Specifications and Contract Documents
for the
East Manawa Subdivision Overlot Grading
City of Council Bluffs, Iowa
City Project No. CD 25-04
August, 2024

Prepared By:
HGM Associates Inc.
640 Fifth Avenue
Council Bluffs, Iowa 51501
HGM Project No. 150624

	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa. Paul J. Gonzales (Date) My license renewal date is December 31, 2024 Pages or sheets covered by this seal: All Pages

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City of Council Bluffs, Iowa
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INSTRUCTIONS TO BIDDERS

The contract documents provide the bidding of the *"**East Manawa Subdivision Overlot Grading, City of Council Bluffs, Iowa, City Project No. CD 25-04**"*. Bids must be submitted in accordance with the specifications. Where any contract documents are in conflict with the General Conditions, the contract documents specifically applicable to this project shall govern.

1. METHOD OF BIDDING

All bid items are based on unit prices. All unit prices must be submitted as dollars and cents. Examples of acceptable unit prices are 1000.00, 10.13, 100.56, 24.69. No partial cents may be included in unit prices. Examples of unacceptable unit prices are 1000.004, 10.125, 100.556, 24.687. The quantities of each item have been estimated from the construction plans. The unit price bid for each item of work shall be full compensation to the contractor for the complete installation of that particular item. Any item of work not listed on the proposal form, which is required to complete a bid item, shall be considered as incidental to that item. The TOTAL BASE BID will be the sum of the unit price extensions for all divisions. Unit price extensions shall be the estimated quantity for each item multiplied by the bid unit price. A unit price must be submitted for all items appearing in the bid line items, including lump sum bid items. The basis of award shall be the lowest acceptable bid (sum of unit price extensions) from a qualified bidder for all divisions.

2. SUBMISSION OF BID

Each bid must be submitted online at https://cbiabids.ionwave.net. Registration is required for bid submission. No paper submissions will be accepted.

The bidder must print, manually sign, and upload as a required response attachment the Bidder Status Form, Past Project Information form, and the Title VI & EEO Certificate of Compliance for the bid to be considered complete and valid.

A copy of the bid security (certified check, bid bond, or share draft) must be uploaded in the assigned requested attachments area.

3. WITHDRAWAL OR REVISION OF PROPOSALS

Any bid may be withdrawn or revised prior to the scheduled time for opening of bids. After opening of bids, no bidder may withdraw his proposal for a period of sixty (60) days.

4. REJECTION OF BIDS

It is noted that the City reserves the right to reject any or all bids pertaining to its Division of the Work. The City may waive any informalities or technicalities in the bids as it pertains to their Divisions of the Work.

5. QUALIFICATION OF BIDDER

The Owner may make such investigations as he deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request.

The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner such bidder is properly qualified to carry out the obligations of the Contract and to complete the work contemplated therein to the best interest of the City of Council Bluffs, Iowa.

6. NONRESIDENT BIDDER REQUIREMENTS

A Resident Bidder is a person or entity authorized to transact business in this state and having a place of business for transacting business within the state at which it is conducting and has conducted business for at least three years prior to the date of the first advertisement for the public improvement. If another state or foreign country has a more stringent definition of a resident bidder, the more stringent definition is applicable as to bidders from that state or foreign country.

If the bidder does not qualify as a resident bidder, the nonresident bidder shall specify on the project proposal whether any preference to resident bidders, including but not limited to any preference to bidders, the imposition of any type of labor force preference, or any other form of preferential treatment to bidders or laborers from that state or foreign country is in effect in the nonresident bidder's state or country of domicile at the time of a bid submittal.

A resident bidder shall be allowed a preference as against a nonresident bidder from a state or foreign country if that state or foreign country gives or requires any preference to bidders from that state or foreign country, including but not limited to any preference to bidders, the imposition of any type of labor force preference, or any other form of preferential treatment to bidders or laborers from that state or foreign country. The preference allowed shall be equal to the preference given or required by the state or foreign country in which the nonresident bidder is a resident. In the instance of a resident labor force preference, a nonresident bidder shall apply the same resident labor force preference to a public improvement in this state as would be required in the construction of a public improvement by the state or foreign country in which the nonresident bidder is a resident.

7. TAXES

Pursuant to Iowa Code Section 423.3(80), the Contractor will be authorized to purchase construction materials in Iowa for this project tax free. The City of Council Bluffs as the "exempt Entity" shall issue an exemption certificate to be used by the Contractor and his subcontractors to purchase materials tax free for the designated project.

The Contractor shall immediately upon notification of Contract award provide the City Representative with a list of all subcontractors to be used on the project in order that the City may identify them in the exemption certificate.

If successful bidder is a non-Iowa partnership, individual, or corporation, bidder shall furnish evidence, prior to execution of Contract, that bond or securities have been posted with the Iowa Division of Labor in the amount required by law.

8. LAWS, PERMITS, LICENSES, REGULATIONS, ETC.

Contractor, in execution of the work, shall conform to all applicable Federal and State Laws, municipal ordinances and rules and regulations of all authorities having jurisdiction over construction of the work, including in part all construction codes and safety codes which may apply to (1) performance of the work; (2) protection of adjoining and adjacent property; (3) maintenance of passageways, guard fences or other protective facilities; and shall obtain and pay for all permits, licenses and approvals necessary for construction of the work and give all required notices.

The City of Council Bluffs brings to the Contractor's attention that this project may contain permit spaces and that permit space entry is allowed only through compliance with a permit space program meeting the requirements of 29 CFR 1910.146(c)(8)(i). The City of Council Bluffs has in place procedures for permit space entry in accordance with 29 CFR 1910.146 (c)(8)(iii). Prior to any of the Contractor's personnel entering into permit space the Contractor shall obtain a copy of the City procedures for permit space entry. The Contractor shall conduct the activities of his personnel in accordance with the City's procedures for permit space entry during the execution of work on this project.

A copy of the City of Council Bluffs' procedure for permit space entry is included in these specifications as Special Provision No 1.

Contractor shall arrange for all inspectors required by Federal, State, Municipal or other authorities having lawful jurisdiction and pay all fees and costs incurred.

Under Code of Iowa Chapter 91C (1995) any construction Contractor performing work in Iowa is required to be registered with the Iowa Division of Labor. Contact the Iowa Division of Labor, telephone number (515) 242-5871 for information.

9. SUBCONTRACTS

The bidder is specifically advised that any person, firm, or other party to whom it is proposed to award a subcontract under this Contract must be acceptable to the Owner.

The Contractor shall submit in writing to the Owner for approval the names of the Subcontractors proposed for the work, prior to execution of the Contract.

The Owner reserves the right to reject any proposed Subcontractor if the successful bidder fails to satisfy the Owner that the proposed Subcontractor is properly qualified to complete the work contemplated.

10. QUESTIONS, CLARIFICATIONS AND INTERPRETATIONS

If a bidder has any questions, or requires a clarification or interpretation of the plans or specifications, or if such bidder is in doubt as to the true meaning of any part of the Contract Documents, bidder should at once notify the Owner, who, with time permitting, will issue a written instruction in the form of an addendum to all prime bidders of record.

Every question or request for clarification or interpretation should be submitted through https://cbiabids.ionwave.net. Such questions or requests should be submitted at least seven (7) days before the date fixed for opening of bids.

Clarifications, interpretations, and supplemental instructions will be available in addenda issued to bidders of record before bids are received.

No clarification or interpretation of the meaning of the plans, specifications, or other Contract Documents will be made to any bidder orally. The Owner will not be responsible for oral clarifications or interpretations, which anyone presumes to make on behalf of the Owner.

11. BIDDERS' RESPONSIBILITY

Before submitting Proposals, bidders shall carefully examine the entire site of the proposed work and adjacent premises and the various means of approach and access to the site, and make all necessary investigations to inform themselves thoroughly as to the facilities for delivering, handling and placing materials at the site.

Bidders shall inform themselves thoroughly as to all difficulties involved in the completion of all work under this contract in accordance with its requirements.

Bidders shall examine the plans and specifications and other Contract Documents and shall exercise their own judgment as to the nature of the whole of the work to be done. Assume all risks irrespective of guarantees of whosoever, with regard to computations or statements of amounts of quantities necessary to fully complete the work in strict compliance with the Contract Documents.

Topography of the ground or the location of other structures are shown on the plans and are believed to be reasonably correct, but are not guaranteed to be absolutely so and are presented by the Owner only as an approximation.

No plea of ignorance of the conditions that exist or may hereafter exist or of conditions of difficulties that may be encountered in the execution of the work under this Contract, as a result of failure to make the necessary examinations and investigations, shall be accepted as an excuse for any failure or omission on the part of the Contractor to fulfill in every detail all requirements of the Contract Documents or will be accepted as a basis for any claims whatsoever for extra compensation or for an extension of time.

Nonresident bidders are cautioned to carefully review the provisions in numbered paragraph 6 above and follow the requirements for supplying the information and Authority on their own (home) state or country of domicile's preference(s) in completing the bid Proposal.

12. TESTING

Attention of the Contractors is directed to the material tests required on this Contract. All laboratory tests shall be made by a testing laboratory employed by the Contractor and approved by the Owner. The cost of tests shall be paid by the Contractor. Unless otherwise provided in the Special Conditions of the Contract and/or in the Contract Specifications, the Contractor shall furnish the materials to be tested and incidental materials and labor required at the site in connection with the tests, the cost of which shall be considered as included in the price or prices set forth in the Contract for contract items.

Field testing for specification compliance of completed work will be paid for by the Owner. The Contractor shall notify the Owner when he considers his work to be ready for testing and the Owner will have such tests performed to determine if performance has been obtained.

If performance has not been obtained, the Contractor shall take the necessary measures for specification compliance of completed work for retesting. The Contractor shall notify the Owner when he considers his work to be ready for retesting and the Owner will have such retests performed to determine if performance has been obtained. The costs of all retests shall be paid by the Contractor.

13. INSURANCE

Contractor shall: (1) faithfully perform said Contract on Principal's part and satisfy all claims and demands incurred for the same; (2) fully indemnify and save harmless the Owner from all costs and damages which said Owner may suffer by reason of failure to do so; and (3) fully reimburse and repay said Owner all outlay and expenses which said Owner may incur in making good any default.

The Contractor shall protect, defend, indemnify and save harmless the Owner, the Architect/ Engineer and their officers, collectively referred to as "Indemnitees", from and against suits, actions, claims, losses, liability or damage of any character, and from and against costs and expenses, including in part attorney fees, incidental to the defense of such suits, actions, claims, sickness, including death, to any person, or damage to property, including in part the loss of use resulting there from, arising from any act or omission of the Contractor, or his employees, servants, agents, subcontractors or suppliers, or anyone else under the Contractor's direction and control, and arising out of, occurring in failure of performance of any work or services called for by the Contract, or from conditions created by the performance or non-performance of said work or services. The Contractor's indemnification hereunder shall apply without regard to whether acts or omissions of one or more of the Indemnitees would otherwise have made them jointly or derivatively negligent or liable for such damage or injury, excepting only that the Contractor shall not be obligated to so protect, defend, indemnify and save harmless if such damage or injury is due to the sole negligence of one or more of the Indemnitees.

The Contractor shall carry and maintain during the life of the Contract insurance as follows:

1.	Worker's Compensation	Statutory
	Employee's Liability Coverage	$ 500,000

2. Commercial General Liability (Occurrence Form)

Bodily Injury and Property Damage (Combined single Limit)

General Aggregate	$2,000,000
Products and Completed Operations Aggregate	$2,000,000
Personal & Adv. Injury	$1,000,000
Each Occurrence	$1,000,000
Fire Damage	$ 50,000
Medical Expense	$ 5,000

*Explosion, Collapse and Underground Coverage Required.

3.	Comprehensive Auto Liability Bodily Injury -- (Owned & Non-Owned Vehicles)	$1,000,000 (each occurrence)
	Property Damage	$ 500,000 (each occurrence) $1,000,000 aggregate or $1,000,000 combined single limit
4.	Excess Liability	$1,000,000

*Applicable Conditions

X--Blasting operations, required whenever explosives will be used.
C--Collapse, required whenever demolitions or excavation is undertaken.
U--Underground, required on all contracts for sewers, water mains, paving, or excavating.

5. <u>OWNER'S PROTECTIVE LIABILITY</u>

Contractor shall purchase and maintain for Owners at Contractor's expense Protective Liability insurance naming Owners as the co-insureds with Engineer and others as indicated below as additional insured. Said insurance will protect said parties against claims which may arise from operations under the Contract Documents. This coverage shall be in the same company which provides Contractor's liability insurance coverage, and in the same minimum amount, or the Contractor shall provide a general liability policy as follows:

1) Provide per site project aggregate coverage.
2) The City named as additional insured as pertaining to general liability and work performed per project aggregate.
3) Provide copies or endorsement.
4) Insurance certificate shall indicate City Project No. and Project title.

The entities listed below are "additional insured as their interest may appear" including their officers, directors, agents, and employees.

Engineer: HGM Associates Inc.
Other: _____

6. PROPERTY INSURANCE **[Not required in this contract]**

6.1. Contractor shall purchase and maintain property insurance upon the Work at the site in the amount of the full replacement cost thereof. This insurance shall:

6.1.1. Include the interests of Owner, Contractor, Subcontractors, Engineer, Engineer's Consultants and any other persons or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

6.1.2. Be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, falsework and Work in transit and shall insure against at least the following perils: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils as may be specifically required by the Supplementary Conditions.

6.1.3. Include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of Engineers and Architects);

6.1.4. Cover materials and equipment in transit for incorporation in the Work or stored at the site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer; and

6.1.5. Be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days' written notice to each other additional insured to whom a certificate of insurance has been issued.

14. COPIES OF PLANS AND SPECIFICATIONS

Upon request, a maximum of two (2) copies of the Project plans and specifications will be provided to the successful bidder at no charge. Additional copies may be obtained by the Contractor upon payment of reproduction fee of $100.00 for each set of Contract Documents.

15. PERFORMANCE & PAYMENT BONDS

Prior to commencement of Contract, Contractor shall deliver Performance and Payment Bonds in form incorporated in the specifications and with surety acceptable to Owner in an amount equal

to one hundred percent (100%) of the amount of the Contract payable to the City of Council Bluffs, Iowa.

16. PAYMENTS TO CONTRACTOR

Payment to the Contractor shall be as set forth in the General Conditions, Article 14, as amended in the Supplementary Conditions.

17. TIME OF COMPLETION

Work on the proposed Project shall be commenced after written Notice to Proceed is issued or after receipt of a signed contract. Phase 1 construction shall be completed on or before December 15, 2024. All other phases shall be completed on or before November 15, 2025.

Substantial Completion shall be defined as completion of all pay item work included in the contract, with only minor punch list item remaining. All utility work shall be installed and tested; excavation and structural fill complete and final erosion control and seeding installed.

The Owner shall be entitled to deduct from monies owed the Contractor for liquidated damages an amount not to exceed $500 for each and every calendar day that the Contractor is in default of substantial completion of the work or an extension thereof.

No work will be permitted on Sundays and legal holidays without express permission of the Engineer. The owner will deduct from the contract retainage the owner's expenses of providing construction phase engineering services for Sunday and legal holidays, which the Contractor works.

The estimated progress of the work in the form of a graph showing estimated construction time vs. estimated construction dollars expended shall be submitted to the Engineer at least five (5) calendar days prior to the preconstruction conference.

The schedule and/or sequence of the work shall be subject to review by the Owner.

18. TITLE VI COMPLIANCE

The City of Council Bluffs in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C. 2000d-2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will affirmatively insure that in any contract 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, national origin, sex, age, or disability in consideration for an award.

19. EQUAL EMPLOYMENT OPPORTUNITY

The bidder will be required to submit the "Title VI & EEO Certificate of Compliance" as a response attachment through https://cbiabids.ionwave.net.

20. SUPERVISION OF THE WORK

A qualified superintendent, who is acceptable to the Owner, shall be maintained on the work and give efficient supervision to the work until its completion. The superintendent shall have full authority to act in behalf of the Contractor, and all directions given to the superintendent shall be considered given to the Contractor. In general, the superintendent shall not be engaged in the full-time operation of equipment/machinery on the work.

AGREEMENT

This AGREEMENT is made and entered this ___ day of _____, 20_____, by and between the City of Council Bluffs, Iowa, hereinafter called the Owner, and _____, hereinafter called the Contractor, with said Agreement to be effective when approved and executed by the Owner.

Whereas the Contractor on the _____ day of _____, 20_____, did submit a proposal to the Owner on certain Plans and Specifications entitled ***"East Manawa Subdivision Overlot Grading, Project No. CD 25-04"*** a copy of which Proposal is hereto attached and made a part hereof, the parties hereto do hereby, in consideration of the mutual covenants hereinafter contained, agree with each other as follows:

1. The Contract Documents include the Notice to Bidders, Instructions to Bidders, General Conditions, Supplemental Specifications, Special Provisions, Proposal, Agreement, Bonds, Standard Details, Construction Drawings, Addenda and Modifications are a part of this Contract the same as if each had been fully set out and attached hereto.

2. The Contractor agrees to furnish all labor, mechanics for labor, tools, materials, and equipment to complete the construction under this Contract in a good and workmanlike manner in accordance with the Plans and Specifications.

3. The Owner agrees to pay the Contractor in accordance with the provisions of said plans and specifications and the accepted proposal.

4. It is mutually agreed by each party hereto that all provisions of said plans and specifications shall be strictly complied with and conformed to the same as if rewritten herein, and that no substitutions or changes in said plans and specifications shall be made except upon written consent of the Owner, and such allowance shall in no manner be construed to release either party from any specified or implied obligation of said plans and specifications.

5. The Contractor shall complete the work under this Contract within the time allotted by the Notice to Bidders or by an approved extension thereof. If the Contractor shall fail to do so, then the Contractor agrees to pay the Owner as liquidated damages, and not as a penalty, the sum of $500 or each and every calendar day that the Contractor is in default of substantial completion of the work under this Contract.

IN WITNESS WHEREOF, we, the contracting parties by our agents hereto affix our signatures.

Executed for Contractor: By:_____

_____
(Title)

ATTEST: (Witness)

_____ _____
Date Signed

Bonds and Insurance Approved By: _____
City Attorney: Richard B. Wade

Non Discrimination in Employment Clause Compliance _____
Approved By: Human Relations Department

Executed by City: By: _____
Mayor: Matthew J. Walsh

ATTEST: (Witness) _____
Date Signed

_____
City Clerk: Jodi Quakenbush

_____

Performance Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):
City of Council Bluffs
Department of Community Development
209 Pearl Street
Council Bluffs, Iowa 51503

CONTRACT
Date:
Amount:
Description (Name and Location): ***East Manawa Subdivision Overlot Grading***
CD 25-04

BOND
Date (Not earlier than Contract Date):
Amount:
Modification to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

CONTRACTOR AS PRINCIPAL
Company: (Corp. Seal)

Signature:_____
Name and Title:

SURETY
Company: (Corp. Seal)

Signature:_____
Name and Title:
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL
Company: (Corp. Seal)

Signature:_____
Name and Title:

SURETY
Company: (Corp. Seal)

Signature:_____
Name and Title:

EJCDC No. 1910-28-A (1996 Edition)
Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.

1. The CONTRACTOR and the Surety, jointly and severally bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Contract, which is incorporated herein by reference.

2. If the CONTRACTOR performs the Contract, the Surety and the CONTRACTOR have no obligations under this Bond, except to participate as provided in Paragraph 3.1

3. If there is no OWNER Default, the Surety's obligation under this Bond shall rise after:

3.1 The OWNER has notified the CONTRACTOR and the Surety at the addresses described in paragraph 10 below, that the OWNER is considering declaring a CONTRACTOR Default and has requested and attempted to arrange a conference with the CONTRACTOR and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Contract. If the OWNER, the CONTRACTOR and the Surety agree, the CONTRACTOR shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive the OWNER's right, if any, subsequently to declare a CONTRACTOR Default; and

3.2 The OWNER has declared CONTRACTOR Default and formally terminated the CONTRACTOR's right to complete the Contract. Such CONTRACTOR Default shall not be declared earlier than twenty days after the CONTRACTOR and the Surety have received notice as provided in paragraph 3.1; and

3.3 The OWNER has agreed to pay the Balance of the Contract Price to:

1. The Surety in accordance with the term of the Contract;

2. Another contractor selected pursuant to paragraph 4.3 to perform the Contract.

4. When the OWNER has satisfied the condition of paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

4.1 Arrange for the CONTRACTOR, with consent of the OWNER, to perform and complete the Contract; or

4.2 Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or

4.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the OWNER for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the OWNER and the contractor selected with the OWNER's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds Issued on the Contract, and pay to the OWNER the amount of damages as described in paragraph 6 in excess of the Balance of the Contract Price incurred by the Owner resulting from the CONTRACTOR Default; or

4.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances;

1. After investigation, determine the amount for which it may be liable to the OWNER and, as soon as practicable after the amount is determined, tender payment therefor to the OWNER; or

2. Deny liability in whole or in part and notify the OWNER citing reasons therefor.

5. If the Surety does not proceed as provided in paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the OWNER to the Surety demanding that the Surety perform its obligations under this Bond, and the OWNER shall be entitled to enforce any remedy available to the OWNER. If the Surety proceeds as provided in paragraph 4.4, and the OWNER refuses the payment tendered or the Surety has denied liability, in whole or in part, without further notice the OWNER shall be entitled to enforce available to the OWNER.

6. After the OWNER has terminated the CONTRACTOR's right to complete the Contract, and if the Surety elects to act under paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the OWNER shall not be greater than those of the CONTRACTOR under the Contract, and the responsibilities of the OWNER to the Surety shall not be greater than those of the OWNER under the Contract. To a limit of the amount of this Bond, but subject to commitment by the OWNER of the Balance of the Contract Price to mitigation of costs and damages on the Contract, the Surety is obligated without duplication for:

6.1 The responsibilities of the CONTRACTOR for correction of defective Work and completion of the Contract;

6.2 Additional legal, design professional and delay costs resulting from the CONTRACTOR's Default, and resulting from the actions or failure to act of the Surety under paragraph 4; and

6.3 Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the CONTRACTOR.

7. The Surety shall not be liable to the OWNER or others for obligations of the CONTRACTOR that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the OWNER or its heirs, executors, administrators or successors.

8. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after CONTRACTOR Default or within two years after CONTRACTOR ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. DEFINITIONS:

12.1 Balance of the Contract Price: The total amount payable by the OWNER to the CONTRACTOR under the Contract after all proper adjustments have been made, including allowance to the CONTRACTOR of any amounts received or to be received by the OWNER in settlement of insurance or other Claims for damages to which the CONTRACTOR is entitled, reduced by all valid and proper payments made to or on behalf of the CONTRACTOR under the Contract.

12.2 Contract: The agreement between the OWNER and CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

12.3 CONTRACTOR Default: Failure of the CONTRACTOR, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4 OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY - Name, Address and Telephone) OWNER'S REPRESENTATIVE (Engineer or other party):	**HGM ASSOCIATES INC.** **640 FIFTH AVENUE** **COUNCIL BLUFFS, IOWA 51501**

Payment Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):
City of Council Bluffs
Department of Community Development
209 Pearl Street
Council Bluffs, Iowa 51503

CONTRACT
Date:
Amount:
Description (Name and Location): ***East Manawa Subdivision Overlot Grading***
CD 25-04

BOND
Date (Not earlier than Contract Date):
Amount:
Modification to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Payment Bond to be duly executed on its behalf by its authorized officer, agent or representative.

CONTRACTOR AS PRINCIPAL
Company: (Corp. Seal)

Signature:_____
Name and Title:

SURETY
Company: (Corp. Seal)

Signature:_____
Name and Title:
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL
Company: (Corp. Seal)

Signature:_____
Name and Title:

SURETY
Company: (Corp. Seal)

Signature:_____
Name and Title:

EJCDC No. 1910-28-B (1996 Edition)
Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects, the American Subcontractors Association, and the Associated Specialty Contractors.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for the labor, materials, and equipment furnished for use in the performance of the Contract, which is incorporated herein by reference.

2. With respect to the OWNER, this obligation shall be null and void if the CONTRACTOR:

2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and

2.2. Defends, indemnifies and holds harmless the OWNER from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract, provided the OWNER has promptly notified the CONTRACTOR and the Surety (at the addresses described in paragraph 12) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the CONTRACTOR and the Surety, and provided there is no OWNER Default.

3. With respect to Claimants, this obligation shall be null and void if the CONTRACTOR promptly makes payment, directly or indirectly, for all sums due.

4. The Surety shall have no obligation to Claimants under this Bond until:

4.1. Claimants who are employed by or have a direct contract with the CONTRACTOR have given notice to the Surety (at the addresses described in paragraph 12) and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

4.2. Claimants who do not have a direct contract with the CONTRACTOR:

1. Have finished written notice to the CONTRACTOR and sent a copy, or notice thereof, to the OWNER, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied of for whom the labor was done or performed; and

2. Have either received a rejection in whole or in part from the CONTRACTOR, or not received within 30 days of furnishing the above notice any communications from the CONTRACTOR by which the CONTRACTOR had indicated the claim will be paid directly or indirectly; and

3. Not having been paid within the above 30 days, have sent a written notice to the Surety and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the CONTRACTOR.

5. If a notice required by paragraph 4 is given by the OWNER to the CONTRACTOR or to the Surety, that is sufficient compliance.

6. When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:

6.1. Send an answer to the Claimant, with a copy to the OWNER, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any disputed amounts.

6.2. Pay or arrange for payment of any undisputed amounts.

7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

8. Amounts owed by the OWNER to the CONTRACTOR under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any Performance Bond. By the CONTRACTOR furnishing and the OWNER accepting this Bond, they agree that all funds earned by the CONTRACTOR in the performance of the Contract are dedicated to satisfy obligations of the CONTRACTOR and the Surety under this Bond, subject to the OWNER's priority to use the funds for the completion of the Work.

9. The Surety shall not be liable to the OWNER, Claimants or others for obligations of the CONTRACTOR that are unrelated to the Contract. The OWNER shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by paragraph 4.1 or paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, the OWNER or the CONTRACTOR, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is, that this Bond shall be construed as a statutory Bond and not as a common law bond.

14. Upon receipt of any person or entity appearing to be a potential beneficiary of this Bond, the CONTRACTOR shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. DEFINITIONS.

15.1. Claimant: An individual or entity having a direct contract with the CONTRACTOR or with a Subcontractor of the CONTRACTOR to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of the CONTRACTOR and the CONTRACTOR's Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

15.2. Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

15.3. OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY - Name, Address and Telephone) OWNER'S REPRESENTATIVE (Engineer or other party):	**HGM ASSOCIATES INC.** **640 FIFTH AVENUE** **COUNCIL BLUFFS, IOWA 51501**

GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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Note: This document contains substantial portions of language from Document No. 1910-8 (1983 Edition) prepared by Engineer's Joint Contract Documents Committee.

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Note: This index shall not be considered part of the General Conditions. This index is only included to aid in the location of subject matter on certain subjects in the text of the General Conditions. This index is not intended to be all inclusive.

GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

Addenda - Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the bidding documents or the Contract Documents.

Agreement - The written agreement between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are incorporated by reference or attached to the Agreement and made part thereof as provided therein.

Application for Payment - The form accepted by ENGINEER which is to be used by CONTRACTOR in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.

Bid - The offer or proposal of the bidder submitted on the prescribed form setting forth the price or prices for the Work to be performed.

Bonds - Bid, performance and payment bonds and other instruments of security.

Change Order - A document recommended by ENGINEER, which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Agreement.

Contract Documents - The Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR'S Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award if approved by OWNER) when attached as an exhibit to the Agreement or specifically included by reference, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all amendments, modifications and supplements issued pursuant to paragraphs 3.4 and 3.5 on or after the Effective Date of the Agreement.

Contract Price - The moneys payable by OWNER to CONTRACTOR under the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.9.1 in the case of Unit Price Work).

Contract Time - The number of days (computed as provided in paragraph 17.2) or the date stated in the Agreement for the completion of the Work.

CONTRACTOR - The person, firm or corporation with whom OWNER has entered into the Agreement.

Defective - An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty, or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER'S recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.8 or unless damage was caused by OWNER'S occupancy in accordance with paragraph 14.10).

Drawings - The drawings which show the character and scope of the Work to be performed and which have been prepared by ENGINEER and are referred to in the Contract Documents.

Effective Date of the Agreement - The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

ENGINEER - The person, firm or corporation named as such in the Agreement.

Field Order - Written order issued by ENGINEER which orders minor changes in the Work in accordance with paragraph 9.5 but which does not involve a change in the Contract Price or the Contract Time.

General Requirements - Paragraphs or Sections of Division 1 of the Specifications.

Laws and Regulations; Laws or Regulations - Laws, rules, regulations, ordinances, codes and/or orders.

Notice of Award - The written notice by OWNER to the apparent successful bidder, if issued, stating that upon compliance by the apparent successful bidder with the conditions precedent enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.

Notice to Proceed - A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER or given by ENGINEER at the direction of the OWNER) fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR'S obligations under the Contract Documents.

OWNER - The public body or authority, corporation, association, firm or person with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be provided.

Partial Utilization - Placing a portion of the Work in service for the purpose for which it is intended (or a related purpose) before reaching Substantial Completion for all the Work.

Project - The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents. Unless specifically indicated, the Work shall be the total construction of the project.

Resident Project Representative - The authorized representative of ENGINEER who is assigned to the site or any part thereof.

Shop Drawings - All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for CONTRACTOR to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a Supplier and submitted by CONTRACTOR to illustrate material or equipment for some portion of the Work.

Specifications - Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and Workmanship as applied to the Work and certain administrative details applicable thereto.

Subcontractor - An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

Substantial Completion - The Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER as evidenced by ENGINEER'S definitive certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it is intended; or if there be no such certificate issued, when final payment is due in accordance with paragraph 14.13. The terms "substantially complete" and "substantially completed" as applied to any Work refer to Substantial Completion thereof.

Supplementary Conditions - The part of the Contract Documents which amends or supplements these General Conditions.

Supplier - a manufacturer, fabricator, supplier, distributor, materialman or vendor.

Underground Facilities - All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

Unit Price Work - Work to be paid for on the basis of unit prices.

Work - The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents. The Work shall comprise the entire project unless otherwise explicitly stated in the Contract Documents.

Work Directive Change - A written directive to CONTRACTOR, issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER, ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed as provided in paragraph 4.2.5 or 4.3.2. A Work Directive Change may not change the Contract Price or the Contract Time, but is evidence that the parties expect that the change directed or documented by a Work Directive Change will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Time as provided in paragraph 10.2. Under no circumstances shall the total cost of Work performed under a Work Directive Change exceed the costs of such Work if calculated in accordance with paragraph 11.3.3. CONTRACTOR shall maintain and furnish to ENGINEER complete and accurate records on the costs of any Work performed under a Work Directive Change.

Written Amendment - A written amendment of the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the nonengineering or nontechnical rather than strictly Work-related aspects of the Contract Documents.

ARTICLE 2 - PRELIMINARY MATTERS

Delivery of Bonds:

2.1. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish in accordance with paragraph 5.1.

Copies of Documents:

2.2. OWNER shall furnish to CONTRACTOR up to five (5) copies (unless otherwise specified in the Supplementary Conditions) of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

Commencement of Contract Time; Notice to Proceed:

2.3 The Contract Time will commence to run (unless otherwise stated in the Notice to Proceed) on the date of issuance of the Notice to Proceed unless otherwise stated in the Supplementary Conditions. A Notice to Proceed may be given at any time within thirty days after the Effective Date of the Agreement unless otherwise stated in the Supplementary Conditions. In no event will the Contract Time commence to run later than the seventy-fifth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, or the date the CONTRACTOR actually commences on-site construction, whichever date is earlier.

Starting the Project:

2.4 Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall start to perform the Work within ten (10) days from the date when the Contract Time commences to run, but no Work shall be done at the site prior to the date on which the Contract Time commences to run.

Before Starting Construction:

2.5 Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error or discrepancy in the Contract Documents, unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof. The CONTRACTOR shall not begin construction of any Work until

he has notified the ENGINEER of his intention to do so, stating the time when Work is to commence. Such notices shall be at least twenty-four (24) hours prior to the time when actual Work is to commence. In the event the CONTRACTOR temporarily leaves a job for more than three consecutive Working days, he shall notify the ENGINEER upon his return to Work. The CONTRACTOR shall keep the ENGINEER advised as to Work schedule. Any Work performed at times or places outside of the established Work schedule shall be regarded as contrary to and outside of the terms of this Contract and the ENGINEER or his authorized representative may order such Work removed and replaced without obligation on the part of the OWNER to pay for such removal and replacement.

2.6 Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements or Supplementary Conditions), CONTRACTOR shall submit to ENGINEER for review:

2.6.1 a progress schedule the form of which is included in the Contract Documents indicating the starting and completion dates of the various stages of the Work and a composite curve showing percent of Work to be completed (excluding stored materials) at all times during the Contract Time. All overhead items shall be prorated over the various items of actual Work and no overhead items such as Insurance, Mobilization, Move In, Superintendence, Bond, General

Conditions, falsework, scaffolding, temporary construction, etc., will be allowed to be listed separately for partial progress payment. Also the CONTRACTOR shall submit for approval a planned sequence of construction indicating the approximate dates and time duration of street closings, utility interruptions, etc. if required.

2.6.2 a preliminary schedule of Shop Drawing submissions; and

2.6.3 a preliminary schedule of values for all of the Work which will include quantities and prices of items aggregating the Contract Price and will subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work which will be confirmed in writing by CONTRACTOR at the time of submission.

2.7 Before any Work at the site is started, CONTRACTOR shall deliver to OWNER, with a copy to ENGINEER, certificates (and other evidence of insurance required by the Contract Documents or requested by OWNER) which CONTRACTOR is required to purchase and maintain in accordance with Article 5 and the Supplementary Conditions. Evidence of insurance required to be carried by OWNER, if any, will be available in the office of the OWNER.

Preconstruction Conference:

2.8 The OWNER or ENGINEER may require a conference attended by CONTRACTOR, ENGINEER and others as appropriate to discuss the schedules referred to in paragraph 2.6, to discuss procedures for handling Shop Drawings and other submittals and for processing Applications for Payment, & to establish a Working understanding among the parties as to the Work.

Finalizing Schedules:

2.9 At least ten days before submission of the first Application for Payment the CONTRACTOR shall finalize the schedules submitted in accordance with paragraph 2.6 addressing all concerns expressed by OWNER and ENGINEER. The finalized progress schedule when acceptable to ENGINEER as providing an orderly progression of the Work to completion within the Contract Time will neither impose on ENGINEER responsibility for the progress or scheduling of the Work nor relieve CONTRACTOR from full responsibility therefor. The finalized schedule of Shop Drawing submissions will be acceptable to ENGINEER as providing a Workable arrangement for processing the submissions. The finalized schedule of values will be acceptable to ENGINEER as to form and substance until the CONTRACTOR is notified otherwise; provided however, the CONTRACTOR may be required from time to time to submit documentation (including subcontracts and purchase orders) to substantiate the Schedule of Values. Prior to submittal of the second Application for Payment on lump sum contracts CONTRACTOR shall submit (on a one time basis) evidence that the proposed schedule of values has been approved by CONTRACTOR'S Surety Company. The schedule setting out a balanced cost breakdown for each major item of Work included in a Lump Sum Bid or Lump Sum Bid Items in excess of Twenty Thousand Dollars shall be approved and signed by an authorized agent of the CONTRACTOR'S Surety Company prior to submittal to the ENGINEER for review. A cost breakdown bearing the signed statement " This cost breakdown is approved by Surety Company for progress payments" will be acceptable if concurred with by the ENGINEER. In the event that the rate of actual progress of the Work falls behind the estimated progress indicated on the approved chart, the CONTRACTOR shall accelerate the Work by placing additional forces and equipment on the project so that the project will be completed within the Contract Time.

ARTICLE 3 - CONTRACT DOCUMENTS; INTENT, AMENDING, REUSE:

Intent:

3.1 The Contract Documents comprise the entire agreement between OWNER and CONTRACTOR concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.

The Contract Documents will be construed in accordance with the law of the place of the Project. The intent of the plans and specifications and Contract Documents is to provide a completed facility as required by the Contract Documents that will properly function without additional Work being performed thereon, and it will be the CONTRACTOR'S obligation to provide such a facility and to put all equipment and systems in operation and on projects including mechanical, electrical or process equipment: including but not limited to mechanical devices and piping and electrical power and apparatus, control wiring, adjusting, balancing and demonstrating the facility's satisfactory operation whether or not such items are detailed on the Contract Drawings.

3.2 It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof if specifically indicated in the Contract Documents) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be supplied whether or not specifically called for. When words which have a well known technical or trade meaning are used to describe Work, materials or equipment such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or Laws or Regulations in effect at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR or ENGINEER, or any of their consultants, agents or employees from those set forth in the Contract Documents, nor shall it be effective to assign to ENGINEER, or any of ENGINEER'S consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.15 or 9.16. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in paragraph 9.4. The submittal of a proposal shall constitute a representation by the CONTRACTOR that CONTRACTOR has investigated the nature and location of the Work, the general and local conditions including but not limited to existing electrical distribution and other utilities, transportation, disposal, handling, and storage of materials, availability of labor, water, electric power, fuel, roads and uncertainties of weather, ground water table or other physical conditions at the site, the conformation and condition of the ground, the character, quality and quantity of surface and sub-surface materials to be encountered and the character of equipment and facilities needed prior to and during the prosecution of the Work. The CONTRACTOR'S failure to properly conduct such investigation shall not relieve him from the responsibility for performing the Work for the Contract Sum. No oral agreement or conversation with any officer, agent or employee of the OWNER or the ENGINEER, either before or after the execution of this contract, shall effect or modify any of the terms or obligations contained in the Contract Documents. Due to the lack of standardization of equipment and material as produced by the various manufacturers, it may become necessary to make minor modifications in the structures, buildings, piping, mechanical Work, electrical Work, accessories, controls, etc. to accommodate the particular equipment offered. In all cases where the equipment and material is to be furnished by the CONTRACTOR, the bid price for any equipment and material offered shall include the cost of making any of the aforementioned necessary changes as well as the cost of preparing detailed drawings showing such changes. It is expressly understood and agreed that any waiver granted by the ENGINEER or the OWNER of any term, provision or covenant of this contract shall not constitute a precedent nor breach of the same or any other terms, provisions, or covenants of this contract. All Work performed and all material and equipment furnished by the CONTRACTOR shall strictly conform to the drawings and specifications. Competent labor, mechanics and tradesmen shall be used on all Work.

3.3 If, during the performance of the Work, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, CONTRACTOR shall so report to ENGINEER in writing at once and before proceeding with the Work affected thereby shall obtain a written interpretation or clarification from ENGINEER; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error or discrepancy in the Contract Documents unless CONTRACTOR or his employees had actual knowledge thereof or should reasonably have known thereof. In case of a conflict in the Contract Documents concerning quality or quantity, the greater quantity or better quality of Work shall be furnished by the CONTRACTOR. The CONTRACTOR shall examine and check all drawings and specifications for the project and be responsible for coordinating his Work with work of other Contractors.

Accuracy of collation of the Contract Documents cannot be guaranteed by the ENGINEER. By submission of his Proposal the CONTRACTOR acknowledges that he has checked the specification pages and drawing sheets for completeness and conformance to the Table of Contents and the Schedule of Drawings (Index of Sheets), respectively. In the event of a conflict, not pertaining to quantity or quality of work, between the requirements of the Supplementary Conditions and the General Conditions or between the Supplementary Conditions and the Specifications, Technical Provisions, or Standard Specifications, the Supplementary Conditions shall govern. The presence of a conflicting provision in any article, paragraph or subparagraph shall not have any effect on other provisions of the same article, paragraph or subparagraph which do not conflict and such other provisions shall remain in full force and effect.

Amending and Supplementing Contract Documents:

3.4 The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:

3.4.1 a formal Written Amendment,

3.4.2 a Change Order (pursuant to paragraph 10.4), or

3.4.3 a Work Directive Change (pursuant to paragraph 10.1).

As indicated in paragraphs 11.2 and 12.1, Contract Price and Contract Time may only be changed by a Change Order or a Written Amendment.

3.5 In addition, the requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, in one or more of the following ways:

3.5.1 a Field Order (pursuant to paragraph 9.5),

3.5.2 ENGINEER'S written interpretation or clarification (pursuant to paragraph 9.4).

Reuse of Documents:

3.6 Neither CONTRACTOR nor any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with OWNER shall have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER; and they shall not reuse any of them on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaptation by ENGINEER.

ARTICLE 4 - AVAILABILITY OF LANDS: PHYSICAL CONDITIONS: REFERENCE POINTS

Availability of Lands:

4.1 OWNER shall furnish, as indicated in the Contract Documents, the lands (and easements if so indicated) upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. If CONTRACTOR believes that any delay in OWNER'S furnishing these lands, rights-of-way or easements entitles CONTRACTOR to an extension of the Contract Time, CONTRACTOR may make a claim therefor as provided in Article 12. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment. Easements, if any, will not necessarily be available on the effective date of the Agreement and the CONTRACTOR shall schedule his Work accordingly if they are not. The OWNER shall furnish all legal plats describing the construction area, if required, and the CONTRACTOR shall, immediately upon entering the project site for the purpose of beginning Work, locate reference points and survey monuments and take such actions as are necessary to prevent their destruction. The CONTRACTOR shall verify existing conditions shown on the drawings before constructing any Work and shall correct without additional charge to the OWNER any defects in the Work resulting from his failure to perform this verification. The CONTRACTOR shall indemnify and hold harmless the OWNER and ENGINEER from liability of any kind arising from any use,

trespass, or damage occasioned, in whole or in part, by his operation on premises of a third person. The construction Work on this project is located in public street right-of-way or right-of-way easements or land owned by the OWNER. The CONTRACTOR shall utilize the public property so as to cause as little obstruction as possible to traffic. The CONTRACTOR shall not enter private property, if any, within the project limits for construction purposes until he has received official notification from the OWNER that the necessary temporary or permanent easements have been obtained for the property in question. Except where permanent facilities are shown on the drawings or specified, all such areas so disturbed by the construction operation shall be restored by the CONTRACTOR to a condition equivalent to that existing prior to use by the CONTRACTOR. The CONTRACTOR shall provide access to abutting property at all times. If the project includes any Work on State or County Highway right-of-way, the CONTRACTOR will obtain permission from the State or County Highway Department to use the highways during construction and to make any crossing required by this program. He shall file with the ENGINEER copies of the permission in writing. If the project includes any Work or railroad property or right-of-way, the CONTRACTOR will obtain permission from the Railway Company(ies) to perform the Work and to make any crossing required by this project. He shall file with the ENGINEER copies of the permission in writing. The CONTRACTOR shall conduct his Work in such a manner that there will always be ready access to all business places and places of residence by the use of planking, barricades, etc. for pedestrian traffic.

Physical Conditions:

4.2.1 Explorations and Reports: Reference is made to the Supplementary Conditions for identification of those reports of explorations and tests of subsurface conditions at the site that have been utilized by ENGINEER in preparation of the Contract Documents. CONTRACTOR may only rely upon the accuracy of the technical data contained in such reports insofar as such data was accurate at the time it was compiled at the specific locations indicated, but not upon nontechnical data, interpretations or opinions contained therein or for the completeness thereof for CONTRACTOR'S purposes and the CONTRACTOR cannot rely on water tables remaining constant. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, CONTRACTOR shall have full responsibility and assume all risk with respect to subsurface conditions at the site even though such actual conditions may result in the CONTRACTOR performing more or less Work than he originally estimated. The CONTRACTOR may examine the logs of borings, cores and other sub-surface data in its entirety, if available, by making a written request therefor to the OWNER and to the ENGINEER. Such data, if available, is offered solely for the purpose of placing at the CONTRACTOR'S disposal available information. Such information is not to be construed as part of the Contract Documents. The CONTRACTOR must interpret such information according to his own judgment and must not rely upon such information as an accurate description of the sub-surface conditions that may arise. Any soil investigations made or to be made by a Testing Laboratory will be considered to have been made for the OWNER as the Testing Laboratory's client. Any partial or complete reproduction of soil borings and/or other soil data made available at the same time as these Contract Documents for informational purposes shall not be considered as part of the Contract Documents for the construction of the project.

4.2.2 CONTRACTOR may examine in the ENGINEER'S office any available drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities referred to in paragraph 4.3) which are at or contiguous to the site that have been utilized by ENGINEER in preparation of the Contract Documents. CONTRACTOR may not rely upon the accuracy of the technical data contained in such drawings, nor for the completeness thereof for CONTRACTOR'S purposes. CONTRACTOR shall have full responsibility with respect to physical conditions in or relating to such structures.

4.2.3 Report of Differing Conditions: If CONTRACTOR believes that:

4.2.3.1 any technical data on which CONTRACTOR is entitled to rely as provided in paragraph 4.2.1 was inaccurate,

or

4.2.3.2 any physical condition uncovered or revealed at the site differs materially from that specifically indicated in the Contract Documents, if so indicated,

CONTRACTOR shall, promptly after becoming aware thereof and before performing any Work in connection therewith (except in an emergency as permitted by paragraph 6.22), notify OWNER and ENGINEER in writing about the inaccuracy or difference.

4.2.4 ENGINEER'S Review: ENGINEER will promptly review the pertinent conditions, determine the necessity of obtaining additional explorations or tests with respect thereto and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER'S findings and conclusions.

4.2.5 Possible Document Change: If ENGINEER concludes that because of newly discovered conditions a change in the Contract Documents is required upon receipt of satisfactory pricing information from the CONTRACTOR a Work Directive Change or a Change Order will be issued as provided in Article 10 to reflect and document the consequences of the change to the Contract Documents.

4.2.6 Possible Price and Time Adjustments: In each such case, an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, or any combination thereof, may be allowable to the extent that they are attributable to any such change in the Contract Documents made by the ENGINEER. If OWNER and CONTRACTOR are unable to agree as to the amount of length thereof, a claim may be made therefor as provided in Articles 11 and 12.

Physical Conditions - Underground Facilities:

4.3.1 Shown or Indicated: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based on information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities or by others. In all cases:

4.3.1.1 OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and,

4.3.1.2 CONTRACTOR shall have full responsibility for reviewing and checking all such information and data, for locating all Underground Facilities shown or indicated in the Contract Documents, for coordination of the Work with the owners of such Underground Facilities during construction, for the safety and protection thereof as provided in paragraph 6.20 and repairing any damage thereto resulting from the Work, the cost of all of which will be considered as having been included in the Contract Price.

4.3.2 Not Shown or Indicated. If an Underground Facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of having properly contacted and requested assistance from utility companies, communication companies and other entities who may have underground facilities in the area, CONTRACTOR shall, promptly after becoming aware thereof and before performing any Work affected thereby (except in an emergency as permitted by paragraph 6.22), identify the owner of such Underground Facility and give written notice thereof to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility to determine the extent to which the Contract Documents should be modified to reflect and document the consequences of the existence of the Underground Facility as it may interfere with the permanent facility being constructed and the Contract Documents will be amended or supplemented to the extent necessary. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility as provided in paragraph 6.20. CONTRACTOR may make a claim for an increase in the Contract Price or an extension of the Contract Time, or both, to the extent that he believes they are attributable to the existence of any Underground Facility that was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of, provided however, any claims shall not be valid unless the CONTRACTOR prior to commencing Work has notified all utility companies, communication companies and other entities who may have installations in the area where the Work is to be performed and solicit their aid in locating utilities including, but not limited to, water, gas, or other fuel, cable TV, electrical and telephone or other communication installations. All utilities encountered must be kept in operation by the CONTRACTOR and must be protected and/or repaired at his own expense. If the parties are unable to agree as to the amount for any change made to the Contract Documents or length of increase in Contract Time as a result thereof, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12. The CONTRACTOR shall be obligated to give all affected utility users adequate advanced warning before shutting off service for any reason. The CONTRACTOR shall not interrupt service to any user without prior written approval of the agency or department operating the utility system.

4.3.3 General: The CONTRACTOR shall inform the ENGINEER if existing utility installations (which are intended to remain in use in their present location upon completion of the project) are encountered that must be relocated prior to completing the Work. If the ENGINEER determines that such utilities must be moved, the OWNER shall bear the cost of moving such utilities. This paragraph shall not apply, however, to any temporary service required to keep existing facilities in operation during the construction period. The CONTRACTOR shall determine the actual location of all existing utilities prior to starting any Work that may cause damage to such utilities. The CONTRACTOR shall indemnify and hold harmless the OWNER and the ENGINEER and their agents and employees from and against all claims, damages, losses and expenses, including attorney's fees, arising as a result of damage to existing utilities caused in

whole or in part by the CONTRACTOR or Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

Any information concerning underground utilities shown on the Drawings is intended to be merely an aid to the CONTRACTOR. The accuracy of information furnished with respect to underground utilities is not guaranteed and the CONTRACTOR must independently verify any such information.

Reference Points:

4.4 OWNER shall provide base lines and benchmarks to establish reference points for construction which in ENGINEER'S judgment are necessary to enable CONTRACTOR to proceed with laying out the Work. CONTRACTOR shall be responsible for laying out the Work (unless otherwise specified in the Supplementary Conditions or General Requirements), shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of OWNER, CONTRACTOR shall report to ENGINEER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by professionally qualified and licensed personnel.

Laying Out the Work:

4.5 The CONTRACTOR shall verify existing conditions shown on the drawings before laying out any Work and shall correct without additional charge to the OWNER any defects in the Work resulting from his failure to perform this verification. The OWNER will furnish horizontal and vertical control which shall be verified by the CONTRACTOR and used as a basis for staking the project. This will consist of one or more benchmarks and one or more base lines. The CONTRACTOR shall satisfy himself as to the accuracy of all measurements and elevations before constructing any permanent facilities, and shall assume full responsibility for construction in accordance with the lines and grades shown in the drawings. Any discrepancies discovered during the CONTRACTOR'S verification shall be immediately reported to the ENGINEER. Unless otherwise specifically provided in the Supplementary Conditions or General Requirements, all responsibility for laying out the Work shall remain solely with the CONTRACTOR.

ARTICLE 5 - BONDS AND INSURANCE

Performance and Other Bonds:

5.1 CONTRACTOR shall furnish performance and payment Bonds, and unless otherwise specified each in an amount at least equal to the Contract Price (where the project is under the jurisdiction of a governmental entity or private owner which requires a bond on a specific form, then such required bond form shall be used) as security for the faithful performance and payment of all CONTRACTOR'S obligations under the Contract Documents. These Bonds shall remain in effect at least until five years after the date when final payment becomes due, except as otherwise provided by Law or Regulation or by the Contract Documents or in the required Bond forms. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions. All Bonds shall be in the forms prescribed by Law or Regulation or by the Contract Documents and be executed by such sureties are as named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds & as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of the authority to act.

5.2 If the surety on any Bond furnished by CONTRACTOR is declared a bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.1, CONTRACTOR shall within five days thereafter substitute another Bond and Surety, both of which must be acceptable to OWNER.

Insurance: (see also Supplementary Conditions)

5.3 CONTRACTOR'S responsibility for insurance is stated in the Supplementary Conditions or elsewhere in the Contract Documents and in paragraph 5.4.

5.4 Responsibility for property insurance on existing buildings at the site, if any, remains with the OWNER, provided, however, CONTRACTOR'S policy or policies shall afford "Broad Form Property Damage Liability" coverage for damage to property of

others in the care, custody or control of the insured, or as to which the insured is for any purpose exercising physical control. See also Supplementary Conditions and elsewhere in Contract Documents for assignment of responsibility for property insurance.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

Supervision and Superintendence:

6.1 CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction. CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract Documents.

6.2 CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR'S representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

Labor, Materials and Equipment:

6.3 CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Supplementary Conditions and other Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular Working hours, and CONTRACTOR will not permit overtime Work or the performance of Work on Saturday, Sunday or any legal holiday without OWNER'S written consent. Any Work necessary to be performed after regular Working hours, on Sundays, or legal holidays, shall be performed without additional expense to the OWNER.

6.4 Unless otherwise specified in the General Requirements or Supplementary Conditions, CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work. The CONTRACTOR shall pay for installation, use and disconnecting of all temporary utilities required for use in constructing the project and shall pay for all water, fuel and power used in performing his Work. The CONTRACTOR shall provide and maintain temporary sanitary facilities as necessary for use of Workmen. All facilities must be in compliance with statutory sanitation requirements. The CONTRACTOR shall be responsible for receiving at the site and proper storage of all equipment furnished under his Contract and shall provide and maintain adequate provisions for storage of all materials, supplies and equipment. All equipment shall be stored in accordance with recommendations of the manufacturer and additionally, any equipment in storage shall have all openings sealed against moisture, dust and other debris and exposed surfaces shall be properly protected to prevent rust, corrosion or other deterioration. No equipment shall be stored out in the open against the recommendations of the manufacturer. It shall be the CONTRACTOR'S responsibility to have on the job site available for the ENGINEER'S and OWNER'S inspection the manufacturer's recommendations for storage of equipment. Any equipment on which this information is not available shall be protected from the weather. Materials on site and not suitably protected will not be included in estimates for payment. The CONTRACTOR shall make provisions for introducing equipment that is too large to pass through finished openings. If the Work is expected to take in excess of 30 days, the General CONTRACTOR shall provide and maintain a temporary field office at the site, equipped with heat, telephone, plan desks and plan files. The office shall be located on the site at a location approved by the OWNER and removed when Work is completed. During the construction the CONTRACTOR shall provide all construction heat, including appropriate heating devices, enclosures, fuel and services required therefore, as necessary to adequately protect the Work and materials against injury from dampness or cold and to comply with the various manufacturer's recommendations as to temperature and drying requirements of the Work of the various trades.

6.5 All materials and equipment shall be of good quality and new and of current production. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable Supplier except as otherwise provided in the Contract Documents; but no provision of any such instructions will be effective to assign to ENGINEER, or any of ENGINEER'S consultants, agents or employees, any duty or authority to

supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.15 or 9.16.

Adjusting Progress Schedule:

6.6 CONTRACTOR shall submit to ENGINEER for review (to the extent indicated in paragraph 2.9) adjustments in the progress schedule to reflect the impact thereon of new developments; these will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the Supplementary Conditions and General Requirements applicable thereto. Any review, action or comment by ENGINEER shall not be cause for an extension of time.

Substitutes or "Or-Equal" Items:

6.7.1 Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier the naming of the item is intended to establish the type, function and quality required. Unless the name is followed by words indicating that no substitution is permitted or the item is listed in a Base Bid Equipment Schedule, materials or equipment of other Suppliers may be accepted by ENGINEER if sufficient information is submitted by CONTRACTOR to allow ENGINEER to determine that the material or equipment proposed is equivalent or equal to that named. The procedure for review by ENGINEER will include the following as supplemented in the Supplementary Conditions and General Requirements. Requests for review of substitute items of material and equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment, CONTRACTOR shall make written application to ENGINEER for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The application will state that the evaluation and acceptance of the proposed substitute will not prejudice CONTRACTOR'S achievement of Completion on time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for Work on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by ENGINEER in evaluating the proposed substitute. ENGINEER may require CONTRACTOR to furnish at CONTRACTOR'S expense additional data about the proposed substitute.

6.7.2 All items of material or equipment proposed by CONTRACTOR as equal substitutions for items of material or equipment which are specified shall be equal in every respect to the quality, quantity, performance, color, finish, gauge and size of that item which has been used as a basis of equality. When a certain manufacturer's equipment is given as a standard of quality, then all accessories that are standard on that item of equipment must be furnished even though the accessories may not be standard on some substituted equipment of another manufacturer. The entire cost of all changes, of any type, necessitated by substitutions of specified material or equipment shall be borne by the CONTRACTOR making the substitutions. The successful bidder shall within 14 days after Notice to Proceed submit to the ENGINEER a complete list of items of material and equipment he proposes to use on this contract. List shall be complete with manufacturer's names, size and type. Equipment orders shall not be placed until shop drawings have been reviewed. Five (5) copies of the list shall be furnished; one of which will be returned with ENGINEER'S comments. Where materials in the submittal differ from those specified, complete data shall be furnished to the ENGINEER as listed below. Requests will be considered only if they comply with all of the following requirements. Complete technical data, including lab reports, if applicable, must be submitted. The differences, including operation, physical dimension etc. between proposed products and specified products shall be fully explained. Complete information shall be submitted in regard to any changes required on the drawings or specifications for related Work. Any difficulties, delays, or additional expense which arise from changes due to substitutions shall be the responsibility of the CONTRACTOR. Items furnished under any "or Equal Clause" will be considered substitutions and to the extent required by the ENGINEER must comply with this Article. Bidders proposing to furnish equipment that is not listed by brand name on the "Base Bid Equipment Schedule" of the Proposal where such a schedule is included in the proposal form, shall submit to the ENGINEER complete design calculations, drawings, specifications, and functional descriptions of their equipment to be received at least fourteen (14) days prior to the date of the bid opening. Such submittals to the ENGINEER will only be considered if received from a bona fide General Contractor holding plans and specifications for this project.

6.7.3 ENGINEER will be allowed a reasonable time within which to evaluate each proposed substitute. ENGINEER will be the sole judge of acceptability, and no substitute will be ordered, installed or utilized without ENGINEER'S prior written acceptance which will be evidenced by either a Change Order or, when in compliance with paragraph 6.2.5.2 a Shop Drawing with a "No Exception Action" taken thereon. OWNER may require CONTRACTOR to furnish at CONTRACTOR'S expense a special performance

guarantee or other surety with respect to any substitute. ENGINEER will record time required by ENGINEER and ENGINEER'S consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not ENGINEER accepts a proposed substitute, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER'S consultants for evaluating each proposed substitute.

Concerning Subcontractors, Suppliers and Others:

6.8.1 CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization (including those acceptable to OWNER and ENGINEER as indicated in paragraph 6.8.2), whether initially or as a substitute, against whom OWNER or ENGINEER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier or other person or organization to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

6.8.2 If the proposal form or Supplementary Conditions require the identity of certain Subcontractors, Suppliers or other persons or organizations (including those who are to furnish the principal items of materials and equipment) to be submitted to OWNER in advance of the specified date prior to the Effective Date of the Agreement for acceptance by OWNER and ENGINEER and if CONTRACTOR has submitted a list thereof in accordance with the proposal form or Supplementary Conditions, OWNER'S or ENGINEER'S acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the biding documents or the Contract Documents) of any such Subcontractor. Supplier or other person or organization so identified may be revoked on the basis of reasonable objection after due investigation, in which case CONTRACTOR shall submit an acceptable substitute, the Contract price will be increased by the difference in the cost occasioned by such substitution and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER or ENGINEER of any such Subcontractor, Supplier or other person or organization shall constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.

6.8.3 The CONTRACTOR shall not assign whole or any part of this Contract or any monies due or to become due hereunder without written consent of the OWNER. In case the CONTRACTOR, with consent of the OWNER, assigns all or any part of any monies due or to become due under this Contract, the instruments of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any monies due or to become due to the CONTRACTOR shall be subject first to prior liens of all persons, firms, and corporations for the payment of all laborers and mechanics for labor that shall be performed and for the payment of material and equipment rental which is actually used or rented in the performance of the Contract and also subject to any liens or amount due the State or Federal Governments or any of their funds.

6.9 CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR'S own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

6.10 The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

6.11 All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER and contains waiver provisions as required by article titled "Insurance" in the Supplementary Conditions or elsewhere in the Contract Documents. CONTRACTOR shall pay each Subcontractor a just share of any insurance moneys received by CONTRACTOR on account of losses under policies issued pursuant to article titled "Insurance" in the Supplementary Conditions or elsewhere in the Contract Documents.

Patent Fees and Royalties:

6.12 CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product or device is specified in the Contract Documents for use in

the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. CONTRACTOR shall indemnify and hold harmless OWNER and ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses and expenses (including attorneys' fees and court and arbitration costs) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product or device whether specified in the Contract Documents or offered as a substitute, and shall defend all such claims in connection with any alleged infringement of such rights. If the CONTRACTOR uses any design, device, or materials covered by letters, patent, or copyright, he shall provide for such use, by suitable agreement where required, with the OWNER of such patented or copyrighted design, device, or material. It is mutually agreed and understood that, without exception, the Contract Prices shall include all royalties or costs arising from the use of such design, device or materials, in any way involved in the Work.

Permits:

6.13 Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or if there are no Bids on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work and meter fees, if any, and OWNER shall pay all charges of such utility owners for capital costs related thereto such as plant investment fees.

Laws and Regulations:

6.14.1 CONTRACTOR shall give all notices and comply with all National, State and local Laws and Regulations, ordinances and building codes applicable to furnishing and performance of the Work. Neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR'S compliance with any Laws or Regulations. Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the contract shall forthwith be physically amended to make such insertion or correction without change in the Contract Amount or Contract Time.

6.14.2 If CONTRACTOR observes that the Specifications or Drawings are at variance with any Laws or Regulations, CONTRACTOR shall give ENGINEER prompt written notice thereof, and any necessary changes will be authorized by one of the methods indicated in paragraph 3.4. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to such Laws or Regulations, and without such notice to ENGINEER, CONTRACTOR shall bear all costs arising therefrom; however, it shall not be CONTRACTOR'S primary responsibility to make certain that the Specifications and Drawings are in accordance with such Laws and Regulations.

Taxes:

6.15 CONTRACTOR shall pay all sales; excise, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work. Supplementary Conditions may also include requirements regarding tax.

Use of Premises:

6.16 CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of Workers to the Project site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment.

CONTRACTOR shall assume full responsibility for any damage to any such land or area, or the owner or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the Work. Should any claim be made against OWNER or ENGINEER by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim by arbitration or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold OWNER and ENGINEER harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court and arbitration costs) arising

directly, indirectly or consequentially out of any action, legal or equitable, brought by any such other party against OWNER or ENGINEER to the extent based on a claim arising out of CONTRACTOR'S performance of the Work. Portions of the Work will be performed in or adjacent to areas in which the OWNER'S normal operation must proceed without interruption during the construction Work. The CONTRACTOR shall conduct the Work in these areas in such a manner as to create a minimum of disturbance and inconvenience to the OWNER and to the public. Street closing, if required, shall be scheduled with the governmental agency responsible for streets and the Fire Department. Should the CONTRACTOR refuse or fail to open streets to traffic at the time scheduled as approved by the governmental agency having authority over the streets, then the OWNER may reopen such street with the OWNER'S own forces and the OWNER shall recover all costs from the CONTRACTOR. The CONTRACTOR shall continue to be responsible for all liability stated in the Contract Documents during such periods. Existing structures and facilities shall remain in service while the new facility is under construction, and continuous use and operation thereof shall be provided unless otherwise stated in the Supplementary Conditions. The following provisions shall not limit the generality of the other requirements in these Contract Documents:

The CONTRACTOR shall do all things necessary or expedient to properly protect existing trees, shrubs, streets, power lines and other utilities, and any and all property of others from damage, and in the event that any such property is damaged in the course of the construction of the project the CONTRACTOR shall at his own expense restore any or all of such damaged property immediately to as good a state as before such damage occurred. In the event a utility company insists on repairing their utility with their own forces, then the CONTRACTOR shall reimburse such company for such Work.

All fences which are necessarily opened or moved during the construction of the project shall except as otherwise specifically provided be replaced in as good condition as they were found. The CONTRACTOR shall be responsible for all loss of or damage to property, whether on or off of the right-of-way, caused by the construction of the project.

6.17 During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work, CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by OWNER. CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents.

6.18 CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it. CONTRACTOR shall not have over 500 lineal feet of trench open at any one time without written permission of the OWNER.

Record Documents:

6.19 CONTRACTOR shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Directive Changes, Field Orders and written interpretations and clarifications (issued pursuant to paragraph 9.4) in good order and annotated to show all changes made during construction. These record documents together with all approved samples and a counterpart of all Shop Drawings on which action has been taken will be available to OWNER and ENGINEER for reference. Upon completion of the Work, these record documents, samples and Shop Drawings will be delivered to ENGINEER for OWNER. Supplementary sketches shall be included, if necessary, to clearly indicate all Work as constructed. All Work shall be clearly shown and the record drawings shall be satisfactory to the OWNER. One complete set of the record drawings shall be furnished to the ENGINEER for the OWNER'S information prior to or with submittal of the final Application for Payment. Failure of the CONTRACTOR to maintain an up to date set of record drawings on the project site shall be reason to withhold payments. All bends and significant points on underground lines shall be referenced to at least two surface landmarks so the exact location can be determined from the record drawings. Notwithstanding the above requirement or any similar requirement in other parts of the Contract Documents, the OWNER and ENGINEER and anyone employed by either of them and anyone for whose acts either of them may be liable, are not assuming, neither jointly nor separately, any duty to provide supervision of CONTRACTORS preparation of Record Drawings. All such supervision shall be the sole and exclusive responsibility of the CONTRACTOR.

Safety and Protection:

6.20 CONTRACTOR shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

6.20.1 all employees on the Work and other persons and organizations who may be affected thereby;

6.20.2 all the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and

6.20.3 other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and Underground Facilities not designated for removal, relocation or replacement in the course of construction.

CONTRACTOR shall comply with all applicable Laws and Regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property. All damage, injury or loss to any property referred to in paragraph 6.20.2 or 6.20.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or the acts or omissions of OWNER or ENGINEER or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR). CONTRACTOR'S duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed and accepted by OWNER. The project from the commencement of Work to acceptance or termination by the OWNER shall be under the charge and control of the CONTRACTOR and during such period of control by the CONTRACTOR all risks in connection with the construction of the project and the materials to be used therein shall be borne by the CONTRACTOR. The CONTRACTOR shall make good and fully repair all injuries and damages to the project or any portion thereof under the control of the CONTRACTOR by reason of any Act of God or other casualty or cause whether or not the same shall have occurred by reason of the CONTRACTOR'S negligence. It shall be the CONTRACTOR'S sole and exclusive responsibility (a) to provide personnel capable of working adjacent to energized electrical lines or other utilities; (b) to provide adequate, safe and properly maintained equipment; (c) to conduct all of his Work in accordance with the safety rules and regulations prescribed by the National Electrical Code, National Electric Safety Code, H30, and Safety Rules for Installation and Maintenance of Electrical Supply and Communication Lines Hand Book 81, Occupational Safety and Health Act of 1970, as well as other safety codes in effect at the site of construction and as specified elsewhere herein, and as are generally applicable to the type of Work being performed; and (d) to continuously supervise and inspect the Work being performed to assure that the requirements of (a), (b) and (c) above are complied with and nothing in these Contract Documents shall be held to mean that any such responsibility is the obligation of the OWNER or the ENGINEER. The CONTRACTOR shall be solely and exclusively responsible for determining the requirements for and providing temporary ladders, guard rails, shoring, bracing, dewatering, if required, warning signs, night lights, and other safeguards desirable or required. The CONTRACTOR shall be solely and exclusively responsible for the design, construction, inspection and continual maintenance of such facilities at all times. It shall be the sole and exclusive responsibility of the CONTRACTOR to provide a safe place to Work for all laborers and mechanics and other persons employed on or in connection with the project, and nothing in these Contract Documents shall be construed to give any of such responsibility to the OWNER or the ENGINEER. The CONTRACTOR shall, in accordance with the above and at his own expense, erect suitable barriers around all excavations or obstructions or dangerous areas on public thoroughfares or otherwise to prevent accidents and shall place and maintain during the night sufficient lighting for this purpose on and near the Work. The CONTRACTOR will at all times until its completion and final acceptance protect his Work, apparatus, and material from accidental or other damage and shall make good any damages thus occurring at his own expense. The CONTRACTOR shall be solely responsible for conducting his Work in compliance with the requirements of the "Occupational Safety and Health Act of 1970", the state agencies responsible for the promulgation of safety and requirements of such other agencies that have jurisdiction over such operations. The ENGINEER shall not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, and he will not be responsible for the CONTRACTOR'S failure to carry out the Work in accordance with the requirements of the Contract. Notwithstanding any reference to any rules or regulations above or in other parts of the Contract Documents, the OWNER and ENGINEER and anyone employed by either of them and anyone for whose acts either of them may be liable, are not assuming, neither jointly nor separately, any duty to provide supervision of construction methods or processes of safety measurers. All such supervision shall be the sole and exclusive responsibility of the CONTRACTOR.

6.21 CONTRACTOR shall designate a responsible representative at the site whose duty shall be the prevention of accidents. This person shall be CONTRACTOR'S superintendent unless otherwise designated in writing by CONTRACTOR to OWNER.

First Aid and Reporting of Accidents: The CONTRACTOR shall be solely and exclusively responsible for the determining of requirements of first aid facilities and for providing such first aid facilities at the site, as are necessary to supply first-aid service to anyone who may be injured in connection with the Work. The CONTRACTOR must promptly report in writing to the ENGINEER and

OWNER all accidents whatsoever arising out of, or in connection with, the performance of the Work, whether on, or adjacent to the site, which causes death, personal injury, or property damages, giving full details and statements of witnesses. In addition, if death or serious injuries or damages are caused, the accident shall be reported immediately by telephone or messenger to both the ENGINEER and the OWNER. If any claim is made by anyone against the CONTRACTOR or any Subcontractor on account of any accident, the CONTRACTOR shall promptly report the facts in writing to the ENGINEER and the OWNER, giving full details of the claim. Adequate provisions shall be made throughout the construction of this project to ensure that fire-fighting equipment can reach each property within the general area.

Emergencies:

6.22 In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from ENGINEER or OWNER, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give ENGINEER prompt written notice of CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If ENGINEER determines that a change in the Contract Documents is required because of the action taken in response to an emergency, a Change Order will be issued to document the consequences of the changes or variations, provided however, an increase in cost will not be allowed if the emergency is caused in whole or in part by CONTRACTOR'S actions.

Shop Drawings and Samples:
(Also see Supplementary Conditions/General Requirements)

6.23 After checking and verifying all field measurements and after complying with applicable procedures specified below and in the Supplementary Conditions and General Requirements, CONTRACTOR shall submit to ENGINEER for review and action in accordance with the accepted schedule of Shop Drawing submissions (see paragraph 2.9), or for other appropriate action if so indicated in the Supplementary Conditions, seven (7) copies (unless otherwise specified in the Supplementary Conditions or General Requirements) of all Shop Drawings, which will bear a stamp and specific written indication as stated on the required Shop Drawing Transmittal Form. Submission of Shop Drawings shall constitute a representation that CONTRACTOR has satisfied CONTRACTOR'S responsibilities under the Contract Documents with respect to the review of the submission. All submissions will be identified as engineer may require. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable ENGINEER to review the information as required.

6.24 CONTRACTOR shall also submit to ENGINEER for review and action with such promptness as to cause no delay in Work, all samples required by the Contract Documents. All samples will have been checked by and accompanied by a specific written indication as stated on the required Shop Drawing Transmission Form. Submission of samples shall constitute a representation that CONTRACTOR has satisfied CONTRACTOR'S responsibilities under the Contract Documents with respect to the review of the submission and will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended.

6.25.1 Before submission of each Shop Drawing or sample CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed or coordinated each Shop Drawing or sample with other Shop Drawings and samples and with the requirements of the Work and the Contract Documents.

6.25.2 At the time of each submission, CONTRACTOR shall give ENGINEER specific written notice of each variation that the Shop Drawings or samples may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation in separate attached letter to be made with each Shop Drawing submitted to ENGINEER for review and action of each such variation.

6.26 ENGINEER will review and take action on, with reasonable promptness, Shop Drawings and samples, but ENGINEER'S review and action will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction or to safety precautions or programs incident thereto. The review and action of a separate item as such will not indicate the same action of the assembly in which the item functions. CONTRACTOR shall make corrections required by ENGINEER, and shall return the required number of corrected copies of Shop Drawings and submit as required new samples for review and action. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

6.27 ENGINEER'S review and action of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing by separate attached letter called ENGINEER'S attention to each such variation at the time of submission as required by paragraph 6.25.2 and ENGINEER has given written "No Exception Taken" action of each such variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing or sample; nor will any action by ENGINEER relieve CONTRACTOR from responsibility for errors or omissions in the Shop Drawings or from responsibility for having complied with the provisions of paragraph 6.25.1.

6.28 Where a Shop Drawing or sample is required by the Specifications, any related Work performed prior to ENGINEER'S review and "No Exception Taken" action of the pertinent submission will be the sole expense and responsibility of CONTRACTOR.

Continuing the Work:

6.29 CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.5 or as CONTRACTOR and OWNER may otherwise agree in writing.

Indemnification:

6.30 To the fullest extent permitted by Laws and Regulations CONTRACTOR shall indemnify and hold harmless OWNER and ENGINEER and their consultants, agents and employees from and against all claims, damages, losses and expenses, direct, indirect or consequential (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs) arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense (a) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom and (b) is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder or arises by or is imposed by Law and Regulations regardless of the negligence of any such party.

6.31 In any and all claims against OWNER or ENGINEER or any of their consultants, agents or employees by any employee of CONTRACTOR, any Subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.30 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR or any such Subcontractor or other person or organization under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

6.32 The obligations of CONTRACTOR under paragraph 6.30 shall not extend to the liability of ENGINEER, ENGINEER'S consultants; agents or employees arising out of the preparation or approval of drawings, Change Orders, designs or specifications which bear the ENGINEER'S professional seal or professional certification, providing such preparation or approval by the ENGINEER is the sole cause of the bodily injury, sickness, disease or death, or the injury to or destruction of tangible property (other than the Work itself) including the loss of use thereof. Any approvals of the above documents by the ENGINEER shall be subject to the conditions, limitations and exceptions stated on such documents and in the Contract Documents. Approval of a document shall not be implied by nor inferred from any act or statement of ENGINEER and ENGINEER shall not be deemed to have approved any document unless such document bears ENGINEER'S Certificate or Seal.

ARTICLE 7 - OTHER WORK

Related Work at Site:

7.1 OWNER may perform other work related to the Project at the site by OWNER'S own forces, have other work performed by utility owners or let other direct contracts therefor which shall contain General Conditions similar to these. If the fact that such other work is to be performed was not noted in the Contract Documents, written notice thereof will be given to CONTRACTOR prior to starting any such other work; and, if CONTRACTOR believes that such performance will involve additional time and the parties are unable to agree as to the extent thereof. CONTRACTOR may make a claim therefor as provided in Article 12, however, the OWNER shall not be required to pay for any additional expense claimed by CONTRACTOR as a result of such additional work being performed.

7.2 CONTRACTOR shall afford each utility owner and other contractor who is a party to such a direct contract (or OWNER, if OWNER is performing the additional work with OWNER'S employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the Work with theirs. CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

7.3 If any part of CONTRACTOR'S Work depends for proper execution or results upon the work of any such other contractor or utility owner (or OWNER), CONTRACTOR shall inspect and promptly report to ENGINEER in writing any delays, defects or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results. CONTRACTOR'S failure so to report will constitute an acceptance of the other work as fit and proper for integration with CONTRACTOR'S Work except for latent or non-apparent defects and deficiencies in the other work.

Coordination:

7.4 If OWNER contracts with others for the performance of other work on the Project at the site, and the Work of the CONTRACTOR and the other party must interface, the person or organization who will have authority and responsibility for coordination of the activities among the various prime contractors will be unless otherwise identified in the Supplementary Conditions, the party performing the greater amount of work as determined by its cost. Unless otherwise provided in the Supplementary Conditions, neither OWNER nor ENGINEER shall have any authority or responsibility in respect of such coordination. The progress of the Work may be affected by coordination of other work being performed by the OWNER or other contractor, and the CONTRACTOR shall investigate such a possibility and make allowances therefor. Should the CONTRACTOR sustain any damage through any act or omission of any other contractor having a contract with the OWNER, the CONTRACTOR shall have no claim against the OWNER for such damage, but shall have a right of action against the other contractor to recover the damages sustained by reason of the acts or omissions of such other contractor. If through acts of neglect on the part of the CONTRACTOR, any other contractor or any Subcontractor shall suffer loss or damage on their work, the CONTRACTOR agrees to settle with such other contractor or Subcontractor by agreement or arbitration, if such other contractor or Subcontractor will so settle. If such other contractor or Subcontractor sues the OWNER and/or ENGINEER on account of any damage alleged to have been so sustained, the OWNER and/or ENGINEER shall notify the CONTRACTOR who shall defend and hold harmless the OWNER and the ENGINEER at such proceedings at the CONTRACTOR'S expense and if any judgment against the OWNER and/or ENGINEER arises therefrom the CONTRACTOR shall pay or satisfy it, including all attorney's fees and court costs which may accrue against the OWNER and/or the ENGINEER.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.1 Unless CONTRACTOR is otherwise notified in writing, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.2 In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer against whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

8.3 OWNER shall furnish the data required of OWNER under the Contract Documents promptly and shall make payments to CONTRACTOR promptly after they are due as provided in paragraphs 14.4 and 14.13.

8.4 OWNER'S duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER'S identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions at the site and in existing structures which have been utilized by ENGINEER in preparing the Drawings and Specifications.

8.5 OWNER'S responsibilities in respect of purchasing and maintaining property insurance are set forth in paragraph 5.4. See also Supplementary Conditions and elsewhere in Contract Documents for assignment of responsibility for property insurance.

8.6 OWNER is obligated to execute Change Orders as indicated in paragraph 10.4.

8.7 OWNER'S responsibility in respect of certain inspections, tests and approvals is set forth in paragraph 13.4.

8.8 In connection with OWNER'S right to stop Work or suspend Work, see paragraphs 13.10 and 15.1. Paragraph 15.2 deals with OWNER'S right to terminate services of CONTRACTOR under certain circumstances.

8.9 The OWNER will obtain a Testing Laboratory and pay for soil investigation and tests including soil proctors and density tests which meet the specification requirements. The OWNER will also obtain a Testing Laboratory and pay for satisfactory compression and/or flexural tests on concrete specimens made by the Testing Laboratory from materials furnished by the CONTRACTOR. The CONTRACTOR shall reimburse the OWNER for payment for all of the above tests where the soil densities or the concrete specimens fail to comply with specification requirements. The OWNER may deduct the costs of all failing tests from payments due the CONTRACTOR; however, in the event they are not deducted for any reason whatsoever, then the CONTRACTOR shall pay to the OWNER the total cost of all failing tests.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

Owner's Representative:

9.1 ENGINEER will be OWNER'S representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER'S representative during construction are set forth in the Contract Documents and shall not be extended without written consent of OWNER and ENGINEER.

Visits to Site:

9.2 ENGINEER will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. ENGINEER'S efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform to the Contract Documents. On the basis of such visits and on-site observations as an experienced and qualified design professional, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defects and deficiencies in the Work.

Project Representation:

9.3 If the OWNER and ENGINEER agree, and such authorization is given, the ENGINEER will provide a Project Representative to assist the ENGINEER in spot checking the Work and in carrying out his other contractual responsibilities at the site. The limitations of authority of any such Project Representative shall be consistent with the following Limitations of Authority.

Limitations of Authority. The Resident Project Representative:

Shall not authorize any deviation from the Contract Documents. Shall not undertake any of the responsibilities of the CONTRACTOR, the subcontractors or the CONTRACTOR'S superintendent. Shall not expedite the Work for the CONTRACTOR. Shall not advise on or issue directions relative to any respect of the means, methods, techniques, sequences or procedures of construction. Shall not authorize the OWNER to occupy the project in whole or in part. Shall not participate in specialized field or laboratory tests.

9.3.1 Neither the ENGINEER'S or his Project Representative's authority to act nor any decision made by them in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of the ENGINEER to the CONTRACTOR, any Subcontractor, any of their agents or employees or any other person performing any of the Work or any other person performing any of the Work or any other person; and neither the ENGINEER nor his Project Representative shall be responsible for any damages or injuries caused, in whole or in part, by the failure of the CONTRACTOR to perform all Work in strict compliance with the Contract Documents.

Clarifications and Interpretations:

9.4 ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as ENGINEER may determine necessary, which shall be consistent with or reasonable inferable from the overall intent of the Contract Documents. If CONTRACTOR believes that a written clarification or

interpretation justifies an increase in the Contract Price or an extension of the Contract Time and the parties are unable to agree to the amount or extent thereof, CONTRACTOR may make a claim therefor as provided in Article 11 or Article 12.

Authorized Variations in Work:

9.5 ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER, and also on CONTRACTOR who shall perform the Work involved promptly. If CONTRACTOR believes that a Field Order justifies an increase in the Contract Price or an extension of the Contract Time and the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a claim therefor as provided in Article 11 or 12.

Rejecting Defective Work:

9.6 ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, and will also have authority to require special inspection or testing of the Work as provided in paragraph 13.9, whether or not the work is fabricated, installed or completed. Workmanship shall be of the best known to the trades. No makeshifts will be permitted anywhere in the Work. Whenever any Work is rejected by the ENGINEER, such rejected Work shall be removed at once from the project and shall be replaced with Work conforming to the requirements of the Contract Documents.

Shop Drawings, Change Orders and Payments:

9.7 In connection with ENGINEER'S responsibility for Shop Drawings and samples, see paragraph 6.23 through 6.28 inclusive as may be modified in Supplementary Conditions.

9.8 In connection with ENGINEER'S responsibilities as to Change Orders, see Articles 10, 11 and 12.

9.9 In connection with ENGINEER'S responsibilities in respect of Applications for Payment, etc., see Article 14.

Determinations for Unit Prices:

9.10 ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER'S written decisions thereon will be final and binding upon OWNER and CONTRACTOR, unless, within ten days after the date of any such decision, either OWNER or CONTRACTOR delivers to the other party to the Agreement and to ENGINEER written notice of intention to appeal from such a decision.

During any appeal process, the CONTRACTOR shall not be paid a greater amount than calculated on the basis of the ENGINEER'S determination.

Decisions on Disputes:

9.11 ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes, and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work and claims under Articles 11 and 12 in respect of changes in the Contract Price or Contract Time will be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph, which ENGINEER will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter will be delivered by the claimant to ENGINEER and the other party to the Agreement promptly (but in no event later than seven (7) days) after the occurrence of the event giving rise thereto, and written supporting data will be submitted to ENGINEER and the other party within twenty (20) days after such occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data n support of the claim.

9.12 When functioning as interpreter and judge under paragraphs 9.10 and 9.11, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such

capacity. The rendering of a decision by ENGINEER pursuant to paragraphs 9.10 and 9.11 with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.16) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such claim, dispute or other matter.

Limitations on ENGINEER'S Responsibilities:

9.13 Neither ENGINEER'S authority to act under this Article 9 or elsewhere in the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization performing any of the Work, or to any surety for any of them.

9.14 Whenever in the Contract Documents the terms "as ordered" "as directed", "as required", "as allowed", "as approved" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper" or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of ENGINEER as to the work, it is intended that such requirement, direction, review or judgement will be solely to evaluate the Work for compliance with the Contract Documents. The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.15 or 9.16.

9.15 ENGINEER will not be responsible for CONTRACTOR'S means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and ENGINEER will not be responsible for CONTRACTOR'S failure to perform or furnish the work in accordance with the Contract Documents.

9.16 ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

ARTICLE 10 - CHANGES IN THE WORK

10.1 Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by a Written Amendment, a Change Order, or a Work Directive Change. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

10.2 If OWNER and CONTRACTOR are unable to agree as to the extent, if any, of an increase or decrease in the Contract Price or an extension or shortening of the Contract Time that should be allowed as a result of a Work Directive Change, a claim may be made therefor as provided in Article 11 or Article 12.

10.3 CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in paragraphs 3.4 and 3.5, except in the case of an emergency as provided in paragraph 6.22 and except in the case of uncovering Work as provided in paragraph 13.9.

10.4 OWNER and CONTRACTOR shall execute appropriate Change Orders (or Written Amendments) covering:

10.4.1 changes in the Work which are ordered by OWNER pursuant to paragraph 10.1, are required because of acceptance of defective Work under paragraph 13.13 or correcting defective Work under paragraph 13.14, or are agreed to by the parties;

10.4.2 changes in the Contract Price or Contract Time which are agreed to be the parties; and

10.4.3 changes in the Contract Price or Contract Time which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 9.11; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.29.

10.5 If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Time) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR'S responsibility, and the amount of each applicable Bond will be adjusted accordingly.

ARTICLE 11 - CHANGE OF CONTRACT PRICE

11.1 The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

11.2 The Contract Price may only be changed by a Change Order or by a Written Amendment; provided however, in other than lump sum contracts where unit prices are established for estimated quantities, payment under the contract may be less than the Contract Price as provided in paragraph 11.9.3. Any claim for an increase or decrease in the Contract Price shall be based on written notice delivered by the party making the claim to the other party and to ENGINEER promptly (but in no event later than seven (7) days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within twenty (20) days after such occurrence (unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall constitute a representation that the amount claimed covers all known amounts (direct, indirect and consequential) to which the claimant is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Price shall be determined by ENGINEER in accordance with paragraph 9.11 if OWNER and CONTRACTOR cannot otherwise agree on the amount involved. No claim for an adjustment in the Contract Price will be valid if not submitted in accordance with this paragraph 11.2.

11.3 The value of any Work covered by a Change Order or of any claim for an increase or decease in the Contract Price shall be determined in one of the following ways:

11.3.1 Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved (subject to the provisions of paragraphs 11.9.1 through 11.9.3 inclusive).

11.3.2 By mutual acceptance of a lump sum (which may include an allowance for overhead and profit which shall be calculated in the pricing data not to exceed the limits in accordance with paragraph 11.6.2.1 through 11.6.2.5).

11.3.3 On the basis of the Cost of the Work (determined as provided in paragraphs 11.4 and 11.5) plus a CONTRACTOR'S Fee for overhead and profit (determined as provided in paragraphs 11.6 and 11.7).

Cost of the Work:

11.4 The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in paragraph 11.5:

11.4.1 Payroll costs for employees as actually paid in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' or workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site on a prorated basis. The expenses of performing Work after regular working hours, on Saturday, Sunday or legal holidays, shall be included in the above to the extent authorized by OWNER.

11.4.2 Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER.

All trade discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to OWNER and CONTRACTOR shall make provisions so that they may be obtained.

11.4.3 Payments made by CONTRACTOR to the Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to CONTRACTOR and shall deliver such bids to OWNER who will then determine, with the advice of ENGINEER, which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work Plus a Fee, the Subcontractor's Cost of the Work shall be determined in the same manner as CONTRACTOR'S Cost of the Work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

11.4.4 Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, and accountants and if approved in advance in writing by OWNER, attorneys) employed for services specifically related to the Work.

11.4.5 Supplemental costs relating to changes in the Work including the following:

11.4.5.1 The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR'S employees incurred in discharge of duties connected with the Work.

11.4.5.2 Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances; office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

11.4.5.3 Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, installation, dismantling and removal thereof - all in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

11.4.5.4 Sales, consumer, use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

11.4.5.5 Deposits lost for causes other than negligence of CONTRACTOR, and Subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

11.4.5.6 Losses and damages (and related expenses), not compensated by insurance or otherwise, to the Work or otherwise sustained by CONTRACTOR in connection with the performance and furnishing of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with the Supplementary Conditions or elsewhere in the Contract Documents), provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR'S Fee. If, however, the OWNER is required to provide property insurance and any such loss or damage requires reconstruction and CONTRACTOR is placed in charge thereof, CONTRACTOR shall be paid for services a fee proportionate to that stated in paragraph 11.6.2.

11.4.5.7 The cost of utilities, fuel and sanitary facilities at the site.

11.4.5.8 Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

11.4.5.9 Cost of premiums for additional Bonds and insurance required because of changes in the Work and premiums for property insurance coverage within the limits of the deductible amounts, if established that OWNER will provide property insurance on the Work elsewhere in the Contract Documents.

11.5 The term Cost of the Work shall not include any of the following:

11.5.1 Payroll costs and other compensation of CONTRACTOR'S officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in CONTRACTOR'S principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.4.1 or specifically covered by paragraph 11.4.4 - all of which are to be considered administrative costs covered by the CONTRACTOR'S Fee.

11.5.2 Expenses of CONTRACTOR'S principal and branch offices other than CONTRACTOR'S office at the site.

11.5.3 Any part of CONTRACTOR'S capital expenses, including interest on CONTRACTOR'S capital employed for the Work and charges against CONTRACTOR for delinquent payments.

11.5.4 Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by sub-paragraph 11.4.5.9 above).

11.5.5 Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.

11.5.6 Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.4.

CONTRACTOR'S Fee:

11.6 The CONTRACTOR'S Fee allowed to CONTRACTOR for overhead profit shall be determined as follows:

11.6.1 a mutually acceptable fixed fee not to exceed the limits stated below; or if none can be agreed upon,

11.6.2 a fee based on the following percentages of the various portions of the Cost of the Work:

11.6.2.1 for costs incurred under paragraphs 11.4.1 and 11.4.2, the CONTRACTOR'S Fee shall be fifteen percent, except on Change Orders that exceed a net increase of $25,000 the CONTRACTOR'S Fee shall be ten percent;

11.6.2.2 for costs incurred under paragraph 11.4.3, the CONTRACTOR'S Fee shall be five percent; and if a subcontract is on the basis of Cost of the Work Plus a Fee, the maximum allowable to subcontractor on account if overhead and profit shall be fifteen percent for the subcontractor;

11.6.2.3 no fee shall be payable on the basis of costs itemized under paragraphs 11.4.4, 11.4.5, and 11.5;

11.6.2.4 the amount of credit to be allowed by CONTRACTOR to OWNER for any such change which results in a net decrease in cost will be the amount of the actual net decrease plus a deduction in CONTRACTOR'S Fee by an amount equal to ten percent of the net decrease; and

11.6.2.5 when both additions and credits are involved in any one change, the adjustment in CONTRACTOR'S Fee shall be computed on the basis of the net change in accordance with paragraphs 11.6.2.1 through 11.6.2.4, inclusive.

11.7 Whenever the cost of any Work is to be determined pursuant to paragraph 11.3, 11.4 and 11.5, CONTRACTOR shall submit in form acceptable to ENGINEER an itemized cost breakdown together with supporting data required by the ENGINEER.

Cash Allowances:

11.8 It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be done by such Subcontractors or Suppliers and for such sums within the limit of the allowances as may be acceptable to ENGINEER. CONTRACTOR agrees that:

11.8.1 The allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and

11.8.2 CONTRACTOR'S costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances. No demand for additional payment on account of any thereof will be valid:

Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR or OWNER on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted. CONTRACTOR shall furnish priced invoices on all cash allowance items to the ENGINEER.

Unit Price Work:

11.9.1 Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER in accordance with Paragraph 9.10. The final certificate for payment on Unit Price Contracts shall be based on the Contract "actual" measurements (except for items where "established quantities" are established in the proposal and/or in the Specifications) checked by the ENGINEER and based on prices in the offer or proposal and supplemental agreements and/or Change Orders, if any, and shall contain an amount to cover in full all force account work ordered, if any.

11.9.2 Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR'S overhead and profit for each separately identified item.

11.9.3 In other than Lump Sum Contracts and for other than items for which "established quantities" are established where unit prices are listed in the proposal for estimated quantities, the CONTRACTOR may reasonably expect a variation in the estimated quantities such that the total payment under the contract for the completed Work may range from 75 to 125 percent of the total amount based on the estimated quantities. The CONTRACTOR will be allowed no claims for anticipated profits, for loss of profits, or for damage of any sort because of a difference between the estimate of any item and the amount of the item actually required. Funds for construction of the Work herein contemplated may be limited. The OWNER reserves the right to eliminate items from the Contract where a separate price is provided as may be required to bring the Cost of the Work within the limits of available funds. In the event that the actual quantity of Work that is completed as approved by the ENGINEER differs from the Contract Quantities where Contract Unit Prices are established, the ENGINEER may prepare a Change Order reflecting such differences at the Unit Contract Price established or the ENGINEER may dispense with the preparation of a Change Order and reflect such differences of quantities in the CONTRACTOR'S Progress Payment Form which is submitted to the OWNER. For any items for which "established quantity" is designated in the description of the item in the proposal form and for other items for which "established quantities" are established in the Specifications, the CONTRACTOR shall be paid only for the quantity of items listed in the estimated quantity column of the proposal and no change in quantities will be considered unless a revision to the drawings reflecting an increase in the Work is made by the ENGINEER justifies same in the opinion of the ENGINEER.

ARTICLE 12 - CHANGE OF CONTRACT TIME

12.1 The Contract Time may only be changed by a Change Order or a Written Amendment. Any claim for an extension or shortening of the Contract Time shall be based on written notice delivered by the party making the claim to the other party and to ENGINEER promptly (but in no event later than seven days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within twenty days after such occurrence (unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and said notice shall constitute a representation by the party giving the notice that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Time shall be determined by ENGINEER in accordance with paragraph 9.11 if OWNER and CONTRACTOR cannot otherwise agree. No claim for an adjustment in the Contract Time will be valid if not submitted in accordance with the requirements of this paragraph 12.1.

12.2 The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of CONTRACTOR if a claim is made therefore as provided in paragraph 12.1. Such delays shall include, but not be limited to acts or neglect by OWNER or others performing additional work as contemplated by Article 7, or to fires, floods, labor disputes, epidemics, abnormal weather conditions or Acts of God. A weather condition which is not more extreme than has occurred at the closest official weather recording stations in the most recent five year period will not be considered an abnormal weather condition. The term "Act of God" as used herein above shall be defined as an inevitable accident; such as an extraordinary interruption of the usual course of events that no experience, foresight or care which might reasonably have been expected could have foreseen or guarded against it, as lightning or tempests.

12.3 All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article 12 shall not exclude recovery for damages [including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration (should the parties agree to arbitrate after the facts to be arbitrated are known) costs] for delay by either party.

ARTICLE 13 - WARRANTY AND GUARANTEE: TESTS AND INSPECTIONS: CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

Warranty and Guarantee:

13.1 CONTRACTOR warrants and guarantees to OWNER and ENGINEER that all Work will be in accordance with the Contract Documents and will not be defective. Prompt notice of all defects shall be given to CONTRACTOR. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in this Article 13. The CONTRACTOR warrants and guarantees that all equipment and components thereof shall be from a line which is currently under manufacture and for which replacement parts are readily available at the time of completion of the project.

Access to Work:

13.2 ENGINEER and ENGINEER'S representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide proper and safe conditions for such access.

Tests and Inspections:

13.3 CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests or approvals.

13.4 If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) to specifically be inspected, tested or approved. CONTRACTOR shall assume full responsibility therefor, pay all costs in connection therewith and furnish ENGINEER the required certificates of inspection, testing or approval. CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with OWNER'S or ENGINEER'S acceptance of a Supplier of materials or equipment proposed to be incorporated in the Work, or of materials or equipment submitted for approval prior to CONTRACTOR'S purchase thereof for incorporation in the Work. The CONTRACTOR shall reimburse the OWNER for the cost of any retesting by coring of hardened concrete required because of failure of original tests. No separate payment will be made to the CONTRACTOR for such testing as such costs shall be considered subsidiary to Work for which payment is made. If personnel from the Testing Laboratory are not on the job site during the placing of concrete then it shall be the CONTRACTOR'S responsibility to obtain and store concrete test specimens, made at the job site, and deliver same to the OWNER'S Testing Laboratory. No concrete shall be placed unless said test specimens are made.

13.5 All inspections, tests or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by independent testing laboratories acceptable to OWNER and the cost thereof shall be paid by the CONTRACTOR unless otherwise specifically stated in the Specifications or in paragraph 8.9.

13.6 If any Work (including the work of others) that is to be inspected, tested or approved is covered without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation. Such uncovering shall be at CONTRACTOR'S expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR'S intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

13.7 Neither observations by ENGINEER nor inspections, tests or approvals by others or waiver of any tests shall relieve CONTRACTOR from CONTRACTOR'S obligations to perform the Work in accordance with the Contract Documents.

Uncovering Work:

13.8 If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER'S observation and replaced at CONTRACTOR'S expense.

13.9 If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER'S request, shall uncover, expose or otherwise make available for observation, inspection or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is defective, CONTRACTOR shall bear all direct, indirect and consequential costs of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, (including but not limited to fees and charges of engineers, architects, attorneys and other professionals), and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, may make a claim therefor as provided in Article 11. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction; and, if the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

OWNER May Stop the Work:

13.10 If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR or any other party. As another option in such circumstances, OWNER may refuse to make part or all of additional payment that would otherwise be due CONTRACTOR until defective Work is removed and replaced with acceptable Work.

Correction or Removal of Defective Work:

13.11 If required by ENGINEER, CONTRACTOR shall promptly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or if the Work has been rejected by ENGINEER, remove it from the site and replace it with nondefective Work. CONTRACTOR shall bear all direct, indirect and consequential costs of such correction or removal (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) made necessary thereby. CONTRACTOR shall correct all Work disturbed in restoring defective or inferior Work, including the replacement of pavement required due to trench settlement even though the pavement may not have been constructed under this contract.

Correction Period:

13.12 If, after the approval of final payment by the OWNER and prior to the expiration of two (2) years thereafter on sewers, sewage force mains, water mains, paving, and miscellaneous yard piping and one (1) year thereafter on any other Work or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER'S written instructions, either correct such defective Work, or, if it has been rejected by OWNER, remove it from the site and replace it with nondefective Work. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or the rejected Work removed and replaced, and all direct, indirect and consequential costs of such removal and replacement (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) will be paid by CONTRACTOR. If shall be the duty of the CONTRACTOR to notify the OWNER in writing within thirty (30) days prior to the expiration of the above defined periods to make final inspection of the Work. Unless the CONTRACTOR shall furnish such notices, the obligation to correct defective Work shall continue in force an additional ninety days or until such notices shall have been furnished and the Work is inspected and any required corrections made. Nothing contained in this paragraph shall be constructed to establish a period of limitation with respect to any other obligation which the CONTRACTOR might have under the Contract Documents, including Paragraph 13.1 of the General Conditions. The establishment of the time period stated herein or such longer period of time as may be prescribed by law or by the terms of any special warranty required by the Contract Documents relates only to the specific obligation of the CONTRACTOR to correct the Work, and has no relationship to the time within which his obligation to comply with the Contract

Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the CONTRACTOR'S liability with respect to his obligations other than specifically to correct the Work.

Acceptance of Defective Work:

13.13 If, instead of requiring correction or removal and replacement of identified defective Work, OWNER (and, prior to ENGINEER'S recommendation of final payment, also ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall bear all direct, indirect and consequential costs attributable to OWNER'S evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness and to include but not be limited to fees and charges of engineers, architects, attorneys and other professionals). If any such acceptance occurs prior to ENGINEER'S recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, OWNER may make a claim therefor as provided in Article 11. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER. The acceptance at any time of the materials or parts of the Work that have not been identified as defective by or in behalf of the OWNER shall not bar the OWNER from future rejection if they are subsequently found to be latently defective or inferior in quality or uniformity to the material specified.

OWNER May Correct Defective Work:

13.14 If CONTRACTOR fails within a reasonable time after written notice of ENGINEER to proceed to correct and to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.11, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR'S services related thereto, take possession of CONTRACTOR'S tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER'S representatives, agents and employees such access to the site as may be necessary to enable OWNER to exercise the rights and remedies under this paragraph. All direct, indirect and consequential costs of OWNER in exercising such rights and remedies will be charged against CONTRACTOR in an amount approved as to reasonableness by ENGINEER, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price and, if the parties are unable to agree as to the amount thereof, OWNER may make a claim therefor as provided in Article 11. Such direct, indirect and consequential costs will include but not be limited to fees and charges of engineers, architects, attorneys and other professionals, all court and arbitration costs (if the parties agree to arbitrate after the facts to be arbitrated are known) and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR'S defective Work. CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by OWNER of OWNER'S rights and remedies hereunder.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

Schedule of Values:

14.1 The schedule of values established as provided in paragraph 2.9 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed. Separate payment shall not be listed for insurance, mobilization, general conditions, superintendence or other field or office overhead items as such cost shall be distributed proportionately for the various items of Work.

Application for Progress Payment:

14.2 At least twenty days before each progress payment is scheduled (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site the Application for Payment shall also be accompanied by priced invoices and a tabulation of stored materials of the form required by the ENGINEER. Application for payment for such stored material shall constitute a representation and warranty by the CONTRACTOR that OWNER has received the materials and equipment free and clear of all liens, charges, security interests and encumbrances (which are hereinafter in these General Conditions referred to as "Liens") and when requested by OWNER, CONTRACTOR shall include with his Application for Payment evidence that the materials and equipment are covered by appropriate

property insurance and other arrangements to protect OWNER'S interest therein, all of which will be satisfactory to OWNER. For purposes of comparison, the CONTRACTOR shall submit with each Application for Payment a progress chart in identical form to the one developed in compliance with paragraph 2.6.1 showing the actual rate of progress to date for the component divisions and for the Project as a whole. The actual rate of progress shown on the chart shall only include Work completed and shall not include stored materials. Payment will be made as provided by law. Where permitted, except as hereinafter provided, partial payments will be made to the CONTRACTOR in an amount equal to ninety percent of the value of the Work completed during the preceding month, as reviewed by the ENGINEER. On projects where the OWNER is a subdivision of state government and the state statutes specifically required partial payment in the amount of ninety-five percent of the value of Work completed be made, such requirement shall govern over the preceding sentence. The CONTRACTOR on or before the tenth day of each month shall submit to the ENGINEER one original typed copy and four photocopies (including tabulation of stored materials and invoices of materials stored on the site for which payment is requested), on the form herein required, of an estimate of the value of the Work performed during the previous month. Payment for properly stored materials will only be made when the CONTRACTOR submits a "Tabulation of Stored Materials" on the form bound herein which indicates an itemized tabulation of (1) Materials on Site in Last Application, (2) Materials Added Since Last Application, (3) Materials Used Since Last Application, and (4) Materials on Site in This Application. Each line item invoice listing must be repeated with subsequent applications for payment until the corresponding amount in the last column of the Tabulation of Stored Material form has shown a zero on one submittal. Two copies of invoices from material suppliers shall accompany the Application accurately reflecting the Subcontractor's or CONTRACTOR'S actual cost of the stored materials for which payment is requested. Materials listed which are furnished by a Subcontractor shall be listed at the Subcontractor's actual cost from his supplier. Payment will not be made for materials stored off the OWNER'S site. Except as stated in the Supplementary Conditions, the retainage will not be paid until the Work is accepted by the OWNER and the final certificate for payment is issued. If, however, the OWNER agrees to reduce the retainage after a Certificate of Substantial Completion has been issued and signed by all parties, the OWNER may in writing instruct the ENGINEER to prepare a certificate for payment authorizing such reduction of retainage and the CONTRACTOR shall furnish a properly executed "Consent of Surety to Reduction in or Partial Release of Retainage", A.L.A. Document G 707A. Failure of the CONTRACTOR to maintain an up to date set of Modified Drawings on the project (for later submittal to the ENGINEER) or to maintain a current insurance certificate on file with the OWNER will be just cause for withholding progress payments. Also, failure of the CONTRACTOR to accompany each progress estimate (application for payment) on treatment plant projects with operation and maintenance manuals and other submittals required by the Contract Document shall be just cause for the deletion from the progress estimate of any completed Work or stored materials for which the required submittals have not been received by the ENGINEER. On unit price contracts, the Application for Payment shall be submitted on the "Contractor's Progress Estimate" as bound in the Contract Documents or on such other forms as requested by the ENGINEER. The bid items shall be listed in the same order and with the same item number as appears in the Proposal, however, additional breakdown may be appropriate in the case of lump sum bid items on Unit Price contracts. On lump sum contracts the Application for Payment shall be submitted by CONTRACTOR on A.L.A. Document G702 and G703, "Application and Certificate for Payment". The Application shall be completely filled out and notarized.

CONTRACTOR'S Warranty of Title:

14.3 CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

Review of Applications for Progress Payment:

14.4 The ENGINEER will review the estimate and make any revisions as he determines to be appropriate, based on his observation of the project, prior to submitting the estimate to the OWNER for payment. Attached schedules showing cost breakdown of lump sum bid items shall also be submitted with the estimate by the CONTRACTOR as requested by the ENGINEER. Unless otherwise provided in the Supplementary Conditions or General Requirements within thirty (30) days from the end of the period covered by the Application for Payment, the amount recommended will (subject to the provisions of the last sentence of paragraph 14.7) be paid by OWNER to CONTRACTOR.

14.5 ENGINEER'S recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER'S on-site observations of the Work in progress as an experienced and qualified design professional or on information received from OWNER and on ENGINEER'S review of the Application for Payment and the accompanying data and schedules that the Work has progressed to the point indicated; that, to the best of ENGINEER'S knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to

a final determination of quantities and classifications for Unit Price Work under paragraph 9.10, and to any other qualifications stated in the recommendation): and that CONTRACTOR is entitled to payment of the amount recommended. However, by recommending any such payment ENGINEER will not thereby be deemed to have represented that exhaustive or continuous on-site inspections have been made to check the quality or the quantity of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents or that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or OWNER to withhold payment to CONTRACTOR.

14.6 ENGINEER'S recommendation of final payment will constitute an additional representation by ENGINEER to OWNER that to the best of ENGINEER'S knowledge, information and belief the conditions precedent to CONTRACTOR'S being entitled to final payment as set forth in paragraph 14.13 have been fulfilled subject to final decisions and approvals required by OWNER.

14.7 ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER'S opinion, it would be incorrect to make such representations to OWNER. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in ENGINEER'S opinion to protect OWNER from loss because:

14.7.1 the Work is defective, or completed Work has been damaged requiring correction or replacement.

14.7.2 the Contract Price has been reduced by Written Amendment or Change Order.

14.7.3 OWNER has been required to correct defective Work or complete Work in accordance with paragraph 13.14, or

14.7.4 of ENGINEER'S actual knowledge of the occurrence of any of the events enumerated in paragraphs 15.2.1 through 15.2.9 inclusive.

OWNER may refuse to make payment of the full amount recommended by ENGINEER because claims have been made against OWNER on account of CONTRACTOR'S performance or furnishing of the Work or Liens have been filed in connection with the Work or there are other items entitling OWNER to a set-off against the amount recommended, but OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action.

Substantial Completion:

14.8 When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Within a reasonable time thereafter, OWNER, CONTRACTOR and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within fourteen days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of OWNER'S objections, ENGINEER considers the Work substantially complete, ENGINEER will within said fourteen days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, normal operating maintenance, heat, utilities, insurance and warranties. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER prior to ENGINEER'S issuing the definitive certificate of Substantial Completion, ENGINEER'S aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

14.9 OWNER shall have the right to exclude CONTRACTOR from the Work after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

Partial Utilization:

14.10 The OWNER shall have the right, if necessary, to take possession of and to use any completed or partially completed portions of the Work, even if the time for completing the entire Work or such portions of the Work has not expired and even if the Work has not been finally accepted or substantially completed. Such possession and use shall not constitute an acceptance of such portions of the Work. The OWNER shall also have the right to enter the premises for the purpose of doing Work not covered by its contract with the CONTRACTOR.

Final Inspection:

14.11 Upon written notice from CONTRACTOR that the entire Work or, if agreeable to the OWNER and the ENGINEER, an agreed portion thereof is complete, ENGINEER will make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measurers as are necessary to remedy such deficiencies.

Final Application for Payment:

14.12 After CONTRACTOR has completed all such corrections to the satisfaction of ENGINEER and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents (as provided in paragraph 6.19) and other documents - all as required by the Contract Documents, and after ENGINEER has indicated that the Work is acceptable (subject to the provisions of paragraph 14.16), CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to OWNER) of all Liens arising out of or filed in connection with the Work. In lieu thereof and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full; an affidavit of CONTRACTOR that the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER'S property might in any way be responsible, have been paid or otherwise satisfied; and consent of the surety, if any, to final payment. If any Subcontractor or Supplier fails to furnish a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien. Before final payment will be made by the OWNER, the CONTRACTOR must file with the OWNER a written clearance from the State Commissioner of Labor or other applicable state office certifying that all payment then due, including payment by subcontractors on the project, under the Statutes covering Unemployment Compensation have been made, all in full conformance with the Statutes in effect at the place of Work. From the total of this final certificate for payment shall be deducted all previous payments and all amounts to be retained or deducted under the provisions of the Contract. All prior partial estimates upon which payments have been made are approximate only and will be subject to corrections in the final or subsequent estimates and payment. The CONTRACTOR'S submission of a final application for payment shall constitute a representation to the OWNER and ENGINEER that all equipment used on the project complies with the latest requirements of the Occupational Safety and Health Act of 1970, including any standards or regulations established by the U.S. Secretary of Labor in the administration of said Act, as of the bid opening date.

Final Payment:

14.13 If, on the basis of ENGINEER'S observation of the Work during construction and final inspection, and ENGINEER'S review of the final Application for Payment and accompanying documentation - all as required by the Contract Documents and by law ENGINEER is satisfied that the Work has been completed and the Application as submitted is correct and CONTRACTOR'S other obligations under the Contract Documents have been fulfilled. ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER'S recommendation of payment and present the Application to OWNER for payment. Otherwise, ENGINEER may hold the Application until all requirements are satisfied or ENGINEER will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application. Thirty days, unless a longer period of time is required by law or provided in the Supplementary Conditions, after presentation to OWNER of the Application and accompanying documentation, in appropriate form and

substance, and with ENGINEER'S recommendation the amount recommended by ENGINEER will become due and will be paid by OWNER to CONTRACTOR.

14.14 If permitted by law and through no fault of CONTRACTOR, final completion of the Work is significantly delayed and if ENGINEER so confirms, OWNER may at OWNER'S option, upon receipt of CONTRACTOR'S Application for Payment and without terminating the Agreement, make payment for part or all of the balance due for the portion of the Work fully completed and accepted or OWNER may reduce any portion of the retainage. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.1, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

Contractor's Continuing Obligation:

14.15 CONTRACTOR'S obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation or any progress or final payment by ENGINEER, nor the issuance of a certificate of Substantial Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by OWNER, nor any act of acceptance by OWNER nor any failure to do so, nor any review and action of a Shop Drawing or sample submission, nor any action of the ENGINEER pursuant to paragraph 14.13, nor any correction of defective Work by OWNER will constitute an acceptance of Work not in accordance with the Contract Documents or a release of CONTRACTOR'S obligation to perform the Work in accordance with the Contract Documents (except as provided in paragraph 14.16).

Waiver of Claims:

14.16 The making and acceptance of final payment will constitute:

14.16.1 a waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.11 or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it will not constitute a waiver by OWNER of any rights in respect of CONTRACTOR'S continuing obligations under the Contract Documents; and

14.16.2 a waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

OWNER May Suspend Work:

15.1 OWNER may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR and ENGINEER which will, if known, fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed or if not so fixed on the date fixed in a subsequent notice. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if CONTRACTOR makes an approved claim therefor as provided in Articles 11 and 12 except that no adjustment in Contract Price or Contract Time will be allowed for any suspension made on account of weather conditions not being conducive to good construction practices.

OWNER May Terminate:

15.2 Upon the occurrence of any one or more of the following events:

15.2.1 if CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time relating to the bankruptcy or insolvency;

15.2.2 if a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;

15.2.3 if CONTRACTOR makes a general assignment for the benefit of creditors;

15.2.4 if a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR'S creditors;

15.2.5 if CONTRACTOR admits in writing an inability to pay its debts generally as they become due;

15.2.6 if CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.9 as revised from time to time);

15.2.7 if CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;

15.2.8 if CONTRACTOR disregards the authority of ENGINEER; or

15.2.9 if CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents;

OWNER may, after giving CONTRACTOR (and the surety, if there be one) seven days written notice and to the extent permitted by Laws and Regulations, if the cause for termination is not then remedied, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR'S tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct, indirect and consequential costs of completing the Work [including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration (if the parties agree to arbitrate after the facts to be arbitrated are known) costs] such excess will be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such costs incurred by OWNER will be approved as to reasonableness by ENGINEER and incorporated in a Change Order, but when exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

15.3 Where CONTRACTOR'S services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.4 Upon seven days written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement. In such case, CONTRACTOR shall be paid for all Work executed and any expense sustained plus reasonable termination expenses sustained which shall not include overhead and profit on any Work not performed by the CONTRACTOR and shall not include any lost profit.

CONTRACTOR May Stop Work or Terminate:

15.5 If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within thirty days after it is submitted, where required, or OWNER fails for thirty days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon thirty days written notice to OWNER and ENGINEER, if the cause for termination is not then remedied, terminate the Agreement and recover from OWNER payment for all Work executed and any expense sustained. In addition and in lieu of terminating the Agreement, if ENGINEER has failed to act on an Application for Payment, where required, or OWNER has failed to make any payment as aforesaid, CONTRACTOR may upon thirty days written notice to OWNER and ENGINEER, if the cause for stopping the Work is not then remedied, stop the Work until payment of all amounts then due. The provisions of this paragraph shall not relieve CONTRACTOR of the obligations under paragraph 6.29 to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with OWNER.

ARTICLE 16 - CLAIMS AND DISPUTES

16.1 All claims, disputes and other matters in question between the parties of this Agreement arising out of or relating to this Agreement or the breach thereof shall, if the procedure of resolution is not set forth in the Contract Documents, be initiated in a competent court of law in the state where the project is located if the parties are unable to resolve such claims, disputes or other matters in question by negotiation.

ARTICLE 17 - MISCELLANEOUS

Giving Notice:

17.1 Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

Computation of Time:

17.2.1 When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation. Unless otherwise indicated in the Contract Documents, a day shall mean a consecutive calendar day.

17.2.2 A calendar day of twenty-four hours measured from midnight to the next midnight shall constitute a day.

General:

17.3 Should OWNER or CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph 17.3 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

17.4 The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 6.30, 13.1, 13.12, 14.3 and 15.2 and all of the rights and remedies available to OWNER and ENGINEER thereunder and in the Supplementary Conditions are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply. All representations, warranties and guarantees made in the Contract Documents will survive final payment and termination or completion of the Agreement.

Salvageable Materials:

17.5 Unless otherwise indicated in Supplementary Conditions or specifications, all salvageable material shall remain the property of the OWNER unless specifically stated otherwise in the specifications. Such material shall be delivered by the CONTRACTOR for storage as requested by the ENGINEER.

Electrical Utilization Equipment:

17.6 All electrical utilization equipment furnished for the project, if any, shall be in accordance with one of three paragraphs below:

17.6.1 The equipment is accepted, certified, listed, and labeled or otherwise determined to comply with the applicable safety standards of a nationally recognized testing laboratory such as, but not limited to Underwriters' Laboratories, Inc. or Factory Mutual Engineering Corporation.

17.6.2 With respect to equipment of a kind which no nationally recognized testing laboratory accepts, certifies, lists, labels or determines to be safe, the equipment is inspected or tested by a federal agency or by a state, municipal, or other local authority responsible for enforcing occupational safety provisions of the Code and in compliance with nationally recognized standards or tests to determine safe use in a specified manner. A written statement of such inspection or test must be submitted to the ARCHITECT/ENGINEER with the Shop Drawings for the OWNER'S record.

17.6.3 With respect to custom-made equipment or related installations which are designed, fabricated for, and intended for use by a particular customer, the equipment is determined to be safe for its intended use by the equipment manufacturer on the basis of tests and test data that would be acceptable to a nationally recognized testing laboratory such as Underwriters Laboratories, Inc., or Factory Mutual Engineering Corporation and; the said manufacturer issues a written statement describing the tests and including test data to accompany the Shop Drawings. The written statement is intended to serve as the OWNER'S record to establish that the equipment satisfies the requirements of the "Occupational Safety and Health Standards".

17.7 Prior to purchasing any electrical utilization equipment, the CONTRACTOR should become thoroughly familiar with the Occupational Safety and Health Standards and in particular Subpart S-Electrical, Paragraph 1910.308-Application.

17.8 The requirements of this article shall apply on the project even though the OWNER may be a State Government or a government subdivision whose employees are not covered by the Federal Health and Safety Act of 1970.

- END -

SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

The following shall amend and/or supplement the General Conditions:

Page GC-5, Add the following sentence at the end of the definition of Contract Documents:

> "Shop Drawing submittals approved pursuant to paragraphs 6.26 and 6.27 and the reports and drawings referred to in paragraphs 4.2.1.1 and 4.2.2.2 are not Contract Documents."

Page GC-5, Change "**CONTRACT DOCUMENTS -** The Agreement..." to:

> **"CONTRACT DOCUMENTS** - The Notice to Bidders, Instructions to Bidders, Agreement..."

Page GC-5, Add the following definition:

> **Furnish** or **Install** or **Provide** or **Supply** - the word "Furnish" or the word "Install" or the word "Provide" or the word "Supply," or any combination or similar directive or usage thereof, shall mean FURNISHING AND INCORPORATING IN THE WORK including all necessary labor, materials, equipment, and everything necessary to perform the Work indicated, unless specifically limited in the context.

Page GC-7, Para 2.1; Add:

> Contractor shall provide certificate of insurance per requirements of Instructions to Bidders.

Page GC-7, Para 2.5; Amend the first sentence of paragraph GC-2.5 by striking out the words "and all applicable field measurements, "and substituting "against all applicable field measurements and conditions."

Page GC-9, Para 3.2; Add two new paragraphs at the end of paragraph SC-3.2 which are to read as follows:

3.2.1 The Specifications may vary in form, format and style. Some specification sections are written in varying degrees of streamlined or declarative style and some sections may be relatively narrative by comparison. Omissions of such words a d phrases as "the Contractor shall," "in conformity with," "as shown," or "as specified" are intentional in streamlined sections. Omitted words and phrases shall be supplied by inference. Similar types of provisions may appear in various parts of a section or articles within a part depending on the format of the section. The Contractor shall not take advantage of any variation of form, format or style in making claims for extra Work."

3.2.2 The cross referencing of specification sections under the subparagraph heading "Related Sections include but are not necessarily limited to:" and elsewhere within each specification section is provided as an aid and convenience to the Contractor. The Contractor shall not rely on the cross referencing provided and shall be responsible to coordinate the entire work under the Contract Documents and provide a complete Project whether or not the cross referencing is provided in each section or whether or not the cross referencing is complete."

Page GC-11, Para 4.2.1; Add new paragraphs 4.2.1.1 and 4.2.1.2 which are to read as follows:

4.2.1.1 The following are reports of explorations and tests of subsurface conditions at the site of the Work:

NONE

4.2.1.2 The following are drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities) which are at or contiguous to the site of the Work:

NONE

Page GC-12, Para 4.3.2; Delete in entirety and insert:

4.3.2 Not shown or indicated. If an Underground Facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents and which Contractor could not reasonably have been expected to be aware of having properly contacted and requested assistance from utility companies, communication companies and other entities who may have underground facilities in the area, Contractor shall, promptly after becoming aware thereof and before performing any work affected thereby (except in an emergency as permitted by paragraph 6.22), identify the owner of such Underground Facility and give written notice thereof to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility to determine the extent to which the Contract Documents should be modified to reflect and document the consequences of the existence of the Underground Facility as it may interfere with the permanent facility being constructed and the Contract Documents will be amended or supplemented to the extent necessary. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility as provided in paragraph 6.20. All utilities encountered must be kept in operation by the Contractor and must be protected and/or repaired at his own expense. The Contractor shall not interrupt service to any user without prior written approval of the agency or department operating the utility system. Underground utilities of record will be shown on the construction plans insofar as it is possible to do so. These, however, are shown for convenience only, and the Owner assumes no responsibility for improper locations or failure to show utility locations on the construction plans.

Page GC-13, Para 4.5; Add:

Line and grades necessary to construct the work will be furnished by the Owner through the Engineer. Said staking shall be furnished, one time only, by the Owner. All other construction staking shall be furnished by the Contractor.

Page GC-13, Para 5.3; Add:

5.3.1 During the term of this Contract, the Contractor shall maintain such insurance as will protect him from claims as set forth below which may arise out of or result from the Contractor's operations under the Contract, whether such operations be by himself or by a Subcontractor or sub-subcontractor or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be held liable:

A) for claims arising under any Workmen's Compensation, Employer's Liability, or any similar employee benefit acts;

B) for claims because of bodily injury, sickness, disease or death of any person or persons other than his employees, and for claims because of damage to or destruction of property of others resulting therefrom, including loss of use thereof, and for claims arising from products and completed operations, and for claims from personal and advertising injury.

5.3.2 Such insurance shall be written for amounts not less than the limits set forth in the Instructions to Bidders.

5.3.3 The insurance referred to in subparagraph B) above shall be written under the Commercial General and Comprehensive Automobile Liability policy forms, including coverage for all owned, hired, and non-owned automobiles. The Contractor may at his option provide the limits of liability as set out above by a combination of the above described policy forms and an Umbrella Excess Liability policy. The liability policy or policies shall, unless otherwise approved by Owner, have any exclusions for punitive and exemplary damages removed. Unless otherwise specifically approved in writing by the Owner the policies shall be written on an "occurrence" basis and not on a "claims made" basis.

5.3.4 It is a condition of the Contract that the policy or policies afford coverage for damage to property of others arising out of the perils of Explosion (including blasting), Collapse, and Damage to Underground Facilities, and it is a further condition that the policy or policies afford the same limits of liability as set out above for liability assumed under contract including CONTRACTUAL LIABILITY as set out in Paragraph 6.30, 6.31, 6.32, of the General Conditions "INDEMNIFICATION". It is a condition of the Contract that the policy or policies afford BROAD FORM PROPERTY DAMAGE LIABILITY COVERAGE for damage to property of others in the care, custody, or control of the insured, or as to which the insured is for any purpose exercising physical control.

5.3.5 All responsibility for payment of any sums resulting from any deductible provision, corridor, or self-insured retention conditions of the policy or policies shall remain with the Contractor.

5.3.6 Approval of the insurance by the Owner shall not in any way relieve or decrease the liability of the Contractor hereunder, and it is expressly understood that the Owner/Engineer do not in any way represent that the above specified insurance or limits of liability are sufficient or adequate to protect the Contractor's interests or liabilities.

5.3.7 A Certificate of Insurance shall be furnished by the Contractor with the Contract for review and approval by the Owner prior to execution of the Contract by the Owner.

5.3.8 The policy or policies listed herein shall be endorsed to provide that thirty (30) days prior notice by Registered Mail from the insurance company(ies) shall be given to the Owner and Engineer in the event of cancellation, non-renewal, reduction of limits or deletion of coverage of the policy(ies) by the insurer and that immediate notice to the same parties by Registered Mail shall be given in the event of cancellation, non-renewal, reduction of limits or deletion of coverage of the policies by the insured.

5.3.9 The Contractor shall have the policy or policies specified herein endorsed to name the Owner and the Engineer as Additional Insured as respect to this project only and as regards Contractor's work only.

Page GC-14, Para 6.3; Add:

Contractor may work Saturday without Owner's written consent.

Page GC-14, Para 6.4; Add:

Field office shall not be required unless specifically noted in Project plans.

Page GC-17, Para 6.14.1; Add:

Legal Relations; Non-Federal Highway Projects:

To be a qualified resident bidder, the person, corporation, partnership, or firm shall not have, as employees, Illinois laborers on the work site of a non-federal-aid highway project within Iowa. An Illinois laborer is any person who has resided in Illinois for at least 30 days and intends to become or remain an Illinois resident. This applies to all labor on the project, whether skilled, semi-skilled, or unskilled, whether manual or non-manual. This also applies to work subcontracted by or to the resident bidder on a non-federal-aid highway project within Iowa. The resident bidder may place on such work no more than three residents of Illinois who are his regularly employed executive and technical experts.

This qualification as resident bidder shall be maintained by the contractor and his subcontractors at the work site until this project is completed.

Page GC-17, Para 6.15; Add:

Unless directed otherwise in the Notice to Bidders and in the Instruction to Bidders the Contractor shall comply with the following:
Section 423 of the Code of Iowa, 1966, requires the Contractor to pay Sales or Use Tax on materials used on construction. All Contractors shall prepare and require their subcontractors to prepare, sign and acknowledge before a notary public, Iowa Department of Revenue "Contractor's Statement", State Tax Commission Form 35-002 and/or other forms currently in use, listing their respective expenditures for all materials that become an integral part of the completed project; the purchase price; the amount of Use of Sales Tax paid; the names of the material suppliers; and all other information required to complete said forms. All Contractors shall file with the Owner executed copies of these forms covering all materials incorporated by them or their subcontractors. Receipt of said executed forms by

the Owner shall be a prerequisite to final payment of retained percentage of contract price to the Contractor. The Use Tax forms will be filled out by the Contractor and accepted by the Owner. Final payment of the project will not be made until Use Tax filing has been cleared by the State Tax Commission. Tax refunds shall be the sole property of the Owner.

Page GC-18, Para 6.20.3; Add:

Contractor shall be solely responsible for conducting his work in compliance with the requirements of the Iowa Bureau of Labor.

Page GC-20, Para 6.27; Add:

The review of shop drawings by the Engineer is for the purpose only of checking for general conformance with the design concept of the project and for general compliance with the information given in the Contract Documents. Any action taken on shop drawings by the Engineer does not relieve the Contractor of responsibility for proper dimensioning, for detailing of connections and incorporating into the work satisfactory materials and equipment meeting the requirements of the Contract Documents. If errors in shop drawings are not detected in the Engineer's review, the Contractor is not relieved from the responsibility to comply with the Contract Documents and the Engineer's review shall never be construed as permitting the Contractor to proceed in error. It is understood that where a Shop Drawing is submitted for review for compliance with a performance specification, it is impossible to determine with certainty whether the item or process covered by the Shop Drawing will conform to the requirements of the Contract Documents. Regardless of any information contained or not contained in the Shop Drawings, the requirements of the drawings and specifications and other Contract Documents must be followed and are not waived or superseded in any way by the Shop Drawing review.

Page GC-21, Para 6.28; Change "No Exception Taken" to "approval."

Page GC-25, Para 10.6; Add the following new paragraph after paragraph GC-10.5:

10.6 Change Proposal Request

10.6.1 When Owner requests Contractor to present a proposal to accomplish a change in the Work, the request will be made in the form of a Change Proposal Request (CPR) prepared by Engineer. The CPR will describe the change and request Contractor to propose a cost and Contract Time change. Contractor will propose cost and time changes, provide a breakdown for the costs, sign the CPR and return it to Engineer. Engineer will make recommendations to Owner concerning acceptance. If the CPR is approved by Owner, the CPR will be included in a Change Order. Contractor is not authorized to proceed with a change contained in a CPR until the Change Order is properly signed and issued.

10.6.2 When the Contractor desires to propose changes to the Work, it may initiate a CPR in the same form as provided in paragraph 10.6.1 and submit the CPR to the Engineer for the Engineer's review and recommendation.

Page GC-29, Para 12.1; Add new paragraph after paragraph CG-12.1 which is to read as follows:

12.1.1 No extension of the Contract Time will be allowed for additional Work or for claimed delay unless the additional Work contemplated or claimed delay is shown to be on the critical path of the Project's schedule of construction or Contractor can show by Critical Path Method analysis how the additional Work or claimed delay adversely affects the critical path.

Page GC-31, Para 13.12; Add:

It is the intention of the Owner to have pavement placed in the streets and drives over the sewers immediately after their installation. The Contractor responsible for placing the sewer will be required to remove and replace concrete pavement if said removal and replacement is necessary to correct the pipe construction or the backfill over the pipe even though such defects may be discovered by closed circuit television inspection after the paving has been placed over the sewer.

Page GC-32, Para 14.2; Amend the paragraph by deleting sentence:

"At least twenty days before each progress payment is scheduled (but not more than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents."

and substituting:

"On the last week day working day of each month, the Owner's Project Observer and Contractor's Foreman or Superintendent shall prepare a list of estimated quantities complete to date and the Engineer will then provide the Owner with a copy of the list of actual quantities for use in preparing the monthly cost estimate on or before the last working day of the month. The Engineer will prepare the periodic cost estimate and forward three (3) copies to the Contractor for review.

If the estimate is acceptable, the Contractor shall sign and date all three copies and return them to the Engineer for submittal to the Owner for approval and payment."

Page GC-34, Para 14.8; Add:

14.8.1 If parts of the Work have been determined to be not acceptable for Substantial Completion requiring additional Work by Contractor and reinspection or retesting by Engineer, the cost of such reinspection or retesting including time, travel and living expense shall be paid by Contractor to Owner who will reimburse Engineer. Owner may offset said monies by deducting that amount from payments due to Contractor.

Page GC-37, Para 15.2; Delete the last sub-paragraph of Para 15.2, which paragraph starts with the words "Owner may, after giving Contractor (and the Surety, if any) seven days..." and ending with the words "lowest price for the Work performed."; and substitute the following text:

Owner may, after giving Contractor (and the Surety, if any,) seven (7) days' written notice and the extent permitted by laws and regulations, terminate the services of Contractor.

If contractor's services are terminated, Surety shall have the right to take over and perform the Work; provided, however, if Surety does not commence performance thereof within ten (10) consecutive calendar days after date of notice to Contractor that the services of Contractor have been terminated, or if Surety has taken over for Contractor and while prosecuting the Work in lieu of Contractor, any one or more of the events cited in 15.2.1 through 15.2.4 occur, then Owner, without process or action at law, may take over any portion of the Work and complete it as described below.

If Owner completes the Work, Owner may exclude Contractor from the site and take possession of the Work and of all Contractor's tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which Owner has paid Contractor but which are stored elsewhere, and finish the Work as Owner may deem expedient.

Whether Owner or Surety completes the Work, Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses and damages sustained by Owner arising out of or resulting from completing the Work, such excess will be paid to Contractor. If such claims, costs, losses and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and when so approved by Engineer incorporated in a Change Order, provided that when exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

Neither Owner, Engineer, nor any of their respective consultants, agents, officers, directors or employees shall be in any way liable or accountable to Contractor or surety for the method by which the completion of the said Work, or any portion thereof, may be accomplished or for the price paid therefore.

Owner, notwithstanding the method used in completing the Contract, shall not forfeit the right to recover damages from Contractor or Surety for Contractor's failure to timely complete the entire Contract. Contractor shall not be entitled to any claim for damages on account of the method used by Owner in completing the Contract.

Maintenance of the Work shall continue to be Contractor's and Surety's responsibilities as provided for in the bond requirements of the Contract Documents or any special guarantees provided for under the Contract Documents or any other obligations otherwise prescribed by law.

Page GC-37, Para 16.1; delete the words: "Shall, if the procedure of resolution is not set forth in the Contract Documents," and substitute the words, "Shall be submitted first to Non-Binding Mediation before any action may"

Page GC-37, Para 16.1; Add:

If for any reason a contract is declared in default, the Contractor shall peaceably relinquish possession of said work or the parts thereof specified in the notice of default. Neither the Owner nor any member or employee thereof shall be in any way liable or accountable to the Contractor or his surety for the method by which the completion of the said work, or any portion thereof, may be accomplished or for the price paid therefore.

Page GC-39, Para 17.9; Add:

Liquidated Damages: The parties hereby agree that damages occasioned the Owner by the Contractor's failure to complete the work within the Contract time are difficult to measure. Therefore, if the Contractor does not complete all work under this Contract as required hereinabove, the Contractor shall pay to the Owner an amount set forth in the Instructions to Bidders per calendar day as agreed liquidated damages accrued by the Owner as a result of not having 100% use of the facilities and for administrative costs and professional services. Said payment of liquidated damages at the daily rate stated above shall continue until all work is satisfactorily completed as specified and so determined by the Engineer. The Owner shall have the right to collect the above described liquidated damages by deducting said amounts from funds payable to the Contractor or by such other means as are available. In addition to the above liquidated damages for delay in performance, the Owner reserves all rights and remedies he may have against the Contractor for breach of Contract. Time is of the essence.

CITY OF COUNCIL BLUFFS

STANDARD SPECIFICATIONS

The Urban Standard Specifications for Public Improvements shall be made part of the Contract Documents for this project by reference. These documents are on file and available at:

City of Council Bluffs
Department of Public Works
209 Pearl Street
Council Bluffs, IA 51503
(712) 890-5296

Copies of these documents may be purchased from:

InTrans
Paul Wiegand, Director
ISU Research Park
2711 South Loop Drive, Suite 4700
Ames, IA 50010-8664
(515) 294-7082

The document can be reviewed at:

http://www.councilbluffs-ia.gov/415/Information-for-Consultants

CITY OF COUNCIL BLUFFS

SUPPLEMENTAL SPECIFICATIONS

TO

THE 2024 EDITION

IOWA STATEWIDE URBAN STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS

January 2024

DIVISION 1 – GENERAL PROVISIONS AND COVENANTS

DELETE IN ITS ENTIRETY and REPLACE with the following:
The City of Council Bluffs utilizes "GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT" and "SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT" Document No. 1910-8 (1983 Edition) prepared by Engineer's Joint Contract Document Committee.

ADD the following:

COORDINATION OF SPECIFICATIONS, PLANS, AND SPECIAL PROVISIONS

A. In case of any discrepancy between the various items included in the contract documents, the items shall prevail, or govern, in the following descending order:
   1. Change Orders
   2. Addenda
   3. Proposal and Contract
   4. Special Provisions
   5. Plans, including plan notes
   6. Supplemental Specifications
   7. General Supplemental Specifications (SUDAS)
   8. Urban Standard Specifications for Public Improvements

B. The Contractor shall not take advantage of any apparent error or omission in the plans or specifications or of any discrepancy between the plans and specifications.

DIVISION 2 – EARTHWORK

SECTION 2010 – EARTHWORK, SUBGRADE, AND SUBBASE

1.08 MEASUREMENT AND PAYMENT

D. Topsoil:

1. On-Site Topsoil:
   a. Measurement:
      DELETE 8 inch AND REPLACE with 4 inch.

E. Class 10, Class 12, or Class 13 Excavation:

3. Includes, but is not limited to:
   ADD the following:
   e. The furnishing, permits, hauling, placement, and compaction of borrow material.
   f. The excavation, hauling, disposal, and permits for all waste material.

2.01 TOPSOIL

DELETE C AND REPLACE with the following:

C. Topsoil shall be considered as the fertile, uppermost part of the soil containing significant organic matter largely devoid of debris and rock and often disturbed in cultivation. The Engineer will approve the source of off-site topsoil. Surface soils supporting growth of noxious weeds or other undesirable vegetation will not be accepted.

2.03 SUITABLE EMBANKMENT MATERIALS

ADD the following:

F. Soils meeting A and B above that have a moisture between 4% and 8% above optimum shall be scarified and air dried by the Contractor to within acceptable limits. Soils meeting A and B above with a moisture content above 8% optimum or unsuitable soils shall be either removed or used in the construction based on the direction of the Engineer. The work described above shall be considered incidental to items for which payment is being made.

2.04 FOUNDATION MATERIALS

C. Subgrade Treatment:

DELETE 3. Fly Ash and REPLACE with the following:

3a. Fly Ash

1. Fly ash shall meet ASTM C 618, Section 4.3 when sampled and tested in accordance with ASTM C 618, Sections 5, 6, and 8, unless otherwise shown on the plans. Note 2 of Section 3.1.2 of ASTM C 618 will not apply.
2. Fly ash shall be Class C containing a minimum of 22% CaO. The source of the ash shall be identified and approved in advance of stabilization operations in order that laboratory testing can be completed prior to commencing work.
3. Fly ash shall be stored and handled in closed weatherproof containers until immediately before distribution. Fly ash exposed to moisture prior to mixing with soils shall be discarded.

3b. Water

Water used for mixing or curing shall be reasonably clean and free of oil, salt acid, alkali, sugar, vegetable, or other substances injurious to the finished product. Water shall meet the requirements of AASHO T 26. Water known to be of potable quality may be used without testing.

3c. Soil

Soil for this work consists of materials on the site or selected materials from other sources and shall be uniform in quality and gradation, and shall be approved by the Engineer. The soil shall be free of roots, sod, weeds, and stones larger than 1.5 inches.

D. Subbase:

1. Special Backfill

   ADD the following:

   c. Only crushed stone or crushed PCC shall be used. Crushed PCC shall be from a single documented source.

3.03 EXCAVATION

ADD the following:

J. Finish Grading:

When topsoil is not included in the contract, excavation shall include all finish grading according to the specified grades and cross-sections. The top 9 inches of backfill behind curbs shall be free of gravel, crushed rock, and other debris.

K. Finish Grading:

When topsoil is included in the contract, a minimum of 4 inches of topsoil shall be placed on all disturbed areas as required by the IDNR NPDES General Permit No. 2. Topsoil shall meet the requirements of Section 2010 or as specified in the Contract Documents.

3.06 SUBGRADE PREPARATION

A. Uniform Composition:

ADD the following:

5. Fly Ash Treated Subgrade:
   a. Fly Ash
      Fly ash shall be applied at the rate and depth specified in the plans.
   b. Tolerances
      At final compaction, the fly ash and water content for each course of subgrade treatment shall conform to the following tolerances unless specified otherwise:

Material	Tolerance
Fly Ash	+2%, -2%
Water	+2%, -3%

3.07 SUBGRADE TREATMENT

A. Lime, Cement, Fly Ash, or Asphalt: REMOVE Fly Ash from this subsection.

ADD the following:

C. Fly Ash:

1. Weather Limitations

The fly ash-treated subgrade shall not be mixed while the atmospheric temperature is below 40° F or when conditions indicate that temperatures may fall below 40° F within 24 hours, when it is foggy, rainy, or when soil or subgrade is frozen.

2. Equipment

The equipment required shall include all equipment necessary to complete this item such as: grading and scarifying equipment, a spreader for the fly ash, mixing or pulverizing equipment, sheepsfoot and pneumatic or vibrating rollers, sprinkling equipment, and trucks.

3. Construction Methods

a. General

It is the primary requirement of this specification to secure a completed stabilized subgrade containing a uniform fly ash mixture, free from loose or segregated areas, of uniform density and moisture content, well bound for its full depth, and with a smooth surface suitable for placing subsequent courses. The Contractor shall regulate the sequence of work, to use the proper amount of fly ash, maintain the work, and rework the courses as necessary to meet the above requirements.

b. Application

Fly ash shall be spread only on areas where the mixing and compaction operations can be completed within 2 hours. The amount of fly ash spread shall be the amount required to obtain the rate and depth specified in the plans.

The fly ash shall be spread uniformly over the top of the subgrade by an approved screwtype spreader box or other approved spreading equipment. The fly ash shall be distributed in such manner that scattering by wind will be minimal. Fly ash shall not be applied when wind conditions, in the opinion of the Engineer, are detrimental to a proper application.

c. Mixing

The full depth of the treated subgrade shall be mixed with the pulvamixer. Fly ash shall not be left exposed for more than 30 minutes after application. The pulvamixer shall make two passes to incorporate the fly ash into the soil. Water shall be added through use of a pulvamixer equipped with a spray bar in the mixing drum capable of applying sufficient quantities of water to achieve the required moisture content of the soil-fly ash mixture. The system shall be capable of being regulated to the degree as to maintain moisture contents within the specified range.

Specified moisture contents shall be established based on laboratory tests with the site soils and the specific fly ash to be used for the treatment. Final moisture content of the mix, immediately prior to compaction, shall not be more than 3% below nor more than 2% above the optimum moisture content for maximum density of the mix as determined in accordance with ASTM D 698. If the moisture content exceeds the specified limits, additional fly ash may be added to lower the moisture content to the required limits. Lowering moisture contents by aeration following addition of the fly ash will not be permitted.

d. Compaction

Compaction of the soil-fly ash mixture shall begin immediately after mixing of the fly ash and be completed within two hours following incorporation of the fly ash. The field density of the compacted mixture shall be at least 95% of the maximum density of laboratory specimens prepared from samples taken from the material in place. The specimens shall be compacted and tested in accordance with ASTM D 698.

The in-place density of the fly ash-treated subgrade layer shall be determined in accordance with ASTM D 2922 at intervals so that each test shall represent no more than 300 square yards.

Irregularities, depressions, or weak spots, which develop, shall be corrected immediately by scarifying the area affected, adding or removing material as required, and reshaping and re-compacting. The surface of the course shall be maintained in a smooth condition, free from undulations and ruts, until other work is placed thereon or the work is accepted.

In addition to the requirements specified for density, the full depth of the material shown on the plans shall be compacted to the extent necessary to remain firm and stable under construction equipment. After each section is completed, tests will be made by the Engineer. If the material fails to meet the density requirements, it shall be reworked to meet these requirements. Throughout this operation, the shape of the course shall be maintained by blading, and the surface upon

completion shall be smooth and shall conform with the typical section shown on the plans and to the established lines and grades. Should the material lose the required stability, density, and finish before the next course is placed or the work is accepted, it shall be recompacted and refinished at no additional cost to the Contracting Authority.

e. Finishing and Curing

After the final layer or course of the fly ash-treated subgrade has been compacted, it shall be brought to the required lines and grades in accordance with the typical sections. The finished surfaces shall not vary more than 3/8 inch when tested with a 16 foot straightedge applied parallel with and at right angles to the pavement centerline. Any variations in excess of this tolerance shall be corrected by the Contractor, at no additional cost to the Contracting Authority, and in a manner satisfactory to the Engineer. After the fly ash-treated course has been finished as specified herein, the surface shall be protected against rapid drying and maintained in a thorough and continuously moist condition by sprinkling for a period of not less than three days or until the pavement section is placed.

f. Thickness

The thickness of the fly ash-treated subgrade shall be determined by depth checks or cores taken at intervals so that each test will represent no more than 300 square yards. When the base thickness is deficient by more than 0.5 inch, the Contractor shall correct such areas in a manner satisfactory to the Engineer. The Contractor shall replace, at no additional cost to the Contracting Authority, the base material where borings are taken for test purposes.

g. Maintenance

The Contractor shall maintain the fly ash-treated subgrade in good condition from the start of work until all the work has been completed, cured, and accepted by the Engineer.

4. Testing Requirements

a. ASTM D 698 Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5 lb Rammer and 12 inch Drop

b. ASTM D 1556 Density of Soil in Place by the Sand-Cone Method

c. ASTM D 2922 Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)

d. AASHTO T 26 Quality of Water to be Used in Concrete

3.09 FIELD QUALITY CONTROL

B. Moisture Content and Density:

DELETE 1 and REPLACE with the following:

1. Ensure that moisture content falls within the specified limits.

ADD the following:

3. The top 9 inches of backfill behind the curb shall be compacted to 90% of maximum Standard Proctor Density.

DIVISION 3 – TRENCH AND TRENCHLESS CONSTRUCTION

SECTION 3010 – TRENCH EXCAVATION AND BACKFILL

1.08 MEASUREMENT FOR PAYMENT

C. Trench Foundation:

ADD the following to 1:

Foundation rock shall only be used at the direction of the Engineer.

2.02 BEDDING MATERIAL

A. Class 1 Material:

DELETE 1 and REPLACE with the following:

1. Crushed stone or crushed PCC complying with the following gradation:

Sieve	Percent Passing
1-1/2”	100
3/4”	65-95
3/8”	36-70
#4	5-45
#10	10-30
#200	<8

OR

2. ¾” Class A IDOT Gradation No. 11

Sieve	Percent Passing
1-0”	100
3/4”	95-100
1/2”	70-90
#4	30-55
#8	15-40
#200	6-16

DIVISION 4 – SEWERS AND DRAINS

SECTION 4010 – SANITARY SEWERS

1.08 MEAUREMENT AND PAYMENT

A. Sanitary Sewer Gravity Main:

1. Trenched:

c. DELETE "wyes", "testing, and inspection"

2. Trenchless:

c. DELETE "testing; and inspection"

B. Sanitary Sewer Gravity Main With Casing Pipe:

1. Trenched:

c. DELETE "testing, and inspection"

2. Trenchless:

c. DELETE "testing; and inspection"

C. Sanitary Sewer Force Main:

1. Trenched:

c. DELETE "wyes", "testing, and inspection"

2. Trenchless:

c. DELETE "testing; and inspection"

D. Sanitary Sewer Force Main with Casing Pipe:

1. Trenched:

c. DELETE "testing, and inspection"

2. Trenchless:

c. DELETE "testing; and inspection"

E. Sanitary Sewer Service Stub:

DELETE and REPLACE paragraph with the following:

E. Sanitary Sewer Service Stub: The portion of the sanitary sewer service from the main to a point that is 2 feet beyond the back of the curb or as specified by the contract documents.

F. Sanitary Sewer Service Relocation:

DELETE 1, 2, 3 and REPLACE with the following:

Sewer Service Relocations shall be measured and paid according to 4010-1.08-E, M, and N.

ADD the following:

M.Service Wyes: Measurement and payment for Service Wyes used in both new sanitary sewer construction and tap of existing sanitary sewers shall be in units of each for each size installed. Saddle Wyes shall not be used for new sewer main construction. Payment shall be full compensation for all materials, tools, labor, and equipment necessary to install each Wye.

ADD the following:

N. Tapping Existing Sanitary Sewer: Measurement and payment for tapping an existing sanitary sewer shall be in units of each. Payment shall be full compensation for all materials, tools, labor, equipment, pumping, and tap fitting except a wye, when used.

2.01 SANITARY SEWER (Gravity Mains)

A. Solid Wall Polyvinyl Chloride Pipe (PVC) 8 inch to 15 inch:

DELETE 1 and REPLACE with the following:

1. Comply with ASTM D 3034, SDR 35, unless specified otherwise.

3.02 GRAVITY SEWER INSTALLATION

A. General:

ADD the following:

8. Inspect pipe for defects before installation. Do not install damaged or defective pipe.

B. Trenched:

ADD the following;

8. Correct misalignment, displacement, or otherwise defective pipe by removing, relaying, or replacing pipe (at no additional cost to the Jurisdiction).

3.06 SANITARY SEWER SERVICE STUBS

C. DELETE and REPLACE paragraph with the following:

C. Install service stub from the sewer main to a location 2 feet beyond the back of the curb or as specified by the contract documents.

FIGURE 4010.201 SHEETS 1 AND 2

Modify as follows:

DELETE 10' Typ. Dimension for service stub out. Stub out shall extend 2 feet beyond the back of the curb or as specified by the contract documents.

SECTION 4020 – STORM SEWERS

1.03 SUBMITTALS

ADD the following:

If the manufacturer's allowable joint opening tolerances are greater than those allowed herein, the shop drawing submittal for Reinforced Concrete Pipe shall include published product information stating the maximum allowable joint openings at the top and bottom of the pipe for each size of pipe in order to meet the pipe and joint specifications.

1.08 MEASUREMENT FOR PAYMENT

A. Storm Sewer:

1. Trenched:

c. DELETE "testing, and inspection"

2. Trenchless:

c. DELETE "testing and inspection"

B. Storm Sewer with Casing Pipe:

1. Trenched:

c. DELETE "testing, and inspection"

2. Trenchless:

c. DELETE "testing; and inspection"

3.02 PIPE INSTALLATION

A. General:

ADD the following:

8. Provide proper facilities for lowering the sections into place without damaging the pipe.
9. Inspect pipe for defects before carefully lowering into trench. Do not install damaged or defective pipe.

B. Trenched:

ADD the following:

7. At no additional cost to the Jurisdiction, correct misalignment, displacement, or otherwise defective pipe by removing, relaying, or replacing pipe.

3.05 PIPE JOINTING

B. Reinforced Concrete Pipe (RCP), Reinforced Concrete Arch Pipe (RCAP), and Reinforced Concrete Elliptical Pipe (RCEP):

DELETE 3 and REPLACE with the following:

3. Place pipe such that the joint openings on the outside or inside of the pipe do not exceed 1/8 inch at the bottom and 5/8 inch at the top or the tolerances specified in a previously approved shop drawing submittal.

ADD the following:

3.08 CONFLICTS

D. Provide temporary support for existing water, gas, telephone, power, and other utilities or services that cross the trench.

E. Compact backfill material under existing utility crossing as specified in Section 3010, or construct utility line supports where specified in the contract documents or as directed by the Engineer.

SECTION 4030 – PIPE CULVERTS

1.08 MEASUREMENT FOR PAYMENT

A. Pipe Culverts:

1. Trenched:

c. DELETE "testing, and inspection"

2. Trenchless:

c. DELETE "testing; and inspection"

SECTION 4040 – SUBDRAINS AND FOOTING DRAIN COLLECTORS

2.05 SUBDRAIN OUTLETS

DELETE sections B and C.

FIGURE 4040.233

Modify as follows:

DELETE the following from note 2:

"corrugated, double-walled HDPE; or PVC"

SECTION 4060 – CLEANING, INSPECTION, AND TESTING OF SEWERS

1.08 MEASUREMENT AND PAYMENT

DELETE and REPLACE with the following:

A. Clean, Inspect, and Test Sanitary Sewer: Measurement and payment shall be in lineal feet of pipe cleaned, inspected, and tested as measured from the center of structures. Payment shall be full compensation for all materials, tools, labor, and equipment necessary to complete all cleaning, inspection, and testing requirements within this section. Leakage testing is not required for sanitary sewer sections with active service stubs. Inspection and Testing shall be performed before paving activity takes place.

B. Clean and Inspect Storm Sewer: Measurement and payment shall be in lineal feet of pipe cleaned and inspected from the center of structures. Payment shall be full compensation for all materials, tools, labor, and equipment necessary to complete the cleaning all inspection requirements for storm sewers within this section.

3.02 VIDEO INSPECTION

A. General:

DELETE 1 and REPLACE with the following:

1. Conduct video inspection of all new and rehabilitated sanitary sewers, storm sewers, and pipe culverts after all backfill, subgrade preparation, subbase, and compaction operations are completed, but prior to paving.

ADD the following:

5. If any pipe damage exists, remove and replace sewer as necessary and re-inspect and test.

C. Inspection Reporting:

ADD the following to 1:

Video shall be provided on a DVD media disk or flash drive.

3.03 SANITARY SEWER LEAKAGE TESTING

ADD the following:

All new Sanitary Sewer Mains shall be tested prior to the installation of laterals. The Contractor shall provide a written report for each segment of Sanitary Sewer Main tested.

3.04 DEFLECTION TESTING

ADD the following:

G. The Contractor shall provide written report(s) for each segment of Sanitary Sewer Main tested.

DIVISION 5 – WATER MAINS AND APPURTENANCES

DELETE in its entirety

DIVISION 6 – STRUCTURES FOR SANITARY AND STORM SEWERS

SECTION 6010 –STRUCTURES FOR SANITARY AND STORM SEWERS

1.08 MEASUREMENT AND PAYMENT

A. Manhole

3. Includes:

REMOVE ”infiltration barriers”

E. Manhole or Intake Adjustment, Minor

c. Includes:

REMOVE “and installing new infiltration barrier (sanitary sewer manholes only)”

F. Manhole or Intake Adjustment, Major

c. Includes:

REMOVE “installing new infiltration barrier (sanitary sewer manholes only)”

ADD the following:

I. Infiltration Barrier: Measurement and payment shall be by each infiltration barrier installed. Payment shall be full compensation for all materials, tools, labor, and equipment necessary to properly install the infiltration barrier.

2.03 CAST-IN-PLACE

B. REINFORCEMENT

MODIFY AS FOLLOWS:

1. Comply with Iowa DOT Article 2404.
2. All deformed bars used for Storm and Sanitary Sewer Structures shall be epoxy coated.

2.10 CASTINGS (Ring, Cover, Grate, and Extensions)

E.Casting Types:

1. Manholes:

ADD the following:

All sanitary and storm sewer manhole castings shall be fixed unless specified otherwise.

All sanitary and storm sewer manholes and inlets shall have “City of Council Bluffs” cast on the covers. A shop drawing submittal shall be provided.

2.11 ADDITIONAL MATERIALS FOR SANITARY SEWER MANHOLES

B. Riser Section Coating:

DELETE Section 1 and REPLACE with the following:

1. Exterior: Coat the exterior of all Sanitary Sewer Manholes with TNEMEC 46-465 Coal Tar Coating or approved Equal.

DELETE Section 2 and REPLACE with the following:

2. Interior: Coat the interior of all Sanitary Sewer Manholes with TNEMEC 46H-413 Hi-Build Tneme-Tar or Approved Equal.

3.03 ADDITIONAL REQUIREMENTS FOR PRECAST CONCRETE STRUCTURES

ADD the following:

F. Field Adjustments: When precast structures are used and a field adjustment is required, the adjustment shall be at the expense of the Contractor.

SECTION 6030 – CLEANING, INSPECTION, AND TESTING OF STRUCTURES

1.08 MEASUREMENT AND PAYMENT

DELETE sentence and REPLACE with the following:

Cleaning of structures is incidental to construction and will not be paid for separately. Air testing manholes is not required unless specified in the contract documents.

DIVISION 7 – STREETS AND RELATED WORK

SECTION 7010- PORTLAND CEMENT CONCRETE PAVEMENT

1.08 MEASUREMENT FOR PAYMENT

A. PCC Pavement:

ADD the following:

4. A partial payment for all PCC Pavement of 80% will be made until backfill is completed in accordance with Section 2010 to the specified grades and cross-sections.

I. PCC Pavement Samples and Testing:

DELETE and REPLACE 3 with the following:

3. Includes: Lump sum price includes, but is not limited to, pavement thickness cores and profilograph pavement smoothness measurement (when required by the contract documents).

ADD the following:

N. Pavement Markings: Measurement and payment shall be by lineal feet of each type of pavement marking and by each symbol and legend installed according to IDOT Section 2527. Payment shall be full compensation for all traffic control, materials, tools, labor, and equipment necessary to properly install the symbols and/or pavement markings. Items shall include the following, as well as the type of paint and tape specified according to IDOT Section 2527.

1. **Painted Pavement Markings**
2. **Permanent Tape Markings**
3. **Painted Symbols and Legends**
4. **Precut Symbols and Legends**

ADD the following:

O. Traffic Control: Measurement and payment for Traffic Control shall be based on lump sum. Payment for Traffic Control shall be made as a percentage of the project is complete, as determined by the Engineer.

Payment shall be full compensation for all materials, tools, labor, and equipment necessary to provide the traffic control required by the contract documents. The unit

price includes, but is not limited to, furnishing and maintaining all necessary barricades, signs, fencing, flagmen, cones, and appurtenances necessary.

Price adjustments will be applied for failure to comply with the traffic control requirements in the contract documents. Contract price adjustments will be assessed for each noncompliance with a progressively doubling price adjustment, beginning at $250.

2.01 MATERIALS

A. DELETE A and REPLACE with the following:

Cement: Only Type IPF cement shall be used. The blended cement shall meet the requirements of Iowa DOT Section 4101.

B. Supplementary Cementitious Materials (SCM):

1. Fly Ash: Comply with Iowa DOT Section 4108. The maximum amount of Fly Ash allowed shall be 15%. Only Class C fly ash shall be used.
2. **ADD**: If Ground Granulated Blast Furnace Slag (GGBFS) is proposed, a mix design shall be submitted to the Engineer for approval.
3. DELETE

D. Coarse Aggregate for Concrete:

DELETE 1 and ADD the following:

1. Crushed stone shall comply with Iowa DOT Section 4115 and meet the requirements for Class 3i Durability.

2.02 CONCRETE MIXES:

A. Mix Design:

ADD the following:

3. For all street pavements, curb and gutter, and recreational trails unless noted otherwise use:
   CV-SUD-C15 as shown in Iowa DOT I.M. 529 Proportion Table 4 (SUDAS Concrete Mixes) with Class V aggregates, 15% max Class C Fly Ash, and a max w/c ratio of 0.400.
   For driveways, sidewalks, intersection returns and street patches (25 square yards or less) use: CV-SUD-C15 mix with a max w/c ratio of 0.420.

B. Consistency and Workability:

2. Air Content

a. ADD the following:

Air content tests shall be taken from behind the paving machine at the discretion of the Engineer. The Contractor shall be responsible for repairing the concrete at no additional cost to the Owner.

C. Use of Fly Ash and Ground Granulated Blast Furnace Slag (GGBFS) as Supplementary Cementitious Materials

DELETE and REPLACE with the following:

Mix proportions for the various mixes using fly ash are included in Iowa DOT Materials I.M. 529. The maximum allowable fly ash substitution rate shall be 15%. Use of GGBFS shall be reviewed and approved by the Engineer. Between October 16 and March 15, supplementary cementitious materials will be allowed only when maturity

method is used to determine time of opening. Transport, store, haul, and batch fly ash in such a manner to keep it dry.

ADD the following:

2.03 PAVEMENT MARKINGS

A. Markings and Symbols:

Comply with IDOT Section 2527.

3.02 PAVEMENT CONSTRUCTION

C. Surface Fixture Adjustment:

ADD the following:

4. Fixtures placed within areas to be paved without box-outs shall be adjusted to within 0.5 inches of the finished vertical grade prior to paving. Adjustments greater than 0.5 inches within the plastic concrete shall not be allowed.

K. Construction of Joints:

1. General:

ADD the following:

f. Misaligned joints that vary by more than one inch may be subject to repair or pavement replacement at no cost to the Contracting Authority. Use repair methods approved by the Engineer. Repair or replace at the direction of the Engineer.

2. Saw Joints:

ADD the following to a:

All transverse contraction joints shall be sawed at a maximum spacing of 21T, where T is the thickness of the pavement.

ADD the following to d:

Discontinue sawing a joint if the joint is raveling.

ADD the following to h:

Raveling or moving of aggregate by joint sawing for transverse and longitudinal joints may be subject to repair or pavement replacement at no cost to the Contracting Authority.

3.07 QUALITY CONTROL

A. Testing:

DELETE and REPLACE notes 2 and 3 in Table 7010.02 with the following:

[2] Certified plant inspection per Iowa DOT Materials I.M. 527 is not required for local let City projects unless specified in the contract documents.

[3] The Supplier/Contractor is responsible for developing the maturity curve for the specified mix and delivering a copy of the results to the Engineer. The Engineer will measure the field maturity and strength of concrete placed unless specified in the contract documents.

REMOVE and REPLACE E with the following:

E. Defects or Deficiencies: Prior to final acceptance of the project, pavement containing excessive cracks, fractures, spalls or other defects shall be removed and replaced or repaired at no cost to the City. The General Conditions of the Construction Contract include a two-year warranty and guarantee for all pavement. Repairs shall be based on AASHTO guide specification Section 501.03Q Repair of Defective Pavement Slabs as follows:

Defect Type	Orientation	Location[a]	Description	Recommended Repair	Alternate Procedures
Plastic Shrinkage	Any	Anywhere penetrates depth	Only partially	Do nothing HMWM[b]	Fill width
Unc. Crack	Transverse	Mid-slab	Full-depth	Saw & seal crack	LTR[c]
Unc. Crack	Transverse	Crosses or ends at transverse joint	Full-depth	Saw & seal the crack; Epoxy uncracked joint	
Unc. Crack	Transverse	Relatively parallel & w/in 1.5 m of joint	Full-depth	Saw & seal the crack; Seal joint	FDR[d] to replace crack & joint
Saw cut or Unc. Crack	Transverse	Anywhere	Spalled	Repair spall by PDR[e] if crack not removed	
Unc. Crack	Longitudinal	Relatively parallel & w/in 0.3m of joint; May cross or end at longitudinal joint	Full-depth	Saw & seal the crack; Epoxy uncracked joint	Cross-stitch[f] or Slot-stitch crack
Unc. Crack	Longitudinal	Relatively parallel & wheel path (0.3-1.35 m from joint)	Full-depth, hairline or spalled	Remove & replace slab	Cross-stitch[f] or Slot-stitch crack
Unc. Crack	Longitudinal	Relatively parallel further than 1.35m from a long, joint or edge	Full-depth	Cross-Stitch[f] or Slot-stitch crack; Seal long. joint	
Saw cut of Unc. Crack	Longitudinal	Anywhere	Spalled	Repair spall by PDR[e] if crack not removed	
Unc. Crack	Diagonal	Anywhere	Full-depth	FDR[d]	
Unc. Crack	Multiple per slab	Anywhere	Two cracks dividing slab into 3 or more pieces	Remove & replace slab	

[s] 1m = 3.28 ft.

[b] HMWM = High molecular weight methacrylate poured over surface and sprinkled with sand for skid resistance.

[c] LTR = Load-transfer restoration; 3 dowel bars per wheel path grouted into slots sawed across the crack; Slots must be parallel to each other and the longitudinal joint. Backfill with non-shrink, cement-based mortar (see reference 4).

[d] FDR = full-depth repair; 3 m (10 ft) long by one lane wide. Extend to nearest transverse contraction joint if 3-m (10-ft) repair would leave a segment of pavement less than 3 m (10ft) long.

[e] PDR = partial-depth repair; Saw around spall leaving 50 mm (2 in.) between spall and 50 mm (2 in.) deep perimeter saw cuts. Chip concrete free, then clean and apply bondbreaker to patch area. Place a separating medium along any abutting joint or crack. Fill area with patching mixture.

[f] Cross-stitching; fro longitudinal cracks only, drill holes at 35° angle, alternating from each side of joint on 750 – 1000 mm (30-36 in.) spacing. Epoxy deformed steel tiebars into holes. (See reference 4).

[g] Slot-stitching; for longitudinal cracks only. Deformed bars grouted into slots sawed across the crack; Backfill with non-shrink, cement-based mortar.

ADD the following:

3.08 PAVEMENT MARKINGS

Comply with IDOT Section 2527.

SECTION 7030 – SIDEWALKS, SHARED USE PATHS AND DRIVEWAYS

2.07 DETECTABLE WARNINGS

ADD the following:

Detectable warning panels shall be 2' x 2', composite, red, removable panels manufactured by, Detectile Slimtek II or approved equal.

3.04 PCC SIDEWALKS, SHARED USE PATHS, AND DRIVEWAYS

B. Concrete Pavement Placement

ADD the following:

4. Pavement Thickness: When specified, Recreational Trail, Sidewalk, and/or Driveway pavement thickness samples and deficiencies shall be provided, measured, and paid according to Section 7010, parts 1.08 and 3.07.

3.10 CLEANING

ADD the following:

D. The Contractor shall clean detectable warning panels of all concrete and cure.

DIVISION 8 – TRAFFIC CONTROL

REFER TO THE CITY OF COUNCIL BLUFFS TRAFFIC SIGNAL SPECIAL PROVISIONS, APRIL 2020 EDITION.

DIVISION 9- SITE WORK AND LANDSCAPING

SECTION 9010 – SEEDING

1.08 MEASUREMENT FOR PAYMENT

A. Conventional Seeding:

1. Seeding:

DELETE the following from c:

"and furnishing water"

ADD the following:

F. Weed Control: Measurement and payment for weed control of seeded areas shall be based on lump sum. Payment shall be full compensation for all labor, tools, materials, and equipment necessary to maintain seeded areas weed free for a period of one year following final completion of the project.

2.02 SEED MIXTURES AND SEEDING DATES

DELETE and REPLACE with the following:

A. CLASS U1-Urban (Typical between back of curb and sidewalk)
Slopes less than 3:1 horizontal to vertical
Shall be United Seeds Super Turf II or equal in proportions as follows:
Four varieties of Tall Fescue minimum 87% of mixture
Two varieties of Kentucky Bluegrass minimum 7% of mixture
One variety of Perennial Ryegrass minimum 5% of mixture
Application rate 10 lbs per 1000 sq-ft, 436 lbs/acre
Over seeding rate 5 lbs per 1000 sq-ft, 218 lbs/acre
Seeding dates: March 1 – June 30, August 10 – September 30 or as directed by the Iowa DOT Roadside Development Section

B. CLASS U2-Urban (Typical between sidewalk and front lawn)
Slopes less than 3:1 horizontal to vertical
Shall be United Seeds Sun and Shade Mixture or equal in proportions as follows:
Two varieties of Kentucky Bluegrass minimum 33% of mixture
One variety of Creeping Red Fine Fescue 33% of mixture
One variety of Perennial Ryegrass 33% of mixture
Application rate 6 lbs per 1000 sq-ft, 261 lbs/acre
Over seeding rate 3 lbs per 1000 sq-ft, 131 lbs/acre
Seeding dates: March 1 – June 30, August 10 – September 30 or as directed by the Iowa DOT Roadside Development Section

C. CLASS R -Rural (Slopes less than 3:1 cut or fill)
Shall be United Seeds City/County/NRD Mixture or equal in proportions as follows:
Linn Perennial Ryegrass 20% of mixture
Seed Oats minimum 20% of mixture
Tall Fescue minimum 30% of mixture
Smooth Brome minimum 30% of mixture
Application rate 100 lbs/acre
Over seeding rate 50 lbs/acre
Seeding dates: March 1 – June 30, August 10 – September 30 or as directed by the Iowa DOT Roadside Development Section

D. CLASS S2B -Urban and Rural (Slopes 3:1 up to 2:1 cut and fill)
Shall be United Seeds All Purpose Pasture Mixture or equal as follows:
Seed Oats minimum 20% of mixture
Smooth Brome minimum 17% of mixture
Festulolium minimum 10% of mixture
Intermediate Wheatgrass minimum 10% of mixture
Ryegrass minimum 10% of mixture
Timothy minimum 10% of mixture
Application rate 4 lbs per 1000 sq-ft, 160 lbs/acre
Over seeding rate 2 lb per 1000 sq-ft, 80 lbs/acre
Seeding dates: March 1 – June 30, August 10 – September 30 or as directed by the Iowa DOT Roadside Development Section

E. CLASS S1B -Urban and Rural (Slopes 2:1 up to 1:1)
Shall be Steep Slope Mix as follows:
Seed Oats minimum 29% of mixture
Smooth Brome minimum 18% of mixture
Festulolium minimum 6% of mixture
Tall Fescue minimum 6% of mixture
Timothy minimum 6% of mixture
Application rate 6 lbs per 1000 sq-ft, 261 lbs/acre
Over seeding rate 2 lb per 1000 sq-ft, 87 lbs/acre
Seeding dates: March 1 – June 30, August 10 – September 30 or as directed by the Iowa DOT Roadside Development Section

F. CLASS F – Floodplain (Detention basin)
Shall be United Seeds Floodplain mix or equal as follows:
Western Wheatgrass minimum 28% of mixture
Virginia wild rye minimum 24% mixture
Big Bluestem minimum 14% mixture
Switch grass minimum 8% mixture
Canada wild rye minimum 7% mixture
Red Top minimum 5% mixture
Fox Sedge minimum 4% mixture
Application rate 2 lbs per 1000 sq-ft, 87 lbs/acre
Over seeding rate 1 lb per 1000 sq-ft, 44 lbs/acre
Seeding dates: March 1 – June 30, August 10 – September 30 or as directed by the Iowa DOT Roadside Development Section

ADD the following:

2.08 SEEDING DATES
Seeding completed outside of the specified dates shall be at the risk of the Contractor. Additional seeding required to meet the specifications shall be at the Contractors expense prior to final acceptance of the project.

2.09 WEED CONTROL
The Contractor shall submit a herbicide application plan and agreement from a certified applicator for approval by the Engineer. Herbicide used shall effectively control both broadleaf and grassy weeds including crabgrass and clover.

SPECIAL PROVISION NO. 1

PERMIT SPACE ENTRY

PROCEDURES

CITY OF COUNCIL BLUFFS, IOWA

CONFINED SPACE ENTRY POLICY – B-2

Purpose

This policy establishes the minimum requirements for safe entry, continued work in, and exit from confined or hazardous spaces.

Applicability

This policy applies to all City employees that may, in the course of their employment, be required to work in a confined or hazardous space.

The procedures described in this policy are mandatory for entry and work in confined spaces. Written entry permits are required for all confined space entry and work as follows:

Issuance of Permits

Entrance to a confined space or hazardous area will only be authorized by the signature of the entry permit by the person in charge of entry. The person in charge of entry will only sign the entry permit after completing the permit entry form which will certify that all gas detection testing and required ventilation of the confined space has been accomplished and that all specified safety and hazard warning equipment is available at the site and is in place and that an attendant will be stationed at the entrance to the confined space throughout the period of work in the confined space.

Duties of the Person In Charge of Entry

A. The person in charge of the entry shall:

    1. Assure that the pre-entry portions of the permit are completed before any employee enters a confined space.

    2. Verify that the necessary pre-entry conditions exist.

B. If the person in charge of entry is present throughout the entry and work period, this person may serve as the attendant if they meet the requirements of an attendant.

Duties of the Attendant

The attendant shall:

    1. Remain outside the confined space or hazardous area.

2. Maintain continuous communication with all authorized entrants within the confined space by voice, radio, visual observation, or other equally effective means. If it is not possible for one attendant to maintain communication with each entrant because of the work station of the entrant in the confined space or hazardous area, other arrangements shall be made to assure that the attendant is continuously aware of the location and condition of any entrant who is out of range of direct communication in the confined space because of his/her work station;

3. Have the authority to order entrants to exit the confined space at the first indication of a non-permitted condition, an unexpected hazard, indication of a toxic reaction, for example, unusual conduct by the entrants if a situation occurs outside the confined space that could pose a hazard to the entrants;

4. Know the procedure and have the means to summon immediate emergency assistance if needed;

5. Remain in his/her post and not leave for any reason except self-preservation, unless replaced by an equally qualified individual while entry continues. The attendant shall order the entrants to exit the confined space if the attendant must leave and there is no replacement and;

6. Warn unauthorized persons not to enter, or to exit immediately if they have entered, and advise the authorized entrants and division superintendent of entry by unauthorized persons.

Training

Formal training will be conducted on an annual basis for all employees.

A. Training for all Employees:

1. The City shall assure that all employees who may be exposed to confined spaces in the course of their employment are aware of the appropriate procedures and controls for entry.

2. The City shall assure that all employees are aware that unauthorized entry into such spaces is forbidden.

3. The City shall make all employees aware that the consequences of unauthorized entry could be fatal, and that their senses are unable to detect and evaluate the severity of the atmospheric hazards.

Training for Authorized Entrants

1. The City shall assure that every employee, before entering a confined space containing a potentially hazardous environment understands the nature of the hazard and the need to perform appropriate testing to determine if it is safe to enter.

2. Employees shall be taught the proper use of all personal protective equipment, including respirators and clothing required for entry or rescue, and the proper use of protective shields and barriers.

3. Employees shall be trained to exit from a confined space as rapidly as they can without help (self-rescue) whenever an order to evacuate is given by the attendant, whenever an automatic evacuation alarm is activated, or whenever employees recognize the warning signs of exposure to hazardous substances whose presence in the confined space is known or expected.

4. Employees should be made aware of the toxic effects or symptoms of exposure to anticipated hazardous materials that may be inhaled or absorbed through the skin. Employees shall be trained to relay an alarm to their attendant and to attempt self-rescue immediately on becoming aware of these effects.

5. The City shall train employees in any modification of normal work practices that are necessary for work in confined spaces.

6. Employees performing atmospheric tests of the confined space should be properly trained in the use of testing equipment.

Training for Person Authorizing or In Charge of Entry

The person in charge of entry shall be trained to:

1. Recognize the effects of exposure to hazards reasonably expected to be present and;

2. Carry out those duties that the entry permit assigns to the person in charge of entry.

Training for the Attendant

The attendant shall be trained in:

1. Proper use of communications equipment furnished by the City for communicating with authorized entrants or summoning emergency or rescue services;

2. Authorized procedures for summoning rescue or other emergency service;

3. Recognition of the early behavioral signs of intoxication caused by contaminants or asphyxiates whose presence could be anticipated in confined space.

4. The training requirements for entrants of the permit specify that the function of the attendant will alternate among the authorized entrants.

The Entry Permit

The confined space and hazardous area permit must be properly completed for every entry into a confined space or hazardous area. The permit is broken down into five (5) sections.

Section # 1

Location and Description-

This would include such items as a street address of a manhole in the collection system, a pump station, or any other descriptive information that would pinpoint location. Description would be information such as sewer line entry, pump station entry, or any other information that would identify the type of confined space or hazardous area.

Date-

The date the permit was issued for. A permit will only be valid for the date it was issued for, unless otherwise noted.

Confined Space Classification-

The classification of the confined space needs to be checked on the entry permit. A description of the different classes can be found in the definitions section. A breakdown of the different city locations is in appendix A of this policy.

Purpose of Entry-

Briefly describe the type of work to be done.

Time-

Time when the work begins.

Department/Division-

The department and division of the crew performing the work.

Expiration-

The time at which the permit expires. No permit shall be issued for more than an eight hour period (exceptions to the eight hour maximum may be granted under certain circumstances with approval of the Risk Management Division).

Person In Charge-

The supervisor's or foreman's name and his/her title.

Section # 2

Section #2 requires the names of everyone involved in the confined space or hazardous area entry, whether they actually enter the space or not.

Section # 3

This section provides a checklist of special requirements that each job may call for. When completing this section each choice must be completed.

The use of the personal protective equipment listed in this section is mandatory, when necessary. This includes such items as the quadpod, lighting, ventilation, etc.

Section # 4

This section lists the tests that need to be taken for any confined space or hazardous area entry. All applicable tests must be taken.

Prior to entry, tests must be taken at three (3) different levels of the confined space (upper, middle, and lower) to determine if hazards exist at different levels n the confined space.

After the initial readings are recorded on the permit, entrants are required to constantly monitor the gas levels while in the confined space. At a minimum of every hour the gas levels are to be recorded on the entry permit.

In the event the test results indicate an atmosphere that does not fall within the P.E.L. measures will have to be taken to adjust the atmosphere to allow for entry or the job must not be allowed to either begin or continue.

The last line in this section is for the name of the person conducting the tests.

Section # 5

This section is used to record the instruments used for testing as well as the name of the person who performed the duties of the attendant. There is a space provided for the person in charge of the entry to sign off on indicating that all the provisions of the permit have been complied with.

Definitions

Atmosphere:
Refers to the gases, vapors, mists, fumes, and dusts within a confined space.

Attendant:

A person trained in emergency rescue procedures and assigned to remain on the outside of the confined space and to be in communication with those working inside.

Ceiling Level:

The maximum airborne concentration of a toxic agent to which an employee may be exposed for a specified period of time.

Combustible Dust:

A dust capable of undergoing combustion or of burning when subjected to a source of ignition.

Confined Space:

Refers to a space which by design has limited openings for entry and exit; unfavorable natural ventilation which could contain or produce dangerous air contaminants, and which is not intended for continuous employee occupancy. Confined spaces include but are not limited to storage tanks, compartments of ships, process vessels, pits, silos, vats, degreasers, reaction vessels, boilers, ventilation and exhaust ducts, sewers, tunnels, underground utility vaults, pipelines, and manholes.

Confined Space Classifications:

Class "A"

A confined space that presents a situation that is immediately dangerous to life or health (IDLH). These include but are not limited to oxygen deficiency, explosive or flammable atmospheres, and/or concentrations of toxic substances.

Class "B"

A confined space that has the potential for causing injury and illness, if preventive measures are not used, but not immediately dangerous to life and health.

Class "C"

A confined space in which the potential hazard would not require any special modification of the work procedure.

Hazardous Area:

An area that does not fit the definition of a confined space but may contain explosive or toxic gases, fumes, or mists or be oxygen deficient.

Hot Work:

Any work involving burning, welding, riveting, or similar fire producing operations, as well as work which produces a source of ignition, such as drilling, abrasive blasting, and space heating.

Inerting:

Displacement of the atmosphere by a non-reactive gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.

Isolation:

A process whereby the confined space is removed from service and completely protected against the inadvertent release of material by the following: blanking off (skillet type metal blank between the flanges), misaligning sections of all lines and pipes, a double block and bleed system, electrical lockout of all sources of power, and blocking or disconnecting all mechanical linkages.

Lower Flammable Limit (LFL):

The minimum concentration of a combustible gas or vapor in air (usually expressed in percent by volume at sea level), which will ignite if an ignition source is present.

Oxygen Deficiency:

Refers to an atmosphere with a partial pressure of oxygen (PO_2) less than 132 mm Hg. Normal air at sea level contains approximately 21% oxygen at a PO_2 of 160 mm Hg. At an altitude of 5,280 feet normal air contains approximately 21% O_2 at a PO_2 of 132 mm Hg.

Oxygen Enriched Atmosphere:

Any oxygen concentration greater than 25% (PO_2 – 190 mm Hg.) at normal atmospheric pressure.

Permissible Exposure Limit (PEL) and/or Permissible Entry Level:

The maximum 8-hour time weighted average of any airborne contaminant to which an employee may be exposed. At no time shall the exposure level exceed the ceiling concentration as listed in 29 CFR Part 1910 Subpart Z.
Purging:

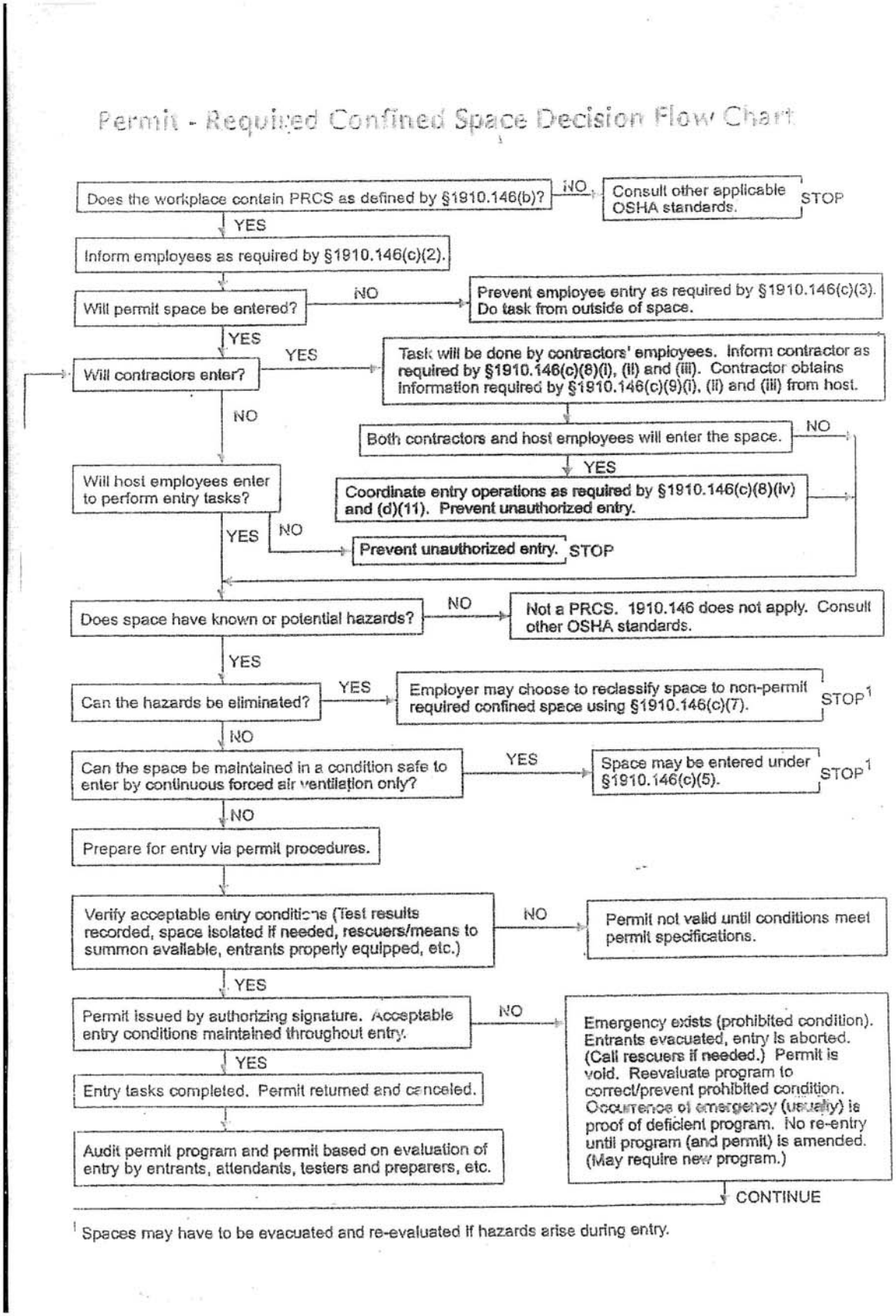
The method by which gases, vapors, or other airborne impurities are displaced from a confined space.

Qualified Person:

A person designated by the City, in writing, as capable (by education and/or specialized training of anticipating, recognizing, and evaluating employee exposure to hazardous substances or other unsafe conditions in a confined space. This person shall be capable of specifying necessary control and/or protective action to insure worker safety.

Respirator (Approved):

A device which has met the requirements of 30 CFR Part 11 and is designed to protect the wearer from inhalation of harmful atmospheres and has been approved by the Bureau of Mines and the National Institute for Occupational Safety and Health, and Mine Safety and Health Administration.



Summary Sheet
Confined Space Entry

Use the Flow Chart in Appendix A of 29 CFR 1910.146 to determine the presence and classification of confined spaces.

Entry occurs as soon as **any** part of the entrant's body breaks the plane of an opening into the space.

Non Permit Spaces do NOT contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

Permit Required Space has one or more of the following:

1. Contains or has a potential to contain a hazardous atmosphere
2. Contains a material that has the potential for engulfing an entrant
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section
4. Contains any other recognized serious safety or health hazard.

If Permit Spaces are present you must:

1. Inform exposed employees (posting signs)
2. Develop and implement a written program (if employees will be entering spaces)

Rescue and emergency services
There are requirements for in-house rescue services as well as for subcontracting these services. The responding crew must have access to the space to prepare for the event of an emergency. If you depend upon a local fire or emergency service, you must evaluate their ability to respond correctly and efficiently.

Non-Permit Spaces and Alternate Entry Procedures

RECLASSIFICATION

Every confined space identified during the employer's initial workplace evaluation should be considered a permit-required confined space, until further investigation reveals the nature and extent of its specific hazards.

The employer may determine that a particular confined space, initially classified as a permit-required space, contains only atmospheric hazards. For example, if a mechanical hazard such as a mixer blade can be successfully locked out, that hazard is considered eliminated. If the only hazard remaining is a residue which can be completely cleaned out and remaining fumes from that residue can be removed through ventilation, then the employer can document in writing that the space is hazard free and will remain so as long as a worker is inside.

That would necessitate cleaning, determining work performed in the space will not stir up hazardous atmosphere and demonstrating that activities outside the space will not negatively affect the atmosphere of the space. The employer is permitted at this point to reclassify the space as non-permit confined.

OSHA defines a non-permit confined space as a confined space that does not contain or – in the case of atmospheric hazards – does not have the potential to contain any hazard capable of causing death or serious physical harm to an entrant.

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If testing and inspection confirm one or more hazards in a permit space, but these hazards can be completely eliminated, the standard includes approved procedures for the employer to reclassify it also as a non-permit confined space.

The first procedure for allowing reclassification of a hazardous confined space is to attempt to eliminate all its hazards without anyone entering the space. If every hazard can be completely eliminated in this manner, the permit space may be reclassified as a non-permit confined space.

If the first procedure is not practical and it becomes necessary for an employee to enter a permit space in order to eliminate its hazards, the entry must occur in accordance with the employer's written permit-required confined space program.

This means the entry must be performed in full compliance with paragraphs (d) through (k) of the OSHA standard and include all required compliance measures, such as training, attendants and rescue services.

If testing and inspection during entry demonstrate there are no actual or potential atmospheric hazards and all other hazards within the permit space have been eliminated, the permit space may be reclassified as a non-permit confined space.

Reclassification as a non-permit space is valid only while all hazards remain eliminated. As long as the space remains safe, employee entry into that space is not subject to the employer's permit space program. However, the written program must record the identity of the space and the employer's procedure – such as periodic testing – ensuring that it remains a non-permit space.

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To document the basis for determining that all hazards in a permit space are eliminated, the employer must prepare a certification containing the following information:

- Date of the determination
- Location of the space
- Signature of the person making the determination.

This certification becomes a permanent part of the employer's written permit space program and must be made available to each employee entering the space.

If hazards arise within a permit space that has been declassified to a non-permit space under paragraph (c)(7) of the standard, each employee in the space must immediately exit the space.

The employer then must reevaluate the space, in accordance with other applicable provisions of the standard, to determine whether it must be reclassified as a permit space under the employer's written program.

WARNING: ***OSHA procedures for downgrading the classification of a permit space to a non-permit space do not apply to any space that poses actual or potential atmospheric hazards.***

If hazardous atmospheric conditions have the potential of developing within the space either naturally or from any activity conducted during entry and work, OSHA does not allow reclassification as a non-permit space.

OSHA also states that control of atmospheric hazards using forced air ventilation does not constitute elimination of those hazards. Permit spaces with actual or potential atmospheric hazards that can be controlled but not eliminated by ventilation cannot be downgraded to non-permit confined spaces.

OSHA does, however, provide less-restrictive alternate procedures for entering permit-required confined spaces containing atmospheric hazards only. Paragraph (c)(5) of the standard covers permit space entry when the employer can demonstrate that forced air ventilation alone will control all hazards in the space.

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ALTERNATE ENTRY PROCEDURES

The confined space standard specifies the conditions to be met before an employer may use the OSHA alternate procedures for entering a permit space with a potentially hazardous atmosphere.

In the same manner as the reclassification procedures discussed above, if an initial entry of a permit space by any employee is necessary in order to obtain required test data, the entry must occur in accordance with the employer's written permit-required confined space program [(c)(5)(i)]

This means the initial entry must be performed in full compliance with paragraphs (d) through (k) of the OSHA standard and must include all required compliance measures. Monitoring and inspection data may be collected either through entry or from outside the space as long as the data is complete and accurate for the entire space. [(c)(5)(i)(D)]

As a result of the initial entry, it may be determined that all hazards within the space – including actual or potential atmospheric hazards – can be completely eliminated (rather than merely controlled). In this event, the employer may reclassify the permit space to a non-permit confined space under the terms of paragraph (c)(7) of the standard.

If, however, testing and monitoring results show a controllable hazardous atmosphere as the only hazard, the space must remain a permit space but may be entered using the alternate procedures detailed in the standard.

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To justify the use of alternate entry procedures, the employer must develop monitoring and inspection data that demonstrate both of the following:

- First, actual or potential hazardous atmosphere is the only hazard posed by the permit-required confined space. [(c)(5)(i)(A)]

- Second, continuous forced air ventilation alone is sufficient to maintain the permit space safe for entry.

To ensure that the entrant has sufficient time to escape the space should ventilation fail for any reason, such as loss of power, the atmosphere within the space may not be expected to approach a hazardous level. As a guideline it is suggested that no more than 50 percent of the level of flammable or toxic substances that would be considered hazardous be used in making this determination [(c)(5)(i)(B)]

For example, if the acceptable LFL for hydrogen sulfide (H_2S) is 10 ppm, to ensure this non-permit space safety factor, the atmosphere would be expected to remain at no more than 5 ppm.

These two determinations and the required monitoring and inspection data are documented in writing by the employer and made available to each entrant. When alternate procedures are used for entering a permit space, the employer must verify that the space is safe for entry and that all required procedures and safety measures have been taken. [(c)(5)(i)(C)]

OSHA requires a written certification with the date, the location of the space, and the signature of the person providing the certification. The certification is made before each entry and must be made available to each employee entering the space. [(c)(5)(i)(E)]

An employer whose employees enter a permit space using the approved alternate procedures still must comply with all the general requirements in paragraph © of the standard, as well as the training requirements in paragraph (g).

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The employer need not comply, however, with paragraphs (d) through (f) and (h) through (k) of the standard, provided that the mandatory procedures specified in the standard are observed.

ENTRANCE COVERS

If conditions exist making it unsafe to remove an entrance cover to the permit space, these conditions must be eliminated before removing the cover. [(c)(5)(ii)(A)]

Once an entrance cover has been removed, guard the opening promptly by a barrier such as a railing or temporary cover. The temporary barrier must be installed so that it:

- Prevents employees from accidentally falling through the opening
- Protects each employee working in the space from foreign objects falling into the space. [(c)(5)(ii)(B)]

ATMOSPHERIC TESTING

Before any employee enters the space, test the internal atmosphere with a calibrated direct-reading instrument. Tests for the following conditions must be made in order:

- First, test for oxygen content.
- Next, test for flammable gases and vapors.
- Finally, test for potential toxic air contaminants. [(c)(5)(ii)(C)]

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VENTILATION

No hazardous atmosphere can be allowed to develop within the space at any time an employee is inside the space. To ensure this condition is met, the following procedures for continuous forced air ventilation must be used:

- No employee may enter the space until continuous forced air ventilation has controlled any hazardous atmosphere in the space.

- Blowers, vents or ducts must be placed and directed in a manner that will ventilate the immediate areas where workers will be present within the space. Forced air ventilation must continue until all employees have left the space.

- The air supply for the forced air ventilation system must originate from a clean source and may not increase the atmospheric hazards in the space. [(c)(5)(ii)(E)]

- The atmosphere within the space must be periodically tested to ensure that continuous forced air ventilation is preventing the accumulation of atmospheric hazards. [(c)(5)(ii)(F)]

- Non-permit confined spaces must be reevaluated whenever changes in the use or configuration of the space might increase hazards to entrants. [(c)(6)]

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HAZARD DETECTION

If a hazardous atmosphere is detected during entry:

- Each employee must evacuate the space immediately.
- The space must be evaluated to determine how the hazardous atmosphere developed.
- Measures must be implemented to protect employees from the hazardous atmosphere before further entry is allowed. If atmospheric hazards cannot be controlled, alternate entry procedures are no longer valid and future entries must comply with the employer's written permit-required confined space program. [(c)(5)(ii)(G)]

NOTE: *Since no attendant is required for this entry, it is imperative that the employer be totally certain there is no hazard in the space which could overcome an entrant to the extent that self-rescue is impossible.*

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HOTWORK PERMIT

GENERAL INFORMATION

Permit No.

Worksite Identification:

Hotwork to be Performed:

Location/Building:

Authorized Duration of Permit: Date: to

Time: to

SOURCE OF IGNITION

- ❑ Acetylene torch
- ❑ Abrasive saw
- ❑ Electric arc
- ❑ Electric tools
- ❑ Heliarc welding
- ❑ Propane torch
- ❑ Soldering
- ❑ Drilling
- ❑ Other:

SOURCE OF IGNITION

THIS HOTWORK PERMIT MAY BE SIGNED AND HOTWORK AUTHORIZED ONLY AFTER SATISFACTORY COMPLIANCE WITH ALL ITEMS OUTLINED IN THIS PERMIT.

- ❑ Floors swept clean of combustibles?
- ❑ Remaining combustible or flammable materials 35 feet horizontally as well as vertically from source of heat?
- ❑ Non-movable combustible or flammable materials isolated, covered/shielded with fire retardant material?
- ❑ Vertical and horizontal openings within 35 feet sealed or covered for spark/vapor control?
- ❑ Heat transmission, conduction, radiation controlled?
- ❑ Hazardous material transfers disconnected within 60 feet of hot work?
- ❑ Lockout/tagout of electrical, mechanical, chemical, blanking, cap piping implemented?
- ❑ Vessels, equipment drained, purged, ventilated, cleaned?
- ❑ Inert gas blanket required?
- ❑ Welding, cutting fume ventilation or respirator required?
- ❑ Building/area air currents and outdoor wind direction known?
- ❑ Hazardous material spill release equipment and countermeasures available.
- ❑ Supervisor notified work location and time of operation?
- ❑ Involved personnel and contractor employees advised of hazards?
- ❑ Means of egress identified and available?
- ❑ Fire protection equipment available and operational?
- ❑ Automatic fire sprinkler system operational?
- ❑ Oxygen-rich environment evaluated?
- ❑ Continuous monitoring of atmospheric conditions maintained?
- ❑ Checking for flammable/combustible gas and oxygen levels?
- ❑ Special danger, caution, warning signs posted?
- ❑ Trenches over four feet deep shored or sloped?
- ❑ Firewatch provided during work and 30 minutes after completion of work?
- ❑ Work areas and adjacent areas where sparks may have spread checked out 30 minutes after work completed?

APPROVALS AND AUTHORIZATIONS

This permit is valid only so long as work conditions existing at the time of issuance continue. It expires on any change in condition that adversely affects safety of the work area while work is in progress.

STOP WORK IMMEDIATELY IF PLANT EMERGENCY ALARM SIGNALS AN EMERGENCY IN OR NEAR YOUR WORK AREA. FOLLOW FIREWATCH INSTRUCTIONS.

I have personally inspected the location where the above work is to be done. I have checked for compliance with the safety precautions listed on the permit and authorized the work to be performed.

Title	Printed Name	Signature	Date
Originator/Approver			
Safety Officer			
Welder			
Firewatch			

THIS PERMIT MUST BE POSTED ON JOB SITE · GOOD ONLY ON INDICATED DATE

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SPECIAL PROVISION NO. 2
POLLUTION PREVENTION PLAN

All contractors/subcontractors shall conduct their operations in a manner that minimizes erosion and prevents sediments from leaving the highway right-of-way. The prime contractor shall be responsible for compliance and implementation of the Pollution Prevention Plan (PPP) for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

1. SITE DESCRIPTION

This Pollution Prevention Plan (PPP) is for the construction of ***"East Manawa Subdivision Overlot Grading, City of Council Bluffs, Iowa, City Project No. CD 25-04***."

This PPP covers approximately _____ acres with an estimated _____ acres being disturbed. The portion of the PPP covered by this contract has _____ acres disturbed.

The PPP is located in an area of one soil association, _____. The estimated average NRCS runoff curve number for this PPP after completion will be _____.

Refer to the project plans for locations of typical slopes, ditch grades, and major structural and non-structural controls. A copy of this plan will be on file at the project engineer's office. Runoff from this work will flow into the _____.

POTENTIAL SOURCES OF POLLUTION:
Site sources of pollution generated as a result of this work relate to silts and sediment which may be transported as a result of a storm event. However, this PPP provides conveyance for other (non-project related) operations. These other operations have storm water runoff, the regulation of which is beyond the control of this PPP. Potentially this runoff can contain various pollutants related to site-specific land uses. Examples are:

<u>Rural Agricultural Activities:</u>
Runoff from agricultural land use can potentially contain chemicals including herbicides, pesticides, fungicides and fertilizers.

<u>Commercial and Industrial Activities:</u>
Runoff from commercial and industrial land use may contain constituents associated with the specific operation. Such operations are subject to potential leaks and spills which could be commingled with run-off from the facility. Pollutants associated with commercial and industrial activities are not readily available since they are typically proprietary.

2. CONTROLS

At locations where runoff can move offsite, silt fence shall be placed along the perimeter of the areas to be disturbed prior to beginning grading, excavation or clearing and grubbing operations. Vegetation in areas not needed for construction shall be preserved. As areas reach their final grade, additional silt fences, silt basins, intercepting ditches, sod flumes, letdowns, bridge end drains, and earth dikes shall be installed as specified in the plans and/or as required by the project engineer. This will include using silt fence as ditch checks and to protect intakes. Temporary stabilizing seeding shall be completed as the disturbed areas are constructed. If construction activity is not planned to occur in a disturbed area for at least 14 days, the area shall be stabilized by temporary seeding or mulching immediately following the completion or temporary completion of the disturbance activity. Other stabilizing methods shall be used outside the seeding time period.

This work shall be done in accordance with Section 2602 of the Standard Specifications. If the work involved is not applicable to any contract items, the work shall be paid for according to Article 1109.03 paragraph B.

As the work progresses, additional erosion control items may be required as determined by the engineer after field investigation. These may be items such as *none known* and other appropriate measures shall be installed by contractor, as directed by the engineer. The contractor will complete the construction with the establishment of permanent perennial vegetation of all disturbed areas.

3. OTHER CONTROLS

Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.

APPROVED STATE OR LOCAL PLANS:
During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

4. MAINTENANCE

The contractor is required to maintain all temporary erosion control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. Cleaning of silt control devices shall begin when the features have lost 50% of their capacity.

5. INSPECTIONS

Inspections shall be made jointly by the contractor and the contracting authority every seven calendar days and after each rain event that is one half inch or greater. The contractor shall immediately begin corrective action on all deficiencies found. The findings of this inspection shall be recorded in the project diary. This PPP may be revised based on the findings of the inspection. The contractor shall implement all revisions. All corrective actions shall be completed within 3 calendar days of the inspection.

6. NON-STORM DISCHARGES

This includes subsurface drains (i.e., longitudinal and standard subdrains), slope drains and bridge end drains. The velocity of the discharge from these features may be controlled by the use of patio blocks, Class A stone or erosion stone.

SPECIAL PROVISION NO. 3
DEWATERING

1. SCOPE OF WORK

1.1. The WORK of this Section includes site dewatering necessary to lower and control groundwater levels and hydrostatic pressure to permit excavation and construction to be performed properly under dry conditions.

1.1.1. The groundwater shall be lowered and maintained to an absolute minimum of 3' or lower below the lowest excavation made for the trench as required to place pipe bedding and manhole bedding.

1.2. Dewatering operations shall be adequate to assure the integrity of the finished project. The responsibility for conducting the dewatering operation in a manner which will protect adjacent structures and facilities rests solely with the CONTRACTOR. The cost of repairing any damage to adjacent structures and restoration of facilities shall be the responsibility of the CONTRACTOR.

1.3. The CONTRACTOR shall bear the sole responsibility for the design, installation, operation, monitoring, and removal of the dewatering system to comply with the requirements of this section and any applicable regulatory agencies. The CONTRACTOR shall be required to install additional dewatering equipment as may be required throughout the duration of the project to maintain groundwater level as described in Paragraph 1.1.1.

1.4. The CONTRACTOR shall be responsible for submitting the applications and obtaining the required permits for the well construction including obtaining approval from the Pottawattamie County Office of Planning and Development. Copies of these guidelines and blank forms are attached at the end of this Special Provision. The CONTRACTOR shall also be responsible for filing a Field Office Notification (FON) with the Iowa Department of Natural Resources (IDNR) and developing a Well Water Pollution Prevention Plan for the discharge of wastewater from well construction activities per the Iowa Department of Natural Resources (IDNR) NPDES General Permit #6. Copies of these guidelines and blank forms are also attached at the end of this Special Provision.

1.5. The OWNER will notify the CONTRACTOR of any demands brought upon the project by the IDNR. The CONTRACTOR shall cooperate with the OWNER in its efforts to comply with the site-specific guidelines provided by the IDNR, including the possibility of adjusting the

dewatering system if the discharge exceeds limits imposed by the IDNR. The OWNER will be responsible for the costs of sampling and laboratory analysis if required by the IDNR.

2. SCHEDULE AND PLAN

2.1. Prior to commencement of construction, the CONTRACTOR shall submit a detailed dewatering plan including: dewatering method, a list of equipment, estimated pumping rates and a schedule of values following General Conditions Article 14.

2.2. Attached for the CONTRACTOR'S information as an Appendix to these Contract Documents is geotechnical information collected for the project. Fluctuations of the groundwater level can occur due to seasonal variations in the amount of rainfall, runoff, and other factors not evident at the time the borings were completed. The geotechnical information was prepared for design purposes only and may not be adequate for a CONTRACTOR to evaluate construction conditions or design the dewatering system. The CONTRACTOR should independently interpret the soil/groundwater conditions taking into consideration their intended means and methods of construction, and the CONTRACTOR may perform additional exploration at their own expense as necessary for design of the dewatering system.

2.2.1. Due to possible variations of soil conditions and groundwater levels between soil bore locations the CONTRACTOR shall be responsible for changing or modifying the dewatering system to accommodate such variations.

3. CONTROL AND OBSERVATION

3.1. Adequate control shall be maintained by the CONTRACTOR to ensure that the stability of excavated slopes are not adversely affected by water, that erosion is controlled and that flooding of excavation or damage to structures does not occur. The CONTRACTOR is solely responsible for site excavation safety and compliance with OSHA regulations, in particular Standard 29 CFR, part number 1926. The ENGINEER assumes no responsibility for site safety; the above information is provided for consideration by the CONTRACTOR only.

3.2. The OWNER reserves the right to install piezometers, at its own expense, to observe the groundwater levels and monitor the performance of the system.

3.3. When directed by the ENGINEER, following General Conditions Article 13, the CONTRACTOR will be required to excavate a pothole to determine if the groundwater is at the acceptable absolute minimum level or lower as defined in Paragraph 1.1.1.

3.3.1. When observation of the groundwater level is complete the pothole shall be backfilled with clean 3" crushed limestone per Pay Item "TRENCH FOUNDATION", and the CONTRACTOR shall be paid for the quantity used based on the contract unit price.

3.3.2 The CONTRACTOR will be required to excavate a pothole, disturbing the smallest footprint possible, to the elevation as described in Paragraph 1.1.1 for that reach of piping. Said pothole excavation shall be made with the following minimum frequency:

- At the beginning of any day where any trench has not been completely backfilled.
- At every 150-lineal feet of trench along the length of the pipe run.
- At the end of every day. (The pothole made at the end of the day shall be left open and shall be used as the pothole for the beginning of the next day of construction.)

The cost of said pothole excavations, excluding 3" foundation rock backfill, shall be considered incidental to the lump sum pay item "DEWATERING". If any additional pothole excavations are requested by the ENGINEER or the OWNER the CONTRACTOR will be paid for said excavations on an each basis per Pay Item "POTHOLE EXCAVATIONS". If the additional potholes are needed as a direct result of the CONTRACTOR'S actions or negligence they will be done at the sole expense of the CONTRACTOR.

4. INSPECTION

4.1. During or after any trench excavation. If CONTRACTOR observes sufficient soil instability present that may prevent proper installation of pipe bedding, pipelines, backfill and compaction, then CONTRACTOR shall call for inspection of conditions by the ENGINEER. The ENGINEER shall inspect the conditions and determine if they are unacceptable for pipe installation.

4.2. If after dewatering has lowered the groundwater level as specified and unacceptable trench conditions are found by the ENGINEER, then the

CONTRACTOR may be directed to increase dewatering pumping rates or install additional wells to lower the groundwater to an acceptable level lower than that defined in Paragraph 1.1.1. If more extensive dewatering is required the CONTRACTOR must achieve the revised acceptable groundwater level before construction may continue. Any additional work required will be processed in compliance with Article 10 of the General Conditions.

5. EXECUTION

5.1. The CONTRACTOR shall furnish, install, and operate pumps, pipes, appliances, and equipment of sufficient capability to maintain the absolute minimum or lower groundwater elevation described in Paragraph 1.1.1 within the trench excavation limits until the trench is backfilled, unless otherwise authorized by the ENGINEER.

5.2. The CONTRACTOR shall provide any temporary ground surface piping necessary to convey dewatering well water discharge to an acceptable storm sewer intake with the capacity to convey said discharge. Any rerouting of temporary ground surface piping, necessary to complete the project, will be provided by the CONTRACTOR. Discharge directly onto the ground surface shall not be allowed unless approved by the ENGINEER. The CONTRACTOR shall supply a clean tapping device at each well location to allow easy discharge water sampling by the ENGINEER.

5.3. An adequate system shall be designed, installed and maintained to lower and control the groundwater elevations as described in Paragraph 1.1.1 to permit excavation, construction of structures, and placement of fill materials to be performed under dry conditions.

5.4. The system shall be placed into operation, prior to beginning excavating below the natural groundwater level, to lower the groundwater to the elevation as described in Paragraph 1.1.1 and shall be operated continuously 24 hours a day, 7 days a week until sewers have been constructed and backfill materials have been placed to the top of the trench.

5.4.1. If the dewatering system shuts down or if pumping is suspended, the groundwater levels will need to be lowered to the required level, as described in Paragraph 1.1.1, and verified by the ENGINEER before continuing any construction, including excavation or backfilling. The ENGINEER will also require any compaction, moisture and/or other soils testing, as determined necessary, of any backfill that is prematurely subjected to groundwater to verify said soils stability prior to placement of additional backfill. If said soils are determined to be unacceptable

the CONTRACTOR will be required to remove and replace damaged soils at their own expense.

5.5. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of subgrade soils at the bottom of the proposed excavation.

5.6. Diversion ditches and dikes shall be used, where necessary, to prevent surface water from entering the excavation.

6. MEASUREMENT FOR PAYMENT

6.1. The measurement and payment for all work covered under this section will be made at the contract lump sum price for "DEWATERING" which shall constitute full compensation for obtaining any necessary permits and furnishing all equipment, labor, and materials to install, operate, maintain, and remove the dewatering system in accordance with all applicable regulations.

6.1.1. No payment shall be made to the CONTRACTOR until copies of the permits are supplied to the OWNER.

6.1.2. The CONTRACTOR shall be required to submit a schedule of values to the ENGINEER OF RECORD to explain the breakdown of the lump sum price. This schedule of values will only be used to determine the appropriate amount of the lump sum to be attributed to each progress payment. The following list contains items that should be used, at a minimum, for the schedule of values:

- Obtaining permits and complying with permit requirements
- Drilling the wells
- Installing the pumps
- Installing power supply
- Discharge and/or manifold piping
- Removal

- END OF SECTION -

Project Name: East Manawa Subdivision Overlot Grading
City Project No.: CD 25-04

Instructions: **Do not add division titles or alter spreadsheet format.** You may add and delete rows and adjust numbering, as needed.
Do not use single quotes ('), double quotes ("), or apostrophes (').
Use inches/feet rather than single (') or double (") quotes or abbreviations.
Use lower case lettering in the Description and capitalize first letter of main words (see Examples below).

DIVISION NO.	ITEM NO.	ESTIMATED QUANTITY	UNIT OF MEASURE	DESCRIPTION	Only delete "SUDAS CODE:" if not applicable
1	1	1.00	LS	Mobilization	SUDAS CODE: 11020
2	1	94.70	AC	Clearing and Grubbing	SUDAS CODE: 2010-3-3.01
2	2	73,580.00	CY	Topsoil - Stip, Salvage, Spread - Established Quantity	SUDAS CODE: 2010-3-3.02
2	3	89,070.00	CY	Excavation, On-Site - Established Quantity	SUDAS CODE: 2010-3-3.03
2	4	584,150.00	CY	Embankment Construction - Established Quantity	SUDAS CODE: 2010-3-3.04
2	5	495,080.00	CY	Imported Embankment Construction Soils - Established Quantity	
4	1	234.00	LF	12 Inch Dia. Storm Drain Pipe Culvert, incl. Trenching and Backfill	SUDAS CODE: 4030-3-3.01
4	2	34.00	LF	18 Inch Dia. Storm Drain Pipe Culvert, incl. Trenching and Backfill	SUDAS CODE: 4030-3-3.01
4	3	355.00	LF	24 Inch Dia. Storm Drain Pipe Culvert, incl. Trenching and Backfill	SUDAS CODE: 4030-3-3.01
4	4	4.00	EA	12 Inch Dia. Storm Drain Pipe Apron	SUDAS CODE: 4030-3-3.02
4	5	1.00	EA	18 Inch Dia. Storm Drain Pipe Apron	SUDAS CODE: 4030-3-3.02
4	6	6.00	EA	24 Inch Dia. Storm Drain Pipe Apron	SUDAS CODE: 4030-3-3.02
4	7	3.00	EA	Outlet Gate Structure	
4	8	3.00	EA	Connect to Existing Storm Sewer Structure	
8	1	1.00	LS	Temporary Traffic Control	SUDAS CODE: 8030-3
9	1	92.20	AC	Temporary Seeding, Class R	SUDAS CODE: 9010-2-2.02-C
9	2	2.50	AC	Seeding, Class F	SUDAS CODE: 9010-2-2.02-F
9	3	1.00	LS	Erosion and Sediment Control - Misceallenous Maintenance	SUDAS CODE: 9040-3-3.02
9	4	5.00	EA	Temporary Sediment Basin, Construction Maintenance	SUDAS CODE: 9040-3-3.17
9	5	5.00	EA	Temporary Sediment Basin Outfall Structure, Muscle Walls	
9	6	200.00	LF	Temporary Channel, 4 Foot Height Muscle Wall	
9	7	15,800.00	LF	Silt Fence	SUDAS CODE: 9040-3-3.18
9	8	4.00	EA	Stabilized Construction Entrance	SUDAS CODE: 9040-3-3.19
9	9	12.00	EA	Inlet Protection	SUDAS CODE: 9040-2-2.18
9	10	5,299.00	SY	Rolled Erosion Control Products, North American Green S150	SUDAS CODE: 9040-2-2.05

NOTICE TO BIDDERS

City of Council Bluffs
Department of Public Works
209 Pearl Street
Council Bluffs, Iowa 51503

Project: ***East Manawa Subdivision Overlot Grading***
City of Council Bluffs, Iowa
City Project No. CD 25-04

Bids will be received by the City of Council Bluffs via the electronic submission system at https://cbiabids.ionwave.net/ until 2:00 o'clock p.m. on September 25, 2024, for all work set forth in the plans, specifications and proposals for the above mentioned project.

MAJOR ITEMS OF WORK for this project include the following approximate quantities:

Excavation: 89,070 CY

Embankment Construction: 584,150 CY

Imported Embankment Fill: 495,080 CY

Temporary Sediment Basin Construction: 5 EA

Temporary Channel Construction: 200 LF

Sediment and Erosion Control Prevention and Maintenance Operations: 1 LS

Temporary and Permanent Seeding: 92.20 AC & 2.50 AC

Temporary Storm Drain Construction:

Contract documents, including construction drawings, are placed in the Office of the City Clerk for examination and are available for viewing and printing at https://cbiabids.ionwave.net/.

Each proposal shall be accompanied by a certified check, bid bond by a surety company registered to do business in the State of Iowa, or a certified share draft drawn on a credit union in Iowa or

chartered under the laws of the United States in the amount of ten percent (10%) of the total bid price and made payable to the City of Council Bluffs. A copy of the certified check, bid bond, or share draft is to be uploaded in the assigned requested attachments area. If a company who has a check is awarded the bid, the City will request the physical check at that time. The certified check or share draft will be returned to the successful bidder once the agreement has been executed. Letters of credit and company or personal checks are not acceptable substitutes for a bid bond and will be cause for rejection of bid.

Each bidder's proposal shall include a list of at least three (3) projects completed in the last five (5) years. These projects shall be similar in contract amount and scope of work to the proposed project. Scope of work for the proposed project includes the **MAJOR ITEMS OF WORK** listed above. Bidders shall also submit with their bid the phone numbers and the names of contact persons for each of the similar projects listed.

No bidder may withdraw their proposal within 60 days after the bid opening.

The successful bidder will be required to furnish satisfactory performance and payment bonds in the amount of one-hundred percent (100%) of the total bid price, a certificate of insurance and a certificate of equal employment opportunity and comply with minimum wage provisions as established by the U.S. Department of Labor.

The work under the proposed contract shall be completed as detailed in the Instructions to Bidders. Project is to be completed in four successive phases. Phase 1 work shall be completed on or before December 15, 2024. All work on remaining phases is to be completed on or before November 15, 2025.

The City of Council Bluffs reserves the right to reject or accept any or all bids and waive any irregularities in the interest of the City.

The City of Council Bluffs pursuant to Iowa Code Section 423.3(80), shall issue a purchasing agent authorization letter and an exemption certificate to the Contractor and Subcontractors for this specific project such that Iowa sales tax will not be paid for materials, supplies, and equipment that will be used in the performance of this specific construction project contract.

PUBLIC NOTICE OF STORM WATER DISCHARGE

The City of Council Bluffs plans to submit a Notice of Intent to the Iowa Department of Natural Resources to be covered under the NPDES General Permit No. 2 "Storm Water Discharge Associated with Industrial Activity for Construction Activities." The storm water discharge will be from "East Manawa Subdivision Overlot Grading, ***City of Council Bluffs, Iowa, City Project No. CD 25-24***" and construction activity located in NW quarter of Section 18, Township 74 North Range 43 West and the NE quarter of Section 13, Township 74 North, Range 44 West of Pottawattamie County. Storm water will be discharged from 3 point sources and will be discharged to the following streams: Drainage Lateral 5 and Mosquito Creek.

Comments may be submitted to the Storm Water Discharge Coordinator. IOWA DEPARTMENT OF NATURAL RESOURCES, Environmental Protection division, Henry A. Wallace Building, 502 East 9th Street, Des Moines, Iowa 50319-0034. The public may review the Notice of Intent from 8:00 a.m. to 5:00 p.m. Monday through Friday, at the above address after it has been received by the department.

By Order of:
Jodi Quakenbush
City Clerk

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, _____ as Principal, and _____ as Surety are held and firmly bound unto the MAYOR AND CITY COUNCIL of the CITY OF COUNCIL BLUFFS, County of Pottawattamie, State of Iowa, hereinafter called "OWNER". In the penal sum of _____ Dollars ($_____) lawful money of the United States, for the payment of which sum will and truly be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents. The condition of this obligation is such that whereas the Principal has submitted the accompanying bid dated the _____day of _____, 20 _____, for ***Project*** "***East Manawa Subdivision Overlot Grading, CD 25-04***".

NOW, THEREFORE,

(a) If said Bid shall be rejected, or in the alternative,

(b) If said Bid shall be accepted and the Principal, within ten (10) days after Owner's mailing a written notice of award of contract to Principal as provided in Notice to Bidders or such additional time as Owner may grant Principal in writing, shall execute and deliver a Contract, combined Performance, Payment and Maintenance Bond and deliver a Certificate of Insurance, all in the forms specified in the Contract Documents for said Project, and shall in all other respects comply with pre-contract requirements of Principal created by the acceptance of said Bid, all as set forth in the Contract Documents for said Project,

Then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

By virtue of statutory authority, the full amount of this bid bond shall be forfeited to the Owner in liquidation of damages sustained in the event that the Principal fails to execute the contract and provide the required bond, certificates, and evidence of performance of all pre-contract requirements as provided in the Contract Documents for said Project.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such Bid or execute such contract; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety, have hereunto set their hands and seals, and such of them as are corporations, have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers this _____ day of _____, A.D., 20_____.

_____(Seal)
Principal

Witness_____ By_____(Title)

Witness_____ By_____(Seal)
Surety

By_____
Attorney-in-fact

EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN
COUNCIL BLUFFS, IOWA
CITY PROJECT NO. CD-25-04

DIVISION I: GENERAL ITEMS
DIVISION II: NOT USED
DIVISION III: STORM SEWER AND APPURTENANCES
DIVISION IV: NOTE USED
DIVISION V: NOTE USED
DIVISION VI: NOT USED
DIVISION VII: NOT USED
DIVISION VIII: MISCELLANEOUS

PROGRESS SET
Aug 22, 2024
NOT FOR CONSTRUCTION

hgm ASSOCIATES INC.
ENGINEERING ARCHITECTURE SURVEYING
council bluffs omaha

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JNS drawn
PJG designed
PJG approved
AUG. 2024 date
revision date

EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN
project PHASE 1 LAYOUT

client CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet TITLE SHEET

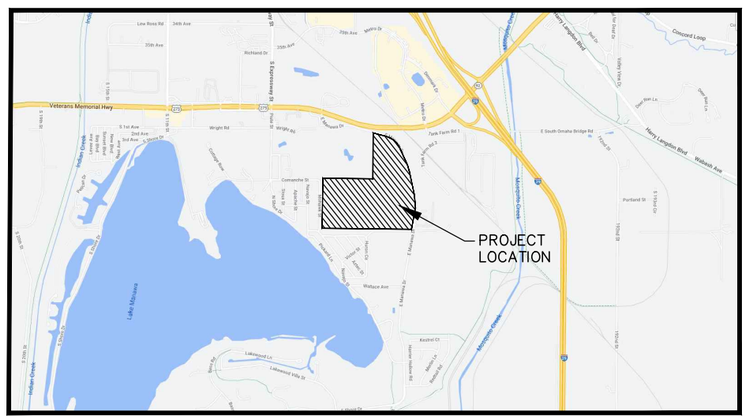
project no. 150624
sheet A.01

FILENAME: S:\Blue_Team\Projects\150624 East Manawa Development - Overlot Grading\Engineering\Dwgs\Design\150623 OVERLOT GRADING - PLAN REVISED.dwg
DRAWN BY: JNS, SAVE DATE: Aug 22, 2024 12:39 PM DATE PLOTTED: 8/22/2024 1:45 PM, PLOT SCALE: 1:2

VERTICAL CONTROL

BENCHMARK OF ORIGIN: NGS W 131 NAVD '88 ELEV.=979.50

2.25 MILES SOUTHERLY ALONG THE BURLINGTON NORTHERN RAILROAD FROM THE JUNCTION OF 16TH AVENUE IN COUNCIL BLUFFS, IN THE SOUTHEAST CORNER OF AN ABANDONED PILE CAP THAT PROJECTS 2.6 FT ABOVE THE GROUND SURFACE, 10.2 FT SOUTHEAST OF THE CENTER OF STATE HIGHWAY 92, 9.2 FT SOUTHWEST OF THE NEAR RAIL, 5.6 FT NORTHWEST OF THE WEST CORNER OF A SMALL RAILROAD BRIDGE, AND LEVEL WITH THE TRACK.



LOCATION MAP
NO SCALE

INDEX

PAGE NO.	DESCRIPTION
A.01	TITLE SHEET, INDEX, CERTIFICATION, LOCATION MAP
A.02	EXISTING BOUNDARY AND TOPOGRAPHIC SURVEY
A.03	SUBDIVISION PHASING
A.04	KEY MAP
A.05	OVERALL GRADING PLAN
B.01-.05	CIVIL SITE DETAILS
C.01	GENERAL NOTES
C.02	ESTIMATED QUANTITIES AND ESTIMATE REFERENCE NOTES
D.01-.06	PHASE GRADING PLAN SHEETS
E.01-.06	STORM WATER POLLUTION PREVENTION PLAN
E.07-.08	STORM WATER POLLUTION PREVENTION PLAN NOTES
E.09	STORM WATER POLLUTION PREVENTION PLAN DETAILS

IOWA 811 ONE CALL

SPECIFICATIONS

THE URBAN STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS, 2024, AND CITY OF COUNCIL BLUFFS SUPPLEMENTAL SPECIFICATIONS 2024, SHALL APPLY TO THIS PROJECT.

REVIEWED:

CITY ENGINEER DATE

THESE DOCUMENTS SHALL NOT BE SCANNED, COPIED, OR DUPLICATED IN ANY MANNER.

LICENSED PROFESSIONAL ENGINEER
PAUL J. GONZALES
19589
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

CITY OF COUNCIL BLUFFS

PAUL J. GONZALES

My license renewal date is December 31, _____.

Pages or sheets covered by this seal:

95% PLANS

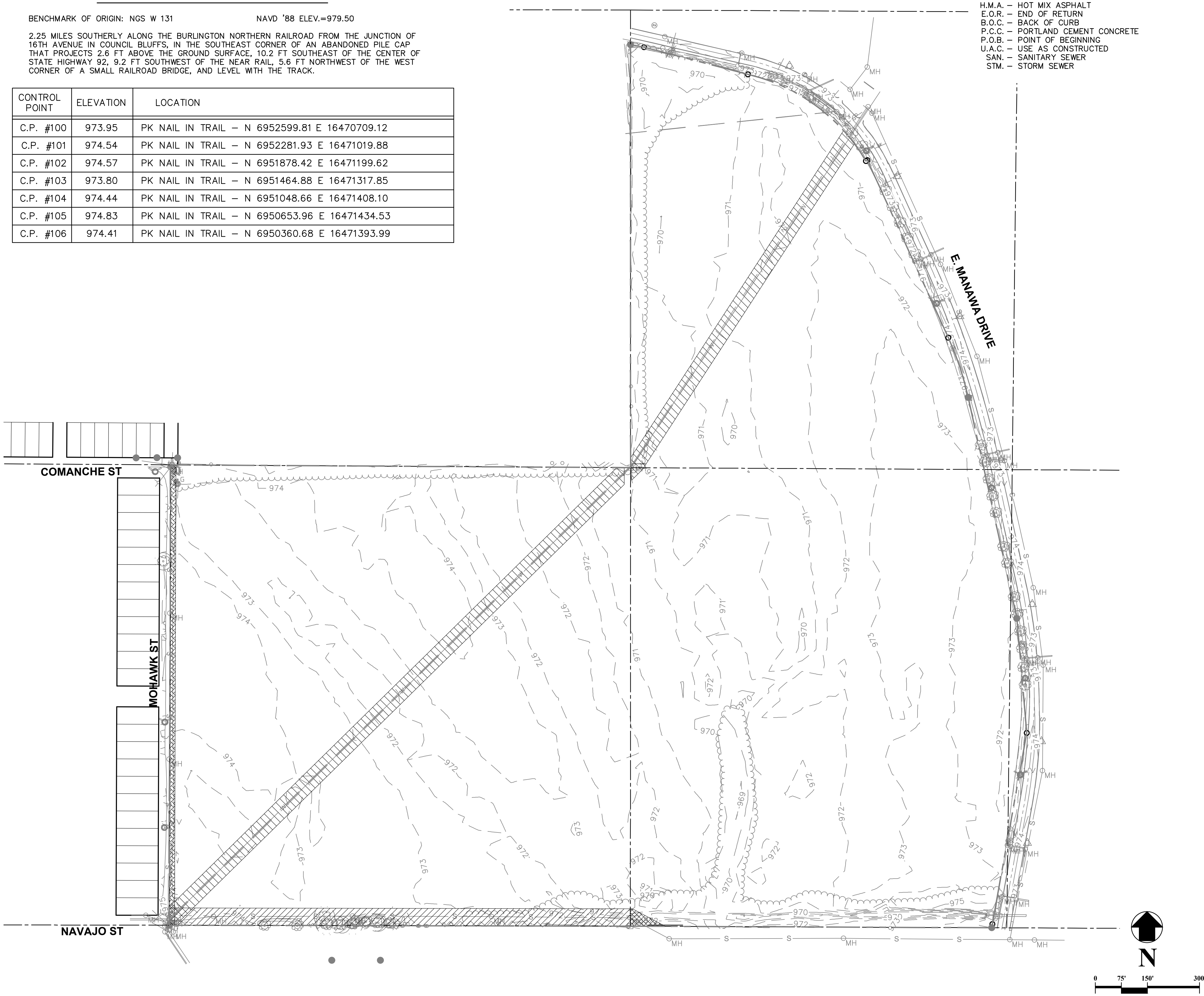
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DRAWN BY: Jns, SAVE DATE: Aug 22, 2024 12:39 PM DATE PLOTTED: 8/22/2024 1:45 PM, PLOT SCALE: 1:2

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CONTROL POINT	ELEVATION	LOCATION
C.P. #100	973.95	PK NAIL IN TRAIL – N 6952599.81 E 16470709.12
C.P. #101	974.54	PK NAIL IN TRAIL – N 6952281.93 E 16471019.88
C.P. #102	974.57	PK NAIL IN TRAIL – N 6951878.42 E 16471199.62
C.P. #103	973.80	PK NAIL IN TRAIL – N 6951464.88 E 16471317.85
C.P. #104	974.44	PK NAIL IN TRAIL – N 6951048.66 E 16471408.10
C.P. #105	974.83	PK NAIL IN TRAIL – N 6950653.96 E 16471434.53
C.P. #106	974.41	PK NAIL IN TRAIL – N 6950360.68 E 16471393.99



ABBREVIATIONS

H.M.A. – HOT MIX ASPHALT
E.O.R. – END OF RETURN
B.O.C. – BACK OF CURB
P.C.C. – PORTLAND CEMENT CONCRETE
P.O.B. – POINT OF BEGINNING
U.A.C. – USE AS CONSTRUCTED
SAN. – SANITARY SEWER
STM. – STORM SEWER

LEGEND

CENTER LINE
CENTERLINE OF DITCH
FENCE – BARB
FENCE – CHAIN LINK
FENCE – MIXTURE
FENCE – PRIVACY
FENCE – SPLIT RAIL
FENCE – WOVEN
GUARDRAIL
RW RETAINING WALL
TOB TOP OF BANK
TOE TOE OF BANK
BOC BACK OF CURB
EOR END OF RETURN
HMA HOT MIX ASPHALT
PCC PORTLAND CEMENT CONCRETE
POB POINT OF BEGINNING
UAC USE AS CONSTRUCTED
BILLBOARD SIGN
BORING LOCATION
FLAG POLE
GUARDRAIL POST
MAILBOX
NO PARKING SIGN
PIEZOMETER
POST ROUND
POST SQUARE
STOP SIGN
STREET SIGN
CATV CABLE TELEVISION BOX
CONTROL CABINET
EB ELECTRICAL PULL BOX
TP ELECTRICAL TRANSFORMER
ETB ELECTRICAL TRANSFORMER BOX
GUY POLE
GUY WIRE
LIGHT POLE
LUMINAIRE
POWER POLE
POWER AND LIGHT POLE
POWER POLE W/ TRANSFORMER
PB PULL BOX
TCB TRAFFIC CONTROL BOX
TELEPHONE POLE
TRAFFIC SIGNAL
TELEPHONE TERMINAL BOX
YARD LIGHT
G GAS METER
VALVE – GAS
RRB RAILROAD CONTROL BOX
RAILROAD CROSS BUCKS SIGN
RAILROAD FROG
RAILROAD POINT OF SWITCH
RAILROAD SIGNAL
RAILROAD TRACK
SAN SANITARY SEWER
STM STORM SEWER
CLEAN–OUT
EXISTING PIPE PLUG
FES FLARED END SECTION
INLET–BEEHIVE
INLET–COMBINATION
INLET–GRATE (ROUND)
INLET–GRATE (SQUARE)
MANHOLE
BENCH MARK
CONTROL POINT
FOUND CONCRETE MONUMENT
FOUND IRON PIN
RIGHT OF WAY RAIL
SET PIN
BUSH
HEDGE
DECIDUOUS TREE
EVERGREEN TREE
6" STUMP W/ DIAMETER
CURB STOP (RESIDENTIAL WATER)
FIRE HYDRANT
MW MONITORING WELL
POST INDICATOR VALVE
SCB SPRINKLER CONTROL BOX
SPRINKLER HEAD
VALVE – WATER (MAIN LINE)
W WATER METER
WELL
YH YARD HYDRANT

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Aug 22, 2024
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council bluffs omaha

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drawn	designed	approved	date		
JNS	PJG	PJG	AUG. 2024	revision	date

project: EAST MANAWA SUBDIVISION OVERLOT GRADING PLAN
PHASE 1 LAYOUT
client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503
sheet: EXISTING BOUNDARY AND TOPOGRAPHIC SURVEY

project no. 150624
sheet A.02

OVERLOT GRADING NARRATIVE:

OVERLOT GRADING OPERATIONS FOR THIS PROJECT ARE TO LIMIT THE AREA OF DISTURBED EARTH OVER THE COURSE OF CONSTRUCTION.

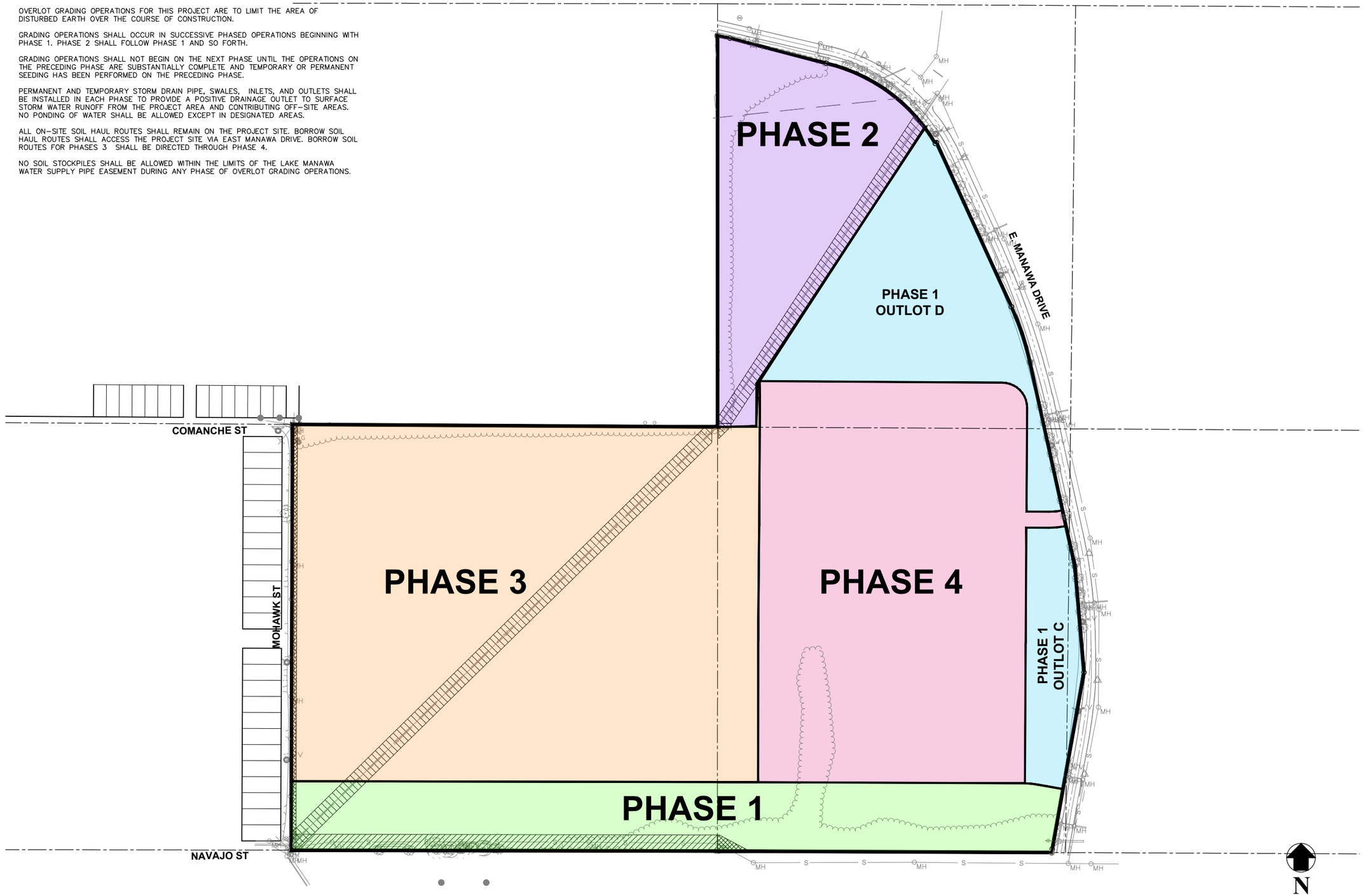
GRADING OPERATIONS SHALL OCCUR IN SUCCESSIVE PHASED OPERATIONS BEGINNING WITH PHASE 1. PHASE 2 SHALL FOLLOW PHASE 1 AND SO FORTH.

GRADING OPERATIONS SHALL NOT BEGIN ON THE NEXT PHASE UNTIL THE OPERATIONS ON THE PRECEDING PHASE ARE SUBSTANTIALLY COMPLETE AND TEMPORARY OR PERMANENT SEEDING HAS BEEN PERFORMED ON THE PRECEDING PHASE.

PERMANENT AND TEMPORARY STORM DRAIN PIPE, SWALES, INLETS, AND OUTLETS SHALL BE INSTALLED IN EACH PHASE TO PROVIDE A POSITIVE DRAINAGE OUTLET TO SURFACE STORM WATER RUNOFF FROM THE PROJECT AREA AND CONTRIBUTING OFF-SITE AREAS. NO PONDING OF WATER SHALL BE ALLOWED EXCEPT IN DESIGNATED AREAS.

ALL ON-SITE SOIL HAUL ROUTES SHALL REMAIN ON THE PROJECT SITE. BORROW SOIL HAUL ROUTES SHALL ACCESS THE PROJECT SITE VIA EAST MANAWA DRIVE. BORROW SOIL ROUTES FOR PHASES 3 SHALL BE DIRECTED THROUGH PHASE 4.

NO SOIL STOCKPILES SHALL BE ALLOWED WITHIN THE LIMITS OF THE LAKE MANAWA WATER SUPPLY PIPE EASEMENT DURING ANY PHASE OF OVERLOT GRADING OPERATIONS.



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drawn	designed	approved	date

EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN

project
PHASE 1 LAYOUT

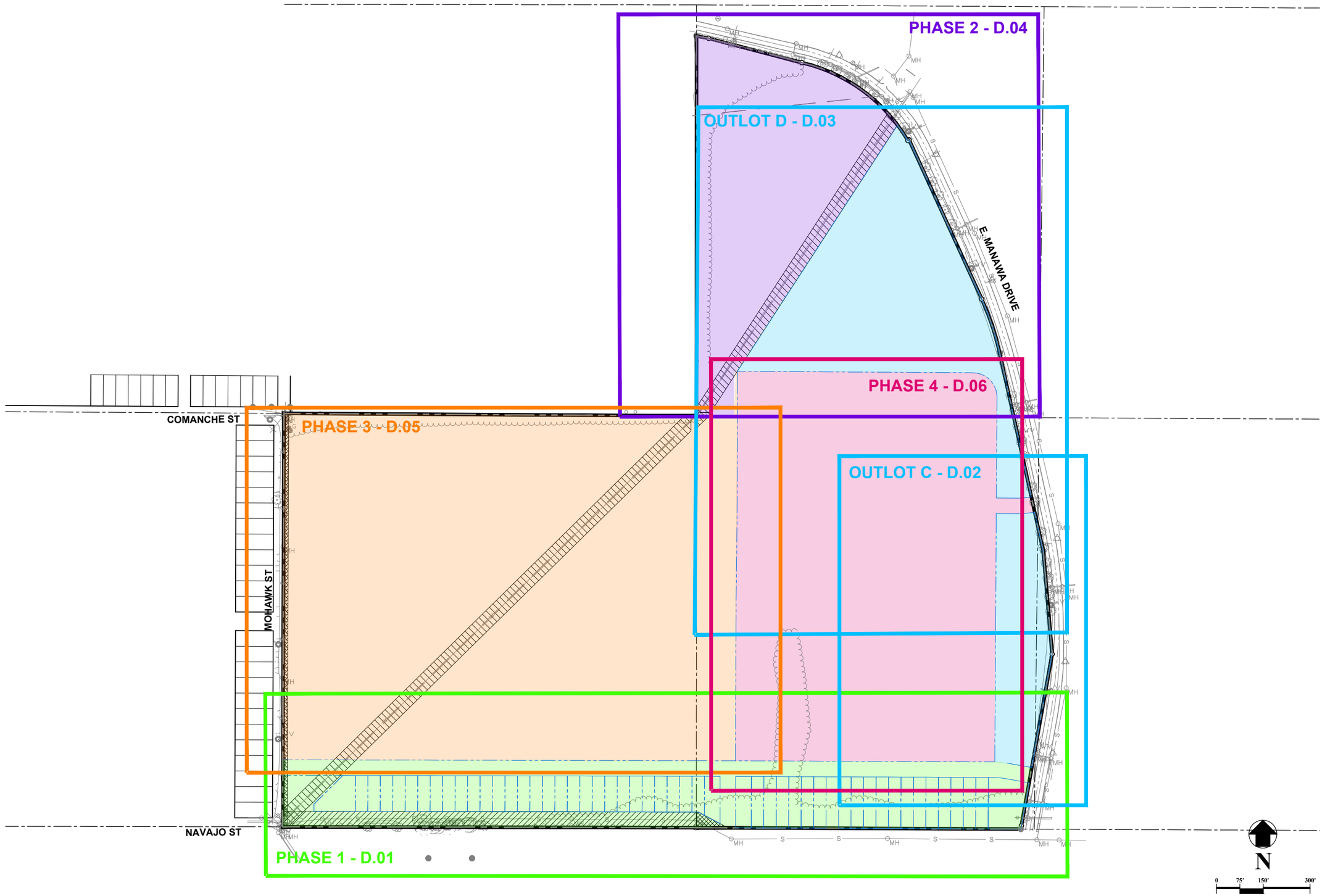
client
CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet
SUBDIVISION PHASING

project no.
150624

sheet
A.03

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DRAWN BY: jns, SAVE DATE: Aug 22, 2024 12:39 PM DATE PLOTTED: 8/22/2024 1:45 PM, PLOT SCALE: 1:2



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JNS		
drawn		
PJG		
designed		
PJG		
approved		
AUG. 2024		
date	revision	date

project: EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN
PHASE I LAYOUT

client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet: KEY MAP

project no.
150624

sheet
A.04

GENERAL GRADING NOTES:

A NPDES GENERAL PERMIT NO. 2 IS REQUIRED FOR THIS PROJECT. THE CONTRACTOR SHALL COMPLY WITH ALL THE REQUIREMENTS OF THE NPDES GENERAL PERMIT NO. 2. SEE SHEETS E.01 THOUGH E.09.

THE GENERAL CONTRACTOR AND/OR SUB-CONTRACTOR SHALL HAVE COMPLETE RESPONSIBILITY FOR DAMAGE CAUSED BY BLOWING DUST FROM HIS CONSTRUCTION ACTIVITIES.

TOPSOIL AND NON-WOODY VEGETATION SHALL BE STRIPPED TO A DEPTH OF 6" IN AREAS TO BE GRADED. A GEOTECHNICAL ENGINEER REPRESENTATIVE SHALL OBSERVE STRIPPING OPERATIONS TO ENSURE ALL UNSUITABLE MATERIALS HAVE BEEN REMOVED. SITE STRIPPING, SUBGRADE PREPARATION AND COMPACTION PROCEDURES SHALL EXTEND A MINIMUM OF 5 FEET BEYOND THE PERIMETER OF THE BUILDING AND A MINIMUM OF 2 FEET BEYOND THE EDGE OF PROPOSED PAVEMENT.

TOPSOIL GENERATED FROM STRIPPING OPERATIONS SHALL BE STOCKPILED IN AN APPROVED LOCATION AND RE-SPREAD ON AREAS FINISH GRADED TO RECEIVE TOPSOIL.

RUBBLE AND WASTE MATERIALS FROM SITE CLEARING AND DEMOLITION SHALL BE REMOVED FROM THE SITE AND LAWFULLY DISPOSED, SALVAGED, OR RECYCLED. WHERE FENCE POSTS ARE REMOVED, THEIR CONCRETE BASES SHALL BE EXCAVATED AND COMPLETELY REMOVED. WASTE MATERIALS SHALL NOT BE BURIED ON SITE.

OSHA'S CONSTRUCTION STANDARDS FOR EXCAVATIONS REQUIRE THAT THE CONTRACTOR'S EXCAVATION ACTIVITIES FOLLOW CERTAIN WORKER SAFETY PROCEDURES. EXCAVATIONS OVER 4 FEET DEEP SHALL BE SLOPED BACK, SHORED, OR SHIELDED. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SITE/EXCAVATION SAFETY AND COMPLIANCE WITH OSHA REGULATIONS.

IN GENERAL, EXISTING SITE SOILS ARE SUITABLE FOR GENERAL GRADING APPLICATIONS. IF A SIGNIFICANT AMOUNT OF ORGANICS ARE IDENTIFIED DURING CONSTRUCTION, THEY SHOULD BE REMOVED AND PROPERLY BACKFILLED WITH MORE SUITABLE SOILS. IF UNSTABLE SOILS ARE ENCOUNTERED IN THE BOTTOM OF SUBGRADE AREAS, THE CONTRACTOR SHALL IMPLEMENT OVER-EXCAVATION AND BACKFILL PRACTICES WITH A MORE SUITABLE MATERIAL. THE CONTRACTOR SHALL CONTACT THE GEOTECHNICAL ENGINEER TO IDENTIFY LIMITS AND DEPTHS OF OVER-EXCAVATION.

EXISTING SITE SOILS MAY REQUIRE ADJUSTMENT OF SOIL MOISTURE CONTENT DURING GRADING OPERATIONS TO ACHIEVE THE REQUIRED COMPACTION AT THE OPTIMAL MOISTURE CONTENT. DRYING OF SOILS VIA DISCING OF SOILS AND WINDROWING IS RECOMMENDED TO LOWER SOIL MOISTURE CONTENT.

ALL STRUCTURAL FILL AND BACKFILL SOILS SHALL BE LOW PLASTICITY, COHESIVE SOIL THAT ARE FREE OF ORGANIC MATERIAL, GRANULAR MATERIAL, OR DEBRIS/RUBBLE. STRUCTURAL FILL/BACKFILL MATERIALS SHALL HAVE A LIQUID LIMIT LESS THAN 45 AND A PLASTICITY INDEX LESS THAN 20. ALL FILL MATERIALS SHALL BE PRE-APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.

COHESIVE SOIL MATERIALS (CLAYS) SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS PER ASTM D-698 (STANDARD PROCTOR) AT A MOISTURE CONTENT OF -1 TO +4 PERCENT OF OPTIMUM. MAXIMUM LIFT THICKNESS SHALL BE LESS THAN ONE FOOT (LOOSE FILL).

PRIOR TO PLACING FILL IN AREAS TO RECEIVE FILL, THE AREA SHALL BE PROOFROLLED IN THE PRESENCE OF A GEOTECHNICAL ENGINEER REPRESENTATIVE. PROOFROLLING MAY BE ACCOMPLISHED WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK WITH A MINIMUM GROSS WEIGHT OF 25 TONS OR OTHER EQUIPMENT PROVIDING EQUIVALENT LOADING.

BACKFILL SOILS IN UTILITY TRENCHES SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS PER ASTM D698 (STANDARD PROCTOR) AT A MOISTURE CONTENT BETWEEN -1% AND +4% OF OPTIMUM. FILL SHALL BE PLACED IN LOOSE LIFTS APPROPRIATE TO THE EQUIPMENT AND METHODS USED FOR COMPACTION.

IMPORTED FILL MATERIAL, IF REQUIRED, SHALL BE FREE OF ORGANIC MATTER AND DEBRIS, AND SHALL BE A CLEAN, INORGANIC SILT OR LEAN CLAY WITH A LIQUID LIMIT LESS THAN 45 AND A PLASTICITY INDEX LESS THAN 20. IMPORTED MATERIAL SHALL NOT CONTAIN ANY FOREIGN MATERIAL OR DEBRIS WITH A DIMENSION GREATER THAN 3".

ANY EXCESS OR UNSUITABLE STRUCTURAL FILL MATERIALS SHALL BE DISPOSED, LAWFULLY, OFF-SITE, AT A LOCATION DETERMINED BY THE CONTRACTOR.

UNLESS OTHERWISE NOTED, ALL SPOT ELEVATIONS SHOWN ARE TOP OF CURB (TC), TOP OF SLAB (P) OR FINISHED GRADE (G).

EXPOSED PROJECT SITE SOILS SHALL BE STABILIZED AS SPECIFIED IN THE STORM WATER POLLUTION PREVENTION PLANS.

THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT SHALL CONTROL IN ALL INSTANCES WHERE SUBGRADE PREPARATION, BACKFILL AND COMPACTION ARE CONCERNED. PLEASE REFERENCE "GEOTECHNICAL INVESTIGATION FOR PHYLLIS BARNES TRUST," COUNCIL BLUFFS, IOWA, PROJECT NO. 212104PBT, DATED DECEMBER 6, 2021, AND PREPARED BY CONSTRUCTION MATERIALS TESTING, INC OF DES MOINES, IOWA.

SURFACE WATER SHALL NOT BE ALLOWED TO POND ON THE SITE OR SOAK INTO THE SOILS OUTSIDE OF DESIGNATED STORMWATER DETENTION AND TEMPORARY SEDIMENT TRAP AREAS. CONSTRUCTION STAGING SHOULD PROVIDE FOR THE DRAINAGE OF SURFACE WATER AWAY FROM THE FUTURE BUILDING AND PAVED AREAS.

GENERAL REMOVAL NOTES:

RUBBLE AND WASTE MATERIALS FROM SITE CLEARING AND DEMOLITION SHALL BE REMOVED FROM THE SITE AND LAWFULLY DISPOSED, SALVAGED, OR RECYCLED. WHERE FENCE POSTS ARE REMOVED, THEIR CONCRETE BASES SHALL BE EXCAVATED AND COMPLETELY REMOVED. WASTE MATERIALS SHALL NOT BE BURIED ON SITE.

THE CONTRACTOR SHALL GRADE THE SITE TO DRAIN DURING DEMOLITION OPERATIONS. STANDING WATER OR PONDING SHALL NOT BE ALLOWED.

EXISTING TREES TO REMAIN IN PLACE SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION OPERATIONS. REFERENCE TREE PROTECTION DETAIL ON SHEET B.03.

TREES AND WOODY VEGETATION IDENTIFIED FOR REMOVAL SHALL HAVE THE ROOT BALLS REMOVED TO A MINIMUM DEPTH OF 42 INCHES BELOW GRADE.

ALL PAVEMENT REMOVALS SHALL BE SAWCUT. PAVEMENT SHALL BE REMOVED IN COMPLETE PANELS. PAVEMENT REMOVAL LIMITS MAY BE ADJUSTED IN THE FIELD TO MATCH EXISTING JOINTS.

PAVEMENTS AND OTHER INFRASTRUCTURE NOT IDENTIFIED FOR REMOVAL AND DAMAGED BY CONTRACTORS OPERATIONS SHALL BE REPAIRED AND/OR REPLACED AT CONTRACTOR'S RESPONSIBILITY.

THE FOUNDATIONS AND FOOTINGS OF ALL STRUCTURES SHALL BE REMOVED AND DISPOSED OF LAWFULLY.

THE CONTRACTOR SHALL BENCH EXCAVATIONS AS NECESSARY TO ACCOMMODATE DEMOLITION AND REMOVAL OPERATIONS OF STRUCTURES AND FOUNDATIONS.

THE CONTRACTOR SHALL COORDINATE REMOVAL OF UTILITIES WITH THE PERSPECTIVE COMPANY/CONTACT. ALL UTILITIES SHALL BE REMOVED TO THE PROPERTY LINE AND PROPERLY CAPPED. BACKFILL AND COMPACT SOILS IN UTILITY TRENCHES PER METHODS AND SPECIFICATIONS IDENTIFIED ON THE GRADING PLAN.

BACKFILL OF TRENCHES/VOIDS FOR UTILITY LINE, STORM AND SANITARY SEWER PIPES AND RELATED STRUCTURE REMOVALS AT THE END OF EACH DAY. BACKFILL SHALL BE PLACED IN TRENCHES IN ACCORDANCE WITH THE METHODS AND SPECIFICATIONS IDENTIFIED IN THE GRADING NOTES. EXCAVATED TRENCHING REMAINING OPEN SHALL NOT EXCEED 25 LINEAL FEET. THE CONTRACTOR SHALL PLACE A TEMPORARY CONSTRUCTION FENCE AROUND ANY EXCAVATION OR STRUCTURES REMAINING OPEN.

REFERENCE NOTES:

1 – TEMPORARY SEDIMENT TRAP "A"

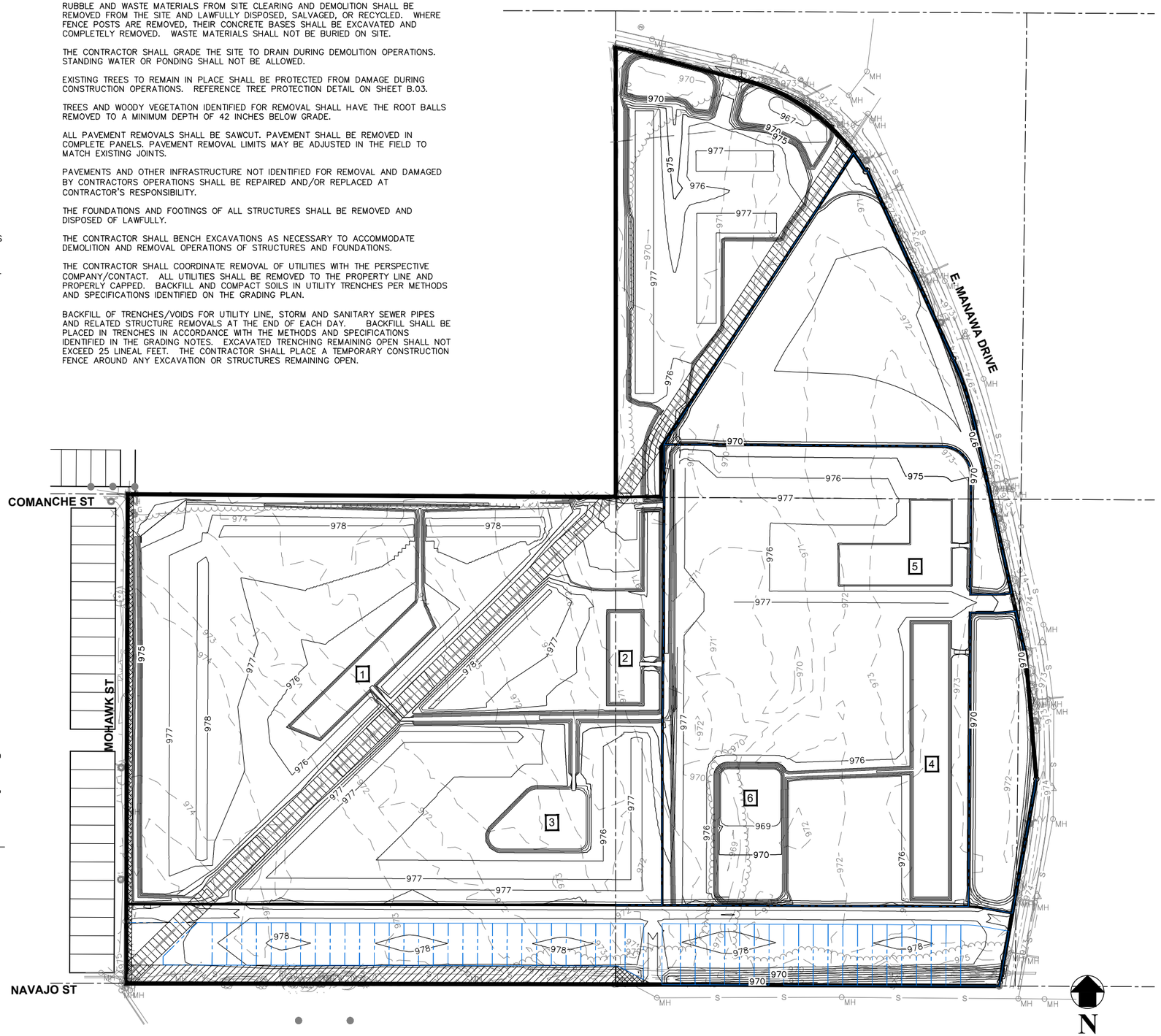
2 – TEMPORARY SEDIMENT TRAP "B"

3 – TEMPORARY SEDIMENT TRAP "C"

4 – TEMPORARY SEDIMENT TRAP "D"

5 – TEMPORARY SEDIMENT TRAP "E"

6 – FUTURE STORM WATER DETENTION BASIN



PROGRESS SET
Aug 22, 2024
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JNS	drawn		
PJG	designed		
PJG	approved		
AUG. 2024	date	revision	date

project: EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN
PHASE I LAYOUT

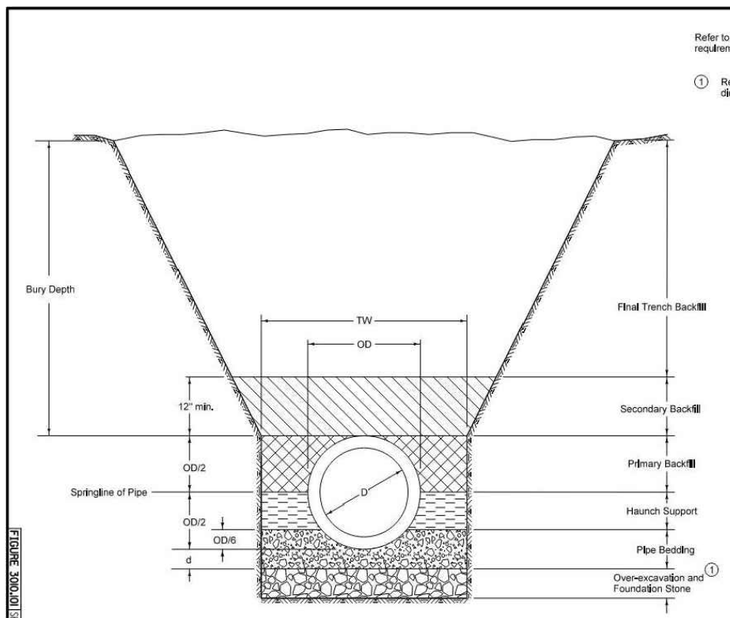
client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet: OVERALL GRADING PLAN

project no. 150624

sheet A.05

FILENAME: S:\Blue_Team\Projects\150624 East Manawa Development - Overlot Grading\Engineering\Dwgs\Design\150023 OVERLOT GRADING - PLAN REVISED.dwg
DRAWN BY: jns, SAVE DATE: Aug 22, 2024 12:39 PM DATE PLOTTED: 8/22/2024 2:11 PM, PLOT SCALE: 1:2



Refer to the contract documents for specific material and placement requirements.

1 Required only when specified in the contract documents or when directed by the Engineer.

Key

OD = Outside diameter of pipe

D = Inside diameter of pipe

TW = Trench width at top of pipe

d = Depth of bedding material below pipe

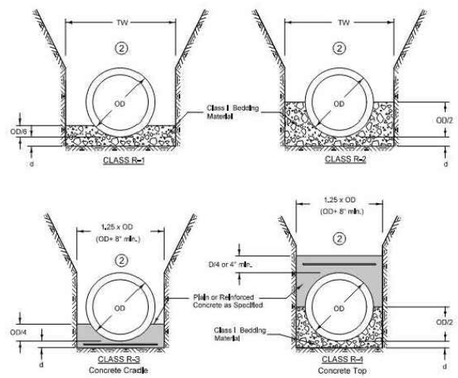
SUDAS	IOWADOT	REVISION
FIGURE 3010.101	STANDARD ROAD PLAN	1 03-17-15
		SW-101
		SHEET 1 of 1

REVISIONS: Realigned lines DOT and SUDAS logos.

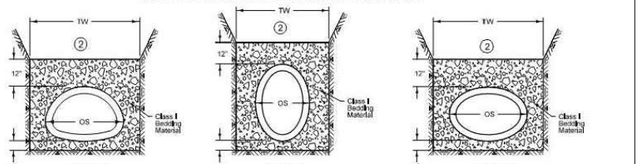
TRENCH BEDDING AND BACKFILL ZONES

FIGURE 3010.101 SHEET 1 OF 1

RCP AND VCP CIRCULAR PIPE BEDDING 1



REINFORCED CONCRETE ARCH AND ELLIPTICAL PIPE BEDDING



Refer to sheet 2 for bury depth restrictions.

1 Use Bedding Class R-1 or R-2 unless specified otherwise.

2 Place remainder of bedding and backfill materials as specified in the contract documents.

Key

OD = Outside diameter of pipe

OS = Outside span of pipe

TW = Trench width at top of pipe;
Min. = OD+18 inches
Max.= 1.25xOD+12 inches OR
54 inches (whichever is greater)

d = Depth of bedding material below pipe;
OD/8 or OS/8, OR 4 inches
(whichever is greater)

SUDAS	IOWADOT	REVISION
FIGURE 3010.102	STANDARD ROAD PLAN	4 01-20-21
		SW-102
		SHEET 1 of 2

REVISIONS: Added note DO NOT USE ON PRIMARY ROADWAYS.

RIGID GRAVITY PIPE TRENCH BEDDING

FIGURE 3010.102 SHEET 1 OF 2

ALLOWABLE BURY DEPTH

CLASS III RCP

Pipe Diameter (in)	Class R-1 Bedding	Class R-2 Bedding	Class R-3 & R-4 Bedding		
			No Steel	As=0.4%	As=1.0%
12	7'	10'	15'	19'	27'
15	8'	10'	16'	19'	27'
18	8'	11'	16'	20'	40'
21	8'	11'	18'	26'	40'
24	8'	12'	23'	36'	40'
27	10'	15'	30'	40'	40'
30	11'	15'	29'	40'	40'
33	11'	15'	28'	40'	40'
36	11'	15'	27'	40'	40'
42	11'	15'	26'	38'	40'
48	11'	15'	26'	36'	40'
54	11'	15'	25'	34'	40'
60	11'	15'	25'	33'	40'
66	11'	15'	24'	32'	40'
72	11'	15'	24'	32'	40'

As = Area of Steel Reinforcing

CLASS IV RCP

Pipe Diameter (in)	Class R-1 Bedding	Class R-2 Bedding	Class R-3 & R-4 Bedding		
			No Steel	As=0.4%	As=1.0%
12	12'	15'	23'	28'	40'
15	12'	16'	23'	30'	40'
18	13'	16'	29'	40'	40'
21	13'	18'	40'	40'	40'
24	16'	23'	40'	40'	40'
27	19'	30'	40'	40'	40'
30	19'	29'	40'	40'	40'
33	19'	28'	40'	40'	40'
36	19'	28'	40'	40'	40'
42	18'	27'	40'	40'	40'
48	18'	26'	40'	40'	40'
54	18'	25'	40'	40'	40'
60	18'	25'	40'	40'	40'
66	18'	25'	40'	40'	40'
72	18'	24'	40'	40'	40'

As = Area of Steel Reinforcing

CLASS V RCP

Pipe Diameter (in)	Class R-1 Bedding	Class R-2 Bedding	Class R-3 & R-4 Bedding		
			No Steel	As=0.4%	As=1.0%
12	18'	23'	35'	40'	40'
15	19'	24'	40'	40'	40'
18	19'	30'	40'	40'	40'
21	25'	40'	40'	40'	40'
24	34'	40'	40'	40'	40'
27	40'	40'	40'	40'	40'
30	40'	40'	40'	40'	40'
33	40'	40'	40'	40'	40'
36	40'	40'	40'	40'	40'
42	37'	40'	40'	40'	40'
48	35'	40'	40'	40'	40'
54	33'	40'	40'	40'	40'
60	32'	40'	40'	40'	40'
66	31'	40'	40'	40'	40'
72	31'	40'	40'	40'	40'

As = Area of Steel Reinforcing

EXTRA STRENGTH VCP

Pipe Dia. (in)	Bedding Class				
	R-1	R-2	R-3 & R-4		
			No Steel	As=0.4%	As=1.0%
6	25'	30'	30'	30'	30'
8	20'	26'	30'	30'	30'
10	18'	23'	30'	30'	30'
12	16'	20'	30'	30'	30'
15	15'	19'	28'	30'	30'
18	14'	18'	30'	30'	30'
21	15'	22'	30'	30'	30'
24	18'	28'	30'	30'	30'
27	20'	30'	30'	30'	30'
30	19'	29'	30'	30'	30'
33	20'	30'	30'	30'	30'
36	20'	30'	30'	30'	30'
39	19'	29'	30'	30'	30'
42	18'	26'	30'	30'	30'

As = Area of Steel Reinforcing

CONCRETE ARCH PIPE

Pipe Size (in x in)	Equiv. Dia. (in)	Pipe Class	
		A-III	A-IV
18 x 11	15	6'	11'
22 x 13	18	6'	11'
26 x 15	21	6'	13'
29 x 18	24	7'	15'
36 x 22	30	8'	15'
44 x 27	36	8'	14'
51 x 31	42	8'	15'
58 x 36	48	8'	15'
65 x 40	54	8'	15'
73 x 45	60	8'	14'
88 x 54	72	9'	14'

Based on Class R-5 bedding

HORIZONTAL ELLIPTICAL RCP

Pipe Size (in x in)	Equiv. Dia. (in)	Pipe Class	
		HE-III	HE-IV
14 x 23	18	12'	22'
19 x 30	24	15'	29'
22 x 34	27	15'	28'
24 x 38	30	15'	27'
27 x 42	33	15'	27'
29 x 45	36	15'	26'
32 x 49	39	15'	26'
34 x 54	42	15'	25'
38 x 60	48	15'	25'
43 x 68	54	15'	24'
48 x 76	60	15'	24'
53 x 83	66	15'	24'
58 x 91	72	15'	24'
63 x 98	78	15'	23'
68 x 106	84	15'	23'

Based on Class R-5 bedding

VERTICAL ELLIPTICAL RCP

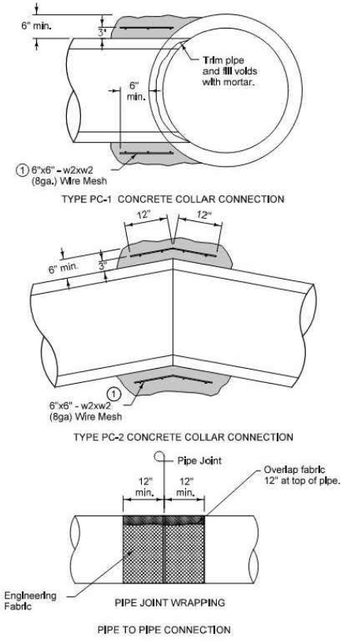
Pipe Size (in x in)	Equiv. Dia. (in)	Pipe Class			
		VE-III	VE-IV	VE-V	VE-VI
23 x 14	18	10'	15'	22'	33'
30 x 19	24	10'	16'	34'	40'
34 x 22	27	11'	20'	40'	40'
38 x 24	30	12'	23'	40'	40'
42 x 27	33	15'	30'	40'	40'
45 x 29	36	15'	29'	40'	40'
49 x 32	39	15'	29'	40'	40'
54 x 34	42	15'	28'	40'	40'
60 x 38	48	15'	27'	40'	40'
66 x 43	54	15'	27'	40'	40'
76 x 48	60	15'	26'	40'	40'
83 x 53	66	15'	25'	40'	40'
91 x 58	72	15'	25'	40'	40'
98 x 63	78	15'	25'	40'	40'
106 x 68	84	15'	24'	40'	40'

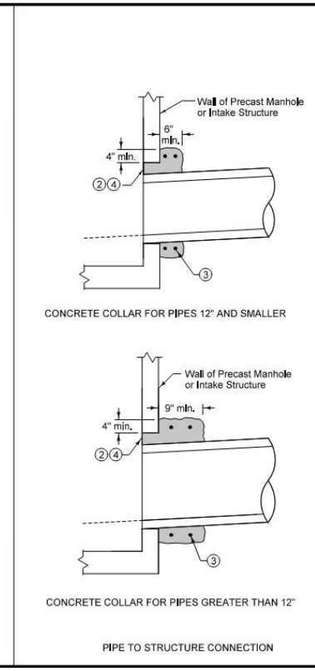
Based on Class R-5 bedding

SUDAS	IOWADOT	REVISION
FIGURE 3010.102	STANDARD ROAD PLAN	4 01-20-21
		SW-102
		SHEET 2 of 2

RIGID GRAVITY PIPE TRENCH BEDDING

FIGURE 3010.102 SHEET 2 OF 2





1 Lap ends of wire mesh a minimum of 6 inches.

2 Concrete collar is required when annular space between the outside of the pipe and the wall of the structure is 2 inches or greater.

3 Provide two #4 hoop bars in concrete collar. Lap bars a minimum of 6 inches.

4 Trowel concrete flush with inside wall of structure.

SUDAS	IOWADOT	REVISION
FIGURE 4020.211	STANDARD ROAD PLAN	2 04-17-18
		SW-211
		SHEET 1 of 1

REVISIONS: Removed "Inlet" callout on Pipe to Structure View. Refiled and replaced with Iowa DOT and SUDAS logos with new logos.

STORM SEWER PIPE CONNECTIONS

FIGURE 4020.211 SHEET 1 OF 1

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Aug 22, 2024
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JNS	P.I.G.	P.I.G.	AUG. 2024
drawn	designed	approved	date

revision date

project EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN
PHASE 1 LAYOUT

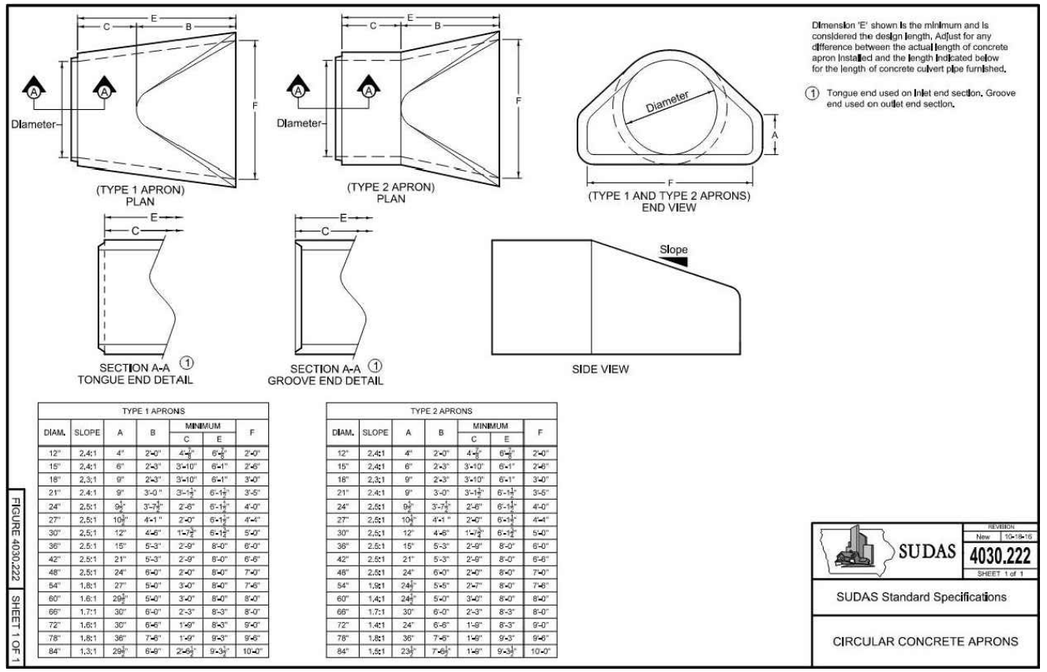
client CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet CIVIL SITE DETAILS

project no. 150624

sheet B.01

FILENAME: S:\Blue_Team\Projects\150624 East Manawa Development - Overlot Grading\Engineering\Dwgs\Design\150023 OVERLOT GRADING - PLAN REVISED.dwg
DRAWN BY: JNS, SAVE DATE: Aug 22, 2024 12:39 PM DATE PLOTTED: 8/22/2024 2:11 PM, PLOT SCALE: 1:2



Dimension 'E' shown is the minimum and is considered the design length. Adjust for any difference between the actual length of concrete apron installed and the length indicated below for the length of concrete culvert pipe furnished.

① Tongue end used on inlet end section. Groove end used on outlet end section.

TYPE 1 APRONS

DIAM.	SLOPE	A	B	MINIMUM C	MINIMUM E	F
12"	2.4:1	4"	2'-0"	4'-4"	6'-4"	2'-0"
15"	2.4:1	6"	2'-3"	3'-10"	6'-1"	2'-6"
18"	2.3:1	9"	2'-3"	3'-10"	6'-1"	3'-0"
21"	2.4:1	9"	3'-0"	3'-1½"	6'-1½"	3'-5"
24"	2.5:1	9"	3'-7½"	2'-8"	6'-1½"	4'-0"
27"	2.5:1	10½"	4'-1"	2'-0"	6'-1½"	4'-4"
30"	2.5:1	12"	4'-8"	1'-7½"	6'-1½"	5'-0"
36"	2.5:1	15"	5'-3"	2'-9"	8'-0"	6'-0"
42"	2.5:1	21"	5'-3"	2'-9"	8'-0"	6'-6"
48"	2.5:1	24"	6'-0"	2'-0"	8'-0"	7'-0"
54"	1.8:1	27"	5'-0"	3'-0"	8'-0"	7'-6"
60"	1.6:1	29½"	5'-0"	3'-0"	8'-0"	8'-0"
66"	1.7:1	30"	6'-0"	2'-3"	8'-3"	8'-0"
72"	1.6:1	30"	6'-6"	1'-9"	8'-3"	9'-0"
78"	1.8:1	36"	7'-6"	1'-9"	9'-3"	9'-6"
84"	1.3:1	29½"	6'-9"	2'-4½"	9'-3½"	10'-0"

TYPE 2 APRONS

DIAM.	SLOPE	A	B	MINIMUM C	MINIMUM E	F
12"	2.4:1	4"	2'-0"	4'-4"	6'-4"	2'-0"
15"	2.4:1	6"	2'-3"	3'-10"	6'-1"	2'-6"
18"	2.3:1	9"	2'-3"	3'-10"	6'-1"	3'-0"
21"	2.4:1	9"	3'-0"	3'-1½"	6'-1½"	3'-5"
24"	2.5:1	9"	3'-7½"	2'-8"	6'-1½"	4'-0"
27"	2.5:1	10½"	4'-1"	2'-0"	6'-1½"	4'-4"
30"	2.5:1	12"	4'-8"	1'-7½"	6'-1½"	5'-0"
36"	2.5:1	15"	5'-3"	2'-9"	8'-0"	6'-0"
42"	2.5:1	21"	5'-3"	2'-9"	8'-0"	6'-6"
48"	2.5:1	24"	6'-0"	2'-0"	8'-0"	7'-0"
54"	1.8:1	24"	5'-5"	2'-7"	8'-0"	7'-6"
60"	1.4:1	24"	5'-0"	3'-0"	8'-0"	8'-0"
66"	1.7:1	30"	6'-0"	2'-3"	8'-3"	8'-0"
72"	1.4:1	24"	6'-6"	1'-9"	8'-3"	9'-0"
78"	1.8:1	36"	7'-6"	1'-9"	9'-3"	9'-6"
84"	1.5:1	23½"	7'-6½"	1'-9"	9'-3½"	10'-0"

SUDAS

REVISION	
New	10-15-16

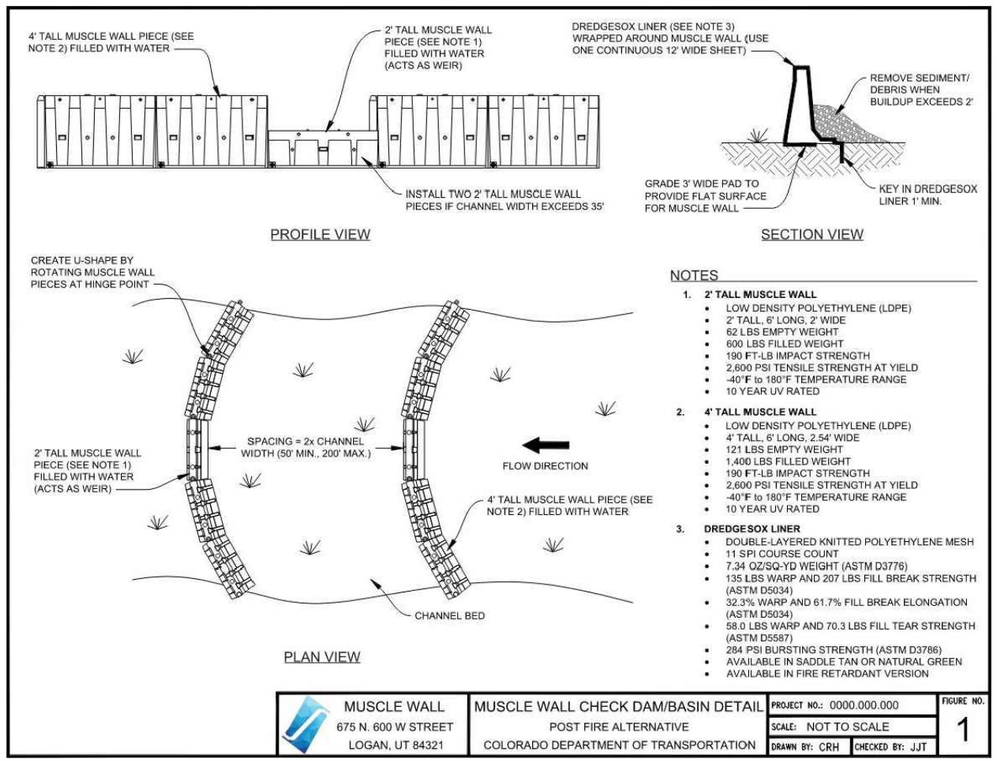
4030.222

SHEET 1 of 1

SUDAS Standard Specifications

CIRCULAR CONCRETE APRONS

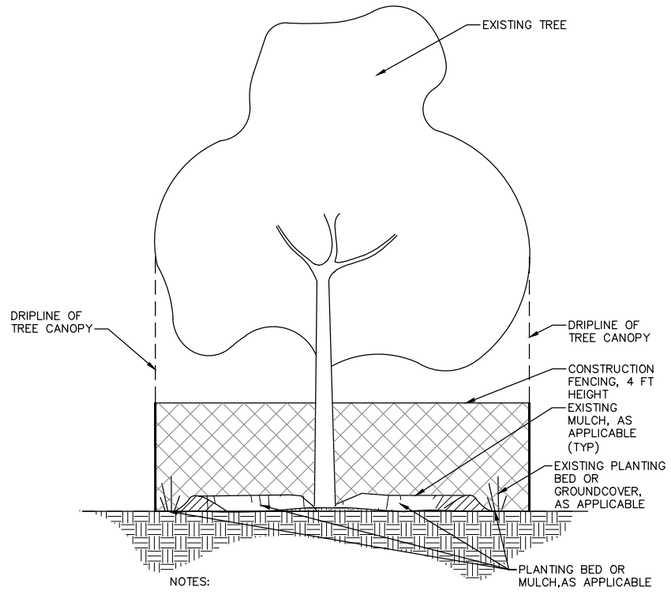
FIGURE 4030.222 SHEET 1 OF 1



NOTES

1. **2' TALL MUSCLE WALL**
   - LOW DENSITY POLYETHYLENE (LDPE)
   - 2' TALL, 6' LONG, 2' WIDE
   - 62 LBS EMPTY WEIGHT
   - 600 LBS FILLED WEIGHT
   - 190 FT-LB IMPACT STRENGTH
   - 2,600 PSI TENSILE STRENGTH AT YIELD
   - -40°F to 180°F TEMPERATURE RANGE
   - 10 YEAR UV RATED
2. **4' TALL MUSCLE WALL**
   - LOW DENSITY POLYETHYLENE (LDPE)
   - 4' TALL, 6' LONG, 2.54' WIDE
   - 121 LBS EMPTY WEIGHT
   - 1,400 LBS FILLED WEIGHT
   - 190 FT-LB IMPACT STRENGTH
   - 2,600 PSI TENSILE STRENGTH AT YIELD
   - -40°F to 180°F TEMPERATURE RANGE
   - 10 YEAR UV RATED
3. **DREDGESOX LINER**
   - DOUBLE-LAYERED KNITTED POLYETHYLENE MESH
   - 11 SPI COURSE COUNT
   - 7.34 OZ/SQ-YD WEIGHT (ASTM D3776)
   - 135 LBS WARP AND 207 LBS FILL BREAK STRENGTH (ASTM D5034)
   - 32.3% WARP AND 61.7% FILL BREAK ELONGATION (ASTM D5034)
   - 58.0 LBS WARP AND 70.3 LBS FILL TEAR STRENGTH (ASTM D5587)
   - 284 PSI BURSTING STRENGTH (ASTM D3786)
   - AVAILABLE IN SADDLE TAN OR NATURAL GREEN
   - AVAILABLE IN FIRE RETARDANT VERSION

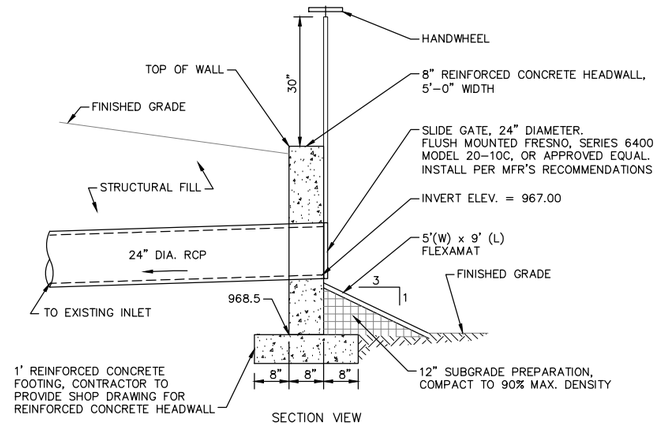
MUSCLE WALL 675 N. 600 W STREET LOGAN, UT 84321	MUSCLE WALL CHECK DAM/BASIN DETAIL POST FIRE ALTERNATIVE COLORADO DEPARTMENT OF TRANSPORTATION	PROJECT NO.: 0000.000.000 SCALE: NOT TO SCALE DRAWN BY: CRH CHECKED BY: JJT	FIGURE NO. 1



NOTES:

1. INSTALL CONSTRUCTION FENCING PRIOR TO STRIPPING, GRUBBING, OR GRADING OPERATIONS.
2. FENCING SHALL BE ALIGNED WITH DRIPLINE OF THE TREE CANOPY OR AROUND PLANTING BORDERS AND/OR MULCH, WHICHEVER IS GREATER.

TREE PROTECTION DETAIL
SCALE : NO SCALE



GATED OUTLET STRUCTURE AT RETENTION/DETENTION PONDS
SCALE : NO SCALE

PROGRESS SET
Aug 22, 2024
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JNS	drawn		
PJG	designed		
PJG	approved		
AUG. 2024	date	revision	date

project: EAST MANAWA SUBDIVISION OVERLOT GRADING PLAN
PHASE 1 LAYOUT

client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet: CIVIL SITE DETAILS

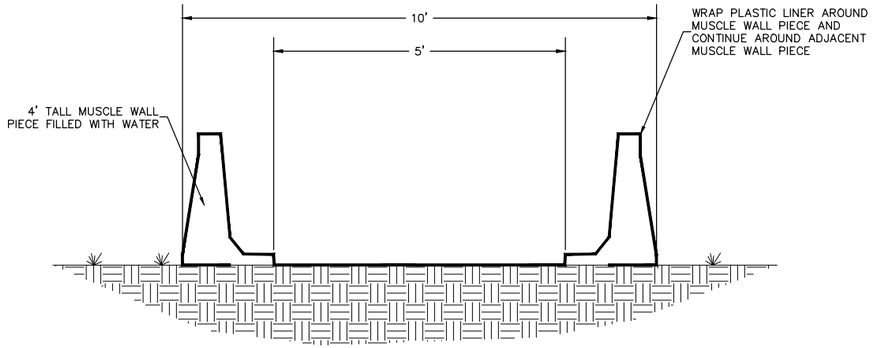
project no.
150624

sheet
B.02

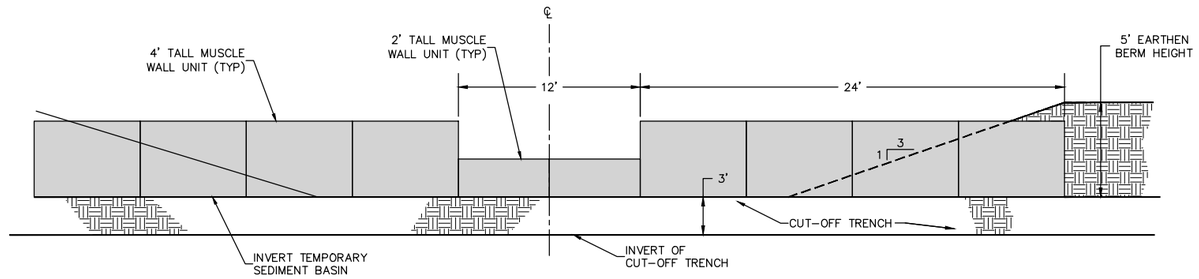
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NOTES:

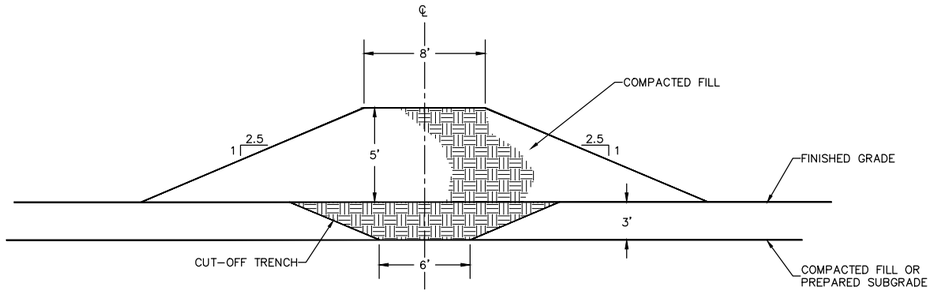
1. REFER TO DETAILS ON SHEETS B.04 AND B.05 FOR MUSCLE WALL UNIT SPECIFICATIONS.
2. MUSCLE WALL UNITS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
3. MUSCLE WALL OUTFALL STRUCTURES AND TEMPORARY CHANNEL WALLS SHALL BE INSTALLED WITH 30 MIL LDPE IMPERMEABLE LINER. TOE-IN LINER PER MANUFACTURER'S RECOMMENDATIONS.
4. MUSCLE WALL STRUCTURES SHALL REMAIN IN PLACE AFTER SUBSTANTIAL COMPLETION OF OVERLOT GRADING PROJECT. MUSCLE WALL UNITS SHALL BE THE PROPERTY OF THE CITY OF COUNCIL BLUFFS.



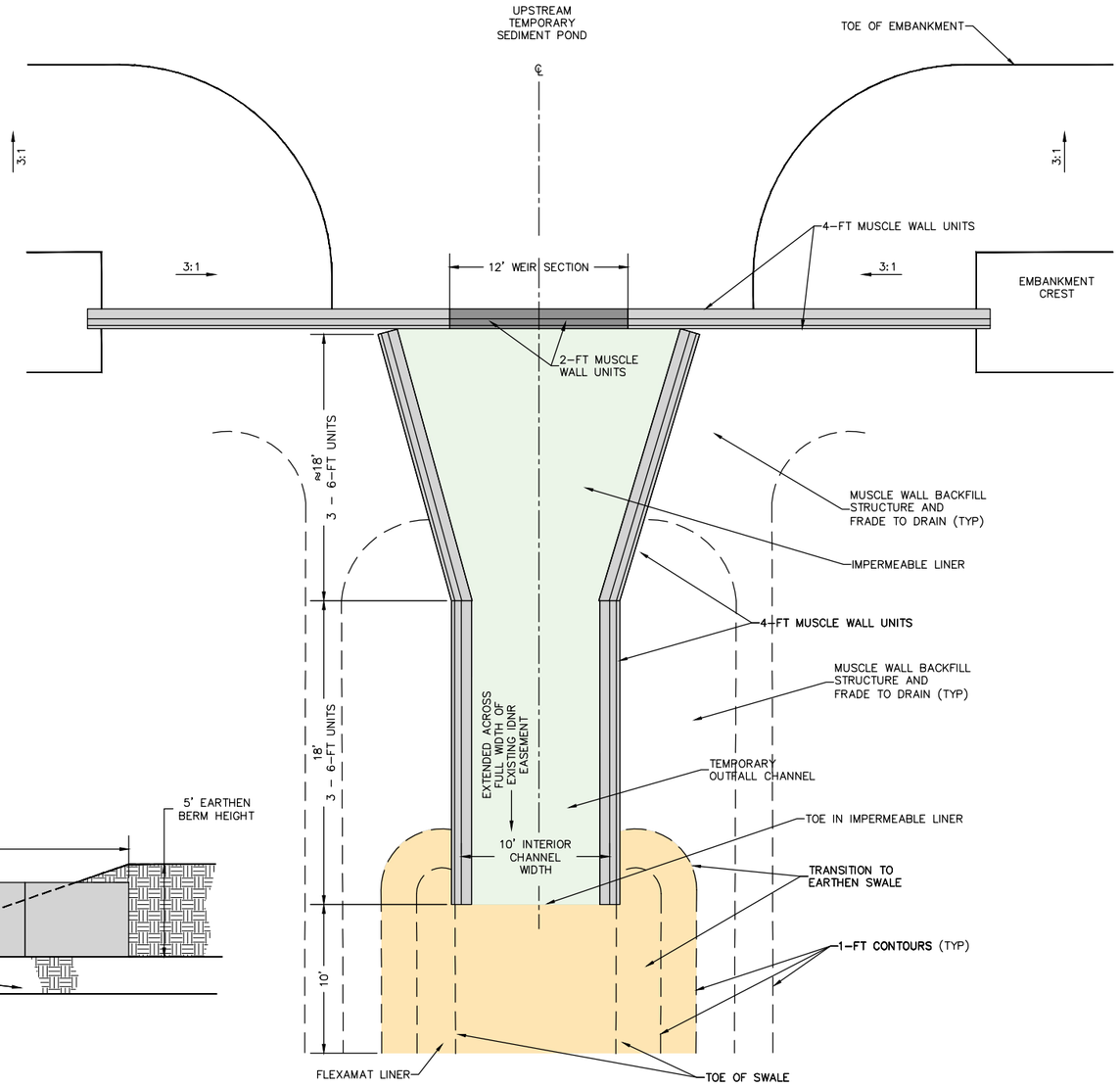
MUSCLE WALL DIVERSION CHANNEL
SCALE : NO SCALE



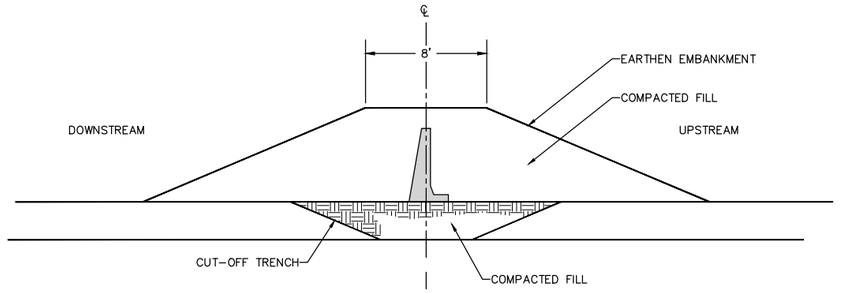
TEMPORARY SEDIMENT TRAP WEIR OUTLET SECTION
SCALE : NO SCALE



TEMPORARY SEDIMENT TRAP EARTHEN EMBANKMENT SECTION
SCALE : NO SCALE



PLAN VIEW OF TEMPORARY SEDIMENT BASIN OUTFALL
SCALE : NO SCALE



TEMPORARY SEDIMENT TRAP EMBANKMENT SECTION WITH 4' TALL MUSCLE WALL
SCALE : NO SCALE

PROGRESS SET
Aug 22, 2024
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drawn		
PJG		
designed		
PJG		
approved		
AUG. 2024		
date	revision	date

project
EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN
PHASE 1 LAYOUT

client
CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet
CIVIL SITE DETAILS

project no.
150624

sheet
B.03

FILENAME: S:\Blue_Team\Projects\150624 East Manawa Development - Overlot Grading\Engineering\Dwgs\Design\150023 OVERLOT GRADING - PLAN REVISED.dwg
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MUSCLE WALL®

FLOOD • CONTAINMENT • STORMWATER



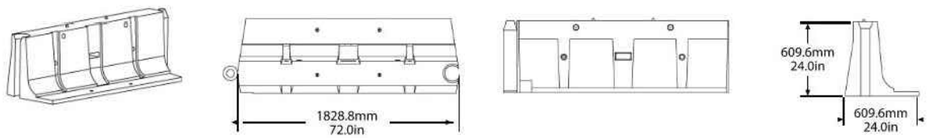
2-FOOT MUSCLE WALL

SPECIFICATIONS

- **Material**
  - Low density polyethylene
  - Elongation to yield: 20%
  - Impact strength: 190 ft-lb
  - Tensile strength at yield: 2600 psi
- **Dimensions**
  - Minimum polyethylene thickness: 0.25"
  - Footprint on ground: 11.5 ft^2
  - 6 ft. wide x 2 ft. deep x 2 ft. high
  - Installed in 6 ft. sections
  - Fit 256 units on one 48 ft. flatbed trailer
- **Portable**
  - Weight per unit (empty): 60lbs
  - Weight per unit (filled): 600lbs
  - Units nest together for transportation
  - 16 walls per pallet
- **All Season Compatible**
  - Temperature range: -40˚ F to 180˚ F
  - 10 year UV rated
- **Ground Pressure**
  - Empty: 0.0333 psi
  - Filled: 0.3939 psi

phone | 435.213.9253 email | info@musclewall.com web | musclewall.com address | 675 N 600 W Ste. 1 Logan, UT 84321





FEATURES

- **Quick Setup & Take Down**
  - Male to female connection that slides easily into place with another Muscle Wall
  - 2-Foot spring liner clip secures the liner to the Muscle Wall as well as reduces liner tenting
  - Each joint acts like a hinge allowing 22˚ range of motion
  - Reversible corner unit enables the Muscle Wall system to make a 90˚ turn in any direction
- **Intuitive Design**
  - Two walls nestle together to reduce storage & shipping space
  - Threaded top hole cap
  - Releasable bung-plug cap for rapid emptying
  - Safety ratchet straps restrain adjacent panels
  - 7 strategically placed kiss-throughs with multiple purposes based on location - structural integrity, safety strap installation, and hand-holds

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drawn	designed	approved	date	revision date

EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN

project: PHASE 1 LAYOUT

client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet: CIVIL SITE DETAILS

project no. 150624

sheet B.04

FILENAME: S:\Blue_Team\Projects\150624 East Manawa Development – Overlot Grading\Engineering\Dwgs\Design\150023 OVERLOT GRADING – PLAN REVISED.dwg
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MUSCLE WALL®

FLOOD • CONTAINMENT • STORMWATER



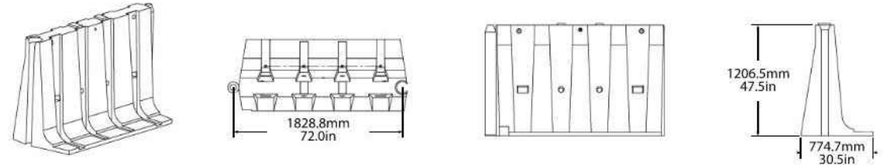
4-FOOT MUSCLE WALL

SPECIFICATIONS

- **Material**
  - Low density polyethylene
  - Elongation to yield: 20%
  - Impact strength: 190 ft-lb
  - Tensile strength at yield: 2600 psi
- **Dimensions**
  - Minimum polyethylene thickness: 0.25"
  - Footprint on ground: 14.5 ft^2
  - 6 ft. wide x 2.54 ft. deep x 4 ft. high
  - Installed in 6 ft. sections
  - Fit 96 units on one 48 ft. flatbed trailer
- **Portable**
  - Weight per unit (empty): 110lbs
  - Weight per unit (filled): 1400lbs
  - Units nest together for transportation
  - 12 walls per pallet
- **All Season Compatible**
  - Temperature range: -40˚ F to 180˚ F
  - 10 year UV rated
- **Ground Pressure**
  - Empty: 0.0527 psi
  - Filled: 0.6705 psi

phone | 435.213.9253 email | info@musclewall.com web | musclewall.com address | 675 N 600 W Ste. 1 Logan, UT 84321





FEATURES

- **Quick Setup & Take Down**
  - Male to female connection that slides easily into place with another Muscle Wall
  - 4-Foot spring liner clip secures the liner to the Muscle Wall as well as reduces liner tenting
  - Each joint acts like a hinge allowing up to 22˚ range of motion
  - Reversible corner unit enables the Muscle Wall system to make a 90˚ turn in any direction
- **Intuitive Design**
  - Two walls nestle together to reduce storage & shipping space
  - Threaded top hole cap
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  - Safety ratchet straps restrain adjacent panels
  - 7 strategically placed kiss-throughs with multiple purposes based on location - structural integrity, safety strap installation, and hand-holds

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drawn	designed	approved	date	revision date

project: EAST MANAWA SUBDIVISION OVERLOT GRADING PLAN
PHASE 1 LAYOUT
client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503
sheet: CIVIL SITE DETAILS

project no.
150624
sheet
B.05

FILENAME: S:\Blue_Team\Projects\150624 East Manawa Development – Overlot Grading\Engineering\Dwgs\Design\150023 OVERLOT GRADING – PLAN REVISED.dwg
DRAWN BY: jns, SAVE DATE: Aug 22, 2024 12:39 PM DATE PLOTTED: 8/22/2024 2:15 PM, PLOT SCALE: 1:2

GENERAL NOTES

1. UTILITY FACILITIES SHOWN ARE FROM LOCATES OR RECORDS PROVIDED BY OTHERS, AND SHALL BE CONSIDERED APPROXIMATE. OTHER UTILITIES MAY EXIST (EITHER IN SERVICE OR ABANDONED) AND THEIR LOCATION MAY NOT BE PRESENTLY KNOWN OR IDENTIFIED ON THE PLANS. THE ENGINEER MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE ENGINEER FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE CONTRACTOR SHALL NOTIFY THE IOWA ONE–CALL SYSTEM AT 1–800–292–8989 TO IDENTIFY THE LOCATION OF ALL UNDERGROUND UTILITY FACILITIES WITHIN THE CONSTRUCTION AREA.

   THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL PUBLIC AND PRIVATE UTILITY FACILITIES LOCATED WITHIN THE CONSTRUCTION AREA TO AVOID DAMAGE IN ACCORDANCE WITH SECTION 480.4, CODE OF IOWA. DAMAGE TO UTILITIES DUE TO THE CONTRACTOR'S ACTIONS SHALL BE REPAIRED OR REPLACED WITHOUT COST TO THE OWNER OR ENGINEER.

   WHERE EXISTING UTILITY FACILITIES ARE SHOWN IN THE PLANS OR ENCOUNTERED WITHIN THE CONSTRUCTION AREA, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANY PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTILITIES AND CONDUCTING WORK NEAR UTILITY FACILITIES REQUIRED BY SECTION 480.4, CODE OF IOWA.

   THE CONTRACTOR SHALL COOPERATE WITH UTILITY COMPANIES IN THEIR ADJUSTMENT OPERATIONS SO THAT THESE OPERATIONS MAY PROGRESS, THE DUPLICATION OF ADJUSTMENT WORK MAY BE REDUCED, AND THAT SERVICES RENDERED BY THOSE PARTIES WILL NOT BE INTERRUPTED.

   THE CONTRACTOR SHALL REVIEW ALL UTILITIES SHOWN IN THE PLANS AND COORDINATE WITH ALL UTILITY COMPANIES NECESSARY TO SCHEDULE WORK FOR ALL KNOWN AND POTENTIAL CONFLICTS. THE CONTRACTOR SHALL BE AWARE THAT UTILITY SERVICES ARE NOT ROUTINELY LOCATED OR SHOWN ON THE PLANS, HOWEVER MAY BE A CONFLICT WITH THE WORK PERFORMED. DELAYS, INCONVENIENCE, OR DAMAGE CLAIMED BY THE CONTRACTOR DUE TO ANY INTERFERENCE OF UTILITIES SHOWN IN THE PLANS OR SERVICES SHALL NOT BE CONSIDERED A CIRCUMSTANCE FOR ADDITIONAL TIME OR COMPENSATION.

2. REMOVALS OF ABANDONED UTILITIES THAT ARE SHOWN ON THE PLANS AND ENCOUNTERED DURING TRENCH EXCAVATION SHALL BE INCIDENTAL TO THE UNDERGROUND UTILITY BEING INSTALLED AND WILL NOT BE PAID FOR SEPARATELY UNLESS INDICATED OTHERWISE ON THE PLANS.

3. PRIOR TO BEGINNING WORK ON THE FOLLOWING ITEMS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW PLANS FOR BY–PASS PUMPING, TRENCH SHORING, JACKING AND BORING, DEWATERING, TRAFFIC CONTROL, EMERGENCY ACTION PLAN (EAP) FOR WORK IN THE LEVEE CRITICAL ZONE AND PROVIDE SHORING OR SUPPORT DETAILS FOR WATER MAINS AND OTHER MAJOR UTILITY LINES THAT MUST REMAIN IN SERVICE.

4. THE CONTRACTOR SHALL KEEP SANITARY SEWER AND STORM SEWER LINES AND STRUCTURES CLEAN AND FREE OF DEBRIS THAT IS A RESULT OF CONSTRUCTION OPERATIONS. ANY CLEANING AND REMOVAL OF DEBRIS THAT ENTERS AS A RESULT OF CONSTRUCTION OPERATIONS SHALL BE COMPLETED AT THE EXPENSE OF THE CONTRACTOR.

5. THE CONTRACTOR SHALL MAKE ACCESS AVAILABLE TO ADJACENT PROPERTIES IN CASE OF EMERGENCIES. THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER (712–890–5296) AND NON–EMERGENCY 911 (712–328–5737), 24 HOURS PRIOR TO CLOSING AND/OR OPENING ANY ROADS TO TRAFFIC. THE CONTRACTOR SHALL ADEQUATELY BARRICADE CLOSED ROADS DURING CONSTRUCTION TO ENSURE PUBLIC SAFETY AND PROTECT NEW PAVEMENT FROM DAMAGE. ALL TRAFFIC CONTROL SHALL BE IN COMPLIANCE WITH "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" U.S. DEPARTMENT OF TRANSPORTATION, LATEST EDITION.

6. REMOVAL AND REINSTALLATION OF MAILBOXES AS NECESSARY SHALL BE INCIDENTAL TO THE PROJECT UNLESS SPECIFIED OTHERWISE. THE CONTRACTOR SHALL NOTIFY THE POST OFFICE OF THE STREET CLOSING AND ARRANGE FOR AN ALTERNATE DROP BOX LOCATION AS NECESSARY.

7. SANITARY SEWER LATERALS DISRUPTED BY THE CONTRACTOR SHALL BE RECONNECTED TO THE SEWER DURING THE SAME DAY THAT THEY ARE DISRUPTED.

8. WHEN MILLING OF ASPHALT PAVEMENT IS A BID ITEM IN THE PLANS ALL MILLED ASPHALT PAVEMENT SHALL BE DELIVERED TO THE CITY PUBLIC WORKS YARD AT 1130 2ND AVENUE. CONSTRUCTION PHASING MAY REQUIRE MULTIPLE MOBILIZATIONS FOR MILLING OPERATIONS. OUT OF PHASE MILLING WILL NOT BE ALLOWED UNLESS OTHERWISE NOTED IN THE CONTRACT DOCUMENTS. THE COST INVOLVED TO HAUL SALVAGED ITEMS TO THE CITY YARD SHALL BE INCIDENTAL TO REMOVAL FOR WHICH PAYMENT IS MADE.

9. REMOVAL OF EXISTING CITY SIGNS AS NECESSARY SHALL BE INCIDENTAL TO THE PROJECT UNLESS SPECIFIED OTHERWISE. ALL SIGNS SHALL BE REMOVED WITHOUT DAMAGE TO THE SIGNS. ANY DAMAGE TO SIGN(S) SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE REQUIRED TO REPLACE IN KIND AND\OR COMPENSATE THE CITY FOR DAMAGED SIGN(S). SIGNS SHALL BE DELIVERED WHEN REMOVED TO THE CITY TRAFFIC DEPARTMENT AT 1001 10TH AVENUE. SIGNS SHALL NOT BE STORED ON PROJECT SITE.

10. ALL SOLID WASTE, AND EXCESS EXCAVATION FROM THE REMOVAL OR INSTALLATION OF PAVEMENT, STORM, AND SANITARY SEWER SYSTEMS, SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR IN COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REQUIREMENTS. ALL REMOVED ITEMS SHALL BE DISPOSED OF BY THE CONTRACTOR OFF SITE AND SHALL NOT BE INCORPORATED INTO THE WORK.

    PRIOR TO THE COMMENCEMENT OF REMOVALS, THE CONTRACTOR SHALL PROVIDE THE ENGINEER DOCUMENTATION OF THEIR CERTIFIED DISPOSAL SITE(S) FOR ALL ITEMS TO BE REMOVED FROM THE PROJECT. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH LOAD TICKETS FOR ALL ITEMS REMOVED FROM THE PROJECT. PAYMENT WILL NOT BE MADE ON REMOVAL ITEMS WITHOUT APPROPRIATE TICKETS.

11. TO COMPLY WITH THE MIGRATORY BIRD TREATY ACT, TREES SHALL NOT BE REMOVED DURING THE PRIMARY NESTING SEASON DEFINED AS APRIL 1ST THROUGH SEPTEMBER 30TH. EXISTING TREES NOT INDICATED FOR REMOVAL SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION. TRIMMING OF TREES WITH TRUNKS LOCATED OUTSIDE OF THE RIGHT OF WAY SHALL NOT BE COMPLETED WITHOUT AUTHORIZATION FROM THE OWNER. WHEN TRIMMING IS REQUIRED ON ANY TREE, THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER AND USE SAWS TO REMOVE ROOTS AND BRANCHES FROM TREES THAT ARE TO REMAIN. NO REMOVAL OF ROOTS OR BRANCHES SHALL BE BY HEAVY EQUIPMENT THAT RESULTS IN TEARS. ALL REMOVALS SHALL LEAVE A SMOOTH CUT FACE.

12. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN PATHWAYS OPEN AND PASSABLE DURING CONSTRUCTION.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COLLECTION AND TRANSPORTATION OF RESIDENTIAL SOLID WASTE AND RECYCLABLES, INCLUDING 96 OR 48 GALLON GARBAGE AND YARD WASTE CARTS, AND 96 OR 48 GALLON RECYCLABLES CARTS; FROM IN FRONT OF INDIVIDUAL PROPERTIES TO THE ENDS OF THE PROJECT LIMITS FOR PICKUP. THE CARTS SHALL BE RETURNED TO THE INDIVIDUAL PROPERTIES THE SAME DAY GARBAGE IS COLLECTED. EACH OF THE CARTS SHALL BE RETURNED TO THE RESPECTIVE ADDRESS WHERE IT WAS RETRIEVED. ALL CARTS SHALL BE MARKED WITH TEMPORARY TAPE WITH THE ADDRESS CLEARLY SHOWN. ANY DAMAGE TO CARTS SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPLACE. THE CONTRACTOR SHALL COORDINATE THE PICKUP LOCATION(S) WITH THE COLLECTION CONTRACTOR.

GENERAL NOTES

14. THE CONTRACTOR SHALL CONFINE ALL OPERATIONS, INCLUDING EQUIPMENT AND MATERIAL STORAGE, WITHIN THE CONSTRUCTION ROW AND/OR EASEMENTS OF THE PROJECT. IF THE CONTRACTOR IS GRANTED PERMISSION TO STORE MATERIALS OR EQUIPMENT ON ADJACENT PRIVATE PROPERTY THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH WRITTEN PROOF OF PERMISSION FROM THE LANDOWNER.

15. THE CONTRACTOR SHALL MAINTAIN THE PROJECT LIMITS. BY COMMENCING THE WORK IN A GIVEN AREA, THE CONTRACTOR ASSUMES THE RESPONSIBILITY FOR ONGOING REQUIRED MAINTENANCE SUCH AS MOWING AND WEED CONTROL WITHIN THE PROJECT LIMITS.

16. THE ENGINEER WILL SET THE REQUESTED CONSTRUCTION STAKES UPON 48 HOUR ADVANCED NOTIFICATION BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF STAKES AND MARKS. THE OWNER WILL FURNISH THE STAKING THROUGH THE ENGINEER ONE TIME ONLY. ALL OTHER CONSTRUCTION STAKING SHALL BE FURNISHED BY THE CONTRACTOR.

    RESTAKING, INCLUDING ASSOCIATED TRIP CHARGES, SHALL BE PAID BY THE CONTRACTOR TO THE OWNER WHO WILL REIMBURSE ENGINEER. THE OWNER MAY DEDUCT AMOUNTS FOR RESTAKING FROM PAYMENTS DUE TO THE CONTRACTOR.

17. STREETS SHALL NOT BE OPENED TO TRAFFIC UNTIL ALL STREET PAVEMENT HAS REACHED REQUIRED STRENGTH, ALL JOINTS HAVE BEEN SEALED, AND ALL DRIVEWAYS AND SIDEWALKS HAVE BEEN CONSTRUCTED UNLESS INDICATED OTHERWISE ON THE PLANS OR APPROVED BY THE ENGINEER.

18. THE CONTRACTOR WILL BE RESPONSIBLE FOR PAYMENTS ASSOCIATED WITH ALL RETESTING RESULTING FROM FAILURE OF INITIAL COMPACTION TESTS. RETESTING, INCLUDING ASSOCIATED TRIP CHARGES, SHALL BE PAID BY THE CONTRACTOR TO THE OWNER. THE OWNER SHALL DEDUCT AMOUNTS FOR RETESTING FROM PAYMENTS DUE TO THE CONTRACTOR.

19. THE CONTRACTOR SHALL CONTROL CONSTRUCTION DEBRIS, HAZARDOUS WASTE SPILLS, AND CONCRETE TRUCK WASHOUT AREA(S). THE CONTRACTOR SHALL CLEAN–UP AND DISPOSE OF ALL WASTE PROPERLY OFF–SITE AT AN APPROVED DISPOSAL FACILITY. NO CONSTRUCTION MATERIAL WASTES OR UNUSED MATERIALS SHALL BE BURIED, DUMPED, BURNED, OR DISCHARGED WITHIN THE PROJECT LIMITS.

20. THE CONTRACTOR SHALL TAKE STEPS TO CONTROL SOIL EROSION AND FUGITIVE DUST DURING CONSTRUCTION. IF NECESSARY, HAY BALES, CHECK DAMS, SEDIMENT TRAPS OR ADDITIONAL SILT FENCE (NOT INDICATED ON THE PLANS) SHALL BE USED TO RETAIN SILT AND PREVENT SILT FROM ENTERING THE STORM DRAINAGE SYSTEM. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT OPERATIONS IN ACCORDANCE WITH THE POLLUTION PREVENTION PLAN AND ADMINISTER IT THROUGHOUT THE PROJECT DURATION.

21. THE CONTRACTOR SHALL CONSTRUCT THE NECESSARY EROSION CONTROL AND RUNOFF DETENTION STRUCTURES INCLUDED IN THE PLANS AND PER THE STORM WATER POLLUTION PREVENTION PLANS (SWPPP) PRIOR TO ANY GRADING ON THE PROJECT IN ORDER TO PREVENT SILT TRANSPORT AND SOIL TRACKING OUTSIDE OF THE PROJECT LIMITS. THE CONTRACTOR SHALL MAINTAIN AND WATER HAUL ROADS TO CONTROL FUGITIVE DUST.

22. ALL CONCRETE TRUCKS SHALL RETURN TO THE PLANT TO WASH OUT UNLESS THE CONTRACTOR PROVIDES A CONCRETE WASH OUT AREA AS DESCRIBED IN THE PLANS OR AS APPROVED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND CLEAN UP OF THE WASH OUT LOCATION.

23. THE OWNER MAY CHARGE THE CONTRACTOR ACTUAL DAMAGES FOR FAILURE OF THE CONTRACTOR TO COMPLY WITH ANY PART OF THE CONTRACT, INCLUDING INCIDENTAL PROJECT REQUIREMENTS, FOR WHICH THE OWNER INCURS COSTS TO REMEDY. THE OWNER MAY CHARGE UP TO THE ACTUAL COST INCURRED BY THE OWNER FOR SUCH DAMAGES. THE OWNER MAY DEDUCT AMOUNTS FOR DAMAGES FROM PAYMENTS DUE TO THE CONTRACTOR.

24. ALL SIDEWALKS, SHARED USE PATHS, PEDESTRIAN CURB RAMPS, AND DRIVEWAYS SHALL BE CONSTRUCTED TO MEET THE MINIMUM REQUIREMENTS OF DIVISION 7 SECTION 7030 OF THE SUDAS STANDARD SPECIFICATIONS. ALL WORK COMPLETED THAT DOES NOT MEET THESE REQUIREMENTS SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT NO COST TO THE CITY.

25. THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHEN FINAL GRADING HAS BEEN COMPLETED. THE ENGINEER SHALL PERFORM A FIELD REVIEW OF THE GRADING PRIOR TO ANY SEEDING OR HYDROMULCHING BY THE CONTRACTOR. FAILURE TO COMPLY WITH THE FINAL GRADING REVIEW MAY RESULT IN RE–GRADING, RE SEEDING AND RE–HYDROMULCHING IN AREAS THAT DO NOT MEET SPECIFICATIONS. ANY ADDITIONAL WORK WILL BE AT THE EXPENSE OF THE CONTRACTOR.

26. THE CONTRACTOR SHALL NOT INSTALL MANHOLE INFILTRATION BARRIERS UNTIL AFTER THE ENGINEER AND CITY REPRESENTATIVE(S) HAVE INSPECTED THE MANHOLE(S). ONCE THE INSPECTION OF MANHOLE(S) HAS BEEN COMPLETED AND IS ACCEPTABLE, THE INFILTRATION BARRIER MAY BE INSTALLED. THE INFILTRATION BARRIER WILL THEN BE INSPECTED BY THE ENGINEER AND CITY REPRESENTATIVE(S) FOR APPROVAL. BACKFILL AROUND THE MANHOLE SHALL NOT BE COMPLETED UNTIL AFTER THE INSPECTION OF THE INFILTRATION BARRIER HAS OCCURRED WHEN USING AN EXTERNAL BARRIER.

27. CONCRETE ADMIXTURES SHALL NOT BE USED UNLESS APPROVED BY THE ENGINEER AND SUBMITTED AS PART OF THE SHOP DRAWING SUBMITTAL FOR THE SPECIFIED MIX DESIGN AS SHOWN IN THE CONTRACT DOCUMENTS

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AUG, 2024		
date	revision	date

project: EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN
PHASE 1 LAYOUT

client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet: GENERAL NOTES

project no.
150624

sheet
C.01

FILENAME: S:\Blue_Team\Projects\150624 East Manawa Development – Overlot Grading\Engineering\Dwgs\Design\150023 OVERLOT GRADING – PLAN REVISED.dwg
DRAWN BY: jns, SAVE DATE: Aug 22, 2024 12:39 PM DATE PLOTTED: 8/22/2024 2:15 PM, PLOT SCALE: 1:2

ESTIMATED QUANTITIES

ITEM NO.	ITEM CODE	DESCRIPTION	ESTIMATED QUANTITY
DIVISION I: GENERAL			
1.	2010-3-3.01	CLEARING AND GRUBBING	94.70 ACRE
2.	2010-3-3.02	TOPSOIL - ESTABLISHED QUANTITY	73,580.00 CY
3.	2010-3-3.03	EXCAVATION - ESTABLISHED QUANTITY	89,070.00 CY
4.	2010-3-3.04	EMBANKMENT CONSTRUCTION - ESTABLISHED QUANTITY	584,150.00 CY
5.		IMPORTED EMBANKMENT CONSTRUCTION SOILS - ESTABLISHED QUANTITY	495,080.00 CY
6.	8030-3.	TEMPORARY TRAFFIC CONTROL	1.00 EA
7.	9010-2-2.02-C	TEMPORARY SEEDING, CLASS R	92.20 AC
8.	9010-2-2.02-F	SEEDING, CLASS F	2.50 AC
9.	9040-2-2.05	ROLLED EROSION CONTROL PRODUCTS, NORTH AMERICAN GREEN S150	5,299.00 sy
10.	9040-3-3.02	EROSION AND SEDIMENT CONTROL	1.00 LS
11.	9040-3-3.17	TEMPORARY SEDIMENT BASIN	5.00 EA
12.		TEMPORARY SEDIMENT BASIN OUTFALL STRUCTURE, MUSCLE WALLS	5.00 EA
13.		TEMPORARY CHANNEL, 4-FT HEIGHT MUSCLE WALL	200.00 LF
14.	9040-2-2.18	INLET PROTECTION	12.00 EA
15.	9040-3-3.18	SILT FENCE	15,800 LF
16.	9040-3-3.19	STABILIZED CONSTRUCTION ENTRANCE	4.00 EA
DIVISION IV: STORM SEWER APPURTENANCES			
1.	4030-3-3.01	12-INCH DIAMETER STORM DRAIN PIPE CULVERT, INCL. TRENCHING AND BACKFILL	234.00 LF
2.	4030-3-3.01	18-INCH DIAMETER STORM DRAIN PIPE CULVERT, INCL. TRENCHING AND BACKFILL	34.00 LF
3.	4030-3-3.01	24-INCH DIAMETER STORM DRAIN PIPE CULVERT, INCL. TRENCHING AND BACKFILL	355.00 LF
4.	4030-3-3.01	12-INCH DIAMETER STORM DRAIN PIPE APRON	4.00 EA
5.	4030-3-3.02	18-INCH DIAMETER STORM DRAIN PIPE APRON	1.00 EA
6.	4030-3-3.02	24-INCH DIAMETER STORM DRAIN PIPE APRON	6.00 EA
7.		OUTLET GATE STRUCTURE	3.00 EA
DIVISION XI: MISCELLANEOUS			
1.	11020	MOBILIZATION	1.00 EA

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AUG. 2024 date
revision date

project: EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN
PHASE 1 LAYOUT

client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet: ESTIMATED QUANTITIES AND ESTIMATE REFERENCE NOTES

project no.
150624

sheet
C.02

FILENAME: S:\Blue_Team\Projects\150624 East Manawa Development - Overlot Grading\Engineering\Dwgs\Design\150023 OVERLOT GRADING - PLAN REVISED.dwg
DRAWN BY: JNS, SAVE DATE: Aug 22, 2024 12:39 PM DATE PLOTTED: 8/22/2024 2:52 PM, PLOT SCALE: 1:2

REFER TO REMOVAL NOTES AND GRADING NOTES ON SHEET A.05

TEMPORARY 3:1 SLOPE DURING PHASE 1 COMPLETION

PROPOSED TEMPORARY SWALE

PHASE 1 CONSTRUCTION LIMITS

MOHAWK ST

NAVAJO ST

MATCH LINE A

REMOVE EXISTING WOODY VEGETATION

PHASE 1 CONSTRUCTION LIMITS

MATCH LINE A

E. MANAWA DRIVE

PROPOSED TEMPORARY SWALE

PHASE 1 CONSTRUCTION LIMITS

TEMPORARY 3:1 SLOPE DURING PHASE 1 COMPLETION

PROPOSED TEMPORARY SWALE

REMOVE EXISTING WOODY VEGETATION

PROP. 82 L.F. TEMPORARY CULVERT, 24" DIA. S = 0.57% I.E. = 970.00 (S) I.E. = 969.50 (N)

PROP. 87 L.F. 24" RCP STORM SEWER S = 0.00% I.E. = 968.02 (E) I.E. = 968.02 (W)

N

0 25' 50' 100'

PHASE 1

IOWA ONE CALL 811

PROGRESS SET
Aug 22, 2024
NOT FOR CONSTRUCTION

hgm ASSOCIATES INC.
ENGINEERING ARCHITECTURE SURVEYING
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drawn			
PJG			
designed			
PJG			
approved			
AUG. 2024			
date	revision		date

project: EAST MANAWA SUBDIVISION OVERLOT GRADING PLAN
PHASE 1 LAYOUT

client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet: GRADING PLAN - PHASE 1

project no. 150624

sheet D.01

FILENAME: S:\Blue_Team\Projects\150624 East Manawa Development - Overlot Grading\Engineering\Dwgs\Design\150023 OVERLOT GRADING - PLAN REVISED.dwg
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REFER TO REMOVAL NOTES AND GRADING NOTES ON SHEET A.05

PHASE 1 CONSTRUCTION LIMITS

TEMPORARY 3:1 SLOPE DURING PHASE 1 COMPLETION

PROPOSED TEMPORARY SWALE

PHASE 1 CONSTRUCTION LIMITS

PROPOSED TEMPORARY SWALE

PROP. OUTLET/GATE STRUCTURE I.E. 24" = 967.00 (E)

PROP. 82 L.F. TEMPORARY CULVERT, 24" DIA. S = 0.57% I.E. = 970.00 (S) I.E. = 969.50 (N)

PROP. 34 L.F. 24" RCP STORM SEWER S = 0.12%

E. MANAWA DRIVE

N

0 20' 40' 80'

PHASE 1 - OUTLOT C

IOWA 811 ONE CALL

PROGRESS SET
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JNS	PJG	PJG	AUG. 2024		
drawn	designed	approved	date	revision	date

project: EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN
PHASE 1 LAYOUT

client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet: GRADING PLAN - PHASE 1 OUTLOT C

project no. 150624

sheet D.02

FILENAME: S:\Blue_Team\Projects\150624 East Manawa Development - Overlot Grading\Engineering\Dwgs\Design\150023 OVERLOT GRADING - PLAN REVISED.dwg
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PHASE 1
CONSTRUCTION LIMITS

PHASE 1
CONSTRUCTION LIMITS

PROP. OUTLET/GATE
STRUCTURE
I.E. 24" = 967.00 (NE)

PROP. 41 L.F.
24" RCP STORM SEWER
S = 0.10%

PROPOSED
TEMPORARY SWALE

PROP. OUTLET/GATE
STRUCTURE
I.E. 24" = 967.00 (E)

PROP. 34 L.F.
24" RCP STORM SEWER
S = 0.12%

PHASE 1
CONSTRUCTION LIMITS

E. MANAWA DRIVE

REFER TO REMOVAL NOTES AND
GRADING NOTES ON SHEET A.05

N

0 30' 60' 120'

PHASE 1 - OUTLOT D

IOWA 811 ONE CALL

PROGRESS SET
Aug 22, 2024
NOT FOR
CONSTRUCTION

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PJG	designed	
PJG	approved	
AUG, 2024	date	revision date

EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN

project PHASE 1 LAYOUT

client CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet GRADING PLAN - PHASE 1 OUTLOT D

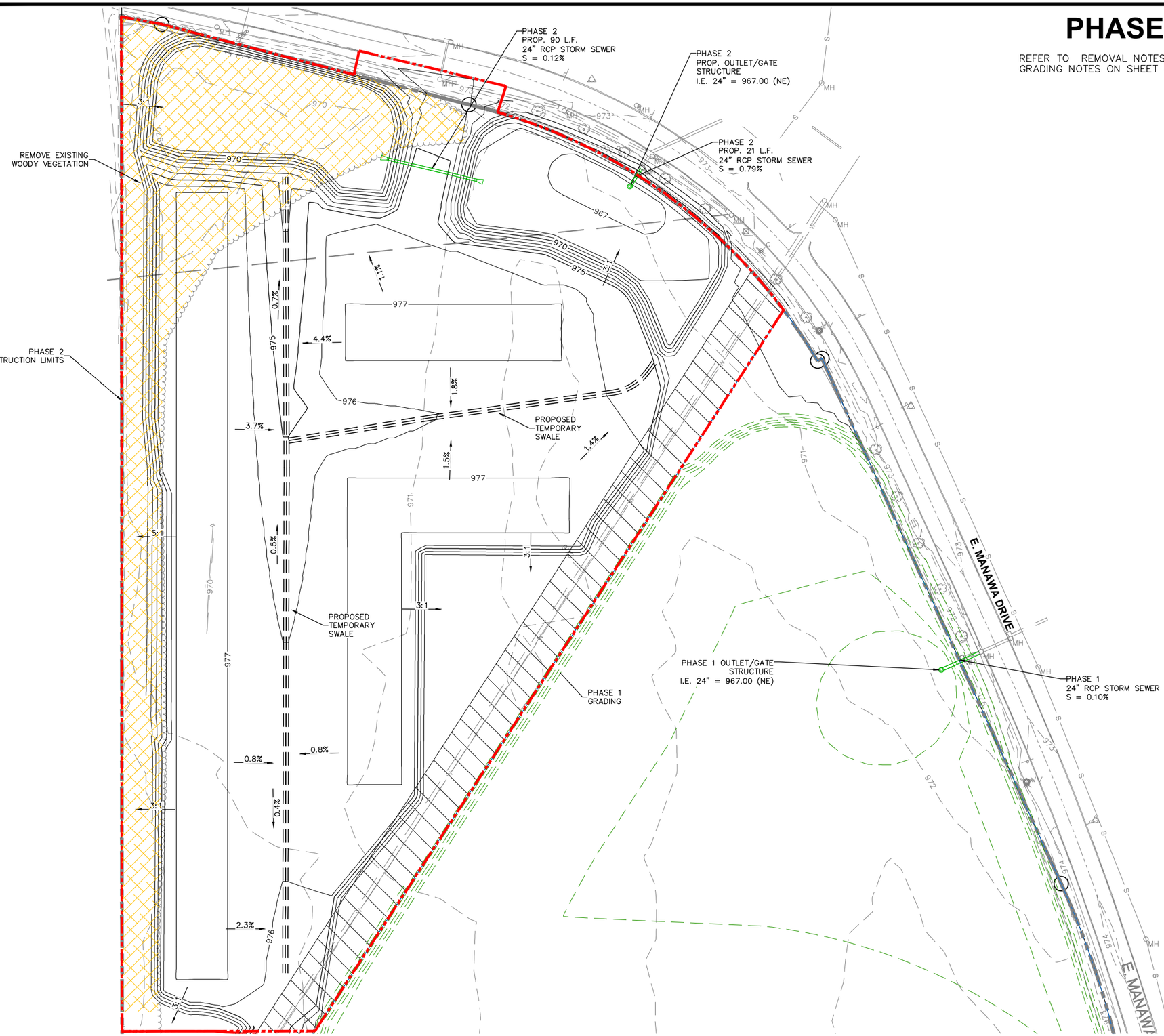
project no.
150624

sheet
D.03

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PHASE 2

REFER TO REMOVAL NOTES AND GRADING NOTES ON SHEET A.05



N

0 25' 50' 100'

IOWA ONE CALL 811

PROGRESS SET
Aug 22, 2024
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drawn			
PJG			
designed			
PJG			
approved			
AUG, 2024			
date	revision		date

project: EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN
PHASE I LAYOUT

client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet: GRADING PLAN - PHASE 2

project no.
150624

sheet
D.04

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COMANCHE ST

MOHAWK ST

PROPOSED TEMPORARY SWALE

REMOVE EXISTING WOODY VEGETATION

PHASE 3 CONSTRUCTION LIMITS

BERM

PROPOSED TEMPORARY SWALE

CONTRIBUTING AREA = 10.9 ACRE
VOLUME (TOTAL) = 0.91 ACRE-FT BELOW WEIR CREST ELEVATION
BOTTOM OF BASIN = 972.0
BERM CREST ELEVATION = 976.0
RECTANGULAR WEIR CREST ELEVATION = 974.0
RECTANGULAR WEIR LENGTH = 12 FT
Qp2 = 28.1 CFS
Qp10 = 44.7 CFS

TEMPORARY SEDIMENT BASIN "A"

TEMPORARY MUSCLE WALL WEIR OUTFALL. SEE DETAIL SHEET B.03

PROPOSED TEMPORARY SWALE

CONTRIBUTING AREA = 2.9 ACRE
VOLUME TOTAL = 0.24 ACRE-FT, BELOW WEIR CREST ELEVATION
BOTTOM OF BASIN = 971.0
BERM CREST ELEVATION = 975.0
RECTANGULAR WEIR CREST ELEVATION = 973.0
RECTANGULAR WEIR LENGTH = 12 FT
Qp2 = 7.5 CFS (RATIONAL METHOD)
Qp10 = 11.9 CFS (RATIONAL METHOD)

TEMPORARY SEDIMENT BASIN "B"

TEMPORARY MUSCLE WALL WEIR OUTFALL. SEE DETAIL SHEET B.03

TEMPORARY MUSCLE WALL CHANNEL EXTENDS 36' FROM WEIR

PROP. 71 L.F. 12" STORM SEWER
S = 2.87%
I.E.=973.90 (W)
I.E.=971.51 (E)

PROPOSED TEMPORARY SWALE

TEMPORARY 4-FT MUSCLE WALL CHANNEL. SEE DETAIL SHEET B.03
LF ≈ 200 FT

TEMPORARY MUSCLE WALL WEIR OUTFALL. SEE DETAIL SHEET B.03

TEMPORARY MUSCLE WALL CHANNEL EXTENDS 36' FROM WEIR

PROP. 163 L.F. 12" STORM SEWER
S = 0.78%
I.E.=972.85 (W)
I.E.=971.51 (E)

TEMPORARY SEDIMENT BASIN "C"

CONTRIBUTING AREA = 6.8 ACRE
VOLUME TOTAL = 0.56 ACRE-FT, BELOW WEIR CREST ELEVATION
BOTTOM OF BASIN = 971.0
BERM CREST ELEVATION = 975.0
RECTANGULAR WEIR CREST ELEVATION = 973.0
RECTANGULAR WEIR LENGTH = 12 FT
Qp2 = 17.5 CFS (RATIONAL METHOD)
Qp10 = 27.9 CFS (RATIONAL METHOD)

PROP. 34 L.F. TEMPORARY 18" RCP STORM SEWER
S = 0.60%
CONNECT TO MOHAWK ST STORM SEWER

N

0 30' 60' 120'

PHASE 3

IOWA 811 ONE CALL

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AUG. 2024	date		
date	revision	date	

EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN

project: PHASE 1 LAYOUT

client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet: GRADING PLAN - PHASE 3

project no. 150624

sheet D.05

BERM

977

PHASE 4
CONSTRUCTION LIMITS

BERM

REMOVE EXISTING
WOODY VEGETATION

976

PHASE 1
GRADING

3:1

969

970

3:1

3:1

1.0%

1.0%

PROPOSED
TEMPORARY
SWALE

PAD ELEVATION - 976.5

PAD ELEVATION - 976.5

CONTRIBUTING AREA = 13.9 ACRE
VOLUME TOTAL = 1.15 ACRE-FT, BELOW WEIR
CREST ELEVATION
BOTTOM OF BASIN = 972.0
BERM CREST ELEVATION = 976.0
RECTANGULAR WEIR CREST ELEVATION = 974.0
RECTANGULAR WEIR LENGTH = 12 FT
Qp2 = 36 CFS (RATIONAL METHOD)
Qp10 = 57 CFS (RATIONAL METHOD)

1.3%

976

3:1

TEMPORARY
SEDIMENT
BASIN "E"

TEMPORARY MUSCLE WALL
WEIR OUTFALL.
SEE DETAIL SHEET B.03

973

0.2%

972

E. MANAWA DRIVE

1.6%

BERM

977

0.3%

976

CONTRIBUTING AREA = 4.8 ACRE
VOLUME TOTAL = 0.40 ACRE-FT, BELOW WEIR
CREST ELEVATION
BOTTOM OF BASIN = 972.0
BERM CREST ELEVATION = 976.0
RECTANGULAR WEIR CREST ELEVATION = 974.0
RECTANGULAR WEIR LENGTH = 12 FT
Qp2 = 12.4 CFS (RATIONAL METHOD)
Qp10 = 19.7 CFS (RATIONAL METHOD)

BERM

977

PROPOSED
TEMPORARY
SWALE

1.8%

1.8%

976

975

0.7%

973

TEMPORARY
SEDIMENT
BASIN "D"

1.0%

1.0%

TEMPORARY MUSCLE WALL
WEIR OUTFALL.
SEE DETAIL SHEET B.03

N

0 25' 50' 100'

PHASE 4

IOWA 811 ONE CALL

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Aug 22, 2024
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drawn			
PJG			
designed			
PJG			
approved			
AUG. 2024			
date		revision	date

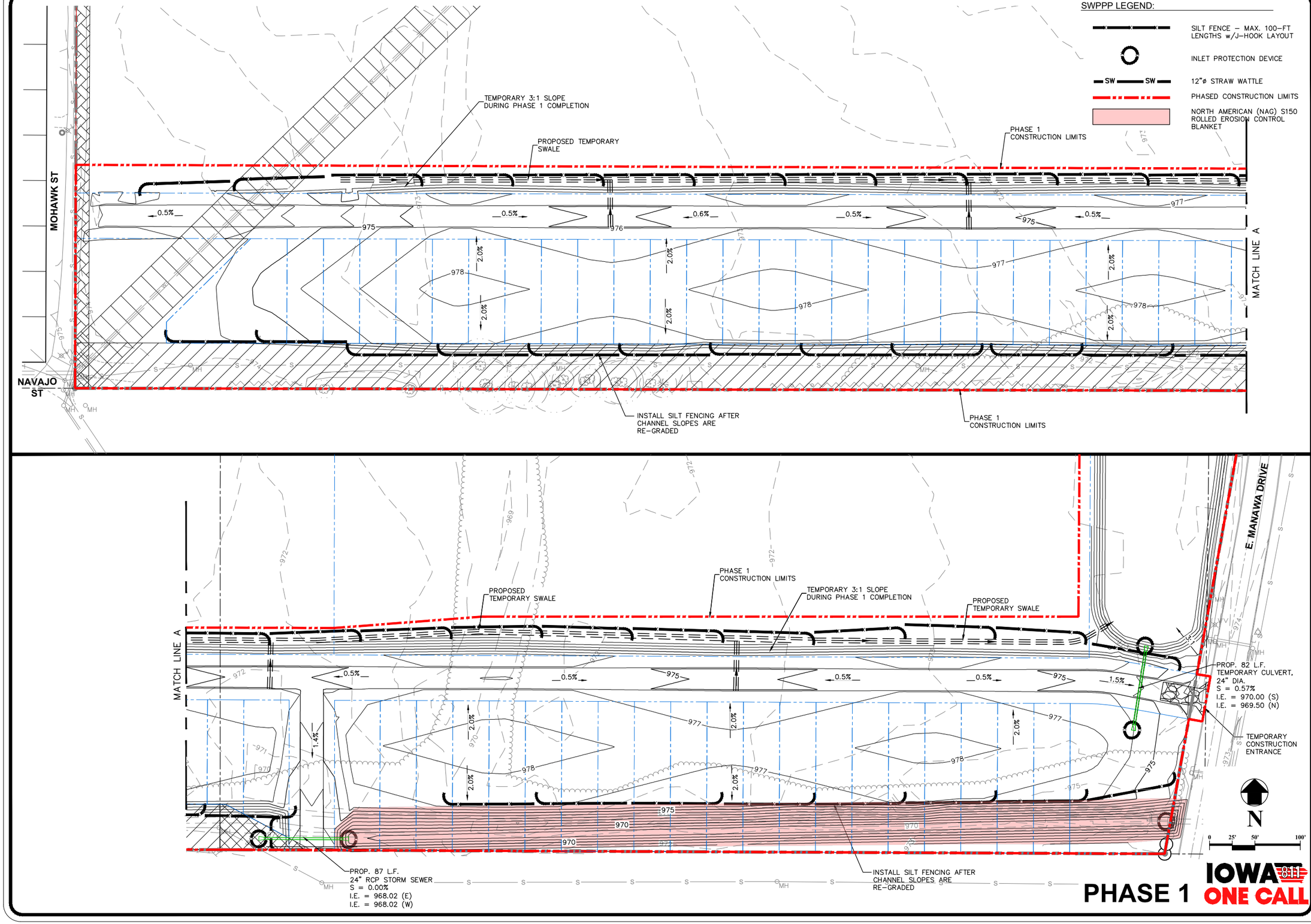
project: EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN
PHASE 1 LAYOUT

client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet: GRADING PLAN - PHASE 4

project no.
150624

sheet
D.06



PROGRESS SET
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JNS	PJG	PJG	AUG. 2024
drown	designed	approved	date

revision date

project: EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN
PHASE 1 LAYOUT

client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet: STORMWATER POLLUTION PREVENTION PLAN

project no. 150624

sheet E.01

IOWA 811 ONE CALL

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PHASE 1
CONSTRUCTION LIMITS

TEMPORARY 3:1 SLOPE
DURING PHASE 1 COMPLETION

PROPOSED
TEMPORARY SWALE

PHASE 1
CONSTRUCTION LIMITS

PROPOSED
TEMPORARY SWALE

PROP. OUTLET/GATE
STRUCTURE
I.E. 24" = 967.00 (E)

PROP. 82 L.F.
TEMPORARY CULVERT,
24" DIA.
S = 0.57%
I.E. = 970.00 (S)
I.E. = 969.50 (N)

TEMPORARY
CONSTRUCTION
ENTRANCE

PROP. 34 L.F.
24" RCP STORM SEWER
S = 0.12%

E. MANAWA DRIVE

SWPPP LEGEND:

SILT FENCE – MAX. 100–FT
LENGTHS w/J–HOOK LAYOUT

INLET PROTECTION DEVICE

12"ø STRAW WATTLE

PHASED CONSTRUCTION LIMITS

N

0 20' 40' 80'

PHASE 1 - OUTLOT C

IOWA 811 ONE CALL

PROGRESS SET
Aug 22, 2024
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JNS			
drawn			
PJG			
designed			
PJG			
approved			
AUG. 2024			
date		revision	date

project: EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN
PHASE 1 LAYOUT

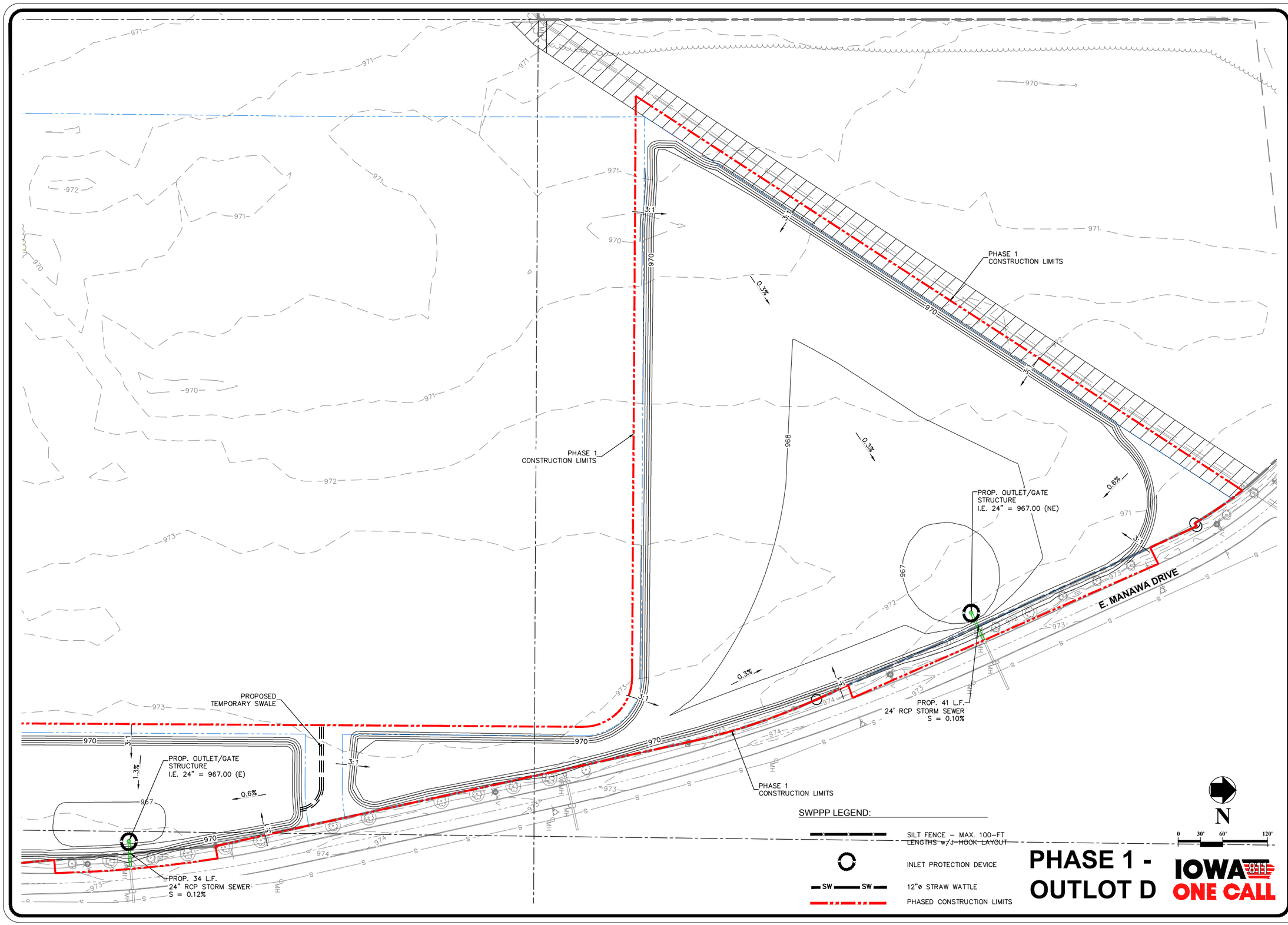
client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet: STORMWATER POLLUTION PREVENTION PLAN

project no.
150624

sheet
E.02

FILENAME: S:\Blue_Team\Projects\150624 East Manawa Development – Overlot Grading\Engineering\Dwgs\Design\150023 OVERLOT GRADING – PLAN REVISED.dwg
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drawn	designed	approved	date

revision date

project: EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN
PHASE 1 LAYOUT

client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet: STORMWATER POLLUTION PREVENTION PLAN

project no.
150624

sheet
E.03

PHASE 1 - OUTLOT D

IOWA 811 ONE CALL

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PHASE 2

SWPPP LEGEND:

- SILT FENCE – MAX. 100-FT LENGTHS w/J-HOOK LAYOUT
- INLET PROTECTION DEVICE
- SW — SW — 12"ø STRAW WATTLE
- PHASED CONSTRUCTION LIMITS

N

0 25' 50' 100'

IOWA ONE CALL 811

TEMPORARY CONSTRUCTION ENTRANCE

PHASE 2 PROP. 90 L.F. 24" RCP STORM SEWER S = 0.12%

PHASE 2 PROP. OUTLET/GATE STRUCTURE I.E. 24" = 967.00 (NE)

PHASE 2 PROP. 21 L.F. 24" RCP STORM SEWER S = 0.79%

REMOVE EXISTING WOODY VEGETATION

PHASE 2 CONSTRUCTION LIMITS

PROPOSED TEMPORARY SWALE

PHASE 1 GRADING

PHASE 1 OUTLET/GATE STRUCTURE I.E. 24" = 967.00 (NE)

PHASE 1 24" RCP STORM SEWER S = 0.10%

E. MANAWA DRIVE

PROGRESS SET
Aug 22, 2024
NOT FOR CONSTRUCTION

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drawn			
PJG			
designed			
PJG			
approved			
AUG, 2024			
date	revision		date

EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN

project: PHASE I LAYOUT

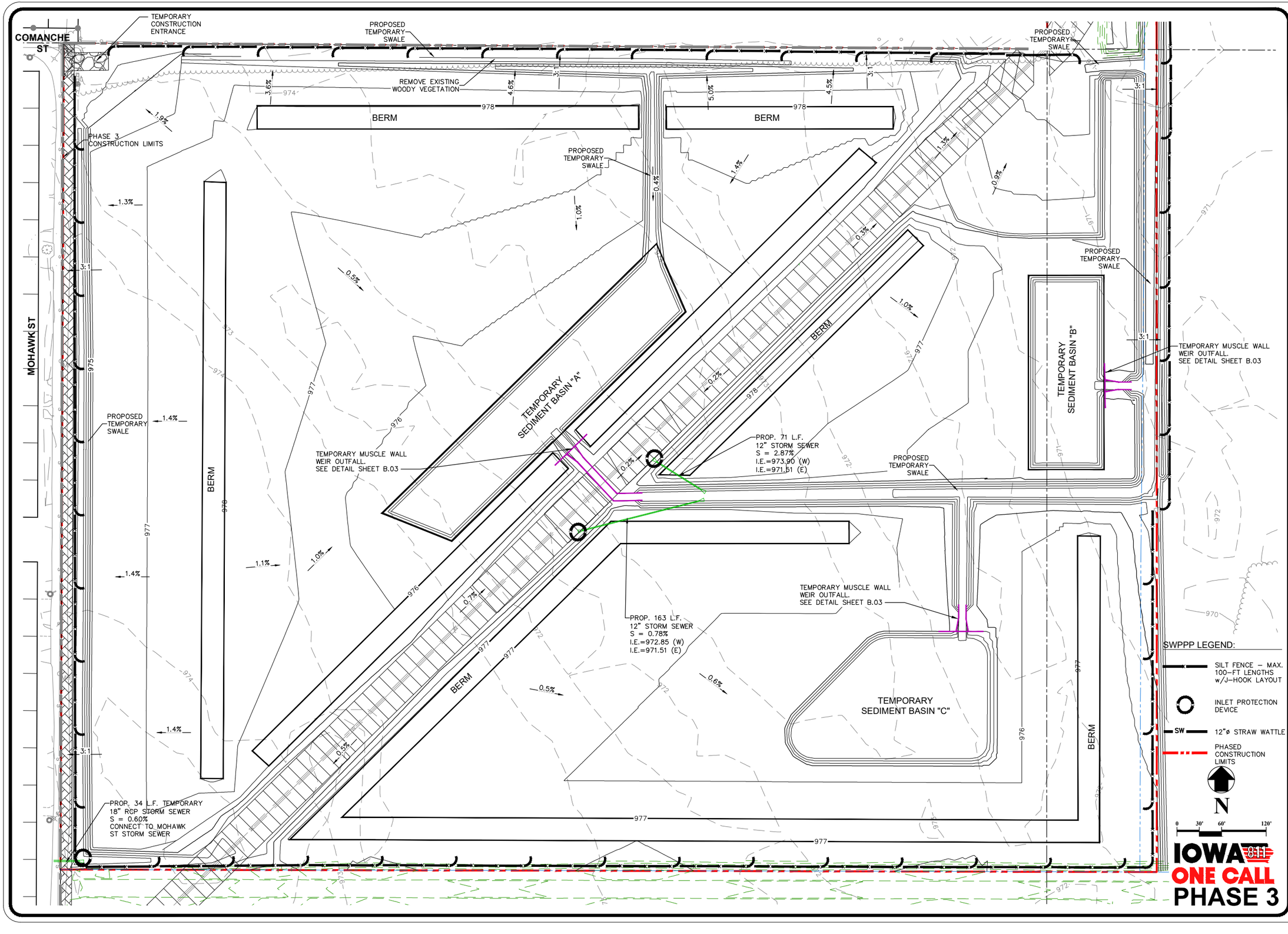
client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet: STORMWATER POLLUTION PREVENTION PLAN

project no. 150624

sheet E.04

FILENAME: S:\Blue_Team\Projects\150624 East Manawa Development – Overlot Grading\Engineering\Dwgs\Design\150023 OVERLOT GRADING – PLAN REVISED.dwg
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drawn		
PJG		
designed		
PJG		
approved		
AUG. 2024		
date	revision	date

project
EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN
PHASE 1 LAYOUT

client
CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet
STORMWATER POLLUTION PREVENTION PLAN

project no.
150624

sheet
E.05

FILENAME: S:\Blue_Team\Projects\150624 East Manawa Development – Overlot Grading\Engineering\Dwgs\Design\150023 OVERLOT GRADING – PLAN REVISED.dwg
DRAWN BY: jns, SAVE DATE: Aug 22, 2024 2:56 PM DATE PLOTTED: 8/23/2024 8:49 AM, PLOT SCALE: 1:2

BERM

977

PHASE 4
CONSTRUCTION LIMITS

BERM

PROPOSED
TEMPORARY
SWALE

PHASE 1
GRADING

976

3:1

969

970

971

972

973

975

977

0.3%

1.8%

1.0%

1.3%

0.7%

0.2%

1.6%

PROPOSED
TEMPORARY
SWALE

PAD ELEVATION - 976.5

PAD ELEVATION - 976.5

BERM

TEMPORARY
SEDIMENT
BASIN "E"

TEMPORARY MUSCLE WALL
WEIR OUTFALL.
SEE DETAIL SHEET B.03

TEMPORARY
SEDIMENT
BASIN "D"

TEMPORARY MUSCLE WALL
WEIR OUTFALL.
SEE DETAIL SHEET B.03

TEMPORARY
CONSTRUCTION
ENTRANCE

E. MANAWA DRIVE

SWPPP LEGEND:

SILT FENCE – MAX. 100–FT
LENGTHS w/J–HOOK LAYOUT

INLET PROTECTION DEVICE

12"ø STRAW WATTLE

PHASED CONSTRUCTION LIMITS

N

0 25' 50' 100'

IOWA 811 ONE CALL

PHASE 4

PROGRESS SET
Aug 22, 2024
NOT FOR
CONSTRUCTION

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JNS	drawn	
PJG	designed	
PJG	approved	
AUG. 2024	date	revision date

EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN

project: PHASE 1 LAYOUT

client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet: STORMWATER POLLUTION PREVENTION PLAN

project no.
150624

sheet
E.06

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SITE DESCRIPTION:

PROJECT NAME:	EAST MANAWA SUBDIVISION OVERLOT GRADING
OWNER NAME:	CITY OF COUNCIL BLUFFS
CONSTRUCTION ACTIVITY:	EARTHWORK AND STORM WATER INFRASTRUCTURE
DISTURBED AREA:	THIS SWPPP COVERS APPROXIMATELY 94.7 ACRES WITH AN ESTIMATED 94.7 ACRES BEING DISTURBED.
RUNOFF COEFFICIENT:	THE ESTIMATED COMPOSITE RUNOFF COEFFICIENT FOR THE DEVELOPED SITE IS CN = 91 TO 92.
EXISTING SOIL CONDITIONS:	EXISTING SOILS ON SITE CONSIST PRIMARILY OF COHESIVE AND GRANULAR ALLUVIAL SOIL DEPOSITS CLASSIFIED AS CL, SC, AND SP SOILS.
SITE MAP:	REFER TO E.01–E.06 FOR LOCATIONS OF EROSION CONTROL DEVICES.
RECEIVING WATERS:	RUNOFF DISCHARGED TO MOSQUITO CREEK

UPDATES AND CHANGES TO POLLUTION PREVENTION PLAN:

CONTRACTOR SHALL AMEND THE POLLUTION PREVENTION PLAN, EITHER ON THE LATEST INSPECTION REPORT OR IN THE POLLUTION PREVENTION PLAN SET, IN COMPLIANCE WITH NPDES GENERAL PERMIT NO. 2, "WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE, WHICH HAS A SIGNIFICANT EFFECT ON THE POTENTIAL FOR THE DISCHARGE OF POLLUTANTS TO THE WATERS OF THE UNITED STATES AND WHICH HAS NOT BEEN ADDRESSED IN THE PLAN OR IF THE STORM WATER POLLUTION PREVENTION PLAN PROVES TO BE INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANTS FROM SOURCES IDENTIFIED... ...OR IN OTHERWISE ACHIEVING THE GENERAL OBJECTIVES OF CONTROLLING POLLUTANTS IN STORM WATER DISCHARGE ASSOCIATED WITH INDUSTRIAL ACTIVITY FOR CONSTRUCTION ACTIVITIES. IN ADDITION, THE POLLUTION PREVENTION PLAN SHALL BE UPDATED TO: INCLUDE CONTRACTORS IDENTIFIED AFTER THE SUBMITTAL OF THE NOTICE OF INTENT AS CO–PERMITTEES." A COPY OF THESE CHANGES SHALL BE PROVIDED TO THE INSPECTOR AT THE NEXT WEEKLY OR PRECIPITATION INSPECTION FOR INCLUSION IN THE UPDATED INSPECTION MAP, THE ORIGINAL SHALL BE MAINTAINED ON SITE. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO IDENTIFY ALL POTENTIAL SOURCES OF POLLUTION, EXCLUDING SEDIMENT AND EROSION SOURCES, AND IMPLEMENTING PROCEDURES TO PREVENT POLLUTION.

TEMPORARY AND PERMANENT SEEDING MIXTURE:

TEMPORARY SEEDING

CLASS R – RURAL

SHALL BE UNITED SEEDS SUBDIVISION MIXTURE OR PRE–APPROVED EQUAL IN PROPORTIONS AS FOLLOWS:

LINN PERENNIAL RYEGRASS	30% OF MIXTURE
SEED OATS	MINIMUM 30% OF MIXTURE
TALL FESCUE	MINIMUM 40% OF MIXTURE

APPLICATION RATE 100 LBS/ACRE (DRILL SEEDING)
OVER SEEDING RATE 50 LBS/ACRE
SEEDING DATES: MARCH 1 – JUNE 30,
AUGUST 10 – OCTOBER 15

EROSION CONTROL MAT SHALL BE INSTALLED ON ALL SLOPES 5:1 OR STEEPER. MAT SHALL BE NORTH AMERICAN GREEN EROSION CONTROL MAT S150.

PERMANENT SEEDING

CLASS F – FLOODPLAIN (DETENTION BASIN)

SHALL BE UNITED SEEDS FLOODPLAIN MIX OR EQUAL AS FOLLOWS:

WESTERN WHEATGRASS	MINIMUM 28% OF MIXTURE
VIRGINIA WILD RYE	MINIMUM 24% OF MIXTURE
BIG BLUESTEM	MINIMUM 14% OF MIXTURE
SWITCH GRASS	MINIMUM 8% OF MIXTURE
CANADA WILD RYE	MINIMUM 7% OF MIXTURE
RED TOP	MINIMUM 5% OF MIXTURE
FOX SEDGE	MINIMUM 4% OF MIXTURE

APPLICATION RATE 2 LB PER 1,000 SQ–FT, 87 LBS/ACRE
OVER SEEDING RATE 1 LB PER 1,000 SQ–FT, 44 LBS/ACRE

SEEDING DATES: MARCH 1 – JUNE 30,
AUGUST 10 – SEPTEMBER 30 OR AS DIRECTED BY THE IOWA DOT ROADSIDE DEVELOPMENT SECTION

POLLUTION PREVENTION PLAN - GENERAL NOTES

All contractors/subcontractors shall conduct their operations in a manner that minimizes erosion and prevents sediments from leaving the highway right–of–way. The prime contractor shall be responsible for compliance and implementation of the Pollution Prevention Plan (PPP) for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in the PPP.

1. SITE DESCRIPTION:
This Pollution Prevention Plan (PPP) is for the construction of East Manawa Overlot Grading. Work includes, but not limited to earthwork and utility installation.

This PPP covers approximately 94.7 acres with an estimated 94.7 acres being disturbed.

This PPP is located in an area of two soil associations of silty clay and silty clay loam. The estimated average NRCS runoff curve number for this PPP after completion will be CN = 91 to 92.

Refer to the project plans for locations of typical slopes, ditch grades, and major structural and non–structural controls. A copy of this plan will be on file at the project engineer's office. Runoff from this work will flow into Mosquito Creek.

POTENTIAL SOURCE OF POLLUTION:
Site sources of pollution generated as a result of this work relate to silts and sediment, which may be transported as a result of a storm event. However, this PPP provides conveyance for other (non–project related) operations. These other operations have storm water runoff, the regulation that is beyond the control of this PPP. Potentially this runoff can contain various pollutants related to site–specific land uses. Examples are:

Rural Agricultural Activities:
Runoff from agricultural land use can potentially contain chemicals including herbicides, pesticides, fungicides and fertilizers.

Commercial and Industrial Activities:
Runoff from commercial and industrial land use may contain constituents associated with the specific operation. Such operations are subject to potential leaks and spills, which could be commingled with run–off from the facility. Pollutants associated with commercial and industrial activities are not readily available since they are typically proprietary.

2. CONTROLS
At locations where runoff can move offsite, silt fence shall be placed along the perimeter of the areas to be disturbed prior to beginning grading, excavation or clearing and grubbing operations. Vegetation in areas not needed for construction shall be preserved. As areas reach their final grade, additional silt fences, silt basins, intercepting ditches, sod flumes, letdowns, bridge end drains, and earth dikes shall be installed as specified in the plans and/or as required by the project engineer. This will include using silt fence as ditch checks and to protect intakes. Temporary stabilizing seeding shall be completed as the disturbed areas are constructed. If construction activity is not planned to occur in a disturbed area for at least 21 days, the area shall be stabilized by temporary seeding or mulching within 14 days. Other stabilizing methods shall be used outside the seeding time period.

As the work progresses, additional erosion control items may be required as determined by the engineer after field investigation. These may be items such as silt fence, ditch checks and other appropriate measures shall be installed by the contractor, as directed by engineer. The contractor will complete the construction with the establishment of permanent perennial vegetation of all disturbed areas.

3. OTHER CONTROLS
Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.

APPROVED STATE OR LOCAL PLANS:
During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

4. MAINTENANCE
The contractor is required to maintain all temporary erosion control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. Cleaning of silt control devices shall begin when the features have lost 50% of their capacity. The maintenance of all temporary and permanent erosion control measures shall be incidental to the "Erosion and Sediment Control" pay item.

5. INSPECTIONS
Inspections shall be made jointly by the contractor and the contracting authority every seven calendar days. The contractor shall immediately begin corrective action on all deficiencies found. The findings of this inspection shall be recorded in the project diary. This PPP may be revised based on the findings of the inspection. The contractor shall implement all revisions. All corrective actions shall be completed within 3 calendar days of the inspection.

6. NON–STORM DISCHARGES
This includes subsurface drains (i.e. longitudinal and standard subdrains), slope drains and bridge end drains. The velocity of the discharge from these features may be controlled by the use of patio blocks, Class A stone or erosion stone.

7. TOPSOIL
Topsoil shall be preserved. The requirement to preserve topsoil shall be met only when the depth of topsoil after soil disturbing activities have been completed and final stabilization achieved for the permitted activity is equal to, or greater than, 4.0 inches, including soil contained in sod, on all areas of the site where the surface of the ground disturbed for the permitted construction activities is exposed and not covered by concrete, asphalt, gravel or other such material and where 4.0 inches or more of topsoil existed prior to the commencement of soil disturbing activities.

On areas where less than 4.0 inches of topsoil existed prior to the commencement of soil disturbing activities that are permitted under the current permit authorization for the site, the minimum depth of topsoil after soil disturbing activities have been completed and final stabilization achieved for the permitted activity shall be equal to, or greater than, the depth of topsoil that existed prior to the commencement of soil disturbing activities that are permitted under the current permit authorization for the site.

The final topsoil depth is to be measured after the soil has been compacted in a fashion generally considered adequate for an established lawn and so that the expected settling that will occur after measurement will be minimal and shall include the soil contained in any sod that has been placed on the site. The type of topsoil at the site after soil disturbing activities have been completed and final stabilization achieved for the permitted activity shall be similar to that which exists or existed in the general area of the site.

8. EROSION MAT
Slope protection shall be North American Green Erosion Control Mat S150 or approved equal.

EROSION CONTROL MEASURE INSTALLATION & MAINTENANCE SCHEDULE:

STABILIZED CONSTRUCTION ENTRANCE:
CONTRACTOR SHALL INSTALL PRIOR TO SITE DISTURBANCE, AND MAINTAIN THROUGHOUT CONSTRUCTION. EACH STABILIZED CONSTRUCTION DRIVEWAY SHALL BE AT LEAST 20' WIDE, 50' LONG WITH A MINIMUM 6" CRUSHED ROCK THICKNESS. THIS ROCK DRIVE SHALL BE CONSTRUCTED SO THAT TOP OF THE DRIVE IS A MINIMUM OF 1.0' ABOVE EXISTING GRADE.

SILT FENCE/ FILTER TUBE:
CONTRACTOR SHALL INSTALL AT THE PERIMETER OF GRADING SITE PRIOR TO SITE DISTURBANCE, AND MAINTAIN THROUGHOUT CONSTRUCTION. 12" DIAMETER FILTER TUBE MAY BE SUBSTITUTED FOR SILT FENCE AT INLET PROTECTION INSTALLATION AREAS.

TEMPORARY SEEDING:
STABILIZATION OF DISTURBED AREAS MUST, AT A MINIMUM, BE INITIATED IMMEDIATELY WHENEVER CLEARING, GRADING, EXCAVATING OR OTHER EARTH DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. SEE MAINTENANCE SCHEDULE NOTE 4.

MAINTENANCE SCHEDULE:
THE FOLLOWING MAINTENANCE SCHEDULE HAS BEEN PROVIDED. THE OPERATOR/CONTRACTOR SHALL PERFORM ALL NEEDED MAINTENANCE. FURTHERMORE, ALL EROSION CONTROL FEATURES REQUIRING MAINTENANCE MAY NOT BE LISTED BELOW. THE OPERATOR/CONTRACTOR SHALL PERFORM THEIR RESPECTIVE DUTIES ON ALL MEASURES THAT ARE NOT LISTED BELOW AS WELL. ALL EROSION CONTROL FEATURES SHOULD BE INSPECTED AT LEAST ONCE EVERY SEVEN (7) DAYS AS REQUIRED BY THE CURRENT NPDES PERMIT FOR THE PROJECT. THE FOLLOWING MAINTENANCE ITEMS LISTED BELOW SHALL BE INCIDENTAL TO THE "EROSION AND SEDIMENT CONTROL" PAY ITEM.

1. STOCKPILES:
STOCKPILED SOIL SHALL BE LOCATED SO THAT RUNOFF FROM THE STOCKPILE IS DIRECTED TOWARDS THE BMP'S. IF STRUCTURAL BMP'S CANNOT EFFECTIVELY CONTROL RUNOFF FROM THE STOCKPILE, THE STOCKPILE SHALL BE RELOCATED TO A BETTER SUITED LOCATION.

2. SILT FENCE / FILTER TUBES:
CONTRACTOR SHALL REMOVE ALL ACCUMULATED MATERIAL ONCE ITS DEPTH REACHES APPROXIMATELY ONE HALF THE HEIGHT OF THE SILT FENCE. IF SITE CONDITIONS PROHIBIT REMOVAL OF ACCUMULATED MATERIAL, OR IF THE SILT FENCE HAS FAILED OR BEEN UNDERMINED, NEW SILT FENCE SHALL BE INSTALLED PARALLEL TO THE EXISTING SILT FENCE, OR THE EXISTING SILT FENCE SHALL BE REMOVED AND NEW SILT FENCE INSTALLED IN THE SAME APPROXIMATE LOCATION. ALL REMOVED MATERIAL SHALL BE SPREAD OUT ON SITE IN SUCH A MANOR TO MINIMIZE EROSION. IF MATERIAL IS TOO WET OR DRY TO SPREAD ON SITE WITHOUT CAUSING EROSION, THE CONTRACTOR SHALL DISPOSE OF THE MATERIAL OFF SITE.

3. CONSTRUCTION ENTRANCE:
THE ENTRANCE SHALL BE IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR THE WASHING AND REWORKING OF EXISTING STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT.

ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY. THE USE OF WATER TRUCKS TO REMOVE MATERIALS DROPPED, WASHED OR TRACKED ONTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.

4. SEEDING:
SEEDING SHALL BE INSPECTED WEEKLY TO CHECK FOR ESTABLISHMENT, BARE SPOTS AND EROSION.

CONTRACTOR SHALL RESEED AREAS WHERE THIS OCCURS. CONTRACTOR SHALL ALSO WATER SEEDED AREAS AS DEEMED NECESSARY TO PROMOTE GRASS ESTABLISHMENT.

5. DUST CONTROL
DUST CONTROL SHALL BE PERFORMED, AS NEEDED AND AS DIRECTED BY THE OWNER OR SEDIMENT AND EROSION CONTROL INSPECTOR, TO PREVENT AIRBORNE LOSS OF SOIL FROM THE PROJECT SITE AND NUISANCE TO THE SURROUNDING AREA. STREET SWEEPING SHALL BE INCIDENTAL TO THE "EROSION AND SEDIMENT CONTROL" PAY ITEM.

6. STREET SWEEPING
CONTRACTOR SHALL PERFORM STREET SWEEPING OF PAVED ROADS TO REMOVE TRACKED, SPILLED, OR WASHED SOILS IN THE IMMEDIATE VICINITY OF THE PROJECT CONSTRUCTION ENTRANCES AS NEEDED AS DIRECTED BY THE OWNER OR SEDIMENT AND EROSION CONTROL INSPECTOR.

PROGRESS SET
Aug 22, 2024
NOT FOR CONSTRUCTION

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JNS drawn
PJG designed
PJG approved
AUG, 2024 date
date revision

project: EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN
PHASE 1 LAYOUT
client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503
sheet: POLLUTION PREVENTION PLAN NOTES

project no. 150624
sheet E.07

FILENAME: S:\Blue_Team\Projects\150624 East Manawa Development – Overlot Grading\Engineering\Dwgs\Design\150023 OVERLOT GRADING – PLAN REVISED.dwg
DRAWN BY: JNS, SAVE DATE: Aug 22, 2024 12:39 PM DATE PLOTTED: 8/22/2024 2:19 PM, PLOT SCALE: 1:2

IDNR - STORM WATER POLLUTION PREVENTION PLAN

An IDNR Storm Water Discharge Permit will be issued for the grading work to be completed as part of this project. The contractor and all the site subcontractors shall be required to sign and return the Pollution Prevention Plan Certification. The Storm Water Pollution Prevention Plan (SWPPP) requirements are included detailed in the specifications.

The contractor shall be responsible for completing the weekly storm water reports and all other activities as outlined in the SWPPP. The reports are to be signed by the contractor and kept on site for the duration of the project (until all temporary seeding has become established).

The contractor shall provide a copy of the storm water reports to the owner and engineer on a weekly basis.

CONSTRUCTION ACTIVITIES AND SCHEDULING

ACTIVITY	SCHEDULE
INSTALL ALL BMPS NEEDED AND ASSOCIATED WITH THE GRADING PHASE SUCH AS STABILIZED CONSTRUCTION ENTRANCES, SILT BASINS, RISER PIPES, OUTLET PIPES SILT TRAPS, SILT FENCE, DIVERSIONS, TERRACES AND ETC.	PRIOR TO ANY STRIPPING OF EXISTING VEGETATION OR GRADING.
PROCEED WITH STRIPPING OF EXISTING VEGETATION AND GRADING IN ACCORDANCE WITH THE GRADING PLAN, WHILE DISTURBING NO MORE THAN NECESSARY.	AFTER INSTALLING ALL BMPS NEEDED AND ASSOCIATED WITH THE GRADING PHASE. FURTHERMORE, INSPECTOR APPROVAL MUST BE OBTAINED BEFORE THE START OF ANY STRIPPING OF EXISTING VEGETATIONS OR GRADING.
IMPLEMENT THE INSTALLATION OF SEEDING AND MULCHING	STABILIZATION MEASURES MUST BE INITIATED AS SOON AS POSSIBLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
PROCEED WITH REMOVAL OF BMP'S	BMP'S MAY NOT BE REMOVED UNTIL EACH IMPACTED DRAINAGE BASIN HAS BEEN FULLY DEVELOPED. FULL DEVELOPMENT SHALL MEAN INSTALLATION OF PAVEMENT, AND UTILITIES, LANDSCAPING, AND FULLY ESTABLISHED SODDING. FURTHERMORE, INSPECTOR APPROVAL MUST BE OBTAINED BEFORE THE REMOVAL OF ANY BMP'S.

IMPLEMENTATION PLAN	
CONSTRUCTION ACTIVITY	STABILIZATION
EROSION CONTROL	INSTALL SILT FENCE/FILTER TUBE
EARTHWORK/GRADING	MAINTAIN SILT FENCE/FILTER TUBE
STABILIZATION	SEEDING, MULCHING AND MAT

TIME FRAME	
ACTIVITY	DATE
EROSION CONTROL IMPLEMENTATION	FALL 2024
EARTHWORK/GRADING	FALL 2024, SPRING/SUMMER 2025
FINAL STABILIZATION	FALL 2025

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."

OWNER

SIGNATURE PRINT DATE

ADDRESS

TELEPHONE# EMAIL

SUB CONTRACTOR

CONTRACTOR–SIGNATURE CONTRACTOR–PRINT DATE

CONTRACTOR–ADDRESS

CONTRACTOR–TELEPHONE# CONTRACTOR–EMAIL

SUB CONTRACTOR

CONTRACTOR–SIGNATURE CONTRACTOR–PRINT DATE

CONTRACTOR–ADDRESS

CONTRACTOR–TELEPHONE# CONTRACTOR–EMAIL

PRIME CONTRACTOR

CONTRACTOR–SIGNATURE CONTRACTOR–PRINT DATE

CONTRACTOR–ADDRESS

CONTRACTOR–TELEPHONE# CONTRACTOR–EMAIL

IOWA NPDES GENERAL PERMIT NO. 2

Storm Water Pollution Prevention Plan
Construction/Implementation
CHECKLIST

Maintain Records of Construction Activities, including:

Dates when major grading activities occur

Dates when construction activities temporarily cease on a portion of the site

Dates when construction activities permanently cease on a portion of the site

Dates when stabilization measures are initiated on the site

Prepare Inspection Reports summarizing:

- Name of Inspector
- Qualifications of inspector
- Measures/areas inspected
- Observed conditions
- Change necessary to the storm water pollution prevention plan

Report any "Hazardous Conditions":

Notify the IDNR and sheriff's office not less than six hours after the onset of a "hazardous condition"

Modify the pollution prevention plan to include:
- the date of release
- circumstances leading to the release
- steps taken to prevent reoccurrence of the release

Modify Pollution Prevention Plan as necessary to:

Comply with minimum permit requirements when notified by the IDNR that the plan does not comply

Address a change in design, construction operation or maintenance which has an effect on the potential for discharge of pollutants

Prevent reoccurrence of a "hazardous condition"

Contractor Certification Statement

"I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site as a part of this certification. Further, by my signature, I understand that I am becoming a co–permittee, along with the owner(s) and other contractors and subcontractors signing such certifications, to the Iowa Department of Natural Resources NPDES General Permit No. 2 for "Storm Water Discharge Associated with Industrial Activity for Construction Activities" at the identified site. As a co–permittee, I understand that I, and my company, are legally required under the Clean Water Act and the Code of Iowa, to ensure compliance with the terms and conditions of the storm water pollution prevention plan developed under this NPDES permit and the terms of this NPDES permit."

This certification must include the name and title of the person providing the signature; the name, address and telephone number of the contracting firm and the date the certification is made. Subcontractors shall also certify. Signatures shall be affixed to this plan.

PROGRESS SET
Aug 22, 2024
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JNS	PJG	PJG	AUG, 2024
drawn	designed	approved	date

revision date

project: EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN
PHASE I LAYOUT

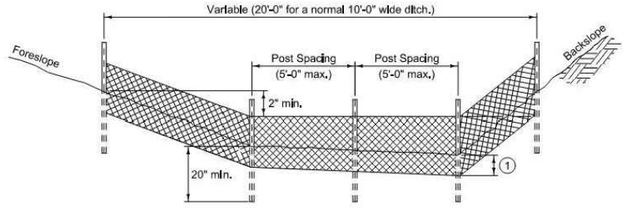
client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet: POLLUTION PREVENTION PLAN NOTES

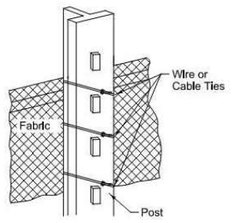
project no.
150624

sheet
E.08

FILENAME: S:\Blue_Team\Projects\150624 East Manawa Development – Overlot Grading\Engineering\Dwgs\Design\150023 OVERLOT GRADING – PLAN REVISED.dwg
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TYPICAL SILT FENCE DITCH CHECK



ATTACHMENT TO POST

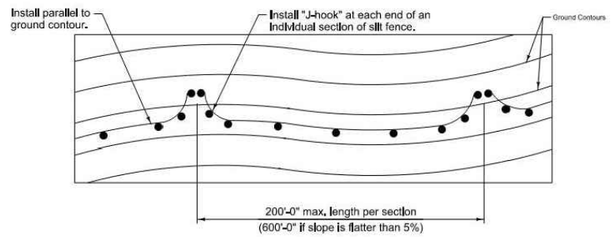
1. Insert 12 inches of fabric a minimum of 6 inches deep (fabric may be folded below the ground line).

FIGURE 9040.119 | SHEET 1 OF 2

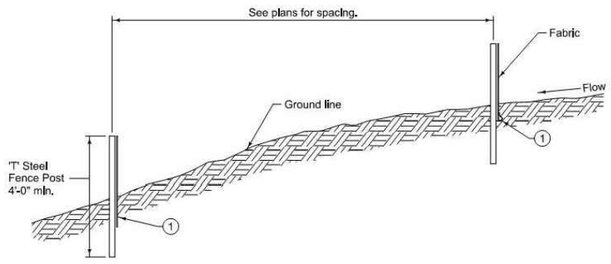
SUDAS | REVISION 2 10-21-14 | 9040.119 | SHEET 1 of 2

SUDAS Standard Specifications

SILT FENCE

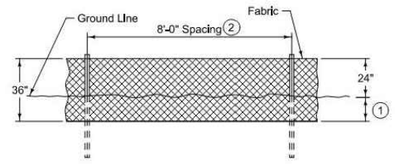


TYPICAL SILT FENCE INSTALLATION ON LONGITUDINAL SLOPES
(Plan View)



TYPICAL SILT FENCE INSTALLATION ON LONGITUDINAL SLOPES
(Profile View)

1. Insert 12 inches of fabric a minimum of 6 inches deep (fabric may be folded below the ground line).
2. Reduce post spacing to 5'-0" at water concentration areas, or as required to adequately support fence.



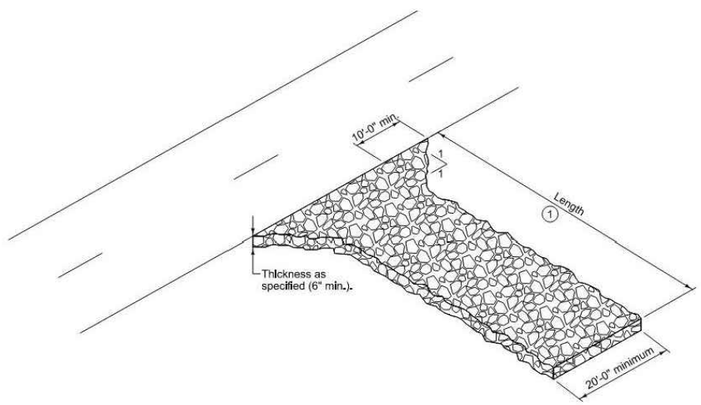
DETAILS OF SILT FENCE ON LONGITUDINAL SLOPES

FIGURE 9040.119 | SHEET 2 OF 2

SUDAS | REVISION 2 10-21-14 | 9040.119 | SHEET 2 of 2

SUDAS Standard Specifications

SILT FENCE



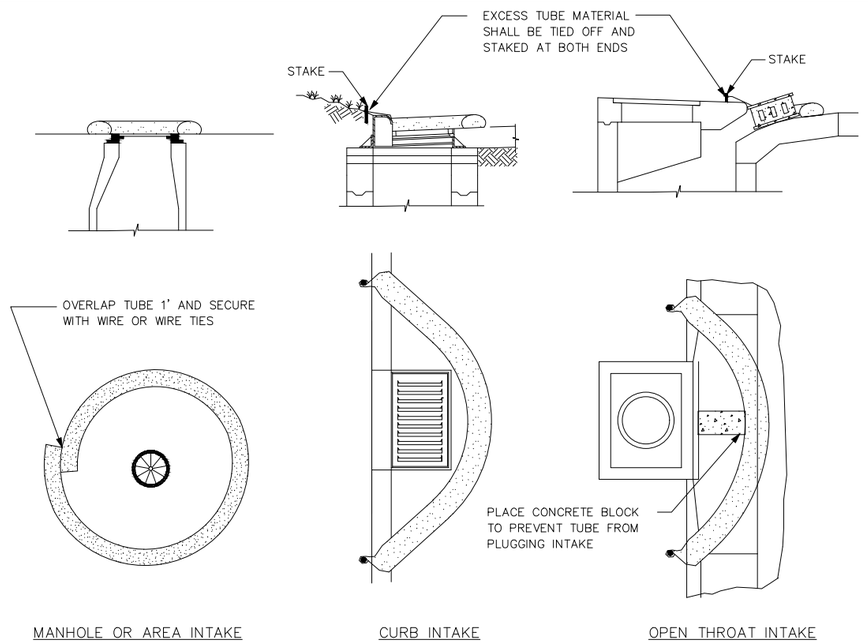
1. Entrance length: 50 foot minimum (30 foot for single family residential), or as specified in the contract documents. Length of entrance may be increased if sediment track-out occurs.

FIGURE 9040.120 | SHEET 1 OF 1

SUDAS | REVISION 2 10-21-14 | 9040.120 | SHEET 1 of 1

SUDAS Standard Specifications

STABILIZED
CONSTRUCTION ENTRANCE



MANHOLE OR AREA INTAKE | CURB INTAKE | OPEN THROAT INTAKE

FIGURE: IP.01
FILTER TUBE FOR MANHOLES & INTAKES

PROGRESS SET
Aug 22, 2024
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JNS	P/G	P/G	AUG. 2024
drawn	designed	approved	date

revision date

project: EAST MANAWA SUBDIVISION
OVERLOT GRADING PLAN
PHASE 1 LAYOUT

client: CITY OF COUNCIL BLUFFS
209 PEARL STREET, COUNCIL BLUFFS, IA 51503

sheet: POLLUTION PREVENTION PLAN DETAILS

project no.
150624

sheet
E.09

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