CITY OF SUPERIOR
C. Reiss Dock
RFQ #23-17-PL

ADDENDUM **#4**

DATE: April 25, 2023

TO: Prospective Applicants

Bid Opening Date: **Tuesday, May 2, 2023, at 2:00 PM**

This addendum modifies the Proposal Documents for the above listed project. The addendum consists of 91 pages.

Acknowledge receipt of the Addenda by signing the Addenda Acknowledgment form included within the proposal documents. Failure to do so may subject the Proposer to disqualification.

Clarifications and answers to questions received:

1. Q: Revision to previous response regarding the following question: "What is the dimension of the #18 tie rod anchors?"

   A: The typical dimension on the west wall from the ~~outside face of sheet pile~~ outside face of the wale to the outside face of the continuous reinforced concrete beam is approximately 49'~~-1"~~ 3". On the northern wall, the dimension varies from approximately 22'-6" to 38'-9". This dimension could vary slightly due to irregularities of the existing upland crane rail foundation alignment with respect to the proposed dock alignment. These dimensions do not include additional lengths necessary for plates, washers, nuts, and additional thread length beyond nut to achieve the loadings specified in the contract plans. Contractor shall field verify all final lengths necessary.

2. Q: The project documents state to follow Buy America and Buy American provisions. Which is to be followed? Depending on the clarification this could have a major impact on material delivery dates.

   A: "Buy America" is be followed. Any reference to "Buy American" within the Contract Documents has been removed or replaced with "Buy America".

3. Q: Will Interzone 954 be acceptable as a coating alternate? Data sheet attached.

   A: This response is pending as it is still under review, response will be provided in future addendum.

4. Q: 31 23 19.1.03.B notes a dewatering plan for any necessary dewatering of contaminated groundwater. Is it anticipated that contaminated water may be encountered below the ~2-to-3-foot top surface contamination zone that was indicated during pre-bid discussion?

   A: Based upon review of environmental investigations and borings, it is not anticipated that excavation below groundwater level will occur in potentially contaminated groundwater locations. If encountered, the Materials Management Plan dictates the necessary protocols and steps to be taken. Stantec and Geotechnical subconsultants will be on-site during construction to monitor groundwater and perform necessary testing per approved Materials Management Plan.

5. Q: Is the "Remove Accumulated Organic Material & Sediment from Existing Concrete Panels" included in the 20 Acres of "Clearing and Grubbing"? If not, can you please provide direction on which item this work should be included in?

a. What is the expectation as far as to how clean these joints must be? Will tree roots need to be completely removed?

b. It also says "Protect Existing Concrete Panels during Removal" but it appears many of the panels are in very rough shape (either cracked or spalling) and there are numerous large trees growing in many of the joints. It will be extremely difficult to remove the accumulated organic material and sediment without causing any damage to the panels. Is there an expectation that damaged panels will be replaced?

c. Do we have to replace any of the panels removed at the reinforced concrete beam for the soil anchor placement and construction of the concrete beam?

A: Removal of organic material from existing concrete panels is to be included in the Common Excavation - Onsite Disposal Bid Item.

a. Organics shall be removed from the existing panels in order to provide a relatively clean and uniform surface for proposed site use, i.e., movement of heavy machinery, scraping and pushing of raw materials, etc.

b. If panels are damaged due required removal of organics and grubbing, to the point in which they can no longer provide a workable dock surface, they shall be removed and backfilled with base aggregate material. The removal of the existing concrete required due to removal of organic materials, dock wall construction, or beneath the proposed asphalt salt pad shall be considered incidental to the project. Site Plan Sheet notes have been revised accordingly to dictate areas of required panel removals. See revised plan sheets attached. Base aggregate material would be measured and paid for according to Specification Section 32 11 23. Engineer shall verify and authorize any claims of the need for concrete removal.

c. Concrete panels removal associated with the installation of the reinforced concrete beam, tie rod anchors or soil anchors are incidental to the respective Tire Rod Anchors or Soil Anchors bid items that removal is necessary for. Concrete panels are not planned to be replaced.

6. Q: Should the bid item for Temp Diversion Berm include removing that berm and filling in the drainage ditch after the construction of the containment berm is completed?

A: Paragraph 1.02A.2.J of Technical Specification Section 01 57 13, has been revised to include berm removal (filling in), upon completion of disposal berm stabilization and restoration. Paragraph 3.02.M.5 of Technical Specification Section 01 57 13 has been added: "Upon completion of disposal berm stabilization and restoration, the temporary diversion channel shall be removed (filled in) and stabilized".

7. Q: Bid item A27 "Chain Link Fence, 6-Feet" indicates 3500 LF of fence. Scaling fence locations on Sheet C2.01 to C2.04 yields about 7100 LF of fence. The bid item language and Specification 32 31 13 state 6-feet, but the plan details on Sheet C8.04 note an 8-foot height. Please confirm the LF quantity of fence and height of proposed fence.

A: Quantity of Bid Item A27 has been revised to 7,216 LF. Fence Details located on Plan Sheet C8.04

has been revised. See attached.

8. Q: Is the rail material to meet Buy America spec?

A: Yes, rail materials shall meet Buy America provisions. Exemption or waiver requests may be made at the contractor's risk. See attached "Buy America" requirements.

9. Q: Is relay material acceptable?

A: Yes, assume for the base bid that relay rail is acceptable. Except for the rail scale rail and turnouts which is to be new per specifications. This assumes that relay rail meets the Buy America provisions or is exempt. An alternate bid item will be included in the bid form for constructing track with new rail materials.

Spec Section 01 20 00, Paragraph 1.03 C to be replaced with: Alternate No. 1- Construct Track - New Rail

"This work is the same as the Construct Track bid item with the difference being that all new rail materials, including anchors, tie plates, spikes, joints, and other track materials are to be incorporated into the work to meet the Buy America provision if relay materials do not or wavier is not granted."

10. Q: Please provide a turnout spec for the industrial turnouts.

A: Spec Section 34 11 10, Paragraph 2.05.A to be replaced with: Turnouts shall be constructed with new materials meeting the Buy America provisions. Turnouts shall be No.(as noted on the plans), 115lb (min.), Solid Manganese Self Guarded (SMSG) Frog, 36E Stand and all rail and OTM to Construct to Last Long Tie as shown in the plans and details.

11. Q: I see the minimum rail size is 115RE. Would 136RE be too large? If not, would the turnouts need to 136 as well, or would comping into 115Re turnouts be acceptable?

A: Larger rail sizes than 115RE is acceptable. Compromise bars will be required per specifications.

12. Q: If a track joint falls within the area of a timber crossing, should we plan for the joint to be thermite welded? I understand this is not a BNSF requirement. However, there are advantages eliminating the joints in road crossings especially a crossing that sees frequent use by heavy equipment and trucks so some customers prefer it.

A: Assume jointed rail though the crossing as base bid.

13. Q: Is there an option to submit alternates to the base bid items noted in Schedules A, B and C? Would alternate options for materials be reviewed if they better aligned with the project schedule?

A: Proposed products submitted prior to the questions due date during bidding have or will be addressed within addendum(s). Submittals of products with request of "or-equal" designation after contract award will be reviewed by Engineer and determined to be acceptable or not acceptable according to specifications and Engineer's opinion. Therefore, bid price assuming said acceptance of "or-equal" products, not addressed prior to bidding would be at bidders own risk.

14. Q: What are the compaction and moisture content requirements for the disposal berm soil cap?

A: See Technical Specification Section 31 23 00, Paragraph 3.05

15. Q: Contingency for offsite disposal of excess contaminated soil, if not suitable for use on site?

A: The Bid Item "Excavation Common - Offsite Disposal" is within the base bid and would be utilized if deemed necessary by Engineer.

16. Q: Sheet MB101 Notes a continuation of the gas line for the building on the Civil Sheets. The civil utility sheets (C4.01, C4.02) do not detail any gas line.

A: Commercial Construction Request is expected to be made by Contractor to Superior Water, Light, & Power, for modification or installation of new natural gas and electrical service to the on-site facilities.

17. Q: The Maintenance and Office Parking area is shown to be gravel but calls for pavement markings. Is the intent to put pavement markings on the gravel surface?

A: Stall Layout is shown for reference only. No striping is proposed. Plan Sheet Callout on C2.02 has been revised per Addendum #3.

18. Q: The Fencing Spec section 32 31 13 does not comply with fence detail. Spec shows a 6' tall PVC coated. Detail does not mention PVC coated and shows 8' tall with barb.

A: Fencing Details on Sheet C8.04 have been revised accordingly. See attached.

19. Q: Fencing Detail 1/C8.04 has conflicting notes:

a. The detail shows posts 5' on center while fence note on same sheet mentions 10' on center (10' on center is typical).

b. The detail shows 4" terminal/corner post size while fence note on same sheet shows a 4" terminal post size but 2-7/8" corner post size (2-7/8" post size is typical for this height for both terminal and corner posts).

A: Fencing Details on Sheet C8.04 have been revised. See attached.

20. Q: Fencing Details show 36" deep footings for line posts, 42" for corner posts, & 48" for gate posts. Recommend changing to 12" X 72" footing for gate and corner posts and 6' drive set for line posts due to frost issues in area.

A: Fencing Details on Sheet C8.04 have been revised. See attached.

21. Q: Detail 1/C8.04 shows a 3/8" truss rod in combination with a diagonal rod with turnbuckle. Typical security fence only has a truss rod - to add a rod above the truss rod is redundant. Please clarify the if this is to be required.

A: Fencing Details on Sheet C8.04 have been revised. See attached.

22. Q: The Contractor recommends using Wheatland WT-40 for framework as it has an interior chromate coating and an exterior clear organic overcoat. The pipe is a 50,000 PSI rated compared to the 30,000 PSI rating the Sch-40 has that is currently specified.

A: Wheatland WT-40 fence framework may be submitted by Contractor for use and would be accepted by Engineer due to its properties exceeding the specifications required by the Project. No change to the project specification has been made at this time.

23. Q: Can the Raw Data files for the CPT borings be provided?

A: No. The hardcopies currently available shall be used as the basis for bid.

24. Q: What is the dimension from the sheet pile wall alignment to the front face of cast in place continuous grade beam?

A: Approximately 50ft from outside of inpan to upland side of grade beam. The Channel side varies. The typical dimension on the west wall from the outside face of the wale to the outside face of the continuous reinforced concrete beam is approximately 49'-3". On the northern wall, the dimension varies from approximately 22'-6" to 38'-9". This dimension could vary slightly due to irregularities of the existing upland crane rail foundation alignment with respect to the proposed dock alignment. These dimensions do not include additional lengths necessary for plates, washers, nuts and additional thread length beyond nut to achieve the loadings specified in the contract plans. Contractor shall field verify all final lengths necessary.

25. Q: Would it be acceptable to provide a mill certificate from mill for the white oak fenders in lieu of the independent grader?

A: Grading of timber prior to installation is required.

26. Q: Would a green colored sealant be acceptable for the white oak timbers?

A: No, unless it is not visibly apparent after installation.

27. Q: 22% moisture content be difficult to obtain as the mill cuts the timbers “green” so initially they have a moisture content of around 40%. The timber will dry out over time, will that be acceptable?

A: This response is pending as it is still under review, response will be provided in future addendum.

28. Q: Will the truck scale need to be supported on helical piles as well?

A: Truck Scale Foundation shall be constructed in accordance with the engineered foundation drawings and specifications (Contractor and Vendor Supplied).

29. Q: Please confirm the loads in the soil anchor schedule have been factored since they are labeled as Ultimate loads. There is an ASD equation in the notes which leads us to question if the pile loading is 95 kips allowable tension or 47.5 kips allowable tension?

A: This response is pending as it is still under review, response will be provided in future addendum.

30. Q: Would you be able to clarify if a master mixing valve/ mixing station is needed for this job? I have attached a detail that shows an mmv and mms. For the flammable waste trap, I see the schedule lists a 500-gallon capacity unit. However, in the specs (attached) it says 35 cubic ft, can you please advise on what size is needed? Also, would It be possible to get Streim approved as an equal? Streim offers the OT-500 or the OS-100 which has the 35 cubic ft. Specs attached for both units.

A: Technical Specification Sections 22 11 00 and 22 13 00 have been modified to address this question. See attached revised documents.

31. Q: Are some non-domestic rail materials acceptable, such as frog castings, nuts/washers, switch stand?

A: Buy America provisions are required for this project.

32. Q: Plan notes indicate some double silt fence. Is the pay item per lineal foot for silt fence going to be paid twice in those locations? Or will “double silt fence” but required but only be paid for as a single silt fence? Please clarify and provide enough information so we can bid correctly.

A: Pay item per lineal foot for silt fence will be paid twice in the locations of "double silt fence". The Quantity reflects this.

33. Q: Plans indicate removing the organic material deposited on top of the existing concrete slab. Please clarify:

a. How deep is this material?

b. Where should this be placed onsite?

c. Is this contaminated material?

d. Is this part of the excavation common item? Or which pay item specifically is this work paid under?

A: Depth of organic material varies but ranges from 0"-12" in some areas. This material is to be placed within the on-site disposal berm and should be considered contaminated. This is to be included under the common excavation - onsite disposal pay item.

34. Q: Spec section 01 50 00 Part 3.03 indicate temporary sewer and water services. Please clarify if this is required and for which buildings.

A: Paragraphs 3.03.C and 3.03.D have been removed.

35. Q: By spec dewatering is incidental. Has the Engineer or Owner considered the water trapped on the surface of the dock? It will certainly impact the project intent of utilizing onsite clay embankment.

a. What is the plan for this water?

b. Is it contaminated?

A: Any water located on the dock surface is associated with the wetlands on site that are not being regulated. Standing water on the dock is not considered to be contaminated. However, dewatering of sitting water on site should be directed to the temporary sediment basin.

36. Q: Questions related to the dredging contract:

a. What is the planned quantity coming to this project site?

- What portion of the planned dredge material is considered to be contaminated?

b. What is the anticipated duration it will take the dredge to be received on site?

- Which months will this occur?

c. What type of material is it?

d. What will the moisture content of it be, when placed onto the C Reiss Dock (for the civil contractor to go place)?

A: This response is pending as it is still under review, response will be provided in future addendum.

37. Q: Compaction Standards for the onsite Berm:

a. What is the compaction spec for the Berm and Cap?

b. What is the compaction spec for the contaminated sediment?

c. What is the compaction spec for the contaminated soil?

- What is the planned quantity?

d. What is the compaction spec for the clean clay fill?

- What is the planned quantity?

A: Reference revised Technical Specification Section 31 23 00 for compaction requirements. Earthwork Summary Table to be provided in following addendum.

38. Q: We greatly appreciate the depth of information provided on plan sheet R601 by Krech Ojard in relation to Earthwork calculations and how it correlates to the pay items provided. This information is NOT PROVIDED for the Site Civil Work portion for the earthwork pay item A17. This is very important – please provide a similar in depth table so we can understand the nature of the work.

a. Existing Topsoil

- Please clarify quantity stripped

- Clarify quantity salvaged/embanked

- Clarify if any is contaminated and what the plan is for that material, if applicable

A: Earthwork Summary Table to be provided in following addendum.

39. Q: Unsuitable Material vs Suitable Material

a. It appears that pay items B1 and B2 are utilized only when sufficient Suitable Material isn't available and/or when excessive Unsuitable Material exists. Please clarify how onsite material will be deemed either Suitable or Unsuitable? Is it based on native moisture content? Time of year? Do you let a contractor attempt to perform the work, then use these items when it can't be performed? Please explain.

A: Technical Specification Section 31 23 00, Paragraph 3.04. has been modified to address this question.

40. Q: Is winter work to be included?

A: Yes.

41. Q: Schedule. It appears that the excess excavated material from the Rail Track Work SOW, is intended to be placed in the onsite berm. The dredge material, by default of the new March 24th completion date, will possibly arrive late spring/early summer 2024. Meaning the excavation for the rail will be hindered by NOT having the dredge sooner and making the June 30th completion date impossible to hit. Please consider this and provide direction.

A: This response is pending as it is still under review, response will be provided in future addendum.

42. Q: Please clarify plan for the "Pad for Office". Is this provided at some later date, but NOT under this contract?

a. Civil drawings call it an office drawing and the plumbing drawings indicate a trailer. Please clarify for us what is to be included.

A: This response is pending as it is still under review, response will be provided in future addendum.

43. Q: Plan sheet M302 Detail 1

a. Is the Breaker Run and Void Fill shown, to be paid under bid item #B6?

b. Note indicates "Existing Concrete Checkered Panels to be Removed as Required" :

- Is this a pay item, or is this incidental to the soil anchors?

- Is the concrete to be replaced and if so, which pay item?

c. The "Remove Organics to Native Soil (Common Excavation)" note:

- What is your planned quantity for this?

- Which pay item does it fall under (A17, B2, or B3?)

A: This response is pending as it is still under review, response will be provided in future addendum.

44. Q: Do we have 1500 psf at the site of the truck scale? If not, what are the Engineer's recommendations to get the required bearing capacity?

A: This response is pending as it is still under review, response will be provided in future addendum.

45. Q: What are the plans for the scale weight data? i.e., are we expected to:

a. Provide a basic output to a PC and the Owner will take it from there? If so, what is the preferred output string and method? OR

b. Are we expected to offer a data management solution? If so, there will be a lot of questions that we will need to have answered in order to be sure to offer the system they expect

A: This response is pending as it is still under review, response will be provided in future addendum.

46. Q: Per the Soil Anchors spec an independent test agency is to observe the load testing and per the Soil Anchor Engineering Spec the design engineer is also called to observe the test. Is the intent to have both parties present for testing?

A: Yes

47. Q: Regarding Dock Wall: The spec calls for all the wales etc. to be galvanized. Spec section 35 42 13.20 section 2.5. Can you verify?

A: This response is pending as it is still under review, response will be provided in future addendum.

48. Q: Regarding Dock Wall: For the wood fenders. Is it the intent to have 10" angles at every out pan?

A: Yes

49. Q: On the civil drawings there are notes for removing storm sewer pipe and removing hydrants. Which pay items are these paid under?

A: This response is pending as it is still under review, response will be provided in future addendum.

50. Q: On the Asphalt Salt Pad. What is the importance of the height of the asphalt berm? Is the shape of the asphalt berm important or can it be slightly different?

A: This response is pending as it is still under review, response will be provided in future addendum.

51. Q: There is a note on C2.02 for a Railing at the Truck Scale. Please clarify what is expected here. Location of railing, length, height, material type, etc.

A: This response is pending as it is still under review, response will be provided in future addendum.

52. Q: On C2.02 a Proposed Pump House is mentioned. Please confirm if this is to be included in this project? If so, provide details.

A: This response is pending as it is still under review, response will be provided in future addendum.

53. Q: C4.01 references Directional Drilling for installation of a 4" steel casing. Do you mean Jack and Bore?

A: This response is pending as it is still under review, response will be provided in future addendum.

54. Q: C4.02 seems to indicate a 1" water service to the future office pad. Please clarify if any 1" water service is to be provided in this bid or not? If so, please provide a bid item.

A: This response is pending as it is still under review, response will be provided in future addendum.

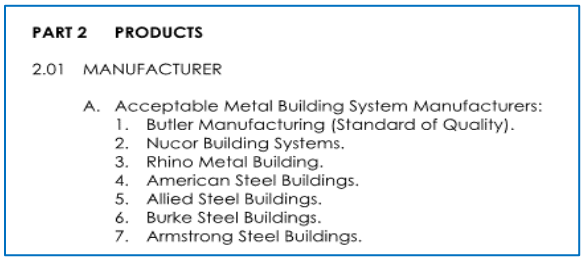
55. Q: SWLP electrical primary extension and utility fees and cost.

a. Who will carry this work scope?

b. What bid item will receive this cost.

A: This response is pending as it is still under review, response will be provided in future addendum.

56. Q: Spec Section 13-34-49 List the following as acceptable building manufacturers: (See image below)



PART 2 PRODUCTS

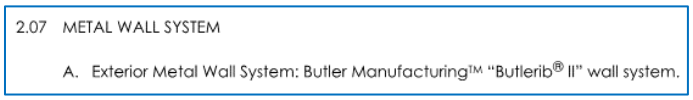
2.01 MANUFACTURER

A. Acceptable Metal Building System Manufacturers:
1. Butler Manufacturing (Standard of Quality).
2. Nucor Building Systems.
3. Rhino Metal Building.
4. American Steel Buildings.
5. Allied Steel Buildings.
6. Burke Steel Buildings.
7. Armstrong Steel Buildings.

When you go to the roof and exterior siding systems, only Butler Manufacturing is shown as approved. (See image below)

2.06 METAL ROOF SYSTEM

A. Metal Roof System: Butler Manufacturing "VSR II™" roof system.



2.07 METAL WALL SYSTEM

A. Exterior Metal Wall System: Butler Manufacturing™ "Butlerib® II" wall system.

Would comparable systems from one of the other building manufacturers approved for building systems, work for metal roof and wall systems?

A: This response is pending as it is still under review, response will be provided in future addendum.

57. Q: What will the stability be of the dredge material when placed by dredge contractor on the dock? In past projects a paint filter test was used, but vibration caused the material to liquify in haul trucks. We recommend considering a slump test requirement on the dredge material, to ensure dredge material will not destabilize in transit.

A: This response is pending as it is still under review, response will be provided in future addendum.

58. Q: Please see the attached substitution request for the sectional door on the C. Reiss Dock project. Please review and let us know if there are any questions or concerns.

A: This response is pending as it is still under review, response will be provided in future addendum.

59. Q: Is there a preferred color for the sheet pile coating?

A: No. Standard colors are acceptable.

60. Q: Please see the attached substitution request for Overhead Doors.

A: This response is pending as it is still under review, response will be provided in future addendum.

61. Q: Please see the questions regarding electrical items below.

a. What wiring do we need run from the rail scale to the Scale House?

b. Is this wiring furnished by others or by contractor for the rail scale?

c. Who terminates wiring at the scale and scale house? Nothing is shown on R110 or R111.

d. Do we need to supply any fiber equipment?

e. What fiber connectors do we need to supply?

f. What size of conduit do we need to furnish and install for the truck scale?

g. Who supplies the cable and wiring for the truck scale.

h. What cable types do we work with for the truck scale?

i. What do we need to supply for boxes, etc. for the truck scale?

A: This response is pending as it is still under review, response will be provided in future addendum.

62. Q: Will polyclad 777 be an acceptable alternate for the sheet pile coating?

A: This response is pending as it is still under review, response will be provided in future addendum.

63. Q: Specifications state the sheet pile to be coated as singles. Will owner allow coating in pairs? Does the pile cap and/or double channel waler require galvanization or shop coating?

A: This response is pending as it is still under review, response will be provided in future addendum.

64. Q: Historical imagery of the C. Reiss site vaguely details old rail lines throughout the Southern portion of the site, as well as between the existing dock wall and bridge rail. Any rail and associated ties will need to be removed for track and access road construction, as well as potential removal between the dock wall and bridge rail based on the Owner's proposed use of that area. If you could please clarify with the project team how this is to be accounted for that would be greatly appreciated.

A: Removing historic railroad track materials is to be considered incidental to the project. Section 02 41 13, paragraph 1.02.A.2.k added: "Removal of railroad track will be incidental. Includes removal of rail, ties, and other appurtenances."

65. Q: We are proposing to use alternatives for 1 1/4" B.A.D. and the open grade. Please see attached and let me know if these are acceptable.

A: This response is pending as it is still under review, response will be provided in future addendum.

66. Q: Section 34 78 23, PART 2 PRODUCTS, 2.01 GENERAL, C. Scale to accommodate a railcar length of 54 feet.

a. Please confirm this is the pulling face (coupler to coupler) and could we get an example car id that we can look up in UMLER for complete dimensions. For the scale layout, knowing the typical railcar's truck centerline is the most helpful.

A: Typical railcar spec sheet is attached.

67. Q: Section 34 78 23, PART 2 PRODUCTS, 2.01 GENERAL, D. Furnish and install one double tandem static railroad car scale system.

a. When the application has one car size being weighed, the appropriate scale would be a single/single meaning there would be two 12'-6" weighbridges spaced correctly for that one car size. Generally, that car size can vary by about 6 feet and still fit on the single/single bridge. For sites that weigh

more diverse lengths of railcars a single/double or a double/double weighbridge may be appropriate. Can you advise if additional railcar lengths are being planned and then provide examples, so the proper weighbridge arrangement and inter-bridge spacing can be determined?

A: Spec Section 34 78 23, Paragraph 2.01D. has been revised: Furnish and install one single tandem (single/single) static railroad car scale system. Spec Section 34 78 23, Paragraph 2.01.E. has been revised: Each single section shall have a clear and unobstructed weighing surface of not less than 12.5 feet in length.

68. Q: The bidding documents indicate this project falls under the Heavy Highway Agreement. There has been pressure from the Great Lakes Floating Reps 150 that whether the contractor constructs this project off water or off land the rates outlined in the GLFA would be required. See attached agreement/ rates. Please clarify what work this pertains and if these rates are to be incorporated into the bidding documents.

A: This response is pending as it is still under review, response will be provided in future addendum.

69. Q: For the concrete strip located on the east side of the access road near the dock, it is shown to be 5' wide and 6' wide on pages C1.02/C1.03/C1.04 and C2.02/C2.03/C2.04, but the width notes are in conflict between the C1.XX and C2.XX sheets. Section 32 13 14 mentions the bid item as "Concrete Strip, 5-Feet Wide". Is the concrete strip 5-feet wide everywhere? What is the height of the concrete strip? Reinforcing details? Joint details?

A: This response is pending as it is still under review, response will be provided in future addendum.

70. Q: For the rail scale, are all cars the same type and length? If not, what is the length of the longest rail car (measured from centerline of outside axles)? What is the length of the shortest rail car (measured from centerline of outside axles)?

A: Typical railcar spec sheet is attached.

71. Q: Is the rail at the scale intended to be raised or recessed?

A: Raised

72. Q: On drawing M302, the detail for the helical getting tied into the new footing. Can the helical extend up into the footing? This would eliminate the adapter and #18 rod etc.

A: Base bid assumes detail as shown.

73. Q: Is the soil anchor termination assembly part of delegated soil anchor design or is it required as shown?

A: Base bid assumes termination detail is NOT delegated.

74. Q: A milestone completion date of March 25, 2024, states completion of dock wall. Can it be specified what is required in this? (Sheet piling, tiebacks, soil anchors, continuous beam pour, timber fender, etc) Does this include touch up coating? Touch up coating is not feasible in cold weather months.

A: This response is pending as it is still under review, response will be provided in future addendum.

75. Q: Are the AZ-26 sheets accepted under Buy American standard? (See attached Buy American Statute)

A: This response is pending as it is still under review, response will be provided in future addendum.

76. Q: How are connection welds to be handled between galvanized coating and dock wall? All steel and iron finishes are to be hot dip galvanized (35 42 13.20 – 2.5A). Is this correct with the amount of field welding to be done. What is the purpose of having all materials field welded and galvanized? Galvanizing needs to be ground off prior to welding.

A: This response is pending as it is still under review, response will be provided in future addendum.

77. Q: Can it be clarified how waler, pile wall cap, fender angles, other metal fabrications are to be coated?

A: This response is pending as it is still under review, response will be provided in future addendum.

78. Q: How are obstructions to be handled that are not identified on the sonar? Would this be considered additional work?

A: This response is pending as it is still under review, response will be provided in future addendum.

Contract Documents – Bid Form

1. Quantity for Item A27 (Chain Link Fence, 6-Feet), has been revised to 7,216 LF.

2. Alternate Item B28 added: "Construct Track – New Rail", 7828 TF

Contract Documents – Section 2.18

1. Replace Section 2.18 text in its entirety with the following: "Buy America: Work for this Project includes federal funds subject to federal contracting requirements identified in the Contract."

Contract Documents – Section 11.12 (Time Penalties)

1. Replace Section 11.12 text in its entirety with the following: "Should the Contractor fail to complete the work within the time agreed upon or within such extra time as may be allowed by extensions (see Item 11.9 above), there shall be deducted from any monies due or that may become due the Contractor, for each and every calendar day that the work shall remain uncompleted, a sum assessed as specified in Section 108.11 Liquidated Damages of the State of Wisconsin Department of Transportation (WisDOT), Standard Specifications for Highway and Structure Construction, 2023 Edition and current Supplemental Specifications, except that this sum shall be considered a penalty, a fixed and agreed-to-sum due to Owner (C. Reiss) from the Contractor by reason of inconvenience to the Owner, loss of operating profits, added cost of engineering and supervision, maintenance of detours and other items resulting from the Contractor's failure to complete the work within the time specified in the contract, including the specified milestone, substantial completion, and final completion deadlines. If the penalties exceed the balance of monies that would otherwise have been due the contractor, the Contractor or the Contractor's Surety shall be responsible for payment of all such penalties to the Owner as liquidated damages."

Technical Specifications – Section 01 20 00 – Price and Payment Procedures

1. Paragraph 1.03 C to be replaced with: Alternate No. 1- Construct Track - New Rail

    a. "This work is the same as the Construct Track bid item with the difference being that all new rail materials, including anchors, tie plates, spikes, joints, and other track materials are to be incorporated into the work to meet the Buy America provision if relay materials do not or wavier is not granted."

Technical Specifications – Section 01 50 00 – Temporary Facility and Controls

1. Paragraphs 3.03.C and 3.03.D have been removed.

Technical Specifications – Section 01 57 13 – Temporary Erosion and Sediment Control

1. Paragraph 1.02.A.2.J has been revised to include berm removal (filling in), upon completion of disposal berm stabilization and restoration.

2. Paragraph 3.02.M.5 has been added: “Upon completion of disposal berm stabilization and restoration, the temporary diversion channel shall be removed (filled in) and stabilized.”

Technical Specifications – Section 02 41 13 – Selective Site Demolition

1. Removal of existing concrete panels necessary for proposed site work has been deemed incidental and added to Paragraph 1.02.

2. Removal of historic railroad track materials is to be considered incidental to the project. See addition to Paragraph 1.02

3. Paragraph 3.05 has been retitled to “Remove Concrete Pavement / Panels”.

Technical Specifications – Section 22 11 00 – Facility Water Distribution

1. Added Paragraph 2.10.C. See attached.

Technical Specifications – Section 22 13 00 – Facility Sanitary Sewerage

1. Added to list of manufacturers in Paragraph 2.05.A. See attached.

2. Replaced Paragraph 2.05.B. See attached.

Technical Specifications – Section 31 23 00 – Excavation and Fill

1. Paragraph 3.04 has been modified. See attached.

Technical Specifications – Section 34 11 10 – Railroad Track Construction

1. Paragraph 2.05.A to be replaced with: Turnouts shall be constructed with new materials meeting the Buy America provisions. Turnouts shall be No. (as noted on the plans), 115lb (min.), Solid Manganese Self Guarded (SMSG) Frog, 36E Stand and all rail and OTM to Construct to Last Long Tie as shown in the plans and details.

Technical Specifications – Section 34 78 23 – Railroad Car Scales

1. Paragraph 2.01.D has been revised: Furnish and install one single tandem (single/single) static railroad car scale system.

2. Paragraph 2.01.E has been revised: Each single section shall have a clear and unobstructed weighing surface of not less than 12.5 feet in length.

Plan Sheet – G-001

1. List of Sheets amended have been rev clouded.

Plan Sheet(s) – C-002 through C-004

1. See revised notes regarding existing concrete panels on site.

Plan Sheet – C-803

1. Details #8 has been revised.

Plan Sheet – C-804

2. Details #1 and #3 have been revised.

Attachments:

1. Revised Bid Form
2. Revised Contract Documents (Section 2.18)
3. Revised Contract Documents (Section 11.12)
4. Revised Technical Specifications – Section 01 20 00 – Price and Payment Procedures
5. Revised Technical Specifications – Section 01 50 00 – Temporary Facility and Controls
6. Revised Technical Specifications – Section 01 57 13 – Temporary Erosion and Sediment Control
7. Revised Technical Specifications – Section 02 41 13 – Selective Site Demolition
8. Revised Technical Specifications – Section 22 11 00 – Facility Water Distribution
9. Revised Technical Specifications – Section 22 13 00 – Facility Sanitary Sewerage
10. Revised Technical Specifications – Section 31 23 00 – Excavation and Fill
11. Revised Technical Specifications – Section 34 11 10 – Railroad Track Construction
12. Revised Technical Specification – Section 34 78 23 – Railroad Car Scales
13. Revised Plan Sheet G-001
14. Revised Plan Sheet C-002

15. Revised Plan Sheet C-003

16. Revised Plan Sheet C-004

17. Revised Plan Sheet C-803

18. Revised Plan Sheet C-804

19. Buy America Requirements (for reference)

20. Rail Car Typical Spec

END OF ADDENDA TEXT

Addendum 4 Bid Page Revised

ITEM #	ITEM NAME	UNITS	QUANTITY	$/UNIT	EXTENSION
SCHEDULE A - SITE CIVIL WORK					
A1	MOBILIZATION	LS	1		
A2	TRAFFIC CONTROL	LS	1		
A3	SILT FENCE	LF	5000		
A4	SILT CURTAIN	LF	310		
A5	INLET PROTECTION	EACH	3		
A6	EROSION MAT CLASS 1 TYPE B	SY	25000		
A7	STRAW BALE DITCH CHECK	EACH	42		
A8	STONE TRACKING PAD	EACH	1		
A9	TEMPORARY DIVERSION BERM	LF	2700		
A10	INTERIM MANUFACTURED PERIMETER CONTROL	LF	2500		
A11	5 MIL. POLYLINER WITH 6" CRUSHED WASHED STONE	SY	1100		
A12	REMOVE RETAINING WALL	LF	475		
A13	REMOVE ABANDONED PETROLEUM LINE, 8-INCH	LF	680		
A14	REMOVE ASPHALTIC SURFACE	SY	135		
A15	REMOVE CONCRETE CURB & GUTTER	LF	24		
A16	CLEARING AND GRUBBING	LS	1		
A17	EXCAVATION COMMON - ONSITE DISPOSAL	CY	37060		
A18	GEOGRID TYPE SR	SY	24400		
A19	BASE AGGREGATE DENSE, 1 1/4-INCH	TON	10400		
A20	TACK COAT	GAL	1500		
A21	HMA PAVEMENT, 3 MT 58-34 S	TON	12		
A22	HMA PAVEMENT, 4 MT 58-34 S	TON	16		
A23	HMA PAVEMENT, 3 MT 58-34 V	TON	2100		
A24	CONCRETE STRIP, 5-FEET WIDE	SY	1260		
A25	CONCRETE PAVEMENT, 8-INCH	SY	100		
A26	CONCRETE CURB & GUTTER	LF	24		
A27	CHAIN LINK FENCE, 6-FEET	LF	7216		
A28	TOPSOIL	TON	4300		
A29	SEED, FERTILIZER, AND MULCH	SY	50000		
A30	STEEL CASING PIPE, 4-INCH	LF	161		
A31	DRY HYDRANT ASSEMBLY	EACH	1		
A32	WATER SERVICE, HDPE, 2-INCH	LF	1620		
A33	SEPTIC TANK	LS	1		
A34	FLARED END SECTION WITH TRASH GUARD, 30-INCH	EACH	2		

A35	STORM SEWER PIPE, REINFORCED CONCRETE CLASS III, 30-INCH	LF	110		
A36	BENTONITE COLLAR	EACH	2		
A37	TURF REINFORCEMENT MATTING, CLASS III, TYPE B	SY	260		
A38	SITE ELECTRICAL	LS	1		
A39	BUILDINGS	LS	1		
A40	TRUCK SCALE	LS	1		
SCHEDULE B - RAIL TRACK WORK					
B1	SELECT BORROW	TON	31878		
B2	EXCAVATION COMMON - OFFSITE DISPOSAL	CY	27720		
B3	EXCAVATION COMMON - ONSITE DISPOSAL	CY	47940		
B4	BASE AGGREGATE DENSE 3/4 - INCH	TON	82		
B5	BASE AGGREGATE DENSE 1-1/4 - INCH	TON	26,965		
B6	BREAKER RUN	TON	700		
B7	TACK COAT	GAL	75		
B8	HMA PAVEMENT 3 MT 58-34 S	TON	150		
B9	HMA PAVEMENT 4 MT 58-34 S	TON	150		
B10	CULVERT PIPE CORRUGATED STEEL 18-INCH	LF	50		
B11	CULVERT PIPE CORRUGATED STEEL 24-INCH	LF	50		
B12	ADJUSTING MANHOLE FRAME AND RING CASTING	EACH	1		
B13	POSTS WOOD 4x6 INCH x 14-FOOT	EACH	4		
B14	SIGNS TYPE II REFLECTIVE H	SF	33		
B15	MARKING STOP LINE EPOXY, 24-INCH	LF	24		
B16	TRAFFIC CONTROL	LS	1		
B17	GEOTEXTILE FABIC TYPE SAS	SY	34,100		
B18	TURNOUT (No. 9)	EACH	6		
B19	STEEL CASING PIPE, 15-INCH	LF	110		
B20	CULVERT PIPE STEEL 15-INCH	LF	65		
B21	CULVERT PIPE STEEL 18-INCH	LF	105		
B22	FLARED END SECTION, 18-INCH	EACH	2		
B23	FLARED END SECTION, 24-INCH	EACH	2		
B24	SANITARY SEWER, 8-INCH	LF	130		
B25	RAILROAD CAR SCALE	LS	1		
B26	DERAIL SLIDING WITH WHEEL CROWDER	EACH	1		
B27	CONSTRUCT TRACK	TF	7,828		

B28	CROSSING TIMBER	TF	147		
SCHEDULE C - DOCK WALL WORK					
C1	SOIL ANCHOR ENGINEERING	LS	1		
C2	BASE AGGREGATE OPEN-GRADED	TON	11600		
C3	UNDERWATER DRIVELINE CLEARING	LF	2600		
C4	STEEL SHEET PILES	SF	133310		
C5	STEEL H-PILES	LF	4550		
C6	TIMBER FENDERS	LF	2610		
C7	CAST STEEL BOLLARDS	EACH	13		
C8	WALE AND ANCHOR HARDWARE ASSEMBLIES	LF	2610		
C9	SOIL ANCHORS	EACH	140		
C10	TIEROD ANCHORS	EACH	277		
C11	PILE WALL CAP	LF	2610		
C12	WEEP DRAINS	EACH	44		
C13	SAFETY LADDERS	EACH	12		
C14	EXCAVATION COMMON – ONSITE DISPOSAL	CY	2200		
C15	BREAKER RUN	TON	4900		
C16	BASE AGGREGATE DENSE 1-1/4 - INCH	TON	4500		
	ALTERNATE ITEM:				
B2T	CONSTRUCT TRACK - NEW RAIL	TF	7828		

Total Schedule A: $_____
Total Schedule A in written words:

_____

Total Schedule B: $_____
Total Schedule B in written words:

_____

Total Schedule C: $_____
Total Schedule C:

_____

BID TOTAL – Schedule A, B, and C: $_____

Bid Total in written words:

_____

Total Alternate Item: B2T: $_____

Total Alternate Item B2T in written words:

_____

Revised Text for Section 2.18 of the Contract Docs:

Buy America: Work for this Project includes federal funds subject to federal contracting requirements identified in the Contract. Contractors are encouraged to reference Section 228.5 (Buy America Provision) of the WisDOT Construction and Materials Manual for more information regarding requirements.

REVISED CONTRACT DOCUMENTS, SECTION 11.12 (TIME PENALTIES) TEXT:

Should the Contractor fail to complete the work within the time agreed upon or within such extra time as may be allowed by extensions (see Item 11.9 above), there shall be deducted from any monies due or that may become due the Contractor, for each and every calendar day that the work shall remain uncompleted, a sum assessed as specified in Section 108.11 Liquidated Damages of the State of Wisconsin Department of Transportation (WisDOT), Standard Specifications for Highway and Structure Construction, 2023 Edition and current Supplemental Specifications, except that this sum shall be considered a penalty, a fixed and agreed-to-sum due to Owner (C. Reiss) from the Contractor by reason of inconvenience to the Owner, loss of operating profits, added cost of engineering and supervision, maintenance of detours and other items resulting from the Contractor's failure to complete the work within the time specified in the contract, including the specified milestone, substantial completion, and final completion deadlines.

The Daily Charge will be $3,400 / per calendar day.

If the penalties exceed the balance of monies that would otherwise have been due the contractor, the Contractor or the Contractor's Surety shall be responsible for payment of all such penalties to the Owner as liquidated damages.

SECTION 01 20 00

PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

1. Section Includes
   Administrative and procedural requirements for allowances, Alternates, pricing of Work, and request for payment procedures.

1.02 PRICE AND PAYMENT PROCEDURES

1. Measurement and Payment
   All Work and costs of this Section shall be incidental to the Project and included in the Total Base Bid.

1.03 ALTERNATES

1. This article identifies each Alternate by number and describes the basic changes to be incorporated into the Work as part of that Alternate. Refer also to the Specifications and Drawings for information.

2. Alternates may be accepted by the Owner in any order and may be used to determine the award of Contract consistent with the Instructions to Bidders.

3. **Alternate No. 1: Construct Track – New Rail**
   a. This work is the same as the Construct Track bid item with the difference being that all new rail materials, including anchors, tie plates, spikes, joints, and other track materials are to be incorporated into the work to meet the Buy America provision if relay materials do not or wavier is not granted.

1.04 BID UNIT PRICES

1. Provide access and assist Engineer in determining actual quantities of Bid Unit Price work.

2. Provide documentation to substantiate Bid Unit Price work.

3. If the Contractor delivers and places more of any material that is paid for on a Bid Unit Price basis than is required to perform the Work and thereby causes the materials to be wasted, the quantity wasted will be deducted from the final measurement for that Bid Item.

1.05 INCREASED/DECREASED QUANTITIES

1. No claim for adjustment in unit price compensation due to increased or decreased quantities is allowed.

2. Certain proposal work items are included in anticipation of the possibility that conditions may be encountered which require this work. The estimates of quantities for these

proposal items are based upon general experience in the area. They are included in the work to establish a bid unit price in the event that such work is necessary to complete the project. The quantity is not guaranteed and the extent of the work required will be dependent upon prevailing conditions. As such, no unit price adjustments for any magnitude of increased or decreased quantities is allowed for such work.

1.06 PAYMENT PROCEDURES

1. Engineer will provide initial Application for Payment Form at the Preconstruction Conference.

2. Submit 1 preliminary copy of progress payment application for review, consistent with the General Specifications. Submit 4 signed copies of Application for Payment to Engineer prior to the dates identified at the Preconstruction Conference.

3. Attach the following supporting documentation, in addition to the requirements of the General Specifications:
   Documentation to substantiate Bid Unit Price work.
   Updated construction schedule consistent with Section 01 33 00.
   Wage reports, etc. required for funded portions of the project.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes
   1. Temporary utilities and miscellaneous temporary facilities required during construction.

B. Products furnished but not installed under this Section or products installed but not furnished under this Section.

C. Related Sections
   1. Section 31 23 00 - Excavation and Fill.

1.02 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment
   1. A Bid Item has been provided for **Mobilization**. Measurement is Lump Sum. This will be considered payment in full for all work and costs of this Bid Item. The amount of the Lump Sum Bid shall not exceed **5 percent** of the Total Base Bid
      a. Partial payment of the Lump Sum Bid Item "Mobilization" will be made using a percentage based on the following:

	Cumulative Percent of Mobilization Item Paid
First Partial Payment	50
Percent of original contract amount earned – 25	70
Percent of original contract amount earned – 50	90
Percent of original contract amount earned – 100	100

   2. All other Work and costs of this Section shall be incidental to the Project and included in the Total Base Bid.

1.03 REFERENCES

A. Wisconsin Department of Transportation "Standard Specifications for Highway and Structure Construction," 2022 Edition (WisDOT) and supplements.

B. The Wisconsin Manual on Uniform Traffic Control Devices – Latest edition.

C. Wisconsin Department of Transportation Traffic Engineering, Operations, and Safety Manual (TEOpS).

D. BNSF Railway Company "Guidelines for industrial Track Projects", August 2018.

1.04 SUBMITTALS

A. Construction Staging Plan consistent with Section 01 33 00, including the following information:
   1. Sequence of construction and traffic control.
   2. Streets closed or restricted during any stage of construction.
   3. Provisions for routing any detoured traffic as permitted.
   4. Specific signs, striping, and other traffic control devices to be utilized.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 MOBILIZATION

A. Move personnel, equipment, materials, and all other items required to complete the Work at the Site.

B. Establish Contractor offices, building, or other facilities necessary for Work on the Project.

C. Temporarily hold or relocate utilities and any miscellaneous structures, such as signs, power poles, guy wires, and mailboxes disturbed.

3.02 SIGNS, MAILBOXES, ETC. REMOVAL AND REPLACEMENT

A. Remove, store carefully, and replace all non-City or County owned signs, posts, etc. that may be within the Site as directed by Engineer. Owner will remove and replace Owner's signs.

B. Remove existing mailboxes and posts, and temporarily install in locations determined by Engineer or as shown on Drawings. Replace mailboxes prior to Substantial Completion. Removal, temporary reinstallation, and replacement shall occur such that mail delivery is not interrupted. Mailboxes, posts, and appurtenances damaged during construction shall be replaced with new at no charge to Owner.

3.03 TEMPORARY UTILITIES

A. Provide and maintain all temporary facilities, utilities, and controls as long as needed for the safe and proper completion of the Work. Remove all temporary facilities, utilities, and controls as rapidly as progress will permit or as directed by Engineer.

B. Temporary Water for Construction
   1. Use of new or existing hydrants is prohibited, except for testing and flushing of newly installed mains.
   2. Obtain water for construction from locations designated by the Owner.

C. Temporary Electricity
   1. Provide all necessary temporary electric service and temporary wiring needed for construction activities. Contractor shall pay for all temporary electricity.

2. Contractor may use permanent electric service after service is installed. Contractor shall pay for all electrical usage until Substantial Completion. After Substantial Completion, Owner will pay for electricity.

D. Temporary Heating
   1. Provide and pay for temporary heating.
   2. Contractor may use permanent HVAC system after Substantial Completion. After Substantial Completion, Owner will pay for heat.

3.04 CONSTRUCTION FACILITIES

A. Sanitary Facilities
   1. Comply with all governing regulations, including safety and health codes, for sanitary fixtures and facilities.
   2. Provide self-contained toilet units, or water and sewer connected temporary toilet facilities, consistent with governing regulations. Contractor may not use Owner's toilet facilities.
   3. Provide and maintain adequate supply of toilet tissue, paper towels, paper cups, and similar disposable materials appropriate for each facility. Provide appropriate covered waste containers for used material.

3.05 TEMPORARY CONSTRUCTION

A. Bypass Pumping
   1. All sanitary flows shall be pumped around areas with no spillage allowed.
   2. Any spill needs to be reported as required by law.

B. Pumping and Dewatering
   1. Provide draining, pumping, dewatering, and cleaning operations necessary to complete the Work.
   2. Provide all necessary pumping to remove all surface water and groundwater from structures as required for the Work. Provide erosion control measures for discharge of water.
   3. Protect Site and adjacent property to avoid damage.

3.06 TEMPORARY BARRIERS AND ENCLOSURES

A. Temporary Barriers
   1. Provide temporary covers, enclosures, markers, and barriers as necessary to protect Work.
   2. Damage to the Site caused by removal of temporary fencing, including postholes, shall be promptly repaired by Contractor. During removal at no time shall the Work remain unattended if a dangerous condition exists because of incomplete removal or Site repairing.

3.07 CONTRACTOR'S OFFICE

A. Provide and maintain an office at the Site for the duration of the Project.

B. The office shall be of sufficient size and have adequate furnishings to provide a comfortable work environment for the Contractor and provide a 10-foot by 24-foot space with table and chairs for monthly progress meetings and other use.

C. Keep 1 complete set of Contract Documents, 1 copy of all approved shop drawings, and 1 complete set of up-to-date Record Drawings in the field office for use by the Engineer and Owner.

3.08 WORKING ON BNSF RIGHT OF WAY

A. Contractor must not at any time foul the main line tracks. A BNSF flagman will be required, at the Contractor's expense, when working within 25 feet from centerline of the track, which would include, but not limited to, work that could foul a track, such as with a large crane, excavation activities that could undermine a track, and overhead wire work which could potentially fall onto the track.

B. Contractor shall comply with Section 7, Requirements for Working on BNSF Right of Way of the BNSF Railway Company "Guidelines for industrial Track Projects", August 2018.

END OF SECTION

SECTION 01 57 13

TEMPORARY EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes
1. Managing storm water runoff and other Project related water discharges to minimize sediment pollution during construction.

B. Related Sections
1. Section 31 23 00 – Excavation and Fill.
2. Section 32 92 00 – Turf and Grasses.

1.02 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment
1. Bid Items have been provided for temporary measures to control soil erosion and sedimentation. Payment at the Bid Unit Price will be considered compensation in full for all Work necessary to complete the Bid Item in full, including installation, maintenance, sediment removal, repairs, and removals. 80-percent partial payment will be made upon installation and 20-percent payment will be made upon removal and restoration.
2. Measurement will be based upon the units as listed below. The actual quantity installed multiplied by the appropriate Bid Unit Price will be compensation in full for all Work and costs of the following Bid Items.
   a. **Temporary Sediment Basin**: Measurement will be by Lump Sum. Payment shall include compensation for maintaining excavated storage area, removal of accumulated sediment, and removal of temporary orifice restrictor upon final site stabilization.
   b. **Silt Fence**: Measurement will be per Lineal Foot, along the base of the fence, from outside to outside of the end posts for each section of fence.
   c. **Silt Curtain**: Measurement will be by linear foot installed.
   d. **Inlet Protection**: Measurement will be by Each, no matter the type.
   e. **Stone Tracking Pad**: Measurement will be by Each.
   f. **Erosion Matting**: Payment will be by type installed. Measurement will be by square yard.
   g. **Straw Bale Ditch Check**: Measurement will be by Each.
   h. **Interim Manufactured Perimeter Control**: Measurement will be by the linear foot.
   i. **5 Mil. Polyliner with 6 inch Crushed Washed Stone**: Measurement will be by the square yard.
   j. **Temporary Diversion Berm:** Measurement will be by linear foot installed, and removed (filled in), upon completion of disposal berm stabilization and restoration.
3. Dust Control shall be incidental to the Project and included in the Total Base Bid.
4. Sediment Basin and Temporary Orifice Restrictor shall be incidental to the Project and included in the Total Base Bid.
5. All other Work and costs of this Section shall be incidental to the Project and included in the Total Base Bid.

1.03 REFERENCES

A. Wisconsin Department of Transportation "Standard Specifications for Highway and Structure Construction," 2022 Edition (WisDOT) and supplements
   1. 623 – Dust Control Surface Treatment.
   2. 628 – Erosion Control.

B. Wisconsin Department of Natural Resources Storm Water Construction Technical Standards (DNR).

C. WDNR's WPDES General Stormwater Permit for Construction Activity.

1.04 SUBMITTALS

A. Contractor Prepared Schedules and Plans
   1. Erosion Control Schedule: Conforming to Wisconsin Administrative Code NR 216.46 and submitted each week that construction is active.
   2. Site Management Plans in conformance with Wisconsin Administrative Code 216.41 and Chapter NR 151.
      a. Submitted when requested by the Engineer.
      b. Site plans prepared by Contractor will indicate Contractor operations, erosion and sediment control measures, and a schedule of starting and completion times.

B. Certification and Sampling
   1. Furnish a manufacturer's certification stating that the erosion and sediment control materials supplied conforms to the requirements of this Section. The certification shall include or have attached typical results of tests for the specified properties, representative of the materials supplied.

1.05 QUALITY ASSURANCE

A. Erosion Control Supervisor: Provide an Erosion Control Supervisor to direct the erosion control operations and ensure compliance with Federal, State, and Local ordinances and regulations.

1.06 PERMITS

A. Adhere to the WDNR's General Stormwater Permit for Construction Activity.

1.07 SEQUENCING AND SCHEDULING

A. Install sediment control measures prior to grading activities.

B. Schedule and coordinate the Work so that permanent erosion and sediment control BMPs, such as basin construction, rip rap placement, and permanent seeding, are directly incorporated into the supplement permanent erosion and sediment control BMPs with temporary BMPs. Place temporary BMPs when permanent erosion control cannot be achieved. Coordinate construction operations so that erosion and sediment control measures (permanent or temporary) are installed and maintained concurrently with the rest of the Work of the Project.

C. Coordinate and schedule the Work of subcontractors such that erosion and sediment control measures are fully executed for each operation and in a timely manner over the duration of the Project. Develop a chain of responsibility for all subcontractors and operators on the Project to ensure that permit provisions are adhered to.

D. Stabilization timeframes shall conform to the NPDES General Stormwater Permit for Construction Activity.

E. Prior to Project shutdown for the winter or other periods of a week or more, the Site shall be adequately protected from erosion and off-Site damage by covering exposed soils with mulch and establishing perimeter controls.

F. If the Contractor fails to install erosion or sediment measures, the Engineer may withhold payment from related work until the control measures are undertaken by the Contractor
   1. When the Contractor fails to conduct the quality control program, does not conduct the inspection required in the NPDES permit, or fails to take action ordered by the Engineer to remedy erosion or sediment control problems, the Engineer shall issue a Written Order to the Contractor.
   2. The Contractor shall respond within 24 hours with sufficient personnel, equipment, materials, and conduct the required Work or be subject to a $1,000 per calendar day deduction for noncompliance.

G. Establish permanent turf in accordance with Section 32 92 00 to prevent excessive soil erosion.

PART 2 PRODUCTS

2.01 SILT FENCE

A. Conform to WDNR Technical Standard 1056.

B. Conform to WisDOT Spec. 628.2.6.

2.02 STONE TRACKING PAD

A. Conform to WisDOT Spec. 628.2.14.

B. Conform to WDNR Technical Standard 1057.

2.03 MULCH MATERIAL:

A. Conform to WDNR Technical Standard 1058.

B. Conform to WisDOT Spec. 628.2.11.

C. Hydraulic soil stabilizer may be used in lieu of mulch with the approval of the Engineer.

2.04 HYDRAULIC EROSION CONTROL PRODUCTS

A. Conform to WDNR Technical Standard 1050.

B. Conform to WisDOT Spec. 628.2.11.

2.05 EROSION MATTING

A. Channel: Conform to WDNR Technical Standard 1053.

B. Non-Channel: Conform to WDNR Technical Standard 1052.

C. Conform to WIsDOT Spec. 628.2.2: Class 1, Type B Matting.

2.06 STORM DRAIN INLET PROTECTION

A. Conform to WDNR Technical Standard 1060.

B. Inlet protection for paved streets with concrete curb and gutter: The following methods are acceptable:
   1. Conform to the details on the Drawings.
   2. Catch Basin Inserts:
      a. Road Drain by Wimco, LLC (www.roaddrain.com).
      b. Lange Industries (www.langeindustries.com) or approved equal.
      c. Filter bag insert conforming to DNR No. 1060 subject to Site and approved by the Engineer [Sometimes they need to be used but avoid if feasible].
   3. Rock Bags:
      a. Conform to WisDOT Spec. 628.2.13.

C. Inlet protection for non-paved surfaces without curb or areas where vegetation will be established. The following methods are acceptable:
   1. Conform to the details on the Drawings.
   2. Silt fence ring, or approved equal:
      a. Place wire mesh cage in a circular or square confirmation to form a minimum 5-foot diameter zone of protection.
      b. Geotextile shall be monofilament/monofilament meeting the requirements of WisDOT Spec. Heavy Duty.
      c. Loose aggregate or a rock log(s) around perimeter of ring to anchor geotextile.
   3. Sediment control inlet hat conforming to WisDOT Spec. 628.3.13:
      a. InfraSafe Sediment Control Barrier by Royal Enterprises (http://www.royalenterprises.net/).

2.07 SILT CURTAIN

A. Conform to WDNR Technical Standards 1070.

2.08 DITCH CHECKS

A. Conforming to WDNR Technical Standard 1062.

2.09 DUST CONTROL

A. Water clear and free from suspended fine sediment.

B. The Owner may elect to have the Contractor apply a chloride solution for dust control
   1. Calcium Chloride: Conform to WisDOT Spec. 623.
   2. Magnesium Chloride Solution: Conform to WisDOT Spec. 623.

2.10 TEMPORARY SEED

A. Conform to Section 32 92 00.

B. General – Sizing, configuration, capacity, and selection of dewatering sediment capture techniques shall be based on Site and flow conditions. The Contractor shall submit the means and methods for review by the Engineer. Sizing of the sediment capture systems will have to be adjusted such that the ultimate discharge water is not visibly different from the receiving water.

2.11 FLOCCULANTS: CONFORM TO WDNR SPEC. 1051.

PART 3 EXECUTION

3.01 GENERAL

A. Comply with all applicable laws, ordinances, regulations, permit requirements, orders and decrees pertaining to erosion/sediment control and stormwater discharge during the conduct of the Work.

B. Take necessary precautions against damage to the Project by action of the elements.

C. Implement the Project's NPDES Stormwater Pollution Prevention Plan (SWPPP) and take necessary actions to prevent off Site damage resulting from Work conducted on the Project or Project related stormwater runoff.

D. Minimize the amount of disturbed land that is susceptible to erosion at any time. Delineate areas not to be disturbed
   1. Exclude vehicles and construction equipment from area not to be disturbed to preserve natural vegetation.
   2. Maintain and preserve riparian and naturally vegetated buffer strips (10 feet minimum distance) along water courses.

3.02 INSTALLATION

A. General: Install temporary stormwater management and sediment control devices in conformance with the details, typical sections, and elevations shown on the Drawings.

B. The location of temporary stormwater and sediment control devices may be adjusted from that shown on the Drawings to accommodate actual field conditions and increase the effectiveness of the installation.

C. Temporary Orifice Restrictor for Temporary Sediment Basin: Conform to Plan Detail.

D. Silt Fence: Conform to WisDOT Spec. 628.3.4
   1. Install in the locations shown on the Drawings using the machine sliced installation method, unless directed otherwise by the Engineer.
   2. Use additional measures, such as rock aggregate, placed along the base of the silt fence where the silt fence geotextile cannot be trenched in, i.e. tree roots, frost, bedrock.
   3. Use short sections of silt fence placed in J-hook patterns to
      a. Supplement the perimeter silt fence at corner locations and areas where sediment deposition will occur. No more than 100 feet of silt fence shall be installed per 1/4-acre of drainage.

b. Break up flow path along silt fence running across contours to be no more than 100-feet between hooks or as directed by the Engineer.

4. Silt fence longer than 600-feet shall be constructed in separate independent units with each unit having a length less than 600-feet. Avoid splices whenever possible. If necessary, make splices at an opposing fence post and according to the manufacturer's specifications.

E. Stone Tracking Pad: Conform to WisDOT Spec. 628.3.16.
   1. Install at locations shown on the Drawings.
   2. Construct construction entrance before grading begins on the Site.
   3. Inspect construction entrance daily for mud accumulation to minimize vehicle tracking of sediment onto public roadways. Remove fugitive rock or wood mulch from adjacent roadways daily.

F. Mulching: Conform to WisDOT Spec. 628.3.12
   1. For seeded Sites, apply at a rate of 2 tons per acre (4,500 kg/ha).
   2. For unseeded Sites, apply at a rate of 2 to 3 tons per acre (4,500 to 6,700 kg/ha), covering the entire soil surface.
   3. Distribute mulch evenly by hand or machine and cover the exposed area to a uniform depth.
   4. Disk anchor in conformance to DNR No. 1058.
   5. Anchor mulch immediately to minimize loss by wind or water.

G. Hydraulic Erosion Control Products: Conform to WDNR Tech. Standard 1050.
   1. Raking or harrowing of soil/seed and slope (cat) tracking shall be done before installation of hydromulch.
   2. Apply hydromulch in at least 2 opposing directions so that a shadowing effect leaving the back side of a soil clod unprotected is minimized.
   3. Type Hydraulic Mulch
      a. Application Rate for Slopes greater than 1:4: 2,800 lbs per acre. 2 applications may be necessary. All other slopes apply at a rate of 2,100 lbs per acre.
   4. Type Bonded Fiber Matrix (BFM)
      a. Application Rate for Slopes less than 1:3: 3,000 lbs per acre.
      b. Application Rate for Slopes between 1:3 and 1:2: 3,500 lbs per acre. 2 applications shall be necessary.
      c. Application Rate for Slopes greater than 1:2: 4,500 lbs per acre. 2 applications shall be necessary.

H. Slope (Cat) Tracking
   1. Slope tracking consists of operating a dozer up and down slopes so that the cleats of the tracks create grooves perpendicular to the slope. By operating the dozer up and down, the soil surface is firmed and miniature interceptor checks are created.
   2. Required on all slopes equal to or steeper than 3:1 (H:V).

I. Erosion Matting: Conform to WisDOT Spec. 628.3.2.
   1. Install immediately following seeding in accordance with WisDOT Spec. 628. and as modified below.
   2. Install as shown on Drawings.
   3. Raking or harrowing of soil/seed shall be done before installation of erosion control blanket.
   4. Install blanket parallel to the direction of flow.

5. If permanent seeding is not available at the time of blanket installation, this material will have to be removed, re-seeded, and installed again as a permanent erosion control measure. If permanent seeding is available at the time of initial installation, a one-time proper installation is acceptable.

J. Storm Drain Inlet Protection: Conform to WisDOT Spec. 628.3.13.
   1. Provide effective storm drain inlet protection over the life of the Project until all sources with potential for discharging to inlets have been paved or stabilized.
   2. Place devices so that driving hazards or obstructions are not created. The devices must be cleaned out regularly and all devices must have an emergency overflow to reduce flooding potential.

K. Temporary Sediment Basins: Conform to WDNR Tech. Standard 1064.
   1. Sediment basins shall be excavated as a first priority when grading begins on the Project. The location and outlet configuration are shown on the Drawings.

L. Temporary Sediment Traps: Conform to WDNR Tech. Standard 1063.
   1. Temporary sediment traps are excavated in conjunction with other grading activities. Temporary traps are approximately 2-feet or less in depth with a length to width ratio of 2:4.
   2. Effectiveness of sediment traps can be increased by placing a rock weeper at the outlet.

M. Temporary Diversion Berm: Conform to WDNR Tech. Standard 1066.
   1. Temporary diversion berm shall be installed at locations shown on the Drawings. The berm shall be located to minimize damage by construction operations and traffic.
   2. Temporary diversion berm shall be installed as a first step in the land-disturbing activity and must be functional prior or in conjunction with upslope land disturbance.
   3. The berm shall be adequately compacted to prevent failure.
   4. Temporary or permanent seeding and mulch shall be applied to the berm immediately following its construction.
   5. Upon completion of disposal berm stabilization and restoration, the temporary diversion channel shall be removed (filled in) and stabilized.

N. Temporary Slope Drains
   1. When temporary down drains are placed on fill slopes, a temporary earth berm or sandbag barrier shall be constructed as necessary to guide water into the drain.
   2. The inlet of a drain and berm system must be properly constructed to channel water into the temporary drain.
   3. All temporary drains shall be adequately anchored to the slope to prevent disruption by the force of the water flowing into the drain.
      a. If the drain consists of plastic pipe, it must be securely anchored to the ground.

O. Silt Curtain: Conform to WDNR Tech. Standard 1070.
   1. Floatation silt curtain shall be installed in locations shown on the Drawings and according to the manufacturer's specifications.
      a. Anchor" and secured to prevent any material from passing beneath, over, around, or through the barrier.
      b. Provide sufficient slack to permit the curtain to rise to the maximum expected high water level, including wave action, without being overtopped and still be in continuous contact with the bottom.

2. Place floatation silt curtain as close to the shoreline or work area as possible. Flotation silt curtain shall not be placed across flowing rivers, streams, drainage ditches, or across culvert inlets or outlets.

3.03 MAINTENANCE

A. Conform to WisDOT Spec. 628.3, NPDES permit, and as follows:
   1. Inspect, maintain, and repair any washouts or accumulations of sediment that occur as a result of the grading or construction. Restoration consists of grade repair, turf re-establishment, and street sweeping of mud and debris tracked from the Site.
   2. Inspection of all erosion and sediment control items will take place immediately after each runoff event and at least daily during prolonged rainfall. Any required repairs shall be made immediately.
   3. The Contractor shall maintain the temporary sediment control devices until they are no longer necessary and are removed:
      a. Maintenance consists of keeping the devices functioning properly.
      b. The Contractor shall repair or replace plugged, torn, displaced, damaged, or non-functioning devices.
   4. Upon final acceptance of the Project and establishment of permanent erosion control measures, the Contractor shall remove all temporary erosion control measures.
   5. Temporary mulching and temporary seeding/mulching are very effective at controlling erosion. However, these are considered temporary measures. These measures may need to be re-established several times throughout the duration of the Work.
   6. Floatation silt curtain shall remain in place until such time that water contained within is free from turbidity:
      a. The curtain shall be removed within 72 hours after this determination has been made.
      b. At the completion of the Project, the floatation silt curtain shall be removed in such a manner so as to minimize release of sediment adhering to the turbidity curtain.
   7. If an erosion control device has been reduced in capacity by 30-percent or more, the Contractor shall restore such features to their original condition.
   8. Control dust blowing and movement on Site and roads as directed by Engineer to prevent exposure of soil surfaces, to reduce on and off-site damage, to prevent health hazards, and to improve traffic safety.

B. Temporary Sediment Basin shall be maintained according to WDNR Technical Standard 1064.

END OF SECTION

SECTION 02 41 13

SELECTIVE SITE DEMOLITION

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes
   1. Complete or partial removal and disposal or salvage of at grade, above grade, and below grade structures and miscellaneous items.

B. Related Sections
   1. Section 31 23 00 – Excavation and Fill.

1.02 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment
   1. Bid Items have been provided for demolition and removal items. Payment at the Bid Unit Price will be considered compensation in full for all Work necessary to complete the Bid Item in full, including removal, salvage, storage, and disposal.
   2. Measurement will be based upon the units as listed below for items removed, abandoned, or salvaged complete as specified. No measurement will be made of any removals that are not required. The actual quantity removed multiplied by the appropriate Bid Unit Price will be compensation in full for all Work and costs of the following Bid Items:
      a. **Underwater Driveline Clearing**: Lineal Foot.
      b. **Remove Abandoned Petroleum Line, 8-inch**: Lineal Foot.
      c. **Remove Asphaltic Surface**: Per square yard without regard to thickness, including integral bituminous curb.
      d. **Remove Concrete Curb and Gutter**: Per lineal foot, no matter the type.
      e. **Remove Retaining Wall**: Per lineal foot, measured at ground level, not matter the height.
         1) Note: it shall be the responsibility of the Bidder to evaluate the existing retaining walls on site, prior to bidding.
      f. Removal of existing concrete panels on site required for proposed site work will be incidental.
      g. Removal of fencing will be incidental.
      h. Saw cutting will be incidental.
      i. Bulkheading and abandoning of existing pipe will be incidental.
      j. Salvage and reinstallation of signs and mailboxes will be incidental.
      k. Removal of railroad track will be incidental and shall include removal of rail, ties, and other appurtenances.
   3. All other Work and costs of this Section shall be incidental to the Project and included in the Total Base Bid.

1.03 REFERENCES

A. Wisconsin Department of Transportation "Standard Specifications for Highway and Structure Construction," 2022 Edition (WisDOT Spec.) and supplements
   1. 204 – Removing or Abandoning Miscellaneous Structures.

1.04 DEFINITIONS

A. Remove: To take away or eliminate from the Site by any method selected by the Contractor, including disposal of material.

B. Salvage: To dismantle, disassemble, or remove carefully without damage so the item can be re-assembled, replaced, or reused in a workable condition equal to that existing before removal.

C. Abandon: To fill, bulkhead, or close off pipes and structures so that no settlement or flow can occur.

1.05 REGULATORY REQUIREMENTS

A. Conform to WisDOT Spec. 204.3.1.3, with the following modifications:
   1. Dispose of all materials designated for removal outside the Site at locations selected by Contractor.
   2. Stockpile or temporarily store materials designated for salvage at locations provided by Contractor.

1.06 SCHEDULING

A. Prior to starting Work, submit for review by the Engineer and approval by the Owner, a schedule showing the commencement, order, and completion dates of the various parts of this Work.

B. Fill holes or depressions resulting from removal or salvage immediately.

C. Provide temporary surface restoration for traffic continuity where removal or salvage operations are completed within streets, driveways, or parking lots.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 GENERAL

A. Dispose of all items removed, except for those items identified to be salvaged or recycled. Said disposal shall be in accordance with all laws, regulations, statutes, etc.

B. Perform removal work without damage to adjacent retained work. Where such Work is damaged, the Contractor shall patch, repair, or otherwise restore same to its original condition at no expense to the Owner.

C. Remove debris from the work area as often as necessary, but not less than at least once at the end of each workday. Debris shall be placed in approved containers to prevent the spread of dust and dirt.

D. Execute the Work in a careful and orderly manner with the least possible disturbance to the public and occupants of buildings.

E. Fill holes resulting from removals consistent with Section 31 23 00.

3.02 EXAMINATION

A. Meet with owners of signs to determine requirements for salvage, storage, and replacement.

3.03 PROTECTION

A. Take all necessary precautions to adequately protect personnel and public and private property in the areas of Work. All Site fencing shall be in place prior to the start of any removal work.

B. All street signs, traffic control signs, guy wires, mailboxes, posts, wood fence, etc. which may interfere with construction shall be removed, stored safely, and replaced.

C. Approved barriers or warning signs shall be provided as necessary.

D. Provide and maintain temporary protection of existing structures designated to remain where removal work is being done, connections made, materials handled, or equipment moved.

E. Do not close or obstruct walkways or roadways. Do not store or place materials in passageways or other means of egress. Conduct operations with minimum traffic interference.

F. Take reasonable precautions to limit damage to existing turf.

G. Holes or depressions created by removals shall not be left open for more than 1 day. Any hole within 10 feet of sidewalks shall be filled, suitably marked, or covered immediately.

H. Avoid disturbance to any material beyond the limits required for new construction.

3.04 SAWING PAVEMENT

A. Concrete Pavement: Saw along the removal line to a depth of 1/3 of the thickness of the concrete prior to breaking off the pavement.

B. Bituminous Pavement: Saw along the removal line to a minimum depth of 3 inches prior to breaking off the pavement.

3.05 REMOVE CONCRETE PAVEMENT / PANELS

A. Remove in accordance with WisDOT Spec. 204.3.2.2, except as modified below:
   1. Saw cut concrete pavement and concrete base prior to mechanical pavement removal equipment. Remove concrete in such a manner that the remaining pavement is not damaged.
   2. Prior to restoring trench areas, the edges of the trench shall be trimmed back to a vertical face on a straight line which is parallel with the centerline of the trench.

3.06 REMOVE BITUMINOUS PAVEMENT, PATH, DRIVEWAY

A. Remove in accordance with WisDOT Spec. 204.3.2.2, except as modified below:
   1. Saw cut bituminous pavement at the removal limits prior to that removal, unless otherwise approved by the Engineer.
   2. Prior to restoring trench areas, the edges of the trench shall be trimmed back to a vertical face on a straight line which is parallel with the centerline of the trench.

3.07 REMOVE CURB AND GUTTER

A. Saw cut at removal limits.

B. Concrete Curb and Concrete Curb and Gutter: Do not disturb any material beyond the limits required to form for new construction (assumed 12-inches maximum from the back of new work and 6-inches beyond the edge of new driveways).

3.08 REMOVE CONCRETE SURFACING

A. Work includes sidewalks, pedestrian ramps, medians, and driveways.

B. Saw cut concrete surfacing prior to removal.

C. Remove concrete in such a manner that the remaining surfacing is not damaged.

D. When removing existing sidewalks, the Contractor shall not disturb any material beyond the limits required for new construction (assumed as 6-inches maximum beyond and 8-inches maximum below existing grade).

E. When removing existing driveways, the Contractor shall not disturb any material beyond the limits required to form for new construction (assumed 12-inches maximum from the back of new Work and 6-inches beyond the edge of new driveways).

F. Prior to restoring trench areas, the edges of the trench shall be trimmed back to a vertical face on a straight line which is parallel with the centerline of the trench.

3.09 REMOVE BITUMINOUS SURFACING

A. Work includes pathways and driveways.

B. Saw cut bituminous surfacing to full depth at the limits of partial removal prior to that removal, unless otherwise approved by the Engineer.

C. Remove bituminous in such a manner that the remaining surfacing is not damaged.

D. Prior to restoring trench areas, the edges of the trench shall be trimmed back to a vertical face on a straight line which is parallel with the centerline of the trench.

E. When removing existing pathways and driveways, the Contractor shall not disturb any material beyond the limits required to form for new construction (assumed 12-inches maximum from the back of new work and 6 inches beyond the edge of new driveways).

3.10 REMOVE RETAINING WALL

A. Avoid damage to sections of wall to remain.

B. Dispose of materials off Site at a predetermined location.

C. Remove wall in its entirety, including footings and tiebacks.

3.11 UNDERWATER DRIVELINE CLEARING

A. The contractor shall complete a pre-construction sonar imaging survey of the proposed driveline to identify the nature and location of possible obstructions to installation of new sheet pile. Work includes all labor, materials, tools, equipment, and incidentals necessary for removal and disposal of obstructions discovered and documented as part of the pre-construction imaging survey.
   1. GPS integrated Multibeam System is the required type of sonar imaging survey. Alternatives to be considered by Engineer if findings can be easily verified by an independent 3rd party.

B. Contractor shall attempt to limit soil excavated with sheet pile drive line clearing, but any excavated soil shall be assumed to be contaminated and disposed of within the designated on-site disposal berm location. If significant quantities of soil are excavated, then field evaluations and quantities will determine whether disposal berm location has adequate capacity for this use. If required, offsite disposal of contaminated soil would be considered additional work. All other removed drive line clearing material shall be legally disposed of offsite by the contractor.

3.12 REMOVE ABANDONED PETROLEUM LINE

A. Existing petroleum lines on property shall be removed from the oil/water separator according to Ch. ATCP 93560 WAC requirements and the Materials Management Plan requirements.

3.13 SALVAGE AND REINSTALL

A. Salvage operations conform to WisDOT Spec. 204.3.1.3.

B. Signs
   1. In no case shall a traffic sign or street sign be removed or disturbed by Contractor without prior notification being given to Engineer and then only after satisfactory arrangements have been made for a temporary installation or its disposition
      a. Street identification signage shall be maintained at all times due to its importance to the 911 Emergency Response System.
      b. Remove and salvage all posts, A-frame angle brackets, stringers, as well as the nuts, bolts, and washers.
      c. Exercise reasonable care against damage to in-place signs during storage and installation.
      d. Remove signs damaged during construction and replace with new signs.

C. Fences
   1. Salvage and store fence and post material where they are in conflict with the Work.
   2. After completion of Work, reinstall fence to the condition existing prior to removal.

3. Install temporary snow fence or similar barrier at the end of the working day while the permanent fence is removed.

3.14 FIELD QUALITY CONTROL

A. Salvaged items to be reinstalled shall be of the same shape, dimension, location, and quality of the original item prior to construction.

B. Items damaged during removal or salvaging operations shall be replaced with new material of equal type and quality of the damaged item when it was new.

3.15 DISPOSING OF MATERIAL

A. Conform to WisDOT Spec. 204.3.1.3.

B. Dispose of all materials outside of the Site at disposal location selected by Contractor in compliance with state and local regulations. Burying of material and debris is not allowed within the Site.

END OF SECTION

SECTION 22 11 00

FACILITY WATER DISTRIBUTION

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
1. Hose bibs.
2. Wall Hydrants.
3. Backflow preventers.
4. Water hammer arrestors.
5. Thermostatic mixing valves.
6. Trap Primers
7. Chlorination.

B. Related Sections:
1. Section 03 30 00 - Cast-In-Place Concrete: Execution requirements for placement of concrete house keeping pads specified by this Section.
2. Section 08 31 13 - Access Doors and Frames: Product requirements for access doors for placement by this Section.
3. Section 09 91 00 - Painting and Coating: Product and execution requirements for painting specified by this Section.
4. Section 22 05 00 – Common Work Results for Plumbing:
    a. Administrative procedures:
        1) Submittals.
        2) Quality Assurance.
        3) Delivery Storage and Handling.
    b. Hangers and supports.
    c. Flashing and Sleeves.
    d. Pipe and equipment identification.
    e. Installation requirements for piping materials applying to various systems.
    f. Cleaning.
5. Section 22 07 00 - Plumbing Insulation: Execution requirements for insulated pipes.
6. Section 26 27 26 - Wiring Devices: Execution requirements for electric connections to equipment specified by this Section.

1.02 REFERENCES

A. American National Standards Institute (ANSI):
1. Z358.1 - Emergency Eyewash and Shower Equipment.

B. American Society of Mechanical Engineers (ASME):
1. B16.3 - Malleable Iron Threaded Fittings.
2. B16.4 - Gray Iron Threaded Fittings.
3. B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings.
4. B16.22 - Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.
5. B16.26 - Cast Copper Alloy Fittings for Flared Copper Tubes.
6. B31.9 - Building Services Piping.
7. B40.1 - Gauges - Pressure Indicating Dial Type - Elastic Element.

C. American Society of Sanitary Engineering (ASSE):
   1. 1010 - Performance Requirements for Water Hammer Arresters.
   2. 1011 - Performance Requirements for Hose Connection Vacuum Breakers.
   3. 1012 - Performance Requirements for Backflow Preventer With Intermediate Atmospheric Vent.
   4. 1013 - Performance Requirements for Reduced Pressure Principle Backflow Preventers and Reduced Pressure Fire Protection Principle Backflow Preventers.
   5. 1019 - Performance Requirements for Vacuum Breaker Wall Hydrants, Freeze Resistant, Automatic Draining Type.
   6. 1052 – Performance Requirements for Hose Connection Backflow Preventer, Field Testable.
   7. 1053 – Performance Requirements for Double check Backflow Prevention, Wall Hydrants, Field Testable.

D. ASTM International (ASTM):
   1. A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
   2. A536 - Standard Specification for Ductile Iron Castings.
   3. B88 - Standard Specification for Seamless Copper Water Tube.
   4. B584 - Standard Specification for Copper Alloy Sand Castings for General Applications.
   5. D1785 - Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.
   6. D2235 - Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings.
   7. D2466 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
   8. D2467 - Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80.
   9. D2855 - Standard Practice for Making Solvent-Cemented Joints With Poly (Vinyl Chloride) (PVC) Pipe and Fittings.
   10. F708 - Standard Practice for Design and Installation of Rigid Pipe Hangers.
   11. F 891 - Standard Specification for Coextruded Poly (Vinyl Chloride) (PVC) Plastic Pipe With a Cellular Core.
   12. F1476 - Standard Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications.

E. American Welding Society (AWS):
   1. A5.8 - Specification for Filler Metals for Brazing and Braze Welding.

F. American Water Works Association (AWWA):
   1. C110 - American National Standard for Ductile-Iron and Grey-Iron Fittings, 3 in. through 48 in. (75 mm through 1200 mm), for Water and Other Liquids.
   2. C111 - American National Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
   3. C151 - American National Standard for Ductile-Iron Pipe, Centrifugally Cast, for Water.
   4. C600 - Standard for Installation of Ductile-Iron Water Mains and their Appurtenances.
   5. C900 - Polyvinyl Chloride (PVC) Pressure Pipe, 4 inches through 12 inches, for Water Distribution.
   6. C901 - Polyethylene (PE) Pressure Pipe and Tubing, 1/2 inches through 3 inches, for Water Service.
   7. C950 - Fiberglass Pressure Pipe.
   8. M6 - Water Meters - Selection, Installation, Testing, and Maintenance.

G. Manufacturers Standardization Society (MSS) of the Valve and Fittings Industry:
   1. SP 58 - Pipe Hangers and Supports - Materials, Design and Manufacturer.
   2. SP 67 - Butterfly Valves.
   3. SP 69 - Pipe Hangers and Supports - Selection and Application.
   4. SP 70 - Cast Iron Gate Valves, Flanged and Threaded Ends.
   5. SP 71 - Cast Iron Swing Check Valves, Flanged and Threaded Ends.
   6. SP 78 - Cast Iron Plug Valves, Flanged and Threaded Ends.
   7. SP 80 - Bronze Gate, Globe, Angle and Check Valves.
   8. SP 85 - Cast Iron Globe & Angle Valves, Flanged and Threaded.
   9. SP 89 - Pipe Hangers and Supports - Fabrication and Installation Practices.
   10. SP 110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.

H. National Electrical Manufacturers Association (NEMA):
   1. 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

I. National Sanitation Foundation International (NSF):
   1. 61 - Drinking Water System Components - Health Effects.

J. Plumbing and Drainage Institute (PDI):
   1. WH201 - Water Hammer Arrester Standard.

1.03 PRICE AND PAYMENT PROCEDURES

A. All Work and Costs of this Section shall be incidental to the Project and included in the appropriate Bid Item associated with the Work.

1.04 SUBMITTALS

A. Product Data:
   1. Piping: Submit catalog information on pipe materials, fittings, and accessories.
   2. Valves:
      a. Submit manufacturers catalog information with valve data and ratings for each service.
      b. Identify valve application in the submittal.
   3. Domestic Water Specialties: Submit manufacturers catalog information, component sizes, rough-in requirements, service sizes, and finishes.
   4. Pumps: Submit pump type, capacity, certified pump curves showing pump performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable. Include electrical characteristics and connection requirements.

B. Manufacturer's Installation Instructions: Submit installation instructions for pumps, valves and accessories.

C. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.05 CLOSEOUT SUBMITTALS

A. Project Record Documents: Record actual locations of valves and equipment.
   1. Submit certification of water disinfection and chlorination.

B. Operation and Maintenance Data: Submit spare parts list, exploded assembly views and recommended maintenance intervals.

1.06 QUALITY ASSURANCE

A. For drinking water service, provide valves complying with NSF 61.

1.07 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

B. Installer: Company specializing in performing Work of this section with minimum 3 years experience.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00: Product storage and handling requirements.

B. Accept valves and equipment on Site in shipping containers with labeling in place. Inspect for damage.

C. Provide temporary protective coating on cast iron and steel valves.

D. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

E. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the Work, and isolating parts of completed system.

1.09 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00.

B. Do not install underground piping when bedding is wet or frozen.

PART 2 PRODUCTS

2.01 DOMESTIC WATER PIPING, BURIED WITHIN 5 FEET OF BUILDING

A. Refer to Section 22 05 00.

2.02 DOMESTIC WATER PIPING, ABOVE GRADE

A. Refer to Section 22 05 00.

2.03 UNIONS AND FLANGES

A. Refer to Section 22 05 00.

2.04 INTERIOR HOSE BIBBS

A. Manufacturers:
   1. Chicago Faucet.
   2. Josam.
   3. Nibco.

4. Smith.
5. Woodford.
6. Zurn.

B. 3/4 inch: 125 psi, CWP, copper to hose, bronze body, angle type, vacuum breaker on hose outlet. NIBCO Fig. 72VB, or approved equal.

2.05 WALL HYDRANTS (HB-1) NOT FREEZE PROOF

A. Manufacturers:
1. Chicago Faucet.
2. Josam.
3. Nibco.
4. Smith.
5. Woodford.
6. Zurn.

B. ASSE 1019; bronze wall plate hose thread spout, and removable key operator, vacuum breaker. Rough bronze finish. Woodford Model 84 (surface mounted).

2.06 EXTERIOR WALL HYDRANTS (HB-2) (FREEZE-PROOF)

A. Manufacturers:
1. Chicago Faucet.
2. Josam.
3. Nibco.
4. Smith.
5. Woodford.
6. Zurn.

B. ASSE 1019; non-freeze, self-draining type with bronze wall plate hose thread spout, and removable key operator, vacuum breaker. Rough bronze finish. Woodford Model 67 (surface mounted).

2.07 BACKFLOW PREVENTERS

A. Manufacturers:
1. Conbraco.
2. Febco.
3. Watts.
4. Wilkins.

B. Reduced Pressure Zone Principal (RPZ) Backflow Preventers:
1. Comply with ASSE 1013.
2. 2 Inch and Smaller: NPT threaded connections and quarter-turn, full port, resilient seated, bronze ball valve shut-offs, with drain connection.
3. 2-1/2 Inch and Larger: Flange connecting, wedge gate valves with non-rising stem and resilient seats, FDA approved epoxy coated check and relief valves, replaceable bronze check seats and stainless-steel relief valve seat.
4. Accessories: Air gap funnel.

2.08 WATER HAMMER ARRESTORS

A. Manufacturers:
   1. Josam.
   2. Precision Plumbing Products
   3. Sioux Chief.
   4. Smith.
   5. Zurn.

B. Josam Series 7500, or approved equal, stainless-steel construction, bellows type sized in accordance with PDI WH-201.
   1. Barrel-piston type water hammer arresters with hard drawn copper barrel, brass piston and "O" rings, seal lubricant, pre-charged permanently sealed air cushion and male IPS plug. Arresters shall be designed for 150 PSI working pressure and PDI certified.

2.09 PIPE HANGERS AND SUPPORTS

A. Refer to Section 22 05 00.

2.10 THERMOSTATIC MIXING VALVE

A. Manufacturers:
   1. Bradley.
   2. Lawler.
   3. Powers.

B. Emergency Fixture Application features:
   1. Positive shut-off upon failure of cold-water supply.
   2. Integral cold-water bypass.
   3. High-low capability to serve eyewash flow or shower flow.
   4. Inlet thermometers and outlet thermometers.
   5. Emergency Shower/Eyewash, basis of design: Lawler model 911 Unit No. 8334.
   6. Emergency Eyewash only, basis of design: Lawler model 911E/F.

C. Master Mixing Valve
   1. Adjustable out temperature 85-135 degrees F.
   2. 180 degree F inlet hot water supply temperature.
   3. 1 inch inlet connections, 1-1/4 inch outlet.
   4. 28 gpm at 5 psi pressure drop, 54 gpm at 20 psi pressure drop.
   5. Cabinet: surface mounted, 18-gauge carbon steel with baked enamel finish, with 16 gauge door, piano hinge, and lock.
   6. Basis of design: Lawler Series 66 Valve No. 66-80, Unit No. 83008.

2.11 TRAP PRIMER

A. Manufacturers:
   1. MIFAB, Inc.
   2. Precision Plumbing Products, Inc.
   3. Sioux Chief Manufacturing Company, Inc.
   4. Smith, Jay R. Mfg. Co.; Division of Smith Industries, Inc.
   5. Watts; a division of Watts Water Technologies, Inc.; Watts Regulator Company.

B. Construction: ASSE 1018, lead free bronze body, chrome plated finish where exposed, 1/2 inch inlet and outlet connections. 125 psi rated pressure, 25 psi minimum system pressure, 10 psi pressure drop to operate.
   1. Provide distribution.

C. Basis of Design: Watts LFTP300

PART 3 EXECUTION

3.01 EXAMINATION

A. Section 01 30 00: Coordination and project conditions.

B. Verify excavations are to required grade, dry, and not over-excavated.

3.02 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt, on inside and outside, before assembly.

3.03 INSTALLATION

A. Pipe and fittings: Refer to Section 22 05 00.

B. Valves: Refer to Section 22 05 00.

C. Hose bibs: Provide vacuum breakers where directed by the Plumbing Inspector.

D. Wall Hydrants:
   1. Insulate piping through the wall and maintain the integrity of the vapor barrier.
   2. Apply sealant to wall surface behind the wall hydrant.

E. Backflow preventers:
   1. Register installation with the Department of Labor and Industry.
   2. Extend drain piping from funnel to floor drain.

F. Water hammer arrestors: Install with shut-off valve and threaded fitting.

G. Balancing valves: Refer to Section 22 05 00.

H. Thermostatic mixing valves:
   1. Set outlet temperature limit to not exceed 115 degrees F.
   2. Set outlet temperature limit to not exceed 85 degrees F for emergency fixtures.

I. Trap Primer: Install supply-type, trap-seal primer valves with outlet piping pitched down toward drain trap a minimum of 1 percent, and connect to floor-drain body, trap, or inlet fitting. Adjust valve for proper flow.

J. Chlorination: Refer to Section 22 05 00.

3.04 INSTALLATION - THERMOMETERS AND GAUGES

A. Install thermometers in piping systems where indicated on Drawings.

B. Install one pressure gauge for each pump, locate taps before strainers and on suction and discharge of pump; pipe to gauge. Omit tap upstream of strainer for in-line pumps.

C. Install gauge taps in piping.

D. Install pressure gauges with snubbers. Provide needle valve or ball valve to isolate each gauge.

E. Install thermometers in piping systems in sockets in short couplings. Enlarge pipes smaller than 2-1/2 inches for installation of thermometer sockets. Allow clearance from insulation.

F. Provide instruments with scale ranges selected according to service with largest appropriate scale.

G. Install gauges and thermometers in locations where they are easily read from normal operating level. Install vertical to 45 degrees off vertical.

H. Adjust gauges and thermometers to final angle, clean windows and lenses, and calibrate.

3.05 INSTALLATION - HANGERS AND SUPPORTS

A. Install hangers and supports in accordance with Section 22 05 00.

3.06 INSTALLATION – BURRIED PIPING SYSTEMS

A. Verify connection size, location, and inverts are as indicated on Drawings.

B. Coordinate underground piping locations with structural footings.

C. Establish elevations of buried domestic water piping with not less than 7.5-feet of cover outside of building.

D. Establish minimum separation of 10 feet from water piping in accordance with Minnesota code.

E. Remove scale and dirt on inside of piping before assembly.

F. Excavate pipe trench in accordance with Division 31.

G. Install pipe to elevation as indicated on Drawings.

H. Place bedding material at trench bottom to provide uniform bedding for piping, level bedding materials in one continuous layer not exceeding 4 inches compacted loose depth; compact to 95 percent maximum density.

I. Install pipe on prepared bedding.

J. Route pipe in straight line.

K. Pipe Cover and Backfilling:
   1. Backfill trench in accordance with Division 31.

2. Maintain optimum moisture content of fill material to attain required compaction density.
3. After hydrostatic test, evenly backfill entire trench width by hand placing backfill material and hand tamping in 6 inches compacted layers to 12 inches minimum cover over top of jacket. Compact to 95 percent maximum density.
4. Evenly and continuously backfill remaining trench depth in uniform layers with backfill material.
5. Do not use wheeled or tracked vehicles for tamping.

3.07 INSTALLATION - ABOVE GROUND PIPING

A. Refer to Section 22 05 00 - Common Work Results for Plumbing for additional requirements.

B. Install non-conducting dielectric connections wherever jointing dissimilar metals.

C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.

D. Install piping to maintain headroom without interfering with use of space or taking more space than necessary.

E. Group piping whenever practical at common elevations.

F. Install piping level, or slope piping and arrange to drain at low points.

G. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings. Refer to Section 22 07 00.

H. Provide access where valves and fittings are not accessible.

I. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.

J. Provide support for utility meters in accordance with requirements of utility companies.

K. Prepare exposed, unfinished pipe, fittings, supports, and accessories ready for finish painting. Refer to Section 09 90 00.

L. Install domestic water piping in accordance with ASME B31.9.

M. Sleeve pipes passing through partitions, walls and floors. Refer to Section 22 05 00.

N. Install unions downstream of valves and at equipment or apparatus connections.

O. Install brass male adapters each side of valves in copper piped system. Solder adapters to pipe.

P. Install gate or ball valves for shut-off and to isolate equipment, part of systems, or vertical risers.

Q. Provide flow controls in water circulating systems as indicated on Drawings.

R. Install potable water protection devices on plumbing lines where contamination of domestic water may occur; on boiler feed water lines, irrigation systems.

S. Pipe relief from valves, back-flow preventers and drains to nearest floor drain.

T. Test backflow preventers in accordance with ASSE 5013.

U. Install water hammer arrestors complete with accessible isolation valve on hot and cold-water supply piping.

3.08 INSTALLATION - SERVICE CONNECTIONS

A. Verify connection size, location, and inverts are as indicated on Drawings.

B. Coordinate underground piping locations with structural footings.

C. Provide mechanical sleeve seal for wall penetrations. Anchor service main to concrete.

D. Establish elevations of buried piping with not less than 7.5 feet of cover.

3.09 FIELD QUALITY CONTROL

A. Section 01 40 00: Field inspecting, testing, adjusting, and balancing.

B. Test domestic water piping system in accordance with applicable code or local authority having jurisdiction.

3.10 PIPING TESTS:

A. Fill domestic water piping. Check components to determine that they are not air bound and that piping is full of water.

B. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. If testing is performed in segments, submit a separate report for each test, complete with diagram of portion of piping tested.

C. Leave new, altered, extended, or replaced domestic water piping uncovered and unconcealed until it has been tested and approved. Expose work that was covered or concealed before it was tested.

D. Cap and subject piping to static water pressure of 50 psig above operating pressure, without exceeding pressure rating of piping system materials. Isolate test source and allow it to stand for four hours. Leaks and loss in test pressure constitute defects that must be repaired.

E. Repair leaks and defects with new materials, and retest piping or portion thereof until satisfactory results are obtained.

F. Prepare reports for tests and for corrective action required.

3.11 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash from site periodically and dispose off-site; do not burn or bury.

3.12 CLEANING

A. Refer to Section 01 70 00.

B. Refer to Section 22 05 00.

END OF SECTION

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SECTION 22 13 00

FACILITY SANITARY SEWERAGE

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Sanitary Drainage Specialties:
      a. Floor drains.
      b. Trench drains.
      c. Floor sinks.
      d. Cleanouts.
      e. Flammable waste interceptor.

B. Related Sections:
   1. Section 03 30 00 - Cast-In-Place Concrete: Execution requirements for placement of concrete specified by this section.
   2. Section 08 31 13 - Access Doors and Frames: Product requirements for access doors for placement by this section.
   3. Section 22 05 00 – Common Work Results for Plumbing: Product and installation requirements for piping materials applying to various systems.
   4. Section 26 27 26 - Wiring Devices: Execution requirements for electric connections to equipment specified by this section.

1.02 REFERENCES

A. American Society of Mechanical Engineers (ASME):
   1. A112.21.1 - Floor Drains.
   2. B31.9 - Building Services Piping.

B. American Society for Testing Materials (ASTM):
   1. A74 - Standard specification for cast iron soil pipe and fittings.
   2. C564 - Standard specification for rubber gaskets for joining cast iron soil pipe and fittings.

C. Cast Iron Soil Pipe Institute (CISPI):
   1. 301 - Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications.
   2. 310 - Specification for Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications.

1.03 PRICE AND PAYMENT PROCEDURES

A. All Work and Costs of this Section shall be incidental to the Project and included in the appropriate Bid Item associated with the Work.

1.04 SUBMITTALS

A. Section 01 33 00: Submittal procedures.

B. Shop Drawings: Indicate dimensions, weights, and placement of openings and holes for sewage-ejectors, and manholes.

C. Product Data:
   1. Sanitary Drainage Specialties: Submit manufacturers catalog information, component sizes, rough-in requirements, service sizes, and finishes.
   2. Pumps: Submit pump type, capacity, certified pump curves showing pump performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable. Include electrical characteristics and connection requirements.

D. Manufacturer's Installation Instructions: Submit installation instructions for material and equipment.

E. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.05 CLOSEOUT SUBMITTALS

A. Section 01 70 00: Closeout procedures.

B. Project Record Documents: Record actual locations of equipment and clean-outs.

C. Operation and Maintenance Data: Submit frequency of treatment required for interceptors. Include, spare parts lists, exploded assembly views for pumps and equipment.

1.06 QUALITY ASSURANCE

A. Perform Work in accordance with State of Minnesota standards.

B. Maintain one copy of each document on site.

1.07 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum 3 years experience.

B. Installer: Company specializing in performing Work of this section with minimum 3 years experience.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00: Product storage and handling requirements.

B. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the Work, and isolating parts of completed system.

1.09 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00.

B. Do not install underground piping when bedding is wet or frozen.

PART 2 PRODUCTS

2.01 FLOOR DRAINS

A. Acceptable Manufacturers:
   1. Jay R. Smith.
   2. Josam.
   3. Wade.
   4. Watts.
   5. Zurn.

B. Construction:
   1. ASME A112.21.1.
   2. Coated cast iron body.
   3. Flashing collar with threaded strainer connection.
   4. Drainage flange.

C. Basis of Design:
   1. Floor Drain (FD-1): Josam 30000-A series, with 4-inch satin finish bronze strainer, bottom outlet.
   2. Condensate Drain (FD-2): Josam 30000-A-E2 series with satin finish bronze strainer with 4-inch diameter funnel, bottom outlet.

2.02 TRENCH DRAINS (LINEAR PRECAST)

A. Manufacturers:
   1. Dura-Trench.
   2. Smith/ACO.
   3. Polycast.
   4. Watts.
   5. Zurn.

B. Trench Drain (TD-1)
   1. Trench: 12 inches wide by 48 inches long, pre-sloped.
   2. Channel: UV stabilized, fiberglass reinforced polymer, polymer concrete or polypropylene.
   3. Frame: Stainless steel or ductile iron with Stainless Steel Frame Guard.
   4. Outlet: Integral 4 inch side outlet.
   5. Grate: Slotted Load rating special duty, over 10,000 lb rating, DIN Class F
   6. Accessories: Provide frame anchors, grate lockdowns and construction covers.

C. Provide extensions necessary to match size indicated on the Drawings.

2.03 CLEANOUTS

A. Acceptable Manufacturers:
   1. Jay R. Smith.
   2. Josam.
   3. Wade.
   4. Watts.
   5. Zurn.

B. Floor Cleanout (CO): Provide Josam Series 58580-1 series, or equal, with satin finish bronze top and carpet cleanout marker where appropriate. Provide chrome cover when located in a wall.

2.04 SAND/SOLIDS TRAP

A. See structural

2.05 FLAMMABLE WASTE TRAP (OIL/WATER SEPERATOR) (OI-1)

A. Acceptable Manufacturers:
   1. Brown Minneapolis Tank.
   2. Midwest Tank.
   3. PPF Metal Fabricating.
   4. Kistner Concrete Products.
   5. Striem.

B. Description:
   1. Retention capacity per drawings and schedules
   2. 3/16 inch steel or 6 inch 5000 psi concrete shell and bottom
   3. Min. 24 inch diameter access cover, 3/8 inch checkered steel plate with gas-tight gaskets.
   4. Load rating: H20
   5. 4-inch inlet and outlet fittings with long sweep elbow.
   6. Piping connections and invert elevations to match orientation indicated on the drawings.

PART 3 EXECUTION

3.01 EXAMINATION

A. Section 01 30 00: Coordination and project conditions.

B. Verify excavations are to required grade, dry, and not over-excavated.

3.02 PREPARATION

A. Verify elevations with site utility work prior to commencing work.

B. Remove scale and dirt, on inside and outside of pipe before assembly. Remove burrs.

C. Protect open ends of pipe from dirt and debris using temporary plugs or caps.

3.03 GENERAL INSTALLATION

A. Pitch drain, waste, and vent piping 1/4 inch per foot minimum. Do not slope more than 1/2 inch per foot.

B. Support piping so it will not sag.

C. Follow manufacturer's installation instructions for neoprene gasket connections to specialties.

D. Install top of hubs below finish floor when masonry partition wall thickness is insufficient to conceal hub and/or outside diameter of hub is greater than stud width.

E. Install an approved expansion joint at intervals not to exceed 35 feet for vertical plastic piping.

F. Floor Drains: Install accurately where indicated on the drawings:
   1. Install with top set level with finished floor, unless indicated otherwise.
   2. Trap and vent as required by local code authority.

G. Cleanouts: Install full size at the following locations:
   1. Base of waste stacks.
   2. Ninety degree turns in mains.
   3. Point where sewer leaves building.
   4. All other necessary points as indicated and required to permit easy system rodding:
      a. Every 50 feet on lines 3 inches or less in size.
      b. Every 100 feet on lines 4 inches or more in size.

H. Encase exterior cleanouts in concrete flush with grade.

I. Install floor cleanouts at elevation to accommodate finished floor.

3.04 INSTALLATION - HANGERS AND SUPPORTS

A. Refer to Section 22 05 00.

3.05 INSTALLATION - BURIED PIPING SYSTEMS

A. Verify connection size, location, and inverts are as indicated on Drawings.

B. Coordinate underground piping locations with structural footings.

C. Establish elevations of buried piping with not less than 6.5 feet of cover.

D. Establish minimum separation of 10 feet from water piping in accordance with Minnesota code.

E. Remove scale and dirt on inside of piping before assembly.

F. Excavate pipe trench in accordance with Division 31.

G. Install pipe to elevation as indicated on Drawings.

H. Place bedding material at trench bottom to provide uniform bedding for piping, level bedding materials in one continuous layer not exceeding 4 inches compacted loose depth; compact to 95 percent maximum density.

I. Install pipe on prepared bedding.

J. Route pipe in straight line.

K. Pipe Cover and Backfilling:
   1. Backfill trench in accordance with Division 31.

2. Maintain optimum moisture content of fill material to attain required compaction density.
3. After hydrostatic test, evenly backfill entire trench width by hand placing backfill material and hand tamping in 6 inches compacted layers to 12 inches minimum cover over top of jacket. Compact to 95 percent maximum density.
4. Evenly and continuously backfill remaining trench depth in uniform layers with backfill material.
5. Do not use wheeled or tracked vehicles for tamping.

3.06 INSTALLATION - ABOVE GROUND PIPING

A. Establish invert elevations, slopes for drainage to 1/8 inch per foot minimum. Maintain gradients.

B. Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Provide clearances at cleanout for snaking drainage system.

C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.

D. Install piping to maintain headroom. Do not spread piping, conserve space.

E. Group piping whenever practical at common elevations.

F. Provide access where valves and fittings are not accessible.

G. Increase vent stacks to 3 inches in diameter (minimum) for vents extending through the roof.

H. Install vent piping penetrating roof with frost proof jackets having air space of at least 1-inch between outside surface of pipe and inside surface of frost proof jacket.

I. Install piping penetrating roofed areas to maintain integrity of roof assembly.

J. Construct the roof jacket with a roof flange of 16 ounce copper or sheet lead of not less than 4 pounds per square foot. Maintain separation from fresh air intakes indicated on the drawings but not less than 10 feet horizontal.

K. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.

L. Prepare exposed, unfinished pipe, fittings, supports, and accessories ready for finish painting. Refer to Section 09 91 00.

M. Install bell and spigot pipe with bell end upstream.

N. Sleeve pipes passing through partitions, walls and floors.

O. Install firestopping at fire rated construction perimeters and openings containing penetrating sleeves and piping. Refer to Section 07 84 00.

P. Support cast iron drainage piping at every joint.

3.07 FIELD QUALITY CONTROL

A. Section 01 40 00: Field inspecting, testing, adjusting, and balancing.

B. Test sanitary waste and vent piping system in accordance with the Sate of Minnesota Rules and Regulations, and local authority having jurisdiction.

3.08 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash from site periodically and dispose off-site; do not burn or bury.

END OF SECTION

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SECTION 31 23 00

EXCAVATION AND FILL

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes
   1. Excavation and fill for roadways, railways, foundations, channels, ponds, and other areas.

B. Related Sections
   1. Section 01 57 13 - Temporary Erosion and Sediment Control.
   2. Section 02 41 13 - Selective Site Demolition.
   3. Section 31 10 00 - Site Clearing.
   4. Section 31 23 13 - Subgrade Preparation.
   5. Section 32 92 00 - Turf and Grasses.
   6. Section 33 05 05 - Trenching and Backfilling.

1.02 PRICE AND PAYMENT PROCEDURES

A. Measurement and Payment
   1. Bid Items have been provided for various excavation materials, borrow materials, and salvage materials. Measurement and payment shall be at the Bid Unit Price, according to the following:
      a. A Bid Item has been provided for **Excavation Common – Onsite Disposal**. Measurement will be according to Section 205.4 of the WisDOT Spec. Payment will include placing embankments and compacting suitable excavated material on Site, including general earth moving activities.
      b. A Bid Item has been provided for **Excavation Common – Offsite Disposal.** Measurement will be according to Section 205.4 of the WisDOT Spec. Payment will include costs of hauling and disposal at an acceptable location according to local regulations. Any common excavation determined to be unsuitable for on-Site use, shall be reviewed by Engineer's representative and agreed to be unsuitable for on-Site use, prior to hauling and disposing off site.
      c. A Bid Item has been provided for **Select Borrow**. Measurement will be by the ton of material as determined from weight tickets delivered to the Engineer. Payment will include all costs related to furnishing and installing the material complete in place as specified
         1) If the borrow material is being wasted or placed in excess compared to the proposed grading, the Owner reserves the right to deduct quantities that are in excess.
      d. A Bid Item has been provided for **Topsoil**. Measurement will be by the ton of material as determined from weight tickets delivered to the Engineer. All hauling, placement, blading, grading, shaping, and compacting of Topsoil shall be incidental to this Bid Item.
   2. Topsoil striping and stockpiling shall be considered incidental to the common excavation work and included in the Total Base Bid. Note that stripped topsoil must be deemed free of contaminants, should the Contractor wish to reuse on site.

3. All other Work and costs of this Section shall be incidental to the Project and included in the Total Base Bid.

1.03 REFERENCES

A. Wisconsin Department of Transportation "Standard Specifications for Highway and Structures Construction," 2022 Edition (WisDOT Spec.) and supplements
   1. 205 – Roadway and Drainage Excavation.
   2. 206 – Excavation for Structures.
   3. 207 – Embankment.
   4. 208 – Borrow.
   5. 209 – Granular Backfill.
   6. 210 – Structure Backfill.
   7. 312 – Select Crushed Material.
   8. 625 – Topsoil and Salvaged Topsoil.

1.04 SUBMITTALS

A. Submit the following items consistent with Section 01 33 00:
   1. Gradation tests for borrow materials.
   2. Topsoil Borrow test indicating material content, organic content, and ph levels.

1.05 DEFINITIONS

A. The definitions of the different classifications of excavation and borrow material shall conform to WisDOT Spec. 205 and 208, or as modified herein.
   1. Grading Grade: Bottom of the fully excavated design section as shown on the Drawings.
   2. Excavation Common: Excavation above the grading grade that has not been classified as another form of excavation in this Section.

1.06 QUALITY ASSURANCE

A. Assist testing laboratory by excavating for density tests. Assist testing laboratory with obtaining material samples.

1.07 SEQUENCING AND SCHEDULING

A. Perform excavation as soon as possible after sewer and water construction.

B. Complete subgrade for streets, railways, driveways, walks, and parking lots immediately after trench backfill and compaction.

C. Complete finish grading of turf areas within 5 calendar days after backfill.

PART 2 PRODUCTS

2.01 MATERIALS

A. Embankment: Conform to WisDOT Spec. 207.

B. Select Borrow: Conform to WisDOT Spec. 208.
   1. Fill imported for structural support should be non-organic granular soils having a maximum 12 percent by weight passing the No. 200 Sieve, and a maximum particle size of 2 inches. Crushed stone (or other rocky materials) could be a suitable alternative, but the Engineer should be consulted to review gradation of any proposed alternative fill material.

C. Breaker Run: Conform to WisDOT Spec. 311.

D. Topsoil Material: Conform to WisDOT Spec 625.

PART 3 EXECUTION

3.01 GENERAL

A. Establish traffic control prior to excavations.

B. Establish the specified erosion control devices according to Section 01 57 13 prior to all excavations.

C. Notify utility companies of progress schedule so they can accomplish relocations, removals, and holding of lines.

D. Perform removals consistent with Section 02 41 13.

E. Strip topsoil consistent with Section 31 10 00.

3.02 PREPARATION OF EMBANKMENT

A. Conform to Section 31 23 13.
   1. Engineer's approval is required of all areas where preparation works has been performed prior to the placement of the embankment or fill material.

3.03 EXCAVATING OPERATIONS

A. Conform to WisDOT Spec. 205.3, or as modified herein.
   1. Excavation of unstable material below grade shall be done under the direction of the Engineer as the subsurface conditions are disclosed.
      a. An experienced soils technician or geotechnical engineer administered by the Contractor must perform observations during construction to determine actual required subcut depths, which could be more or less than anticipated.
      b. Resident Engineer or their employed soils technician or geotechnical Engineer may also perform quality assurance observations to determine potential subcut depths during construction.
   2. Remove muck excavation material so as to minimize disruption to the bottom of the excavation.
   3. Notify Engineer immediately of any large boulders or ledge rocks encountered so proper measurement or profile can be made for an agreed upon price.
   4. No solid rock will be allowed within 12-inches of the subgrade.
   5. Provide and maintain temporary drainage facilities until permanent facilities are completed.

6. After the excavation is complete and prior to backfilling operations, notify the Engineer 24-hours in advance so all excavation areas can be cross-sectioned to determine quantities.

3.04 PLACING EMBANKMENT MATERIALS

A. Conform to WisDOT Spec. 207.3.

B. The Contractor shall construct an embankment test strip from excavated materials intended to be used as fill prior to beginning embankment construction or stockpiling material for embankment construction. The test strip shall be a minimum of 24 feet wide by 50 feet long and consisting of a minimum of two layers of specified thickness. Contractor shall attempt to compact the test strip to the specified density which may involve additional drying or wetting effort (moisture condition). Density testing shall validate the desired compaction is achieved. Based on results of the embankment test strip, the Engineer shall determine if the excavated material is suitable for embankment construction. During embankment construction, the engineer may require additional test strips if excavated soil conditions or seasonal weather conditions change from when the initial test strip was performed. This work is to be considered incidental to the project.

C. The Contractor shall moisture condition and recompact soil as necessary to meet project specifications. Excavated materials too wet for immediate compaction shall be dried to permit compaction conditions at proper moisture content before placing additional lifts. Place layers of soil to form a continuous monolithic material. Knead the lift into the previously placed lift. Compact with sheepsfoot roller, or similar kneading type compactor capable of influencing the entire lift. Drying methods may include but are not limited to utilizing a disc implement, dozer blade, or other ripper attachment to scarify the material and expose additional surface area to drying elements (i.e., sun and wind). Soil that is dry of requirements should be wetted prior to compaction; similar equipment may be used for the drying process to expose additional surface area for water application. Water may be applied utilizing various sprayer implements or hoses. Apply consistently over the exposed area and incorporate the moisture into the soil during subsequent compaction process. Based on in-place testing results, drying and/or wetting practices should be repeated multiple times per day until in-place moisture and density requirements are met. The Contractor shall be responsible for protecting the moisture condition of soil during the construction phase. Such protection measures include sloping of exposed surfaces to promote runoff (avoid ponding) and compacting exposed surfaces prior to rain events to minimize infiltration.

D. The contractor will make a Reasonable Effort to compact the onsite soil to avoid replacement with offsite borrow material. A Reasonable Effort will be considered 4 working days from the initial attempt of compacting a LOT which is defined as a 6-inch lift of soil in a 0.25-acre area. During construction, the Engineer may revise the Reasonable Effort timeline based on the means and methods utilized by the contractor to moisture condition the soil, elements at the time of construction, potential impacts to the project timeline, and other factors at the Owner and Engineer's discretion.

E. If moisture conditioning cannot achieve the specified compaction results within the Reasonable Effort time period, the Engineer will instruct the Contractor to either continue the moisture conditioning effort as extra work or the Engineer will classify the material as unsuitable and instruct the Contractor to remove and replace it with suitable material

from other onsite excavation areas or from an offsite source if there is not enough suitable material available onsite.

1. Payment for additional moisture conditioning time to complete the current LOT shall be made on a time and material basis for. Additional time shall be measured for only the time the Contractor is actively working the soil material with personnel and/or equipment. The Engineer will monitor the additional time and may stop work if reasonable progress is not being made and the Engineer will re-evaluate the conditions. Upon completion of the LOT, the reasonable effort time period will reset for the next LOT.
2. Payment for removal of soil material incorporated into the embankment that is later classified by the Engineer as unsuitable shall be paid for under the respective Excavation Common bid items. Removal of excavated material that has been stockpiled or loosely spread-out onsite that has not been classified as suitable by the engineer will not qualify for additional work and payment.
3. Payment for suitable material hauled in from an offsite source to construct the embankment shall be made under the Select Borrow bid item.

3.05 COMPACTING EMBANKMENTS

A. Conform to WisDOT Spec. 207.3.6, or as modified herein.
   1. Fill placed to attain grade for foundation and/or slab support should be compacted in thin lifts, such that the entire lift achieves a minimum compaction level of 98% of its maximum standard Proctor dry density (ASTM D698). Geotechnical reporting anticipates a lift thickness on the order of 6 to 8 inches may be appropriate, although this should be reviewed in the field at the time of construction.
   2. Special Compaction Methods required for embankment materials shall conform to the Specified Density Method with the testing location and rates being determined by the Engineer.
      a. It is the responsibility of the Contractor to provide compaction testing throughout the project. Rate of testing is not specified, but quality assurance testing will be performed by the Resident Engineer, as deemed necessary.
   3. Clayey or silty soil used as fill will need to be placed at a water content sufficient to attain compaction (near the "optimum water content" defined in ASTM D698). It is the Contractor's responsibility to moisture condition the soil (wet or dry) to a uniform condition. Some on Site soils will be wet (or could be dry) and the Contractor shall not claim that this is a changed condition.
   4. Backfilling of embankments shall be performed using on Site materials: If the Contractor is unable to meet the specified density requirements using that material due to excess moisture content, they shall immediately notify the Engineer of this condition.
   5. The Contractor shall recognize that inclement weather (sometimes heavy) occurs during the construction season and the Contractor shall be responsible for protecting the moisture condition of soils during the construction phase. Such protection measures include sloping of exposed surfaces to promote runoff (avoid ponding) and compacting exposed surfaces prior to rain events to minimize infiltration.

3.06 RAIL SPUR EMBANKMENT REQUIREMENTS

A. Fill placed to attain subgrade elevation for rail spur support shall be compacted in thin lifts, such that the entire lift achieves a minimum compaction level of 95 percent of its maximum standard Proctor dry density (ASTM D698). Clay fill shall be within 2 percent (+/-) of its optimum moisture content. Geotechnical reports anticipate a lift thickness on the

order of 4 to 6 inches may be appropriate, although this should be reviewed in the field at the time of construction.

1. Compaction required for embankment materials shall conform to the Special Compaction Method as dictated by the WisDOT Standard Specifications. Testing, rates, and locations shall be determined and provided by the Resident Engineer, as needed.

3.07 FINISHING OPERATIONS

A. Conform to WisDOT Spec. 205.3.14 or as modified herein.
   1. Finish grading of subgrade prior to placement of an aggregate base course shall conform to the following tolerances:
      a. Not vary by more than 0.05 feet above or below the prescribed elevation at any point where a measurement is made.
   2. Finish grading of subgrade prior to placement of a granular borrow shall conform to the following tolerances:
      a. Not vary by more than 0.10 feet above or below the prescribed elevation at any point where a measurement is made.
   3. Finish grading of granular borrow prior to placement of an aggregate base shall conform to the following tolerances:
      a. Not vary by more than 0.10 feet above or below the prescribed elevation at any point where a measurement is made.
   4. Grading of the soils beneath the proposed topsoil shall be reviewed and approved by the Engineer prior to the start of the topsoil placement.

3.08 OFFISTE DISPOSAL OF CONTAMINATED MATERIALS

A. Any necessary offsite disposal of contaminated materials shall be in accordance with the requirements of the approved Materials Management Plan for the site, as well as local and state regulatory requirements.

END OF SECTION

SECTION 34 11 10

RAILROAD TRACK CONSTRUCTION

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
1. Unloading, stockpiling, transporting and inventory of material, distributing and placing of ties, tie plates, all other track material (OTM), fittings and fastenings. Track Construction shall also include the laying, bolting, gauging and spiking of rail and adjustments of rail, the installing of bumping posts or earthen berms, derails, frogs, switches, guardrails, switch stands, road crossings, the placing of ballast, lining, surfacing and finishing of tracks, on previously prepared sub-ballast.

B. Related Sections
1. Section 02 41 13 – Selective Site Demolition.
2. Section 31 10 00 – Site Clearing.
3. Section 31 20 00 – Earthmoving.
4. Section 31 23 33 – Excavation and Fill.
5. Section 31 23 13 – Subgrade Preparation.
6. Section 31 32 19 – Geosynthetic Soil Stabilization and Layer Separation.
7. Section 32 11 23 – Aggregate Base Courses.
8. Section 34 78 23 – Railroad Car Scales.

1.02 PRICE AND PAYMENT PROCEDURES

A. Measurement And Payment
1. A Bid Item has been provided for **Construct Track**. Measurement will be by the track foot as measured in feet along the centerline of track, excluding turnouts, crossings, and switch point derails. The unit price for track construction shall include furnishing and installing the rail, ties, tie plates, joint bars, track bolts, nuts and lock washers, track spikes, rail anchors, ballast, bumping posts or earthen berms, railroad protection flagging, and surfacing and lining as required to achieve proposed top of rail elevation.
2. Bid Items have been provided for **Turnout (Number)**. Measurement will be per each individual unit acceptably completed. A turnout is considered both the straight side and diverging side. Payment is full compensation for furnishing and the installation of all materials for turnouts, to include frogs, switches, switch stands with connecting rods, guardrails, switch ties, and appurtenant rails with fastenings; and all labor, tools equipment and incidentals necessary to complete the contract work according to the plans and details.
3. A Bid Item has been provided for **Derail Sliding with Wheel Crowder**. Measurement will be per each individual unit acceptably completed. Payment is full compensation for furnishing and the installation of all materials, labor, tools equipment and incidentals necessary to complete the contract work according to the plans and details. Item includes derail sign and post.
4. Bid Items have been provided for **Crossing (Type)**. Measurement will be measured in track feet along the centerline of track for each type of crossing

installed. The unit price for Crossing bid items is for furnishing and the installation of all material for grade crossings, to include timber crossing material, concrete crossing material or flangeway rail and fasteners, rail, hardwood ties, joint bars and joint bars compromise.

1.03 REFERENCED STANDARDS

A. Current versions of the following rules, standards, specifications, and references shall apply to all track work:
   1. BNSF Railway Company Guidelines for Industrial Track Projects.
   2. American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering.
   3. Wisconsin Department of Transportation "Standard Specifications for Highway and Structure Construction," 2022 Edition (WisDOT Spec.) and supplements.

1.04 QUALITY ASSURANCE

A. Construction Supervision - The track construction shall be progressed with skilled supervision and labor and the Contractor shall assemble the track material in such a manner as may be required by the Engineer.

B. Inspection Of Subgrade - Shall be made just prior to track laying. Track construction shall not commence until the subgrade and sub ballast has been approved by the Engineer.

C. Damage And Restoration - The Contractor shall perform hauling, loading and unloading operations as well as track construction in such a manner as to cause no damage to the roadbed, ditches, shoulders, slopes, drainage pipes, risers, drop inlets, roads and any other facilities. Any damage to the foregoing shall be repaired or replaced, where necessary, in a manner satisfactory to the Engineer and at the expense of the Contractor. In making repairs and replacements, equivalent materials shall be used and the method of placement shall be as directed by the Engineer.

1.05 TRACK PROTECTION AND SAFETY

A. All BNSF Requirements for Contractors Working on BNSF Right-of-Way apply.

B. Contractor must not at any time foul the main line tracks. A BNSF flagman will be required, at the Contractor's expense, when working within 25 feet from centerline of the track. This shall be considered incidental to the work.

1.06 SUBMITTALS

A. Provide material certifications for materials listed in Part 2 – Products.

PART 2 PRODUCTS

2.01 RAIL

A. For trackage maintained by the Customer the minimum acceptable rail shall be 115# section and shall be compatible with BNSF standard rail section. For

locations where trackage will be maintained by BNSF rail and fastenings shall conform to the BNSF standard rail section in use in that area. Contractor shall contact BNSF Engineering for approved section. Transition rails or compromise joints at the BNSF-Customer interface are the responsibility of the customer. Minimum length shall not be less than 39 feet except in turnouts and shall be free from defects. Rail should be minimum full ball relay rail, not exceeding 3/16 inch wear on any surface. Continuous welded rail (CWR) will need to be destressed as soon as possible after laying (see "Procedures for the Installation, Adjustment, Maintenance, and Inspection of CWR in Industry Tracks" appendix, page A-1 thru A-9). CWR is recommended when using concrete ties. Thermite and flash-butt welds must be placed in crib area between ties. An abrasive rail saw will be used to cut rail—no torch cutting.

2.02 ANCHORS

A. Rail anchors shall be new or reconditioned, sized to fit the rail section, and shall be provided per industrial track design criteria on pages 3 and 6. High traffic volumes or unusual grade or alignment problems may require additional anchors as determined by Engineer. Turnouts shall also be anchored.

2.03 TIES

A. Hardwood ties shall be new 7" X 8" (AREMA No. 4) 8'-6" long, placed on 21.5 inch centers. Switch ties shall have a minimum cross section of 7" x 9" and minimum lengths shall conform to applicable BNSF Standard plans. Concrete ties shall be pre-stressed, measure 11 inches wide at the bottom and 9 inches high with a length of 8' 3" and weight of 630 pounds. Concrete ties can be placed on 28 inch centers provided there is a minimum ballast section of 8 inches below the tie. Second-hand, or "3/4" concrete ties can be used after inspection and approval from the BNSF Roadmaster. When placing 3/4 ties, the damaged shoulders should be alternated from left to right sides so that they are not on the same side. Steel ties are spaced at 24 inch centers with 8 inch ballast section and can be used with timber or concrete ties. Steel ties should not be used within 200 feet of a signal circuit identified by insulated joints.

2.04 BALLAST

A. Track ballast shall be Class 2 (1" - 3/8"). Ballast shall be free from loam, dust, and other foreign particles and shall not have less than 75 percent crushed particles with two or more fractured faces, unless otherwise approved by BNSF. Processed ballast shall be hard, dense, of angular particle structure, providing sharp corners and cubicle fragments and free of deleterious materials. Ballast materials shall provide high resistance to temperature changes, chemical attack, have high electrical resistance, low absorption properties and free of cementing characteristics. Materials shall have sufficient unit weight (measured in pounds per cubic foot) and have a limited amount of flat and elongated particles. Unless it meets or exceeds BNSF requirements, slag is not an approved ballast material. Walkway ballast shall be Class 2 (1" - 3/8").

B. The quality of the material to be used for ballast shall be determined by the supplier prior to its acceptance by the Owner. A series of tests by the supplier, as

specified herein, shall be made at a testing laboratory approved by the Engineer to establish the characteristics of the material being tested.

C. Prior to installation, the quality of the material to be used for ballast shall be determined by the supplier prior to its acceptance. The producer should provide the Engineer with certified results of ballast quality and gradation as conducted by a testing laboratory acceptable to the Engineer. The producer shall receive approval from the Engineer for the testing laboratory prior to performing the following tests.

FULLY WASHED BRANCH AND YARD BALLAST MATERIAL		
PROPERTY	VALUE	ASTM TEST
Percent Material, Passing No. 200 Sieve	0.5%	X1.3 or C-117
Bulk Specific Gravity (See Note #2)	2.6%	C27
Absorption Percent	0.5%	C127
Clay Lumps & Friable Particles	0.5%	C142
Abrasion Number L.A. Abrasion Number	50.0% 35% max	C535 and MMA C-535
Soundness (Sodium Sulfate) 5 Cycles	5.0%	C88
Flat and/or Elongated Particles	5.0%	USACE CRD-C119 or D-4791
Plasticity Index L.A. Fines	NP	D423, D424
Total Sample Liquid Limit	25	D423, D424
Total Sample Plasticity Index	6	D423, D424

Note #1: The limit for Bulk Specific Gravity is a minimum value. Limits for the remainder of the tests are maximum values.

Note #2: With the implementation of these specifications, the railroads will only accept ballast which has been washed into the cars or stockpile. Deluge type washing of ballast after loading is not acceptable. The larger gradations will be sampled on the belt, material finer than a #200 sieve will be sampled from loaded cars.

NP: Nonplastic.

NOMINAL BALLAST SIZE		PERCENT PASSING (BY WEIGHT)									
SIZE NO.	SQ. OPENING	2 ½"	2"	1 ¾"	1 ½"	1 ¼"	1"	¾"	½"	3/8"	No. 4
Class 2	1 - 3/8"				100		90-100	40-75	15-35	0-15	0-5

2.05 TURNOUTS (SWITCHES, FROGS, GUARDRAILS)

A. Turnouts shall be constructed with new materials meeting the Buy America provisions. Turnouts shall be No.(as noted on the plans), 115lb (min.), Solid Manganese Self Guarded (SMSG) Frog, 36E Stand and all rail and OTM to Construct to Last Long Tie as shown in the plans and details.

2.06 TIE PLATES

A. Tie plates may be new or secondhand, free of injurious defects and foreign material, conforming to AREMA Specifications, and shall fit rail being used. For rail 110# section and greater, all plates will be double-shouldered.

2.07 JOINTS

A. New or secondhand joints, free of foreign material and without injurious defects, and with 4 or 6 bolt holes, conforming to AREMA requirements, may be furnished to fit rail section for which they are designed. Bolt holes must be drilled with proper equipment. Torch-cutting of bolt holes is not allowed. New or secondhand compromise joints of manufactured type (welded or homemade are not acceptable), free of foreign material and without injurious defects, shall be furnished and used where rail section (weight or design) changes. Rail section by weight shall not be compromised where difference in weight is in excess of 25 lbs. When this becomes necessary, a rail of some weight between the two different rail sections, in excess of 25 lbs., shall be used and the compromise made in two steps. The length of the medium-weight rail should be 39 feet where practical.

2.08 SPIKES

A. Spikes: 5/8" x 6" cut track spikes shall be installed. All spikes shall conform to AREMA requirements.

2.09 TRACK BOLTS & NUTS

A. Track bolts and nuts shall be installed conforming to AREMA Specifications. Bolts will be correct size and length to fit rail.

2.10 LOCK WASHERS

A. One lock washer conforming to AREMA Specifications shall be installed on each track bolt.

2.11 BUMPING POST

A. An earthen berm (see BNSF Railway Company Guidelines for Industrial Track Projects appendix, page A-15) shall be installed at the ends of tracks. Also, a red retro-reflective marker shall be placed at the end of track.

2.12 DERAILS

A. Sliding derail and wheel crowders shall to AREMA Specifications.

PART 3 EXECUTION

3.01 GENERAL

A. All work shall be of good quality in materials, equipment and workmanship and shall conform in every respect with the specifications and instructions.

3.02 TIES

A. Ties will be unloaded and handled in such a manner as not to damage ties, using approved handling equipment. Ties to be placed at design spacing of 21.5-inch center to center (22 ties/39 feet) for wood, and 28-inch centers for concrete, on the finished subgrade, perpendicular to center line of track with the right-hand ends of ties being parallel. Exception: On curves, align the ties to the inside of the curve. All joints are to be suspended between ties. Top surface of ties shall be clean and smooth to provide full bearing for tie plates. Lay wood ties with heartwood face down, and if not possible to determine position of the heartwood, lay the widest surface of the tie down. If spikes are pulled from any tie, hole shall be filled by driving in a treated wood tie plug the full depth of the hole. Boring or adzing of ties shall be kept to a minimum.

3.03 TIE PLATES

A. Double-shouldered tie plates will be used on all ties and set in position with can't surface sloping inward, making sure they are firmly seated and have full bearing. After rails are in place, shoulder of plates shall be in full contact with outside edge of rail base.

3.04 RAILS

A. Assemble joints before fastening rails to ties, using joint bars with full number of track bolts and spring washer for each bolt, first removing loose mill scale and rust from contact surfaces or joint bars and rails. In laying secondhand rail, care must be taken to rail end mismatch at the joints. Under no circumstances must rail be struck in web with tool or any metal object. The right-hand rail facing in direction of increasing construction shall be spiked to ties, and the opposite rail shall be brought to gage of 4' 8-1/2", measured at right angles between the rails, in a place 5/8 inches below top of rail. A track gauge manufactured for the purpose of measuring gage should be used rather than a tape measure. Gauge is to be checked at every third tie. Do not strike rail directly with a maul, either on top when driving spikes, or on side to obtain track gauge. Rail shall be laid with staggered joints. Joints shall be located as nearly as possible to the middle of the opposite rails with the following variation: (a) except through turnouts, the staggering of the joints on one side shall not vary more than 6 feet in either direction from the center of the opposite rail.

3.05 JOINTS

A. If necessary to force joint bar into position, strike lower edge of bar lightly with 4- lb. maul. Do not drive bolts in place. Tighten bolts in sequence, beginning at joint center and working out to ends. Bolts are to be tightened to a range of 20,000 to 30,000 ft.-lbs. tension. If a bolt tightening machine is not used, a standard

track wrench with a 42 inch long handle may be used. At the time of installation, rail expansion shims of softwood not over 1 inch width shall be placed between the ends of adjacent rails to ensure proper space allowance for expansion required by the rail temperatures in the following table, and shall be left in place:

39-ft Rail	
Temperature Deg. F	**Expansion**
Over 85	None
66 to 85	1/16
46 to 65	1/8
26 to 45	3/16
6 to 25	1/4
Below 6	5/16

3.06 BENDING STOCK RAILS

A. Use approved rail bending equipment. Make bends uniform and accurate for all stock rails.

3.07 SPIKING TO WOOD TIES

A. Rails shall be spiked to every tie, using not less than 2 spikes for each rail at each tie. Drive spikes through tie plate holes into ties, located diagonally opposite each other but not less than 2 inches from edge of tie. Start and drive spikes vertically and square with rail. Take care to avoid slanting, bending, or causing sideways movement of spike. Each rail will be spiked with two spikes per tie plate on tangent track staggered with inside spikes to the east or north and outside spikes to the west or south. On curves a third spike is required on the gauge side of the rail. Spikes should not be placed in the slots on skirted joint bars when such practice can be avoided by providing other plates with a hole pattern that will clear the skirts. When spikes are driven by machine, work shall be closely supervised to see that they are driven with hammer centered exactly over each spike head and drive spike vertically. Set stop bolt on the machine to prevent over-driving. Withdraw spikes that are incorrectly driven and fill hole by driving a tie plug to full depth of hole. Locate replacement spike at another hole in tie plate and tie.

3.08 BALLAST AND SURFACING

A. Raise track by means of jacks placed close enough together to prevent excessive bending of rails or strain on joint. Lift both rails simultaneously and as uniformly as possible. Power jack may also be used. Each track raise shall not exceed 4 inches with ties tamped prior to additional raise.

B. Unload and level down ballast by most practical means, taking care not to disturb grade stakes. Perform tamping, using power tamping machines wherever possible, or manually, using approved AREMA tamping tools appropriate for type of ballast being placed. Tamp each layer of ballast from a line 15 inches inside each rail, on both sides of and to the ends of ties. Center area between these limits shall be filled lightly with ballast but not tamped. At turnouts and crossovers, tamp ballast uniformly for full length of ties. Tamping shall proceed simultaneously

at both ends of same tie, making sure ballast is forced directly under the ties and against sides and ends of ties.

C. Dress ballast in conformance with dimensions shown on drawings, placing additional ballast material as necessary. When placing pavement up to the track and flush with top of rail it is important to make sure water drains away from the track. This will prevent pooling and freezing which create hazardous walking conditions. Lines should be painted 10 feet parallel to the centerline of track on both sides to serve as visual reminder of the track's foul zone. Crushed rock or fabric should be placed over the ties to keep the pavement from adhering to them. Flange ways need to be kept clean to allow wheels to contact top of rail at all times.

3.09 DERAILS & BUMPERS

A. Where required, derails and bumpers shall be installed in conformity with standard plans and/or instructions and shall be inspected and approved by the Engineer before final acceptance and operation over the track.

B. It is the Contractor's responsibility to install temporary derails as necessary to protect the main track or any track in that may be in operation.

3.10 ROAD CROSSINGS

A. Where required, road crossings shall be installed in conformity with standard plans and/or instructions and shall be inspected and approved by the Engineer before final acceptance and operation over the track.

3.11 FINAL INSPECTION

A. After ballasting and surfacing are completed, inspect track to see that joints are tight and rail attachments to ties are secure. Contractor will notify the Engineer that the track work is complete and ready for inspection. The Engineer, along with a BNSF Engineering Representative will inspect the finished track work. If continuous welded rail is placed, the Contractor will provide a copy of the "Record of Neutral Temp of Welded Rail as Laid" form to the Engineer prior to inspection. After the Engineer's approval, the track will be considered complete.

END OF SECTION

SECTION 34 78 23

RAILROAD CAR SCALES

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes
   1. Furnish and install a railcar scale system to provide a complete working system.

B. Related Sections
   1. Section 31 23 00 – Excavation and Fill.
   2. Section 31 23 13 – Subgrade Preparation.
   3. Section 34 11 10 – Railroad Track Construction.

1.02 PRICE AND PAYMENT PROCEEDURES

A. Measurement and Payment
   1. A Bid Item has been provided for **Railroad Car Scale**. Measurement will be by the lump sum as specified. The unit price for Railroad Car Scale shall include furnishing and installing a complete railcar scale system according to this specification, as shown on the plans, and in accordance with the manufactures instructions. Item includes weighbridges, weigh rail, scale foundation, scale deck, approach slabs and rail, load cells, scale instrumentation, weigh indicators and recording devices, sump pump or gravity drain piping, wiring, power supply, scale house, bollards, poles, lights, bases, excavation and backfill, subgrade improvements, foundation bedding, bollards, testing, and other incidentals included in the work that do not have a separate pay item in the contract.

1.03 REFERENCES

A. Current versions of the following rules, standards, specifications, and references shall apply:
   1. Association of American Railroads "AAR Scale Handbook".
   2. American Railway Engineering and Maintenance -of-Way Association (AREMA) Standards
   3. National Institute of Standards and Technology (NIST), Handbook 44, "Specifications, Tolerances, and Technical Requirements for Weighing and Measuring Devices".
   4. Wisconsin Department of Transportation Standard Specifications for Highway and Structure Construction.

1.04 INFORMATIONAL SUBMITTALS

A. Contractor shall provide drawings, specifications, and descriptions in sufficient dimensional detail to permit design calculations for stresses and to allow adequate checking of the design requirements for finish, and workmanship of steel, approach wall, and scale pit construction including sump pit/pump or gravity drain. Such information with site plan showing final location and details for the scale house, electrical supply, pole and remote display and other necessary equipment location,

shall be furnished by the contractor, distributor, or installer for review prior to commencement of construction. All plans shall include location of scale and owner's name. Drawings, details, and specifications shall be signed and sealed by a professional engineer licensed in the State of Wisconsin.

B. Certificate of Conformance (NTEP Certification) that scale meets the requirements as set forth by NIST H-44 for Class IIIL devices.

PART 2 PRODUCTS

2.01 GENERAL

A. All equipment and material furnished shall be new.

B. Scale shall be certified for Legal for Trade usage.

C. Scale to accommodate a railcar length of 54 feet.

D. Furnish and install one single/tandem (single/single) static railroad car scale system.

E. Each single section shall have a clear and unobstructed weighing surface of not less then 12.5 feet in length.

F. The scale shall be fully electronic in design and shall not incorporate any mechanical weighing elements, check rods, or check stays.

G. The scale shall be designed to perform as a summed weighing platform and shall be of a shallow-pit, self-contained, and live-rail/live-deck design.

H. The scale shall have a gross weighing capacity of 170 tons (340,000 pounds) and shall have a sectional capacity of 85 tons (170,000 pounds).

I. The scale shall be designed to meet the requirements established by AAR/AREMA for Cooper E-80 loading and the current edition of the National Institute of Standards and Technology Handbook 44 (NIST H-44).

J. The scale shall be calibrated to 340,000 pounds by 50-pound increments.

K. The design and manufacture of the scale weighbridge, load cells, digital instrument, printer, and associated accessories shall be of one manufacturer to maximize compatibility and availability of components. Also, the manufacturer shall have a quality system that has been registered to the standards of ISO 9001.

2.02 SCALE WEIGHBRIDGES

A. Weighbridges shall meet the minimum specifications as required in AAR Scale Handbook Section 2.14 and as supplemented as follows:
   1. The weighbridge shall be designed to allow access to the load cell cables, base plates, and all foundation anchor bolts via removable access covers.
   2. The weighbridge shall consist of prefabricated modules and shall not require special wide-load permits for shipping.
   3. All welding should be completed in accordance with the American Welding Society (AWS) D1.5 Bridge Welding Code.

4. All welding should be performed by welding operators that have been certified to the AWS D1.5 Bridge Welding Code.
5. All welding should be performed in position 1F, to ensure maximum weld integrity.
6. Weigh rails shall be a minimum of 115lb/yd and new rail.
7. The weigh rails should be smooth, straight, and without joints throughout their entire length. Surface and alignment must be preserved between the ends of the approach and weigh rails. The gap between the approach and weigh rails shall be maintained to not less than 1/8 in. (4 mm) and shall not exceed 5/8 in. (16 mm). The gap should be protected against change by the use of expansion joints or other suitable means, in the approach track.

2.03 PROTECTION FROM CORROSION

A. The finish and treatment of all surfaces shall be durable and appropriate for the intended use and be treated to prevent corrosion.

2.04 APPROACH RAILS

A. Weighbridges shall meet the minimum specifications as required in AAR Scale Handbook Section 2.16 and as supplemented as follows:
   1. Approach rails shall be a minimum of 115lb/yd and new rail.

2.05 SCALE DECK

A. Shall meet the minimum requirements of Section 2.18 of the AAR Scale Handbook.

2.06 SCALE FOUNDATION AND PIT

A. Scale Foundation and Pit shall meet the minimum specifications as required in AAR Scale Handbook Section 2.22 and as supplemented as follows:
   1. The foundation shall be constructed to provide positive drainage to a sump pump reservoir or gravity drain as determined foundation designer.

2.07 SCALE HOUSE

A. Shall meet the minimum requirements of Section 2.24 of the AAR Scale Handbook or as supplemented as follows:
   1. Scale house is to be unattended.
   2. Size
      a. Min. size: 6' x 8'.
      b. 8 foot interior ceiling height.
   3. Walls
      a. 2x4 Studs with 1/2 inch Sheathing.
      b. 8 foot Interior ceiling height.
      c. R-11 fiberglass insulation.
      d. Exterior Walls
         - Grey vertical steel siding.
         - White Steel Trim.
      e. Interior Walls
         - 3/8 inch white vinyl panels.
         - Baseboard and corner trim.
   4. Roof
      a. 2x8 bowed rafters @ 16 inch O.C.

b. 3/8 inch sheathing.
c. R-19 fiberglass insulation.
d. Gray steel panels.

5. Door
   a. 36" x 6'-8" hollow metal steel door.
   b. Heavy gauge steel frame.
   c. Gray enamel finish.
   d. Keyed lock & dead bolt.
   e. Hydraulic door closure.
   f. Weather stripping and threshold.
6. Electrical
   a. 2410/120 VAC single phase service
      - 100A main breaker.
      - 12 circuit capacity.
      - 4 - 20A circuit breakers installed.
      - 1 1/2 inch conduit thru wall entrance.
   b. Wiring & fixtures:
      - Surface mount EMT conduit & boxes.
      - 12 AWG insulated copper wiring w/ ground (90 degrees C rated).
      - 4 - 120VAC/20A duplex outlets.
      - 1 - 4' LED Wrap surface mount light w/ acrylic light diffuser.
      - 1 - Exterior LED light w/ photocell.
7. HVAC
   a. Combination 120 VAC thru wall unit.
   b. Heat: 3,900 BTU.
   c. Cool: 9,000 BTU.
   d. Automatic heat/cool switching.
8. Foundation
   a. Concrete Slab designed to support Scale House structure.

2.08 WEIGHT INDICATOR, REMOTE DISPLAY SYSTEM, AND RECORDING DEVICES

A. Shall meet the minimum requirements of Section 2.25 of the AAR Scale Handbook or as supplemented as follows:
   1. Scale instrument shall have the ability to connect with external PC software to allow configuration, data backup and restore, security unlock capabilities, FTP access to log files so as to significantly reduce service cost and downtime during any repair and maintenance of the scale.
   2. The scale instrument shall output the following information:
      a. Gross, Tare, and Net Weight.
      b. ID.
      c. Transaction Counter.
      d. Time and Date.
      e. Variable Application-Specific Information.
      f. Standard Reports Generated by the Scale Instrument.
   3. Remote Display System
      a. General:
         - Provide remote display and traffic light indicator near the rail scale to regulate movement of traffic over scale. System shall include lights, pole(s), concrete bases, mounting hardware, power supply and other necessary items to provide a functioning system to provide communication at a distance up to 200 feet.

b. Remote Display
   - 6-digit, red LED display.
   - IPP66 Weather Tight Rating
   - -40 degrees F to 120 degrees F (-40 degrees C to 49 degrees C) operating temperature.
   - Steel enclosure with sun shield.
   - 2-Year limited warranty.

c. Traffic Control
   - Red and green LED lights for stop and go communication.

d. Pole and Base
   - Type 3 per WisDOT Standard Specification 657.
   - Concrete base Type 2 per WisDOT Standard Specification 654.

e. Site Lighting
   - Luminaires Utility LED 8 per WisDOT standard Specification 659.
   - Luminaire arms single member 4-inch clamp 6-ft per WisDOT standard specification 657.

4. The printer shall be housed in a suitable enclosure for desktop mounting.
5. The printer shall be capable of printing all information sent from the scale instrument, including:
   a. Gross, Tare, and Net Weights.
   b. Time and Date.
   c. Transaction Counter Number.
   d. 12-Digit Numeric ID.

2.09 LOAD CELLS

A. Shall meet the minimum requirements of Section 2.26 of the AAR Scale Handbook.

2.10 SUMP PUMP

A. If a sump pit is designed and constructed in the scale pit, then provide design and construction of a sump pump system sufficient to dewater the pit. Provide discharge piping to grade and heat tape/wire on discharge pipe to prevent from freezing.

2.11 POWER SUPPLY

A. See Rail Scale Electrical Drawings Sheets R110 and R111.

2.12 LIGHTNING PROTECTION

A. A comprehensive lightning protection system shall be provided with the scale.

B. The system shall not require complicated wiring or devices to provide this protection.

C. Major scale components including load cells, scale instrument, and printer shall be included in the lightning protection system.

PART 3 EXECUTION

3.01 CONSTRUCTION

A. Scale system shall be installed in accordance with the manufacturer's instructions.

B. Foundation constructed in accordance with the engineered foundation drawings and specifications (contractor or vendor supplied).

C. Electrical supply and systems shall be installed in accordance with local and state codes, drawings, and specifications.

D. Subgrade Improvements
   1. See sheet R120 for sub foundation to rail scale. Scale foundation shall bear on scale sub foundation. Alternatively provide written alternative to achieve 4000 psf subgrade foundation per geotechnical report.

3.02 TESTING

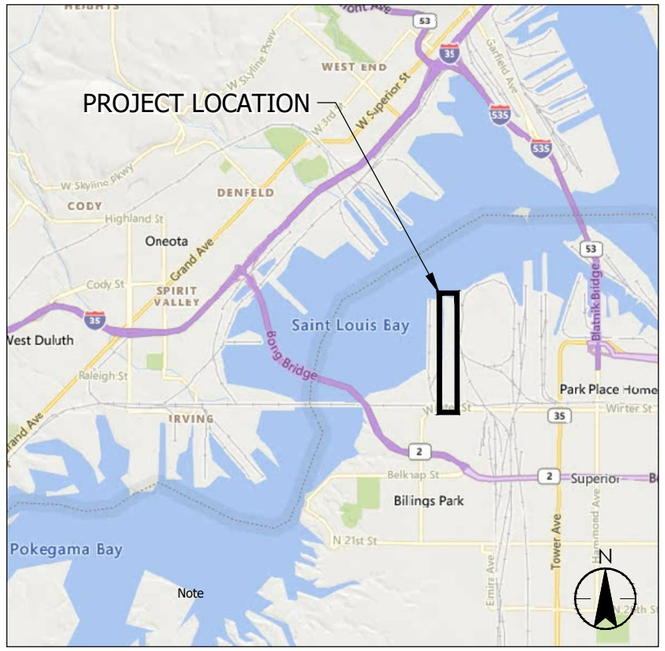
A. Contractor shall test and certify the scale in accordance with NIST 44 Handbook and AAR Scale Handbook.

END OF SECTION

C. REISS DOCK

C. REISS COMPANY, LLC

ST. LOUIS BAY, SUPERIOR, WISCONSIN

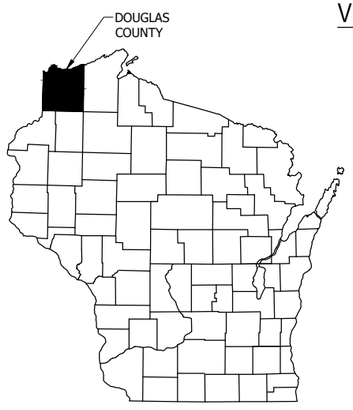


VICINITY MAP

NO SCALE

LOCATION MAP

NO SCALE



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CIVIL PLANS

G0.01	TITLE SHEET
G0.02	LEGEND
C0.00	EXISTING CONDITIONS AND DEMO SHEET INDEX
C0.01	EXISTING CONDITIONS AND DEMO
C0.02	EXISTING CONDITIONS AND DEMO
C0.03	EXISTING CONDITIONS AND DEMO
C0.04	EXISTING CONDITIONS AND DEMO
C1.00	EROSION CONTROL SHEET INDEX
C1.01-C1.05	EROSION CONTROL PLAN
C1.06	EROSION CONTROL NOTES
C2.00	SITE PLAN SHEET INDEX
C2.01	SITE PLAN
C2.02	SITE PLAN
C2.03	SITE PLAN
C2.04	SITE PLAN
C3.00	GRADING PLAN SHEET INDEX
C3.01	GRADING PLAN
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C4.01	UTILITY PLAN AND PROFILE
C4.02	UTILITY PLAN AND PROFILE
C6.00	ACCESS ROAD PLAN SHEET INDEX
C6.01-C6.05	ACCESS ROAD PLAN AND PROFILE
C8.01	CONSTRUCTION DETAILS
C8.02	CONSTRUCTION DETAILS
C8.03	TYPICAL ROAD SECTIONS
C8.04	CONSTRUCTION DETAILS

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A001	ABBREVIATIONS, INDICATION OF MATERIALS, AND SYMBOLS
A002	BUILDING CODE REVIEW
AB101	FLOOR PLAN
AB102	MEZZANINE FLOOR PLAN
AB201	EXTERIOR ELEVATIONS
AB301	BUILDING SECTIONS
AB302	DETAILS
AB401	INTERIOR ELEVATIONS
AB601	SCHEDULES AND DETAILS

STRUCTURAL

S001	STRUCTURAL NOTES
S501	STRUCTURAL DETAILS
S502	STRUCTURAL DETAILS
SB101	FOUNDATION PLAN
SB201	ROOF FRAMING PLAN
SB301	BUILDING SECTIONS

PLUMBING

P001	PLUMBING COVER SHEET
PB100	PLUMBING UNDERLFOOR PLAN
PB101	PLUMBING FLOOR PLAN
PB102	MEZZANINE PLUMBING FLOOR PLAN
P501	PLUMBING DETAILS
P502	PLUMBING ISOMETRICS
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ELECTRICAL

E001	SYMBOLS SHEET
E101	ELECTRICAL SITE PLAN
EB201	BUILDING B LIGHTING PLAN
EB301	BUILDING B POWER PLAN
EB401	BUILDING B SYSTEMS PLAN
E601	SINGLE LINE DIAGRAM AND PANEL SCHEDULE

MECHANICAL

M001	MECHANICAL COVER SHEET
M501	MECHANICAL DETAILS
M601	MECHANICAL SCHEDULES
MB101	MECHANICAL FLOOR PLAN
MB102	MEZZANINE MECHANICAL FLOOR PLAN

RAILROAD PLANS

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R101	RAIL PROJECT OVERVIEW
R102	TRAFFIC CONTROL PLAN
R110	RAIL SCALE ELECTRICAL PLAN
R111	RAIL SCALE ELECTRICAL PLAN
R120	RAIL SCALE SUB FOUNDATION PLAN
R201	RAIL PLAN AND PROFILE
R202	RAIL PLAN AND PROFILE
R203	RAIL PLAN AND PROFILE
R204	RAIL PLAN AND PROFILE
R210	RAILROAD SHEET PLAN AND PROFILE
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R401-R425	RAIL CROSS SECTIONS
R430	ROAD CROSS SECTIONS
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R501-R506	DETAILS
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R602	ESTIMATED QUANTITIES

BULKHEAD WALL IMPROVEMENTS

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M002	GENERAL STRUCTURAL NOTES & SCHEDULES
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M401	ENLARGED DOCK FACE ANCHORAGE PLAN
M402	ENLARGED STRUCTURAL PLANS
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M502	SECTIONS & DETAILS
M503	SECTIONS & DETAILS

CIVIL PLANS
G0.01 - C8.03

CIVIL PLANS
BUILDING SHEETS
A001 - AB601
PLUMBING
P001 - P601

CIVIL PLANS
STRUCTURAL SHEETS
S001 - SB301

CIVIL PLANS
ELECTRICAL SHEETS
E0.01 - E6.01

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BULKHEAD WALL IMPROVEMENTS
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CIVIL PLANS
MECHANICAL
M001 - MB102

THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE. THERE MAY BE OTHER UNDERGROUND UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

STANTEC ASSUMES NO RESPONSIBILITY FOR DAMAGES, LIABILITY OR COSTS RESULTING FROM CHANGES OR ALTERATIONS MADE TO THIS PLAN WITHOUT WRITTEN CONSENT OF STANTEC.

THESE DRAWINGS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY OTHERS. STANTEC HAS NOT VERIFIED THE ACCURACY AND/OR COMPLETENESS OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE INCORPORATED HEREIN AS A RESULT.

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TITLE SHEET

C. REISS DOCK
C. REISS COMPANY, LLC
ST. LOUIS BAY, SUPERIOR, WI

DATE OF ISSUANCE
MARCH 10, 2023

NO	REVISION	DATE
3	ADDENDUM	4-18-23
4	ADDENDUM	4-26-23

SURVEY	JN
DRAWN	AJR
DESIGNED	AJR
CHECKED	CJB
APPROVED	CMM
PROJ. NO.	193707141

SHEET NUMBER
G0.01

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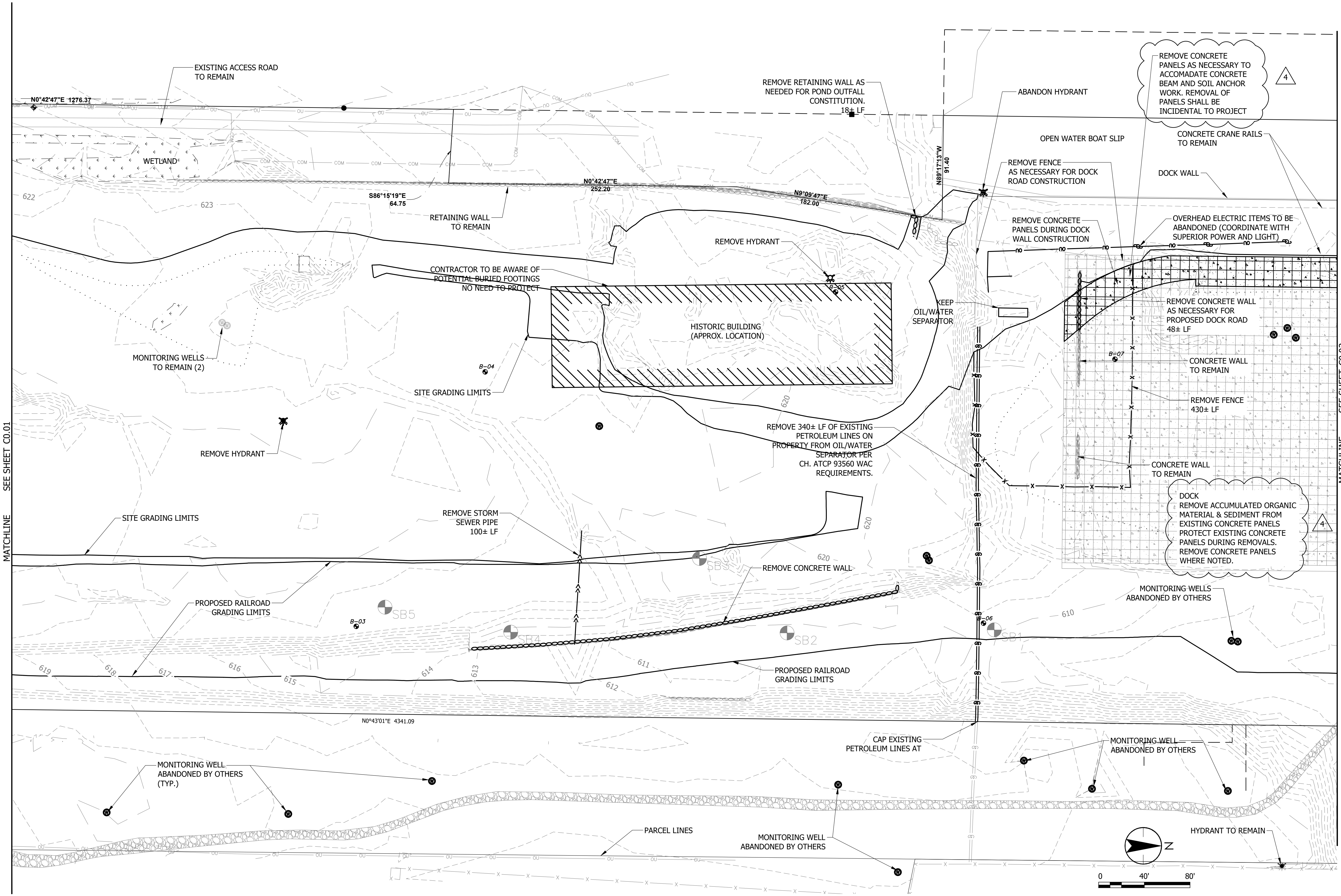

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EXISTING CONDITIONS AND DEMO

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DATE OF ISSUANCE
MARCH 10, 2023

NO	REVISION	DATE
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4	ADDENDUM	4-26-23

SURVEY	JN
DRAWN	AJR
DESIGNED	AJR
CHECKED	AJR
APPROVED	AJR
PROJ. NO.	193707141

SHEET NUMBER
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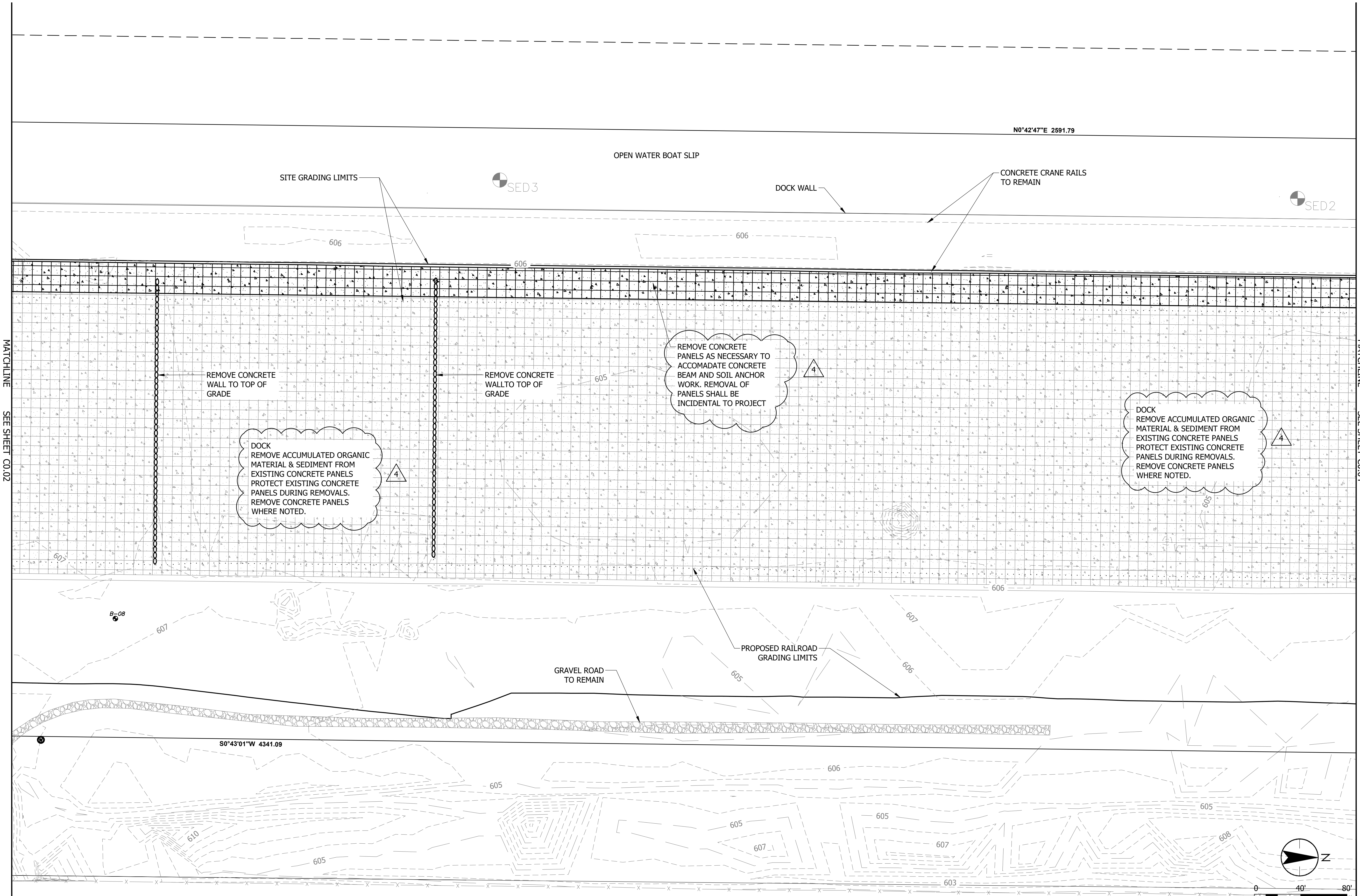

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SURVEY	JN
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DESIGNED	AJR
CHECKED	AJR
APPROVED	AJR
PROJ. NO.	193707141

SHEET NUMBER
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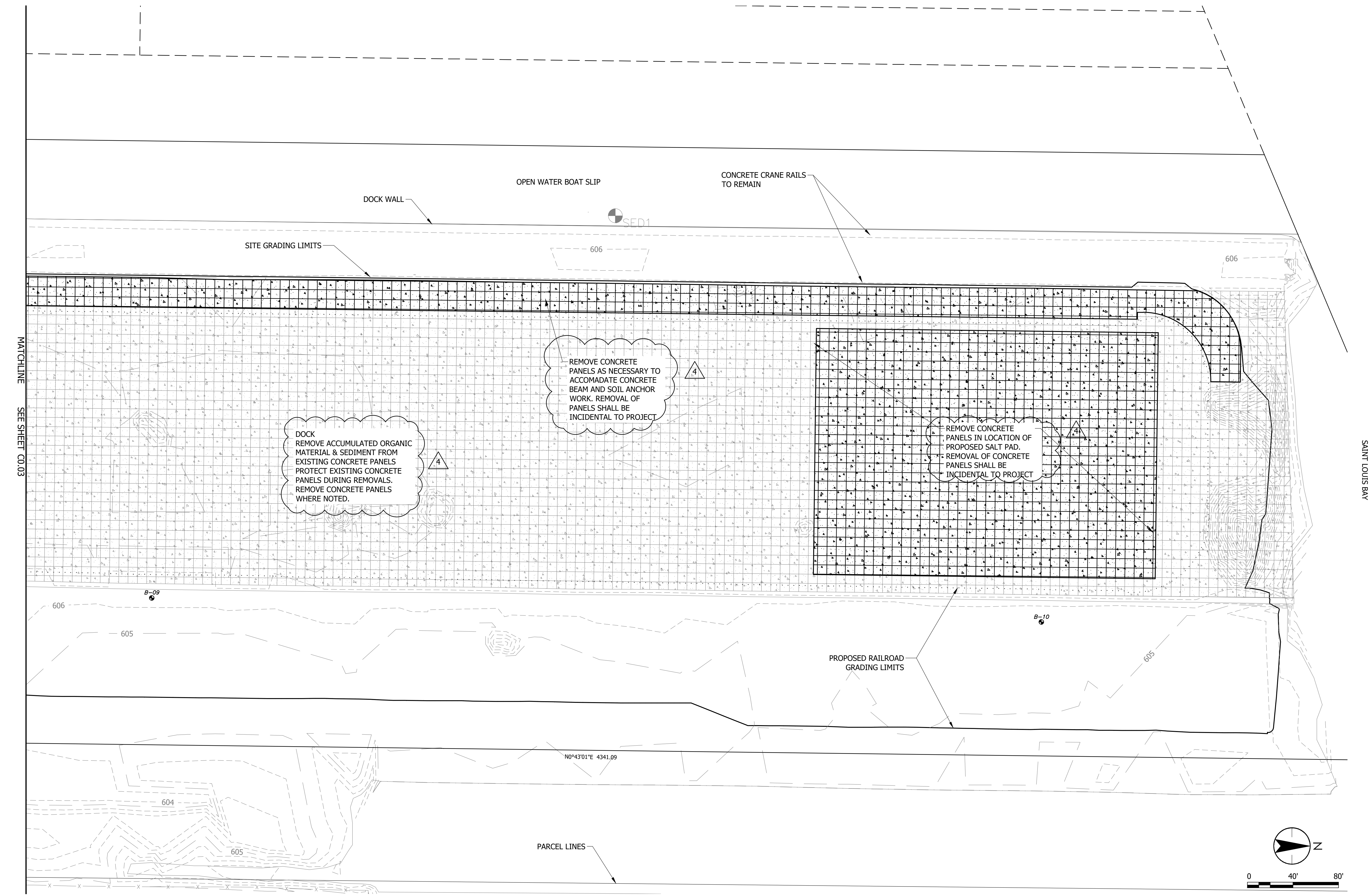

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MARCH 10, 2023

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4	ADDENDUM	4-26-23

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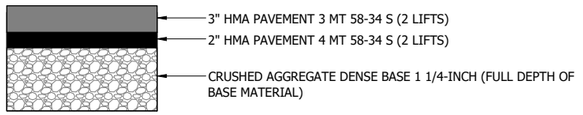
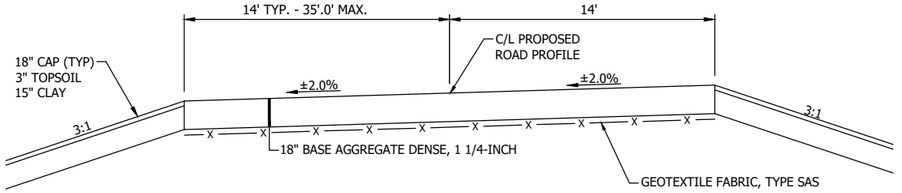
DESIGNED	AJR
CHECKED	AJR
APPROVED	AJR
PROJ. NO.	193707141

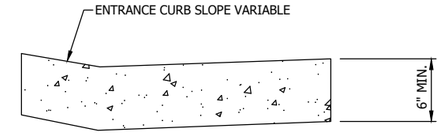
SHEET NUMBER
C0.04



1 C2.01 ASPHALT PATCH (MUNICIPAL ROW)

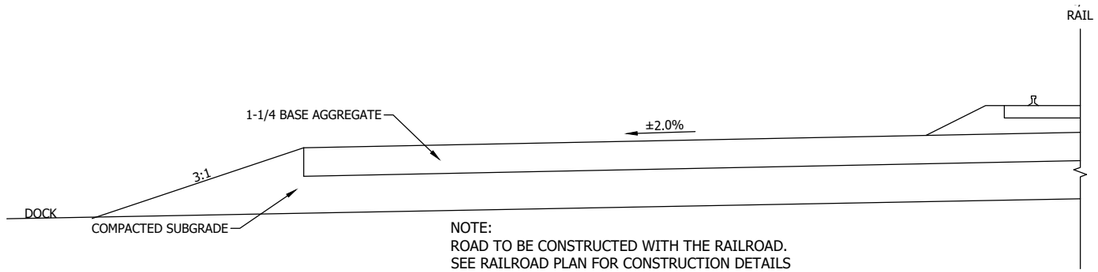


2 TYPICAL SECTION - ACCESS ROAD
STA. 1+00 - STA. 21+26



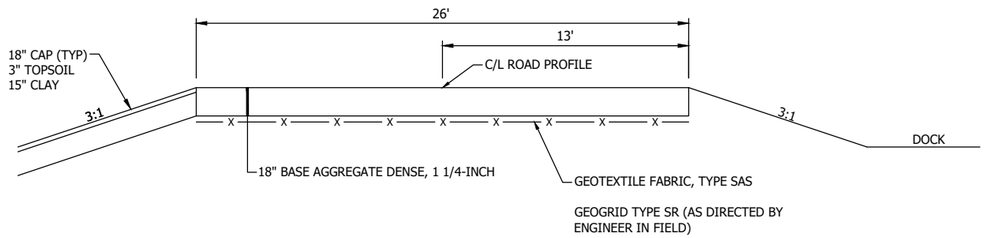
NOTE:
1. THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

3 C2.01 DRIVEWAY ENTRANCE CURB
WINTER STREET

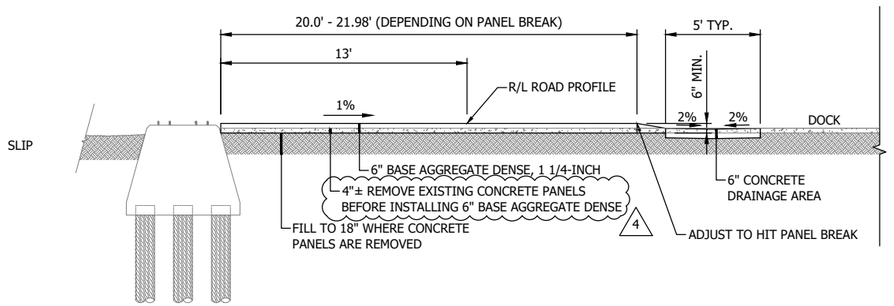


NOTE:
ROAD TO BE CONSTRUCTED WITH THE RAILROAD.
SEE RAILROAD PLAN FOR CONSTRUCTION DETAILS

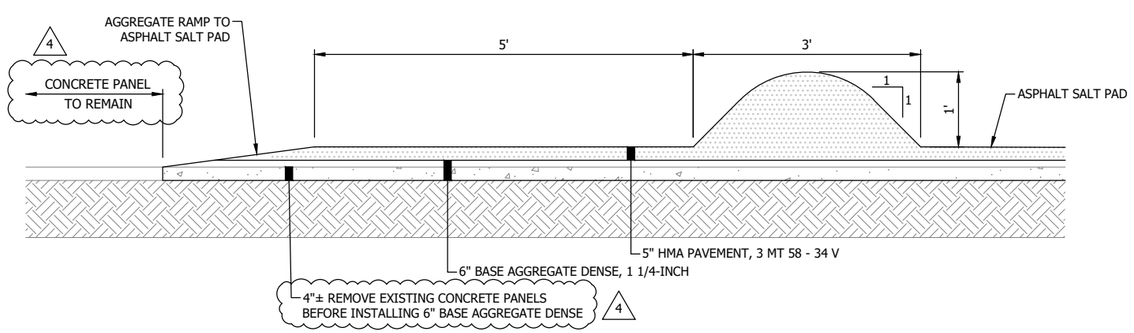
4 TYPICAL SECTION - ACCESS ROAD ALONG RAILROAD
STA. 21+26 - STA. 45+37



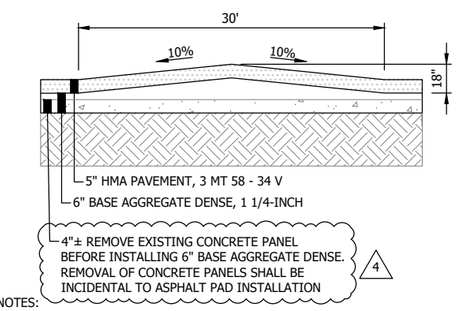
5 TYPICAL SECTION - ACCESS ROAD
STA. 100+50 - STA. 103+45.27
STA. 126+64.88 - STA. 129+21.82



6 TYPICAL SECTION - ACCESS ROAD
STA. 103+45.27 - STA. 126+64.88



7 C2.04 ASPHALT CURB FOR SALT PAD - NORTH, SOUTH, EAST EDGE



NOTES:
1. BASE SHALL BE PROOF ROLLED PRIOR TO PLACEMENT OF PAVEMENT.
2. PROVIDE BASECOURSE AS NEEDED TO MEET GRADES AS SHOWN ON THE GRADING PLAN.

8 C2.04 ASPHALT SALT PAD ENTRANCE BARRIER - WEST EDGE

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TYPICAL ROAD SECTIONS

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4	ADDENDUM	4-26-23

SURVEY	JN
DRAWN	AJR
DESIGNED	AJR
CHECKED	AJR
APPROVED	AJR
PROJ. NO.	193707141

SHEET NUMBER
C8.03

Plot Date: 04/26/2023 - 1:43pm
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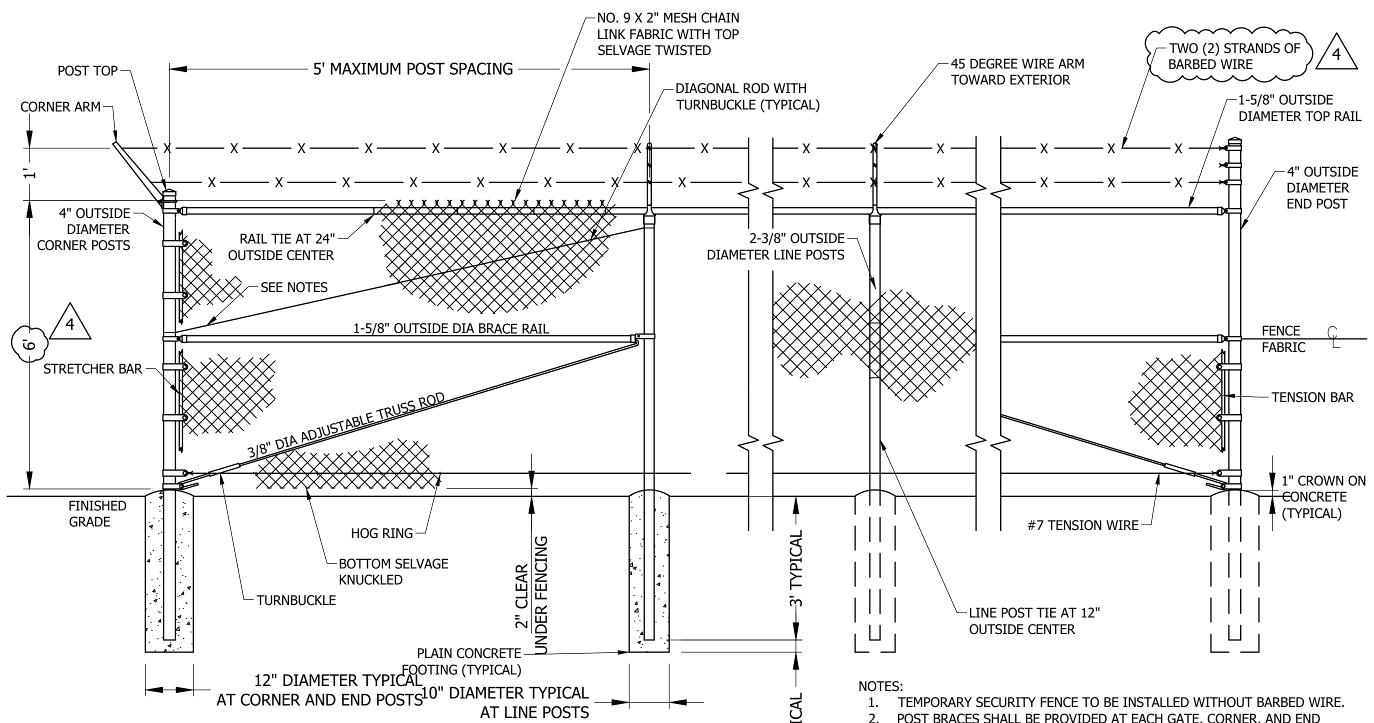
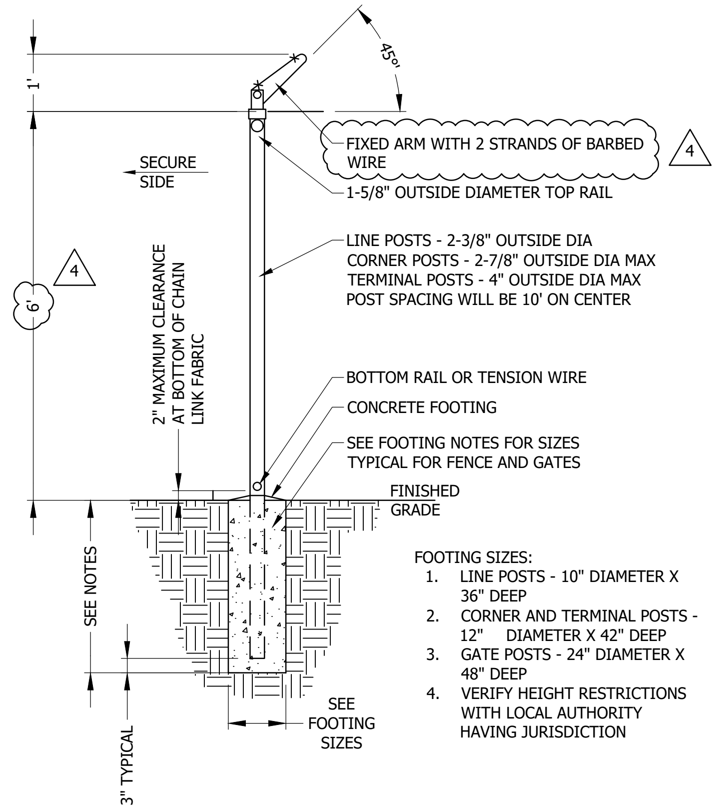


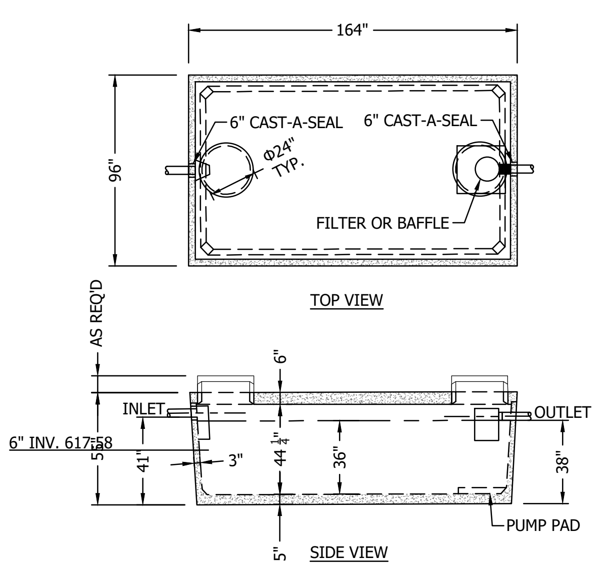
NOTES:
1. TEMPORARY SECURITY FENCE TO BE INSTALLED WITHOUT BARBED WIRE.
2. POST BRACES SHALL BE PROVIDED AT EACH GATE, CORNER, AND END POST, WHERE FENCE RUNS OF 300 FEET OR MORE TERMINATE AT THE POST. SECOND DIAGONAL ROD SHALL BE INSTALLED AS SHOW.
3. DRIVEN PILES WITH CONCRETE FOOTING FOR ALL FENCE POSTS EXCEPT AT GATES

1 SECURITY FENCE
C2.01 - C2.04 NTS



FOOTING SIZES:
1. LINE POSTS - 10" DIAMETER X 36" DEEP
2. CORNER AND TERMINAL POSTS - 12" DIAMETER X 42" DEEP
3. GATE POSTS - 24" DIAMETER X 48" DEEP
4. VERIFY HEIGHT RESTRICTIONS WITH LOCAL AUTHORITY HAVING JURISDICTION

A SECURITY FENCE SECTION
NTS



DIMENSIONS:
WALL: 3"
BOTTOM: 5"

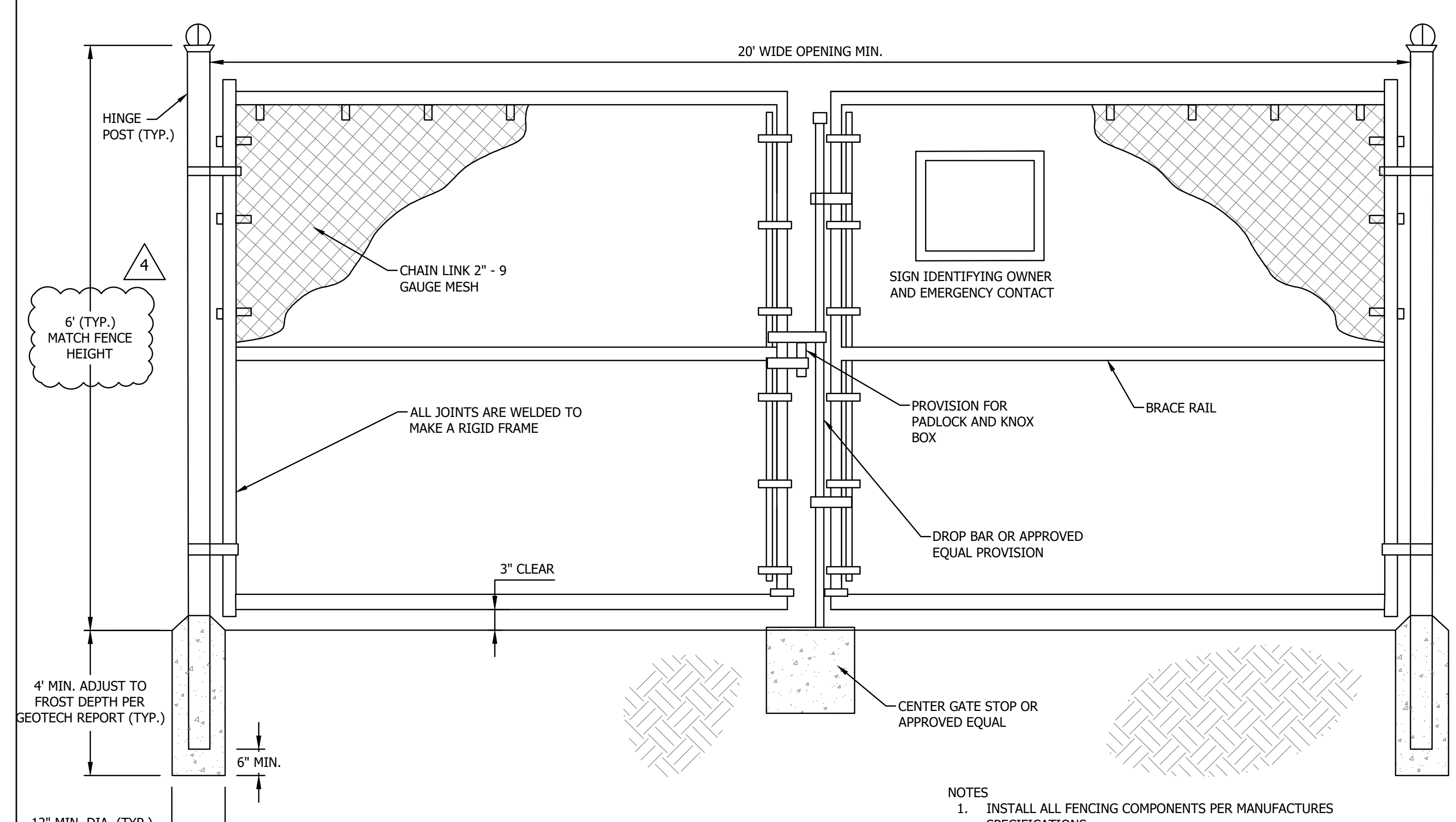
COVER: 6"
MANHOLE: 24" I.D. PRECAST CONRETE RISER
HEIGHT: 55" O.D.
LENGTH: 164" O.D.
WIDTH: 96" O.D.
BELOW INLET: 41" O.D.
LIQUID LEVEL: 36"
WEIGHT: BOTTOM 14,060 LBS.
COVER 8,170 LBS

INLET AND OUTLET:
6" CAST-A-SEAL BOOT OR EQUAL

INLET AND OUTLET BAFFLE AND FILTER:
WISCONSIN, SEE DETAIL #10
LIQUID CAPACITY: 56.27 GAL/IN
LOADING DESIGN: 8'-0" UNSATURATED SOIL
HOLDING TANK:
OUTLET HOLE PLUGGED
ACUTUAL CAPACITY: 2,138 GAL

TANK CAN BE USED AS:
SEPTIC/HOLDING/PUMP OR SIPHON
COVER: MIX DESIGN #8 (NO FIBER)
TANK: MIX DESIGN #9 (SMALL FIBER)

2 WLP2000-MR SEPTIC TANK OR EQUAL
C2.02 NTS



NOTES
1. INSTALL ALL FENCING COMPONENTS PER MANUFACTURES SPECIFICATIONS.
2. ALL FENCING AND HARDWARE SHALL BE GALVANIZED, UNLESS OTHERWISE NOTED.
3. GATE POSTS SHALL BE SET IN CONCRETE.

3 20' WIDE CHAIN LINK FENCE DOUBLE SWING GATE
C2.01 NTS

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CONSTRUCTION DETAILS

C. REISS DOCK
C. REISS COMPANY, LLC
ST. LOUIS BAY, SUPERIOR, WI

DATE OF ISSUANCE		
MARCH 10, 2023		
NO	REVISION	DATE
3	ADDENDUM	4-18-23
4	ADDENDUM	4-26-23

SURVEY	JN
DRAWN	AJR
DESIGNED	AJR
CHECKED	AJR
APPROVED	AJR
PROJ. NO.	193707141

SHEET NUMBER
C8.04

Plot Date: 04/25/2023 - 7:30pm
Drawing name: V:\1937\active\193707141\03_data\gis_cad\cad\dwg\SHEETS\193707141C800.dwg
Xrefs:, TB-34x22-MEQ, Security Fence

SAMPLE BUY AMERICA AWARD TERM FOR MARAD GRANTS EXECUTED AFTER MAY 13, 2022—FOR REFERENCE ONLY

REQUIRED USE OF AMERICAN IRON, STEEL, MANUFACTURED PRODUCTS, AND CONSTRUCTION MATERIALS

This award term implements § 70914(a) of the Build America, Buy America Act, Pub. L. No. 117-58, div. G, tit. IX, subtit. A, 135 Stat. 429, 1298 (2021) and Office of Management and Budget (OMB) Memorandum M-22-11, "Initial Implementation Guidance on Application of Buy America Preference in Federal Financial Assistance Programs for Infrastructure."

Requirement to Use Iron, Steel, Manufactured Products, and Construction Materials Produced in the United States.

The Recipient shall not use funds provided under this award for a project for infrastructure unless:

(1) all iron and steel used in the project are produced in the United States—this means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States;

(2) all manufactured products used in the project are produced in the United States—this means the manufactured product was manufactured in the United States; and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product; and

(3) all construction materials are manufactured in the United States—this means that all manufacturing processes for the construction material occurred in the United States.

Inapplicability.

The domestic content procurement preference in this award term only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project. Nor does a Buy America preference apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project, but are not an integral part of the structure or permanently affixed to the infrastructure project.

Waivers.

When necessary, the Recipient may apply for, and the USDOT may grant, a waiver from the domestic content procurement preference in this award term.

A request to waive the application of the domestic content procurement preference must be in writing. The USDOT will provide instructions on the waiver process and on the format, contents, and supporting materials required for any waiver request. Waiver requests are subject to public

comment periods of no less than 15 days and must be reviewed by the Office of Management and Budget (OMB) Made in America Office.

When the USDOT has made a determination that one of the following exceptions applies, the awarding official may waive the application of the domestic content procurement preference in any case in which the USDOT determines that:

(1) applying the domestic content procurement preference would be inconsistent with the public interest;

(2) the types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality; or

(3) the inclusion of iron, steel, manufactured products, or construction materials produced in the United States will increase the cost of the overall project by more than 25 percent.

There may be instances where an award qualifies, in whole or in part, for an existing waiver described at https://www.transportation.gov/office-policy/transportation-policy/made-in-america.

Definitions

"Construction materials" includes an article, material, or supply—other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives—that is or consists primarily of:

- non-ferrous metals;
- plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);
- glass (including optic glass);
- lumber; or
- drywall.

"Domestic content procurement preference" means all iron and steel used in the project are produced in the United States; the manufactured products used in the project are produced in the United States; or the construction materials used in the project are produced in the United States.

"Primarily iron or steel" means that the cost of the iron and steel content in the article, material, or supply exceeds 50 percent of the total cost of all its components. The cost of iron and steel is the cost of the iron or steel mill products (such as bar, billet, slab, wire, plate, or sheet), castings, or forgings utilized in the manufacture of the product and a good faith estimate of the cost of iron or steel components. The origin of the elements of the iron or steel is not relevant to the determination of whether it is domestic or foreign.

"Project" means the construction, alteration, maintenance, or repair of infrastructure in the United States.

Aluminum BethGon® II

The aluminum BethGon® II with its patented twin-tubs is the industry-leading coal gondola car. FreightCar America's "continuous improvement" has kept this car in the fore front as the most recognized coal gondola in the industry. Having delivered over 70,000 cars, it is the best selling railcar ever produced by FreightCar America. Since the original BethGon was introduced in 1978, it has a demonstrated track record of reliability and performance over millions of service miles.

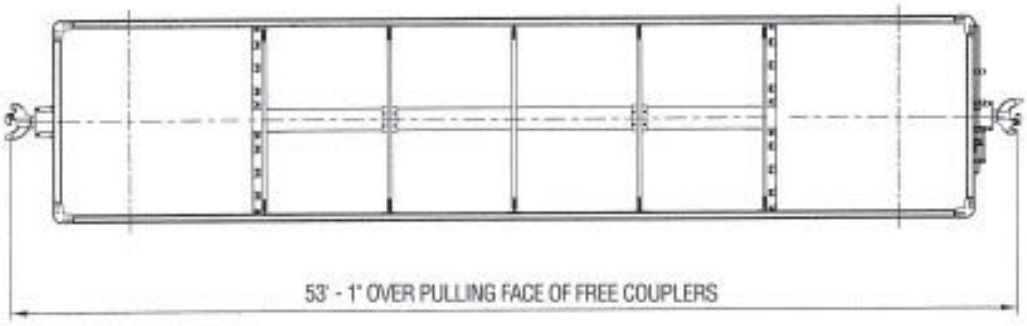
Today's aluminum BethGon II with a lightweight of 41,700 lbs has a carrying capacity of 244,330 lbs and a volume of 4,911 cubic feet.

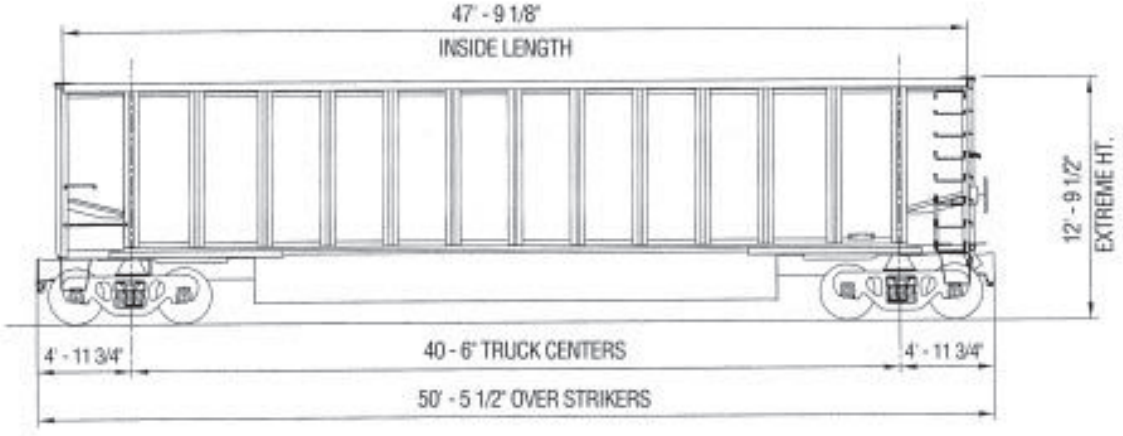
The BethGon II features FreightCar America's patented top chords with integral dumper clamp reinforcements and the patented cold rolled center sill. This lightweight, 70ksi yield steel backbone is used in every coal car built by FreightCar America. This car can also be equipped with FreightCar America's patented aluminum side stake with integral wear bars that help protect the side stakes during rotary dumping.

FreightCar America's BethGon II provides an optimized balance of payload, lightweight and efficient unloading, all at a competitive price.

For more information contact us at:
800-458-2235
www.freightcaramerica.com

FreightCar America®

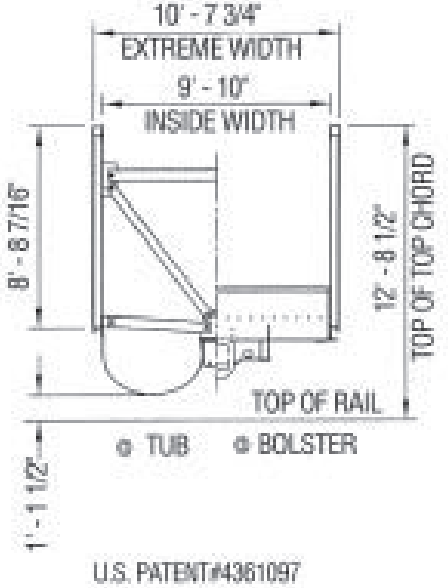




Aluminum BethGon® II

General Dimensions (Approximate)

Length inside	47' 9-1/8"
Length over strikers	50' 5-1/2"
Length over pulling face of couplers	53' 1"
Truck centers	40' 6"
Width, inside	9' 10"
Width, extreme	10' 7-13/32"
Height rail to top of side at top chord	12' 8-1/2"
Height extreme at corners	12' 9-1/2"
Cubic capacity, level	4,520 cu. ft.
Cubic capacity, 10" heap	4,911 cu. ft.
Lightweight	41,700 lbs.
Load limit	244,300 lbs.
Gross rail load	286,000 lbs.
Center of gravity (loaded)	87.3"



U.S. PATENT#4361097

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