



ADDENDUM NO. 1

Project: NDOT – Big Blue River Rest Area ADA Path Design

Issued: 03/15/2024

Bid Date: 03/21/2024 3:00 PM CST

This Addendum is issued to all known plan holders before receipt of proposals.

The following shall be included with, and considered a part of, the original contract documents to the same extent as if they were included therein, for the construction of the above mentioned project. The Project Manual and Drawings shall be modified or revised as herein described. Where at variance with the original work, this Addendum shall have precedence.

This Addendum modifies the original Bidding Documents. The Bidder must acknowledge receipt of this Addendum in the space provided on the Proposal Form. Failure to do so may subject bidder to disqualification.

CIVIL ADDENDA ITEMS:

- AD1.1.** Pre-Bid Meeting Minutes
- AD1.2.** Specification Section 32 12 73 Pavement Joint Sealant: Updated Specification Section.
- AD1.3.** Specification Section 32 13 13 Concrete Paving: Updated Specification Section.
- AD1.4.** Specification Section 32 32 23 Segmental Retaining Walls: New Specification Section Added.
- AD1.5.** C100: General Notes - Changes made to notes 4 and 24.
- AD1.6.** C101: Survey - Manhole Location Identified.
- AD1.7.** C102 Site Layout - Manhole and site cleanout locations identified; notes added.
- AD1.8.** C103 Enlarged Site Layout - Manhole and site cleanout locations identified; notes added.
- AD1.9.** C105 Grading Plan - Manhole and site cleanout locations identified, notes added, detail updated.
- AD1.10.** C106 Enlarged Grading Plan - Manhole and site cleanout locations identified, notes added, detail updated.
- AD1.11.** C107 Enlarged Grading Plan - detail updated.
- AD1.12.** C200 Misc Details - notes updated, expansion joint detail updated.



Meeting Minutes

REGA No. 231194

Project: Eastbound Blue River Rest Area

Location: On-site Mile Marker 381 on I-80

Attendees: Josh Cowan, Martin Bena, Dustin Eisenbarth, Ben Brewer, Nate Burnett, and one other NDOT Employee

1. Introductions
2. Review Project Scope
3. Bonding/Insurance
 - a. A bid bond is required
 - b. Insurance Requirements to NDOT Standards
4. Project Clarifications
 - a. NDOT to remove and trees in pathway
 - b. Contractor to provide own bathroom
 - c. Compaction and grading to the plans is required
5. Contractor Questions/Addendum Items
 - a. Expansion Joint Spacing – Expansion joints to increase from every 40' to 250'
 - b. Adjusting a clean out to grade that was found on-site
 - c. Type of Sealant – Changing from Polyurethane Sealant to Silicone Sealant
 - d. Public and Private Utility locates are the responsibility of the contractor
 - e. REGA to add segmental wall specification to project specifications
6. Award of Contract
 - a. NDOT to review Bids on 3/22 and hope to have approval to low bidder 3/24.

Meeting adjourned,

If you have any questions, please call.

A handwritten signature in black ink that reads 'Nathaniel P. Burnett'.

Nathaniel P. Burnett
REGA Engineering Group

SECTION 32 12 73
PAVEMENT JOINT SEALANTS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Expansion and contraction joints within portland cement concrete pavement.
 - 2. Joints between portland cement concrete pavement.
- B. Related Sections include the following:
 - 1. Division 32 Section "Concrete Paving" for constructing joints in concrete paving.
 - 2. Division 32 Section "Joint Sealants" for sealing nontraffic and traffic joints in locations not specified in this Section.

1.3 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Product Certificates: Signed by manufacturers of joint sealants certifying that products furnished comply with requirements and are suitable for the use indicated.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project and whose work has resulted in joint-sealant installations with a record of successful in-service performance.
- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multi-component materials.
- B. Store and handle materials to comply with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer.
 2. When joint substrates are wet.
- B. Joint-Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than that allowed by joint sealant manufacturer for application indicated.
- C. Joint-Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with their adhesion are removed from joint substrates.

PART 2 PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint sealant manufacturer based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range of standard colors for this characteristic.

2.2 COLD-APPLIED JOINT SEALANTS (CONCRETE SIDEWALKS AND PAVING)

- A. Silicone joint sealers may be either self-leveling or non-sag and shall meet the requirements as shown in the table below:

Silicone Joint Sealer Requirement		
Property	Requirement	Test
As supplied:		
Specific Gravity	1.010-1.515	ASTM D792
Work Time, minimum	10 minutes	
Tack-Free Time, at 77°F (25°C)	20-360 minutes	
Cure Time, at 77°F (25°C), max.	14 days	
Full Adhesion, maximum	21 days	
As cured, at 73.4 +/-3.6°F (23+/- 2°C) and 50+5% RH:		
Ultimate Elongation, minimum		
Durometer Hardness:	800%	ASTM D412
Non-Sag, Shore A		
Self-Leveling, Shore 00, minimum	10-25	ASTM D2240
Cyclic Joint Movement Capacity	40	ASTM D2240
Tensile Stress, at 150% Elongation	+100% to -50%	ASTM C719
	45 psi	ASTM D412

- B. Products: Subject to compliance with requirements, provide one of the following:
1. Single-component, Silicone Sealant for Concrete:
 - a. Sikasil 728 RCS; Sika Corporation.
 - b. Sikasil 728 SL; Sika Corporation.
 - c. RoadSaver SL (Part #34903); RoadSaver SL (Part #34903)
 - d. Right Pointe Mastic; Right Pointe.
 - e. Wabo SiliconeSeal; Watson Bowman Acme.
 - f. DOWSIL 888 Silicone Joint Sealant; Dow Chemical Company.
 - g. DOWSIL 902 RCS Joint Sealant; Dow Chemical Company.
 - h. SoudaFlex PU35; Soudal Accumetric.

- i. SoudaSeal 50LM; Soudal Accumetric.
- j. SoudaSeal AP; Soudal Accumetric.
- k. SoudaSeal SL; Soudal Accumetric.

2.3 PRIMERS

- A. Primers: Product recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint- sealant-substrate tests and field tests.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint sealant manufacturer's written instructions.
- B. Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint sealant manufacturer's written installation instructions applicable to products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealants by proven techniques to comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses provided for each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- D. Provide joint configuration to comply with joint sealant manufacturer's written instructions, unless otherwise indicated.

3.4 CLEANING

- A. Clean off excess sealants or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from the original work.

END OF SECTION

SECTION 32 13 13
CONCRETE PAVING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. General
 - 1. Formwork
 - 2. Reinforcing
 - 3. Mix Design
 - 4. Placement Procedures
 - 5. Finishes

1.2 REFERENCES

- A. NDOT Standard Specifications including all current supplemental specifications.
- B. American Concrete Institute (ACI) 318, Building Code Requirements for Reinforced Concrete.
- C. American Concrete Institute (ACI) 301, Standard Specifications for Structural Concrete.
- D. American Standard Testing of Materials (ASTM), Current Edition.
- E. Concrete Reinforcing Steel Institute (CRSI), Manual of Standard Practice.

1.3 SUBMITTALS

- A. Product Data for all proprietary materials and items, including but not limited to: portland cement, reinforcing steel, aggregates, admixtures, joint materials.
- B. Laboratory Test Reports for concrete materials and mix design test.
- C. Shop Drawing for reinforcement detailing fabricating, bending and placing concrete reinforcement. Comply with ACI 315 showing bar schedules, stirrup spacing, bent bar diagrams and arrangement of concrete reinforcement. Include details of any special reinforcement required for openings.

1.4 QUALITY CONTROL TESTING REQUIREMENTS

- A. The CONTRACTOR will employ a testing laboratory to perform tests and to submit test reports to the ENGINEER within 24 hours after tests.
- B. Sampling and Testing requirements during construction:
 - 1. Sampling Fresh concrete as per ASTM C172; except as modified for slump to comply with ASTM C94.
 - 2. Slump as per ASTM C143; one test at point of discharge for each day's pour of each type of concrete and when consistency seem to have changed.
 - 3. Air Content as per ASTM C173 and ASTM C231; one test for each day's pour of each type of air entrained concrete.
 - 4. Compression Test Specimens as per ASTM C39; one set of four(4) standard cylinders for each day's pour, plus additional sets for each 50 cubic yards; one specimen will be tested at 7 days, two will be tested at 28 days and one will be reserved for later testing if required.

5. As directed by the ENGINEER.
- C. Strength level of Concrete will be considered satisfactory if averages of sets of three consecutive strength tests results equal or exceed specified compressive strength and no individual strength test results falls below the specified compressive strength by more than 500 psi.
- D. Additional tests of in place concrete will be required when test results indicated specified strengths and other characteristics have not be attained. Conduct tests by cored cylinders complying with ASTM C42 or other methods as directed by the ENGINEER.

PART 2 PRODUCTS

2.1 PORTLAND CEMENT

- A. Type I, Type II, and Type III Portland Cement shall conform to the requirements in ASTM C 150 with the following additional requirements:
 1. Portland Cement shall not contain more than 0.60% equivalent alkali.
- B. Interground and Blended Cement shall conform to the requirements in ASTM C 595 with the following additional requirements:
 - a. Interground/Blended cement (Type IP)
 1. For Type IP(25) shall be composed of Class F fly ash or Class N pozzolan replacement at 25% - 2%.
 2. For Type IP(20) shall be composed of Class F fly ash or Class N pozzolan replacement at 20% + 2%.
 - b. Interground/Blended cement (Type IS)
 1. For Slag Cement, the maximum replacement shall be 35% +5 when incorporated into the final Interground/Blended cement.
 - c. Interground/Blended cement (Type IT)
 1. For Supplemental Cementitious Materials (SCMs), Slag cement and Limestone, the maximum replacement by weight shall be 40%. The manufacturer has a production tolerance of + 2% from the proposed replacement.
 2. For Limestone cement, the replacement range shall be from 5.1% to 10.0% when incorporated into the final Interground/Blended cement.
 - d. No additional SCMs, Slag cement and Limestone will be added at the batch plant.

2.2 FLY ASH

- A. Fly ash shall be Class C or F meeting the requirements of ASTM C 618.
- B. All fly ash will be acceptance tested by NDOT or an approved supplier. This includes production plant samples and field samples.
- C. Fly ash shall conform to the requirements of Class C or Class F pozzolan as defined in ASTM C 618 except that the maximum loss on ignition for Class F pozzolan shall be 3.0%. Either class of fly ash shall not contain more than 1.5% of available alkalis as Na₂O.
- D. Fly ash produced in furnace operations utilizing liming materials or soda ash (sodium carbonate) as an additive will not be acceptable.

2.3 AGGREGATE

- A. The aggregate mix used shall meet the requirements of ASTM C33, except for aggregate mixes listed in the NDOT Construction Specification.

2.4 ADMIXTURES

- A. Any admixtures to be used in the concrete for this project shall not contain more than 0.1 percent chloride ions and conform to the following:
 - 1. Air-Entraining Admixture: ASTM C260 and certified by the manufacturer to be compatible with other required admixtures.
 - 2. Water-Reducing Admixture: ASTM C494, Type A
 - 3. High-Range Water Reducing Admixture: ASTM C494, Type F or Type G
 - 4. Water Reducing, Accelerating Admixture: ASTM C494, Type E
 - 5. Water Reducing, Retarding Admixture: ASTM C494, Type D

2.5 WATER

- A. Water used in mixing concrete shall be clean (drinkable) and free from injurious amounts of oils, acid, alkali, salts, organic materials or other materials that may be deleterious to either the concrete or the reinforcement.

2.6 REINFORCING MATERIALS

- A. Reinforcing Bars shall conform to either ASTM A615 or ASTM A617, deformed bars.
- B. Welded Wire Fabric shall conform to ASTM A185, smooth wire or ASTM A497, deformed wire.
- C. Supports for reinforcement shall include; bolsters, chairs and other devices for spacing, supporting and fastening reinforcing bars and welded wire fabric in place.
 - 1. For slabs on grade use supports with sand plates or horizontal runners where base material will not support chair legs.
 - 2. For exposed to view surfaces where legs of supports are in contact with forms, provide supports with legs that are protected by plastic (CRSI, Class 1) or stainless steel (CRSI, Class2).

2.7 FORM MATERIALS

- A. Exposed finished concrete surfaces shall be formed using plywood or metal. Use of aluminum forms is prohibited. Provide continuous, straight, smooth, exposed surfaces and furnish forms in largest possible sizes to minimize the number of joints and that conform to joint system shown on plans.
 - 1. Use overlaid plywood complying with U.S. Product Standard PS-1 "A-C or B-B High Density Overlaid Concrete Form, Class 1"
- B. Unexposed finished concrete surfaces shall be formed using plywood or metal. Use of aluminum forms is prohibited. Provide lumber stressed on at least two (2) edges and one side for tight fit.
- C. Form Coatings shall be commercial formulation form-coating compounds with a minimum VOC of 350 mg/L that will not bond with, stain or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
- D. Form Ties shall be factory fabricated, adjustable length, removable or snap-off metal form ties, designed to prevent form deflection and to prevent spalling concrete upon removal.

1. Provide ties that will leave no metal closer than 1-½ inches to exposed surface.
2. Provide ties that will leave holes not larger than 1-inch diameter in concrete surface.

2.8 OTHER MATERIALS

- A. Granular Base shall be an evenly graded mixture of fine and coarse aggregates to provide, when compacted, a smooth and even surface below slabs on grade.
- B. Curing Compound shall be a liquid type membrane forming curing compound complying with ASTM C309, Type 1, Class A or Class B.
- C. Patching Compound shall be a cement based compound for application from one inch thick to feathered edges.
- D. Bonding Compound shall be polyvinyl acetate or acrylic base.
- E. Chemical Hardener shall consist of fluosilicates combined with a wetting agent. Provide Sonneborn Lapidolith or equal.
- F. Foam Expansion Joint Filler shall be polyethylene closed-cell expansion joint filler. Provide Sonneborn Sonoflex or equal.
- G. Joint Sealer shall be one component polyurethane self-leveling sealant, ASTM C920, Type S, Grade P, Class 25, Use T.

2.9 PROPORTIONING AND DESIGNING MIXES

- A. Prepare design mix such that ratio of course aggregate to fine aggregate is as specified for NDOT Type 1PF Cement.
- B. Submit written reports to the ENGINEER of proposed mix. Do not begin concrete production until the ENGINEER has reviewed proposed mix designs.
- C. Design mixes to provide normal weight concrete with the following properties, unless otherwise indicated on the drawings or specifications:
 1. All other concrete shall be a NDOT Type 1PF mix and have a 28-day strength of 4,000 psi.
- D. Slump Limits shall be as follows:
 1. Not less than 1 inch nor more than 4 inches for all other concrete
- E. Mix design adjustments may be requested when characteristics of materials, job conditions, weather, or other circumstances warrant, as accepted by the ENGINEER.
- F. Admixtures in mix design:
 1. Use water-reducing admixture concrete, as required for placement and workability.
 2. Use air-entraining admixture concrete in all concrete unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content with a tolerance of plus or minus 1 percent of 5 percent.
 3. Use admixtures for water and set accelerating or retarding in strict compliance with manufacturer's directions.

2.10 CONCRETE MIXING

- A. Ready-mixed concrete shall comply with the requirements of ASTM C94, and as specified.

1. When air temperature is between 85 degrees F (30 degrees C) and 90 degrees F (32 degrees C), reduce mixing and delivery time from 1 ½ hours to 75 minutes, and when air temperature is above 90 degrees F (32 degrees C), reduce mixing and delivery time to 60 minutes.

PART 3 EXECUTION

3.1 FORMS

- A. General: Design, erect, support, brace, and maintain formwork to support vertical, lateral, static, and dynamic loads that might be applied until concrete structure can support such loads. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation, and position. Maintain formwork construction tolerances and surface irregularities complying with the following ACI 347 limits:
 1. Provide Class A tolerances for concrete surfaces exposed to view.
 2. Provide Class C tolerances for other concrete surfaces.
- B. Construct forms to sizes, shapes, lines, and dimensions shown and to obtain accurate alignment, location, grades, level, and plumb work in finished structures. Provide for openings, offsets, keyways, recesses, moldings, chamfers, blocking, anchorages and inserts, and other features required in the Work. Use selected materials to obtain required finishes. Solidly butt joints and provide backup under joists to prevent cement paste from leaking.
- C. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, recesses, and the like for easy removal.
- D. Provide temporary openings for clean-outs and inspections where interior area of formwork is inaccessible before and during concrete placement. Securely brace temporary openings and set tightly to forms to prevent losing concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- E. Chamfer exposed corners and edges as indicated using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.
- F. Provisions for Other Trades: Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses, and chases from trades providing such items. Accurately place and securely support items built into forms.
- G. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before placing concrete. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

3.2 VAPOR RETARDER INSTALLATION

- A. General: Place vapor retarder sheeting in position with longest dimension parallel with direction of pour.
- B. Lap joints 6 inches and seal with manufacturer's recommended mastic or pressure sensitive tape.
 1. Location: continuously under all slabs within the building perimeter.

3.3 PLACING REINFORCEMENT

- A. General: Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports and as specified.

1. Avoiding cutting or puncturing vapor retarder during reinforcement placement and concreting operations. Repair damages before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials that reduce or destroy bond with concrete. Do not secure reinforcement to re-bar driven into ground or on rocks, dirt clods or other debris. Do not "float in" reinforcement.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as approved by ENGINEER.
- D. Place reinforcement to maintain minimum coverages as indicated for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.
- E. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.4 JOINTS

- A. Construction Joints: Locate and install construction joints so they do not impair strength or appearance of the structure, as acceptable to ENGINEER.
- B. Provide keyways at least 1 1/2 inches deep in construction joints in walls and slabs and between walls and footings. Bulkheads designed and accepted for this purpose may be used for slabs.
- C. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints except as indicated otherwise. Do not continue reinforcement through sides of strip placements.
- D. Use bonding agent on existing concrete surfaces that will be joined with fresh concrete.
- E. Waterstops: Provide waterstops in construction joints as indicated. Install waterstops to form continuous diaphragm in each joint. Support and protect exposed waterstops during progress of Work. Field-fabricate joints in waterstops according to manufacturer's printed instructions.
- F. Isolation Joints in Slabs-on-Grade: Construct isolation joints in slabs-on-grade at points of contact between slabs-on-grade and vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
- G. Contraction (Control) Joints in Slabs-on-Grade: Construct contraction joints in slabs-on-grade to form panels of patterns as shown. Use saw cuts 1/8 inch wide by one-fourth of slab depth or inserts 1/4 inch wide by one-fourth of slab depth, unless otherwise indicated.
 1. Form contraction joints by inserting premolded plastic, hardboard, or fiberboard strip into fresh concrete until top surface of strip is flush with slab surface. Tool slab edges round on each side of insert. After concrete has cured, remove inserts and clean groove of loose debris.
 2. Contraction joints in unexposed floor slabs may be formed by saw cuts as soon as possible after slab finishing as may be safely done without dislodging aggregate.
 3. If joint pattern is not shown, provide joints not exceeding 15 feet in either direction and located to conform to bay spacing wherever possible (at column centerlines, half bays, third bays).

3.5 INSTALLING EMBEDDED ITEMS

- A. General: Set and build into formwork anchorage devices and other embedded items required for

other work that is attached to or supported by cast-in-place concrete. Use setting drawings, diagrams, instructions, and directions provided by suppliers of items to be attached.

- B. Forms for Slabs: Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and contours in finished surfaces. Provide and secure units to support screed strips using strike-off templates or compacting-type screeds.

3.6 PREPARING FORM SURFACES

- A. General: Coat contact surfaces of forms with an approved, nonresidual, low-VOC, formcoating compound before placing reinforcement.
- B. Do not allow excess form-coating material to accumulate in forms or come into contact with in-place concrete surfaces against which fresh concrete will be placed. Apply according to manufacturer's instructions.
 - 1. Coat steel forms with a nonstaining, rust-preventative material. Rust-stained steel formwork is not acceptable.

3.7 CONCRETE PLACEMENT

- A. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast in. Notify other trades to permit installation of their work.
- B. General: Comply with ACI 304 "Guide for Measuring, Mixing, Transporting, and Placing Concrete", and as specified.
- C. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened sufficiently to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation at its final location.
- D. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers no deeper than 24 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.
 - 1. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping. Use equipment and procedures for consolidation of concrete complying with ACI 309.
 - 2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the machine. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix to segregate.
- E. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until completing placement of a panel or section.
 - 1. Consolidate concrete during placement operations so that concrete is thoroughly worked around reinforcement, other embedded items and into corners.
 - 2. Bring slab surfaces to correct level with a straightedge and strike off. Use bull floats or darbies to smooth surface free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.
 - 3. Maintain reinforcing in proper position on chairs during concrete placement.

- F. Cold-Weather Placement: Comply with provisions of ACI 306 and as follows. Protect concrete work from physical-damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

When air temperature has fallen to or is expected to fall below 40 deg F (4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and not more than 80 deg F (27 deg C) at point of placement.

1. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 2. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise accepted in mix designs.
- G. Hot-Weather Placement: When hot weather conditions exist that would impair quality and strength of concrete, place concrete complying with ACI 305 and as specified.
1. Cool ingredients before mixing to maintain concrete temperature at time of placement to below 90 deg F (32 deg C). Mixing water may be chilled or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water.
 2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedding in concrete.
 3. Fog spray forms, reinforcing steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without puddles or dry areas.
 4. Use water-reducing retarding admixture when required by high temperatures, low humidity, or other adverse placing conditions, as acceptable to ENGINEER.

3.8 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: Provide a rough-formed finish on formed concrete surfaces not exposed to view in the finished Work or concealed by other construction. This is the concrete surface having texture imparted by form-facing material used, with tie holes and defective areas repaired and patched, and fins and other projections exceeding 1/4 inch in height rubbed down or chipped off. (Rough-formed finish is acceptable for pipe gallery.)
- B. Smooth-Formed Finish: Provide a smooth form on formed concrete surfaces exposed to view or to be covered with a coating material applied directly to concrete, or a covering material applied directly to concrete, such as waterproofing, dampproofing, veneer plaster, painting, or another similar system. This is an as-cast concrete surface obtained with selected form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch defective areas with fins and other projections completely removed and smoothed.
- C. Related Unformed 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 other wise indicated.

3.9 MONOLITHIC SLAB FINISHES

- A. Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as specified; slab surfaces to be covered with membrane or elastic waterproofing, membrane or elastic roofing, or sand-bed terrazzo; and where indicated.
1. After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating, using float blades or float shoes only, when surface water has disappeared, or when concrete has stiffened sufficiently to permit operation of power-driven

floats, or both. Consolidate surface with power driven floats or by hand-floating if area is small or inaccessible to power units. Finish surfaces to tolerances of F(F) 18 (floor flatness) and F(L) 15 (floor levelness measured according to ASTM E 1155. Cut down high spots and fill low spots. Uniformly shape surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.

B. Trowel Finish: Apply a trowel finish to monolithic slab surfaces exposed to view and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint, or another thin film-finish coating system.

1. After floating, begin first trowel-finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and finish surfaces to tolerances of F(F) 20 (floor flatness) and F(L) 17 (floor levelness) measured according to ASTM E 1155. Grind smooth any surface defects that would telegraph through applied floor covering system.

C. Nonslip Broom Finish: Apply a nonslip broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with ENGINEER before application.

3.10 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures due to form ties or for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place, and cure concrete as specified to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete Work.

B. 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.

C. Equipment Bases: Provide equipment bases as shown on drawings. Set anchor bolts for equipment to template at correct elevations, complying with diagrams or templates of manufacturer furnishing equipment.

D. Concrete Sidewalks shall be minimum 4" thick.

3.11 CONCRETE CURING AND PROTECTION

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. In hot, dry, and windy weather, protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control materials. Apply according to manufacturer's instructions after screeding and bull floating, but before power floating and troweling. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days.

B. Curing Methods: Cure concrete by curing compound, by moist curing, by moisture retaining cover curing, or by combining these methods, as specified.

C. Provide moisture curing by the following methods:

1. Keep concrete surface continuously wet by covering with water.

2. Use continuous water-fog spray.
 3. Cover concrete surface with specified absorptive cover, thoroughly saturate cover with water, and keep continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with a 4-inch lap over adjacent absorptive covers.
- D. Provide moisture-retaining cover curing as follows:
1. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3 inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
- E. Apply curing compound on exposed interior slabs and on exterior slabs, walks, and curbs as follows:
1. Apply curing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours and after surface water sheen has disappeared). Apply uniformly in continuous operation by power spray or roller according to manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.
 2. Use membrane curing compounds that will not affect surfaces to be covered with finish materials applied directly to concrete.
- F. Curing Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces, by moist curing with forms in place for the full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.
- G. Curing Unformed Surfaces: Cure unformed surfaces, including slabs, floor topping, and other flat surfaces, by applying the appropriate curing method. Final cure concrete surfaces to receive finish flooring with a moisture-retaining cover, unless otherwise directed.

3.12 REMOVING FORMS

- A. General: Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form-removal operations, and provided curing and protection operations are maintained.
- B. Formwork supporting weight of concrete, such as beam soffits, joists, slabs, and other structural elements, may not be removed in less 14 days or until concrete has attained at least 75 percent of design minimum compressive strength at 28 days. Determine potential compressive strength of in-place concrete by testing field-cured specimens representative of concrete location or members.
- C. Form-facing material be removed 4 days after placement only if shores and other vertical supports have been arranged to permit removal of form-facing material without loosening or disturbing shores and supports.

3.13 REUSING FORMS

- A. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or other wise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-coating compound as specified for new formwork.
- B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints. Align and secure joint to avoid offsets. Do not use patched forms for exposed concrete surfaces except as acceptable to ENGINEER.

3.14 CONCRETE SURFACE REPAIRS

- A. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removing forms, when acceptable to ENGINEER.
- B. Mix dry-pack mortar, consisting of one part portland cement to 2 1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing.
 - 1. Cut out honeycombs, rock pockets, voids over 1/4 inch in any dimension, and holes left by tie rods and bolts down to solid concrete but in no case to a depth less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush coat the area to be patched with bonding agent. Place patching mortar before bonding agent has dried.
 - 2. For surfaces exposed to view, blend white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Provide test areas at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.
- C. Repairing Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of ENGINEER. Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes and fill with dry-pack mortar or precast cement cone plugs secured in place with bonding agent.
 - 1. Repair concealed formed surfaces, where possible, containing defects that affect the concrete's durability. If defects cannot be repaired, remove and replace the concrete.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface tolerances specified for each surface and finish. Correct low and high areas as specified. Test unformed surfaces sloped to drain for trueness of slope and smoothness by using a template having the required slope.
 - 1. Repair finished unformed surfaces containing defects that affect the concrete's durability. Surface defects include crazing and cracks in excess of 0.01-inch wide or that penetrate to the reinforcement or completely through nonreinforced sections regardless of width, spalling, popouts, honeycombs, rock pockets, and other objectionable conditions.
 - 2. Correct high areas in unformed surfaces by grinding after concrete has cured at least 14 days.
 - 3. Correct low areas in unformed surfaces during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete. Proprietary underlayment compounds may be used when acceptable to ENGINEER.
 - 4. Repair defective areas, except random cracks and single holes not exceeding 1 inch in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose reinforcing steel with at least 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
- E. Repair methods not specified above may be used, subject to acceptance of ENGINEER.

END OF SECTION

REGA ENGINEERING GROUP

Project No.: REGA231194

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SECTION 32 32 23
SEGMENTAL RETAINING WALLS

PART 1 GENERAL

1.1 RELATED SECTIONS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes segmental concrete unit masonry retaining walls.
- B. Related Sections:
 - 1. Division 31 Section "SITE CLEARING" for soil stripping, storing, and removal of obstructions.

1.3 SUBMITTALS

- A. General: Submit electronic (PDF) format submittals according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data: For each type of product indicated.
- C. Shop Drawings: For layout, details, reinforcements, and structural stabilization requirements.

1.4 QUALITY CONTROL TESTING REQUIREMENTS

- A. Qualifications of workmen: Provide at least one person who shall be thoroughly trained and experienced in the skills required, who shall be completely familiar with the design and application of work described for this Section, and who shall be present at all times during the progress of the work of this Section and shall direct all work performed under this Section.
- A. Standards: Comply with the provisions of the following standards:
 - 1. ASTM C 90 - Load Bearing Concrete Masonry Units;
 - 2. ASTM C 698 - Sampling and Testing Concrete Units;
 - 3. ASTM D 698 - Moisture Density Relationship for Soils, Standard Method;
 - 4. NCMA TEK 50 A - Specifications for Segmental Retaining Wall Units;
 - 5. NCMA SRWU-1 - Determination of Connection Strength between Geosynthetics and Segmental Concrete Units;
 - 6. NCMA SRW-2 - Determination of Shear Strength between Segmental Concrete Units;
 - 7. NCMA - Design Manual for Segmental Retaining Walls.

1.5 RETAINING WALL DESIGN AND INSTALLATION

- A. Provide all retaining wall design and pay for related engineering costs, when the retaining wall is over 30 inches high. Include any soil testing, design of the wall by a Structural Engineer licensed in Nebraska, and sealed and signed plans by a professional engineer registered in Nebraska. Do not begin construction of the retaining wall until shop drawings have been sent to and reviewed by the Owner or Owner's representative. Install the retaining wall in complete conformance with the site plans and the retaining wall design plans.
- B. Install proper drainage, filter fabric, the anchoring system, and any other items required for the retaining wall installation.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Inspection: Inspect materials upon delivery to assure that specified type, grade, color and texture of wall units has been received.
- B. Protection:
 - 1. Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the work and materials of all other trades.
 - 2. Contractor shall prevent excessive mud, wet concrete, epoxies, and like materials which may affix themselves, from coming in contact with the SRW units.
- C. Replacements:
 - 1. All SRW units shall be sound and free of cracks or other defects that would interfere with the proper placing of the unit or significantly impair the strength or permanence of the construction.
 - 2. Cracking or chipping may be grounds for rejection. Units showing cracks larger than 1/2" when measured along their length shall not be used within the wall. Units showing chips visible at a distance of 20 feet from the wall shall not be used within the wall. In the event of damage, immediately make all replacements necessary to the approval of the Architect and at no additional cost to the Owner.

1.7 WARRANTY

- A. The Contractor shall warrant all retaining walls for a period of two years from the date of final acceptance for any settling, leaning, drainage or materials coming thru the retaining wall and shall repair all defects at no cost to the Owner. These repairs may include removing the entire wall and re-installing the entire wall including filter fabric, anchoring and any other item required for the retaining wall installation.

PART 2 PRODUCTS

2.1 SEGMENTAL RETAINING WALL UNITS

- A. Basis-Of-Design: Subject to compliance with requirements, provide products by VERSA-LOK Retaining Wall Systems: Mosaic System Design, or comparable products by one of the following:
 - 1. ANCHOR Retaining Wall Systems, Inc.
 - 2. ROCKWOOD Retaining Walls.
- B. Color: The color of SRW units shall be:
 - 1. Blended colored concrete - selected by the Architect from the manufacturer's full range of colors.
- C. Finish and shape: The exposed face of SRW units shall be 'Split Faced' units with a 'Weathered' (rough edges) look.
- D. Size: Standard with the manufacturer and as required for wall height.
- E. Bond: SRW units shall be erected with a variable bond configuration. The bond variance shall meet the manufacturer's written recommendations.
- F. Structural requirements: Concrete used to manufacture SRW units shall have a minimum 28 days compressive strength of 3000 psi in accordance with ASTM C 90 and C 140. The concrete shall have adequate freeze/thaw protection with a maximum moisture absorption rate, by weight, of 8%. SRW unit's molded dimensions shall not differ more than +/- 1/8 inch in width or depth nor more than +/- 1/16 inch in height from the actual unit size stated by the manufacturer.
- G. Constructability and connection: Units shall be capable of attaining concave and convex curves and 90 to 140 degrees inside corners and 25 to 90 degrees outside corners. Each unit shall be positively engaged to the unit below with connection pins to provide a 3/4 inch horizontal setback per 6-inch high course (a cant of 7 degrees from vertical). The installed wall cant shall not differ more than +/- 2 degrees from that specified.

2.2 CONNECTION DEVICE

- A. Manufacturer's standard connection pins, to interlock the units.

2.3 LEVELING PAD

- A. Material: The leveling pad shall consist of compacted sand or gravel and shall be a minimum of 4" in depth. The leveling pad should extend laterally at least a distance of 6 inches beyond the toe and heel of the lowermost unit where possible.
- B. Compaction: Compact fill between units by running hand-operated compaction equipment just behind the unit. Do not use mechanical vibrating plate compactors on top of the units. Compact to a minimum of 95% Standard Proctor Density (ASTM D 698) or 90% of Modified Proctor Density (ASTM D 1557).

2.4 DRAINAGE AGGREGATE

- A. Provide clean, free draining crushed stone or granular fill, 1" or less in diameter and meeting the following gradation: 1"/100 - 75%; 3/4"/50 - 75%; No. 4/0 - 60%; No. 40/0 - 50%; and No. 200/0 - 50%. Vertical drainage aggregate layer behind the wall face shall be placed not less than 1 cu. ft. per 1 sq. ft. of wall face.

2.5 COMMON BACKFILL

- A. Type: Soil placed behind the reinforced backfill can be any inorganic soil with a liquid limit less than 50 and plasticity index of less than 30, or as directed by the Engineer.
- B. Compaction: Retained backfill shall be compacted to a minimum 90% maximum Standard Proctor Density (ASTM 698).

2.6 GEOSYNTHETIC REINFORCEMENT

- A. VERSA-Grid, high-strength polymer products, or equal

PART 3 EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions under which work of this Section will be installed. Correct conditions detrimental to proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected.

3.2 EXCAVATION

- A. The contractor shall excavate to the lines and grades shown on the project grading plans and as required to meet the requirements of the retaining wall design provided by a Licensed Engineer. The contractor shall take precautions to minimize over-excavation. Over-excavation shall be filled with compacted fill material, or as directed by the Soils Engineer, at no additional cost to the Owner. The contractor shall verify the location of existing structures and utilities before excavation. The contractor shall ensure all surrounding structures are protected from the effect of excavation.

3.3 LEVELING PAD CONSTRUCTION

- A. Leveling pad shall be placed as recommended by the manufacturer with a minimum thickness of 4 inches. The leveling pad should extend laterally at least a distance of 6 inches from the toe and heel of the lowermost SRW unit if possible. The foundation soil shall be proof rolled and compacted to 95% Standard Proctor Density. Soil leveling pad material shall be compacted to provide a level hard surface on which to place the first course of units. Well-graded sand can be used to smooth the top 2 to 1/4 inch of the leveling pad. Compaction will be with hand-operated compaction equipment or mechanical vibrating plate compactor to 95% of maximum Proctor Density (ASTM D 698). A leveling pad shall be prepared to ensure full contact of SRW units with the pad.

3.4 SRW UNIT INSTALLATION

- A. Placement
 - 1. After completion of the leveling pad, place the first course of SRW units on the leveling pad. The units shall be leveled side-to-side, front-to-rear and with adjacent units and aligned. The first course is the most important to ensure accurate and acceptable results. Ensure that units are in full contact with the leveling pad.
 - 2. Place the front of the units side-by-side. Do not leave gaps between the front of adjacent units. Alignment may be done by means of a string line or offset from the baseline to the back of the units or along the pinning grooves. Lay out of curves and corners in accordance with SRW manufacturer's installation guidelines.
 - 3. Install geosynthetic reinforcement as required by the engineered wall system.

- B. Drainage fill: Place and compact drainage fill between and behind units. Place and compact infill soil behind drainage fill.
- C. Connection pins: Insert two connection pins for each unit through pin holes of the upper course units into receiving slots in lower course units. Pins shall be fully seated in the pin slot below.
- D. Debris: Clean all excess debris from the top of units before installing the next course of units.
- E. Alignment: After installation of each new course of units, push units forward to remove any looseness in the unit-to-unit connection and then check alignment. Check the level of the units. Repeat procedures to the extent of the wall height, ensuring that pins are engaged in each successive course.
- F. Caps: SRW caps shall be glued to underlying units with the manufacturer's recommended concrete adhesive. Caps shall overhang the top course of units by the manufacturers recommended allowance.

END OF SECTION

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GENERAL NOTES:

1. KEEP PROJECT SITE FREE FROM DRAINAGE PONDING DUE TO CONSTRUCTION OPERATIONS DURING PROGRESS OF WORK. MAKE ARRANGEMENTS FOR DISPOSAL OF ALL WATER AND SEWAGE RECEIVED ON THE SITE FROM TEMPORARY CONNECTIONS OR STOPPAGES. DO NOT DISCHARGE ANY WATER OR SEWAGE ONTO PRIVATE PROPERTY OUTSIDE THE CONSTRUCTION RIGHT-OF-WAY.
2. STRIP TOP SOIL AND SEPARATELY STORE TO PROVIDE DEPTH OF TOP SOIL REPLACEMENT AS SPECIFIED.
3. CONTRACTOR IS RESPONSIBLE FOR LIAISON WITH UTILITY COMPANIES AND FOR REPAIRING UTILITIES AND SERVICES WHICH ARE NOT IN DIRECT CONFLICT WITH THE WORK, AND IS RESPONSIBLE FOR DAMAGE DURING CONSTRUCTION AT NO EXPENSE TO THE OWNER, UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
4. PUBLIC, PRIVATE LOCATES BY CONTRACTOR. UTILITIES SHOWN ON DRAWINGS, IN DIRECT LINE AND GRADE, WHICH CONFLICT WITH THE WORK, SHALL BE RELOCATED BY OTHERS AT NO EXPENSE TO THE CONTRACTOR, UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
5. FOR UTILITIES NOT SHOWN ON THE DRAWINGS AND WHICH ARE IN DIRECT CONFLICT WITH THE WORK, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF THE CONFLICT. WHEN DIRECTED, THE CONTRACTOR SHALL PERFORM THE WORK. THE CONTRACTOR SHALL BE ENTITLED TO PAYMENT FOR ANY EXTRA WORK IN ACCORDANCE WITH THE GENERAL CONDITIONS.
6. UTILITY REMOVAL. BEFORE THE CONTRACTOR BEGINS WORK, HE SHALL CONFER WITH THE OWNERS OF ANY UNDERGROUND OR OVERHEAD UTILITIES WHICH MAY BE ON OR IN CLOSE PROXIMITY TO THE WORK AREAS AND SHALL ARRANGE FOR THE NECESSARY DISCONNECTION OF THE UTILITIES IN ACCORDANCE WITH THE UTILITY COMPANY REGULATIONS. THE UTILITY COMPANY OR OWNER OF THE UTILITY SHALL PERFORM THE WORK OF REMOVING, REPAIRING, RECONDITIONING, OR REVISING THE UTILITY UNLESS OTHERWISE SPECIFIED OR INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL COOPERATE WITH THE UTILITY COMPANIES SO THAT WORK CAN BE EXPEDITED TO THE BEST INTERESTS OF ALL CONCERNED.
7. REMOVE PAVEMENT TO A MINIMUM OF 1' – 0" FROM EDGE OF TRENCH. NO UNDERCUTTING WILL BE PERMITTED. REMOVE PAVEMENT ON STRAIGHT LINES APPROXIMATELY PARALLEL TO THE CENTER LINE OF THE TRENCH. CUT PAVEMENT AND DRIVES WITH A CONCRETE SAW AND PROVIDE A MINIMUM VERTICAL CUT OF 1 INCH.
8. CONTRACTOR SHALL COORDINATE REST AREA WORK WITH NDOT. CONTACT MARTIN BENA AT (531)–510–8777.
9. CONTRACTOR SHALL DISPOSE OF SURFACE MATERIALS AND BUILDING CONSTRUCTION DEBRIS IN ACCORDANCE WITH LOCAL ORDINANCES. BURNING OF REFUSE WILL NOT BE PERMITTED.
10. ALL FILL AND BACKFILL MATERIALS SHALL BE LOW-PLASTICITY COHESIVE SOILS OR SAND BASED SOILS AND FREE OF RUBLE AND ORGANICS. THE FILL MATERIAL SHALL BE LOW-PLASTICITY WITH A LIQUID LIMIT LESS THAN 47 AND A PLASTICITY INDEX RANGING FROM 10 TO 26 PERCENT. WHEN UNSUITABLE MATERIALS ARE ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER, IN ACCORDANCE WITH THE GENERAL CONDITIONS. IF DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL EXCAVATE AND REPLACE WITH SUITABLE MATERIAL. SUITABLE MATERIAL FOR BACKFILL SHALL BE OBTAINED FROM OFF-SITE BORROW AS APPROVED BY THE ENGINEER AND SOIL ENGINEER.
11. TOP SOIL SHALL BE CLEAN, FERTILE, FRIABLE SOIL. TOPSOIL SHALL BE A MIXTURE OF SOIL AND ORGANIC MATTER AND SHALL BE FREE OF STONES OVER ONE-HALF INCH IN DIAMETER, HARD CLAY CLUMPS, REFUSE, PLANT MATERIAL OR THEIR ROOTS, STICKS, NOXIOUS WEEDS, SALTS, SOIL STERILIZANTS OR OTHER MATERIAL THAT IS DETRIMENTAL TO PLANT GROWTH. THE PH RANGE SHALL BE 5.0 TO 7.5, 25% ORGANIC MATERIAL MINIMUM AS DETERMINED BY LOSS ON IGNITION OF MOISTURE FREE SAMPLES DRIED AT 100 DEGREES CENTIGRADE. TOPSOIL SHALL CONFORM TO ASTM D 5268. OBTAIN FROM NATURALLY WELL DRAINED SITES FREE OF FLOODING WHERE TOPSOIL OCCURS AT LEAST 4 INCHES DEEP. DO NOT OBTAIN FROM BOGS OR MARSHES. TOPSOIL SHALL NOT BE DELIVERED OR USED WHILE IN A FROZEN OR SATURATED CONDITION.
12. STRIP TOPSOIL AND VEGETATION TO A DEPTH OF 2 TO 4 INCHES OR BELOW THE ROOT CROWN. THE CONTRACTOR SHALL CONSULT THE ENGINEER DURING STRIPPING OPERATIONS TO AVOID REMOVING MORE TOPSOIL THAN IS NECESSARY.
13. CONTRACTOR SHALL SCARIFY AND COMPACT ALL PROPOSED WORK AREAS INCLUDING SIDEWALK, CONCRETE PAVEMENT, BACKFILL OF PICNIC AREAS, ETC.
14. COMPACTION OF FILL; ALL FILL AND BACKFILL SHALL BE WETTED OR DRIED BY AERATION, AND THEN COMPACTED TO THE FOLLOWING PERCENTAGE OF MAXIMUM DENSITY AT A MOISTURE CONTENT WITHIN THE LIMITS SPECIFIED ABOVE OR BELOW OPTIMUM MOISTURE CONTENT, AS DETERMINED BY TESTING PROCEDURE ASTM D 698, (STANDARD PROCTOR) AND ASTM D1557 (MODIFIED PROCTOR), UNLESS OTHERWISE NOTED:

MATERIAL	PERCENT OF MAXIMUM (COHESIVE SOIL ONLY)	ASTM	PERCENT ABOVE OR BELOW OPTIMUM MOISTURE CONTENT
* RANDOM FILL	95% MINIMUM	D698	-2% TO +2%
* UPPER 6" OF SUBGRADE BENEATH SIDEWALKS	95% MINIMUM	D698	-2% TO +2%
* UPPER 12" OF SUBGRADE BENEATH PAVEMENT	98% MINIMUM	D698	-2% TO +2%

15. EXTEND COMPACTION REQUIREMENTS FOR ALL PAVEMENTS TO 3 FEET BEYOND PAVEMENT PERIMETER. EXTEND COMPACTION REQUIREMENTS FOR ALL SIDEWALKS TO 18 INCHES BEYOND SIDEWALK PERIMETER.
16. COMPACT COHESIVE SOILS BY THE USE OF SHEEPSFOOT OR PNEUMATIC TYPE COMPACTORS UNDER OPTIMUM MOISTURE CONDITIONS.
17. CONTRACTOR SHALL SEED ALL DISTURBED AREAS AFTER CONSTRUCTION TO MATCH EXISTING CONDITIONS WITH MILLER SEED, ALL-PURPOSE CONTRACTOR'S MIX
18. UPON COMPLETION OF ROUGH GRADING, THE CONTRACTOR SHALL SPREAD (4) INCHES OF TOPSOIL. CONTRACTOR SHALL FINE GRADE SITE WITH NO MORE THAN TWO (2) PASSES. ESTABLISH VEGETATIVE COVER IMMEDIATELY AFTER FINISH GRADING. IN AREAS WHERE COMPOST IS NOT TO BE USED, THE CONTRACTOR SHALL SPREAD TOPSOIL, BEFORE SPREADING TOPSOIL, GRADED AREAS SHALL BE SCARIFIED FOR A DEPTH OF 4 INCHES, AND ALL SETTLEMENTS AND WASHES SHALL BE REPAIRED. FINISH GRADE SHALL BE HELD 1 INCH BELOW ADJACENT SIDEWALKS, CURBS AND PAVEMENT. TOPSOIL SHALL BE FREE OF ROCKS, RUBBLE, WOOD AND OTHER UNDESIRABLE MATERIAL.
19. PERFORM FINISH GRADING OF TOPSOIL ADEQUATELY FOR SEEDING OR WHATEVER MATERIAL IS PLACED IN EACH AREA. FINISHED SURFACE SHALL BE REASONABLY SMOOTH, COMPACTED AND FREE FROM IRREGULAR SURFACE CHANGES. THE DEGREE OF FINISH SHALL BE THAT ORDINARILY OBTAINABLE FROM BLADE GRADER OPERATIONS, EXCEPT AS OTHERWISE NEEDED. FINISHED SURFACE SHALL BE NOT MORE THAN 0.10 FEET ABOVE OR BELOW ESTABLISHED GRADE OR APPROVED CROSS SECTION. ALL SWALES SHALL BE FINISHED SO AS TO DRAIN READILY. PRIOR TO THE INSTALLATION OF SEED, A FINAL WALK THRU OF THE SITE SHALL BE CONDUCTED AND ANY MODIFICATIONS TO THE SITE GRADING SHALL BE MADE TO ENSURE THE ENTIRE SITE HAS POSITIVE DRAINAGE. THESE GRADING MODIFICATIONS SHALL BE CONDUCTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
20. FINAL TOPSOIL THICKNESS SHALL BE AS FOLLOWS:

LOCATION

THICKNESS (INCHES)

SEDED AREAS

6 MIN.

TREE AND SHRUB BEDS

12 MIN.

GROUND COVER AREAS

12 MIN.
21. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NDOT STANDARD SPECIFICATIONS FOR HWY CONSTRUCTION, AND ITS MOST CURRENT REVISIONS EXCEPT AS MODIFIED BY THE DETAILED SPECIFICATIONS. IF A CONFLICT EXISTS BETWEEN EITHER THE NDOT SPECIFICATIONS AND THE DETAILED SPECIFICATIONS THE MORE STRINGENT SPECIFICATION SHALL GOVERN AS DETERMINED BY THE PROJECT ENGINEER.

22. THE LOCATIONS OF ALL AERIAL AND UNDERGROUND UTILITY FACILITIES ARE APPROXIMATE OR MAY NOT BE INDICATED IN THESE PLANS. UNDERGROUND FACILITIES, WHETHER INDICATED OR NOT, WILL BE LOCATED AND FLAGGED BY THE UTILITIES AT THE REQUEST OF THE CONTRACTOR. NO EXCAVATION WILL BE PERMITTED IN THE AREA UNTIL ALL SUCH UNDERGROUND UTILITY FACILITIES HAVE BEEN LOCATED AND IDENTIFIED TO THE SATISFACTION OF ALL PARTIES, AND THEN ONLY WITH EXTREME CARE TO AVOID ANY POSSIBILITY OF DAMAGE TO THE UTILITY FACILITY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL EXISTING UTILITIES, PAVEMENT, AND OTHER IMPROVEMENTS NOT DESIGNATED FOR REMOVAL OR ABANDONMENT. ANY DAMAGE TO EXISTING UTILITIES AND/OR PAVED STREETS NOT DESIGNATED FOR REMOVAL OR ABANDONMENT CAUSED BY CONSTRUCTION OPERATIONS SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE. IN ALL CASES, WITH NO EXCEPTION THE CONTRACTOR, BEFORE BEGINNING CONSTRUCTION OF ANY NEW UNDERGROUND FACILITIES, SHALL LOCATE, UNCOVER AND DETERMINE THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UNDERGROUND FACILITIES WHICH MAY POTENTIALLY CONFLICT WITH HIS WORK, OR ARE TO BE INCORPORATED INTO THE NEW WORK. BEFORE PROCEEDING, THE CONTRACTOR SHALL CONFIRM THAT A CONFLICT DOES NOT EXIST AND THE UNDERGROUND WORK MAY BE PERFORMED AS SHOWN ON THE PLANS. IF THE CONTRACTOR DETERMINES THAT A PROBLEM DOES EXIST, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER WHO WILL MAKE THE FINAL DETERMINATION FOR RESOLVING THE CONFLICT. THE CONTRACTOR WILL RECEIVE NO ADDITIONAL COMPENSATION FOR ANY DELAYS OR WORK RESULTING FROM A CONFLICT WHICH HAS NOT THOROUGHLY BEEN INVESTIGATED PRIOR TO PROCEEDING WITH THE WORK. THE CONTRACTOR MAY REQUEST ADDITIONAL COMPENSATION FOR ANY ADDITIONAL WORK PERFORMED TO DIRECTLY RESOLVE THE CONFLICT AS DIRECTED IN WRITING BY THE ENGINEER. THE TIME LIMIT TO COMPLETE THE WORK IS AS STATED IN THE SPECIFICATIONS.

23. THE CONTRACTOR SHALL CALL FOR THE EXISTING UTILITY LOCATION STAKES (1-800-331-5666) 48 HOURS PRIOR TO DIGGING. CALL ALL APPLICABLE UTILITY COMPANIES.

24. THE CONTRACTOR SHALL ADJUST TO GRADE ALL WATER AND GAS VALVE BOXES, CLEANOUTS AND MANHOLES THAT FALL WITHIN THE LIMITS OF THIS CONTRACT (NO PAY ITEM). THE CONTRACTOR SHALL KEEP ALL SAID WATER, GAS, AND EXISTING SEWERS AND THEIR APPURTENANCES FREE OF DEBRIS AND OPERABLE AT ALL TIMES DURING CONSTRUCTION. INSPECTION DURING CONSTRUCTION SHALL BE PAID FOR BY THE OWNER. THE CITY CONSTRUCTION ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR 48 HOURS BEFORE THE START OF CONSTRUCTION.

25. THE CONTRACTOR SHALL PROVIDE, FURNISH AND MAINTAIN ALL NECESSARY BARRICADES, WARNING SIGNS, LIGHTS AND FLAGMAN AS PER THE "MUTCD MANUAL TRAFFIC CONTROL GUIDELINES FOR STREET CONSTRUCTION, MAINTENANCE, AND UTILITY OPERATIONS" AND AS DIRECTED BY THE ENGINEER.

26. THE CONTRACTOR SHALL PROTECT, BY WHATEVER MEANS REQUIRED, ALL TRAFFIC SIGNALS, MAILBOXES, FENCES, SIGNS, STRUCTURES, DRIVEWAYS, SIDEWALKS, STREETS, POLES, BUSHES, TREES, IRRIGATION SYSTEMS, ETC. WHICH ARE NOT DESIGNATED FOR REMOVAL OR ARE OUTSIDE THE LIMITS OF CONSTRUCTION. ANY DAMAGE OR DESTRUCTION CAUSED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED AT A MINIMUM TO THE ORIGINAL CONDITION, AS DIRECTED BY THE ENGINEER, AND AT THE COST OF THE CONTRACTOR.

27. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY EROSION CONTROL DEVICES, AS SHOWN ON THE PLANS IN CONFORMANCE WITH NDOT STANDARD SPECIFICATIONS FOR MUNICIPAL CONSTRUCTION OR AS MANDATED BY THE ENGINEER. UPON COMPLETION, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES UNLESS DIRECTED OTHERWISE BY THE ENGINEER. AFTER SUFFICIENT GROUND COVER HAS BEEN ESTABLISHED AS DETERMINED BY THE ENGINEER, THE CONTRACTOR SHALL REMOVE THE TEMPORARY EROSION CONTROL DEVICES INCLUDING SILT FENCING AND SEDIMENT CONTROL BASINS, AND ESTABLISH GROUND COVER IN DISTURBED AREAS.

28. A DIAMOND EDGE SAW BLADE SHALL BE USED FOR CUTTING ALL REQUIRED CONTRACTION AND LONGITUDINAL PAVEMENT JOINTS AND CONCRETE REMOVAL. ALL REMOVAL SHALL BE FULL DEPTH SAW CUT.

29. PAVING DIMENSIONS ARE SHOWN ON THE PLANS.

30. ALL CONCRETE SHALL BE 4000 PSI 47B CONCRETE WITH 1PF CEMENT AND FOLLOW NEBRASKA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.

31. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES AND SITE CLEARING PERMITS AND LANDFILL FEES.

32. THE CONTRACTOR SHALL CONSTRUCT ALL PAVEMENTS TO CONFORM WITH THE CORRECT CROSS SECTIONS, LINES AND FINISH GRADES AS INDICATED ON THE PLANS, NO PONDING OF WATER SHALL BE ALLOWED.

33. CONTRACTOR SHALL SEAL ALL JOINTS WITH SEALANT SHOWN ON NDOT APPROVED PRODUCT LIST AND AS DETAILED ON DETAIL 1/C200.

34. THE FINAL SOIL GRADES IN ALL LANDSCAPE AREAS BETWEEN BUILDINGS AND PAVED AREAS SHALL NOT BE GREATER THAN 1" BELOW PAVEMENT BEFORE SEEDING, ROCK, MULCH OR OTHER LANDSCAPE MATERIALS ARE INSTALLED AND SHALL HAVE A MINIMUM OF 4% SLOPE AWAY FROM BUILDINGS.

35. CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO PERFORM FIELD TESTS AND INSPECTION. CONTRACTOR SHALL PAY FOR ALL TESTING AND ANY FAILED TESTS FOR ALL MATERIAL AND CONCRETE TESTING AS REQUIRED BELOW.

DESIGNATED AREA	TESTING FREQUENCY
* ALL LIFTS OF FILL	1 TEST PER 3000 SF OR PER SMALLER SEPARATE AREA REQUIRED
* CONCRETE	SEE DETAILED SPECIFICATIONS FOR ALL CONCRETE TESTING REQUIREMENTS.

GENERAL INFORMATION

NO SCALE

DEMOLITION NOTES:

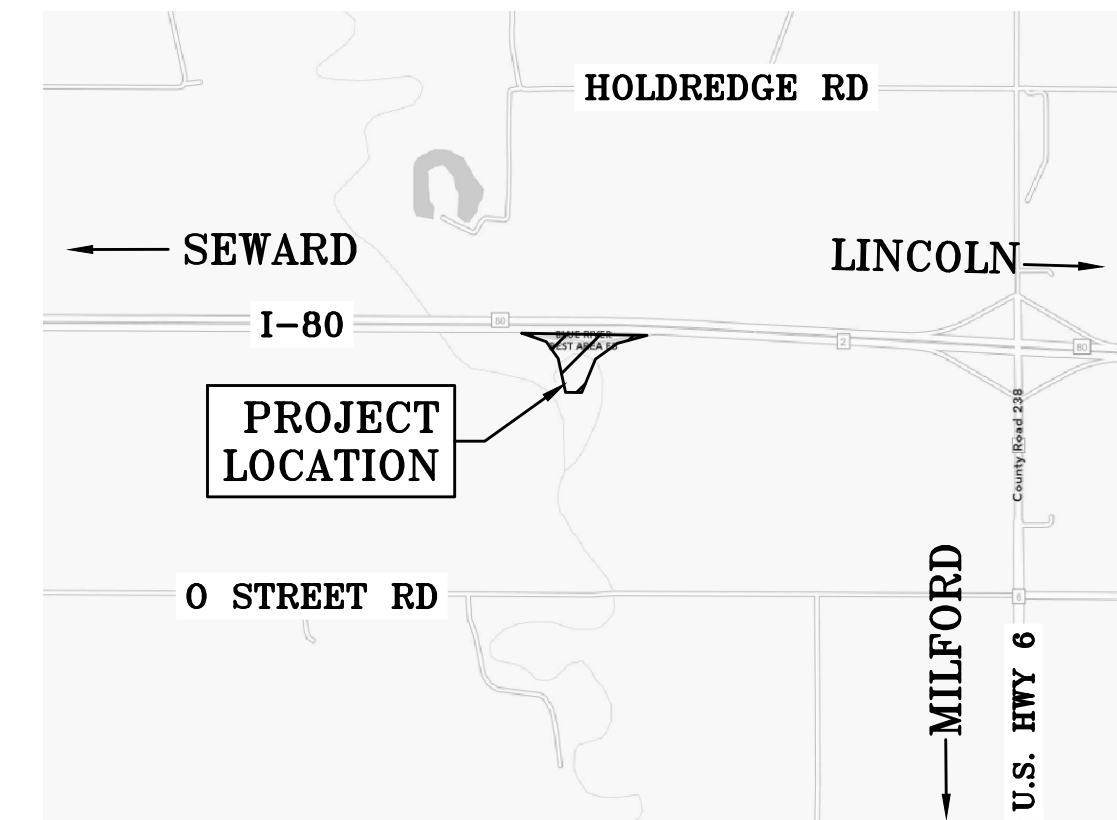
1. PROTECT ALL SIDEWALKS/PAVEMENT NOT SHOWN FOR REMOVAL. CONTRACTOR SHALL REPAIR ALL DAMAGED SIDEWALK AT NO COST TO THE OWNER.

2. PROTECT ALL UTILITIES NOT BEING AFFECTED BY THE DEMOLITION. ANY DAMAGE OR ACCIDENTAL REMOVAL OF UTILITIES SHALL BE REPAIRED AT THE COST OF THE CONTRACTOR.

3. COORDINATION OF ITEMS REMOVED BY OTHERS SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR.

4. THE CONTRACTOR SHALL PROTECT ALL LANDSCAPING AREAS (TREES, IRRIGATION, DECORATIVE BRICK, ETC.) OUTSIDE OF DEMOLITION AREA NEAR STREET UNLESS OTHERWISE NOTED. ANY DAMAGE SHALL BE REPLACED AT THE COST OF THE CONTRACTOR.

5. REMOVE PAVEMENT TO THE NEAREST CONTRACTION JOINTS. SAW CUT PAVEMENT FULL DEPTH.



VICINITY MAP
S23, T10N, R3E



REGA #231194

ISSUED FOR:	DATE:
35% PROGRESS SET	01/15/2024
65% PROGRESS SET	02/08/2024
CONSTRUCTION SET	02/29/2024
ADDENDUM #1	03/15/2024

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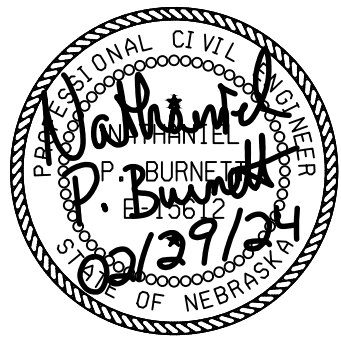
CONSULTANTS:

CIVIL ENGINEER

REGA
ENGINEERING

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LINCOLN, NEBRASKA 68512
(402).484.7342

- ENGINEERING
- PLANNING
- LANDSCAPE ARCHITECTURE
- LAND SURVEYING
- IRRIGATION



UPGRADES -
EASTBOUND
BLUE RIVER
REST AREA

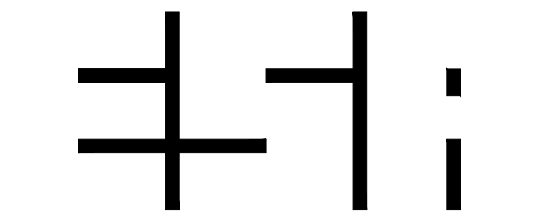
MILFORD, NE
Mile Marker 381 on I-80

GENERAL
INFORMATION

ESA PROJECT NO. 34523
NDOT PROJECT NO. AFE W-010

CONSTRUCTION SET

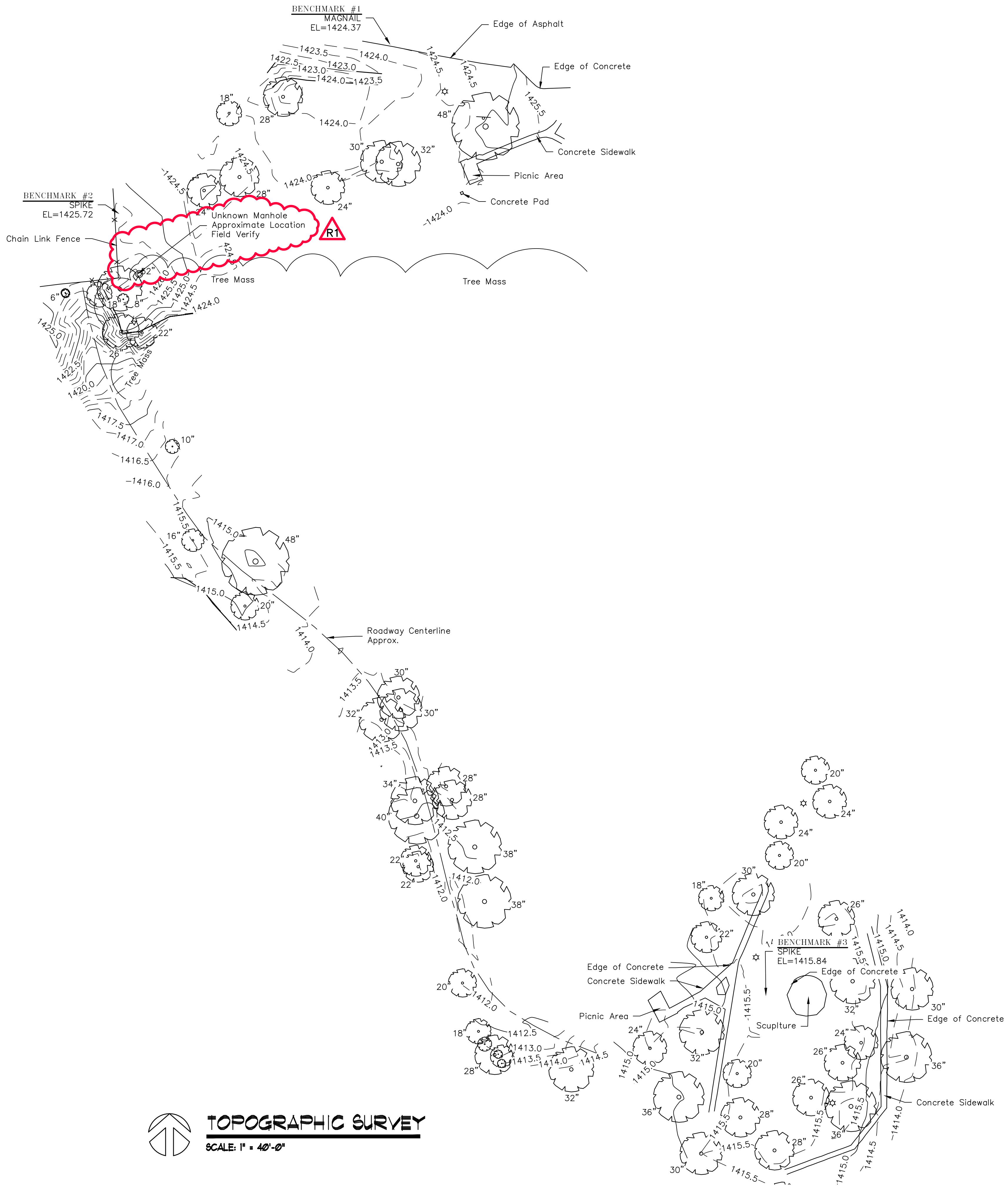
DATE: FEBRUARY 29, 2024



ERICKSON SULLIVAN
ARCHITECTS

110 S. 14TH STREET, SUITE 200
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C100



- LEGEND**
- SECTION CORNER
 - SET CAPPED 3/4" BAR (UNLESS NOTED)
 - FOUND SURVEY POINT
 - CALCULATED SURVEY POINT
 - TEMPORARY CONTROL POINT (T.C.P.) (12" LANDSCAPE SPIKE TYP.)
 - C.T.P. - CRIMPED TOP PIPE
 - O.T.P. - OPEN TOP PIPE
 - S.D.H. - STAR DRILL HOLE
 - CHISELED "X" IN CONCRETE
 - PLAT DISTANCE
 - MEASURED DISTANCE
 - RECORDED DISTANCE
 - CALCULATED DISTANCE
 - RADIUS OF CURVE
 - TEMPORARY PROJECT BENCH MARK
 - SANITARY MANHOLE
 - SANITARY SEWER PIPE
 - COVER ELEVATION
 - INVERT ELEVATION
 - STORM DRAIN MANHOLE
 - FLARED END SECTION
 - STORM DRAIN SEWER PIPE
 - OVERHEAD ELECTRIC
 - ELECTRIC MANHOLE
 - ELECTRIC PEDESTAL
 - UNDERGROUND ELECTRIC
 - POWER POLE
 - GUY WIRE
 - LIGHT POLE
 - STREET LAMP
 - SPOT LIGHT
 - OVERHEAD TELEPHONE
 - TRANSFORMER
 - UNDERGROUND TELEPHONE
 - TELEPHONE CONDUIT
 - TELEPHONE MANHOLE
 - TELEPHONE PEDESTAL
 - WATER MANHOLE
 - WATER
 - WATER VALVE
 - FIRE HYDRANT
 - POST INDICATOR VALVE
 - SPRINKLER VALVE BOX
 - GAS
 - GAS VALVE
 - GAS MANHOLE
 - CABLE TELEVISION
 - CABLE PEDESTAL
 - STEAM MANHOLE
 - BASKETBALL HOOP
 - FLAG POLE
 - MAILBOX
 - SIGN
 - TRAFFIC SIGNAL
 - SPOT ELEVATION
 - F.F.E. - FINISHED FLOOR ELEVATION
 - FENCE (CHAIN LINK OR WIRE)
 - FENCE (WOODEN OR WROUGHT IRON)
 - LANDSCAPING
 - TREE LINE
 - DECIDUOUS TREE
 - CONIFEROUS TREE
 - BUSH
 - MAJOR CONTOUR
 - MINOR CONTOUR
 - UNDERGROUND FIBER OPTICS

BENCHMARK

BENCHMARK #1: MAGNAIL
ELEVATION = 1424.37

BENCHMARK #2: SPIKE
ELEVATION = 1425.72

BENCHMARK #3: SPIKE
ELEVATION = 1415.84



REGA #231194

ISSUED FOR:	DATE:
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CONSTRUCTION SET	02/29/2024
ADDENDUM #1	03/15/2024

TOPOGRAPHIC SURVEY
SCALE: 1" = 40'-0"

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LINCOLN, NEBRASKA 68512
(402).484.7342

- ENGINEERING
- PLANNING
- LANDSCAPE ARCHITECTURE
- LAND SURVEYING
- IRRIGATION

UPGRADES - EASTBOUND BLUE RIVER REST AREA

MILFORD, NE
Mile Marker 381 on I-80

TOPOGRAPHIC SURVEY

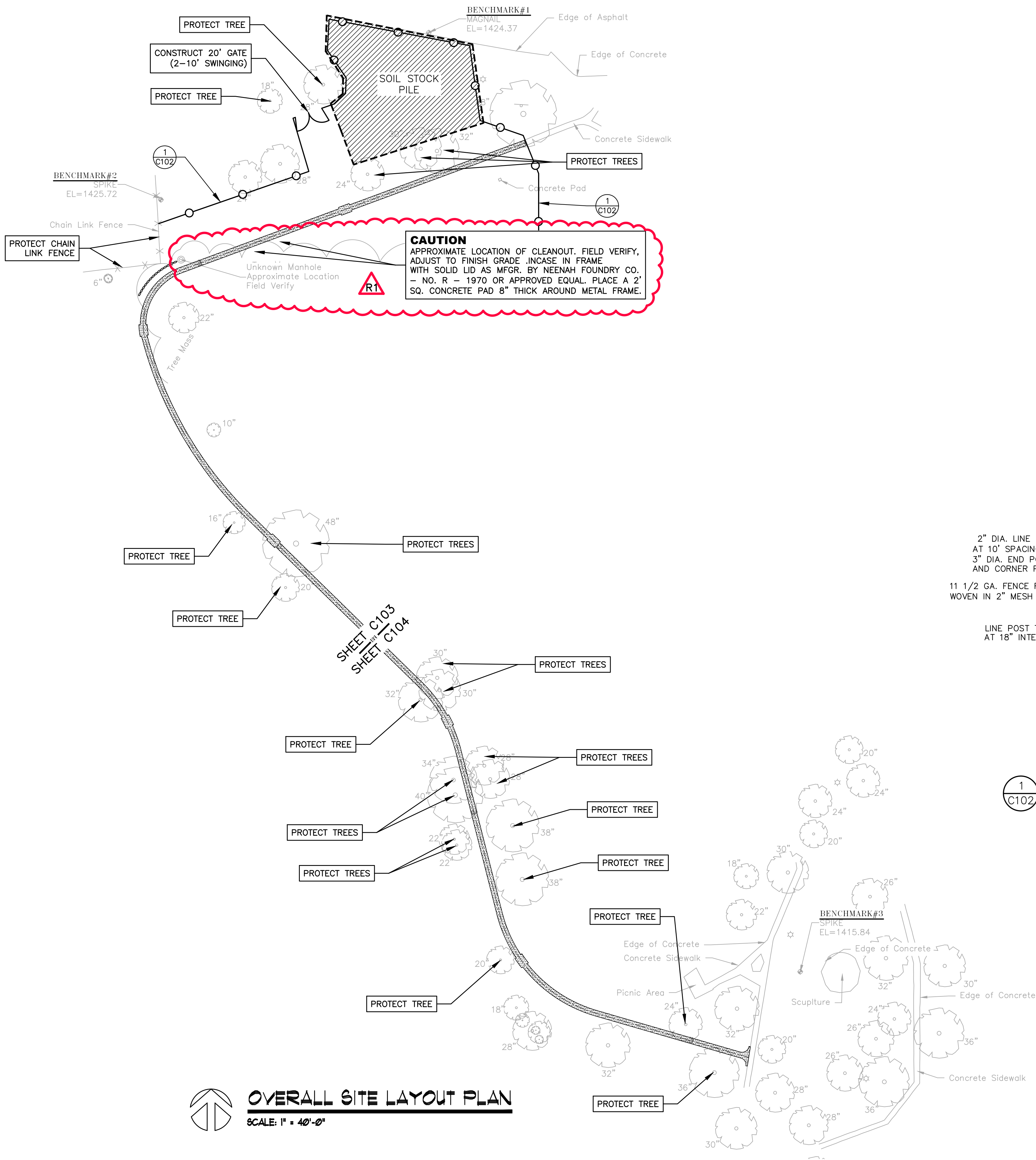
ESA PROJECT NO. 34523
NDOT PROJECT NO. AFE W-010

CONSTRUCTION SET

DATE: FEBRUARY 29, 2024

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C101



LEGEND

- 4" SIDEWALK PAVEMENT (1 C200)
- MSE RETAINING WALL (2 C200)
- SOIL STOCK PILE AREA LIMITS
- 6' CHAIN LINK CONSTRUCTION FENCE. FIELD ADJUST AS NEEDED. (1 C102)
- CONSTRUCTION FENCE GATE. CONTRACTOR TO CONSTRUCT GATE WIDTHS AS NEEDED. CONSTRUCTION GATES SHALL HAVE PERMANENT HINGES, WIRE HINGES WILL NOT BE ALLOWED. (1 C102)

NOTES:

- CONTRACTOR TO PATCH OR REPLACE ALL PAVEMENT DISTURBED BY THE CONSTRUCTION FENCE LINE POST AFTER CONSTRUCTION IS COMPLETED.
- PLACED AT THE PERIMETER OF CONSTRUCTION STAGING AREA OR AS SHOWN ON PLANS.
- CONTRACTOR SHALL COORDINATE PLACEMENT/ PHASING WITH OWNER PRIOR TO INSTALLATION.

BENCHMARK

BENCHMARK #1: MAGNAIL
ELEVATION = 1424.37

BENCHMARK #2: SPIKE
ELEVATION = 1425.72

BENCHMARK #3: SPIKE
ELEVATION = 1415.84



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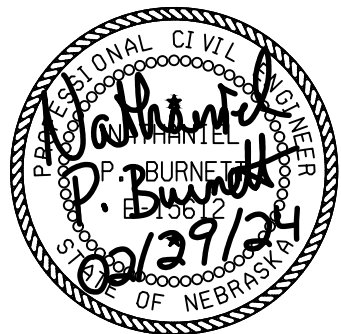
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- ENGINEERING
- PLANNING
- LANDSCAPE ARCHITECTURE
- LAND SURVEYING
- IRRIGATION



UPGRADES - EASTBOUND BLUE RIVER REST AREA

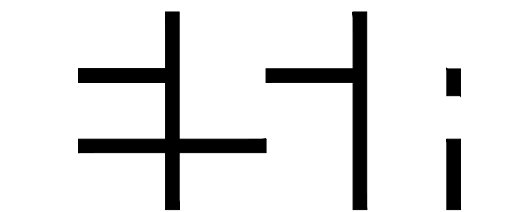
MILFORD, NE
Mile Marker 381 on I-80

OVERALL SITE
LAYOUT PLAN

ESA PROJECT NO. 34523
NDOT PROJECT NO. AFE W-010

CONSTRUCTION SET

DATE: FEBRUARY 29, 2024



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C102

C103

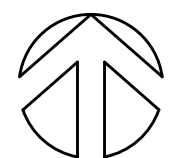
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CIVIL ENGINEER:

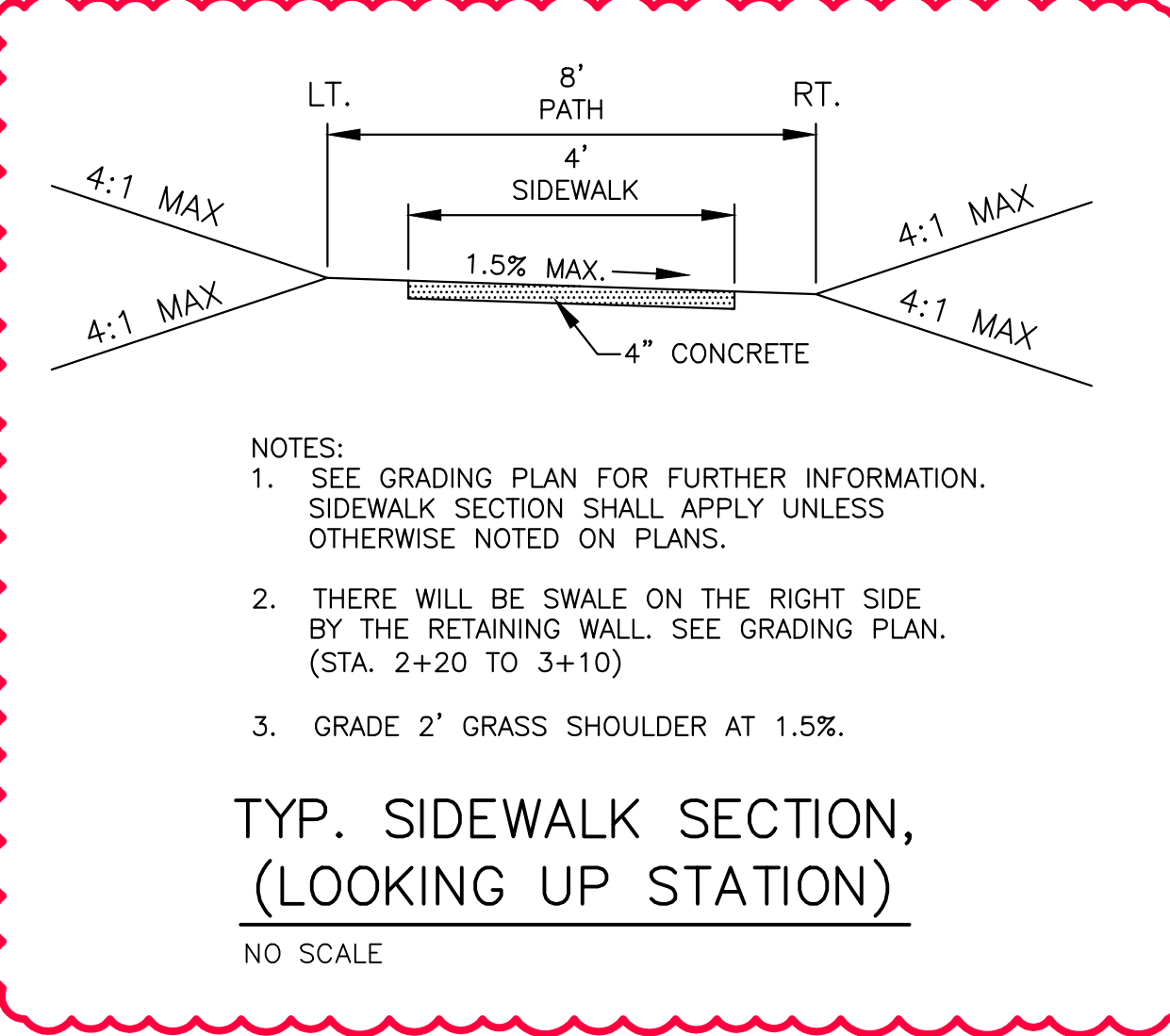
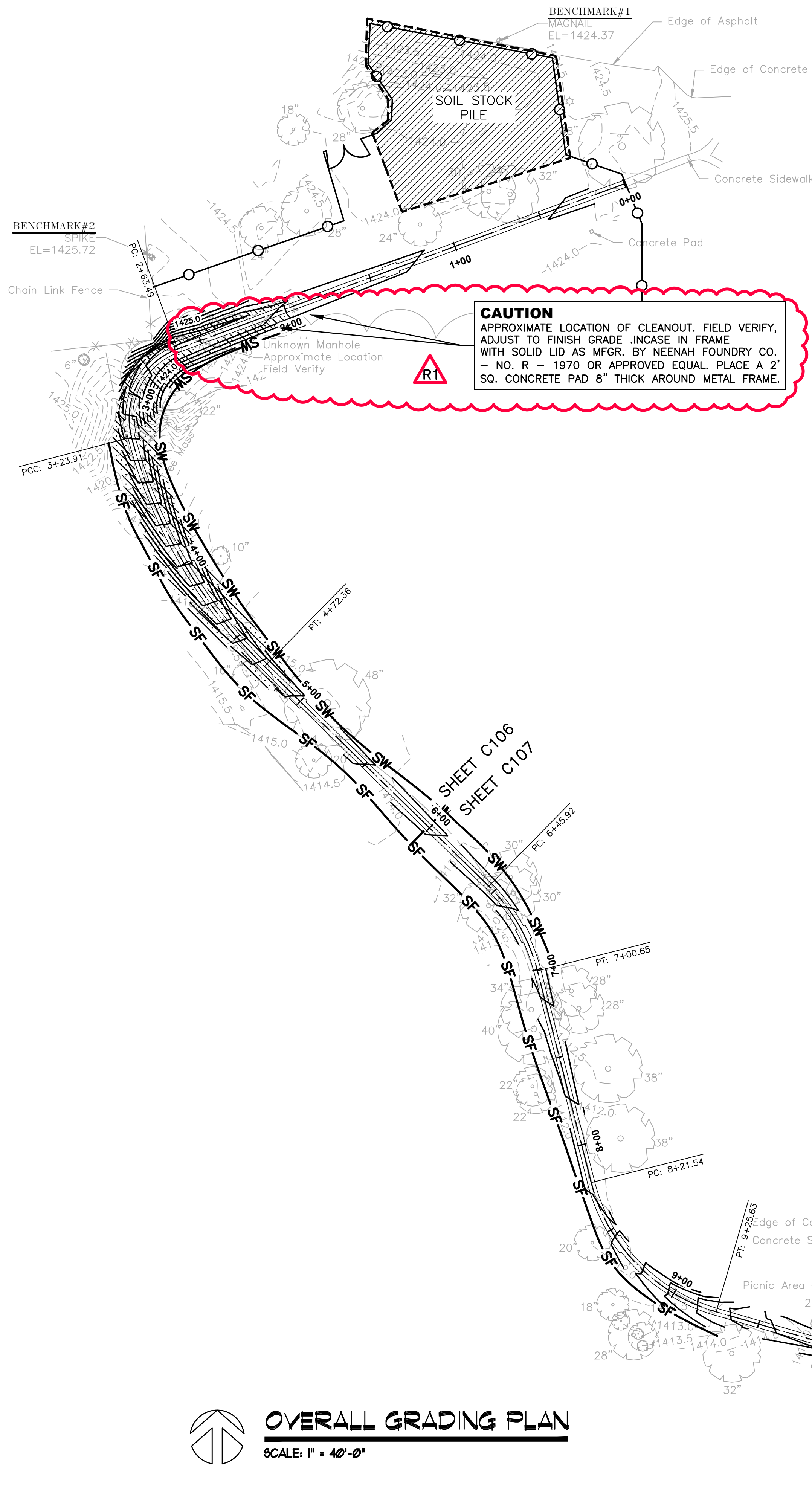
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CONSTRUCTION SET	02/29/2024
ADDENDUM #1	03/15/2024

[illegible]

SCALE: 1" = 20'-0"



LEGEND

- 1412.0 --- - EXISTING CONTOURS (FT.)
- 1412.5 --- - EXISTING CONTOURS (1/2 FT.)
- 1412.0 — - PROPOSED CONTOURS (FT.)
- 1412.5 — - PROPOSED CONTOURS (1/2 FT.)
- SF — - SILT FENCE, NDOT STANDARD PLAN NUMBER 502-R2
- SW — - SILT CHECK, NDOT SPECIAL PLAN NUMBER 5104-1-E-00
- [Hatched Box] - EROSION CONTROL BLANKET (DOUBLE NET STRAW S32) WITH MILLER SEED, ALL-PURPOSE CONTRACTOR'S MIX
- [Hatched Box] - SOIL STOCK PILE AREA LIMITS
- [Chain Link Fence Symbol] - 6' CHAIN LINK CONSTRUCTION FENCE. (1/102) FIELD ADJUST AS NEEDED.
- [X Symbol] - CONSTRUCTION FENCE GATE. CONTRACTOR TO CONSTRUCT GATE WIDTHS AS NEEDED. CONSTRUCTION GATES SHALL HAVE PERMANENT HINGES, WIRE HINGES WILL NOT BE ALLOWED. (1/102)

SHEET NOTE:

- CONTRACTOR SHALL SEED ALL DISTURBED AREAS AFTER CONSTRUCTION WITH MILLER SEED, ALL-PURPOSE CONTRACTOR'S MIX.

NOTE:
THIS PROJECT IS LESS THAN 1 ACRE AND DOES NOT REQUIRE A SWPPP PERMIT. CONTRACTOR SHALL ADHERE TO THESE PLANS AS BEST MANAGEMENT PRACTICES.

BENCHMARK

- BENCHMARK #1: MAGNAIL
ELEVATION = 1424.37
- BENCHMARK #2: SPIKE
ELEVATION = 1425.72
- BENCHMARK #3: SPIKE
ELEVATION = 1415.84



REGA #231194

ISSUED FOR:	DATE:
35% PROGRESS SET	01/15/2024
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CONSTRUCTION SET	02/29/2024
ADDENDUM #1	03/15/2024

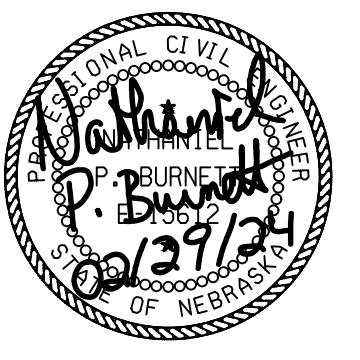
OVERALL GRADING PLAN
SCALE: 1" = 40'-0"

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(402).484.7342

- ENGINEERING
- PLANNING
- LANDSCAPE ARCHITECTURE
- LAND SURVEYING
- IRRIGATION



UPGRADES -
EASTBOUND
BLUE RIVER
REST AREA

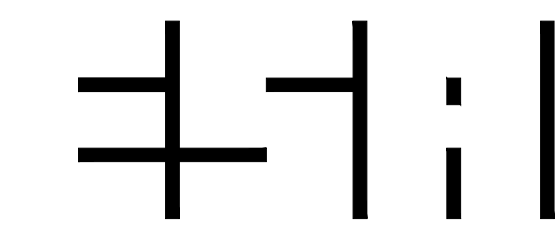
MILFORD, NE
Mile Marker 381 on I-80

OVERALL GRADING
PLAN

ESA PROJECT NO. 34523
NDOT PROJECT NO. AFE W-010

CONSTRUCTION SET

DATE: FEBRUARY 29, 2024



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C105

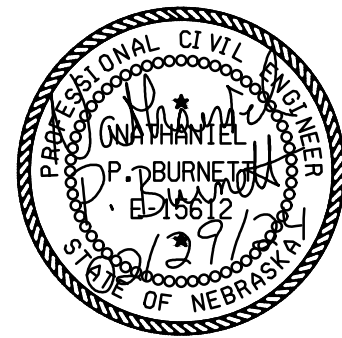
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- ENGINEERING
- PLANNING
- LANDSCAPE ARCHITECTURE
- LAND SURVEYING
- IRRIGATION



UPGRADES -
EASTBOUND
BLUE RIVER
REST AREA

MILFORD, NE
Mile Marker 381 on I-80

ENLARGED
GRADING PLAN

ESA PROJECT NO. 34523
NDOT PROJECT NO. AFE W-010

CONSTRUCTION SET

DATE: FEBRUARY 29, 2024

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C106

LEGEND

- 1412.0 --- EXISTING CONTOURS (FT.)
- 1412.5 --- EXISTING CONTOURS (1/2 FT.)
- 1412.0 — PROPOSED CONTOURS (FT.)
- 1412.5 — PROPOSED CONTOURS (1/2 FT.)
- SF — SILT FENCE, STANDARD PLAN NUMBER 502-R2
- SW — SILT CHECK, NDOT SPECIAL PLAN NUMBER 5104-1-E-00
- P XXXX.XX + PAVEMENT SPOT ELEVATION
- P MATCH + PAVEMENT TO MATCH EXISTING PAVEMENT ELEVATION
- DIRECTION OF FLOW
- [Hatched Box] EROSION CONTROL BLANKET (DOUBLE NET STRAW S32) WITH MILLER SEED, ALL-PURPOSE CONTRACTOR'S MIX
- [Hatched Box] SOIL STOCK PILE AREA LIMITS
- ○ ○ 6' CHAIN LINK CONSTRUCTION FENCE, FIELD ADJUST AS NEEDED. (1 C102)
- [X Symbol] CONSTRUCTION FENCE GATE. CONTRACTOR TO CONSTRUCT GATE WIDTHS AS NEEDED. CONSTRUCTION GATES SHALL HAVE PERMANENT HINGES, WIRE HINGES WILL NOT BE ALLOWED. (1 C102)
- TW XXXX.XX + TOP OF WALL SPOT ELEVATION
- BW XXXX.XX + BOTTOM OF RETAINING WALL (FINISH GRADE AT FACE OF WALL)

SHEET NOTE:

- CONTRACTOR SHALL SEED ALL DISTURBED AREAS AFTER CONSTRUCTION WITH MILLER SEED, ALL-PURPOSE CONTRACTOR'S MIX.

BENCHMARK

BENCHMARK #1: MAGNAIL
ELEVATION = 1424.37

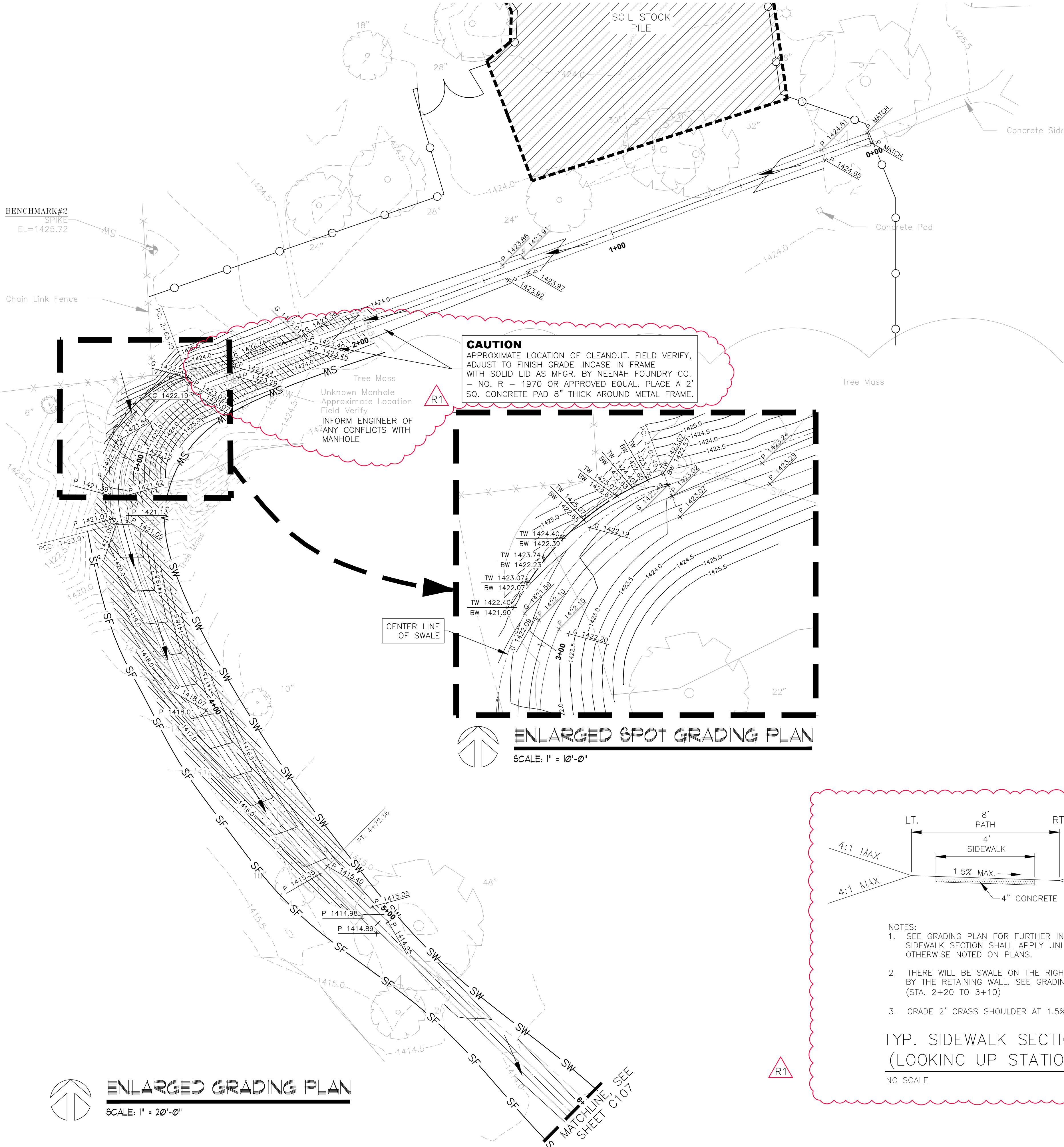
BENCHMARK #2: SPIKE
ELEVATION = 1425.72

BENCHMARK #3: SPIKE
ELEVATION = 1415.84



REGA #231194

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CONSTRUCTION SET	02/29/2024
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ENLARGED GRADING PLAN

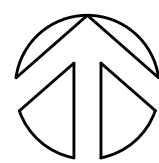
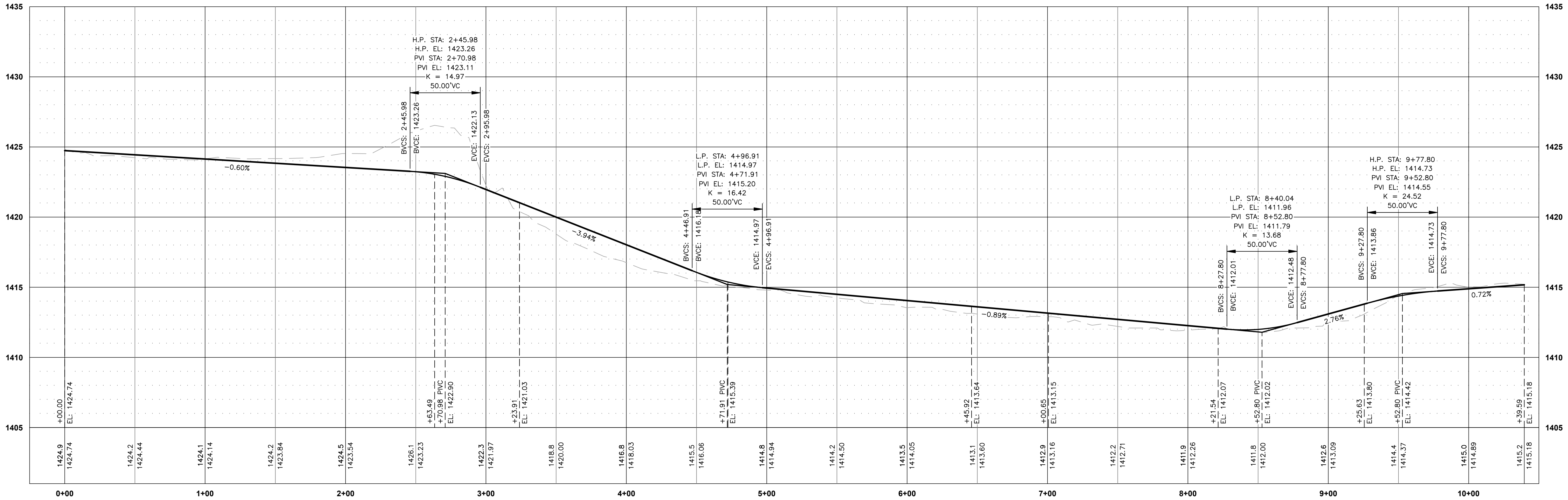
SCALE: 1" = 20'-0"

ENLARGED SPOT GRADING PLAN

SCALE: 1" = 10'-0"

TYP. SIDEWALK SECTION,
(LOOKING UP STATION)

NO SCALE



BLUE RIVER REST AREA TRAIL PROFILE

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'



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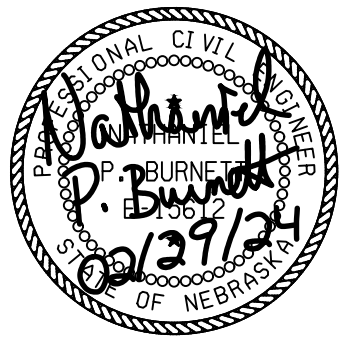
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CIVIL ENGINEER

REGA
ENGINEERING

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LINCOLN, NEBRASKA 68512
(402).484.7342

- ENGINEERING
- PLANNING
- LANDSCAPE ARCHITECTURE
- LAND SURVEYING
- IRRIGATION



UPGRADES - EASTBOUND BLUE RIVER REST AREA

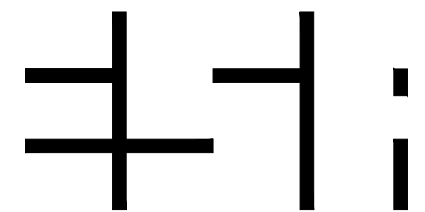
MILFORD, NE
Mile Marker 381 on I-80

BLUE RIVER REST
AREA TRAIL PROFILE

ESA PROJECT NO. 34523
NDOT PROJECT NO. AFE W-010

CONSTRUCTION SET

DATE: FEBRUARY 29, 2024



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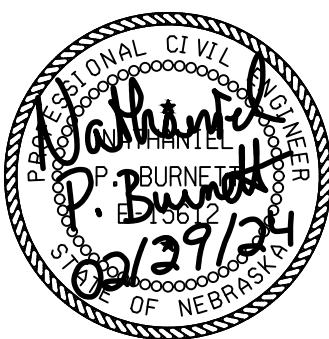
C108

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CIVIL ENGINEER

REGA
ENGINEERING

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(402).484.7342

- ENGINEERING
- PLANNING
- LANDSCAPE ARCHITECTURE
- LAND SURVEYING
- IRRIGATION



UPGRADES -
EASTBOUND
BLUE RIVER
REST AREA

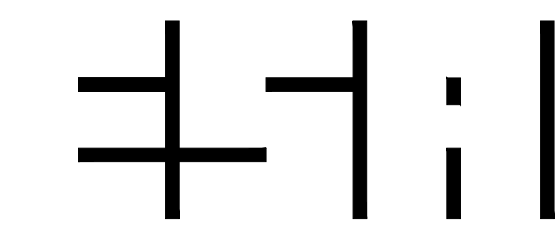
MILFORD, NE
Mile Marker 381 on I-80

MISCELLANEOUS
DETAILS

ESA PROJECT NO. 34523
NDOT PROJECT NO. AFE W-010

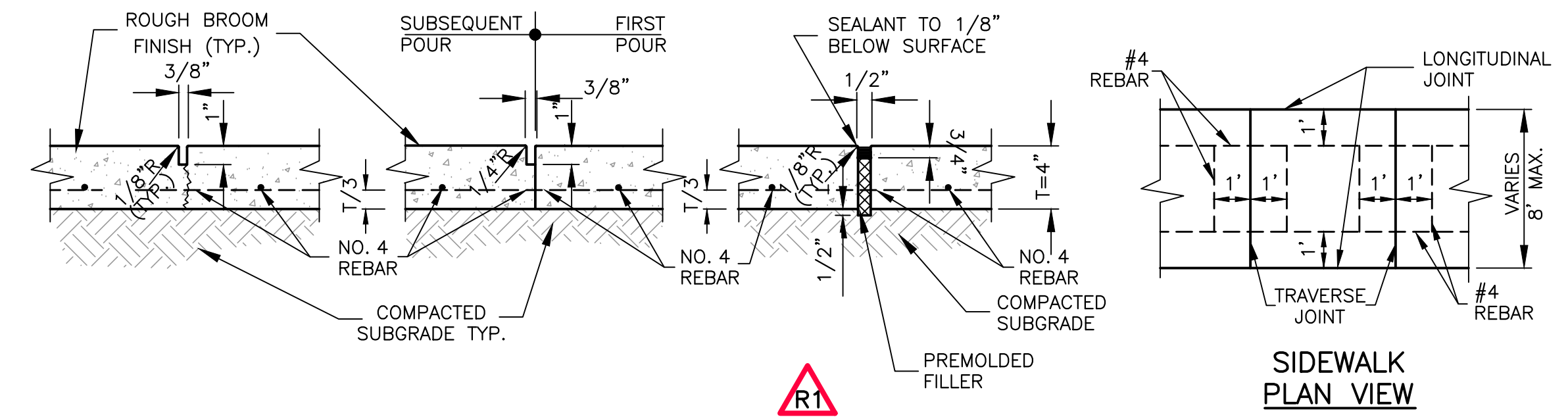
CONSTRUCTION SET

DATE: FEBRUARY 29, 2024



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- CONTRACTION JOINT**

MAXIMUM SPACING =
WIDTH OF THE WALK
UNLESS INDICATED
OTHERWISE ON PLANS
- CONSTRUCTION JOINT**

USE ONLY WHERE
CONSTRUCTION JOINTS
WOULD OCCUR
- EXPANSION JOINT**

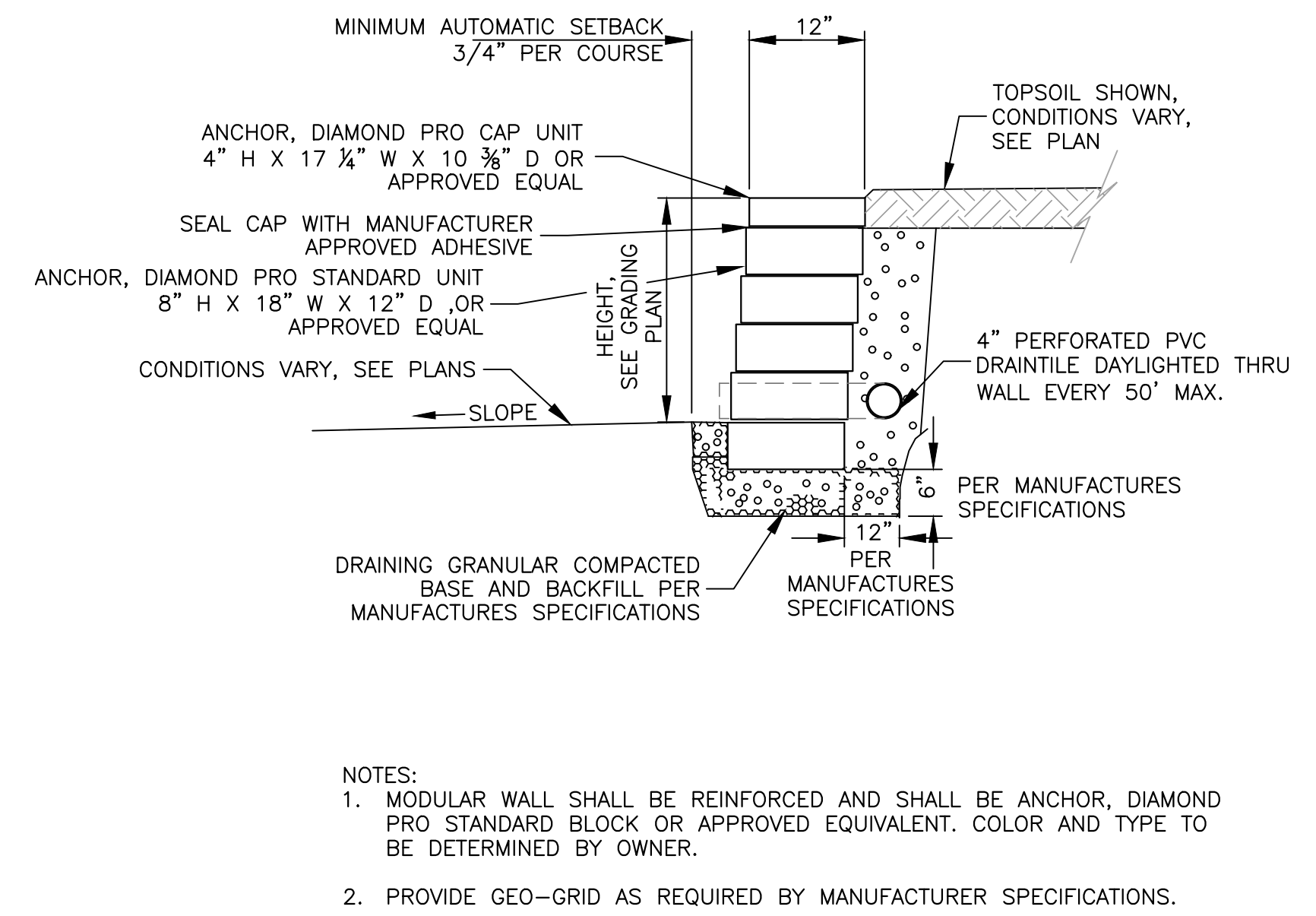
SPACE AS SHOWN ON LAYOUT
PLAN (@ 250' MAX.) AND
WHERE ABUTTING ALL
STRUCTURES, PAVEMENT AND
CURBS
- LONGITUDINAL JOINT**

INSTALL (2) #4 LONGITUDINAL
BARS IN SIDEWALK (1' FROM
EDGE) OVERLAPPING EACH
OTHER BY 12"
- TRANSVERSE JOINT**

INSTALL A MINIMUM OF (2) #4
TRANSVERSE BARS PER
SIDEWALK PANEL (1' FROM
JOINT)
- NOTES:

 - WHEN ABUTTING EXISTING SIDEWALK, MATCH EXISTING PATTERN LOCATION OF CONTROL AND EXPANSION JOINTS UNLESS OTHERWISE INDICATED.
 - PROVIDE 1/2" E.J. WITH SEALANT WHEN ABUTTING BACK OF CURB AND STRUCTURES.
 - ALL SIDEWALKS SLOPE AT MINIMUM 1.5% AWAY FROM BUILDING OR TOWARD CURBS UNLESS SHOWN OTHERWISE.
 - CONTRACTOR SHALL SEAL JOINTS WITH SILICONE SEALANT, SEE PROJECT SPECIFICATIONS.

1 CONCRETE SIDEWALK JOINT DETAILS
C200 NO SCALE



- NOTES:
- MODULAR WALL SHALL BE REINFORCED AND SHALL BE ANCHOR, DIAMOND PRO STANDARD BLOCK OR APPROVED EQUIVALENT. COLOR AND TYPE TO BE DETERMINED BY OWNER.
 - PROVIDE GEO-GRID AS REQUIRED BY MANUFACTURER SPECIFICATIONS.

2 MODULAR WALL SECTION
C200 NO SCALE

MISCELLANEOUS DETAILS
NO SCALE

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Know what's below.
Call before you dig.

REGA #231194	
ISSUED FOR:	DATE:
35% PROGRESS SET	01/15/2024
65% PROGRESS SET	02/08/2024
CONSTRUCTION SET	02/29/2024
ADDENDUM #1	03/15/2024

C200