WESTGATE ROAD STREET IMPROVEMENT DISTRICT NO. 1261
NORTH ROAD EAST TO PAVED SECTION OF WESTGATE ROAD

FOR

CITY OF GRAND ISLAND, NEBRASKA

CONTRACT DOCUMENTS
AND
SPECIFICATIONS

FEBRUARY 2014

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
GRAND ISLAND, NEBRASKA

BIDDER CHECKLIST FOR

WESTGATE ROAD STREET IMPROVEMENT DISTRICT NO. 1261
NORTH ROAD EAST TO PAVED SECTION OF WESTGATE ROAD

CITY OF GRAND ISLAND, NEBRASKA

Bids must be received by the City Clerk before 3:00 p.m., (local time) on Tuesday, March 4, 2014.

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

_____A completed bidder checklist form.

_____A signed original and one copy of the Contractor's Bid. (Pages CB-1 through CB-4)

_____Acknowledgment of Addenda Number(s)_____.

_____Firm unit pricing; or lump sum pricing as applicable. (See bid Form)

_____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.

_____

Bidder Company Name Date

_____

Print – Name of Person Completing Bid

_____

Signature

WESTGATE ROAD STREET IMPROVEMENT DISTRICT NO. 1261
NORTH ROAD EAST TO PAVED SECTION OF WESTGATE ROAD

CITY OF GRAND ISLAND, NEBRASKA

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ADVERTISEMENT TO BIDDERS

ADVERTISEMENT TO BIDDERS
for

WESTGATE ROAD STREET IMPROVEMENT DISTRICT NO. 1261
NORTH ROAD EAST TO PAVED SECTION OF WESTGATE ROAD

for
CITY OF GRAND ISLAND, NEBRASKA

Sealed bids will be **received at the office of the City Clerk,** 100 E. First Street., Grand Island, NE 68801 or P.O. Box 1968, Grand Island, Nebraska 68802 until **3:00 p.m., (Local Time), Tuesday, March 4, 2014,** for the construction of **Westgate Road Street Improvement District No. 1261; North Road East to Paved Section of Westgate Road** for 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.

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 fifteen (15) days, at the bid price, after acceptance 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. **Please return one original and one copy of each bid sheet.**

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.

Successful bidder shall comply with the City's insurance requirements, and supply performance and payment bonds. Successful bidder shall maintain a Drug Free Workplace Policy.

Bids will be evaluated by the Purchaser based on price, quality, adherence to schedule, plan and specification, 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 irregularities therein and to accept whichever bid that may be in the best interest of the City, at its sole discretion.

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 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 to order.

No bidder may withdraw their bid for a period of forty-five (45) days after date of opening bids.

TITLE VI: The City of Grand Island, in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office the Secretary, Part 21, Nondiscrimination in Federally assisted programs of the Department of Transportation issued pursuant to such Act, hereby notified all bidden that it will affirmatively insure that in any contact entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin, sex, age and disability/handicap in consideration for an award.

SECTION 504/ADA NOTICE TO THE PUBLIC: The City of Grand Island does not discriminate on the basis of disability in admission of its programs, services, or activities, in access to them, in treatment of individuals with disabilities, or in any aspect of their operations. The City of Grand Island also does not discriminate on the basis of disability in its hiring or employment practices.

This notice is provided as required by Title II of the Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973. Questions, complaints, or requests for additional information or accommodation regarding the ADA and Section 504 may be forwarded to the designated ADA and Section 504 compliance coordinator.

Mary Lou Brown
308-385-5444, extension 140
100 East First Street, Grand Island, NE 68801
Monday through Friday; 8:00 a.m. to 5:00 p.m.

Plans and specifications for use in preparing bids may be obtained from the office of the City Engineer, Second Floor, City Hall, 100 East First Street, Grand Island, NE.

RaNae Edwards
City Clerk

CONTRACTOR'S BID

WESTGATE ROAD STREET IMPROVEMENT DISTRICT NO. 1261
NORTH ROAD EAST TO PAVED SECTION OF WESTGATE ROAD

CITY OF GRAND ISLAND, NEBRASKA

CONTRACTOR'S BID FORM

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:

BID SECTION "A"

No.	Description	Estimated Quantity	Firm Unit Price	Total Price
1	8" CONCRETE PAVEMENT	5,750.00 S.Y.	$	$
2	6" INTEGRAL CURB	2,187.00 L.F.	$	$
3	CRUSHED ROCK SURFACE COURSE	40.00 TN.	$	$
4	CONCRETE HEADER	41.00 L.F.	$	$
5	STOP SIGN	1.00 EA.	$	$
6	15" R.C. STORM SEWER PIPE	179.00 L.F.	$	$
7	18" R.C. STORM SEWER PIPE	459.00 L.F.	$	$
8	24" R.C. STORM SEWER PIPE	879.00 L.F.	$	$
9	36" R.C. STORM SEWER PIPE	410.00 L.F.	$	$
10	STORM SEWER MANHOLE	3.00 EA.	$	$
11	CURB INLET	6.00 EA.	$	$

12	AREA INLET	2.00 EA.	$	$
13	18" R.C. FLARED END SECTION	2.00 EA.	$	$
14	36" R.C. FLARED END SECTION	3.00 EA.	$	$
15	OUTFALL STRUCTURE	1.00 EA.	$	$
16	TYPE 1D EROSION CONTROL	13,652.00 S.Y.	$	$
17	BROKEN CONCRETE RIPRAP	22.20 TN.	$	$
18	WATER MAIN WET CUT-IN	3.00 EA.	$	$
19	8" D.I. WATER MAIN	104.00 L.F.	$	$
20	8" M.J. 45° BEND	12.00 EA.	$	$
21	8" M.J. SLEEVE	3.00 EA.	$	$
22	8" GATE VALVE W/ BOX	1.00 EA.	$	$
23	TAPPING FIRE HYDRANT ASSEMBLY	1.00 EA.	$	$
24	1" TESTING TAP	2.00 EA.	$	$
25	REMOVE TESTING TAP	2.00 EA.	$	$
26	CONCRETE BLOCKING FOR FITTINGS	14.00 C.Y.	$	$
27	6" SANITARY SEWER SERVICE PIPE	10.00 L.F.	$	$
28	6" CAP	1.00 EA.	$	$
29	ADJUST MANHOLE TO GRADE	1.00 EA.	$	$
30	REMOVE ASPHALT PAVEMENT	374.00 S.Y.	$	$
31	REMOVE STORM SEWER PIPE	38.00 L.F.	$	$
32	TREE REMOVAL	1.00 L.S.	$	$
33	REMOVE FENCE	1,303.00 L.F.	$	$
34	TRAFFIC CONTROL	1.00 L.S.	$	$
35	GENERAL CLEARING & GRUBBING	1.00 L.S.	$	$
36	SUBGRADE PREPARATION	5,729 S.Y.	$	$
37	EARTHWORK (ROADWAY)	1.00 L.S.	$	$

38	COMMON EXCAVATION (DITCH)	15,950.00 C.Y.	$	$
39	SILT FENCE	695.00 L.F.	$	$
40	CURB INLET SEDIMENT FILTERS	6.00 EA.	$	$
41	SEEDING	5.20 AC.	$	$

SUBTOTAL BID SECTON "A" $_____

BID SECTION "B"

No.	Description	Estimated Quantity	Firm Unit Price	Total Price
1	8" HIGH EARLY CONCRETE PAVEMENT	99.00 S.Y.	$	$
2	42" R.C. STORM SEWER PIPE	272.00 L.F.	$	$
3	42" R.C. FLARED END SECTION	2.00 EA.	$	$
4	CONCRETE COLLAR	2.00 EA.	$	$
5	TYPE 1D EROSION CONTROL	1,138.00 S.Y.	$	$
6	WATER MAIN WET CUT-IN	1.00 EA.	$	$
7	20" D.I. WATER MAIN	40.00 L.F.	$	$
8	20" M.J. 22.5° BEND	4.00 EA.	$	$
9	20" M.J. SLEEVE	1.00 EA.	$	$
10	1" TESTING TAP	2.00 EA.	$	$
11	CONCRETE BLOCKING FOR FITTINGS	16.00 C.Y.		
12	REMOVE PAVEMENT	99.00 S.Y.		
13	TRAFFIC CONTROL	1.00 L.S.		
14	GENERAL CLEARING & GRUBBING	1.00 L.S.		
15	COMMON EXCAVATION (DITCH)	950.00 C.Y.		
16	SILT FENCE	72.00 L.F.		
17	SEEDING	0.50 AC.		

SUBTOTAL BID SECTON "B" $_____

BID SECTION "C"

No.	Description	Estimated Quantity	Firm Unit Price	Total Price
1	CONCRETE FLUME	255.00 S.Y.	$	$
2	TYPE 1D EROSION CONTROL	4,962.00 S.Y.	$	$
3	TREE REMOVAL	1.00 L.S.	$	$
4	GENERAL CLEARING & GRUBBING	1.00 L.S.	$	$
5	COMMON EXCAVATION (DITCH)	1,000.00 C.Y.	$	$
6	SILT FENCE	58.00 L.F.	$	$
7	SEEDING	1.70 AC.	$	$

SUBTOTAL BID SECTON "C" $_____

GRAND TOTAL BID SECTON "A", "B", & "C" $_____

EXPERIENCE DATA [minimum of five (5)]:

Each bidder shall supply the following data on their experience:

Name of Bidder: _____

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

_____

_____

_____

_____

_____

Additional Data: _____

_____

_____

SUBCONTRACTORS USED:

_____

_____

_____

INSURANCE: Bidder acknowledges that bid includes compliance with the attached insurance requirements.

ADDENDA:
Bidder acknowledges that the following Addendums were received and considered in Bid preparation.

ADDENDUM NO.	**DATE**	**SIGNATURE**
_____	_____	_____
_____	_____	_____

Exceptions shall be listed in the following blanks. 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 _____

_____

_____.

The undersigned bidder agrees to furnish the required performance & payment bond and to enter into a contract within fifteen (15) days after acceptance of this Bid, and further agrees to complete all work covered by the foregoing bid in accordance with specified requirements. **No work shall commence until the Certificate of Insurance and bonds (when required) are approved by the City and the contract is executed.** The proposed work can commence after the contract is signed and the required bond is approved. **Work on this contract is to be substantially complete no later than August 15, 2014. All work is to be completed no later than September 12, 2014.**

Enclosed herewith is the required bid guarantee in the amount of

_____Dollars ($_____)
which the undersigned bidder agrees is to be forfeited to and become the property of the City of Grand Island, Nebraska, as liquidated damages should this Bid be accepted and a contract be awarded to them and they fail to enter into a contract in the form prescribed and to furnish the required bond within 15 days, but otherwise the aforesaid bid guarantee will be returned upon signing of the contract and delivering the approved bond

In submitting the 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 by the bidder for forty-five (45) days after opening.

In submitting the 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 RRS, 1943 and also complies with, and will continue to comply with, section 48-657 RRS, 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 they have not directly or indirectly induced or solicited any person, firm or corporation to refrain from bidding, (c) that they have not sought, by collusion or otherwise, to obtain for themselves an advantage over any other bidder or over the City of Grand Island, and (d) that they have 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 FAX NUMBER OF BIDDER

_____

INSTRUCTIONS TO BIDDERS

INSTRUCTIONS TO BIDDERS

WESTGATE ROAD STREET IMPROVEMENT DISTRICT NO. 1261
NORTH ROAD EAST TO PAVED SECTION OF WESTGATE ROAD

CITY OF GRAND ISLAND, NEBRASKA

EXCEPTIONS TO SPECIFICATIONS: Each bidder shall carefully check all requirements herein set forth and shall offer items which comply fully with these requirements or shall plainly set forth all points, features, conditions, specifications of items that are non-compliant. Bidder must comply with all applicable Federal, State and Local rules and regulations.

SUBMISSION OF BIDS: All bids shall be submitted using the City's bid form. Bids shall **be addressed to the City Clerk** and plainly marked, **"BID FOR WESTGATE ROAD STREET IMPROVEMENT DISTRICT NO. 1261".**

INSURANCE COVERAGE: The Contractor shall purchase and maintain at their 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 them of any contractual responsibility or obligation.

BASE BID: The bidder is expected to base their bids on materials and items complying fully with these specifications. In the event the contractor names in the bid materials items which do not conform, they will be responsible for furnishing materials and items which fully conform at no change in the bid price.

BIDDER QUALIFICATION: Bids will be received only from qualified bidders. A bidder will be considered qualified if they are 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.

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 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 to order.

CHECKS OR BID BONDS: Checks or bid bonds of the unsuccessful bidders will be returned when their bids have been rejected and not to exceed forty-five (45) days from the date bids are opened. All bids shall remain in force for this forty-five (45) day Period. The check or bid bond of the successful bidder will be returned when the Contracts are signed by both parties and necessary bonds supplied. Should the

Purchaser make an award to a Contractor who refuses to enter into Contract and furnish the required bonds within fifteen (15) days after notification of acceptance, then the bid security which has been deposited with the Purchaser will be forfeited to the Purchaser as liquidated damages.

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 for materials incorporated into the work. 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 ten (10) working days prior to the designated meeting to allow timfe for proper review and consideration. Progress Payments will be permitted during the project, so long as work is being done to the 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, they 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 only by addendum only issued and/or delivered to each person receiving a set of such bid 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: Work shall be substantially complete no later than August 15, 2014. All work shall be completed no later than September 12, 2014.

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. Addendums 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 acknowledgment of receipt.

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 (3) days after bids are opened.

BID DATA: Bidders shall submit bid data, if required, on items offered in the Bid by **furnishing one original and one copy of the completed Contractor's Bid form**. The bid sheets shall be filled out legibly in ink to permit reproduction.

BIDDER SECURITY: Bidder security, when required, shall be enclosed in a special envelope marked, "**BIDDER SECURITY/BID FOR WESTGATE ROAD STREET IMPROVEMENT DISTRICT NO. 1261".** The envelope shall contain only a cashier's check, certified check or bidder's bond.

This separate envelope shall be attached to a sealed envelope containing the bid and any other bid materials. This second envelope shall be "BID FOR WESTGATE ROAD STREET IMPROVEMENT DISTRICT NO. 1261" and be addressed to the City Clerk." Bids of an incomplete nature or subject to multiple interpretation may, at the option of the Purchaser, be rejected as being irregular.

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.

DRUG FREE WORKPLACE POLICY: Bidders shall furnish, upon request, a copy of their Drug Free workplace Policy.

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.

LOCAL CONDITIONS: Each bidder shall have an authorized representative visit the site of the work and thoroughly inform them 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.

TILE VI: The City of Grand Island, in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office the Secretary, Part 21, Nondiscrimination in Federally assisted programs of the Department of Transportation issued pursuant to such Act, hereby notified all bidden that it will affirmatively insure that in any contact entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity
to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin, sex, age and disability/handicap in consideration for an award.

SECTION 504/ADA NOTICE TO THE PUBLIC: The City of Grand Island does not discriminate on the basis of disability in admission of its programs, services, or activities, in access to them, in treatment of individuals with disabilities, or in any aspect of their operations. The City of Grand Island also does not discriminate on the basis of disability in its hiring or employment practices.

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Mary Lou Brown
308-385-5444, extension 140
100 East First Street, Grand Island, NE 68801
Monday through Friday; 8:00 a.m. to 5:00 p.m.

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

City of Grand Island
Public Works Department/Engineering Division
P.O. Box 1968
Grand Island, NE 68802-1968
(308) 385-5444, Extension 260
Attn: Terry Brown

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.

INSURANCE REQUIREMENTS

MINIMUM INSURANCE REQUIREMENTS

WESTGATE ROAD STREET IMPROVEMENT DISTRICT NO. 1261
NORTH ROAD EAST TO PAVED SECTION OF WESTGATE ROAD

CITY OF GRAND ISLAND, NEBRASKA

You are urged to include in your bid compliance with the City's minimum insurance requirements; however, any non-compliance must be detailed in the Exceptions Section of the bid. Compliance with the specified OCP coverage is mandatory.

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 be not 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 be not 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.**

EXEMPT SALE CERTIFICATE

TAX FORM 13

Nebraska Department of REVENUE

Nebraska Resale or Exempt Sale Certificate

for Sales Tax Exemption

• Read instructions on reverse side/see note below

FORM 13

NAME AND MAILING ADDRESS OF PURCHASER	NAME AND MAILING ADDRESS OF SELLER
Name: CITY OF GRAND ISLAND	Name:
Street or Other Mailing Address: PO BOX 1968	Street or Other Mailing Address:
City: GRAND ISLAND State: NE Zip Code: 68802-1968	City: State: Zip Code:

Check Type of Certificate

☐ Single Purchase ☑ 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 Item or Service Purchased

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

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

of Description of Product Sold, Leased, or Rented

If None, State Reason

and hold Nebraska Sales Tax Permit Number 01-

or Foreign State Sales Tax Number State

SECTION B—Nebraska Exempt Sale Certificate

The basis for this exemption is exemption category 1 (Insert appropriate category as described on reverse of this form.)

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

Description of Item(s) Purchased Intended Use of Item(s) Purchased

If exemption categories 3 or 4 are claimed, enter the Nebraska Exemption Certificate number. 05-

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

Description of Item(s) Sold | Date of Seller's Original Purchase | Was Tax Paid when Purchased by Seller? ☐ YES ☐ NO | Was Item Depreciable? ☐ YES ☐ NO

SECTION C—For Contractors Only

1. Purchases of Building Materials or Fixtures:

☐ As an Option 1 or Option 3 contractor, I hereby certify that purchases of building materials and fixtures from the above seller are exempt from Nebraska sales tax. My Nebraska Sales or Consumer's Use Tax Permit Number is: 01-

2. Purchases Made Under Purchasing Agent Appointment on behalf of _____ :
(exempt entity)

☐ Pursuant to an **attached** Purchasing Agent Appointment and Delegation of Authority for Sales and Use Tax, Form 17, I hereby certify that purchases of building materials, and fixtures are exempt from Nebraska sales tax.

Any purchaser, or their agent, or other person who completes this certificate for any purchase which is other than for resale, lease, or rental in the regular course of the purchaser's business, or is not otherwise exempted from the sales and use tax under Neb. Rev. Stat. §§77-2701 through 77-27,135, shall in addition to any tax, interest, or penalty otherwise imposed, be 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 shall apply 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 _____ Title _____ Date _____

NOTE: **Sellers must keep this certificate as part of their records. DO NOT SEND TO THE NEBRASKA DEPARTMENT OF REVENUE.**

Incomplete certificates cannot be accepted.

www.revenue.ne.gov, (800) 742-7474 (toll free in NE and IA), (402) 471-5729

6-134-1970 Rev. 3-2009
Supersedes 6-134-1970 Rev. 10-2007

INSTRUCTIONS

WHO MAY ISSUE A RESALE CERTIFICATE. Form 13, Section A, is to be issued by persons or organizations making purchases of property or taxable services in the **normal** course of their business for the purpose of resale either in the form or condition in which it was purchased, or as an ingredient or component part of other property.

WHO MAY ISSUE AN EXEMPT SALE CERTIFICATE. Form 13, Section B can only be issued by persons or organizations exempt from payment of the Nebraska sales tax by qualifying for one of the six enumerated **Categories of Exemption** (see below). Nonprofit organizations that have a 501(c) designation and are exempt from federal and state income tax are **not** automatically exempt from **sales** tax. Only the entities listed in the referenced regulations are exempt from paying Nebraska sales tax on their purchases when the exemption certificate is properly completed and provided to the seller. Organizations claiming a sales tax exemption may do so only on items purchased for their own use. For health care organizations, the exemption is limited to the specific level of health care they are licensed for. The exemption is not issued to the entire organization when multiple levels of health care or other activities are provided or owned by the organization. Items purchased by an exempt organization that will be resold must be supported by a properly completed Nebraska Resale Certificate, Form 13, Section A.

Indicate the category which properly reflects the basis for your exemption. Place the corresponding number in the space provided in Section B. If category 2 through 6 is the basis for exemption, you must complete the information requested in Section B.

Nebraska Sales and Use Tax Reg-1-013, Sale for Resale – Resale Certificate, and Reg-1-014, Exempt Sale Certificate, provide additional information on the proper issuance and use of this certificate. These and other regulations referred to in these instructions are available on our Web site: **www.revenue.ne.gov/legal/regs/slstaxregs**.

Use Form 13E for purchases of energy sources which qualify for exemption. Use Form 13ME for purchases of mobility enhancing equipment on a motor vehicle.

CONTRACTORS. Form 13, Section C, Part 1, must be completed by contractors operating under Option 1 or Option 3 to document their tax-free purchase of building materials or fixtures from their suppliers. Section C, Part 2, may be completed to exempt the purchase of building materials or fixtures pursuant to a Purchasing Agent Appointment, Form 17. See the contractor information guides on our Web site **www.revenue.ne.gov** for additional information.

WHERE TO FILE. Form 13 is given to the seller at the time of the purchase of the property or service or when sales tax is due. The certificate must be retained with the seller's records for audit purposes. Do not send to the Department of Revenue.

SALES TAX NUMBER. A purchaser who completes Section A and is engaged in business as a wholesaler or manufacturer is not required to provide an identification number. Out-of-state purchasers can provide their home state sales tax number. Section B does not require an identification number when exemption category 1, 2, or 5 is indicated.

PROPERLY COMPLETED CERTIFICATE. A purchaser must complete a certificate before issuing it to the seller. To properly complete the certificate, the purchaser must include: (1) identification of the purchaser and seller, (2) a statement whether the certificate is for a single purchase or is a blanket certificate, (3) a statement of basis for exemption including completion of all information for the basis chosen, (4) the signature of an authorized person, and (5) the date the certificate was issued.

PENALTIES. Any purchaser who gives a Form 13 to a seller for any purchase which is other than for resale, lease, or rental in the **normal** course of the purchaser's business, or is not otherwise exempted from sales and use tax under the Nebraska Revenue Act, shall be subject to a penalty of $100 or ten times the tax, whichever amount is larger, for each instance of presentation and misuse.

Any purchaser, or their agent, who fraudulently signs a Form 13 may be found guilty of a Class IV misdemeanor.

CATEGORIES OF EXEMPTION

1. Purchases made directly by certain governmental agencies identified in Nebraska Sales and Use Tax Reg-1-012, Exemptions; Reg-1-072, United States Government and Federal Corporations; and Reg-1-093, Governmental Units, are exempt from sales tax. A list of specific governmental units are provided in the above regulations. Governmental units are not assigned exemption numbers.

   Sales to the United States government, its agencies, and corporations wholly owned by the United States government are exempt from sales tax. However, sales to institutions chartered or created under federal authority, but which are not directly operated and controlled by the United States government for the benefit of the public, generally are taxable. Construction projects for federal agencies have specific requirements, see Reg-1-017 Contractors.

   Purchases that are **not** exempt from Nebraska sales and use tax include, but are not limited to, governmental units of other states, sanitary and improvement districts, urban renewal authorities, rural water districts, railroad transportation safety districts, and county historical or agricultural societies.

2. Purchases when the intended use renders it exempt as set out in paragraph 012.02D of Reg-1-012, Exemptions. Complete the description of the item purchased and the intended use as required on the front of Form 13. Sellers of **repair parts** for agricultural machinery and equipment cannot accept a Form 13 to exempt such sales from tax.

3. Purchases made by organizations that have been issued a Nebraska Exempt Organization - Certificate of Exemption are exempt from sales tax. Reg-1-090, Nonprofit Organizations; Reg-1-091, Religious Organizations; and Reg-1-092, Educational Institutions, identify such organizations. These organizations will be issued a Nebraska state exemption identification number. This exemption number must be entered in Section B of the Form 13.

4. Purchases of common or contract carrier vehicles and repair and replacement parts for such vehicles.

5. Purchases of manufacturing machinery or equipment by a taxpayer engaged in business as a manufacturer for use predominantly in manufacturing. This includes the installation, repair, or maintenance of such qualified manufacturing machinery or equipment (see Revenue Ruling 01-08-2).

6. A sale that qualifies as an occasional sale, such as a sale of depreciable machinery and equipment productively used by the seller for more than one year and the seller previously paid tax on the item. The **seller** must sign and give the exemption certificate to the purchaser. The certificate must be retained by the purchaser for audit purposes (see Reg-1-014, Exempt Sale Certificate).

PURCHASING AGENT APPOINTMENT

TAX FORM 17

Nebraska Department of REVENUE

Purchasing Agent Appointment

and Delegation of Authority for Sales and Use Tax

FORM 17

PURCHASING AGENT APPOINTMENT

Name and Address of Prime Contractor	Name and Address of Governmental Unit or Exempt Organization
Name	Name: CITY OF GRAND ISLAND
Street or Other Mailing Address	Street or Other Mailing Address: PO BOX 1968
City / State / Zip Code	City: GRAND ISLAND / State: NE / Zip Code: 68802-1968
Name and Location of Project	**Appointment Information**
Name	Effective Date (see Instructions)
Street or Other Mailing Address	Expiration Date
City / State / Zip Code	Nebraska Exemption Number (Exempt Organizations Only): 21-0244767
Identify 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 stated above.

sign here ▶ Authorized Signature of Governmental Unit or Exempt Organization _____ Title _____ Date _____

DELEGATION OF PRIME CONTRACTOR'S AUTHORITY

Name and Address of Subcontractor	Delegation Information
Name	Effective Date
Street or Other Mailing Address	Expiration Date
City / State / Zip Code	Portion of Project

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

sign here ▶ Signature of Prime Contractor or Authorized Representative _____ Title _____ Date _____

INSTRUCTIONS

WHO MUST FILE. Any governmental unit or organization that is **exempt** from sales and use tax may appoint as its agent a prime contractor to purchase building materials and/or fixtures that will be annexed to property that belongs to or will belong to the governmental unit or exempt organization pursuant to a construction contract with the governmental unit or exempt organization. The appointment of the prime contractor as its agent is completed by issuing a Purchasing Agent Appointment and Delegation of Authority for Sales and Use Tax, Form 17, to the prime contractor. The Form 17 is required to be given to the contractor **BEFORE** he or she annexes building materials. The governmental unit or exempt organization must identify the project (e.g., east wing, chapel construction, or new school auditorium). Most nonprofit organizations are NOT exempt from sales tax in Nebraska. In addition, not all governmental units are exempt from Nebraska sales tax. Refer to Contractor Information on our Web site for additional information on exempt entities. A contractor can confirm the exempt status of a governmental unit or exempt organization by contacting the Nebraska Department of Revenue.

The exemption from the payment of the Nebraska and local option sales and use taxes only applies if the governmental unit or exempt organization directly, or through its contractor, pays for the building materials. **IMPORTANT NOTE:** When an organization that requires licensure in order to be exempt (i.e., nonprofit hospitals), but is not licensed at the time of the construction project, the exempt organization **CANNOT**

issue either a purchasing agent appointment or an exemption certificate. If the exempt organization becomes licensed upon completion of the project, it may apply for a refund of the tax paid or collected by the contractors.

WHEN TO FILE. A prime contractor engaging in a construction project with a governmental unit or exempt organization must receive a properly completed and signed Form 17 **BEFORE** any building materials are annexed. If Form 17 is not issued, the contractor must pay the sales and use taxes and the governmental unit or exempt organization may obtain a refund of the taxes paid by the contractor.

WHERE TO FILE. A copy of the completed form should be retained by the governmental unit or exempt organization issuing the Form 17. The original is to be retained by the prime contractor. Copies of this form must be made by the prime contractor for delegation purposes to any subcontractors working on the project identified on this form.

APPOINTMENT INFORMATION. Enter the dates the purchasing agent appointment will become effective and when it will expire. This appointment will not allow any purchases without payment of the tax by the prime contractor or subcontractor before the effective date or after the expiration date. The dates the delegation becomes effective and the expiration dates must be completed. The phrase "upon completion" or similar phrase is not acceptable as an expiration date. The governmental unit or exempt organization may need to issue another Form 17 if the project is not completed within the prior "effective" and "expiration" dates. Exempt organizations must enter their Nebraska Sales and Use Tax Exemption number.

DELEGATION OF PRIME CONTRACTOR'S AUTHORITY. The prime contractor may delegate his or her authority to act as the purchasing agent of the governmental unit or exempt organization to a subcontractor. The prime contractor must complete his or her copy of Form 17 for each subcontractor who is delegated authority to act as a purchasing agent. Reproductions of this delegation must be provided to the subcontractor, who must retain a copy for his or her records, and to the governmental unit or exempt organization.

Enter the dates the delegation of the subcontractor will become effective, when it will expire, and the portion of the project delegated. This delegation will not allow any purchases without payment of the tax by the subcontractor before the delegation date or after the expiration date. Any further delegation from a subcontractor to additional subcontractors must be delegated by providing a copy of the Form 17 that they received from the prime contractor and attaching it to a separate Form 17 with any further delegation to other subcontractors. The purchasing agent appointment is limited to the contractor's purchase of building materials and/or fixtures for the specific project and is only valid during the appointment dates shown on the Form 17.

EXEMPT SALE CERTIFICATE. A prime contractor who has been appointed to act as a purchasing agent by a governmental unit or exempt organization, and who hires a subcontractor operating as an Option 1 contractor, must provide to that subcontractor a completed copy of Form 17 and a Nebraska Resale or Exempt Sale Certificate, Form 13, with Section C, Part 2, completed. The subcontractor will retain these forms in his or her records, and will not charge the contractor sales tax on any portion of the invoice involving the annexation of materials to the specific project identified on the Form 17. If these forms are not provided to the subcontractor operating under Option 1, the subcontractor must collect and remit sales tax on the charge for the separately stated building materials portion of the invoice. If the Option 1 subcontractor does not separately state the charge for the building materials from contractor labor, then the entire charge is taxable to the prime contractor.

Contractors operating under Option 2 (maintaining a tax-paid inventory) who have been issued a Form 17 from a governmental unit or an exempt organization, must furnish each vendor a copy of the Form 17 and a Form 13, completing Section C, Part 2, when purchasing building materials that will be annexed to real estate. Forms 13 and 17 must be retained with the vendor's and contractor's records for audit purposes. A contractor or subcontractor may reproduce copies of these documents which will be furnished to the vendors for each invoice or order made by them.

Invoices from vendors for the purchase of building materials by the contractor as purchasing agent, or the authorized subcontractor, must clearly identify that such purchase is for the specific Form 17 project.

CREDIT/REFUND OF SALES AND USE TAX. A contractor or subcontractor who has been appointed as a purchasing agent before any materials are annexed, may withdraw sales or use tax-paid materials from inventory that will be annexed to real estate or used to repair property annexed to real estate and receive a credit for the sales or use tax amount previously paid on those materials.

The contractor or subcontractor may take a credit either against his or her current tax liability, or file a Claim for Overpayment of Sales and Use Tax, Form 7, and receive a refund of the sales or use tax paid on those materials.

TOOLS, EQUIPMENT, AND SUPPLIES. The purchase, rental, or lease of tools, supplies, or equipment (i.e., scaffolding, barricades, machinery, etc.) by a contractor for use in the completion of an exempt project CANNOT be purchased tax free, even if the contractor has been issued a Form 17. These items do not become annexed to the real estate.

OPTION 1 CONTRACTOR ONLY. If an Option 1 contractor is the **only** contractor involved in performing work for a governmental unit or exempt organization, a Form 17 is NOT required. The Option 1 contractor must only obtain a Form 13, Section B, from the exempt project owner.

PENALTY. Any person who signs this document with the intent to evade payment of tax is liable for the sales and use tax, interest, and penalty, and may be found guilty of a misdemeanor.

AUTHORIZED SIGNATURE. The purchasing agent appointment must be signed by an officer of the exempt organization or proper government official. The delegation of prime contractor's authority must be signed by the owner, partner, corporate officer, or other individual authorized to sign by a power of attorney on file with the Nebraska Department of Revenue.

CONTRACT AGREEMENT

CONTRACT AGREEMENT

THIS AGREEMENT made and entered into this _____ day of _____, **2013**, 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 construction of **Westgate Road Street Improvement District No. 1261**; and

WHEREAS, the City, in the manner prescribed by law, has publicly opened, examined, and canvassed the proposals submitted, and has determined the aforesaid Contractor to be the lowest responsive 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 or themselves, and its 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 and Special Provisions, 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 _____ **AND XX/100 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.

ARTICLE III. The contractor hereby agrees to act as agent for the City in purchasing materials and supplies for the City for incorporation into the work of 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 **Westgate Road Street Improvement District No. 1261**.

ARTICLE IV. Work on this contract is to be substantially complete no later than August 15, 2014. All work is to be completed no later than September 12, 2014.

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.

ARTICLE VI. 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 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 to order.

ARTICLE VII. The City of Grand Island, Nebraska operates on a fiscal year beginning October 1st and ending on the following September 30th. 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 VIII. FAIR EMPLOYMENT PRACTICES: Each proposer agrees that they will not discriminate against any employee or applicant for employment because of age, race, color, religious creed, ancestry, handicap, sex or political affiliation.

ARTICLE IX. LB 403: Every public contractor and his/her or its subcontractors who are awarded an agreement 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.

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 and bond are in due form according to law and are hereby approved.

_____ Date _____
Attorney for the City

APPENDIX A – TITLE VI NON-DISCRIMINATION -

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

(1) **Compliance with Regulations:** The contractor shall comply with the Regulation relative to nondiscrimination in Federally-assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, and the Federal Highway Administration (hereinafter "FHWA") Title 23, Code of Federal Regulations, Part 200 as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

(2) **Nondiscrimination:** The Contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin, sex, age, and disability/handicap in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by 49 CFR, section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

(3) **Solicitations for Subcontractors, Including Procurements of Materials and Equipment:** In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin, sex, age, and disability/handicap.

(4) **Information and Reports:** The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the City of Grand Island or the FHWA to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information the contractor shall so certify to the City of Grand Island, or the FHWA as appropriate, and shall set forth what efforts it has made to obtain the information.

(5) **Sanctions for Noncompliance:** In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the City of Grand Island shall impose such contract sanctions as it or the FHWA may determine to be appropriate, including, but not limited to:
   (a.) withholding of payments to the contractor under the contract until the contractor complies, and/or
   (b.) cancellation, termination or suspension of the contract, in whole or in part.

(6) **Incorporation of Provisions:** The contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto.

The contractor shall take such action with respect to any subcontract or procurement as the City of Grand Island or the FHWA may direct as a means of enforcing such provisions including sanctions for non-compliance: Provided, however, that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the City of Grand Island to enter into such litigation to protect the interests of the City of Grand Island, and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

DIVISION I

GENERAL SPECIFICATIONS

APPLICABLE TO ALL
CONSTRUCTION CONTRACTS

DIVISION I
GENERAL SPECIFICATIONS

CONTENTS

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.

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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 guaranties 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

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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.

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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.

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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 ½" margin on all sides except the left which shall be 2". The margin lines shall measure 21"x33 ½". 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:

Worker's Compensation	Statutory Limits
Employer's 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 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:

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 be not 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 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:

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

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 IA – SPECIAL PROVISIONS

WESTGATE ROAD PAVING IMPROVEMENTS
STREET IMPROVEMENT DISTRICT 1261
CITY OF GRAND ISLAND, NEBRASKA 2013

SECTION 100 -- GENERAL

100.01 Description of Work. The work to be performed under the provisions of these Contract documents includes, but is not limited to: furnishing all material, equipment, labor, and appurtenances thereto for the complete installation of Westgate Road Paving Improvements, Street Improvement District 1261.

100.02 Location of Work. The paving improvements to be performed under this Contract are generally located in the southwestern portion of Grand Island. The project involves construction of a new portion of Westgate Road from North Road thence easterly approximately 1,200 feet and connecting to existing pavement near Copper Road. The project includes approximately 5,750 s.y. of 8" P.C. concrete pavement with integral curb, 2,199 l.f. of RCP storm sewer from 15" to 42" size, storm sewer inlets, 15,950 c.y. of excavation for storm drainage ditches, traffic control, erosion control, miscellaneous water main work, miscellaneous removals, clearing & grubbing, seeding, and associated appurtenances. Refer to the plans for exact locations and alignments.

100.03 Pre-Construction Conference. As soon as practical after the Contract is awarded, a pre-construction conference shall be scheduled with the Contractor. The purpose of the conference is to discuss: the project plans and specifications, any unusual conditions, erosion controls, the Contractor's plan and schedule of operation, materials, maintenance of traffic and access, and other items that will result in a complete job.

At the pre-construction conference, the Contractor shall be required to submit for review by the Public Works Department:

- A written construction schedule. The Contractor shall use the schedule to notify the affected property management of the impending activities ten (10) business days in advance of commencing work on any section. If the Contractor desires to make modifications, or the schedule fails to reflect actual progress, a revised schedule shall be re-submitted to the Public Works Department ten (10) business days prior to the revised operations;

- A list of Contractor's key personnel, including any subcontractors, and a list of their qualifications, experience, and cell phone contact numbers.

- Material manufacturer's standard data sheets.

- An environmental protection plan and an emergency procedure plan, including a list of the appropriate governmental agencies to be notified.

100.04 Specifications and Standard Plan Drawings. All Divisions of the City of Grand Island Specifications and Standard Plan Drawings shall be considered a part of this Contract, whether or not attached into these specifications, and shall be supplemented by the Nebraska Department of Roads 2007 English Edition of the Standard Specifications for Highway Construction. In case of a discrepancy: 1. The City of Grand Island Standard Specifications shall govern over the Nebraska Department of Roads 2007 English Edition of the Standard Specifications for Highway Construction; 2. Special Provisions shall govern over the City of Grand Island Standard Specifications; and 3. The plans shall govern over the Special Provisions. It shall be the Contractor's responsibility to comply with all requirements thereof. No attempt has been made in these specifications to segregate work to be performed by any trade or

subcontractor. Any segregation between the trades or crafts will be solely a matter for agreement between the Contractor and their employees or their subcontractors. The specifications as a whole will govern construction of the entire work. The applicable provisions whereof will govern work to be performed under each section.

100.05 Sufficient People and Equipment. It is the intent of these specifications that the Contractor has sufficient people and equipment on the job site capable of completing the job as specified. The Contractor must demonstrate this capability to the satisfaction of the Public Works Department. If at any time during the performance of the work, the Contractor's progress on any phase of the work shall fall behind that necessary to enable the Contractor to complete it in accordance with the date or calendar days set out in the bid, the Contractor, at no extra expense to the City, shall take such action as necessary to meet those completion dates including, but not limited to, working additional or longer shifts and employing more labor and equipment and/or to increase the efficiency of, improve the character of, augment the number of, or to substitute new tools, plant or equipment of the Contractor as the case might be so as to secure the quality of work required.

100.06 Time Frame. No work shall commence until the Certificate of Insurance and bonds (when required) are approved by the City, the Contract is executed, and a Notice to Proceed is issued. The Contractor shall coordinate with the City of Grand Island relative to scheduling work. Completion of all work, including restoration, shall be completed by the date stated in the Contract Agreement.

100.07 Property Corners. It shall be the Contractor's responsibility to protect existing property corners and government surveying monuments. If property corners are disturbed or destroyed during construction, it shall be the Contractor's obligation to employ a licensed land surveyor to replace those damaged or destroyed corners. No extra or additional payment will be made for restoration of property corners.

100.08 Baselines, Benchmarks, and Control Points. All storm water & paving improvements shall be laid out from existing section corners, benchmarks, and control points established on the plans. The Contractor shall be responsible for executing the work to the lines and grades established. It shall be the Contractor's responsibility to maintain and preserve all baselines and control points. If such marks are destroyed by the Contractor without authorization by the Public Works Department, all such lines, points, monuments and stakes shall be re-established by the Public Works Department, and the expense charged to the Contractor.

100.09 Protection of Property and Surface Structures. All property and structures shall be protected unless their removal is shown on the Contract drawings or authorized by the City.

100.10 Miscellaneous Removal Items. It shall be the Contractor's responsibility to notify the property owners within the project area, a minimum of ten (10) days ahead of construction, so the property owners may remove small trees, bushes, shrubs, fences, sod, sprinkler systems, etc., from the construction limits if they wish to save them.

100.11 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.

Any time the Contractor, sub-contractors, or their employees are working near overhead or underground power lines, they will be required to comply with the *Grand Island Electric Department Recloser Disabling and Transmission Line Outage Policy.*

100.12 Underground Installations. Existing underground installations (such as water mains, sanitary sewer force mains, gas mains, sewers, telephone lines, power lines, and buried structures) in the vicinity of the work are to be checked by the Contractor. The Contractor shall be solely responsible for locating

all existing underground installations. The Contractor shall use their own information and shall not 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.

100.13 Relations with Other Contractors. The Contractor shall cooperate with all other contractors and City crews who may be performing work in the vicinity of the work under this Contract; and shall conduct their operations to minimize interference with the work of such contractors or employees. The Contractor shall promptly make good, at Contractor's own expense, any injury or damage that may be sustained to other contractors or employees of the City, caused by Contractor's actions or inactions.

Any difference or conflict, which may arise between the Contractor and other contractors, or between the Contractor and employees of the City, in regard to their work, shall be resolved as determined by the City. If the work of the Contractor is delayed because of any acts or omissions of any other contractor, the Contractor shall have no claim against the City.

100.14 Emergency Response. The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs for their employees in order to respond rapidly and successfully to an emergency situation. The Contractor's personnel must know the steps that need to be followed before, during, and after they occur. This includes the roles and responsibilities of the different responding agencies, the location and availability of response resources, the process for conducting the response, and other actions as necessary.

If a hazardous situation is detected, the Contractor shall notify the appropriate police, fire, and/or other such first response team as necessary to mitigate the hazard. Additionally, all such incidents shall be reported immediately to the Phelps Control Center, (308) 385-5460. The Contractor shall document such incidents and provide a written report to the Public Works' Project Inspector.

100.15 Not Used

100.16 Air Quality and Opening Burning. The Contractor must comply with the Nebraska Department of Environmental Quality Rules and Regulations for the control of air quality as promulgated in Title 129 of the Nebraska Administrative Code. Open fires are prohibited. All solid waste generated by the project will be disposed of in accordance with Title 132, Integrated Solid Waste Management.

100.17 Best Management Practices. The Contractor shall follow guidelines established in City of Grand Island City Code; Chapter 40, Storm Water Management. The utility construction defined in 40.11, A thru D; shall comply with guidelines listed as disturbing greater than one (1) acre.

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.

SECTION 200 -- TRAFFIC AND ACCESS

200.01 Work Site. Public relations are a very important part of this Contract. The Contractor and Contractor's employees shall recognize the necessity to be courteous to the public and especially to landowners on whose property or near whose property they are working, and shall confine their operations to the immediate construction area.

Good housekeeping is essential, and shall be practiced throughout the construction period. The Contractor and Contractor's employees shall maintain a clean and safe work site free from trash and debris. They shall use due care in placing construction tools, equipment, excavated materials, and construction materials and supplies so as to cause the least possible damage to the property. The Contractor shall furnish and maintain all necessary safety equipment (such as barriers, signs, warning light and guards) and to provide adequate protection of persons and property.

The Contractor shall abate dust nuisance by sweeping, or other means as necessary, to keep paved areas acceptably cleaned until such time as restoration is completed. Construction actives which result in mud on hard surfaced areas will not be permitted. No additional compensation shall be allowed for site cleanup.

Pedestrian and vehicular traffic shall be protected from work activities, equipment, and materials stockpiled and waiting installation. This may require barricades, fencing, bracing, shoring, or lateral supports in the immediate area.

Following completion of the project, all materials, trash, and debris shall be removed by the Contractor.

200.02 Limits of Construction. The project is located within City of Grand Island right-of-ways. The Contractor shall confine all work activities to the public road right-of-ways, permanent easements and temporary construction easements. Failure to restrict construction activities to the project limits may result in damage to private property and bad public relations.

Any property damage done by the Contractor beyond these limits shall be immediately repaired at the Contractor's expense.

200.03 Project Site Access. Access to roads, streets, highways, and driveways shall be maintained except when necessary construction activities prevent such access for a limited period of time.

The Contractor shall fully cooperate with the various commercial businesses, private residents and property owners, emergency departments, agencies or parties involved with delivery of mail or packages, and the collection and removal of trash and garbage. The Contractor shall coordinate construction operations so existing schedules for such activities shall be maintained.

200.04 Right-of-Way Permits – Not Used.

200.05 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 shall be followed.

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

The individual responsible for installing and maintaining the TTC shall be available 24 hours per day, seven days per week. 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 right every day until the work is completed and the right-of-way is cleared.

The contractor is shall develop and implement Temporary Traffic Control Plans for the closure of North Road, Old Potash Highway, and Westgate Road within the right-of-way and all pedestrian facilities.

Temporary Traffic Control shall be paid for directly, see Detour Plan and bid quantities.

200.05.1 Not Used.

200.05.1 Barricades and Warning Signs. The Contractor shall be responsible for furnishing, installing and maintaining all barricades, warning signs, or flashing lights adjacent to all work areas and/or coordination of any required detours. Placement and use of reflectorized materials, etc. shall be according to the MUTCD and all revisions thereto published under the direction of the Federal Highway Administration.

In situations where sight distance is limited or where other safety conditions dictate, the Contractor shall provide additional means of controlling traffic including but not limited to furnishing flaggers. Flaggers shall be properly attired with vest, head gear and stop/slow paddles, and used according to MUTCD flagging and signage procedures.

200.06 Personal Protective Equipment. During all phases of the project, all personnel working within the construction limits shall be suitably dressed to perform their duties safely and in such a manner that will not interfere with their vision, hearing, and use of hands and feet.

As a minimum, all workers shall be required to wear:

- Hard hats that meets the American National Standard (ANSI) Z89.1 – latest revision.
- High-visibility and reflective personal protective safety clothing. Such clothing shall be suitable during both daytime and nighttime usage, and meet the performance Class 2 or Class 3 requirements of ANSI/ISEA 107-2004 publication entitled "American National Standards for High-Visibility Safety Apparel and Headwear".

200.07 Notice of Closing. When it becomes necessary to close a portion of a street during the execution of this work, the Contractor shall notify the Authority Having Jurisdiction and Engineer's office (Olsson Associates), at least seventy two (72) hours in advance. The closing of individual roadways or intersections will only be allowed with **prior approval of the appropriate Authority Having Jurisdiction (AHJ)**.

When it becomes necessary to close any private driveway during the execution of this work, the Contractor shall make arrangements with the affected property management, at least five (5) business days in advance.

200.08 Work within the Right-of-Way. All supplies, materials and/or equipment that may serve as obstructions to traffic shall be properly protected and enclosed by fences or barricades, and not stored within the right-of-way. However, materials waiting to be installed during the construction work day may be placed within the right-of-way, provided they do not limit nor interfere with public access and safety.

Vehicles and equipment, when not in use with the construction work within the right-of-way, shall be kept a minimum of thirty (30) feet from the edge of the surfaced shoulder or roadway.

All workers within the right-of-way, who are exposed to vehicles using the right-of-way or to construction equipment within the work area, shall wear high-visibility and reflective personal protective safety clothing. Such clothing shall be suitable during both daytime and nighttime usage, and meet the performance Class 2 or Class 3 requirements of ANSI / ISEA 107-2004 publication entitled "American National Standards for High-Visibility Safety Apparel and Headwear."

200.09 Roadway and Driveways - Restoration. Hard surfaced pavement restoration for roadways and driveways whether concrete, asphalt, or concrete with an asphalt overlay shall be replaced, as identified on the plans to the grade of the existing adjacent surfacing.

200.10 Cold Weather Concreting. When average daily temperatures are below 40°F (4.5°C) for more than three (3) consecutive days, the Contractor shall use approved practices and procedures that will assure that placed concrete will be sufficiently strong and durable to fully meet design requirements. The use of insulating coverings, accelerating admixtures, high-early strength cement or additional cement may be used to develop the level of strength required. All such methods shall fully conform to the American Concrete Institute's "Recommended Practice for Cold Weather Concreting." There shall be no additional payment if such cold weather techniques are required.

200.11 Not Used.

200.12 Staging Area. The Contractor shall be responsible for obtaining and maintaining an area for material storage and staging of construction activities for the duration of this project. When not in use, all construction material, equipment, etc. shall be stored in this area and not in the public roadway right-of-way.

Upon completion of the project, the Contractor shall restore the staging area to equal or better than original condition. No separate payment shall be made for obtaining, maintaining and or restoring the stage area, but shall be considered incidental to the project.

200.12.1 Temporary Staging Area Fencing. All storage and staging areas shall be enclosed with temporary fencing. Temporary site fencing material as a minimum shall be commercial grade, heavy-duty plastic mesh design, and highly visible orange in color. The fence shall be a minimum of four (4) feet in height with a smooth top and bottom for safety and aesthetic appeal. The fence shall be installed plumb for the entire length, strung taut between posts, and properly maintained during the entire project.

200.12.2 Sanitation. The Contractor shall provide and maintain enclosed toilets for the use of personnel 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.

SECTION 300 – UNION PACIFIC RAILROAD CROSSING

300.01 General – Not Used

300.02 Construction Coordination – Not Used

300.03 Flagman – Not Used

300.04 Insurance – Not Used

300.05 Pipeline Material – Not Used

SECTION 400 -- DEWATERING

400.01 General. When required, this section will be used in conjunction with Division VI, Section 36, Dewatering. It shall be the Contractor's responsibility for devising and operating a construction dewatering system.

400.02 Discharge Permit. The City of Grand Island has a Construction Dewatering Permit from the State of Nebraska Department of Environmental Control. A copy of permit number NEG671000 is contained in Appendix "A".

400.03 Discharge Water. All dewatering discharge water shall be conveyed to locations as previously approved by authorities having jurisdiction. It will be the Contractor's responsibility to make driveway and street crossings in such a manner as to not interfere with normal use. The Contractor will not be allowed to utilize the right-of-way ditches for open conveyance of discharge water.

SECTION 500 -- SALVAGING AND REPLACEMENT OF TOPSOIL

500.01 General. This work shall consist of salvaging topsoil from areas requiring excavations, and replacing the topsoil after construction.

500.02 Quality of Topsoil. Topsoil shall consist of friable surface soil up to one (1) foot in depth, reasonably free of grass, roots, weeds, sticks, stones, and other foreign materials.

500.03 Excavation. After the site has been cleared and grubbed, the topsoil shall be removed to the depth of one (1) foot from the designated areas and shall be stockpiled. Objectionable materials encountered during excavation shall be removed from the construction site. Additional materials required to re-establish grade shall be supplied by the Contractor.

500.04 Spreading. Spreading shall not be done when the ground or topsoil is frozen, excessively wet or otherwise in a condition detrimental to the work. Surfaces designated to be covered shall be lightly scarified just prior to the spreading operation. Where compacted fills are 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.

After placement is completed, the surface of the topsoil shall be restored to the grade prior to construction.

SECTION 600 – TEMPORARY EROSION CONTROL

600.01 Phase II Construction Requirements. When required, the Contractor shall fully comply with all Phase II Construction Requirements.

Phase II of the storm water program applies to all construction activities disturbing one or more acres of land, or if the site is less than one acre but part of a larger common plan of development (such as a large subdivision). These sites must obtain an NPDES permit before any earthmoving activities begin. The NDEQ may require construction sites disturbing less than one acre of land to obtain a storm water discharge permit if such activities would adversely affect water quality.

In order to comply with Phase II of the storm water program, review all requirements contained in the NDEQ construction permit. The steps below are a brief outline of what must be done as part of your permitting process. These steps are not inclusive and the NDEQ construction permit must be referenced and followed for full compliance:

Determine which parties are considered "operators" responsible for complying with the Phase II requirements.

The City of Grand Island has completed and submitted a Notice of Intent (NOI) with all required form work to NDEQ.

The City of Grand Island has developed a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP does not need to be submitted to NDEQ, but must be kept on the construction site and accessible to everyone during construction activities.

The contractor will complete inspection reports and the contractor shall implement the SWPPP at the direction of the City of Grand Island.

Complete final stabilization of the site.

Complete and submit a Notice of Termination (NOT) to the NDEQ.

600.02 Best Management Practices (BMPs). The Contractor shall implement and maintain such BMPs as relevant to conduct the operations and maintain the work so that adequate drainage and erosion control are in place at all times. Techniques will be employed for wind erosion control, sediment control, non-storm water control, and waste management and materials pollution; including preventing petroleum products, chemicals, harmful materials, construction debris, and excessive suspended solids from entering waterways.

600.03 Drainage and Erosion Controls. The Contractor shall be responsible for evaluating the construction site and determining the need to prevent soil erosion and avoid water pollution, including but not limited to, taking temporary measures and/or installing permanent erosion control structures such as sediment traps, silt fence, ditch checks, etc. Such features shall be incorporated into the project at the earliest practicable time and shall be properly maintained by the Contractor.

The Contractor shall exercise every reasonable precaution throughout the Contract to provide adequate drainage and erosion controls on the project site and adjacent properties. Construction of drainage facilities, as well as performance of other Contract work which will contribute to the control of siltation, shall be carried out in conjunction with other project operations, or as soon thereafter as is practicable.

All erosion resulting from the Contractor's operations and the elements must be corrected by the Contractor at no additional cost to the City. The Contractor shall conduct all construction activities so as to avoid soil erosion. Each day, areas shall be protected so that storm runoff will not erode soil.

SECTION 700 – SEEDING

Disturbed residential lawn & turf areas shall be seeded as shown on the plans with Type 'A' Seeding. The following seed mixture shall be used:

Arrow Seed Co., Inc.
P.O. Box 722
Broken Bow, NE 68822
Phone: 800-622-4727

Duraturf Plus 2 Mixture or an approved equal:
22.5% Rembrandt or Barerra Tall Fescue
22.5% Crossfire II Tall Fescue
22.5% Millennium Tall Fescue
22.5% Wildfire Tall Fescue
7.0% Rambo or Caliber Kentucky Bluegrass
5.0% Prizm or Fiesta III Perennial Ryegrass

Sow seed at the rate of 8-10 lbs/1,000 square feet.

All seed shall be origin Nebraska, adjoining states, or as specified. A Contractor proposing to use a substitute variety, or origin shall submit for the Engineer's consideration a seed tag representing the seed which shows the variety, origin and analysis of the seed.

Rate of application of commercial inorganic fertilizer shall be:

	Rate of Application Per Acre (Minimum)

Available Nitrogen (N_2) - - - - - - - - - - - - - - - - - -	30 or 35 LB
Available Phosphoric Acid (P_2O_5) - - - - - - - - - - - -	90 or 95 LB

Rate of application of granular sulphur-coated urea fertilizer shall be:

Nitrogen (total available)- - - - - - - - - - - - - - - - - -	60 LB

The Contractor may, at his option, apply granular urea formaldehyde in lieu of the sulphur-coated urea fertilizer at the following rate:

Nitrogen (total available)- - - - - - - - - - - - - - - - - -	60 LB

All areas which are seeded shall be covered with mulch. Mulching shall be in accordance with the requirements of Section 805 of the Nebraska Department of Roads Standard Specification. Mulching shall not be measured and paid for directly but shall be considered subsidiary to the pay item for "Seeding".

SECTION 800 – PAY ITEMS

800.01 Reinforced Concrete Pipe shall include all labor, equipment, excavation, subgrade preparation, backfill, and incidental items necessary to install pipe of the diameter(s) as required under the contract. The pay item is one (1) linear foot of each diameter(s) listed in the bid form, in place, measured between the ends of the pipe as planned.

800.02 Portland Cement Concrete Pavement shall include all labor, equipment, material, accessories, subgrade preparation, joints, concrete, reinforcing, finishing, formwork, surface cure, protection, backfill, and incidental items necessary to furnish and install concrete pavement in accordance with the plans and specifications. The pay item is one (1) square yard of each type(s) and thickness listed in the bid form, in place.

800.03 Reinforced Concrete Flared-End Sections shall include all labor, equipment, unclassified excavation, subgrade preparation, jointing, accessories, proper backfill, and compactions, grading, handling of water, and all related work required to install a flared-end section in accordance with the contract documents. The pay item is one (1) each, for the size(s) listed on the bid form, complete in place.

800.04 Portland Cement Integral Curb shall include all labor, materials, equipment, unclassified excavation, concrete, reinforcement, backfill, formwork, finishing, surface cure, protection, and incidental items to construct concrete integral curb in accordance with the plans and specifications. The pay item is one (1) linear foot complete in place.

800.05 Storm Sewer Manhole shall include all labor, materials, equipment, unclassified excavation, concrete, reinforcement, backfill, ring and cover and incidental items to construct storm sewer manhole in accordance with the plans and specifications. The pay item is one (1) each listed on the bid form, complete in place.

800.06 Concrete Collar shall include all labor, materials, equipment, unclassified excavation, concrete, reinforcement, backfill, and incidental items to construct concrete collar for storm sewer connections in accordance with the plans and specifications. The pay item is one (1) each, for the size(s) listed on the bid form, complete in place.

800.07 Storm Sewer Inlet shall include all labor, materials, equipment, unclassified excavation, formwork, reinforcement, concrete, inverts, grouting, ring & cover castings, pipe fitting, backfill, compaction, and incidental items for furnishing and constructing storm sewer inlets of the type(s) listed on the bid form and all in accordance with the plans and specifications. The pay item is one (1) each listed on the bid form.

800.08 Ductile Iron Watermain Pipe shall include all labor, materials, equipment, unclassified excavation, subgrade preparation, pipe installation, reaction blocking, thrust restraints, disinfection, testing, backfill, trench compaction, and incidental items for the installation of ductile iron water main in accordance with the plans and specifications. The pay item is one (1) linear foot, for the size(s) listed on the bid form, complete in place.

800.09 Gate Valve with Box (Watermain) shall include all labor, materials, equipment, unclassified excavation, subgrade preparation, thrust restraints, disinfection, testing, backfill, concrete, and incidental items for furnishing and placing gate valves and valve boxes in accordance with the plans and specifications. The pay item is one (1) gate valve with box, for the size(s) listed on the bid form, complete in place.

800.10 Ductile Iron Watermain Fittings shall include all labor, material, equipment, unclassified excavation, thrust restraints, testing, disinfection, backfill and all necessary incidental items for furnishing and installing watermain fittings as specified and shown on the plans. The pay item is one (1) each, for the type(s) and size(s) listed on the bid form, complete in place.

800.11 Wet Cut-In (Watermain) shall include all labor, materials, equipment, unclassified excavation, fitting/pipe removal, backfill, testing, disinfection, and incidental items for cutting and making connection to, or disconnection from, existing mains of various sizes but not normally under pressure. The pay item is one (1) each listed on the bid form.

800.12 Sanitary Sewer Service Pipe shall include all labor, materials, equipment, unclassified excavation, subgrade preparation, pipe installation, backfill, trench compaction, and incidental items for the installation of sanitary sewer service pipe in accordance with the plans and specifications. The pay item is one (1) linear foot, for the size(s) listed on the bid form, complete in place.

800.13 Tree Removal shall include all labor, material, equipment, unclassified excavation, saw cutting, removal, hauling, disposal, root ball removal, backfill and all necessary incidental items for tree removal as specified and shown on the plans. The pay item is one (1) each.

800.14 Traffic Control shall include all labor, materials, equipment, transportation, barricades, warning lights, signage, flaggers, submittals, and incidental items necessary to furnish, install, removal at conclusion of work, and maintain temporary traffic control assemblies during the course of necessary work in accordance with the plans and specifications. The pay item is one (1) lump sum, listed on the bid form, complete in place.

800.15 Remove Pavement shall include all necessary materials, labor, equipment, unclassified excavation, saw cutting, hoisting, loading, hauling, concrete removal, asphalt removal, disposal, and incidental work for removing the existing surfacing in accordance with the plans and specifications. The pay item is one (1) square yard, for the type(s) and depth(s) listed on the bid form, removed.

800.16 Crushed Rock Surface Course shall include all necessary labor, equipment, materials, subgrade preparation, compaction and incidental work for placing crushed rock surfacing in accordance with the plans and specifications. The pay item is one (1) ton, listed on the bid form, complete in place.

800.17 Outfall Structure shall include all labor, equipment, materials, subgrade preparation, trenching, unclassified excavation, formwork, reinforcement, concrete, finishing, protection, anchoring, and incidental work necessary to complete outfall structure under the contract. The pay item is one (1) each, type(s) listed on the bid form, complete in place.

800.18 Silt Fence shall include all labor, equipment, materials, excavation, subgrade preparation, proper backfill, periodic cleanout and disposal of sediment, maintenance, removal at project completion, and related work required to construct and maintain silt fence in accordance with the plans and specifications. The pay item is one (1) linear foot, listed on the bid form.

APPENDIX "A"

DISCHARGE PERMIT

Nebraska Department
of Environmental Quality

Wastewater Section
1200 'N' Street, Suite 400, The Atrium
PO Box 98922
Lincoln, NE 68509-8922
Tel.: 402-471-4220
Fax:: 402-471-2909

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
General NPDES Permit Number NEG671000

A General NPDES Permit Authorizing Dewatering Discharges

In compliance with the provisions of the Federal Water Pollution Control Act (33 U.S.C. Sections. 1251 et. seq. as amended to date), the Nebraska Environmental Protection Act (Neb. Rev. Stat. Sections 81-1501 et. seq. as amended to date), and the Rules and Regulations promulgated pursuant to these Acts, the Director of the Nebraska Department of Environmental Quality is hereby issuing this general permit authorizing the discharge of pollutants to waters of the State and excluding tribal lands within the State of Nebraska. This general permit establishes prohibitions, limitations and other conditions pertaining to these discharges. This general permit does not relieve permittees of other duties and responsibilities under the Nebraska Environmental Protection Act, as amended, or established by regulations promulgated pursuant thereto.

This general permit establishes prohibitions and other conditions pertaining to these types of discharges. This general permit is issued authorizing dewatering discharges from construction excavation sites and wells to waters of the state. Some dewatering discharges may be prohibited to those waters identified in Part I B and C of this permit.

This permit shall become effective on **January 1, 2012**.

This permit and the authorization to discharge shall expire at midnight, **December 31, 2016**

Pursuant to the Delegation Memorandum dated January 12, 1999 and signed by the Director, the undersigned hereby executes this document on the behalf of the Director.

Signed this 30th day of December, 2011

Marty Link
Acting Water Quality Division Administrator

Table of Contents

Part I. Eligibility

A. Discharges Authorized by this Permit

This permit authorizes ground and surface waters discharges from dewatering construction excavations, foundation sumps, utility vaults or wells provided the water being discharged is groundwater or groundwater mixed with storm water. This permit does not constitute authorization under 33 U.S.C. 1344 (Section 404 of the Clean Water Act) of any stream dredging or filling operations.

B. Area of Application

This permit has application throughout the entire State of Nebraska excluding State Resource Waters and tribal lands within the State of Nebraska.

C. Limitations of Coverage

This permit does not authorize the following discharges and may be the basis for denial or termination of authorization under this general permit. The department shall be consulted prior to your submission of the DW-NOI if any of the following conditions apply:

1. Discharges regulated by an existing NPDES permit;
2. Direct discharges to classified lakes or impounded waters listed in NDEQ Title 117, Chapter 6;
3. State Resource Waters (See Appendix B)
4. Discharges to Public Drinking Water (See Appendix B), unless written authorization from the Department is received;
5. Discharges to tribal lands within the State of Nebraska;
6. The discharges containing sanitary, process wastewater or livestock wastes;
7. Discharges in the opinion of the Department, may create potential, negative water quality impacts in the receiving stream, water body; and ground water;
8. Discharges that may adversely impact critical habitat of aquatic related, threatened or endangered species as designated by Nebraska Game and Parks Commission (www.ngpc.state.ne.us) or the U.S. Fish and Wildlife Service (www.fws.gov);
9. Discharges that may adversely affect properties listed or eligible for listing in the National Register of Historic Places (www.nebraskahistory.org) or affecting known or discovered archeological sites; and
10. Storm water discharges associated with industrial activity as defined in Title 119, which includes storm water discharges from construction sites of 1 acre or more.

D. Permit Compliance

Any noncompliance with the requirements of this Permit constitutes a violation of the provisions of the Federal Water Pollution Control Act (33 U.S.C. Secs. 1251 et. seq. as amended to date), the Nebraska Environmental Protection Act (Neb. Rev. Stat. Secs. 81-1501 et. seq. as amended to date), and the Rules and Regulations promulgated pursuant to these Acts.

Part II. Authorization to Discharge

A. Authorization

Eligible facilities are defined by the requirements and limitations in Part I. The eligible facilities may apply for authorization to discharge under this general permit using the Notice of Intent (DW-NOI) (See Attachment #1). You must use the DW-NOI form provided in Attachment #1 (or a photocopy thereof or electronic DW-NOI form that may become available during the term of this permit provided by NDEQ).

1. You must use the DW-NOI form to notify the Department that as a Permittee, you intend to meet all conditions of this permit. Complete, accurate, and timely DW-NOI forms shall automatically receive authorization ten (10) calendar days after the post-marked date. The Department shall provide a Discharge Authorization Number for the dewatering site described on the DW-NOI form.
   a. Ongoing projects authorized under the previous version of this permit shall remain in effect no longer than 180 days after the issue date of this permit. Permittees with ongoing projects shall operate under

all existing terms and conditions of that permit until the project is either terminated or receives authorization under this permit.

b. You are not prohibited from submitting NOIs after initiating Dewatering. An NOI submitted to the Department after initiating dewatering shall receive authorization consistent with this permit. Authorization of a late NOI shall not preclude the Department from taking enforcement action for discharging pollutants to Waters of the State without a permit.

c. The Department may request additional information from an applicant for any substantive reason and postpone the assignment of discharge authorization in writing as necessary.

d. Written authorization shall be required for dewatering when effluent discharge is within 2,500 feet of any water of the state identified in Appendix B of this permit.

e. Submittal of the NPDES DW-NOI form does not relieve the applicant of the responsibility to comply with the requirements of other government agencies.

f. The current addresses and telephone number at the time of permit issuance are:

Wastewater Section
Nebraska Department of Environmental Quality
1200 N Street, The Atrium, Suite 400
P.O. Box 98922
Lincoln, Nebraska 68509-8922
Telephone 402-471-4220

Web Site Address: www.deq.state.ne.us/publications/grantsandforms/npdes program/applications

2. Contents of the Notice of Intent

You must provide the following information on the DW-NOI form

Site Information

The following information shall be provided:

1) The name of the site;
2) The site location in descriptive terms (i.e., street address, or if not available, in relationship to recognizable landmarks);
3) A legal description designated in terms of section, township, range and county, provided to the nearest 1/16th of a section, unless the facility occupies a larger area (e.g., NW¼, SW¼, S10, T15N, R11E, Douglas County) and/or Global Positioning System (GPS) location;
4) Information on the number of outfalls and the discharge volume anticipated from each;
5) The source of water (e.g., surface water, storm water runoff and/or ground water);
6) The identity of any contamination and/or pollutants that may be present in dewatering discharges.

Receiving Stream

1) The name of the stream or water body that will receive the outfall discharges;
2) Identify the number of outfalls that discharge into the receiving stream;
3) Identify if the receiving stream(s) is listed in Appendix B, and
4) Provide a brief description of any controls used to dissipate energy so as to prevent channel erosion and scouring in the receiving stream or drainage way.

The "Certifying Official's" Identity, Mailing Address and Telephone Number

The "Authorized Representative's" Identity, Mailing Address and Telephone Number

Certification Statement

The following certification statement shall be contained in the Notice of Intent:

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

I further certify that:

1) I or qualified members of my staff, have reviewed and understand the terms and conditions of NPDES General Permit Number NEG671000;
2) The facility identified in Section 1 of this DW-NOI (Notice of Intent) meets the "Eligibility" requirements and is not excluded by the "Limitation of Coverage" requirements, set forth in Section C of the permit; and
3) I understand that the submission of this DW-NOI (Notice of Intent) obligates the facility identified in Section 1 of this Notice of Intent to comply with the terms and conditions of the Permit NEG671000, provided authorization to discharge is obtained.

Signature Requirements

The owner/operator (person, business, or governmental entity) shall sign and submit the initial Notice of Intent. DW-NOIs for additional sites may be submitted under the signature of the Authorized Representative. The owner/operator must specifically authorize the Authorized Representative to perform this task in a previous DW-NOI or other written documentation.

B. Additional Notification Requirements that Apply to Some Facilities

1. The Department may request additional information from the applicant when it is necessary to adequately review the DW-NOI and evaluate the discharge request.
2. Facilities that discharge to a public or private storm sewer system are obligated to notify the owner or operator of the storm sewer system.

C. Revocation of Discharge Authorization

1. The Director may revoke a permittee's authorization to discharge under the terms and conditions of this permit for any of the following reasons:
   a. When it becomes necessary to protect the public health and welfare.
   b. The discharge is adversely affecting a listed endangered or threatened species or its critical habitat;
   c. The discharge is causing a violation of a surface or ground water quality standard; and
   d. A permittee fails to submit an alternative permit application requested pursuant to Part II.D.
2. The Department may deny authorization to discharge under the terms and conditions of this permit by providing the applicant with a written notice of the denial and an explanation of the basis for the determination.
3. The Department may require the submittal of a different Notice of Intent for an alternative general permit. The Department shall provide an explanation of the basis for any such request.
4. All permittees must meet the requirements set forth in this permit. Failure to do so shall negate any authorization to discharge.
5. Authorization to discharge under the terms and conditions of this permit shall be terminated upon the issuance of the alternative permit or the granting of discharge authorization under another alternative general permit.

D. Requiring an Alternative Permit and Application

1. The Director may require any person authorized to discharge under the terms and conditions of this permit to apply for and obtain either a site-specific NPDES permit or an alternative NPDES general permit. The Department shall provide a written notice that an alternative permits application is required. This notice shall include:
   a. A brief explanation of the basis for the determination;
   b. An application or Notice of Intent for an alternative permit; and
   c. A deadline for submitting the application for the alternative permit.
2. The Director may grant additional time for the submittal of the alternative application following the initial notice. Conditions that may constitute a basis for requesting an alternative application include, but are not limited to:
   a. The discharge is a significant contributor of pollution;
   b. The discharge is to Public Drinking Water Supply (see Appendix B);
   c. The discharger is not in compliance with the terms and conditions of the permit;
   d. Additional pollution control or prevention technology has become available;
   e. The promulgation of new effluent limitations that apply to the source;
   f. The approval of a water quality management plan containing requirements applicable to the source;
   g. The identification of conditions or pollutant sources not previously recognized; and
   h. The issuance of an alternative general permit that applies to the discharge.

E. Notification of Changes: Ownership, Name, or Contacts

The permittee is responsible for notifying the Department within 30 days of any transfer of ownership, facility name change, or changes in the owner/operator or Authorized Representative. The former owner and the new owner must provide written notification of ownership changes.

F. Notification of Activities that may alter the Water Quality of the Discharge

The permittee shall notify the Department immediately of any activities or actions that may alter the water quality of dewatering discharges. For additional reporting requirements relative to spills, leaks, or effluent physical characteristics (Immediate Reporting Requirements) see Part IV.F.

G. Notification of Project Relocation or Completion

1. The permittee shall notify the Wastewater Section within 30 days when a different dewatering site is established. The written notification of these site changes is completed using the NPDES DW-RLN form - Relocation Notice.

2. The permittee shall notify the Department prior to initiating dewatering activities if the start-up date varies by more than one week of the anticipated date submitted in the DW-NOI form. Written notification shall be provided to the Department.
3. The permittee shall provide the Department with a written notification of the project termination within 30 days after discontinuing the dewatering activities.

Part III. Effluent Limitations and Monitoring Requirements for Dewatering Discharges

A. Construction Excavation Discharge Effluent Limitations and Monitoring Requirements

The dewatering discharges associated with construction excavation sites shall be monitored and subject to the limitations set forth in the following table. Monitoring shall be conducted at the discharge point(s). The Department may specify an alternate or more specific monitoring point(s).

Parameter	Storet #	Units	Discharge Limitations		Monitoring Frequency [1]	Sample Type
			Monthly Average	Daily Maximum		
Flow	50050	MGD	Report	Report [2]	Daily	Calculated or Measured
Physical Characteristics [3]	NA	NA	[3]		Daily	*In Situ* and Grab [3]
Petroleum Hydrocarbons [4]	82180	mg/L	Report	10	[4]	Grab
Total Suspended Solids	00530	mg/L	Report	90	Weekly	Grab
Metals	NA	mg/L	Varies	Varies	[7]	Grab
Organics	NA	mg/L	Varies	Varies	[7]	Grab
Parameter	**Storet #**	**Units**	**Discharge Limitations**		**Monitoring Frequency**	**Sample Type**
			Minimum	**Maximum**		
pH [5]	00400	Standard Units	6.5 [6]	9.0 [2]	Weekly	Grab

Footnotes:

(1) Monitoring shall be initiated within 8 hours after the discharge is started.

(2) Maximum means the maximum amount discharged.

(3) The procedures, limits, sampling, record keeping and reporting requirements for this parameter are set forth in the 'Physical Characteristics Examination Procedures' (see Attachment #6 of this permit).

(4) If a visible hydrocarbon sheen or petroleum free-product is detected during the physical characteristic examination, the petroleum hydrocarbon reporting and limitation requirements apply. The OA-2 test method (University Hygienic Laboratory, Iowa City, IA) shall be used for Total Extractable Hydrocarbon analyses, unless otherwise specified in writing by the NDEQ.

(5) All pH samples must be analyzed within a 15-minute time period.

(6) Minimum means the minimum acceptable value. pH is reported as the negative logarithm of the hydrogen ion concentration. pH results cannot be averaged.

(7) Applicable on a site by site basis

Abbreviations: MGD - million gallons per day mg/L - milligrams per Liter NA - Not Applicable

B. Foundation Sumps, Utility Vaults or Well Effluent Limitations and Monitoring Requirements

The dewatering discharges associated with foundation sumps, utility vaults or wells used to lower ground water levels shall be monitored and subject to the limitations set forth in the following table. Monitoring shall be conducted at the discharge point(s). The Department may specify an alternate or more specific monitoring point(s).

Parameter	Storet #	Units	Discharge Limitations		Monitoring Frequency (1)	Sample Type
			Monthly Average	Daily Maximum		
Flow	50050	Gallons per Day	Report	Report (2)	Daily	Calculated or Measured
Physical Characteristics (3)	NA	NA	(3)		Daily	*In Situ* and Grab (3)
Petroleum Hydrocarbons (4)	82180	mg/L	Report	10	(4)	Grab
Total Suspended Solids	00530	mg/L	Report	30	Weekly	Grab
Metals	NA	mg/L	Varies	Varies	(7)	Grab
Organics	NA	mg/L	Varies	Varies	(7)	Grab
Parameter	**Storet #**	**Units**	**Discharge Limitations**		**Monitoring Frequency**	**Sample Type**
			Minimum	**Maximum**		
pH (5)	00400	Standard Units	6.5 (6)	9.0 (2)	Weekly	Grab

Footnotes:

(1) Monitoring shall be initiated within 8 hours after the discharge is started.

(2) Maximum means the maximum amount discharged.

(3) The procedures, limits, sampling, record keeping and reporting requirements for this parameter are set forth in the 'Physical Characteristics Examination Procedures' (see Attachment #6 of this permit).

(4) If a visible hydrocarbon sheen or petroleum free-product is detected during the physical characteristic examination, the petroleum hydrocarbon reporting and limitation requirements apply. The OA-2 test method (University Hygienic Laboratory, Iowa City, IA) shall be used for Total Extractable Hydrocarbon analyses, unless otherwise specified in writing by the NDEQ.

(5) All pH samples must be analyzed within a 15-minute time period.

(6) Minimum means the minimum acceptable value. pH is reported as the negative logarithm of the hydrogen ion concentration. pH results cannot be averaged.

(7) Applicable on a site by site basis

Abbreviations: MGD - million gallons per day mg/L - milligrams per Liter NA - Not Applicable

C. Site Specific Limitations

Site specific limitations for a parameter may be added on a case-by-case basis that are equivalent to the basic standards and methodologies for surface water, or regulation for effluent limitations, or any other applicable regulation, and would be specified in the certification along with the appropriate monitoring frequency.

D. One-time sampling analysis for Metals

The Department may request a one-time sampling and analysis for specific or all inclusive metals parameters on a site specific/ discharge specific basis. The permittee will be required to submit these results to the Department. The Department will then review the data to determine if any certification amendments are necessary based on the effluent monitoring results.

E. One-time sampling analysis for Organics

The Department may request a one-time sampling and analysis for specific or all inclusive organics parameters on a site specific/ discharge specific basis. The permittee will be required to submit these results to the Department. The Department will then review the data to determine if any certification amendments are necessary based on the effluent monitoring results.

Part IV. Other Conditions and Requirements

A. Compliance with Permit Terms and Conditions

Compliance with the terms and conditions of this permit does not relieve the permittee from any liability that may arise as a consequence of their discharges.

B. Discharge affecting Endangered or Threatened Species

This permit does not replace or satisfy any review requirements for Endangered or Threatened species from new or expanded discharges that adversely impact or contribute to adverse impacts on a listed endangered or threatened species or adversely modify a designated critical habitat. The permittee must conduct any required review and coordinate with appropriate agencies for any project with the potential of affecting threatened or endangered species, or their critical habitat.

C. Discharges Affecting Historical Places or Archeological Sites

This permit does not replace or satisfy any review requirements for Historic Places or Archeological Sites, from new or expanded discharges which adversely affect properties listed or eligible for listing in the National Register of Historic Places or affecting known or discovered Archeological Sites. The permittee must be in compliance with National Historic Preservation Act and conduct all required review and coordination related to historic preservation, including significant anthropological sites and any burial sites, with the Nebraska Historic Preservation Officer. You must comply with all applicable state, and local laws concerning the protection of historic properties and places. Your discharge authorization under this permit is contingent upon this compliance.

D. Prohibited Toxic Discharges

Discharges shall be free from toxic substances, which alone or in combination with other substances, create conditions unsuitable for aquatic life, except in instances where there is no net increase in the receiving water body of the quantity or concentration of the toxic substance. The exception shall only apply in instances where water is taken from and discharged to the same water body and no increases in pollutant quantities or concentrations occur.

E. Prohibited Discharges that Cause Aesthetic Violations

Discharges shall not contain pollutants at concentrations or levels that produce objectionable films, foam, colors, turbidity or deposits, or noxious odors in the receiving stream or waterway, except in instances where there is no net increase in pollutant quantities or concentrations in the receiving water body. The exception shall only apply in instances where water is taken from and discharged to the same water body and no increases in pollutant quantities or concentrations occur.

F. Immediate Reporting Requirement

The permittees shall report immediately by telephone upon becoming aware of any of the following:

1. Evidence indicating a possible violation of the effluent limitations and requirements listed in Effluent Limitations and Monitoring Requirements for Dewatering Discharges;
2. Evidence of oil or petroleum product contamination in the effluent (e.g., a visible oil sheen);
3. Any physical characteristic in the effluent that could indicate the presence of a pollutant or pollutants not previously identified or anticipated; and
4. The occurrence, or new knowledge of, any spills, leaks or contamination in the vicinity of the project that could impact the water quality of the effluent.

The telephone numbers are listed in Part II. A. 1. f

G. Reduction of the Monitoring Frequency

1. Excavation Dewatering

   If continuous dewatering is conducted for a period of 30 days, the permittee may request a reduction in the monitoring frequency. The request shall be submitted in writing. The compliance limitations and requirements criteria will be used to evaluate the frequency reduction.

2. Dewatering using Wells to depress the water level

   After dewatering wells have been operated continuously for a one-week period, the permittee may request a reduction in the monitoring frequency. The request shall be submitted in writing. The compliance limitations and requirements criteria will be used to evaluate the frequency reduction.

H. Implementation of Erosion Control and Energy Dissipation Measures

Permittees shall implement erosion control and energy dissipation measures as necessary to prevent excessive erosion and channel scouring that may result from the discharge flow.

I. Groundwater Contamination

If groundwater contamination is encountered, then the permittee is to contact the department and, if appropriate, the owner of the collection system receiving the discharge. Since this discharge of contaminated groundwater is not covered under this permit, the permittee shall immediately cease dewatering and apply for a treated groundwater remediation discharge permit.

J. Modification of Permit Attachments

The Department may modify the permit attachments (i.e., DW-NOI, DW-DMR, and DW-RLN forms). The modified forms satisfy the notification and reporting requirements set forth in this permit. If information is submitted on an outdated form, opportunity to resubmit the information shall be provided the permittee, or, at the discretion of the Department, submittals on outdated forms may be accepted.

K. Additional Monitoring Requirements

In addition to monitoring requirements set forth, the Department may request more frequent monitoring.

Appendix A – Standard Conditions that Apply to NPDES and NPP Permits

These general conditions are applicable to all NPDES and NPP permits. These conditions shall not preempt any more stringent requirements found elsewhere in this permit.

A. General Conditions

1. **Information Available**

   All permit applications, fact sheets, permits, discharge data, monitoring reports, and any public comments concerning such shall be available to the public for inspection and copying, unless such information about methods or processes is entitled to protection as trade secrets of the owner or operator under Neb. Rev. Stat. §81-1527, (Reissue 1999) and NDEQ Title 115, Chapter 4.

2. **Duty to Comply**

   The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Federal Clean Water Act and the State Act and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

   The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal even if the permit has not yet been modified to incorporate the requirement.

3. **Duty to Reapply**

   If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.

4. **Need to Halt or Reduce Activity is not a Defense**

   It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

5. **Duty to Mitigate**

   The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

6. **Proper Operation and Maintenance**

   The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

7. **Permit Actions**

   This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

8. **Property Rights**

   This permit does not convey any property rights of any sort, or any exclusive privilege.

9. **Duty to Provide Information**

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Director upon request copies of records required to be kept by this permit.

10. **Inspection and Entry**

The permittee shall allow the Director or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

11. **Land Application of Wastewater Effluent**

The permittee shall be permitted to discharge treated domestic wastewater effluent by means of land application in accordance with the regulations and standards set forth in NDEQ Title 119, Chapter 12 002. The Wastewater Section of the Department must be notified in writing if the permittee chooses to land apply effluent.

12. **Toxic Pollutants**

The permittee shall not discharge pollutants to waters of the state that cause a violation of the standards established in NDEQ Titles 117, 118 or 119. All discharges to surface waters of the state shall be free of toxic (acute or chronic) substances which alone or in combination with other substances, create conditions unsuitable for aquatic life outside the appropriate mixing zone.

13. **Oil and Hazardous Substances/Spill Notification**

Nothing in this permit shall preclude the initiation of any legal action or relieve the permittee from any responsibilities, liabilities or penalties under section 311 of the Clean Water Act. The permittee shall conform to the provisions set forth in NDEQ Title 126, *Rules and Regulations Pertaining to the Management of Wastes*. If the permittee knows, or has reason to believe, that oil or hazardous substances were released at the facility and could enter waters of the state or any of the outfall discharges authorized in this permit, the permittee shall immediately notify the Department of a release of oil or hazardous substances. During Department office hours (i.e., 8:00 a.m. to 5:00 p.m., Monday through Friday, except holidays), notification shall be made to the Nebraska Department of Environmental Quality at telephone numbers (402) 471-2186 or (877) 253-2603 (toll free). When NDEQ cannot be contacted, the permittee shall report to the Nebraska State Patrol for referral to the NDEQ Immediate Response Team at telephone number (402) 471-4545. It shall be the permittee's responsibility to maintain current telephone numbers necessary to carry out the notification requirements set forth in this paragraph.

14. Unlawful Acts; Civil Penalty

a. It shall be unlawful for any person:

i) To refuse the right of entry and inspection to any authorized representative of the department when the representative is acting under the provisions of a permit issued by the department;

ii) To violate any air, water, or land quality standards, any emission or effluent standards or limitations, any permit or license condition or limitation, any order of the director, or any monitoring, reporting, or record-keeping requirements contained in or issued or entered into pursuant to the Environmental Protection Act, the Integrated Solid Waste Management Act, or the Livestock Waste Management Act or the rules or regulations adopted and promulgated pursuant to such acts;

iii) To make any false statement, representation, or certification in any application, label, record, report, plan, or other document required to be filed or maintained by such acts, rules, or regulations;

iv) To falsify, tamper with, or render inaccurate any monitoring device or method used or required for compliance with a permit or license or such acts, rules, or regulations; or

v) To violate any other provision of or fail to perform any other duty imposed by such acts, rules, or regulations.

b. Each violation of this section or of Neb. Rev. Stat § 81-1506 shall subject a person to a civil penalty of no more than $10,000 per day. In case of a continuing violation, each day shall constitute a separate offense. In assessing the amount of the fine, the court shall consider the degree and extent of the violation, the size of the operation, and any economic benefit derived from noncompliance to violate any air, water, or land quality standards, any emission or effluent standards or limitations, any permit or license condition or limitation, any order of the Director, or any monitoring, reporting, or record-keeping requirements contained in or issued or entered into pursuant to the Environmental Protection Act, the Integrated Solid Waste Management Act, or the Livestock Waste Management Act or the rules or regulations adopted and promulgated pursuant to such acts. Violations may also result in federal prosecution.

15. Severability

If any provision of this permit is held invalid, the remainder of this permit shall not be affected.

16. Other Rules and Regulations Liability

The issuance of this permit in no way relieves the obligation of the permittee to comply with other rules and regulations of the Department.

B. Signatory Requirements

1. Applications

a. Applications, reports, or information submitted to the Director shall be signed and certified.

b. All permit applications shall be signed as follows:

i) For a corporation

By a responsible corporate officer: For the purpose of this section, a responsible corporate officer means:

(a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or

(b) The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

ii) For a partnership or sole proprietorship

By a general partner or the proprietor.

iii) For a municipality, State, Federal, or other public agency

By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(a) The chief executive officer of the agency, or

(b) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

c. All reports required by permits, and other information requested by the Director shall be signed by a person described in this section, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

i) The authorization is made in writing by a person described in paragraphs B.1.b.(i), b.(ii), orb.(iii);

ii) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company, (a duly authorized representative may thus be either a named individual or any individual occupying a named position) and;

iii) The written authorization is submitted to the Director.

2. Changes to Authorization

If an authorization of paragraphs B.1.b.(i), b.(ii), or b.(iii) is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of this section must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

3. **Certification**

All applications, reports and information submitted as a requirement of this permit shall contain the following certification statement:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

C. Monitoring and Records

1. **Samples**

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

2. **Records**

Records of monitoring information shall include:

a. The date(s), exact place, and time and methods of sampling or measurements;
b. The individual(s) who performed the sampling or measurements;
c. The date(s) analyses were performed;
d. The individual(s) who performed the analyses;
e. The analytical techniques or methods used; and
f. The results of such analyses.

3. **Test Methods**

Monitoring must be conducted according to test procedures approved in NDEQ Title 119, Chapter 27 002 unless another method is required under 40 CFR subchapter N – Effluent Guidelines and Standards Parts 425 to 471 and subchapter O – Sewer Sludge Parts 501 and 503.

4. **Record Retention**

Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

5. **Representative Sampling**

Samples and measurements taken as required within this permit shall be representative of the discharge. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water or substance. Monitoring points shall not be changed without notification to the Department and with the written approval of the Director.

a. Composite sampling shall be conducted in one of the following manners
   i) Continuous discharge - a minimum of one discrete aliquot collected every three hours,
   ii) Less than 24 hours - a minimum of hourly discrete aliquots or a continuously drawn sample shall be collected during the discharge, or
   iii) Batch discharge - a minimum of three discrete aliquots shall be collected during each discharge.

b. Composite samples shall be collected in one of the following manners:
   i) The volume of each aliquot must be proportional to either the waste stream flow at the time of sampling or the total waste stream flow since collection of the previous aliquot,
   ii) A number of equal volume aliquots taken at varying time intervals in proportion to flow,
   iii) A sample continuously collected in proportion to flow, and
   iv) Where flow proportional sampling is infeasible or nonrepresentative of the pollutant loadings, the Department may approve the use of time composite samples.

c. Grab samples shall consist of a single aliquot collected over a time period not exceeding 15 minutes.

d. All sample preservation techniques shall conform to the methods adopted in NDEQ Title 119, Chapter 21 006 unless:
   i) In the case of sludge samples, alternative techniques are specified in the 40 CFR, Part 503, or
   ii) Other procedures are specified in this permit.

e. Flow Measurements

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be used to insure the accuracy and reliability of measurements. The devices shall be installed, calibrated and maintained to insure that the accuracy of the measurements. The accepted capability shall be consistent with that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of +/- 10%. The amount of deviation shall be from the true discharge rates throughout the range of expected discharge volumes. Guidance can be obtained from the following references for the selection, installation, calibration and operation of acceptable flow measurement devices:

i) *Water Management Manual*, U. S. Department of Interior, Bureau of Reclamation, Second Edition, Revised Reprint, 2001, 327 pp. Available on the Department of Interior, Bureau of Reclamation (website http://www.usbr.gov/pmts/hydraulicslab/pubs/wmm/).

ii) *NPDES Compliance Inspection Manual*, U. S. Environmental Protection Agency, Office of Enforcement and Compliance Assurance, Publication EPA 305-X-04-001 July 2004. This document is available on EPA website:

http://www.epa.gov/compliance/resources/publications/monitoring/cwa/inspections/npdesinspect/npdesmanual.html

D. Reporting Requirements

1. Planned Changes

The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in NDEQ Title 119, Chapter 4;

b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements in NDEQ Title 119, Chapter 4; or

c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

2. Anticipated Noncompliance

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

3. Transfers

This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary in NDEQ Title 119, Chapter 24; in some cases, modification or revocation and reissuance is mandatory.

4. Monitoring Reports

Monitoring results shall be reported at the intervals specified elsewhere in this permit.

a. Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director.

b. If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under in NDEQ Title 119, Chapter 27 002, or another method required for an industry-specific waste stream under 40 CFR subchapter N – Effluent Guidelines and Standards Parts 425 to 471 and subchapter O – Sewer Sludge Parts 501 and 503, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

c. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

5. Quarterly Discharge Monitoring Reports (DMRs)

The permittee shall report the monitoring results required by this permit on a DMR form supplied or approved by the Department. Monitoring results shall be submitted on a quarterly basis using the reporting schedule set forth below, unless otherwise specified in this permit or by the Department.

Monitoring Quarters	DMR Reporting Deadlines
January - March	April 28
April - June	July 28
July - September	October 28
October - December	January 28

If the permittee monitors any pollutant more frequently than required by this permit, using procedures specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted on the DMR. The frequency of the analysis shall also be reported on the DMR.

6. **Compliance Schedules**

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

7. **Immediate Notification**

a. NPP permittees shall report immediately to the publicly owned treatment works (POTW), any discharge to the POTW that may result in a violation of NDEQ Title 119, Chapter 26.

b. All permittees shall report immediately to the NDEQ:

i) Discharges of oil or hazardous substances which threaten waters of the state or public health and welfare, and

ii) Discharges causing in-stream toxicity (i.e., a fish kill) or an immediate threat to human health.

Initial notification may be verbal. A written noncompliance notification shall be submitted as set forth in Section D. 9. of this Appendix.

8. **Twenty-four Hour Reporting**

a. The permittee shall report any noncompliance which may endanger human health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

b. The following shall be included as information which must be reported within 24 hours under this paragraph.

i) Any unanticipated bypass which exceeds any effluent limitation in the permit.

ii) Any upset which exceeds any effluent limitation in the permit.

iii) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours.

c. The Director may waive the written report on a case-by-case basis for reports under Section D if the oral report has been received within 24 hours.

9. **Written Noncompliance Notification**

The permittee shall submit a written noncompliance report to the NDEQ:

a. Within five days of becoming aware of any noncompliance with the:

i) NPP effluent limitations or requirements set forth in this permit, or

ii) NPDES toxic pollutant effluent limitations or requirements set forth in this permit.

b. Within seven days of becoming aware of any other noncompliance with the NPDES requirements and/or effluent limitations set forth in this permit. The written notification shall be submitted on a noncompliance form supplied by the Department and shall include:

i) A description of the discharge and cause of noncompliance,

ii) The period of noncompliance, including exact dates and times, or if not corrected, the anticipated time the noncompliance is expected to continue, and

iii) The steps taken to reduce, eliminate, and prevent the reoccurrence of the noncompliance.

c. The submittal of a written noncompliance report does not relieve the permittee of any liability from enforcement proceedings that may result from the violation of permit or regulatory requirements.

10. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under paragraph D.7. at the time discharge monitoring reports are submitted.

11. Other Information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

E. Bypass

1. Definitions

a. **Bypass** means the intentional diversion of waste streams from any portion of a treatment facility.

b. **Severe property damage** means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

2. Bypass not Exceeding Limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs E.3. and E.4. of this section.

3. Notice

a. Anticipated bypass: If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.

b. Unanticipated bypass: The permittee shall submit notice of an unanticipated bypass as required in the 24-hour notice (paragraph D. 7.).

4. Prohibition of Bypass

Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

c. The permittee submitted notices as required under paragraph E.3. of this section.

The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed in paragraph E.4.a., b., and c. of this section.

F. Upset

1. **Definition**

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

2. **Effect of an Upset**

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph F. 3 of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

3. **Conditions Necessary for a Demonstration of Upset**

A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

a. An upset occurred and that the permittee can identify the cause(s) of the upset;

b. The permitted facility was at the time being properly operated;

c. The permittee submitted notice of the upset as required in paragraph D.7.b. (24-hour notice); and

d. Permittee complied with any remedial measures required under A.5.

4. **Burden of Proof**

In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

G. **Operation and Maintenance**

1. **Proper Operation and Maintenance**

The permittee shall, at all times, maintain in good working order and operate as efficiently as possible, any facilities or systems of control installed by the permittee in order to achieve compliance with the terms and conditions of this permit. This would include, but not be limited to, effective performance based on designed facility removals, effective management, adequate operator staffing and training, adequate laboratory and process controls, and adequate funding that reflects proper user fee schedules.

2. **Removed Substances**

Solids, sludge, filter backwash or other pollutants removed in the course of treatment or control of wastewater shall be disposed of at a site and in a manner approved by the Nebraska Department of Environmental Quality. The disposal of nonhazardous industrial sludges shall conform to the standards established in or to the regulations established pursuant to 40 CFR, Part 257. The disposal of sludge shall conform to the standards established in or to the regulations established pursuant to 40 CFR, Part 503. If solids are disposed of in a licensed sanitary landfill, the disposal of solids shall conform to the standards established in NDEQ Title 132. Publicly owned treatment works shall dispose of sewage sludge in a manner that protects public health and the environment from any adverse effects which may occur from toxic pollutants as defined in Section 307 of the Clean Water Act. This permit may be modified or revoked and reissued to incorporate regulatory limitations established pursuant to 40 CFR, Part 503.

3. **Changes in Discharge**

   Any facility expansion, production increases or process modifications which will result in new or substantially increased discharges of pollutants or a change in the nature of the discharge of pollutants must be reported by the permittee 180 days prior to the expansion, increases or modifications, either by amending the original application or by submitting a new application. This permit may be modified or revoked and reissued as a result of this notification to maintain compliance with applicable state or federal regulations.

4. **Changes in Toxic Discharges from Manufacturing, Commercial, Mining and Silvicultural Facilities**

   Permittees discharging from manufacturing, commercial, mining and silvicultural facilities shall report to the Department:

   a. If any toxic pollutant not limited in this permit is discharged from any NPDES outfall as a result of any activity that will or has occurred and results in its routine or frequent discharge. The Department shall be informed if that discharge exceeds the following notification levels:

      i) 100 micrograms per liter (0.1 mg/L) for any toxic pollutant,

      ii) 200 micrograms per liter for acrolein and acrylonitrile (0.2 mg/L),

      iii) 500 micrograms per liter for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol (0.5 mg/L),

      iv) 1000 micrograms per liter for antimony (1 mg/L),

      v) Five times the maximum concentration value reported for that pollutant in the permit application or

      vi) An alternative level established by the Director, and

   b. If any toxic pollutant not limited in this permit is discharged from an NPDES outfall as a result of any activity that will or has occurred and results in its nonroutine discharge. The Department shall be informed if that discharge exceeds the following notification levels:

      i) 500 micrograms per liter (0.5 mg/L) for any toxic pollutant,

      ii) 1000 micrograms for antimony (1 mg/L),

      iii) Ten times the maximum concentration value reported for that pollutant in the permit application, or

      iv) An alternative level established by the Director.

5. **Changes in Sludge Quality**

   The permittee shall provide written notice to the Department of any alteration or addition that result in a significant change in the permittee's sludge use or disposal practices. This permit may be modified or revoked and reissued as a result of this notification to maintain compliance with applicable state or federal regulations.

6. **Changes of Loadings to Publicly Owned Treatment Work (POTW)**

   All POTWs must provide adequate notice to the Director of the following:

   a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to NDEQ Title 119, Chapter 26, if it were directly discharging those pollutants; and

   b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

   For purposes of this paragraph, adequate notice shall include information on the quality and quantity of effluent introduced into the POTW, and any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

H. Definitions

Administrator: The Administrator of the USEPA.

Aliquot: An individual sample having a minimum volume of 100 milliliters that is collected either manually or in an automatic sampling device.

Annually: Once every calendar year.

Authorized Representative: Individual or position designated the authorization to submit reports, notifications, or other information requested by the Director on behalf of the Owner under the circumstances that the authorization is made in writing by the Owner, the authorization specifies the individual or postion who is duly authorized, and the authorization is submitted to the Director.

Bimonthly: Once every other month.

Biosolids: Sewage sludge that is used or disposed through land application, surface disposal, incineration, or disposal in a municipal solid waste landfill.

Biweekly: Once every other week.

Bypass: The intentional diversion of wastes from any portion of a treatment facility.

Certifying Official: For a corporation, Certifying Official means a responsible corporate officer which means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or

The manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship, Certifying Official means a general partner or proprietor, respectively.

For a municipality, State, Federal, or other public agency, Certifying Official means a principal executive officer of the agency, or a senior executive officer having responsibility for the operations of a principal geographic unit of the agency.

Daily Average: An effluent limitation that cannot be exceeded and is calculated by averaging the monitoring results for any given pollutant parameter obtained during a 24-hour day.

Department: Nebraska Department of Environmental Quality.

Director: The Director of the Nebraska Department of Environmental Quality.

Industrial Discharge: Wastewater that originates from an industrial process and / or is noncontact cooling water and / or is boiler blowdown.

Industrial User: A source of indirect discharge (a pretreatment facility).

Monthly Average: An effluent limitation that cannot be exceeded. It is calculated by averaging any given pollutant parameter monitoring results obtained during a calendar month.

Operator: A person (often the general contractor) designated by the owner who has day to day operational control and/or the ability to modify project plans and specifications related to the facility.

Owner: A person or party possessing the title of the land on which the activities will occur; or if the activity is for a lease holder, the party or individual identified as the lease holder; or the contracting government agency responsible for the activity.

Outfall: A discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, or container from which pollutants are or may be discharged into Waters of the State.

Passive Discharge: A discharge from a POTW that occurs in the absence of an affirmative action and is not authorized by the NPDES permit (e.g. discharges due to a leaking valve, discharges from an overflow

structure) and / or is a discharge from an overflow structure not designed as part of the POTW (e.g. discharges resulting from lagoon berm / dike breaches).

Publicly Owned Treatment Works (POTW): A treatment works as defined by Section 212 of the Clean Water Act (Public Law 100-4) which is owned by the state or municipality, excluding any sewers or other conveyances not leading to a facility providing treatment.

Semiannually: Twice every year

Significant Industrial User (SIU): All industrial users subject to Categorical Pretreatment Standards or any industrial user that, unless exempted under Chapter 1, Section 105 of NDEQ Title 119, discharges an average of 25,000 gallons per day or more of process water; or contributes a process waste stream which makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW; or is designated as such by the Director on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any National Pretreatment Standard or requirement.

Sludge: Any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect.

30-Day Average: An effluent limitation that cannot be exceeded. It is calculated by averaging any given pollutant parameter monitoring results obtained during a calendar month.

Total Toxic Organics (TTO): The summation of all quantifiable values greater than 0.01 milligrams per liter (mg/l) for toxic organic compounds that may be identified elsewhere in this permit. (If this term has application in this permit, the list of toxic organic compounds will be identified, typically in the Limitations and Monitoring Section(s) and/or in an additional Appendix to this permit.)

Toxic Pollutant: Those pollutants or combination of pollutants, including disease causing agents, after discharge and upon exposure, ingestion, inhalation or assimilation into an organism, either directly from the environment or indirectly by ingestion through food chains will, on the basis of information available to the administrator, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunction (including malfunctions in reproduction) or physical deformations in such organisms or their offspring.

Upset: An exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee, excluding such factors as operational error, improperly designed or inadequate treatment facilities or improper operation and maintenance or lack thereof.

Volatile Organic Compounds (VOC): The summation of all quantifiable values greater than 0.01 milligrams per liter (mg/l) for volatile, toxic organic compounds that may be identified elsewhere in this permit. (See the definition for Total Toxic Organics above. In many instances, VOCs are defined as the volatile fraction of the TTO parameter. If the term "VOC" has application in this permit, the list of toxic organic compounds will be identified, typically in the Limitations and Monitoring Section(s) and/or in an additional Appendix to this permit.)

Waters of the State: All waters within the jurisdiction of this state including all streams, lakes, ponds, impounding reservoirs, marshes, wetlands, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, situated wholly or partly within or bordering upon the state.

Weekly Average: An effluent limitation that cannot be exceeded. It is calculated by averaging any given pollutant parameter monitoring results obtained during a fixed calendar week. The permittee may start their week on any weekday but the weekday must remain fixed. The Department approval is required for any change of the starting day.

"X" Day Average: An effluent limitation defined as the maximum allowable "X" day average of consecutive monitoring results during any monitoring period where "X" is a number in the range of one to seven days.

I. **Abbreviations**

CFR: Code of Federal Regulations

kg/Day: Kilograms per Day

MGD: Million Gallons per Day

mg/L: Milligrams per Liter

NOI: Notice of Intent

NDEQ: Nebraska Department of Environmental Quality

NDEQ Title 115: *Rules of Practice and Procedure*

NDEQ Title 117: *Nebraska Surface Water Quality Standards*

NDEQ Title 118: *Ground Water Quality Standards and Use Classification*

NDEQ Title 119: *Rules and Regulations Pertaining to the Issuance of Permits under the National Pollutant Discharge Elimination System*

NDEQ Title 126: *Rules and Regulations Pertaining to the Management of Wastes*

NDEQ Title 132: *Integrated Solid Waste Management Regulations*

NPDES: National Pollutant Discharge Elimination System

NPP: Nebraska Pretreatment Program

POTW: Publicly Owned Treatment Works

µg/L: Micrograms per Liter

WWTF: Wastewater Treatment Facility

A. General

A complete TTO analysis involves testing for up to 5 fractions containing 111 compounds. However, the Pesticide Fraction and Dioxin need not be included in the TTO analysis unless specifically requested by the Department. The Department may also, on a case-by-case basis, add additional parameters to this TTO list.

B. Calculation of TTO Value

TTO test results are calculated by summing all quantifiable values greater than 0.01 milligrams per liter (mg/L) for the TTO compounds. In situations where the concentration of a compound is below the detection limit, it need not be included. However, the Department may reject an analysis as inconclusive and request follow-up monitoring if the detection limits are too high to provide reasonable assurance of compliance.

C. Reporting of Results

The TTO value calculated as set forth above is to be reported on the appropriate Discharge Monitoring Report (DMR) and a copy of the laboratory report showing the test results for each individual compound is to be included as an attachment to both the Department's and City's copy of the DMR.

D. Identification of Compounds, Sampling Methods and Analytical Procedures

1. Volatile Fraction

The compounds included in this fraction are listed below. The volatile fraction is to be analyzed using **grab samples** and **EPA Method 624 or 1624**, unless written Departmental approval for alternative methods is provided.

Acrolein	Acrylonitrile	Benzene
Bromoform	Carbon tetrachloride	Chlorobenzene
Chlorodibromomethane	Chloroethane	2-Chloroethyl vinyl ether
Chloroform	Dichlorobromomethane	1, 1-Dichloroethane
1, 2-Dichloroethane	1, 1-Dichloroethylene	1, 2-Dichlorobenzene
1, 3-Dichlorobenzene	1, 4-Dichlorobenzene	1, 2-Dichloropropane
1, 3-Dichloropropylene	Ethylbenzene	Methyl bromide
Methyl chloride	Methylene chloride	Tetrachloroethylene
1, 1, 2, 2-Tetrachloroethane	Toluene	1, 2-*trans*-Dichloroethylene
1, 1, 1-Trichloroethane	1, 1, 2-Trichloroethane	Trichloroethylene
Vinyl chloride		

2. Acid Fraction

The compounds included in this fraction are listed below. The acid fraction is to be analyzed using **production day composite samples** and **EPA Method 625 or 1625**, unless written Departmental approval for alternative methods is provided.

2-Chlorophenol	2, 4-Dichlorophenol	2, 4-Dimethylphenol
4, 6-Dinitro-o-cresol	2, 4-Dinitrophenol	2-Nitrophenol
4-Nitrophenol	N-nitrosodimethylamine	N-nitrosodi-n-propylamine
N-nitrosodiphenylamine	Parachlorometa cresol	Pentachlorophenol
Phenol	2, 4, 6-Trichlorophenol	

3. **Base/Neutral Fraction**

The compounds included in this fraction are listed below. The volatile fraction is to be analyzed using **production day composite samples** and **EPA Method 625 or 1625**, unless written Departmental approval for alternative methods is provided.

Acenaphthene	Acenaphthylene	Anthracene
Benzidine	1, 2-Benzanthracene	3, 4 -Benzopyrene
3, 4-Benzofluoranthene	11, 12-Benzofluoranthene	1, 12-Benzoperylene
Bis(2-chloroethoxy) methane	Bis(2-chloroethyl) ether	Bis(2-chloroisopropyl) ether
Bis(2-ethylhexyl)phthalate	4-Bromophenyl phenyl ether	Butyl benzyl phthalate
2-Chloronaphthalene	Chrysene	4-Chlorophenyl phenyl ether
1, 2, 5, 6-Dibenzanthracene	3, 3-Dichlorobenzidine	Diethyl phthalate
Dimethyl phthalate	Di-N-Butyl phthalate	2, 4-Dinitrotoluene
2, 6-Dinitrotoluene	Di-n-octyl phthalate	
1, 2-Diphenylhydrazine (as Azobenzene)		Fluoranthene
Fluorene	Hexachlorobenzene	Hexachlorobutadiene
Hexachloroethane	Indeno (1 ,2, 3-cd) pyrene	Isophorone
Hexachlorocyclopentadiene	Naphthalene	Nitrobenzene
Phenanthrene	Pyrene	1, 2 ,4-Trichlorobenzene

4. **Pesticide Fraction**

The compounds included in this fraction are listed below. The Pesticide Fraction is to be analyzed using **production day composite samples** and **EPA Method 608**, unless written Departmental approval for alternative methods is provided. Monitoring for the Pesticide Fraction need not be conducted unless specifically requested by the Department.

Aldrin	Alpha-BHC	Beta-BHC
Gamma-BHC	Delta-BHC	Chlordane
4, 4'-DDT	4, 4'-DDE	4, 4'-DDD
Dieldrin	Alpha-endosulfan	Beta-endosulfan
Endosulfan sulfate	Endrin	Endrin aldehyde
Heptachlor	Heptachlor epoxide	PCB-1016
PCB-1221	PCB-1232	PCB-1242
PCB-1248	PCB-1254	PCB-1260
Toxaphene		

5. **Dioxin (2, 3, 7, 8-tetrachlorodibenzo-p-dioxin)**

Dioxin is to be analyzed using production day composite samples and EPA Method 613, unless written Departmental approval for alternative methods is provided. Monitoring for Dioxin need not be conducted unless specifically requested by the Department.

Nebraska Department of Environmental Quality

Wastewater Section
1200 'N' Street, Suite 400, The Atrium
PO Box 98922
Lincoln, NE 68509-8922
Tel. 402/471-4220
Fax 402/471-2909

DW-NOI

Notice of Intent (NOI) for Requesting Dewatering Discharges Authorization Under the General NPDES Permit NEG671000

Submission of this Notice of Intent fulfills the requirements set forth in Part II of NPDES General Permit Number NEG671000. By submission of this Notice of Intent the applicant is requesting authorization to discharge under the terms and conditions of said permit, and is agreeing to meet all of the terms and conditions set forth in said permit.

Once authorization to discharge is granted violations of the terms and conditions of the permit may result in the initiation of enforcement proceedings pursuant to sections 81-1508 through 81-1508.02 of the Nebraska Environmental Protection Act (Reissue 1987 and Cum. Supp. 1994). Among the enforcement options authorized by the Act are civil penalties of up to $10,000 per day per violation.

The permit should be consulted for additional information on the completion of this NOI. Questions concerning the NOI or the permit should be directed to the Wastewater Section at (402) 471-4220. Written requests and submittals should be sent to the Wastewater Section at the address set forth on page 4 of this NOI.

1. **Facility Certifying Official / Owner or Operator**

   If both the owner and the operator are to be jointly responsible for permit compliance, then both must be identified. If not, only the owner or the operator, whichever meets the requirements as certifying official, is responsible for permit compliance should be identified.

   Owner or Operator Name: _____

   _____

2. **Identification and Location of Sources**

   a. **Facility Name:** _____

   b. **Facility Location:** (location description, not mail address):

   _____

   _____

   c. **Legal Description:**

   _____ Quarter of the _____ Quarter, _____ Section _____, Township _____ N, Range _____ (E or W),

   County _____

   d. **Receiving Stream or Waterbody:** _____

e. **Is the Receiving Stream listed in Appendix B of the permit?** **Yes** **No**
(If yes, written notification from the department for authorization to discharge is required. No discharges will be allowed to State Resource Waters. The discharge site may be denied due to potential for water quality impacts. Addition information concerning the dewatering and potential impact of the discharge on water quality may be required.)

f. **Is this a direct discharge into a waterbody listed in NDEQ Title 117, Chapter 6?** **Yes** **No**

g. **Is the dewatering discharge to a Municipal Separate Storm Sewer System?** **Yes** **No**

h. **Have you notified the Municipal Separate Storm Sewer System operator?** **Yes** **No**

i. **Have you contacted the Nebraska Game and Parks Commission been contacted concerning impact(s) to the listed endangered or threatened species or their critical habitat(s)?** **Yes** **No**

j. **Have you contacted the Nebraska Historical Society concerning impact(s) to historic sites?** **Yes** **No**

k. **Please provide a brief description of any controls used to dissipate energy so as to prevent channel erosion and scouring in the receiving stream.**

_____

_____

_____

_____

3. **Certifying Official and Authorized Representative**

The responsibilities and requirements of the "Certifying Official" and the "Authorized Representative" are set forth on page 4 of this NOI. If both the owner and the operator are to be jointly responsible for permit compliance, then an Authorized Representative for both must be identified. Only one Authorized Representative can be specified. An Authorized Representative need not be identified if an owner/operator wishes to be the sole contact for the Department.

a. **Certifying Official**

Name: _____ Title: _____

Mail Address: _____

City: _____ State: _____ Zip Code: _____

Telephone: _____ Email(optional)_____

b. **Authorized Representative**

Name: _____ Title: _____

Mail Address: _____

City: _____ State: _____ Zip Code: _____

Telephone: _____ Email(optional)_____

4. **Discharge Information**

a. How many discharge outfalls are present? _____

For each outfall, identify the following information:

b. Outfall 1:

1) What is the source of the discharge? (i.e. chlorinated municipal water, storm water, surface water or ground water):

_____

2) Anticipated Start-Up Date: _____ Anticipated Completion Date: _____

3) Anticipated Discharge Flow Rate: _____ Anticipated Discharge Frequency _____

c. Outfall 2:

1) What is the source of the discharge? (i.e. chlorinated municipal water, storm water, surface water or ground water):

_____

2) Anticipated Start-Up Date: _____ Anticipated Completion Date: _____

3) Anticipated Discharge Flow Rate: _____ Anticipated Discharge Frequency _____

d. Outfall 3:

1) What is the source of the discharge? (i.e. chlorinated municipal water, storm water, surface water or ground water):

_____

2) Anticipated Start-Up Date: _____ Anticipated Completion Date: _____

3) Anticipated Discharge Flow Rate: _____ Anticipated Discharge Frequency _____

5. **Identification of Potential Pollutants in the Discharge**

Identify any pollutants that you know may be potentially present in the discharge or any materials stored in the vicinity that if spilled could contaminate the discharge. Also identify any ground water contamination plumes, previous spills or other events that you know have occurred and that may contribute pollutants to the discharge.

_____

_____

_____

_____

_____

_____

6. **Certification**

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations.

I further certify that:

I, or qualified members of my staff, have reviewed and understand the terms and conditions of NPDES General Permit Number NEG671000;

The facility identified in Section 1 of this NOI meets the "Eligibility" requirements and is not excluded by the "Limitation of Coverage" requirements, set forth in Part I. C. of the permit; and

I understand that the submission of this NOI obligates the facility identified in Section 1 of this NOI to comply with the terms and conditions of the Permit NEG671000, provided authorization to discharge is obtained.

_____ _____

Certifying Official's Signature | Date Signed

_____ _____

Certifying Official's Printed Name | Title

Qualifications and Responsibilities of the "Certifying Official" and the "Authorized Representative"
The qualifications and responsibilities of the "Certifying Official" are set forth in NDEQ Title 119 Chapter 13 002:

All permit applications submitted to the Department shall be signed:

002.01 – For a corporation by a responsible corporate officer;

002.02 - For a partnership or in the case of a sole proprietorship by a general partner or the proprietor; and

002.03 - For a municipal, State, Federal, or other public facility by either a principal executive officer or ranking elected official.

The qualifications and responsibilities for the "authorized representative" are set forth in NDEQ Title 119 Chapter 13 003. All other correspondence, reports and DW-DMR's shall be signed by a person designated in 002.01 through 002.03 or a duly authorized representative if such representative is responsible for the overall operation of the facility from which the discharge originates; the authorization is made in writing by the person designated under 002.01 through 002.03 and the written authorization is submitted to the Director. The authorized representative may also sign DW-NOIs, if the Owner/Operator has specifically authorized them to perform this task in a previous DW-NOI or in other written documentation.

Submit the completed NOI to:

U.S. Postal Service Address:

Wastewater Section
Nebraska Department of Environmental Quality
PO Box 98922
Lincoln, NE 68509-8922
Telephone: (402) 471-4220

Alternate Carrier Address:

Wastewater Section
Nebraska Department of Environmental Quality
1200 'N' Street, The Atrium, Suite 400
Lincoln, NE 68509

Attachment # 2

THREATENED & ENDANGERED SPECIES GUIDANCE CHECKLIST
For NPDES Industrial Storm Water General Permit #NER900000
(For New or Expanded Dischargers)

Disclaimer: This checklist was developed for guidance purposes only in an effort to assist permit applicants to identify potential locations of threatened and endangered species that could be affected by discharge activities. Completion of this checklist is not a requirement for permit authorization and is not intended to be used as a substitute for a professional environmental review. The use of this form does not relieve the permittee from further review or enforcement action by the Nebraska Department of Environmental Quality (NDEQ) or the Nebraska Game and Parks Commission (NGPC)

1. Does the action area drain to a stream of concern? *(See attached Stream and River Reaches of Concern for Nebraska Fish Species map.)*	☐ Yes	☐ No
2. Does the action area drain to rivers, streams, ponds, lakes or wetlands within the range of American burying beetle? (*See attached American Burying Beetle Distribution map.*)	☐ Yes	☐ No
3. Does the action area drain to a Salt Creek, Little Salt Creek, Rock Creek or saline wetlands in Lancaster or Saunders County?	☐ Yes	☐ No
4. Does the action area drain to Lodgepole Creek from Kimball to the Wyoming State line?	☐ Yes	☐ No
5. Does the action area drain to wetlands or wet meadows in the range of the western prairie fringed orchid or small white lady's slipper. (*These are both species of orchids. See attached Orchid Distribution map.*)	☐ Yes	☐ No
6. Does the action area drain to a river within the range of interior least tern or piping plover? (*See attached Tern & Plover Distribution map.*)	☐ Yes	☐ No
7. Does the action area drain to a river, stream, lake, pond, or wetland within the range of massasauga? (*See attached Massasauga Distribution map.*)	☐ Yes	☐ No
8. Does the action area drain to a river within the range of river otter? (*See attached River Otter Distribution map.*)	☐ Yes	☐ No
9. Does the action drain to wetlands or to the Republican, Platte, Loup, Middle Loup, North Loup, or Niobrara Rivers within the primary whooping crane migration corridor? (*See attached Primary Migration Corridor of Whooping Crane map.*)	☐ Yes	☐ No

If you answered "no" to all questions, a review by NGPC may not be needed (*see disclaimer above*). Include this form with your permit application.

If you answered "yes" to any of these questions, consultation with the Nebraska Game and Parks Commission may be necessary. Include this form with your permit application. Permit authorizations will vary from those identified in Table 1-2 depending on the additional time required to evaluate potential impacts.

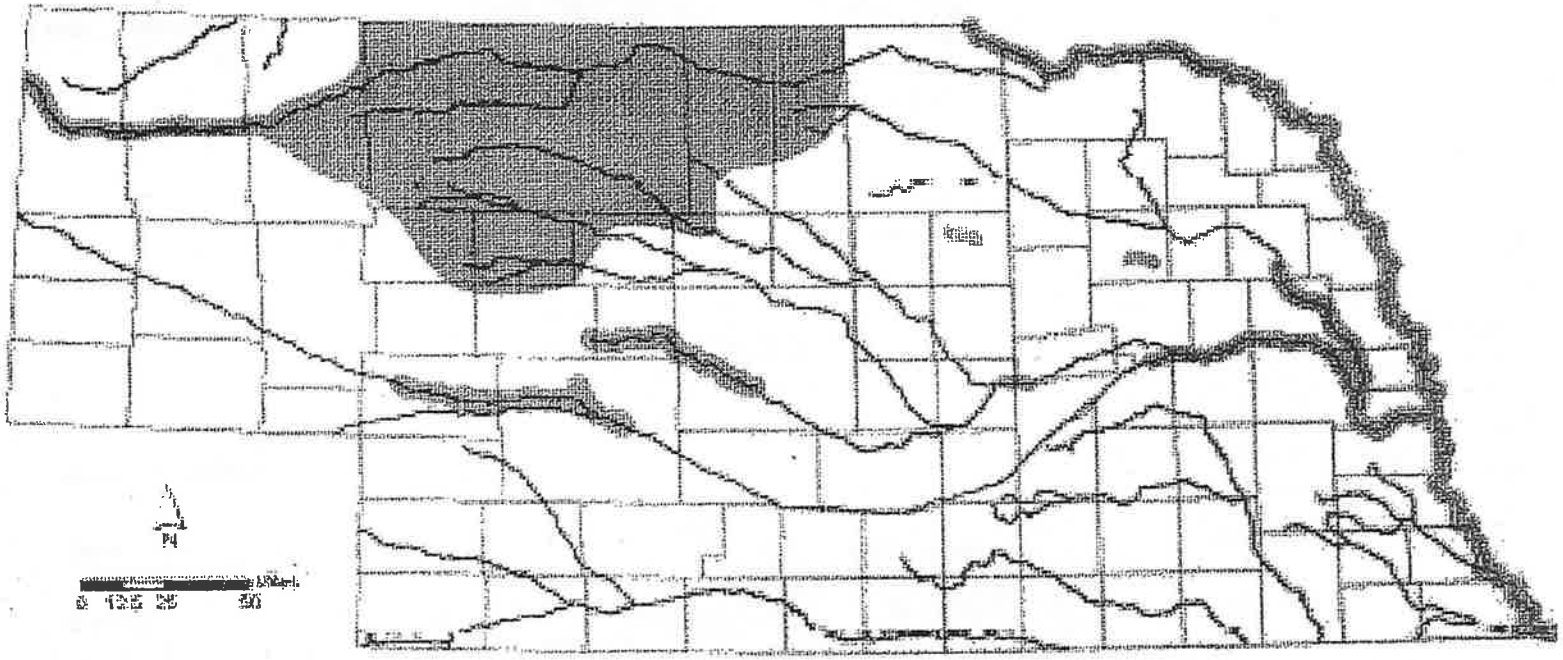
All NOI submissions received without documentation relating to threatened and endangered species will be considered incomplete.

If you have questions, please call the Environmental Analyst Supervisor at (402) 471-5438.

Additional Resources

- Nebraska Game and Parks Commission Nongame and Endangered Species
http://outdoornebraska.ne.gov/wildlife/programs/nongame/pdf/E_T_Species_List.pdf
- Range Maps for Nebraska's Threatened and Endangered Species (includes listing by county)
http://digitalcommons.unl.edu/nebgamewhitepap/30/
- Endangered, threatened, proposed, and Candidate species in Nebraska Counties (USFWS)
http://www.fws.gov/mountain-prairie/endspp/CountyLists/Nebraska.pdf
- Listings and occurrences for Nebraska (USFWS)
http://ecos.fws.gov/tess_public/pub/stateListingAndOccurrenceIndividual.jsp?state=NE

Stream and River Reaches of Concern for Nebraska Fish Species



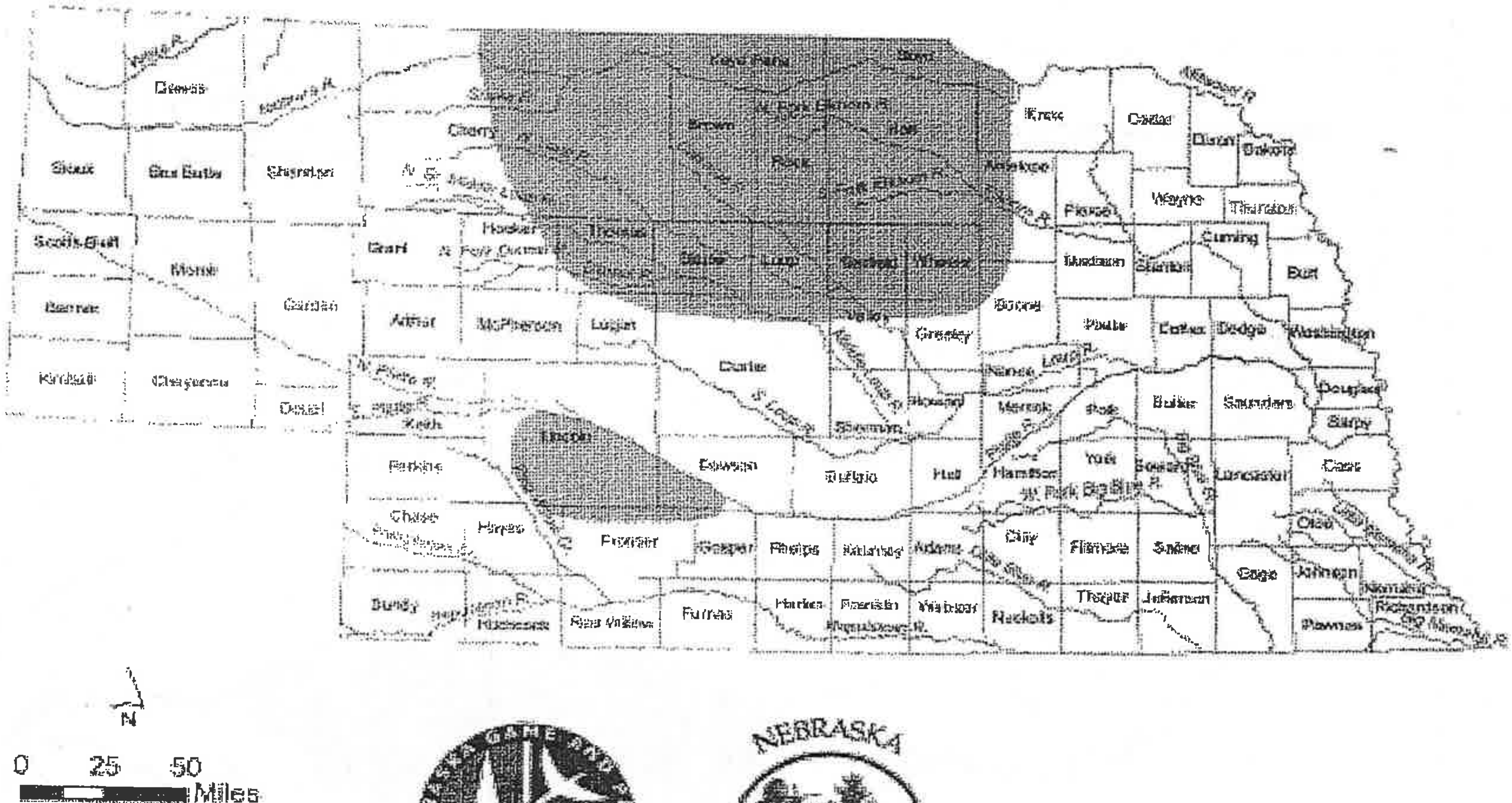
Legend
- Major_Rivers
- Counties
- Areas of Concern

Map produced by the Nebraska Game and Parks Commission
February 19, 2008

Streams and rivers within shaded areas are of concern for at-risk fish species.

Attachment # 2

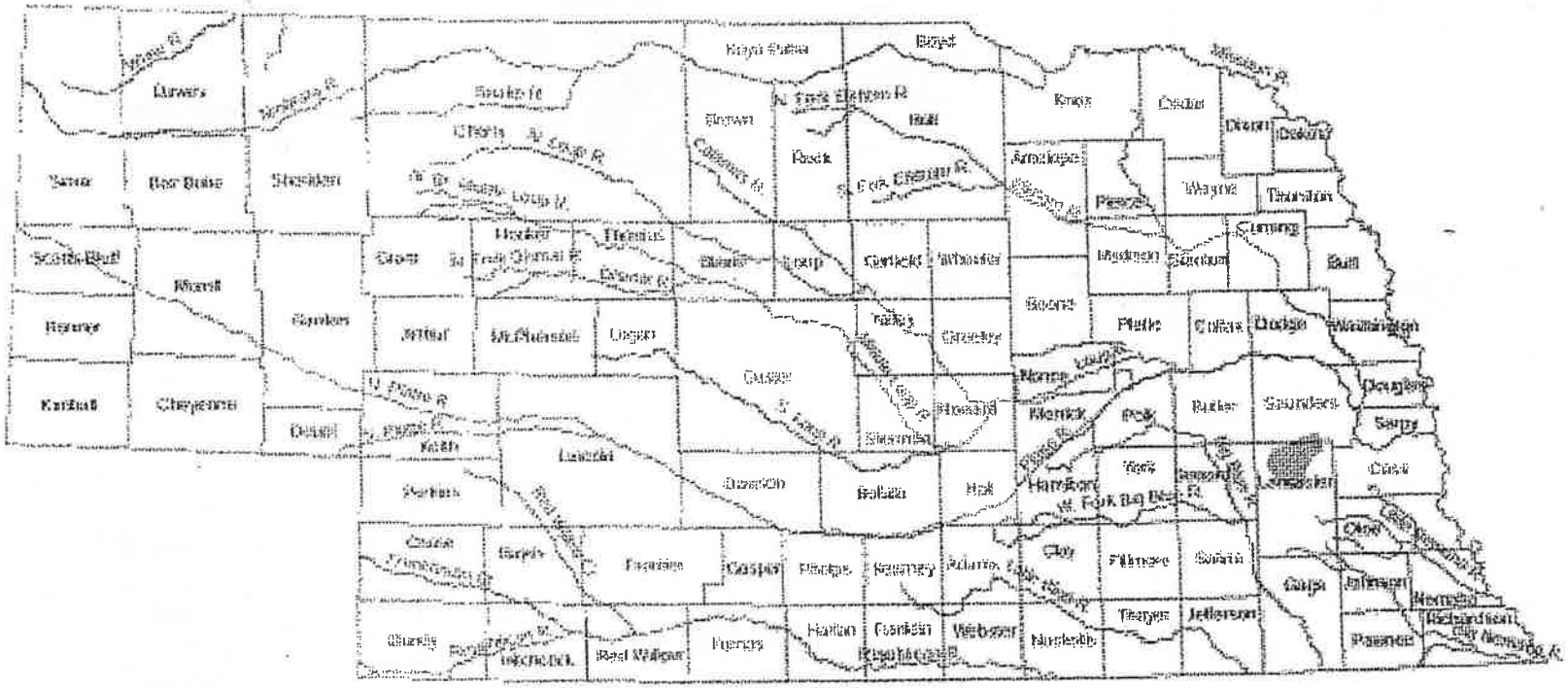
Estimated Current Range of American Burying Beetle (*Nicrophorus americanus*)



Nebraska Natural Heritage Program,
Nebraska Game and Parks Commission
June 2008

Attachment # 2

Estimated Current Range of Saltwort (Salicornia rubra) and Salt Creek Tiger Beetle (Cicindela nevadica lincolniana)



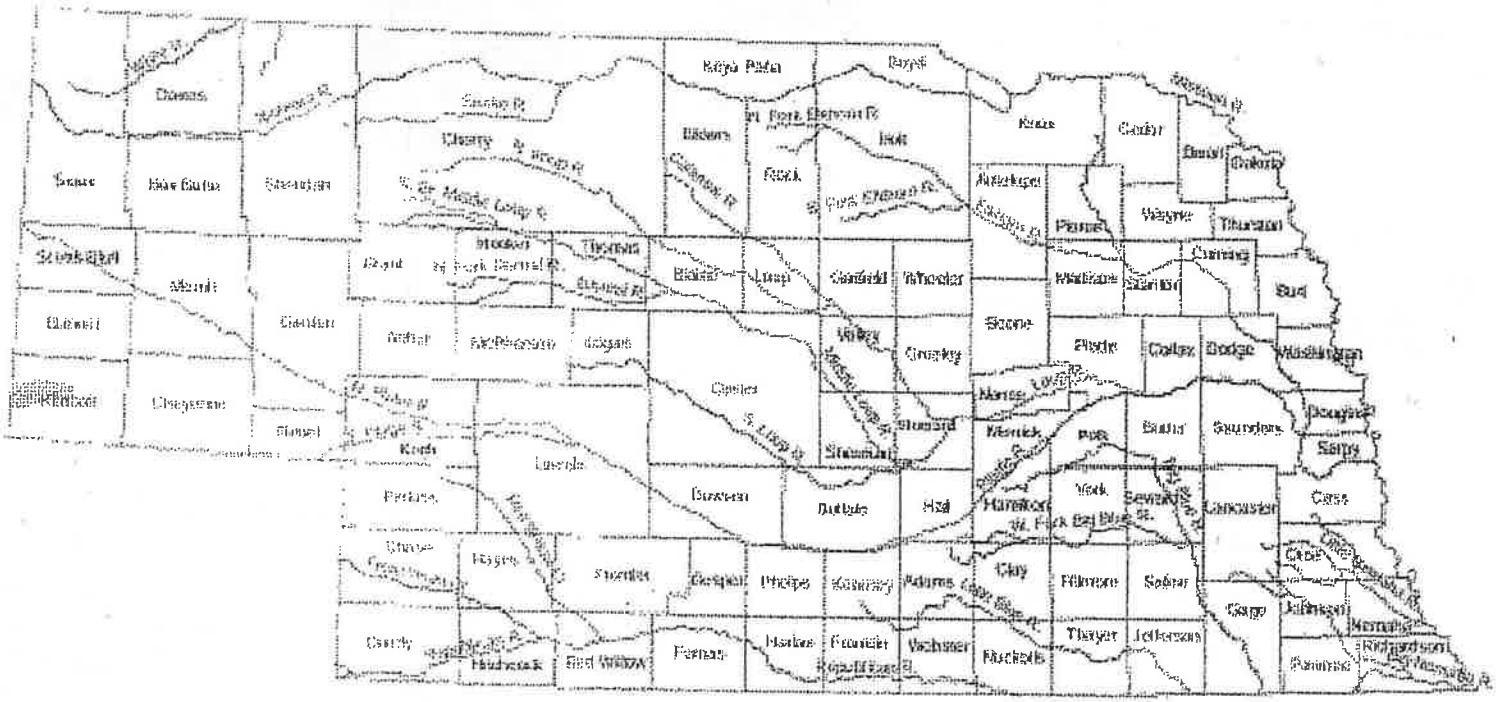
N

0 25 50 Miles

Nebraska Natural Heritage Program,
Nebraska Game and Parks Commission
June 2008

Attachment # 2

Estimated Current Range of
Colorado Butterfly Plant (Gaura neomexicana ssp. coloradensis)

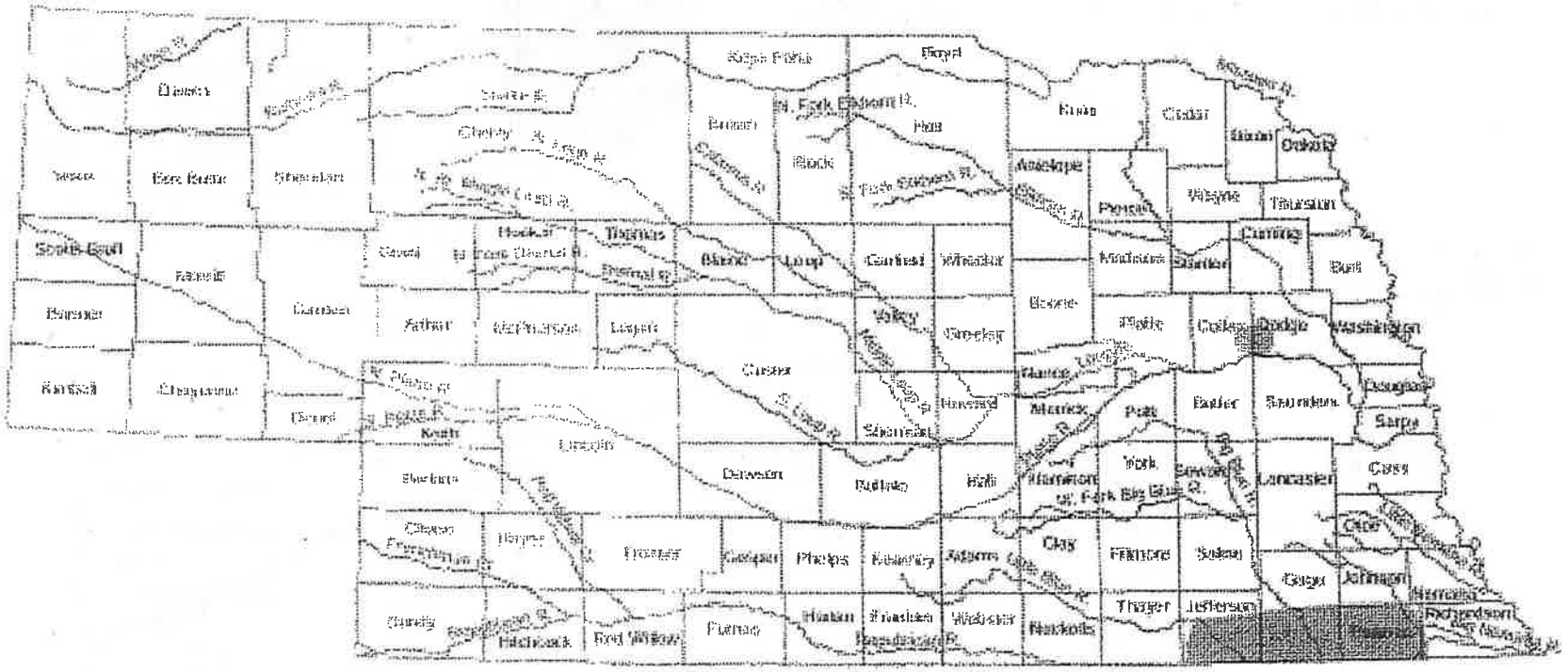


0 25 50 Miles

Nebraska Natural Heritage Program.
Nebraska Game and Parks Commission
June 2008

Attachment # 2

Estimated Current Range of Massasauga (Sistrurus catenatus)



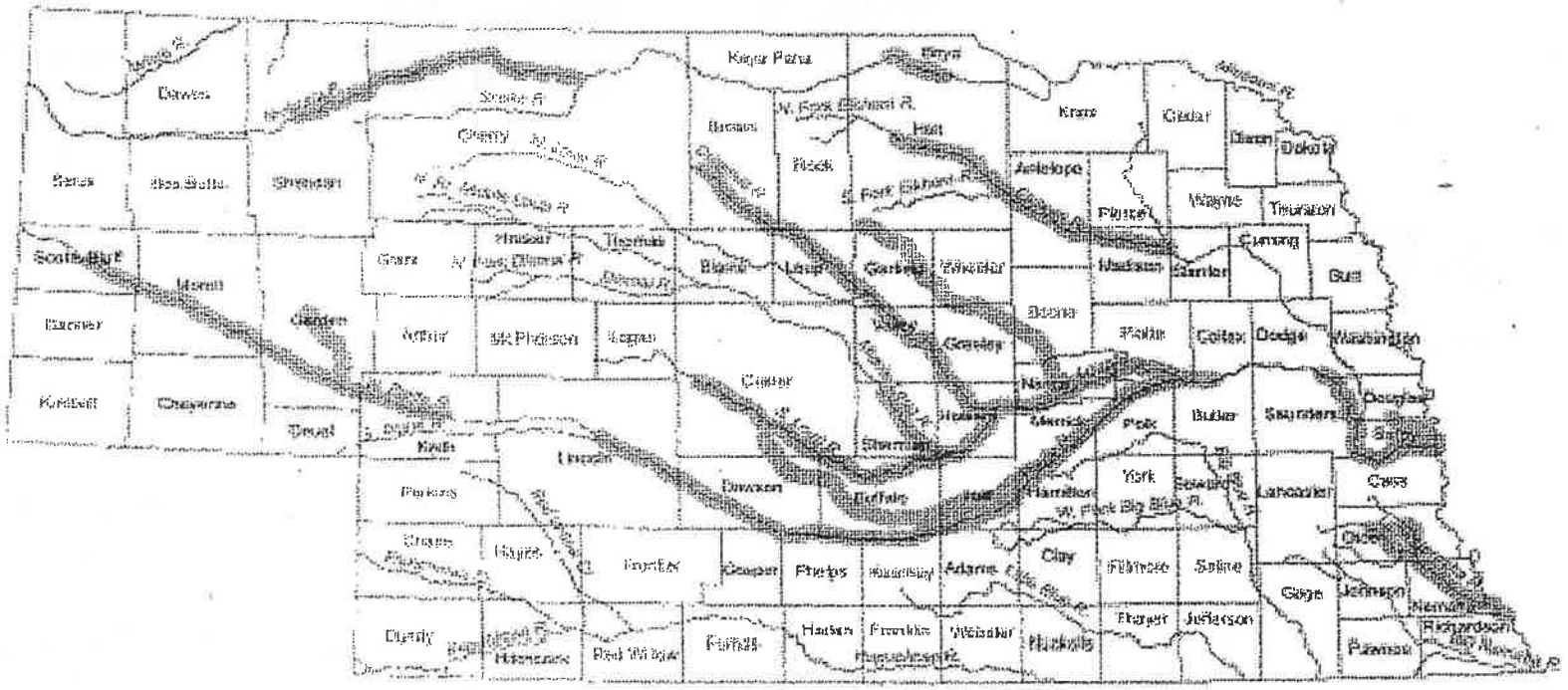
N

0 25 50 Miles

Nebraska Natural Heritage Program,
Nebraska Game and Parks Commission
June 2008

Attachment # 2

Estimated Current Range of River Otter (*Lutra canadensis*)

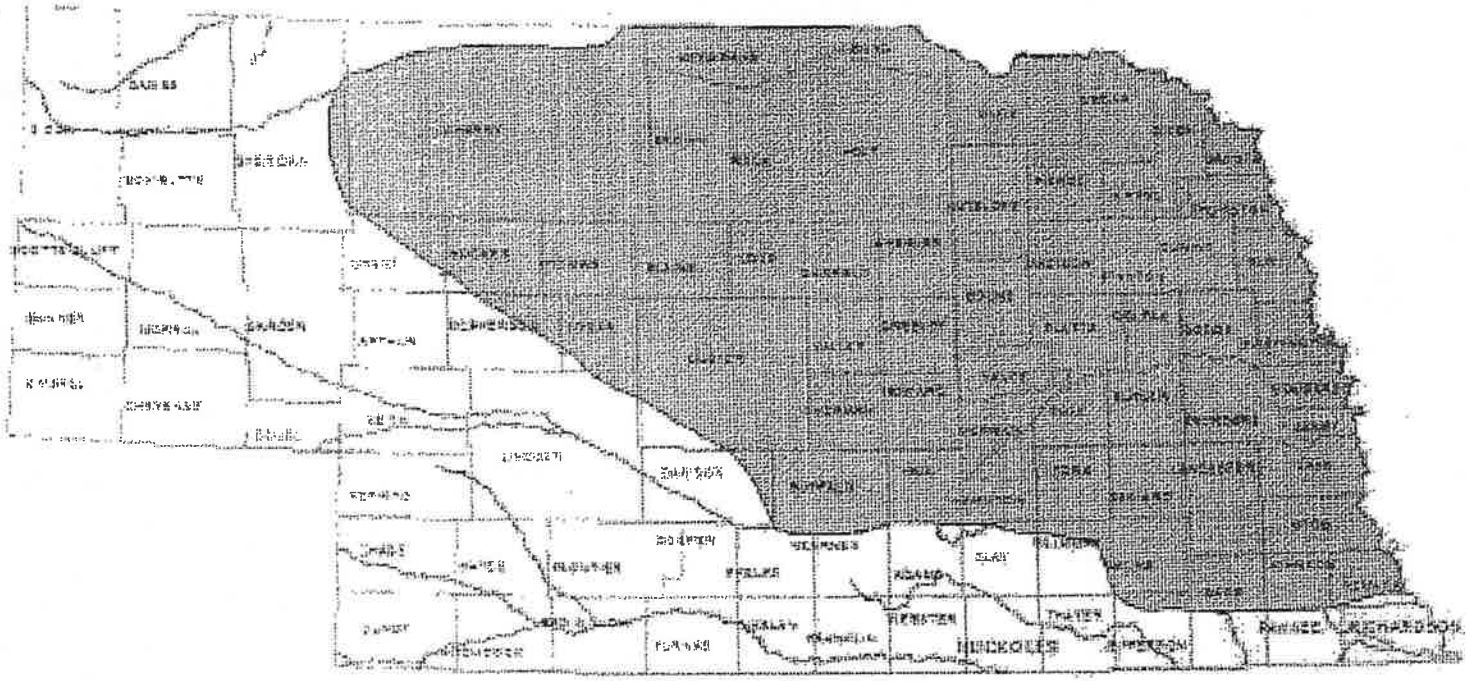


0 25 50 Miles

Nebraska Natural Heritage Program,
Nebraska Game and Parks Commission
August 2008

Attachment # 2

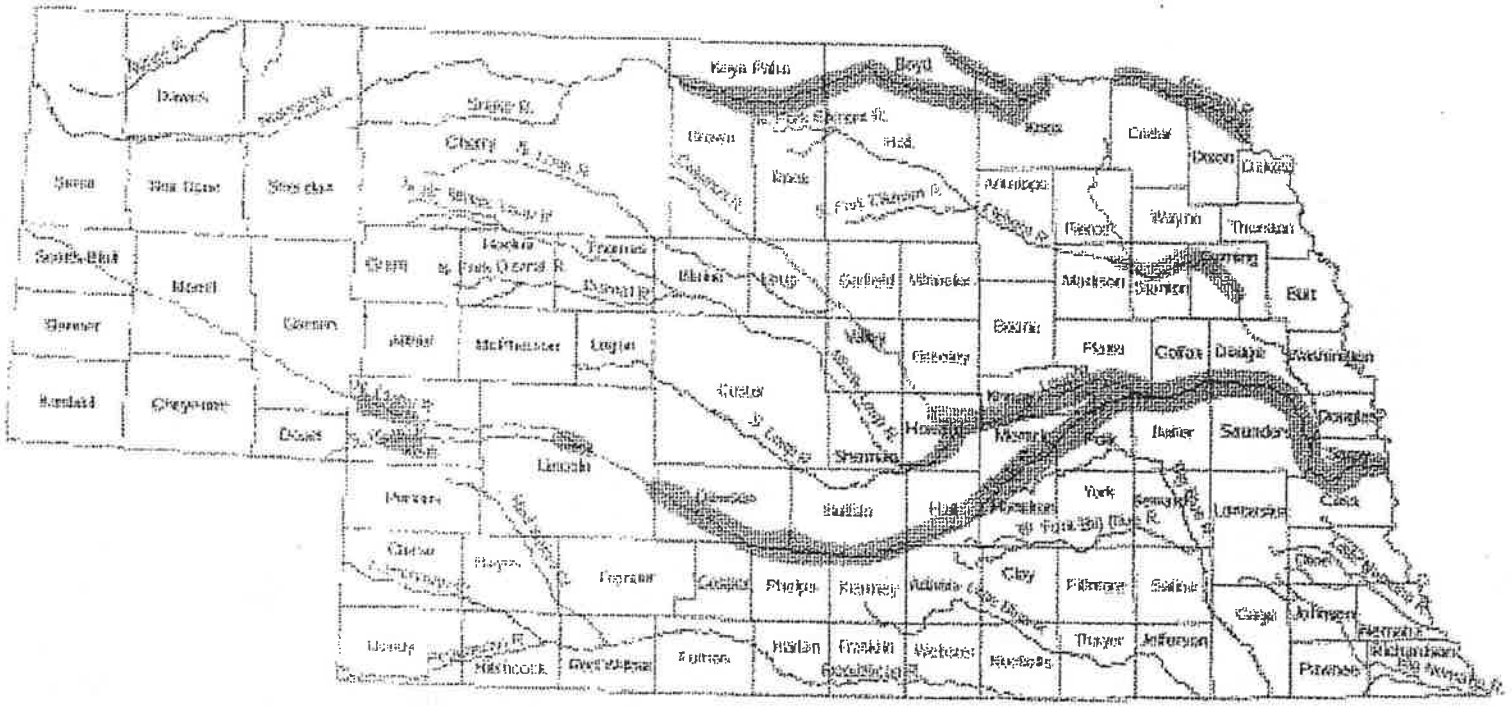
Orchid Distribution



Nebraska Game and Parks Commission 2008

Attachment # 2

Estimated Current Range of Piping Plover (Charadrius melodus) and Interior Least Tern (Sternula antillarum athalassos)



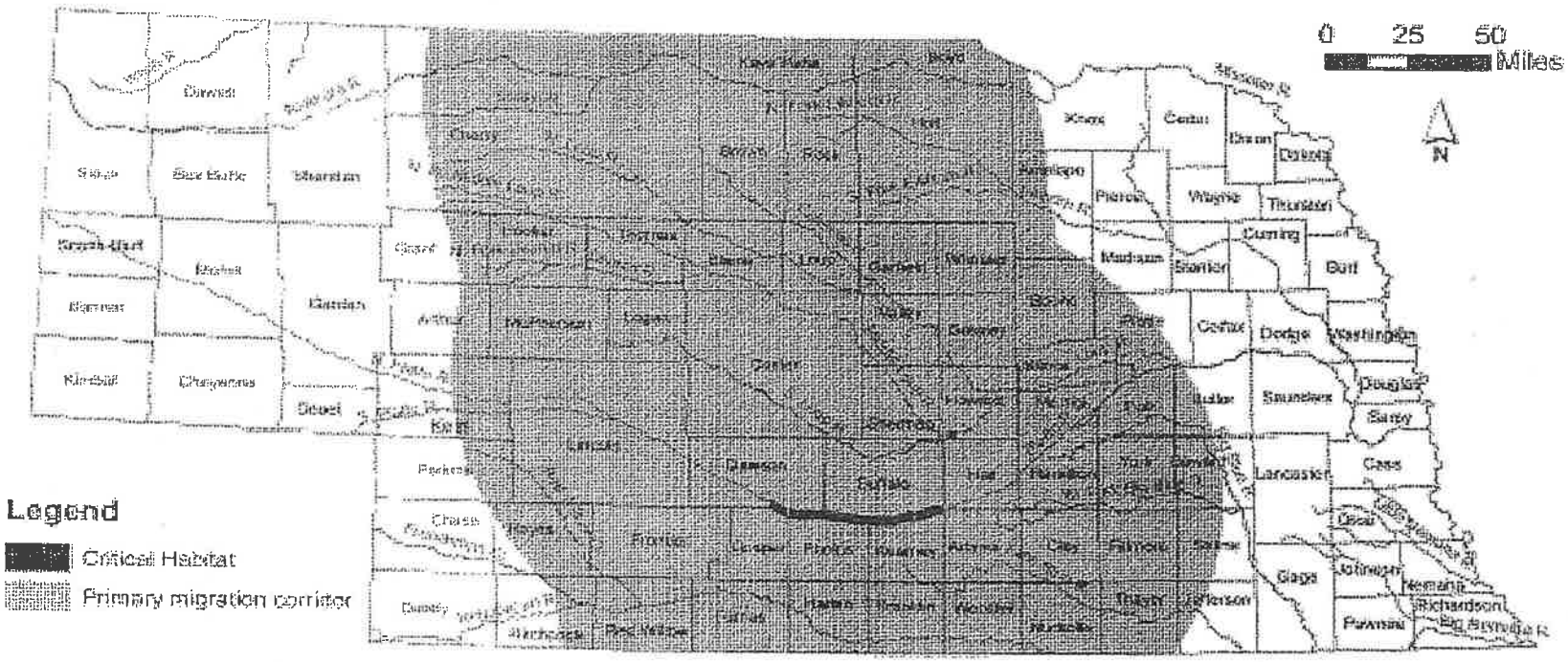
N

0 25 50
Miles

Nebraska Natural Heritage Program,
Nebraska Game and Parks Commission
June 2008

Attachment # 2

Whooping Crane (*Grus americana*): Primary migration corridor and USFWS-designated Critical Habitat



The primary migration corridor is the area identified by the U.S. Fish and Wildlife Service (USFWS) as encompassing 95% of documented Whooping Crane migratory stopovers between 1975 and 2007. Whooping Cranes have been documented far outside of this corridor in Nebraska. Data source: U.S. Fish and Wildlife Service. State-specific Nebraska flyway for Whooping Crane. Vector digital data. Unpublished shapefile received October 27, 2008 from Martha Tacha, USFWS, Region 6, Grand Island, Nebraska.

Critical Habitat areas are considered essential for the conservation of a listed species. Data source: U.S. Fish and Wildlife Service, Region 2. 2003. Whooping Crane critical habitat. Vector digital data. Downloaded October 29, 2008 from http://ecos.fws.gov.

Map produced by the Nebraska Natural Heritage Program, Nebraska Game and Parks Commission, November 2008.

Attachment # 2

Attachment # 3

Nebraska Department of Environmental Quality

Wastewater Section
1200 'N' Street, Suite 400, The Atrium
PO Box 98922
Lincoln, NE 68509-8922
Tel. 402/471-4220
Fax 402/471-2909

DW-DMR

Dewater Discharges Discharge Monitoring Report (DMR)
Authorized Under NPDES General Permit NEG671000

This DW-DMR is to be submitted monthly (i.e., within 28 days after the end of each calendar month), unless alternative submittal arrangements are approved. Any pH, Oil & Grease, or Total Suspended Solids monitoring results that are not in compliance with the permit effluent limits shall be reported to the Department within 24 hours (Telephone 402/471-4220) and a written non-compliance report must be submitted within 5 days (See Appendix A, Sections D.8 and D.9 in the permit). If the appropriate information is included on this form, it may be used as a non-compliance report form and to provide notification of project completion. Be sure to fill in all of the appropriate blanks below and sign on the back of this form.

NPDES Tracking Number: NEG671 ___ ____ ____ - R

Project Owner or Operator: _____

Project Name & Location: _____

When was the discharge initiated? (mo/day/yr) _____

Is the discharge continuing? _____ **If not, when was it discontinued?** _____

Is this a dewatering well site? _____

If yes, the total suspended solids maximum limitations should 30 mg/L. If no, the 90mg/L limitation shall apply.

If the prior question is not true, please explain:_____

_____

What is the Outfall Designations:_____

What is the Source of the outfall? (i.e. well, pit, foundation pump, etc.)_____

_____

Circle the Calendar Quarter to which this report applies: January through March

April through June July through September October through December

Discharge Report for the month (Specify Calendar Month)____________________

Pollutant	Discharge Limitations		Discharge Concentration		Number of Samples	Sample Type
	30-Day Average	Daily Average	30-Day Average[(2)]	Daily Average[(2)]		
Flow [(1)]	Report as MGD	Report as MGD				
Total Petroleum Hydrocarbons	Report as mg/L	10 mg/L				
Total Suspended Solids [(4)]	Report as mg/L	30 or 90 mg/L				
pH	6.5 Standard Units	9.0 Standard Units				

Discharge Report for the month (Specify Calendar Month)____________________

Pollutant	Discharge Limitations		Discharge Concentration		Number of Samples	Sample Type
	30-Day Average	Daily Average	30-Day Average[(2)]	Daily Average[(2)]		
Flow [(1)]	Report as MGD	Report as MGD				
Total Petroleum Hydrocarbons	Report as mg/L	10 mg/L				
Total Suspended Solids [(4)]	Report as mg/L	30 or 90 mg/L				
pH	6.5 Standard Units	9.0 Standard Units				

Discharge Report for the month (Specify Calendar Month)____________________

Pollutant	Discharge Limitations		Discharge Concentration		Number of Samples	Sample Type
	30-Day Average	Daily Average	30-Day Average[(2)]	Daily Average[(2)]		
Flow [(1)]	Report as MGD	Report as MGD				
Total Petroleum Hydrocarbons	Report as mg/L	10 mg/L				
Total Suspended Solids [(4)]	Report as mg/L	30 or 90 mg/L				
pH	6.5 Standard Units	9.0 Standard Units				

Footnote:

(1) If there is no flow during calendar month, enter "0" in the Monthly Average and Daily Average boxes for flow. The other reporting boxes in that month's table may be left blank

(2) The calculated valued determined by averaging the monitoring results for any given pollutant obtained during a 24-hour day.

(3) The calculated valued determined by averaging the monitoring results for any given pollutant obtained during calendar month.

(4) The Daily Average Limitation is 90 mg/L for construction excavation site discharges and 30 mg/L for other sites.

Abbreviations: MGD = Million gallons per day mg/L = milligrams per Liter

Attachment # 3

Summary of Physical Characteristic Examination Findings or Other Information:

PCE results may be summarized herein or the PCE form may be attached. Examples of "Other Information": explain non-compliances or unusual conditions, request termination of permit coverage or identify attachments including any additional monitoring results requested by the Department.

Discharge Report for week or month(s) of _____

_____

_____

_____

_____

Certification

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations.

_____ _____

Certifying Official's Signature or Authorized Representative **Date Signed**

_____ _____

Print Name **Title**

Requirements for and Responsibilities of Certifying Official and Authorized Representative

The "Certifying Official" is responsible for signing all permit applications and must meet the requirements set forth in NDEQ Title 119 Chapter, 13 002:

"All permit applications submitted to the Department shall be signed:

002.01 – For a corporation, by a responsible corporate officer;

002.02 - For a partnership or a sole proprietorship by a general partner or the proprietor; and

002.03 - For a municipal, State, Federal, or other public facility by either a principal executive officer or ranking elected official."

The qualifications and responsibilities for the "authorized representative" are set forth in NDEQ Title 119 Chapter 13 003. All other correspondence, reports and DW-DMR's shall be signed by a person designated in 002.01 through 002.03 or a duly authorized representative if such representative is responsible for the overall operation of the facility from which the discharge originates; the authorization is made in writing by the person designated under 002.01 through 002.03 and the written authorization is submitted to the Director. The authorized representative may also sign DW-NOIs, if the Owner/Operator has specifically authorized them to perform this task in a previous DW-NOI or in other written documentation as set forth in permit Section C.2.g.

Submit the completed DW-DMR form to one of the following addresses:

US Postal Service Address

Wastewater Section
Nebraska Department of Environmental Quality
PO Box 98922
Lincoln, NE 68509-8922

Alternate Carrier Address

Wastewater Section
Nebraska Department of Environmental Quality
The Atrium, 1200 N Street, Suite 400
Lincoln, NE 68509

Attachment # 4

Nebraska Department of Environmental Quality

Wastewater Section
1200 'N' Street, Suite 400, The Atrium
PO Box 98922
Lincoln, NE 68509-8922
Tel. 402/471-4220
Fax 402/471-2909

Physical Characteristics Examination (PCE) Instructions
Authorized by NPDES General Permit NEG671000

The General Dewatering Permit requires that Physical Characteristic Examinations be made in addition to the monitoring required in the general permit. Discharge authorizations are contingent upon the conductance of these examinations (i.e., Physical Characteristic Examinations are required).

1. **Physical Characteristic Examination (PCE) Procedure**

   This procedure involves qualitative observations for characteristics of color, turbidity, odors, surface sheens, septic conditions, or any other unusual conditions (e.g., off-gassing). PCE observations are to be made both *in situ* and on grab samples. PCE results are to be recorded on the attached report form or other approved format. PCE results are to be used as indicators of potential pollution problems. If none of the previous listed characteristics are noted a report is not required.

2. **Immediate Notification and Follow-Up**

   a. When a discharge displays, any of these characteristics: turbidity, color, off gassing, sheens, films, hydrocarbon contamination, or foaming and odors.

   b. This may indicate possible presence of excessive pollution. At these concentrations or amounts that are indicated requires that the discharge be discontinued immediately and the Department notified.

   c. The discharge shall be discontinued immediately and the NDEQ shall be contacted: If there is any evidence the discharge is causing distress to fish, aquatic organisms, plant life, wildlife and/or livestock, or creating a public health concern.

   d. Following the notification, the permittee shall take appropriate follow-up actions as specified by the Department. These actions may include, but are not necessarily limited to: a follow-up investigation, additional testing, alternative disposal options, and/or treatment. It is also possible that the discharge may be allowed without further action if it is determined that the discharge would not result in excessive pollution.

   e. Excessive pollution is defined as pollution in amounts that would result in a violation of a permit limit or of water quality criteria set forth in NDEQ Title 117 and 118. "Water shall be free from human-induced pollution which causes". These narrative and aesthetic standards for surface waters include:

      1) Noxious odors;

      2) Floating, suspended, colloidal, or settleable materials that produce objectionable films, colors, turbidity, or deposits; and

      3) The occurrence of undesirable or nuisance aquatic life (e.g., algal blooms).

3. **Periodic Reporting**

   In addition to the immediate notification requirements described above, a summary report of the findings of the Physical Characteristic Examination procedure results is to be submitted as an attachment to the discharge monitoring reports (DW-DMR's) that are required pursuant to Appendix A, Subsection D of the NPDES permit.

4. **Record Keeping**

   Records of the physical examination results need to be kept and need to include the following information:

   a. The date and time of the observation

   b. Name of the observer; and

   c. Summary information on the observations made.

Attachment # 4

Nebraska Department of Environmental Quality

Wastewater Section
1200 'N' Street, Suite 400, The Atrium
PO Box 98922
Lincoln, NE 68509-8922
Tel. 402/471-4220
Fax 402/471-2909

PCE - Physical Examination Characteristic Examination Report

This form may be used to record observations of the physical characteristics of water discharges as required on some NPDES permit. The use of this form is generally not required by NPDES permits. Therefore an alternative report form containing the same information may be used.

Project/Facility Name: _____

Date and Time of Observation: _____

Name of Observer: _____

Parameter	Observations
Turbidity	
Color	
Odor	
Petroleum or Hydrocarbons Present	
Sheens or Films	
Foam or Foaming Below Discharge	
Floating Solids	
Off-Gassing	

Record any other observations or additional information: _____

_____

_____

Is there evidence or potential evidence of excessive pollution as defined in the PCE procedure: _____

_____

_____

Attachment # 5

Nebraska Department of Environmental Quality

Wastewater Section
1200 'N' Street, Suite 400, The Atrium
PO Box 98922
Lincoln, NE 68509-8922
Tel. 402/471-4220

NCR Non-Compliance Report Instructions

The Non-Compliance Report form needs to be submitted within 5 days of becoming aware of any permit violation. In addition, an oral report of the violation needs to be made within 24 hours of becoming aware of a permit violation. Other reporting requirements may also apply; see the Reporting Requirements and Standard Conditions in your NPDES permit for more details.

Complete the heading on the report, including: permittee or facility name, NPDES permits number, outfall number, and the date(s) on which sampling was conducted.

In the left column, list the parameter(s) for which the noncompliance(s) occurred. In the columns to the right, provide the requested information on the monitoring values found, the permit limits, their units and the frequency of analysis, and the sample type (e.g., grab or 24 hour composite). Be sure to provide the flow data requested in the last row, as well.

Also provide on the form or in an attachment (e.g., a laboratory report) monitoring information on the other parameters tested at the same time or over the same time period.

Provide an explanation of what caused the non-compliance, and what actions were taken to correct and to prevent a reoccurrence of the non-compliance. If necessary, provide additional information on the nature of the violation, the exact time frame over which it occurred, and any impacts that were observed in the receiving stream. Attachments may be used as needed.

The Certifying Official or Authorized Representative, who meet the following qualifications, must sign the form.

The "Certifying Official", who meets the requirements set forth in NDEQ Title 119, Chapter 13 002 is responsible for signing all permit applications. "All permit applications submitted to the Department shall be signed:

002.01 – For a corporation by a responsible corporate officer;

002.02 - For a partnership or in a sole proprietorship by a general partner or the proprietor; and

002.03 - For a municipal, State, Federal; or other public facility by either a principal executive officer or ranking elected official."

The qualifications and responsibilities for the "authorized representative" are set forth in NDEQ Title 119 Chapter 13 003. All other correspondence, reports and DW-DMR's shall be signed by a person designated in 002.01 through 002.03 or a duly authorized representative if such representative is responsible for the overall operation of the facility from which the discharge originates; the authorization is made in writing by the person designated under 002.01 through 002.03 and the written authorization is submitted to the Director. The authorized representative may also sign DW-NOIs, if the Owner/Operator has specifically authorized them to perform this task in a previous DW-NOI or in other written documentation as set forth in permit Section C.2.g.

Return the completed form to one of the following addresses:

US Postal Service Address

Wastewater Section
Nebraska Department of Environmental Quality
PO Box 98922
Lincoln, NE 68509-8922

Alternate Carrier Address

Wastewater Section
Nebraska Department of Environmental Quality
The Atrium, 1200 N Street, Suite 400
Lincoln, NE 68509

Attachment # 5

Nebraska Department of Environmental Quality

Wastewater Section
1200 'N' Street, Suite 400, The Atrium
PO Box 98922
Lincoln, NE 68509-8922
Tel. 402/471-4220

NCR Non-Compliance Report

This non-compliance form needs to be submitted within 5 days of becoming aware of any permit violation. In addition, an oral report of the violation needs to be made within 24 hours of becoming aware of a permit violation. Other reporting requirements may also apply; see Appendix A, Section D of your permit for more details.

Facility Name: _____

Facility Location: _____

NPDES Tracking Number: NEG671 ____ ____ ____ Outfall Number: _____

Parameter	Date(s) Monitored	Type of Limitation: Minimum, Average or Maximum	Permit Limit (Include Units e.g., mg/L or kg/day)	Test Result (Include Units e.g., mg/L or kg/day)	Flow (MGD) or Volume (gallons)

Attachment # 5

Provide an explanation of what caused the non-compliance and what actions were taken to correct and to prevent a reoccurrence the non-compliance. If necessary, provide additional information on the nature of the violation, the exact time frame over which it occurred, and any impacts that were observed in the receiving stream. Attachments may be used as needed.

Certification: I certify that I am familiar with the information in this report and that to the best of my knowledge and belief this report is true, complete and accurate.

Signature of Certifying Official or Authorized Representative*

Date

Printed Name of Signatory

The "Certifying Official", who meets the requirements set forth in NDEQ Title 119, Chapter 13 002 is responsible for signing all permit applications. "All permit applications submitted to the Department shall be signed:

002.01 – For a corporation by a responsible corporate officer;
002.02 - For a partnership or in a sole proprietorship by a general partner or the proprietor; and
002.03 - For a municipal, State, Federal, or other public facility by either a principal executive officer or ranking elected official."

The qualifications and responsibilities for the "authorized representative" are set forth in NDEQ Title 119 Chapter 13 003. All other correspondence, reports and DW-DMR's shall be signed by a person designated in 002.01 through 002.03 or a duly authorized representative if such representative is responsible for the overall operation of the facility from which the discharge originates; the authorization is made in writing by the person designated under 002.01 through 002.03 and the written authorization is submitted to the Director. The authorized representative may also sign DW-NOIs, if the Owner/Operator has specifically authorized them to perform this task in a previous DW-NOI or in other written documentation as set forth in permit Section C.2.g.

Attachment # 6

Nebraska Department of Environmental Quality

Wastewater Section
The Atrium Building, Suite 400, 1200 N Street
PO Box 98922
Lincoln, NE 68509-8922
Tel. 402/471-4220
Fax 402/471-2909

DW-RLN Dewatering Discharges Relocation Notice
Authorized Under NPDES General Permit NEG671000

This form is intended for use by facilities subject to NPDES General Permit for Dewatering Discharges. The second page of this form contains sections that apply specifically to this NPDES program.

Questions concerning the completion of this form should be directed to Wastewater Section at 402/471-4220.

1. **Certifying Official Identification**

   Certifying Official: _____

   Title: _____

   Address: _____

   Telephone Number: _____ Email: _____

2. **Authorization Number NEG671** ____ ____ ____ ____

3. **Facility Identification**
   Facility Name: _____

   SIC Code: _____ Facility Type: _____

4. **Relocation Site**
   Street Address or brief narrative description of the facility location (not the mail address):

   _____

   _____

5. **Legal Description:**

   _____ **Quarter of the** _____ **Quarter of Section** _____, **Township** _____**N, Range** _____**(E or W)**

   County _____

6. **Relocation Schedule** – Provide the anticipated dates for the following:

   Start Date: _____

   Stop Date: _____

7. **Receiving Waters:**

Name of receiving water of the dewatering water: _____

Is the receiving water identified in Appendix B of the NPDES permit? _____

If yes, written notification from the Department for authorization to discharge is required. No discharges are allowed to State Resource Waters. The relocation site may be denied due to the potential of water quality impacts. Additional information concerning the dewatering discharge and potential impact of the discharge on water quality may be required.

Is the dewatering water being land applied? _____

Have measures been taken to prevent soil erosion from the discharge? _____

What preventative measures were used? _____

_____

_____

8. **Certification**

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations.

_____ _____

Signature of Certifying Official or Authorized Representative — Date Signed

_____ _____

Printed Name — Title

Submit the completed form to:

US Postal Service Address

Wastewater Section
Nebraska Department of Environmental Quality
PO Box 98922
Lincoln, NE 68509-8922

Alternate Carrier Address

Wastewater Section
Nebraska Department of Environmental Quality
The Atrium, 1200 N Street, Suite 400
Lincoln, NE 68509

DIVISION II

PORTLAND CEMENT CONCRETE PAVEMENT

DIVISION II
PORTLAND CEMENT CONCRETE PAVEMENT

CONTENTS

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:

Class of Concrete	Compressive Strength Requirements in Pounds per Square Inch	
	7 days	28 days
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:

	Minimum	Maximum
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) resolutions 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 templets, 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

CONTENTS

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:

	Minimum	Maximum
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

CONTENTS

29	**METHOD OF MEASUREMENT AND BASIS OF PAYMENT**
29.01	Sewer Pipe in Place
29.02	Wyes
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.

Revised 1-18-2010

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.

Revised 1-18-2010

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.

Revised 1-18-2010

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.

ANCILLARY MATERIALS

A. Nonshrink Grout:

1. Color: To match concrete.
2. Manufacturers and Products
    a. Master Builders Co., Cleveland, OH; Master Flow 928.
    b. Euclid Chemical Co., Cleveland, OH; Hi-flow Grout
    c. Or equal

B. Grout for Slipliner Invert Rehabilitation:

1. Description: Rapid strength repair mortar.

2. Final Set Time: 20 to 36 minutes.
3. Manufacturers and Products:
    a. Master Builders Co., Cleveland, OH; EMACO T415
    b. Or equal

C. Protective Epoxy Coating for Exposed Grout at Slipliner Invert Rehabilitation:

1. Strong Seal System by Johnson Service Co.; Kearney, NE 68848

D. Curing Compound: Required for Cast In Place Concrete

1. Material: Solvent based containing chlorinated rubber solids in accordance with ASTM C309, with additional requirements that the moisture loss not exceed 0.030 grams per centimeter squared per 72 hours.
2. Manufacturers and Products:

    a. Master Builders Co., Masterkure N Seal HS.
    b. Euclid Chemical Co.; Euco Super Floor Coat.
    c. Or Equal

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. Laptop 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 approves 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. Manholes over three (3) feet in depth shall be equipped with cast iron steps 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 1-18-2010

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. Nonshrinkable backfill will be required under all street sections, existing or proposed, unless the Director of Public Works approves the standard backfill methods. 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.

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.

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 shall be backfilled using nonshrinkable backfill. 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 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 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.

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.

Revised 1-18-2010

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 radically 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.

Revised 1-18-2010

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 Wyes. Wyes shall be paid for at the contract unit price for various size wyes. Measurement for payment shall include that portion of the wye from the barrel of the main line sewer to the end of the wye. A 1" x 4" lumber sufficient in length to reach the ground surface shall be placed vertically at the end of each wye.

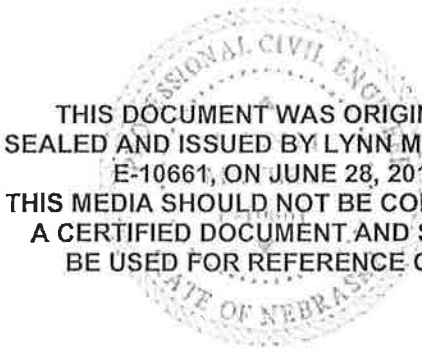
29.03 Manholes. Manholes shall be paid for at the contract unit price bid per manhole for a depth of five (5) feet which payment shall include base, stubouts, and ring cover. Additional payment shall be made for manholes more than five (5) feet in depth, measured from flow line to top of cover, at the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

City of Grand Island, NE

DIVISION VI

WATER MAINS



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DIVISION VI
WATER MAINS

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REFERENCES AND DEFINITIONS

ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ASTM	American Society For Testing Materials
AWS	American Welding Society
AWWA	American Water Works Association
DIPRA	Ductile Iron Pipe Research Association
EPA	Environmental Protection Agency
NDEQ	Nebraska Department of Environmental Quality
DW-NOI	Dewatering Notice of Intent
NPDES	National Pollution Discharge Elimination System
mg/L	Milligrams per Liter
psi	Pounds per Square Inch
UNS	Unified Numbering System
UHMW	Ultra High Molecular Weight

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CONTENTS CONTINUED

CONTENTS CONTINUED

DIVISION VI
WATER MAINS

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 30 - 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 water mains and appurtenances in strict accordance with these specifications, the applicable drawings, and subject to the terms and conditions of the contract.

SECTION 31 - MATERIALS

31.00 Materials. Materials shall comply with the requirements of the United States of America Safe Drinking Water Act, other federal regulations for potable water systems, and these specifications as applicable. All materials shall be new and unused, and shall conform to the following specifications.

31.01 Ductile Iron Pipe. All pipe shall be ductile iron and shall conform to the AWWA Standard, *DUCTILE-IRON PIPE, CENTRIFUGALLY CAST*, ANSI/AWWA C151/A21.51 and subsequent revisions; and the T*HICKNESS DESIGN OF DUCTILE-IRON PIPE*, ANSI/AWWA C150/A21.50 and subsequent revisions or as otherwise shown on the plans.

All pipe shall have a nominal length of not less than eighteen (18) feet and be designed for a working pressure of 350 psi with a standard pipe thickness in accordance with Pressure Class 350.

Mechanical joint pipe, pipe sockets flanges, packing glands, gaskets, and bolts shall conform to the AWWA Standard, *DUCTILE-IRON PRESSURE PIPE AND FITTINGS,* ANSI/AWWA C111/A21.11 and subsequent revisions, and supplied with ductile iron glands as per ASTM A536.

Boltless gasketed joint pipe with the exception of jointing facilities shall conform to the AWWA Standard, *RUBBER-GASKET JOINTS FOR DUCTILE-IRON PRESSURE PIPE AND FITTINGS*, ANSI/AWWA C111/A21.11 and subsequent revisions. Pipe bells shall be grooved or otherwise recessed for gasket sealing and anchorage with reasonably close clearance between pipe bell and adjacent spigot surfaces. The design of the joint shall be such that a deflection of up to three degrees is allowable. All necessary gaskets and gasket lubricants shall be the type recommended and supplied by the pipe manufacturer.

Boltless gasketed joints shall be sealed with a continuous ring gasket manufactured for the use and service and shall seal the joint tight under all operating conditions, including water hammer and pipe movements due to expansion, contraction, and normal settlement. The physical properties and design of the gasket shall be such that they will remain in proper position in the pipe joints under maximum internal pressure and joint deflection conditions. The composition and physical properties of the gaskets shall be submitted to and approved by the Engineer prior to delivery and installation.

31.02 Fittings. All pipe fittings three (3) inches to twenty-four (24) inches shall be Pressure Class 350 and all pipe fittings thirty (30) inches to forty-eight (48) inches shall be Pressure Class 250. All fittings shall be ductile iron, mechanical joint, and shall conform to the AWWA Standard, *DUCTILE-IRON AND GRAY-IRON FITTINGS*, ANSI/AWWA C110/A21.10 and subsequent revisions.

Compact ductile-iron, mechanical joint fittings, three (3) inch through twenty-four (24) inch shall conform to the AWWA Standard, *DUCTILE-IRON COMPACT FITTINGS*, ANSI/AWWA C153/A21.53 and subsequent revisions, and designed for a working pressure of 350 psi.

All joint sockets, socket flanges, packing glands, gaskets, and bolts shall conform to the AWWA Standard, *RUBBER-GASKET JOINTS FOR DUCTILE-IRON PRESSURE PIPE AND FITTINGS,* ANSI/AWWA C111/A21.11 and subsequent revisions. Mechanical and push-on joints shall have the same pressure rating as the pipe or fitting of which they are a part. All fittings shall be supplied with ductile iron glands as per ASTM A536 and all required connecting bolts, nuts, glands, gaskets, and accessories.

Unless otherwise specified all bolt holes shall straddle the vertical centerline of all mechanical joint flanges, fittings, valves, and hydrants. (The vertical centerline of a fitting is determined when the fitting is in the position to change the direction of the fluid flowing in a horizontal plane.)

31.03 Coatings and Linings. The interior surfaces of all pipe and fittings shall be cement mortar lined in accordance with ASTM C150 and shall conform to the AWWA Standard, *CEMENT-MORTAR LINING FOR DUCTILE-IRON PIPE AND FITTINGS FOR WATER,* ANSI/AWWA C104/A21.4 and subsequent revisions. All cement mortar lining shall be coated with asphaltic seal coat in conformity with the referenced standard specifications.

The exterior of all pipe fittings and interior surface of bells not cement mortar lined, shall be coated with a bituminous pipe coating of a type acceptable to the Engineer. The coating shall dry to a smooth, glossy surface, shall not be brittle when cold or sticky when exposed to the sun, and shall adhere to the pipe at all temperatures. Coating shall be free from blisters and holidays. Coatings and linings shall conform to all subsequent revisions of the cited specifications.

31.04 Gate Valves. All valves up to and including twelve (12") inch shall be ductile-iron or cast-iron body, resilient wedge gate valves, and shall conform to the AWWA Standard, *RESILIENT-SEATED GATE VALVES FOR WATER SUPPLY SERVICE*, ANSI/AWWA C509 and subsequent revisions. Valves shall have mechanical joint ends, 2" square operating nut for key operation and "0" ring type stem seals. All valves shall open counterclockwise and be of the non-rising stem type. The valve sealing mechanism shall be a wedge design of ductile-iron or cast-iron, completely encapsulated with a molded resilient covering permanently boned to the iron wedge to meet ASTM D429 testing. The sealing mechanism shall be designed to provide zero leakage at a minimum of 200 psi operating pressure, with flow in either direction. All valves shall have a full unobstructed waterway, coated with a corrosion resistant material free of cavities or projections conforming to the AWWA Standard, *PROTECTIVE EPOXY INTERIOR COATINGS FOR VALVES AND HYDRANTS,* ANSI/AWWA C550 and subsequent revisions. All valves shall be furnished with all required connecting bolts, nuts, glands, gaskets, and accessories.

Unless otherwise specified, all bolt holes shall straddle the vertical centerline of all mechanical joint flanges, fittings, valves, and hydrants. (The vertical centerline of a fitting is determined when the fitting is in the position to change the direction of the fluid flowing in a horizontal plane.)

Valves shall be manufactured by American®, Clow Valve Co.®, Kennedy Valve®, or Mueller Co.®.

31.05 Butterfly Valves. All valves, fourteen (14") and larger, shall be rubber seated butterfly valves and shall conform to the AWWA Standard, *RUBBER-SEATED BUTTERFLY VALVES 3" In THROUGH 72 In,* ANSI/AWWA C504 and subsequent revisions, with heavy duty cast iron or ductile-iron bodies. The valves shall be designed for a working pressure of 150 psi. Each valve shall have mechanical joint ends, a suitable heavy reliable operator with more than adequate strength for the torque involved, and a 2" square operating nut for key operation. The operators and shafts shall be fully grease-packed and sealed for life and shall be suitable for direct burial. Valves shall be furnished with standard AWWA nuts and stainless steel shafts or high tensile carbon steel. All valves shall be furnished with all required connecting bolts, nuts, glands, gaskets, and accessories and open counterclockwise.

Valves shall be Henry Pratt® Groundhog butterfly valves or Mueller® Lineseal III butterfly valves.

31.06 Tapping Sleeves and Tapping Valves. All tapping sleeves shall be either ductile-iron body, mechanical joint, or 304 stainless steel body, full circumferential seal with carbon steel flange or ductile iron flange. All tapping sleeves shall be furnished with all required connecting bolts, nuts, glands, gaskets, and accessories.

Ductile iron body tapping sleeves shall be: American® Series 2800-C tapping sleeve; Kennedy Valve® tapping sleeve, or Mueller Co.® H-615 tapping sleeve.

Stainless steel body tapping sleeves shall be: Ford Meter Box Co.® "Fast" with carbon steel flange; Romac Industries, Inc® "SST" with ductile flange; or Mueller Co.® "H-304" with carbon steel or ductile flange.

All tapping valves shall conform to the AWWA Standard, *RESILIENT-SEATED GATE VALVES FOR WATER SUPPLY SERVICE*, ANSI/AWWA C509 and subsequent revisions. Valves shall have a 2" square operating nut for key operation and "0" ring type stem seals. All valves shall open counterclockwise and be of the non-rising stem type. The valve sealing mechanism shall be a wedge design of ductile-iron or cast-iron, completely encapsulated with a molded resilient covering permanently boned to the iron wedge to meet ASTM D429 testing. The sealing mechanism shall be designed to provide zero leakage at a minimum of 200 psi operating pressure, with flow in either direction. All valves shall have a full unobstructed waterway, coated with a corrosion resistant material free of cavities or projections conforming to the AWWA Standard, *PROTECTIVE INTERIOR COATINGS FOR VALVES AND HYDRANTS,* ANSI/AWWA C550 and subsequent revisions.

Unless otherwise specified, all bolt holes shall straddle the vertical centerline of all mechanical joint flanges, fittings, valves, and hydrants. (The vertical centerline of a fitting is determined when the fitting is in the position to change the direction of the fluid flowing in a horizontal plane.)

Tapping valves shall be: American® Series 2500 tapping valve; Kennedy Valve® tapping valve, or Mueller Co.® T-2360 tapping valve.

31.07 Water Main Valve Boxes. All buried valves installed in lines larger than 2" dia., shall be provided with cast iron, "Buffalo" type, valve boxes. Valve boxes shall have a two-piece screw-type extension sleeve and be intended for the size of valve on which it is to be used and for the depth of cover as required. The box's lid shall have the word "WATER" cast thereon. Valve boxes shall be "Tyler/Union – series 6850", size 664-S, or approved equal.

Valve box extensions shall be cast iron, screw-type, "Tyler/Union -- item #69 for series 6850 boxes or approved equal.

31.08 Valve Stems. Valve stems shall turn counterclockwise to open the valves.

31.09 Sleeve Couplings. Sleeve couplings shall conform to the AWWA Standard, *BOLTED, SLEEVE-TYPE COUPLINGS FOR PLAIN-END PIPE,* ANSI/AWWA C219 and subsequent revisions, and have an inside diameter suitable for connecting ductile iron pipe to ductile iron pipe or cast iron pipe to cast iron pipe. The center sleeve shall be ductile iron ASTM A-536, grade 65-45-12. Ends shall have a smooth inside taper for uniform gasket seating. End rings shall be ductile iron ASTM A-536, grade 65-45-12. Couplings shall be furnished complete with gaskets, bolts, and nuts conforming to the AWWA Standard, RUBBER-GASKET JOINTS FOR DUCTILE-IRON PRESSURE PIPE AND FITTINGS, ANSI/AWWA C111/A21.11 and subsequent revisions, and without pipe stops. All materials shall be designed for 150 psi working pressure with the resulting seal flexible and bottle-tight.

Sleeve couplings shall be Romac Industries, Inc® 501 or approved equal. The center sleeve shall have a minimum of a seven (7") inch wide body.

31.10 Fire Hydrants. Fire hydrants shall conform to the AWWA Standard, *DRY-BARREL FIRE HYDRANTS,* ANSI/AWWA C502 and subsequent revisions. Hydrants shall be manufactured with "O" ring packing, 5-1/4" valve opening, 6" stand pipe, 6" mechanical joint inlet, two 2-1/2" hose connections (nozzle) with 3-1/16" OD and 7-1/2 threads per inch NST and one 4-1/2" pumper connection (nozzle) with 5-3/4" OD and 4 threads per inch NST. Hydrants shall have a 1-1/2" pentagonal operating and nozzle cap nuts which open left or counterclockwise.

Fire hydrants shall be furnished with all the required connecting bolts, nuts, glands, and gaskets. Unless otherwise specified, all bolt holes shall straddle the vertical centerline of all mechanical joint flanges, fittings, valves, and hydrants. (The vertical centerline of a fitting is determined when the fitting is in the position to change the direction of the fluid flowing in a horizontal plane).

Fire hydrants shall be painted as per City requirements with an industrial enamel exterior grade paint. Public fire hydrants shall be painted to have yellow barrels with red caps and bonnet; private fire hydrants shall be painted solid red. Colors shall be Guardsman Yellow #760-4004-00 and Red #760-7008-00, or Sherwin Williams Yellow #F77Y9 and Red #77R7, or Glidden Yellow #4540 and Red #4520.

Hydrants shall be: American-Darling B-62-B-5 hydrant with five and a half foot bury; or Kennedy Guardian K-81D hydrant with five foot bury; or Mueller Centurion A-423 3-way hydrant with five foot bury.

31.11 Structural Concrete. All concrete shall be type 47-B (modified) air-entrained as specified in City of Grand Island Specifications, Division II, "PORTLAND CEMENT CONCRETE PAVEMENT".

When average daily temperatures are below 40°F (4.5°C) for more than three consecutive days, the Contractor shall uses approved practices and procedures that will assure that placed concrete will be sufficiently strong and durable to fully meet design requirements. The use of insulating coverings, accelerating admixtures, high-early strength cement, or additional cement may be used to develop the level of strength required. All such methods shall fully conform to the American Concrete Institute's Recommended Practice for Cold Weather Concreting. There shall be no additional payment if such cold weather techniques are required.

31.12 "No-Lead Brass" Fittings and Valves. This specification shall apply to any waterworks brass goods, such as corporation stops, curb stops, coupling, connectors, nipples, etc. All such goods shall comply with the United States Of America Safe Drinking Water Act, and the U.S. Environmental Protection Agency.

The brass part of any fitting or valve in contact with potable water shall be made of a "No-Lead Brass", and shall conform to UNS Copper Alloy No. C89520 or C89833 in accordance with the chemical and mechanical requirements of ASTM B584 and AWWA Standard, UNDERGROUND SERVICE LINE VALVES AND FITTINGS, ANSI/AWWA C800 with a maximum lead content of 0.25% by weight.

All brass fittings and valves shall have the manufacturers name or trademark permanently stamped or cast on it. Additional marking such as "NL", "EBII", "FD" or other commonly accepted identifier, indicating the alloy as "No-lead" shall also be cast or stamped into the fitting or valve.

31.13 Corporation Stop. All corporation stops 1", 1-1/2", or 2" in size, shall be Ford Meter Box Co.® FB1000-NL ball valve; A.Y.McDonald Co.® 74701B-22 ball valve; or Mueller Co.® 300-N ball valve.

31.14 Curb Stop. All curb stops 1", 1-1/2", or 2" in size, shall be Ford Meter Box Co.® B44-NL ball valve; A.Y.McDonald Co ® 76100-22 ball valve; or Mueller Co. ® 300-N ball valve.

31.15 Water Service Valve Box. Curb stops in service lines 2" dia. or smaller, shall be provided with cast iron, two-piece screw-type, size 94-E valve boxes. The box's lid shall have the word "WATER" cast thereon and supplied with a standard pentagon head brass screw.

An enlarged base shall be used with a complete service box for all 1-1/2" and 2" curb stops.

Service boxes shall be "Tyler/Union – 6500 series" or approved equal.

31.16 Copper Pipe. All water service lines 1", 1-1/2", or 2" in size, shall be flexible Type "K" soft copper pipe.

31.17 Service Saddle. All service saddles shall conform to the AWWA Standard, *UNDERGROUND SERVICE LINE VALVES AND FITTINGS,* ANSI/AWWA C800 and subsequent revisions, and as additionally specified herein.

The saddle body shall be, high strength ductile-iron per ASTM A536, hot dipped zinc galvanized or enamel coated, with outlet tapped for CC taper threads, and a steel double strap design for use on cast iron or ductile-iron pipe. A service saddle shall be required for 1-1/2" and larger service taps on all mains regardless of thickness class.

All service saddles shall be Ford Meter Box Co.® F202; Mueller Co.® DR2A; Romac Industries, Inc® 202NS; or approved equal.

31.18 Not Used

31.19 Not Used

31.20 **Restrained Couplings and Glands.** With prior approval from the Utilities Department, mechanical joint restraint couplings and glands may be used on fittings, valves, and pipe to reduce the installation of concrete thrust blocks; however, thrust blocks will be required where indicated on plans.

31.20.1 **Retainer Glands.** All retainer glands shall be ductile iron conforming to ASTM A536 and designed for a working pressure rating of 350 psi. Glands shall have a wedge style design and torque limiting bolts to fully restrain the fitting and pipe together.

Retainer glands shall be "EBAA Iron, Inc. – Megalug series 1100", "Romac Industries, Inc. – RomaGrip", "Star Pipe Products – series 3000", or approved equal.

31.20.2 **Anchor Couplings.** Anchoring couplings shall be a ductile iron fitting, which provides a restrained connection without the use of braces or blocking and designed to prevent the joint form separating under pressure when all bolts are in place. It shall have a pressure rating of 350 psi; be equipped with freely moving, 360° rotatable couplings conforming to ASTM A536; and manufactured to fit standard mechanical joint connections.

31.20.3 **Ultra-Compact MJ Restraint.** The connector shall be an ultra-compact, bolt-through mechanical joint restraint, for 4", 6", and 8" valves and fittings, manufactured of ductile iron, cement-lined inside, asphalt-coated for corrosion protection, and conform to AWWA Standards, ANSI/AWWA C153/A21.53 and ANSI/AWWA C104/A21.4 and have a working pressure rating of 350 psi.

The bolt-through, positive restraint device shall connect valves and fittings at a linear distance not to exceed one (1) inch and without attachment to the pipe; (the device shall not be used directly on fire hydrant shoes).

Connector shall be furnished complete with all gaskets and bolts, and be "Infact Corporation, Foster Adaptor" or approved equal.

31.20.4 **Hydrant Offset Adapter.** Offset adapters shall be manufactured of ductile iron, cement-lined inside and asphalt-coated for corrosion protection, and conform to AWWA Standards: ANSI/AWWA C153/A21.53 and ANSI/AWWA C104/A21.4 and have a pressure rating of 350 psi. The adapter shall provide a restrained joint and alignment adjustment in a single fitting, allowing fire hydrants to be set to grade without extension kits. Adapters shall come complete with all gaskets, bolts, and rotatable split-retainer glands.

Hydrant offset adapters shall be "Assured Flow Sales, Inc. – Gradelok" or approved equal.

SECTION 32 – CONSTRUCTION METHODS

32.00 **Project Supervision.** The general contractor shall be required at all times during construction activities to have a designated Project Supervisor at the work site.

The *Project Supervisor* shall be experienced in all aspects of the project and will be responsible for on-site, day-to-day management of the project.

The Project Supervisor shall have:

- Practical written and verbal communication skills of the English language.
- Ability to read, understand, and accurately interpret the contract documents, plans, specifications, and survey stakes prepared for the project.
- Skilled knowledge of construction techniques.
- Ability to supervise the entire construction crew, including sub-contractors.
- The experience and ability to identify existing and predictable hazards in the surroundings or working conditions, and the authority to take prompt corrective measure to resolve problems and / or eliminate them.
- A set of contract documents, plans and specifications at the work site.

If the Contractor's *Project Supervisor* is not at the work site, the Contractor's office shall notify the City and all construction activities shall cease until such time as a qualified replacement arrives on site. No claims for financial adjustment due to inadequate project supervision shall be permitted by the City.

32.01 Excavation. The Contractor shall perform all excavation of whatever substances encountered to the depth shown on the drawings or to provide a minimum cover of five (5) feet over the top of the pipe. The Engineer shall have the right to limit the amount of trench that may be opened in advance of the line of work.

All excavated materials not required for backfill shall be removed from the project by the Contractor. Banks of trenches shall be kept as nearly vertical as practicable and, where required, shall be properly sheeted and braced. Trenches shall be of sufficient width to provide working space for proper installation.

The bottom of the trenches shall be accurately graded to provide uniform bearing and support for each section of pipe on undisturbed soil at every point along its entire length, except for portions of the pipe sections where it is necessary to excavate for bell holes.

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 trenches shall be stacked in an orderly manner a sufficient distance back from edge of trenches to avoid overloading and preventing slides or cave-ins. Materials unsuitable for backfilling shall be wasted by the Contractor as directed by the Engineer. Any unauthorized excavation below grade shall be backfilled at the Contractor's expense with good, well-tamped material.

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 locations 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.

32.02 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 same 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.

32.03 Tunneling. Tunneling, when necessary, shall be done under the supervision of the Engineer. Refer to Section 35 – UNDERCROSSING.

32.04 Pipe Cutting. Cutting of the pipe shall be kept to a minimum and shall be done in a neat and workmanlike manner without damage to the pipe. Unless otherwise authorized by the Engineer, cutting shall be done by means of an approved type of mechanical cutter. Wheel cutters shall be used when practicable.

32.05 Installation. Pipe and accessories shall be handled in such manner as to insure delivery to the work in a sound, undamaged condition.

While suspended in a sling and before lowering into the trench, all pipe shall be inspected for defects. Defective, damaged, or unsound pipe will be rejected. Deflections from a straight line or grade, as required by vertical or horizontal curves, shall not exceed manufacturer's recommendations and approval by Engineer.

Mechanical joints shall be installed under the provisions of the recommendations of the joint manufacturer. Fittings at bends or deadends shall be firmly blocked against the vertical face of the trench to prevent fittings from being blown of the lines when under pressure. Blocking shall conform to the plan for concrete blocking for fittings. Where pipe ends are left for future connections, they shall be valved, plugged, or capped as shown on the plans. Where connections are made between new work and existing mains, the connections shall be made by using fittings as required.

32.06 Manholes. Manholes shall be constructed as indicated on Standard Plan Drawings, No. 136-A, 136-B, or as otherwise shown on the plans. Floors of the manholes shall be earth. Manholes over three feet in depth shall be equipped with cast iron steps placed on approximately sixteen (16) inch centers.

32.07 Service Interruptions. When it becomes necessary for the purpose of making connections or for any other reason to shut off or turn on water in any existing mains, it is the sole responsibility of the Contractor to notify the City Water Department through the resident Engineer a minimum of 24 hours in advance as to when and for how long service will be interrupted and also to notify all water users well in advance so they might prepare themselves for the period during which service might be interrupted. Valves shall not be opened or closed by anyone other than City Water Department personnel.

32.07.1 Connection to City Mains. Newly installed piping shall not be connected to existing City mains until acceptance of the pressure and leakage tests, unless otherwise noted on the plans. Test plugs, corporations, connecting sleeves, and temporary piping to a water source, shall be furnished and installed by the Contractor.

32.07.2 Line Stoppers. When necessary to isolating sections of water lines for maintenance, repairs, lowering, or for other reasons when service interruptions in an existing main are not allowed, line-stoppers shall be used to eliminate system shut-down.

Line-stoppers shall be defined as a complete modular system of equipment specifically designed for plugging water lines in order to temporarily stop the flow of water as may be required for repair, replacement, and / or relocation of water main components. The flow control device shall be inserted at normal water main pressure.

Line-stoppers, inserted into mains twenty inch (20") dia. or smaller, shall be furnished and installed by the Grand Island Water Department. The actual material expense and labor costs associated with the use of such line-stoppers shall be charged to the Contractor.

In water lines larger than twenty inch (20") dia., the Contractor shall make arrangements for line-stoppers to be furnished and installed by a firm specializing in their use, with extensive experience in their equipment's operation. Prior to installation, all devices shall be thoroughly checked, cleaned, and sanitized by the Contractor. The City's Water Department shall inspect all equipment and issue final approval before installation of line-stoppers.

The Contractor shall be responsible for all excavations and properly maintaining trench banks, sheeting, and bracing as required. Trenches shall be of sufficient width to provide proper working space. After the work is completed, the Contractor shall backfill the trench with suitable compacted materials as specified.

32.08 Valve Boxes. Valves and valve boxes shall be installed in the lines as shown on the drawings and as directed by the Engineer. They shall be set plumb and centered with valve boxes placed directly over the valves. Earth fill shall be carefully tamped around all valve boxes. Valve boxes shall have the interiors cleaned of all foreign matter before installation.

32.09 Pressure and Leakage Test. The Contractor shall furnish all labor, pumps, pipe connections, line plugs, adapters, caps, and all other necessary apparatus, except gauges, for performing hydrostatic pressure and leakage tests in accordance with AWWA Standard, *INSTALLATION OF DUCTILE-IRON WATER MAINS AND THEIR APPURTENANCES,* ANSI/AWWA C600, except as otherwise specified. The City will furnish calibrated gauges for the tests and a source of water.

After the pipe has been laid, all new potable water systems, 2" dia. and larger, and each valved section thereof, shall be subjected to a hydrostatic pressure of at least one and one half (1-1/2) times the working pressure (100 PSI minimum) at the point of testing.

Each valved section of pipe shall be slowly filled with water, and the specified test pressure shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Engineer. Valves shall not be operated in either the opening or closing direction at differential pressures above the rated pressure. When hydrants are in the test section, the pressure test shall be made against closed hydrant valves.

Before applying the specified test pressure, air shall be expelled completely from the pipe, valves, and hydrants. If permanent air vents are not located at all high points, corporation cocks shall be installed at such points so the air can be expelled as the line is filled with water. After all the air has been expelled, the corporation cocks shall be closed, and the test pressure applied. At the conclusion of the pressure test, the corporation cocks shall be removed and plugged by the Contractor.

When the specified pressure has been reached, the valve between the pump and the pipeline shall be closed, and the pump shall be disconnected and removed. The test pressure shall remain for a minimum of two (2) hours. If the pressure varies more than two pounds per square inch plus or minus (2 PSI+/-) during the duration of the test, it shall be extended for twenty-four (24) hours to satisfy those concerned that the decrease in the pressure is not due to thermal-volume changes of the water in the line. At the end of the twenty-four (24) hour period, the pressure shall be brought back up to the specified pressure and observed for two (2) hours.

During the pressure test, any exposed pipe, fittings, valves, hydrants, and joints shall be examined carefully. Any damaged or defective pipe, fittings, valves, hydrants, or joints that are discovered shall be repaired or replaced with sound material, and the test shall be repeated until it is satisfactory to the Owner.

After the pressure testing has been successfully completed, a hydrostatic test shall be conducted for a minimum of two (2) hours. The test shall be conducted at the specified pressure and shall be maintained by adding makeup water during the test period.

The amount of makeup water added shall be accurately measured and shall not exceed the following allowance per length of pipeline determined by the following formula:

$$L = \frac{SD\sqrt{P}}{148{,}000}$$

Where L = Testing allowance (Makeup water), in gallons per hour.
S = Length of pipe tested, in feet.
D = Nominal diameter of the pipe, in inches.
P = Average test pressure during the leakage test, in pounds per square inch, (gauge)

If the pipeline under test contains sections of various diameters, the testing allowance shall be the sum of the allowance for each size.

Testing allowance shall be defined as the maximum quantity of makeup water that is added into the pipeline, or valved section thereof, in order to maintain pressure within +/-5 psi of the specified test pressure. If any test of laid pipe discloses leakage greater that than specified, the Contractor shall, at his own expense, locate and make approved repairs as necessary until the leakage is within the specified allowance.

All visible leaks are to be repaired regardless of the amount of leakage.

32.10 Sterilization, Flushing and Sampling of Lines. All new potable water systems, 2" dia. and larger, and each valved section thereof, shall be disinfected before they are placed in service. All water mains taken out of service for inspecting, repairing, or other activity that might lead to contamination of water shall be disinfected before they are returned to service. The Contractor shall furnish all labor, pumps, pipe connections, additional line plugs, adapters, caps, and all other necessary apparatus and materials. All work shall conform to the AWWA Standard, *DISINFECTING WATER MAINS*, ANSI/AWWA C651 and subsequent revisions, except as otherwise specified.

Precautions shall be taken to protect the interiors of pipes, fittings, and valves against contamination. All materials delivered for construction shall be stored so as to minimize entrance of foreign material. All openings in the pipeline shall be closed with water tight plugs when pipe laying is stopped at the close of the day's work or for other reasons, such as rest breaks or meal periods.

Immediately prior to installing any pipe or fittings, the Contractor shall swab the interior of the pipe or fittings with a minimum 2% hypochlorite disinfecting solution. During the installation of any pipe or fittings, the Contractor shall place calcium hypochlorite granules in each section of pipe, each hydrant, hydrant branch, and other appurtenance. The quantity of granules to be placed shall be at a minimum concentration of one (1) ounce per one hundred (100) cubic feet of pipe volume.

After acceptance of the pressure and leakage test, the main shall be filled with water at a rate such that water within the main will flow at a velocity no greater than one (1) foot per second. Precautions shall be taken to assure that air pockets are eliminated. When all air has been eliminated, the main shall be flushed to remove particulates. The flushing velocity in the main shall not be less than two and five tenths (2.5) feet per second, unless the City determines that conditions do not permit the required flow to be discharged to waste. The main isolation valve shall not be operated for flushing or rechlorination until a downstream hydrant is opened. During such operations, the main isolation valve shall only be operated by Utility Department personnel.

After the initial flushing operation, the main shall be disinfected by chlorination. Chlorination will commence at a point not more than ten feet (10') downstream from the beginning of the new main. Water from an approved supply source, shall be made to flow at a constant and measured rate into the newly laid water main, and shall receive a dose of chlorine, fed at a constant rate such that the water will have not less than one-hundred (100) mg/L free chlorine. The chlorine shall be applied to the water main by injecting a hypochlorite solution by means of a chemical-feed pump designed for feeding chlorine
solutions.

Feed lines shall be of such material and strength as to safely withstand the corrosion caused by the concentrated chlorine solutions and the maximum pressures that may be created by the pumps. All connections shall be checked for tightness before the solution is applied to the main. During the application of chlorine, valves shall be positioned so the strong chlorine solution in the main being treated will not flow into water mains in active service. Chlorine application shall not cease until the entire main is filled with heavily chlorinated water.

The chlorinated water shall be retained in the main for at least twenty-four (24) hours, during which time all valves and hydrants in the treated section shall be operated to ensure disinfection of the appurtenances. At the end of this twenty-four (24) hour period, the treated water in all portions of the main shall have a residual of not less than twenty-five (25) mg/L free chlorine. After the applicable retention period, the heavily chlorinated water shall be flushed from the main until chlorine measurements show that the concentration in the water leaving the main is no higher than five-tenths (0.5) mg/L or as prevailing in the system.

The Contractor shall provide a means of disposing of the water and sterilizer so as to prevent damage to the environment during flushing operations. If there is any question that the chlorinated discharge will cause damage to the environment, then the Contractor shall supply a reducing agent to the water to be wasted to neutralize thoroughly the chlorine residual remaining in the water. Where necessary, Federal, State and local regulatory agencies shall be contacted to determine special provisions for the disposal of heavily chlorinated water.

After final flushing and before new water main is connected to the main system, two consecutive sets of acceptable samples, taken at least twenty-four (24) hours apart, shall be collected from the new main. At least one set of samples shall be collected from every 1,200 feet of the new water main, plus one set from the end of the line, and one set from each branch.

Samples will have 0 coliform bacteria and less than 250 heterotrophic plate count (HPC) to pass. Following successful sampling and testing of the line, the Contractor shall remove all testing apparatus and plug the main at the point of injection of the disinfectant and flushing discharge.

Samples for bacteriological analysis shall be collected in sterile bottles treated with sodium thiosulfate as required by "Standard Methods for the Examination of Water and Wastewater." No hose or fire hydrant shall be used in collection of samples. Sample tubing and devices shall be clean and disinfected with isopropyl rubbing alcohol or a 2% chlorine solution, and flushed prior to sampling. Sterilization by flame is not permitted. The Utility Department shall collect the final certification samples of record to check for complete disinfection. If the initial disinfection fails to produce satisfactory bacteriological samples, the main shall be rechlorinated in accordance with this section until satisfactory results are obtained.

The Contractor shall have the opportunity to perform the actual chlorination using the Contractor's own personnel and equipment. The Contractor shall notifying the Utility Director in writing at least 48 hours in advance of any work to disinfect the main. If the Contractor's personnel or equipment do not demonstrate the capabilities or methodology to properly disinfect the newly installed main after performing the chlorination procedures two times, the Contractor shall, upon written notification from the Utility Department, immediately suspend all such work. The disinfection will then be performed by the City and the expense charged to the Contractor.

The rate for each rechlorination application will be $0.25 per linear feet of pipeline, but not less than a minimum charge of $100.00. The City will furnish personnel, pumps, and chemicals for the actual chlorination. All temporary discharge hoses, piping, excavations, sample taps and corporations, other personnel or equipment, necessary for doing the work will remain the contractor's responsibility.

32.11 Tapping of Water Mains. The Contractor shall furnish the necessary tapping valve, tapping sleeve, and/or specials, and do all work necessary to make the connection to the water main without interruption of service on the tapped line. The actual tapping of the main will be performed by City personnel and the expense charged to the Contractor.

32.12 Separation from Sanitary Sewer and / or Storm Sewer Lines (Sewers).

There shall be a minimum of eighteen (18) inches vertical clearance between water lines crossing either above or below sewers. Distances shall be measured from outside of water line to outside of sewer lines. At crossings, one full length of pipe shall be centered at the crossing, such that all pipe end joints will be as far apart as possible.

For situations where water lines are parallel to sewer lines, water lines shall be installed at least ten (10) feet horizontally from any existing or proposed sewer line. Distances shall be measured from outside of water line to outside of sewer facilities.

When it is not practical to maintain the specified separation, the City may allow deviation on a case-by-case basis, if supported by data from the design engineer; and the sewer materials are water main pipe or equivalent. Refer to Standard Plan Drawing No. 138 entitled "Sanitary Sewer – Water Main Crossing" or Standard Plan Drawing No. 138-A entitled "Storm Sewer – Water Main Crossing", when it is not feasible to obtain the specified separation distances.

32.12.1 Separation from Storm Water Drain-Ways. Water lines crossing open storm water drain-ways or other surface water crossings shall be adequately supported and anchored; and accessible for repair or replacement. Pipe shall be of special construction, having flexible, restrained, watertight joints.

The water main shall be installed with sufficient earth cover to protect the line from damage due to: freezing; flow characteristics within the channel; depth of scour from flooding; and future channel widening and deepening.

When crossing waterways in excess of fifteen (15) feet in width, valves shall be provided at both ends of the crossing so that the section can be isolated for testing or repair. The valves shall be easily accessible and located so as to not be subject to flooding.

32.13 Backfilling. Trenches shall not be backfilled until all required tests are performed and until the water system installed conforms to the requirements of the plans and specifications.

Materials for tamped backfill and the method of placement shall be as specified per ANSI/AWWA C600 Type 3 pipe bedding. The trenches shall then be carefully backfilled up to one foot above the top of the pipe with sand or fine earth, in layers of not more than six (6) inches thick and carefully tamped to form a solid bedding for the pipe.

The balance of the excavated material shall be consolidated in the following manner. Tamped backfill will be required for the full depth of the trench above the pipe bedding in layers not to exceed twelve (12) inches in depth. 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.

32.13.1 Compaction Testing. When standard backfill methods are used, density tests will be required for each twelve (12) inch vertical lift of compacted material placed at a frequency of not greater than three hundred (300) lineal feet of trench. Density testing shall be required on each trench crossing a public right-of-way or easement. Test locations, to verify trench backfill integrity and methodology, may be specified by the City as required. The Contractor shall maintain the trench backfill for one (1) year from the date of acceptance of the project by the City.

The Contractor shall be required to hire an independent soil testing laboratory to test separately each lift for density and certify that each and every lift was compacted to 95% of maximum density within the public right-of-way and to 90% of maximum density within public easements. Density test results shall be submitted to the City before acceptance of the project by the City.

32.14 Backfilling Under Pavement. Non-shrinkable backfill will be required under all street sections, existing or proposed, unless the Director of Public Works approves standard backfill methods.

32.15 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, shall be backfilled using non-shrinkable backfill. The backfill shall be filled to the subgrade of the undisturbed sidewalk, curb, gutter, paving, or earth surface.

The non-shrinkable backfill shall be a mixture of sand, gravel, Portland cement, and water which flows easily around the utility being covered and develops a 28-day compressive strength of from 30 to 200 psi. No non-shrinkable backfill mix designs shall be used without the approval of the Public Works Director. Fly ash may be approved in the mix if test data are submitted to indicate the above characteristics are met.

The mix design shall met the following requirements:

Portland Cement	60 lbs.
47-B Sand - Gravel	3,300 lbs.
Water	40 gal.

32.16 Acceptance. Upon completion of a job, all debris and surplus material shall be removed from the job by the Contractor. The Engineer shall be notified so that an inspection of the work can be made.

32.17 Water Services. Water services shall be installed as indicated on the construction plans. The City Water Department will tap the water main and install the corporation stop. The Contractor shall furnish the corporation stop and pay the City Water Department for making the tap. Service lines shall be buried a minimum of five (5) feet in depth from future finished grade. No splices, joints, or unions in copper water service lines will be allowed between the water main and the curb stop. The service shall extend perpendicularly (90°) from the main's horizontal alignment to the curb stop or service valve location.

All water facilities shall be filled, pressure tested, disinfected, flushed, and acceptable water sample test results obtained, prior to being placed in service.

Following installation of water service lines, the Contractor shall furnish and install a seven (7) foot long, steel studded "T" post, adjacent to each stop box to identify its location. Posts shall be new, painted dark blue in color, and set three (3) feet into the ground. All marking posts shall be incidental to the service line and not a claim for extra material or work.

All work shall be per AWWA standard, *UNDERGROUND SERVICE LINE VALVES AND FITTINGS,* ANSI/AWWA C800 and subsequent revisions, City specifications, and Standard Plan 152.

32.17.1 Service Ownership. Water is conveyed from mains owned by the City of Grand Island to the consumer's premises by service lines and their appurtenances. The service line, pipes, valves, fittings and appurtenances, including the meter, through which a consumer receives water shall be owned by, installed, and maintained at the expense of the consumer.

The dividing point between the City Of Grand Island owned mains and consumer owned service line shall be defined as the connection on the discharge side of the City Of Grand Island owned main. At the dividing point, water irrevocably leaves the public system and enters privately owned facilities to serve the consumer premises.

The maintenance and protection of privately owned piping, service pipes, fittings, meters, fixtures, and water using appliances, is the exclusive responsibility and expense of the consumer; including but not limited to, protection of water using devise by reason of temporary or permanent pressure changes; the stoppage of the flow of water; limited or sustained water pressure; or from dirt or debris that may enter the service connection.

32.18 Water Meter Installations. Meters shall be installed in a clean pipeline, free from foreign materials. The meter shall be installed horizontally with the register facing upward; with the direction of flow as indicated by the arrow cast in the meter case; and protected from freezing, damage, and tampering.

Meters shall be equipped with a strainer, and shall be installed with a minimum of five (5) pipe diameters of straight run of pipe or equivalent full open components, upstream of the meter strainer inlet flange; and three (3) pipe diameters of straight run of pipe or equivalent full open components, downstream of the meter outlet flange. Full open components may consist of: straight pipe, full open gate valves and ball valves, tees, and concentric reducers.

No elbows, bends, non-concentric reducers, check valves, back flow preventers and/or pressure reducing devices shall be installed within ten (10) pipe diameters upstream or five (5) pipe diameters downstream of the meter set.

Butterfly valves shall not be installed within five (5) pipe diameters upstream or three (3) pipe diameters downstream of the meter set.

Full port ball valves or gate valves may be installed immediately upstream of the meter set, provided they are fully opened and not used to throttle flow rates through the meter.

All meters shall be equipped and installed with a remote meter reading system, to enable obtaining register reading without directly accessing the meter's location. The system shall be suitable for indoor and/or outdoor use and shall be factory sealed to prevent tampering.

32.18.1 Meter Ownership. A water meter is a device used to measure and record a consumer's water utilization. All water meters shall be purchased from the City of Grand Island; and owned by, installed, and maintained at the expense of the consumer.

32.18.2 Meter Pits and Vaults Prohibited. The water meter shall be located so that it may be easily examined and read by any such person designated by the Utilities Director to perform such functions.

Water meters shall not be located in any pit, manhole, or vault, nor an area containing fumes that are toxic, poisonous or corrosive; nor in any area in which the meter could be damaged by freezing, vibration, physical impact or structural stress; nor knowingly be allowed to conduct excessively high velocity waters.

32.19 Fire Hydrant. All fire hydrants shall be set with the centerline of the hydrant's pumper nozzle eighteen (18) inches above the final grade adjacent to their location. The Contractor shall furnish and install all fittings, offsets, and blocking required to adjust the hydrant's elevation. Hydrant extensions shall be supplied by the Contractor and installed by the City Water Department at the Contractor's expense. The method of adjustment shall have prior approval of the Utilities Department.

Service lines shall not be allowed to extend from the hydrant lead. The hydrant lead shall be defined as all piping upstream the water main fitting supplying the hydrant.

32.20 Relocation of Mains and Service Lines. When proper management, operation or maintenance of the Water System requires; or when new construction or reconstruction projects require existing water mains, lines or services to be moved, lowered, or relocated, the City Of Grand Island shall have the right to make such changes as required. All water lines that are relocated or reconstructed shall be inspected by the Grand Island Utilities Department.

32.20.1 Pressure and Leakage Testing of Relocated Mains and Service Lines. After each section of the water piping system has been relocated, and prior to being placed back in normal operation, it shall be subjected to a hydrostatic pressure test (100 PSI minimum) at the point of relocation. This will include testing the entire section of piping isolated and taken out of service to allow the relocation work.

32.20.2 Sterilization, Flushing and Sampling of Relocated Mains & Service Lines. All sections of the water system taken out of service for relocation, or any other activities that might lead to contamination of water, shall be disinfected before being returned to service. The Contractor shall provide a temporary connection for disinfecting the newly relocated lines. Additionally, the Contractor shall provide a temporary means for flushing the isolated sections. The discharge connection shall be sized for flushing velocities not less than two and one half (2.5) feet per second, and shall include: valves, connecting piping, and hoses as required to discharge to waste.

After final flushing and before new water main is connected to the main system, two consecutive sets of acceptable samples, taken at least twenty-four (24) hours apart, shall be collected from the new main. At least one set of samples shall be collected from every 1,200 feet of the new water main, plus one set from the end of the line, and one set from each branch. Samples will have 0 coliform bacteria and less than 250 heterotrophic plate count (HPC) to pass. Following successful sampling and testing of the line, the Contractor shall remove all testing apparatus and plug the main at the point of injection of the disinfectant and flushing discharge.

The City will furnish personnel, pumps, chemicals, and perform the actual chlorination of the water lines taken out of service during the repair / relocation work. The rate to be charged to the Contractor, for each chlorination application, will be $0.25 per linear feet of isolated pipeline, but not less than a minimum charge of $100.00. All temporary discharge hoses, piping, excavations, sample taps and corporations, other personnel or equipment, necessary for doing the work will remain the Contractor's responsibility.

32.20.3 Water Services on Relocated Mains. All materials necessary to relocate water service lines shall be new and un-used. Copper service pipe, laid between the water main and the curb stop, shall be built of continuous construction without joints, unions, or splices.

When required to relocate service lines under undisturbed hard surfaced roadways or driveways, trenchless methods shall be used. Any standard method of trenchless pipe installation that provides the best overall system, while providing the least disruption to the area, shall be considered for approval by the City. All service pipes shall have no less than five feet of earth cover, and in all cases shall be so protected as to prevent rupture by freezing.

The new service shall normally extend perpendicularly (90°) from the main's horizontal alignment; and connected to the existing water service at the new curb stop or valve location. All work shall be done under the direction of a licensed plumber, including the abandonment of the existing service. The Contractor shall salvage the existing curb stop (or valve) and box for the City.

32.20.4 Abandonment of Service Pipes on Relocated Mains. Water services shall be abandoned by a licensed plumber. For lead service lines, cut and crimp the line. For copper service lines, cut and sweat a cap onto the pipe. All work shall be done as close as possible to, but not to exceed one foot from the tap. The City Utilities Department shall be notified whenever a service pipe is abandoned and shall inspect and approve all work done in connection with such abandonment.

SECTION 33 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

33.01 Water Main. Water mains shall be measured for payment by measuring the length down the centerline of construction of all pipelines installed, with no deduction for fittings or valves. Payment shall be made at the contract unit price per lineal foot for various sizes, including fittings, excavation, and backfill complete in place.

It is intended that all water main pipe fittings, service lines, and appurtenances shall have five (5) feet of earth cover, or as otherwise indicated on the plans and specifications. The elevation of the piping may vary depending upon existing obstructions and proposed improvements encountered during the construction. Any deviations in alignment or grade shall have the prior approval of the Utilities Department. Where additional depth is required to clear encountered or proposed grade interference, the additional excavation and backfill shall be incidental to the project and not a claim for extra work.

33.02 Valves and Boxes. Valves and valve boxes shall be paid for at the contract unit price complete in place.

33.03 Hydrants. Fire hydrants shall be paid for at the contract unit price complete. If applicable, the fire hydrant bid price shall include the 6" ductile iron pipe to complete the link between the hydrant and the tee at the main, the 6" valve and box, and the 6"x90 degree bend. The tee will be paid for separately as set forth in the bid.

33.04 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 footings, ring and cover. Additional payment shall be made for manholes more than five (5) feet in depth, measuring from top of footings to top of cover, at the contract price for each vertical foot or fraction thereof in excess of five (5) feet.

33.05 Fittings. Fittings such as tees, bends, and reducers shall be paid for at the contract unit price complete in place.

33.06 Concrete Blocking. Payment will be made on the basis of cubic yards of concrete called for in Standard Plan Drawings entitled "Concrete Blocking for Fittings" and "Fire Hydrant Blocking".

33.07 Corporation Stop. Corporation stops shall be paid for at the contract unit price complete in place.

33.08 Curb Stop. Curb stops shall be paid for at the contract unit price complete in place.

33.09 Water Services. Water services shall be measured for payment by measuring the length down the center of the pipeline from the corporation stop to the curb stop. Payment shall be made at the contract unit price per lineal foot for various sizes, excavation, and backfill complete in place.

SECTION 34 – POLYETHYLENE ENCASEMENT

34.01 Scope of Work. This section includes the Contractor furnishing materials and installation procedures for polyethylene encasement to be applied to all underground installations of ductile-iron pipe, fittings, valves, and other appurtenances to ductile-iron pipe systems. In general, all materials and installation shall conform to the AWWA Standard, *POLYETHYLENE ENCASEMENT FOR DUCTILE-IRON PIPE SYSTEMS,* ANSI/AWWA C105/A21.5 and subsequent revisions, and as additionally specified herein.

34.01.1 Soil Testing. The Contractor shall furnish materials and shall field apply polyethylene encasement to all ductile-iron pipe, fittings, valves, and other appurtenances associated with the piping system unless such corrosion protection measures shall not be required as determined by soil testing previously conducted by the City of Grand Island.

In areas where the Utilities Department has not yet made a determination on soil characteristics, the Contractor shall have the opportunity to have performed soil tests to determine if polyethylene pipe encasement should be used. If this option is selected, the Contractor shall hire an independent testing laboratory to evaluate conditions that may affect their corrosive rate on ductile-iron pipe. Analysis shall only be conducted by personnel who are experienced in environmental factors which may contribute to the corrosion of the proposed piping system. Such test shall be at the Contractor's expense and not a claim for extra work.

All sampling collection, analysis, and evaluation shall fully comply and conform to the AWWA Standard, *POLYETHYLENE ENCASEMENT FOR DUCTILE-IRON PIPE SYSTEMS*, ANSI/AWWA C105/A21.5; APPENDIX A – "Notes on Procedures for Soil Survey Tests and Observations and Their Interpretation to Determine Whether Polyethylene Encasement Should Be Used", and subsequent revisions.

The Contractor shall deliver to the Utilities Director certified copies of such soil test results at least 48 hours in advance of any work on the installation of the water main. The Utilities Department shall review and make a determination from the data submitted.

34.02 Materials. Film shall be high-density, cross-laminated polyethylene or linear low-density polyethylene film manufactured of virgin polyethylene material. Film shall meet all the listed requirements for polyethylene film specified in the AWWA Standard, *POLYETHYLENE ENCASEMENT FOR DUCTILE-IRON PIPE SYSTEMS*, ANSI/AWWA C105/A21.5.

The polyethylene film shall have a nominal thickness of 0.008 in. (8 mil). Tube size or sheet width for each pipe diameter shall be as listed on Standard Plan No. 155.

34.03 Installation. The polyethylene encasement shall prevent contact between the pipe and the surrounding backfill and bedding material, but is not intended to be a completely airtight or watertight enclosure. All lumps of clay, mud, cinders, etc. on the pipe surface shall be removed prior to installation of the polyethylene encasement. During the installation, care shall be exercised to prevent soil or embedment material from becoming trapped between the pipe and the polyethylene.

The polyethylene film shall be fitted to the contour of the pipe to affect a snug, but not tight, encasement with minimum space between the polyethylene and the pipe.

Sufficient slack shall be provided in contouring to prevent stretching the polyethylene where it bridges irregular surfaces, such as bell-spigot interfaces, bolted joints, or fittings, and to prevent damage to the polyethylene due to backfilling operations. Overlaps and ends shall be secured with adhesive tape or other material capable of holding the polyethylene encasement in place until backfilling operations are complete.

For installations below the water table, both ends of the polyethylene tube shall be sealed as thoroughly as possible with adhesive tape at the joint overlap. This standard includes three methods of installation of polyethylene encasement on pipe. Methods A and B are for use with polyethylene tubes and Method C is for use with polyethylene sheets.

34.03.1 Method A. (Refer to Standard Plan No. 155) Cut polyethylene tube to a length approximately two (2) ft longer than the pipe section. Slip the tube around the pipe, centering it to provide a one (1) ft overlap on each adjacent pipe section, and bunching it accordion-fashion lengthwise until it clears the pipe ends.

Lower the pipe into the trench and make up the pipe joint with the preceding section of pipe. A shallow bell hole must be made at joints to facilitate installation of the polyethylene tube.

After assembling the pipe joint, make the overlap of the polyethylene tube. Pull the bunched polyethylene from the preceding length of pipe, slip it over the end of the new length of pipe, and secure it in place. Take up the slack width at the top of the pipe to make a snug, but not tight, fit along the barrel of the pipe, securing the fold at quarter points.

Any cuts, tears, punctures, or other damage to the polyethylene shall be repaired. Proceed with installation of the next section of pipe in the same manner.

34.03.2 Method B. (Refer to Standard Plan No. 155) Cut polyethylene tube to a length approximately one (1) ft shorter than that of the pipe section. Slip the tube around the pipe, centering it to provide 6" in. of bare pipe at each end. Take up the slack width at the top of the pipe to make a snug, but not tight, fit along the barrel of the pipe, securing the fold at quarter points.

Before making up a joint, slip a 4-ft length of polyethylene tube over the end of the preceding pipe section, bunching it accordion-fashion lengthwise. After completing the joint, pull the 4-ft length of polyethylene over the joint, overlapping the polyethylene previously installed on each adjacent section of pipe by at least one (1) ft, make each end snug and secure.

Any cuts, tears, punctures, or other damage to the polyethylene shall be repaired. Proceed with installation of the next section of pipe in the same manner.

34.03.3 Method C. (Refer to Standard Plan No. 155) Cut polyethylene sheet to a length approximately two (2) ft longer than that of the pipe section. Center the cut length to provide a one (1) ft overlap on each adjacent pipe section, bunching it until it clears the pipe ends. Wrap the polyethylene around the pipe so that it circumferentially overlaps the top quadrant of the pipe. Secure the cut edge of polyethylene sheet at intervals of approximately 3 ft.

Lower the wrapped pipe into the trench and make up the pipe joint with the preceding section of pipe. A shallow bell hole must be made at joints to facilitate installation of the polyethylene. After completing the joint, make the overlap and secure the ends.

Any cuts, tears, punctures, or other damage to the polyethylene shall be repaired. Proceed with installation of the next section of pipe in the same manner.

34.03.4 Appurtenances. Cover bends, reducers, offsets, and other pipe-shaped appurtenances with polyethylene in the same manner as the pipe. When it is not practical to wrap valves, tees, crosses, and other odd-shaped pieces in a tube, wrap with a flat sheet or split length of polyethylene tube by passing the sheet under the appurtenance and bringing it up around the body. Make seams by bringing the edges together, folding over twice, and taping down. Tape polyethylene securely in place at valve stem and other penetrations.

34.03.5 Repairs. Repair all cuts, tears, punctures, or damage to polyethylene with adhesive tape or with a short length of polyethylene sheet or a tube cut open, wrapped around the pipe to cover the damaged area, and secured in place.

34.03.6 Openings in Encasement. Provide openings for branches, service taps, blowoffs, air valves, and similar appurtenances by making an X-shaped cut in the polyethylene and temporarily folding back the film. After the appurtenance is installed, tape the slack securely to the appurtenance and repair the cut, as well as any other damaged areas in the polyethylene, with tape. Service taps may also be made directly through the polyethylene, with any resulting damaged areas being repaired as described above.

34.03.7 Junctions between Wrapped and Unwrapped Pipe. Where polyethylene wrapped pipe joins an adjacent pipe that is not wrapped, extend the polyethylene wrap to cover the adjacent pipe for a distance of at least 3 ft. Secure the end with circumferential turns of tape.

Service lines of dissimilar metals shall be wrapped with polyethylene or a suitable dielectric tape for a minimum clear distance of 3 ft away from the ductile-iron pipe.

34.03.8 Backfill for Polyethylene-Wrapped Pipe. Use the same backfill material as that specified for pipe without polyethylene wrap, exercising care to prevent damage to the polyethylene wrapping when placing backfill. Backfill material shall be free from cinders, refuse, boulders, rocks, stones, or other material that could damage polyethylene. In general, backfilling practice should be in accordance with the AWWA Standard, *INSTALLATION OF DUCTILE-IRON WATER MAINS AND THEIR APPURTENANCES,* ANSI/AWWA C600, subsequent revisions, and City of Grand Island Specification Division VI, Water Mains, Section 32.13, 32.14 and 32.15, and as specified with the contract.

SECTION 35 – UNDERCROSSING

35.01 Scope of Work. This section includes the Contractor furnishing all the materials and installing complete the casing and carrier pipes. This work shall include, but is not limited to, dewatering, shoring, excavating, tunneling, jacking casing, placing casing with specified support, sealing, compacting, backfilling, and fine grading.

35.02 Casing Material. The steel casing pipe shall have a minimum wall thickness of in accordance with Standard Plan 141-A, coated inside and outside with asphalt coating double full dipped. The casing for the under crossing shall be entirely of one (1) material.

The design of such pipe is based upon the superimposed loads and not upon the loads which may be placed upon the pipe as a result of the jacking operations. Increases in pipe strength to withstand jacking loads shall be the responsibility of the Contractor.

Sections of the steel pipe casing shall be joined with a continuous full penetration butt weld for the full circumference. Joints shall be beveled before welding. No other methods shall be acceptable unless prior approval is obtained from the City. Welds shall be in full compliance with AWS D1.1-80 standards.

35.03 Procedure. The Contractor will contact the appropriate regulatory agency a minimum forty-eight (48) hours in advance, before starting work within thirty feet (30') of any railroad or roadway surface.

35.04 Protection of Public. During the period that any work is being performed within the public right-of-way, or that an open trench or pit exists within the limits of said right-of-way, the Contractor shall furnish and utilize such signs, lights, barricades, and other devices to the extent necessary, in order to properly guide and protect the public; and shall be in accordance with State of Nebraska Department of Roads guidelines.

The Contractor shall accept full responsibility to the public, and to the right-of-way itself, for loss or damage caused by or directly traceable to his operations, actions, or inactions on or near the right-of-way.

35.05 Installation of Casing Pipe. The casing shall be so constructed and installed as to prevent leakage of any substance from the casing through its length, except at the ends. Casing shall be so installed as to prevent the formation of a waterway under the railroad or roadway, with an even bearing throughout its length, and shall slope to one (1) end. The casing shall be placed at the location and elevation shown on the drawing. No change in elevation from that shown shall be permitted without written approval from the City. Excavation shall be held to the minimum possible required for installation of liner plate. The casing shall be installed, using structural steel, plates, field bolted, to provide full round casing pipe. In advancing the casing operation, shielding or poling shall be used, together with such other measures as may become advisable to prevent settlement of the overburden. Casing pipe shall extend the entire distance, between the limits indicated on the plans. Liner plates may extend further than this minimum requirement at no additional cost to the City, if the Contractor so elects.

After installation, the entire length of the casing shall be pressure grouted between the exterior of the tunnel liner and the adjacent soil, using a cement-sand grout of one (1) part cement to six (6) parts sand.

The casing pipe jacked into place shall be accomplished without disturbance of the road surface above. The pipe shall be jacked in the up-slope direction.

After installation of casing, and prior to backfilling any excavations, both ends of the casing shall be closed by a manner approved by the City, so as to prevent any infiltration of dirt, water, or refuse into the casing, prior to the future installation of the carrier pipe.

35.06 Excavation. The Contractor shall perform all excavations necessary for installation of the casing. The City shall have the right to limit the amount of trench that may be opened in advance of the line of work. All excavated materials not required for backfill shall be removed from the project by the Contractor. Banks of trenches shall be kept as nearly vertical as practical and, where required, shall be properly sheeted and braced. Trenches shall be held to the minimum width needed to provide working space for proper installation.

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 trenches shall be stacked in an orderly manner, a sufficient distance back from edge of trenches to avoid overloading and preventing slides or cave-ins. Materials unsuitable for backfilling shall be wasted by the Contractor as directed by the City.

35.07 Backfilling. After installation of the casing, all excavations and trenches shall then be carefully backfilled as per Division VI, Water Mains Specifications, Sections 32.13, 32.14, 32.15, and other Divisions as appropriate.

35.08 Carrier Pipe. Carrier pipe shall be ductile-iron pipe with restrained joints conforming to Section 37.02.1, Division VI of the City of Grand Island Standard Specifications.

35.08.1 Carrier Pipe – Casing Spacers. Carrier pipes shall be centered within the casing by using full circle designed spacers. Spacers shall be constructed of 14 gauge, T-304 stainless steel, with a ribbed PVC extrusion insulating liner that overlaps the edges of the band and prevents slippage. Spacers, for carrier pipe diameters of 16 inches or less, shall have a minimum body width of 8 inches, and for carrier pipes, 18 inches and above, the spacer band width shall be increased to 12 inches.

Spacers risers and runners shall be properly designed to position and support the carrier pipe within the casing. Risers shall be a minimum of 10 gauge, T-304 stainless steel, MIG welded to the stainless steel body. Runners shall be ultra high molecular weight polymer (UHMW) with a high resistance to abrasion and frictional slid wear. The runners shall be mechanically attached to the riser and the bolt heads shall be welded for strength.

Casing spacers, for pipe diameters up to 16 inches, shall have two runners on the top and two runners on the bottom. For pipe diameters 18 inches through 36 inches, spacers shall be supplied with 4 runners on the bottom and two on the top.

35.08.2 Carrier Pipe – Installation. Casing spacers shall be installed on the carrier pipe within one foot from each end of the casing pipe. For carrier pipe diameters of 16 inches or less, three spacers per length of pipe shall be installed. For carrier pipes 18 inches and above, four spacers per length of pipe shall be used.

Pipelines shall normally be installed in the center of straight casings. Risers and runners shall be dimensioned to provide a clearance of ¾ inch to the top of the casing. Refer to Standard Plan 141-A for minimum clearances between pipe bells and casing.

Carrier pipes shall be pulled not pushed through the casing.

35.08.3 Carrier Pipe – Casing End Seals. After installation of the carrier pipe, the ends of the casing shall be closed against the carrier pipe to provide a backfill barrier to debris and seepage. End seals shall be made of heavy-duty neoprene or other synthetic rubber. Each end of the seal shall be secured to the pipe with T-304 stainless steel bands.

SECTION 36 – DEWATERING

36.01 General. The Contractor is responsible for devising and operating a construction dewatering system if required to install any part of the water main.

36.02 Discharge Permit. When required, facilities shall apply for authorization to discharge under a permit in compliance with the National Pollution Discharge Elimination System (NPDES).

The Owner or Operator shall use the Notice of Intent (DW-NOI) procedures to notify the Nebraska Department of Environmental Quality (NDEQ) that as a Permittee, they intend to meet all conditions of the permit. Complete and accurate information shall be submitted to the NDEQ for permission to discharge ten (10) calendar days prior to dewatering to use the construction-dewatering permit.

Nebraska Department of Environmental Quality
Wastewater Section
1200 'N' Street, Suite 400, The Atrium
PO Box 98922
Lincoln, NE 68509-8922
Tel (402) 471-4220
Fax (402) 471-2909

36.03 Dewatering Wells. If dewatering wells are used, the Contractor is required to secure all permits, properly install, and abandon the wells as per Nebraska State Statute.

SECTION 37 -- TRENCHLESS INSTALLATION OF WATER MAIN

37.01 General. Trenchless methods for the installation of pipelines requires using specialized tools, equipment and experience. The Contractor shall be well practiced with such techniques, with a minimum of five years experience in successfully completed projects of similar size, length, and soil conditions. When required, the Contractor shall furnish the Utilities Department with a list of such jobs with the name of the purchaser, location, date, size, type, and operating conditions.

The Contractor shall provide all labor, materials, equipment, tools, dewatering, shoring, excavating, tunneling, boring with specified support, sealing, compacting, backfilling, clean-up, fine grading, and restoration of all required surface access pits, and launching and receiving pits. Additionally, it includes transporting and setting up all equipment used to perform the operations.

All work shall comply with the Ductile Iron Pipe Research Association's guidelines for "Horizontal Directional Drilling With Ductile Iron Pipe," the pipe manufacture's recommendations, and other specifications referenced within these contract documents.

The Utilities Department reserves the right to modify sections and location of pipe installed by trenchless methods due to such factors as: soil conditions, material limitations, installation methodology, obstacles, or other causes.

37.01.1 Permits. The Utilities Department shall obtain ingress and egress permits, right-of-way, and easements required for the work, where required. Other permits required for the performance of the work shall be obtained by the Contractor.

37.01.2 Site Investigation. The Contractor shall determine the types and locations of surface and subsurface utilities and materials, soil types, groundwater, and other environmental factors and shall determine their effect on the bore installation.

All site investigations required shall be the responsibility of the Contractor. If utilities of unknown depth or other obstructions will require grade or alignment deviations from the plans, the grade or alignment may be adjusted with the prior approval of the Utilities Department.

37.02 MATERIALS

37.02.1 Restrained Joint Pipe. Pipe shall be ductile iron with restrained push-on joints conforming to the AWWA Standard, *DUCTILE-IRON PIPE, CENTRIFUGALLY CAST,* ANSI/AWWA C151/A21.51 and Section 31, Division VI of the City of Grand Island Standard Specifications.

Pipe shall be cement mortar lined conforming to the AWWA Standard, *CEMENT-MORTAR LINING FOR DUCTILE-IRON PIPE AND FITTINGS*, ANSI/AWWA C104/A21.4 and subsequent revisions. All cement mortar lining shall be coated with asphaltic seal coat in conformity with referenced standard specifications.

Pipe shall be designed for a working pressure of 350 psi, with boltless, restrained, flexible joints, that have smoothly contoured bells. Joint designs that restrict smooth installation, increase pulling forces, or degrade the flow of drilling fluid around the joint shall not be used. Pipe and joint seals shall be capable of handling the internal pressures, external pressures, torque, and vacuum that can occur during pull-back along the bore path.

37.02.2 Pulling Heads. The pipe pulling head shall have the same characteristics as the pipe to which it is attached. Pulling heads, reamers, and swivel assemblies shall be designed and furnished by the pipe manufacturer, or an approved equal in full compliance with the pipe manufacturer's requirements.

37.02.3 Polyethylene Encasement. All pipe shall have polyethylene encasement, as per Grand Island Standard Specifications, Section 34, and as additionally specified herein.

Use only tube-type polyethylene sleeves with a nominal thickness of 0.008 in. (8 mil). Installation shall be per AWWA Standard, ANSI/AWWA C105/A21.5 "Alternate Method 'A' or Wet Trench Conditions" as modified herein. Polyethylene tubing shall be secured to the first length of pipe with several wraps of tape directly to both the pipe barrel and tubing, approximately one foot from the spigot end. Ensure that all excess material is neatly folded longitudinally, and secured around the barrel section by circumferential tape wraps at a maximum of two foot spacing. The polyethylene tubing should always overlap back over the bell and joint section to ensure that drilling fluid is not force under the polyethylene during pull-back. Secure the polyethylene at the joint area with circumferential tape wraps on each side of the joint. Continue installation opposite to the direction of pull-back.

37.03 PIPE INSTALLATION

37.03.1 Drilling System. The Contractor shall have the equipment and expertise appropriate for horizontal direction drilling operations and pipeline installation.

The equipment shall consist, as a minimum of a system capable of performing the bore and pulling back the pipe, with a boring mixture delivery and fluid recovery system of sufficient appropriate capacity, and a guidable drill head capable of carrying

out the drilling and piping installation. The equipment shall be designed to withstand the pulling, pushing and rotating pressure involved to complete the work, and equipped to monitor and record the pull-back pressure during the pull-back operation. The drill head shall be steerable and shall be provided with necessary cutting surfaces and drilling fluid jets as required.

37.03.2 Guidance System. The bore shall utilize a proven guidance probe and interface to accurately determination the location of the drill head during the drilling operation. It shall be capable of tracking at the required installation depth in any soils encountered and enable the operator to adjust the drill head both horizontally and vertically.

37.03.3 Drilling Fluid System. A self-contained system of sufficient size to mix and deliver the boring fluid shall be provided. Tank capacities shall be sized to hold excess material completely by containing "mud" quantities without spillage. The entry point shall be appropriately enclosed and equipped with a sump pump to reclaim or discharge excess drilling fluids to a reuse or disposal tank. The system shall be able to ensure thorough mixing of all components of the slurry to avoid clumping. The boring fluid shall be continually agitated by the mixing system. No discharge of excess material or site runoff will be allowed.

37.03.3.1 Drilling Fluid. The drilling fluid shall be comprised of clean potable water, bentonite clay, and appropriate additives. The Contractor shall be responsible for obtaining, transporting, and/or storage of any water required for drilling fluids. Additives shall be environmentally safe, non-toxic, and approved for such usage. The boring fluid shall be of a consistency to suspend the cuttings and maintain the integrity of the bore walls.

37.03.4 Excavations. The Contractor shall be responsible for all excavations and properly maintaining trench banks, sheeting, and bracing as required. Excavations shall be of sufficient width to provide proper working space for drilling operations and down hole assemblies. Material excavated from the trenches shall be stacked in an orderly manner a sufficient distance back from edge of excavations to avoid overloading and preventing slides or cave-ins.

Excavations shall be located for proper installation of the pipeline. The insertion / assembly pits may also subsequently be used for connections, installing valves, fittings, or hydrant assemblies at locations indicated on the plans.

37.03.5 Pilot Hole. Install the pilot hole using a steerable drilling head. The pilot hole shall be drilled along the planned bore path and alignment, to the tolerances listed and concurrent with safe operations. Proper setbacks shall be maintained to avoid excessively steep entry and exit of the pilot hole. In all cases, the transition from the surface to the bore path shall be within the pipe Manufacture's allowable joint deflection.

The Contractor has the option to pre-ream the pilot hole. However, lack of pre-reaming shall not place excessive loading on the installation of the pipeline. Any damage to the pipeline resulting from inadequate pre-reaming shall be the responsibility of the Contractor.

37.03.6 Alignment. The bore path shall be to the elevations and alignment indicated on the drawings and as staked for the contractor. The installation shall be guided by equipment that gives continuous, accurate monitoring and done without disturbing the area surfacing, ditch lines, or waterways.

The Contractor shall continuously monitor the bore alignment at all times when the bore operation is proceeding. When the alignment goes beneath a body of water, a visual inspection shall be made at the most accessible point immediately downstream of the bore alignment for changes in turbidity or color, which may indicate a subsurface breech in the boring operation.

Pipe entry and exit points may be moved further from the original plan only with prior approval of the Utilities Department. Any bore exit to the surface, other than for the final location, shall be plugged and stabilized before proceeding, and the exit site shall be restored to its original condition.

Deviations from the alignment indicated on the plans may be allowed providing:

- No deviation shall be greater than 5% of depth per 100' of installed length;
- All piping shall be installed with a minimum of five (5) feet of earth cover;
- The pipeline shall not interfere with proposed infrastructure locations, or the safe operation and maintenance of existing utilities or structures;
- The pipeline shall not encroach beyond the right-of-way, easement, or construction limits.

In cases where the pipe is outside of the specified limits, or otherwise deviates more than the approved maximum, the Contractor shall re-install the pipe to the accepted alignment and elevation at their own expense.

37.03.7 Installation – Cartridge Method. The Cartridge Assembly Method shall be the preferred option for assembling pipe sections due to right-of-way imitations.

The individual pipe sections shall be joined in the insertion pit. Each section shall then be progressively pulled into the bore path a distance equivalent to a single pipe section. The process is repeated until the entire length is pulled through the bore path to the exit point.

37.03.8 Pull-Back. After successfully reaming of the bore hole, the Contractor shall attach a swivel connector between the final reamer and the pulling head and pull the pipe through the bore hole. Once pull-back operations have commenced, the operations shall continue without interruption until the pipe is completely pulled back through the bore hole. Pipe shall only be pulled from the plain end to minimize pulling forces and to take advantage of the bell transition.

If excessive pull-back is encountered, or the pipe becomes immovable, the Contractor shall stop the pull-back operations to allow any potential hydro-lock to subside, then pulling operations will again commence. If the pipe remains stuck, the Contactor shall notify the City to discuss options or alternatives, and then work shall proceed in accordance with those decisions.

37.03.9 Pulling Force. Restrained push-on joint pipe must be able of withstanding the pulling forces used to install the pipe thought the bore hole. The pulling force shall be limited to the joints maximum dead-end thrust load at the rated working pressure, and in full compliance with the pipe Manufacture's recommendations.

37.03.10 Backfill and Clean-Up. Disposal and clean-up of excess drilling fluid and pits shall be the responsibility of the Contractor. Disposal shall not be allowed on the project site. All work shall be done in accordance with environmental regulations, right-of-way limits, and permit requirements.

The Contractor shall backfill all excavations with suitable compacted materials as required. Earth spoiled by drilling mud or where other deleterious backfill substances are encountered, the material shall be rejected, hauled away, and disposed of by the Contractor and the site refilled with clean material. The area shall be restored to a condition equal to or better than its original condition.

Materials to be removed from the job site shall be disposed of properly. If materials are to be disposed of on private property, prior written permission shall be obtained from the owner of the property, and submitted to the City's designated representative.

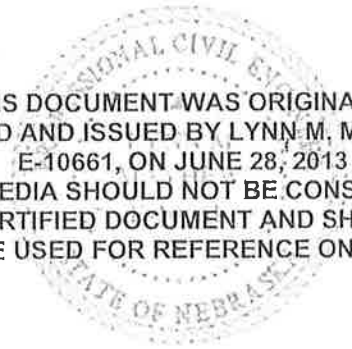
All materials, trash, and debris shall be removed by the Contractor from the construction limits in a timely manner.

37.04 RECORDS AND MEASUREMENTS

37.04.1 Records. The Contractor shall keep a daily log of all drilling activities and records indicating the pull-back loads exerted on the pipe for each section installed. A copy shall be provided to the City Utilities Department upon completion of the boring procedure. When monitoring records indicated the pullback forces exceed the pipe Manufacture's loading recommendations, the pipeline may be rejected.

The field records and notes shall additionally specify: the type of equipment used; the length and depth of the installation; and existing utility locations.

37.04.2 Measurement for Payment. The installation of bored pipe will be measured for payment by the linear foot of the various sizes of pipe acceptably installed. Measurement will be for full length of placement as verified in the field.



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Jun 28, 2013

CITY OF GRAND ISLAND

STANDARD PLAN DRAWINGS

CURRENT REVISION: 4/18/2002

CITY OF GRAND ISLAND

STANDARD PLAN DRAWINGS INDEX

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PLAN 126-A, SHT 3 OF 4	STANDARD TYPE "D" MODIFIED INLET
PLAN 126-A, SHT 4 OF 4	STANDARD TYPE "D" MODIFIED INLET
PLAN 128	JUNCTION BOX
PLAN 129	STANDARD OUTSIDE DROP MANHOLE
PLAN 129-A	INSIDE DROP MANHOLE FOR PRIVATE SERVICE LINES
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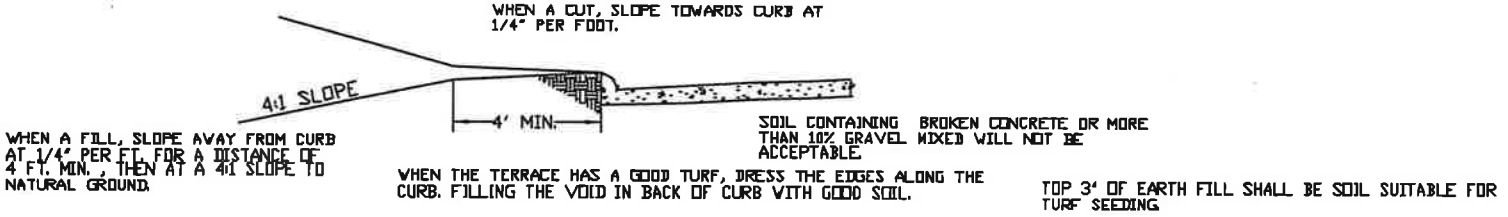
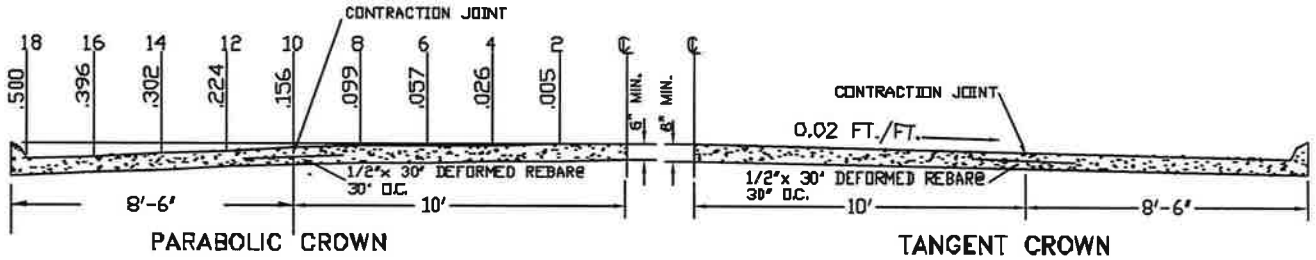
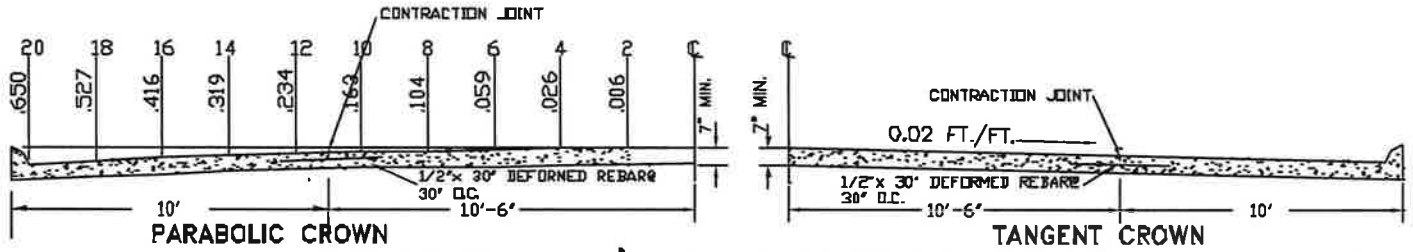
PLAN 151	SPECIAL MANHOLE WITH SLUICE GATE
PLAN 154	SPECIAL TEE & RISER



EARTH FINISH IN BACK OF CURB



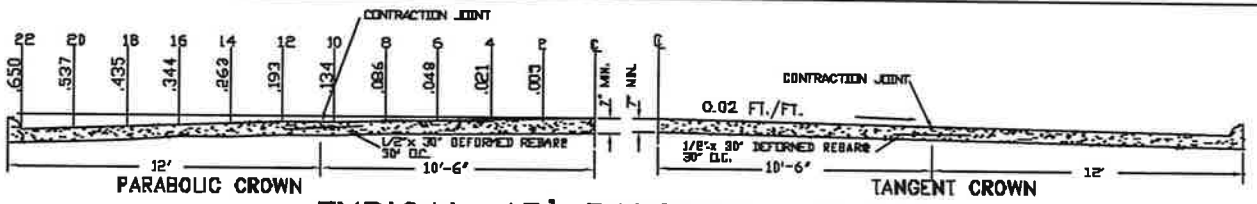
TYPICAL 37' PAVEMENT WIDTH



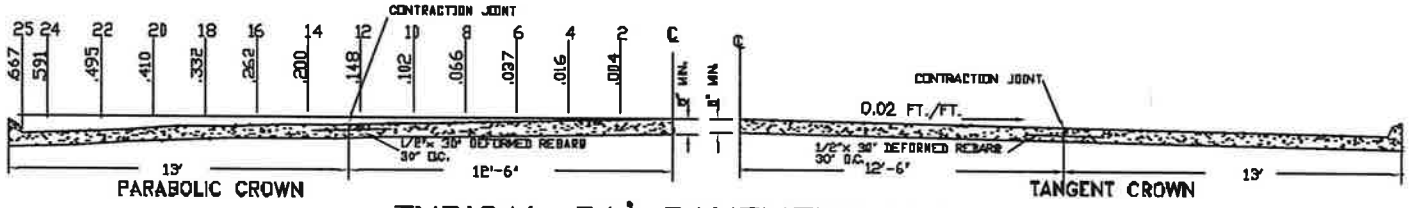
TYPICAL 41' PAVEMENT WIDTH

REVISED **6/4/98**

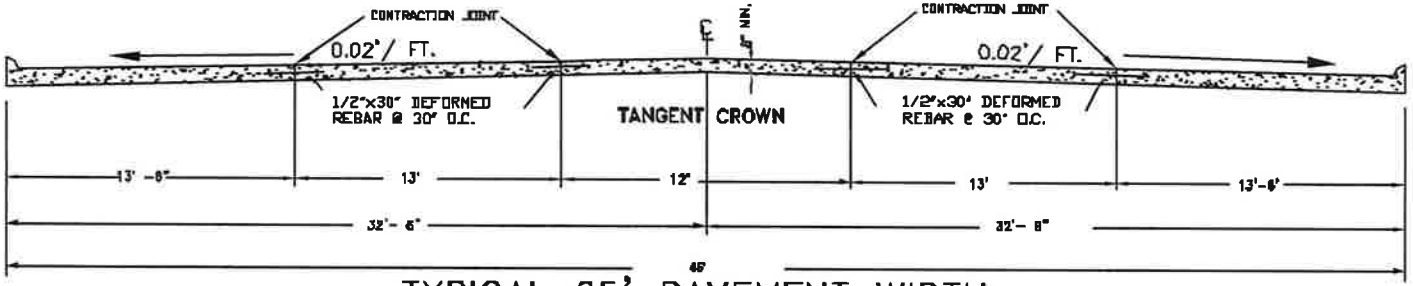
CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: 5/19/98 DRAWN BY L.D.C. APPVD. BY W.L.B.	STANDARD PAVEMENT CROSS SECTION	PLAN 101 1of2



TYPICAL 45' PAVEMENT WIDTH



TYPICAL 51' PAVEMENT WIDTH



TYPICAL 65' PAVEMENT WIDTH

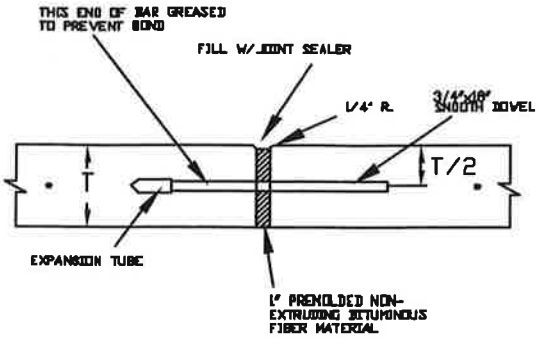
REVISED 6/4/98

CITY OF GRAND ISLAND
PUBLIC WORKS DEPARTMENT

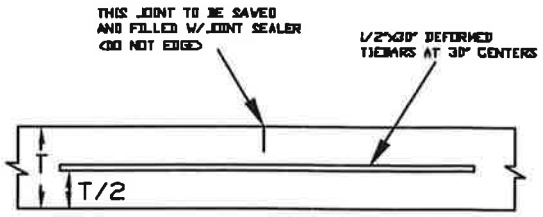
DATE: 5/19/98
DRAWN BY L.D.C.
APPVD. BY W.L.B.

STANDARD PAVEMENT CROSS SECTION

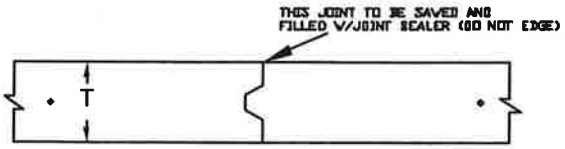
PLAN 101 2of2



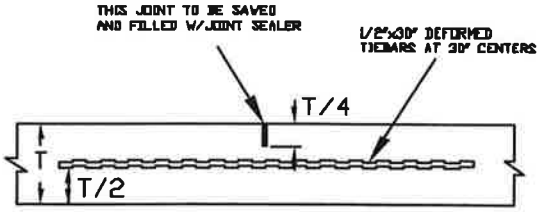
EXPANSION JOINT



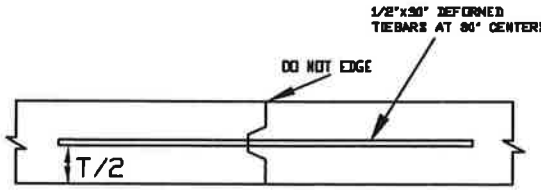
CONSTRUCTION JOINT



CONSTRUCTION JOINT
(KEYED)

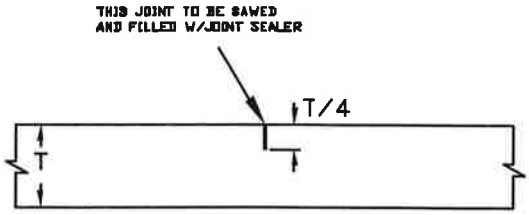


CONTRACTION JOINT



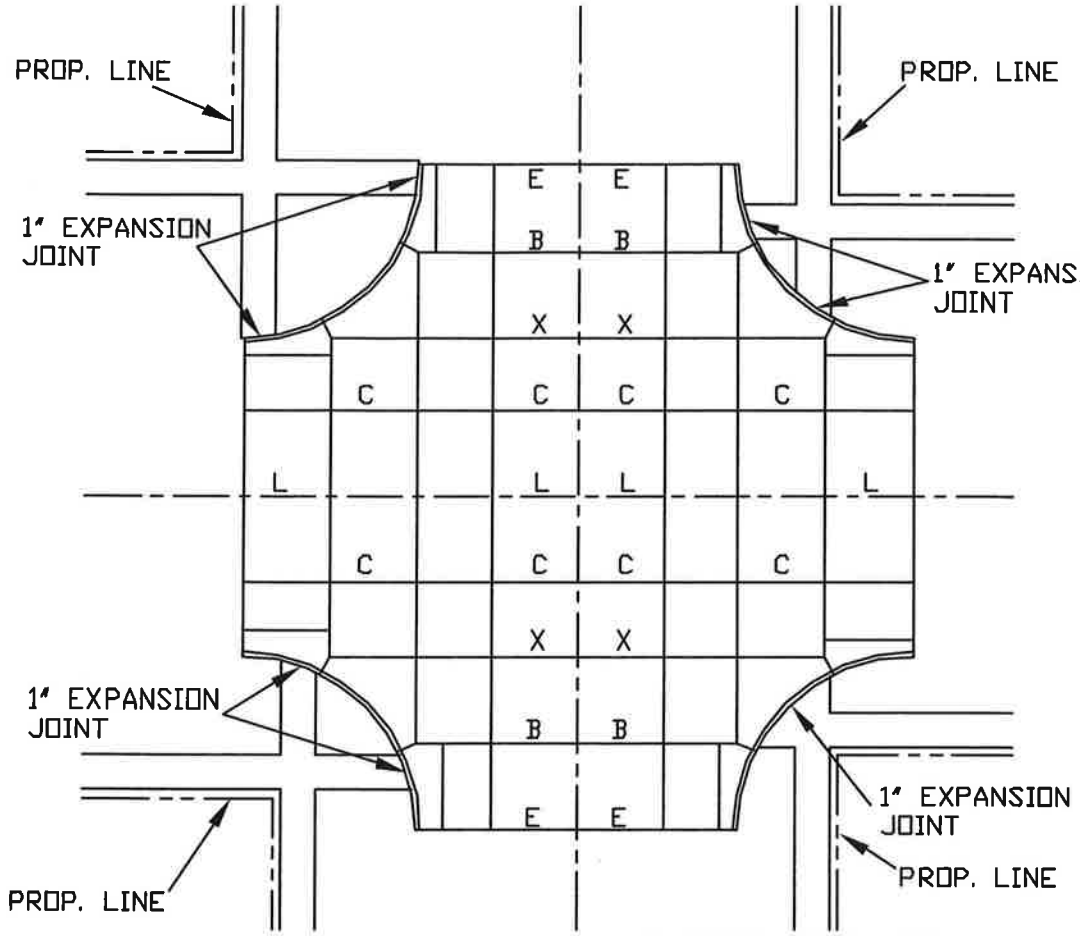
CONSTRUCTION JOINT

(WHEN PLACED FURTHER THAN 5' FROM ADJACENT JOINT)



CONTRACTION JOINT

CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: SEPT. 1970 DRAWN BY L.D.C. APPVD. BY	JOINT DETAILS	PLAN 102



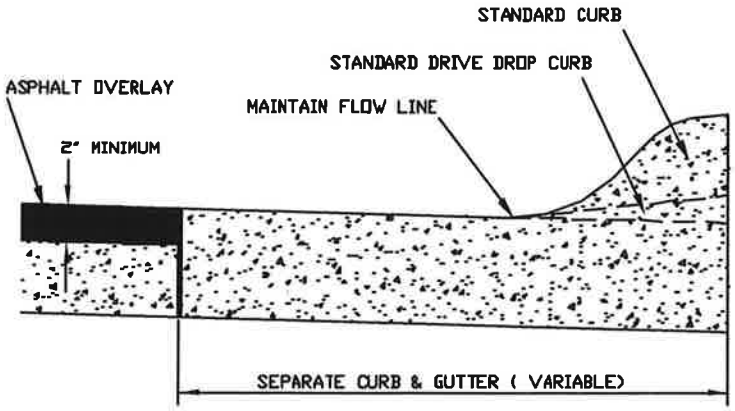
C=CONTRACTION JOINT (LONGITUDINAL)
L=LONGITUDINAL JOINT
X=CONSTRUCTION JOINT (KEYED)
OR
TRANSVERSE CONTRACTION JOINT
E=EXPANSION JOINT
B=TRANSVERSE CONTRACTION JOINT

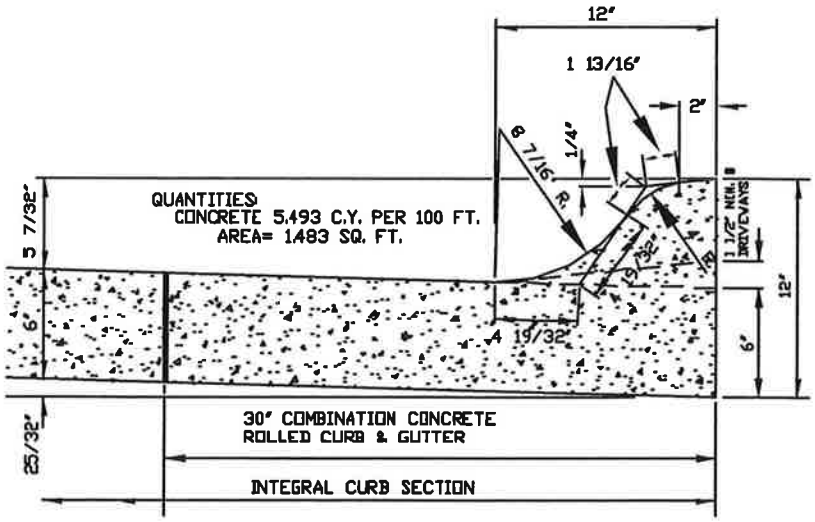
TYPICAL STREET INTERSECTION W/20' RADIUS

NOTE: 1. WHEN 51' PAVING IS CONTINUOUS THROUGH AN INTERSECTION, THE INTERSECTION AREA BETWEEN EXPANSION JOINTS SHALL BE ALL 7" P.C.C. PAVEMENT.

2. WHEN 51' PAVING BUTTS AGAINST A CROSS STREET, THE AREA BETWEEN THE EXPANSION JOINT AND THE CROSS STREET SHALL BE ALL 7" P.C.C. PAVEMENT.

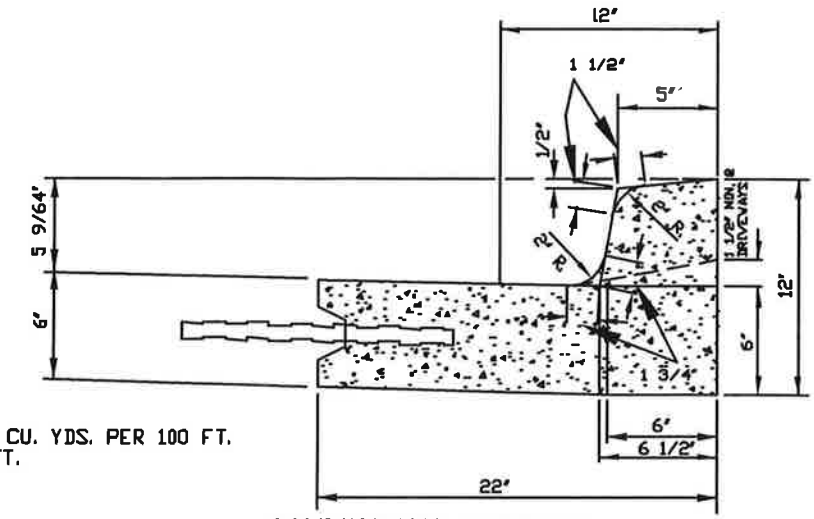
CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: AUG. 1970 DRAWN BY J.A.W. APPVD. BY	INTERSECTION JOINT DESIGN	PLAN 103





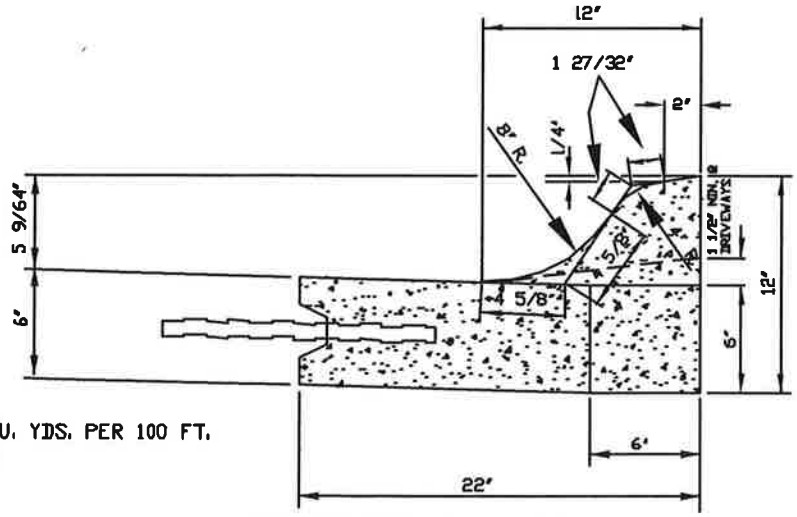
NOTE: DUE TO THE FLAT GRADE IN THE CITY OF GRAND ISLAND, NEBR. EXTREME CARE SHALL BE USED IN FINISH WORK TO ELIMINATE " LOW SPOTS" AND " POCKETS"

CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: MAY, 1981 DRAWN BY P.E.S. APPVD. BY W.B.	STANDARD CURB SECTIONS	PLAN 104



QUANTITIES
CONCRETE 4.284 CU. YDS. PER 100 FT.
AREA 1.157 SQ. FT.

COMBINATION CONCRETE
BATTERED CURB AND GUTTER



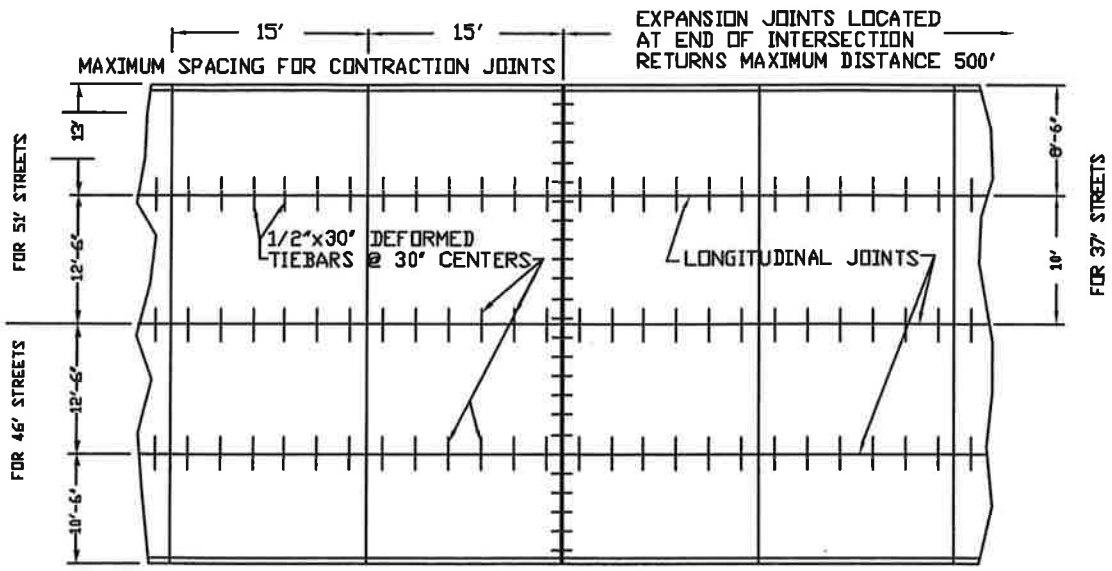
QUANTITIES
CONCRETE 4.303 CU. YDS. PER 100 FT.
AREA 1.162 SQ. FT.

COMBINATION CONCRETE
BATTERED CURB AND GUTTER

NOTE-
COMBINATION CONCRETE 22 INCH CURB AND GUTTER SHALL NOT BE USED UNLESS SPECIAL PERMISSION IS GRANTED BY THE CITY ENGINEER OR IT IS CALLED FOR ON PLANS.

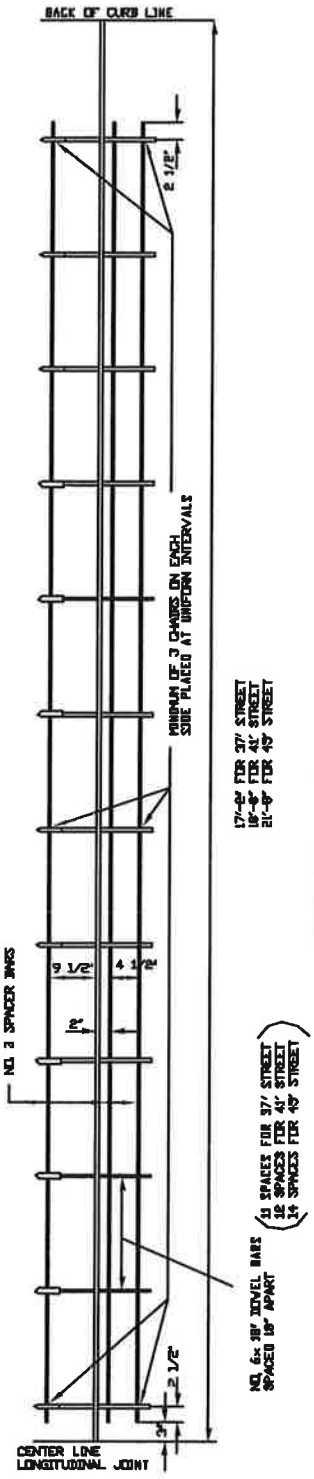
DUE TO THE FLAT GRADE IN THE CITY OF GRAND ISLAND, NEBR. EXTREME CARE SHALL BE USED IN FINISH WORK TO ELIMINATE 'LOW SPOTS' OR 'POCKETS'.

CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: JAN. 1963 DRAWN BY J.V.N. APPVD. BY	STANDARD CURB SECTIONS (SEE NOTE)	PLAN 105

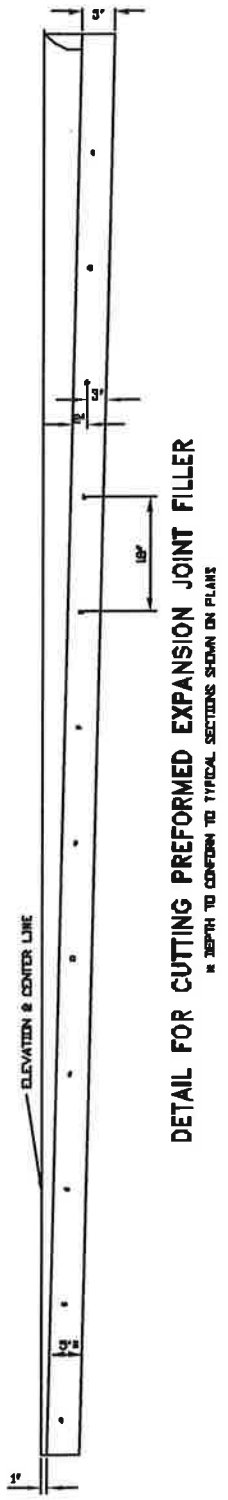


REINFORCING PLAN

CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: JULY, 1970 DRAWN BY J.W.A. APPVD. BY	JOINT LOCATION	PLAN 106

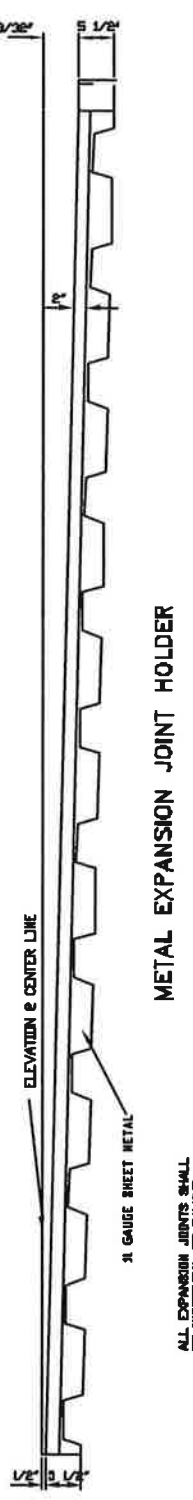


ASSEMBLY PLAN



DETAIL FOR CUTTING PREFORMED EXPANSION JOINT FILLER

* DEPTH TO CONFORM TO TYPICAL SECTIONS SHOWN ON PLANS



METAL EXPANSION JOINT HOLDER

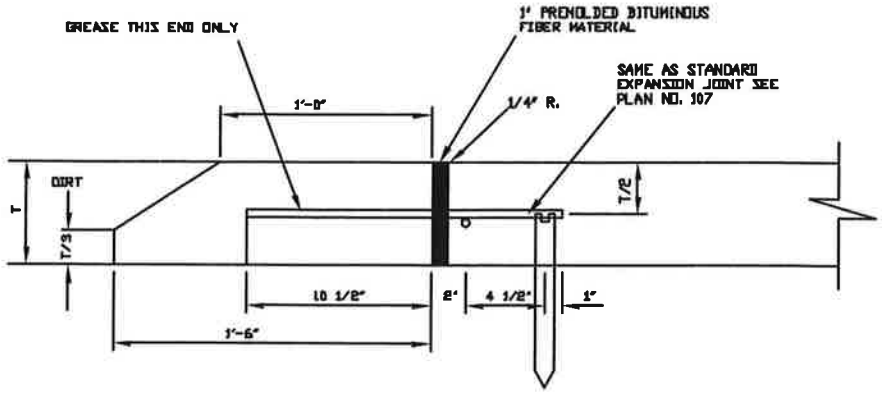
ALL EXPANSION JOINTS SHALL BE INCIDENTAL TO PAVING

CITY OF GRAND ISLAND
PUBLIC WORKS DEPARTMENT

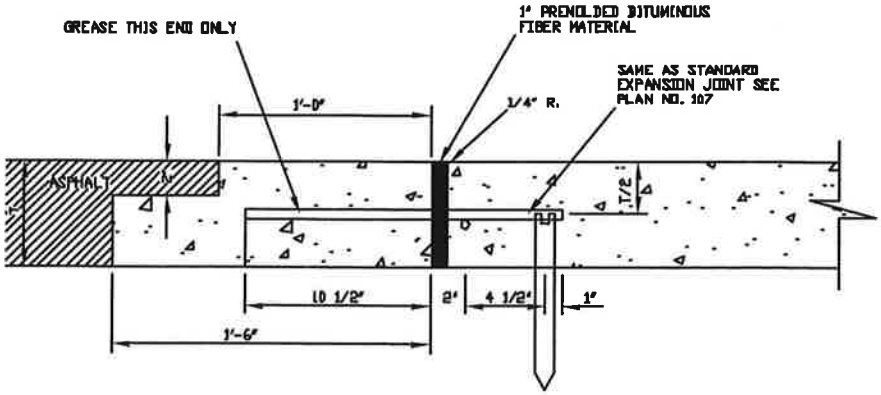
DATE: APRIL 1971
DRAWN BY L.D.C.
APPVD. BY

STANDARD EXPANSION JOINT ASSEMBLY

PLAN 107

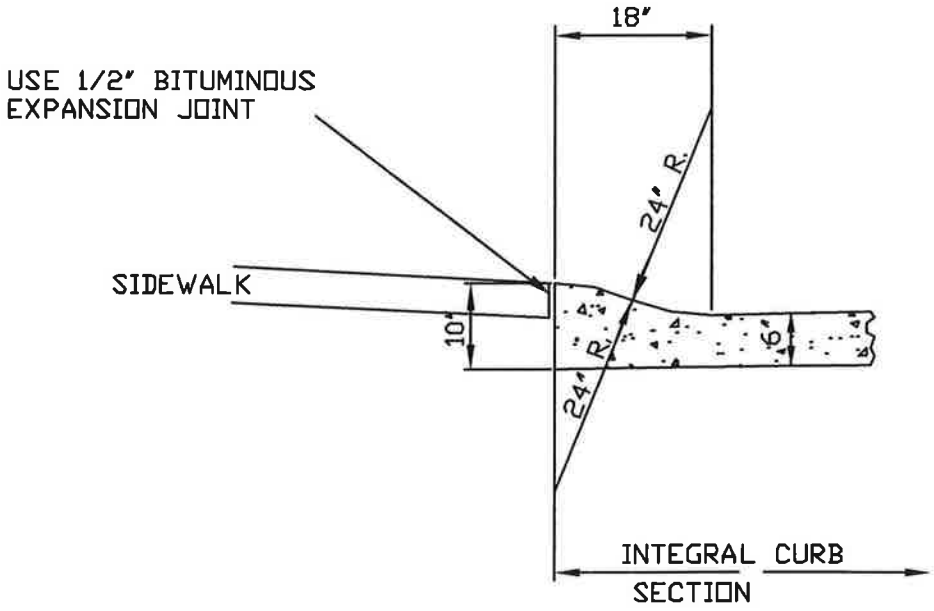


STANDARD CONCRETE HEADER FOR DIRT RETURN



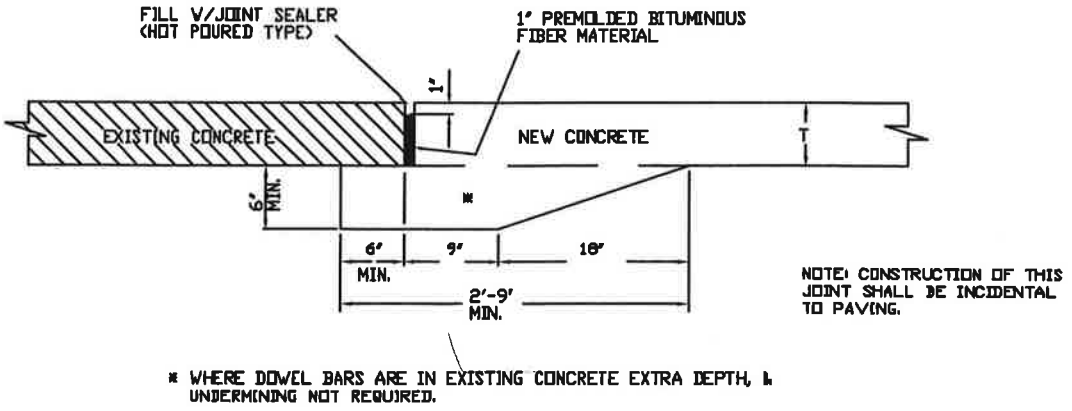
STANDARD CONCRETE HEADER FOR ASPHALT RETURN

CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: FEB. 1978 DRAWN BY L.D.C. APPVD. BY	STANDARD CONCRETE HEADER	PLAN 108



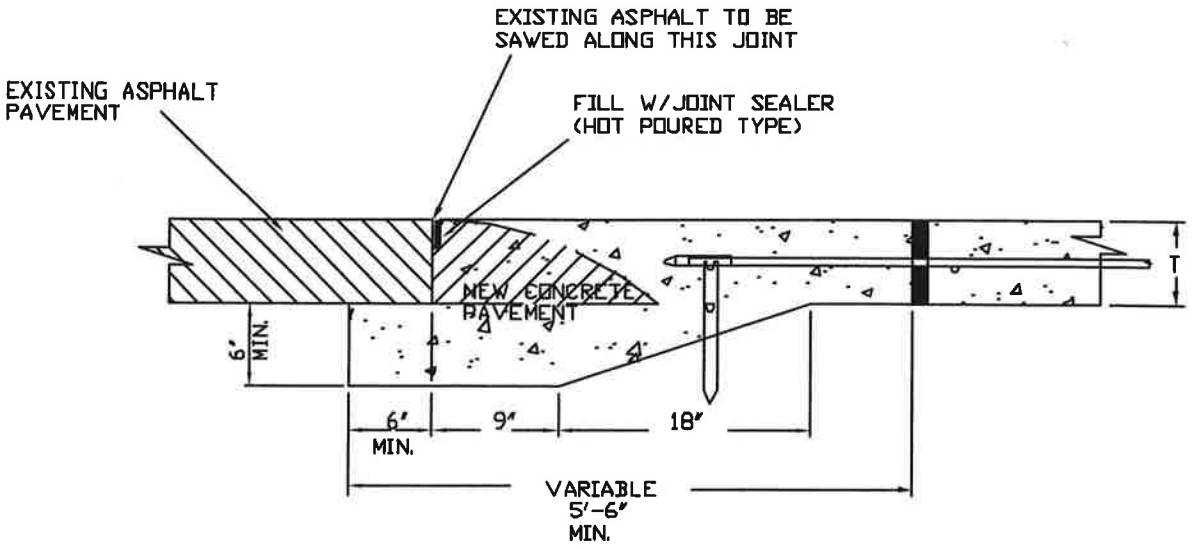
NOTE: DUE TO THE FLAT GRADE IN THE CITY OF GRAND ISLAND, NEBR. EXTREME CARE SHALL BE USED IN FINISH WORK TO ELIMINATE "LOW SPOTS" OR " POCKETS"

CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: JAN. 1976 DRAWN BY L.D.C. APPVD. BY	ROLL TYPE INTEGRAL CURB	PLAN 109



JOINT DETAILS AT EXISTING CONCRETE PAVEMENT

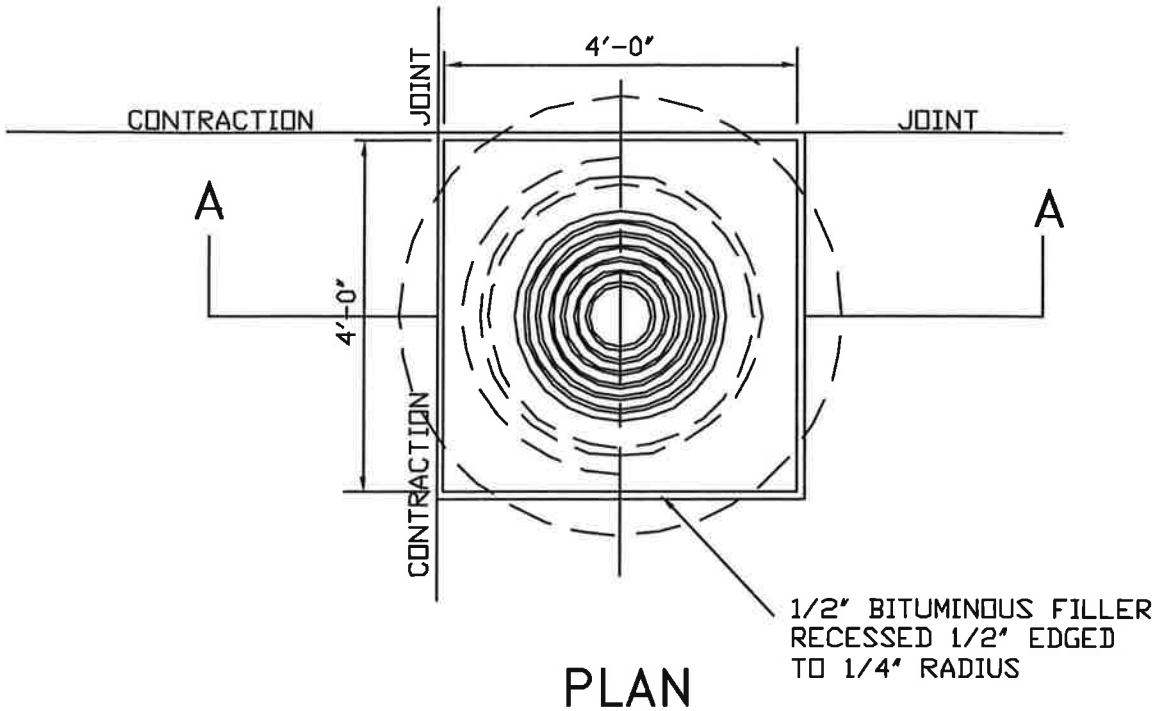
CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: JULY, 1970 DRAWN BY J.W.A. APPVD. BY	TRANSVERSE CONSTRUCTION JOINT	PLAN 111



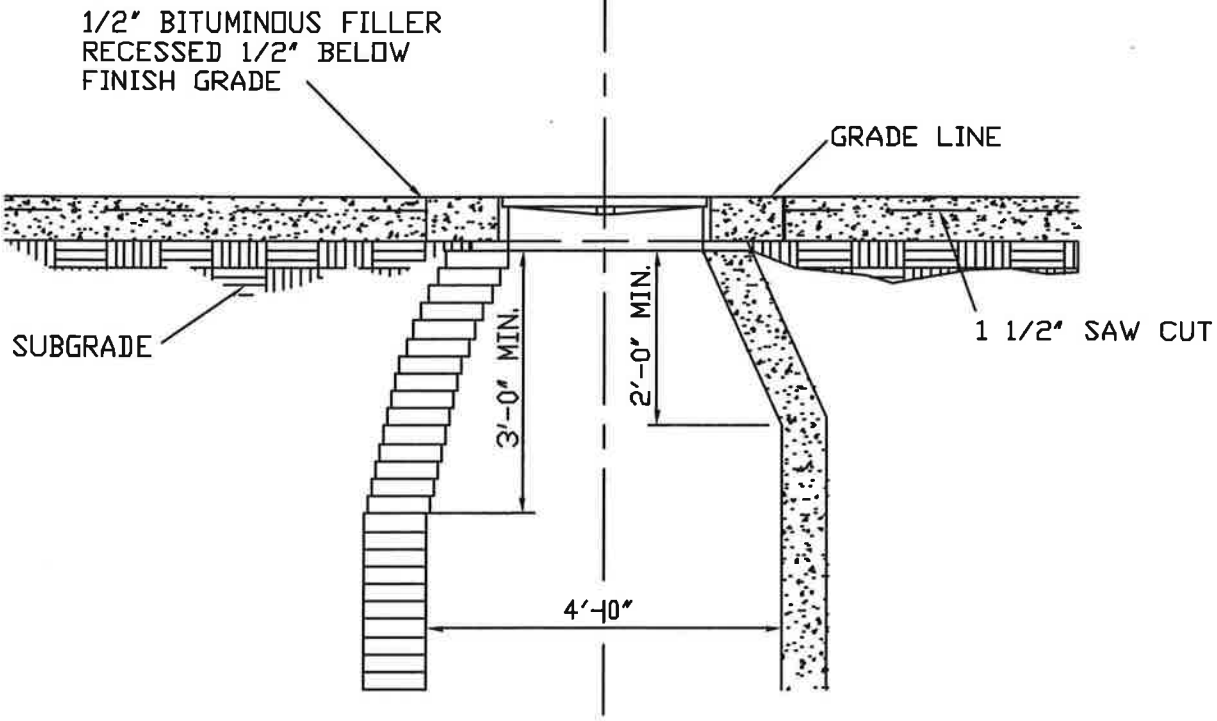
NOTE: THIS JOINT IS TO BE USED WHERE NEW CONCRETE PAVEMENT IS CONNECTED TO EXISTING ASPHALT PAVEMENT.

ALL SAWING AND EXPANSION JOINTS SHALL BE INCIDENTAL TO PAVING.

CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: DEC. 1962 DRAWN BY J.V.N. APPVD. BY	TRANSVERSE CONSTRUCTION JOINT	PLAN 112

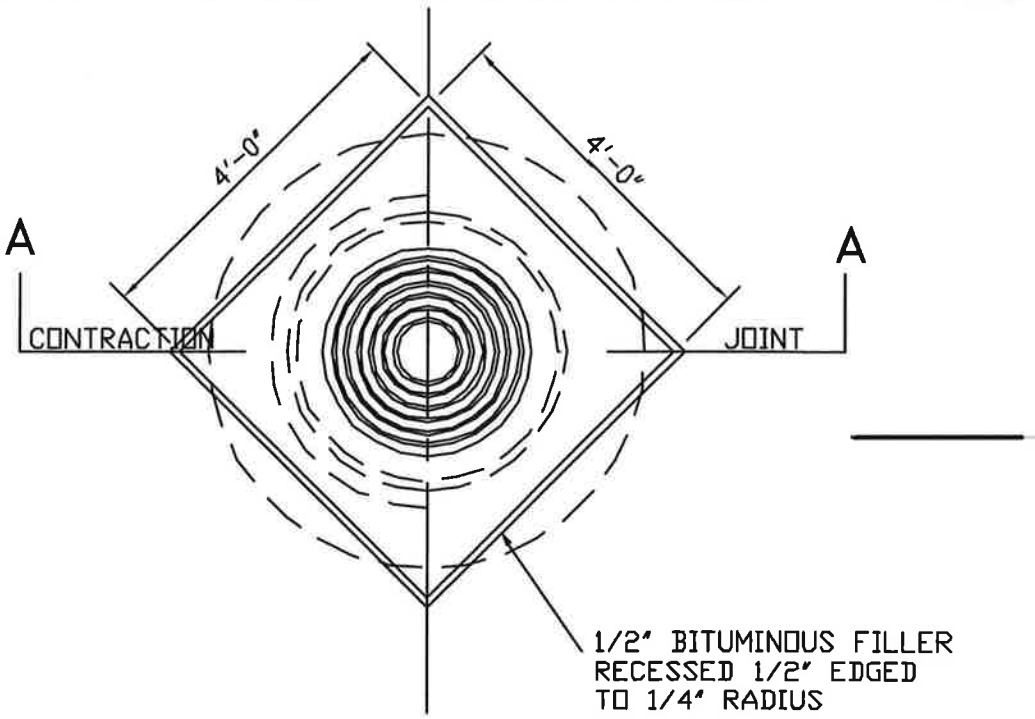


PLAN

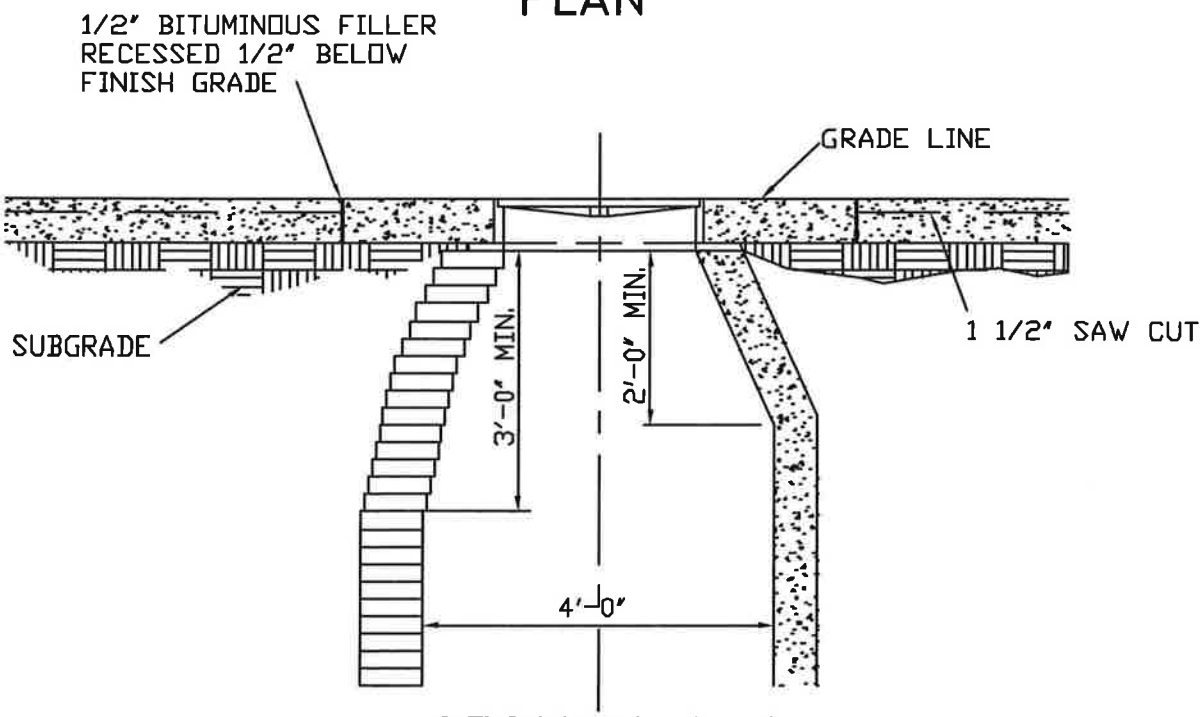


SECTION A–A

CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: AUG. 1978 DRAWN BY K.E.S. APPVD. BY A.E.R.	STANDARD MANHOLE EXPANSION	PLAN 114 SHEET 10F2



PLAN



SECTION A-A

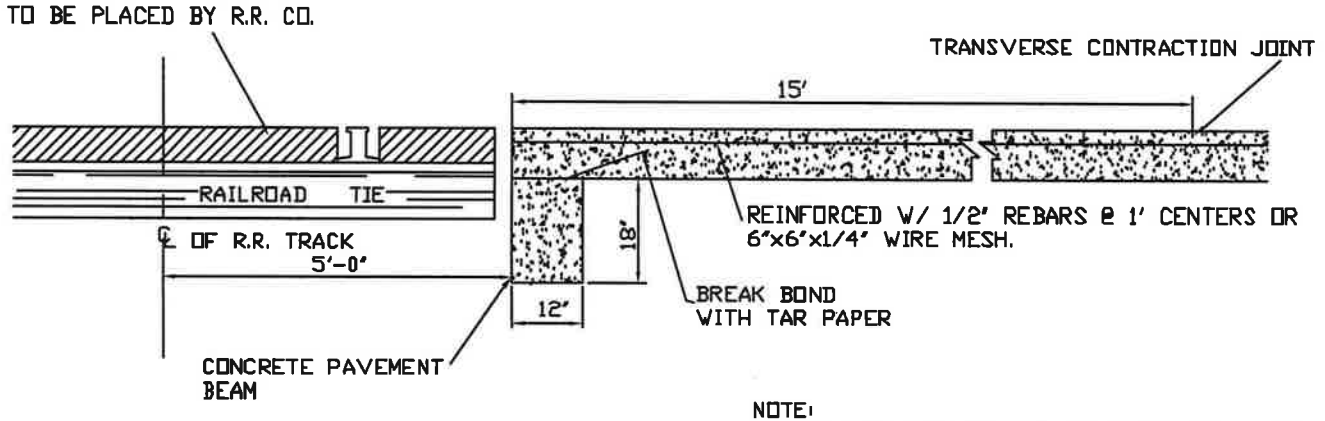
CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: AUG. 1978 DRAWN BY J.R.B. APPVD. BY A.E.R.	STANDARD MANHOLE EXPANSION	PLAN 114 SHEET 2OF2

CITY OF GRAND ISLAND
PUBLIC WORKS DEPARTMENT

DATE: JULY 1970
DRAWN BY J.W.A.
APPVD. BY

CONCRETE BEAM AT RAILROAD CROSSING

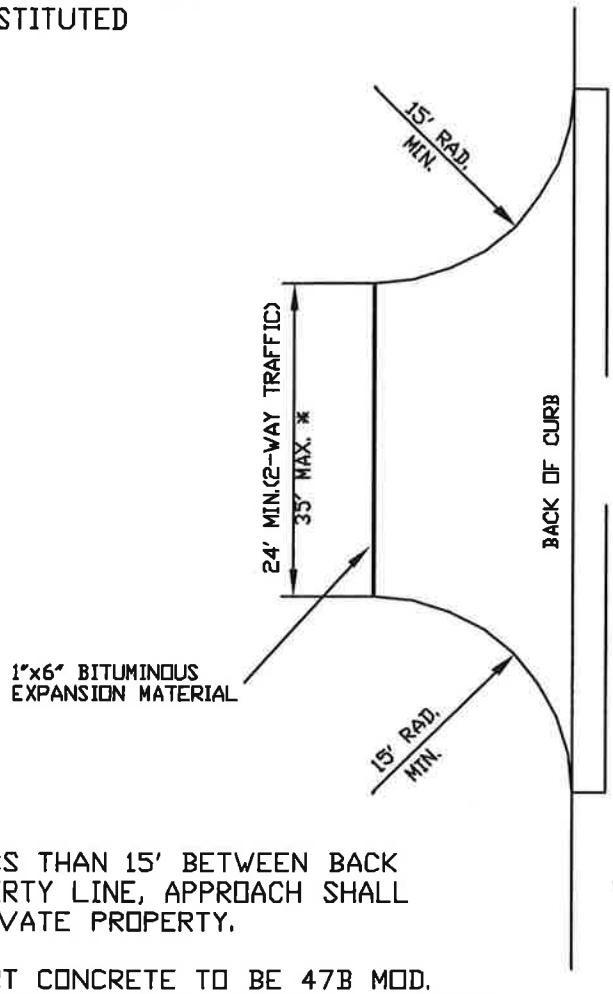
PLAN 115



NOTE:

1. THE 1/2" REBARS OR WIRE MESH SHALL BE INCIDENTAL TO PAVING.
2. PAYMENT FOR THE CONCRETE PAVEMENT BEAM SHALL BE PER LINEAR FOOT.

MINIMUM COMMERCIAL DRIVEWAY REQUIREMENTS
ALTERNATE NO.2 MAY BE SUBSTITUTED



NOTES:

1 IF THERE IS LESS THAN 15' BETWEEN BACK OF CURB & PROPERTY LINE, APPROACH SHALL EXTEND ONTO PRIVATE PROPERTY.

2 PORTLAND CEMENT CONCRETE TO BE 47B MOD. OR 6 1/2 SACK SAND-GRAVEL. MINIMUM THICKNESS TO BE 6 INCHES

3 CURBS CAN BE TAPERED FROM FULL CURB TO NO CURB IN THE RADIUS LENGTH OR BE MAINTAINED AS FULL CURB WHICHEVER FITS THE DESIGN ON PRIVATE PROPERTY

* WIDER OPENING MAY BE CONSTRUCTED IF APPROVED BY DIRECTOR OF PUBLIC WORKS

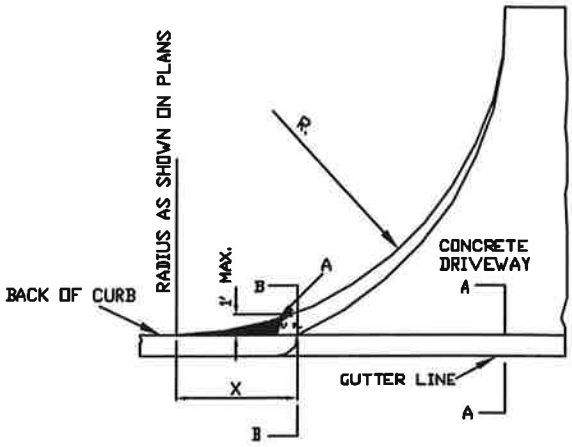
ALTERNATE NO.1

REVISED 4/8/96

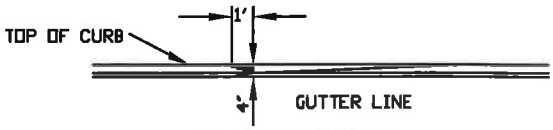
CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: 2/7/89 DRAWN BY P.E.S. APPVD. BY W.L.B.	STANDARD FOR COMMERCIAL DRIVEWAY CONSTRUCTION	PLAN 116 1of3

R	X	A
5	3.32	0.49
6	3.61	0.57
7	3.87	0.64
8	4.12	0.70
9	4.36	0.79
10	4.58	0.84
11	4.80	0.85
12	5.00	0.98
13	5.20	1.07
14	5.39	1.14
15	5.57	1.22
16	5.75	1.27
17	5.92	1.29
18	6.08	1.31
19	6.25	1.33
20	6.40	1.40

EXCLUDE AREA "A" WHEN COMPUTING SQ. YDS. OF CONCRETE DRIVEWAY BACK OF CURB.

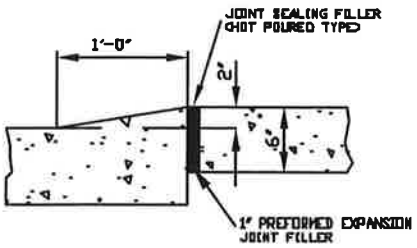


PLAN

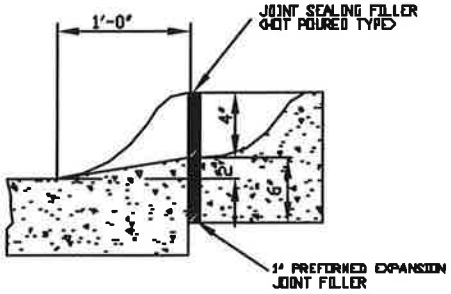


ELEVATION

NOTES:
1. IF THERE IS LESS THAN 15' BETWEEN BACK OF CURB & PROPERTY LINE, APPROACH SHALL EXTEND ONTO PRIVATE PROPERTY.
2. PORTLAND CEMENT CONCRETE TO BE 47B MOD. OR 6 1/2 SACK SAND-GRAVEL MINIMUM THICKNESS TO BE 6 INCHES.
3. CURBS CAN BE TAPERED FROM FULL CURB TO NO CURB IN THE RADIUS LENGTH OR BE MAINTAINED AS FULL CURB WHICHEVER FITS DESIGN ON PRIVATE PROPERTY.



SECTION A-A



SECTION B-B

MINIMUM COMMERCIAL DRIVEWAY REQUIREMENTS.
ALTERNATE NO. 1 MAY BE SUBSTITUTED.

ALTERNATE NO. 2

CITY OF GRAND ISLAND
PUBLIC WORKS DEPARTMENT

DATE: 2/7/89
DRAWN BY L.D.C.
APPVD. BY W.L.B.

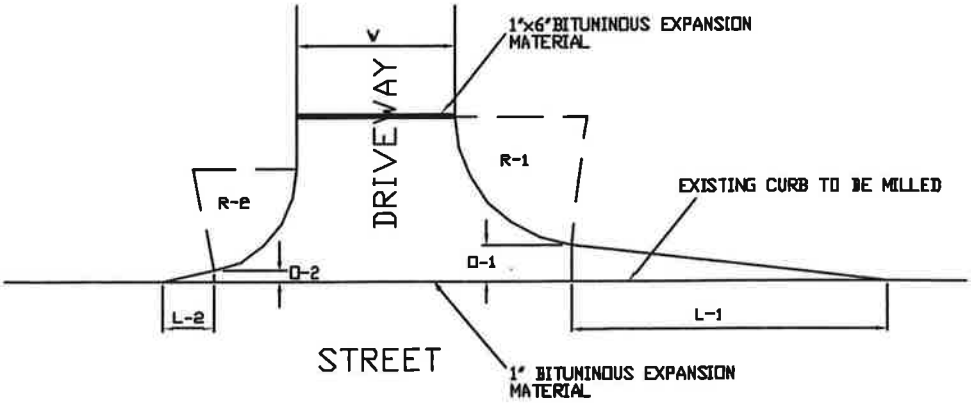
STANDARD FOR COMMERCIAL DRIVEWAY CONSTRUCTION

PLAN 116
2 of 3

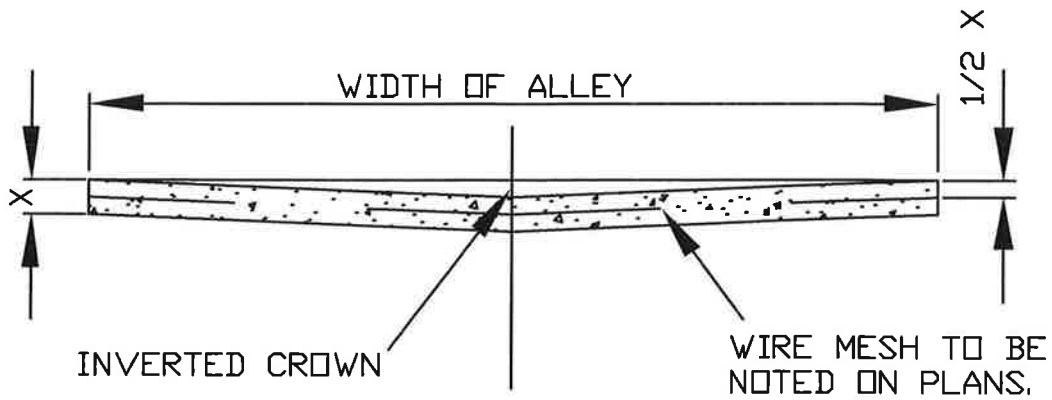
MINIMUM DIMENSION (FEET)

STREET CLASSIFICATION	DRIVE APPROACH					DRIVE DEPARTURE			
	W	R-1	L-1	D-1		W	R-2	L-2	D-2
STATE HIGHWAY	35 40	20 20	90 90	7 7		35 40	20 20	10 10	2 2
CITY ARTERIAL	30 35	25 20	60 60	7 7		30 35	20 15	10 10	2 2

NOTES:
1. DRIVE APPROACH DATA MAY BE USED FOR DRIVE DEPARTURE ALSO TO MAKE IMPROVEMENT SYMMETRICAL IF DESIRED.
2. PORTLAND CEMENT CONCRETE TO BE 47B MODIFIED OR 6 1/2 SACK SAND-GRAVEL. MINIMUM THICKNESS TO BE 6 INCH.
3. CURB CAN BE TAPERED FROM FULL CURB TO NO CURB IN THE RADIUS LENGTH OR BE MAINTAINED AS FULL CURB WHICHEVER FITS THE DESIGN ON PRIVATE PROPERTY.



CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: MARCH 1981 DRAWN BY L.D.C. APPVD. BY W.L.B.	OPTION FOR COMMERCIAL DRIVEWAY CONSTRUCTION	PLAN 116 3of3



TYPICAL ALLEY SECTION

NOTES:

1. X= THICKNESS OF PAVEMENT.
2. COMMERCIAL AREA PAVEMENT 8" CONCRETE.
3. RESIDENTIAL AREA PAVEMENT 6" CONCRETE.
4. REINFORCING AND CROWN TO BE NOTED ON PLANS.
5. 16' ALLEY PAVEMENT 4" OR 0.33' INVERTED CROWN.
6. 12' ALLEY PAVEMENT 3" OR 0.25' INVERTED CROWN.

CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: DEC. 1966 DRAWN BY K.G.N. APPVD. BY	TYPICAL ALLEY SECTION	PLAN 117

CITY OF GRAND ISLAND
PUBLIC WORKS DEPARTMENT

DATE: DEC. 1985
DRAWN BY L.D.C.
APPVD. BY

STANDARD
ALLEY
RETURN

PLAN
118

CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: DEC. 1966 DRAWN BY K.G.N. APPVD. BY	STANDARD ALLEY RETURN	PLAN 119

NOTE: DRIVEWAY OPENING AT CURB SHALL NOT EXCEED 26'
ALL SAWING AND EXPANSION JOINTS SHALL BE INCIDENTAL TO DRIVEWAY CONSTRUCTION
THE MIN. CEMENT CONTENT SHALL BE 6 1/2 SACKS PER CU. YD. OF CONC.

ALL CURB SHALL BE MILLED (NO SAWING OR REMOVAL)

CITY OF GRAND ISLAND
PUBLIC WORKS DEPARTMENT

DATE: JAN. 1967
DRAWN BY K.G.N.
APPVD. BY

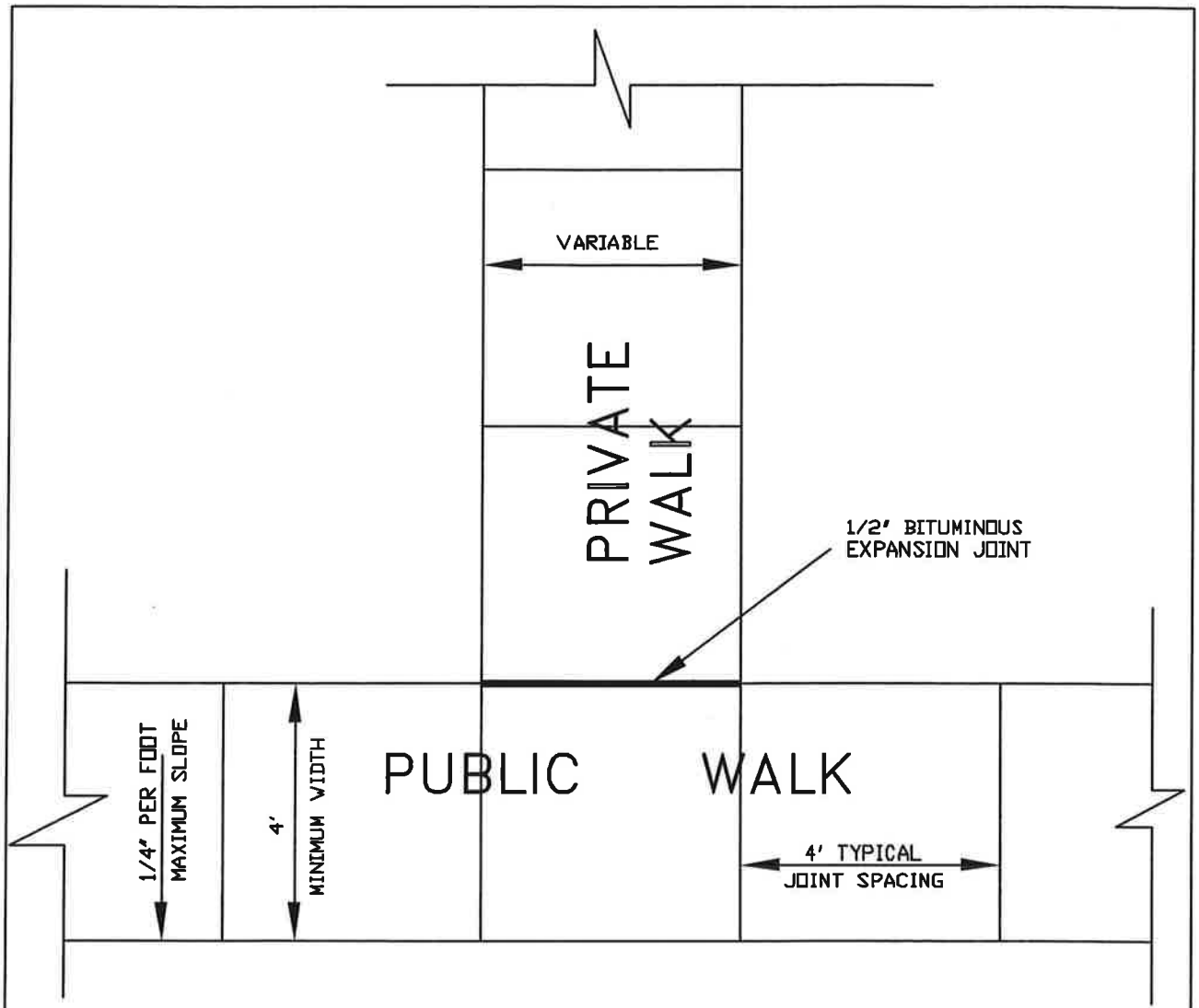
DRIVEWAY OPENING

PLAN 120

NOTE: DRIVEWAY OPENING AT CURB SHALL NOTE EXCEED 26'
ALL SAWING AND EXPANSION JOINTS SHALL BE INCIDENTAL TO DRIVEWAY CONSTRUCTION.
THE MIN. CEMENT CONTENT SHALL BE 6 1/2 SACKS CEMENT PER CU. YD. OF CONCRETE.

ALL CURB SHALL BE MILLED (NO SAWING OR REMOVAL)

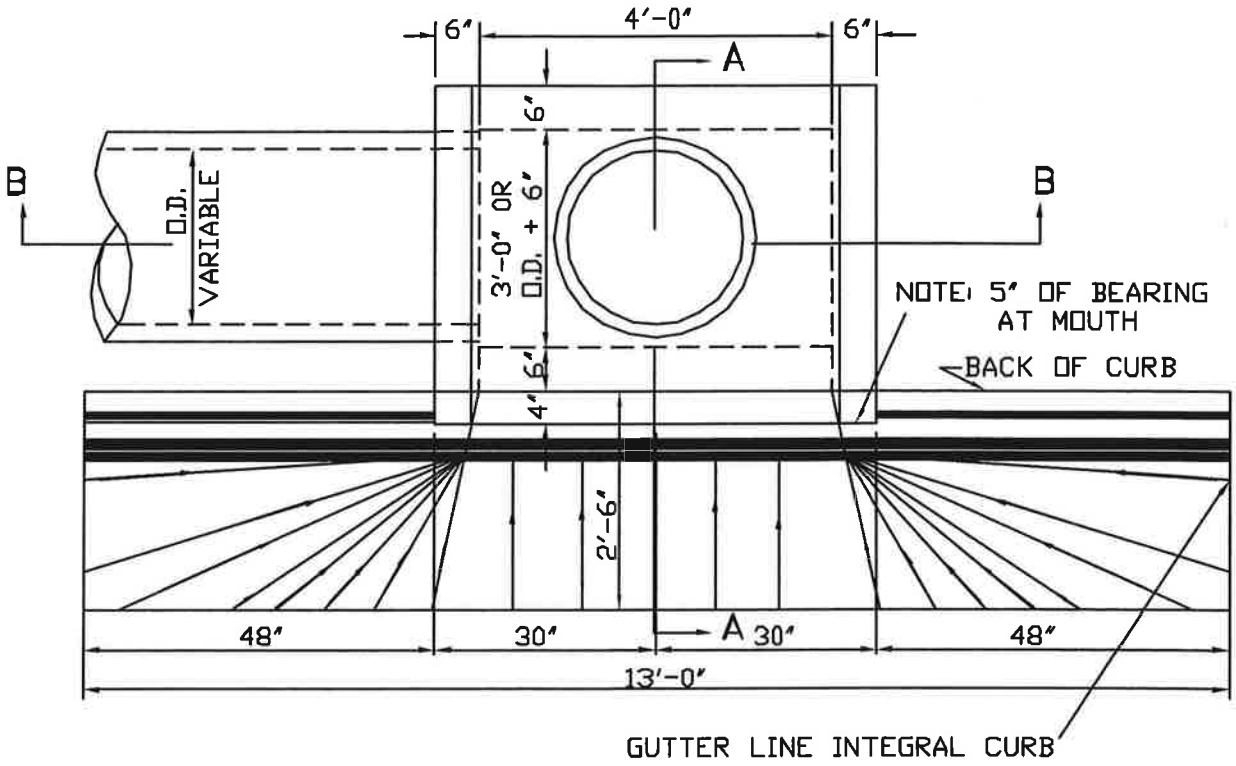
CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: JAN. 1967 DRAWN BY K.G.N. APPVD. BY	DRIVEWAY OPENING	PLAN 120-A



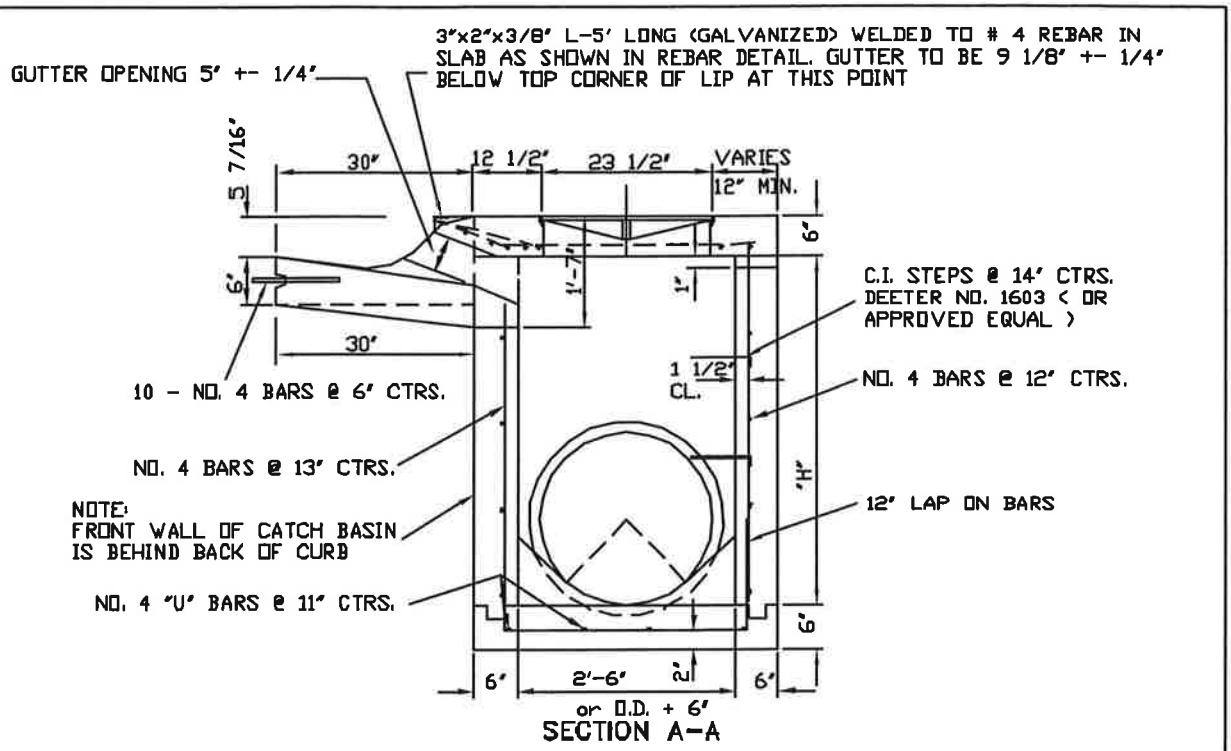
NOTE: ALL EXPANSION JOINTS SHALL BE INCIDENTAL TO SIDEWALK CONSTRUCTION.

REVISED 8/6/02

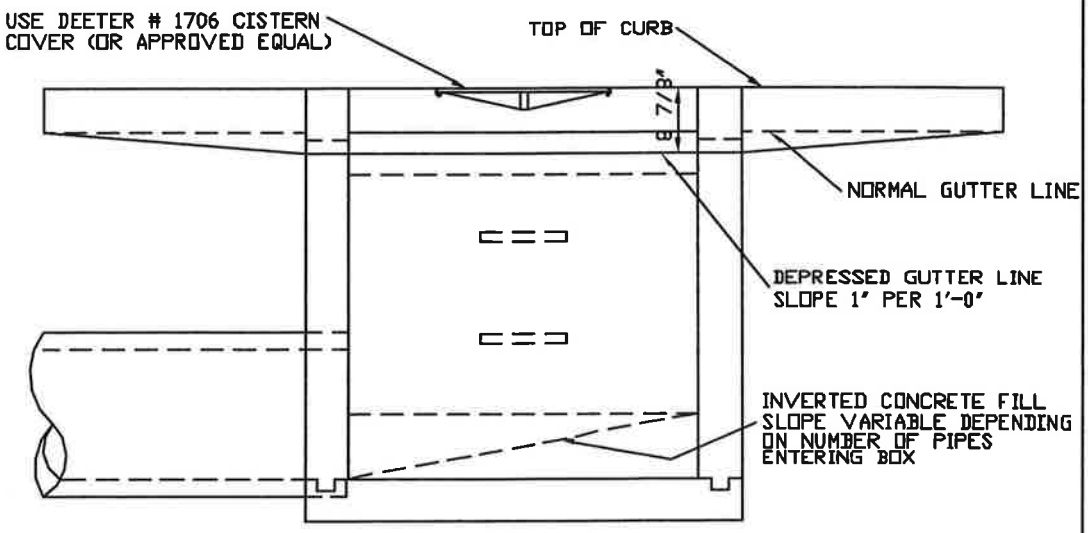
CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: FEB. 1964 DRAWN BY J.V.N. APPVD. BY	CONVENTIONAL SIDEWALK	PLAN 123



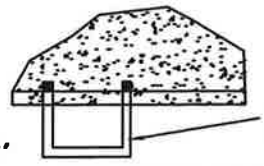
CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: JAN. 1976 DRAWN BY L.D.C. APPVD. BY	STANDARD TYPE "D" MODIFIED INLET	PLAN 126-A 1 OF 4



SECTION A-A



SECTION B-B



NOTE:
STEPS TO BE MIN. 18' FROM FLOOR & MIN. 18' DOWN FROM TOP

CAST IRON STEP DEETER NO. 1603 (OR APPROVED EQUAL)

STEP INSTALLATION DETAIL

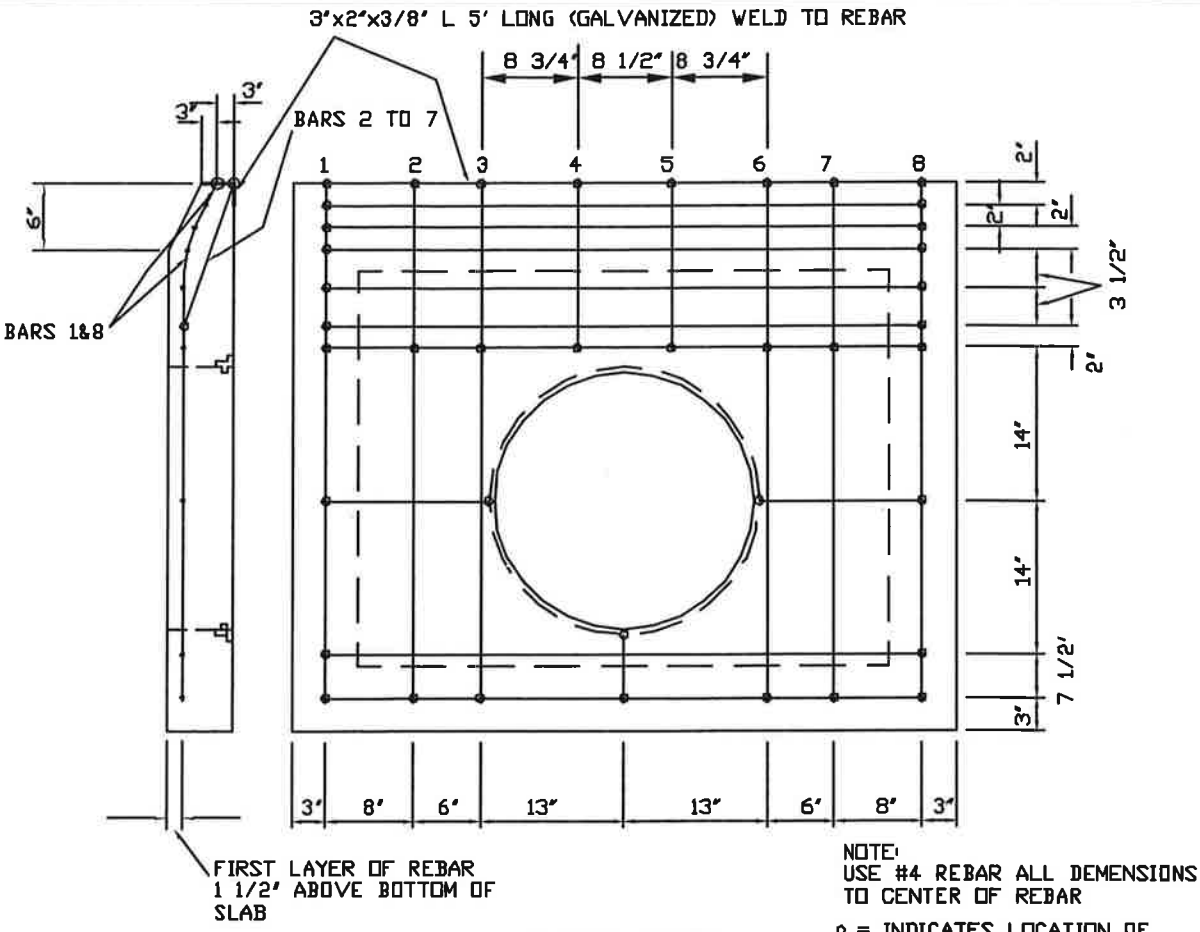
REVISED 9/9/81

CITY OF GRAND ISLAND
PUBLIC WORKS DEPARTMENT

DATE: JAN. 1978
DRAWN BY L.D.C.
APPVD. BY

STANDARD
TYPE "D" MODIFIED INLET

PLAN 126-A
2OF4



REBAR DETAIL

BARREL ABOVE F.L.	TOP OF INLET QUANTITIES		BARREL W/FLOOR QUANTITIES		C.I. STEPS
"H"	LBS. STEEL	C.Y. CONC.	LBS. STEEL	C.Y. CONC.	
2'-0"	45.7	.25	86.68	.84	0
2'-6"	45.7	.25	97.12	1.01	0
3'-0"	45.7	.25	117.37	1.17	1
3'-6"	45.7	.25	127.71	1.34	1
4'-0"	45.7	.25	148.06	1.50	2
4'-6"	45.7	.25	158.40	1.67	2
5'-0"	45.7	.25	178.74	1.83	3
5'-6"	45.7	.25	189.09	1.99	3

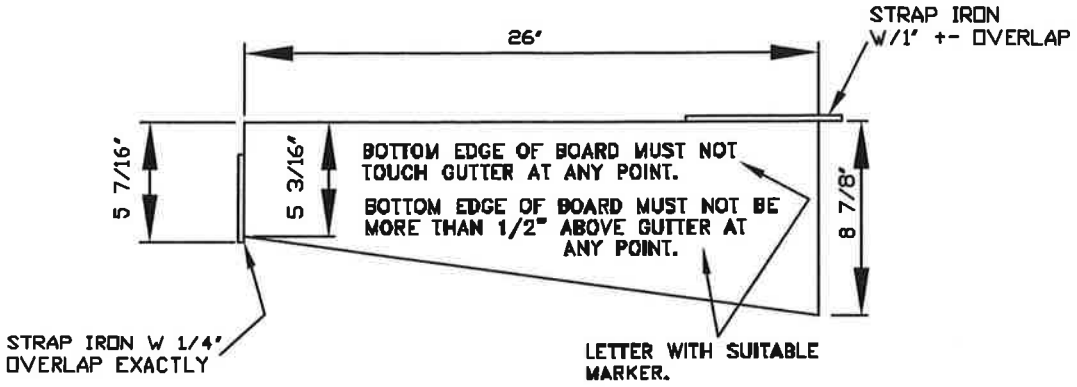
CITY OF GRAND ISLAND
PUBLIC WORKS DEPARTMENT

DATE: JAN. 1976
DRAWN BY L.D.C.
APPVD. BY

STANDARD
TYPE "D" MODIFIED
INLET

PLAN
126-A
3OF4

AUTOMATIC GUTTER LINE REJECTOR

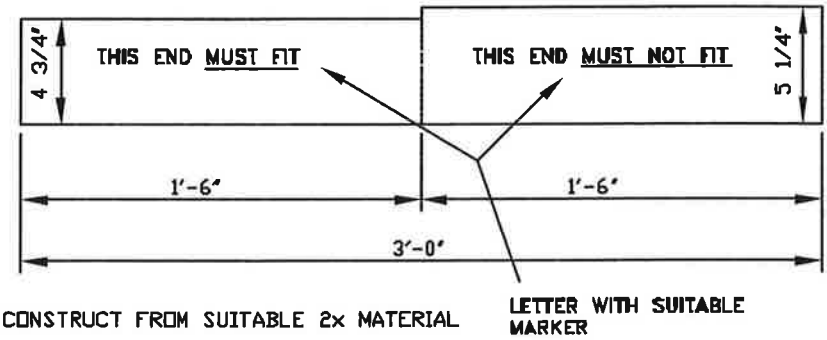


NOTE:

HANG RIGHT END OVER LIP OF INLET LIP LET LEFT END REST ON PAVEMENT.

CONSTRUCT FROM SUITABLE 2x MATERIAL ATTACH STRAP IRON WITH SUITABLE FASTNERS.

AUTOMATIC THROAT REJECTOR



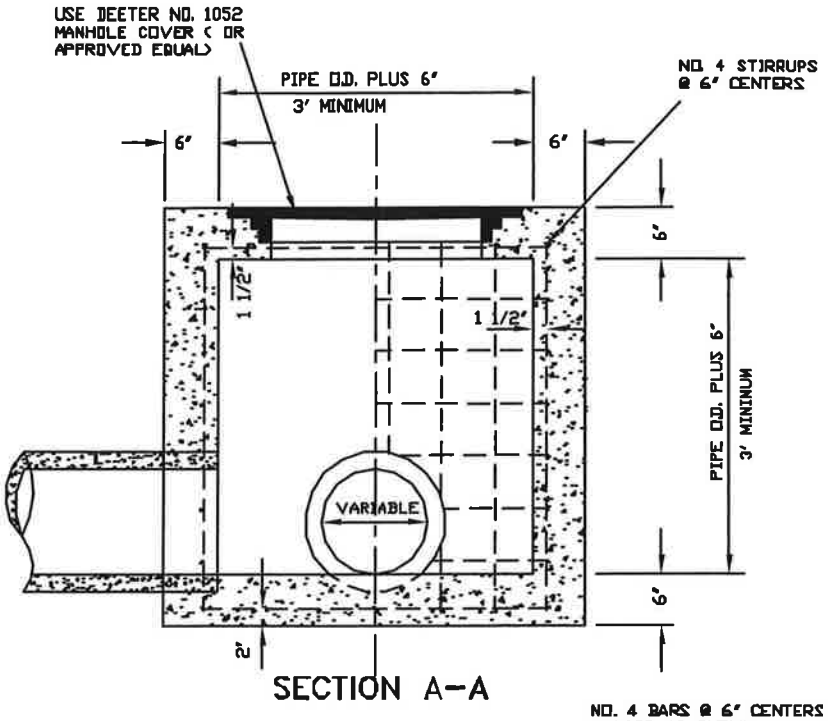
CONSTRUCT FROM SUITABLE 2x MATERIAL

NOTE:

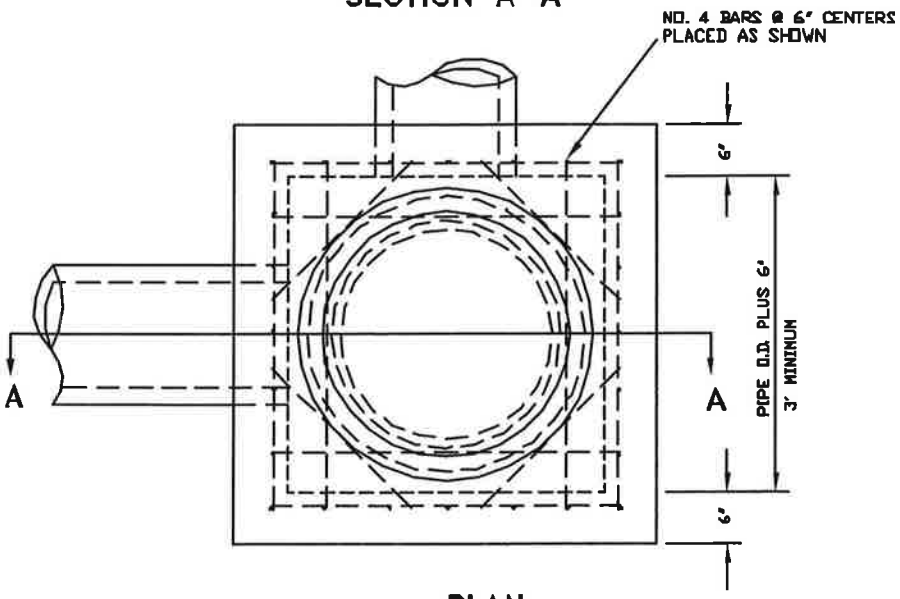
LEFT END OF BOARD MUST PASS FREELY THROUGH THROAT. RIGHT END OF BOARD MUST NOT CLEAR THROAT.

CONTRACTOR MUST CHECK GUTTER & THROAT OF TYPE "D" MODIFIED INLETS WITH ABOVE BOARDS WHILE CONCRETE IS STILL WORKABLE.

CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: JAN. 1978 DRAWN BY D.L.J. APPVD. BY	STANDARD TYPE "D" MODIFIED INLET	PLAN 126-A 4OF4



SECTION A-A



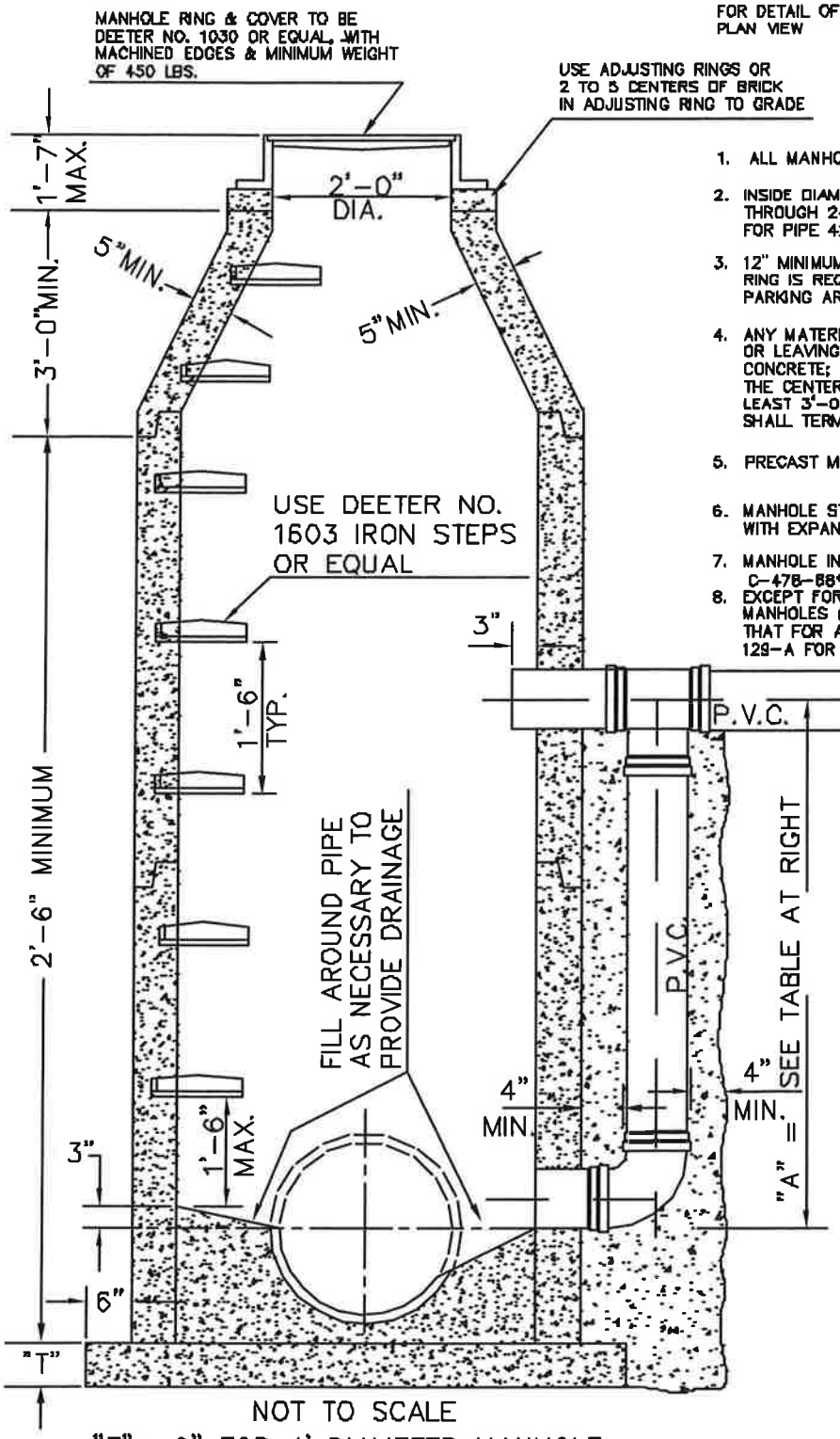
PLAN

REVISED 9/9/81, 9/11/84

CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: FEB. 1964 DRAWN BY J.V.N. APPVD. BY	JUNCTION BOX	PLAN 128

NOTE:

SEE STANDARD PLAN NO. 130-A FOR DETAIL OF RING & COVER & PLAN VIEW



NOT TO SCALE

"T"= 6" FOR 4' DIAMETER MANHOLE

"T"= 8" FOR 5" DIAMETER MANHOLE

MANHOLE NOTES

1. ALL MANHOLES RINGS TO BE SET IN MORTAR.
2. INSIDE DIAMETER OF MANHOLES TO BE 4'-0" FOR PIPE THROUGH 24", 5'-0" FOR PIPE 27" THROUGH 36", & 6'-0" FOR PIPE 42" THROUGH 48" IN SIZE &7'-0" FOR 54" PIPE.
3. 12" MINIMUM THICKNESS ADJUSTING RINGS UNDER MANHOLE RING IS REQUIRED WHEN MANHOLE IS LOCATED IN ROADWAYS, PARKING AREAS, SIDEWALKS, ETC.
4. ANY MATERIAL EXCAVATED BENEATH PIPE ENTERING OR LEAVING MANHOLES SHALL BE REPLACED WITH CONCRETE; SUCH CONCRETE FILL SHALL EXTEND TO THE CENTER OF THE PIPE FOR A DISTANCE OF AT LEAST 3'-0" FROM THE FACE OF THE MANHOLE AND SHALL TERMINATE AT A BELL
5. PRECAST MANHOLE CIRCULAR SECTIONS TO BE PER A.S.T.M.
6. MANHOLE STEPS IN PRECAST MANHOLES TO BE GROUTED WITH EXPANDING GROUT.
7. MANHOLE INVERTS SHALL BE POURED CONCRETE. * C-478-68*
8. EXCEPT FOR DROP ASSEMBLY, THE CONSTRUCTION OF DROP MANHOLES (INCLUDING MATERIALS) SHALL BE SIMILAR TO THAT FOR A STD. MANHOLE. SEE STD. PLAN NO. 129 & 129-A FOR DROP MANHOLE DETAILS

I.D. INCOMING PIPE	I.D. DROP PIPE	"A" MINIMUM
8"	8"	2'-0"
10"	10"	2'-0"
12"	12"	2'-0"
15"	12"	2'-0"
18"	15"	2'-2"
21"	18"	2'-7"
24"	18"	2'-9"
27"	18"	2'-10"
30"	18"	3'-1"
36"	18"	3'-4"
42"	AS DIRECTED BY CITY ENGINEER	
48"		

* ALL CONCRETE TO CONFORM TO DIVISION II CONCRETE PAVING SPECIFICATIONS.

CITY OF GRAND ISLAND
PUBLIC WORKS DEPARTMENT

DATE:
DRAWN BY: P.E.S.
APPVD. BY:

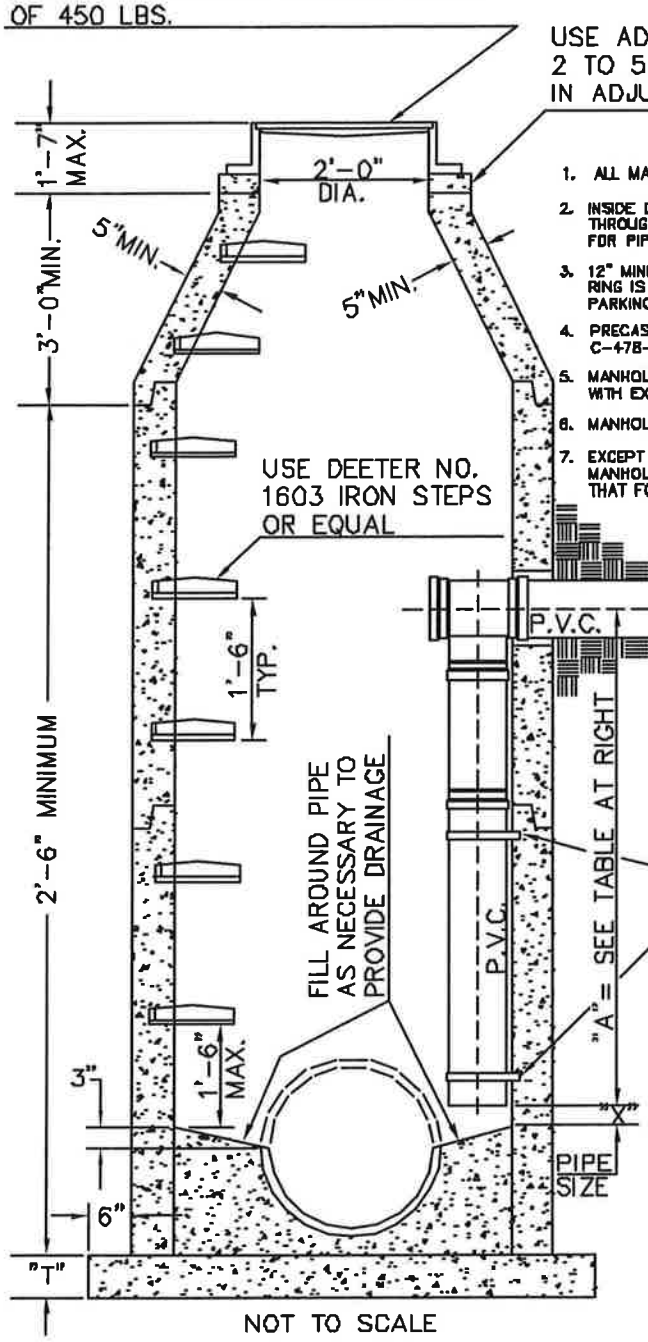
STANDARD
OUTSIDE DROP
MANHOLE

PLAN
129

MANHOLE RING & COVER TO BE DEETER NO. 1030 OR EQUAL, WITH MACHINED EDGES & MINIMUM WEIGHT OF 450 LBS.

SEE STANDARD PLAN NO. 130-A FOR DETAIL OF RING & COVER & PLAN VIEW

USE ADJUSTING RINGS OR 2 TO 5 CENTERS OF BRICK IN ADJUSTING RING TO GRADE



NOT TO SCALE

"T" = 6" FOR 4' DIAMETER MANHOLE
"T" = 8" FOR 5" DIAMETER MANHOLE

MANHOLE NOTES

1. ALL MANHOLES RINGS TO BE SET IN MORTAR.
2. INSIDE DIAMETER OF MANHOLES TO BE 4'-0" FOR PIPE THROUGH 24", 5'-0" FOR PIPE 27" THROUGH 36", & 6'-0" FOR PIPE 42" THROUGH 48" IN SIZE.
3. 12" MINIMUM THICKNESS ADJUSTING RINGS UNDER MANHOLE RING IS REQUIRED WHEN MANHOLE IS LOCATED IN ROADWAYS, PARKING AREAS, SIDEWALKS, ETC.
4. PRECAST MANHOLE CIRCULAR SECTIONS TO BE PER A.S.T.M. C-478-68"
5. MANHOLE STEPS IN PRECAST MANHOLES TO BE GROUTED WITH EXPANDING GROUT.
6. MANHOLE INVERTS SHALL BE POURED CONCRETE."
7. EXCEPT FOR DROP ASSEMBLY, THE CONSTRUCTION OF DROP MANHOLES INCLUDING MATERIALS SHALL BE SIMILAR TO THAT FOR A STANDARD MANHOLE

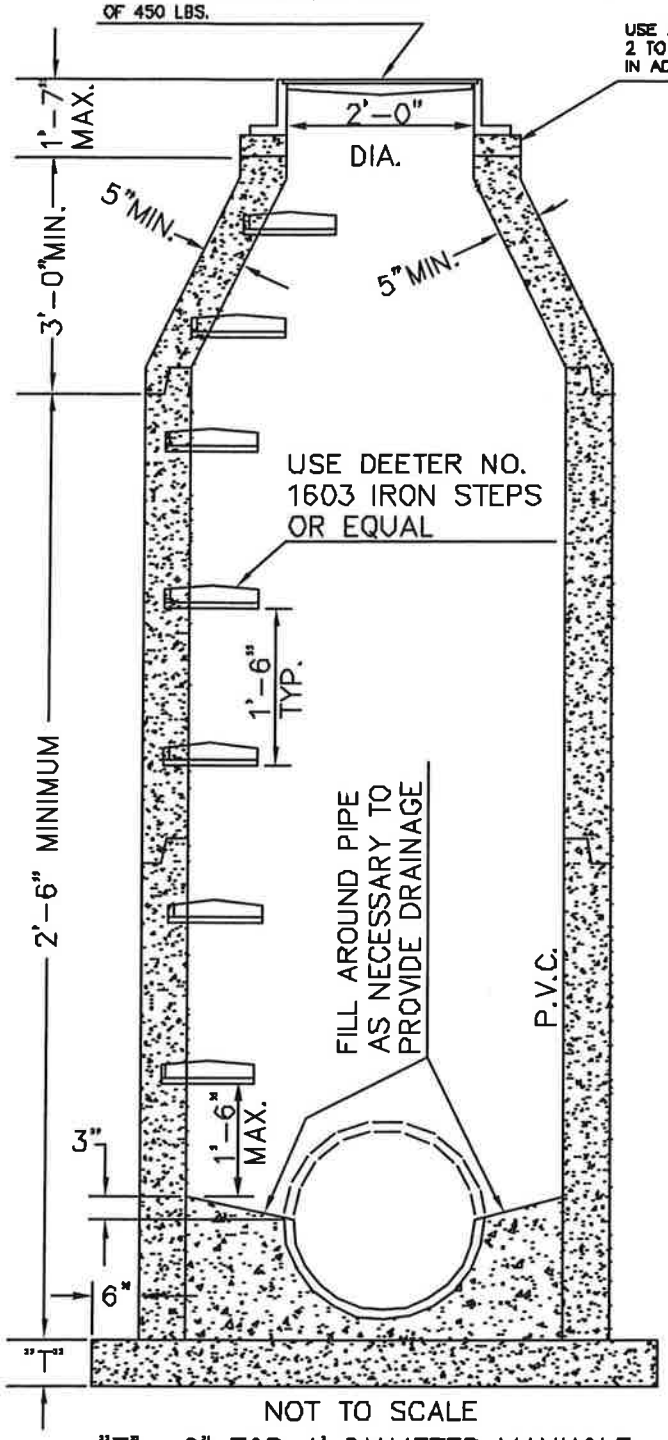
I.D. INCOMING PIPE	I.D. DROP PIPE	"A" MINIMUM
4"	4"	2'-0"
6"	6"	2'-0"

NOTE:

DROP PIPE ANY LARGER THAN 6" CAN ONLY BE INSTALLED IN A MANHOLE WITH PERMISSION OF THE PUBLIC WORKS DEPT. MANHOLE SIZE MAY VARY.

CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: 4-23-91 DRN. BY: P.S.	INSIDE DROP MANHOLE FOR PRIVATE SERVICE LINES	PLAN 129-A

NOTE:
SEE STANDARD PLAN NO. 130-A FOR DETAIL OF RING & COVER & PLAN VIEW



NOT TO SCALE

"T"= 6" FOR 4' DIAMETER MANHOLE
"T"= 8" FOR 5" DIAMETER MANHOLE

MANHOLE NOTES

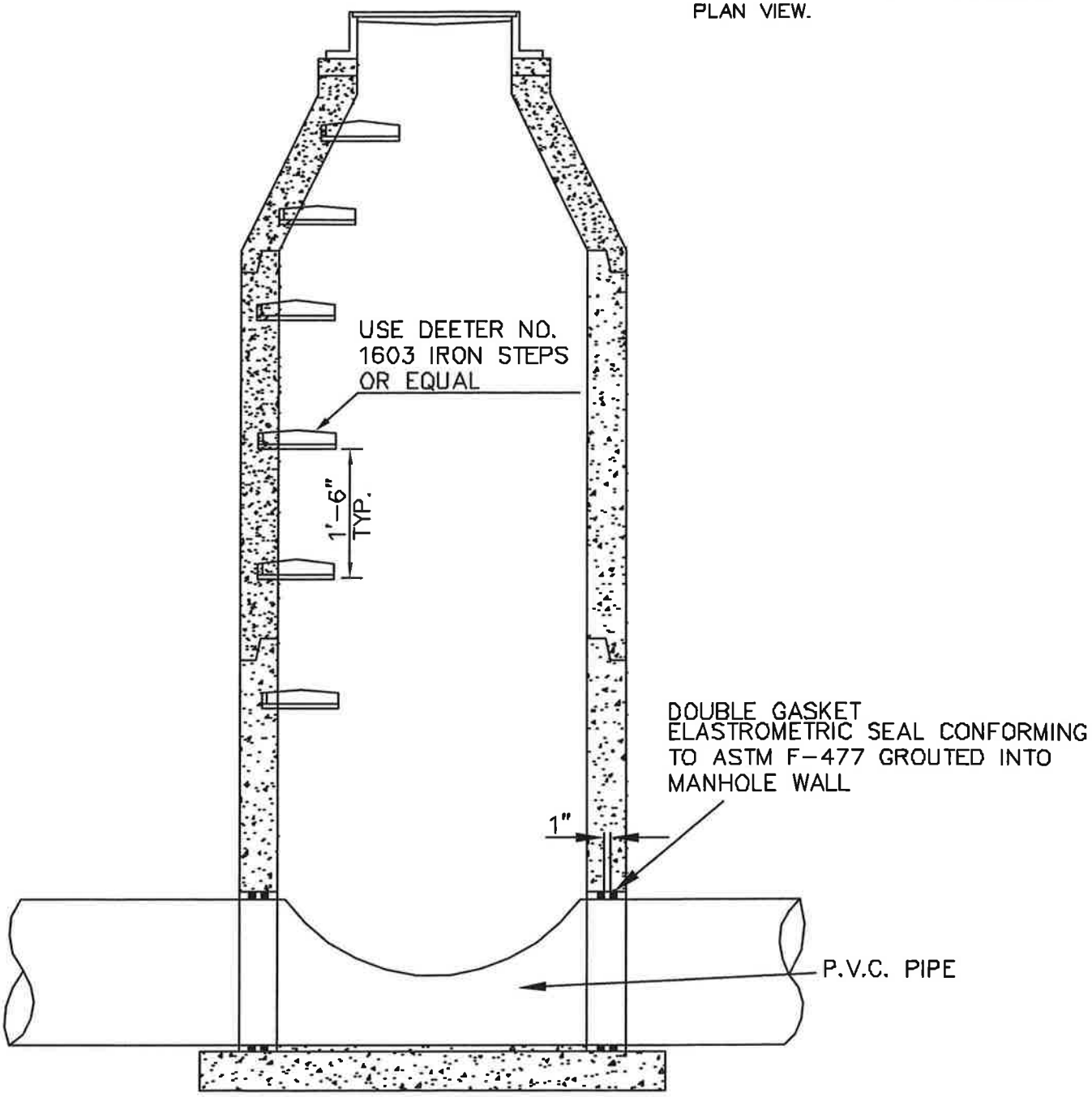
1. ALL MANHOLES RINGS TO BE SET IN MORTAR.
2. INSIDE DIAMETER OF MANHOLES TO BE 4'-0" FOR PIPE THROUGH 24", 5'-0" FOR PIPE 27" THROUGH 36", & 6'-0" FOR PIPE 42" THROUGH 48" IN SIZE & 7'-0" FOR 54" PIPE.
3. 12" MINIMUM THICKNESS ADJUSTING RINGS UNDER MANHOLE RING IS REQUIRED WHEN MANHOLE IS LOCATED IN ROADWAYS, PARKING AREAS, SIDEWALKS, ETC.
4. ANY MATERIAL EXCAVATED BENEATH PIPE ENTERING OR LEAVING MANHOLES SHALL BE REPLACED WITH CONCRETE; SUCH CONCRETE FILL SHALL EXTEND TO THE CENTER OF THE PIPE FOR A DISTANCE OF AT LEAST 3'-0" FROM THE FACE OF THE MANHOLE AND SHALL TERMINATE AT A BELL
5. PRECAST MANHOLE CIRCULAR SECTIONS TO BE PER A.S.T.M. C-478-66*
6. MANHOLE STEPS IN PRECAST MANHOLES TO BE GROUTED WITH EXPANDING GROUT.
7. MANHOLE INVERTS SHALL BE POURED CONCRETE.
8. EXCEPT FOR DROP ASSEMBLY, THE CONSTRUCTION OF DROP MANHOLES (INCLUDING MATERIALS) SHALL BE SIMILAR TO THAT FOR A STANDARD MANHOLE.
9. A DROP PIPE SHALL BE PROVIDED FOR A SEWER ENTERING A MANHOLE 24" OR MORE ABOVE THE INVERT. SEE STANDARD PLAN NO. 129 & 129-A FOR DROP MANHOLE DETAILS.

* ALL CONCRETE TO CONFORM TO DIVISION V STORM & SANITARY SEWERS, SECTION 26.14, SULFATE RESISTANT CONCRETE SPECIFICATIONS

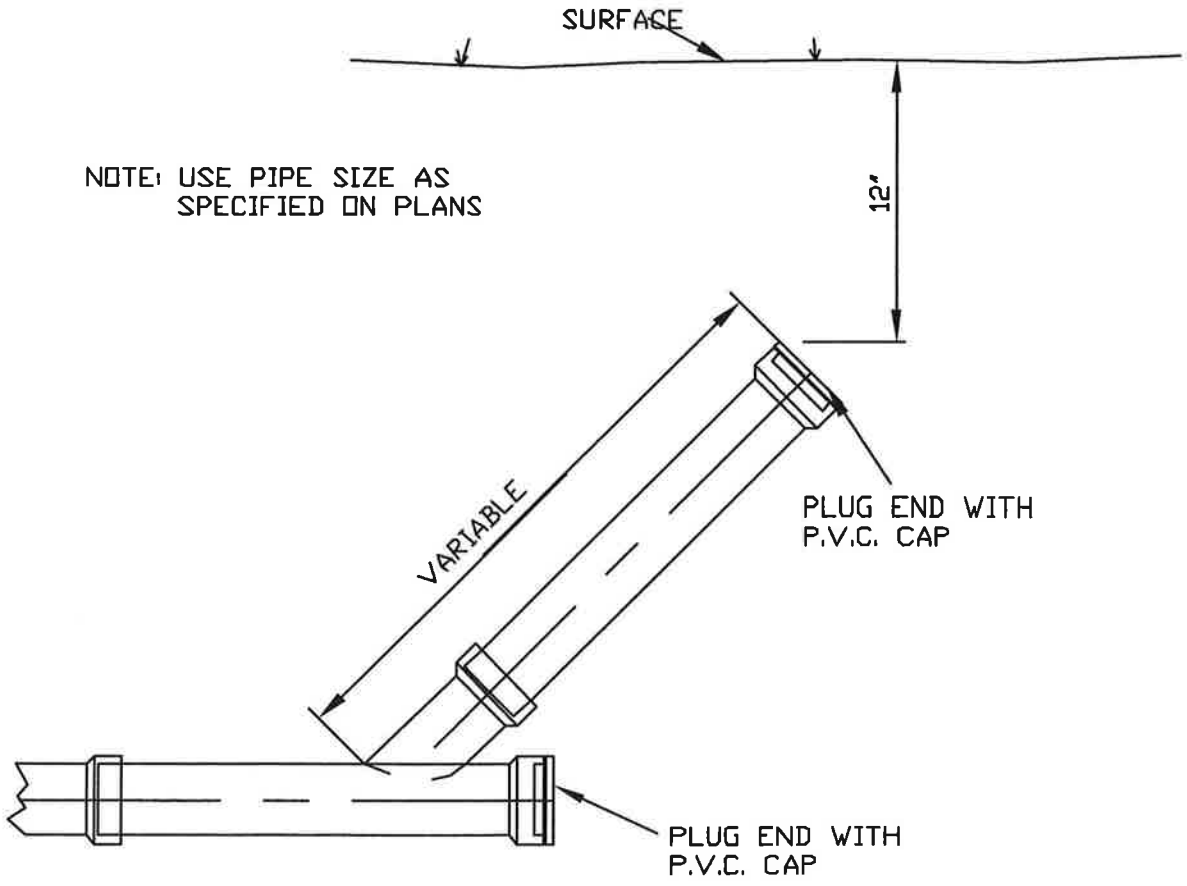
CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: 12-4-03 DRAWN BY: P.E.S. APPVD. BY:	STANDARD MANHOLE	PLAN 130

NOTE:

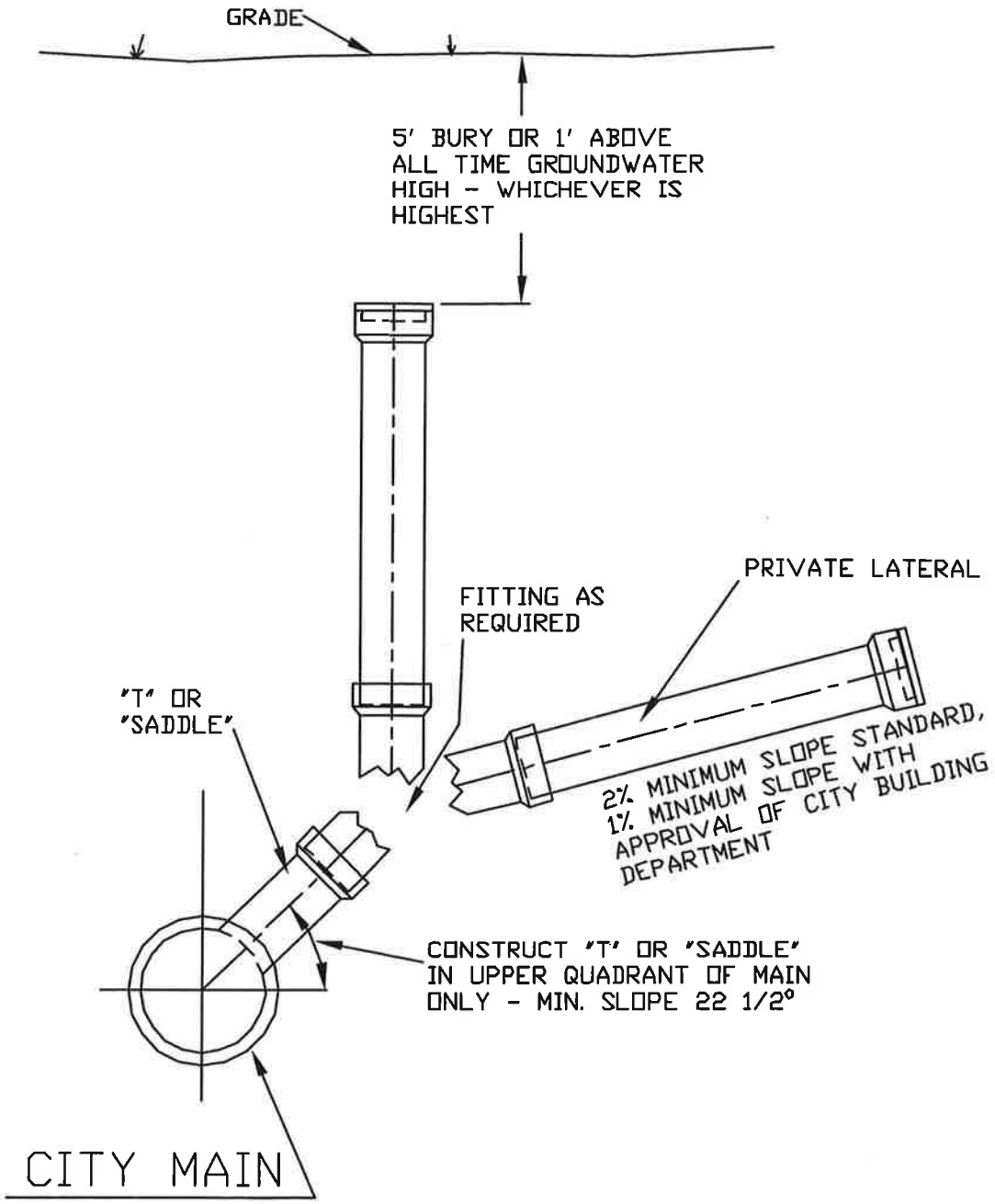
SEE STANDARD PLAN NO. 130
FOR DETAIL OF MANHOLE.
SEE STANDARD PLAN NO.130-A
FOR DETAIL OF RING & COVER &
PLAN VIEW.



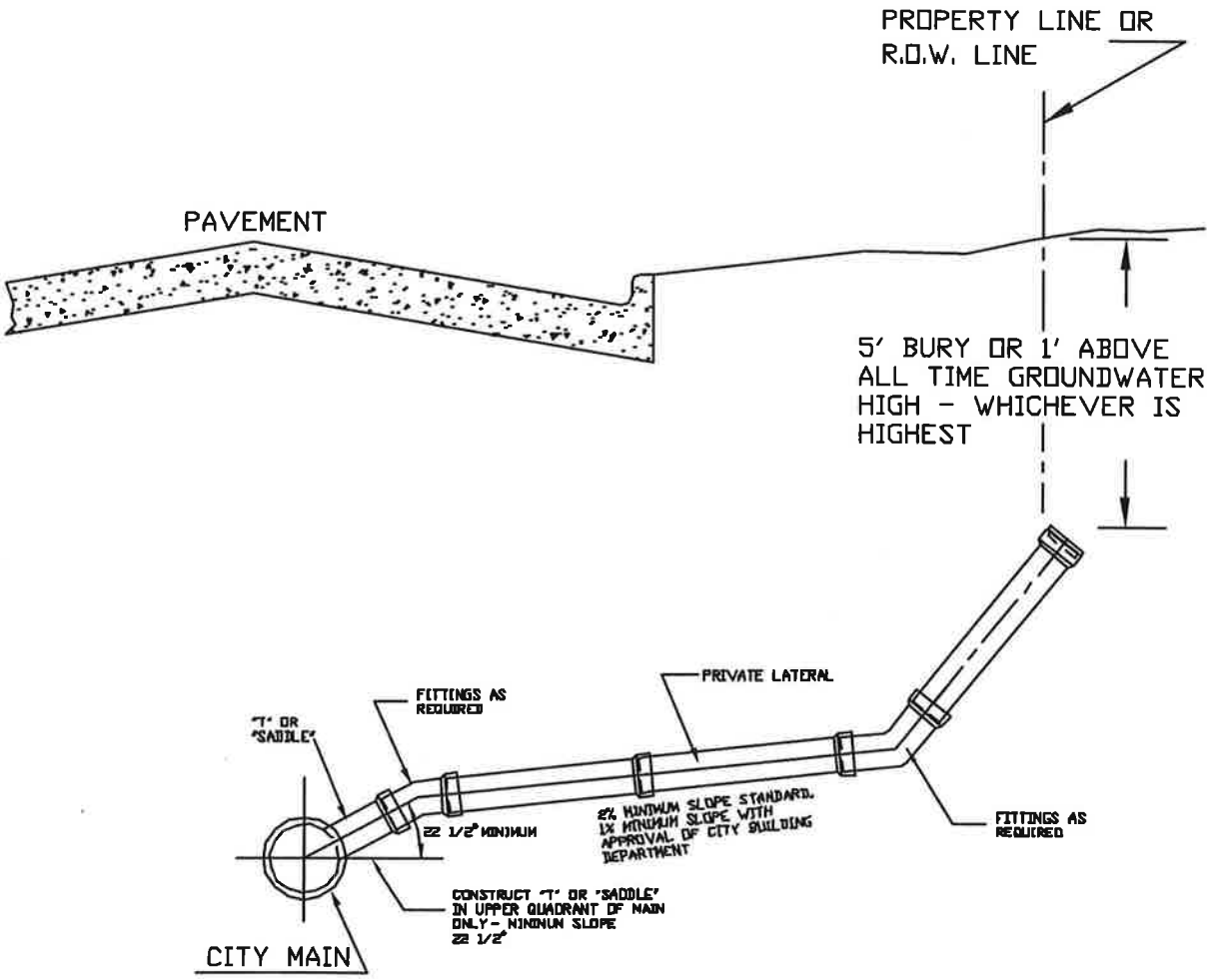
CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: 10/14/85 DRAWN BY: K.J.H. APPVD. BY:	P.V.C. PIPE-MANHOLE CONNECTION	PLAN 130-B



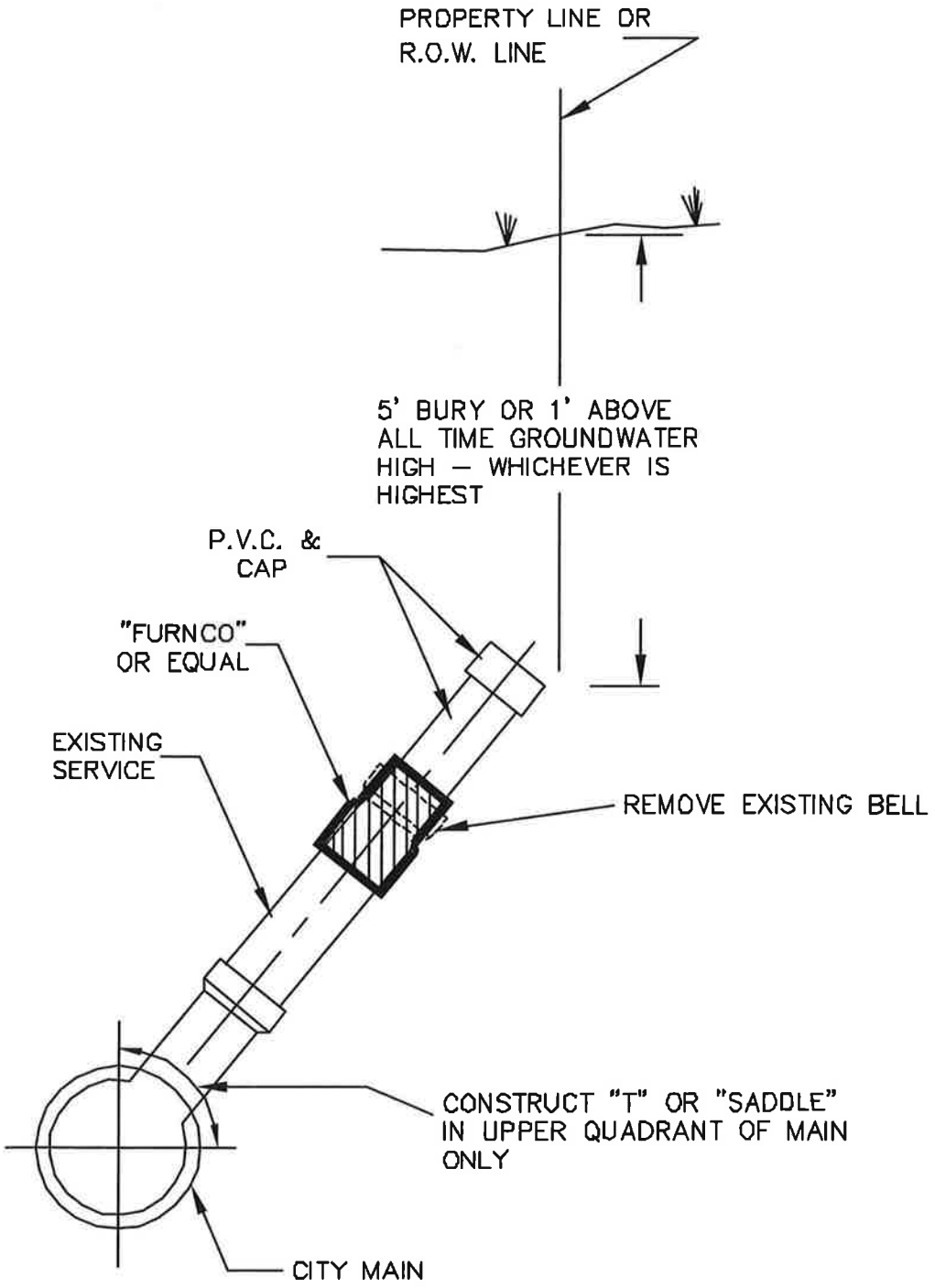
CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: 4/18/02 DRAWN BY L.D.C. APPVD. BY	STANDARD CLEANOUT	PLAN 131



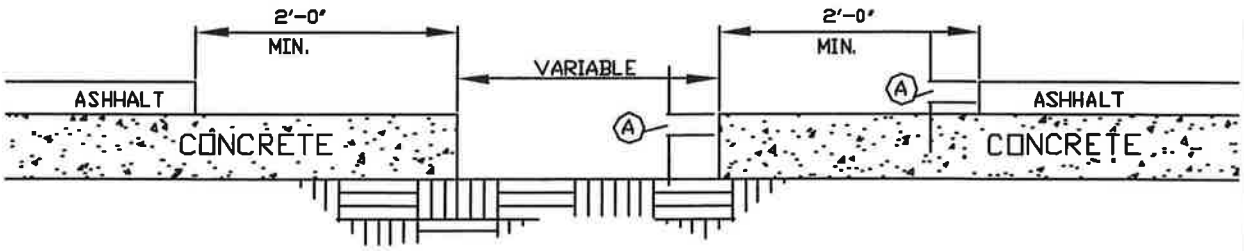
CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: 12/28/00 DRAWN BY L.D.C. APPVD. BY S.P.R.	SANITARY SEWER SERVICE LINE CONNECTION	PLAN 132



CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: 11/29/00 DRN BY: P.S. APPD. BY: S.P.R.	SANITARY SEWER SERVICE LINE CONNECTION UNDER PAVEMENT	PLAN 132-A



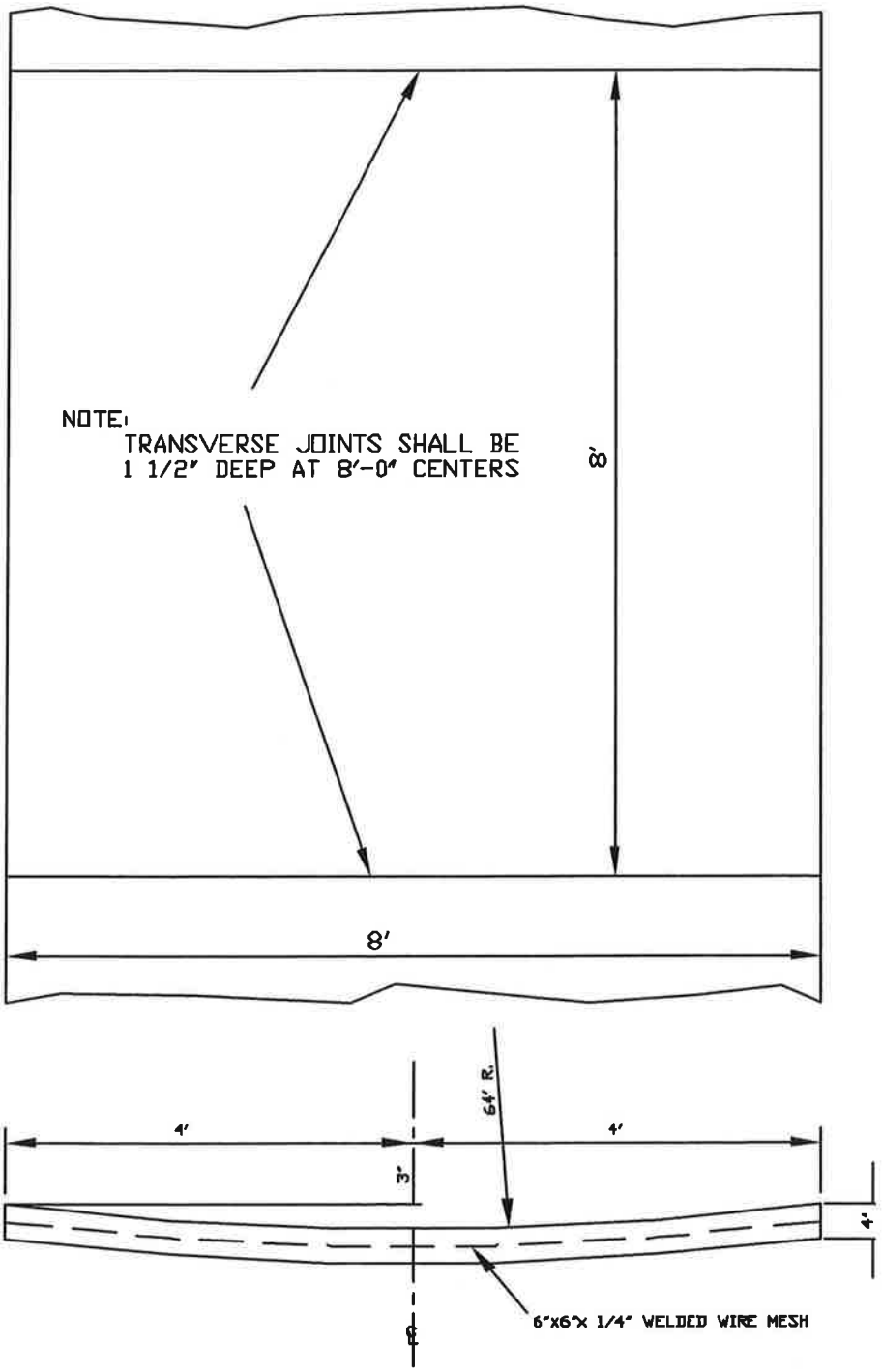
CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: 2–25–99 DRAWN BY: P.E.S. APPVD. BY: W.B.	SANITARY SEWER CAP	PLAN 132–C



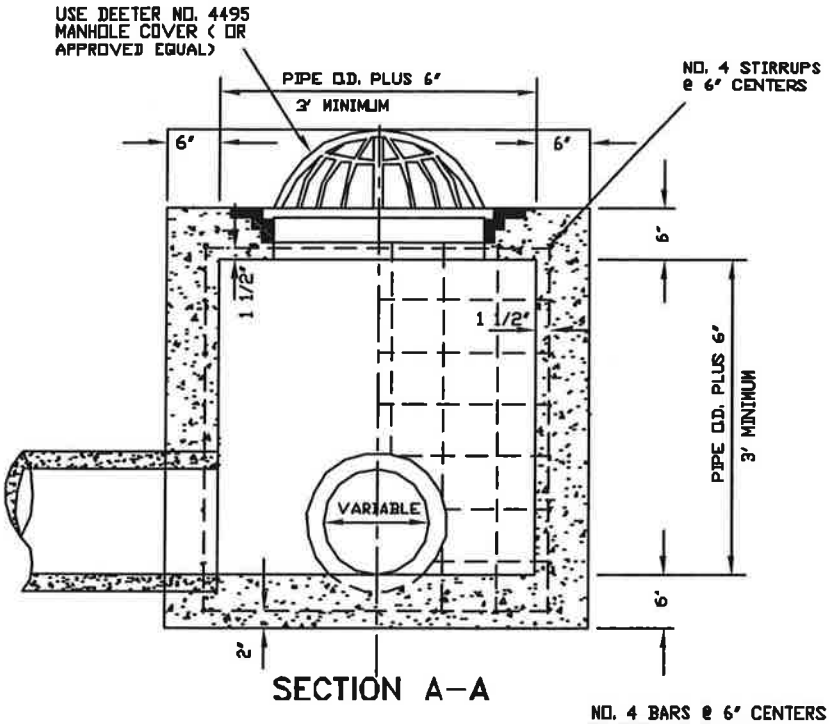
(A) THE MINIMUM SAW CUT ON BOTH ASPHALT & CONCRETE IS TWO INCHES (0'-2").

THE ASPHALT MUST BE TAKEN OUT AT LEAST TWO FOOT (2'-0") FROM THE CONCRETE SAW CUT.

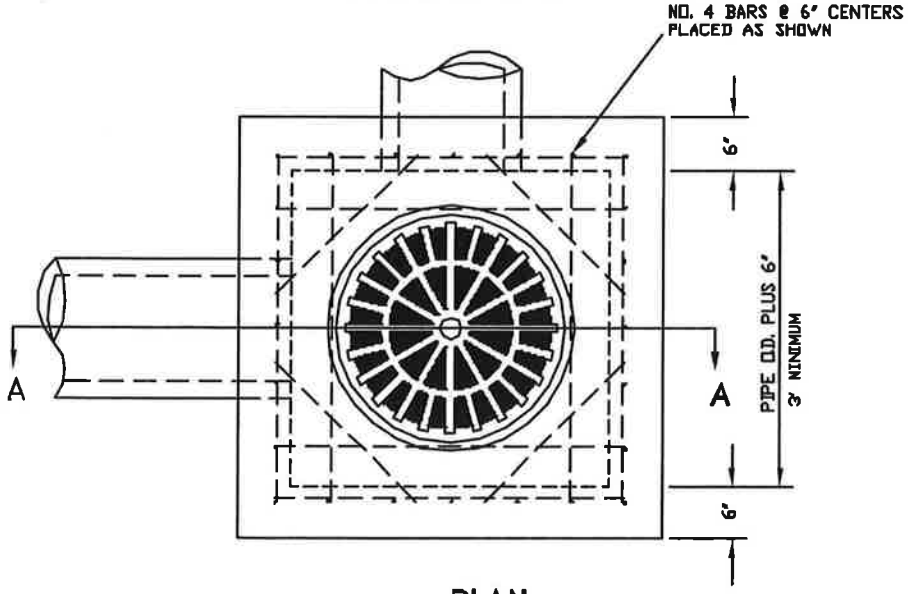
CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: 11/13/74 DRAWN BY D.L.J. APPVD. BY	STANDARD PAVEMENT SAW CUT	PLAN 139



CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: FEB. 1976 DRAWN BY L.D.C. APPVD. BY	CONCRETE APRON DETAIL	PLAN 145



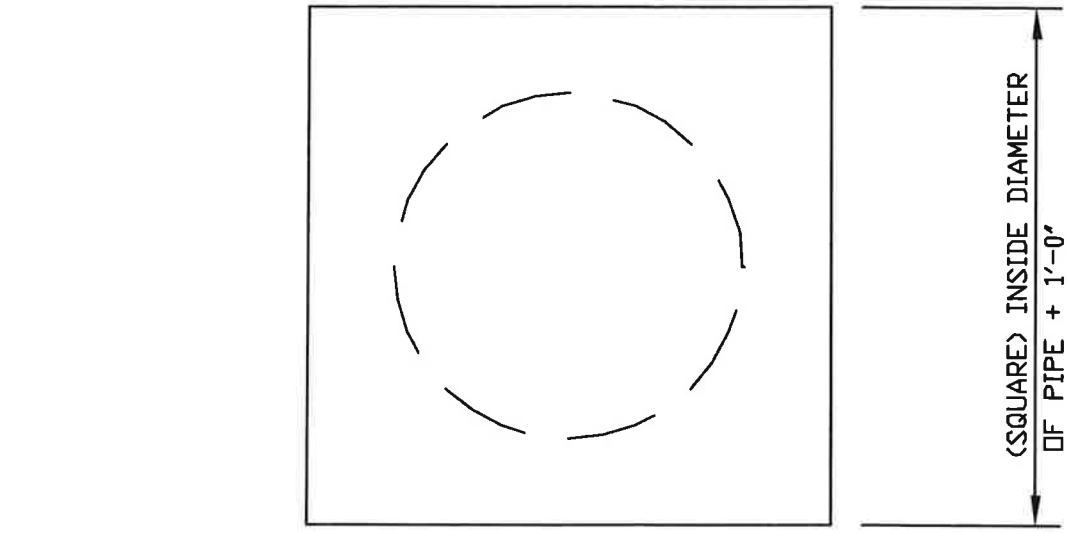
SECTION A–A

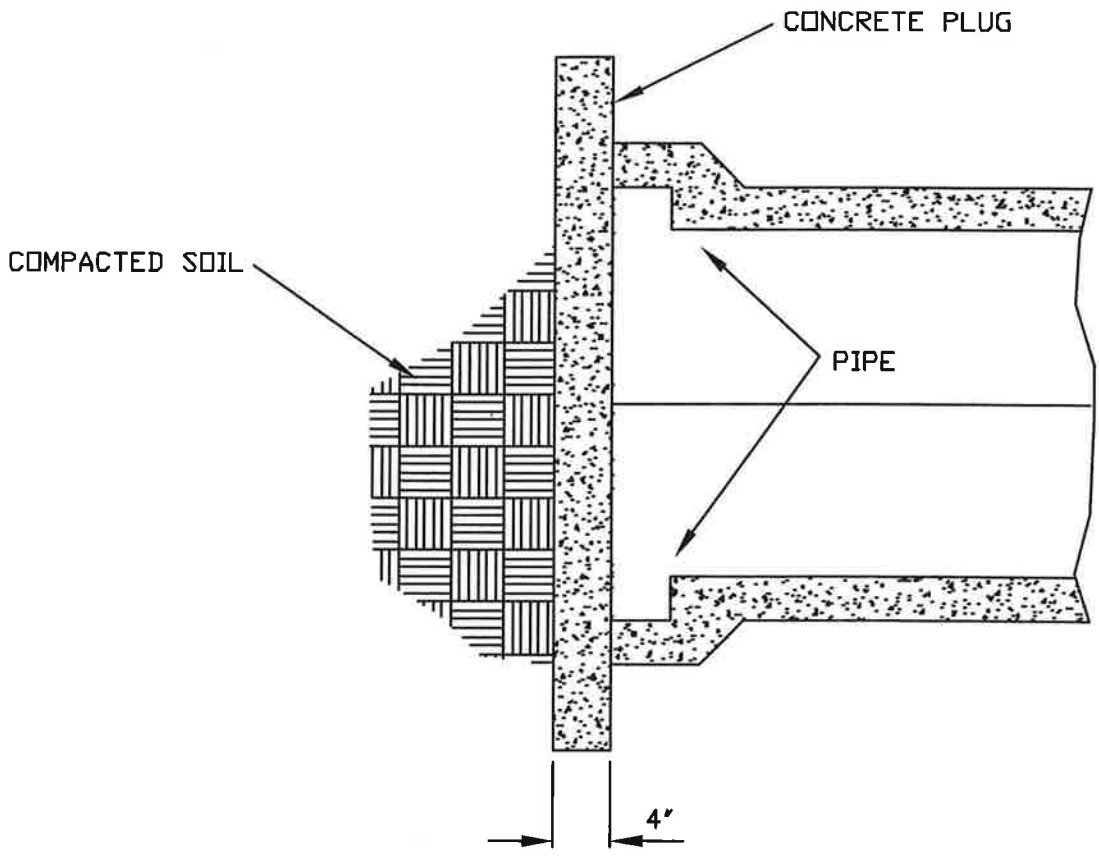


PLAN

REVISED MARCH 24, 1989

CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: FEB. 1964 DRAWN BY L.D.C. APPVD. BY	JUNCTION BOX WITH BEEHIVE INLET	PLAN 149



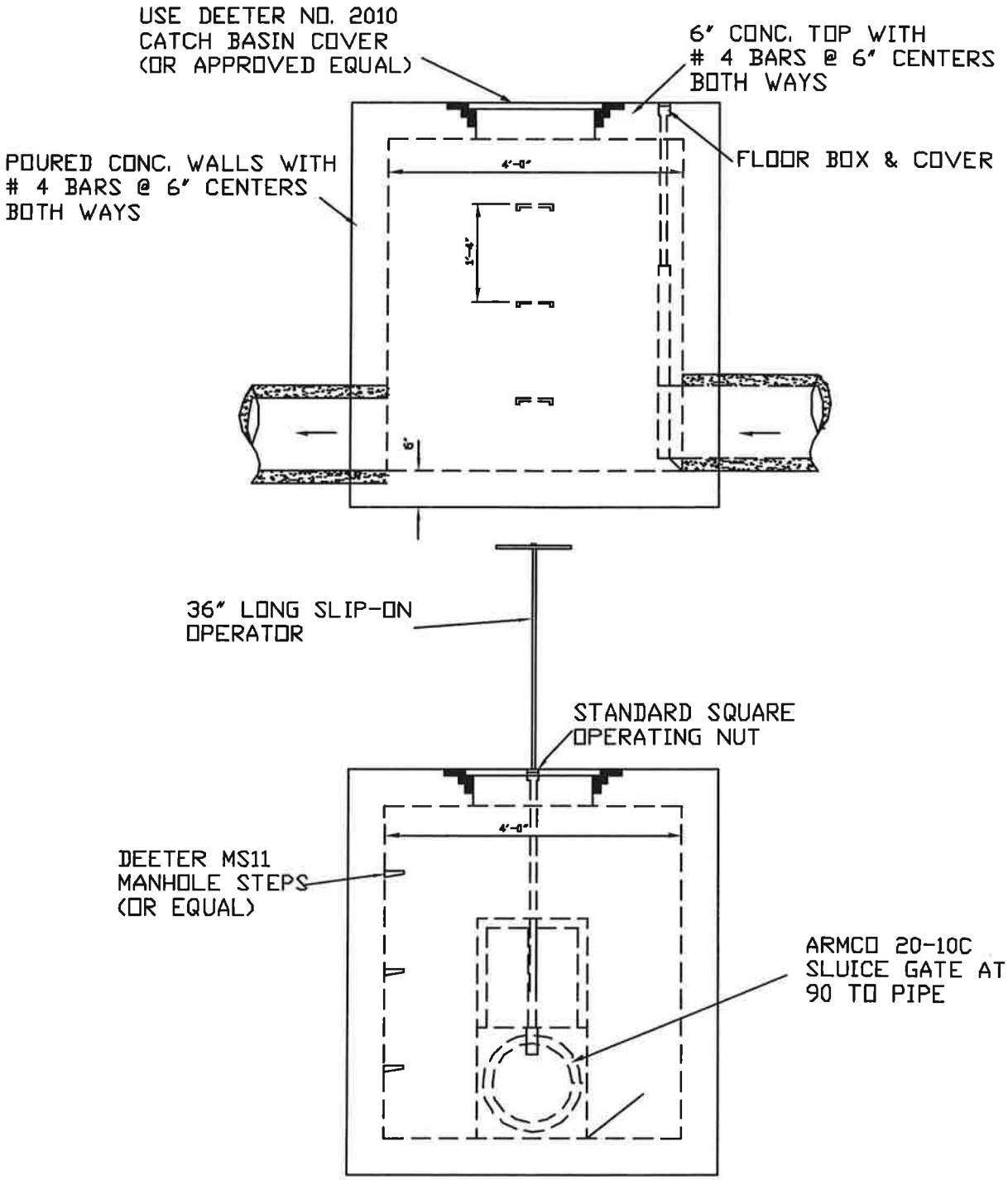


CITY OF GRAND ISLAND
PUBLIC WORKS DEPARTMENT

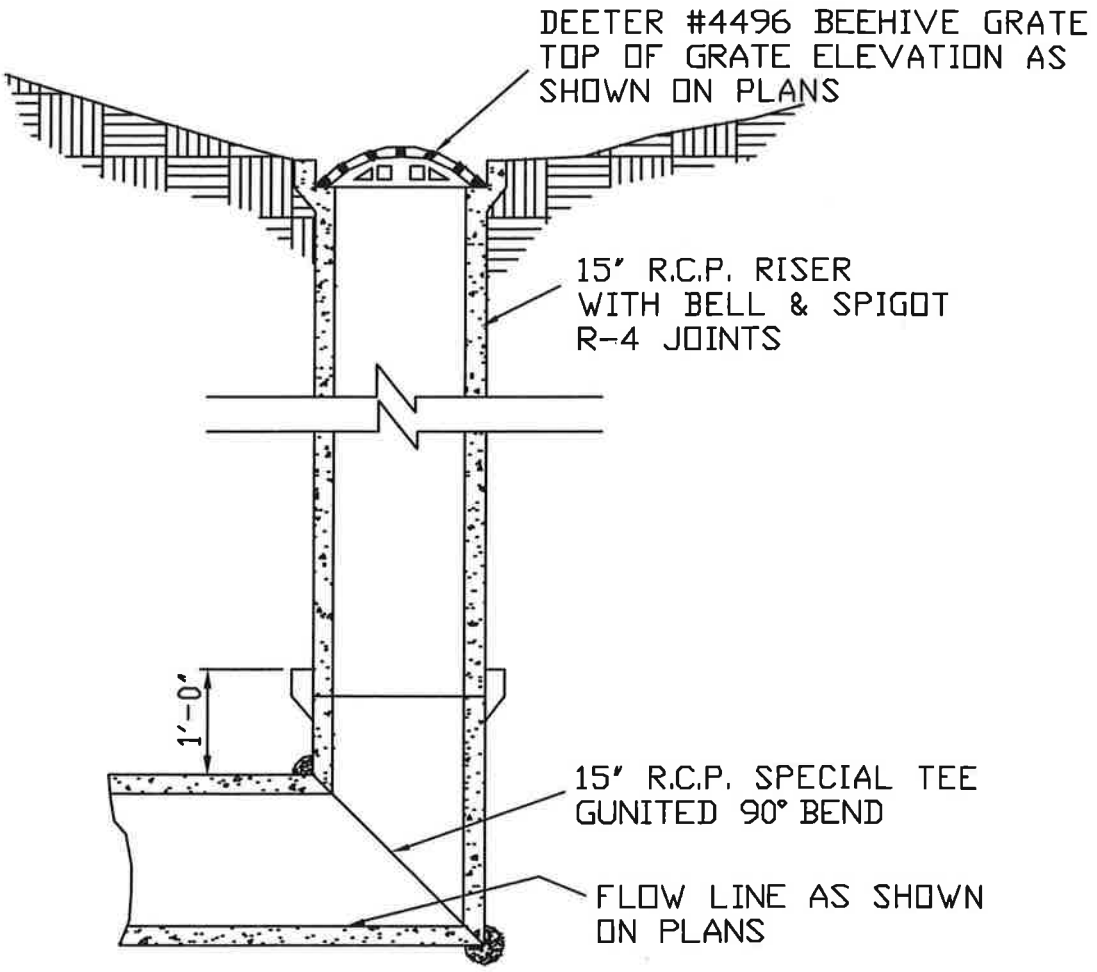
DATE: FEB 1978
DRAWN BY P.E.S.
APPVD. BY B.T.

CONCRETE PLUG
FOR
STORM SEWER PIPE

PLAN
150



CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: JULY 1978 DRAWN BY P.E.S. APPVD. BY A.E.R.	SPECIAL MANHOLE WITH SLUICE GATE	PLAN 151



CITY OF GRAND ISLAND PUBLIC WORKS DEPARTMENT	DATE: JULY 1983 DRAWN BY P.E.S. APPVD. BY	SPECIAL TEE & RISER	PLAN 154

CITY OF
GRAND ISLAND
UTILITIES DEPARTMENT

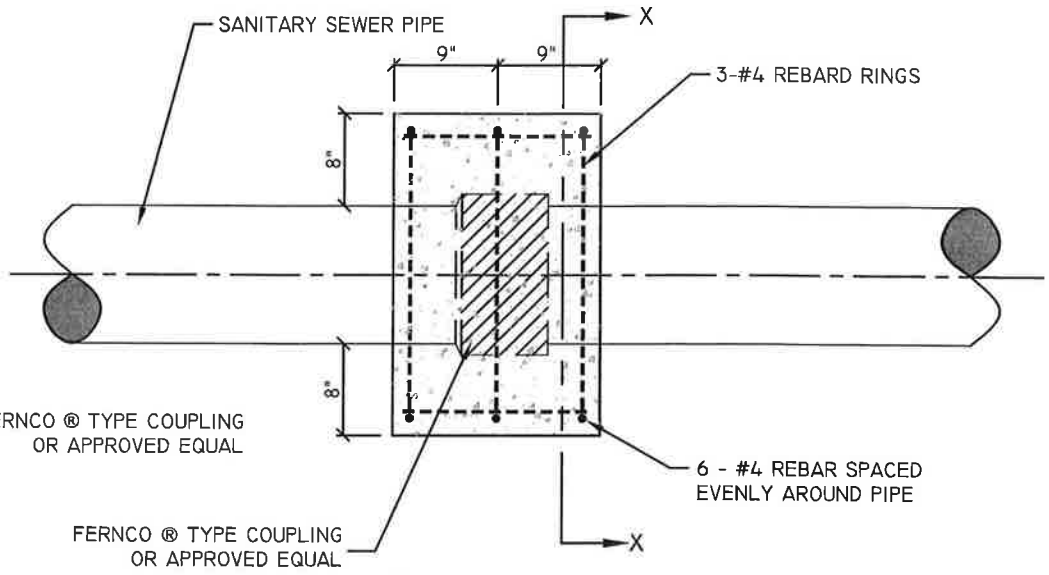
Water Main
Standard Plans

CURRENT REVISION: FEBR. 4, 2013

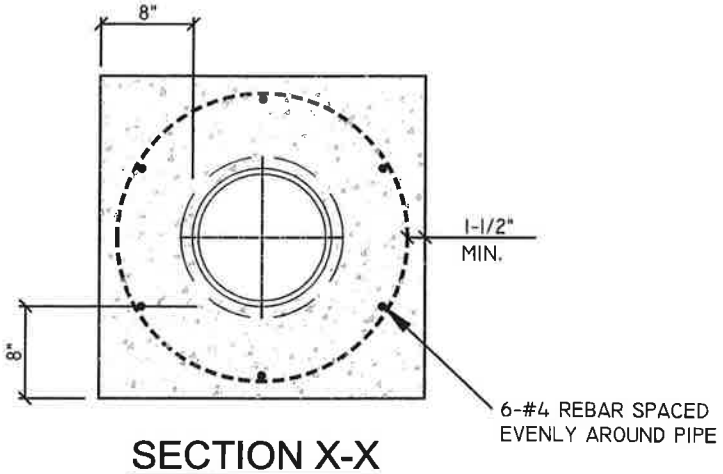
CITY OF GRAND ISLAND

UTILITIES DEPARTMENT

Water Main Standard Plans Index



PLAN VIEW



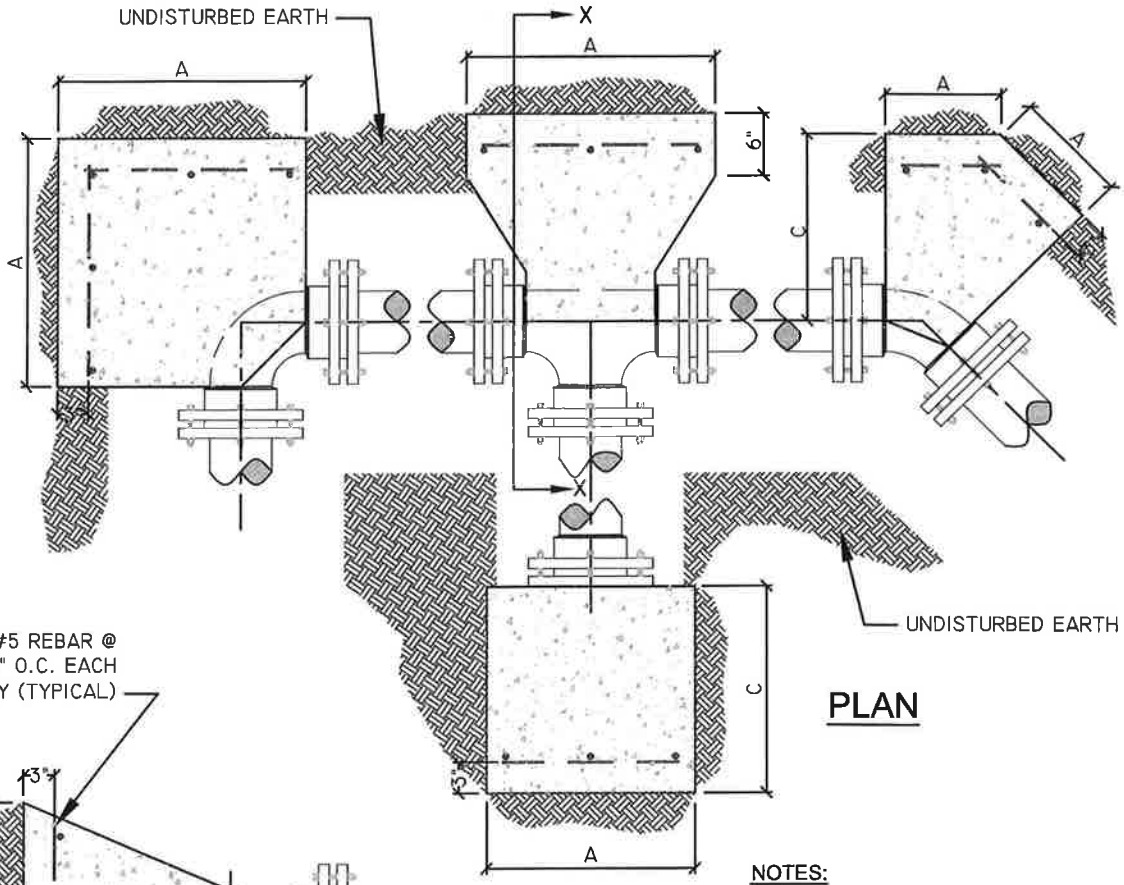
SECTION X-X

NOTES :

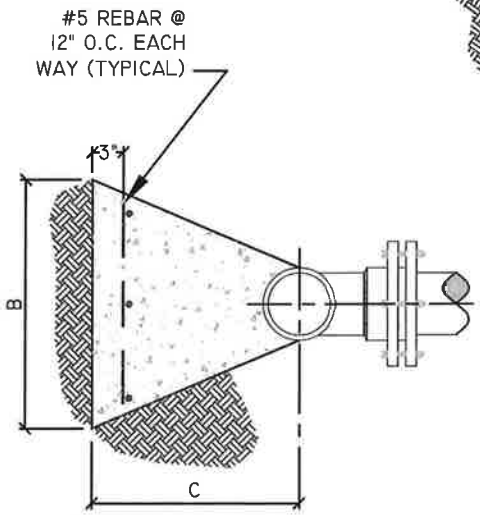
1. ALL JOINT ENCASEMENTS TO BE TYPE 47-B MODIFIED POURED CONCRETE AS PER DIVISION II; "CONCRETE PAVING SPECIFICATIONS"

ENCASEMENT QUANTITIES		
PIPE (DIAMETER)	CONCRETE (CUBIC YARDS)	REBAR (POUNDS)
8"	0.2028	7.848
10"	0.2305	8.023
12"	0.2589	8.198
15"	0.3026	8.460
18"	0.3478	8.723

CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 5/22/2002 DRAWN BY: ZEX CHECKED BY: T.W.B.	JOINT ENCASEMENT	PLAN 133



PLAN



SECTION X-X

NOTES:

1. ALL THRUST BLOCKS TO BE TYPE 47-B MODIFIED POURED CONCRETE AS PER DIVISION II; "CONCRETE PAVING SPECIFICATIONS"; AND DIVISION VI "WATER MAINS".
2. ALL CONCRETE BLOCKING SHALL BE INSTALLED IN SUCH A MANNER THAT ALL PIPE AND FITTING JOINTS ARE ACCESSIBLE.
3. ALL FITTINGS ARE TO BE WRAPPED IN 8 MIL POLYETHYLENE.
4. ALL THRUST BLOCKS ARE TO BE POURED AGAINST UNDISTURBED SOIL.
5. IF SOIL OTHER THAN SANDY SOIL IS DISCOVERED DURING EXCAVATION, THE THRUST BLOCK SIZE SHALL BE VERIFIED BY THE ENGINEER.

THRUST BLOCK DIMENSIONS (INCHES)
DESIGN PRESSURE - 150 PSI SOIL TYPE - SANDY SILT (2000 LBS/SF)

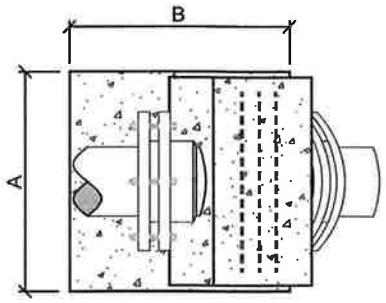
PIPE DIA.	TEES AND PLUGS			90° ELLS			45° ELLS			22 1/2° ELLS			11 1/4° ELLS		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
4"	17	17	18	20	20	18	12	12	18	12	12	18	12	12	18
6"	24	24	20	29	29	20	21	21	20	12	12	20	12	12	20
8"	32	32	22	37	37	22	28	28	22	20	20	22	12	12	22
10"	39	39	24	46	46	24	34	34	24	24	24	24	17	17	24
12"	46	46	26	55	55	26	40	40	26	29	29	26	20	20	26
14"	53	53	29	63	63	29	47	47	29	33	33	29	24	24	29
16"	61	61	31	72	72	31	53	53	31	38	38	31	27	27	31
18"	68	68	33	81	81	33	59	59	33	42	42	33	30	30	33
20"	75	75	36	89	89	36	66	66	36	47	47	36	33	33	36
24"	90	90	39	108	108	39	80	80	39	56	56	39	40	40	39
30"	111	111	42	133	133	42	98	98	42	70	70	42	49	49	42

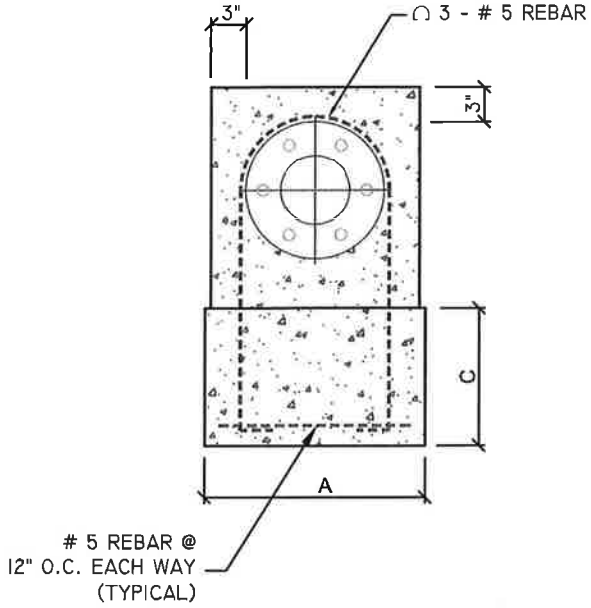
CITY OF GRAND ISLAND
UTILITIES DEPARTMENT

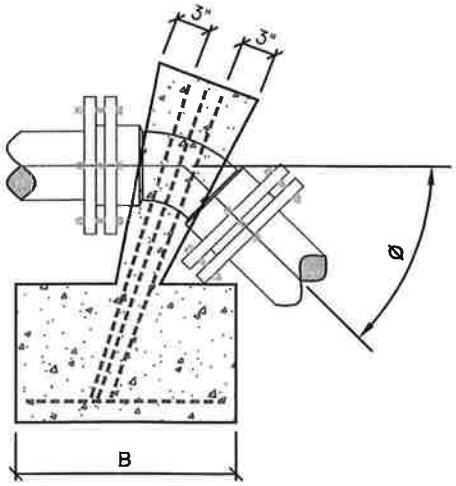
REVISED: 5/03/2010
DRAWN BY: P.F.G.
CHECKED BY: T.W.B.

CONCRETE BLOCKING FOR FITTINGS

PLAN 134







THRUST BLOCK DIMENSIONS (INCHES)

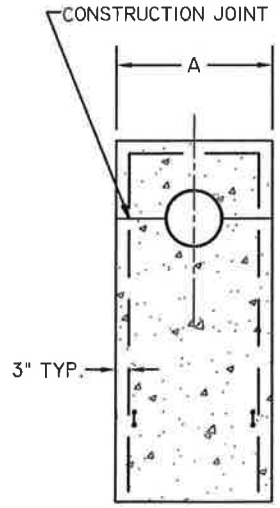
DESIGN PRESSURE - 150 PSI
SOIL TYPE - SANDY SILT (2000 LBS/SF)

Ø = 22 1/2° AND 45°			
PIPE DIA.	A	B	C
4"	30"	30"	24"
6"	44"	44"	24"
8"	57"	57"	24"
10"	62"	62"	30"

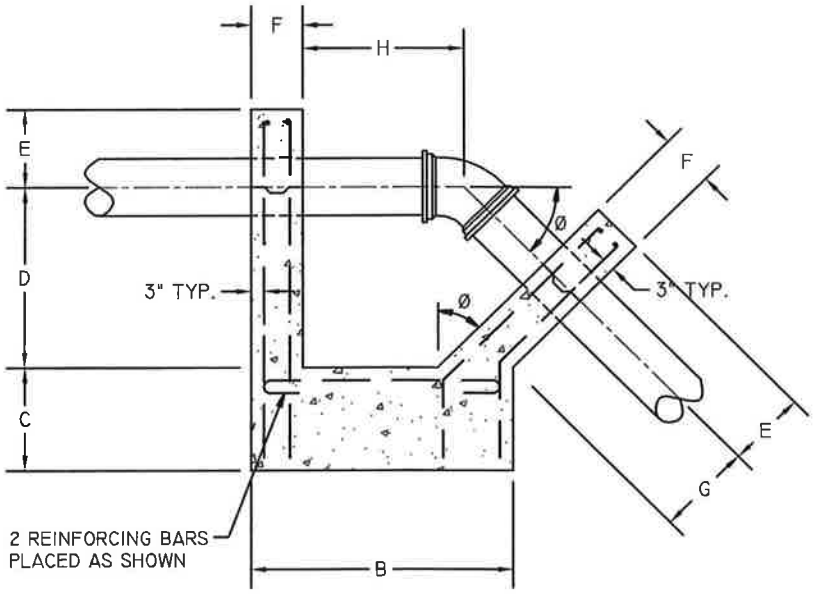
NOTES :

1. ALL THRUST BLOCKS TO BE TYPE 47-B MODIFIED POURED CONCRETE AS PER DIVISION II; "CONCRETE PAVING SPECIFICATIONS"; AND DIVISION VI "WATER MAINS".
2. ALL CONCRETE BLOCKING SHALL BE INSTALLED IN SUCH A MANNER THAT ALL PIPE AND FITTING JOINTS ARE ACCESSIBLE.
3. ALL FITTINGS ARE TO BE WRAPPED IN 8 MIL POLYETHYLENE.
4. ALL THRUST BLOCKS ARE TO BE POURED AGAINST UNDISTURBED SOIL.
5. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO A.S.T.M. A-305-507 AND SATISFY THE BENT TEST REQUIREMENTS FOR STRUCTURAL GRADE STEEL.
6. IF SOIL OTHER THAN SANDY SOIL IS DISCOVERED DURING EXCAVATION, THE THRUST BLOCK SIZE SHALL BE VERIFIED BY THE ENGINEER.

CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 5/03/2010 DRAWN BY: P.F.G. CHECKED BY: T.W.B.	INVERT BLOCKING 4" - 10" PIPE	PLAN 134A 1 OF 2



END ELEVATION



SIDE ELEVATION

Ø = 22 1/2°									
PIPE DIA.	BAR DIA.	SIZE IN INCHES							
		A	B	C	D	E	F	G	H
12"	#4	36	60	12	24	18	12	12	21
14"	#5	36	66	18	27	18	12	15	27
16"	#5	36	78	24	33	18	12	18	33
18"	#5	42	84	24	36	18	12	20	37
20"	#6	48	84	24	36	18	12	20	37
24"	#7	54	108	24	48	24	12	27	50

THRUST BLOCK DIMENSIONS (INCHES)

DESIGN PRESSURE - 150 PSI
SOIL TYPE - SANDY SILT (2000 LBS/SF)

NOTES :

1. ALL THRUST BLOCKS TO BE TYPE 47-B MODIFIED POURED CONCRETE AS PER DIVISION II; "CONCRETE PAVING SPECIFICATIONS"; AND DIVISION VI "WATER MAINS".
2. ALL CONCRETE BLOCKING SHALL BE INSTALLED IN SUCH A MANNER THAT ALL PIPE AND FITTING JOINTS ARE ACCESSIBLE.
3. ALL FITTINGS ARE TO BE WRAPPED IN 8 MIL POLYETHYLENE.
4. ALL THRUST BLOCKS ARE TO BE POURED AGAINST UNDISTURBED SOIL.
5. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO A.S.T.M. A-305-507 AND SATISFY THE BENT TEST REQUIREMENTS FOR STRUCTURAL GRADE STEEL.
6. IF SOIL OTHER THAN SANDY SOIL IS DISCOVERED DURING EXCAVATION, THE THRUST BLOCK SIZE SHALL BE VERIFIED BY THE ENGINEER.

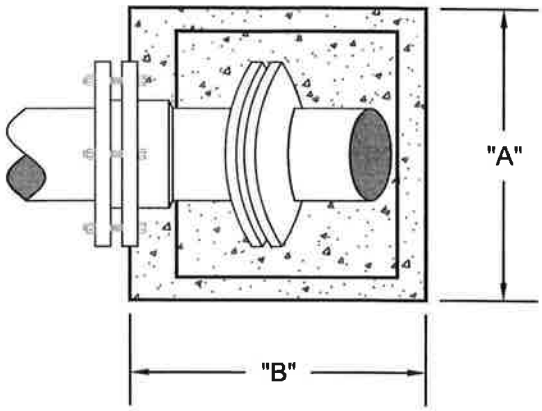
CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 5/03/2010 DRAWN BY: P.F.G. CHECKED BY: T.W.B.	INVERT BLOCKING 12" - 24" PIPE	PLAN 134A 2 OF 2

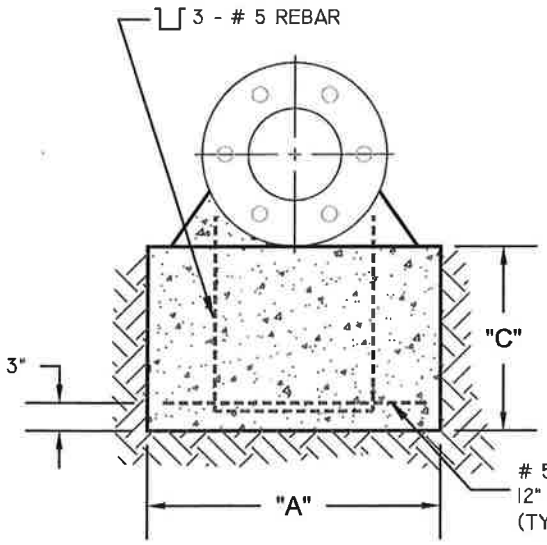
THRUST BLOCK DIMENSIONS
(INCHES)

DESIGN PRESSURE - 150 PSI

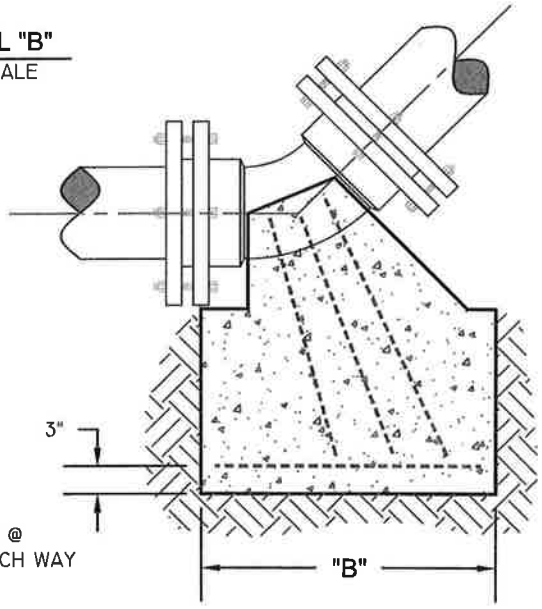
SOIL TYPE - SANDY SILT (2000 LBS/SF)

PIPE DIA.	A	B	C
4"	17"	17"	18"
6"	24"	24"	20"
8"	31"	31"	22"
10"	38"	38"	24"
12"	46"	46"	26"
14"	53"	53"	29"
16"	60"	60"	31"
18"	68"	68"	33"
20"	75"	75"	36"
24"	90"	90"	39"





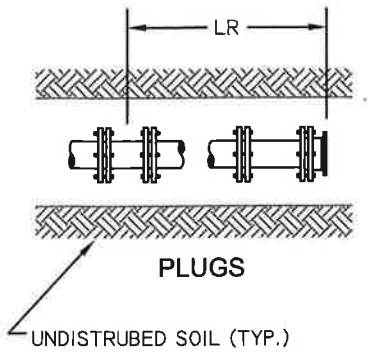
DETAIL "B"
NO SCALE

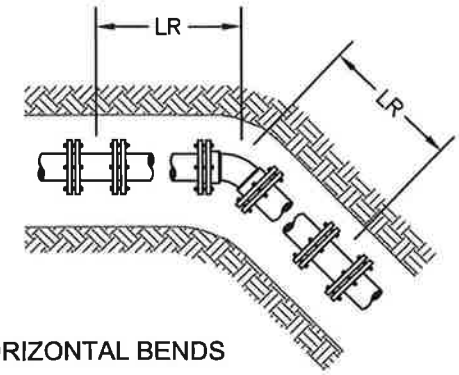


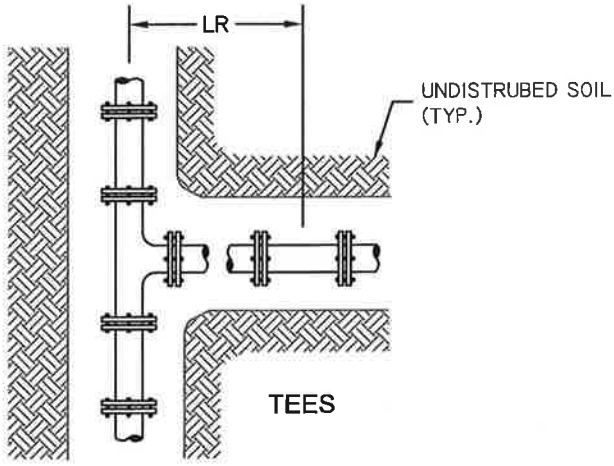
NOTES :

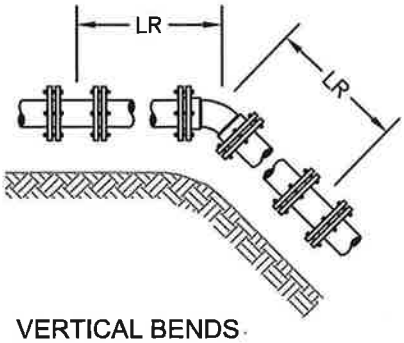
1. ALL THRUST BLOCKS TO BE TYPE 47-B MODIFIED POURED CONCRETE AS PER DIVISION II; "CONCRETE PAVING SPECIFICATIONS"; AND DIVISION VI "WATER MAINS".
2. ALL CONCRETE BLOCKING SHALL BE INSTALLED IN SUCH A MANNER THAT ALL PIPE AND FITTING JOINTS ARE ACCESSIBLE.
3. ALL FITTINGS ARE TO BE WRAPPED IN 8 MIL POLYETHYLENE.
4. ALL THRUST BLOCKS ARE TO BE POURED AGAINST UNDISTURBED SOIL.
5. IF SOIL OTHER THAN SANDY SOIL IS DISCOVERED DURING EXCAVATION, THE THRUST BLOCK SIZE SHALL BE VERIFIED BY THE ENGINEER.

CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 5/03/2010 DRAWN BY: P.F.G. CHECKED BY: T.W.B.	INVERT BLOCKING	PLAN 134B









ALL LENGTHS ARE GIVEN IN FEET

RESTRAINED LENGTHS "LR" FOR DUCTILE IRON PIPE WITH POLYETHYLENE WRAP						
NOMINAL PIPE SIZE INCHES	HORIZONTAL BENDS			TEE BRANCH AND PLUGS	VERTICAL BENDS	
	90 DEG.	45 DEG.	22½ DEG.		45 DEG.	22½ DEG
6	42	18	18	109	45	22
8	54	22	18	142	59	28
10	66	27	18	172	71	34
12	77	32	18	202	84	40
14	88	37	18	232	96	46
16	99	41	20	261	108	52
18	109	45	22	290	120	58
20	120	50	24	318	132	63
24	139	58	28	373	155	74

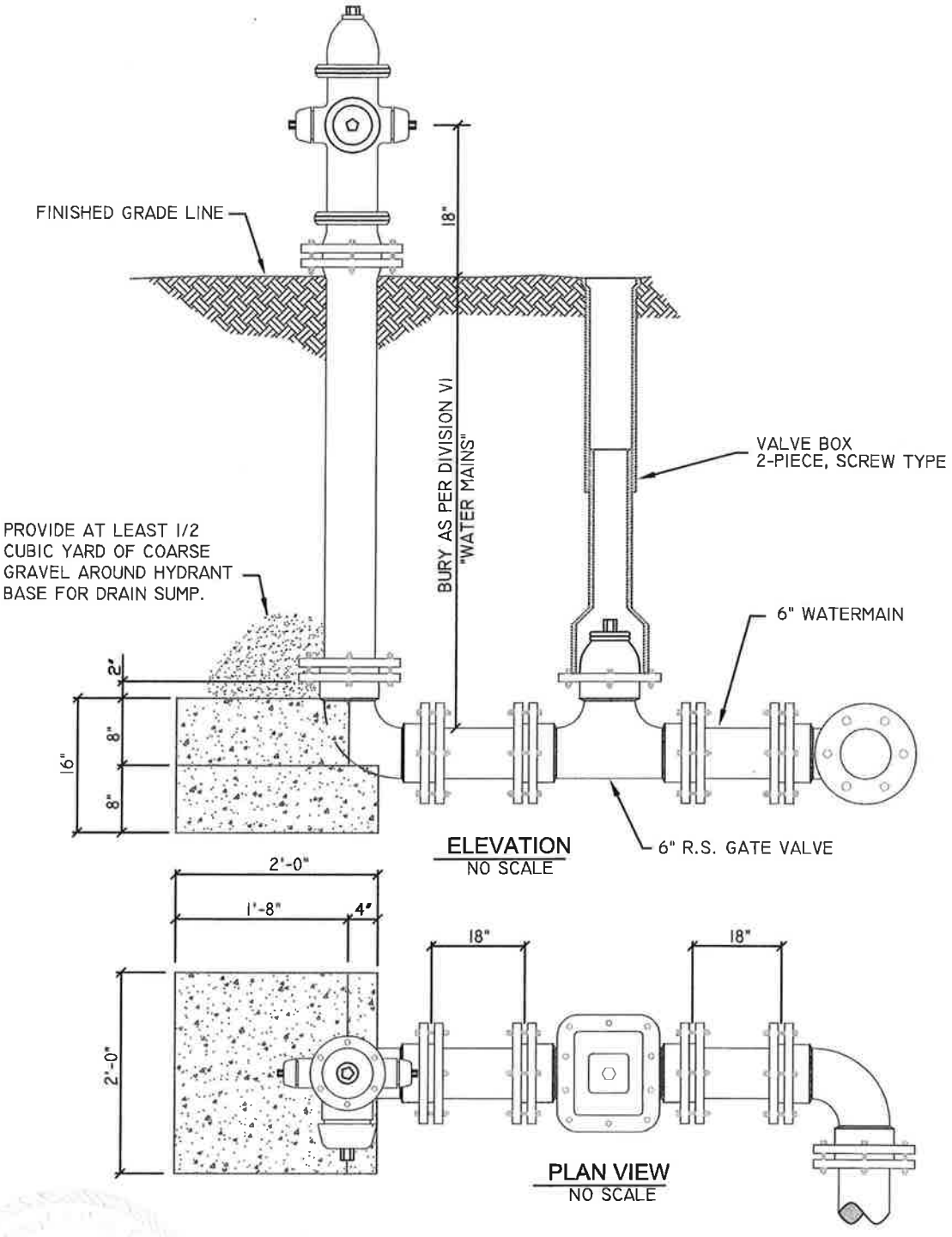
NOTES:

1. ALL JOINTS WITHIN THE SPECIFIED LENGTH "LR" MUST BE RESTRAINED.

2. SPECIFIED LENGTH BASED ON A DESIGN PRESSURE OF 200 PSI.

3. THE MINIMUM DEPTH OF BURY SHALL BE 5' TO TOP OF PIPE.

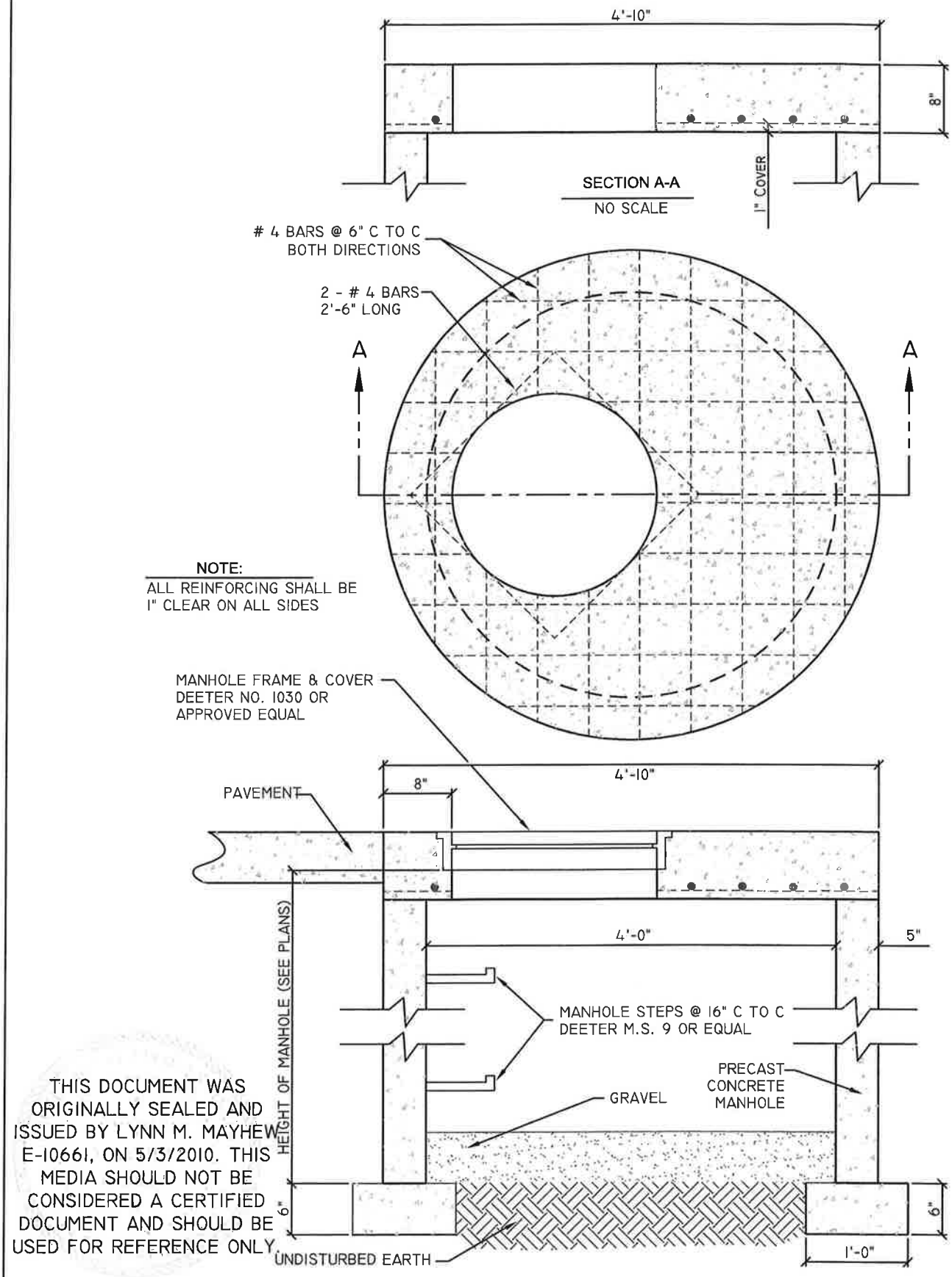
CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 6/30/2009 DRAWN BY: L.J.S. CHECKED BY: T.W.B.	JOINT RESTRAINT FOR D.I. PIPE W/ POLYETHYLENE WRAP	PLAN 134C



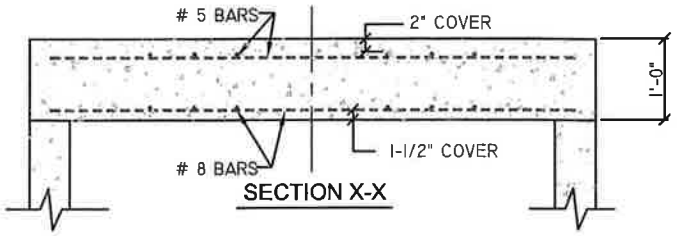
NOTES :

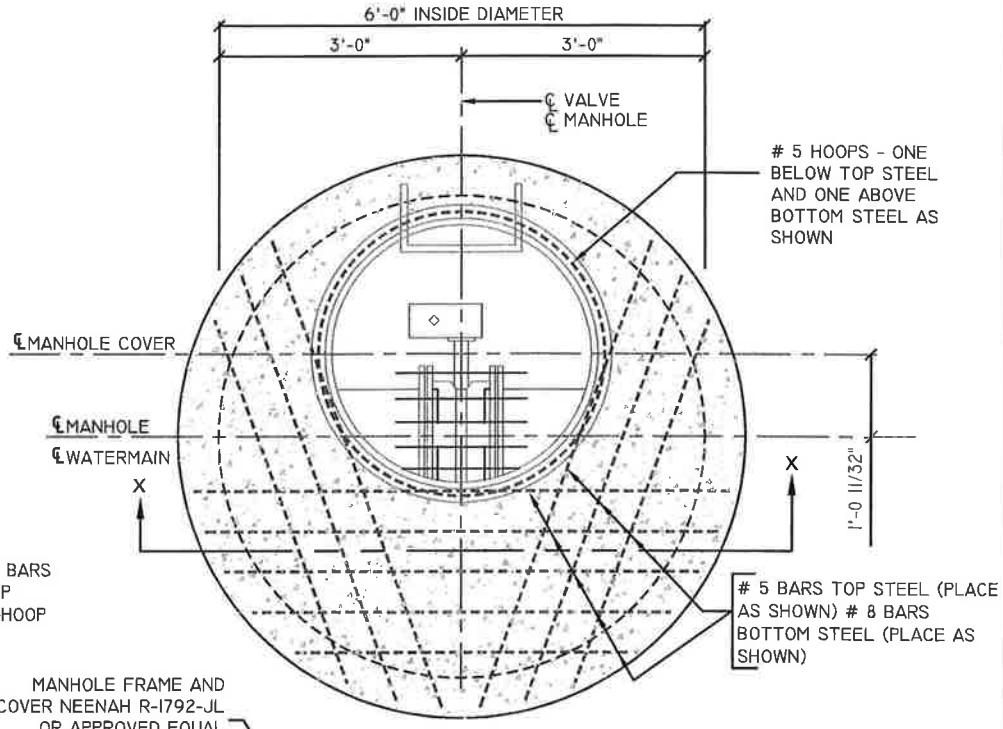
1. ALL THRUST BLOCKS TO BE TYPE 47-B MODIFIED POURED CONCRETE AS PER DIVISION II; "CONCRETE PAVING SPECIFICATIONS"; AND DIVISION VI "WATER MAINS".
2. ALL CONCRETE BLOCKING SHALL BE INSTALLED IN SUCH A MANNER THAT ALL PIPE AND FITTING JOINTS ARE ACCESSIBLE.
3. ALL FITTINGS ARE TO BE WRAPPED IN 8 MIL POLYETHYLENE.
4. ALL THRUST BLOCKS ARE TO BE POURED AGAINST UNDISTURBED SOIL.

CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 12/13/2004 DRAWN BY: P.F.G. CHECKED BY: T.W.B.	FIRE HYDRANT BLOCKING	PLAN 135

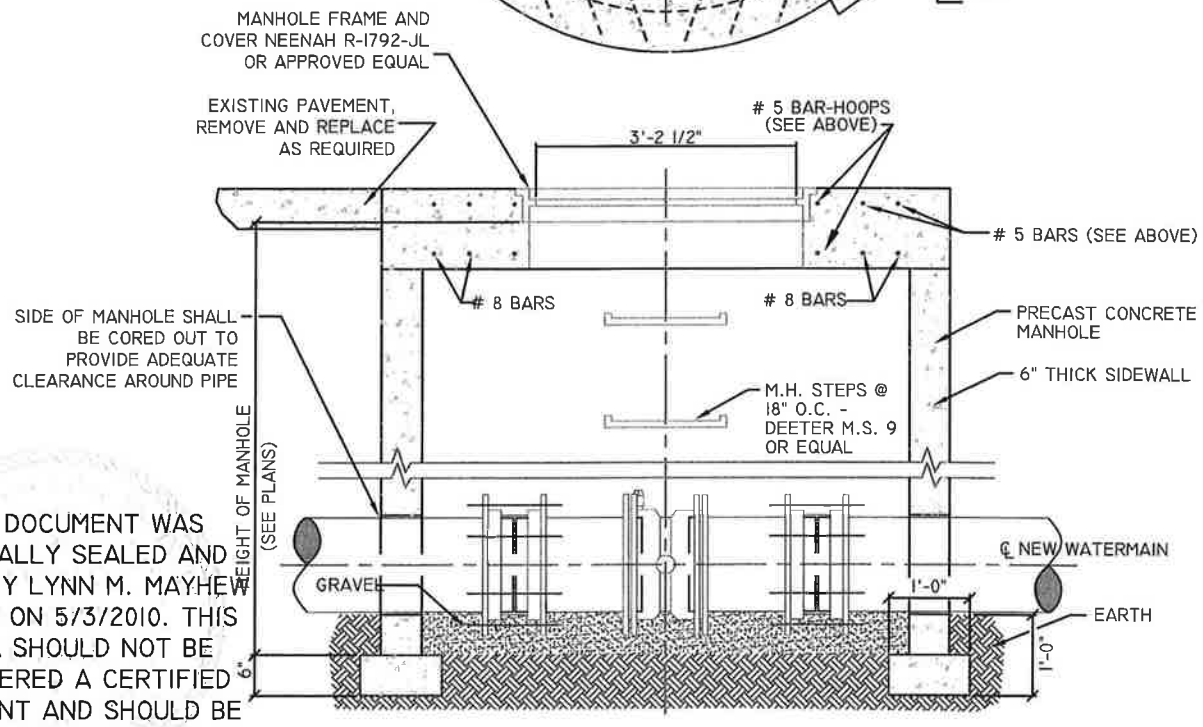


CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 5/22/2002 DRAWN BY: ZEX CHECKED BY: T.W.B.	STANDARD WATER VALVE MANHOLE FOR 8" OR SMALLER VALVES	PLAN 136A





THE NUMBER AND PATTERN OF BARS SHOWN ARE IDENTICAL FOR TOP AND BOTTOM STEEL (SEE BAR-HOOP NOTATION ABOVE)

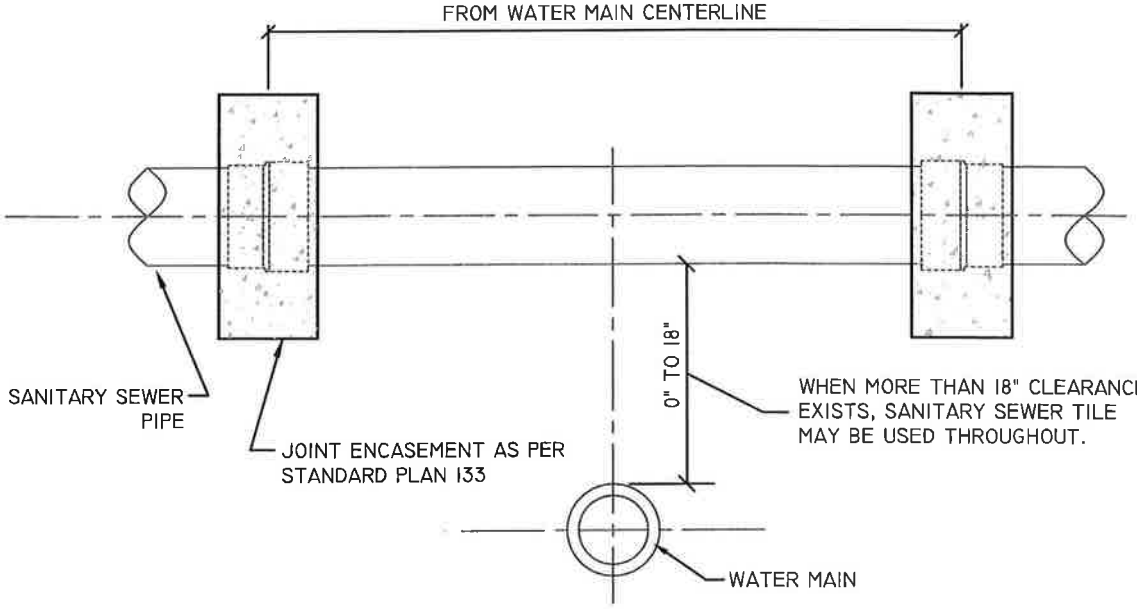


CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 5/22/2002 DRAWN BY: ZEX CHECKED BY: T.W.B.	STANDARD WATER VALVE MANHOLE FOR 10" OR LARGER VALVES	PLAN 136B

SANITARY SEWER CROSSING OVER WATER MAIN

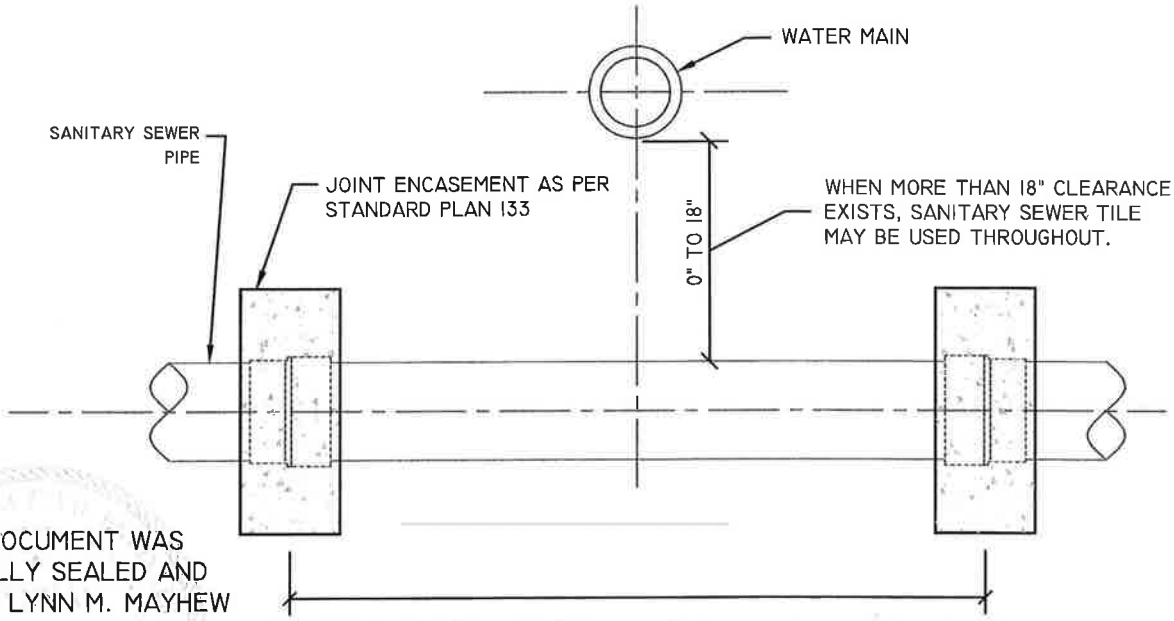
NO SCALE

ALL PIPE, 4" THROUGH 12" SHALL BE PVC AS PER ANSI / AWWA C900, AND ALL PIPE, 14" THROUGH 48" SHALL BE PVC AS PER ANSI / AWWA C905, AND SHALL BE INSTALLED SO THAT NO JOINT OCCURS LESS THAN 10' FROM WATER MAIN CENTERLINE



SANITARY SEWER CROSSING UNDER WATER MAIN

NO SCALE

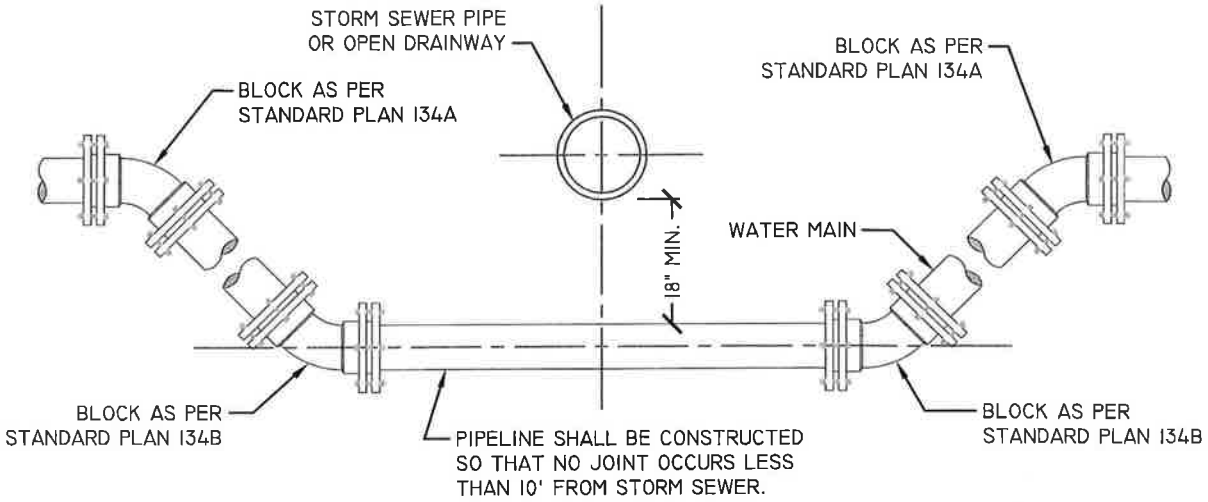


ALL PIPE, 4" THROUGH 12" SHALL BE PVC AS PER ANSI / AWWA C900, AND ALL PIPE, 14" THROUGH 48" SHALL BE PVC AS PER ANSI / AWWA C905, AND SHALL BE INSTALLED SO THAT NO JOINT OCCURS LESS THAN 10' FROM WATER MAIN CENTERLINE

CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 5/22/2002 DRAWN BY: ZEX CHECKED BY: T.W.B.	SANITARY SEWER WATER MAIN CROSSING	PLAN 138

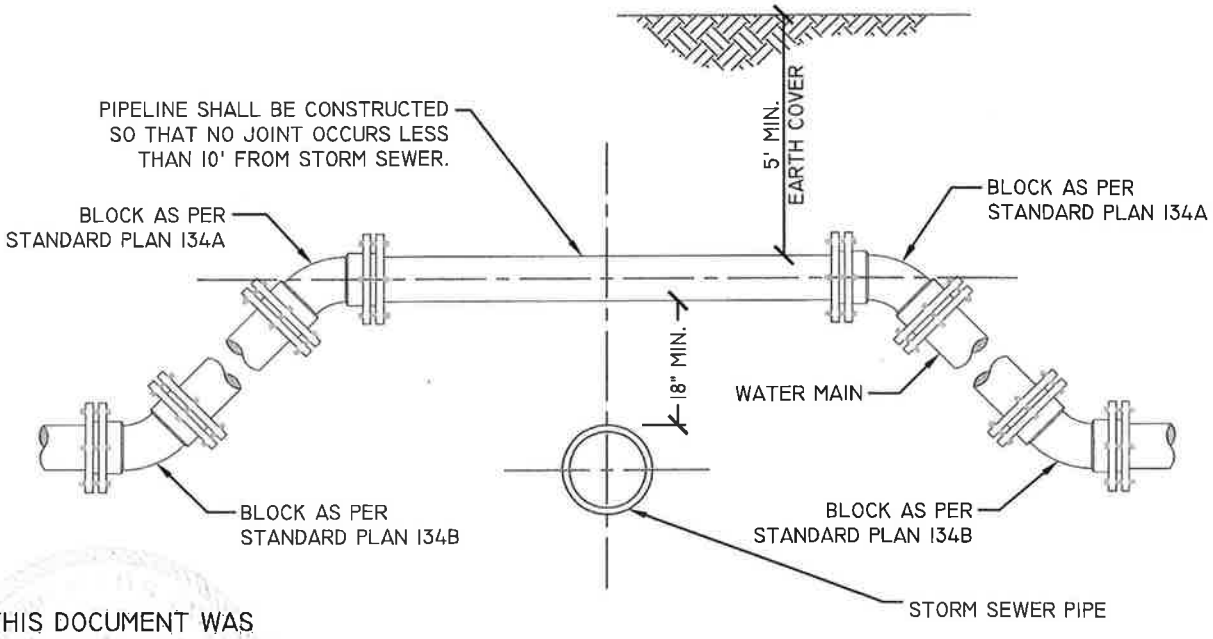
WATER MAIN CROSSING UNDER STORM SEWER / DRAINWAY

NO SCALE



WATER MAIN CROSSING OVER STORM SEWER

NO SCALE



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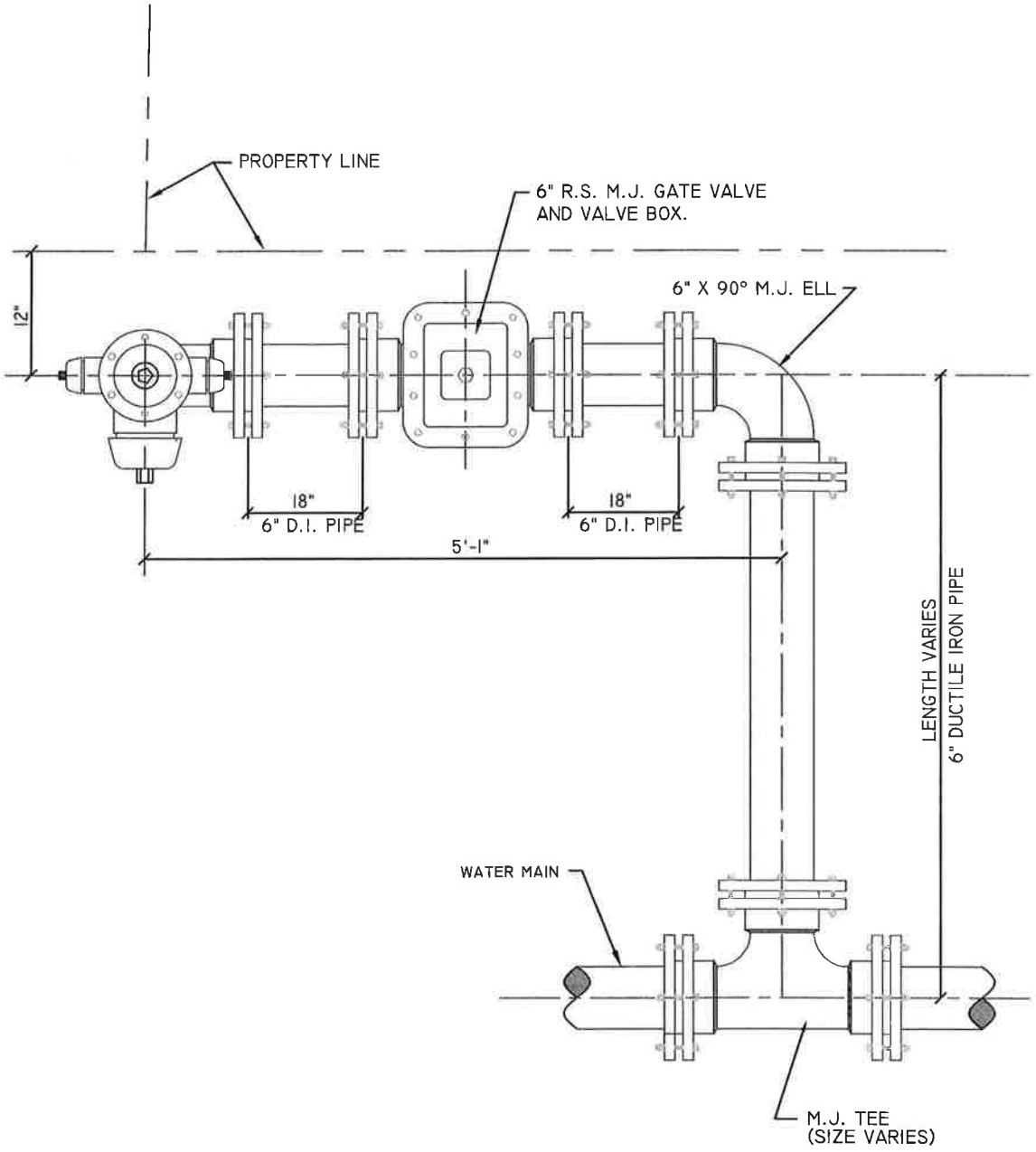
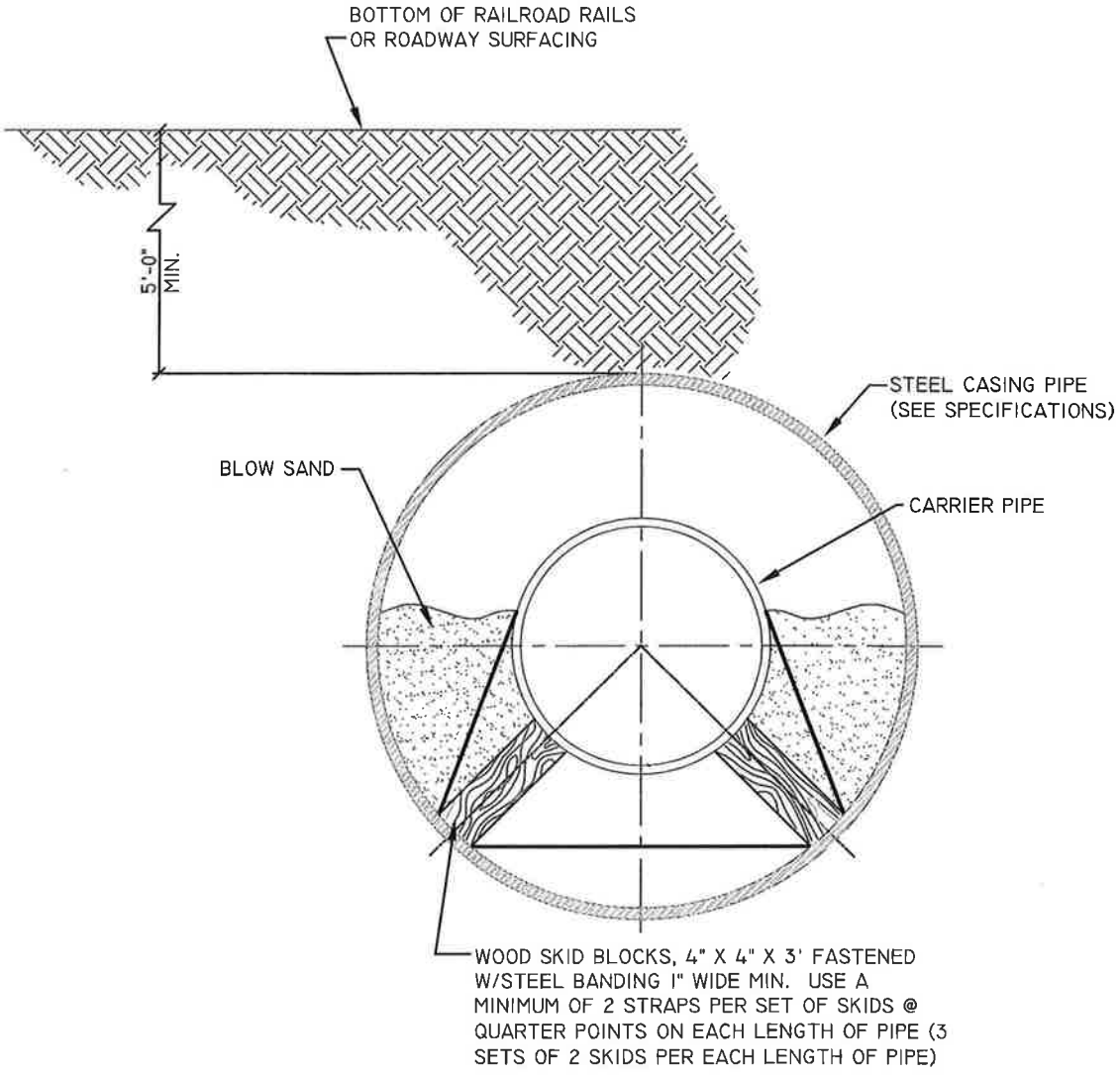
CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 8/17/2005 DRAWN BY: P.F.G. CHECKED BY: T.W.B.	STORM SEWER OR DRAINWAY - WATER MAIN CROSSING	PLAN 138A



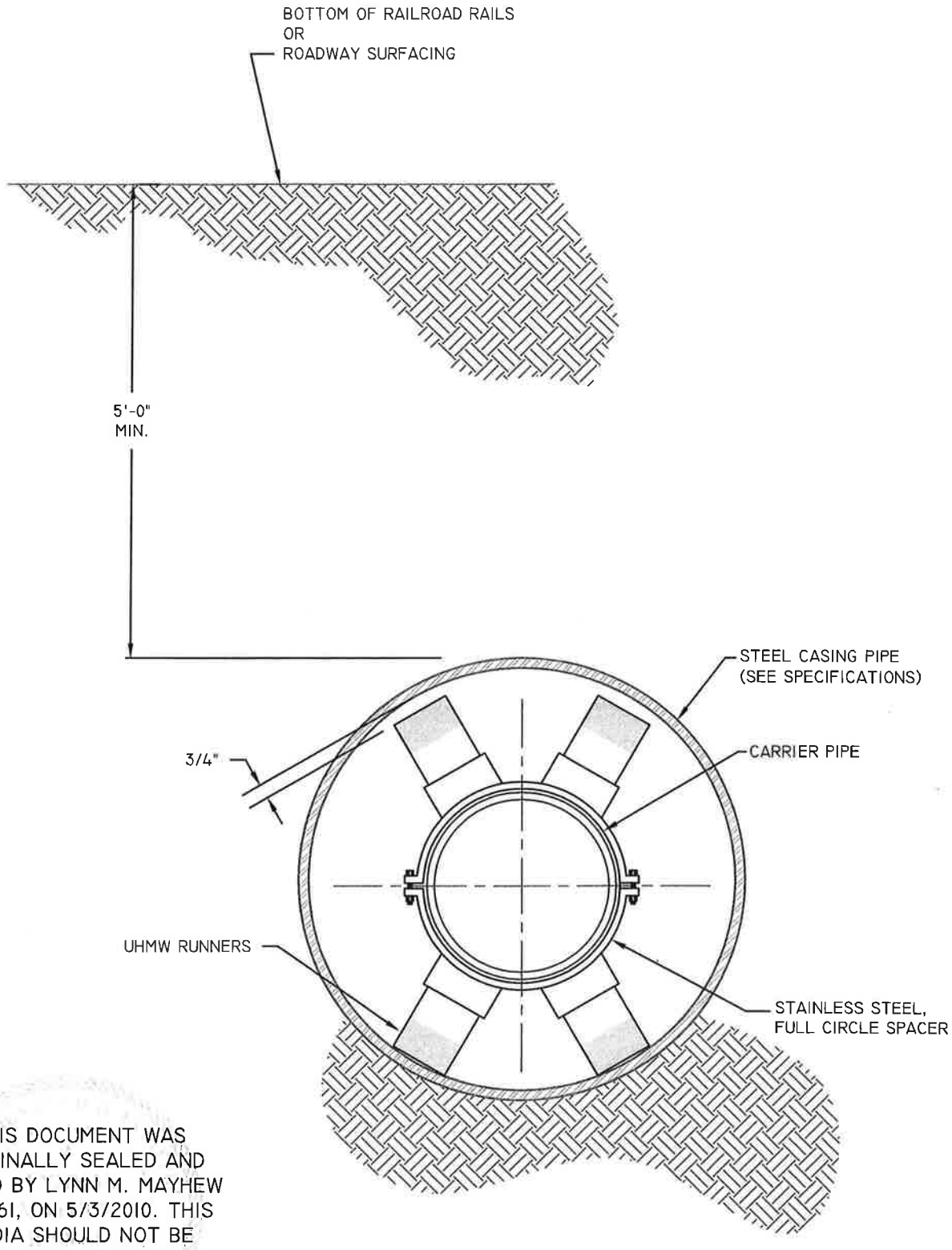
NOTES :

1. EACH FIRE HYDRANT ASSEMBLY SHALL INCLUDE: FIRE HYDRANT, 6" DUCTILE IRON PIPE AS REQUIRED TO COMPLETE THE ASSEMBLY, 6" M.J. R.S. GATE VALVE, VALVE BOX, 6" X 90° M.J. ELL, AND THRUST BLOCKS AS PER STANDARD PLANS 134 AND 135.
2. THE CONTRACTOR SHALL SET OR TURN ALL FIRE HYDRANTS SO THE PUMPER NOZZLE FACES THE DRIVEN ROADWAY OR AS OTHERWISE DIRECTED BY THE UTILITIES DEPARTMENT.
3. WHERE FIRE HYDRANTS ARE LOCATED IN A HARD SURFACED ISLAND, OR PARKING AREA, THE CONTRACTOR SHALL PROVIDE AN 18" BLOCK-OUT AROUND THE HYDRANT BARREL FILLED WITH COMPACTED SOIL.

CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 12/06/2004 DRAWN BY: ZEX CHECKED BY: T.W.B.	FIRE HYDRANT LOCATION	PLAN 140



CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 8/07/2003 DRAWN BY: ZEX CHECKED BY: T.W.B.	CARRIER PIPE AND ENCASEMENT TYPE 1	PLAN 141 1 OF 3



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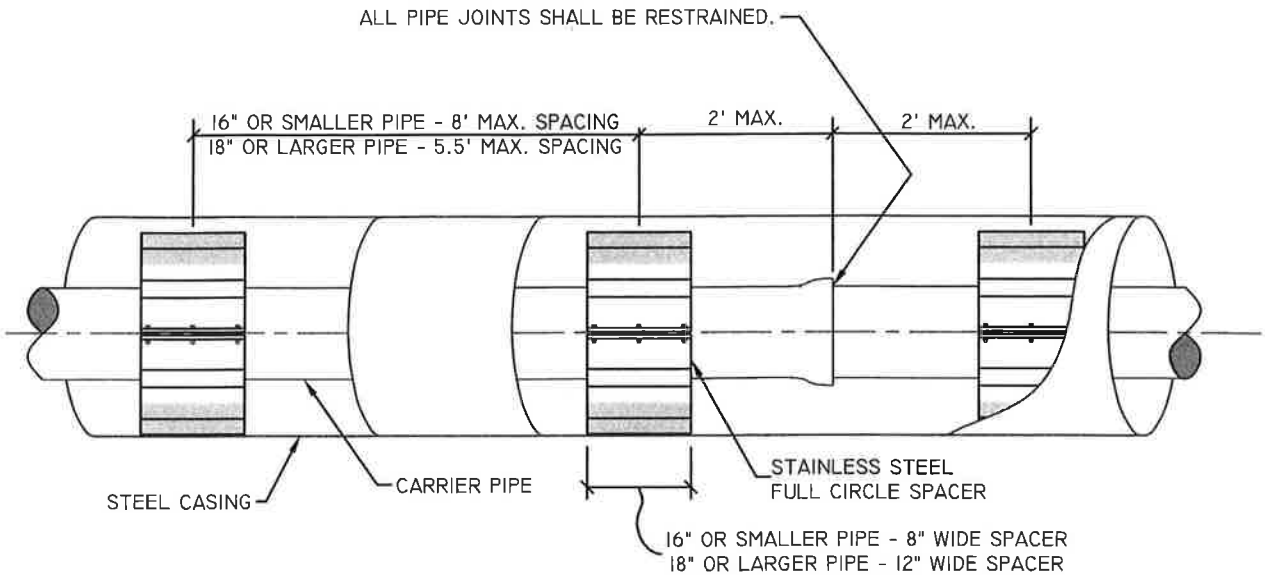
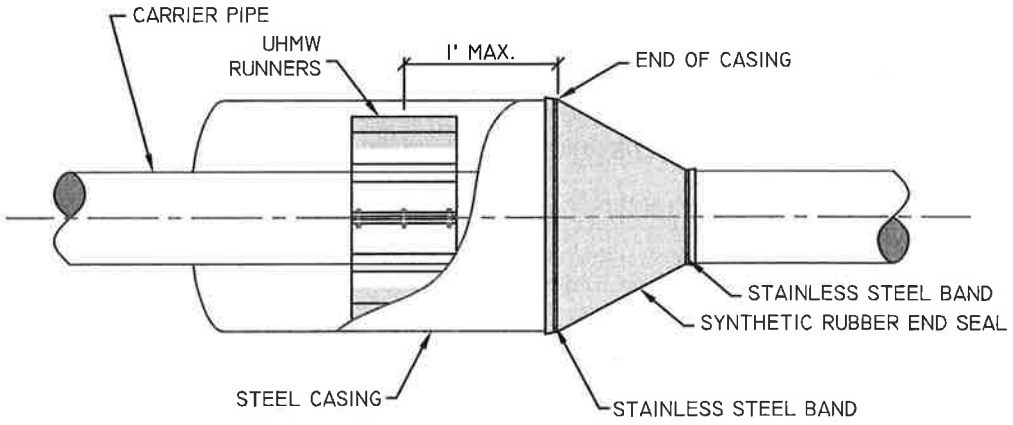
CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 12/13/2006 DRAWN BY: P.F.G. CHECKED BY: T.W.B.	CARRIER PIPE AND ENCASEMENT TYPE 2	PLAN 141 2 OF 3





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CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 1/06/2010 DRAWN BY: P.F.G. CHECKED BY: T.W.B.	CARRIER PIPE AND ENCASEMENT TYPE 2	PLAN 141 3 OF 3

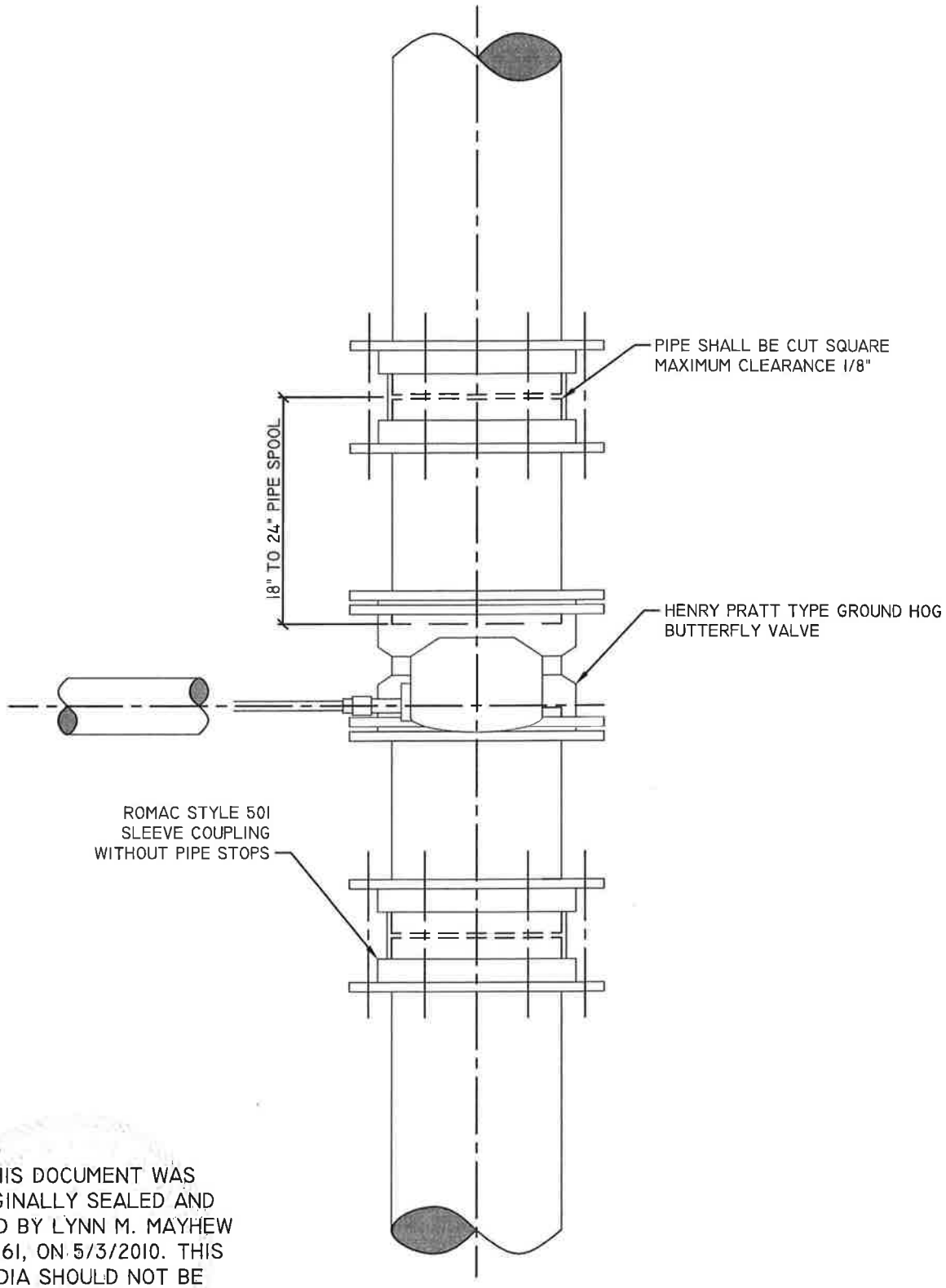
STANDARD FOR SIZING CASINGS:

CARRIER PIPE DIAMETER	GLAND O.D.	CASING DIAMETER	MINIMUM WALL THICKNESS
4"	9.120	12	0.250
6"	11.120	16	0.313
8"	13.370	18	0.313
10"	15.620	20	0.375
12"	17.880	24	0.438
14"	20.250	24	0.438
16"	22.500	28	0.438
18"	24.750	30	0.500
20"	27.000	32	0.500
24"	31.500	36	0.563
30"	37.180	42	0.563
* ALL DIMENSIONS ARE IN INCHES			

THE INSIDE DIAMETER OF THE CASING PIPE SHALL EXCEED THE OUTSIDE DIAMETER OF THE CARRIER PIPE, JOINTS, OR COUPLINGS, BY 4 (FOUR) INCHES.

THE STEEL CASING PIPE SHALL HAVE A MINIMUM WALL THICKNESS AS BASED ON THE CHART SHOWN. THE CASING SHALL BE ENTIRELY OF 1 (ONE) MATERIAL AND COATED INSIDE AND OUT WITH AN ASPHALT COATING, DOUBLED FULL DIPPED. THE DESIGN OF THE CASING PIPE IS BASED ON SUPER-IMPOSED LOADS AND NOT UPON LOADS WHICH MAY BE ON CASING AS A RESULT OF THE JACKING OPERATIONS. INCREASES IN CASING STRENGTH TO WITHSTAND JACKING LOADS SHALL BE THE RESPONSIBILITY OF THE CONTRATOR.

CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 5/22/2002 DRAWN BY: ZEX CHECKED BY: T.W.B.	ENCASEMENT DETAILS	PLAN 141A



ELEVATION

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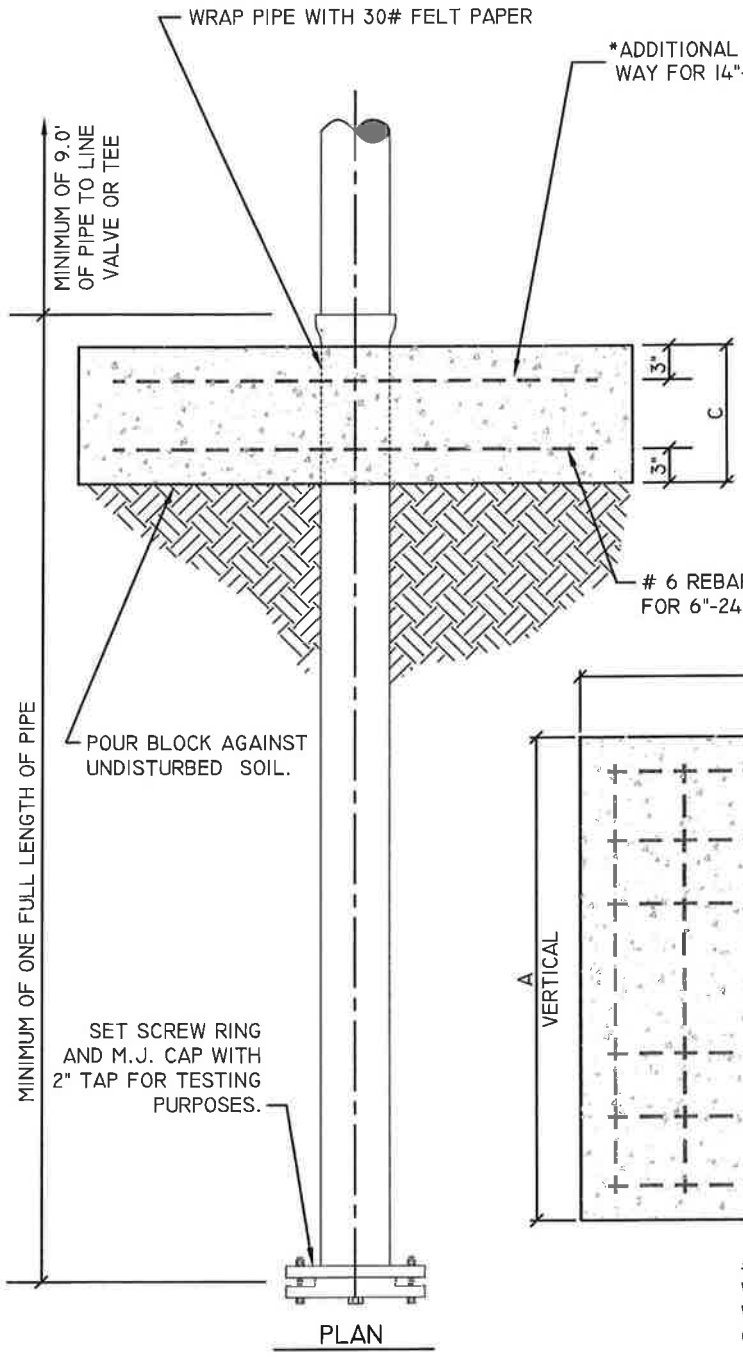
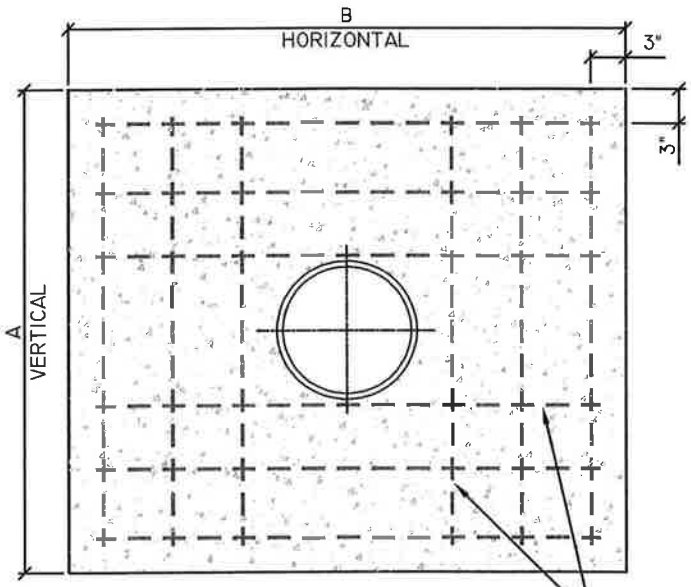
CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 5/22/2002 DRAWN BY: ZEX CHECKED BY: T.W.B.	BUTTERFLY VALVE INSTALLATION	PLAN 142



MIN. BELL BLOCK DIMENSIONS			
PIPE DIA.	VERT. "A"	HORZ. "B"	WIDTH "C"
6"	42'	48"	12"
8"	42'	48"	12"
10"	48"	48"	12"
12"	48"	48"	12"
*14"	54"	54"	18"
*16"	54"	60"	18"
*18"	54"	66"	18"
*20"	60"	84"	18"
*24"	60"	102"	18"
* 2 ROWS OF # 6 REBAR REQUIRED			



ELEVATION

NOTES:

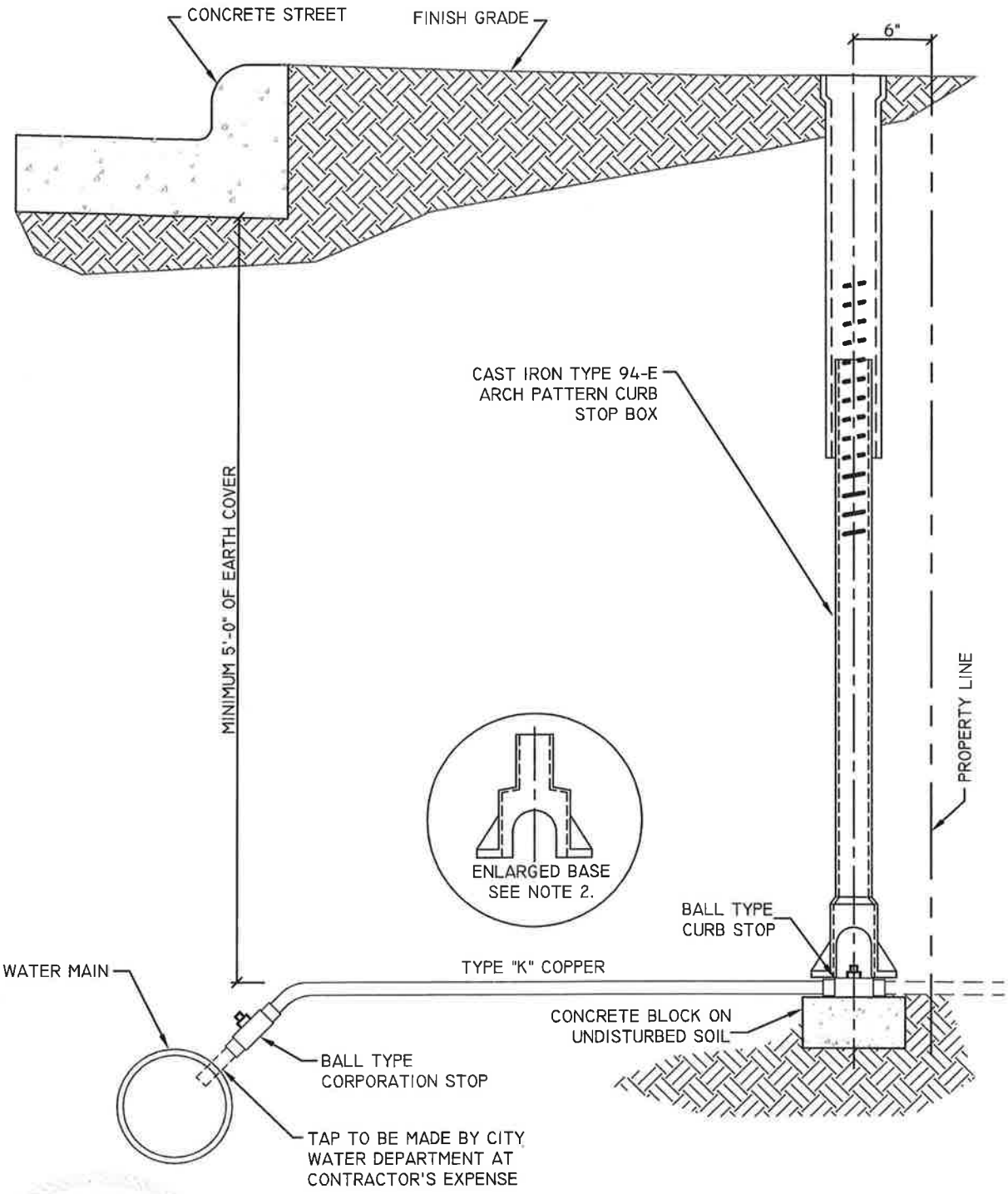
1. GRANULAR BACKFILL SHALL BE PLACED IN 3" TO 6" VERTICAL LIFTS AND COMPACTED BY APRROVED MECHANICAL TAMPING DEVICE. MINIMUM EARTH COVER SHALL BE 5'-0".
2. ALL THRUST BLOCKS TO BE TYPE 47-B MODIFIED POURED CONCRETE AS PER DIVISION II; "CONCRETE PAVING SPECIFICATIONS"; AND DIVISION VI "WATER MAINS".
3. ALL CONCRETE BLOCKING SHALL BE INSTALLED IN SUCH A MANNER THAT ALL PIPE AND FITTING JOINTS ARE ACCESSIBLE.

CITY OF GRAND ISLAND
UTILITIES DEPARTMENT

REVISED: 12/13/2004
DRAWN BY: ZEX
CHECKED BY: T.W.B.

BELL JOINT BLOCK

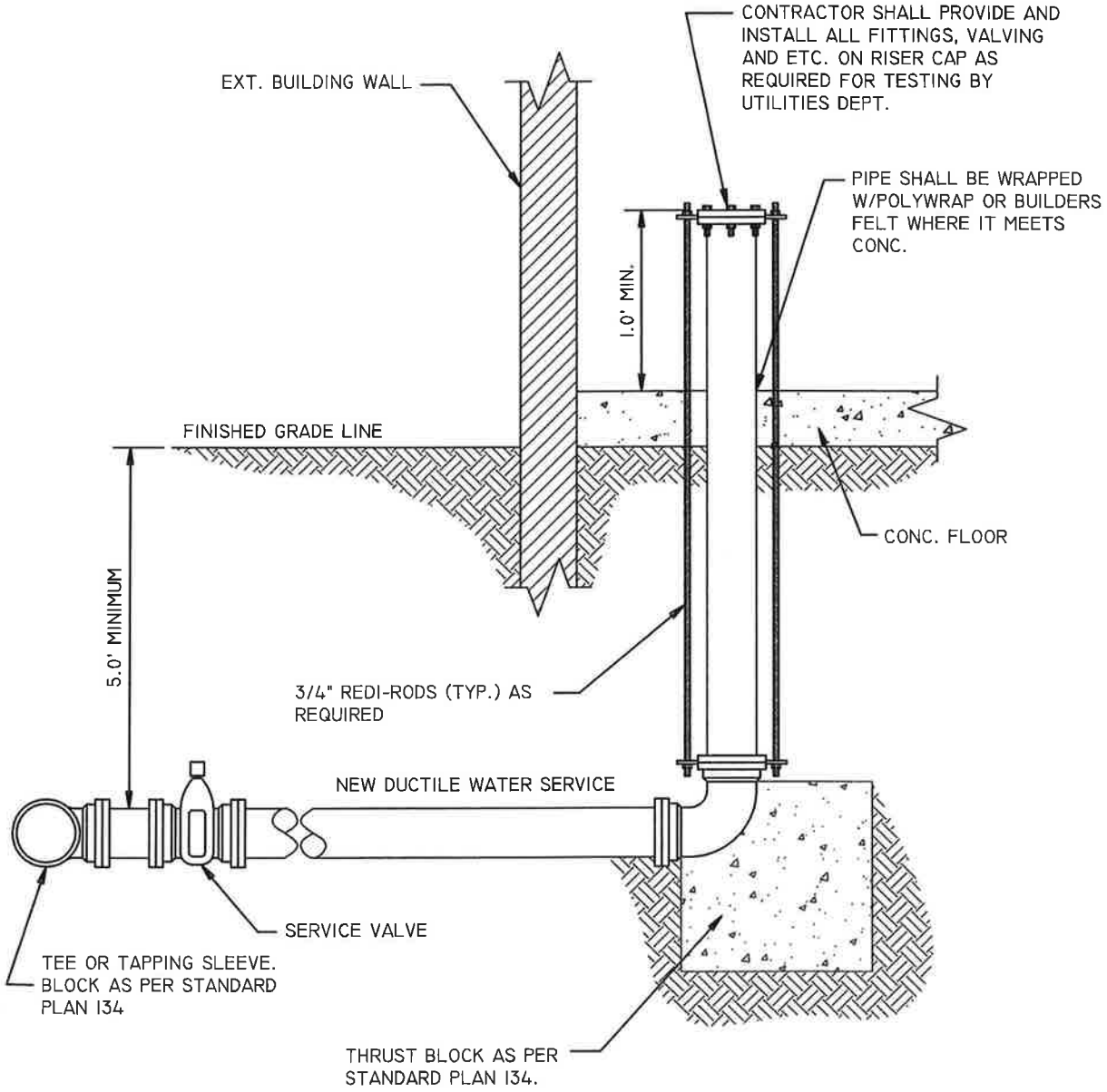
PLAN 143



NOTES:

1. A SERVICE SADDLE SHALL BE REQUIRED FOR ALL 1-½" AND LARGER TAPS ON ALL MAINS REGARDLESS OF PIPE THICKNESS CLASS.
2. USE ADDITIONAL ENLARGED BASE WITH STANDARD 94-E BOX ON ALL 1-½" AND 2" CURB STOPS.

CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 12/3/2012 DRAWN BY: P.F.G. CHECKED BY: T.W.B.	1", 1-½", OR 2" WATER SERVICE LINE	PLAN 152 1 OF 2



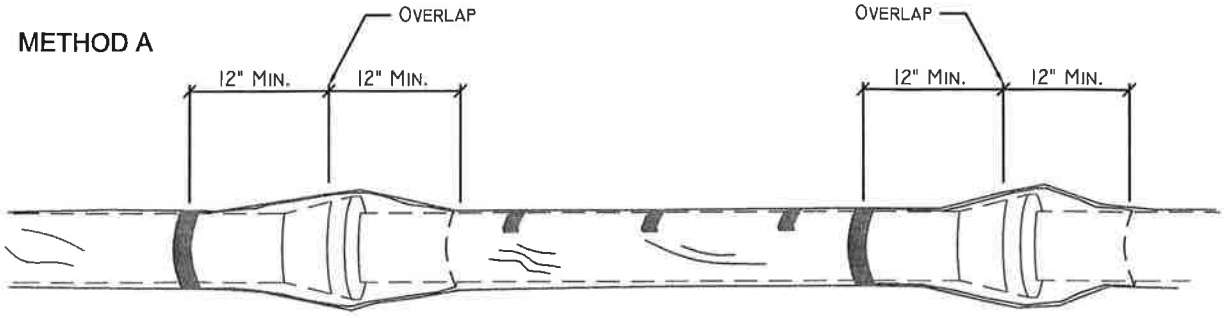
GENERAL NOTES:

1. ALL COMMERCIAL WATER SERVICES LARGER THAN 2" IN DIA. SHALL BE DUCTILE IRON FROM SERVICE VALVE TO METER.

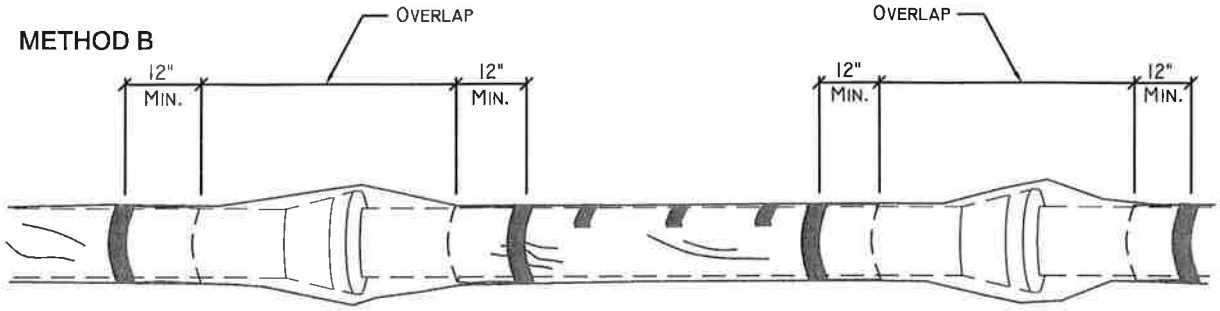
2. DETAILED PLANS FOR NEW AND REPLACEMENT SERVICE LINES SHALL BE PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE "SITE PLAN GUIDELINES FOR PRIVATE DOMESTIC AND PRIVATE FIRE SERVICE MAINS, LARGER THAN 2" DIA." THE WORKING PLANS SHALL BE SUBMITTED FOR REVIEW TO THE AUTHORITY HAVING JURISDICTION BEFORE ANY EQUIPMENT IS INSTALLED OR REMODELED. THE CITY OF GRAND ISLAND UTILITIES DEPARTMENT AND THE CITY OF GRAND ISLAND FIRE DEPARTMENT SHALL BE REFERENCED AS THE AUTHORITY HAVING JURISDICTION (AHJ).

CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 5/20/2006 DRAWN BY: P.F.G. CHECKED BY: T.W.B.	SERVICE LINES LARGER THAN 2" DIA.	PLAN 152 2 OF 2

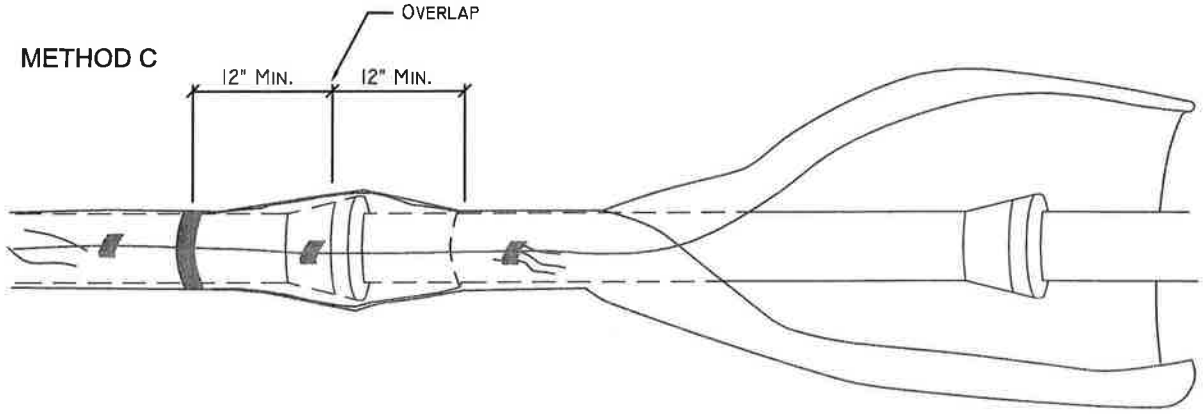
METHOD A



METHOD B



METHOD C



POLYETHYLENE TUBE AND SHEET SIZES NOMINAL THICKNESS OF 0.008 IN. (8 MIL.)		
NOMINAL PIPE DIA. (INCHES)	MIN. POLYETHYLENE WIDTH (INCHES)	
	FLAT TUBE	SHEET
4	16	32
6	20	40
8	24	48
10	27	54
12	30	60
14	34	68
16	37	74
18	41	82
20	45	90
24	54	108
30	67	134
36	81	162

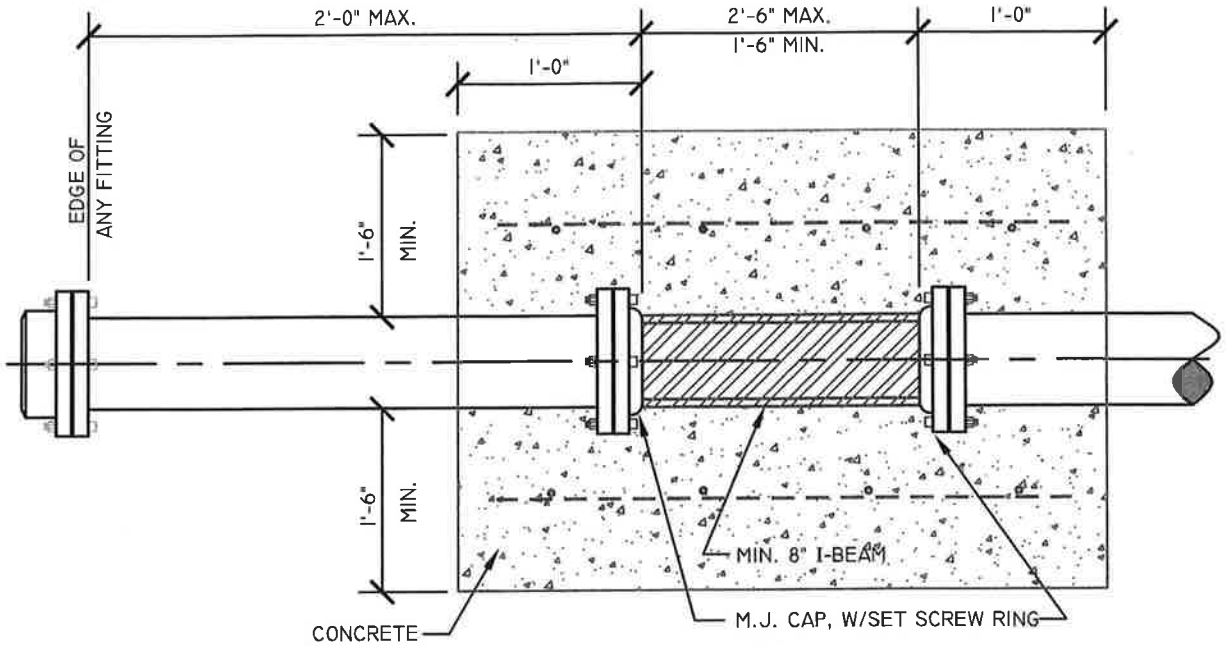
THIS DOCUMENT WAS ORIGINALLY SEALED AND ISSUED BY LYNN M. MAYHEW E-10661, ON 2/04/2013. THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT AND SHOULD BE USED FOR REFERENCE ONLY.

CITY OF GRAND ISLAND
UTILITIES DEPARTMENT

REVISED: 5/22/2002
DRAWN BY: ZEX
CHECKED BY: T.W.B.

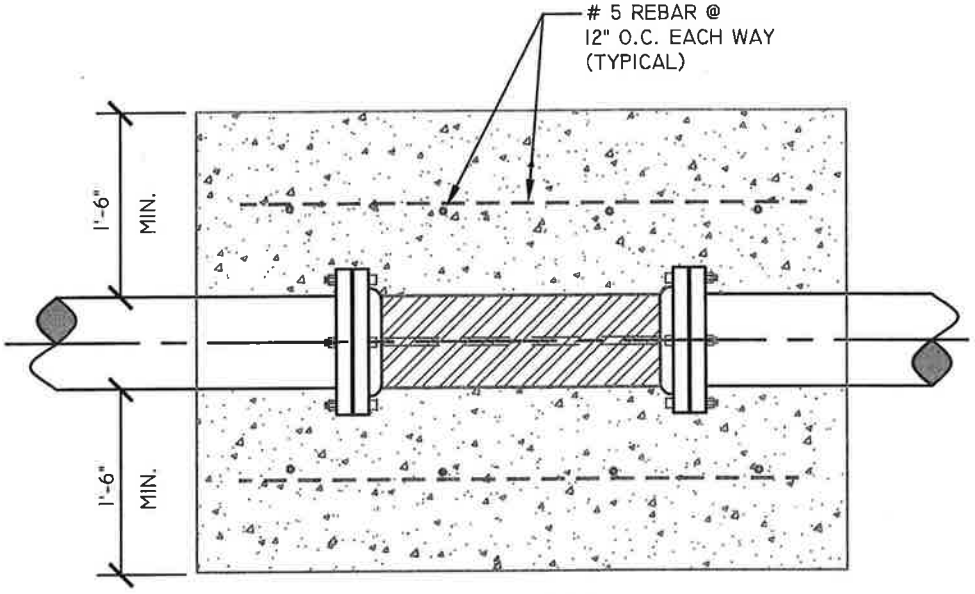
POLYETHLENE ENCASEMENT

PLAN 155



PLAN

NO SCALE



ELEVATION

NO SCALE

GENERAL NOTES

1. ALL THRUST BLOCKS TO BE TYPE 47-B MODIFIED POURED CONCRETE AS PER DIVISION II; "CONCRETE PAVING SPECIFICATIONS"; AND DIVISION VI "WATER MAINS".
2. ALL THRUST BLOCKS ARE TO BE POURED AGAINST UNDISTURBED SOIL.

CITY OF GRAND ISLAND UTILITIES DEPARTMENT	REVISED: 5/22/2002 DRAWN BY: ZEX CHECKED BY: T.W.B.	IN-LINE "I" BEAM BLOCK	PLAN 156

NOTES:

1. PUSH-ON PIPE BELLS SHALL BE RESTRAINED USING STAINLESS STEEL WEDGE FASTENERS VULCANIZED INTO THE PIPE GASKETS: I.E., FAST-GRIP®; FIELD LOK 350®; OR APPROVED EQUAL GASKETS.
2. RETRAINER GLANDS SHALL BE GRADE 65-45-12, DUCTILE IRON, PER A.S.T.M. A536 WITH A WEDGE STYLE DESIGN AND TORQUE LIMITING BOLT HEADS. GLANDS SHALL BE ROMAGRIP®, MEGALUG SERIES 1100®, OR APPROVED EQUAL.
3. HYDRANT OFFSET FITTINGS SHALL BE DUCTILE IRON, MECHANICAL JOINT, WITH SWIVEL ENDS, AND WITH A PRESSURE RATING OF 350 PSI.
4. THE CONTRACTOR SHALL SET OR TURN THE FIRE HYDRANT SO THE PUMPER NOZZLE FACES THE DRIVEN ROADWAY OR AS OTHERWISE DIRECTED BY THE UTILITIES DEPARTMENT.
5. WHERE FIRE HYDRANTS ARE LOCATED IN HARD SURFACED AREAS, THE CONTRACTOR SHALL PROVIDE AN 18" BLOCK-OUT AROUND THE HYDRANT BARREL FILLED WITH COMPACTED SOIL.
6. WATER MAINS LARGER THEN 6" DIA. REQUIRE A M.J. REDUCER INSTALLED WITH RETAINER GLANDS BETWEEN THE LINE VALVE AND THE HYDRANT OFFSET FITTING.

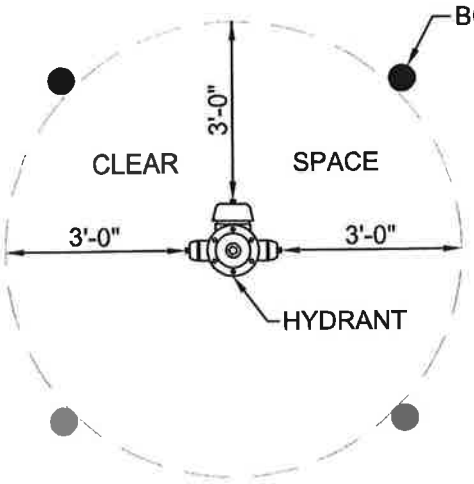
PROFILE VIEW
NO SCALE

CITY OF GRAND ISLAND
UTILITIES DEPARTMENT

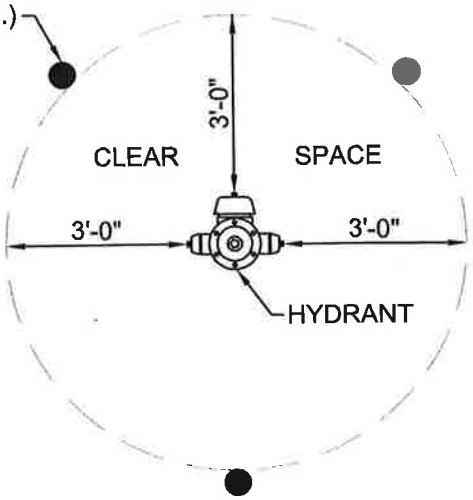
REVISED: 1/23/2007
DRAWN BY: P.F.G.
CHECKED BY: T.W.B.

FIRE HYDRANT ON DEAD END W/ RESTRAINED JOINTS

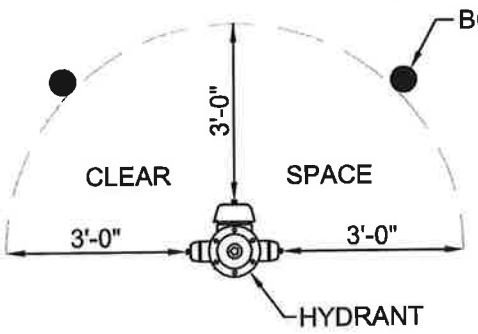
PLAN 158



FIRE HYDRANT BOLLARD PROTECTION- TYPE C



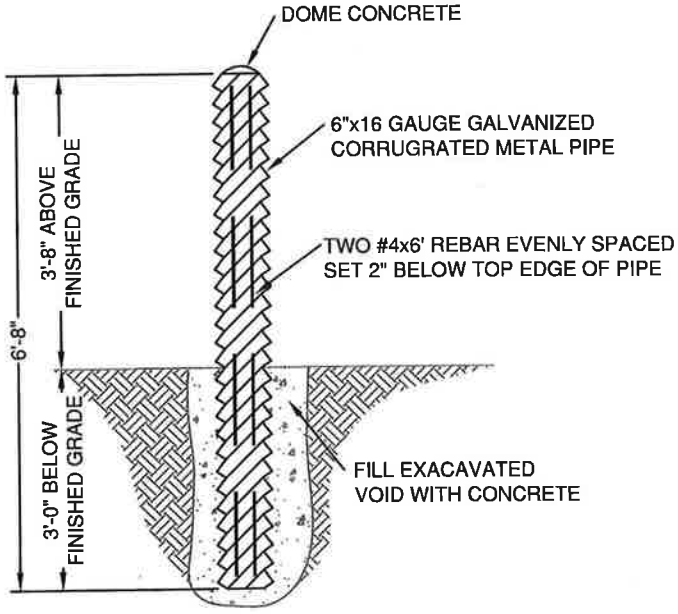
FIRE HYDRANT BOLLARD PROTECTION- TYPE B



FIRE HYDRANT BOLLARD PROTECTION- TYPE A

NOTE:
PROTECTIVE BOLLARDS SHALL BE PLACED SO THERE IS NO INTERFERENCE WITH THE OPERATION OF THE FIRE HYDRANT OR IT'S AUXILARY VALVE.

TYPE 47-B CONCRETE REQUIRED
VOLUME-1.4 CU. FT.
FILLED WT.-APPROX. 235 LBS. EA.



FIRE HYDRANT BOLLARD DETAIL

CITY OF GRAND ISLAND UTILITIES DEPARTMENT	DATE: 4/9/2012 DRAWN BY: K.J.M. CHECKED BY: T.W.B.	FIRE HYDRANT BOLLARD PROTECTION	PLAN 160


PROFESSIONAL CIVIL ENGINEER
TIMOTHY A.
GOLKA
E-12055
2/12/14
STATE OF NEBRASKA