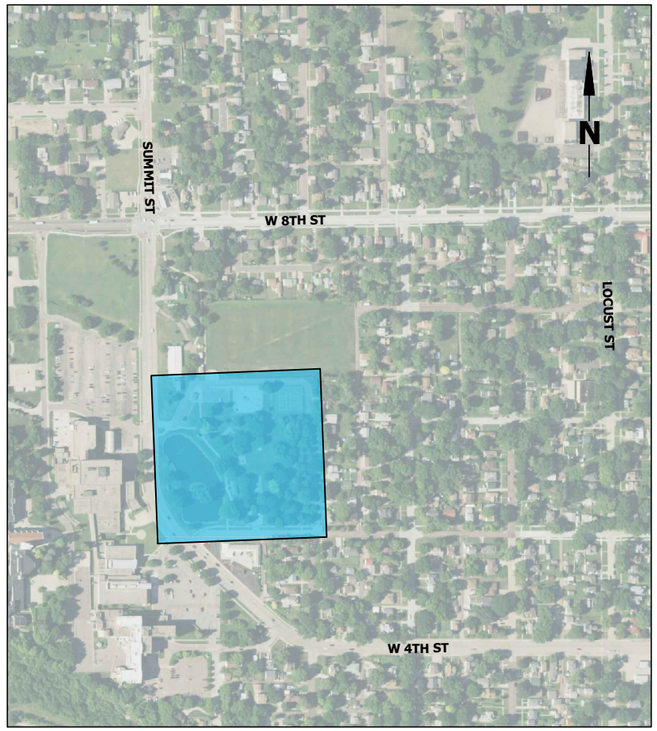
WESTSIDE PARK

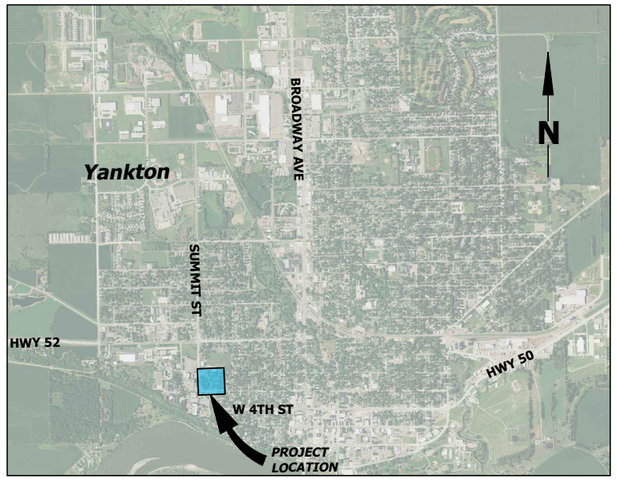
POND IMPROVEMENTS

YANKTON, SOUTH DAKOTA

LOCATION MAP:



VICINITY MAP (LOCAL):



CLIENT:

CITY OF YANKTON
416 WALNUT ST
P.O. BOX 176
YANKTON, SOUTH DAKOTA 57078
PH: 605.668.5221
FAX: 605.668.5265

MAYOR:
STEPHANIE MOSER

CITY STAFF:
AMY LEON, *CITY MANAGER*
AL VIERECK, *CITY FINANCE OFFICER*
TODD LARSON, *PARKS & RECREATION DIRECTOR*
ADAM HABERMAN *, PUBLIC WORKS DIRECTOR*

STOCKWELL NO. 21289

UTILITY PROVIDER LIST:

WATER:
CITY OF YANKTON
KYLE GOODMANSON
315 WEST RIVERSIDE DRIVE
YANKTON, SD 57078
(605) 668-5272

WASTEWATER:
CITY OF YANKTON
KYLE GOODMANSON
315 WEST RIVERSIDE DRIVE
YANKTON, SD 57078
(605) 668-5272

STORM WATER:
CITY OF YANKTON
BRAD BIES
416 WALNUT STREET
YANKTON, SD 57078
(605) 668-5251

GAS:
MIDAMERICAN ENERGY COMPANY
NICOLLE RASMUSSON
1200 SOUTH BLAUVELT AVENUE
SIOUX FALLS, SD 57105
(605) 373-6081

TELECOMMUNICATIONS:
MIDCO
GREG BUTHE
3507 S. DULUTH AVENUE
SIOUX FALLS, SD 57105
(605) 231-0400

VAST BROADBAND
JAY MORRISON
(605) 306-5099

CENTURYLINK
TREVOR JANSSEN
(605) 977-2848

ENERGY:
NORTHWESTERN ENERGY
NOAH KILONZO
313 CEDAR STREET
YANKTON, SD 57350
(605) 668-4604

Drawings indicate general utility locations only. Neither the correctness or completeness of locations are guaranteed.

Prior to excavation contact:
SOUTH DAKOTA ONE CALL
(1-800-781-7474)

LEGEND OF LINE TYPES:

- CENTERLINE
- PROPERTY LINE
- SECTION LINE
- QUARTER LINE
- MAJOR CONTOUR (1400)
- MINOR CONTOUR (1402)
- WATER MAIN (W)
- STORM SEWER (ST)
- SANITARY SEWER (S)
- SANITARY SEWER FORCE MAIN (FM)
- COMBINED SEWER (CS)
- GAS MAIN (G)
- UNDERGROUND POWER (UP)
- OVERHEAD POWER (OP)
- FIBER OPTIC (F)
- CONC. CURB & GUTTER
- APPROACH
- WOOD FENCE
- CHAIN LINK FENCE (X)
- BARBED WIRE FENCE

LEGEND OF SYMBOLS:

- DECIDUOUS TREE (30")
- CONIFEROUS TREE (8")
- TREE STUMP (18")
- SHRUB
- SIGN
- PARKING METER POST
- MAIL BOX
- FLAGPOLE
- SPRINKLER HEAD
- GAS VALVE
- TRAFFIC SIGNAL LIGHT
- POWER POLE
- GUY WIRE
- STREET LIGHT
- FLOOD LIGHT
- HISTORICAL STREET LIGHT
- UTILITY CLOSURE
- WELL
- WATERMAIN SHUTOFF
- FIRE HYDRANT
- WATERMAIN VALVE & BOX
- WATERMAIN CAP
- UTILITY CLEANOUT
- UTILITY RISER
- UTILITY METER
- STORM SEWER MANHOLE
- SANITARY MANHOLE
- WATER MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- FIBER OPTIC MANHOLE

SHEET INDEX:

PLANS ISSUED BY:

CIVIL ENGINEER /
LANDSCAPE ARCHITECT /
SURVEYOR

STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVENUE, SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

STRUCTURAL ENGINEER

HEYER ENGINEERING
436 E. 8TH STREET
SIOUX FALLS, SD 57103
605.370.6139

ELECTRICAL ENGINEER

ASSOCIATED CONSULTING ENGINEERING, INC.
340 S. PHILLIPS AVENUE
SIOUX FALLS, SD 57104
605.335.3720

GEOTECHNICAL ENGINEER

GEOTEK ENGINEERING & TESTING
909 E. 50TH STREET N.
SIOUX FALLS, SD 57104
605.335.5512

REGISTERED LANDSCAPE ARCHITECT
REG. NO. 11267
DAVID CHRISTIAN LOCKE
SOUTH DAKOTA

I, David C. Locke, hereby certify that these plans, except where otherwise indicated, were prepared by me, or under my direct supervision and that I am a duly registered engineer under the laws of the State of South Dakota.

David C. Locke LA S.D. No. 11267 Date

CONTROL DATA

POINT NUMBER	NORTHING	EASTING	ELEVATION
CP-1	10,909.540	52,985.900	1,250.050

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SIOUX FALLS, SD 57104
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City of Yankton, South Dakota — Ideas flow here

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

REGISTERED LANDSCAPE ARCHITECT
REG. NO. 11267
DAVID CHRISTIAN LOCKE
SOUTH DAKOTA
3/13/22

PLOT DATE 3/15/2022 4:49 PM

BID SET

ORIENTATION & DATA CONTROL

G-002

GENERAL REQUIREMENTS

1.1 PROJECT INFORMATION

1.1.1 The Owner of the project is the City of Yankton. The City of Yankton has retained Stockwell Engineers to act as the Owner's representative. Contact information for each is provided below

City of Yankton
416 Walnut Street
Yankton, SD 57078
(605)668-5221

Stockwell Engineers
801 North Phillips Ave, Suite 100
Sioux Falls, SD 57104
(605)338-6668

1.2 DESCRIPTION OF WORK

1.2.1 This project consists of improvements to the park and pond at Westside Park in Yankton. Improvements include pond regrading, an updated outlet structure, riprap bank stabilization, retaining walls, concrete sidewalks, an updated pedestrian bridge, seeding, and landscaping in the project limits, as well as other work as identified in the technical drawings.

1.3 SPECIFICATION AND DRAWING CONVENTIONS

1.3.1 The specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1.3.2 Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

1.3.3 Specification requirements are to be performed by Contractor unless specifically stated otherwise.

1.3.4 The General Notes of this section apply to the Work of all Sections in the Specifications.

1.4 SPECIFICATIONS TO BE USED

1.4.1 The Project Manual, together with the most current edition of the South Dakota Department of Transportation Standard Specifications for Roads and Bridges with Supplemental Specifications and Errata and required provisions, are hereby made a part of these specifications in its entirety unless otherwise revised, deleted, or supplemented herein.

1.4.2 The South Dakota Department of Transportation Standard Specifications for Roads and Bridges with Supplemental Specifications and Errata can be downloaded from the SDDOT's website at http://www.sddot.com/.

1.5 ORDER OF PRECEDENCE

1.5.1 If conflicts arise, the order of precedence of the contract documents shall be as follows: Drawings over Technical Specifications over Special Provisions over Supplemental Specifications over General Conditions over South Dakota Department of Transportation Supplemental Specifications and Errata over South Dakota Department of Transportation Standard Specifications for Roads and Bridges.

1.6 LOCAL ORDINANCES

1.6.1 The Contractor shall abide by all local, state, and federal ordinances or policies.

1.7 TIME PROVISIONS

1.7.1 Time provisions shall be as specified under Article 4 of the Agreement between Owner and Contractor.

1.8 SEQUENCE OF OPERATIONS

1.8.1 The following Sequence of Operation shall be followed unless an alternate Sequence of Operations is submitted in writing and approved by the Engineer. Work shall commence under this contract after all start date requirements are fulfilled and shall be completed within the time provisions specified. Notify the Engineer as start date requirements are approaching. After the Contractor has, in the opinion of the Engineer, satisfactorily completed all start date requirements in accordance with the contract documents, approval to commence work shall be given.

1.8.2 Construction may begin after the notice to proceed is issued and a preconstruction meeting is held, and in accordance with Article 4 of the Agreement between the Owner and the Contractor.

1.8.3 Special Conditions: Maintain temporary access to properties adjacent to the project whenever feasible. Always maintain temporary access to commercial businesses.

1.9 SOIL BORINGS

1.9.1 Refer to the Project Manual for the Geotechnical Report completed for the City.

1.10 ACCESS TO SITE

1.10.1 The Project Site shall be within the property lines and easement areas as illustrated in the plans. Contractor shall have limited use of Project Site for construction operations as indicated in the construction documents. Driveways and entrances serving premises shall be kept clear and available to Owner, Owner's employees, and emergency vehicles at all times. Material storage and vehicle and equipment traffic shall be limited to the construction limits. Schedule deliveries to minimize space and time requirements for storage of material and equipment on-site.

1.10.2 All paved streets adjacent to the project are to be cleaned at the end of each working day.

1.10.3 It shall be the responsibility of the Contractor to coordinate with the property owners relating to access to their property and any subsequent damages.

1.11 WORK RESTRICTIONS

1.11.1 Contractor shall comply with limitations on use of public streets and with other requirements of authorities having jurisdiction. Onsite work hours shall be limited to the following:

1. Weekday Hours: dawn to dusk
2. Saturday Hours: dawn to dusk
3. Sunday Hours: prohibited unless approved by the Engineer
4. Holidays: Prohibited unless approved by the Engineer
5. Utility Shutdown Hours: 8:00 am to 5:00 pm

1.11.2 Utility Interruptions: Do not interrupt utilities unless the Work necessitates. Notify Engineer in writing two days in advance of proposed utility interruptions. Obtain Engineer's written permission before proceeding.

1.11.3 Disruptive Operations: Coordinate operations that may result in elevated levels of noise, vibration, odors, or other disruption with Engineer. Notify Engineer in writing two days in advance of proposed disruptive operations. Obtain Engineer's written permission before proceeding.

1.12 SUBSTITUTIONS

1.12.1 Refer to the General Conditions for substitution procedures.

1.13 CONTRACT MODIFICATION AND PAYMENT

1.13.1 Refer to the General Conditions for contract modification and payment procedures.

1.14 SCHEDULE OF VALUES

1.14.1 Prior to the preconstruction meeting, the Contractor shall submit to the Engineer a schedule of values as required in the General Conditions. The schedule of values shall be prepared in coordination with the Contractor's progress schedule. Where work is separated into phases requiring separately phased payments, provide sub schedules showing values coordinated with each phase of payment. The schedule of values shall be updated when requested by the Engineer.

1.15 LIST OF SUBCONTRACTOR AND SUPPLIERS

1.15.1 Prior to the preconstruction meeting, submit to the Engineer a summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment to be fabricated. The list shall include the following information:

1. Name, address, telephone number, and email address of entity performing subcontract or supplying products
2. Description of related Work covered by subcontract
3. Drawing number and detail references, as appropriate, covered by subcontract
4. Names of key personnel who will be involved with the Work.

1.16 LIST OF CONTACTS

1.16.1 Prior to the pre-construction meeting, submit to the Engineer a list of key personnel. The list shall include superintendent and other personnel in attendance at Project Site. Identify individuals along with their duties and responsibilities. Include addresses, cellular telephone numbers and e-mail addresses.

1.17 PROGRESS SCHEDULE

1.17.1 In accordance with the General Conditions and prior to scheduling the pre-construction meeting, submit a preliminary progress schedule to the Engineer for approval. Prepare the schedule using current version of a computer program that was developed specifically to manage progress schedules. Approved programs include Microsoft Project, Primavera, Meridian Prolog or another equivalent program.

1.17.2 General Format: Develop schedule in bar and network format. Span schedule from date established for the Notice to Proceed to date of Readiness for Final Payment. Illustrate first workday of each week with a continuous vertical line. Block out and clearly label holidays. Illustrate each significant construction activity separately and indicate each activity's estimated start date, completion date, time duration, sequence requirements, and relationship to other activities. Indicate float or the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.

1.17.3 Significant Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, Notice to Proceed, Commencement Deadlines, Interim Completion dates, Substantial Completion, and Readiness for Final Payment.

1.17.4 Include a narrative that lists the Contractor's anticipated work hours. Describe the days of the week when operations are expected to occur and the associated hours for each day. List holidays and other anticipated days when work will not occur. Provide the estimated number of adverse weather days for each month.

1.17.5 After the Progress Schedule is approved, a preconstruction meeting can be scheduled. At monthly intervals, update schedule to reflect actual construction progress and activities. Issue revised schedule one week before each regularly scheduled coordination meeting. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations. As the Work progresses, indicate final completion percentage for each activity. Failure to submit schedules will result in the Owner withholding payment until the updated schedule is submitted.

1.17.6 When periodic update indicates the Work is behind the current approved schedule, submit a report indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which the schedule will be regained.

1.18 SCHEDULE OF SUBMITTALS

1.18.1 Prior to the pre-construction meeting, deliver to the Engineer a Submittal Schedule as required in the General Conditions. The Schedule of Submittals shall be prepared in coordination with the Contractor's Progress Schedule and Schedule of Values. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Engineer and additional time for handling and reviewing submittals required by those corrections.

1.19 GENERAL COORDINATION PROCEDURES

1.19.1 Coordination: Coordinate operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work, including those that depend on each other for proper installation, connection, and operation. Make adequate provisions to accommodate items scheduled for later installation.

1.19.2 Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to the following:

1. Preparation of Contractor's Progress Schedule.
2. Preparation of the Schedule of Values.

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

City of Yankton SOUTH DAKOTA Values How Here

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI Project #: 21289

REGISTERED LANDSCAPE ARCHITECT
REG. NO 11267
PAMELA CHRISTIAN
SOUTH DAKOTA
3/15/22

Plot Time: 3/16/2022 8:04 AM

BID SET

GENERAL NOTES

C-001

3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

1.20 REQUEST FOR INFORMATION (RFI):

1.20.1 General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors. Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. Project number.
3. Date.
4. Name of Contractor.
5. Name of Engineer.
6. RFI number, numbered sequentially.
7. RFI subject.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.
13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

1.20.2 Engineer will review each RFI, determine action required, and respond. Allow seven working days for Engineer's response for each RFI. The following Contractor generated RFIs will be returned without action:

1. Requests for approval of submittals.
2. Requests for approval of substitutions.
3. Requests for approval of Contractor's means and methods.
4. Requests for coordination information already indicated in the Contract Documents.
5. Requests for adjustments in the Contract Time or the Contract Sum.
6. Requests for interpretation of Architect's actions on submittals.
7. Incomplete RFIs or inaccurately prepared RFIs.

1.20.3 Engineer's action may include a request for additional information, in which case Engineer's time for response will date from time of receipt by Engineer of additional information. Engineer's action of RFIs that may result in a change to the Contract Time, or the Contract Price may require a Change Order as specified in the General Conditions of the Contract.

1.21 DIGITAL DATA FILES

1.21.1 Digital data files of Engineer's CAD drawings will be provided by Engineer for Contractor's use during construction. Contractor may use digital data files in preparing coordination drawings, Shop Drawings, and Project record Drawings. Engineer makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings. Contractor and those subcontractors granted access by Contractor, shall execute a data licensing agreement in form acceptable to Engineer.

1.22 PROJECT MEETINGS

1.22.1 General: The Contractor shall schedule and conduct meetings and conferences at Project site unless otherwise indicated. Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Engineer of scheduled meeting dates and times a minimum of 10 working days prior to meeting.

1.22.2 Preconstruction Meeting: Schedule and conduct a preconstruction conference in accordance with the General Conditions.

1. Attendees: Authorized representatives of Owner, Engineer and their consultants, Contractor and its superintendent, major contractors, suppliers, and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss procedures and items of significance that could affect progress, including responsibilities and personnel assignments, tentative construction schedule, phasing, critical work sequencing and long lead items, designation of key personnel and their duties, lines of communications, use of web-based Project software, procedures for processing field decisions and change orders, procedures for RFIs, Procedures for testing and inspecting, procedures for processing Applications for Payment, distribution of the Contract Documents, submittal procedures, use of the premises, work restrictions, working hours, Owner's occupancy requirements, responsibility for temporary facilities and controls, procedures for disruptions and shutdowns, parking availability, staging areas, equipment deliveries and priorities, safety, security, and progress cleaning.

1.22.3 Coordination Meetings: Contractor shall conduct Project coordination meetings at biweekly intervals. Project coordination meetings are in addition to specific meetings held for other purposes. Coordination meetings shall be held at a time and location approved by the Engineer.

1. Attendees: In addition to representatives of Owner, and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the Work. Private utility owners, the general public, and those interested in the current progress or performance of future activities shall be invited to attend. The Contractor will provide a summary of the project schedule and will answer questions. The public will then be dismissed, and the remaining attendees will discuss construction coordination and other items as needed.

2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project. Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to combined Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time. Revise combined Contractor's construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting. Review present and future needs of each contractor present, including interface requirements, sequence of operations, status of submittals, deliveries, off-site fabrication, access, site use, temporary facilities and controls, work hours, hazards and risks, progress cleaning, quality and work standards, status of RFIs, proposal requests, change orders or pending changes. Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.23 SUBMITTALS

1.23.1 Submittal procedures are specified in the General Conditions. Deliver submittals in form acceptable to Engineer. Include a transmittal or cover letter listing the following:

1. Name of the Project
2. Date transmitted
3. Name of the Engineer
4. Name of the Contractor
5. Name of firm or entity that prepared the submittal
6. Submittal purpose and description
7. References to specification section with paragraph number and generic name sited.
8. Drawing number and detail references, as appropriate
9. Location(s) where product is to be installed, as appropriate
10. Other necessary identification
11. Remarks
12. Identify options requiring selection by Engineer
13. Signature of transmitter

1.23.2 On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Engineer on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet. Site references to specification section, drawing number or detail with paragraph number and generic name.

1.23.3 Prepare and deliver submittals required by individual specification sections. A non-comprehensive list is provided below.

1. Progress Schedule
2. Schedule of Values
3. Schedule of Submittals
4. List of Subcontractors and Suppliers
5. Contact List
6. Asphalt/Concrete job mix formula
7. Materials Certifications
8. Shop Drawings
9. DANR Contractor Authorization Form

1.23.4 Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data. Fully illustrate requirements in the Contract Documents. Include identification of products, schedules, compliance with specified standards, notation of coordination requirements, notation of dimensions established by field measurement, relationship, and attachment to adjoining construction clearly indicated, seal and signature of professional engineer if specified.

1.23.5 Incomplete submittals will be rejected and returned for resubmittal without review. Engineer will discard submittals received from sources other than Contractor.

1.24 ACCEPTANCE TESTING

1.24.1 Refer to the General Conditions for acceptance testing procedures.

1.24.2 Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and a Change Order will adjust the Contract Sum.

1.24.3 Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.

1.25 CONFLICTING REQUIREMENTS

1.25.1 Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements are specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Engineer for direction before proceeding.

1.25.2 Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.

1.26 REFERENCES

1.26.1 Industry Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference. Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.26.2 Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."

1.27 TEMPORARY FACILITIES

1.27.1 Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property. Locate facilities where they will serve

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City of Yankton SOUTH DAKOTA Values Make Here

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI Project #: 21289

REGISTERED LANDSCAPE ARCHITECT
REG. NO. 11267
DAVID CHRISTIAN LOCKE
SOUTH DAKOTA
3/16/22

Plot Time: 3/16/2022 8:04 AM

BID SET

GENERAL NOTES

C-002

Project adequately and result in minimum interference with performance of the Work. Relocate, modify, and repair facilities as required by progress of the Work. Locate facilities to limit site disturbance.

1.27.2 Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas within construction limits indicated on Drawings. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.

1.27.3 Traffic Controls: Comply with requirements of authorities having jurisdiction. Protect existing site improvements to remain including curbs, pavement, and utilities. Maintain access for fire-fighting equipment and access to fire hydrants.

1.27.4 Parking: Provide temporary or use designated areas of Owner's existing parking areas for construction personnel.

1.27.5 Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Review existing storm water runoff patterns and facilities. Maintain Project site, excavations, and construction free of water. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities. Remove snow and ice as required to minimize accumulations.

1.27.6 Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction

1.28 SECURITY AND PROTECTION OF FACILIITES

1.28.1 Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.

1.28.2 Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

1.28.3 Temporary Erosion and Sediment Control: Comply with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent, and requirements specified in the plans.

1.28.4 Storm Water Control: Comply with requirements of authorities having jurisdiction. Review existing storm water runoff patterns and facilities. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains. Install manhole construction plate markers to protect sanitary sewer facilities from inflow. Repair damage caused by improper temporary drainage facilities at Contractor's expense.

1.29 PRODUCT DELIVERY, STORAGE, AND HANDLING

1.29.1 Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

1.29.2 Delivery and Handling: Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

1.29.3 Storage: Store products to allow for inspection and measurement of quantity or counting of units. Store materials in a manner that will not endanger Project structure. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage. Protect stored products from damage and liquids from freezing.

1.30 PRODUCT WARRANTIES

1.30.1 Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1.31 EXAMINATION, PREPARATION, AND CONSTRUCTION LAYOUT

1.31.1 Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services; and other utilities. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

1.31.2 Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

1.31.3 Existing Utility Information: Furnish information to local utility owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

1.31.4 Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.31.5 Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

1.31.6 Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Engineer promptly.

1.31.7 Construction Layout: Notify the Engineer to lay out the Work using accepted surveying practices. Engineer's Surveyor shall establish benchmarks and control points for Contractor to set lines and levels. Preserve and protect benchmarks and control points during construction operations. Do not change or relocate benchmarks or control points without prior written approval of Engineer. Report lost or destroyed benchmarks or control points promptly. Contractor shall verify the accuracy of benchmarks set by the Engineer's Surveyor and notify the Engineer immediately if errors are discovered. Proceed to lay out the Site only after errors are corrected. Proceeding with the Work indicates Contractor's acceptance of Surveyor's benchmark.

1.31.8 Lines and Levels: Contractor shall lay out and establish control lines and levels for site improvements. Transfer survey markings and elevations from benchmarks, as necessary. Always level from two or more locations.

1.32 INSTALLATION

1.32.1 General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated. Make vertical Work plumb and make horizontal Work level. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

1.32.2 Tools and Equipment: Where possible, select tools or equipment that minimize production of excessive noise levels.

1.33 CUTTING AND PATCHING

1.33.1 General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

1.33.2 Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

1.33.3 Temporary Support: Provide temporary support of work to be cut.

1.33.4 Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

1.33.5 Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

1.33.6 Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use. Cut or drill from the exposed or finished side into concealed surfaces. For concrete and masonry, cut using a cutting machine, such as an abrasive saw or a diamond-core drill. For excavating and backfilling, comply with requirements in applicable Sections where required by cutting and patching operations. Proceed with patching after construction operations requiring cutting are complete.

1.33.7 Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable. Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing. Clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

1.33.8 Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

1.34 PROGRESS CLEANING

1.34.1 General: Clean Project site and work areas daily. Enforce requirements strictly. Dispose of materials lawfully. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations. Use containers intended for holding waste materials of type to be stored. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

1.34.2 Site: Maintain Project site free of waste materials and debris. Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1.34.3 Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

1.34.4 Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

1.34.5 Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

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City of Yankton SOUTH DAKOTA Values Made Here

WESTSIDE PARK POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI Project #: 21289

REGISTERED LANDSCAPE ARCHITECT
REG. NO 11267
DAVID CHRISTIAN LOCKE
SOUTH DAKOTA
3/16/22

Plot Time: 3/16/2022 8:04 AM

BID SET

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1.34.6 Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements as specified.

1.34.7 During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

1.34.8 Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

1.34.9 Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

1.35 PROTECTION OF INSTALLED CONSTRUCTION

1.35.1 Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

1.35.2 Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.

1.35.3 Comply with manufacturer's written instructions for temperature and relative humidity.

1.36 WASTE MANAGEMENT AND DISPOSAL

1.36.1 Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract. Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.

1.36.2 Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged and recycled. Comply with requirements for Temporary Facilities and Controls for controlling dust and dirt, environmental protection, and noise control.

1.36.3 Disposal of Waste: Except for items or materials to be salvaged or recycled, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas. Burning waste materials on Site is not permitted.

1.37 CLOSEOUT PROCEDURES

1.37.1 Procedures for Substantial Completion are specified in the General Conditions and further described in the paragraphs that follow.

1.37.2 Final Cleaning: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average maintenance program. Comply with manufacturer's written instructions.

1.37.3 Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

1. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
2. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
3. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.
4. Trim tree limbs damaged during construction.
5. Remove tools, construction equipment, machinery, and surplus material from Project site.
6. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
7. Remove labels that are not permanent.
8. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
9. Leave Project clean and ready for occupancy.

1.37.4 Submit and complete the following items before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

1. Submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
2. Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
3. Submit closeout submittals specified in other Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, special warranties, and similar final record information.
4. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
5. Advise Owner of pending insurance changeover requirements.
6. Advise Owner of changeover in utility services.
7. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
8. Complete final cleaning requirements.

1.37.5 Inspection: Submit a written request for inspection to determine Substantial Completion in conformance with the General Conditions.

1.37.6 Complete repair and restoration operations identified in Engineer's Punch List. Repair, or remove and replace, defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1.37.7 Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.

CONCRETE

2.1 CAST IN PLACE CONCRETE

2.1.1 Reference: SDDOT Standard Specifications for Roads and Bridges.

2.1.2 Submittals: Submit design mixture for each job mix proposed for the Work. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments. Indicate amounts of mixing water to be withheld for later addition at Project site.

2.1.3 Products: Products to be as follows unless otherwise specified. Reference SDDOT Standard Specifications for Roads and Bridges for additional specifications.

1. Concrete: M6 mix design.
2. Form Facing Materials: Provide form-facing panels that provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints. Plywood, metal, or other approved panel materials.
3. Reinforcing Bars: ASTM A 615, Grade 60, deformed
4. Epoxy Coated Reinforcing Bars: ASTM A 615, Grade 60, deformed bars, ASTM A 775, epoxy coated, with less than 2 percent damaged coating in each 12-inch bar length.
5. Epoxy Repair Coating: Liquid, two-part, epoxy repair coating; compatible with epoxy coating on reinforcement and complying with ASTM A 775.
6. Curing Compound: SDDOT Standard Specifications for Roads and Bridges – Section B21.

2.1.4 Schedule inspections with Owner's inspectors and testing agencies. Inspections and testing include:

1. Form work and steel reinforcement placement inspections
2. Concrete placement inspections
3. Concrete sampling

2.1.5 Delivery, Storage and Handling: Deliver, store and handle steel reinforcement to prevent bending and damage. Avoid damaging coatings on steel reinforcement.

2.1.6 Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

2.1.7 Hot-Weather Placement: Comply with ACI 301 and as follows. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

2.1.8 Formwork Installation: Design, erect, shore, brace, and maintain formwork to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits. Limit concrete surface irregularities. Construct forms tight enough to prevent loss of concrete mortar. Construct forms for easy removal without hammering or prying against concrete surfaces. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

2.1.9 Embedded Item Installation: Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

2.1.10 Steel Reinforcement Installation: Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D 3963/D 3963M.

2.1.11 Joints, General: Construct joints true to line with faces perpendicular to surface plane of concrete. Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer. Form keyed joints where indicated. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

2.1.12 Slab Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness. For tooled joints, form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces. For sawed joints, Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch-wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

2.1.13 Placement: Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections are completed. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Engineer. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners. Maintain reinforcement in position on chairs during concrete placement. Work mortar against forms to produce a smooth finish relatively free of water, air pockets and honeycombing. Screed slab surfaces with a straightedge and strike off to correct elevations. Slope surfaces uniformly to drains where required. Begin initial floating using bull floats or darbies to force coarse aggregate from the surface and form a uniform and open-textured surface plane,

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City of Yankton SOUTH DAKOTA Values Made Here.

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI Project #: 21289

REGISTERED LANDSCAPE ARCHITECT REG. NO. 11267 CHRISTIAN LOCKE SOUTH DAKOTA 3/16/22

Plot Time: 3/16/2022 8:04 AM

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GENERAL NOTES

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before excess bleed water appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

2.1.14 Finished Formed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

2.1.15 Finishing Slabs: Consolidate surface by hand floating. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture. After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. While concrete is still plastic, slightly scarify surface with a fine broom.

2.1.16 Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

2.1.17 Concrete Protecting and Curing: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing. Apply curing compound uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

2.1.18 Concrete Surface Repairs: Repair and patch defective areas. Repair honeycombs, rock pockets or other defects along formed surfaces. Remove and replace concrete that cannot be repaired and patched to Engineer's approval.

EARTHWORK

3.1 SITE CLEARING

3.1.1 Documentation: Document existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing. Use sufficiently detailed photographs or video recordings. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plant designated to remain.

3.1.2 Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed trafficways if required by Owner or authorities having jurisdiction.

3.1.3 Mail Service: Provide location for temporary mail service. Coordinate location and arrangement with U.S. Postal Service and local mail carriers.

3.1.4 Notify South Dakota One Call 1-800-781-7474 for area where Project is located before site clearing. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place. Carefully remove items indicated to be salvaged and store on Owner's premises.

3.1.5 Protect and maintain benchmarks and survey control points from disturbance during construction. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed. Protect existing site improvements to remain from damage during construction. Restore damaged improvements to their original condition, as acceptable to Owner.

3.1.6 Existing Utilities: Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place. Arrange with private utility companies to shut off indicated utilities. Owner will arrange to shut off indicated utilities when requested by Contractor. Do not interrupt utilities serving facilities occupied by Owner or others, unless permitted by Engineer and only after arranging to provide temporary utility services.

3.2 CLEARING & GRUBBING

3.2.1 Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated. Grind down stumps and remove roots larger than 2 inches in diameter, obstructions, and debris to a depth of 18 inches below exposed subgrade. Use only hand methods or air spade for grubbing within protection zones. Chip removed tree branches and dispose of off-site. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

3.2.2 Salvage landscaping within the construction limits for reset where indicated in the Drawings. Replenish landscape rock or mulch where deficient.

3.3 TOPSOIL STRIPPING

3.3.1 Strip topsoil to depth of 6 inches minimum in a manner to prevent intermingling with underlying subsoil or other waste materials. Remove subsoil and non-soil materials from topsoil, including clay lumps, gravel, and other objects larger than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials. Stockpile topsoil where indicated in the drawings. Stockpile topsoil away from edge of excavations without intermixing with subsoil or other materials. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water. Do not stockpile topsoil within protection zones. Dispose of surplus topsoil.

3.4 SITE IMPROVEMENTS

3.4.1 Remove existing above and below grade improvements as necessary to facilitate new construction. Remove slabs, paving, curbs, gutters, and aggregate base as indicated in the drawings. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.

3.4.2 Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

3.5 EARTH MOVING

3.5.1 Reference: SDDOT Standard Specifications for Roads and Bridges

3.5.2 Preinstallation: Review methods and procedures related to earthmoving, including, but not limited to personnel and equipment needed to make progress and avoid delays, coordination of Work with utility locator service, coordination of Work and equipment movement with the locations of tree- and plant-protection zones, extent of trenching by hand or with air spade and field quality control.

3.5.3 Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.

3.5.4 Utility Locator Service: Notify South Dakota One Call for area where Project is located before beginning earth-moving operations.

3.5.5 Erosion Control: Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures specified are in place.

3.5.6 Products: Reference SDDOT Standard Specifications for Roads and Bridges for additional specifications.

1. Earthen Material: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
2. Base Course: Base course to be SDDOT Standard Specifications for Roads and Bridges Aggregate Base Course unless otherwise specified.

3.5.7 Schedule inspections with Owner's inspectors and testing agencies. Inspections and testing include:

1. Subgrade observation of bridge abutments.
2. Subgrade observation of retaining walls.

3.5.8 Preparation: Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations. Protect and maintain erosion and sedimentation controls during earth-moving operations. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.5.9 Dewatering: Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

3.5.10 Unclassified Earth Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated earthen materials may include soil materials or boulders. No changes in the Contract Sum or the Contract Time will be authorized for removal of boulders. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; and soil, boulders, and other materials not classified as bedrock or unauthorized excavation. If bedrock is encountered, do not excavate until it has been classified and cross sectioned by Engineer. Bedrock shall be measured and paid separately.

3.5.11 Excavating for Structures: Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections. Do not disturb bottom of excavation. Trim bottoms to required lines and grades to leave solid base to receive other work.

3.5.12 Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.5.13 Subgrade Inspection: Notify Engineer when excavations have reached required subgrade. If Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed. Proof-roll subgrade below pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Engineer, and replace with compacted backfill or fill as directed. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Engineer, without additional compensation.

3.5.14 Unauthorized Excavation: Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Engineer. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Engineer.

3.5.15 Storage of Soil Materials: Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.5.16 Backfill: Place backfill on subgrades free of mud, frost, snow, or ice. Place and compact backfill in excavations promptly, but not before completing the following:

1. Construction below finish grade including, where applicable, subdrainage, damp proofing, waterproofing, and perimeter insulation.
2. Surveying locations of underground utilities for Record Documents.
3. Testing and inspecting underground utilities.
4. Removing concrete formwork.
5. Removing trash and debris.
6. Removing temporary shoring, bracing, and sheeting.
7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

3.5.17 Soil Fill: Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material. Place and compact fill material in layers to required elevations. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.5.18 Soil Moisture Control: Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry density.

3.5.19 Compaction of Soil Backfill and Fills: Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand-operated tampers. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.

3.5.20 Compact soil materials to not less than the following percentages of maximum dry density according to ASTM D 698 ASTM D 1557:

1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent.

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City of Yankton South Dakota

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI Project #: 21289

Plot Time: 3/16/2022 8:04 AM

BID SET

GENERAL NOTES

C-005

3. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.

3.5.21 Grading: General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated. Provide a smooth transition between adjacent existing grades and new grades. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

3.5.22 Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:

1. Turf or Unpaved Areas: Plus or minus 1 inch
2. Walks: Plus or minus 1 inch
3. Pavements: Plus or minus 1/2 inch

3.5.23 Base Course Under Pavements and Walks: Place base course on subgrades free of mud, frost, snow, or ice. Place base course material over subbase course under pavement. Shape base course to required crown elevations and cross-slope grades. Place base course in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick. Compact base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry density according to ASTM D 698 ASTM D 1557.

3.5.24 Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.5.25 Protection: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions. Scarify or remove and replace soil material to depth as directed by Engineer; reshape and recompact. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.5.26 Disposal of Surplus and Waste Materials: Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

3.6 DEWATERING

3.6.1 Dewatering Performance: Furnish, install, test, operate, monitor, and maintain dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of pond and ground water and permit excavation and construction to proceed on dry, stable subgrades.

1. Continuously monitor and maintain dewatering operations to ensure erosion control, stability of excavations and constructed slopes, prevention of flooding in excavation, and prevention of damage to subgrades and permanent structures.
2. Prevent surface water from entering excavations by grading, dikes, or other means.
3. Accomplish dewatering without damaging existing buildings, structures, and site improvements adjacent to excavation.
4. Remove dewatering system when no longer required for construction.

3.6.2 Regulatory Requirements: Comply with governing EPA notification regulations before beginning dewatering. Comply with water- and debris-disposal regulations of authorities having jurisdiction.

3.6.3 Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by dewatering operations.

1. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding site or surrounding area.
2. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.

3.6.4 Install dewatering system to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.

3.6.5 Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.

3.6.6 Provide temporary grading to facilitate dewatering and control of surface water.

3.6.7 Install dewatering system utilizing wells, well points, or similar methods complete with pump equipment, standby power and pumps, filter material gradation, valves, appurtenances, water disposal, and surface-water controls.

1. Space well points or wells at intervals required to provide sufficient dewatering.
2. Use filters or other means to prevent pumping of fine sands or silts from the subsurface.

3.6.8 Place dewatering system into operation to lower water to required levels before excavating below ground-water level.

3.6.9 Provide sumps, sedimentation tanks, and other flow-control devices as required by authorities having jurisdiction.

3.6.10 Provide standby equipment on-site, installed and available for immediate operation, to maintain dewatering on continuous basis if any part of system becomes inadequate or fails.

3.6.11 Operate system continuously until drains, sewers, and structures have been constructed and fill materials have been placed or until dewatering is no longer required.

3.6.12 Operate system to lower and control ground water to permit excavation, construction of structures, and placement of fill materials on dry subgrades. Drain water-bearing strata above and below bottom of foundations, drains, sewers, and other excavations.

1. Do not permit open-sump pumping that leads to loss of fines, soil piping, subgrade softening, and slope instability.
2. Reduce hydrostatic head in water-bearing strata below subgrade elevations of foundations, drains, sewers, and other excavations.
3. Maintain piezometric water level a minimum of 24 inches (600 mm) below bottom of excavation.

3.6.13 Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water and sediment in a manner that avoids inconvenience to others.

3.6.14 Remove dewatering system from Project site on completion of dewatering. Plug or fill well holes with sand or cut off and cap wells a minimum of 36 inches (900 mm) below overlying construction.

3.6.15 Provide continual observation to ensure that subsurface soils are not being removed by the dewatering operation.

3.6.16 Protect and maintain dewatering system during dewatering operations. Promptly repair damages to adjacent facilities caused by dewatering.

3.7 RIP RAP

3.7.1 Riprap shall be salvaged on site, cleaned and reinstalled in the locations noted on the plans.

3.7.2 Contractor shall assume an additional quantity of 150 tons of Class B field stone rip rap shall be furnished and installed on site to supplement existing rip rap.

3.7.3 Riprap shall be Class B and installed in the areas identified on the plans and shall conform to Section 700 of the SDDOT Standard Specifications. The fabric for all rip rap areas shall conform to Section 831-Type B.

EXTERIOR IMPROVEMENTS

4.1 ASPHALT PAVING

4.1.1 Asphalt patching will be provided for by the City. Contact Adam Haberman at 605-661-1616 to coordinate work.

4.2 SOIL PREPARATION:

4.2.1 Reference: SDDOT Standard Specifications for Roads and Bridges

4.2.2 Preconstruction Testing: Owner will engage a qualified testing agency to perform preconstruction soil analyses on imported soil. Notify Engineer seven days in advance of the dates and times when soil will be imported.

4.2.3 Delivery, Storage and Handling: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and compliance with state and Federal laws if applicable. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways. Do not move or handle materials when they are wet or frozen. Accompany each delivery of bulk fertilizers and soil amendments with appropriate certificates.

4.2.4 Products: Products to be as follows unless otherwise specified. Reference SDDOT Standard Specifications for Roads and Bridges for additional specifications.

1. Contractor Furnished Topsoil: Imported, naturally formed soil from off-site and modified as necessary to produce viable planting soil. If necessary, amend imported soil with materials to become planting soil meeting testing requirements of AASHTO T88, ASTM D 5268-07 and the following:

Compositional Category	Percentage by Mass
Total Sample:	
Deleterious materials (rock, gravel, slag, cinder, roots, sod)	5 max
Material passing the No. 10 sieve:	
Organic Material	2 to 20
Sand content	20 to 60
Silt and clay content	35 to 70
pH (ASTM D 5268)	5 to 7

i. Source: Take imported, unamended soil from sources that are naturally well-drained sites where topsoil occurs at least 4 inches deep, not from bogs, or marshes; and that do not contain undesirable organisms; disease-causing plant pathogens; or obnoxious weeds and invasive plants.

ii. Unacceptable Materials: Concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials that are harmful to plant growth.

iii. Fertilizers: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in composition amounts recommended in soil reports from qualified testing agency.

4.2.5 Preinstallation: Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in planting soil. Proceed with placement only after unsatisfactory conditions have been corrected.

4.2.6 Preparation of Soil: Excavate soil from designated area(s) to depths required and stockpile until amended. Clean soil of concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials that are harmful to plant growth. Clean soil to contain specified combined maximum of percent by dry weight of stones, roots, plants, sod, clay lumps, and pockets of coarse sand. If necessary, mix unamended soil with amendments to produce required planting soil.

4.2.7 Subgrade Preparation: Do not till if existing soil or subgrade is frozen, muddy, or excessively wet. Till subgrade to a minimum depth of 4 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

4.2.8 Placing Soil: Do not apply soil if existing soil or subgrade is frozen, muddy, or excessively wet. Apply soil and mix approximately half the thickness of soil over prepared, loosened subgrade. Mix thoroughly into top 2 inches of subgrade. Spread remainder of planting soil.

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City of Yankton SOUTH DAKOTA Values Made Here.

WESTSIDE PARK POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI Project #: 21289

REGISTERED LANDSCAPE ARCHITECT REG. NO 11267 DAVID CHRISTIAN CLARKE SOUTH DAKOTA 3/16/22

Plot Time: 3/16/2022 8:04 AM

BID SET

GENERAL NOTES

C-006

4.2.9 Compaction: Compact each blended lift of planting soil to 75 to 82 percent of maximum Standard Proctor density according to ASTM D 698 except where a different compaction value is indicated on Drawings.

4.2.10 Finish Grading: Grade planting soil to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

4.2.11 Protection: Protect areas of in-place soil from additional compaction, disturbance, and contamination. Prohibit the following practices within these areas except as required to perform planting operations:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Vehicle traffic.
4. Foot traffic.
5. Erection of sheds or structures.
6. Impoundment of water.
7. Excavation or other digging unless otherwise indicated.

4.2.12 If planting soil or subgrade is over compacted, disturbed, or contaminated by foreign or deleterious materials or liquids, remove the planting soil and contamination; restore the subgrade as directed by Engineer and replace contaminated planting soil with new planting soil.

4.2.13 Weed Control: Perform weed control and protect in-place soil from noxious weed germination.

4.2.14 Cleaning: Protect areas adjacent to planting-soil preparation and placement areas from contamination. Keep adjacent paving and construction clean and work area in an orderly condition. Remove surplus soil and waste material including excess subsoil, unsuitable materials, trash, and debris and legally dispose of them off Owner's property unless otherwise indicated. Dispose of excess subsoil and unsuitable materials on-site where directed by Owner.

4.3 TURF AND GRASSES

4.3.1 Reference: SDDOT Standard Specifications for Roads and Bridges

4.3.2 Submittals: Provide the following submittals

1. Certificate of Grass Seed: From seed vendor for each grass-seed monostand or mixture, stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
2. Product certificates for fertilizers from manufacturer.

4.3.3 Delivery, Storage and Handling: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways. Accompany each delivery of bulk materials with appropriate certificates.

4.3.4 Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of planting completion.

1. Spring Planting: April 15 to May 15
2. Fall Planting: August 15 to September 15

4.3.5 B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

4.3.6 Products: Products to be as follows unless otherwise specified. Reference SDDOT Standard Specifications for Roads and Bridges for additional specifications.

1. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Rules for Testing Seeds" for purity and germination tolerances. Seed of grass species as listed below for solar exposure, with not less than 85% germination, not less than 97% pure seed, and not more than 0.10% weed seed:

   i. Turf Mix 1:

Grass Species	LBS/1 ACRE
Improved Kentucky Bluegrass (minimum 3 varieties)	240
Fine-Leaf Perennial Ryegrass (minimum 2 varieties)	60
TOTALS	**300**

2. Fertilizers: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

   i. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4% phosphorous, and 2% potassium, by weight.

3. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.

4. Non-asphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.

4.3.7 Schedule inspections with Owner's inspectors and testing agencies. Inspections and testing include:

1. Inspection of planting areas prior to seeding.

4.3.8 Examination: Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, gravel, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results. Uniformly moisten excessively dry soil that is not workable, or which is dusty. Proceed with installation only after unsatisfactory conditions have been corrected. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Engineer and replace with new planting soil.

4.3.9 Initial Weed Control: Inspect areas to be planted for vegetative growth that has already germinated. Where found, apply an appropriate post-emergent herbicide with low soil residual as recommended by the manufacturer. Suspend seeding operations until soil residual dissipates.

4.3.10 Preparation: Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations. Protect adjacent and adjoining areas from hydroseeding and hydromulching overspray. Protect grade stakes set by others until directed to remove them. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways. Prepare planting area for soil placement and mix planting soil according to "Soil Preparation" Section. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil. Pulverize soil to less than 1-inch particles and rake to a uniformly smooth, fine textured surface within 0.5 inches of finished elevation. Remove stones larger than 1 inch. Before planting, obtain Engineer's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

4.3.11 Seeding: Sow seed with drill or slit seeder wherever feasible. Do not hydroseed, broadcast or drop seed unless necessary. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other. Do not use wet seed or seed that is moldy or otherwise damaged. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer. Sow seed at rates specified under "Products" Section. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray. Protect seeded areas with slopes exceeding 1:4 with erosion-control blankets installed and stapled according to manufacturer's written instructions.

4.3.12 Fertilizing: Apply initial fertilizer following seeding operations at the rate of 300 lbs per acre.

4.3.13 Hydromulching: Review weather forecast and apply hydromulching 18 hours prior to rainfall or other watering. Mix specified fiber mulch in water, using equipment specifically designed for hydromulching application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application. Mix slurry with fiber-mulch manufacturer's recommended tackifier. Spray-apply slurry uniformly to all areas seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than 3000-lb/acre dry weight.

4.3.14 Hydroseeding: Hydroseed where slopes are steeper than 3:1. Increase the specified seed ratio amount 50% and mix with fiber mulch slurry. Spray apply slurry uniformly to all areas to be seeded in a two-step process. Apply first slurry coat at a rate so that mulch component is deposited at not less than 500-lb/acre dry weight, and seed component is deposited at not less than the specified seed-sowing rate. Apply slurry cover coat of fiber mulch (hydromulching) at a rate of 3000 lb/acre.

4.3.15 Turf Renovation: Renovate existing turf where indicated. Renovate turf damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles. Reestablish turf where settlement or washouts occur or where minor regrading is required. Install new planting soil as required. Remove sod and vegetation from diseased or unsatisfactory turf areas; do not bury in soil. Remove topsoil containing foreign materials, such as oil drippings, fuel spills, stones, gravel, and other construction materials resulting from Contractor's operations, and replace with new planting soil. Mow, dethatch, core aerate, and rake existing turf. Remove weeds before seeding. Where weeds are extensive, apply selective herbicides as required. Do not use pre-emergence herbicides. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of them off Owner's property. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches. Apply initial fertilizer required for establishing new turf and mix thoroughly into top 4 inches of existing soil. Install new planting soil to fill low spots and meet finish grades. Apply seed and protect with mulch as required for new turf. Water newly planted areas and keep moist until new turf is established.

4.3.16 Turf Maintenance: Roll, regrade and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement. Hand pull or inoculate legumes and noxious weeds.

4.3.17 Turf Acceptance: Turf installations shall appear healthy and uniform with a close stand of grass, free of weeds and surface irregularities, with coverage exceeding 90% over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory to Engineer.

4.3.18 Cleanup and Protection: Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established. Remove nondegradable erosion-control measures after grass establishment period.

4.4 CLAY LINER

4.4.1 Maximum seepage requirement for the new pond constructed with a clay liner shall be 1/16 inch per day.

4.4.2 Off-site borrow material should be used for the clay liner and shall consist of a lean clay (CL) or fat clay (CH) soil.

4.4.3 Permeability tests shall be performed on the off-site borrow material prior to and after construction of the pond liner.

4.4.4 The site preparation for the new pond liner, should consist of removing 12 inches of materials to an elevation that is 12 inches below the new bottom-of-pond elevation. Following the removals, the clay liner soils shall be placed in uniform lifts (6-inch maximum) and moisture conditioned to a moisture content level between the optimum moisture content level and 3 percent above the optimum moisture content level as determined by standard Proctor (ASTM D698). It may be necessary to adjust the moisture content closer to the optimum moisture content to achieve the specified compaction level. Once the moisture content level of the fill soils is within the recommended range, the liner soils should be compacted to a minimum of 95 percent of standard Proctor density (ASTM D698).

4.4.5 The on-site soils (especially the glacial till soils) may randomly contain "pockets" of sand soils. The bottom of the pond excavations shall be observed by a geotechnical engineer or technician to help identify sand pockets that will require removal and replacement with suitable clay liner material.

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City of Yankton SOUTH DAKOTA Values Made Here

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI Project #: 21289

REGISTERED LANDSCAPE ARCHITECT
REG. NO. 11267
DAVID CHRISTIAN COCKE
SOUTH DAKOTA
3/3/22

Plot Time: 3/16/2022 8:04 AM

BID SET

GENERAL NOTES

C-007

4.4.6 The pond should be pre-filled as soon as possible to minimize drying and shrinkage cracking of the completed liner. Water for filling of the pond will be provided by the City at no cost to the contractor. Water shall be filled in the pond up to the 1242.0 elevation or as directed by the Engineer.

UTILITIES

5.1 REFERENCE:

5.1.1 Reference the City of Yankton standard specifications for sanitary sewer, water main, storm sewer and warranty except as modified herein.

5.2 COMMON WORK RESULTS FOR UTILITIES

5.2.1 Delivery, Storage and Handling: Deliver pipes and tubes with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe end damage and to prevent entrance of dirt, debris, and moisture. Store plastic pipes protected from direct sunlight. Support to prevent sagging and bending.

5.2.2 Piped Utility Demolition: Disconnect, demolish, and remove piped utility systems, equipment, and components indicated to be removed. Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material. Drain piping to be abandoned in place. Fill abandoned piping with flowable fill, and cap or plug piping with same or compatible piping material where indicated. If pipe, insulation, or equipment to remain is damaged in appearance or is unserviceable, remove damaged or unserviceable portions and replace with new products of equal capacity and quality.

5.2.3 Piping Installation: Install piping according to the following requirements and utilities Sections specifying piping systems. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on the Coordination Drawings. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise. Install piping to permit valve servicing. Install piping at indicated slopes. Install piping free of sags and bends. Install fittings for changes in direction and branch connections. Select system components with pressure rating equal to or greater than system operating pressure. Install sleeves for pipes passing through concrete and masonry walls and concrete floor and roof slabs.

5.2.4 Piping Joint Construction: Join pipe and fittings according to the following requirements and utilities Sections specifying piping systems. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly. For threaded joints, thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified. Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds. Join plastic pressure piping gasketed joints according to ASTM D 3139. Join plastic non-pressure piping gasketed joints according to ASTM D 3212.

5.3 STORM DRAINAGE PIPING

5.3.1 Reference: City of Yankton Technical Specifications for Storm Sewer and SDDOT Standard Specifications for Roads and Bridges.

5.3.2 Connect to Existing Pipe: If a male/female joint of similar type is not available to connect new pipe to existing pipe, a concrete collar shall be installed. The collar shall be Class M-6 concrete and shall be 6 inches in depth and 2 feet wide with wire mesh reinforcement.

5.4 PROTECTION OF EXISTING FACILITIES

5.4.1 Existing sanitary sewer lines and manholes within the construction limits shall be protected at all times during construction. The upstream ends of existing sanitary sewer lines downstream from new sanitary sewer construction shall be plugged at locations to be approved by the Engineer. Water, stone, dirt, gravel, asphalt, concrete, or any other debris shall not be allowed to enter the City's sanitary sewer system during flushing operations or at any other time. Construction taking place in the vicinity of any existing City sanitary sewer lines or manholes shall not cause any inflow of surface water, ground water, water from damaged water lines, or debris to enter the City's sanitary sewer system. The Contractor shall be responsible for any damages incurred to the City's sanitary sewer system and/or private property and any actions imposed by DANR due to spills or overflows.

5.4.2 Manhole construction plate markers shall be constructed in accordance with standard plates. The plate markers shall be installed on existing manholes immediately after construction surfacing removals have been completed and on new manholes immediately after installation. The Contractor shall ensure that all manholes are secured, protected and watertight at the end of each workday. Under no circumstances shall an uncompleted or completed manhole be left uncovered, unprotected or not watertight overnight.

5.5 ADJUST MANHOLE AND VALVE BOXES

5.5.1 Sanitary sewer manholes and castings, storm sewer junction box castings, and water main valve boxes are to be adjusted in accordance with the applicable standard plate. The Contractor shall furnish the new manhole or junction box frames and covers and water valve boxes in accordance with the supplemental standard specifications, where shown on the plan sheets.

5.5.2 Existing frames and/or lids cracked or broken through the carelessness of the Contractor's forces shall be replaced with new frames and/or lids at the Contractor's expense.

TRAFFIC CONTROL NOTES

6.1 GENERAL MAINTENANCE OF TRAFFIC

6.1.1 Install traffic control to conform to the most current Edition of the Manual on Uniform Traffic Control Devices (MUTCD) unless otherwise modified in the plans.

6.1.2 Notifications: Notify the Engineer 7 days prior to start of construction and before any substantial traffic control change. Notify the Engineer 48 hours in advance of all other traffic control changes. Install variable message boards 7 days prior to the closure.

6.1.3 Install traffic control devices after 8:30 am.

6.1.4 Removing, relocating, salvaging, and resetting of existing traffic control devices, including delineation, shall be the responsibility of the Contractor. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the City.

6.1.5 Storage of vehicles and equipment shall be outside the clear zone and as near as possible to the right-of-way line. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work.

6.1.6 Indiscriminate driving and parking of vehicles within the right-of-way and park will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators, and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the City, and to the satisfaction of the Engineer.

6.1.7 All breakaway sign supports shall comply with FHWA NCHRP 350 crash-worthy requirements. The Contractor shall provide post installation details at the preconstruction meeting for all steel post breakaway sign support assemblies.

6.1.8 Installation, maintenance, relocation, and removal of Type I and II barricades, cones, vertical panels, drums, barricade warning lights, watchmen, tubular markers, and flags shall be incidental.

6.1.9 The Contractor or designated traffic control subcontractor shall ensure the adequacy, legibility, and reflectivity of each sign and device. Sign washing shall be considered incidental to Traffic Control and required as directed by the Engineer.

6.1.10 The Contractor shall provide temporary access routes for residences and businesses located in the construction area unless otherwise noted in the plans. Temporary routes and drives shall be considered incidental.

6.1.11 Flagger warning signs shall be installed when using flaggers to direct traffic. Flaggers shall wear appropriate safety clothing and shall use a Stop/Slow paddle.

6.2 TEMPORARY CONSTRUCTION SIGNS

6.2.1 Installation of temporary traffic control shall conform to the Manual on Uniform Traffic Control Devices (MUTCD) 2009 Edition, Section 6F.03 Sign Placement, unless otherwise modified in the plans. Signs mounted on portable sign supports shall meet requirements provided in Paragraphs 4 through 6 of Section 6F.03 Sign Placement if used for duration greater than 30 days.

6.2.2 The R9-8 through R9-11a series, R11 series, W1-6 through W1-8 series, M4-10, E5-1, or other similar type signs may be used on portable sign supports that do not meet the minimum mounting heights provided in Paragraphs 4 through 6 up to 30 days. All other signs must meet the minimum height requirements if used longer than 3 days.

6.2.3 Signs mounted on Type 3 Barricades should not cover more than 50 percent of the top two rails or 33 percent of the total area of the three rails.

6.3 VEHICULAR ACCESS

6.3.1 In general, the project limits are specified to be closed to thru vehicular traffic. Temporary access to local traffic shall be maintained whenever feasible. The Contractor shall notify the Engineer 7 days in advance of closures that will affect vehicular access. The Contractor shall reference the signage plans for illustrations of temporary signing to be maintained throughout the duration of the project. Construction shall be completed in a timely fashion to minimize the impact to vehicular traffic.

6.3.2 Temporary Gravel Crossings shall be used and placed at locations as shown in the Traffic Control Plans and/or as determined by the Engineer during construction. Base course shall be salvaged from the temporary crossings and be reused for roadbed placement.

6.4 TRUCK ROUTES

6.4.1 The Contractor shall only haul materials in and out of the construction site on the streets designated by the City as truck routes.

6.5 PEDESTRIAN TRAFFIC

6.5.1 The Contractor shall protect and restrict all pedestrians from work areas. Safety fence shall be installed around all work areas adjacent to pedestrian walkways and at other locations as illustrated in the plans or deemed necessary by the Engineer. Safety fence shall be installed in a respectable manner spacing posts as needed to keep the fence taut.

6.5.2 Temporary boardwalks shall be constructed at locations to provide access to those who are disabled and in need of temporary access. Locations shall be determined in the field by the Engineer. Boardwalks shall be ADA accessible.

6.6 CHANNELIZING DEVICES

6.6.1 In transition and taper sections, channelizing devices shall be reflectorized drums. In tangent sections, 42" tall grabber cones may be used instead of reflectorized drums.

6.7 STANDARD SPACING FOR SIGNS, TAPERS, AND CHANNELIZING DEVICES

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet)				Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
	(A)	(B)	(C)	(D)		
0 – 30	200				180	25
35 – 40	350				320	25
45 – 50	500				600	50
55	500				660	50
	(A)	(B)	(C)	(D)		
60 – 65	500	1000	1300	1600	780	50
75	500	1000	1300	1600	1125	50

EROSION CONTROL NOTES

7.1 GENERAL EROSION CONTROL

7.1.1 Prevent erosion and contain all construction related debris, sediments, or containments on site. Protective measures are illustrated in the Drawings but are not meant to be all inclusive. Monitor the site and notify Engineer of any failures to contain construction related pollutants. Inspect, maintain, and repair erosion and sedimentation control measures during construction until permanent vegetation is established and until a Notice of Termination is filed with the DANR.

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City of Yankton South Dakota

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI Project #: 21289

Plot Time: 3/16/2022 8:04 AM

BID SET

GENERAL NOTES

C-008

EXISTING CONDITIONS & REMOVAL NOTES

8.1 FACILITIES AND UTILITY WORK BY OTHERS

8.1.1 Reference examination and preparation paragraphs of General Requirements.

8.1.2 Notify South Dakota One Call 1-800-781-7474 to have utilities field located.

8.1.3 Prior to beginning Work, locate, excavate, expose, and record elevations of all underground facilities whether indicated or not. Notify engineer and utility owner where conflicts are discovered. Coordinate schedules with utility owners and provide ample time for them to access site and relocate facilities.

8.1.4 The following utility companies are known to have facilities on the project:

City of Yankton
Kyle Goodmanson – Water/Wastewater
phone: (605) 668-5272
Brad Bies – Storm Water
phone: (605)668-5251

Vast Broadband
Jay Morrison
phone: (605)306-5099

Northwestern Energy
Noah Kilonzo
phone: (605)668-4604

MidAmerican Energy
Nicolle Rasmusson
phone: (605)373-6081

Midco Communications
Greg Buthe
phone: (605) 231-0400

Lumen
Trevor Janssen
phone: (605)977-2848

8.1.5 Safeguard utility owner's facilities and coordinate efforts to coincide and minimize inconvenience to the public and utility companies. Where pipe utility installation crosses existing utilities, support the utilities in a manner that is acceptable to the owner of the utility. Repair damage caused to facilities to the satisfaction of utility owner.

8.1.6 Remove and dispose of abandoned utilities encountered while performing work. Costs shall be incidental to project.

8.2 INCIDENTAL WORK

8.2.1 Incidental Work Items include but are not limited to the following:

1. Repairing damaged utilities
2. Removal and disposal of abandoned private utilities
3. Salvage, reset or replenish disturbed landscaping
4. Removal and reinstalling concrete sidewalk for electrical connections.

GRADING, PAVING AND RESTORATION NOTES

9.1 EARTHWORK

9.1.1 Reference General Notes. Move earthen materials and establish elevations as indicated in the drawings. Strip organic material within embankment areas prior to filling.

9.1.2 The contractor shall anticipate excavated material to compact to a higher density than its native state and apply his/her own assumptions of shrinkage as they see fit and include them in their unit price.

9.2 TABLE OF EARTHWORK QUANTITIES

9.2.1 The quantity of unclassified excavation represents the unadjusted net volume of cut that exists within the site. The volumes listed within the earthwork table have been calculated through comparing the existing grade surface to the finish grade surface. The volumes of cut and fill are unadjusted and describe the net volume of existing, in-place material needed to be excavated on site and the net volume of area needed to be filled to reach finish grade elevation. The contractor shall note that no adjustments have been made to the excavation or embankment volumes for the salvaging of topsoil, shrinkage, salvaging of rip rap, or pavements to be removed.

TABLE OF EARTHWORK QUANTITIES (CUBIC YARD) WORK SITE	
Cut	9109
Fill	577
Shrinkage (30% of Fill)	173
Net (waste)	8359

Total Unclassified Excavation **9,109 CY**

9.3 STRIP AND STOCKPILE TOPSOIL

9.3.1 Strip and stockpile topsoil of disturbed areas with a depth of 6". Prior to construction operations starting, topsoil shall be removed from the construction limits and stockpiled in an acceptable location. Stripped topsoil shall be free of clay, rock, debris, tree roots and etc. The stockpile shall provide positive drainage and erosion control silt fence may need to be utilized for containment. Upon completion of surfacing operations, contractor shall place salvaged topsoil at a depth of 6" over all disturbed areas.

9.4 SIDEWALKS

9.4.1 Sidewalks shall be constructed in accordance with the American with Disabilities Act (ADA). The Contractor shall verify elevations as necessary and coordinate with the Engineer to determine the locations of landing areas and slope tolerances in the field.

9.5 CONCRETE CURB AND GUTTER

9.5.1 Concrete curb and gutter shall conform to Section 650 of the SDDOT Standard Specifications for Roads and Bridges. Exceptions and additions to this section are written in the following notes.

9.5.2 When new concrete curb and gutter is to be installed and connecting to existing concrete curb and gutter, the Contractor shall drill into the existing gutter pan with two (2) No. 4 x 24" epoxy coated deformed tie bars.

9.5.3 All curb and gutter shall be cured with a white pigmented linseed oil base emulsion compound. Application of the curing compound shall be in accordance with section 380.3.M.2 of the SDDOT Standard Specifications for Roads and Bridges. Curing compound material shall be in accordance with section 821.1.C.

PLANTING

10.1 PLANT BED PREPARATION

10.1.1 Remove stones larger than 1" in any dimension, sticks, roots, trash and other extraneous matter. Grade the planting areas to a smooth, uniform surface that is loose and uniformly fine textured. Grade to within +/- 0.5" of the finish elevation. Roll and rake, remove ridges, pulverize soil clods to less than 1" and fill depressions to meet finish grades. The Contractor will need prior authorization from the Engineer to commence planting. Plant bed preparation shall be incidental to the appropriate bid items.

10.2 WARRANTY

10.2.1 Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship or growth within the specified warranty period.

10.2.2 Failures include, but are not limited to: death and unsatisfactory growth, and damage from falling or blowing over. The Contractor will be responsible to replace all plants and trees that fail during the project or warranty period at no additional cost to the City.

10.2.3 The Engineer will monitor plants planted by the contractor as part of the construction contract. Trees that die prior to completion of the project will be reported to the contractor and must be removed immediately. Replacement trees will be planted as directed at no additional cost to the City.

10.2.4 The Parks Department will monitor the trees during the warranty period. If a tree meets the criteria below, the Park Supervisor will advise the Engineer of the need to meet on site to confirm that the tree is dead. A picture of the dead tree will then be taken, and the tree will be removed by the Forestry Crew. The Engineer will follow up with the contractor to have the tree replaced at no additional cost to the City.

1. Criteria for identifying a dead tree:
   i. Leaves are brown during the summer.
   ii. Tree loses its leaves during the summer.
   iii. Buds are dry and brittle.
   iv. Brittle branches that break when bent.
   v. The surface beneath the bark of the tree is brown. To check, take a pocket knife and scrape the surface just below the bark. If the surface beneath the bark is green, then the tree is not dead.

10.2.5 Staking of trees will be at the discretion of the Engineer and will be incidental to the cost of the tree. No hose and wire will be used for staking.

10.2.6 All plants, trees and shrubs will be warrantied for 12 months from date of project substantial completion. At the end of the warranty period the engineer shall make an inspection of the project and note dead, unhealthy or otherwise unacceptable plants, trees and shrubs that shall be replaced by the Contractor at no additional cost to the project. Warranty costs shall be incidental to the project.

10.3 GENERAL NOTES

10.3.1 All plants, trees and shrubs shall conform to or exceed minimum quality standards as defined by the American Nursery and Landscaping Association, current edition of ANSI Z60.1, and shall be purchased from a Landscape Nursery. Plants, trees and shrubs furnished shall be of the same genus, species, cultivar and size as specified in the plans. Species and variety may be substituted only by the approval of the Engineer. Each plant, tree and shrub shall have an identification label, removed after the Substantial Completion inspection.

10.3.2 Planting locations for each individual species shall be identified prior to planting. Location shall be approved by the Engineer prior to installation.

10.3.3 Hand dig tree planting pits when in close proximity to existing utilities.

10.3.4 All plants, trees and shrubs shall be planted in accordance with all the drawings and specifications included in the plans.

10.3.5 Trees may not be stored on site for more than 24 hours prior to planting without prior approval and installation of a moisture retaining cover or bedding around all root balls.

10.3.6 Within 2 hours after being planted, plants, trees and shrubs shall be watered to thoroughly saturated backfill soil as this provides settlement and filling of voids in the backfill.

10.4 PLANT AND PLANT AREA MAINTENANCE

10.4.1 The Contractor is responsible for maintaining all plants and plant beds until the entire project is complete and accepted by the Owner, per the following:

1. The Contractor is responsible for controlling weeds and mowing all newly seeded, sodded and landscaping areas until a uniform perennial vegetative cover with a density of 90% of the native cover for unpaved areas and areas not covered by permanent structures has been established. The Contractor shall also spray and remove any weeds that are present prior to seeding, sodding and installing the landscaping areas. If areas are seeded in late fall, this requirement shall remain in effect the following spring.
2. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, resetting to proper grades or vertical position and performing other operations as required to establish healthy, viable plantings. Spray or treat as required to keep trees and plants free of insects and disease.
3. Fill settled areas with planting soil as necessary. Remove and replace landscape and mulch materials damaged or lost in areas.
4. Protect plants from damage due to landscape operations and operations of other Contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged planting.

10.5 MULCH RINGS AND TREEGATORS

10.5.1 Trees located in lawn areas shall receive a mulch ring with a minimum diameter of 4 feet and a minimum thickness of 4 inches placed around each individual tree.

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WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI Project #: 21289

REGISTERED LANDSCAPE ARCHITECT REG. NO 11267 DAVID CHRISTOPHER LOCKE SOUTH DAKOTA 3/9/22

Plot Time: 3/16/2022 8:04 AM

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GENERAL NOTES

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10.5.2 A 20 gallon Treegator Slow Release Watering Bag shall be provided and installed with each tree. www.treegator.com. Each tree bag shall be refilled at least once per week.

10.6 WEED BARRIER FABRIC

10.6.1 Weed barrier fabric shall be placed at the areas specified in the plans.

10.6.2 Weed barrier fabric shall be anchored to the ground with 6" U shaped staples. The staples shall be placed at a 4' spacing along all edges, overlaps, and throughout the area of weed barrier fabric. The weed barrier fabric shall be overlapped 4" between rolls.

10.6.3 The weed barrier fabric shall be provided from the list below or an approved alternate:

1. SRW Pro Plus V
   SRW Products
   1-800-752-9326
   www.srwproducts.com
2. Pro 5
   DeWitt Company Inc.
   1-800-888-9669
   www.dewittcompany.com

10.7 MULCH

10.7.1 1-1/2-inch river rock mulch (multi-colored) shall be placed at a thickness of 3 inches in areas shown on the plans. Contractor shall leave a 12" diameter gap around each plant that shall be filled with shredded bark mulch.

10.8 LANDSCAPE EDGING

10.8.1 Landscape Edging shall be 3/16" x 5.5" aluminum edging in standard lengths with tapered steel angle stakes. Basis of Design: Sure-Loc, Aluminum Landscape edging black anodized, or equal as approved by addendum 10 days prior to bid date. Accessories include the manufacturer's standard alignment clips or stakes.

PRECAST MODULAR BLOCK GRAVITY RETAINING WALL

11.1 SUMMARY

11.1.1 This Section includes furnishing all materials and labor required for the design and construction of a precast concrete modular block (PMB) gravity retaining wall without geosynthetic reinforcement. Precast modular block retaining wall blocks under this section shall be cast utilizing a wet-cast concrete mixture, exhibit a final handling weight in excess of 1,000 pounds (450 kg) per unit, and may utilize concrete reinforcing steel.

11.1.2 Scope of Work: The work shall consist of furnishing materials, labor, equipment, and supervision for the construction of a precast modular block (PMB) retaining wall structure in accordance with the requirements of this section and in acceptable conformity with the lines, grades, design, and dimensions shown in the project site plans.

11.1.3 Drawings and General Provisions of the Contract, including General and Supplementary Conditions and General Notes also apply to this Section.

11.2 PRICE AND PAYMENT PROCEDURES

11.2.1 Unit Prices: In addition to a lump sum price pursuant to completion of the scope of work in the plans, the General Contractor shall provide a unit price per square foot of vertical wall face that shall be the basis of compensation for up to a ten (10) percent increase or reduction in the overall scope of the retaining wall work.

11.3 REFERENCES

11.3.1 Where the specification and reference documents conflict, the Owner's designated representative will make the final determination of the applicable document.

11.3.2 Definitions:

1. Precast Modular Block (PMB) Unit – machine placed, "wet cast" concrete modular block retaining wall facing unit.
2. Geotextile – a geosynthetic fabric manufactured for use as a separation and filtration medium between dissimilar soil materials.
3. Drainage Aggregate – clean, crushed stone placed within and immediately behind the precast modular block units to facilitate drainage and reduce compaction requirements immediately adjacent to and behind the precast modular block units.
4. Unit Core Fill – clean, crushed stone placed within the hollow vertical core of a precast modular block unit. Typically, the same material used for drainage aggregate as defined above.
5. Foundation Zone – soil zone immediately beneath the leveling pad.
6. Retained Zone – soil zone immediately behind the drainage aggregate and wall infill for wall sections designed as modular gravity structures.
7. Leveling Pad – hard, flat surface upon which the bottom course of precast modular blocks are placed. The leveling pad shall be constructed with crushed stone. A leveling pad is not a structural footing.
8. Wall Infill – the fill material placed and compacted between the drainage aggregate and the excavated soil face in retaining wall sections designed as modular gravity structures.
9. RWDE – retaining wall design engineer.

11.3.3 Reference Standards

1. Design
   i. AASHTO LRFD Bridge Design Specifications, 8th and 9th Edition.
   ii. Minimum Design Loads for Buildings and Other Structures – ASCE/SEI 7-16.
   iii. International Building Code, 2018 Edition.
   iv. Design Manual for Segmental Retaining Walls, National Concrete Masonry Association, 3rd Edition, 2010.
2. Precast Modular Block Units
   i. ACI 201 – Guide to Durable Concrete
   ii. ACI 318 – Building Code Requirements for Structural Concrete
   iii. ASTM C33 – Standard Specification for Concrete Aggregates
   iv. ASTM C39 – Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
   v. ASTM C94 – Standard Specification for Ready-Mixed Concrete.
   vi. ASTM C136 – Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
   vii. ASTM C143 – Standard Test Method for Slump of Hydraulic-Cement Concrete.
   viii. ASTM C150 – Standard Specification for Portland Cement
   ix. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
   x. ASTM C260 – Standard Specification for Air-Entraining Admixtures for Concrete.
   xi. ASTM C494 – Standard Specification for Chemical Admixtures for Concrete.
   xii. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
   xiii. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
   xiv. ASTM C666 – Standard Test Method for Concrete Resistance to Rapid Freezing and Thawing.
   xv. ASTM C845 - Standard Specification for Expansive Hydraulic Cement.
   xvi. ASTM C920 – Standard Specification for Elastomeric Joint Sealants.
   xvii. ASTM C989 - Standard Specification for Slag Cement for Use in Concrete and Mortars.
   xviii. ASTM C1116 – Standard Specification for Fiber-Reinforced Concrete.
   xix. ASTM C1157 - Standard Performance Specification for Hydraulic Cement.
   xx. ASTM C1218 - Standard Test Method for Water-Soluble Chloride in Mortar and Concrete.
   xxi. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures.
   xxii. ASTM C1611 – Standard Test Method for Slump Flow of Self-Consolidating Concrete.
   xxiii. ASTM C1776 – Standard Specification for Wet-Cast Precast Modular Retaining Wall Units.
   xxiv. ASTM D6638 – Standard Test Method for Determining Connection Strength Between Geosynthetic Reinforcement and Segmental Concrete Units (Modular Concrete Blocks).
   xxv. ASTM D6916 – Standard Test Method for Determining Shear Strength Between Segmental Concrete Units (Modular Concrete Blocks).
3. Geosynthetics
   i. AASHTO M 288 – Geotextile Specification for Highway Applications.
   ii. ASTM D3786 – Standard Test Method for Bursting Strength of Textile Fabrics Diaphragm Bursting Strength Tester Method.
   iii. ASTM D4354 – Standard Practice for Sampling of Geosynthetics for Testing.
   iv. ASTM D4355 – Standard Test Method for Deterioration of Geotextiles
   v. ASTM D4491 – Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
   vi. ASTM D4533 – Standard Test Method for Trapezoid Tearing Strength of Geotextiles.
   vii. ASTM D4595 – Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method.
   viii. ASTM D4632 – Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
   ix. ASTM D4751 – Standard Test Method for Determining Apparent Opening Size of a Geotextile.
   x. ASTM D4759 – Standard Practice for Determining Specification Conformance of Geosynthetics.
   xi. ASTM D4833 – Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products.
   xii. ASTM D4873 – Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples.
   xiii. ASTM D6241 – Standard Test Method for the Static Puncture Strength of Geotextiles and Geotextile-Related Products Using a 50-mm Probe.
4. Soils
   i. AASHTO M 145 – AASHTO Soil Classification System.
   ii. AASHTO T 104 – Standard Method of Test for Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate.
   iii. AASHTO T 267 – Standard Method of Test for Determination of Organic Content in Soils by Loss of Ignition.
   iv. ASTM C33 – Standard Specification for Concrete Aggregates.
   v. ASTM D448 – Standard Classification for Sizes of Aggregates for Road and Bridge Construction.
   vi. ASTM D698 – Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort. (12,400 ft-lb./ft (2,700 kN-m/m)).
   vii. ASTM D1241 – Standard Specification for Materials for Soil-Aggregate Subbase, Base and Surface Courses.
   viii. ASTM D1556 – Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method.

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WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI Project #: 21289

REGISTERED LANDSCAPE ARCHITECT REG. NO 11267 JONATHAN JACKSON SOUTH DAKOTA 3/16/22

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GENERAL NOTES

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ix. ASTM D1557 – Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort. (56,000 ft-lb./ft (2,700 kN-m/m)).

x. ASTM D2487 – Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).

xi. ASTM D2488 – Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).

xii. ASTM D3080 – Standard Test Method for Direct Shear Test of Soils Under Consolidated Drained Conditions.

xiii. ASTM D4254 – Standard Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.

xiv. ASTM D4318 – Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

xv. ASTM D4767- Test Method for Consolidated-Undrained Triaxial Compression Test for Cohesive Soils.

xvi. ASTM D4972 – Standard Test Method for pH of Soils.

xvii. ASTM D6913 – Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis.

xviii. ASTM D6938 – Standard Test Method for In-Place Density and Water Content of Soil and Aggregate by Nuclear Methods (Shallow Depth).

xix. ASTM G51 – Standard Test Method for Measuring pH of Soil for Use in Corrosion Testing.

xx. ASTM G57 – Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method.

11.4 ADMINISTRATIVE REQUIREMENTS

11.4.1 Preconstruction Meeting. As directed by the Owner, the General Contractor shall schedule a preconstruction meeting at the project site prior to commencement of retaining wall construction. Participation in the preconstruction meeting shall be required of the General Contractor, the Retaining Wall Installation Contractor (RWIC), the Earthwork/Grading Contractor, and the Qualified Inspection Engineer. The General Contractor shall provide notification to all parties at least 10 calendar days prior to the meeting.

1. Preconstruction Meeting Agenda:

   i. The RWIC shall be provided the opportunity to explain all aspects of the retaining wall construction drawings.

   ii. The RWIC shall explain all excavation needs, site access and material staging area requirements to the General Contractor and Earthwork/Grading Contractor.

11.5 SUBMITTALS

11.5.1 Product Data. At least 14 days prior to construction, the General Contractor shall submit the retaining wall product submittal package to the Owner's Representative for review and approval. The submittal package shall include technical specifications and product data from the manufacturer for the following:

1. Precast Modular Block System brochure
2. Precast Modular Block concrete test results as follows:

   i. 28-day compressive strength

   ii. Air content

   iii. Slump or Slump Flow (as applicable)

3. Geotextile

11.5.2 Installer Qualification Data. At least 14 days prior to construction, the General Contractor shall submit the qualifications of the business entity responsible for installation of the retaining wall, the RWIC.

11.5.3 Retaining Wall Design Calculations and Construction Shop Drawings. Prior to construction, the General Contractor shall furnish construction shop drawings and the supporting structural calculations report to the Owner for review and approval. Unless specifically requested by the Owner, the submittal may be in electronic format. This submittal shall include the following:

1. Signed, sealed (State of South Dakota) and dated drawings and engineering calculations prepared in accordance with these specifications.

11.6 CONSTRUCTION SHOP DRAWING PREPARATION

11.6.1 The RWDE shall coordinate the retaining wall construction shop drawing preparation with the project Civil Engineer, project Geotechnical Engineer and Owner's Representatives. The General Contractor shall furnish the RWDE the following project information required to prepare the construction shop drawings. This information shall include, but is not limited to, the following:

1. Current versions of the site, grading, drainage, utility, erosion control, landscape, and irrigation plans.
2. Electronic CAD file of the civil site plans listed in (1).
3. Report of geotechnical investigation and all addenda and supplemental reports.
4. Recommendations of the project Geotechnical Engineer regarding effective stress shear strength and total stress shear strength (when applicable) parameters for in-situ soils in the vicinity of the proposed retaining wall(s) and for any fill soil that may potentially be used as backfill in retained and/or foundation zones of the retaining wall.
5. Information pertaining to the magnitude, location, and nature of surcharge loadings acting on or near the proposed wall.

11.6.2 The RWDE shall provide the Owner with a certificate of professional liability insurance verifying the minimum coverage limits of $1 million per claim and $1 million aggregate.

11.6.3 Design of the precast modular block retaining wall shall satisfy the requirements of this section. Where local design or building code requirements exceed these specifications, the local requirements shall also be satisfied.

11.6.4 The RWDE shall note any exceptions to the requirements of this section by listing them at the bottom right corner of the first page of the construction shop drawings.

11.6.5 Approval or rejection of the exceptions taken by the Retaining Wall Engineer will be made in writing as directed by the Owner.

11.6.6 The RWDE shall determine the appropriate standard(s) to be utilized, and to which the precast modular block design shall be based upon, except as noted herein.

11.6.7 In the event that a conflict is discovered between these specifications and a reasonable interpretation of the design specifications and methods referenced in Paragraph above, these specifications shall prevail.

11.6.8 Soil Shear Parameters. The RWDE shall prepare the construction shop drawings based upon soil shear strength parameters from the available project data and the recommendations of the project Geotechnical Engineer. If insufficient data exists to develop the retaining wall design, the RWDE shall communicate the specific deficiency of the project information or data to the Owner in writing.

11.6.9 Allowable bearing pressure requirements for each retaining wall shall be clearly shown on the construction drawings.

11.7 QUALITY ASSURANCE

11.7.1 RWIC Qualifications. In order to demonstrate basic competence in the construction of precast modular block walls, the RWIC shall document compliance with the following:

1. Experience.

   i. Construction experience with a minimum of 3,000 square feet of the proposed precast modular block retaining wall system.

   ii. Construction of at least three (3) precast modular block (large block) retaining wall structures within the past three (3) years.

2. RWIC experience documentation for each qualifying project shall include:

   i. Project name and location

   ii. Date (month and year) of construction completion

   iii. Contact information of Owner or General Contractor

   iv. Type (trade name) of precast modular block system used

   v. Maximum height of the wall constructed

   vi. Face area of the wall constructed

3. In lieu of the requirements set forth in items 1 and 2 above, the RWIC must submit documentation demonstrating competency in precast modular block retaining wall construction through a training program that is deemed acceptable by the Owner.

11.7.2 RWDE Qualifications and Statement of Experience. The RWDE shall submit a written statement affirming that he or she has the following minimum qualifications and experience.

1. The RWDE shall be licensed to practice in the jurisdiction of the project location.
2. The RWDE shall be independently capable of performing all internal and external stability analyses, including those for compound stability, rapid draw-down and deep-seated.
3. The RWDE shall affirm in writing that he or she has personally supervised the design of the retaining walls for the project, that the design considers all the requirements listed and that he or she accepts responsibility as the design engineer of record for the retaining walls constructed on the project.
4. The RWDE shall affirm in writing that he or she has designed a minimum of approximately 3,000 face square feet of modular block earth retaining walls within the previous five (5) years.
5. In lieu of these specific requirements, the engineer may submit alternate documentation demonstrating competency in Precast Modular Block retaining wall design.

11.7.3 The Owner reserves the right to reject the design services of any engineer or engineering firm who, in the sole opinion of the Owner, does not possess the requisite experience or qualifications.

11.8 QUALITY CONTROL

11.8.1 The Owner's Representative shall review all submittals for materials, design, RWDE qualifications and the RWIC qualifications.

11.8.2 The Owner's engagement of the Inspection Engineer does not relieve the RWIC of responsibility to construct the proposed retaining wall in accordance with the approved construction shop drawings and these specifications.

11.8.3 The RWIC shall inspect the on-site grades and excavations prior to construction and notify the RWDE and General Contractor if on-site conditions differ from the elevations, assumptions, grading, and soil and groundwater conditions depicted in the retaining wall construction shop drawings.

11.9 DELIVERY, STORAGE AND HANDLING

11.9.1 The RWIC shall inspect the materials upon delivery to ensure that the proper type, grade and color of materials have been delivered.

11.9.2 The RWIC shall store and handle all materials in accordance with the manufacturer's recommendations as specified herein and in a manner that prevents deterioration or damage due to moisture, temperature changes, contaminants, corrosion, breaking, chipping, UV exposure or other causes. Damaged materials shall not be incorporated into the work.

11.9.3 Geosynthetics

1. All geosynthetic materials shall be handled in accordance with ASTM D4873. The materials should be stored off the ground and protected from precipitation, sunlight, dirt and physical damage.

11.9.4 Precast Modular Blocks

1. Precast modular blocks shall be stored in an area with positive drainage away from the blocks. Be careful to protect the block from mud and excessive chipping and breakage. Precast modular blocks shall not be stacked more than three (3) units high in the storage area.

11.9.5 Drainage Aggregate and Backfill Stockpiles

1. Drainage aggregate or backfill material shall not be piled over unstable slopes or areas of the project site with buried utilities.

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City of Yankton SOUTH DAKOTA Values Plan Here

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI Project #: 21289

REGISTERED LANDSCAPE ARCHITECT
REG. NO. 11267
DAVID ROBINSON
SOUTH DAKOTA
3/9/22

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2. Drainage aggregate material shall not be staged where it may become mixed with or contaminated by poor draining fine-grained soils such as clay or silt.

MATERIALS

11.10 PRECAST MODULAR BLOCK RETAINING WALL UNITS

11.10.1 All units shall be wet-cast precast modular retaining wall units conforming to ASTM C1776.

11.10.2 All units for the project shall be obtained from the same manufacturer. The manufacturer shall be licensed and authorized to produce the retaining wall units by the precast modular block system patent holder/licensor and shall document compliance with the published quality control standards of the proprietary precast modular block system licensor for the previous three (3) years, or the total time the manufacturer has been licensed, whichever is less.

11.10.3 Concrete used in the production of the precast modular block units shall be first-purpose, fresh concrete. It shall not consist of returned, reconstituted, surplus or waste concrete. It shall be an original production mix meeting the requirements of ASTM C94 and exhibit the properties as shown in the following table:

Concrete Mix Properties:

Freeze Thaw Exposure Class	Minimum 28-Day Compressive Strength	Maximum Water Cement Ratio	Nominal Maximum Aggregate Size	Aggregate Class Designation[1]	Air Content
Very Severe	4,500 psi (30.0 MPa)	0.40	1 inch (25 mm)	4S	6.0% +/- 1.5%
Maximum Water-Soluble Chloride Ion (Cl^-) Content in Concrete, Percent by Weight of Cement					0.15
Maximum Chloride as Cl^- Concentration in Mixing Water, Parts Per Million					1000
Maximum Percentage of Total Cementitious Materials By Weight [2] (Very Severe Exposure Class Only):					
Fly Ash or Other Pozzolans Conforming to ASTM C618					25
Slag Conforming to ASTM C989					50
Silica Fume Conforming to ASTM C1240					10
Total of Fly Ash or Other Pozzolans, Slag, and Silica Fume[3]					50
Total of Fly Ash or Other Pozzolans and Silica Fume[3]					35
Alkali-Aggregate Reactivity Mitigation per ACI 201					
Slump (Conventional Concrete) per ASTM C143[10]				5 inches +/- 1½ inches (125 mm +/- 40 mm)	
Slump Flow (Self-Consolidating Concrete) per ASTM C1611				18 inches – 32 inches (450 mm – 800 mm)	

[1]Defined in ASTM C33 Table 3 *Limits for Deleterious Substances and Physical Property Requirements of Coarse Aggregates for Concrete.*
[2]The total cementitious material also includes ASTM C150, C595, C845, C1157 cement. The maximum percentages shall include:
(a) Fly ash or other pozzolans in type IP, blended cement, ASTM C595, or ASTM C1157.
(b) Slag used in the manufacture of an IS blended cement, ASTM C595, or ASTM C1157.
(c) Silica fume, ASTM C1240, present in a blended cement.
[3]Fly ash or other pozzolans and silica fume shall constitute no more than 25 and 10 percent, respectively, of the total weight of the cementitious materials.

11.10.4 Each concrete block shall be cast in a single continuous pour without cold joints. With the exception of half-block units, corner units and other special application units, the precast modular block units shall conform to the nominal dimensions listed in the table below and be produced to the dimensional tolerances shown.

Block Type	Dimension	Nominal Value	Tolerance
28" (710 mm) Block	Height	18" (457 mm)	+/- 3/16" (5 mm)
	Length	46-1/8" (1172 mm)	+/- 1/2" (13 mm)
	Width*	28" (710 mm)	+/- 1/2" (13 mm)
41" (1030 mm) Block	Height	18" (457 mm)	+/- 3/16" (5 mm)
	Length	46-1/8" (1172 mm)	+/- 1/2" (13 mm)
	Width*	40-1/2" (1030 mm)	+/- 1/2" (13 mm)
60" (1520 mm) Block	Height	18" (457 mm)	+/- 3/16" (5 mm)
	Length	46-1/8" (1172 mm)	+/- 1/2" (13 mm)
	Width*	60" (1520 mm)	+/- 1/2" (13 mm)
52" (1320 mm) XL Block	Height	36" (914 mm)	+/- 3/16" (5 mm)
	Length	46-1/8" (1172 mm)	+/- 1/2" (13 mm)
	Width*	52" (1320 mm)	+/- 1/2" (13 mm)
72" (1830 mm) XL Block	Height	36" (914 mm)	+/- 3/16" (5 mm)
	Length	46-1/8" (1172 mm)	+/- 1/2" (13 mm)
	Width*	72" (1830 mm)	+/- 1/2" (13 mm)
96" (2440 mm) XL Block	Height	36" (914 mm)	+/- 3/16" (5 mm)
	Length	46-1/8" (1172 mm)	+/- 1/2" (13 mm)
	Width*	96" (2440 mm)	+/- 1/2" (13 mm)

* Block tolerance measurements shall exclude variable face texture

11.10.5 Individual block units shall have a nominal height of 18 inches.

11.10.6 With the exception of half-block units, corner units and other special application units, the precast modular block units shall have

1. Two (2), circular dome shear knobs that are 10 inches (254 mm), 7.5 inches (190 mm), or 6.75 inches (171 mm) in diameter and 4 inches (102 mm) or 2 inches (51 mm) in height. The shear knobs shall fully index into a continuous semi-cylindrical shear channel in the bottom of the block course above.
2. The peak interface shear between any two (2) vertically stacked precast modular block units, with 10 inch (254 mm) diameter shear knobs, measured in accordance with ASTM D6916 shall exceed 6,500 lb/ft (95 kN/m) at a minimum normal load of 500 lb/ft (7kN/m). as well as an ultimate peak interface shear capacity in excess of 11,000 lb/ft (160 kN/m).
3. The peak interlock shear between any two (2) vertically stacked precast modular block units, with 7.5 inch (190 mm) or 6.75 inch (171 mm) diameter shear knobs, measured in accordance with ASTM D6916 shall exceed 1,850 lb/ft (27 kN/m) at a minimum normal load of 500 lb/ft (7kN/m) as well as an ultimate peak interface shear capacity in excess of 10,000 lb/ft (146 kN/m).
4. Test specimen blocks tested under ASTM D6916 shall be actual, full-scale production blocks of known compressive strength. The interface shear capacity reported shall be corrected for a 4,000 psi (27.6 MPa) concrete compressive strength. Regardless of precast modular block configuration, interface shear testing shall be completed without the inclusion of unit core infill aggregate.

11.10.7 In certain configurations and/or combinations of blocks, some minor on-site trimming/partial removal of some of the shear knobs may be necessary to allow for proper alignment.

11.10.8 The 28" (710 mm) and 41" (1030 mm) precast modular block units may be cast with a 13" (330 mm) wide, continuous vertical core slot completely through the block, or solid concrete.

11.10.9 Without field cutting or special modification, the precast modular block units shall be capable of achieving a minimum radius of 14 ft 6 in (4.42 m).

11.10.10 The precast modular block units shall be manufactured with integrally cast shear knobs that establish a standard horizontal set-back for subsequent block courses. The precast modular block system shall be available in the four (4) standard horizontal set-back facing batter options listed below:

18-inch High Blocks:

Horizontal Set-Back/Blk. Course	Max. Facing Batter
3/8" (10 mm)	1.2°
1-5/8" (41 mm)	5.2°
9-3/8" (238 mm)	27.5°
16-5/8" (422 mm)	42.7°

1. The precast modular block units shall be furnished with the required shear knobs that provide the facing batter required in the construction shop drawings.
2. Basis of Design: 9-3/8" setback per block course.

11.10.11 The precast modular block unit face texture shall be selected by the Owner from the available range of textures available from the precast modular block manufacturer. Each textured block facing unit shall be a minimum of 5.76 square feet (0.54 square meters) with a unique texture pattern that repeats with a maximum frequency of once in any 15 square feet (1.4 square meters) of wall face.

1. Basis of Design: Limestone.

11.10.12 The block color shall be selected by the Owner from the available range of colors available from the precast modular block manufacturer.

1. Basis of Design: Natural Color.

11.10.13 All precast modular block units shall be sound and free of cracks or other defects that would interfere with the proper installation of the unit, impair the strength or performance of the constructed wall. PMB units to be used in exposed wall construction shall not exhibit chips or cracks in the exposed face or faces of the unit that are not otherwise permitted. Chips smaller than 1.5" (38 mm) in its largest dimension and cracks not wider than 0.012" (0.3 mm) and not longer than 25% of the nominal height of the PMB unit shall be permitted. PMB units with bug holes in the exposed architectural face smaller than 0.50" in its largest dimension shall be permitted. Bug holes, water marks, and color variation on non-architectural faces are acceptable. PMB units that exhibit cracks that are continuous through any solid element of the PMB unit shall not be incorporated in the work regardless of the width or length of the crack.

11.10.14 Pre-approved Manufacturers.

1. Manufacturers of Redi-Rock Retaining Wall Systems as licensed by Redi-Rock International, LLC, 2940 Parkview Drive, Petoskey, MI 49770 USA; telephone (866) 222-8400; website: www.redi-rock.com.

11.10.15 Substitutions. Technical information demonstrating conformance with the requirements of this specification for an alternative precast modular block retaining wall system must be submitted for preapproval at least 14 calendar days prior to the bid date. Acceptable alternative PMB retaining wall systems, otherwise found to be in conformance with this specification, shall be approved in writing by the Owner 7 days prior to the bid date. The Owner's Representative reserves the right to provide no response to submissions made outside of the time requirements of this section or to submissions of block retaining wall systems that are determined to be unacceptable to the Owner.

11.11 GEOTEXTILE

11.11.1 Nonwoven geotextile fabric shall be placed as indicated on the retaining wall construction shop drawings. Additionally, the nonwoven geotextile fabric shall be placed in the v-shaped joint between adjacent block units on the same course. The nonwoven geotextile fabric shall meet the requirements Class 3 construction survivability in accordance with AASHTO M 288.

11.11.2 Pre-approved Nonwoven Geotextile Products.

1. Mirafi 140N
2. Propex Geotex 451
3. Skaps GT-142
4. Thrace-Linq 140EX
5. Carthage Mills FX-40HS
6. Stratatex ST 142

11.12 DRAINAGE AGGREGATE AND WALL INFILL

11.12.1 Drainage aggregate (and wall infill for retaining walls designed as modular gravity structures) shall be a durable crushed stone conforming to No. 57 size per ASTM C33 with the following particle-size distribution requirements per ASTM D6913:

U.S. Standard Sieve Size	% Passing
1-½" (38 mm)	100
1" (25 mm)	95-100
½" (13 mm)	25-60
No. 4 (4.76 mm)	0-10
No. 8 (2.38 mm)	0-5

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11.13 LEVELING PAD

11.13.1 The precast modular block units shall be placed on a leveling pad constructed from crushed stone. The leveling pad shall be constructed to the dimensions and limits shown on the retaining wall design drawings prepared by the RWDE.

11.13.2 Crushed stone used for construction of a granular leveling pad shall meet the requirements of the drainage aggregate and wall infill or a preapproved alternate material.

EXECUTION

11.14 GENERAL

11.14.1 All work shall be performed in accordance with OSHA, State, and local safety standards, state and local building codes and manufacturer's requirements.

11.14.2 The General Contractor is responsible for the location and protection of all existing underground utilities. Any new utilities proposed for installation in the vicinity of the retaining wall, shall be installed concurrent with retaining wall construction. The General Contractor shall coordinate the work of subcontractors affected by this requirement.

11.14.3 New utilities installed below the retaining wall shall be backfilled and compacted to a minimum of 98% maximum dry density per ASTM D698 standard proctor.

11.14.4 The General Contractor is responsible to ensure that safe excavations and embankments are maintained throughout the course of the project.

11.15 EXAMINATION

11.15.1 Prior to construction, the General Contractor, Grading Contractor, RWIC and Inspection Engineer shall examine the areas in which the retaining wall will be constructed to evaluate compliance with the requirements for installation tolerances, worker safety and any site conditions affecting performance of the completed structure. Installation shall proceed only after unsatisfactory conditions have been corrected.

11.16 PREPARATION

11.16.1 Excavation.

1. The Grading Contractor shall excavate to the lines and grades required for construction of the precast modular block retaining wall as shown on the construction drawings. The Grading Contractor shall minimize over-excavation.
2. Over-excavated soil shall be replaced with compacted fill in conformance with the specifications of the RWDE and General Notes of this project.
3. Embankment excavations shall be bench cut as directed by the project Geotechnical Engineer and inspected by the Inspection Engineer for compliance.

11.16.2 Foundation Preparation.

1. Prior to construction of the precast modular block retaining wall, the leveling pad area and undercut zone (if applicable) shall be cleared and grubbed. All topsoil, brush, frozen soil and organic material shall be removed. Additional foundation soils found to be unsatisfactory beyond the specified undercut limits shall be undercut and replaced with approved fill as directed by the project Geotechnical Engineer.

11.16.3 Leveling Pad.

1. The leveling pad shall be constructed to provide a level, hard surface on which to place the first course of precast modular block units. The leveling pad shall be placed in the dimensions shown on the retaining wall construction drawings and extend to the limits indicated.
2. Crushed Stone Leveling Pad. Crushed stone shall be placed in uniform maximum lifts of 6" (150 mm). The crushed stone shall be compacted by a minimum of 3 passes of a vibratory compactor capable of exerting 2,000 lb (8.9 kN) of centrifugal force and to the satisfaction of the Inspection Engineer.

11.17 PRECAST MODULAR BLOCK WALL SYSTEM INSTALLATION

11.17.1 The precast modular block structure shall be constructed in accordance with the construction drawings, these specifications and the recommendations of the retaining wall system component manufacturers. Where conflicts exist between the manufacturer's recommendations and these specifications, these specifications shall prevail.

11.17.2 Geotextile and drainage aggregate shall be installed as shown on the construction shop drawings.

11.17.3 Precast Modular Block Installation

1. The first course of block units shall be placed with the front face edges tightly abutted together on adjacent blocks, on the prepared leveling pad at the locations and elevations shown on the construction drawings. The RWIC shall take special care to ensure that the bottom course of block units are in full contact with the leveling pad, are set level and true and are properly aligned according to the locations shown on the construction drawings.
2. Backfill shall be placed in front of the bottom course of blocks prior to placement of subsequent block courses. Nonwoven geotextile fabric shall be placed in the V-shaped joints between adjacent blocks. Drainage aggregate shall be placed in the V-shaped joints between adjacent blocks, and extend to a minimum distance of 12" (300 mm) behind the block unit.
3. Drainage aggregate shall be placed in 9 inch to 12 inch maximum lifts (as specified by the Engineer) and compacted by a minimum of three (3) passes of a vibratory plate compactor capable exerting a minimum of 2,000 lb (8.9 kN) of centrifugal force, or by other suitable compaction methods.
4. Nonwoven geotextile fabric shall be placed between the drainage aggregate and the retained soil.
5. Subsequent courses of block units shall be installed with a running bond (approximate half block horizontal course-to-course offset). With the exception of 90 degree corner units, the shear channel of the upper block shall be fully engaged with the shear knobs of the block course below. The upper block course shall be pushed forward to fully engage the interface shear key between the blocks and to ensure consistent face batter and wall alignment. Drainage aggregate, unit core fill, geotextile and properly compacted backfill shall be complete and in-place for each course of block units before the next course of blocks is stacked.
6. The elevation of retained soil fill shall not be less than 1 block course (18") below the elevation of the retained backfill throughout the construction of the retaining wall.
7. If included as part of the precast modular block wall design, cap units shall be secured with an appropriate construction adhesive in accordance with the Manufacturer's recommendation.

11.17.4 Construction Tolerance. Allowable construction tolerance of the retaining wall shall be as follows:

1. Deviation from the design batter and horizontal alignment, when measured along a 10' (3 m) straight wall section, shall not exceed 3/4".
2. Deviation from the overall design batter shall not exceed 1/2" per 10' of wall height.
3. The maximum allowable offset (horizontal bulge) of the face in any precast modular block joint shall be 1/2".
4. The base of the precast modular block wall excavation shall be within 2" of the staked elevations, unless otherwise approved by the Inspection Engineer.
5. Differential vertical settlement of the face shall not exceed 1' along any 200' of wall length.
6. The maximum allowable vertical displacement of the face in any precast modular block joint shall be 1/2".
7. The wall face shall be placed within 2" of the horizontal location staked.

11.18 WALL INFILL AND BACKFILL PLACEMENT

11.18.1 Backfill material placed immediately behind the drainage aggregate shall be compacted as follows:

1. 98% of maximum dry density at ± 2% optimum moisture content per ASTM D698 standard proctor or 85% relative density per ASTM D4254.

11.18.2 Compactive effort within 3' of the back of the precast modular blocks should be accomplished with walk-behind compactors. Compaction in this zone shall be within 95% of maximum dry density as measured in accordance with ASTM D1557 modified proctor or 80% relative density per ASTM D 4254. Heavy equipment should not be operated within 3' of the back of the precast modular blocks.

11.18.3 Backfill material shall be installed in lifts that do not exceed a thickness of 9 to 12 inches, as specified by Engineer.

11.18.4 At the end of each work day, the RWIC shall grade the surface of the last lift of the granular wall infill to a 3% ± 1% slope away from the precast modular block wall face and compact it.

11.18.5 The Contractor shall always protect the precast modular block wall structure against surface water runoff through the use of berms, diversion ditches, silt fence, temporary drains and/or any other necessary measures to prevent soil staining of the wall face, scour of the retaining wall foundation or erosion of the reinforced backfill or wall infill.

11.19 OBSTRUCTIONS IN THE INFILL ZONE

11.19.1 The RWIC shall make all required allowances for obstructions behind and through the wall face in accordance with the approved construction shop drawings.

11.19.2 Should unplanned obstructions become apparent for which the approved construction shop drawings do not account, the affected portion of the wall shall not be constructed until the RWDE can appropriately address the required procedures for construction of the wall section in question.

11.20 COMPLETION

11.20.1 For walls supporting unpaved areas, a minimum of 12" (300 mm) of compacted, low-permeability fill shall be placed over the granular wall infill zone of the precast modular block retaining wall structure. The adjacent retained soil shall be graded to prevent ponding of water behind the completed retaining wall.

11.20.2 For retaining walls with crest slopes of 5H:1V or steeper, appropriate soil erosion/sedimentation control measures shall be installed along the wall crest immediately following construction and grading of the crest slope. The crest slope above the wall shall be immediately seeded and protected to establish vegetation.

11.20.3 The Contractor shall confirm that the as-built precast modular block wall geometries conform to the requirements of this section. The Contractor shall notify the Owner representative of any deviations.

PREFABRICATED CONTINENTAL EXPRESS BRIDGE

12.1 GENERAL

12.1.1 These specifications are for fully engineered half through truss (no overhead bracing) bridge of steel construction and shall be regarded as minimum standards for design and fabrication. The work included under this item shall consist of design, fabricating, finishing and transporting the steel truss bridge superstructure including bearings.

12.2 QUALIFIED BRIDGE MANUFACTURER

12.2.1 Each Contractor is required to identify their intended supplier as part of the bid submittal. Qualified Bridge Manufacturers must have at least 5 years of experience fabricating these types of structures and shall have an up to date quality certification by AISC as Certified Bridge Fabricator - Advanced (Major) with Fracture Critical Endorsement and Sophisticated Paint Endorsement. All suppliers shall fabricate their product utilizing a modern fabrication facility owned and operated by the Bridge Manufacturer that includes the use of CNC beam drilling machines, no brokers are allowed.

12.2.2 Pre-Approved Bridge Manufacturer:

1. Contech Engineered Solutions LLC
   1-800-338-1122
   E-mail: info@conteches.com

12.2.3 Bridge Manufacturers, other than those listed above, may be used provided the Engineer receives a written request at least 10 days prior to the bid. The written request shall accompany the following information:

1. Bridge Manufacturer's Product Literature.
2. Name and resume of Bridge Manufacturer's design professional who will be signing and sealing the engineering submittals.
3. Copy of current AISC certification.
4. Representative copies of detailed drawings, field procedures, calculations, quality control manual, welder's certifications, and proof of in-house C.W.I.
5. Listing of projects including owner, location, size, year of fabrication, and contact person.
6. Certification by the Bridge Manufacture's Design Professional that the bridge proposed will be in accordance with all project development done up to the date of these specifications.

12.2.4 The above will be evaluated by the Engineer for accuracy and ability to provide the bridge in accordance with these specifications. Bridge Manufactures other than those listed above may only be used if the Engineer provides written approval 5 days prior to the bid. The Engineer's ruling shall be final.

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12.3 BRIDGE MANUFACTURER'S DESIGN PROFESSIONAL AND SUBMITTALS

12.3.1 The Bridge Manufacturer shall have as a direct employee, an engineer who is experienced in bridge design to be in responsible charge of all engineering related task and design. The engineer shall have a minimum of 10 years of experience in bridge design and be a currently licensed civil or structural engineer in the State of South Dakota and shall be the engineer who will seal and sign the plans.

12.3.2 Engineering drawings, 11x17 format, shall be prepared and submitted to the Contractor or Owner for their review after receipt of the order. Submittal drawings shall be unique drawings, prepared to illustrate the specific portion of the bridge being fabricated. All relative design information such as member size, ASTM/AASHTO material specification, dimensions necessary to fabricate and required welding shall be clearly shown on the drawings. Drawings shall have referenced details and sheet numbers. All drawings shall be stamped, signed and dated by the Bridge Manufacturer's Design Professional.

12.3.3 Structural calculations for the design of the bridge superstructure shall be prepared by the Bridge Manufacturer and submitted for review after receipt of the order. Calculations shall include complete design, analysis and code checks for the controlling members, connectivity and support conditions, truss stability checks, deck design, deflection checks, bearings and all splices.

12.4 APPLICABLE CODES AND STANDARDS

12.4.1 Governing Specifications:

1. Bridge shall be designed in compliance with the AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges, 2009 (AASHTO Ped). Calculations shall be in accordance with this document, and formulas shall reference the appropriate sections.

12.4.2 Other Reference Codes, Specifications and Standards:

1. AASHTO LRFD Bridge Design Specifications, 9th Edition, 2020 (AASHTO LRFD)
2. AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, First Edition, 2005 (AASHTO Signs)
3. AISC Steel Construction Manual, 15th Edition, 2017 (AISC)
4. American Welding Society, Structural Welding Code, D1.1, 2015 (AWS D1.1)
5. ASCE/SEI 7-10 Minimum Design Loads for Buildings and Other Structures, 2010 (ASCE 7)
6. Setra Technical Guide for Footbridges, 2006 (Setra)
7. ANSI/AWC NDC-2015 National Design Specification for Wood Construction, 2015 (NDS)
8. Tropical Timbers of the World, US Forest Products Laboratory

12.4.3 The AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges shall control if any conflicting requirements occur with the Other Reference Documents and/or other local Codes.

12.5 BRIDGE SYSTEM TYPE

12.5.1 Truss Style

1. The truss style shall be a Connector®. The vertical trusses shall be designed such that the top and bottom chord members are parallel for the entire length of bridge. The interior verticals of the trusses shall be perpendicular to the top face of the bottom chord and the end verticals of the trusses shall be plumb. Trusses shall be laid out such that diagonals shall be at an angle of 30-degrees or more with respect to the bottom chord.

12.5.2 Diagonal Style

1. The vertical truss shall use a single-diagonal, Pratt configuration, where all the diagonals are in tension for gravity loads.

12.5.3 Floor Beam Location

1. The bridge shall utilize an H-Section configuration where the ends of the floor beams are welded only to the interior face of the verticals. The distance from the top of deck to the bottom of the bottom chord shall be determined by the Bridge Manufacturer during final design.

12.6 BRIDGE GEOMETRY

12.6.1 Span Length

1. The bridge span length shall be 90'-0" (horizontal straight line dimension) and measured from end to end of the bridge truss, not including the end dam, any deck extension or bearing that extends beyond the end of the truss.

12.6.2 Width

1. The bridge width shall be 8'-0" and shall be as measured from the inside face of structural truss

12.6.3 Top of Truss Height Above Deck

1. The top of the top chord shall not be less than 48" above the deck (measured from the high point of the deck). Note that this dimension may be exceeded due to truss height requirements for structural, deflection and vibration requirements.

12.6.4 Lower Steel Clearance

1. This dimension shall be the height of the bottom chord, plus an adequate weld clearance for the vertical to bottom chord and the floor beam to vertical connections, plus the height of the floor beam, plus the maximum thickness of the deck system.
2. The bridge manufacturer shall determine the distance from the top of the deck (measured from the highest point of the deck) to the bottom of any steel member.

12.6.5 Truss Bay Spacing

1. The number of bays and the dimension of the panel points shall be determined by the Bridge Manufacturer.

12.6.6 Camber

1. A single simple-span bridge shall have a vertical camber dimension at the mid span equal to 100% of the anticipated full dead load deflection rounded up to the next ¼".

12.6.7 Elevation Difference

1. The top of the decks at each end of the bridge shall be constructed with a vertical elevation difference to produce a 1.0% grade slope along the bridge deck.
2. The slope grade at the ends of the bridge due to the combination of camber and elevation difference shall not be more than 4.8%.

12.7 STRUCTURAL DESIGN LOADS

12.7.1 Dead Load

1. The bridge structure shall be designed for the total bridge weight including the final deck system.

12.7.2 Pedestrian Loading (PL)

1. The bridge structure shall be designed for a uniform pedestrian loading of 90 psf. This loading shall be patterned to produce the maximum load effects. Consideration of dynamic load allowance is not required with this loading.

12.7.3 Vehicle Load (VL)

1. The superstructure and deck system shall be designed for each of the following concentrated/vehicular loads:
   i. A concentrated load of 1,000 pounds placed on any area 2.5' by 2.5' square.
   ii. On bridges 6' and wider a single truck shall be placed to produce the maximum load effects and shall not be placed in combination with the pedestrian load. The dynamic load allowance need not be considered for this loading. The truck shall be the following:
      (a) 8' & 10' Wide: H5 vehicle (10,000 pound two-axle vehicle with 80% to rear axle).

12.7.4 Wind Load (WS)

1. Pedestrian bridges shall be designed for wind loads as specified in AASHTO Signs, Articles 3.8 and 3.9. The loading shall be based on a wind speed of 115 mph and applied over the exposed area in front elevations of both trusses including all enclosures.
2. In addition to the wind load specified above, a vertical uplift line load as specified in AASHTO LRFD Article 3.8.2 and determined as the force caused by a pressure of 20 psf over the full deck width, shall be applied concurrently. This loading shall be applied at the windward quarter point of the deck width.

12.7.5 Seismic (EQ)

1. Seismic loads shall not be considered or included in the design.

12.7.6 Fatigue Load (FL)

1. The fatigue loading shall be as specified in Section 11 of AASHTO Signs. The Natural Wind Gust specified in Article 11.7.1.2 need only be considered. The Truck-Induced Gust specified in Article 11.7.1.3 of AASHTO Signs shall not be considered.

12.7.7 Combination of Loads

1. The load combinations and load factors to be used shall be as specified in AASHTO LRFD Table 3.4.1-1, with the following exceptions:
   i. Load combinations Strength II, Strength IV, and Strength V need not be considered.
   ii. The load factor for Fatigue I load combination shall be taken as 1.0, and Fatigue II load combination need not be considered.

12.8 STRUCTURAL DESIGN CRITERIA

12.8.1 Modeling

1. The bridge shall be modeled and analyzed utilizing a three-dimensional computer software which shall account for moments induced in members due to joint fixity where applicable. Moments due to both truss deflection and joint eccentricity must be considered. All loads listed in Section 12.7 of these specifications shall be applied to the model and analyzed appropriately.

12.8.2 Lateral Frame Design

1. The bridge shall be designed and proportioned such that appropriate lateral stiffness is provided locally and globally, to ensure that the structure is stable.
2. For bridges without any overhead members (Half-Through Trusses), the vertical truss members, the floor beams and their connections shall be proportioned to resist a lateral force applied at the top of the truss verticals at the center of the top chord. This lateral force shall be applied as an additional load to the top of the vertical at the center of the top chord, creating a cantilever moment, which is then added to the forces obtained from the three-dimensional model. The magnitude of this lateral force shall not be less than 0.01/K times the average factored design compressive force in the two adjacent top chord members increased by a factor of safety of 1.33.
3. The top chord shall be analyzed as a column with elastic lateral supports at the panel points, considering all moments due to in-plane and out-of-plane bending, along with moments due to eccentricities of the members.
4. The U-Frame Stiffness of the verticals and floor beams shall be as specified in AASHTO Ped Article 7.1.2, assuming that the vertical and floor beam connection is rigid. This means that the following must be met:
   i. On H-Section floor beam connections, the floor beam width shall be at least 80% of the vertical face width in order to prevent any deformation due to tube wall plastification of the vertical member faces under service loads. The connection design will be checked at Strength I & Strength III load combinations.
   ii. The vertical and floor beam members shall not be connected to faces of the bottom chord at a 90-degrees to one another.
   iii. All fixed end moments in the floor beams and verticals due to floor beam rotations, in addition to the loads derived from a U-Frame analysis have been accounted for in the strength design of the connections.
5. At no time shall a K>2.0 be used in the design of the top chord.
6. The end verticals shall be designed as a simple cantilever to carry the loads obtained from the three-dimensional model, plus the cantilever moment due to a lateral load of 0.01 times the axial force in the end vertical, applied laterally at the top end of the end vertical at the center of the top chord.
7. The floor beams shall be sized for the forces obtained from a simple span, pinned end analysis, or from the forces obtained from the three-dimensional model, whichever controls.

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City of Yankton SOUTH DAKOTA Values Made Here

WESTSIDE PARK POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI Project #: 21289

REGISTERED LANDSCAPE ARCHITECT
REG. NO 1126
JOSHUA CHRISTIAN STOCKS
SOUTH DAKOTA
3/16/22

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GENERAL NOTES

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8. The diagonals and brace diagonals shall be analyzed as pinned-end connection members.
9. Interior verticals shall be analyzed as pinned-end connections unless longitudinal forces are applied to the verticals such as when the brace diagonals are connected to floor beams on an H-Section floor beam configuration. When longitudinal forces are applied to the verticals they shall be analyzed as fixed-end connections.
10. All other members shall be analyzed as fixed-end connections.

12.8.3 Deflections

1. The vertical deflection of the bridge due to the unfactored pedestrian live loading shall not exceed 1/360 of the span length.
2. The horizontal deflection of the bridge under unfactored wind loading shall not exceed 1/360 of the span length.

12.8.4 Fracture

1. The fracture toughness requirements and designation of Fracture Critical Member and Main Member designation are hereby waived for these structures.

12.8.5 Vibrations

1. Vibration of the structure shall not cause discomfort or concern to the users of the bridges. To assure this, the fundamental frequency (f) of the pedestrian bridge in the vertical direction, without live load, shall be greater than 3.0 hertz (Hz) to avoid the first harmonic. The fundamental frequency of the pedestrian bridge in the lateral direction, shall be greater than 1.3 Hz. If the fundamental frequency cannot satisfy these limitations, then the bridge should be proportioned such that either of the following criteria are satisfied:

    i. f > 2.86 * ln(180/W)

    or

    W > 180 * e(-0.35 * f)

2. Where W is the weight of the bridge in kips and f is the fundamental frequency in the vertical direction in Hz.
3. For bridges longer than 85 ft and shorter than 125 ft the vertical and horizontal vibration must also meet the requirements for Bridge Class III with a Mean comfort level in accordance with Setra.

12.9 DECK SYSTEM

12.9.1 Deck to be comprised of Reinforced Concrete designed to span from floor beam to floor beam.

12.9.2 Reinforced concrete shall be normal weight concrete (145 pounds per cubic foot maximum) and shall have a minimum compressive strength of 4,500 psi at 28 days, with an air content of 6% +/- 1.5%.

12.9.3 Concrete mix design, materials, quality, mixing, placement, finishing and testing shall be in accordance with the requirements of Section 552 of Federal Highway Administration Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP-14). FP-14 can be viewed or downloaded at: http://flh.fhwa.dot.gov/resources/specs

12.9.4 The surface of deck concrete shall be finished with a sidewalk finish per Section 552.14(c) of FP-14.

1. Finish after floating or at a time when finishing operations will not displace aggregate.
2. Strike off the surface using a strike board and then float the surface. Use an edging tool on edges and expansion joints. Broom the surface using a broom with stiff bristles, broom perpendicular to the centerline from edge to edge with adjacent strokes slightly overlapped. Produce regular corrugations not over ⅛ inch (3 millimeters) in depth without tearing the concrete. Correct porous spots, irregularities, depressions, small pockets, and rough spots while the concrete is plastic. Groove contraction joints at the required interval using an approved grooving tool.

12.9.5 Stay-in-place galvanized (G90 coating) metal form deck shall be used and shall be designed to support the weight of the wet concrete plus a 20 pounds per square foot construction load. Form deck shall be shop attached to floor beams via self-drilling fasteners, welding or power actuated fasteners. Welding shall not be used on painted or galvanized bridges. The longitudinal sheet laps shall be attached with self-drilling self-tapping fasteners at 36-inch maximum spacing. The attachment of the form deck to the floor beams is only necessary to keep the form deck in place during transportation and during the concrete placement. The form deck is not to be used for diaphragm action or composite action and provides no structural benefit to the truss or the deck after the concrete is set. Metal form deck panels shall be of a length to span a minimum of two bays of the truss supports. The top of deck to bottom of form deck shall be as required to support the anticipated loads but shall not be less than 5".

12.9.6 The concrete deck shall be designed to span longitudinally from floor beam to floor beam and to support the loads specified in Section 12.7 of these specifications.

12.9.7 A distribution width of deck is allowed, to support the anticipated vehicle wheel loads. This distribution width (E in feet) shall be the narrower of the following:

1. E = 4 + .06S

    i. Where S is the floor beam spacing minus one-half of the floor beam width.

2. One-half of the total driving width of the bridge deck.
3. 0.75 times the lateral wheel spacing of the vehicle.
4. 0.6S + Wheel Width

    i. Where S is the floor beam spacing minus one-half of the floor beam width.

    ii. The Wheel Width (in inches) is $2.5 * \sqrt{(\frac{0.01*P}{2.5})}$, where P is the wheel load in pounds

12.9.8 Reinforcing steel shall be ASTM A615 Grade 60 epoxy coated bars. All bar bends, anchorage and splices shall be in accordance with AASHTO Specifications. Top reinforcing shall have a minimum clearance of 2" to the top of deck.

12.9.9 Bridge Manufacturer shall designate the estimated slab thickness and reinforcing requirements at time of quotation. These estimates are to be used for quoting purposes only. Actual quantities may vary during the final design process, with costs variances due to any changes to the quantities being the sole responsibility of the contractor. Contractor shall supply all concrete and reinforcing materials

12.10 MATERIALS OF CONSTRUCTION

12.10.1 Structural Steel

1. All members of the truss and deck support system shall be fabricated from square or rectangular hollow structural shapes (HSS), with the exception that floor beams may be wide flange shapes. All open ends of end posts and floor support beams shall be capped. Drain holes shall be provided for all sections at the low point of the member that may become filled with water.
2. All bridges shall be fabricated using A847 for HSS sections and A588 for structural shapes and plates.
3. Minimum nominal thickness of primary hollow structural shapes shall be 1/4". Rolled shapes shall have a minimum thickness of 1/4"

12.10.2 Fasteners

1. Structural bolts used to field splice or connect all main members shall be ASTM F3125 Grade A325 Type 3 (Weathering). The nuts for these structural bolts shall be ASTM A563 Type 3 (Weathering).
2. Bolts used for the connection of a wood rub rail shall be 18-8 or 316 Stainless Steel, ¼" diameter carriage bolts.
3. Screws for the attachment of wood deck shall be steel, 5/16" diameter, six lobe drive, self-tapping screws. The screws shall have flat heads for the screws in the wood and round heads for the screws on the edge cover. The screws shall have a protective coating that will prevent corrosion due to contact with treated wood and environmental exposure.
4. Self-drilling fasteners for attachment of the form decking shall be #14 x 1" zinc plated hex washer head Tek screws.
5. Power Actuated fasteners shall be Hilti sheet metal nail X-ENP-19 fastener.

12.11 FINISH

12.11.1 For corrosion resistant high-strength low-alloy (weathering) steel no surface finish treatment is necessary. All exposed surfaces of structural steel to be cleaned in accordance with Steel Structures Painting Council Surface Preparation Specifications No. 7, SSPC -SP7 brush-off blast cleaning. Exposed surfaces of steel shall be defined as those surfaces seen from the deck or from the outside and bottom of the structure. All other surfaces to have standard mill finish. The steel will be allowed to form a protective weathering patina over time.

12.12 ATTACHMENTS

12.12.1 Safety Rails

1. Safety rail system shall be placed on the inside of the structure, spaced so as to prevent a 4-inch sphere from passing through the side truss for the full height of the side truss, or 48 inches, whichever is less. The top of the top chord may be considered the top of the rail system.
2. Rails system shall consist of horizontal rails. Rails shall be L 1 ¼ x 1 ¼ x 1/8 placed at a 45-degree orientation with both legs welded to truss verticals and with a maximum unsupported length of 6'-0" if placed on the inside of the structure and 7'-0" if placed on the outside of the structure. If the truss vertical spacing is greater than the maximum unsupported length, mid-bay supports will be required. When safety rails are placed on the inside of the structure and not covered by the end vertical, the ends of rail near the end of the bridge shall be mitered at a 45-degree angle, capped and ground smooth. No solid plate covering all rails as a unit will be allowed.
3. Each element of the pedestrian rail system shall be designed to support a uniformly applied load of 50 pounds per lineal foot, both transversely and vertically, acting simultaneously. In addition, each longitudinal element shall be designed to support a concentrated load of 200 pounds, which will act simultaneously with the above uniform loads at any point and in any direction at the top of the longitudinal element.
4. The posts of the pedestrian rail system shall be designed for a concentrated load applied at either the center of gravity of the upper longitudinal element or 60" above the top of the walkway, whichever is less. This concentrated load shall be equal to 200 pounds plus 0.05 times the post spacing in feet.

12.12.2 Toe Plate

1. Toe Plates shall be steel channel shape section, 4" high by 1" wide minimum with the end of the channel legs welded directly to the inside face of the truss verticals. The maximum unsupported length shall be 7'-0". If the vertical spacing is greater than the maximum unsupported length, mid-bay supports will be required. When the ends of the toe plates near the end of the bridge are not covered by the end verticals, they shall be capped and ground smooth. The bottom of the toe plate shall be placed 2" above the finished height of the deck. All seams of the toe plates shall be fully welded to give the appearance of a continuous member (welding should be located at a support member). If toe plates are incorporated into a safety rail system, they may be modified as needed but shall be a minimum of 4" high.

12.12.3 Rub Rail

1. Rub Rails shall be provided at a height of 3'-6" from top of the deck to the top of rub rail. Rub Rails shall be nominal 5/4x6 Ipe hardwood. If the vertical spacing exceeds 7'-0" then mid-bay supports will be required. Rub rails shall be supplied S4S, E4E. All exposed surfaces shall be smooth with no exposed sharp edges. Rub rails shall be attached using two ¼" diameter carriage bolts with lock nuts at each attachment. Attachment shall be to a structural angle welded directly to the side of the vertical. Where a seam occurs between two adjacent pieces of rub rail, two structural angles shall be used, one on each side of the truss vertical.

12.12.4 Expansion Joint

1. The gap between the end of the bridge deck and the back wall of the foundation system be sized to accommodate bridge movements due to thermal expansion of the bridge over the design temperature range. The gaps shall be covered with a steel cover which attaches to the bridge and extends over the gap and onto the top of the foundation system back wall. The steel cover shall have its edges rounded or beveled at a 45-degree angle. A compression seal sized for movement and rated for pedestrian traffic may be used in place of the steel cover.

12.13 BEARINGS

12.13.1 Bearing Type

1. Bearing type and size shall be designed by the Bridge Manufacturer based on anticipated loads and movements.

12.13.2 Design Temperature Range

1. The Design Temperature Range will be site specific and will be determined per AASHTO LRFD Article 3.12.2.

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GENERAL NOTES

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12.13.3 Non-Shrink Grouting

1. The bridge will be supplied with a lower setting plate. This setting plate shall be leveled and shimmed to the proper elevation. The space between the lower surface of the setting plate and the foundation surface shall be filled with a non-shrink grout capable of achieving a minimum compressive strength equal to or greater than the strength of the foundation concrete. The cost of the leveling, shimming, and non-shrink grout shall be the responsibility of the Contractor.

12.14 FOUNDATIONS

12.14.1 Foundation System

1. Foundation system has been designed by the project structural engineer in conjunction with the bridge bearing requirements and dimensions provided by the Bridge Manufacturer and the site-specific geotechnical information provided by the Geotechnical Engineer. All abutment dimensions and materials are included in the plans.

12.14.2 Anchor Bolts

1. Bridge Manufacturer shall design the diameter and grade of anchor bolts, based on the shear and tensile strength of the anchor bolt material only. All design considerations regarding concrete breakout strength in shear and tension, pullout strength, concrete side-face blowout strength, concrete pry out strength, embedment depth, type of anchorage or any other concrete failure modes are the responsibility of the Foundation Engineer and shall be shown on the final contract plans. All anchor bolts shall be galvanized. The Foundation Engineer shall determine if the anchor bolts shall be cast-in-place, drilled/epoxy, or expansion anchors. Anchor bolts shall be provided and installed by the Contractor.

12.15 FABRICATION

12.15.1 Welding procedures and weld qualification test procedures shall conform to the provisions of AWS D1.1. Filler metal shall be in accordance with the applicable AWS Filler Metal Specification and shall match the corrosion properties of the base metal.

12.15.2 Welders shall be qualified for each process and position used while fabricating the bridge. Qualification tests shall be in accordance with AWS D1.1. All weld qualifications and records shall be kept in accordance with the Fabricator's Quality Assurance Manual which has been approved and audited by AISC as the basis for certification.

12.15.3 Shop splices for main truss members shall be full penetration welds all around the perimeter of the member. These shop splices shall be performed using a full perimeter backing plate. After welding of the shop splices, the weld shall be ground smooth to match the perimeter of the member. Grinding these welds smooth is required and will be grounds for rejection of the bridge upon delivery if not completed.

12.15.4 Shop splices for all horizontal rail components to be located at the centerline of the truss verticals, each end welded to the truss vertical and seal welded together. Exposed surface of the seal welds as seen from the deck shall be ground smooth.

12.15.5 Shop spliced for all horizontal stringers to be located at the centerline of the floor beams, each end welded to the floor beam and seal welded together.

12.15.6 For shipping purposes, the bridge may be fabricated in sections. Sections shall be field assembled using bolted connections. No field welding of members shall be allowed.

12.15.7 The chord members of the bridge shall be bolted such that at least two faces of the member are bolted. This is to provide reasonable force distribution around the perimeter of the member. Bolted splices shall be designed and fabricated such that the head of the bolt and washer are the only item exposed. No through-bolting of the member is allowed. The nuts of the fastener cannot be welded to the internal splice plate and shall be held in plate with a nut capture system per Patent US 10,267,345 B2 or equal.

12.15.8 The diagonals and brace diagonals shall be bolted utilizing a through-bolt system with plates on the exterior faces of the members. An internal stiffening plate is required to keep the member from crushing during the bolt tightening process.

12.15.9 All bolted connections are considered to be pretensioned or slip-critical connections. All bolts are to be pretensioned per the requirements of section 8.2 of the Specification for Structural Joints Using High-Strength Bolts. Recommended tightening method of all structural bolts shall be Turn-of-the-Nut Pretensioning.

12.16 QUALITY CONTROL

12.16.1 The bridge shall be fabricated in a shop owned by the Bridge Manufacturer. This facility shall have up to date quality certification by AISC per Section 12.2 of these specifications.

12.16.2 The bridge manufacturer shall employ a Certified Weld Inspector (CWI), with endorsement by AWS QC1. This CWI shall be present during the complete fabrication of the bridge. The CWI shall provide written documentation that the bridge has been fabricated in accordance with these specifications and the approved design drawings.

12.16.3 Documentation

1. Material Certifications shall be available for review for all materials within the bridge. Traceability of heat numbers is required for all structural steel.
2. Documentation showing the performance of all critical quality checks shall also be made available for review by the Engineer or Owner.

12.16.4 All welds within the structure, shall be visually inspected for conformance to size, under cut, profile and finish.

12.16.5 All shop splices of main truss members shall be magnetic particle tested.

12.17 DELIVERY AND ERECTION

12.17.1 Delivery shall be made via truck to a location nearest the site which is accessible to normal over-the-road equipment. All trucks delivering bridge materials will need to be unloaded at the time of arrival. If the erection Contractor needs special delivery or delivery is restricted, they shall notify the Bridge Manufacturer prior to bid date. This includes site issues which may prevent over-the-road equipment from accessing the site. Steerable dollies are not used in the cost provided by the Bridge Manufacturer. Determining the length of bridge section which can be delivered is the responsibility of the Contractor and shall be communicated to the Bridge Manufacturer prior to the bid date.

12.17.2 The Bridge Manufacturer will provide standard typical written procedures for lifting and splicing the bridge. All actual means, methods, equipment and sequence of erection used are the responsibility of the Contractor.

12.18 WARRANTY

12.18.1 The Bridge Manufacture shall warrant, at the time of delivery, that it has conveyed good title to its steel structure, free of liens and encumbrances created by the Bridge Manufacture, and that its steel structure is free of defects in design, material and workmanship. This warranty shall be valid for a period of one (1) year from completed installation. Durable tropical hardwood decking and hardwood attachments shall carry a one (1) year warranty against rot, termite damage, or fungal decay.

12.18.2 This warranty shall not cover defects in the steel structure caused by abuse, misuse, overloading, accident, improper installation, maintenance, alteration, or any other cause not expressly warranted. This warranty shall not cover damage resulting from or relating to the use of any kind of de-icing material. This warranty shall be void unless owner's records are supplied that show compliance with the minimum guidelines specified in the in the Bridge Manufacture's inspection and maintenance procedures.

12.18.3 Repair, replacement, or adjustment, in Bridge Manufacture's sole discretion, shall be the exclusive remedy for any defects under this warranty. This warranty shall exclude liability for any indirect, consequential, or incidental damages.

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City of Yankton SOUTH DAKOTA

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA

SEI Project #: 21289

REGISTERED LANDSCAPE ARCHITECT
REG. NO. 11267
DAVID CHRISTIAN LOCKE
SOUTH DAKOTA
3/9/22

Plot Time: 3/16/2022 8:04 AM

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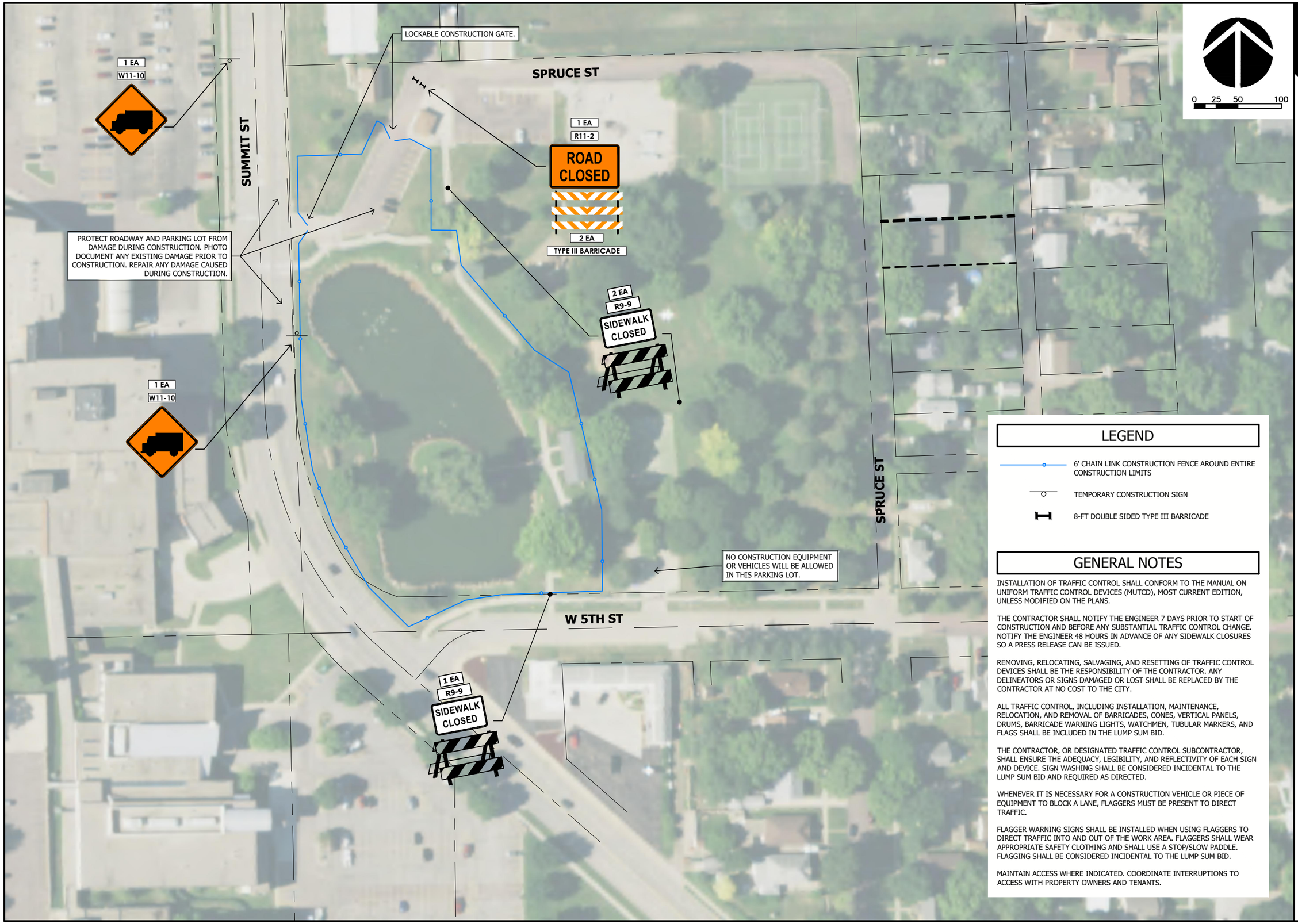
GENERAL NOTES

C-016

21289 - C-100 - Traffic Control Plan.dwg



LEGEND

- 6' CHAIN LINK CONSTRUCTION FENCE AROUND ENTIRE CONSTRUCTION LIMITS
- TEMPORARY CONSTRUCTION SIGN
- 8-FT DOUBLE SIDED TYPE III BARRICADE

GENERAL NOTES

INSTALLATION OF TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), MOST CURRENT EDITION, UNLESS MODIFIED ON THE PLANS.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER 7 DAYS PRIOR TO START OF CONSTRUCTION AND BEFORE ANY SUBSTANTIAL TRAFFIC CONTROL CHANGE. NOTIFY THE ENGINEER 48 HOURS IN ADVANCE OF ANY SIDEWALK CLOSURES SO A PRESS RELEASE CAN BE ISSUED.

REMOVING, RELOCATING, SALVAGING, AND RESETTING OF TRAFFIC CONTROL DEVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ANY DELINEATORS OR SIGNS DAMAGED OR LOST SHALL BE REPLACED BY THE CONTRACTOR AT NO COST TO THE CITY.

ALL TRAFFIC CONTROL, INCLUDING INSTALLATION, MAINTENANCE, RELOCATION, AND REMOVAL OF BARRICADES, CONES, VERTICAL PANELS, DRUMS, BARRICADE WARNING LIGHTS, WATCHMEN, TUBULAR MARKERS, AND FLAGS SHALL BE INCLUDED IN THE LUMP SUM BID.

THE CONTRACTOR, OR DESIGNATED TRAFFIC CONTROL SUBCONTRACTOR, SHALL ENSURE THE ADEQUACY, LEGIBILITY, AND REFLECTIVITY OF EACH SIGN AND DEVICE. SIGN WASHING SHALL BE CONSIDERED INCIDENTAL TO THE LUMP SUM BID AND REQUIRED AS DIRECTED.

WHENEVER IT IS NECESSARY FOR A CONSTRUCTION VEHICLE OR PIECE OF EQUIPMENT TO BLOCK A LANE, FLAGGERS MUST BE PRESENT TO DIRECT TRAFFIC.

FLAGGER WARNING SIGNS SHALL BE INSTALLED WHEN USING FLAGGERS TO DIRECT TRAFFIC INTO AND OUT OF THE WORK AREA. FLAGGERS SHALL WEAR APPROPRIATE SAFETY CLOTHING AND SHALL USE A STOP/SLOW PADDLE. FLAGGING SHALL BE CONSIDERED INCIDENTAL TO THE LUMP SUM BID.

MAINTAIN ACCESS WHERE INDICATED. COORDINATE INTERRUPTIONS TO ACCESS WITH PROPERTY OWNERS AND TENANTS.

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SOUTH DAKOTA
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TRAFFIC CONTROL PLAN

C-100

1.0 STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

1.1 GENERAL

1.1.1 The Contractor shall be responsible for preventing erosion and containing all construction related debris, sediments, or containments on site. Protective measures are illustrated in the technical drawings but are not meant to be all inclusive. The Contractor shall monitor their site and notify the Engineer of any failures to contain construction related pollutants.

1.1.2 The Contractor is responsible for maintaining and repairing all erosion control measures until a Notice of Termination is filed with the DANR. No payment will be made to the Contractor for maintaining or repairing those items unless otherwise specified.

1.2 STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

1.2.1 The numbers right of the title headings are **reference numbers** to the GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES

SITE DESCRIPTION (4.2 1)

- **Project Limits: See Title Sheet (4.2 1.b)**
- **Project Description: See General Notes (4.2 1.a.)**
- **Site Map(s): See Title Sheet and Plans (4.2 1.f. (1)-(6))**
- **Major Soil Disturbing Activities** (check all that apply)
  - ☒Clearing and grubbing
  - ☒Excavation/borrow
  - ☒Grading and shaping
  - ☒Filling
  - ☒Cutting and filling
  - ☐Other (describe):
- **Total Project Area** 2.2 Acres **(4.2 1.b.)**
- **Total Area To Be Disturbed** 2.2 Acres **(4.2 1.b.)**
- **Existing Vegetative Cover (%)** 35

Soil Properties: The subsurface profile at the test boring locations consisted of the following layers: existing fill materials, fine alluvium soils, Niobrara marl, glacial till soils and Pierre shale. The existing fill materials were encountered at the surface of the test borings and extended to a depth of 4 ½ feet. The fine alluvium soils were encountered at test boring 2 and extended to a depth of 10 feet. The Niobrara marl was encountered below the glacial till soils at test boring 1 and extended to a depth of 44 ½ feet (thickness of 31 feet). The glacial till soils were encountered at each test boring. At test boring 1, the glacial till soils extended to a depth of 13 ½ feet and extended to the termination depth of test boring 2 (shallow test boring). The Pierre shale was encountered below the Niobrara marl at test boring 1 and extended to the termination depth of the test boring. **(4.2 1. d.)**

- **Name of Receiving Water Body/Bodies:** Missouri River **(4.2 1.e.)**

ORDER OF CONSTRUCTION ACTIVITIES (4.2 1.C.)

(Stabilization measures shall be initiated as soon as possible, but in no case later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Initiation of final or temporary stabilization may exceed the 14-day limit if earth disturbing activities will be resumed within 21 days.)

- **Install perimeter protection where runoff sheets from the site.**
- **Install channel and ditch bottom protection.**
- **Clearing and grubbing.**
- **Remove and store topsoil.**
- **Stabilize disturbed areas.**
- **Install utilities.**
- **Install inlet and culvert protection after completing storm drainage and other utility installations.**
- **Complete final grading.**
- **Complete traffic control installation and protection devices.**
- **Reseed areas disturbed by removal activities**.

EROSION AND SEDIMENT CONTROLS (4.2 2.A.(1)(A)-(F))

(Check all that apply)

- **Stabilization Practices (See Detail Plan Sheets)**
  - ☐ Temporary Seeding (Cover Crop Seeding)
  - ☒ Permanent Seeding
  - ☐ Sodding
  - ☒ Planting (Woody Vegetation for Soil Stabilization)
  - ☐ Mulching (Grass Hay or Straw)
  - ☒ Hydraulic Mulch (Wood Fiber Mulch)
  - ☐ Soil Stabilizer
  - ☐ Bonded Fiber Matrix
  - ☒ Erosion Control Blankets or Mats
  - ☐ Vegetation Buffer Strips
  - ☒ Roughened Surface (e.g. tracking)
  - ☐ Dust Control
  - ☐ Other:
- **Structural Temporary Erosion and Sediment Controls**
  - ☐ Silt Fence
  - ☐ Floating Silt Curtain
  - ☐ Straw Bale Check
  - ☐ Temporary Berm
  - ☐ Temporary Slope Drain
  - ☒ Straw Wattles or Rolls
  - ☐ Turf Reinforcement Mat
  - ☒ Rip Rap
  - ☐ Gabions
  - ☐ Rock Check Dams
  - ☐ Sediment Traps/Basins
  - ☒ Inlet Protection
  - ☐ Outlet Protection
  - ☒ Surface Inlet Protection (Area Drain)
  - ☒ Curb Inlet Protection
  - ☐ Stabilized Construction Entrances
  - ☐ Entrance/Exit Equipment Tire Wash
  - ☐ Interceptor Ditch
  - ☒ Concrete Washout Area
  - ☐ Temporary Diversion Channel
  - ☐ Work Platform
  - ☐ Temporary Water Barrier
  - ☐ Temporary Water Crossing
  - ☐ Other:
- **Wetland Avoidance**

Will construction and/or erosion and sediment controls impinge on regulated wetlands? Yes ☐ No ☒ If yes, the structural and erosion and sediment controls have been included in the total project wetland impacts and have been included in the 404 permit process with the USACE.

- **Storm Water Management (4.2 2.b., (1) and (2))**

Storm water management will be handled by temporary controls outlined in "EROSION AND SEDIMENT CONTROLS" above, and any permanent controls needed to meet permanent storm water management needs in the post construction period. Permanent controls will be shown on the plans and noted as permanent.

- **Other Storm Water Controls (4.2 2.c., (1) and (2))**
  - **Waste Disposal**

    All liquid waste materials will be collected and stored in sealed metal containers approved by the project engineer. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal, and notices stating proper practices will be posted in the field office. The general contractor's representative responsible for the conduct of work on the site will be responsible for seeing waste disposal procedures are followed.
  - **Hazardous Waste**

    All hazardous waste materials will be disposed of in a manner specified by local or state regulations or by the manufacturer. Site personnel will be instructed in these practices, and the individual designated as the Contractor's on-site representative will be responsible for seeing that these practices are followed.
  - **Sanitary Waste**

    Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units in a timely manner by a licensed waste management contractor or as required by any local regulations.

MAINTENANCE AND INSPECTION (4.2 3. AND 4.2 4.)

- **Maintenance and Inspection Practices**
  - Inspections will be conducted at least one time per week and after a storm event of 0.50 inches or greater.
  - All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
  - Silt fence will be inspected for depth of sediment and for tears to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches $^1/_3$ of the height of the silt fence.
  - Sediment basins and traps will be checked. Sediment will be removed when depth reaches approximately 50 percent of the structure's capacity, and at the conclusion of the construction.
  - Check dams will be inspected for stability. Sediment will be removed when depth reaches ½ the height of the dam.
  - All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
  - Inspection and maintenance reports will be prepared for each site inspection, which will also document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
  - The Engineer and Contractor's site superintendent are responsible for inspections. Maintenance, repair activities are the responsibility of the contractor. The Engineer will complete the inspection and maintenance reports and distribute copies.

NON-STORM WATER DISCHARGES (3.0)

The following non-storm water discharges are anticipated during this project (check all that apply).

- ☐ Discharges from water line flushing.
- ☒ Pavement wash-water, where no spills or leaks of toxic or hazardous materials have occurred.
- ☒ Uncontaminated ground water associated with dewatering activities.

MATERIALS INVENTORY (4.2. 2.C.(2))

The following materials or substances are expected to be present on the site during the construction period. These materials will be handled as noted under the headings "EROSION AND SEDIMENT CONTROLS" and "SPILL PREVENTION" (check all that apply).

- ☒Concrete and Portland Cement
- ☐Detergents
- ☒Paints
- ☒Metals
- ☒Bituminous Materials
- ☒Petroleum Based Products
- ☒Cleaning Solvents
- ☒Wood
- ☒Cure
- ☐Texture
- ☒Chemical Fertilizers
- ☐Other:

SPILL PREVENTION (4.2 2.C.(2))

- **Material Management**
  - Housekeeping
    - Only needed products will be stored on-site by the contractor.
    - Except for bulk materials, the Contractor will store all materials under cover and in appropriate containers.
    - Products must be stored in original containers and labeled.
    - Material mixing will be conducted in accordance with the manufacturer's recommendations.
    - When possible, all products will be completely used before properly disposing of the container off site.
    - The manufacturer's directions for disposal of materials and containers will be followed.
    - The Contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
    - Dust generated will be controlled in an environmentally safe manner.
    - Vegetation areas not essential to the construction project will be preserved and maintained as noted on the plans.

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City of Yankton SOUTH DAKOTA Ideas Flow Here

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI Project #: 21289

REGISTERED LANDSCAPE ARCHITECT REG. NO 11267 DAVID CHRISTIAN COOKE SOUTH DAKOTA 3/16/22

Plot Time: 3/16/2022 8:16 AM

BID SET

SWPPP

C-200

- Hazardous Materials
  - Products will be kept in original containers unless the container is not resealable.
  - Original labels and material safety data sheets will be retained in a safe place to relay important product information.
  - If surplus product must be disposed of, manufacturer's label directions for disposal will be followed.
  - Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, de-greasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
  - Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any storm water system or storm water treatment system.
  - Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete pumping, residuals from concrete saw cutting (either wet or dry), and mixer washout waters will be collected on site and managed to prevent contamination of storm water runoff.

➢ **Product Specific Practices (6.8)**
- Petroleum Products
  All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.
- Fertilizers
  Fertilizers will be applied only in the amounts specified. Once applied, fertilizers will be worked into the soil to limit the exposure to storm water. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.
- Paints
  All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the manufacturer's instructions and any applicable state and local regulations.

➢ **Spill Control Practices (4.2 2 c.(2))**
In addition to the previous housekeeping and management practices, the following practices will be followed for spill prevention and cleanup if needed.
- For all hazardous materials stored on site, the manufacturer's recommended methods for spill clean up will be clearly posted. Site personnel will be made aware of the procedures and the locations of the information and cleanup supplies.
- Appropriate cleanup materials and equipment will be maintained by the contractor in the materials storage area on-site. As appropriate, equipment and materials may include items such as brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for clean up purposes.
- All spills will be cleaned immediately after discovery and the materials disposed of properly.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- After a spill a report will be prepared describing the spill, what caused it, and the cleanup measures taken. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, as well as clean up instructions in the event of reoccurrences.
- The contractor's site superintendent, responsible for day-to-day operations, will be the spill prevention and cleanup coordinator. The contractor is responsible for ensuring that the site superintendent has had appropriate training for hazardous materials handling, spill management, and cleanup.

➢ **Spill Response (4.2 2 c.(2))**
The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize migration into storm water runoff and conveyance systems. If the release has impacted on-site storm water, it is critical to contain the released materials on-site and prevent their release into receiving waters. If a spill of pollutants threatens storm water or surface water at the site, the spill response procedures outlined below must be implemented in a timely manner to prevent the release of pollutants.
- The Contractor's site superintendent will be notified immediately when a spill or the threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
- If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.
- Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the contractor at the site.
- If oil sheen is observed on surface water (e.g. settling ponds, detention ponds, swales), action will be taken immediately to remove the material causing the sheen. The contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.
- If a spill occurs the superintendent or the superintendent's designee will be responsible for completing the spill reporting form and for reporting the spill to SD DANR.
- Personnel with primary responsibility for spill response and clean up will receive training by the contractor's site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
- Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.

SPILL NOTIFICATION
In the event of a spill, the contractor's site superintendent will make the appropriate notification(s), consistent with the following procedures:

➢ A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to DANR immediately **if any one of the following** conditions exists:
- The discharge threatens or is in a position to threaten the waters of the state (surface water or ground water).
- The discharge causes an immediate danger to human health or safety.
- The discharge exceeds 25 gallons.
- The discharge causes a sheen on surface water.
- The discharge of any substance that exceeds the ground water quality standards of ARSD (Administrative Rules of South Dakota) chapter 74:51:01.
- The discharge of any substance that exceeds the surface water quality standards of ARSD chapter 74:51:01.
- The discharge of any substance that harms or threatens to harm wildlife or aquatic life.
- The discharge of crude oil in field activities under SDCL (South Dakota Codified Laws) chapter 45-9 is greater than 1 barrel (42 gallons).

To report a release or spill, call DANR at 605-773-3296 during regular office hours (8 a.m. to 5 p.m. Central time). To report the release after hours, on weekends or holidays, call State Radio Communications at 605-773-3231. Reporting the release to DANR does not meet any obligation for reporting to other state, local, or federal agencies. Therefore, the responsible person must also contact local authorities to determine the local reporting requirements for releases. DANR recommends that spills also be reported to the National Response Center at (800) 424-8802.

CONSTRUCTION CHANGES (4.4)
When changes are made to the construction project that will require alterations in the temporary erosion controls of the site, the Storm Water Pollution Prevention Plan (SWPPP) will be amended to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The Engineer will modify the SWPPP plan and drawings to reflect the needed changes. Copies of forms and the SWPPP will be retained in a designated place for review over the course of the project.

CERTIFICATIONS

➢ **Certification of Compliance with Federal, State, and Local Regulations**
The Storm Water Pollution Prevention Plan (SWPPP) for this project reflects the requirements of all local municipal jurisdictions for storm water management and sediment and erosion control as established by ordinance, as well as other state and federal requirements for sediment and erosion control plans, permits, notices or documentation as appropriate.

➢ **Owner**
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 gather and evaluate 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.

_____

Authorized Signature (See the General Permit, Section 6.7.1.C.)

➢ **Prime Contractor**
This section is to be executed by the General Contractor after the award of the contract. This section may be executed any time there is a change in the Prime Contractor of the project.

I certify under penalty of law that this document and all attachments will be revised or maintained under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate 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.

_____

Authorized Signature

CONTACT INFORMATION

➢ **Contractor Information**:
- Prime Contractor Name: _____
- Contractor Contact Name: _____
- Address: _____
- City: _____ State: _____ Zip: _____
- Office Phone: _____ Field: _____
- Cell Phone: _____ Fax: _____

➢ **Owner, City of Yankton**
- Name: Adam Haberman, Public Works Director
- Address: 416 Walnut Street
- City: Yankton State: South Dakota Zip: 57078
- Office Phone: 605-668-5250
- Cell Phone:
- Fax: 605-668-5265

➢ **Engineer, Stockwell Engineers**
- Name: David Locke
- Business Address: 801 N Phillips Ave, Suite 100
- City: Sioux Falls State: South Dakota Zip: 57104
- Office Phone: 605-338-6668
- Cell Phone: 605-951-7528
- Fax: 605-338-8750

➢ **SD DANR Contact Spill Reporting**
- Business Hours Monday-Friday (605) 773-3296
- Nights and Weekends (605) 773-3231

➢ **SD DANR Contact for Hazardous Materials.**
- (605) 773-3153

➢ **National Response Center Hotline**
- (800) 424-8802

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City of Yankton SOUTH DAKOTA Values How Here

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI Project #: 21289

REGISTERED LANDSCAPE ARCHITECT
REG. NO 11267
DAVID CHRISTIAN LOCKE
SOUTH DAKOTA
3/16/22

Plot Time: 3/16/2022 8:16 AM

BID SET

SWPPP

C-201

GENERAL NOTES

1. AT NO TIME SHALL ANY WATERS FROM THIS PROJECT ENTER THE STORM SEWER OR LEAVE THE PROJECT LIMITS WITHOUT EXPOSURE TO A SEDIMENT FILTRATION DEVICE. ALL DROP INLETS, MANHOLES, AND JUNCTION BOXES (EXISTING OR NEW) SHALL HAVE SEDIMENT CONTROL DEVICES PLACED AROUND THEIR PERIMETER DURING ALL STAGES OF CONSTRUCTION EXCEPT DURING THE PLACEMENT OF THE FINAL SURFACING. THIS MAY NECESSITATE MULTIPLE INSTALLATIONS OF THE SEDIMENT CONTROL DEVICES AT THE SAME LOCATION.
2. ALL PAVED STREETS/PARKING AREAS ADJACENT TO THE SITE SHALL BE SWEPT CLEAN AT THE END OF EACH DAY.
3. ANY DISCHARGE OF GROUNDWATER FROM THIS SITE TO THE CITY'S STORM SEWER SYSTEM IS NOT AUTHORIZED WITHOUT:
   - SUBMITTAL OF MONITORING DATA TO SD DANR TO DETERMINE WHAT TYPE OF SURFACE WATER DISCHARGE PERMIT WOULD BE NECESSARY.
   - APPROPRIATE SD DANR PERMIT MUST BE OBTAINED PRIOR TO ANY DISCHARGE,
5. ANY DISCHARGE OF GROUNDWATER FROM THIS SITE TO THE CITY'S SANITARY SEWER SYSTEM IS NOT AUTHORIZED WITHOUT:
   - SUBMITTAL OF A WASTEWATER DISCHARGE PERMIT APPLICATION TO PUBLIC WORKS AND RECEIVE CONDITIONAL APPROVAL OR PERMIT PRIOR TO DISCHARGE (CONTACT KYLE GOODMANSON, 668-5272).
6. IF GROUNDWATER IS DISCOVERED, A PROFESSIONAL GROUNDWATER AND ENVIRONMENTAL CONSULTANT SHALL REVIEW THE PLAN FOR GROUNDWATER HAZARDS, BOTH DURING CONSTRUCTION AND POST CONSTRUCTION, AND SUBMIT FINDINGS, SUGGESTIONS, AND/OR MITIGATION TO THE CITY FOR REVIEW OR CERTIFY THAT PROPOSED WORK IN AND AROUND CONSTRUCTION SITE IS CLASSIFIED AS NON-HAZARDOUS.
7. ALL DISTURBED AREAS DUE TO CONSTRUCTION ACTIVITY SHALL BE SEEDED WITH SPECIAL SEED MIX #1.
8. GRADING OPERATIONS THAT ARE LEFT OPEN OVER THE WINTER OR FOR LONGER THAN 14 DAYS SHALL RECEIVE TEMPORARY EROSION CONTROL IN THE FORM OF A COVER CROP OR BONDED FIBER MATRIX (SDDOT APPROVED PRODUCT) INSTALLATION PER MANUFACTURERS AND ENGINEERS RECOMMENDATION.

LEGEND

- SPECIAL SEED MIX #1
- LANDSCAPE AREA (SEE LANDSCAPE PLAN)
- RIPRAP OVER 12" CLAY LINER(SALVAGE AND REUSE EXISTING AND SUPPLEMENT WITH AN ADDITIONAL 150 TONS OF CLASS B FIELD STONE RIPRAP - SEE GENERAL NOTES)
- SITE DISTURBANCE LIMITS
- VTC — VEHICLE TRACKING CONTROL
- CWF — CONCRETE WASHOUT FACILITY
- W — 12" SEDIMENT CONTROL WATTLE
- INLET PROTECTION
- SB — SEDIMENT BASIN HORSESHOE FILTER

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City of Yankton SOUTH DAKOTA Ideas Flow Here

WESTSIDE PARK POND IMPROVEMENTS

YANKTON, SOUTH DAKOTA

SEI PROJECT #: 21289

REGISTERED LANDSCAPE ARCHITECT
REG. NO 11267
DAVID CHRISTIAN LARKE
SOUTH DAKOTA
3/16/22

PLOT DATE 3/16/2022 9:02 AM

BID SET

EROSION CONTROL PLAN

C-210

21289 - C-220 - Erosion Control Details.dwg

VTC

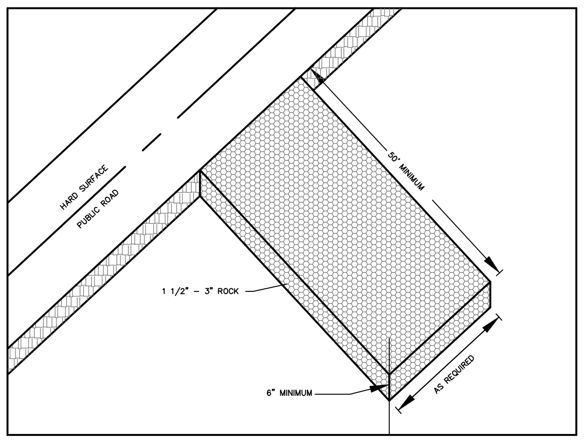
VEHICLE TRACKING CONTROL

DEFINITION:

A STONE STABILIZED PAD LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE.

PURPOSES:

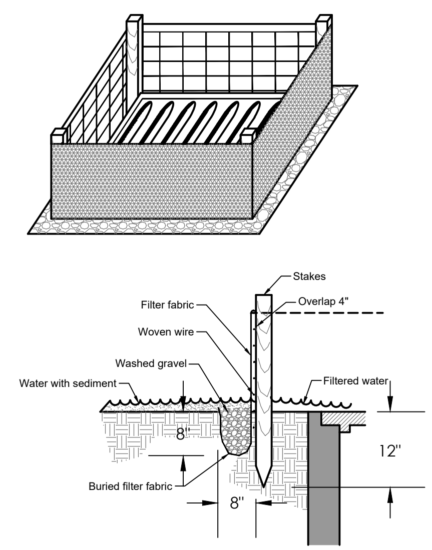
TO REDUCE THE AMOUNT OF MUD TRANSPORTED ONTO PUBLIC ROADS BY MOTOR VEHICLES OR RUNOFF.



TEMPORARY VEHICLE TRACKING CONTROL

1. Set posts.
2. Excavate an 8" x 8" trench upslope along the posts.
3. Attach a supporting wire fence to the posts
4. Attach fabric sandwich 4" fabric overlap between posts and wire and extend into trench.
5. Back fill trench. If rock type soils are encountered, utilize 30 to 40 lb sandbags butted end to end to prevent underflow.

Attach fabric with hog rings 12" maximum horizontal spacing on top and bottom of the woven wire and with staples or wire ties at 12" maximum vertical spacing on the posts.

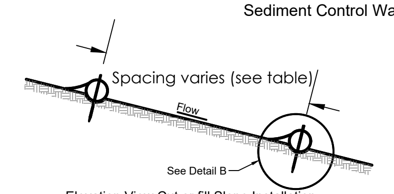


Filter fabric shall conform to Section 831 of SDDOT Standard Specifications for Roads and Bridges, latest edition.

SILT FENCE DROP INLET SEDIMENT FILTER N.T.S.

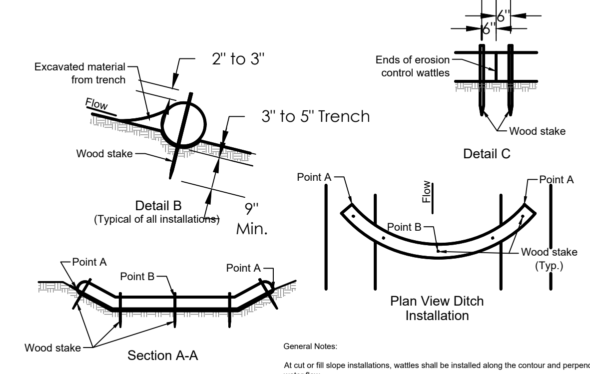
Sediment Control Wattle

W



Cut or Fill Slope Installation	
Slope	Spacing (FT)
1:1	10
2:1	20
3:1	30
4:1	40

Note: If only one wattle is required, the slope shall not exceed 20:1.



Ditch Installation	
Grade	Spacing (FT)
2%	150
3%	100
4%	75
5%	50

General Notes:

At cut or fill slope installations, wattles shall be installed along the contour and perpendicular to the water flow.

At ditch installations, point "A" must be higher than point "B" to ensure that water flows over the wattle and not around the ends.

The contractor shall dig a 3" to 5" trench, install the wattle tightly in the trench so that daylight can not be seen under the wattle, and then compact the soil excavated from the trench against the wattle on the uphill side. See Detail B.

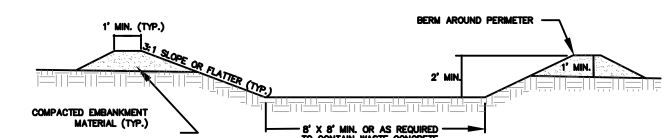
The stakes shall be 1"x2" or 2"x2" wood stakes, however, other types of stakes such as rebar may be used only if approved by the engineer. The stakes shall be placed 6" from the ends of the wattles and the spacing of the stakes along the wattles shall be 3' to 4'.

Where installing running lengths of wattles, the contractor shall butt the second wattle tightly against the first and shall not overlap the ends. See Detail C.

Sediment Control Wattle

NOTES:

1. CONCRETE WASHOUT FACILITY SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
2. A SIGN SHALL BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE CWF.
3. THE CONCRETE WASHOUT FACILITY SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
4. WHEN CWF ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE AND MATERIALS USED TO CONSTRUCT THE CWF SHALL BE REMOVED AND DISPOSED OF.
5. WHEN THE CONCRETE WASHOUT FACILITY IS REMOVED, THE HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE SHALL BE BACKFILLED, REPAIRED AND STABILIZED.

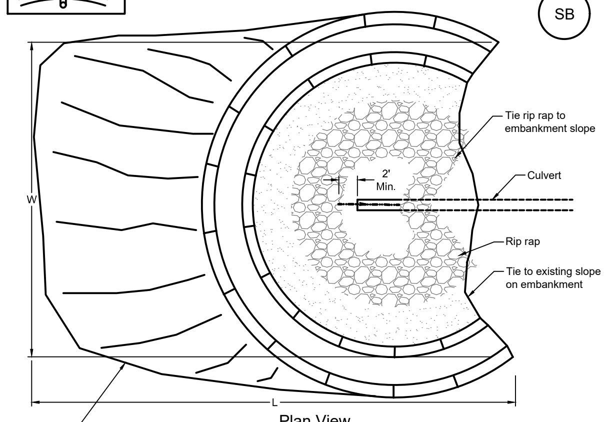


CROSS SECTIONAL VIEW

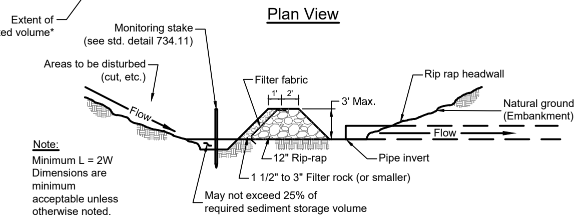
CONCRETE WASHOUT FACILITY N.T.S.

Sediment Basin Horseshoe Filter

SB



Plan View



Note:
Minimum L = 2W
Dimensions are minimum acceptable unless otherwise noted.

Section Thru Basin, Filter and Culvert Pipe

Note:
Gravel & rip rap filter berm basin detail is designed to protect existing pipe inverts that drain 50 acres or less.
* Existing topography may provide for required storage volume without excavation

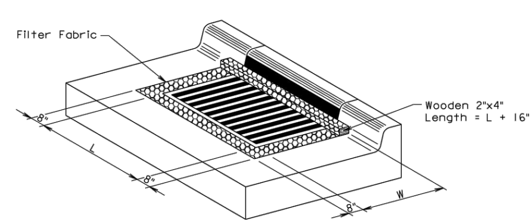
No Scale

Volume Required = 3600 CF / AC X tributary acre
Volume Provided = CF
Bottom Elevation =
Top Elevation =

Revised: January 2008

CITY OF SIOUX FALLS PUBLIC WORKS Providing a Better Quality of Life for You!	Sediment Basin Horseshoe Filter	Specification Reference No. 734	Plate Number 734.23

L = Length of Grate
W = Width of Grate



ISOMETRIC VIEW

GENERAL NOTES:

The grate and curb and gutter shown are for illustrative purposes only.

The sediment control at inlet with frame and grate shall be placed at locations stated in the plans or at locations determined by the Engineer.

The filter fabric shall be the type specified in the plans.

The filter fabric shall be placed in the inlet opening prior to placing the grate. Approximately 18 inches of excess filter fabric shall be wrapped around the 2"x4" and stapled securely to the 2"x4" after the grate has been placed.

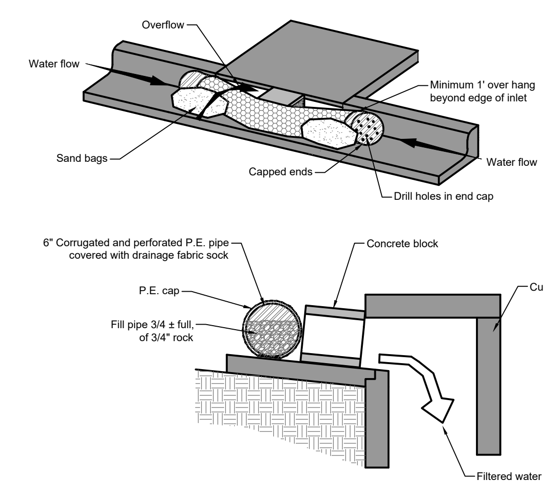
The Contractor shall inspect and maintain the sediment control device once every week and within 24 hours after every rainfall event. The Contractor shall maintain the sediment control device by removing accumulated sediment and replacing torn filter fabric with new filter fabric.

The removed sediment shall be placed at a location away from the drop inlet where the sediment will not be washed back into the drop inlet or other storm sewer system.

All costs for furnishing, installing, inspecting, maintaining, removing, and replacing the sediment control device at the inlet including labor, equipment, and materials shall be incidental to the contract unit price per each for "Sediment Control at Inlet with Frame and Grate".

September 14, 2005

Published Date: 4th Qtr. 2018	SDDOT	SEDIMENT CONTROL AT INLETS WITH FRAMES AND GRATES	PLATE NUMBER 734.10 Sheet 1 of 1



Specific Application:
This method of inlet protection is applicable at curb inlets where ponding in front of the structure is not likely to cause inconvenience or damage to adjacent structures and unprotected areas. Clean out as necessary to prevent blockage of runoff conveyance.

CORRUGATED PIPE AND FABRIC INLET PROTECTION - OVERFLOW N.T.S.

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

City of Yankton South Dakota

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

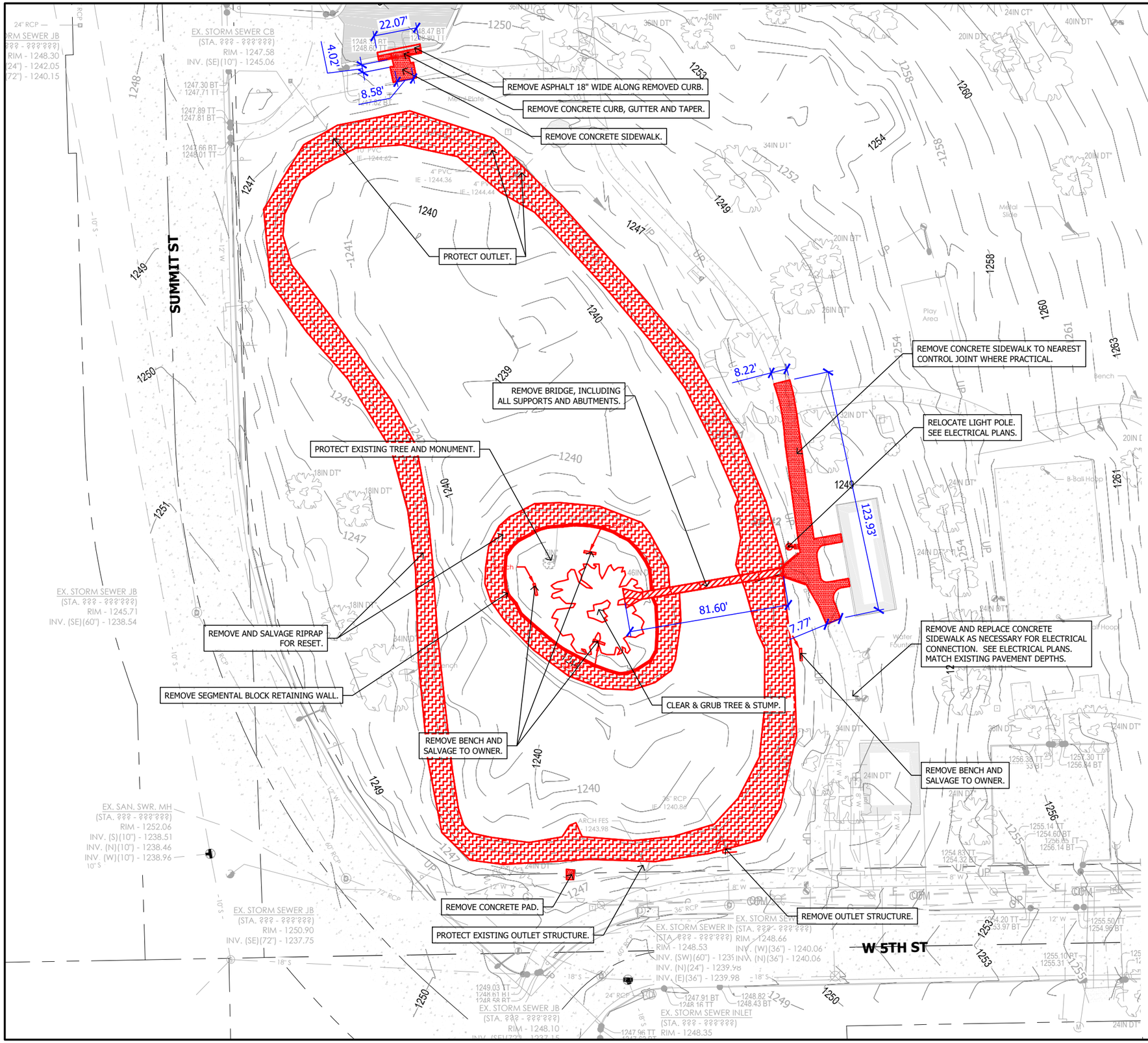
REGISTERED LANDSCAPE ARCHITECT REG. NO. 11267 DAVID CHRISTIAN ... SOUTH DAKOTA 3/16/22

PLOT DATE 3/16/2022 8:41 AM

BID SET

EROSION CONTROL DETAILS

C-220



GENERAL NOTES

PRIOR TO ANY EXCAVATION AT THE SITE, CONTRACTOR SHALL EXAMINE ANY APPLICABLE DRAWINGS AVAILABLE FROM THE OWNER AND/OR THE LANDSCAPE ARCHITECT, AND CONSULT WITH THE OWNER'S PERSONNEL AND UTILITY COMPANIES REPRESENTATIVES TO DETERMINE POSSIBLE UTILITY LOCATIONS AND DEPTHS. NO COMPENSATION WILL BE ALLOWED FOR DAMAGE RESULTING FROM FAILURE TO COMPLY WITH THIS REQUIREMENT. REPORT TO OWNER'S REPRESENTATIVE ANY DAMAGE TO EXISTING UTILITIES PRIOR TO REPAIR. CALL SOUTH DAKOTA ONE CALL: 811 (IN-STATE) OR (800)781-7474 (OUTSIDE OF SOUTH DAKOTA).

THE CONTRACTOR SHALL VERIFY THE LOCATION AND PROTECT ALL UTILITIES AND STRUCTURES. DAMAGE TO UTILITIES AND STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER OF THE UTILITIES.

FIELD VERIFY EXISTING GRADES AND LOCATIONS OF EXISTING UTILITIES, CONDUIT, LINES, POLES, TREES, PAVING, BUILDING, AND OTHER SITE STRUCTURES PRIOR TO DEMOLITION OR CONSTRUCTION AND IMMEDIATELY INFORM THE LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.

PRIOR TO START, COORDINATE AND SCHEDULE ENGINEER TO MARK REMOVAL LIMITS.

INSTALL EROSION CONTROL DEVICES PRIOR TO START.

CONTACT THE LANDSCAPE ARCHITECT PRIOR TO REMOVING ANY PLANT MATERIAL NOT INDICATED TO BE PROTECTED OR REMOVED.

PROTECT ALL ITEMS WITHIN CONTRACT LIMITS NOT INDICATED TO BE REMOVED. NOTIFY THE LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.

CONTRACTOR SHALL SAW CUT ALL ASPHALT OR CONCRETE TO BE REMOVED TO THE NEAREST CONTROL JOINT WHERE PRACTICAL.

KILL AND REMOVE ALL EXISTING VEGETATION NOTED ON THE PLANS PRIOR TO ALL GRADING ACTIVITIES.

REMOVE AND STOCKPILE ALL TOPSOIL FROM AREAS TO BE PAVED.

LEGEND

- REMOVE CONCRETE SIDEWALK
- REMOVE CONCRETE CURB & GUTTER
- REMOVE STRUCTURE
- REMOVE & SALVAGE FOR RESET RIPRAP
- CLEAR & GRUB TREE, STUMP, AND/OR BUSH
- TREE PROTECTION FENCING
- SITE DISTURBANCE LIMITS
- CENTERLINE
- PROPERTY LINE
- CONTOUR LINE
- NATURAL GAS
- UNDERGROUND TELEPHONE
- STEAM LINE
- UNDERGROUND POWER
- OVERHEAD POWER
- UNDERGROUND CABLE TV
- OVERHEAD CABLE TV
- SANITARY SEWER
- STORM SEWER
- WATER MAIN
- CURB AND GUTTER
- POWER POLE
- LIGHT POLE
- GUY WIRE
- WATER VALVE
- GAS VALVE
- MANHOLE
- FIRE HYDRANT
- TRAFFIC SIGNAL
- EXISTING SPOT ELEVATION
- BENCHMARK
- IRON PIN FOUND
- FENCE, BARBED WIRE
- FENCE, CHAIN LINK

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City of Yankton SOUTH DAKOTA
Where Life Flows

WESTSIDE PARK POND IMPROVEMENTS

YANKTON, SOUTH DAKOTA

SEI PROJECT #: 21289

REGISTERED LANDSCAPE ARCHITECT
REG. NO. 11267
DAVID CHRISTIAN LOCKE
SOUTH DAKOTA
3/15/22

PLOT DATE 3/16/2022 8:43 AM

BID SET

EXISTING CONDITIONS & REMOVALS

C-300

21289 - C-400 - Site Plan.dwg

SUMMIT ST

ASPHALT PATCH
CURB AND GUTTER
6" CONCRETE PAVEMENT WITH 4" AGGREGATE BASE COURSE
12" FREE DRAINING/MASON SAND
RAMP ACCESS CONCRETE CURB
7.95'
4.00'
12.00'
17.39'
9.00'
APPROXIMATE EDGE OF WATER
LIMITS OF RIP RAP
C-401
NEW PEDESTRIAN BRIDGE
6" CONCRETE SIDEWALK WITH 4" AGGREGATE BASE COURSE
6" CONCRETE SIDEWALK WITH 4" AGGREGATE BASE COURSE
REDI-ROCK BATTERED RETAINING WALL WITH STANDARD TOP BLOCK
REDI-ROCK FREESTANDING BOND BEAM WALL AT TOP OF BATTERED RETAINING WALL
REDI-ROCK FREESTANDING BOND BEAM WALL AT TOP OF BATTERED RETAINING WALL
NEW OUTLET STRUCTURE
W 5TH ST
Play Area
Metal Slide
Bench
B-Ball Hoop
Water Fountain
Stone
Metal Plate

0 12.5 25 50

GENERAL NOTES

1. WHEN NEW CONCRETE CURB AND GUTTER IS TO BE INSTALLED AND CONNECTING TO EXISTING CONCRETE CURB AND GUTTER, THE CONTRACTOR SHALL DRILL INTO THE EXISTING GUTTER PAN WITH TWO (2) NO. 4 X 24" EPOXY COATED DEFORMED TIE BARS.
2. ALL PEDESTRIAN RAMPS TO MEET ALL CURRENT AMERICAN WITH DISABILITIES ACT CODE REQUIREMENTS AND REGULATIONS.

LEGEND

- PROPERTY LINE
- 6" CONCRETE PAVEMENT W/ 4" AGGREGATE BASE COURSE
- ASPHALT PATCH (BY CITY)
- 12" FREE/MASON SAND, SEE DETAIL
- BRIDGE CONCRETE DECKING - SEE GENERAL NOTES
- EXPANSION JOINT

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City of Yankton SOUTH DAKOTA Ideas Flow Here

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

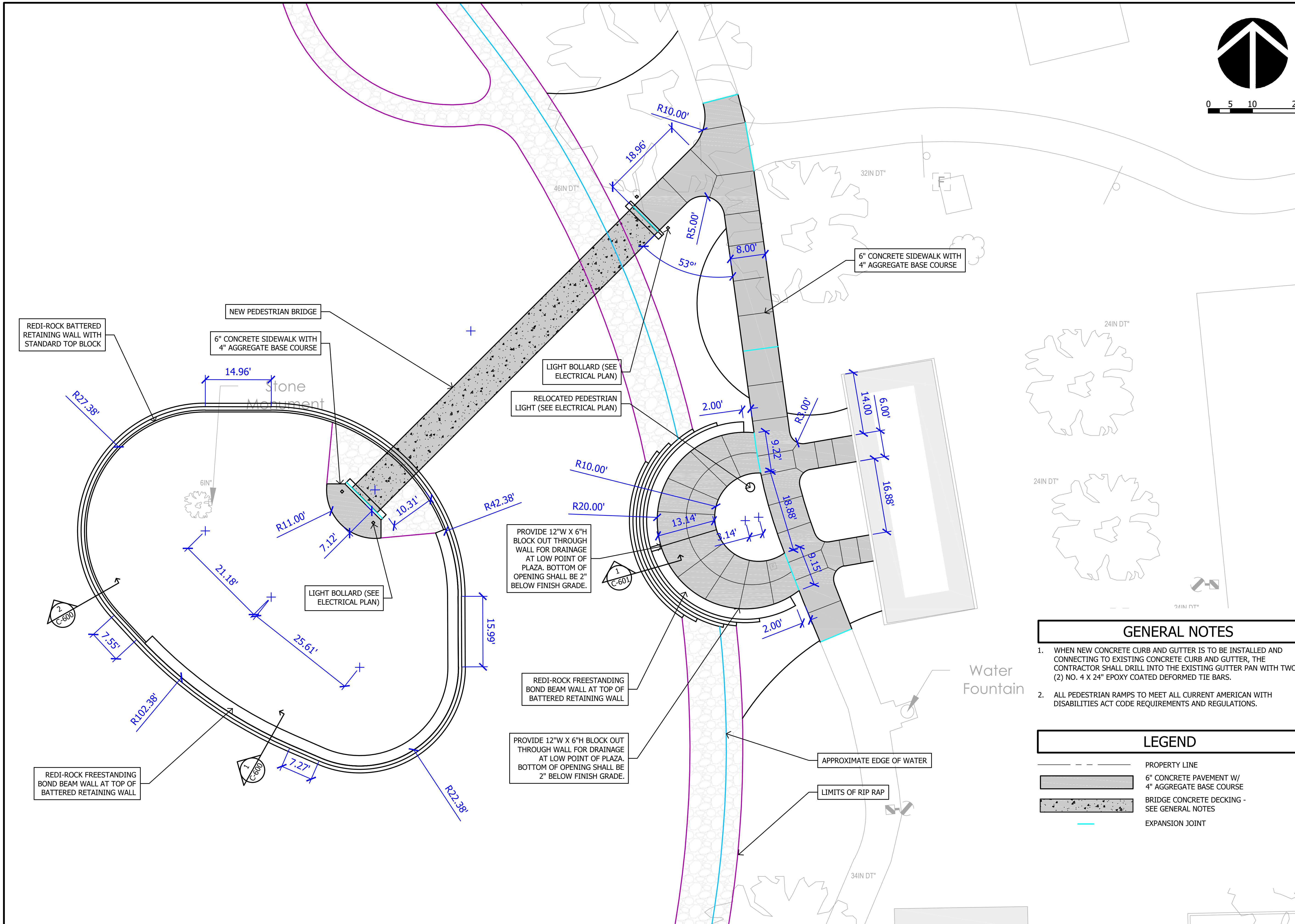
REGISTERED LANDSCAPE ARCHITECT
REG. NO. 11267
DAVID CHRISTIAN
SOUTH DAKOTA
3/16/22

PLOT DATE 3/16/2022 9:30 AM

BID SET

SITE PLAN

C-400



GENERAL NOTES

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- BRIDGE CONCRETE DECKING - SEE GENERAL NOTES
- EXPANSION JOINT

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City of Yankton South Dakota

WESTSIDE PARK POND IMPROVEMENTS

YANKTON, SOUTH DAKOTA

SEI PROJECT #: 21289

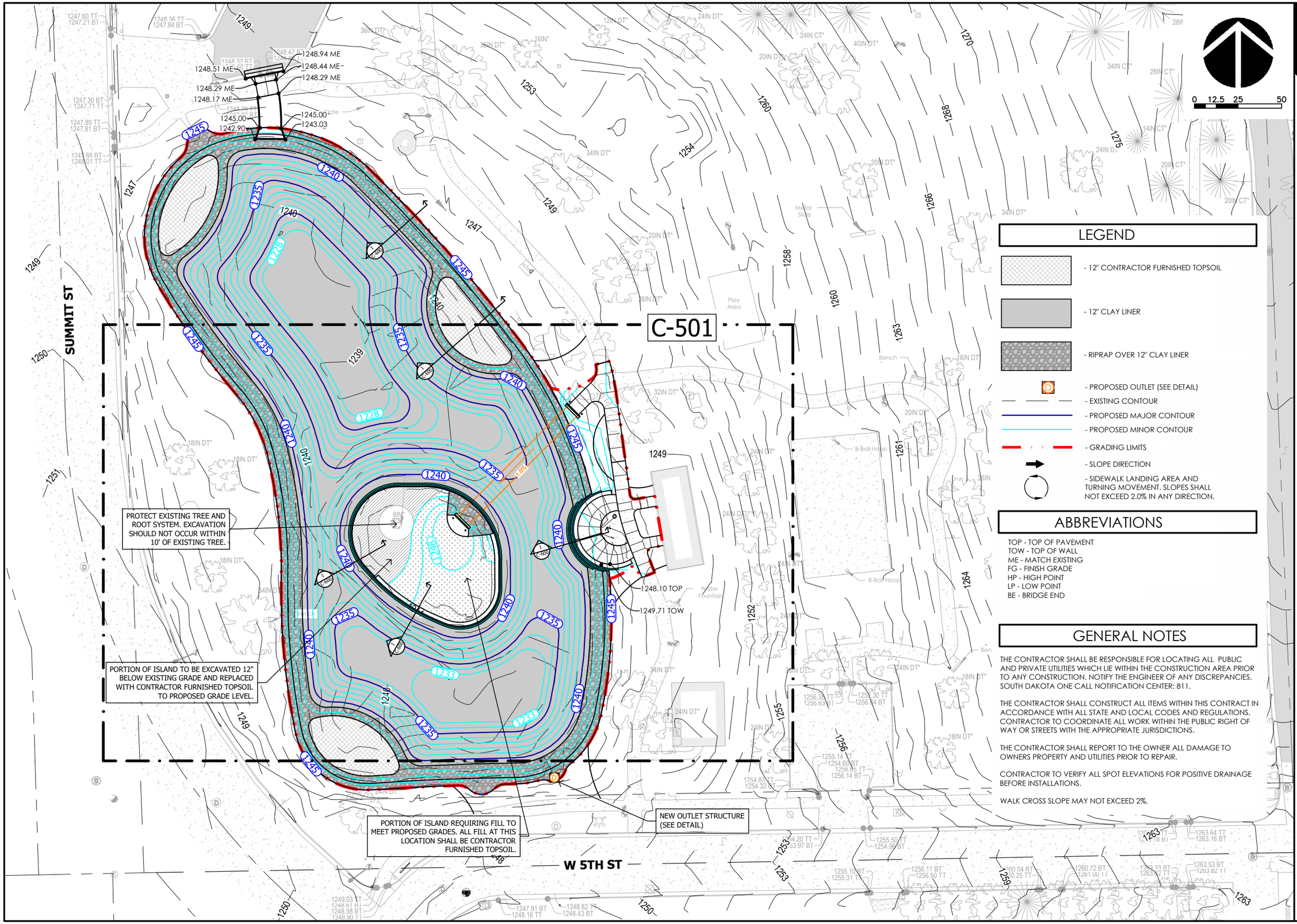
REGISTERED LANDSCAPE ARCHITECT REG. NO. 1267 DAVID CHRISTIAN LOCKE SOUTH DAKOTA 3/16/22

PLOT DATE 3/16/2022 9:34 AM

BID SET

SITE PLAN (ENLARGED)

C-401



LEGEND

- 12" CONTRACTOR FURNISHED TOPSOIL
- 12" CLAY LINER
- RIPRAP OVER 12" CLAY LINER
- PROPOSED OUTLET (SEE DETAIL)
- EXISTING CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- GRADING LIMITS
- SLOPE DIRECTION
- SIDEWALK LANDING AREA AND TURNING MOVEMENT. SLOPES SHALL NOT EXCEED 2.0% IN ANY DIRECTION.

ABBREVIATIONS

TOP - TOP OF PAVEMENT
TOW - TOP OF WALL
ME - MATCH EXISTING
FG - FINISH GRADE
HP - HIGH POINT
LP - LOW POINT
BE - BRIDGE END

GENERAL NOTES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL PUBLIC AND PRIVATE UTILITIES WHICH LIE WITHIN THE CONSTRUCTION AREA PRIOR TO ANY CONSTRUCTION. NOTIFY THE ENGINEER OF ANY DISCREPANCIES. SOUTH DAKOTA ONE CALL NOTIFICATION CENTER: 811.

THE CONTRACTOR SHALL CONSTRUCT ALL ITEMS WITHIN THIS CONTRACT IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REGULATIONS. CONTRACTOR TO COORDINATE ALL WORK WITHIN THE PUBLIC RIGHT OF WAY OR STREETS WITH THE APPROPRIATE JURISDICTIONS.

THE CONTRACTOR SHALL REPORT TO THE OWNER ALL DAMAGE TO OWNERS PROPERTY AND UTILITIES PRIOR TO REPAIR.

CONTRACTOR TO VERIFY ALL SPOT ELEVATIONS FOR POSITIVE DRAINAGE BEFORE INSTALLATIONS.

WALK CROSS SLOPE MAY NOT EXCEED 2%.

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City of Yankton SOUTH DAKOTA Ideas Flow Here

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

REGISTERED LANDSCAPE ARCHITECT
REG. NO. 11267
STATE OF SOUTH DAKOTA
3/16/22

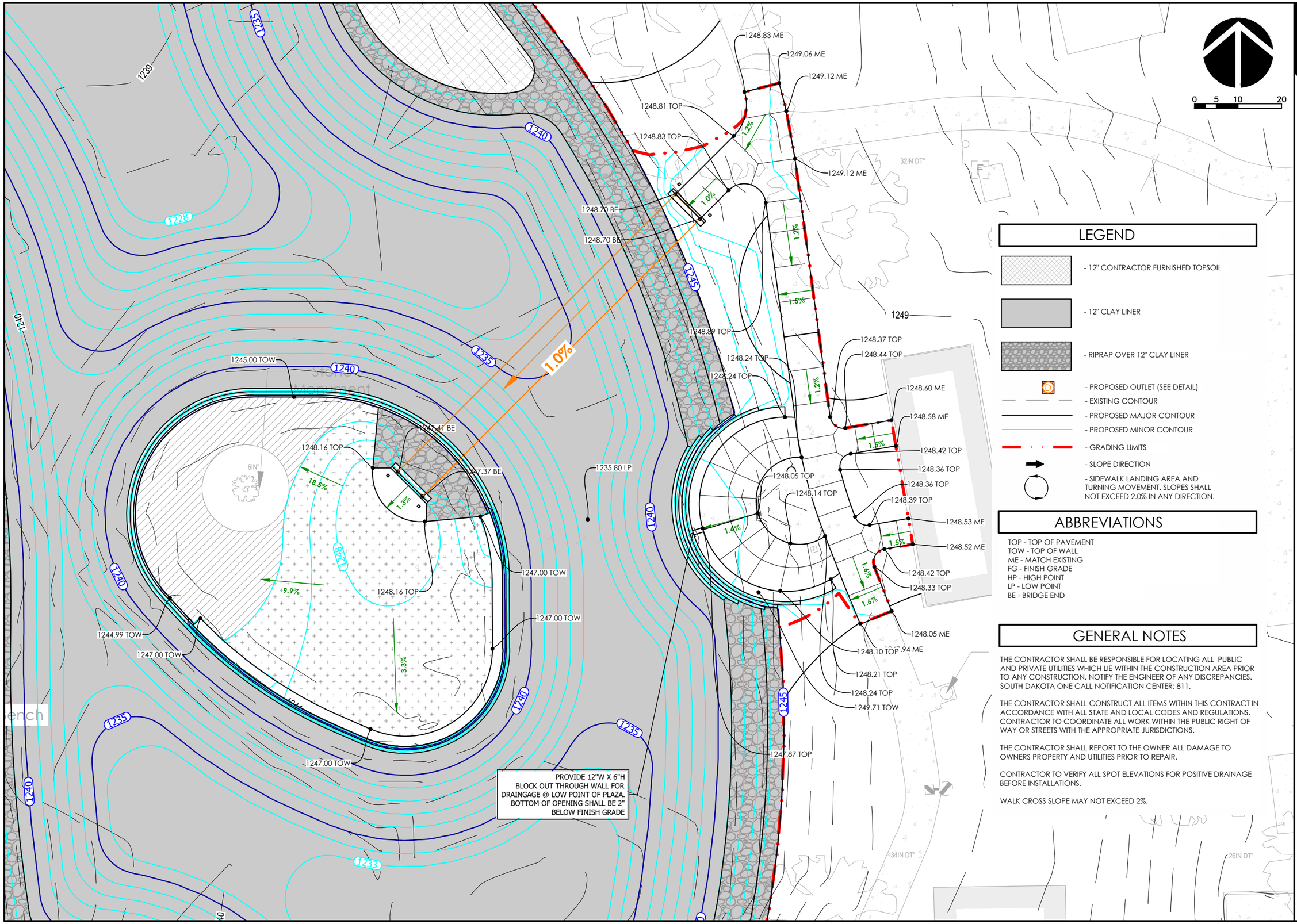
PLOT DATE 3/16/2022 3:28 PM

BID SET

GRADING & UTILITY PLAN

C-500

21289 - C-500 - Grading & Utility Plan.dwg



LEGEND

- 12" CONTRACTOR FURNISHED TOPSOIL
- 12" CLAY LINER
- RIPRAP OVER 12" CLAY LINER
- PROPOSED OUTLET (SEE DETAIL)
- EXISTING CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- GRADING LIMITS
- SLOPE DIRECTION
- SIDEWALK LANDING AREA AND TURNING MOVEMENT. SLOPES SHALL NOT EXCEED 2.0% IN ANY DIRECTION.

ABBREVIATIONS

TOP - TOP OF PAVEMENT
TOW - TOP OF WALL
ME - MATCH EXISTING
FG - FINISH GRADE
HP - HIGH POINT
LP - LOW POINT
BE - BRIDGE END

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CONTRACTOR TO VERIFY ALL SPOT ELEVATIONS FOR POSITIVE DRAINAGE BEFORE INSTALLATIONS.

WALK CROSS SLOPE MAY NOT EXCEED 2%.

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City of Yankton SOUTH DAKOTA Ideas Flow Here

WESTSIDE PARK POND IMPROVEMENTS

YANKTON, SOUTH DAKOTA

SEI PROJECT #: 21289

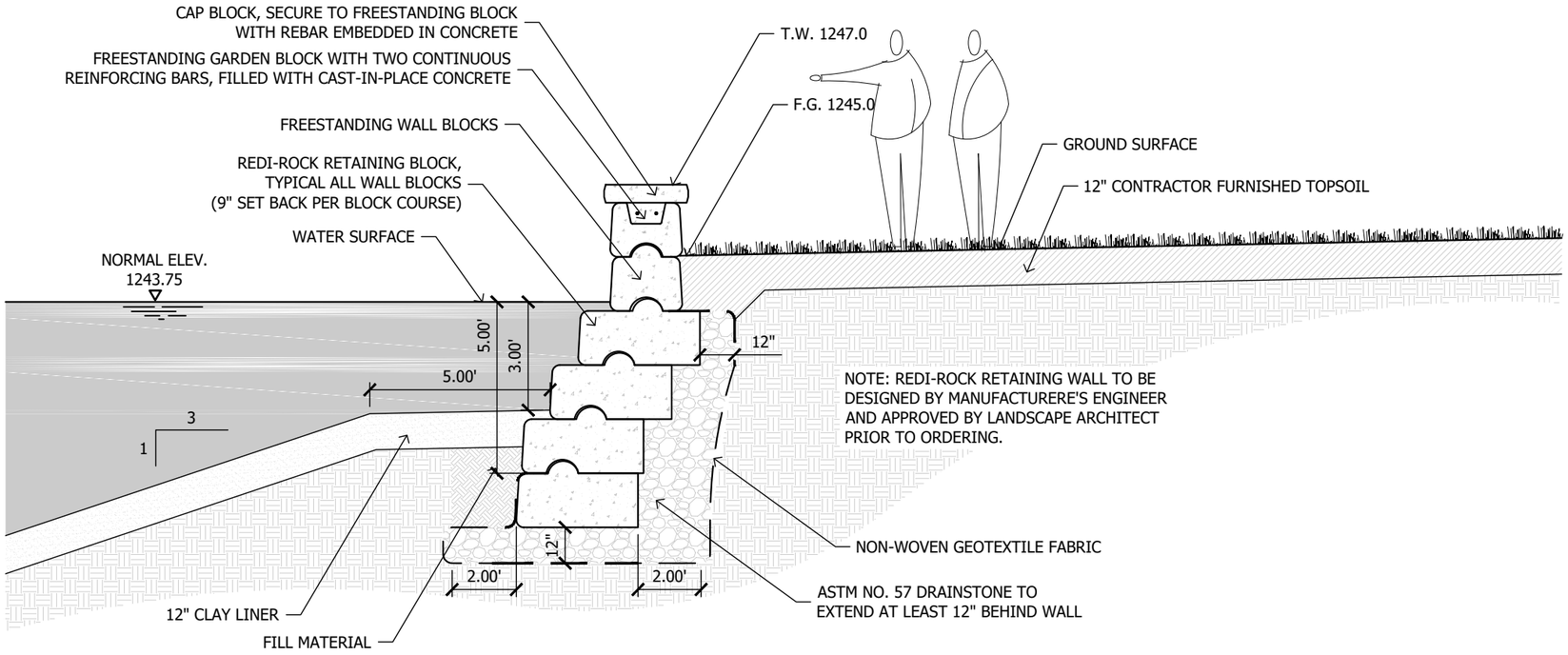
REGISTERED LANDSCAPE ARCHITECT REG. NO 11267 DANIEL CHRISTIAN COCK SOUTH DAKOTA

PLOT DATE 3/16/2022 3:35 PM

BID SET

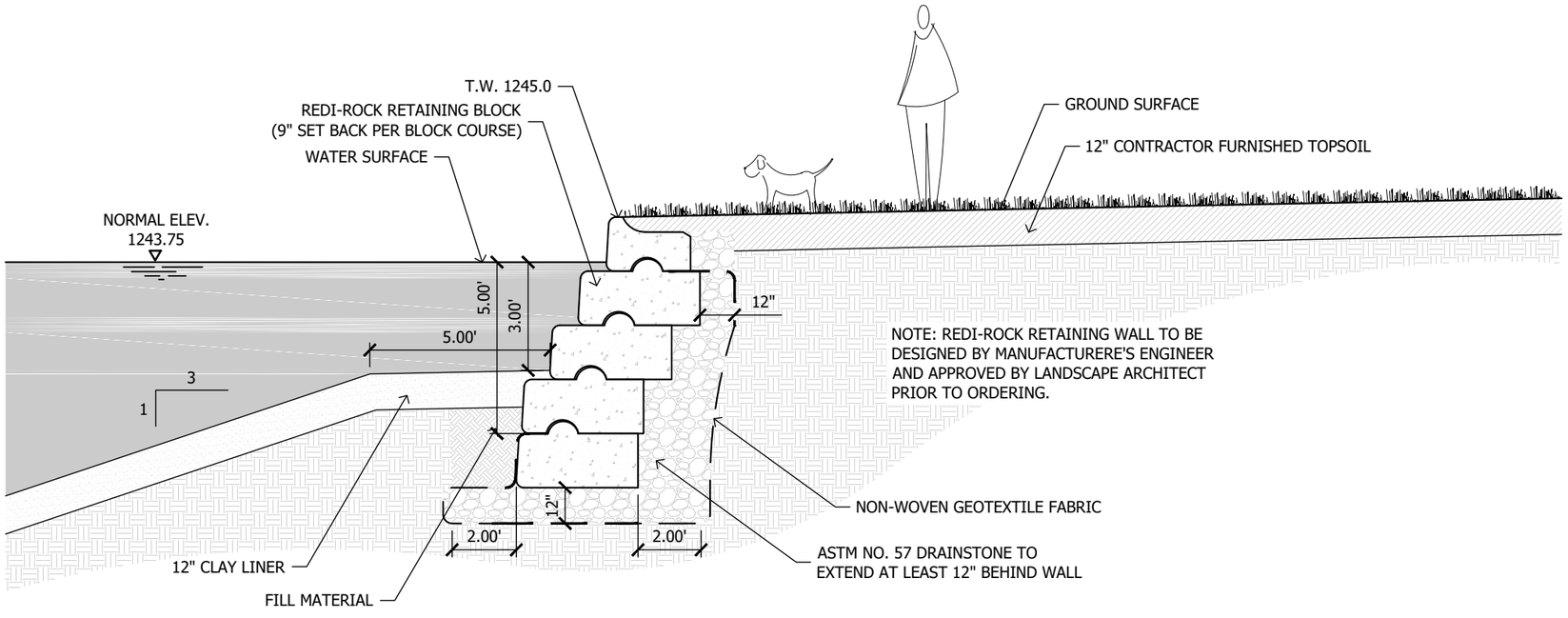
GRADING & UTILITY PLAN

C-501



01 ISLAND SEATWALL - TYPICAL SECTION

SECTION - N.T.S.



02 ISLAND RETAINING WALL - TYPICAL SECTION

SECTION - N.T.S.

STOCKWELL
STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
PH: 605.338.6668
FAX: 605.338.8750

City of Yankton SOUTH DAKOTA Where You Belong

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

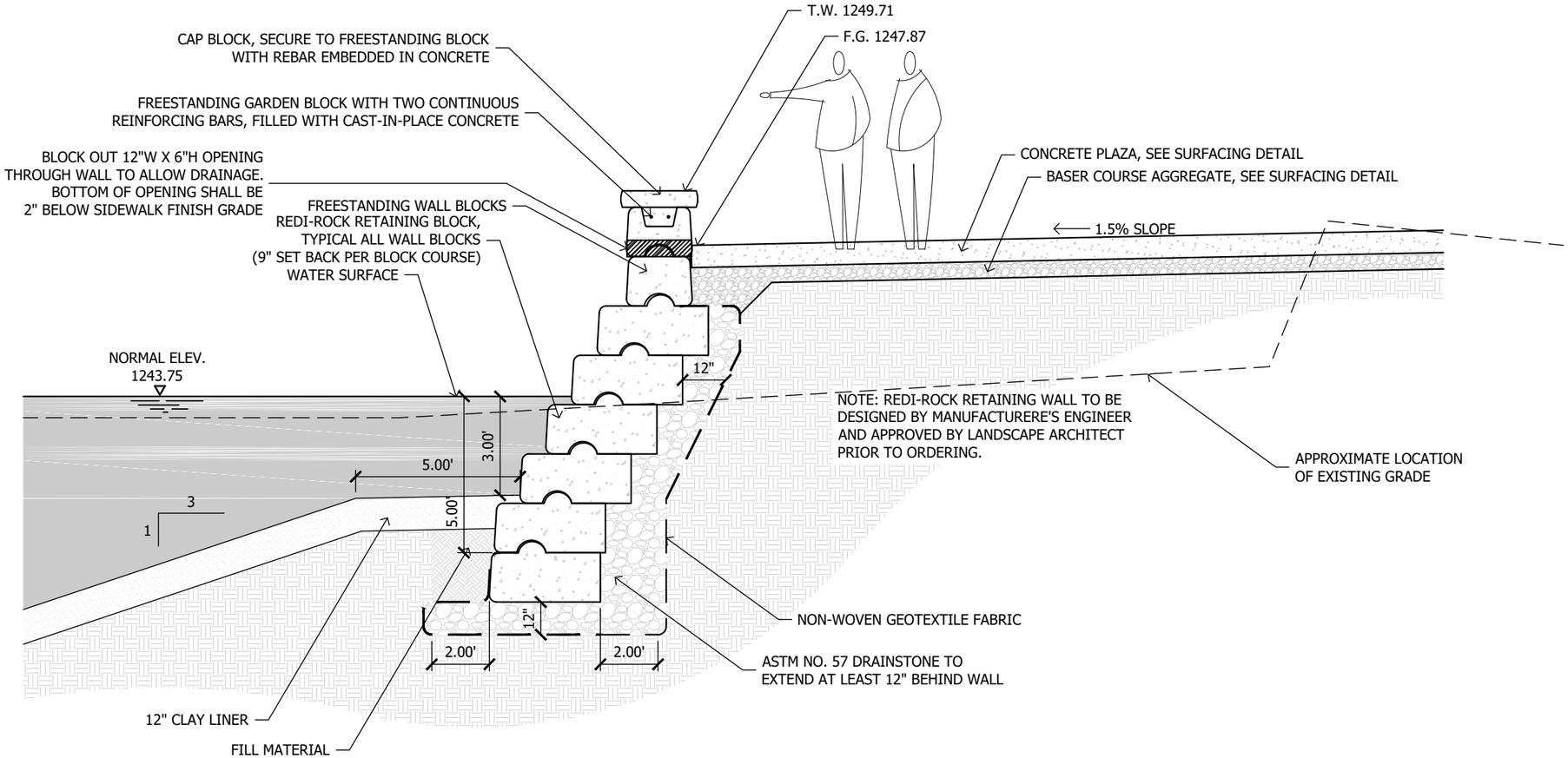
REGISTERED LANDSCAPE ARCHITECT REG. NO. 1267 DAVID CHRISTIAN CLOKE SOUTH DAKOTA 3/16/22

PLOT DATE 3/16/2022 9:40 AM

BID SET

DETAILS

C-600



01 OVERLOOK SEATWALL - TYPICAL SECTION

SECTION - N.T.S.

STOCKWELL

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801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
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City of Yankton SOUTH DAKOTA
Where It's Now Here

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

REGISTERED LANDSCAPE ARCHITECT
REG. NO 11267
DAVID CHRISTIAN LOCKE
SOUTH DAKOTA
3/16/22

PLOT DATE 3/16/2022 9:40 AM

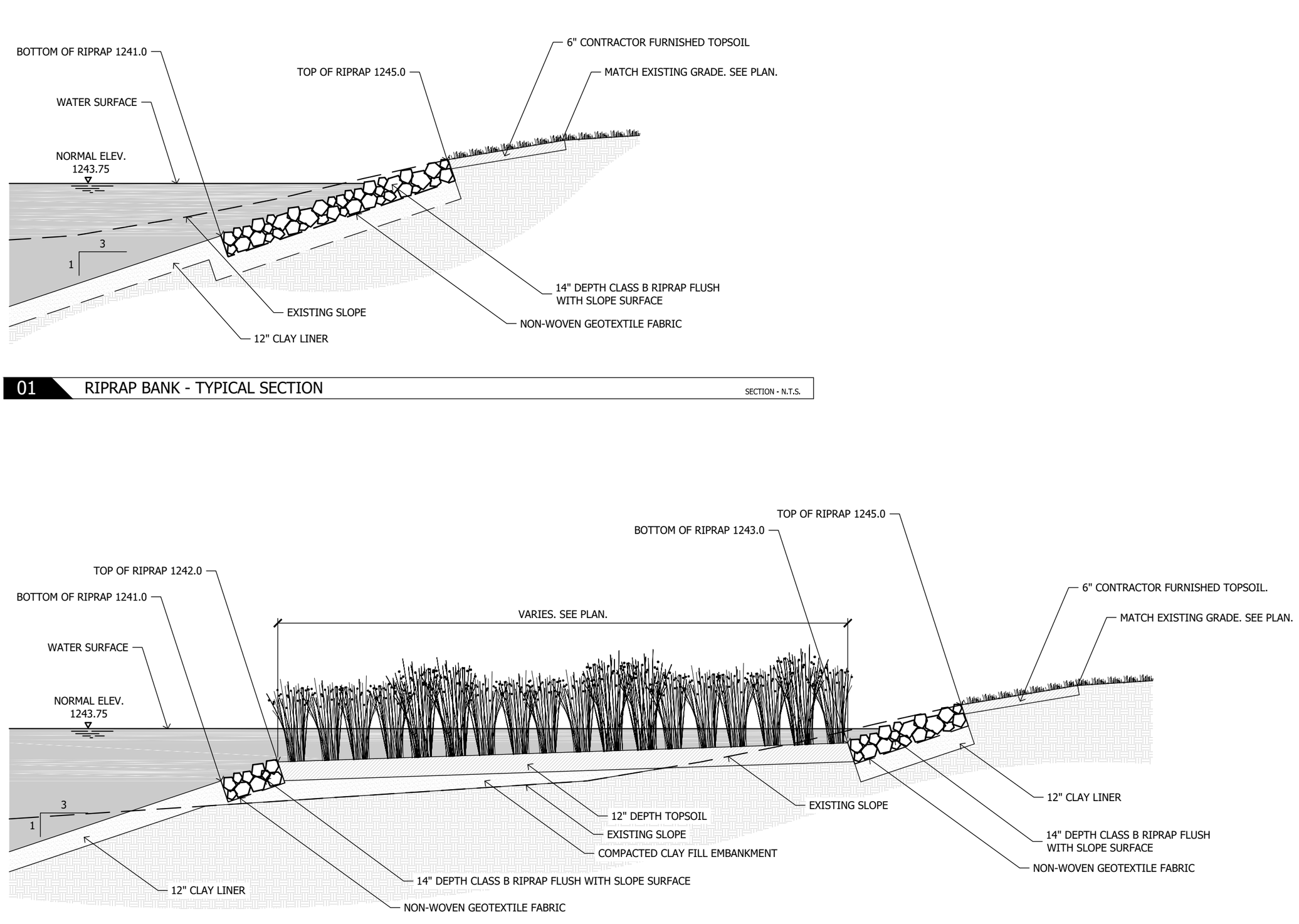
BID SET

DETAILS

C-601

01 RIPRAP BANK - TYPICAL SECTION

SECTION - N.T.S.



02 BELOW WATER PLANT BED - TYPICAL SECTION

SECTION - N.T.S.

STOCKWELL

STOCKWELL ENGINEERS, INC.
801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
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City of Yankton SOUTH DAKOTA
Where You Belong

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

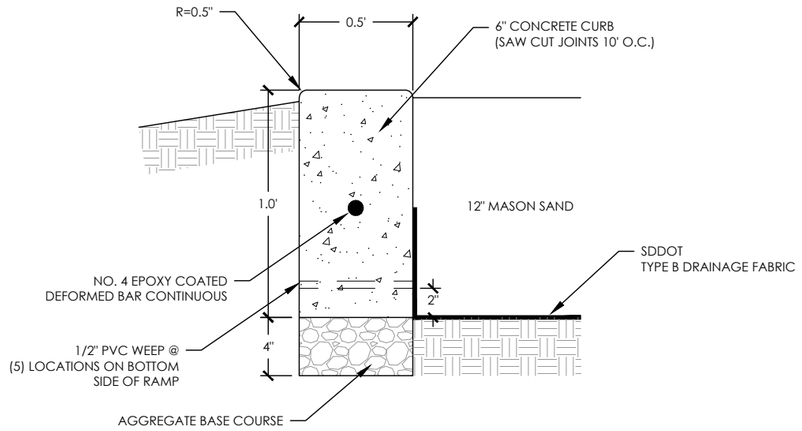
REGISTERED LANDSCAPE ARCHITECT
REG. NO. 1267
DAVID CHRISTIAN BICKEL
SOUTH DAKOTA
3/16/22

PLOT DATE 3/16/2022 9:40 AM

BID SET

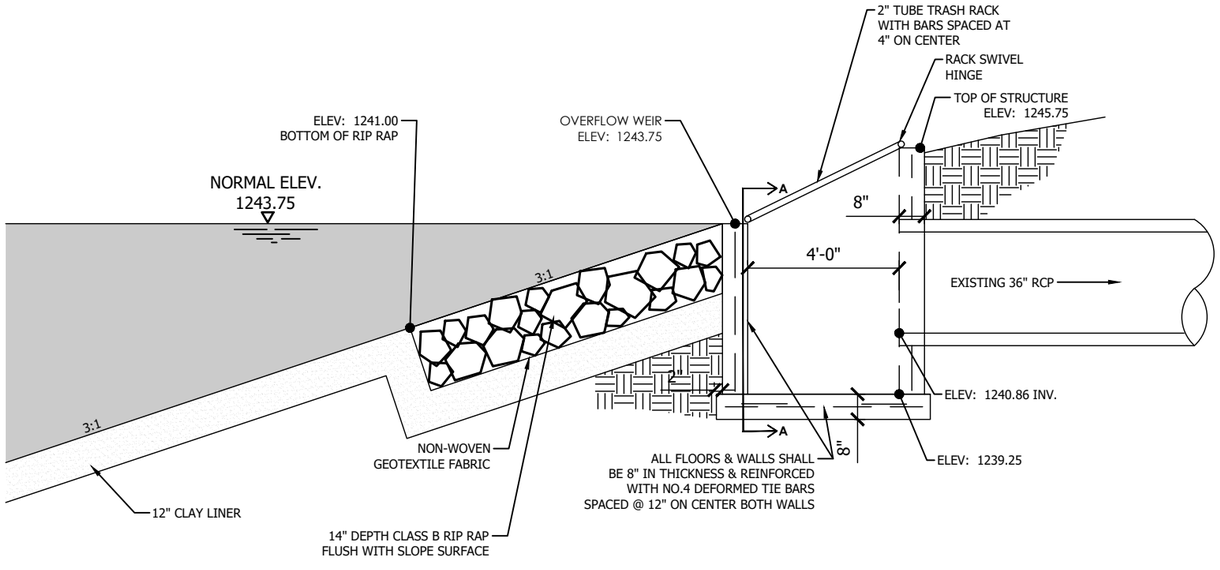
DETAILS

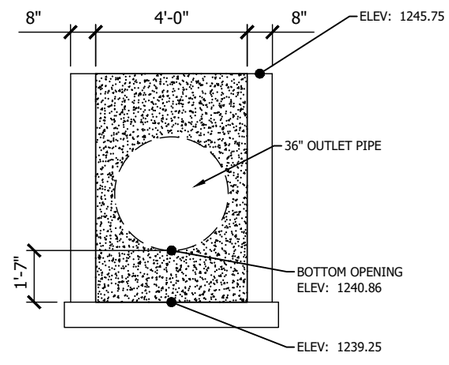
C-602



01 RAMP ACCESS - CURB DETAIL

SECTION - N.T.S.





SECTION A-A

02 OUTLET STRUCTURE DETAIL

SECTION - N.T.S.

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801 N. PHILLIPS AVE., SUITE 100
SIOUX FALLS, SD 57104
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FAX: 605.338.8750

City of Yankton SOUTH DAKOTA
Where it's Now here

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

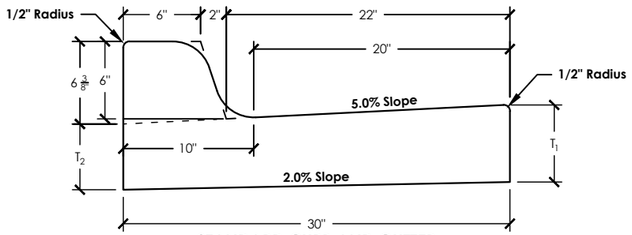
REGISTERED LANDSCAPE ARCHITECT
REG. NO. 11267
DAVID CHRISTIAN
SOUTH DAKOTA
3/16/22

PLOT DATE 3/16/2022 9:40 AM

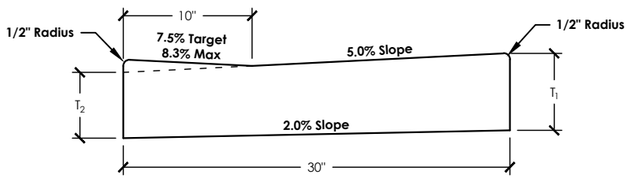
BID SET

DETAILS

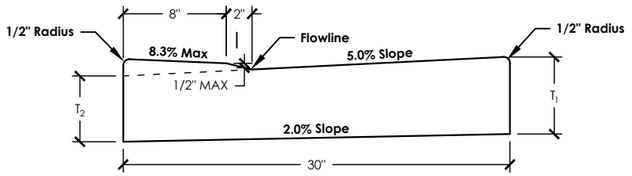
C-603



STANDARD CURB AND GUTTER



DROP CURB FOR ADA CURB RAMPS



DROP CURB FOR DRIVEWAY APPROACH

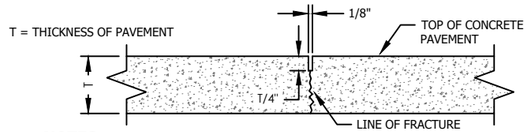
T_1 = Thickness shall be equal to the depth of the adjacent pavement but not less than 6"

$T_2 = T_1$-7/8"

NOTES:

1. COORDINATE AND SCHEDULE BENCHMARKS WITH STAKING REPRESENTATIVE. VERIFY ACCURACY OF BENCHMARKS AND PROCEED TO LAYOUT WORK. REFERENCE DRAWINGS FOR DIMENSIONS.
2. EXCAVATE TO SUBGRADE AND COMPACT. PLACE AND COMPACT BASE COURSE TO ALLOW FOR SPECIFIED THICKNESS OF CONCRETE. CONCRETE THICKNESS TO EQUAL THE DEPTH OF ADJOINING PAVEMENT BUT NOT LESS THAN 6-IN UNLESS OTHERWISE SPECIFIED.
3. DRILL AND EMBED TWO 24-IN, #5 EPOXY COATED DEFORMED TIE BARS WHERE ADJACENT TO EXISTING CURB.
4. INSTALL METAL RECESS STRIP WHERE KEYWAY JOINTS ARE INDICATED IN THE DRAWINGS. INSTALL EXPANSION JOINTS AT SPECIFIED LOCATIONS.
5. FORM CURB AND GUTTER TO CONFORM WITH DRAWINGS AND OTHER DETAILS. CONTACT ENGINEER FOR INSPECTION PRIOR TO PLACING CONCRETE.
6. CONCRETE TO BE M6 UNLESS OTHERWISE SPECIFIED.
7. CONSTRUCT DROP CURB AT LOCATIONS SPECIFIED IN DRAWINGS.
8. FORM CONTRACTION JOINTS AT INTERVALS NECESSARY TO PREVENT RANDOM CRACKS. SPACE JOINTS EQUALLY FOR UNIFORM APPEARANCE AND AT A MAXIMUM SPACING OF 12-FT.

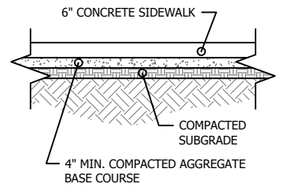
01 CONCRETE CURB AND GUTTER SECTION - N.T.S.



NOTES:

- WALK BEHIND SAW EQUIPMENT SHALL BE USED TO ENSURE STRAIGHT CUTS.
- JOINTS SHALL BE CUT AT A TIME ADEQUATE TO PREVENT RANDOM CRACKING. SAWING SHALL BE COMPLETED WITHIN 24 HOURS OF PLACEMENT.

SAWED CONTROL JOINT



CONCRETE SIDEWALK

NOTES:

1. SURVEY ELEVATIONS AS REQUIRED. PROCEED TO LAYOUT WORK. REFERENCE DRAWINGS FOR DIMENSIONS.
2. EXCAVATE TO SUBGRADE AND COMPACT. PLACE AND COMPACT BASE COURSE TO ALLOW FOR SPECIFIED THICKNESS OF CONCRETE. SIDEWALKS TO BE A MINIMUM OF 4-IN THICK UNLESS OTHERWISE SPECIFIED.
3. SIDEWALKS TO MEET CURRENT ADA STANDARDS. TARGET SLOPES LESS THAN THE MAXIMUM DURING LAYOUT.
4. INSTALL EXPANSION JOINTS AT SPECIFIED LOCATIONS.
5. FORM SIDEWALKS TO CONFORM WITH DRAWINGS AND OTHER DETAILS. CONTACT ENGINEER FOR INSPECTION PRIOR TO PLACING CONCRETE.
6. FORM CONTRACTION JOINTS AT INTERVALS NECESSARY TO PREVENT RANDOM CRACKS. SPACE JOINTS EQUAL TO THE WIDTH OF SIDEWALK. ADJUST JOINT SPACING FOR UNIFORM APPEARANCE.
7. CONCRETE TO BE M6
8. APPLY BROOM FINISH TO EXTERIOR.

03 CONCRETE SIDEWALK SECTION - N.T.S.

STOCKWELL

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FAX: 605.338.8750

City of Yankton SOUTH DAKOTA Where You Belong

WESTSIDE PARK POND IMPROVEMENTS

YANKTON, SOUTH DAKOTA

SEI PROJECT #: 21289

REGISTERED LANDSCAPE ARCHITECT REG. NO 11267 DAVID JOHN JACKS SOUTH DAKOTA 3/16/22

PLOT DATE 3/16/2022 9:40 AM

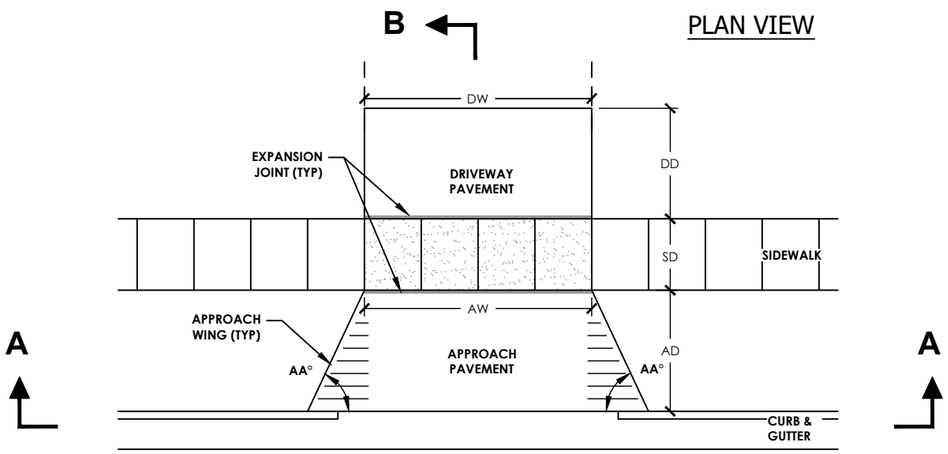
BID SET

DETAILS

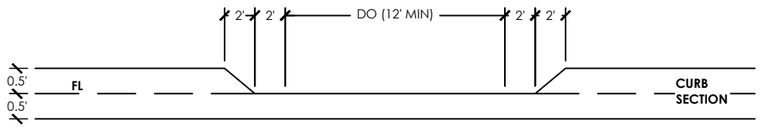
C-604

21289 - C-600 - Details.dwng

PLAN VIEW



SECTION A-A



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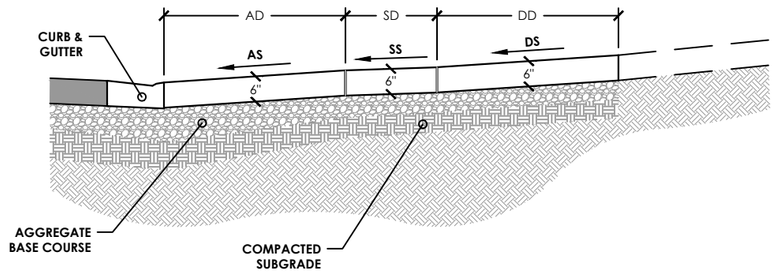

Abbreviations/Tolerances:

DO = DRIVEWAY OPENING (12' MIN)
DW = DRIVEWAY WIDTH
DD = DRIVEWAY DEPTH
DS = DRIVEWAY SLOPE (12% MAX)
AW = APPROACH WIDTH (12' MIN)
AD = APPROACH DEPTH
AS = APPROACH SLOPE (10% MAX)
SD = SIDEWALK DEPTH
SS = SIDEWALK SLOPE (1.5% TARGET, 2% MAX)
AA° = APPROACH ANGLE (60° MIN)
FL = FLOW LINE

NOTES:

1. Survey driveway elevations prior to removal. Remove driveway to nearest tooled joint that achieves slope tolerances.
2. Project driveway thru to curb and gutter and center to establish DO. DO to match DW except where DW is less than 12 feet.
3. AW to match DW wherever feasible. Widen AW where DW is less than 12 feet or AA is constrained.
4. Notify engineer where tolerances are not achievable.
5. Approach wing to be reinforced with #4 bars 12" on center. Over excavate approach wing and construct 8" thick.
6. Sidewalk thru approach to be a minimum of 6" thick. Approach and driveway to be a minimum of 6" thick.
7. Install a minimum of 1/2" expansion joint material between driveway and sidewalk and between approach and sidewalk.

01 TYPICAL DRIVEWAY APPROACH SECTION - N.T.S.

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City of Yankton SOUTH DAKOTA Where Life Flows

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

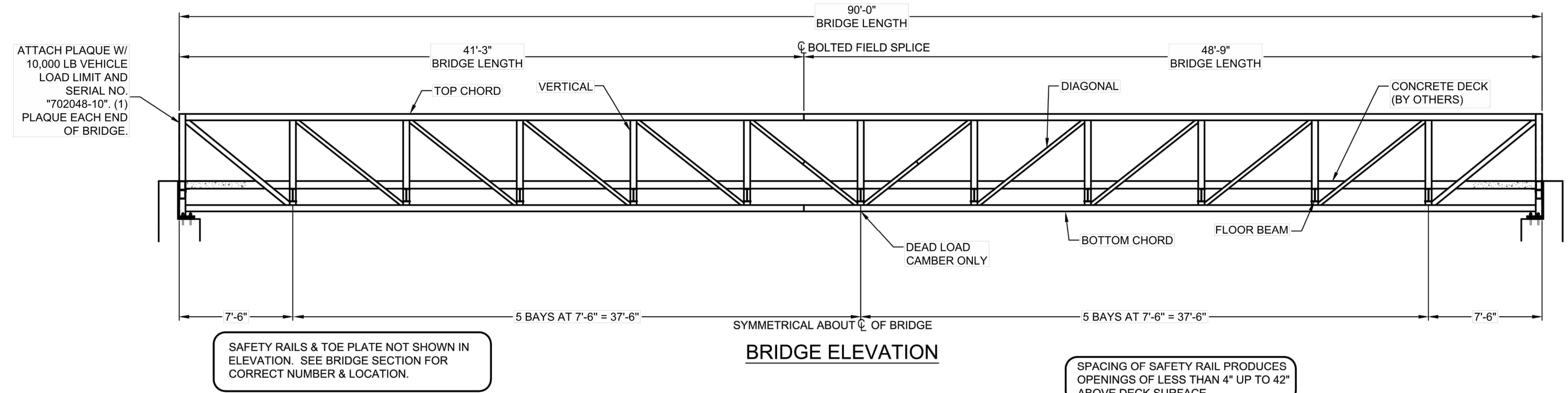
REGISTERED LANDSCAPE ARCHITECT
REG. NO 11267
DAVID CHRISTIANSEN
MORE
SOUTH DAKOTA
3/16/22

PLOT DATE 3/16/2022 9:40 AM

BID SET

DETAILS

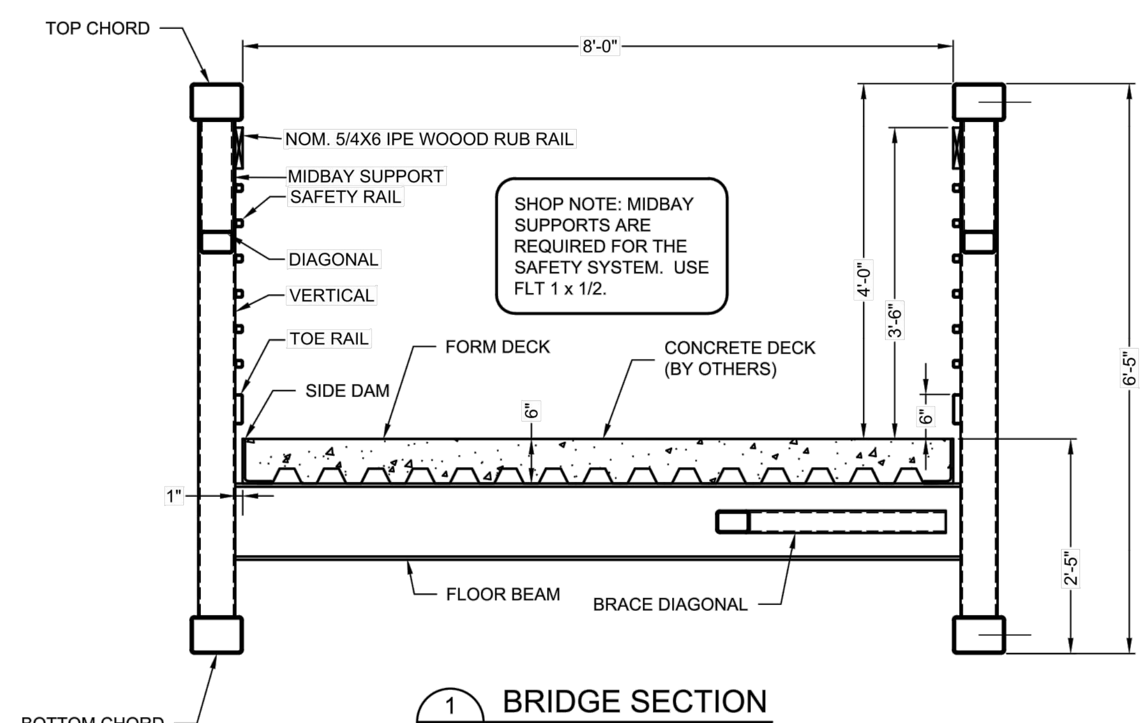
C-605



BRIDGE ELEVATION

GENERAL NOTES

1. DESIGN STRESSES ARE IN ACCORDANCE WITH "STANDARD SPECIFICATION FOR HIGHWAY BRIDGES" & "GUIDE SPECIFICATIONS FOR DESIGN OF PEDESTRIAN BRIDGES" BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), LATEST EDITION.
2. BRIDGE MEMBERS ARE FABRICATED FROM HIGH STRENGTH, LOW ALLOY, ENHANCED ATMOSPHERIC CORROSION RESISTANT ASTM A847 COLD-FORMED WELDED SQUARE AND RECTANGULAR TUBING, AND ASTM A588, ASTM A606, OR ASTM A242 PLATE AND STRUCTURAL SHAPES (Fy=50,000 PSI).
3. CONCRETE DECK: GALVANIZED FORM DECK SUPPLIED BY CONTECH. CONCRETE, REINFORCING, AND EXPANSION MATERIAL SUPPLIED BY OTHERS. SEE CONCRETE DECK SHEET.
4. THE GAS METAL ARC WELDING PROCESS OR FLUX CORED ARC WELDING PROCESS WILL BE USED. WELDING TO BE IN ACCORDANCE WITH AWS D1.1.
5. ALL TOP AND BOTTOM CHORD SHOP SPLICES TO BE COMPLETE PENETRATION TYPE WELDS. WELD BETWEEN TOP CHORD AND END VERTICAL SHALL BE AS DETAILED.
6. UNLESS OTHERWISE NOTED, WELDED CONNECTIONS SHALL BE FILLET WELDS (OR HAVE THE EFFECTIVE THROAT OF A FILLET WELD) OF A SIZE EQUAL TO THE THICKNESS OF THE LIGHTEST GAGE MEMBER IN THE CONNECTION. WELDS SHALL BE APPLIED AS FOLLOWS:
   A. BOTH ENDS OF VERTICALS, DIAGONALS, AND FLOOR BEAMS SHALL BE WELDED ALL AROUND.
   B. BRACE DIAGONALS WILL BE WELDED ALL AROUND.
   C. MISCELLANEOUS NON-STRUCTURAL MEMBERS WILL BE STITCH WELDED TO THEIR SUPPORTING MEMBERS.
7. BRIDGE DESIGN WAS ONLY BASED ON COMBINATIONS OF THE FOLLOWING LOADS WHICH WILL PRODUCE MAXIMUM CRITICAL MEMBER STRESSES.
   A. 90 PSF UNIFORM LIVE LOADING ON THE FULL DECK AREA OR ONE 10,000 LB VEHICLE LOAD. THE LOAD SHALL BE DISTRIBUTED AS A FOUR-WHEEL VEHICLE WITH 80% OF THE LOAD ON THE REAR WHEELS. THE WHEEL TRACK WIDTH OF THE VEHICLE SHALL BE 6'-0" AND THE WHEEL BASE SHALL BE 10'-0". THE VEHICLE SHALL BE POSITIONED SO AS TO PRODUCE THE MAXIMUM STRESSES IN EACH MEMBER, INCLUDING DECKING.
   B. 35 PSF WIND LOAD ON THE FULL HEIGHT OF THE BRIDGE, AS IF ENCLOSED.
   C. 20 PSF UPWARD FORCE APPLIED AT THE WINDWARD QUARTER POINT OF THE TRANVERSE BRIDGE WIDTH (AASHTO 3.15.3).
8. CLEANING: ALL EXPOSED SURFACES OF STEEL SHALL BE CLEANED IN ACCORDANCE WITH STEEL STRUCTURES PAINTING COUNCIL SURFACES PREPARATION SPECIFICATIONS NO. 7 BRUSH-OFF BLAST CLEANING. SSPC-SP7-LATEST EDITION.
9. MINIMUM MATERIAL THICKNESS OF 1/4" ON ALL STRUCTURAL MEMBERS.



1/2 BRIDGE SECTION

CONTECH
PROPOSAL
DRAWING

AISC CERTIFIED FABRICATOR

For Reference Only

90'-0" x 8'-0"
WESTSIDE PARK
PEDESTRIAN BRIDGE
YANKTON, SD

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
8301 State Highway 29 North, Alexandria, MN 56308
800-328-2047 320-852-7500 320-852-7067 FAX
CONTINENTAL BRIDGE

DATE:	2/25/2022
DESIGNED: XXX	DRAWN: DJB
CHECKED: XXX	APPROVED: XXX
PROJECT No.: 702048	SEQUENCE No.: 010
SHEET: 1 OF 4	

MARK	DATE	REVISION DESCRIPTION	BY

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City of Yankton, South Dakota

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

REGISTERED LANDSCAPE ARCHITECT 11267 SOUTH DAKOTA

PLOT DATE 3/16/2022 9:40 AM

BID SET

DETAILS

C-606

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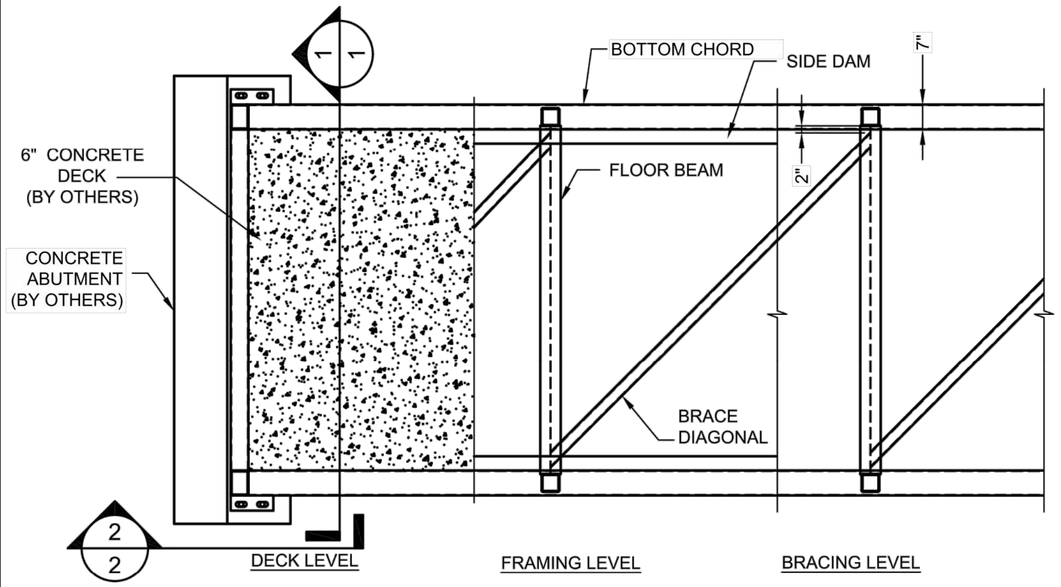
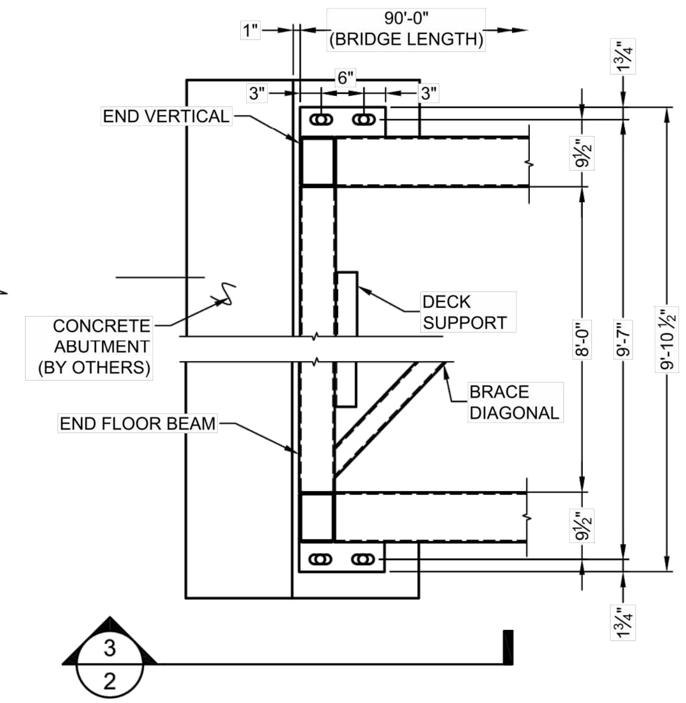
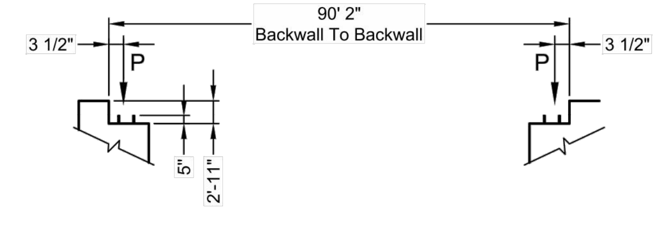
21289 - C-600 - Details.dwg



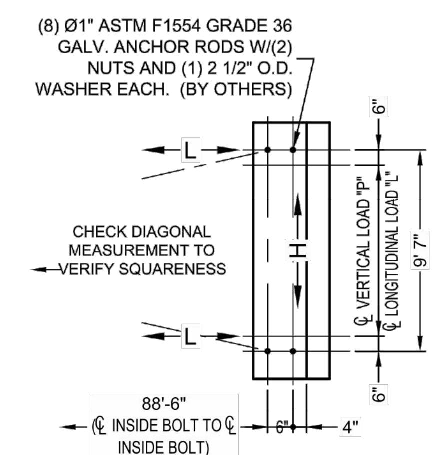
BRIDGE PLAN VIEW



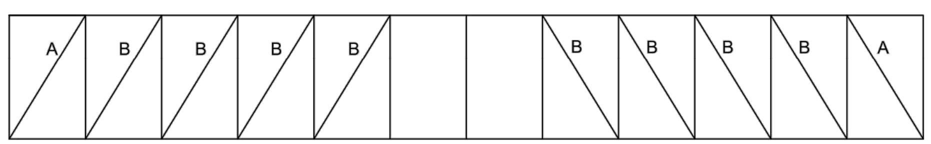
BEARING PLAN VIEW



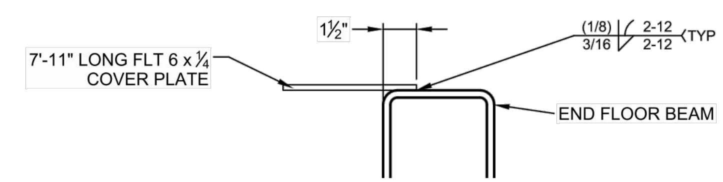
ANCHOR BOLT ELEVATION



PLAN



BRACE DIAGONAL LAYOUT



COVER PLATE
(TYP BOTH ENDS OF BRIDGE

COMBINE REACTIONS AS PER LOCAL OR GOVERNING BUILDING CODES AS REQUIRED

BRIDGE REACTIONS (+ DOWNWARD LOAD, - UPWARD LOAD)	P (LBS)	H (LBS)	L (LBS)
DEAD LOAD ②	16,675		
UNIFORM LIVE LOAD	16,200		
VEHICLE LOAD	5,000		
WIND UPLIFT 20 PSF WINDWARD / LEEWARD	-6,190 / -2,064		
WIND	4,685	10,110	
THERMAL ②			2,505

"P" - VERTICAL LOAD EACH BASE PLATE (4 PER BRIDGE)
"H" - HORIZONTAL LOAD EACH FOOTING (2 PER BRIDGE)
"L" - LONGITUDINAL LOAD EACH BASE PLATE (4 PER BRIDGE)

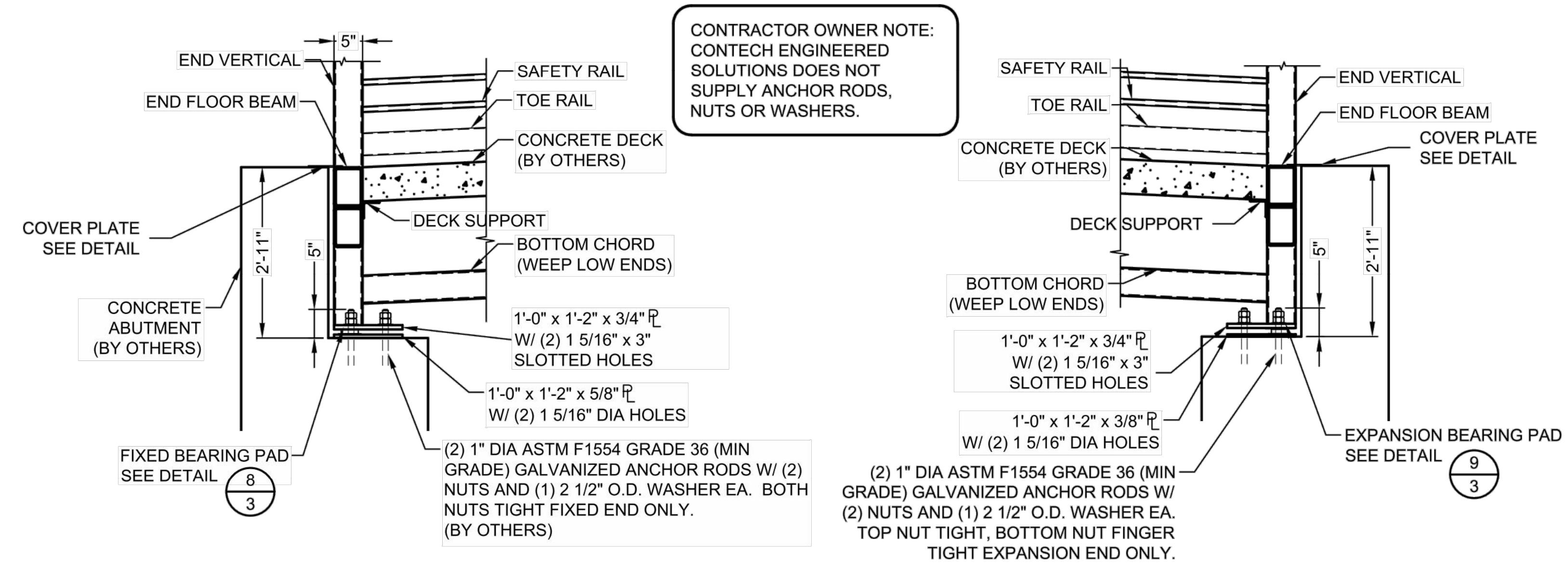
① BRIDGE LIFTING WEIGHT: 22,800 LBS

② BRIDGE FINAL WEIGHT: 66,700 LBS

①DOES NOT INCLUDE WEIGHT OF CONCRETE DECK

②INCLUDES WEIGHT OF CONCRETE DECK

CONTRACTOR OWNER NOTE: CONTECH ENGINEERED SOLUTIONS DOES NOT SUPPLY ANCHOR RODS, NUTS OR WASHERS.



BEARING ELEVATION

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FAX: 605.338.8750

City of Yankton, South Dakota

MARK	DATE	REVISION DESCRIPTION	BY

90'-0" x 8'-0"
WESTSIDE PARK
PEDESTRIAN BRIDGE
YANKTON, SD

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CONTINENTAL BRIDGE

DATE: 2/25/2022	
DESIGNED: XXX	DRAWN: DJB
CHECKED: XXX	APPROVED: XXX
PROJECT No.: 702048	SEQUENCE No.: 010
SHEET: 2 OF 4	

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

REGISTERED LANDSCAPE ARCHITECT 11267 SOUTH DAKOTA 3/6/22

PLOT DATE 3/16/2022 9:40 AM

BID SET

DETAILS

C-607

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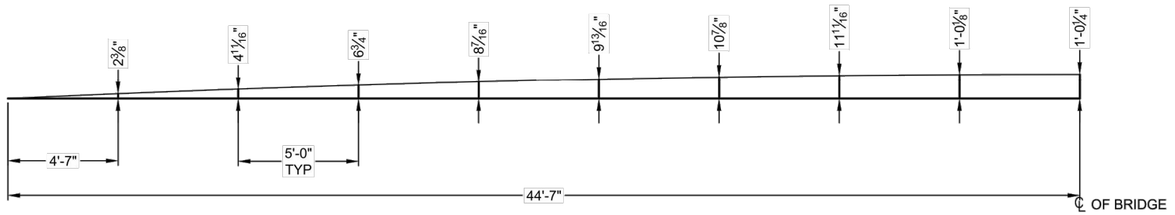


CAMBER DIAGRAM

QUALITY ASSURANCE NOTES

1. ALL WELDS TO BE VISUALLY INSPECTED.

BEARING PAD SPECIFICATIONS

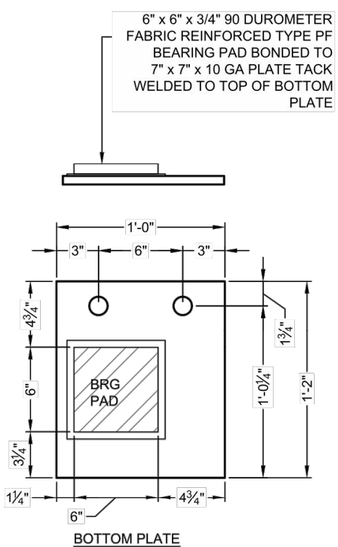
PREFORMED FABRIC REINFORCED
ELASTOMERIC TYPE PF

PHYSICAL PROPERTIES:

-ELASTOMER DUROMETER: 60±5 (SHORE A)
- FINISHED PAD DUROMETER: 90±5 (SHORE A)
-COMPRESSIVE STRENGTH: 18,000 PSI MAX
-MAXIMUM DESIGN PRESSURE: 1500 PSI
-AASHTO GRADE

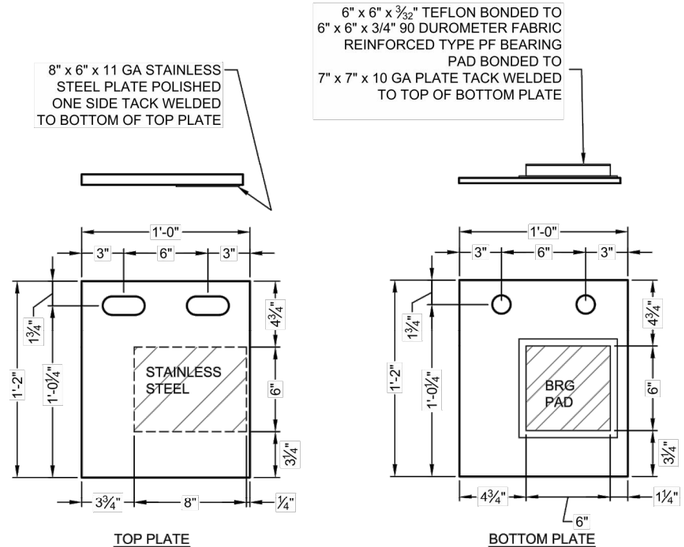
GUIDE SPECIFICATIONS:

-MEETS DESIGN REQUIREMENTS OF AASHTO LRFD 2008
-COMPLIES WITH MIL-C882-E MILITARY SPECIFICATION AND P.C.I.



BOTTOM PLATE

8/2 FIXED BEARING PAD DETAILS
(1) AS SHOWN (1) OPPOSITE



TOP PLATE BOTTOM PLATE

9/2 EXP. BEARING PAD DETAILS
(1) AS SHOWN (1) OPPOSITE

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MARK	DATE	REVISION DESCRIPTION	BY

90'-0" x 8'-0"
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PEDESTRIAN BRIDGE
YANKTON, SD

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CONTINENTAL BRIDGE SYSTEM

DATE:	2/25/2022
DESIGNED: XXX	DRAWN: DJB
CHECKED: XXX	APPROVED: XXX
PROJECT No.: 702048	SEQUENCE No.: 010
SHEET: 3 OF 4	

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City of Yankton SOUTH DAKOTA
Where You Belong

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

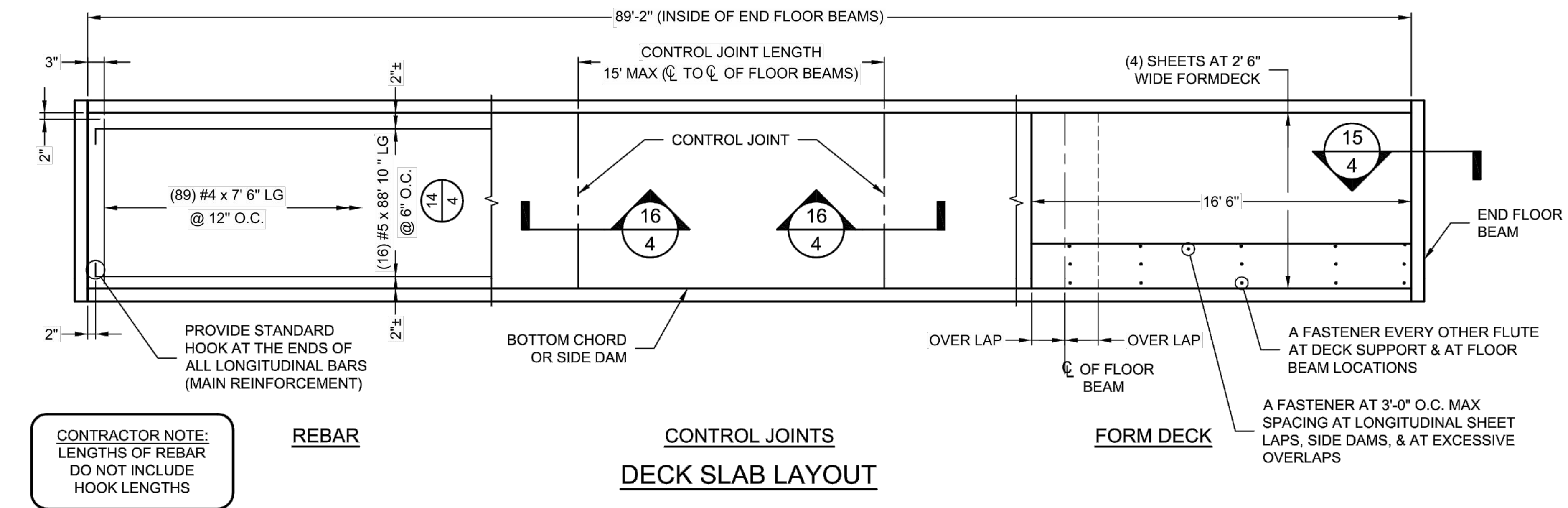
REGISTERED LANDSCAPE ARCHITECT
REG. NO 11267
DAVID CHRISTIANSEN
SOUTH DAKOTA
3/9/22

PLOT DATE 3/16/2022 9:40 AM

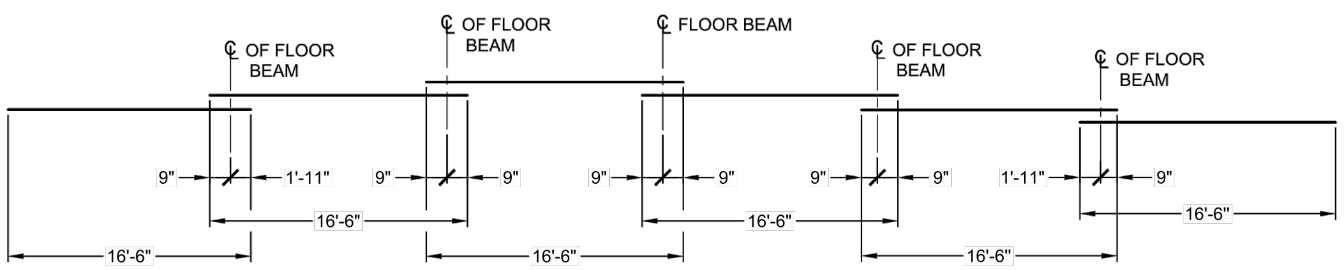
BID SET

DETAILS

C-608



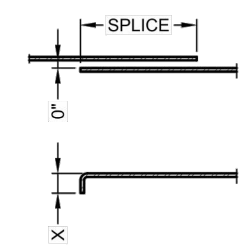
DECK SLAB LAYOUT



FORMDECK LAYOUT

NOTE:
IF SPLICE IS REQUIRED IN LONGITUDINAL REBARS, LAP SPLICE LENGTH WILL BE AS SHOWN. STAGGER SPLICED REBAR EVERY OTHER LONGITUDINAL BAR AND LOCATE AT ⅓ DISTANCE BETWEEN FLOOR BEAMS.

LENGTH (INCHES)		
BAR SIZE	HOOK X	SPLICE
#3	6"	20"
#4	8"	27"
#5	9"	33"
#6	11"	40"



THE TABLES SHOWN ARE FOR f'c = 3,500 PSI (MINIMUM) AND fy = 60,000 PSI

STANDARD SPLICE AND HOOK LENGTH DETAILS

NORMAL WEIGHT CONCRETE (150 PCF)

DECK & CONCRETE NOTES

1. GALVANIZED FORM DECK SHALL BE CANAM STEEL DECK UF2X - 20 GAGE. FORM DECK WILL BE SHOP ATTACHED TO FLOOR BEAMS WITH #12-24 X 1 1/4" SELF-DRILLING FASTENERS WITH 1" O.D. WASHERS OR 1" X 3/16" POWER ACTUATED FASTENERS.
2. BAR REINFORCEMENT SHALL BE GRADE 60 MINIMUM AND CONFORM TO THE REQUIREMENTS OF ASTM A 615.
3. CONCRETE DECK AND REINFORCING TO BE AS SHOWN ON DRAWINGS AND TO BE FURNISHED AND INSTALLED BY OTHERS. THE COMPRESSIVE STRENGTH OF THE CONCRETE (f'c) MUST BE A MINIMUM OF 3,500 PSI (28 DAY STRENGTH). BRIDGE IS DESIGNED FOR REGULAR WEIGHT (150 PCF) CONCRETE WITH A MAXIMUM AGGREGATE SIZE OF 3/4". INSTALL BRIDGE PRIOR TO POURING CONCRETE.
4. CONCRETE COVER OF 2 3/16 " ABOVE LONGITUDINAL REINFORCEMENT SHALL BE STRICTLY MAINTAINED.
5. CONCRETE DESIGN, QUALITY, MIXING, AND PLACING SHALL BE IN ACCORDANCE WITH BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE ACI 318-08 AND SPECIFICATIONS FOR STRUCTURAL CONCRETE ACI 301-05.
6. COMPRESSION TEST SPECIMENS SHALL BE TAKEN DURING CONSTRUCTION TO INSURE COMPLIANCE WITH CONCRETE STRENGTH REQUIREMENTS. EVALUATION AND ACCEPTANCE OF THE COMPRESSIVE STRENGTH OF CONCRETE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318-08, CHAPTER 5 "CONCRETE QUALITY, MIXING, AND PLACING." ALL CONCRETE WHICH FAILS TO MEET THE ACI REQUIREMENTS IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE COST OF THE CONTRACTOR.
7. THE CONTRACTOR MUST EXERCISE CARE TO CONTROL TRAFFIC AND STORAGE OF MATERIALS ON THE FORM DECK BEFORE POURING THE SLAB. SPANS MUST BE PLANKED OR OTHERWISE PROTECTED AGAINST DAMAGE FROM WORKERS WALKING ON THE MATERIAL, CONSTRUCTION TRAFFIC AND CONCRETE PLACING EQUIPMENT.

THESE SPECIFICATIONS SHALL BE THE MINIMUM REQUIREMENTS FOR THE BRIDGE DECK SLAB. MORE STRINGENT REQUIREMENTS SPECIFIED BY LOCAL GOVERNING BODIES MAY BE APPLICABLE.

CAUTION:

WE ARE PROVIDING STAY-IN-PLACE FORM DECKING TO ACCEPT A CONCRETE DECK ON THIS STRUCTURE IN ACCORDANCE WITH THE SPECIFICATIONS AND/OR THE CONTRACT DOCUMENTS. BE AWARE THAT MOST PEDESTRIAN BRIDGE LIABILITY CLAIMS ARE STATISTICALLY SLIP AND FALL CLAIMS. IT IS THE OWNER'S AND/OR THE CONCRETE INSTALLER'S RESPONSIBILITY TO PROVIDE A NON-SKID FINISH ON THE CONCRETE DECK. WE RECOMMEND, AS A MINIMUM, A ROUGHENED BROOM FINISH BE USED ON ALL DECK SURFACES.

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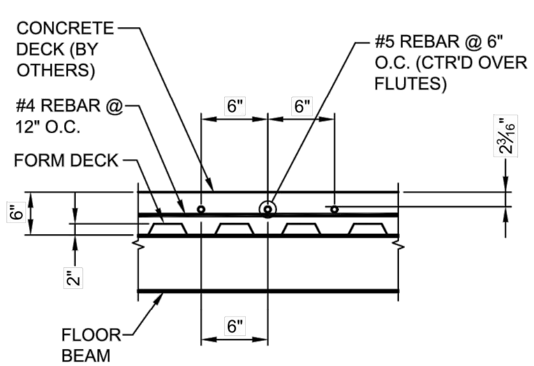
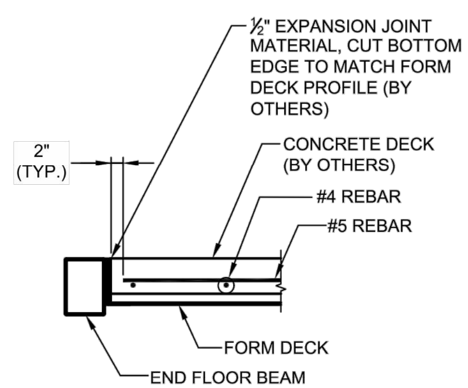
PROPOSAL
DRAWING



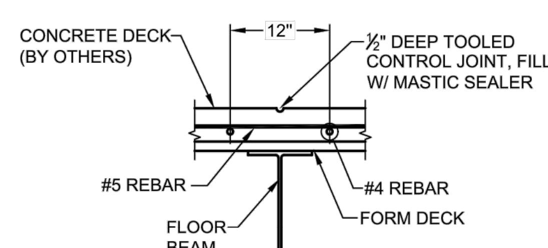
14/4 TYP SLAB REINF. DETAIL

f'c = 3,500 PSI (MINIMUM 28 DAY STRENGTH)
GRADE 60 REINFORCING (fy = 60,000 PSI)



15/4 SECTION - EXP'N JOINT

LOCATE AT EACH END FLOOR BEAM



16/4 CONTROL JOINT

MARK	DATE	REVISION DESCRIPTION	BY

90'-0" x 8'-0"
WESTSIDE PARK
PEDESTRIAN BRIDGE
YANKTON, SD

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
8301 State Highway 29 North, Alexandria, MN 56308
800-328-2047 320-852-7500 320-852-7067 FAX
CONTINENTAL BRIDGE

DATE: 2/25/2022	
DESIGNED: XXX	DRAWN: DJB
CHECKED: XXX	APPROVED: XXX
PROJECT No.: 702048	SEQUENCE No.: 010
SHEET: 4 OF 4	

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SIOUX FALLS, SD 57104
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FAX: 605.338.8750

City of Yankton South Dakota

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

REGISTERED LANDSCAPE ARCHITECT REG. NO. 11267 DAVID CHRISTIAN SOUTH DAKOTA 3/9/22

PLOT DATE 3/16/2022 9:40 AM

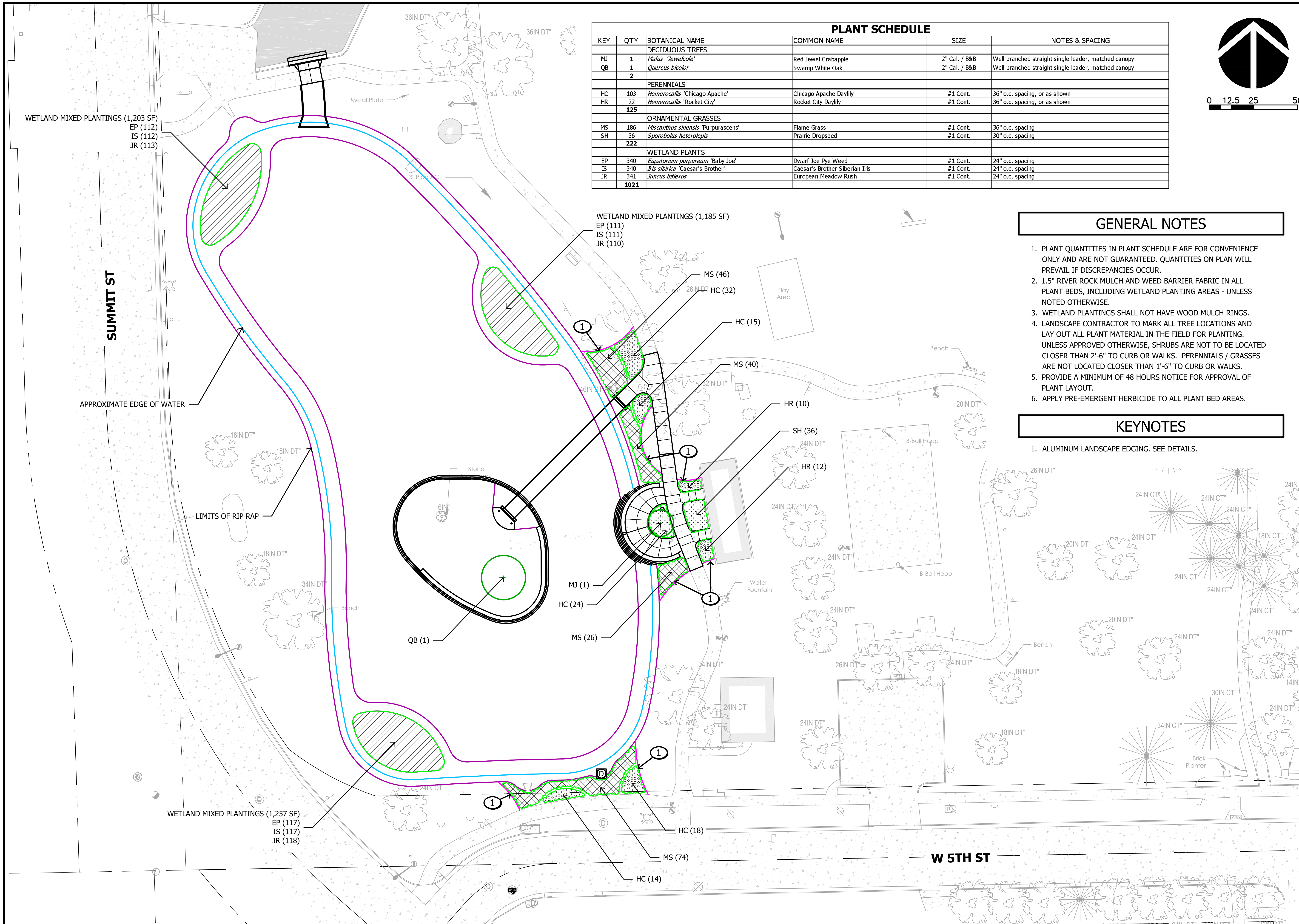
BID SET

DETAILS

C-609

For Reference Only

21289 - L-100 - Landscape Plan.dwg



KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	NOTES & SPACING
		DECIDUOUS TREES			
MJ	1	*Malus 'Jewelcole'*	Red Jewel Crabapple	2" Cal. / B&B	Well branched straight single leader, matched canopy
QB	1	*Quercus bicolor*	Swamp White Oak	2" Cal. / B&B	Well branched straight single leader, matched canopy
	2				
		PERENNIALS			
HC	103	*Hemerocallis* 'Chicago Apache'	Chicago Apache Daylily	#1 Cont.	36" o.c. spacing, or as shown
HR	22	*Hemerocallis* 'Rocket City'	Rocket City Daylily	#1 Cont.	36" o.c. spacing, or as shown
	125				
		ORNAMENTAL GRASSES			
MS	186	*Miscanthus sinensis* 'Purpurascens'	Flame Grass	#1 Cont.	36" o.c. spacing
SH	36	*Sporobolus heterolepis*	Prairie Dropseed	#1 Cont.	30" o.c. spacing
	222				
		WETLAND PLANTS			
EP	340	*Eupatorium purpureum* 'Baby Joe'	Dwarf Joe Pye Weed	#1 Cont.	24" o.c. spacing
IS	340	*Iris sibirica* 'Caesar's Brother'	Caesar's Brother Siberian Iris	#1 Cont.	24" o.c. spacing
JR	341	*Juncus inflexus*	European Meadow Rush	#1 Cont.	24" o.c. spacing
	1021				

GENERAL NOTES

1. PLANT QUANTITIES IN PLANT SCHEDULE ARE FOR CONVENIENCE ONLY AND ARE NOT GUARANTEED. QUANTITIES ON PLAN WILL PREVAIL IF DISCREPANCIES OCCUR.
2. 1.5" RIVER ROCK MULCH AND WEED BARRIER FABRIC IN ALL PLANT BEDS, INCLUDING WETLAND PLANTING AREAS - UNLESS NOTED OTHERWISE.
3. WETLAND PLANTINGS SHALL NOT HAVE WOOD MULCH RINGS.
4. LANDSCAPE CONTRACTOR TO MARK ALL TREE LOCATIONS AND LAY OUT ALL PLANT MATERIAL IN THE FIELD FOR PLANTING. UNLESS APPROVED OTHERWISE, SHRUBS ARE NOT TO BE LOCATED CLOSER THAN 2'-6" TO CURB OR WALKS. PERENNIALS / GRASSES ARE NOT LOCATED CLOSER THAN 1'-6" TO CURB OR WALKS.
5. PROVIDE A MINIMUM OF 48 HOURS NOTICE FOR APPROVAL OF PLANT LAYOUT.
6. APPLY PRE-EMERGENT HERBICIDE TO ALL PLANT BED AREAS.

KEYNOTES

1. ALUMINUM LANDSCAPE EDGING. SEE DETAILS.

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City of Yankton SOUTH DAKOTA

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

REGISTERED LANDSCAPE ARCHITECT REG. NO. 11267 SOUTH DAKOTA 3/16/22

PLOT DATE 3/16/2022 9:46 AM

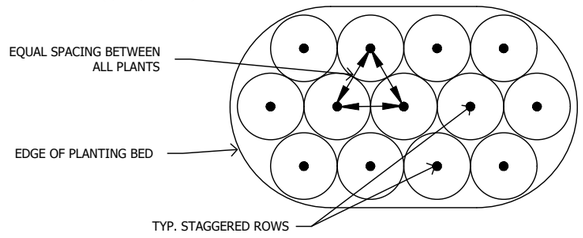
BID SET

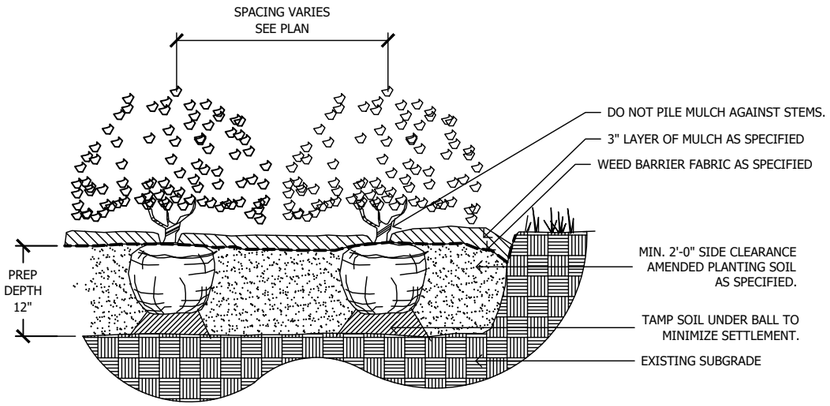
LANDSCAPE PLAN

L-100

GENERAL NOTES:

1. INSTALL TOP OF PLANT BALL 2" ABOVE ADJACENT GRADE.
2. TAMP PLANTING MIX FIRMLY AS PIT IS FILLED AROUND EACH PLANT BALL.
3. SOAK EACH PLANT BALL AND PIT IMMEDIATELY AFTER INSTALLATION.
4. PRUNE ONLY DEAD OR DAMAGED BRANCHES.
5. FOR CONTAINER PLANTS, SCARIFY SIDES OF ROOT BALL (1/4"-1/2" DEEP)



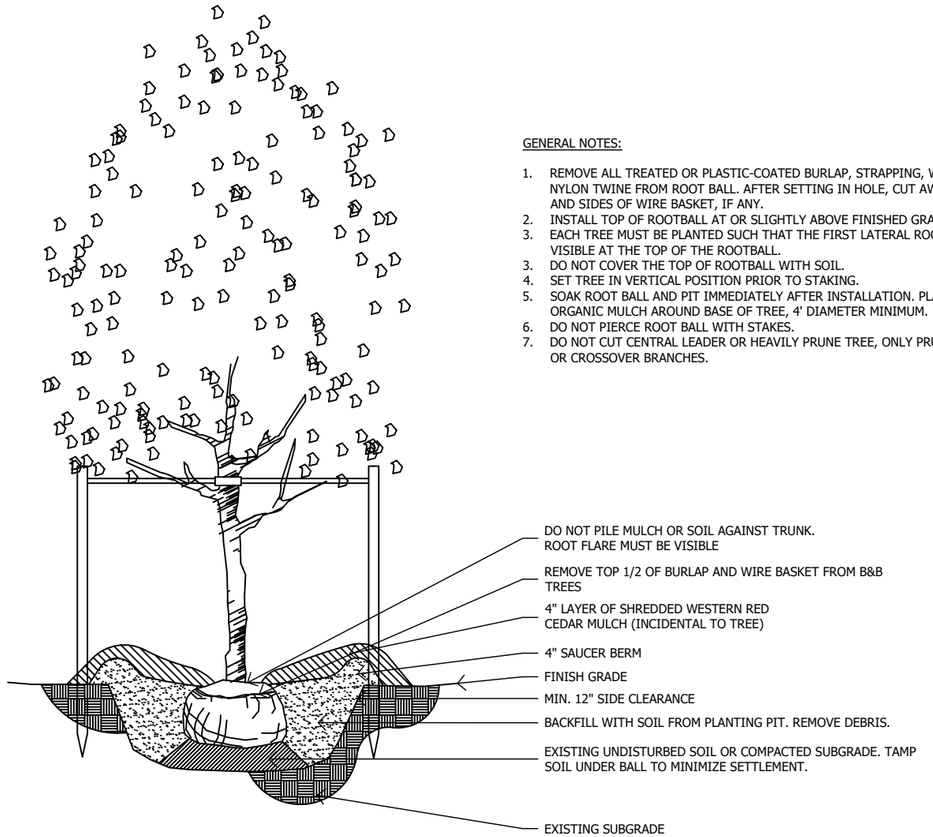


01 SHRUB PLANTING

PLAN/ SECTION - N.T.S.

GENERAL NOTES:

1. REMOVE ALL TREATED OR PLASTIC-COATED BURLAP, STRAPPING, WIRE, OR NYLON TWINE FROM ROOT BALL. AFTER SETTING IN HOLE, CUT AWAY TOP AND SIDES OF WIRE BASKET, IF ANY.
2. INSTALL TOP OF ROOTBALL AT OR SLIGHTLY ABOVE FINISHED GRADE LEVEL.
3. EACH TREE MUST BE PLANTED SUCH THAT THE FIRST LATERAL ROOT IS VISIBLE AT THE TOP OF THE ROOTBALL.
3. DO NOT COVER THE TOP OF ROOTBALL WITH SOIL.
4. SET TREE IN VERTICAL POSITION PRIOR TO STAKING.
5. SOAK ROOT BALL AND PIT IMMEDIATELY AFTER INSTALLATION. PLACE 4" OF ORGANIC MULCH AROUND BASE OF TREE, 4' DIAMETER MINIMUM.
6. DO NOT PIERCE ROOT BALL WITH STAKES.
7. DO NOT CUT CENTRAL LEADER OR HEAVILY PRUNE TREE, ONLY PRUNE DEAD OR CROSSOVER BRANCHES.

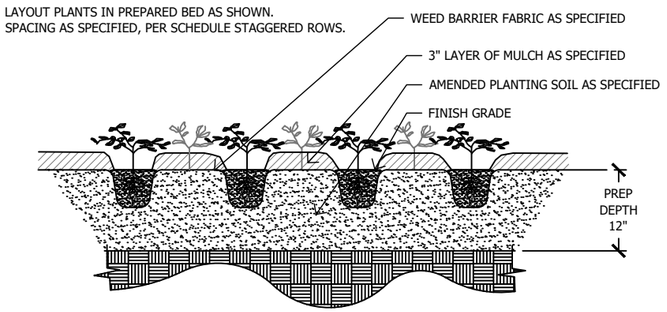


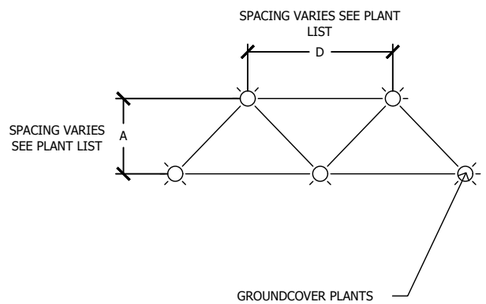
02 TREE PLANTING

PLAN/ SECTION - N.T.S.

GENERAL NOTES:

1. LAYOUT PLANTS IN PREPARED BED AS SHOWN.
2. SPACING AS SPECIFIED, PER SCHEDULE STAGGERED ROWS.





PLANT SPACING (D)	ROW SPACING (A)
6" O.C.	5.20"
8" O.C.	6.93"
10" O.C.	8.66"
12" O.C.	10.4"
15" O.C.	13.0"
18" O.C.	15.6"
24" O.C.	20.8"
30" O.C.	26.0"
36" O.C.	30.0"

03 GROUND COVER PLANTING

PLAN/ SECTION - N.T.S.

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City of Yankton SOUTH DAKOTA Where You Belong

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

REGISTERED LANDSCAPE ARCHITECT
REG. NO. 11267
DAVID CHRISTIAN LOCHE
SOUTH DAKOTA
3/16/22

PLOT DATE 3/16/2022 9:47 AM

BID SET

LANDSCAPING DETAILS

L-200

SURE-LOC ALUMINUM EDGING CORPORATION
494 EAST 64TH ST
HOLLAND, MI 49423
TOLL FREE: 1-800-787-3562
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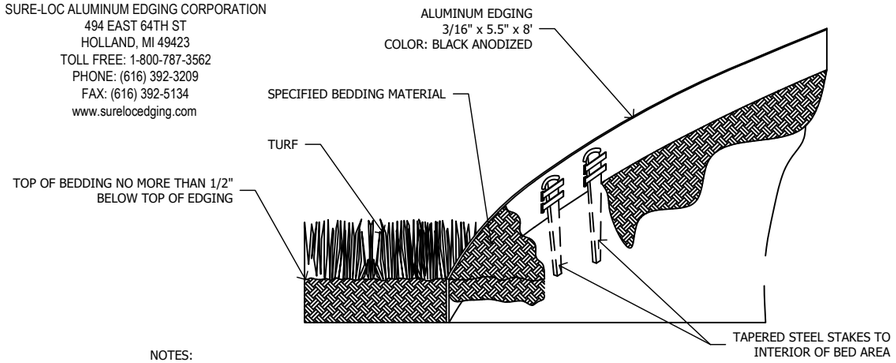
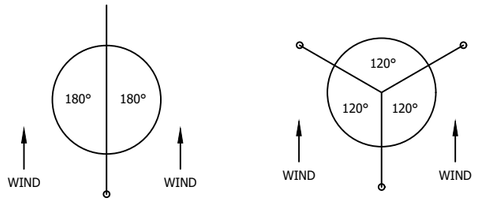


NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

01 ALUMINUM LANDSCAPE EDGING

SECTION - N.T.S.

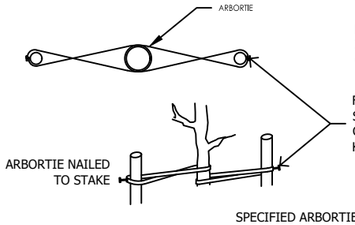


GUYING PATTERN FOR DECIDUOUS TREE PLANTING

GUYING PATTERN FOR EVERGREEN TREE PLANTING

GUY AND STAKE DECIDUOUS TREES 2" AND LARGER CALIPER AND CONIFEROUS TREES OVER 4' HT.

FOR TREES ON 4:1 OR STEEPER SLOPES, PLACE 2 GUYS UPSLOPE, ONE DOWNSLOPE; OTHERWISE PLACE FOR PREVAILING WIND.



FOLD ENDS OF ARBORTIE BACK. SECURE TO STAKE WITH 1" GALVANIZED ROOFING NAIL OR USE A KNOT.

SPECIFIED ARBORTIE GREEN (OR WHITE) STAKING AND GUYING MATERIAL IS TO BE FLAT WOVEN POLYPROPYLENE MATERIAL. 3/4" (19.05MM) WIDE 900 LB. BREAK STRENGTH.

ARBORTIE SHALL BE FASTENED TO STAKES IN A MANNER WHICH PERMITS TREE MOVEMENT AND SUPPORTS THE TREE.

02 TREE GUYING

SECTION - N.T.S.

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City of Yankton SOUTH DAKOTA
Where It's Now Here

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

REGISTERED LANDSCAPE ARCHITECT
REG. NO. 11267
DAVID CHRISTIAN LOCKE
SOUTH DAKOTA
3/16/22

PLOT DATE 3/16/2022 9:47 AM

BID SET

LANDSCAPING DETAILS

L-201

GENERAL CONSTRUCTION NOTES:

1. THE INTENT OF THESE PLANS AND NOTES IS TO PRESENT THE PROJECT REQUIREMENTS FOR THE WEST SIDE PARK IMPROVEMENTS PROJECT IN YANKTON, SD.

2. THESE STRUCTURAL DRAWINGS ARE INTENDED TO BE USED IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS. SOME DIMENSIONS, SECTIONS, AND FRAMING DETAILS MAY BE SHOWN ON THE ARCHITECTURAL DRAWINGS.

3. DURING CONSTRUCTION, THE CONTRACTOR MAY ENCOUNTER EXISTING CONDITIONS THAT ARE UNKNOWN OR THAT DIFFER THAN AS DEPICTED IN THESE DRAWINGS. SUCH EXISTING CONDITIONS MAY INTERFERE WITH THE NEW CONSTRUCTION OR REQUIRE PROTECTION DURING CONSTRUCTION.

4. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL ENCOUNTERED EXISTING CONDITIONS THAT INTERFERE WITH THE PROPER EXECUTION OF NEW WORK OR COMPROMISE THE STRUCTURAL INTEGRITY OF THE EXISTING STRUCTURE.

5. ALL WORK SHALL COMPLY WITH THE 2015 INTERNATIONAL BUILDING CODE, AS APPROVED BY THE CITY OF YANKTON.

6. REFERENCE STANDARDS: UNLESS OTHERWISE NOTED, ALL STANDARDS SHALL BE CURRENT EDITION, WITH LATEST ADDENDA, IF APPLICABLE.

7. THE CONTRACTOR SHALL VERIFY ALL CONTRACT DOCUMENTS, SITE ELEVATIONS, DIMENSIONS AND CONDITIONS PRIOR TO STARTING WORK AND SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES.

8. SPECIFIC NOTES AND DETAILS SHALL TAKE PRECEDENCE OVER GENERAL NOTES.

9. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS OTHERWISE INDICATED, THEY DO NOT INDICATE THE MEANS, METHODS, TIMING, OR PROCEDURES USED TO COMPLETE THE CONSTRUCTION. TEMPORARY BRACING, SHORING, OR PROTECTION OF THE STRUCTURE AGAINST WIND, ERECTION AND OTHER SITE CONDITIONS DURING CONSTRUCTION OF THE BUILDING SHALL BE THE RESPONSIBILITY OF CONTRACTOR. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PROTECTION OF THE STRUCTURE DURING ALL PHASES OF DEMOLITION, CONSTRUCTION, AND INSTALLATION.

10. NO AREA OF THE STRUCTURE SHALL BE LOADED WITH CONSTRUCTION MATERIALS OR EQUIPMENT THAT EXCEEDS FINAL DESIGN CRITERIA.

11. HOLES, PIPES, SLEEVES, ETC NOT SHOWN ON THE DRAWINGS MUST BE APPROVED BY THE STRUCTURAL ENGINEER BEFORE PLACEMENT THROUGH STRUCTURAL MEMBERS.

12. CONTRACTOR SHALL PROVIDE A CAST-IN SLEEVE FOR ALL HORIZONTAL ELEMENTS THAT EXTEND THROUGH FOOTING. IE: DRAIN TILE, ELECTRICAL CONDUIT, MECHANICAL PIPING, ETC. ALL SLEEVES SHALL BE COORDINATED WITH ARCHITECT/ENGINEER.

13. SHOP DRAWINGS PREPARED BY SUPPLIERS, SUB CONTRACTORS, ETC, SHALL BE DIMENSIONED, REVIEWED, COORDINATED, AND SIGNED/STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTING TO THE STRUCTURAL ENGINEER.

14. FABRICATOR SHALL CLEARLY NOTE CHANGES MADE IN THE SHOP DRAWINGS WHICH DO NOT COMPLY WITH THE CONTRACT DOCUMENTS. REVIEWED APPROVAL SHOP DRAWINGS SHOWING ENGINEERS COMMENTS ACCOMPANIED WITH RECORD SET SHOP DRAWINGS, SHALL BE AVAILABLE FOR REFERENCE AT THE CONSTRUCTION SITE.

15. EXPANSION ANCHORS SHALL BE HILTI "KWIK BOLT TZ" OR EQUIVALENT (UON). INSTALL ANCHORS IN STRUCTURAL CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

16. ADHESIVE ANCHORS (AA) SHALL BE HILTI "HIT HY-200 USING 'HAS' STANDARD RODS" OR EQUIVALENT (UON). USE HILTI "HIT-ICE" FOR COLD WEATHER APPLICATIONS, SEE SPECIFICATIONS FOR USAGE. INSTALL ANCHORS IN STRUCTURAL CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

17. CONCRETE SCREW ANCHORS (CSA) SHALL BE SIMPSON STRONG-TIE "TITEN HD" OR EQUIVALENT (UON). INSTALL ANCHORS IN STRUCTURAL CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

FOUNDATION NOTES:

1. FOOTING ELEVATIONS ARE TO TOP OF FOOTING (T.O.F.), (UON).

2. FOOTINGS ARE DESIGNED FOR A NET ALLOWABLE SOIL BEARING PRESSURE OF 2000 psf FOR CONTINUOUS. FOUNDATION DESIGN COMPLIES WITH GEOTECHNICAL REPORT #22-070 DATED: FEBRUARY 7, 2022 BY GEOTEK ENGINEERING & TESTING SERVICES, INC.

3. FOOTINGS SHALL BEAR ON NATURAL UNDISTURBED SOIL OR ENGINEERED FILL. SOILS SHALL BE OBSERVED AND APPROVED BY A GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF FOOTING CONCRETE. IF NATURAL UNDISTURBED SOILS ARE NOT ENCOUNTERED AND/OR INADEQUATE SOILS ARE NOTED AT FOOTING BEARING LEVEL, ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH FURTHER WORK AT THOSE FOOTING LOCATIONS.

4. PROTECT FOOTINGS FROM THE ACTION OF WATER OR FREEZING.

5. PRIOR TO PLACEMENT OF FOOTING CONCRETE, CLEAN FOOTING EXCAVATIONS OF SNOW, WATER, MUD, DIRT, AND DEBRIS.

6. FOOTINGS SHALL NOT BE EARTH FORMED.

DRIVEN PILE NOTES:

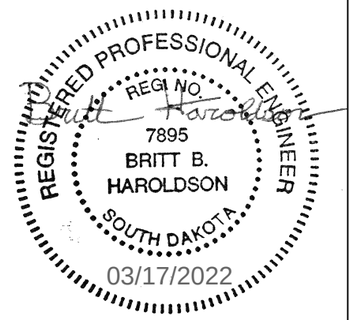
1. ENGAGE AN EXPERIENCED INSTALLER WHO HAS SPECIALIZED IN THE INSTALLATION OF DRIVEN PILES SIMILAR TO THOSE REQUIRED FOR THIS PROJECT.

2. DESIGN AND INSTALLATION OF DRIVEN PILES SHALL COMPLY WITH THE 2015IBC CHAPTER 18, SECTION 1810.

3. ALL PILES SHALL BE 10.75"ΦX0.375" PIPE MEETING ASTM A252/A572/A1011/A1018 AND SHALL HAVE A MINIMUM YEILD STRESS Fy= 50 KSI.

4. ALL PILES SHALL BE FILLED WITH CONCRETE AFTER INSTALLATIONS HAVE BEEN COMPLETED.

5. ALL PILES SHALL BE DESIGNED TO SUPPORT 60 TON. DRIVE PILES TO ULTIMATE DESIGN CAPACITIES. NOMINAL PILE LENGTH IS ANTICIPATED TO BE 55 FEET.



HEYER ENGINEERING
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123.0008.2022

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City of Yankton SOUTH DAKOTA Takes Flight Here

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

PLOT DATE 3/17/2022 8:58:03 AM

PERMIT SET

GENERAL NOTES

S-100

EXCAVATION AND BACKFILL NOTES:

1. EXCAVATION AND BACKFILL SHALL BE EXECUTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

2. BACKFILL AND COMPACTION SHALL BE INSPECTED AND CERTIFIED BY A LICENSED GEOTECHNICAL ENGINEER. REPORTS ARE TO BE SUBMITTED TO THE ARCHITECT/ENGINEER.

3. FOOTING EXCAVATIONS SHALL BE EXCAVATED TO PROPER LINE AND LEVEL TO ENSURE MINIMUM CONCRETE COVER OF FOOTING REINFORCEMENT FOR FOOTING DEPTH.

4. ALL BACKFILL BELOW STRUCTURAL FOUNDATIONS AND SLABS ON GRADE BOTH INTERIOR AND EXTERIOR, IF NOT SPECIFIED IN CONTRACT DOCUMENTS OR SPECIFICATIONS, SHALL BE SOIL TYPE SP OR SP-SM ACCORDING TO THE UNIFIED SOIL CLASSIFICATION SYSTEM. GRADATION MUST BE 100% PASSING 2" SIEVE WITH <20% PASSING #200 SIEVE. BACKFILL MUST BE FREE OF ORGANICS.

5. BACKFILL SHALL BE COMPACTED BY MECHANICAL MEANS. FLOODING OR WATER INUNDATION SHALL NOT BE PERMITTED.

6. BACKFILL SHALL BE PLACED IN 8" (ALTERNATING) LIFTS ON EACH SIDE OF THE FOUNDATION WALLS TO MAINTAIN STABILITY OF FOUNDATION WALLS. COMPACT EACH LIFT TO THE FOLLOWING DENSITY (ASTM D698):

   98% DRY DENSITY - BELOW FOOTINGS
   98% DRY DENSITY - BELOW SLABS ON GRADE
   95% DRY DENSITY - EXTERIOR FOUNDATION WALL BACKFILL

7. BACKFILL SHALL NOT BE PLACED AGAINST BASEMENT FOUNDATION WALLS UNLESS WALLS ARE ADEQUATELY BRACED, TOP AND BOTTOM. FINAL WALL BRACING IS BASEMENT SLAB AND 1ST FLOOR STRUCTURE. IF THESE ELEMENTS ARE NOT IN PLACE AT TIME OF BACKFILL, CONTRACTOR SHALL PROVIDE AN ENGINEERED, TEMPORARY BRACING SYSTEM. THE TEMPORARY BRACING SYSTEM PROPOSED SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW PRIOR TO BACKFILLING.

8. THE CONTRACT STRUCTURAL DOCUMENTS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THE MEANS AND METHODS USED TO PERFORM THE EXCAVATION IS AT THE SOLE DISCRETION OF THE CONTRACTOR, INCLUDING THE DESIGN AND INSTALLATION OF TEMPORARY BRACING OR SHORING. CONTRACTOR IS RESPONSIBLE FOR ALL CODE AND REGULATORY SAFETY REQUIREMENTS.

SPECIAL INSPECTIONS:

1. THE CONTRACTOR SHALL COORDINATE THE TESTING AND INSPECTION SERVICES IN ACCORDANCE WITH THE PROGRESS OF THE WORK. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO THE TESTING OR INSPECTION AGENCY OF THE REQUIRED WORK TO ALLOW ALLOCATION OF PERSONNEL. THE COST OF ANY RETESTING OR ADDITIONAL INSPECTIONS AS A RESULT OF UNINSPECTED WORK, FAILED TESTS, OR REJECTED WORK, SHALL BE BORNE BY THE CONTRACTOR.

2. THE FOLLOWING TABLE INCLUDES ITEMS REQUIRING SPECIAL INSPECTION PROVIDED BY THE **OWNER**. SPECIAL INSPECTIONS LISTED IN THIS TABLE MAY NOT INCLUDE ALL INSPECTIONS AND/OR TESTING THAT IS REQUIRED FOR THE PROJECT PER IBC CHAPTER 17. ADDITIONAL TESTING MAY BE REQUIRED BY THE CONTRACTOR, AS PART OF THEIR CONTRACT. THESE "SPECIAL INSPECTIONS" ARE IN ADDITION TO THE INSPECTIONS BY THE BUILDING OFFICIAL THAT ARE IDENTIFIED IN SECTION 110 IBC.

REQUIRED SPECIAL INSPECTION

DESCRIPTION OF WORK	TESTING REQUIRED	INSPECTION FREQUENCY	REMARKS
DRIVEN PILINGS	NO	CONTINUOUS DURING INSTALLATION	SEE IBC TABLE 1705.7 ITEM NO 1, 2, 3, & 4
GRADING, EXCAVATION, & FILLING	YES	PERIODIC (CONT DURING FILL)	SEE IBC TABLE 1705.6
CONCRETE FORMWORK	NO	PERIODIC	SEE IBC TABLE 1705.3 ITEM NO 12
CONCRETE REINFOREMENT	NO	PERIODIC	SEE IBC TABLE 1705.3 ITEM NO 1
CONCRETE REINFOREMENT	NO	PERIODIC (CONT FOR MULTIPASS WELDS)	SEE IBC TABLE 1705.3 ITEM NO 2
CAST-IN-PLACE CONCRETE	YES	PERIODIC (CONT DURING PLACEMENT)	SEE IBC TABLE 1705.3 ITEM NO 5, 6, 7, 8, & 11
CAST-IN-PLACE CONCRETE CURING & PROTECTION	NO	PERIODIC	CURING TECHNIQUES
ANCHOR RODS INSTALLED IN CONCRETE	NO	PERIODIC	SEE IBC TABLE 1705.3 ITEM NO 3
POST-INSTALLED ADHESIVE ANCHORS IN CONCRETE	NO	CONTINUOUS	SEE IBC TABLE 1705.3 ITEM NO 4a
POST-INSTALLED MECHANICAL	NO	PERIODIC	SEE IBC TABLE 1705.3 ITEM NO 4b

REGISTERED PROFESSIONAL ENGINEER
REGI NO.
7895
BRITT B.
HAROLDSON
SOUTH DAKOTA
03/17/2022

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City of Yankton SOUTH DAKOTA
Where It All Comes Together

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

PLOT DATE 3/17/2022 8:58:03 AM

PERMIT SET

GENERAL NOTES

S-101

CONCRETE NOTES:

1. CONCRETE CONSTRUCTION SHALL CONFORM TO AMERICAN CONCRETE INSTITUTE (ACI) CODES AND SPECIFICATIONS, LATEST EDITION.

   ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE"
   ACI 315 "DETAILS & DETAILING OF CONCRETE REINFORCEMENT"
   ACI 318-14 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"

2. CAST-IN-PLACE CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH IS AS FOLLOWS:

   3000 psi - STEEL PILE FILL
   4500 psi - PILE CAP

3. CONCRETE MIX DESIGNS SHALL BE BY AN INDEPENDENT TESTING LABORATORY, AND SUBMITTED FOR REVIEW & APPROVAL.

4. CAST-IN-PLACE CONCRETE SHALL BE SUBJECT TO TESTING BY AN INDEPENDENT TESTING LABORATORY. SEE PROJECT SPECIFICATIONS FOR REQUIREMENTS.

5. NON-WELDED REINFORCING STEEL SHALL BE GRADE 60 DEFORMED, BILLET-STEEL, ASTM A615, UON ALL WELDED WIRE FABRIC (WWF) SHALL BE PLAIN ASTM A185.

6. WELDED REINFORCING STEEL SHALL BE GRADE 60, LOW CARBON, ASTM A706.

7. CLEAR CONCRETE COVER FOR ALL REINFORCING SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE DRAWING:

CONCRETE ON SOIL	3"
SLAB ON GRADE	MID-HEIGHT
WALLS, STRUCTURAL SLABS-	
FORMED & EXPOSED TO EARTH OR WEATHER:	
#6 THROUGH #18	2"
#5 & SMALLER	1 1/2"
NOT EXPOSED TO EARTH & WEATHER:	
#11 & SMALLER	3/4"
BEAMS & COLUMNS (COVER TO STIRRUPS OR TIES)	1 1/2"

8. PROVIDE EXTRA REINFORCEMENT AROUND ALL OPENINGS GREATER THAN 1'-0" SQUARE OR 1'-0" IN DIAMETER, INCLUDING DOOR OPENINGS, IN CONCRETE WALLS & SLABS. PROVIDE 2- #5 BARS @ 3" OC, ON EACH SIDE OF THE OPENING EXTENDING 2'-0" BEYOND THE CORNER OF THE OPENING & 2- #5 BARS AT 3" OC BY 3'-0" LONG DIAGONAL BARS AT EACH CORNER. PLACE DIAGONAL BARS CENTERED ON CORNER @ 2" CLEAR OF CORNER. ADDITIONAL REINFORCEMENT SHALL BE PROVIDED AT EACH LAYER OF REINFORCING.

9. REINFORCING STEEL SHALL BE BENT, SPLICED, AND PLACED IN ACCORDANCE WITH ACI 301 (LATEST EDITION).

10. PROVIDE LAP SPLICE FOR REINFORCING STEEL AS FOLLOWS:
    TYPE #1 SPLICE - ONLY WHERE SPECIFICALLY SHOWN ON PLAN
    TYPE #2 SPLICE - TYPICAL FOR HORIZONTAL REINFORCING BARS IN SLABS, GRADE BEAMS, FOOTINGS AND FOUNDATION WALLS (UON)
    TYPE #3 SPLICE - WHERE CONCRETE COVER IS LESS THAN Bd AND THE SPACING IS LESS THAN 2 Bd
    TYPE #4 SPLICE - TYPICAL FOR VERTICAL BARS IN COLUMNS AND PIERS (UON)

REINFORCING STEEL SPLICE LENGTHS STANDARD NON-COATED BARS

CONCRETE STRENGTH F'c	TYPE #1 SPLICE CLASS A SPLICE		TYPE #2 SPLICE CLASS B SPLICE		TYPE #3 SPLICE CLASS B SPLICE		TYPE #4 SPLICE COMRESSION SPLICE
	#6 & SMALLER	#7 & LARGER	#6 & SMALLER	#7 & LARGER	#6 & SMALLER	#7 & LARGER	#4 & LARGER
3000 psi	44 Bd	55 Bd	57 Bd	71 Bd	85 Bd	107 Bd	30 Bd
3500 psi	41 Bd	51 Bd	53 Bd	66 Bd	79 Bd	99 Bd	30 Bd
4000 psi	38 Bd	47 Bd	49 Bd	62 Bd	74 Bd	92 Bd	30 Bd
5000 psi	34 Bd	42 Bd	44 Bd	55 Bd	66 Bd	83 Bd	30 Bd
6000 psi	31 Bd	38 Bd	40 Bd	50 Bd	60 Bd	76 Bd	30 Bd

NOTES: Bd = BAR DIAMETER

A. MIN. LAP: 1' - 6" FOR TYPE #1 THROUGH TYPE #3 & 1' - 0" FOR TYPE #4 SPLICES.
B. MULTIPLY THE SPLICE LENGTH ABOVE BY THE FOLLOWING ADJUSTMENT FACTORS:
   a. 1.0 - FOR STANDARD REBAR
   b. 1.3 - WHEN HORIZONTAL REINFORCING HAS MORE THAN 1' - 0" OF FRESH CONCRETE, PLACE BELOW BAR
   c. 1.3 - FOR LIGHTWEIGHT CONCRETE
   d. 1.2 - FOR TYPICAL EPOXY COATED REBAR
   e. 1.5 - FOR EPOXY COATED REBAR WITH COVER LESS THAN 3 Bd OR CLEAR SPACING LESS THAN 6 Bd
   f. Fy USED/60 - FOR REBAR STRENGTHS OTHER THAN 60 ksi
C. ALL ADJUSTMENT FACTORS THAT APPLY SHALL BE USED TO CALCULATE REQUIRED SPLICE LENGTH.

11. PROVIDE ADEQUATE SUPPORT BARS AND ACCESSORIES TO HOLD REINFORCING BARS FIRMLY IN PLACE TO SPECIFIED COVERAGE.

12. CAST DOWELS, WITH STD 90° HOOK, IN FOOTINGS FOR CONCRETE PIERS AND WALLS ABOVE. DOWELS SHALL BE THE SAME SIZE AND NUMBER AS THE VERTICAL REINFORCING, (UON).

13. SUPPLY 50 FEET EXTRA OF #4 REBAR FOR MISC PLACEMENT AS DIRECTED BY THE ARCHITECT/ENGINEER. CONTRACTOR SHALL INCLUDE ALLOWANCE FOR PROJECTED LABOR COSTS INVOLVED WITH INSTALLATION OF REINFORCEMENT.

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
7895
BRITT B. HAROLDSON
SOUTH DAKOTA
03/17/2022

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WESTSIDE PARK
POND IMPROVEMENTS
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SEI PROJECT #: 21289

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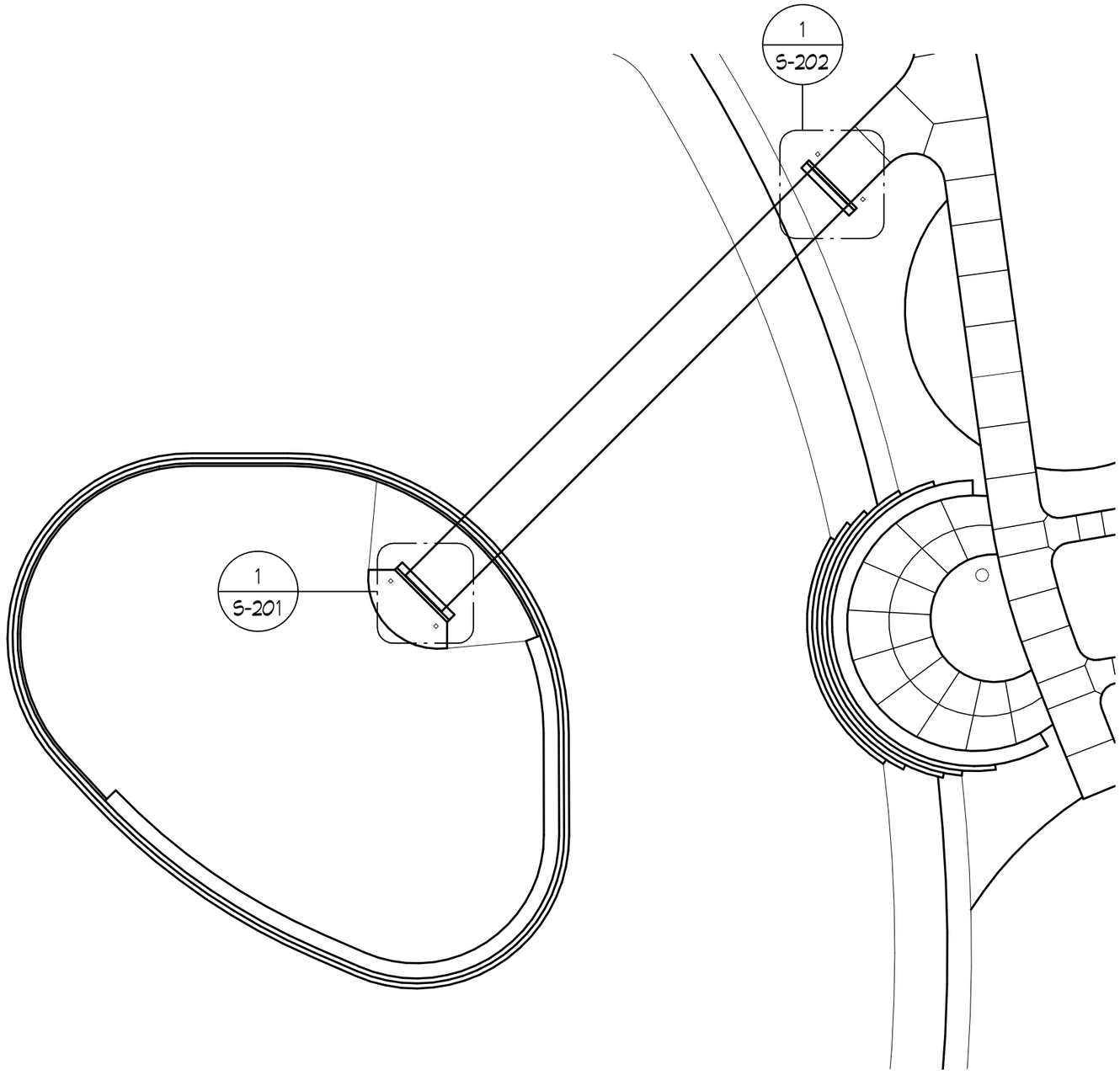
GENERAL NOTES

S-102



1 / S-200 FOUNDATION PLAN
1" = 20'-0"

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FOUNDATION PLAN

S-200

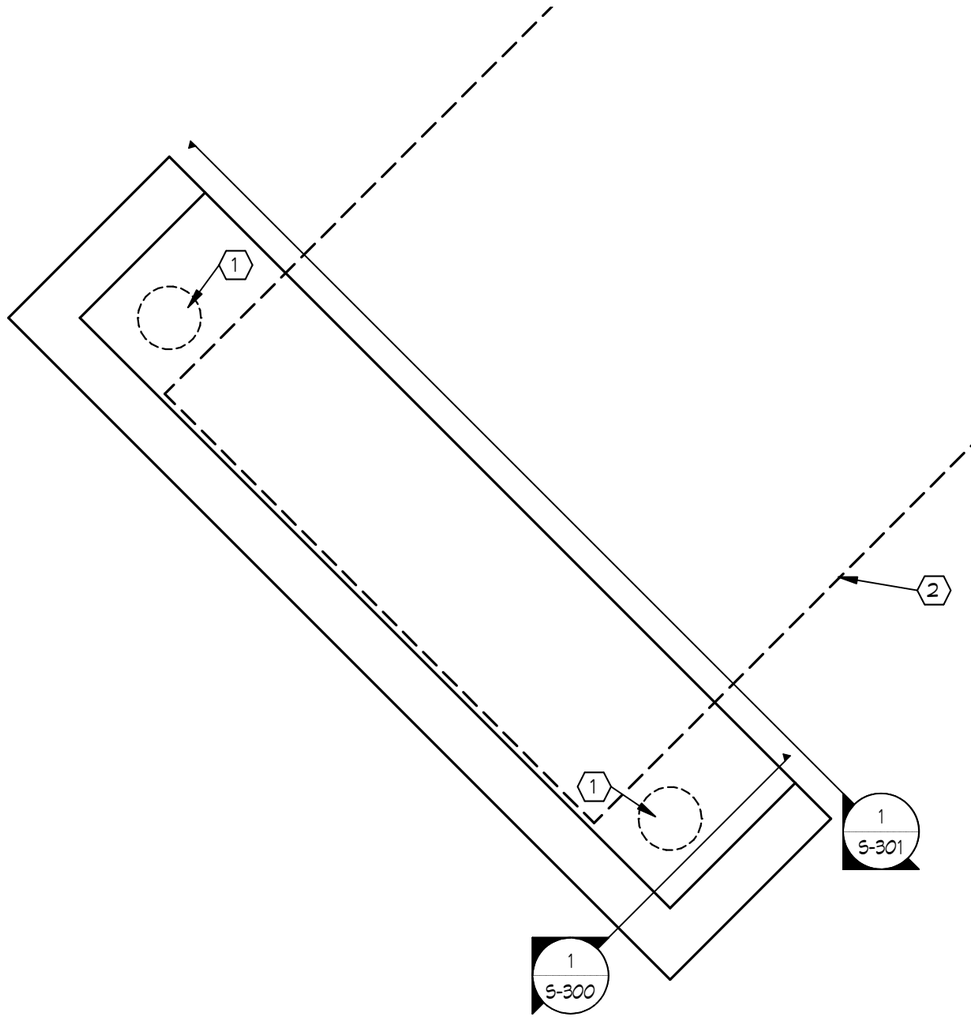
SHEET NOTES:

1. GENERAL CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS.
2. VERIFY SLOPE GRADE, ELEVATION AND EXTERIOR CONC W/ CIVIL PLANS

KEY NOTES:

(1) 10.75 0x0.375" WALL THICKNESS STEEL PIPE PILE. STEEL PIPE TO BE CAPPED AND MEET SPECIFICATION ASTM A572 GRADE 50 KSI OR ASTM A252/A1011/1018 GRADE 50 KSI.

(2) PEDESTRIAN BRIDGE BY OTHERS. GC TO COORDINATE DIMENSIONS, ELEVATIONS AND CONNECTIONS.



1 / S-201 ENLARGED BRIDGE ABUTMENT

1/2" = 1'-0"

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ENLARGED BRIDGE ABUTMENT

S-201

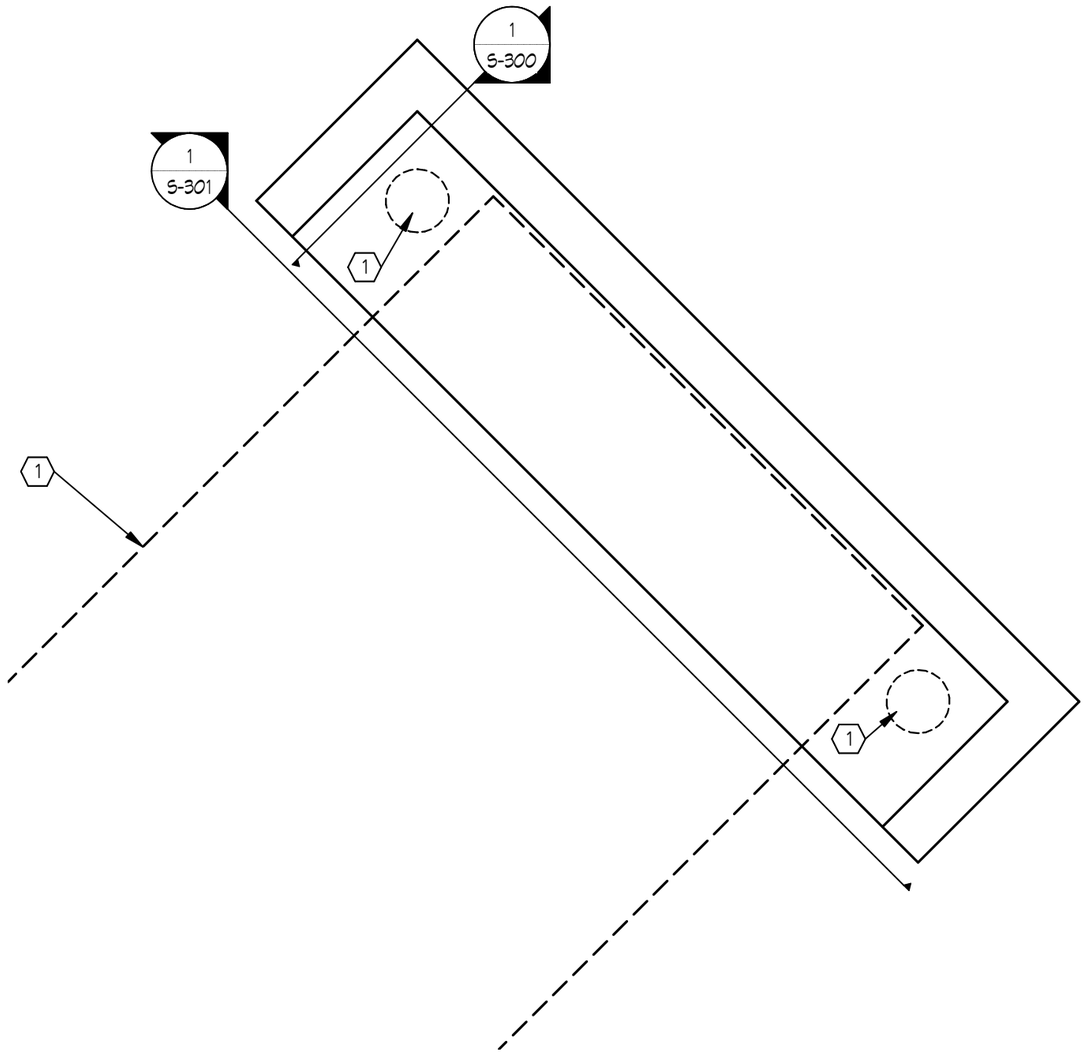
SHEET NOTES:

1. GENERAL CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS.
2. VERIFY SLOPE GRADE, ELEVATION AND EXTERIOR CONC W/ CIVIL PLANS

KEY NOTES:

(1) 10.75 OX0.375" WALL THICKNESS STEEL PIPE PILE. STEEL PIPE TO BE CAPPED AND MEET SPECIFICATION ASTM A572 GRADE 50 KSI OR ASTM A1011/1018 GRADE 50 KSI.

(2) PEDESTRIAN BRIDGE BY OTHERS. GC TO COORDINATE DIMENSIONS, ELEVATIONS AND CONNECTIONS.



1 / S-202 ENLARGED BRIDGE ABUTMENT

1/2" = 1'-0"

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SEI PROJECT #: 21289

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
7895
BRITT B.
HAROLDSON
SOUTH DAKOTA
03/17/2022

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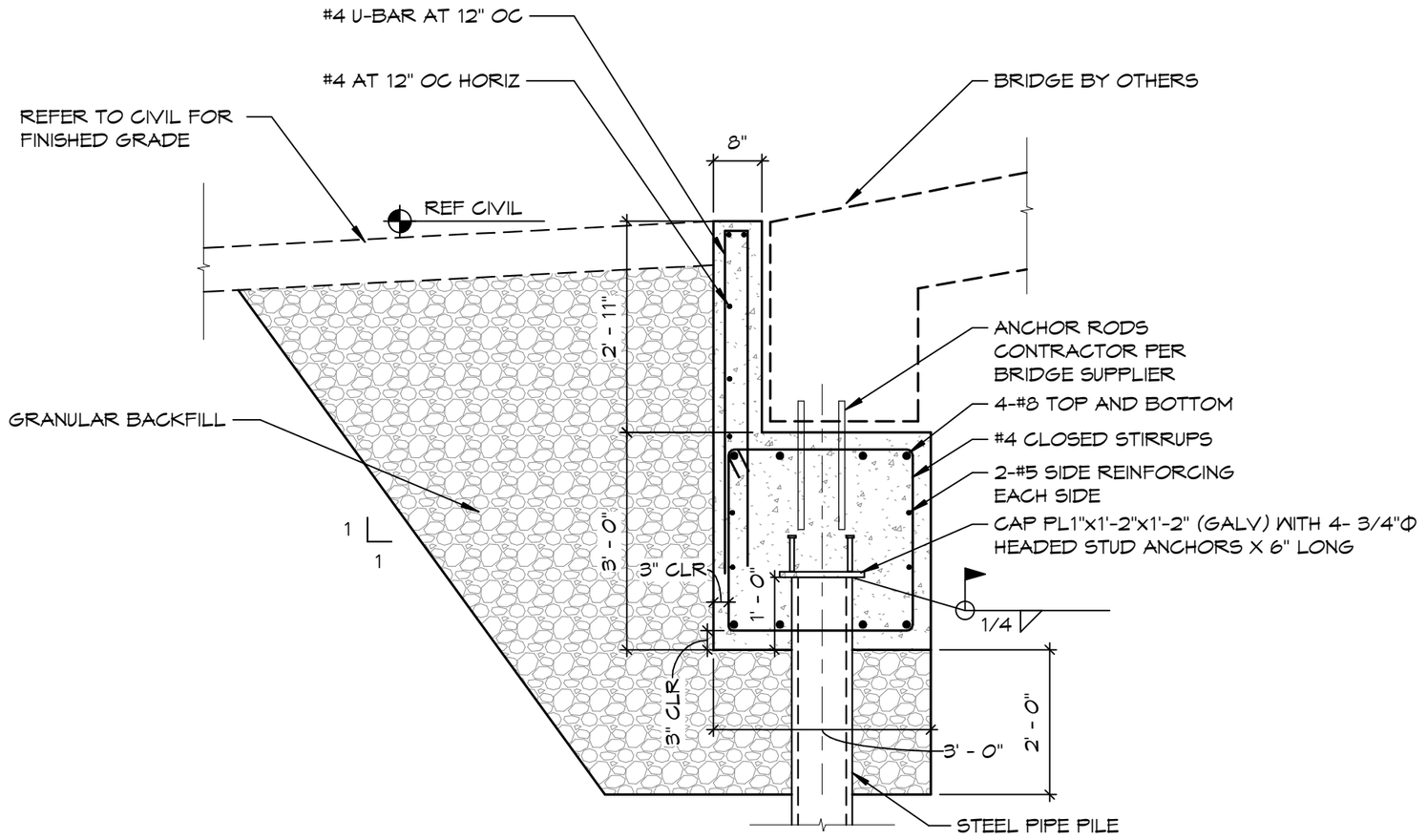
ENLARGED BRIDGE ABUTMENT

S-202

NOTES:

1. GC TO COORDINATE PEDESTRIAN BRIDGE ANCHOR BOLTS AND CONNECTION.



1 / S-300 CONCRETE PILE CAP AT STEEL PILE

1/2" = 1'-0"

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YANKTON, SOUTH DAKOTA
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DETAILS

S-300

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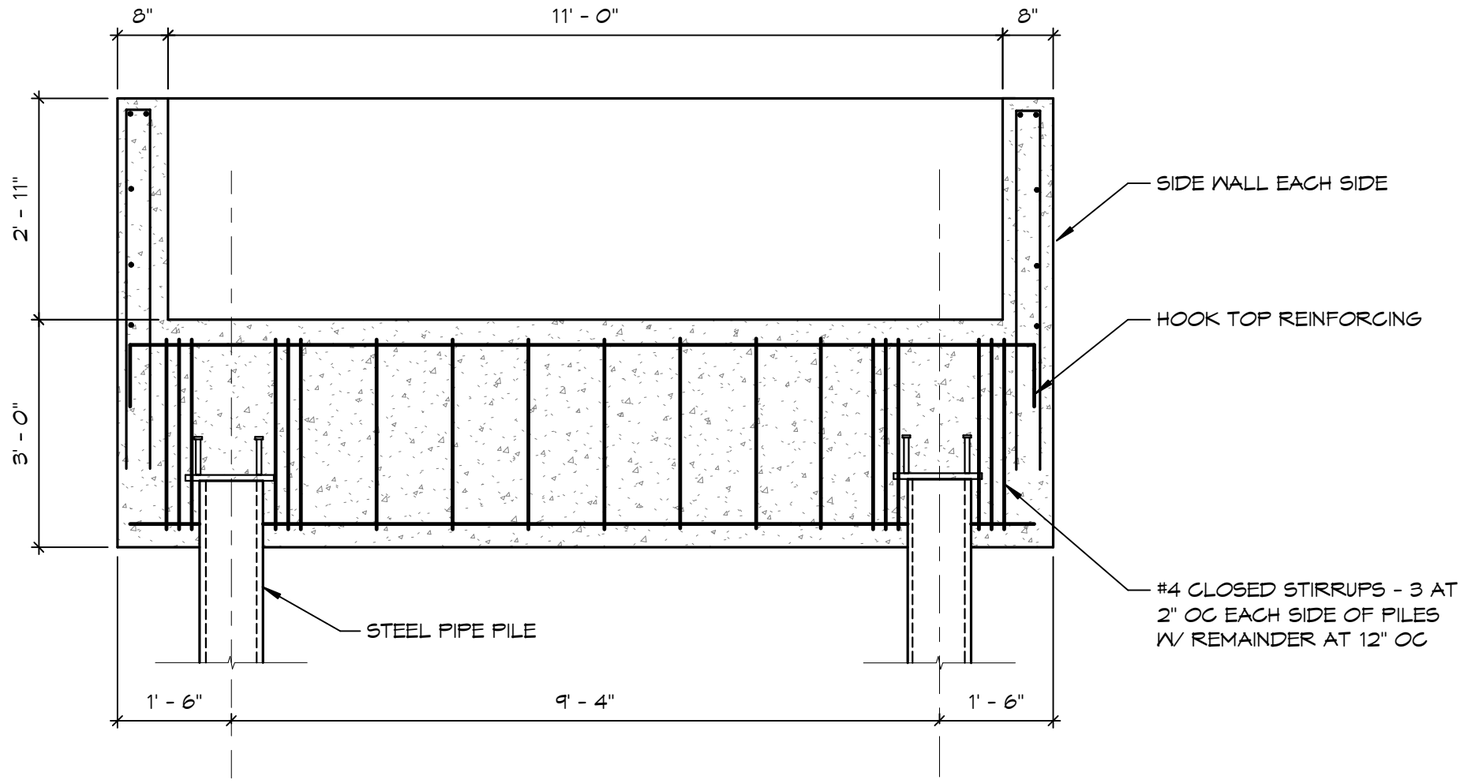
NOTES:

1. NOT ALL REINFORCING IS SHOWN FOR CLARITY.



1 / S-301 CONCRETE PILE CAP AT STEEL PILE

1/2" = 1'-0"

REGISTERED PROFESSIONAL ENGINEER
REGI NO
7895
BRITT B. HAROLDSON
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03/17/2022

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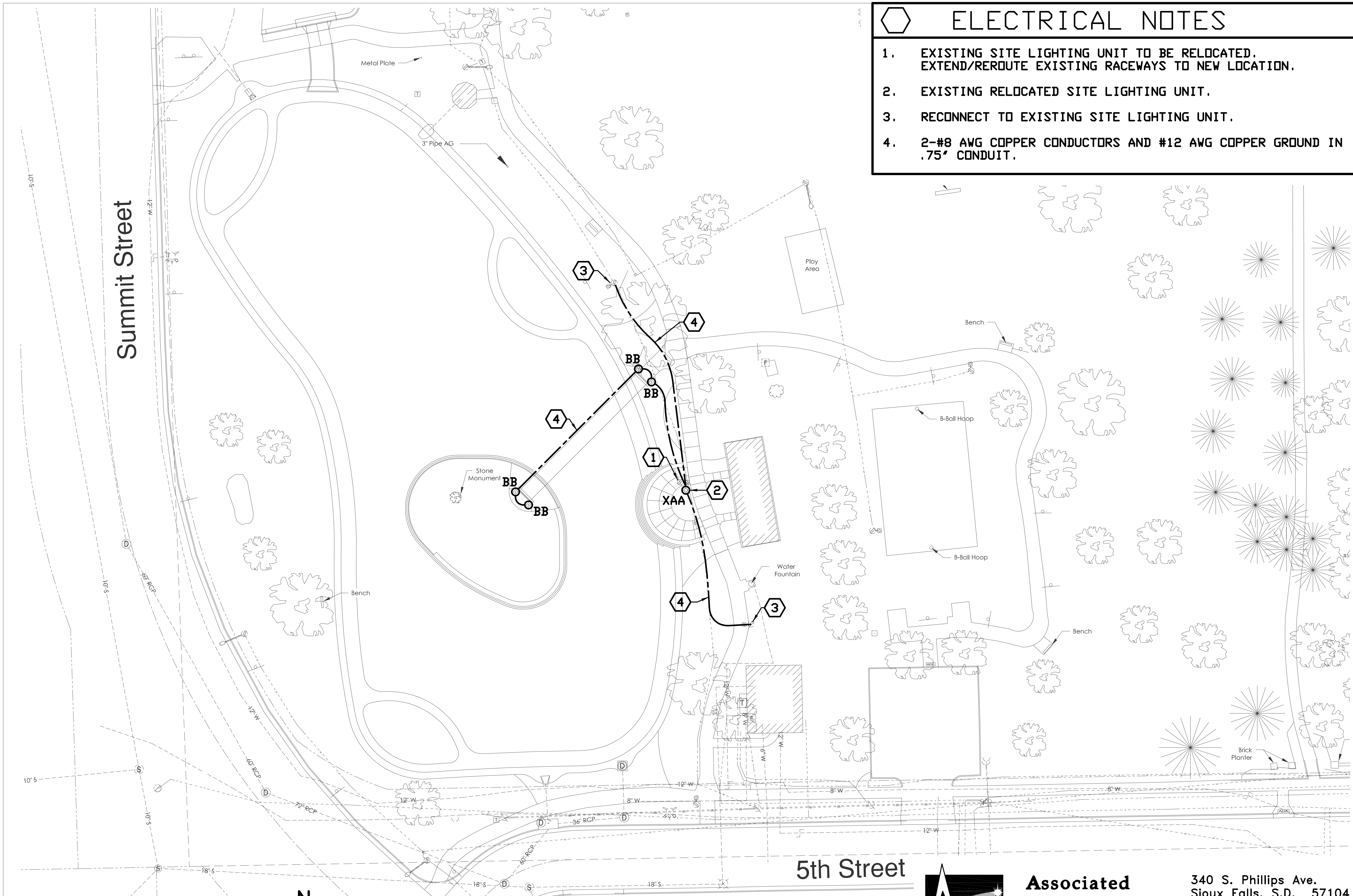
DETAILS

S-301

122012 - Elec.dwg

ELECTRICAL NOTES

1. EXISTING SITE LIGHTING UNIT TO BE RELOCATED. EXTEND/REROUTE EXISTING RACEWAYS TO NEW LOCATION.
2. EXISTING RELOCATED SITE LIGHTING UNIT.
3. RECONNECT TO EXISTING SITE LIGHTING UNIT.
4. 2-#8 AWG COPPER CONDUCTORS AND #12 AWG COPPER GROUND IN .75" CONDUIT.



SITE PLAN - ELECTRICAL

SCALE 0 10 25 50 75 100

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ACEI PROJECT # 122012

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City of Yankton South Dakota

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

REGISTERED PROFESSIONAL ENGINEER
REGISTRATION NUMBER 7911
BRADLEY JAMES SHOUP
SOUTH DAKOTA

PLOT DATE 3/17/2022 8:49 AM

BID SET

SITE PLAN - ELECTRICAL

E-100

122012 - Elec.dwg

LIGHTING FIXTURE SCHEDULE

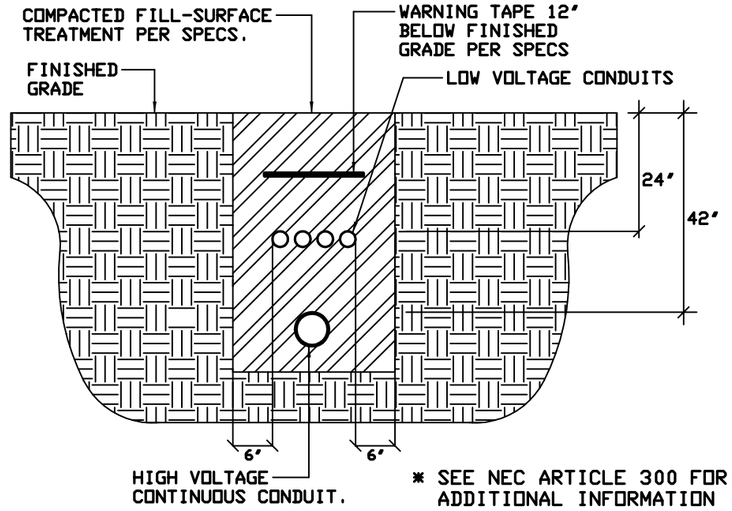
Project Name: WESTSIDE PARK POND IMPROVEMENTS, YANKTON SD — **ACEI Project No: 122012**

TYPE	MFR.	NUMBER	LAMPS	VOLTS	DESCRIPTION	NOTES
XAA	EXISTING	EXISTING	175W/MH	120	EXISTING SITE LIGHTING UNIT TO BE RELOCATED.	1
BB	LIGMAN	ULB-10842-21WCOB-W40-SU04-120/277	LED/4000K	120	LED, 6" SQUARE BOLLARD, 31.5" TALL, CORTEN FINISH, APPROXIMATELY 900 LUMENS.	2

SPECIFIC NOTES:
1. RELAMP LUMINAIRE UPON REINSTALLATION.
2. COORDINATE ORIENATION WITH CIVIL ENGINEER IN THE FIELD.

ELECTRICAL SYMBOL LEGEND

AA	LIGHT FIXTURE, LETTERS INDICATE TYPE.
	DUPLEX RECEPTACLE
	LIGHTING AND APPLIANCE PANELBOARD
	MAIN DISTRIBUTION PANELBOARD
	CONTROL CABINET
	SPECIAL EQUIPMENT CABINET AS NOTED.
TR	TRANSFORMER
L1-1,3,5	HOME RUN TO PANELBOARD. ARROWS INDICATE QUANTITY OF CIRCUITS. NUMBERS INDICATE PANEL AND CIRCUITS.
	CONDUIT CONCEALED IN WALL OR CEILING
UP	CONDUIT UP
DN	CONDUIT DN
	CONDUIT CONCEALED UNDER GRADE
	CONDUIT EXPOSED
	FEEDER CONDUIT
3/4"MTC.	DENOTES EMPTY CONDUIT



TYPICAL TRENCH DETAIL

NO SCALE

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City of Yankton, South Dakota — Where it all comes together

WESTSIDE PARK
POND IMPROVEMENTS
YANKTON, SOUTH DAKOTA
SEI PROJECT #: 21289

REGISTERED PROFESSIONAL ENGINEER — REGISTRATION NUMBER 7911 — BRADLEY JAMES SHOUP — SOUTH DAKOTA

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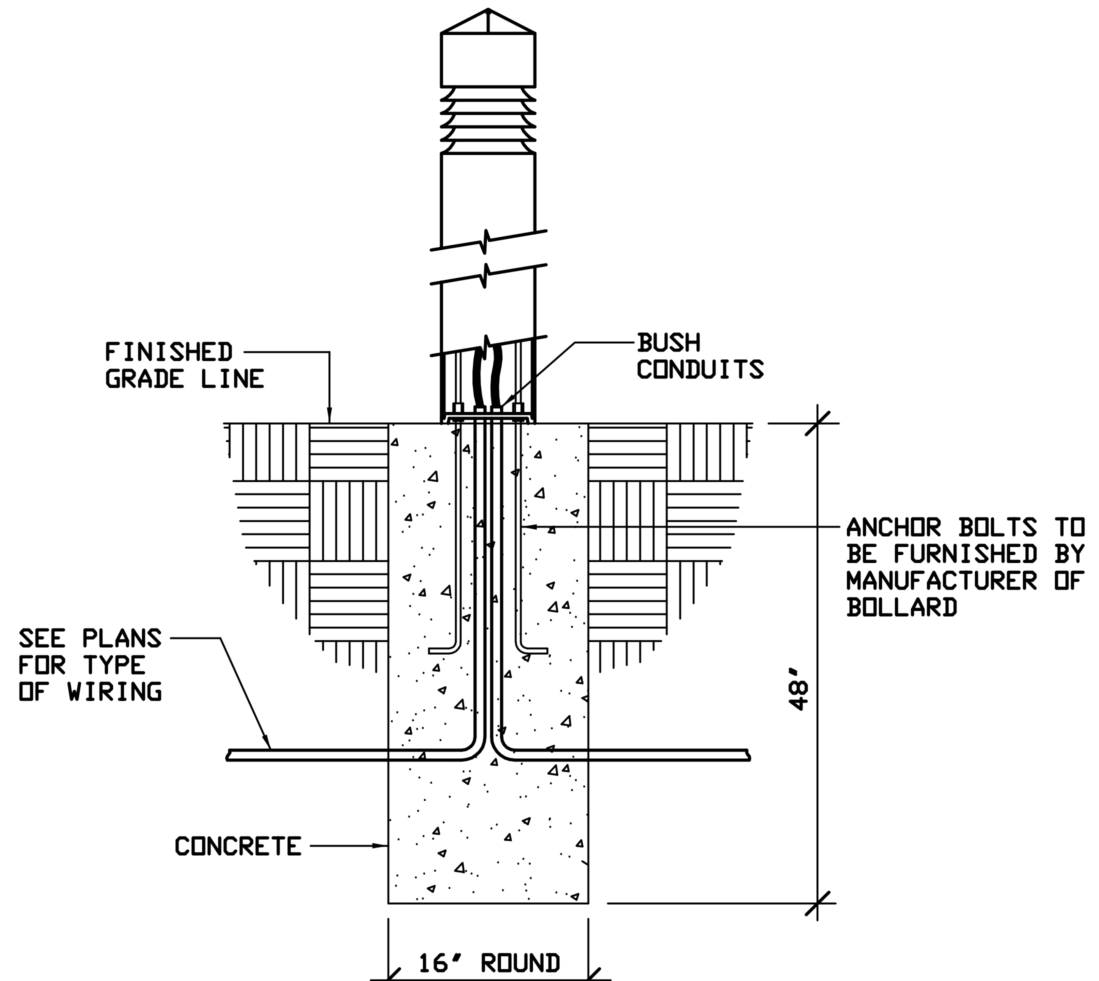
BID SET

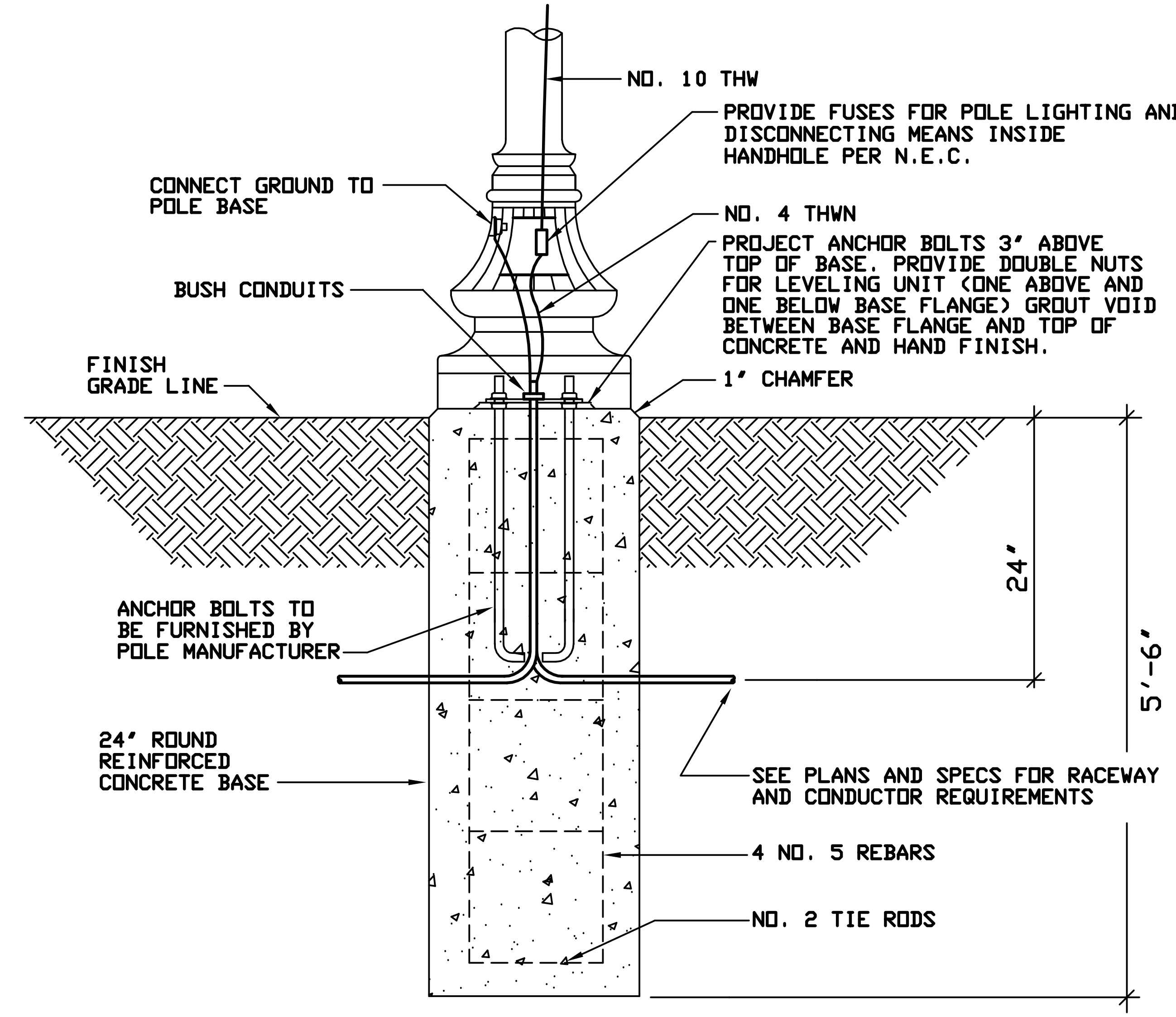
SCHEDULES & DETAILS

E-101



TYPE "BB" BOLLARD MOUNTING DETAIL

NO SCALE



TYPE "XAA" POLE BASE DETAIL

NO SCALE

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City of Yankton South Dakota

WESTSIDE PARK
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SEI PROJECT #: 21289

REGISTERED PROFESSIONAL ENGINEER
REGISTRATION NUMBER 7911
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SOUTH DAKOTA

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DETAILS

E-102

122012 - Elec.dwg

122012 - Elec.dwg

ELECTRICAL SPECIFICATIONS:

DRAWINGS AND MEASUREMENTS: The drawings are not intended to be scaled for roughing-in measurements nor to serve as shop drawings. The Contractor shall consult existing conditions and equipment drawings for dimensions, obstructions and locations of equipment. Equipment are shown on the drawings only in a schematic manner and not necessarily in their specific location.

ORDINANCES AND CODES: All work shall be executed in accordance with the current edition of the City Electrical Ordinances, OSHA, State Electrical Laws and Statutes and National Electrical Code (NEC) and be subject to the inspection of these departments. All fees, permits, licenses, etc., necessary in order to complete the work of this section shall be paid by this Contractor.

WORKMANSHIP: The installation work included in this specification shall be performed in a neat workmanlike manner by men experienced and skilled in the Electrical trade. Only the best quality workmanship will be accepted. All exposed parts of the electrical wiring systems such as exposed conduits, flush plates, fixtures, etc., shall be square and true with the building construction.

GUARANTEE: This Contractor shall assume responsibility for any defects which may develop in any part of his work caused by faulty workmanship, material or equipment, and agrees to replace, repair, or alter, at his expense, any such faulty workmanship, material or equipment that has been brought to his attention during a period of one year from the date of the final certificate for payment. Acceptance of the work shall not waive this guarantee.

SPECIAL WARRANTY: Written warranty, signed by manufacturer and Installer agreeing to replace external parts of luminaires and poles exhibiting a failure of finish as specified below. This warranty is in addition to, and not a limitation of, other rights and remedies Owner may have under requirements of the Contract Documents:

Protection of Metal from Corrosion: Warranty against perforation or erosion of finish due to weathering.

Color Retention: Warranty against fading, staining, and chalking due to effects of weather and solar radiation.

Warranty Period: Manufacturer's standard, but not less than three years from date of Substantial Completion.

QUALITY ASSURANCE: All materials and equipment shall be new and of best quality, of the type best suited for the purpose intended, and be made by nationally recognized and substantially established manufacturers. All electrical materials used in this work shall be listed by the Underwriters Laboratories, Inc., where testing is provided and shall bear their label.

EQUIPMENT IDENTIFICATION AND CLEANUP: All electrical equipment shall be provided with identification indicating its use or function. Equipment to be identified shall include special control switches, junction boxes & empty conduits provided for future use. All electrical equipment must be kept completely protected from weather elements, painting, etc., until the work is substantially completed. Damage from rust, paint, scratches, etc., shall be corrected as directed by the A/E.

RACEWAY: All wiring shall be installed in rigid metal conduit or PVC. PVC may be used only underground. Where risers from grade occur, a PVC-to-GRS transition shall be made.

RACEWAY FITTINGS: On all conduit systems, the connector fitting shall be of the insulated throat type. Where rigid conduit is connected to a threadless box, double locknut method shall be used. All conduit fittings shall be of steel construction. Malleable iron fittings shall not be used on any conduits.

RACEWAY INSTALLATIONS: Conduits shall be sized as required by NEC for number and size of conductors installed. All conduit and raceways shall be securely positioned suitable fastenings. Exposed conduits shall be run parallel to and at right angles and neatly grouped and supported.

WIRE AND CABLE: All wire and cable for feeder and branch circuits shall conform to the requirements of the current edition of the NEC and shall meet all relevant ASTM Specifications. Conductors shall be 600 volt rated, coated soft-drawn copper and unsoft-drawn copper and unless otherwise noted, shall have type THHN/THWN insulation, unless otherwise noted. Aluminum conductors shall not be used.

GROUNDING SYSTEM: All circuits shall be provided with an equipment grounding conductor, sized per NEC.

UNDERGROUND WARNING TAPE: Permanent, bright colored, continuous-printed, vinyl tape. Tape shall be not less than 6 inches wide by 4 mils thick, compounded for permanent direct-burial service, with embedded continuous metallic strip or core, and have a printed legend that indicates type of underground line.

LIGHTING FIXTURES: Capital letter at fixture symbol on drawings indicates the fixture type.

FIXTURE TYPES: Lighting fixtures shall be as scheduled hereinafter.

Concrete for Pole Foundations: Comply with division 3 Section "Cast-in-Place Concrete." Specification. Design Strength: 3000-psig, 28-day compressive strength.

SHOP DRAWINGS: Provide submittals for bollards and underground warning tape.

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City of Yankton South Dakota
Where it all comes together

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ELECTRICAL SPECIFICATIONS

E-103