% Limestone by volume minimum; State of Nebraska approved source.
  - 3. Water/Cement Ratio: 0.38%.
  - 4. Air Entrainment: Between 5.0 to 7.5%.
  - 5. Water Reducers: Use in all concrete as per manufactures recommended guidelines.
  - 6. Suerplasticizer: Use in all walls. Use in slabs at CONTRACTOR's option.
  - 7. Slump Range: 1 to 4 inches; before addition of Suerplasticizer.
  - 8. Slump Range: 5 to 9 inches; after addition of Suerplasticizer.
- E. Mixing: Minimum 70 and maximum 270 revolutions of mixing drum. Nonagitating equipment is not allowed.

## REINFORCING STEEL

- A. Deformed Bars: ASTM A615, Grade 60.

## FORMWORK

### A. Form Material

1. Use hard plastic finished plywood for exposed areas, and new shiplap or plywood for unexposed areas.
2. Earth cuts may be used for forming footings.

### B. Form Ties:

1. Fixed conical or spherical type inserts that remain in contact with forming material and allow for dry packing of form ties holes.
2. Ties shall withstand pressures and limit deflection of forms to acceptable limits.
3. Wire ties are not acceptable.

### C. Construction:

1. In accordance with ACI 347.
2. Make joints tight to prevent escape of mortar and to avoid formation of fins.
3. Brace as required to prevent distortion during concrete placement.
4. Brace as required to prevent distortion during concrete placement.  
On exposed surfaces locate form ties in uniform pattern or as shown. Construct so ties remain embedded in the wall with no metal within 1 inches of concrete surface when forms, inserts, and tie ends are removed.

### D. Form Removal:

1. Remove forms with care to prevent scarring and damaging the surface.

## PLACING REINFORCING STEEL

### A. Unless otherwise specified, place reinforcing steel in accordance with CRSI Recommended practice for placing Reinforcing Bars.

### B. Splices and Laps:

1. Top Bars: Horizontal bars placed such that 12 inches of fresh concrete is cast below in single placement.
2. Horizontal wall bars are considered top bars.
3. Lapped bars 42 diameters or minimum 24 inches.
4. Lap all other bars 30 diameters or minimum 18 inches. Tie splices with 18-gauge annealed wire as specified in CRSI Standard.

## PLACING CONCRETE

### A. Place concrete in accordance with ACI 301.

### B. Prior to placing concrete, remove water from excavation and debris and foreign material from forms. Check reinforcing steel for proper placement and correct discrepancies.

### C. Before depositing new concrete on old concrete, clean surface using sandblast or bush hammer or other mechanical means to obtain a ¼-inch rough profile.

- D. Place concrete as soon as possible after leaving mixer, without segregation or loss of ingredients, without splashing forms or steel above, and in layers not over 2 feet deep. Place within 1-1/2 hours after adding cement mix.
- E. 8 feet maximum vertical drop to final placement, when not guided with chutes or other devices to prevent segregation due to impact with reinforcing.

#### COMPACTION

- A. Vibrate concrete as follows:
  - 1. Apply approved vibrator at points spaced not farther apart than vibrator's effective radius.
  - 2. Apply close enough to forms to vibrate surface effectively but not damage form surfaces.
  - 3. Vibrate until concrete becomes uniformly plastic.
  - 4. Vibrator must penetrate fresh placed concrete and into previous layer of fresh concrete below.

#### CONSTRUCTION JOINTS

- A. Locate as shown or as approved.

#### FINISHING

- A. Floor Slabs and Tops of Walls
  - 1. Screed surface to true level planes.
  - 2. After initial water has been absorbed, float with wood float and trowel with steel trowel to smooth finish free from trowel marks.
  - 3. Do not absorb wet spots with neat cement.
- B. Unexposed Slab Surfaces: Screed to true surface, bull float with wood float, and wood trowel to seal surface.

#### PROTECTION AND CURING

- A. Protect fresh concrete from direct rays of sunlight, drying winds, and wash by rain.
- B. Keep concrete slabs continuously wet for a 7-day period. Intermittent wetting is not acceptable or use curing compound only where approved by ENGINEER. Cure formed surfaces with curing compound applied in accordance with manufacturer's directions as soon as forms are removed and finishing is completed.
- C. Remove and replace concrete damaged by freezing.

#### FIELD TESTS

- A. Evaluation of Concrete Field Strength: In accordance with ACI 318/318R

## **SECTION 27 - CONSTRUCTION METHODS**

27.01 Excavation. The ditch shall be excavated along the lines and to the depth as designated by the Engineer. The Contractor shall furnish, at Contractor's expense, all planks, stakes, spikes, grade boards, and twine that may be required. The Engineer shall have the right to limit the amount of trench that may be opened in advance of the line of work. Should the trench be excavated to a greater depth than that given by the Engineer, the Contractor shall refill to grade, at Contractor's expense, with good, well-tamped material. Trenches, where required, shall be properly sheeted and braced. The bottom of the trench under each pipe shall be shaped to receive the bottom quadrant of the pipe barrel. Bell holes shall be excavated so, after placement, only the barrel of the pipe receives bearing pressure from the trench bottom.

Whenever wet or unstable soil that is incapable of properly supporting the pipe, as determined by the Engineer, is encountered in the trench bottom, such soil shall be removed to the depth and length determined by the Engineer and the trench backfilled to grade with sand, gravel, or other suitable material.

All grading in the vicinity of trench excavation shall be controlled to prevent surface water from flowing into the trench. Any water accumulating in the trench shall be removed by pumping or other approved method. Material excavated from the trench shall be stacked in an orderly manner a sufficient distance back from the edge of the trench to avoid overloading and to prevent slides or cave-ins. Materials unsuitable for backfilling shall be wasted by the Contractor as directed by the Engineer.

A minimum of one foot of topsoil (unless otherwise noted on the plans) shall be removed in any and all areas covered by vegetation. This topsoil shall be stockpiled separately from the material removed from the remainder of the trench. After the pipe is installed and the trench backfilled to an elevation one foot (unless otherwise noted on the plans) below grade, the topsoil shall be replaced and compacted as previously described.

Excavation will not be classified. Whatever material is encountered shall be excavated to the proper grades and, if in any location such material is not sufficient to provide a uniform, even bed for the pipe, the trench shall be excavated at least three (3) inches deeper than the grade at the bottom of the pipe and the space thus excavated shall be refilled with earth or sand and thoroughly compacted.

Trench excavation shall not be paid for separately but shall be considered incidental to the sewer in place.

27.02 Protection of Existing Utilities. The accuracy of location of existing underground utilities as shown on the plans is not guaranteed. It shall be the duty of the Contractor to locate these utilities in advance of excavation and to protect them from damage after uncovering. No house service lines are shown on the plans. The Contractor shall contact the owners of the utilities for assistance in locating these service lines. Any expense incurred by reason of damaged or broken lines shall be the responsibility of the Contractor.

Pipe Laying and Jointing. Pipe shall be protected at all times against impact shocks and free fall. Laying of pipe in finished trenches shall be commenced at the lowest point with the spigot ends on bell-and-spigot pipe and tongue ends on tongue-and-groove pipe pointing in the direction of the flow. Pipe shall be set firmly to line and grade and, preparatory to making pipe joints, all surface of the pipe to be jointed shall be cleaned and dried. Joints shall be made tight to meet requirements of tests specified in the section of these specifications entitled Exfiltration, Infiltration, and Air Testing.

Sewer trenches shall be kept free from water by a method approved by the Engineer. The Contractor shall not pump sewage into a street or pump to a storm sewer unless authorized by the Engineer. Sanitary sewage must be returned to the sanitary sewer by means of pipe and hoses unless it is impossible to do so. In that instance, disposal must be approved by the Engineer.

27.04 Manholes. Manholes shall be constructed as indicated on the plans. Tops shall be fitted with cast iron rings and covers weighing approximately 450 pounds and satisfactory to the Engineer. Manhole steps, where indicated on plans shall be injection molded copolymer polypropylene steel reinforced rod type step. Placement shall be in manholes over three (3) feet in depth, placed on approximately sixteen (16) inch centers. Drop inlet manholes shall be constructed where indicated on the plans.

Manholes of Precast sections conforming to ASTM C478 specifications may be used.

The three (3) types of manhole construction which have been approved are as follows:

- Type 1 – Standard Manhole
- Type 2 – Manhole with ConShield
- Type 3 – Manhole with ConShield and Epoxy Coating

Any substitutes must be approved by the Public Works Director.

**Revised 1-6-2023**

27.05 Storm Sewer Inlets. Storm sewer inlets shall be of the type as shown on the plans and constructed as per the detailed drawings.

27.06 Pipe Bedding. For Class "C" bedding, the space between the pipe and the side of the excavation up to one (1) foot above the top of the pipe shall be filled with sand or fine earth in layers of not more than six (6) inches thick and carefully tamped to form a solid bedding.

For Class "B" bedding, the trench shall be backfilled with a granular fill of crushed stone or pea gravel to an elevation which is half the diameter of the pipe, and the remaining distance from half the diameter of the pipe to one (1) foot above top of pipe shall be a tamped backfill as specified for Class "C" bedding. The granular fill shall have not less than 95% passing 1/2" and not less than 95% retained on a #4 sieve, shall be placed in not more than six (6) inch layers and compacted by slicing with a shovel.

27.07 Trench Backfill. The area more than one foot over the top of pipe shall be designated as trench backfill. Trenches shall not be backfilled until all required tests are performed and until the system installed conforms to the requirements of the plans and specifications. The trenches shall then be carefully backfilled up to one foot above the top of the pipe as specified in the section entitled Pipe Bedding. The balance of the excavated material shall be consolidated in the following manner. As backfilling proceeds, the entire mass shall be vibrated with a mechanical vibrator, provided, however, in all locations where plastic soils are encountered, the backfill material shall not be placed until the moisture content is low enough to obtain maximum density when tamped into place with mechanical tampers. Materials for tamped backfill and the method of placement and compaction thereof shall be specified for Class "C" pipe bedding. The completion of the trench backfill under pavement shall be done according to the section of these specifications entitled Backfilling Under Pavement.

Trench backfill and compaction testing shall adhere to the following requirements:

- A. **Public Right-of-Way:** Backfill shall be compacted to at least 95% of the maximum dry density (obtained at optimum moisture content plus or minus 2% for silt or clay with no required moisture content for sand) as determined by AASHTO Method T99. The minimum frequency shall be one test for every 12" compacted lift for an area or length worked, but no more than 300' apart. A minimum of one test shall be taken for every 12" compacted lift for each street crossing regardless of the length.
- B. **Public Utility Easement:** Backfill shall be compacted to at least 90% of the maximum dry density (obtained at optimum moisture content plus or minus 2% for silt or clay with no required moisture content for sand) as determined by AASHTO Method T99. The frequency shall be the same as that for public right-of-way. A minimum of one test shall be taken for every 12" lift for each easement crossing, regardless of the length.

The Engineer in charge shall be furnished a copy of the density testing results. Information on length or area worked, material identification and description, test thickness such as probe length or sample depth, location of sample, elevation of sample, etc. shall be recorded for each sample.

In unimproved areas such as easements and alleys, the trench or opening may be backfilled with sand which shall be flushed into place with water, provided the top twelve (12) inches of backfill shall be made of the excavated topsoil.

No separate or additional payment will be made for backfill compaction and density testing.

**27.08 Backfilling Under Pavement.**

Standard backfill methods shall be as specified in the section of these specifications entitled Trench Backfill. When standard backfill methods are used, density tests will be required for each twelve (12) inch lift of compacted material placed and for each 300 lineal feet of trench regardless of the length. Density test results shall be submitted to the Engineer before acceptance of the project by the City. Use of nonshrinkable backfill may be required or may be requested for substitution of standard backfill methods by the Contractor under all street sections, existing or proposed, with the approval of the Director Public Works.

Trenches shall not be backfilled until all required tests are performed and the system conforms to the plans and specifications. The Contractor shall maintain the sewer trench backfill for one (1) year from the date of acceptance of the project by the City.

**Revised 6-25-2021**

#### 27.09 Nonshrinkable Backfill.

All excavations where a sidewalk, curb, gutter, or paved street has been cut or where new paving (concrete or asphalt) will be placed may be backfilled using nonshrinkable backfill per Section 27.08. The backfill shall be filled to the subgrade of the undisturbed sidewalk, curb, gutter, paving, or earth surface. The nonshrinkable backfill shall be a mixture of sand, gravel, Portland cement, and water (such as State of Nebraska Department of Transportation Standard Specifications for Highway Construction, Section 1003.02) which flows easily around the utility being covered and develops a 28 day compressive strength of from 30 to 200 psi. No nonshrinkable backfill mix designs shall be used without the approval of the Director of Public Works. Fly ash may be approved in the mix if test data are submitted to indicate the above characteristics are met.

27.10 Stacks. Where indicated on the plans or directed by the Engineer, six (6) inch stacks will be furnished and constructed complete with clay stoppers to within ten (10) feet of ground surface or above underground water surface. All stacks will be constructed in accordance with the standard plan entitled Stack Construction Details in Division VIII, Standard Plan Drawings.

A separate stack shall be constructed for each house connection and in no case shall two service connections be connected to the same stack.

#### 27.11 Relation to Water Mains.

Horizontal and Vertical Separation. Sewers shall be laid at least 10 feet horizontally from any existing or proposed water main. The distance shall be measured edge to edge. In cases where it is not practical to maintain a 10 foot separation, the appropriate reviewing agency may allow deviation on a case-by-case basis, if supported by data from the design engineer. Such deviation may allow installation of the sewer closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on one side of the sewer and at an elevation so the bottom of the water main is at least 18 inches (460 mm) above the top of the sewer.

If it is impossible to obtain proper horizontal and vertical separation as described above, both the water main and sewer must be constructed of slip-on or mechanical joint pipe complying with public water supply design standards of the agency and be pressure tested to 150 psi (1034 kPa) to assure watertightness before backfilling.

Crossings. Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches (460 mm) between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to maintain line and grade.

When it is impossible to obtain proper horizontal and vertical separation as stipulated above, one of the following methods must be specified:

- a. The sewer shall be designed and constructed of PVC pipe and equal to water pipe, and shall be pressure tested at 150 psi (1034 kPa) to assure water tightness prior to backfilling.
- b. Either the water main or the sewer line may be encased in a watertight carrier pipe which extends 10 feet (3 m) on both sides of the crossing, measured perpendicular to the water main. The carrier pipe shall be of materials approved by the regulatory agency for use in water main construction.

27.12 Testing. Upon completion of sewer, each pipe line and manhole will be tested as specified by the Engineer in charge. The Contractor shall furnish such tools, hose, and other equipment necessary for making such tests and shall be present during the inspection to note any deficiencies that may exist. Before final acceptance, all sewers shall be clean, shall comply with the specifications and all contract documents, and shall be acceptable to the Engineer and municipal authorities.

27.13 Exfiltration and Air Testing. Both the sewer pipe line and the manholes shall be tested. Manholes shall be exfiltration tested only. Sewer pipe lines shall be air tested only.

The first line between manholes shall be tested before backfilling and before any sewer pipe is installed in the remainder of the work. Thereafter, individual or multiple lines (optional to the Contractor with approval of the Engineer) shall be tested.

Exfiltration Test. This test shall be performed according to stated procedures and under the supervision of the Engineer. The test shall be conducted by blocking off all manhole openings, filling the manhole, and measuring the water level in the manhole for reference. The head above the pipe invert shall be about ten (10) feet. The head shall not exceed twenty-five (25) feet or be less than five (5) feet. The parameters for infiltration are similar. When the ground water level is above the pipe invert, the head shall be measured from ground water elevation. The total exfiltration shall not exceed 100 ~~200~~ gallons per inch of diameter per mile of pipe per day. Manholes shall be considered as sections of 48 inch or 60 inch pipe. The exfiltration test shall be maintained for at least two (2) hours or as long as necessary to locate all leaks, as directed by the Engineer. If the leakage in any reach exceeds the allowable maximum, it shall be retested after the leaks are repaired.

**Revised 5-20-2021**

Air Test. This test shall be performed according to stated procedures and under the supervision of the Engineer.

Equipment used shall meet the following minimum requirements: (a) Pneumatic plugs shall have a sealing length equal to or greater than the diameter of the pipe to be tested, (b) pneumatic plugs shall resist internal testing pressure without requiring external bracing or blocking, (c) all air used shall pass through a single control unit, and (d) individual hoses shall be used for the following connections: (1) from control unit to pneumatic plugs for inflation, (2) from control unit to sealed line for introducing the low pressure air, and (3) from sealed line to control unit for continually monitoring the air pressure inside the pipe being tested.

Procedures: All pneumatic lugs shall be seal tested before being used in the actual test installation. One length of pipe shall be laid on the ground and sealed at both ends with the pneumatic plugs to be checked. Air shall be pressurized to 25 psig. The sealed pipe shall be pressurized to 5 psig. The plugs shall hold against this pressure without movement of the plugs out of the pipe.

After a manhole to manhole reach of pipe has been backfilled and cleaned and the pneumatic plugs are checked by the above procedures, the plugs shall be placed in the line at each manhole and inflated to 25 psig. Low pressure air shall be introduced into this sealed line until the internal air pressure reaches 4 psig greater than the average back pressure of any ground water that may be over the pipe.

After a manhole to manhole reach of pipe has been backfilled and cleaned and the pneumatic plugs are checked by the above procedures, the plugs shall be placed in the line at each manhole and inflated to 25 psig. Low pressure air shall be introduced into this sealed line until the internal air pressure reaches 4 psig greater than the average back pressure of any ground water that may be over the pipe.

At least two (2) minutes shall be allowed for the air pressure to stabilize.

After the stabilization period (3.5 psig minimum pressure in the pipe), the air hose from the control unit to the air supply shall be disconnected. The portion of line being tested shall be termed "acceptable" if the time required in minutes for the pressure to decrease from 3.5 to 3.0 psig (greater than the average back pressure of any ground water that may be over the pipe) shall not be less than the time shown for the given diameters in the following table:

				SPECIFICATION TIME FOR LENGTH (L) SHOWN (MIN:SEC)								
1 Pipe Diameter (In.)	2 Minimum Time (Min: sec)	3 Length for Minimum Time (ft)	4 Time for Longer Length (sec)	100 FT	150 FT	200 FT	250 FT	300 FT	350 FT	400 FT	450 FT	
4	1:53	597	.190L	1:53	1:53	1:53	1:53	1:53	1:53	1:53	1:53	
6	2:50	398	.427L	2:50	2:50	2:50	2:50	2:50	2:50	2:51	3:12	
8	3:47	298	.760L	3:47	3:47	3:47	3:47	3:48	4:26	5:04	5:42	
10	4:43	239	1.187L	4:43	4:43	4:43	4:57	5:56	6:55	7:54	8:54	
12	5:40	199	1.709L	5:40	5:40	5:42	7:08	8:33	9:58	11:24	12:50	
15	7:05	159	2.671L	7:05	7:05	8:54	11:08	13:21	15:35	17:48	20:02	
18	8:30	133	3.846L	8:30	9:37	12:49	16:01	19:14	22:26	25:38	28:51	
21	9:55	114	5.235L	9:55	13:05	17:27	21:49	26:11	30:32	34:54	39:16	
24	11:20	99	6.837L	11:24	17:57	22:48	28:30	34:11	39:53	45:35	51:17	
27	12:45	88	8.653L	14:25	21:38	28:51	36:40	43:16	50:30	57:42	64:89	
30	14:10	80	10.683L	17:28	26:43	35:37	44:31	53:25	62:19	71:13	80:07	
33	15:35	72	12.926L	21:33	32:19	43:56	53:52	64:38	75:24	86:10	96:57	
36	17:00	66	15.384L	25:39	38:28	51:17	64:06	76:55	89:44	102:34	115:23	

In areas where ground water is known to exist, the Contractor shall determine the water elevation prior to running the test. The height of water over the invert of the pipe shall be divided by 2.3 to establish the pounds of pressure that will be added to all readings. For example, if the height of the water is 11-1/2 feet, then the added pressure will be 5 psig. This increases the 3.5 psig to 8.5 psig and the 3.0 psig to 8.0 psig. The allowable drop of one half pound and the timing remain the same. For safety reasons, do not exceed 9.0 psig.

If the installation fails to meet this requirement, the Contractor shall, at Contractor's expense, determine the source of the leakage. Contractor shall then repair or replace all defective materials and/or workmanship. Air testing shall then be performed on the repaired line to meet the above specifications.

**27.14 Television Inspection.** Television inspection shall be required to determine if any defects exist prior to final acceptance. A minimum of 30 days shall lapse between completion of construction and television inspection.

Mobile closed circuit television inspection equipment shall be used to televise sewer lines between manholes. The camera shall be pulled through the line. Push type cameras are not acceptable. Robotic type camera equipment shall be used to televise stubouts.

The television camera used for the inspection shall be a color camera specifically designed and constructed for such inspection. Lighting for the camera shall be suitable to allow a clear picture for the entire periphery of the pipe. Picture quality and definition shall be satisfactory to the Engineer. Inspection operations shall cease if the quality of the image on the screen is unsatisfactory. No payment will be made for unsatisfactory inspections.

A continuous image for viewing shall be produced. The images shall be of first rate quality according to the currently accepted standards for television inspection of sewers. A system, which displays the camera location in feet on the monitor with respect to the starting manhole's centerline, shall be used. This system shall automatically update the camera location display as the camera is pulled forward or backward through the sewer line.

Measurement for location of observations to be recorded shall be made at the ground level by means of a meter device. Measurement meters shall be accurate to one-half (0.5) foot. Measurements shall be referenced from the center of the manhole where the camera is started to the center of the manhole where observations are terminated. The measurements shall be checked at the completion of the observations by measuring the distance between manhole centers at the ground level. The observed measurements made by the meter and the ground level measurements shall correspond to within plus or minus one foot. Surface measurements shall be made by the contractor in the presence of the Engineer's representative.

The television camera shall be moved through the line at a uniform slow rate. During the inspection the camera shall be stopped at the points where one or more of the following conditions are observed and distances recorded.

1. Service line tees, wyes or taps.
2. Infiltration/inflow sources.
3. Structural defects, including broken pipe, collapsed pipe, cracks, punctures, settling, etc.
4. Abnormal joint conditions, such as horizontal and vertical misalignment, open joints, joints not fully sealed, etc.
5. Unusual conditions.

All such conditions shall be photographed as determined by the Engineer. Photographs of all questionable conditions shall be taken for subsequent review. The photographs shall be taken from the image on the TV monitor with a Polaroid, a 35 mm camera, or other approved methods. Before taking the photographs, the TV camera shall be properly positioned so the optimum view can be obtained. The image size of photographs shall be no smaller than three inches by four inches.

All photographs shall be identified by location, date taken, and names of the owner's and Contractor's representative. The location of all photographs shall be identified by recording the distance from each defect or point of interest to the center of the reference manhole. All photographs shall be submitted as specified.

A DVD/CD with a clear and audible voice narrative of the entire TV monitoring shall be furnished. Each disk will be delivered to the Engineer in charge. Each disk shall be titled on the screen with the date, manhole numbers, pipe size, district or project number. The camera shall be set to begin at the center of the manhole and the footage zeroed out.

The title shall change at each manhole and the footage zeroed out again before starting a new pull when more than one section of sewer is televised in succession. Defects in the sewer line shall be repaired or replaced by the Contractor, as directed by the Engineer, at no cost to the City.

One bound copy of the final inspection report shall be submitted to the Engineer. Included in the report shall be a map showing the work area, a wye location report, a television inspection report, and a DVD/CD and all pictures.

Television inspection shall be measured and paid for on the basis of unit price as set forth in the bid. Such unit price payment shall be full compensation for all reports, photographs, and other work related work to complete the closed circuit television monitoring.

27.15 Exposure of Pipe or Manholes. The Contractor shall conduct the work at all times in such a manner as will insure no disruption to the normal function of the sanitary sewer collection system. Particular attention shall be paid to the threat of introduction of storm water or other waters to the piping and manholes of the collection system. The Contractor shall take whatever precautions are necessary, such as, but not limited to, installation of plugs in exposed pipes and manholes when work is not in progress or when leaving the work site. The Contractor will be held responsible for damages which may occur to either the collection system or to private property through introduction of storm water or other waters to exposed piping or manholes relating to the construction work.

## **SECTION 28 - DRAINAGE STRUCTURE CONSTRUCTION**

28.01 Concrete Work. The construction of forms, mixing, placing, finishing, and curing of concrete work, as well as the fabrication, placement, protection, and cleaning of reinforcement, shall conform to the applicable parts of Division II, Portland Cement Concrete Pavement.

28.02 Brick Work. All brick shall be wetted before being laid in a 1:2 cement mortar. All joints shall be completely filled with mortar and shall not be less than 1/4 inch and not more than 1/2 inch in thickness. The joints shall be completely filled, smooth and free from surplus mortar on the inside of the walls. Bricks shall be laid radially with every sixth course laid as a stretcher course. Brick shall be plastered with 1/2 inch of mortar over the entire outside surface of wall.

28.03 Precast Manhole Sections. Precast concrete sections for manholes shall be installed with bituminous joint filler.

28.04 Acceptance. Upon completion of a job, all debris and surplus materials shall be removed from the job by the Contractor. The Engineer shall be notified, and shall make an inspection of the work. The City will be notified in writing as to the acceptability of the work.

Prior to City acceptance all storm and sanitary sewers will be televised by the City. Payment will be per foot for televising. Fifteen (15) days after any dewatering wells have been turned off the televising can be performed.

Any cleaning performed by the City will be charged by the hour to the Contractor.

## **SECTION 29 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

29.01 Sewer Pipe in Place. Sewer pipe shall be measured and paid for at the contract unit price per lineal foot for various sizes including excavation and backfill complete in place. Sewer pipe shall be measured for payment after installation of the sewer through all line manholes and through the walls of structures and existing manholes and shall include the portion of all wyes considered as main line sewer. Such payment shall be full compensation for all labor, plant, equipment, and materials necessary for a complete and acceptable project, including removal of all debris and final cleanup of the job.

29.02 Service Tees. Tees shall be paid for at the contract unit price for various size tees. Measurement for payment shall include that portion of the tee from the barrel of the main line sewer to the end of the tee. A 1" x 4" lumber sufficient in length to reach the ground surface shall be placed vertically at the end of each service lateral, or approved alternate marker.

**Revised 1-31-2023**

29.03 Manholes. Manholes shall be paid for at the contract unit price bid per manhole for a depth of five (5) feet which payment shall include base, stubouts, and ring cover. Additional payment shall be made for manholes more than five (5) feet in depth, measured from flow line to top of cover, at the contract unit price for each vertical foot or fraction thereof in excess of five (5) feet.

29.04 Storm Sewer Inlets. Storm sewer inlets shall be paid for at the contract unit price bid per inlet.

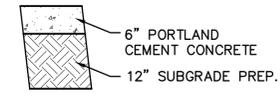


**GENERAL NOTES:**

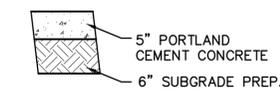
- ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF GRAND ISLAND STANDARD SPECIFICATIONS AND STANDARD DRAWINGS.
- THE LOCATION OF ALL AERIAL AND UNDERGROUND UTILITY FACILITIES MAY NOT BE INDICATED ON THESE PLANS. UNDERGROUND UTILITIES, WHETHER INDICATED OR NOT WILL BE LOCATED AND FLAGGED BY THE UTILITIES AT THE REQUEST OF THE CONTRACTOR. NO EXCAVATION WILL BE PERMITTED IN THE AREA OF UNDERGROUND UTILITY FACILITIES UNTIL ALL SUCH FACILITIES HAVE BEEN LOCATED AND IDENTIFIED TO THE SATISFACTION OF ALL PARTIES. THE EXCAVATION MUST BE ACCOMPLISHED WITH EXTREME CARE IN ORDER TO AVOID ANY POSSIBILITY OF DAMAGE TO THE UTILITY FACILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES.
- CONTRACTOR SHALL PRESERVE ALL PROPERTY CORNER MONUMENTS OR RE-ESTABLISH THEM IF THEY ARE DISTURBED DURING CONSTRUCTION.
- THE CONTRACTOR SHALL USE EXTREME CAUTION IN THE AREA OF EXISTING MANHOLES, POWER POLES, AND EXISTING UTILITIES, AND SHALL BE RESPONSIBLE FOR DAMAGES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING CONSTRUCTION FENCING AND BARRICADES TO SECURE THE SITE. THIS SHALL BE SUBSIDIARY TO MOBILIZATION ITEM.
- THE TRENCHES SHALL BE BACKFILLED, MECHANICALLY TAMPED AND TESTED. OWNER IS RESPONSIBLE FOR ALL COSTS OF TESTING. SEE GRAND ISLAND STANDARD SPECIFICATIONS FOR COMPACTION REQUIREMENTS.
- PRIOR TO MOVING OFF SITE THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND CITY IN WRITING REQUESTING A FINAL WALK-THROUGH OF THE PROJECT.
- THE OWNER SHALL BE RESPONSIBLE FOR CONCRETE AND DENSITY TESTING REQUIRED BY THE CITY OF GRAND ISLAND SPECIFICATIONS.
- CONSTRUCTION STAKING SHALL BE COMPLETED BY THE OWNER.
- CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
- THE ENGINEER SHALL DEVELOP STORM WATER POLLUTION PREVENTION PLAN AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS IMPLEMENTATION.
- SAW CUTTING PAVEMENT FOR REMOVAL SHALL BE FULL DEPTH AND SUBSIDIARY TO PAVEMENT REMOVAL. REMOVAL SHALL OCCUR AT EXISTING JOINTS WHERE POSSIBLE.
- CONTRACTOR SHALL PROTECT THE EXISTING SPRINKLER HEADS AND LINES. IF THERE IS A CONFLICT, THE SPRINKLER HEAD SHALL BE SALVAGED TO THE OWNER AND THE LINES SHALL BE PLUGGED.

**PAVING NOTES:**

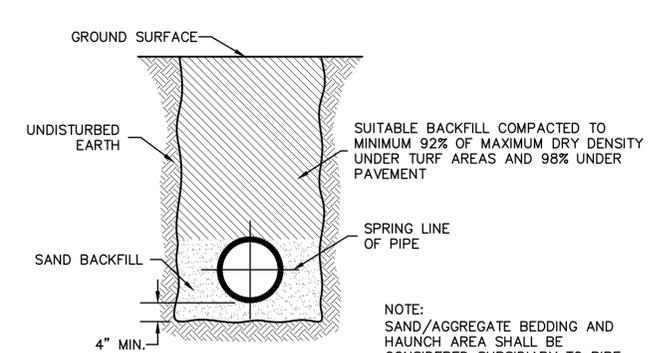
- CONCRETE PAVEMENT FOR PARKING LOT SHALL BE NEBRASKA DEPARTMENT OF TRANSPORTATION 47B-3500. ALL CEMENT SHALL BE 1P.
- CONCRETE PAVEMENT FOR SIDEWALKS SHALL BE NEBRASKA DEPARTMENT OF TRANSPORTATION BX-3500. (CONTRACTOR SHALL USE 1P CEMENT FOR SIDEWALK MIX).
- SAWCUT JOINTS SHALL BE NO LARGER THAN, 12'x12' ON 6" PAVEMENT OR 6'x6' ON 5" SIDEWALK PAVEMENT.
- THE PARKING LOT PAVEMENT SHALL HAVE A BURLAP DRAG OR BROOM FINISH. SIDEWALK SHALL HAVE A LIGHT BROOM FINISH.
- PRIOR TO PAVING, THE TOP 12" OF SUBGRADE IN ALL AREAS TO RECEIVE PAVEMENT SHALL BE, SCARIFIED, AND RECOMPACTED TO 98% PROCTOR. SUBSIDIARY TO PAVEMENT.
- ALL CONSTRUCTION JOINTS SHALL BE TIED (SEE DETAIL).
- CONTRACTOR SHALL PLACE CURING COMPOUND ON ALL EXPOSED CONCRETE SURFACES IMMEDIATELY AFTER FINISHING.
- CONSTRUCTION OF CURB RAMPS SHALL BE CONSIDERED SUBSIDIARY TO CONCRETE SIDEWALK.
- CONSTRUCTION OF ALL JOINTS INCLUDING DOWELS AND TIE BARS SHALL BE CONSIDERED SUBSIDIARY TO CONCRETE PAVEMENT.
- ALL EXPANSION JOINTS SHALL BE FILLED WITH GRAY SELF LEVELING URETHANE SEALANT.
- PAVING CONTRACTOR SHALL COORDINATE WITH IRRIGATION CONTRACTOR FOR CONDUIT SLEEVE LOCATIONS AND SIZES.
- ALL SIDEWALKS SHALL HAVE A MAX 2% CROSS SLOPE.
- STORM SEWER CAN BE ADS N-12 OR HP STORM PIPE OR RCP OR APPROVED ALTERNATE. NO ADDITIONAL COMPENSATION FOR TRANSITIONS FROM DIFFERENT MATERIALS.
- ANY PANELS THAT CONTAIN RANDOM CRACKING WILL BE CONSIDERED UNACCEPTABLE. THE ENGINEER WILL DECIDE WHETHER TO REPLACE OR REPAIR THE PANEL. THE CONTRACTOR SHALL REPLACE OR REPAIR THESE PANELS AT THE DIRECTION OF THE ENGINEER AT NO COST TO THE OWNER. A 20% DEDUCTION WILL BE ASSESSED ON A REPAIRED PANEL. ANY PANEL THAT IS REPLACED WILL NOT BE ASSESSED A 20% DEDUCTION.



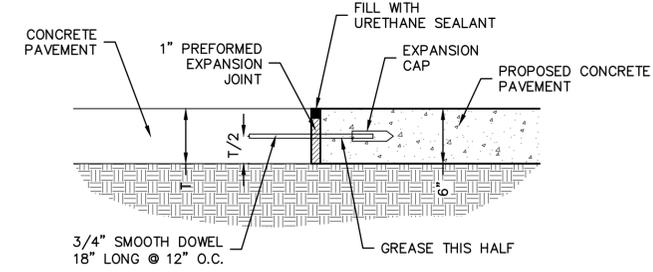
**STANDARD DUTY CONCRETE PAVING DETAIL**  
NOT TO SCALE



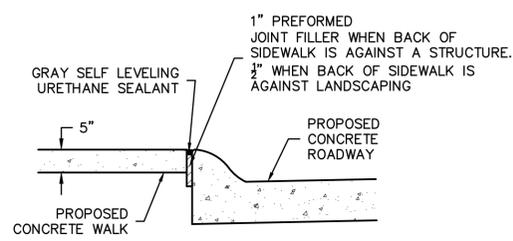
**STANDARD DUTY CONCRETE SIDEWALK DETAIL**  
NOT TO SCALE



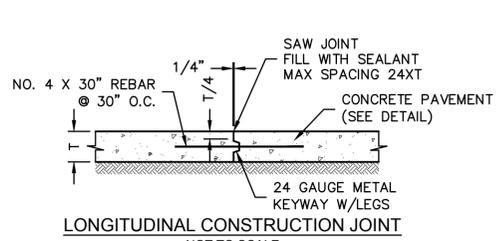
**TRENCH BACKFILL**  
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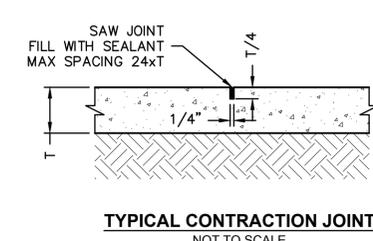
**DOWELED EXPANSION JOINT**  
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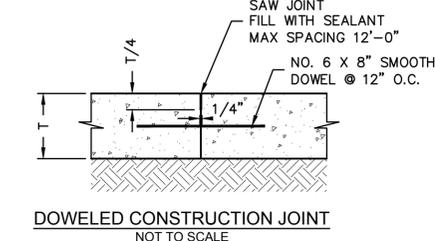
**SIDEWALK/CURB DETAIL**  
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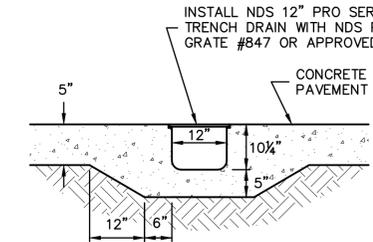
**LONGITUDINAL CONSTRUCTION JOINT**  
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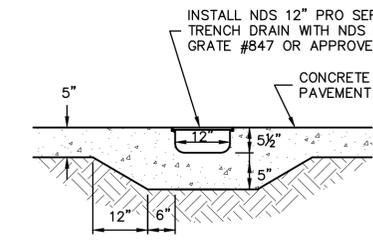
**TYPICAL CONTRACTION JOINT**  
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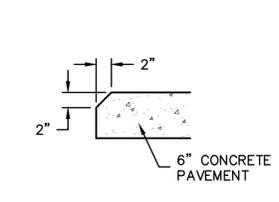
**DOWELED CONSTRUCTION JOINT**  
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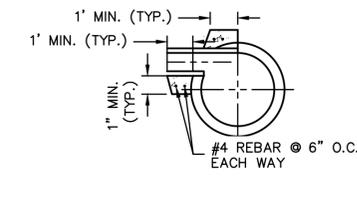
**12" x 10" TRENCH DRAIN**  
NOT TO SCALE



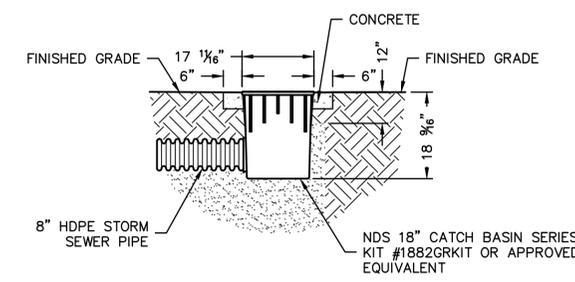
**12" x 5.5" TRENCH DRAIN**  
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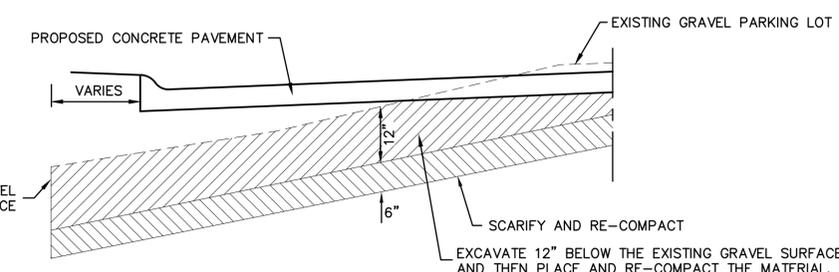
**PAVEMENT NO CURB EDGE DETAIL**  
NOT TO SCALE



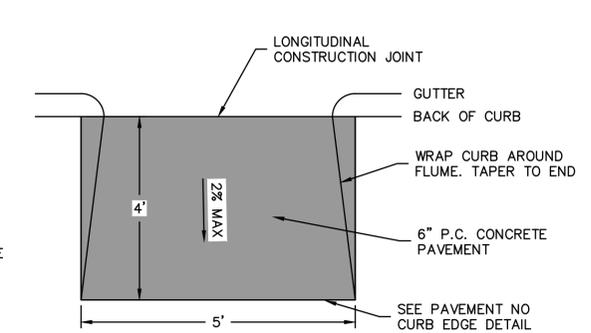
**TAPPING COLLAR DETAIL**  
NOT TO SCALE



**CATCH BASIN DETAIL**  
NOT TO SCALE



**OVEREXCAVATION DETAIL**  
NOT TO SCALE

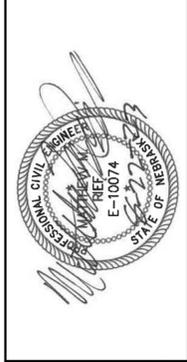


**DRAINAGE FLUME DETAIL**  
NOT TO SCALE

- NOTES:
- BACKFILL MATERIAL SHALL BE CRUSHED STONE OR GRAVEL MATERIAL MEETING CLASS 1 OR 2 AS SPECIFIED IN ASTM D2321.
  - SUITABLE BACKFILL COMPACTED TO MINIMUM 92% OF MAXIMUM DRY DENSITY UNDER TURF AREAS AND 95% UNDER PAVEMENT (98% AT TOP 12" UNDER PAVEMENT)

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 USER: bstainke

**olsson**  
 Engineering - Nebraska COA #CA-0638  
 201 East 2nd Street  
 Grand Island, NE 68801 TEL 308.384.8750 www.olson.com



REV. NO.	DATE	REVISIONS DESCRIPTION

**DETAILS**

**RYDER PARK PARKING LOT IMPROVEMENTS**

**GRAND ISLAND, NE**

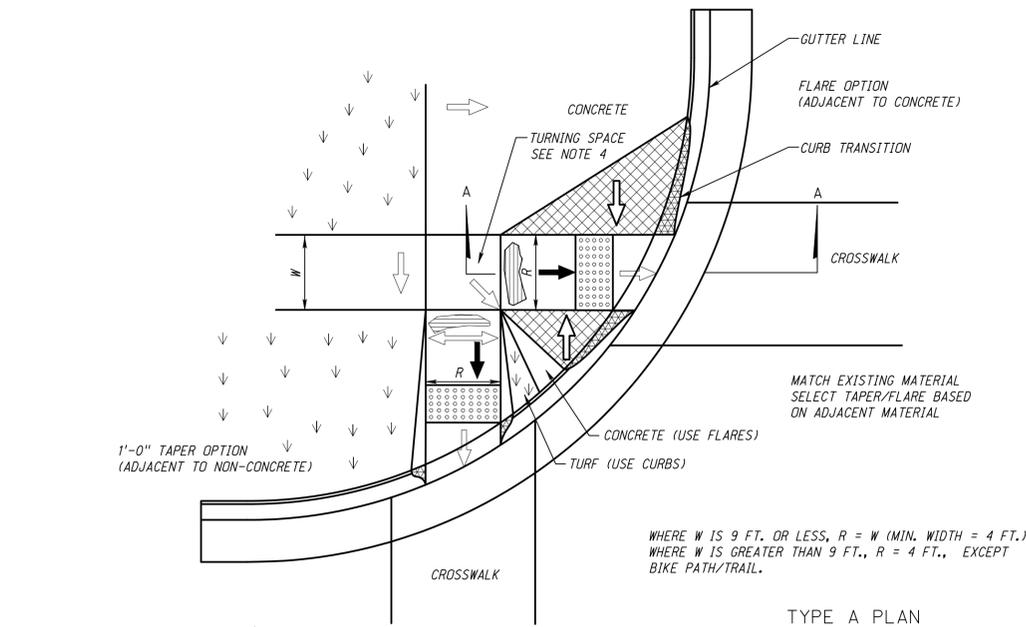
2023

drawn by: BAS  
 checked by: MMR  
 approved by: MMR  
 QA/QC by: MMR  
 project no.: 022-06632  
 drawing no.:  
 date: 08/22/2023

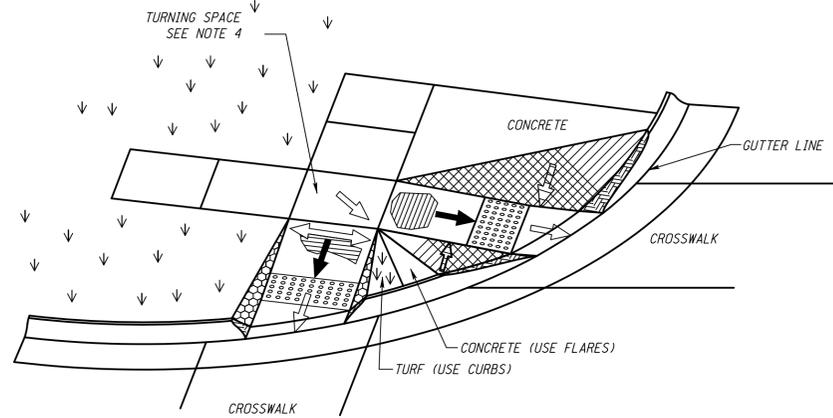
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2 of 9

USER: bsteinke

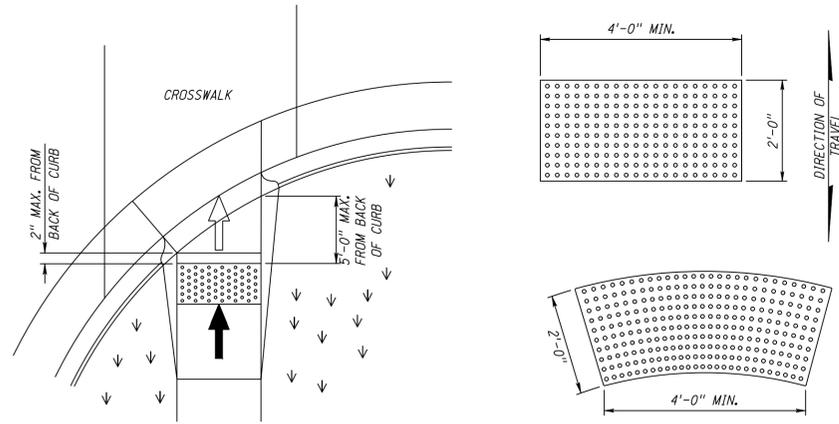
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TYPE A PLAN



ISOMETRIC VIEW



DETECTABLE WARNING PANEL PLACEMENT DETAIL

DETECTABLE WARNING PANELS

LEGEND

	DETECTABLE WARNING PANEL (DWP)
	BROOMED CURB RAMP WHEN 5% TO 8.3%
	RAMP FLARE
	GRASS OR NON WALKING SURFACE
	CURB TRANSITION
	CURB FACE SLOPE 1 VERT. : 2 HORIZ.

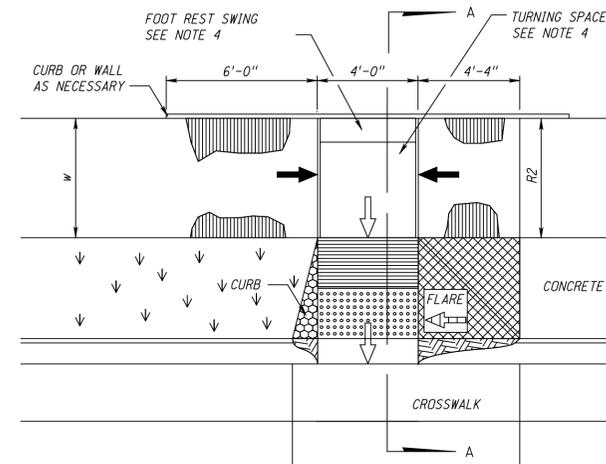
NOTES:

1. THE SURFACE OF ALL CURB RAMPS SHALL BE BROOMED PERPENDICULAR TO THE SLOPE OF THE CURB RAMP.
2. CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE CURB RAMP, FREE OF SAGS AND SHORT GRADE CHANGES.
3. ALL CURB RAMPS SHALL BE CONSTRUCTED WITH A DETECTABLE WARNING PANEL (DWP), 2 FT. x 4 FT. MINIMUM, PLACED WITHIN 2" OF THE BACK OF CURB.

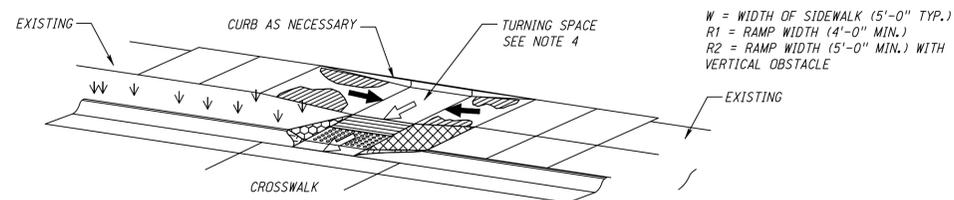
- DETECTABLE WARNING PANEL:
- SHALL BE SUBSIDIARY TO SIDEWALK
  - SHALL BE A CONTRASTING COLOR TO THE SURROUNDING SURFACING.
  - SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP.

NEW CURB RAMPS SHALL HAVE CAST IN CONCRETE DETECTABLE WARNING PANELS.

4. TURNING SPACE SHALL HAVE MINIMUM DIMENSIONS OF 4 FT. x 4 FT. AND SHALL BE A MINIMUM OF 1 FT. FROM ANY OBSTACLE SUCH AS A CURB OR RETAINING WALL FOR SWING OF WHEELCHAIR FOOT REST. THE SLOPE SHALL BE 2% MAXIMUM IN ANY DIRECTION.



TYPE F PLAN

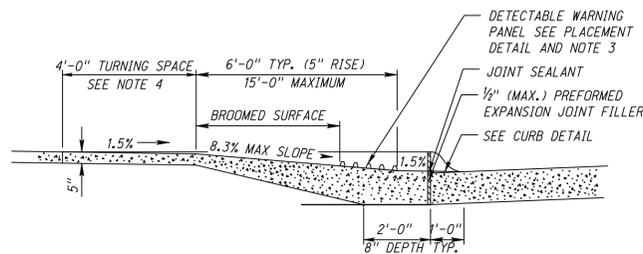


ISOMETRIC VIEW

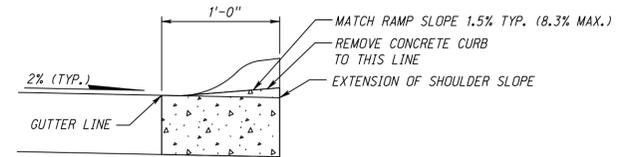
SLOPE LEGEND

	SIDEWALK/TURNING SPACE AND RAMP CROSS SLOPE 1.5% TYPICAL, 2.0% MAX. SLOPE
	RAMP RUNNING SLOPE 8.0% TYPICAL, 8.3% MAX. SLOPE
	FLARE 90° TO RAMP 9.0% TYPICAL, 10.0% MAX. SLOPE

THE CONTRACTOR SHOULD ACCOUNT FOR CONSTRUCTION TOLERANCES TO PREVENT EXCEEDING THE MAXIMUM SLOPES. ANY SLOPES EXCEEDING THE MAXIMUMS SHALL NOT BE ACCEPTED WITHOUT PRIOR APPROVAL FROM THE PROJECT MANAGER.



TYPICAL RAMP PROFILE (A-A SECTION)



NOTE: COMBINATION CONCRETE CURB AND GUTTER MAY BE REMOVED AND REPLACED IN LIEU OF MILLING.

CURB DETAIL



REV. NO.	DATE	REVISIONS DESCRIPTION

DETAILS	RYDER PARK PARKING LOT IMPROVEMENTS	2023
	GRAND ISLAND, NE	

drawn by:	BAS
checked by:	MMR
approved by:	MMR
QA/QC by:	MMR
project no.:	022-06632
drawing no.:	
date:	08/22/2023

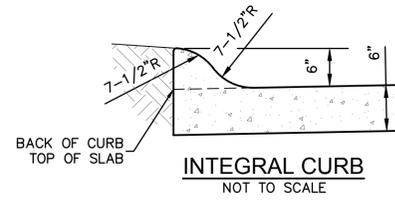




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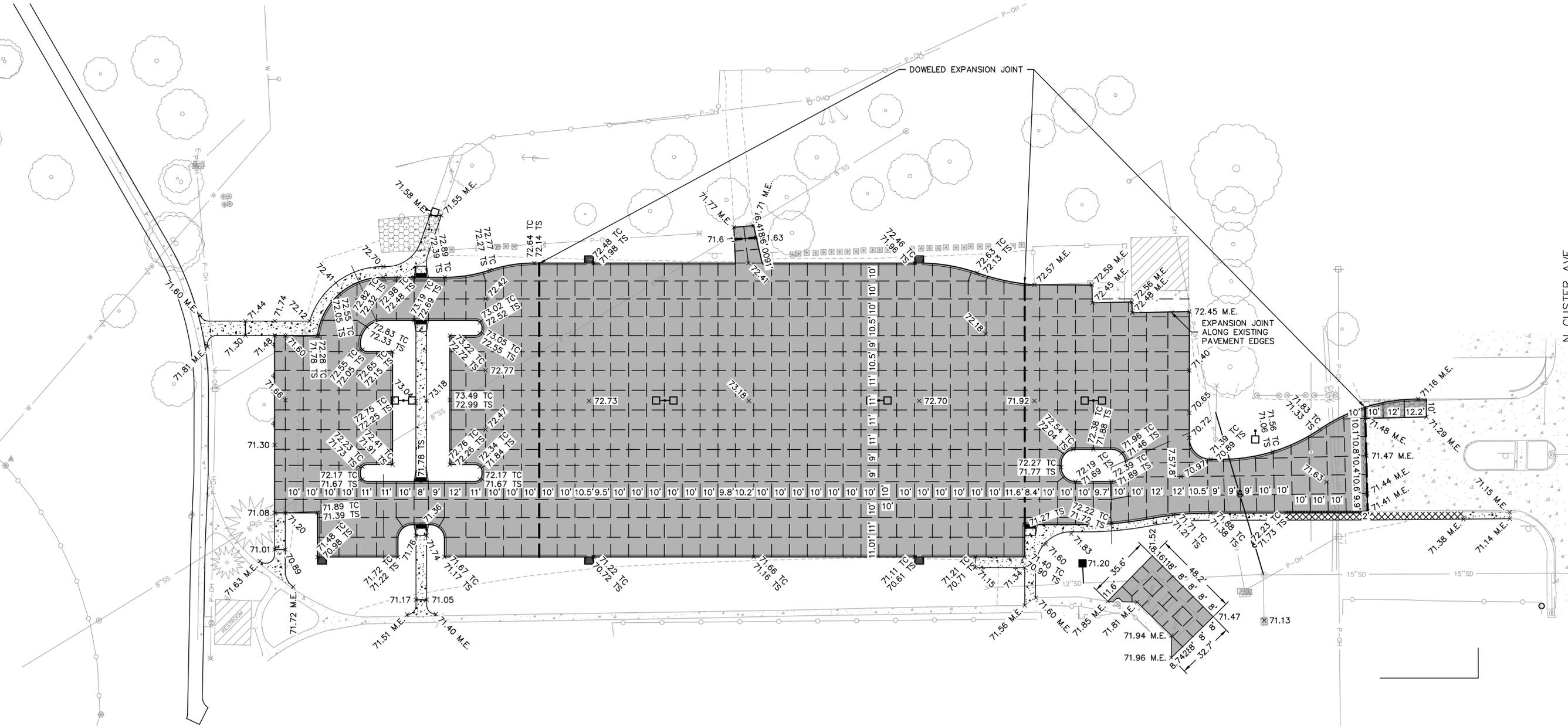
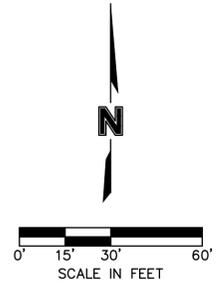
**NOTES:**

1. ALL SPOT ELEVATIONS ARE TO TOP OF SLAB, UNLESS OTHERWISE NOTED.
2. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
3. DATUM ELEVATION = 1800.00
4. ALL SIDEWALKS SHALL HAVE A MAX 2% CROSS SLOPE.



**LEGEND**

- PROPOSED 6" P.C. CONCRETE PAVEMENT
- PROPOSED 5" P.C. CONCRETE SIDEWALK/TRAIL
- PROPOSED 5" P.C. CONCRETE SIDEWALK/TRAIL
- PROPOSED CURB AND GUTTER
- PROPERTY LINE
- PAVING JOINT
- EXPANSION JOINT



REV. NO.	DATE	REVISIONS DESCRIPTION

JOINTS AND GRADES		2023
RYDER PARK PARKING LOT IMPROVEMENTS		
GRAND ISLAND, NE		
drawn by:	BAS	
checked by:	MMR	
approved by:	MMR	
QA/QC by:	MMR	
project no.:	022-06632	
drawing no.:		
date:	08/22/2023	



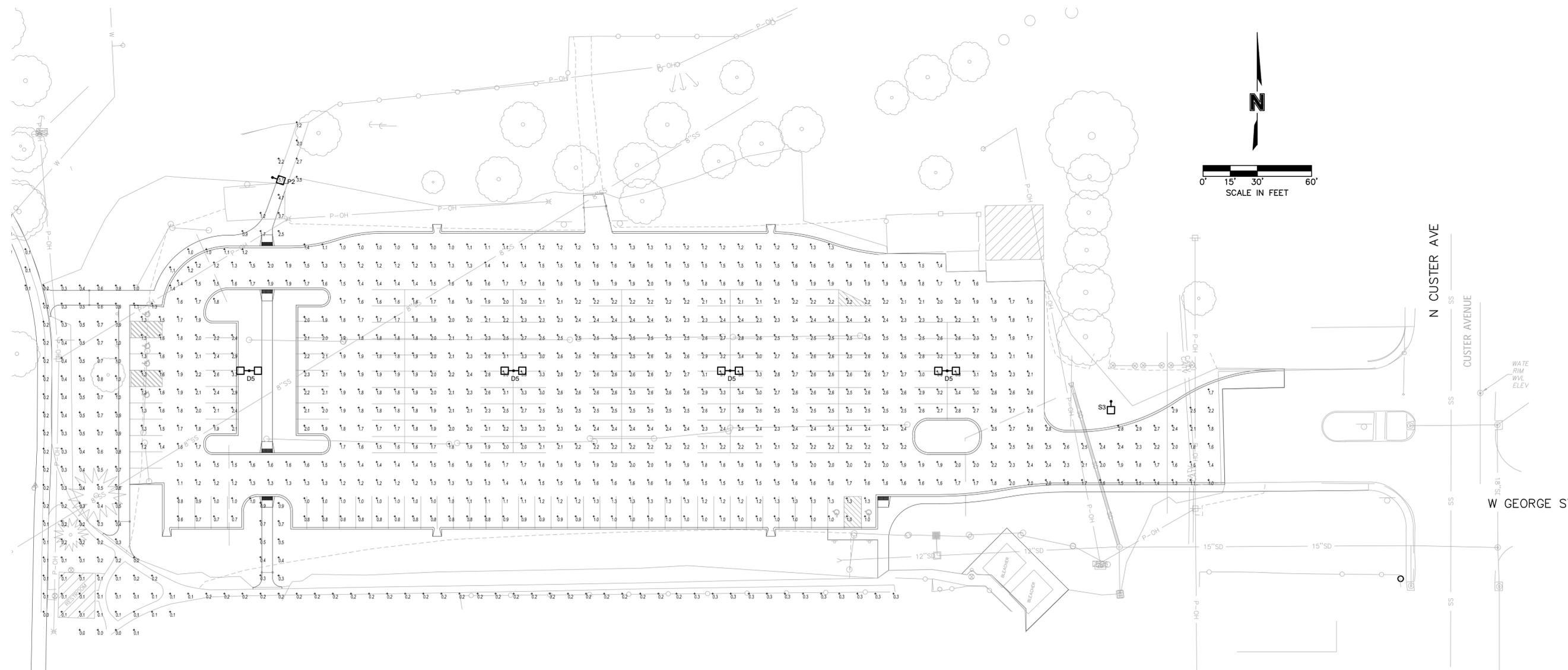








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**LIGHTING FIXTURE SCHEDULE**

ID	DESCRIPTION	MANUFACTURER	CATALOG NO.	LAMPS	LOAD	VOLTAGE	MOUNTING	COMMENTS
D5	DUAL ARM AREA LED, TYPE V WIDE DISTRIBUTION, DIMMING MOTION AND DAYLIGHT SENSOR, DARK BRONZE FINISH	COOPER	GALN-SA4B-740-U-5WQ-BZ-ZW-WOFXX	4000K LED'S	164	240	30'-0" SQUARE STRAIGHT STEEL POLE, 3'-6" AFG CONCRETE BASE	NOTES 1, 2, 3, 4
P2	SINGLE ARM AREA LED, TYPE II DISTRIBUTION, DIMMING MOTION AND DAYLIGHT SENSOR, DARK BRONZE FINISH	COOPER	GALN-SA1B-740-U-T2-BZ-ZW-WOFXX	4000K LED'S	44	240	14'-0" SQUARE STRAIGHT STEEL POLE, 6" AFG CONCRETE BASE	NOTES 1, 2, 3
S3	SINGLE ARM AREA LED, TYPE III WITH SPILL CONTROL DISTRIBUTION, DIMMING MOTION AND DAYLIGHT SENSOR, DARK BRONZE FINISH	COOPER	GALN-SA4B-740-U-SL3-BZ-ZW-WOFXX	4000K LED'S	164	240	30'-0" SQUARE STRAIGHT STEEL POLE, 3'-6" AFG CONCRETE BASE	NOTES 1, 2, 3, 4

- LIGHTING FIXTURE SCHEDULE NOTES:
- POLE FINISH SHALL MATCH FIXTURE FINISH AND SHALL BE BY FIXTURE MANUFACTURER.
  - REFER TO CONCRETE BASE DETAILS SHEET SL4.
  - PROVIDE WITH HIGH/LOW MOTION AMBIENT SENSOR. CONTRACTOR SHALL PROGRAM THE SENSOR USING THE BLUETOOTH APP TO THE FOLLOWING SETTINGS: PHOTOCELL ENABLED AT 5 FC, LUMINAIRES DIM TO 30% OUTPUT WHEN NO OCCUPANCY IS DETECTED. RAMP UP TO 100% WHEN OCCUPANCY IS DETECTED, RAMP DOWN TIME TO 30% OUTPUT IS 5 MINUTES. LUMINAIRES SHOULD NOT TURN OFF WHEN UNOCCUPIED DURING NIGHT TIME OPERATION. LUMINAIRES SHALL ALL BE GROUPED TOGETHER.
  - PROVIDE VIBRATION DAMPENERS.

**CALCULATIONS LUMINAIRE SCHEDULE**

SYMBOLS	LABEL	CATALOG NUMBER	DESCRIPTION	LAMP	FILE	LUMENS	LLF	WATTS	MOUNTING HEIGHT	B.U.G.
□-□	D5	REFER TO LIGHTING FIXTURE SCHEDULE	COOPER GALN	4000K LED'S	GALN-SA4B-740-U-5WQ_23559 lumens.ies	23,559	1.0	164	33'-6"	B5-U0-G3
□-□	P2	REFER TO LIGHTING FIXTURE SCHEDULE	COOPER GALN	4000K LED'S	GALN-SA1B-740-U-T2_5790 lumens.ies	5,790	1.0	44	14'-6"	B1-U0-G2
□-□	S3	REFER TO LIGHTING FIXTURE SCHEDULE	COOPER GALN	4000K LED'S	GALN-SA4B-740-U-SL3_22311 lumens.ies	23,311	1.0	164	33'-6"	B3-U0-G4

**HORIZONTAL LIGHTING CALCULATIONS**

AREA	SYMBOL	AVERAGE	MAXIMUM	MINIMUM	AVG/MIN	MAX/MIN
PARKING/DRIVE LANE	+	1.93	3.90	0.6	3.22	6.50

NOTES:  
 1. CALCULATION VALUES ARE IN FOOTCANDLES.  
 2. CALCULATION POINTS ARE AT GRADE ON THE HORIZONTAL PLANE.



REV. NO.	DATE	REVISIONS DESCRIPTION

SITE LIGHTING PHOTOMETRIC PLAN	2023
RYDER PARK PARKING LOT IMPROVEMENTS	
GRAND ISLAND, NE	

drawn by: EMK  
 checked by: RAZ  
 approved by: FLE  
 QA/QC by: RAZ  
 project no.: 022-06632  
 drawing no.:  
 date: 08/22/2023

