ADDENDUM NO. 2:

Issued to All Bid Document Holders of Record, SIBA, and SCCTD.ORG

Date: December 14, 2022

This Addendum forms a part of the Contract for the subject project. The original Contract Documents and any prior Addenda remain in full force and effect except as modified by the following which shall take precedence over any contrary provisions in the prior documents.

PRE-BID MEETING/DISCUSSION:

1. The Pre-Bid Meeting Presentation is attached.

2. The following topics were discussed at the Pre-bid Conference.

    a. Earthwork Quantities – The fill earthwork volumes shown on the cross-sections utilize a swell factor of 15 percent. Plan fill volumes should be reduced by 15 percent to obtain actual fill volumes. Based on the engineer's quantity estimate, approximately 24,000 cubic yards of borrow material is required to complete the earthwork. Borrow material shall be obtained from the footprint of the Facilities – Single Track package from Station 2135+24 to Station 2140+50.

    b. Seeding Requirements – Seeding requirements along the mainline shall be in accordance with sheets 56 through 66 and the special provision for Seeding. Seeding requirements at Old Illinois 158 as shown on sheet 67 will be revised and re-issued.

    c. Pile Lengths – Estimated pile lengths are indicated on Sheet 80 for the LRT Bridge over Seibert Road and Sheets 104 to 106 for the Bike Trail Bridge over Seibert Road. The estimated pile lengths indicated on the drawings shall be used in the preparation of a bid. Actual pile lengths exceeding the estimated pile lengths shall be addressed in accordance with Article of 1.47 of Section 00 72 13 - General Conditions.

    d. Notice to Proceed – The Notice to Proceed for the Facilities – Double Track package is anticipated to be issued by mid-March 2023. The Notice of Award is anticipated to be issued by the end-January 2023.

    e. Bid Price Breakdown Form – The Bid Price Breakdown Form will be used as a basis for the Contractors monthly pay application. Payment for the items listed on the form will be determined based on the individual item price and the percentage of work completed, as approved by the Resident Engineer.

    f. Date of advertisement for Facilities – Single Track – The Facilities - Single Track package is anticipated to be advertised beginning December 22, 2022.

    g. Engineer's Cost Estimate – An Engineer's Cost Estimate has been prepared but will not be shared in advance of bid letting.

SUBMITTED BIDDER QUESTIONS AND RESPONSES:

1. Question – Do you have quantity takeoff for this?
   Response – There are no quantity take-off sheets. The contract documents include a bid price breakdown form, but it may not have the detail you are looking for.

2. Question – They are calling out fence in multiple areas on the bid form. To my knowledge I cannot find any fence spec, details, or any on the plan sheets. Am I missing something?
   Response – Fence details are included on Sheet 123 – Precast Box Culvert Schedule And General Notes.

3. Question – Directional indicator barricades with steady burn monodirectional lights are shown on Pg 54 for Eastbound traffic on Seibert Rd. No similar traffic control devices are shown for Westbound Seibert traffic approaching the merge. Will the same devices be required for westbound traffic on Seibert Rd?
   Response – Directional indicator barricades with steady burn monodirectional lights are required for the westbound Seibert Road traffic approaching the merge. The Maintenance of Traffic plan sheets have been revised to address this and other issues. The revised plan sheets will be provided with the issuance of Addendum No. 3 on or about December 20, 2022.

4. Question – The Special Provisions/Utility Conflict Schedule references the relocation of the Seepage Field. Are the original project construction plans or as-builts available for the referenced area and systems?
   Response – Neither construction plans nor as-builts drawings are available for the Seepage Field.

5. Question – Utility Conflict Numbers 016 & 017 appear to require the Contractor to initially locate both the water and Force Main sewer lines. Will new casing pipes be installed along the side of the existing pipes and at a similar elevation or is the intent to case the existing lines?
   Response – The intent of the current plans for utility conflict numbers 016 and 017 is to provide a casing pipe around the existing lines to be installed by the contractor. These utility conflicts are currently being reviewed and revisions to the plans are anticipated to be issued with Addendum No. 3 on or about December 20, 2022.

6. Question – There are 2 swing gates identified on the plans at the termination points of Old IL-158. Will there be dimensions or details of the gate made available to bidders?
   Response – Details regarding these swing gates will be provided in Addendum No. 3. Addendum No. 3 is anticipated to be issued on or about December 20, 2022.

7. Question – If the box culverts are installed prior to embankment fill operations will fill dirt be an acceptable material between the top of the box culvert and the bottom of the sub-ballast?
   Response – Yes, fill dirt meeting the project specifications is acceptable.

8. Question – In the event additional embankment is needed, will on site borrow areas be provided?
   Response – Based on the engineer's quantity estimate, approximately 24,000 cubic yards of borrow material is required to complete the earthwork. Borrow material shall be obtained from the footprint of the Facilities – Single Track package from Station 2135+24 to Station 2140+50 (i.e., End of Facilities – Double Track to Wherry Road).

9. Question – Per General Notes on sheet 102, the contractor is to use "stay-in place galvanized forms." Bid form item B.4.2.c.2 calls for Pre-Cast Concrete Deck Panels. Which is correct?
   Response – Stay-in-place galvanized forms are required per the General Notes on sheet 102. Per the directions for Item B.4 Structures – Bridges in Section 00 43 00 – Bid Price Breakdown, components not applicable for a particular bridge should be marked as N/A. The bidder shall mark B.4.2.c.2 as N/A.

10. Question – Has an itemized pay item list been developed by the engineer to produce an engineer's estimate? Can the itemized list be provided to contractors?
    Response – An Engineer's Cost Estimate has been prepared but will not be shared in advance of bid letting. An itemized pay item list will not be provided to bidders.

11. Question – If we decide to bid as a joint venture, do you require anything ahead of time or just submit the bid with the required documents? Statement of Joint Venture 00 45 06 along with all other signature pages as needed.
    Response – We do not require an early submittal for approval of a joint venture. Submit the Statement of Joint Venture 00 45 06 with appropriate signatures with your bid.

12. Question – If I include our IDOT Certificate of Eligibility, per information below, we will not need to complete Section 00 45 00. It states A or B, but it seems there are quite a few questions in this section you might want answered.
    Response – Per the language of Section 00 45 00, IDOT Prequalified Bidders are only required to provide their Certificate of Eligibility. Please note, either a) or b) will be required for each member of a joint venture.

13. Question – I see the radius on the Seibert Road bridge is 18'-0" and the individual stems are 3'-6" square. Do you know if that is the exact same design from the original Illinois line sections?
    Response - Plan details from Line Section 4A, Volume 3 – Structures appear to match the dimensions described. The bidder will need to verify that the previous plan set matches the current bid package.

BIDDING REQUIREMENTS, CONTRACT FORMS, CONDITIONS OF THE CONTRACT AND GENERAL REQUIREMENTS:

1. STORMWATER POLLUTION PREVENTION PLAN
   - Replace entire Section.

2. SECTION 01 14 01 – BI-STATE DEVELOPMENT STANDARD OPERATING PROCEDURES (SOP'S)
   - Replace the Metro Contractor Safety Action Plan in its entirety.

TECHNICAL SPECIFICATIONS:

1. DESIGN PROFESSIONALS OF RECORD
    - Replace Pages 1 & 2. Corrected numbering and Design Professional responsibility for various special provisions.

2. SECTION 03 30 00 – CAST-IN-PLACE CONCRETE
    - Replace entire Section. Revised language in multiple locations to reference IDOT Standard Specifications adopted January 1, 2022.

3. SECTION 03 39 00 – CONCRETE CURING
    - Replace entire Section. Revised language on page 2 to reference IDOT Standard Specifications adopted January 1, 2022.

4. SECTION 34 21 08 – EARTHWORK
    - Replace entire Section. Added reference to Section 01 45 29 – Testing Laboratory Services under 1.02 RELATED SECTIONS and 1.03 QUALITY CONTROL. Revised language relating to testing and approval of materials under Section 1.03 QUALITY CONTROL.

CLARIFICATIONS:

1. No updates to the bid opening date or other contract documents will be required with this addendum.

ATTACHMENTS:

1. Revisions as noted above.

ACKNOWLEDGEMENT

Each Bidder shall acknowledge receipt of this Addendum by affixing his signature below, by noting this Addendum on his Solicitation, Acceptance and Award Form (Section 00 52 13, Block 11), and by attaching this Addendum to his Bid.

The undersigned acknowledges receipt of this Addendum and the Bid submitted is in accordance with information, instructions, and stipulations set forth herein.

Bidder: _____

By: _____

Date: _____

END OF DOCUMENT

St. Clair County MidAmerica Airport MetroLink Extension

Pre-Bid Conference for Facilities – Double Track

December 8, 2022

AGENDA

- Introductions
- Facilities Packages
- Schedule of anticipated Addenda
- Bidder's Checklist (Section 00 01 11)
- Instructions to Bidders (Section 00 21 13)
  - Bid Submission
  - General Requirements
  - Timetable
  - Evaluation and Award
- Contract Time (Section 00 41 00)
- Solicitation, Acceptance, and Award (Section 00 52 13)
- Questions/Comments

INTRODUCTIONS

- **St. Clair County Transit District (SCCTD) – Owner**
  - Ken Sharkey – Managing Director
  - Tony Erwin – Director of Facilities and Maintenance
- **Gonzalez Companies (GC) – Construction Manager**
  - Pat Judge – Project Principal
  - Mark Harrison – Construction Manager
  - Eric Glazier – Project Controls Manager
  - Jon Schaller – Procurement Manager

FACILITIES PACKAGES

SCHEDULE OF ANTICIPATED ADDENDA

- Addendum No. 1 – December 7, 2022
- Addendum No. 2 – December 13, 2022
- Addendum No. 3 – December 20, 2022
- Addendum No. 4 – January 4, 2023 (if required)

BIDDER'S CHECKLIST (SECTION 00 01 11)

1. Bid Form (Section 00 41 00)
2. Bid Price Breakdown Form (Section 00 43 00)
3. AA/EEO Affirmative Action Procedure (Section 00 43 01)
4. Employment Data Sheet (Section 00 43 02)
5. DBE Utilization Plan (Section 00 43 03)
6. Subcontractors List (Section 00 43 04)
7. Letter of Intent to Perform As A Subcontractor (Section 00 43 05)
8. Good Faith Efforts Guidance (Section 00 43 06)
9. Representation and Certification of Prime (Section 00 45 00)
10. Certification of Non-Restrictive Competition (Section 00 45 04)
11. Debarment, Suspension, Ineligibility and Voluntary Exclusion (Section 00 45 05)
12. Statement of Joint Venture (JV) (Section 00 45 06)
13. Solicitation, Acceptance and Award Form (Section 00 52 13)
14. Bid Guarantee (Section 00 22 01)
15. ADDENDA/AMENDMENTS

FAILURE TO ADHERE TO THESE REQUIREMENTS MAY RENDER THE BIDDER AS NON-RESPONSIVE

The purpose of this checklist is to assist the Bidder with the submission of a complete bid package required for this Invitation for Bids. It is the Bidder's responsibility to ensure compliance with the submission requirements as stipulated in this Invitation for Bids.

INSTRUCTIONS TO BIDDERS (1 OF 2) (SECTION 00 21 13)

- **1.03 Bid Submission**
  - Bids will be displayed and read aloud at the office of the St. Clair County Transit District, 27 North Illinois Street, Belleville, IL 62220 at 2:00 P.M., on **January 10, 2023** (or as may be designated in an amendment).
- **1.04 General Requirements**

A.	Contract Time:	Refer to Section 00 41 00, Bid Form Article 3.0 Contract Time and Article 1.11 of this Section
B.	Bid Guarantee:	5% Base Bid Section 00 22 01, Bid Guarantee
C.	Liquidated Damages:	Refer to Section 00 72 13
D.	Performance/Payment Bond:	100% Performance Bond and Payment Bond in the amount of $2,500,000.00. Refer to Section 00 73 04
E.	Insurance Requirements:	See Section 00 73 16
F.	**DBE Participation Goal:**	**25 %**
G.	Certified Payroll Submission:	See Section 00 73 46

INSTRUCTIONS TO BIDDERS (2 OF 2) (SECTION 00 21 13)

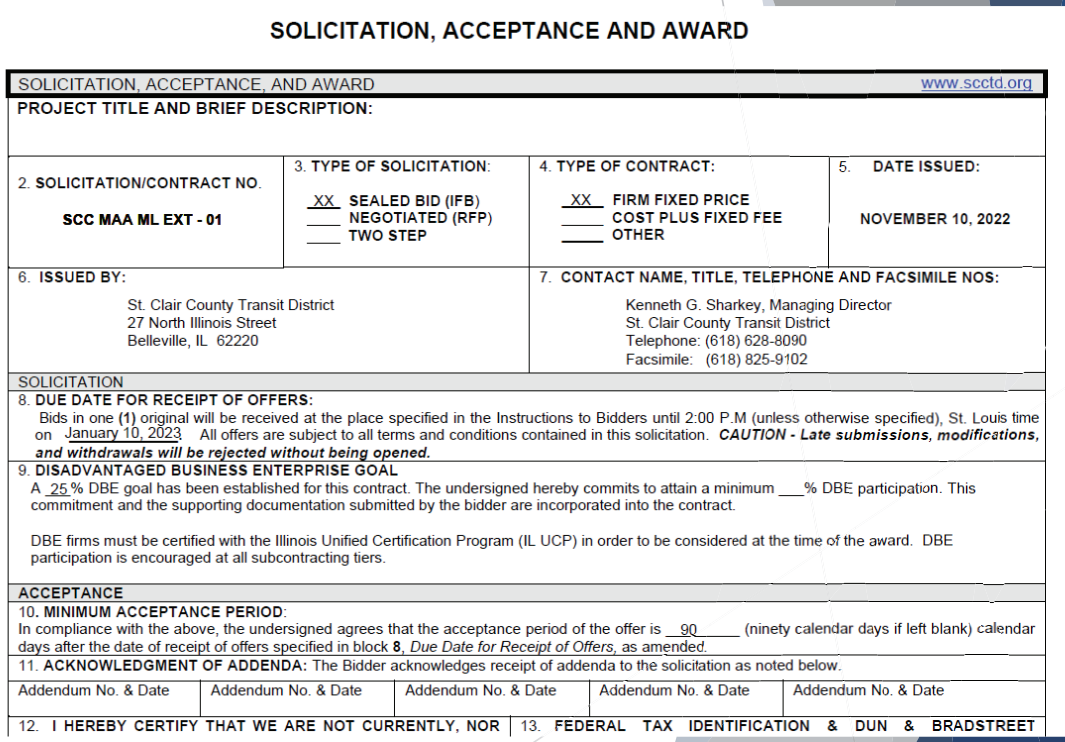
- **1.07 Timetable**
  - Written explanation desired by a Bidder regarding the meaning or interpretation of solicitation documents must be submitted in writing via email to SCCTD-FDT-BID@gocos.net no later than **11:59 P.M., St. Louis time, on January 3, 2023**. Reply by the Transit District will be in the form of an Addendum.
- **1.14 Evaluation and Award**
  - Award will be made to the lowest, responsive, and responsible bidder whose bid conforms to the bid documents.

CONTRACT TIME (SECTION 00 41 00)

- If this Bid is accepted by SCCTD, the Contractor shall commence the work within a period of ten calendar days after written Notice to Proceed and shall substantially complete the work by the **Substantial Completion Milestone date of March 11, 2024.** The Contractor shall complete all work, including any punchlist items and clean up, by the **Final Completion date of May 6, 2024.**
- Substantial Completion is defined as the stage in the progress of the work when the work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Transit District can occupy or utilize the work for its intended purpose.
- Final Completion is defined as the stage of the work when the work or designated portion of the work is fully complete and accepted in accordance with the Contract Documents, including all changes authorized and when all requirements for project closeout have been met.
- See Section 00 54 23, Post Bid Submittals, for submittal timing requirements.

SOLICITATION, ACCEPTANCE, AND AWARD (SECTION 00 52 13)

- The minimum acceptance period of the offer is 90 calendar days after the date of receipt of offers.
- The Bidder must acknowledge receipt of addenda to the solicitation.



SOLICITATION, ACCEPTANCE AND AWARD

SOLICITATION, ACCEPTANCE, AND AWARD — www.scctd.org

PROJECT TITLE AND BRIEF DESCRIPTION:

2. SOLICITATION/CONTRACT NO.	3. TYPE OF SOLICITATION:	4. TYPE OF CONTRACT:	5. DATE ISSUED:
SCC MAA ML EXT - 01	XX SEALED BID (IFB) ___ NEGOTIATED (RFP) ___ TWO STEP	XX FIRM FIXED PRICE ___ COST PLUS FIXED FEE ___ OTHER	**NOVEMBER 10, 2022**

6. ISSUED BY:	7. CONTACT NAME, TITLE, TELEPHONE AND FACSIMILE NOS:
St. Clair County Transit District 27 North Illinois Street Belleville, IL 62220	Kenneth G. Sharkey, Managing Director St. Clair County Transit District Telephone: (618) 628-8090 Facsimile: (618) 825-9102

SOLICITATION

8. **DUE DATE FOR RECEIPT OF OFFERS:**
Bids in one **(1)** original will be received at the place specified in the Instructions to Bidders until 2:00 P.M (unless otherwise specified), St. Louis time on January 10, 2023. All offers are subject to all terms and conditions contained in this solicitation. ***CAUTION - Late submissions, modifications, and withdrawals will be rejected without being opened.***

9. **DISADVANTAGED BUSINESS ENTERPRISE GOAL**
A 25 % DBE goal has been established for this contract. The undersigned hereby commits to attain a minimum ___% DBE participation. This commitment and the supporting documentation submitted by the bidder are incorporated into the contract.

DBE firms must be certified with the Illinois Unified Certification Program (IL UCP) in order to be considered at the time of the award. DBE participation is encouraged at all subcontracting tiers.

ACCEPTANCE

10. **MINIMUM ACCEPTANCE PERIOD**:
In compliance with the above, the undersigned agrees that the acceptance period of the offer is 90 (ninety calendar days if left blank) calendar days after the date of receipt of offers specified in block **8**, *Due Date for Receipt of Offers,* as amended.

11. **ACKNOWLEDGMENT OF ADDENDA:** The Bidder acknowledges receipt of addenda to the solicitation as noted below.

Addendum No. & Date	Addendum No. & Date	Addendum No. & Date	Addendum No. & Date	Addendum No. & Date

12. **I HEREBY CERTIFY THAT WE ARE NOT CURRENTLY, NOR** | 13. **FEDERAL TAX IDENTIFICATION & DUN & BRADSTREET**

QUESTIONS/COMMENTS

- Formal responses to the questions/comments received during this Pre-Bid Conference will be provided in a future addendum.

Illinois Department of Transportation

Storm Water Pollution Prevention Plan

Route	Marked Route	Section Number
N/A	N/A	N/A
Project Number	**County**	**Contract Number**
Facilities - Double Track	St. Clair	SCCTD - SCC MAA ML EXT - 01

This plan has been prepared to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) Permit No. ILR10 (Permit ILR10), issued by the Illinois Environmental Protection Agency (IEPA) for storm water discharges from construction site activities.

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

Signature	Date

Print Name	Title	Agency
Ken Sharkey	Managing Director	St. Clair County Transit District

Note: Guidance on preparing each section of BDE 2342 can be found in Chapter 41 of the IDOT Bureau of Design and Environment (BDE) Manual. Chapter 41 and this form also reference the IDOT Drainage Manual which should be readily available.

I. Site Description:

A. Provide a description of the project location; include latitude and longitude, section, town, and range:

The project is located to the west of Scott AFB and north of Mid-America Airport (MAA) near the Village of Shiloh located in St. Clair County in Sections 2, 3, 4, 9, & 16 in Township 1N in Range 7W. The project limits are from the St. Clair County Metrolink Shiloh-Scott Station (west side of Scott AFB) to just west of Rieder Road and just south of I-64 on the north side of MAA, approximately 2.6 miles in length. The general location at the Shiloh-Scott Station is: 38° 32' 21" by 89° 52' 44" and the general location at the end of the project is: 38° 33' 41" by 89° 51' 13". This contract package is titled: Facilities - Double Track.

B. Provide a description of the construction activity which is the subject of this plan. Include the number of construction stages, drainage improvements, in-stream work, installation, maintenance, removal of erosion measures, and permanent stabilization:

The proposed project consists of the advanced grading work for the future construction of a light rail double track railroad. Where the proposed alignment for the rail track will be placed, clearing of the existing site will take place to allow for earthwork to take place with embankment and stabilization work, while a layer of rock sub ballast will be placed on top of the embankment for the future rail bed to be placed. Proposed open ditches will be constructed alongside the rail alignment and culverts will be placed under the embankment to continue natural drainage ways through the area. A new bridge will be constructed to carry the rail tracks over existing Seibert Road. Alongside the rail alignment, a future bike trail will also be cleared and graded for future construction. Temporary erosion control and permanent landscaping will be included for all disturbed areas.

C. Provide the estimated duration of this project:

24 Months (2 years)

D. The total area of the construction site is estimated to be 70 acres.

The total area of the site estimated to be disturbed by excavation, grading or other activities is 52 acres.

E. The following are weighted averages of the runoff coefficient for this project before and after construction activities are completed; see Section 4-102 of the IDOT Drainage Manual:

Before = 0.32 & After = 0.44

F. List all soils found within project boundaries; include map unit name, slope information, and erosivity:

Downsouth silt loam, 2 to 5 percent slopes
Wakeland silt loam, 0 to 2 percent slopes, frequently flooded
Edwardsville silt loam, 0 to 2 percent slopes
Mascoutah silty clay loam, 0 to 2 percent slopes
Winfield silt loam, 2 to 5 percent slopes
Winfield silt loam, 5 to 10 percent slopes, eroded
Menfro silt loam, 2 to 5 percent slopes
Menfro silt loam, 5 to 10 percent slopes, eroded
Bethalto silt loam, 0 to 2 percent slopes

G. If wetlands were delineated for this project, provide an extent of wetland acreage at the site; see Phase I report:

Approximately 0.42 acres of emergent wetland and 0.17 acres of forested wetland will be directly impacted by the proposed project. Proposed discharges of dredged or fill material to wetlands is being coordinated through USACE. Impacts are anticipated to be permitted through the receipt of General Permit 38 or Nationwide Permit 14. The USACE permit review is in progress.

H. Provide a description of potentially erosive areas associated with this project:

The soil map as developed by the Natural Resources Conservation Services for this section of St. Clair County was utilized to identify the potentially erosive soils with the proposed development. The St. Clair County soils map indicates that soils within the project area have a 'slight' to 'moderate' potential for erosion. The erosion control plan provides Best Management Practices (BMPs) to minimize erosion from occurring during construction.

I. The following is a description of soil disturbing activities by stages, their locations, and their erosive factors (e.g., steepness of slopes, length of slopes, etc.):

See plan sheets for locations of soil disturbance. The new embankments will be constructed with side slopes ranging between 1:7 and 1:2.

J. See the erosion control plans and/or drainage plans for this contract for information regarding drainage patterns, approximate slopes anticipated before and after major grading activities, locations where vehicles enter or exit the site and controls to prevent offsite sediment tracking (to be added after contractor identifies locations), areas of soil disturbance, the location of major structural and non-structural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands) , and locations where storm water is discharged to surface water including wetlands.

K. Identify who owns the drainage system (municipality or agency) this project will drain into:

Waters of the United States

L. The following is a list of General NPDES ILR40 permittees within whose reporting jurisdiction this project is located:

St. Clair County MS4 Group is a co-permittee group which includes the following adjacent communities to the project within a portion of the Lower Silver Creek watershed: St. Clair County, City of Belleville, City of Fairview Heights, City of O'Fallon, Village of Shiloh, Caseyville Township, O'Fallon Township, & St. Clair Township.

M. The following is a list of receiving water(s) and the ultimate receiving water(s) for this site. In addition, include receiving waters that are listed as Biologically Significant Streams by the Illinois Department of Natural Resources (IDNR). The location of the receiving waters can be found on the erosion and sediment control plans:

Direct receiving waters include Ash Creek, and unnamed tributaries to Ash Creek and Silver Creek. Ultimate receiving waters include Silver Creek, as well as Loop Creek, which itself is a tributary to Silver Creek. Silver Creek ultimately drains to the Kaskaskia River which ultimately drains to the Mississippi River. None of these direct receiving waters are listed as Biologically Significant Streams.

N. Describe areas of the site that are to be protected or remain undisturbed. These areas may include steep slopes (i.e., 1:3 or steeper), highly erodible soils, streams, stream buffers, specimen trees, natural vegetation, nature preserves, etc. Include any commitments or requirements to protect adjacent wetlands.

For any storm water discharges from construction activities within 50-feet of Waters of the U.S. (except for activities for water-dependent structures authorized by a Section 404 permit, describe: a) How a 50-foot undisturbed natural buffer will be provided between the construction activity and the Waters of the U.S. or b) How additional erosion and sediment controls will be provided within that area.

There are no areas that require special soil protection and no trees are identified for protection.

O. Per the Phase I document, the following sensitive environmental resources are associated with this project and may have the potential to be impacted by the proposed development. Further guidance on these resources is available in Section 41-4 of the BDE Manual.

Wetlands, Streams, and associated Riparian areas will be impacted by the proposed project. Several riparian and other wooded areas were identified as potential habitat for threatened and endangered bat species.

☐ 303(d) Listed receiving waters for suspended solids, turbidity, or siltation.
The name(s) of the listed water body, and identification of all pollutants causing impairment:

There are no 303(d) Listed waters within the proposed project boundaries. The nearest 303(d) Listed impaired water for sediment/siltation that may receive storm water runoff from the proposed project is Loop Creek, which is located approximately 3.8 miles downstream at its nearest confluence with Ash Creek.

Provide a description of how erosion and sediment control practices will prevent a discharge of sediment resulting from a storm event equal to or greater than a twenty-five (25) year, twenty-four (24) hour rainfall event:

Maintaining the listed practices in this plan will not increase discharge levels of sediment.

Provide a description of the location(s) of direct discharge from the project site to the 303(d) water body:

There are no direct discharge points from this project.

Provide a description of the location(s) of any dewatering discharges to the MS4 and/or water body:

There are no dewatering discharges from this project.

☒ Applicable Federal, Tribal, State, or Local Programs

There are no other applicable Federal or Tribal soil and erosion control and storm water management requirements that apply to the project. However, St. Clair County MS4 General NPDES ILR40 and IDNR Section 401 WQC requirements are anticipated to apply.

☐ Floodplain

(intentionally left blank)

☒ Historic Preservation

Several cultural resource sites were identified and delineated within the proposed project boundaries. Consultation with USACE, IHPA, and Tribes is ongoing.

☐ Receiving waters with Total Maximum Daily Load (TMDL) for sediment, total suspended solids, turbidity or siltation

TMDL (fill out this section if checked above)

The name(s) of the listed water body:

The nearest 303(d) Listed impaired water for sediment/siltation that may receive storm water runoff from the proposed project is Loop Creek, which is located approximately 3.8 miles downstream at its nearest confluence with Ash Creek. No TMDLs have been developed for this segment of Loop Creek.

Provide a description of the erosion and sediment control strategy that will be incorporated into the site design that is consistent with the assumptions and requirements of the TMDL:

There are no direct discharges into Loop Creek. Ditch checks, perimeter barrier, inlet protection, and outlet protection will be used in conjunction with establishing vegetative growth to the disturbed earth as soon as possible to prevent any discharges towards the receiving waters.

If a specific numeric waste load allocation has been established that would apply to the project's discharges, provide a description of the necessary steps to meet that allocation:

(intentionally left blank)

☒ Threatened and Endangered Species/Illinois Natural Areas (INAI)/Nature Preserves

No threatened or endangered species, INAI areas, or Nature Preserves were identified within the project boundaries. However, potential summer roosting habitat for federal- and state-listed endangered Indiana bat and federal-listed threatened northern long-eared bat were identified. Impacts to potential T&E species habitat will be completed in compliance with USFWS and IDNR requirements.

☐ Other

(intentionally left blank)

☒ Wetland

Wetlands were identified and delineated within the proposed project boundaries. Proposed discharges of dredged or fill material to wetlands is being coordinated through USACE. Impacts are anticipated to be permitted under General Permit 38 or Nationwide Permit 14, and will be mitigated through the purchase of wetland credits from an approved mitigation bank. The USACE permit review is in progress.

P. The following pollutants of concern will be associated with this construction project:

- ☒ Antifreeze / Coolants
- ☒ Concrete
- ☒ Concrete Curing Compounds
- ☒ Concrete Truck Waste
- ☒ Fertilizers / Pesticides
- ☒ Paints
- ☒ Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids)
- ☒ Soil Sediment
- ☒ Solid Waste Debris
- ☒ Solvents
- ☒ Waste water from cleaning construction equipments
- ☒ Other (Specify) Portable restrooms
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____

II. Controls:

This section of the plan addresses the controls that will be implemented for each of the major construction activities described in Section I.C above and for all use areas, borrow sites, and waste sites. For each measure discussed, the Contractor will be responsible for its implementation as indicated. The Contractor shall provide to the Resident Engineer a plan for the implementation of the measures indicated. The Contractor, and subcontractors, will notify the Resident Engineer of any proposed changes, maintenance, or modifications to keep construction activities compliant with the Permit ILR10. Each such Contractor has signed the required certification on forms which are attached to, and are a part of, this plan:

A. **Erosion and Sediment Controls:** At a minimum, controls must be coordinated, installed and maintained to:

1. Minimize the amount of soil exposed during construction activity;
2. Minimize the disturbance of steep slopes;
3. Maintain natural buffers around surface waters, direct storm water to vegetated areas to increase sediment removal and maximize storm water infiltration, unless infeasible;
4. Minimize soil compaction and, unless infeasible, preserve topsoil.

B. **Stabilization Practices:** Provided below is a description of interim and permanent stabilization practices, including site- specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices may include but are not limited to: temporary seeding, permanent seeding, mulching, geotextiles, sodding, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as provided below in II.B.1 and II.B.2, stabilization measures shall be initiated **immediately** where construction activities have temporarily or permanently ceased, but in no case more than **one (1) day** after the construction activity in that portion of the site has temporarily or permanently ceases on all disturbed portions of the site where construction will not occur for a period of fourteen (14) or more calendar days.

1. Where the initiation of stabilization measures is precluded by snow cover, stabilization measures shall be initiated as soon as practicable.

2. On areas where construction activity has temporarily ceased and will resume after fourteen (14) days, a temporary stabilization method can be used.

The following stabilization practices will be used for this project:

- ☒ Erosion Control Blanket / Mulching
- ☒ Geotextiles
- ☒ Permanent Seeding
- ☒ Preservation of Mature Seeding
- ☐ Protection of Trees
- ☐ Sodding
- ☒ Temporary Erosion Control Seeding
- ☐ Temporary Turf (Seeding, Class 7)
- ☒ Temporary Mulching
- ☐ Vegetated Buffer Strips
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____

Describe how the stabilization practices listed above will be utilized during construction:

The project is designed to minimize the effects of construction activities that will result in earth disturbing activities causing erosion. The phasing of the construction activities will involve only disturbing what is required and leaving the remainder of the site with established grass cover to be undisturbed. All areas exposed due to construction will utilize temporary erosion control seeding applied with mulch to minimize the potential discharge of sediment.

Describe how the stabilization practices listed above will be utilized after construction activities have been completed:

The permanent stabilization practices will be to establish permanent grass turf to stabilize any disturbance and control the effects of storm water. A erosion control blanket or mulch will be applied over the permanent seeding. Erosion control blanket will be utilized on all slopes to prevent erosion and aid in establishment of turf. Heavy duty erosion control blanket will be utilized on steeper slopes to prevent erosion and aid in establishment of turf. Geotextiles will be placed under rock outlet protection or riprap. Any areas disturbed by construction that will not be permanently stabilized prior to winter will be temporarily stabilized with an application of temporary seed and mulch.

C. **Structural Practices:** Provided below is a description of structural practices that will be implemented, to the degree attainable, to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Such practices may include but are not limited to: perimeter erosion barrier, earth dikes, drainage swales, sediment traps, ditch checks, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins. The installation of these devices may be subject to Section 404 of the Clean Water Act.

- ☐ Aggregate Ditch
- ☐ Concrete Revetment Mats
- ☒ Dust Suppression
- ☐ Dewatering Filtering
- ☐ Gabions
- ☒ In-Stream or Wetland Work
- ☒ Stabilized Construction Exits
- ☐ Stabilized Trench Flow
- ☐ Slope Mattress
- ☒ Slope Walls
- ☒ Temporary Ditch Check
- ☐ Temporary Pipe Slope Drain

- ☐ Level Spreaders
- ☒ Paved Ditch
- ☐ Permanent Check Dams
- ☒ Perimeter Erosion Barrier
- ☐ Permanent Sediment Basin
- ☐ Retaining Walls
- ☒ Riprap
- ☒ Rock Outlet Protection
- ☐ Sediment Trap
- ☒ Storm Drain Inlet Protection
- ☐ Temporary Sediment Basin
- ☐ Temporary Stream Crossing
- ☐ Turf Reinforcement Mats
- ☒ Other (Specify) Stockpile management
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____
- ☐ Other (Specify) _____

Describe how the structural practices listed above will be utilized during construction:

Structural practices will be utilized to prevent sediment from being discharged off site. The perimeter barrier will be placed at locations indicated on the plans and will be installed prior to major earth disturbing activities. Storm drain inlet protection will be utilized where completed drains are active inlets to the storm water system to prevent infiltration of any sediment. All outfalls will be protected using riprap with a filter fabric blanket. Temporary ditch checks will be utilized in the graded ditches. Locations where contractor equipment enter and or exit the site will have a stabilized rock base to minimize sediment tracked off site. Dust control consisting of water spray shall be used during construction as needed to control dust resulting from construction operations. Street sweeping shall be performed as necessary and at the end of each work day to clean up any sediment tracked off-site. All stockpiles, both on and off-site, shall have perimeter barrier installed to prevent any discharges from the stockpile location.

Describe how the structural practices listed above will be utilized after construction activities have been completed:

All permanent outfalls and discharge points will be protected using riprap with a filter fabric blanket. Once permanent vegetation, in the form of grass turf, has been established the temporary measures may be removed.

D. **Treatment Chemicals**

Will polymer flocculants or treatment chemicals be utilized on this project: ☐ Yes ☒ No

If *yes* above, identify where and how polymer flocculants or treatment chemicals will be utilized on this project.

E. **Permanent (i.e., Post-Construction) Storm Water Management Controls:** Provided below is a description of measures that will be installed during the construction process to control volume and pollutants in storm water discharges that will occur after construction operations have been completed.The installation of these devices may be subject to Section 404 of the Clean Water Act.

1. Such practices may include but are not limited to: storm water detention structures (including wet ponds), storm water retention structures, flow attenuation by use of open vegetated swales and natural depressions, infiltration of runoff on site, and sequential systems (which combine several practices).

   The practices selected for implementation were determined based on the technical guidance in Chapter 41 (Construction Site Storm Water Pollution Control) of the IDOT BDE Manual. If practices other than those discussed in Chapter 41 are selected for implementation or if practices are applied to situations different from those covered in Chapter 41, the technical basis for such decisions will be explained below.

2. Velocity dissipation devices will be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., maintenance of hydrologic conditions such as the hydroperiod and hydrodynamics present prior to the initiation of construction activities).

Description of permanent storm water management controls:

The storm water management controls for the project are primarily planned to be open vegetated areas and storm drains out to the open ditches.

F. **Approved State or Local Laws:** The management practices, controls and provisions contained in this plan will be in accordance with IDOT specifications, which are at least as protective as the requirements contained in the IEPA's Illinois Urban Manual. Procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials shall be described or incorporated by reference in the space provided below. Requirements specified in sediment and erosion site plans, site permits, storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of an NOI, to be authorized to discharge under the Permit ILR10 incorporated by reference and are enforceable under this permit even if they are not specifically included in the plan.

Description of procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials:

All storm water conveyances are designed to be in compliance with all federal, state, and local laws, ordinances, and procedures.

G. **Contractor Required Submittals:** Prior to conducting any professional services at the site covered by this plan, the Contractor and each subcontractor responsible for compliance with the permit shall submit to the Resident Engineer a Contractor Certification Statement, BDE 2342A.

1. The Contractor shall provide a construction schedule containing an adequate level of detail to show major activities with implementation of pollution prevention BMPs, including the following items:
   - Approximate duration of the project, including each stage of the project
   - Rainy season, dry season, and winter shutdown dates
   - Temporary stabilization measures to be employed by contract phases
   - Mobilization time-frame
   - Mass clearing and grubbing/roadside clearing dates
   - Deployment of Erosion Control Practices
   - Deployment of Sediment Control Practices (including stabilized cons
   - Deployment of Construction Site Management Practices (including concrete washout facilities, chemical storage, refueling locations, etc.)
   - Paving, saw-cutting, and any other pavement related operations
   - Major planned stockpiling operation
   - Time frame for other significant long-term operations or activities that may plan non-storm water discharges as dewatering, grinding, etc
   - Permanent stabilization activities for each area of the project
2. During the pre-construction meeting, the Contractor and each subcontractor shall provide, as an attachment to their signed Contractor Certification Statement, a discussion of how they will comply with the requirements of the permit in regard to the following items and provide a graphical representation showing location and type of BMPs to be used when applicable:
   - Temporary Ditch Checks - Identify what type and the source of Temporary Ditch Checks that will be installed as part of the project. The installation details will then be included with the SWPPP.
   - Vehicle Entrances and Exits - Identify type and location of stabilized construction entrances and exits to be used and how they will be maintained.
   - Material Delivery, Storage and Use - Discuss where and how materials including chemicals, concrete curing compounds, petroleum products, etc. will be stored for this project.
   - Stockpile Management - Identify the location of both on-site and off-site stockpiles. Discuss what BMPs will be used to prevent pollution of storm water from stockpiles.
   - Waste Disposal - Discuss methods of waste disposal that will be used for this project.
   - Spill Prevention and Control - Discuss steps that will be taken in the event of a material spill (chemicals, concrete curing compounds, petroleum, etc.)
   - Concrete Residuals and Washout Wastes - Discuss the location and type of concrete washout facilities to be used on this project and how they will be signed and maintained.
   - Litter Management - Discuss how litter will be maintained for this project (education of employees, number of dumpsters, frequency of dumpster pick-up, etc.).
   - Vehicle and Equipment Fueling - Identify equipment fueling locations for this project and what BMPs will be used to ensure containment and spill prevention.
   - Vehicle and Equipment Cleaning and Maintenance - Identify where equipment cleaning and maintenance locations for this project and what BMPs will be used to ensure containment and spill prevention.
   - Dewatering Activities - Identify the controls which will be used during dewatering operations to ensure sediments will not leave the construction site.
   - Polymer Flocculants and Treatment Chemicals - Identify the use and dosage of treatment chemicals and provide the Resident Engineer with Material Safety Data Sheets. Describe procedures on how the chemicals will be used and identify who will be responsible for the use and application of these chemicals. The selected individual must be trained on the established procedures.
   - Additional measures indicated in the plan.

III. Maintenance:

When requested by the Contractor, the Resident Engineer will provide general maintenance guides (e.g., IDOT Erosion and Sediment Control Field Guide) to the Contractor for the practices associated with this project. Describe how all items will be checked for structural integrity, sediment accumulation and functionality. Any damage or undermining shall be repaired immediately. Provide specifics on how repairs will be made. The following additional procedures will be used to maintain, in good and effective operating conditions, the vegetation, erosion and sediment control measures and other protective measures identified in this plan. It will be the Contractor's responsibility to attain maintenance guidelines for any manufactured BMPs which are to be installed and maintained per manufacture's specifications.

Perimeter barriers and ditch checks will have built-up sediment removed when sediment reaches 1/3 the height of the practices. Concrete truck washout locations and BMPs will be designated by the contractor. No concrete truck washouts will be allowed to occur into any storm water conveyances.

IV. Inspections:

Qualified personnel shall inspect disturbed areas of the construction site including Borrow, Waste, and Use Areas, which have not yet been finally stabilized, structural control measures, and locations where vehicles and equipment enter and exit the site using IDOT Storm Water Pollution Prevention Plan Erosion Control Inspection Report, BC 2259. Such inspections shall be conducted at least once every seven (7) calendar days and within twenty-four (24) hours of the end of a storm or by the end of the following business or work day that is 0.5 inch or greater or equivalent snowfall.

Inspections may be reduced to once per month when construction activities have ceased due to frozen conditions. Weekly inspections will recommence when construction activities are conducted, or if there is 0.5” or greater rain event, or a discharge due to snowmelt occurs.

If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the Resident Engineer shall notify the appropriate IEPA Field Operations Section office by email at: epa.swnoncomp@illinois.gov, telephone or fax within twenty-four (24) hours of the incident. The Resident Engineer shall then complete and submit an “Incidence of Non-Compliance” (ION) report for the identified violation within five (5) days of the incident. The Resident Engineer shall use forms provided by IEPA and shall include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of non-compliance shall be signed by a responsible authority in accordance with Part VI. G of the Permit ILR10.

The Incidence of Non-Compliance shall be mailed to the following address:
Illinois Environmental Protection Agency
Division of Water Pollution Control
Attn: Compliance Assurance Section
1021 North Grand East
Post Office Box 19276
Springfield, Illinois 62794-9276

V. Failure to Comply:

Failure to comply with any provisions of this Storm Water Pollution Prevention Plan will result in the implementation of a National Pollutant Discharge Elimination System/Erosion and Sediment Control Deficiency Deduction against the Contractor and/or penalties under the Permit ILR10 which could be passed on to the Contractor.

BI·STATE DEVELOPMENT

metro · GATEWAY ARCH · ST. LOUIS DOWNTOWN AIRPORT · RIVERBOATS · ST. LOUIS REGIONAL FREIGHTWAY

CONTRACTOR SAFETY ACTION PLAN

Bi-State Development Contractor Safety Program

Metro's Operation Control Center Phone Number is

314-289-6870

SCAN HERE TO REPORT HAZARD

SAFETY@METROSTLOUIS.ORG

INTRODUCTION

Bi-State Development (BSD) acknowledges that construction and other contract activity at BSD and any other facilities operated by BSD may pose risks. This safety action plan does not necessarily cover all applicable safety and health laws. Contractors must comply with applicable Federal, State, BSD, and local safety and health standards while on-site.

The contractor is liable and responsible for their employees' safety. BSD reserves the right, however, to require the contractor to cease operations if it finds that the contractor's actions expose non-contractor individuals to an unsafe circumstance, environmental requirement, or rule. BSD reserves the right, however, to require the contractor to cease operations if it finds that the contractor's actions expose non-contractor individuals to an unsafe circumstance, environmental requirement, or rule.

This Contractor Safety Action Plan is designed to assist contractors that have been selected to conduct work on or around BSD in improving safety knowledge and hazard responsibilities.

The regulatory codes or programs referenced in this document are meant solely as a guide or reference for contractors and are not intended to encompass all rules and regulations that may influence the subject matter and/or contractor.

The contractor will be responsible for verifying the regulatory accuracy of this document and communicating to its employees the environment, health, and safety information provided by BSD.

Compliance by contractors and/or their representatives during BSD work is mandatory.

PURPOSE

The objective of BSD's Contractor Safety Action Plan (SAP) is to facilitate and organize employer and employee activities in the event of a workplace emergency and to be prepared for such an occurrence. There will be fewer and less severe employee injuries and less equipment damage as a result of well-developed strategies and adequate employee training that helps workers understand their roles and responsibilities. To be permitted to work on Metro's land, you must develop a complete SAP that addresses site-specific challenges. It includes a review of the workplace and a description of how personnel would respond to various types of emergencies, taking into account the layout, structural characteristics, emergency systems, and BSD's policies and procedures.

SAFETY MANAGEMENT SYSTEM

BSD's Safety Management System (SMS) is an umbrella system that encompasses all of BSD's Environmental, Health (Industrial Hygiene), and Safety programs. It provides a methodical approach for identifying hazards and mitigating risks while preserving confidence in the effectiveness of these risk controls. The Safety Action Plan is an element of the Safety Management System implemented by BSD.

Prior to beginning any work on BSD's property, BSD CONTRACTORS ARE REQUIRED TO COMPLETE A SAFETY ACTION PLAN.

The Completed Safety Action Plan must be available as follows:

1. Work along MetroLink Right-of-Way
   - Emailed to **rowworkpermits@metrostlouis.org** and **safety@metrostlouis.org**.
2. Work at Metro Facilities
   - Emailed to safety@metrostlouis.org
3. Provided to the BSD Project Manager.
4. Maintained with each work group on BSD's property.

GENERAL INFORMATION

Your Name:

Your Title/Position and Contact Information:

Company Name:

Company Contact Information:

Your Employee in Charge Contact Information:

Work Site Location:

Type of Work Being Performed:

Primary Metro point of contact:

General or Subcontractor:

Current copies of Safety Data Sheets (SDSs) for hazardous materials must be provided to the BSD Safety Department for approval and be maintained on-site. (email to safety@metrostlouis.org)

CONTRACTOR REQUIREMENTS

CONTRACTOR COMPLIANCE

Contractors/suppliers operating for or with BSD MUST complete a Safety Action Plan (SAP). During a given calendar year, the number of SAPs submitted by a contractor will vary dependent on criteria such as the number of work locations and the nature of the work to be undertaken. General Contractors may submit a single Safety Action Plan to include subcontractors on a project, or they may require each subcontractor to submit their own form. When relevant, the General Contractor must clearly identify on a Safety Action Plan form that subcontractors are covered.

SAFETY ACTION PLAN RETENTION & MAINTENANCE

Your company must maintain an ELECTRONIC COPY of this Safety Action Plan:

- If working along the MetroLink Right-of-Way, an electronic copy shall be emailed to rowworkpermits@metrostlouis.org and safety@metrostlouis.org.
- If working within at a BSD Facility, an electronic copy shall be emailed to safety@metrostlouis.org

Your company must maintain HARD COPY of the Safety Action Plan:

- Submit a hard-copy of your completed Safety Action Plan to your BSD Project Manager or Employee in Charge (EIC).
- Maintain a hard copy of your completed Safety Action Plan on-site with each of your work groups.

COMPANY INJURY HISTORY

Contractors must provide the “Frequency and Severity Rates” for each of the PREVIOUS THREE CALENDAR YEARS. Frequency and severity rates data is used to estimate the organizational performance on safety.

COMPANY INJURY HISTORY

Frequency Rate

Experience on BSD = # of Recordable Injuries x 200,000 divided by the # of Actual Hours Worked for BSD.

Severity Rate

Severity Rate = # of Lost Days x 200,000 divided by the Actual Hours Worked for BSD.

Year	*Frequency/Incident Rate*	*Severity/Lost Workday Rate*
2021	_____	_____
2020	_____	_____
2019	_____	_____

CORRECTIVE ACTIONS FOR PAST INJURY EXPERIENCE

Please include this document as an addendum to the Safety Action Plan. BSD's top focus is the safe operation and prevention of mishaps and injuries. Feedback from previous Contractor experiences is important, and Contractors must have a framework in place to identify lessons learned and adopt effective preventative measures.

EMERGENCY PREPAREDNESS

ON SITE EMERGENCY INFORMATION

Work groups must have written emergency preparedness information on hand at the job site.

- Work groups working on a project(s) at a fixed work location must fill out the information below for the fixed location.
- Work groups that will be moving around during the course of a project must update this information as needed and keep it on file with each work group.

OPERATIONS CONTROL CENTER 314-289-6870

Emergency Preparedness Plans

Emergency preparedness plans must be developed by the contractor and communicated to the contractor's/subcontractor's employees. In some cases, contractors may need to interface with Metro's Property. The Project Manager or EICs shall obtain specific addresses, the names of local fire, medical and police agencies.

The following information must be communicated during job briefings and in conjunction with Metro's Toolbox Talk Program

Project/Work Location
Contact Information:
Who is CPR Qualified?
Who is First Aid Qualified?
Medical Phone Number:
Estimated Medical Response Time:
Who is Responsible for Making the Emergency Call? (Include Contact Information)
Provide Written Directions to Job Site (Latitude/Longitude Recommended)
Who is Assigned to Meet Emergency Personnel? (Include Contact Information)

PLAN ELEMENTS

SAFETY ACTION PLAN AFFIRMATION

The below statements in each row SHALL BE CHECKED and implemented within your safety plan; by selecting the Program In Place option you affirm that the training will be accomplished prior to the start of work. If these elements do not apply, please select the OPT Out option.

This Safety Action Plan will not be accepted unless each element is checked.

Program in Place	Safety Program Element	Regulatory Reference	Opt Out
☐	Asbestos	OSHA 1910.1001 & 1926.1101	☐
☐	Arc Flash/Electrical Worker	NFPA 70E & OSHA SUBPART S	☐
☐	Confined Space Entry	OSHA 1910.146	☐
☐	DOT Training	DOT – 390-399	☐
☐	Hazardous Waste	OSHA 1910.120	☐
☐	Excavation (Trenching & Shoring)	OSHA 1926.650-652	☐
☐	Fall Protection/Bridge Worker Safety	OSHA 1926.500-503 & 1926.760	☐
☐	Metro's Track Access Safety Training Safety	TIER 1, 2, 3 (AS NEEDED)	☐
☐	Hazard Communication	OSHA 1910.1200	☐
☐	Hearing Conservation	OSHA 1910.95	☐
☐	Lead Safety	OSHA 1910.1025	☐
☐	Lockout/Tagout (Hazardous Energy Control)	OSHA 1910.147	☐
☐	Radiation Safety	OSHA 1910.97 & 1910.1096	☐
☐	Respiratory Protection	OSHA 1910.134	☐
☐	Personal Protective Equipment	OSHA 1910.132, .133, .135, .136, .137, .138;	☐

EMPLOYEE TRAINING

TRAINING PROGRAMS & REGULATORY COMPLIANCE

This program & training summary shall cover/support the provisions of potential work that your company has contracted to perform for Metro or its General Contractor(s), including Competent or Qualified Worker training.

- Your company is responsible for this determination in compliance with your Metro contract.
- Safety Training shall be conducted by/through the Contractor's Company.
- Employee non-compliance shall result in their removal from Metro property.
- Copies of training programs do not need to be provided to Metro.
- Metro does not conduct safety training for personnel other than Metro employees with exception to Track Access Safety Training.

Safety Programs	N/A	Training Completed
Asbestos	☐	☐
Arc Flash/Electrical Worker	☐	☐
Confined Space	☐	☐
DOT Training	☐	☐
Environmental/Hazardous Worker	☐	☐
Excavation (Trenching/Shoring)	☐	☐
Fall Protection	☐	☐
Metro's Track Access Training	☐	☐
Hazard Communications	☐	☐
Hearing Conservation	☐	☐
Lockout/Tagout	☐	☐
Lead Safety	☐	☐
Respiratory Protection	☐	☐
Personal Protective Equipment	☐	☐

PERSONAL PROTECTIVE EQUIPMENT (PPE)

PPE COMPLIANCE

Your Company's contract may require a variety of work and tasks in different environments. Contract employers must ensure that all employees have the proper PPE to use for the tasks that they will or may be involved in on Metro property. PPE Compliance is strictly enforced per Metro's Safety Rules.

Safety Boots

Safety boots must meet the following criteria:

- Leather or leather-like upper.
- Sturdy no-leather sole that will resist puncture.
- Above ankle (5-inch height as measured from inside boot).
- Minimum ASTM F2412-05, ASTM F2413-5 impact and compression class toe.
- Lace-up

Anti-Slip Winter Footwear

Employees will wear anti-slip winter footwear when working in icy and or snowy conditions.

All employees must have appropriate PPE to perform the tasks that are contracted for; including:

- Safety Eyewear and Face Protection
- Safety-Toed Boots/Anti-Slip Footwear
- Hard Hat
- Hearing Protection (If Needed)
- Gloves/Hand protection
- High-Visibility, ANSI Class II vest
- Other specialty PPE as identified/required by Metro Safety Rules for task at hand

JOB SAFETY BRIEFINGS

The Contract employer must ensure their employees receive Job Safety Briefings at the start of each work shift and as needed during the course of the day; e.g. personnel changes, weather changes, and/or changes in assignments.

- Job Safety Briefings will include Emergency Preparedness Information and summarize the findings of Risk Assessment activities.
- In addition to critical safety and response preparation, BSD Job Safety Briefings provide information on potential exposures in the work environment, discussion about the best ways to minimize risk to exposure, and potential cues to pause the work.
- Contractors may reference Metro's Toolbox Talk Discussion forms if needed. Contact Safety@metrostlouis.org for more information.

To hold an effective Job Safety Briefing, follow these steps:

Lead Name:
Today's Date:
Location of Job:
Track # (If Applicable):
Start Date:
Length of Job:
Weather Forecast:
# of Employees Onsite:

Record of those Attending:

Name (Please Print):	Signature:
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8	
9.	
10.	

FIRE PREVENTION

Hot Work

Hot work can be defined as cutting and welding operations for construction/demolition activities that involve the use of portable gas or arc welding equipment, or involve soldering, grinding, or any other similar activities producing a spark, flame, or heat.

Will "Hot Work" activities be performed on Metro property?

YES ☐ NO ☐

Fire Prevention Affirmation

If "YES" then all of the following items must be implemented:

1. Risk Assessment activities and Job Safety Briefings will identify procedures/strategies, and equipment available for fire prevention and suppression, as well as, locations where suppression equipment will be staged.
2. In right-of-way areas, the local fire agency is contacted to check for hot work bans or restrictions, and determine ability of local agency to provide emergency assistance.
3. All right-of-way fires are to be reported to Metro's Operation Control Center and responsible Metro Project Manager/EIC.
4. List fire prevention and suppression equipment on-site and minimum fire watch of 60 minutes.

ON TRACK SAFETY

Will any contractors performing Roadway Worker duties be within 20' of track centerline of Metro's tracks? Roadway Worker duties include inspection, construction, maintenance or repair of track, bridges, roadway, signal and communication systems, traction power systems, roadway facilities or roadway maintenance machinery on or near track or with the potential of fouling a track, and other personnel directly involved with their protection?

YES ☐ NO ☐

ON TRACK SAFETY CONT.

Track Safety Affirmation

If "YES" then all of the following items must be implemented:

1. The contract employer is responsible for scheduling Track Access training for all its employees working within Metro's Operating Right-of-Way.
2. Each contract employee must be able to provide training documentation upon request.
3. Each contract Roadway Worker In-Charge must maintain a current copy of this Safety Action Plan and have it readily accessible.
4. A detailed work plan shall be submitted to Metro to describe equipment listing, and equipment staging.
5. A Right of Way Work Permit shall be completed and emailed to **rowworkpermits@metrostlouis.org.**

Configuration Changes

Configuration management is defined as identification and documentation of the functional and physical characteristics of facilities, systems, equipment and vehicles including the control of changes to these elements. Required configuration information is maintained and tracked by documenting test/modified equipment.

Will the work being performed change the configuration of Metro's property? YES ☐ NO ☐

If "YES" then all of the following items must be implemented:

1. The contract employer is responsible submitting detailed attachments to support this document describing proposed configuration change as well as the impact to Metro the configuration change will incur.

ON TRACK SAFETY CONT.

The following checklist shall be completed prior to entering Metro's Operating Right-of-Way and prior to the start of any work.

	YES	NO
Are all employees current on track access certification?	☐	☐
Have all employees reviewed the daily operating clearance and understand the scope of work?	☐	☐
Do all employees know which track or tracks the restriction(s) is in effect for?	☐	☐
Do all employees know where the approved "clear to" location is to allow for safe passage of trains?	☐	☐
Do all employees know maximum authorized speed of trains for each track including the track with the restriction in effect?	☐	☐
Do all employees understand the communication protocols?	☐	☐
Do all employees know how the railroad flagger will warn workers of an approaching train?	☐	☐
Do all employees have the correct PPE and equipment to perform their jobs safely?	☐	☐
If Track Cars are utilized, visually verify all locking pins are secured.	☐	☐

If the answer is NO to any of these questions, NO WORK CAN BEGIN.

HAZARD REPORTING

Metro's Safety Management System Training Card

Upon request, Metro can provide contractor's with Safety Management System Cards that summarize options to report a Hazard or Safety Concern to Metro.

SAFETY MANAGEMENT SYSTEM (SMS)

WHAT IS MY ROLE IN OUR SMS?

- Work safely/ Wear PPE
- Be compliant with procedures and regulations
- Report safety hazards, concerns, or suggestions

WHAT CAN I REPORT?

- Hazards/potential hazards
- Safety issues and concerns
- Accidents/incidents
- Possible solutions and safety improvements
- Close calls/near misses

Call the Public Safety Hotline at
314-982-6873
or email Safety@metrostlouis.org

UNACCEPTABLE WORKPLACE BEHAVIORS

- Will full safety violations
- Reckless and neglectful acts
- Criminal activities
- Alcohol or drug use

SAFETY REPORTING OPTIONS

- Notify your Lead/Supervisor or local Safety Representative
- Call the Public Safety Hotline
- Email Safety@metrostlouis.org
- Report safety hazards, concerns, or suggestions
- OR use the QR code below.

PERSONAL SAFETY ACCOUNTABILITIES:

- I am accountable for my own safety & the safety of those around me
- I follow procedures, wear PPE, and promptly report safety hazards
- I report injuries and damages
- Be safe at work and at home

SCAN HERE TO REPORT HAZARD

SAFETY SUPPORT

Other Safety Support and Affirmation

The categories below will further identify Metro support required and ensure a comprehensive understanding of the work request.

Excavation Operation?	YES ☐	NO ☐	Water required?	YES ☐	NO ☐
PileDriving Operation?	YES ☐	NO ☐	Metro Equipment Required?	YES ☐	NO ☐
Saw Cutting Operation?	YES ☐	NO ☐	Within 10ft. of Catenary?	YES ☐	NO ☐
Welding or Grinding Operation?	YES ☐	NO ☐	Passengers/Public be Impacted?	YES ☐	NO ☐
Workers at elevated heights?	YES ☐	NO ☐	Self Flagging or Metro Flagger?	YES ☐	NO ☐
Chemicals used?	YES ☐	NO ☐	Metro Systems Require Powerdown?	YES ☐	NO ☐

If "YES" then all of the following items must be added in a separate attachment to this plan:

1. Describe controls.
2. Submit a detailed work plan.
3. Describe Metro support needed.
4. Subit chemical Safety Data Sheets.

The following section serves as your company's Compliance Affirmation to this document:

Name _____

Title _____

Date _____

TECHNICAL SPECIFICATIONS

DESIGN PROFESSIONALS OF RECORD

1. Civil
   a) Tammy Marie Scherrer
      IL PE # 062.073934
   b) WSP USA Inc.
      License # 184000414-0006
      Expires 04/30/2023
   c) Responsible for:
      - JSP-1 Construction Layout

DocuSigned by:
Tammy Scherrer
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12/12/2022

Expires: 11-30-2023

2. Civil - Utilities
   a) Shelley L. Dintelman
      IL PE # 062.055901
   b) EFK Moen LLC
      License # 184002293-0014
      Expires 04/30/2023
   c) Responsible for:
      - JSP-6 Septic Tank and Seepage Field

DocuSigned by:
Shelley L. Dintelman
DB28AB1928640D...
12/12/2022

Expires: 11-30-2023

3. Erosion Control
   a) Francis B Nelson III
      IL PE # 062.059187
   b) Quigg Engineering Inc.
      License # 184004721-0014
      Expires 04/30/2023
   c) Responsible for:
      - JSP-2 IDNR-OWR Floodway and Stream Statewide Permit
      - JSP-3 Seeding Mixes
      - JSP-5 Monarch Butterfly Habitat Seeding

DocuSigned by:
Francis B. Nelson III
11AC3602A5B0432...
12/12/2022

Expires: 11-30-2023

4. Geotechnical
   a) Jacob A. Schaeffer
      IL PE # 062.068397
   b) Millennia Professional Services of Illinois, LTD
      License # 184004070-0010
      Expires 04/30/2023
   c) Responsible for:
      - JSP-4 Settlement Monitoring Areas

DocuSigned by:
Jacob A. Schaeffer
ED49FABB6757488...
12/12/2022

Expires: 11-30-2023

5. Structures
   a) Patrick Laux
      IL SE # 081.007655
   b) WSP USA Inc.
      License # 184000414-0006
      Expires 04/30/2023
   c) Responsible for:
      - 503 Deck Drains
      - 504 Precast Concrete Deck Panels
      - 505 Pedestrian Truss Superstructure
      - 505 Bridge Walkway Grating
      - 521 Elastomeric Bearing Assembly
      - 580 Membrane Waterproofing Systems for LRT Bridge Decks

DocuSigned by:
Patrick J. Laux
690686557B7904DA...
12/12/2022

Expires: 11-30-2024

6. Systems
   a) Andrew Schultz
      IL PE # 062.074471
   b) Rani Engineering, LLC
      License # Pending
      Expires
   c) Responsible for:
      - 34 42 37 Signals and Communications Conduits
      - 34 42 38 Signals and Communications Underground Ductbanks
      - 34 42 39 Signals and Communications Pull Boxes and Manholes
      - 34 42 40 Cable Troughs

DocuSigned by:
Andrew W. Schultz
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12/12/2022

Expires: 11-30-2023

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 DESCRIPTION

A. This Section covers the requirements for placing, curing, protecting and finishing, cast-in-place concrete.

1.02 RELATED SECTIONS

A. Section 01 33 01 - Submittal Procedures

B. Section 01 33 23 - Shop Drawings, Product Data, and Samples

C. Section 01 45 16 - Field Quality Control Procedures

D. Section 03 10 00 - Concrete Forming and Accessories

E. Section 03 20 00 - Concrete Reinforcing

F. Section 03 39 00 - Concrete Curing

1.03 QUALITY CONTROL

A. Refer to Section 01 45 16, Field Quality Control Procedures, for general requirements and procedures.

B. Perform Work in accordance with ACI 301.

C. Maintain one copy of each required record on site.

D. Acquire cement and aggregate from same source for all Work.

E. Conform to ACI 305R when concreting during hot weather.

F. Conform to ACI 306R when concreting during cold weather.

1.04 SUBMITTALS

A. Refer to Section 01 33 01, Submittal Procedures, and Section 01 33 23, Shop Drawings, Product Data, and Samples.

1.05 STANDARDS

A. American Concrete Institute (ACI)

117	Standard Tolerances for Concrete Construction and Materials and Commentary
301	Specification for Structural Concrete
304R	Guide for Measuring, Mixing, Transporting and Placing Concrete
304.2R	Placing Concrete by Pumping Methods
305R	Hot Weather Concreting
306R	Cold Weather Concreting
308R	Guide to External Curing of Concrete
309R	Guide to Consolidation of Concrete
318	Building Code Requirements for Structural Concrete & Commentary & the PCA Notes

B. American Society for Testing and Materials (ASTM)

C150	Standard Specification for Portland Cement
C171	Standard Specification for Sheet Materials for Curing Concrete
C309	Standard Specification for Liquid Membrane-Forming Compound for Curing Concrete
C618	Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
D994	Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type)
D1751	Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)

C. American Association of State and Highway Transportation Officials(AASHTO)

M182	Burlap Cloth made from Jute or Kenaf & Cotton Mats

D. Federal, State and Local Jurisdictions

Illinois Department of Transportation - Standard Specifications for Road and Bridge Construction - adopted January 1, 2022

1.06 JOBSITE CONDITIONS

A. Notify the CM at least 24 hours prior to actual placement of concrete.

B. Whenever possible, place concrete during normal working hours. When concrete placement schedules require concrete placement at times other than the normal working hours, notify the CM of the special conditions at least 48 hours in advance of placement.

C. Do not place concrete until inspected and accepted by the CM.

PART 2 PRODUCTS

2.01 CONCRETE MATERIALS

A. Cement: ASTM C150, Type I - Normal or Type II - Moderate, Sulfate Resistance, Portland Type, as specified in Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction," adopted January 1, 2022, Section 1020.

B. Fine and Coarse Aggregates: As specified in Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction," adopted January 1, 2022, Sections 1003 and 1004.

C. Water: Clean and not detrimental to concrete, as specified in Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction," adopted January 1, 2022, Section 1002.

D. Concrete materials and mix proportions for structures and ductbanks to be in accordance with Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction," adopted January 1, 2022.

E. Pozzolanic Admixtures: Pozzolanic admixtures to be fly ash or raw or calcined material pozzolans meeting the requirements of ASTM C 618 Class C or Class F with these exceptions:

a. Loss of Ignition - the maximum to be less than 3%

b. Carbon Content - the maximum to be 3% by weight

c. Fineness - the maximum retained on a No. 325 Sieve to be 25%

d. Although it is not mandatory to use fly ash concrete on the project, the Contractor may substitute up to 10% fly ash by weight for cement. The fly ash to be included in the mix design and compatible with the admixtures used to meet stated requirements.

F. The use of any material added to the concrete mix to be approved by the CM. Contractor to submit certificates indicating that the material to be furnished meets all of the requirements indicated. In addition, the CM may require the Contractor to submit complete test data from an approved laboratory showing that the material to be furnished meets all of the requirements of the cited specifications.

G. Reinforcing Steel: Section 03 20 00, Concrete Reinforcing.

H. Liquid Membrane-Forming Curing Compound: ASTM C309, Type I-D, clear or translucent with fugitive dye, or Type 2, white pigmented.

I. Waterproof Curing Sheet: ASTM C171, waterproof paper or polyethylene film.

J. Burlap Sheet: AASHTO M182, Class 3 or 4.

K. Expansion Joint Materials

1. Pre-formed Expansion Joint Filler

a. Non-extruding and resilient bituminous types: ASTM D1751.

b. Plain bituminous type: ASTM D994.

L. Vapor Barrier: Polyethylene sheet, 0.01 inch thick, FS L-P-512, Type I, Class H, Grade 5 or FS L-P-00524.

2.02 CONCRETE MIX

A. Mix and deliver concrete in accordance with Section 503 of the Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction," adopted January 1, 2022.

B. Select proportions for normal weight concrete in accordance with the Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction," adopted January 1, 2022.

C. All cast-in-place concrete to meet the following criteria.

1. Minimum Compressive Strength (28 days): 4000 psi

2. Slump: 3 to 4 inches

3. Maximum Gallons of Mixing Water per Sack of Cement: 5.0 gal/sack

4. Air entrainment - 5½ percent with a tolerance of 1½ percent

D. Use accelerating admixtures in cold weather only when approved by CM. Use of admixtures will not relax cold weather placement requirements.

E. Use of calcium chloride is not permitted.

F. Use set retarding admixtures during hot weather only when approved by CM.

G. Air entrained concrete and air entraining agents to be as specified in Section 503 of the Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction," adopted January 1, 2022.

H. Concrete for ductbanks and structures to be in accordance with the Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction," adopted January 1, 2022.

PART 3 EXECUTION

3.01 FIELD QUALITY CONTROL

A. Inspect forms, earth bearing surfaces, reinforcement, and embedded items.

B. Obtain CM's approval before placing concrete.

3.02 TRANSPORTATION AND PLACEMENT OF CONCRETE

A. Transporting. Transport concrete to the job site in revolving drum truck mixers in a manner that will assure efficient delivery of concrete to the point of placement without adversely altering the specified properties with regard to water-cement ratio, slump, homogeneity, and air containment.

B. Discharging

1. Discharge concrete into the forms within not more than 1-1/2 hours after the cement has entered the mixing drums. Do not add retempering water at the job site, nor exceed the specified maximum water content.

2. Concrete conveying equipment to have capacity to provide a placement rate which will preclude cold joints and deposit the concrete without segregation or loss of ingredients.

3. Placing concrete by pumping methods to conform to the applicable requirements of ACI 304R, Chapter 9, and ACI 304.2R.

C. Placing

1. Concrete placement, once started, to be carried on as a continuous operation until the section of approved size and shape is completed.

2. Deposit concrete at or near its final position in the formwork, in a manner that will preserve the desired properties of the water-cement ratio, slump, air content and homogeneity.

3. Do not allow concrete to fall freely in the forms for a distance exceeding three feet. Do not move concrete horizontally more than five feet from the point of discharge. Space points of deposit not more than 10 feet apart.

4. Exercise care to avoid splashing the forms and reinforcing above the level of the concrete as placed. Regulate the placing of concrete so that the pressure caused by wet concrete will not cause distortion, leakage or movement in the forms.

5. All methods of placing concrete to be subject to acceptance by the CM.

D. Consolidation

1. Unless otherwise directed, consolidate all concrete by use of approved mechanical vibrators operated within the mass of concrete. Conform to the procedures set forth in ACI 309.

2. Conduct vibration in a systematic manner by competent, experienced workmen, with regularly maintained vibrators, and with required back-up units at the job site. Use the largest and most powerful vibrator that can effectively be operated in the given work, with a minimum frequency of 8000 vibrations per minute, and of required amplitude to effectively consolidate the concrete.

3. Insert and withdraw the vibrator vertically at uniform spacing over the entire area of the placement. Space the distance between insertions such that “spheres of influence” of each insertion overlap.

3.03 CURING AND PROTECTION

A. General

1. Beginning immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury. Maintain concrete with minimal moisture loss at a relatively constant temperature for the specified curing time. Materials and methods of curing is subject to acceptance by the CM.

2. Comply with the curing procedures set forth in ACI 301, and the applicable portions of ACI 308.

3. Comply with the special curing conditions for hot and cold weather concreting.

4. CM will have final determination as to the adequacy of curing methods employed during the course of work.

B. Duration of Curing and Protection. Continuously cure concrete for a period of not less than five days after placing. In every instance, curing procedures are subject to the approval of the CM.

C. Protection from Mechanical Injury. During the curing period, protect the concrete from damaging mechanical disturbances, such as load stresses, heavy shock, and excessive vibration. Protect all finished concrete surfaces from damage by construction equipment, materials or methods, application of curing procedures and rain or running water.

D. Protection from De-icing Agents. Do not apply de-icing chemicals to any concrete that has not attained the desired maturity

3.04 HOT WEATHER CONCRETING

A. General

1. When mixing, transporting, placing, finishing and curing concrete in hot weather, comply with ACI 305R and the directions of the CM.

2. Definition. For the purpose of this Contract Document, “hot weather” is defined as any combination of high air temperature, low relative humidity and high wind velocity tending to impair the quality of fresh or hardened concrete or otherwise resulting in abnormal properties.

B. Production and Delivery

1. Mixing. Hold mix time to the minimum, which will insure required concrete quality and uniformity. Mixing time not to exceed one and one-half hours, measured from the time of completion of batching to final placement in the forms.

2. Delivery. Minimize the period between mixing and delivery. Give special attention to the coordination of dispatching trucks from the plant with the rate of placement in the field to avoid prolonged waiting periods. On all delivery slips, indicate batching and depositing times.

3. Retempering. Upon arrival at the job site, the addition of mix water other than that required to adjust the mix to the specified slump, within the limits of the specified maximum water-cement ratio, will not be allowed. Accurately and clearly indicate on the delivery slip all mix water added at the job site.

4. Temperature of Concrete as Placed. When concrete temperatures are expected to exceed 70°F, take appropriate safeguards. In any event, do not allow concrete temperature to exceed 90°F. Submit special procedures required to maintain concrete within the 90°F limit to the CM for review and acceptance.

C. Placement and Precautions

1. Preparation and Precautions

a. For concrete placed in contact with the ground, thoroughly dampen the subgrade, avoiding freestanding water and soft spots.

b. During hot weather conditions as defined herein, and as directed by the CM, keep all new concrete shaded from the sun, shielded from the wind, and kept moist or protected by other approved methods to retain the moisture in the concrete throughout the initial and specified curing period.

c. Equip the job with ample water supply, fog nozzles, and other equipment and apparatus required to provide specified conditions for properly curing the concrete.

2. Placing and Curing

a. Place all concrete promptly upon arrival at the job site, and immediately vibrate after placement. Protect unformed surfaces from excessive drying during finishing operations, and perform each operation without delay as soon as the concrete is ready for it. Conduct curing in such a manner that at no time during the prescribed period will the concrete lack ample moisture and temperature control. Protect all exposed concrete surfaces from drying, even intermittently, by water spray where possible. Where initial water curing is not possible due to finishing requirements, use an approved, white-pigmented, spray-curing

compound, evenly applied to prevent dry spots. The use of curing compounds are regarded as temporary curing only, not to replace water curing for the remainder of the specified curing period.

b. Formwork in itself will not be acceptable as satisfactory curing in hot weather. Cover and keep the formwork moist. As soon as forms can be loosened without damage to the concrete, run curing water down inside them. Keep exposed formed surfaces immediately and continuously moist.

3.05 COLD-WEATHER CONCRETING

A. General

1. When mixing, transporting, placing, finishing and curing concrete in cold weather, conform to ACI Standard 306R and the direction of the CM.

2. Definition. For the purpose of this Contract Document, “cold-weather” is defined as any combination of low air temperature and high wind velocity which may result in damage to freshly placed concrete from freezing and thawing at an early age. Concrete mixed or placed when air temperature is below, or expected to fall below 40°F for more than one consecutive day will be considered cold weather concrete, and will require special treatment.

B. Concrete Temperature

1. Maintain the concrete temperature, as placed, to assure freedom from frost damage until protection can be established, and to offset heat loss in the interval between mixing and placing. Do not allow the temperature of the concrete to be less than 50°F or more than 90°F at the time of placement.

2. When the atmospheric temperature is below 35°F or when the temperature may be expected to drop below 30°F within 24 hours, do not place concrete without written permission from the CM. Heat mix water or aggregates, or both, when required to maintain specified concrete temperature, by approved methods which will preclude the occurrence of appreciable fluctuations in concrete temperature from batch to batch, or flash set in the cements.

3. Do not heat aggregates higher than 212°F, or water higher than 140°F. Add heated materials to the batch prior to the introduction of Portland cement. Do not use concrete materials containing ice or frozen lumps. Do not use calcium chloride or other “anti-freeze” compounds.

C. Preparation and Curing

1. Do not place concrete until satisfactory arrangements for covering, insulating or housing of newly placed concrete are made in advance of placement and approved by the CM. Select a method of protection, which conforms to Chapter 7 of ACI 306R, and is satisfactory to maintain, in all parts of the concrete, the temperature and moisture conditions recommended for winter curing procedures as herein specified. Curing conditions, in addition to providing required temperature control as specified, to include procedures to prevent undesirable drying of the fresh concrete. When dry heating is used, cover the concrete with an approved impervious material, or curing compound, or water cure the concrete.

2. Maintain a minimum internal concrete temperature of at least 50°F during the specified curing period. Maintain the following curing schedules:

    a. Maintain temperature of the concrete above 70°F for the first three days, or above 50°F for the first five days, after the concrete is in place.

    b. When high early strength cement concrete is used, maintain the concrete at a minimum of 70°F for first two days, or 50°F for four days, after the concrete is in place.

    c. In any case, the periods specified above are minimum requirements, and extensions of the periods will be required when necessary to develop satisfactory strength in the concrete. Should Contractor wish to secure permission to use other methods than those specified herein, submit such request in writing to CM including verification and satisfactory evidence of adequacy of intended methods. In any case, only approved methods of protection and curing will be allowed.

D. Temperature Records. Provide, install and maintain necessary and effective temperature recording devices, as directed by the CM. Record maximum and minimum temperature readings in each 24-hour period. Include a copy of the temperature readings in the permanent records of the job. The CM will keep a record of the date, time, outside air temperature, temperature of concrete as placed, and the temperature history of each part of the concrete during the specified curing period.

3.06 REPAIR OF SURFACE DEFECTS

A. Immediately after form removal, repair all surface defects. Surface defects include tie holes, air voids, bug holes with a nominal diameter or depth generally greater than ¼ inch, honeycombed areas, visible construction joints, fins and burrs, and other defects. All concrete repair work to result in a concrete surface of uniform color and texture, and be free of all irregularities.

B. After being cleaned and thoroughly dampened, fill the tie holes solid with patching mortar.

C. The CM will make the final determination as to the acceptability of concrete finishes and repair of surface defects.

3.07 FINISHING OF SLABS

A. Troweled Finish. First float-finish the surface, then power-trowel, and finally hand trowel. With the first troweling after power floating, produce a smooth surface which is relatively free of defects but which may still show some trowel marks. Perform additional troweling by hand after the surface has hardened to required hardness. Perform the final troweling when a ringing sound is produced as the trowel is moved over the surface.

B. When type of finish is not indicated in the Contract Documents, provide a trowel finish.

3.08 JOINTS AND EMBEDDED ITEMS

A. Construction Joints

1. Make construction joints straight and as inconspicuous as possible, and in exact vertical and horizontal alignment with the structure, as the case may be.

2. Thoroughly clean the surface of the concrete at construction joints and remove fabricate prior to placing adjoining concrete. As an allowance for shrinkage, do not place concrete against the hardened side of a construction joint for a least 12 hours. Where bonding is required, use only approved materials.

3. Reinforcement to be continuous across construction joints. Provide keys and inclined dowels as indicated in the Contract Documents and as directed.

4. Place waterstops in construction joints as indicated in the Contract Documents and as directed by the CM.

5. Locate and make construction joints not indicated so as not to impair the strength of the structure. Obtain acceptance in writing by the CM.

B. Expansion and Contraction Joints

1. Construct joints as indicated in the Contract Documents. Carefully inspect joints to assure that they are free of concrete, mortar or other debris. The outer edges of the joint to be straight, parallel and satisfactory in appearance.

2. Do not permit reinforcement and other embedded metal items bonded in the concrete to extend continuously through any joint, unless expressly permitted by the CM.

3. Place and inspect waterstops prior to concrete placement. Use premolded waterstop materials of the maximum length practicable in order to reduce the number of end joints.

C. Embedded Items

1. Clean items to be embedded in concrete, free from oil or foreign matter that would weaken the bond of the concrete to these items.

2. Install in the formwork requisite inserts, anchors, sleeves, and other items specified under other sections of these Contract Documents. Close ends of conduits, piping and sleeves embedded in concrete with caps or plugs.

3. Before depositing concrete check the location and support of piping, electrical conduits, and other items, which are to be wholly or partially embedded.

END OF SECTION 03 30 00

SECTION 03 39 00

CONCRETE CURING

PART 1 GENERAL

1.01 DESCRIPTION

A. This Section covers requirements for initial and final curing of horizontal and vertical concrete surfaces.

1.02 RELATED SECTIONS

A. Section 01 33 01 - Submittal Procedures

B. Section 01 33 23 - Shop Drawings, Product Data, and Samples

C. Section 01 45 16 - Field Quality Control Procedures

D. Section 03 30 00 - Cast-in-Place Concrete

1.03 SUBMITTALS

A. Refer to Section 01 33 01, Submittal Procedures and, Section 01 33 23, Shop Drawings, Product Data, and Samples.

B. Product Data. Provide data on curing compounds, product characteristics, compatibility, and limitations.

C. Manufacturers' Installation Instructions. Indicated criteria for preparation and application.

1.04 STANDARDS

A. American Concrete Institute (ACI)

301	Structural Concrete
302.1R	Concrete Floor and Slab Construction
308R	Guide to External Curing of Concrete

B. American Society for Testing and Materials (ASTM)

C171	Sheet Materials for Curing Concrete

C309 Liquid Membrane-Forming Compounds for Curing Concrete

D2103 Polyethylene Film and Sheeting

1.05 QUALITY CONTROL

A. Refer to 01 45 16, Field Quality Control Procedures for general requirements and procedures.

B. Perform Work in accordance with ACI 301 and ACI 302.

C. Maintain one copy of documents on site.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver curing materials in manufacturer's packaging including application instructions.

PART 2 PRODUCTS

2.01 MATERIALS

A. Membrane Curing Compound - Federal Spec TTC-800A Type 1, Class A Acrylic type, clear without fugitive dye, for use on walls. White Pigment Membrane Compound - ASTM C309 Type 1, Class A Acrylic type, for use on slab on grade.

B. Absorptive Mats Type B. ASTM C171, cotton fabric bonded to prevent separation during handling and placing.

C. Water. Potable and not detrimental to concrete as specified in the Illinois Department of Transportation "Standard Specifications for Road and Bridge Construction," adopted January 1, 2022.

D. Polyethylene film thickness to be a minimum of 6 mil with sheet size to be at the discretion of the Contractor.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to be cured.

3.02 EXECUTION - HORIZTONAL SURFACES

A. Cure slab on grade surfaces in accordance with ACI 308.

B. Absorptive Mat. Spread cotton fabric over floor slab areas. Spray with water until mats are saturated, and maintain in saturated condition for 7 days. Use in accordance with ASTM C171.

C. Polythylene Film. Spread polyethylene film over floor slab areas, lapping edges and sides and sealing with pressure sensitive tape, cover with plywood, maintain in place for 7 days. Use in accordance with ASTM D2103.

D. White pigmented membrane curing compound to be sprayed on and applied in accordance with ASTM C309. Surfaces to be damp or waterproofed are not be cured with membrane.

3.03 EXECUTION - VERTICAL SURFACES

A. Cure surfaces in accordance with ACI 308.

B. Spraying. Spray water over surfaces and maintain wet for 7 days.

C. Use of clear membrane curing compound to be sprayed on and applied in accordance with ASTM C309.

END OF SECTION 03 39 00

SECTION 34 21 08

EARTHWORK

PART 1 GENERAL

1.01 DESCRIPTION

A. This Section covers requirements for earthwork including excavation, disposal of excess material, placement of compacted backfill, and clean-up.

1.02 RELATED SECTIONS

A. Section 01 33 01 - Submittal Procedures

B. Section 01 33 23 - Shop Drawings, Product Data, and Samples

C. Section 01 45 16 - Field Quality Control Procedures

D. Section 01 45 29 - Testing Laboratory Services

1.03 QUALITY CONTROL

A. Refer to Section 01 45 16, Field Quality Control Procedures, and Section 01 45 29, Testing Laboratory Services, for general requirements and procedures.

B. Testing of materials will be performed by the Contractor. The Contractor shall engage the services of an independent materials testing laboratory to perform all sampling and testing needed to complete the Earthwork. Cost to be borne by Contractor.

C. In the event of a dispute regarding test results, the CM may engage the services of an independent materials testing laboratory to perform verification of field testing. Cost to be borne by Contractor.

D. Approval of materials will be by the CM based on test results provided by the Contractor's independent materials testing laboratory. Allow a minimum of 10 days for notification and approval.

1.04 SUBMITTALS

A. Refer to Section 01 33 01, Submittal Procedures, and Section 01 33 23, Shop Drawings, Product Data, and Samples.

B. Obtain all permits and releases required for disposal of material. Submit copies of the permits and releases to the CM.

C. Before the delivery of any material to be used in the Work is made, advise the CM of the material source, furnish samples for testing purposes, and obtain the CM's approval of that particular source and material.

1.05 STANDARDS

A. American Association of State and Highway Transportation Officials (AASHTO)

AASHTO	T 180	Moisture-Density Relationship of Soils Using a 10# Rammer and a 457-mm (18-in.) Drop
AASHTO	T 27	Sieve Analysis of Fine and Coarse Aggregates
AASHTO	T 90	Determining the Plastic Limit and Plasticity Index of Soils

B. American Society for Testing and Material (ASTM)

ASTM	C136	Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM	D 1140	Test Methods for Determining the Amount of Material Finer than 75-µm (No. 200) Sieve in Soils by Washing
ASTM	D 1241	Specification for Materials for Soil-Aggregate Subbase, Base, and Surface Courses
ASTM	D 1556	Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM	D 1557	Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbs/ft^3 or (2,700 kN-m/m^3)
ASTM	D 2216	Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock
ASTM	D 2974	Test Methods for Determining the Water (Moisture) Content, Ash Content, and Organic Material of Peat and Other Organic Soils

ASTM	D4253	Test Methods for Maximum Index Density of Soil Using a Vibratory Table
ASTM	D4254	Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density
ASTM	D4255	Standard Test Method for In-Plane Shear Properties of Polymer Matrix Composite Materials by the Rail Shear Method
ASTM	D4318	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM	D 6938	Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

PART 2 PRODUCTS

2.01 MATERIALS

A. Structural Backfill. Material approved by CM, having properties such that it may be readily spread and compacted. Material to have the following mechanical properties and gradation.

B. Structural Backfill, General Requirements. Material used for backfill to be inert, inorganic soil or soil-rock material, free from deleterious substances, and of such quality that it can be compacted as specified. Inorganic to be defined as containing less than three percent by weight of organic material when tested in accordance with ASTM D2974.

1. Material passing U.S. No. 40 Sieve

   a. Liquid Limit: 25 maximum (ASTM D4318)

   b. Plasticity Index: 6 maximum (ASTM D4318)

2. Gradation (ASTM D422):

Sieve Opening	Percent Passing, by Weight
3 inch square	100
U.S. No. 4	35 maximum

U.S. No. 30	20 maximum
U.S. No. 200	25 maximum

3. Sand Equivalent 20 minimum

C. Pervious Backfill. Clean, washed gravel or crushed stone conforming to the following requirements:

1. Gradation (ASTM C-136):

Sieve Opening	Percent Passing, by Weight
1/2 inch	100
3/8 inch	85 - 100
No. 4	60 - 100
No. 16	35- 80
No. 50	10 - 50
No. 100	0 - 8
No. 200	0-4

2. Clay Lumps: 0.25 percent maximum

3. Other Deleterious Material: 2.0 percent maximum

D. Sand Backfill. Clean, inert, hard, durable grains of quartz or other hard durable rock, free from loam, clay, surface coatings, or other deleterious materials; having not more than 10 percent passing a No. 200 sieve.

E. Impervious Backfill. Silt-clay material containing more than 35 percent by weight passing a No. 200 sieve or silty or clayey gravel and sand containing more than 20 percent by weight passing the No. 200 sieve; or peats and other highly organic soil. Impervious backfill to be reasonably free of stumps, roots, and stones larger than three inches diameter.

F. Utility Backfill. Backfill for Excavations and Trenches to be structural backfill.

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. Erosion Protection. Prevent erosion of the site at all times. Construct temporary berms and dikes and cut temporary swales to allow for natural drainage of site.

B. Use of Materials Found on the Site.

1. Use approved excavated materials for backfill. Place and compact the material in a manner conforming to the Contract Documents for the particular type of work.

2. Material that cannot be readily placed to be stockpiled at the jobsite in an area designated by the CM and used in the manner and purpose described above. Contractor is responsible for all Work necessary to stockpile and re-handle material.

3. All material unsuitable for reuse and suitable material not required for the proper completion of the Work will become the property of the Contractor and to be removed and properly disposed of away from the job site.

C. Unfavorable Weather. Do not place, spread, roll or compact fill material that is frozen or thawing, or during unfavorable weather conditions. If interrupted by heavy rain or other unfavorable conditions, do not resume until ascertaining that the moisture content and density of the previously placed soil are as specified.

D. Unauthorized Excavation. Over excavation of foundations to be filled with compacted backfill.

3.02 REMOVAL OF SUBSURFACE OBSTRUCTIONS

A. Remove subsurface structures and related obstructions to the extent indicated in the Contract Documents.

B. Promptly notify CM when any subsurface facilities are encountered during excavation. CM to be permitted free access to determine the measures deemed necessary to resolve problem.

3.03 EXCAVATION

A. General Requirements

1. Excavate to the lines and grades indicated in the Contract Documents.

2. Limits of the excavation to allow for necessary working space for installing forms and as required for safety of personnel.

3. Remove unstable bottom material. Remove large stones, debris and unsuitable soil from excavation bottoms.

4. Bottoms of excavations to be level, firm, undisturbed earth, clean and free from loose material.

5. Exercise care to preserve the material below and beyond the lines of all excavations.

6. Excavation for the convenience of the Contractor to conform to the limits acceptable to the CM.

7. Place excavated material at a distance from edge of excavation to prevent cave-ins or bank slides, but in no case closer than three feet from the edge of excavation.

8. Dewater excavations as specified in Section 34 21 11, Dewatering, construct berms.

B. Trench Excavation

1. Excavate trenches for ductbanks, utilities, and conduits by the open cut method.

2. In paved areas, saw cut pavement on the neat lines at the width indicated in the Contract Documents for the trench. After compacting the backfill, restore pavement to a condition equivalent to that existing at the start of construction. Restore pavement damaged during construction outside the neat lines.

3. Excavate trenches no wider than the width indicated in the Contract Documents. Where the width is not indicated, make the width not more than 24 inches wider than the pipe or conduit.

4. The bottoms of excavations to be firm earth, free from loose material, debris, and foreign matter. When bottoms of excavations or trenches contain unstable material, the bed to be made firm by removing the unstable material to a sound depth and replaced with approved backfill material compacted to at least 95 percent maximum dry density.

3.04 BACKFILL

A. Trench Backfill

1. Place backfill in layers not to exceed six inches of loose material and compact each layer to 95 percent maximum dry density before the next layer is placed.

2. Must be clean backfill around pipes or conduits.

3. Place backfill material in such a manner that unbalanced horizontal loads will not be applied to newly-placed utilities or pipe lines.

4. Place backfill around and to the underside of the utility in such a manner that the utility is supported uniformly throughout to the lines and grades designated or existing. Ram and tamp the backfill materials under and around utilities in a manner to provide uniform support. Do not use ponding or jetting.

5. Do not use compaction equipment and methods that produce excessive horizontal or vertical earth pressures, as determined by the CM.

6. Material for bedding of pipe to be sand. Minimum thickness of sand bedding with concrete, clay and cast-iron pipe to be 2 inches. Provide firm and uniform support of piping.

7. Backfill below the horizontal centerline of pipe to be sand. Backfill to 12 inches above the top of pipe to be utility backfill.

B. Structural Backfill

1. Use materials removed from site excavations if such material meets specified requirements.

2. Place backfill in layers not to exceed eight inches of loose material, and compact each layer to 95 percent maximum dry density before the next layer is placed.

3. Do not backfill on or against structural concrete until the specified 28-day concrete strength has been attained.

3.05 GRADING AND COMPACTING

A. Fine Grading and Compacting. Shape the subgrade to the designated cross section, and compact the top six inches to minimum 95 percent of the maximum dry density of the subgrade material. Cut down all high spots, fill depressions, and recompact until the surface is smooth and satisfactorily compacted.

B. Backfill over Original Ground. Where backfill is to be placed over original ground, compact the original ground as follows:

1. Scarify and compact the top six inches of original ground to 95 percent of maximum dry density.

C. Grading and Finishing. In areas designated for grading and finishing, rake or machine-grade the areas to remove stones over two inches and other unsatisfactory material. Fill depressions, and finish the surface within the designated tolerances. Finished slopes to be uniform in appearance.

3.06 COMPACTION

A. Compact each layer of embankment, fill and backfill material to not less than the indicated or specified compaction. Relative compaction to be determined by ASTM D1557. If the material is cohesive; or as determined by ASTM D4253, dry marked, and ASTM D4254, method A, if the material is granular.

3.07 CLEAN-UP

A. Clean-up all debris and remove and dispose of any excess construction materials.

B. Replant any vegetation disturbed by construction.

C. Remove any site litter.

D. Leave site in clean condition.

3.08 FIELD QUALITY CONTROL

A. Excavating, trenching, and backfilling to be carried out under the inspection of the CM, who will perform appropriate field and laboratory tests to evaluate the suitability of backfill material, the proper moisture content for compaction, and the degree of compaction achieved. Backfill that does not meet the specified requirements to be removed or recompacted until the requirements are satisfied.

B. Contractor to provide soil samples as requested by the CM, from locations selected by the CM.

C. Costs of all retesting of materials will be borne by the Contractor.

END OF SECTION 34 21 08