

May 25, 2007

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATION
DEPARTMENT OF TRANSPORTATION
RHODE ISLAND CONTRACT NO.2007-CB-030
FEDERAL-AID PROJECT NO. FAP Nos: BHO-0428(001)

Wanskuck & Hawkins Street Bridges, 428 & 429 - Repairs

Branch Avenue at Route 146 and Route 146 at Hawkins Street
CITY/TOWN OF Providence
COUNTY OF PROVIDENCE

NOTICE TO PROSPECTIVE BIDDERS

ADDENDUM NO. 2 Prospective bidders and all concerned are hereby notified of the following changes in the Plans, Specifications, Proposal and Distribution of Quantities for this contract. These changes shall be incorporated in the Plans, Specifications, Proposal and Distribution of Quantities, and shall become an integral part of the Contract Documents.

A. Clarification

1. Pre-Bid Conference Sign-In Sheet

The Pre-Bid Sign-In Sheet has been added.

2. Contract Time Determination (CTD) Schedule

The Department's current policy is not to release CTD Schedules for review.

3. Winter Shutdown

The contractual completion dates for this project have been based upon a Winter Shutdown period from December 15th to March 15th.

4. Drainage and Erosion Control Program

A site specific Storm Water Pollution Prevention Plan (SWPPP) has not been developed and is not required for this project.

5. Temporary Jacking and Shoring Beam End at Pier - Bridge No. 428

The contractual completion dates for this project have been determined assuming that both the Northbound and Southbound beam ends at each respective pier will be shored simultaneously to allow for reconstruction of the entire pier at the same time. Since the two bounds are separated by an open joint, the Contractor may jack, shore, and reconstruct the Northbound and Southbound portions of each pier in two separate operations to allow for reuse of the shoring system if the project schedule can be met.

The beam ends for the approach span and the beam ends for the main span must be jacked and lowered simultaneously to avoid any eccentric loading in the shoring system as described in Job Specific Code 824.9903.

6. Verizon Telecommunications Ducts

The Verizon Telecommunication ducts at the west end of the Bridge No. 428 South pier have been relocated to facilitate construction. The concrete encasement has been removed from approximately the roadway curbing to the toe of the concrete slope paving as detailed on the plans. The inboard duct has been shifted onto the outboard duct by using 22.5 degree sweeps as shown in the attached photos.

The Contractor shall notify Verizon prior to the start of excavation in this area and upon completion of work as noted on the Plans.

7. Plant Field Laboratory

A Plant Field Laboratory will be required for this project. Section 930 of the Standard Specifications shall be revised as described in Job Specific Code 930.1000 of the Contract Documents.

B. Contract Documents

1. General Provisions/Contract Specific

a. Page A-2

Delete Page A-2 in its entirety and insert revised Page A-2(R-1) attached to this Addendum No 2. The date was changed for the Bid Opening, Bid Deadline, and Proposal Read.

b. Page CS-7(R-1)

Delete Page CS-7(R-1) in its entirety and insert revised Page CS-7(R-2) attached to this Addendum No 2. Paragraph 5a has been revised.

c. Page CS-9

Delete Page CS-9 in its entirety and insert revised Page CS-9(R-1) attached to this Addendum No 2. Paragraph 5a has been revised.

2. Specifications - Job Specific

a. Page JS-i(R-1)

Delete Page JS-i(R-1) in its entirety and insert revised Page JS-i(R-2) attached to this Addendum No 2. Codes 105.18 and 108.07 have been deleted.

b. Page JS-1

Delete Page JS-1 in its entirety and insert revised Page JS-1(R-1) attached to this Addendum No 2. Job Specific Code 101. DEFINITIONS AND TERMS has been revised.

c. Page JS-2

Delete Page JS-2 in its entirety and insert revised Page JS-2(R-1) attached to this Addendum No 2. Job Specific Code 105.18 CLAIMS FOR ADJUSTMENTS AND DISPUTES has been deleted.

d. Pages JS-3 through JS-18

Delete Pages JS-3 through JS-18 in their entirety and insert revised Pages JS-3(R-1) through JS-18(R-1) and new Pages JS-18A through JS-18L attached to this Addendum No 2. Job Specific Code 108.03 PROSECUTION AND PROGRESS has been revised in its entirety.

e. Page JS-19 through JS-21

Delete Pages JS-19 through JS-21 in their entirety and insert revised Pages JS-19(R-1) through JS-21(R-1) attached to this Addendum No 2. Job Specific Code 108.07 DETERMINATION AND EXTENSION OF CONTRACT TIME has been deleted.

f. Page JS-30

Delete Page JS-30 in its entirety and insert revised Page JS-30(R-1) attached to this Addendum No 2. DESCRIPTION section has been revised.

g. Page JS-34

Delete Page JS-34 in its entirety and insert revised Page JS-34(R-1) attached to this Addendum No 2. BASIS OF PAYMENT section has been revised.

C. Distribution of Quantities

1. Index Page 1(R-1)

Delete Index Page 1(R-1) in its entirety and insert revised Index Page 1(R-2) attached to this Addendum No. 2. Item Code 601.0300 has been deleted.

2. Page 6(R-1)

Delete Page 6(R-1) in its entirety and insert revised Page 6(R-2) attached to this Addendum No. 2. Item Code No. 601.0300 has been deleted.

D. Drawings/Plans - Change/Addition

1. Sheet No. 8 Maintenance and Protection of Traffic Plan No. 3

Revise Sheet No. 8 as shown on Sketch No. 1 attached to this Addendum No. 2. Catch basin diameters have been added.

2. Sheet No. 12 Bridge No. 428 General Plan

Revise Sheet No. 12 as shown on Sketch Nos. 2 and 3 attached to this Addendum No. 2. Call-out for Providence Telecommunications Line has been revised.

3. Sheet No. 17 Bridge Notes 2

Revise Sheet No. 17 as shown on Sketch No. 4 attached to this Addendum No. 2. Structural Steel Notes and Temporary Jacking and Shoring Notes have been revised.

4. Sheet No. 23 Bridge No. 428 Typical Abutment Shoring Details

Revise Sheet No. 23 as shown on Sketch No. 5 attached to this Addendum No. 2. Call-out has been revised.

5. Sheet No. 47 Typical Details

Delete Sheet No. 47 in its entirety and insert Revised Sheet No. 47(R-1) attached to this Addendum No. 2. Telecommunications Line Support Detail has been added.

for: David W. Fish
Edmund T. Parker Jr., P.E.
Chief Engineer

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

PRE-BID CONFERENCE

Project: Interim Repairs to Bridge Nos. 428 and 429
Providence, RI
R.I.F.A.P. Nos.: BHO-0428(001)
R.I.C. No.: 2007-CB-030

Date: May 22, 2007
Time: 9:00 A.M.
Location: Transportation
Management Center
Conference Room

| <u>NAME</u> | <u>ORGANIZATION</u> | <u>PHONE NUMBER</u> |
|--------------------|------------------------|----------------------|
| David Cluley | RIDOT | (401) 222-2053 x4073 |
| Kevin Vizzinos | PAZZ CORPORATION | (401) 334-4100 |
| GILBERT PERBESON # | VERIZON | (401) 727-9504 |
| JOSEPH REILLY | PAZZ CORPORATION | 401-334-4100 |
| STEVEN LEPORE | DOT-UTILITY | 222-2503-4094 |
| Bob Pavia | RIDOT | 222-20503-x4079 |
| David W Fish | " | " x4022 |
| Andy Poccia | CARDI CORP | 401 739 8300 |
| CARL ENGLE | " " | " " |
| Tom Scammiro | Shire Corp | 467-1802 |
| Anthony Mesin | Shire Corp | 467-1802 |
| GREG MAUIZER | AETNA BRIDGE | 728 0400 |
| AL PRATA | RIDOT | 222-2503 x 4095 |
| KAZEM FARHOU MARD | " | x4020 |
| Paul Manser | COMMUNICATIONS FAIRHUR | 474-6430 |
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Verizon Telecommunications Duct Relocation Photos
Existing Conditions – April 26, 2007

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ADMINISTRATION - DIVISION OF PURCHASES

NOTICE TO HIGHWAY AND BRIDGE CONTRACTORS

Sealed Proposals addressed to the State Purchasing Agent, Rhode Island Department of Administration, Division of Purchases, One Capitol Hill, Providence, Rhode Island 02903, will be opened and read in public on June 8, 2007 at 11:30AM. All bidders MUST register online at www.purchasing.ri.gov. A Bidder Certification Cover Sheet MUST accompany each bid. Bid item description and quantities estimated for this project will also be available online. Should you need assistance in registering or downloading a bid, call (401) 222-2142 ext. 134. Failure to comply will result in mandatory disqualification per Item 4 of Section 102.12 of the Rhode Island Department of Transportation's Standard Specifications for Road and Bridge Construction 1997 Edition and RI General Law 37-2-17 which references the RI Vendor Information Program (RIVIP).

DESCRIPTION: Rhode Island Contract No. 2007-CB-030, Federal-Aid Project No. BII0-0428(001), is for the Interim Repairs to Bridge Nos. 428 (Wanskuck Bridge) and 429 (Hawkins Street Bridge) in the City of Providence, Providence County, Rhode Island.

The work associated with the interim bridge repairs to the Wanskuck Bridge No. 428 generally consists of, but is not limited to: a) partial removal of cast-in-place concrete slope paving, b) jacking and shoring of the existing bridge superstructure, c) complete removal and replacement of all pier columns and caps, d) removal and replacement of all existing bridge pier bearings with new pot bearings and subsequent cleaning and painting of damaged portions of the bridge paint system, e) installation of steel bridge shoring to be left in place at each abutment, and f) installation of new pier mounted underpass lighting. The bridge will remain in service throughout construction to carry all travel lanes on Route 146 and will be completed in phases to maintain through traffic in both directions on Branch Avenue.

Highway work associated with the repairs to the Wanskuck Bridge No. 428 generally consists of, but is not limited to: a) full depth saw cutting, removal, and replacement of bituminous pavement, b) removal and replacement of concrete sidewalk, c) removal and replacement of two drainage catch basins at the bridge structure and miscellaneous drainage work, d) cold planing and resurfacing Branch Avenue within the limits of the bridge interchange, e) installation of a traffic communications conduit, f) utility gate box replacement, g) removal and resetting of granite curb, and h) replacement of loops at the signalized intersections within the project limits.

Various overhead and underground utilities are present at Wanskuck Bridge No. 428. The overhead Cox Communications and Providence Telecommunications utilities will be permanently relocated by others and the utility pole guy wires adjacent to the North Pier will be relocated temporarily by others.

The work associated with the interim bridge repairs to the Hawkins Street Bridge No. 429 generally consists of, but is not limited to: a) jacking and shoring of the existing bridge superstructure at the pier, b) partial removal and replacement of the pier stem, c) miscellaneous structural steel repairs to the bridge superstructure, d) removal and replacement of the existing bridge bearings at the pier with new standard sliding bearings, e) cleaning and painting of structural steel adjacent to the pier stem, and f) cold planing and resurfacing of the existing bituminous wearing surface on the Hawkins Street Bridge deck. The bridge will remain in service during all construction. Maintenance and Protection of Traffic shall be provided on Route 146 to maintain all travel lanes throughout construction.

Highway work associated with the repairs to the Hawkins Street Bridge No. 429 generally consists of, but is not limited to: a) saw cutting, removal, and replacement of bituminous pavement, b) removal and replacement of precast median barrier and chain link fencing, and c) reconstruction of catch basins.

No utilities are present within the limits of the work area for the Hawkins Street Bridge No. 429 with the exception of an existing underground highway lighting conduit adjacent to the pier which is to remain in service throughout construction.

The project wide installation of erosion controls and maintenance and protection of traffic will be required during the construction period along with all other incidentals complete-in-place and accepted within the limits of the contract.

4. SPECIALTY ITEMS

The following proposal items are hereby designated as "Specialty Items":

- Sliding Bearings Standard Expansion
- Pot Bearings
- Cleaning and Painting of Structural Steel
- Containment, Collection, Storage, and Disposal of Debris and Spent Materials
- Installation of Electric Facilities and Underpass Lighting
- Pavement Markings (Temporary & Permanent)
- Radar Vehicle Detector

5. SEQUENCE OF CONSTRUCTION

The Contractor shall perform the proposed work during the day and/or night as specified in this General Provision Subsections 5a and 5b.

a. General

A Master Resource Loaded Schedule (MRLS) is not required for this project.

The Contractor shall coordinate his work to ensure that all utility relocations may proceed without delay. The Contractor shall, immediately upon commencing work at the site, perform all work necessary for the preparation of utility company involvement prior to beginning any other work on the project. Such work will include, but not be limited to, site preparation, tree trimming, earthwork, removals and relocations or disposals, traffic control, survey, etc., which involve the relocation of overhead wires or underground utilities.

The Contractor shall coordinate with the City's Director of Public Works and all utility companies to ensure that any scheduled utility work be completed prior to the Contractor commencing his work within this Contract.

All drainage work, including new construction and modifications, shall be completed and accepted by the Engineer prior to commencing pavement removal. Locations of surface features of utilities shown on the plans are approximate. The Contractor shall check and verify the exact location of all existing utilities, both underground and overhead with Dig Safe. Any damage to existing utilities shall be the Contractor's responsibility.

All Friday work on any holiday weekend listed above must end by 3 p.m.

Contractual completion dates for this project are based on a Winter Shutdown period from December 15th to March 15th.

Any deviations from the requirements stated here or detailed in these specifications, as well as any deviations from the approved construction work sequence and time schedule, must be submitted to the Engineer in writing for approval. If the contract is extended beyond the specified completion date, a similar work schedule will be established by the Engineer.

b. Special Requirements

Work on Bridge Nos. 428 and 429 may proceed simultaneously.

One week prior to the Pre-construction conference, the Contractor must submit to the Department for approval a detailed construction work sequence and time schedule for the completion of all work associated with this contract and the requirements it contains. Approval of the work sequence and time schedule is required before the start of any construction or other work associated with the contract. The proposed construction and time schedule must consider and address the safe vehicle and pedestrian passage through the project.

Highway lighting shall not be relied upon for work zone lighting. The cost of the work zone lighting required for nighttime operations shall be incidental to the contract in accordance with Section T22, Lighting for Night Work Operations, of the Standard Specifications. No separate payment will be made for lighting of the work zone during nighttime operation.

The Contractor shall maintain two lanes of traffic in each direction on Route 146 (12-foot minimum) at all times at the Hawkins Street Bridge No. 429 except at the approval of the Engineer. Traffic control for Route 146 at Hawkins Street must only be setup and removed at night between the hours of 10 PM and 6 AM. No lane closures on Route 146 at the Branch Avenue Interchange will be allowed throughout the entire construction project.

Prior to diverting traffic onto the shoulders of Route 146 at the Hawkins Street Bridge No. 429, the Contractor must reconstruct the catch basins as detailed on the Plans. Catch basin reconstruction work and all other work requiring shutdown of the Route 146 travel lanes and shoulders shall only be performed at night between the hours of 10PM and 6 AM.

INDEX

SPECIFICATIONS - JOB SPECIFIC

| <u>CODE</u> | <u>TITLE</u> | <u>PAGE</u> |
|-------------|--|--------------|
| 101. | Definitions and Terms | JS-1 |
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| 108.03 | Prosecution and Progress | JS-3 |
| | ITEM DELETED | JS-19 |
| 108.08 | Failure to Complete on Time | JS-22 |
| 201.9901 | Remove and Dispose Piezo Sensors | JS-23A |
| 209.9901 | Inlet Sediment Control Device | JS-24 |
| 212.1000 | Maintenance and Cleaning of Erosion and Pollution Controls | JS-25 |
| 819.9901 | Drill & Install Reinforcement with Epoxy Adhesive | JS-26 |
| 820.9901 | High Pressure Water/Sand Blasting Treatment of Concrete Surfaces | JS-27 |
| 824.9901 | Structural Steel Cover Plate Repair | JS-29 |
| 824.9902 | Structural Steel Weld Repair | |
| 824.9903 | Temporary Jacking and Shoring Beam End at Pier – Bridge No. 428 | JS-30 |
| 824.9904 | Temporary Jacking and Shoring Beam End at Pier – Bridge No. 429 | |

JOB SPECIFIC

101. DEFINITIONS AND TERMS

DESCRIPTION:

Delete **Subsection 101.80; WINTER SHUTDOWN** on page 1-11 of the Rhode Island Department of Transportation, Standard Specifications for Road and Bridge Construction, 2004 Edition, with all the latest revisions, and replace with the following:

101.80 WINTER SHUTDOWN. The period from December 15th through the following March 15th.

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JOB SPECIFIC

CODE 108.03 PROSECUTION AND PROGRESS

Delete section 108.03 of the RIDOT Specification and Revised Section 100 in its entirety and replace with the following:

The Department has implemented an integrated schedule management and control program for all RIDOT contracts. A Project Schedule must be maintained for all projects under contract by RIDOT. Compliance with this specification is incidental to the contract and no separate payment will be made for any costs involved with said compliance.

A. GENERAL REQUIREMENTS

1. Project Schedule Program

Construction contracts require an integrated schedule controls program that the Contractor shall comply with until contract completion. This schedule shall be the Contractor's working schedule and shall be used to plan, organize, and execute the work, record and report actual performance and progress, and show how the general Contractor plans to complete all remaining work as of the end of each progress report period. The Contractor shall utilize the Project Schedule in planning, scheduling, coordinating, and performing the work including all activities of subcontractors, equipment vendors, and suppliers.

The Contractor shall employ a scheduler(s) dedicated to the contract, who during the last five (5) years has been continuously utilized as a scheduler on heavy civil construction projects similar in size and scope to this project. The Contractor shall submit the resume of the proposed scheduler(s) to the Engineer for approval within 5 days of receipt of the Apparent Low Bidder Letter. Determination of the scheduler(s) acceptability on the contract is made at the sole discretion of the Engineer.

The following schedule submittals are required:

- 1. PRELIMINARY PROJECT SCHEDULE**
- 2. PROJECT SCHEDULE BASELINE**
- 3. MASTER RESOURCE LOADED SCHEDULE**
- 4. STATUS SCHEDULE UPDATES**
- 5. SHORT TERM SCHEDULES**
- 6. RECOVERY SCHEDULES**

The above listed Project Schedules shall be used for evaluating all issues related to time, and assist in evaluating the Contractors' performance, responsibility and qualifications pertaining to RIDOT contracts. The Project Schedules shall be updated in accordance with the requirements of this specification to reflect the actual progress of the Work and the Contractor's current plan for the timely completion of the Work. The Project Schedules shall be used by the Engineer and Contractor for the following purposes as well as any other purpose where the issue of time is relevant:

1. To communicate to the Engineer the Contractor's current plan for carrying out the Work;
2. To identify work paths that are critical to the timely completion of the Work;
3. To identify upcoming activities on the critical path(s);
4. To identify any changes in proposed work that is different than what is in the specifications or on the plans, such as alternate phasing, Value Engineering Proposals, etc.

5. To evaluate the best course of action for mitigating the impact of unforeseen events;
6. As the basis for analyzing the time impact of changes in the Work;
7. As a reference in determining the cost associated with increases or decreases in the Work;
8. To identify when Submittals will be submitted to the Engineer;
9. To prioritize the Engineer's review of Submittals;
10. To document the actual progress of the Work;
11. To evaluate resource requirements of the Contractor and the Engineer;
12. To integrate the Work with the operational requirements of the Engineer's facilities; and
13. To facilitate efforts to complete the Work in a timely manner.
14. To coordinate the work of 3rd party Contractors into the sequencing of the general Contractor.

The Project Schedules shall be the primary tool utilized by the Contractor to accurately document the progress of the work and to communicate its plan for the timely completion of the work.

The Contractor shall utilize the following standards in the development of the schedules required in this specification. The Contractor, in the development of the Project Schedule, must utilize the following standards in the development and maintenance of the project schedule. Throughout the life of the project, additions, substitutions or deletions must be submitted for approval in writing at the time of each submittal. At no time shall an activity be deleted without the prior consent of the Engineer, nor shall the Activity ID be altered in any way without the consent of the Engineer.

2. Scheduling Terms

Unless otherwise defined, terms used that relate to the scheduling software shall be as defined by the P3 Reference Manual and the P3 Planning and Control Guide, 1999.

3. Schedule Type

All Schedules required by the Project Schedule Program shall be a computer generated, critical path method (CPM) network utilizing the precedence diagram method of scheduling.

4. Software

The software utilized to generate the CPM schedule shall be capable of producing schedules in accordance with the requirements of the Contract Documents and fully compatible with software utilized by the Engineer currently Primavera Project Planner (P3), Version 3.0. The Contractor shall purchase and maintain a valid software maintenance agreement for each license of software necessary to produce the Project Schedules.

The Contract Documents use the schedule software terminology utilized by P3 and addresses features available in P3, Version 3.0. It is the Contractor's option to utilize any other scheduling software that is capable of meeting the schedule requirements, in which case, the Contractor shall demonstrate to the Engineer's satisfaction that the selected software is capable of meeting the schedule requirements. The demonstration shall take place at the Engineer's Office within five (5) working days after award of the Contract. No later than the date of the demonstration, the Contractor shall provide the Engineer with one copy of the software complete with all manufacturer manuals to evaluate for a period of five

(5) working days. In the event that the software selected by the Contractor is accepted by Engineer, the Contractor shall provide and maintain a minimum of five (5) software licenses for the Engineer for the duration of the project at no additional charge. Two (2) of the five (5) software licenses shall become the permanent property of Engineer upon completion of the project, at the Contractor's expense.

In the event that the software selected by the Contractor is accepted by the Engineer, settings for features in the selected software shall be consistent with the settings specified herein for P3. When the Contractor utilizes software with which the Engineer is unfamiliar, the Engineer reserves the right to rescind its acceptance of the setting of any feature based upon the Engineer's direct experience of the software at any time during the course of the Work.

5. Use of Float

Time Extensions will be granted only to the extent that equitable adjustments for the activity or activities affected exceed or exceeded the total or remaining float along the Critical Path or activities at the time of the actual delay. The Critical Path is defined as the longest continuous series of activities through the network to a Contract Milestone or to Contract Completion. Where the path to a specific Milestone has become negative, the critical path shall be the longest continuous chain of activities with the greatest amount of negative float. Float is not for the exclusive use or benefit of either the Engineer or the Contractor, but is an expiring resource available to all parties, acting in good faith, as needed to meet any Contract Milestone(s). Time Extensions shall not be granted until a delay occurs that is:

- a) Beyond the control of and without fault of or negligence of the Contractor and its Subcontractors or Suppliers, at any tier; and
- b) Extends the actual performance of the Work beyond any Milestone(s).

As float is an expiring resource, if the Work is delayed on the Critical Path due to a delay caused by the Engineer, the Contractor may not use any float created by such delay on any other path(s) without the express written approval of the Engineer. Use of such float on any parallel path without the approval of the Engineer shall be construed as a concurrent delay to any delay caused by the Engineer. Approval for use of float must be in advance of its use in order for the Engineer to evaluate the option of maintaining non-critical path(s), while recovering time to the Contract Milestone(s).

B. SCHEDULE SUBMITTAL

1. Concurrent Review/Completion and Timeliness of Submittals

To promote the efficient use of Contractor and Engineer scheduling resources, part of the Engineer's review of the Baseline Schedule will be a concurrent and repetitive process with the Contractor's preparation of the Baseline Schedule. The Contractor shall complete and submit portions of the Baseline Schedule in accordance with the submittal deadlines contained herein. For the determination of submittal deadline dates, the date of Apparent Low Bidder Letter shall be working day No. 1, based on a five (5) day work week or Calendar No. 5. Baseline Schedule submittals will be reviewed for general conformity with the plans and specifications. Each submittal required by this section shall reflect the incorporation of all of the Engineer's comments on the Project Schedules to date. With each submittal, the Contractor shall provide a written explanation of its response to each Engineer's comment to date. Such written explanations are critical for the Engineer to conduct timely, efficient reviews of the submittals.

The Engineer review periods specified in this section are based upon the timely receipt of information from the Contractor in accordance with all of the requirements of this section. Failure of the Contractor to provide complete, timely Baseline Schedule submittals as specified and in the sequence and time frames, as specified below, may result in delays or extensions to the Engineer review periods.

Submittals may be rejected for incompleteness or failure to meet the specification requirements and re-submittal will be required. The Engineer will not be obligated to accelerate its review to compensate for the Contractor's failure to meet submittal deadlines. The Contractor may submit information earlier than required in the Baseline Schedule Submittal Schedule below, however, unless specifically agreed to, the Engineer shall not be obligated to complete its review of that information any earlier than the deadline specified for its review (e.g., Step No. 2, will be returned on work day twenty (20) based on Calendar No. 5, if submitted early or on time).

The Activity IDs, Work Breakdown Structure, and Activity codes are essential to the Engineer's review for accessing the information contained in the Project Schedules. If the values of any activity code are incorrectly assigned to more than one percent (1%) of all activities in each Baseline Schedule submittal or more than fifty (50) activities, whichever is greater, the Engineer may be unable to conduct timely or meaningful reviews and the submittal shall be returned, at the Engineer's discretion, for correction and re-submittal.

2. Weekly Meetings

Within 5 working days of the Contractor's receipt of the Department's Apparent Low Bidder Letter, the Department will hold a Schedule Development Meeting. The purpose of this meeting will be to review the standards to be utilized in the development of the schedule and to answer any questions the Contractor may have. At the meetings the Contractor must be prepared to discuss the company's current workload, dedicated resources, available resources, and, if a Master Resource Loaded Schedule is required, the format of the Master Resource Loaded Schedule.

The Contractor shall meet, at a minimum, once each week thereafter with the Engineer, until the Baseline, Preliminary and/or Master Schedule is accepted, to discuss the preparation of the Schedules and the administration of the Schedules. All members of the proposed Project Management Team shall attend all weekly meetings. Other members of the Contractor's project management staff, and/or, subcontractors and suppliers shall be present at the Contractor's discretion or when requested by the Engineer.

3. Preliminary Baseline Schedule Information

The Preliminary Project Schedule shall show all work activities of items that the Contractor is required or plans to perform for the first 120 days after the Notice to Proceed. In addition, the Preliminary Project Schedule shall show, in summary, the proposed sequence of work for the balance of the project. This Preliminary Project Schedule shall be superseded and replaced by the Project Schedule Baseline following its review and acceptance by the Department.

This submission shall be submitted within 30 days after the Contractor's receipt of the Apparent Low Bidder Letter. This submission shall utilize the content standards set forth in the Baseline Schedule Submission Steps 1 through 3. Failure to submit and obtain an acceptance of the Preliminary Baseline Schedule shall be a basis for the Engineer to withhold the progress payments until such schedule has been submitted and accepted.

4. Submittals and Procurement

All submittals and shop drawings will be represented in the Contractor’s Submittal List (CSL) and in the Project Schedule. At a minimum, each submittal in the CSL will have a corresponding submittal preparation activity in the schedule. Each submittal activity will have corresponding review and approval activity. Each submittal item will also have a corresponding procurement activity identify the duration for the procurement of the corresponding materials, equipment, etc.

The accuracy and completeness will be the responsibility of the Contractor. The Contractor is responsible for any delays due to the inaccuracy of the identification of shop drawing and submittal requirements.

All shop drawing and submittal activities, procurement activities, and corresponding installation activities shall be cross referenced for easy identifications and coordination with the Contractor’s submittal list, specifications and items codes.

5. Baseline Schedule Submittal

In the course of developing the initial Baseline Schedule, the Contractor shall submit the following scopes of work for the Engineer to review in accordance with the following schedule:

| BASELINE SCHEDULE SUBMITTAL SCHEDULE | | | |
|--------------------------------------|---------------------------------|---|--|
| STEP | DESCRIPTION | SUBMITTAL DEADLINE | ENGINEER REVIEW DEADLINE |
| 1 | Schedule Framework | Working Day No. 10 after Apparent Low Bidder Letter | 5 working days after submittal or working day 10 after Apparent Low Bidder Letter, whichever is later. |
| 1a | Preliminary Schedule | Working Day 21 after apparent Low Bidder letter | 5 working days after submittal or working day 26 after Apparent Low Bidder Letter, whichever is later. |
| 2 | Schedule Structure Re-submittal | Working Day No. 15 after Apparent Low Bidder Letter | 5 working days after submittal or working day no. 20, whichever is later. |
| 3 | Logic with coding and narrative | Working Day No. 30 after Apparent Low Bidder Letter | 12 working days after submittal or working day no.42, whichever is later. |
| 4 | Resource and Cost Loading | Working Day No. 45 after Apparent Low Bidder Letter | 10 working days after submittal or working day no. 55, whichever is later. |

| BASELINE SCHEDULE SUBMITTAL SCHEDULE | | | |
|--------------------------------------|--|---|--|
| STEP | DESCRIPTION | SUBMITTAL DEADLINE | ENGINEER REVIEW DEADLINE |
| 5 | Logic, coding, resource and cost loading, narrative re-submittal | Working Day No. 75 after Apparent Low Bidder Letter | 10 working days after submittal or working day no. 85, whichever is later. |
| 6 | Baseline Schedule including narrative | Working Day No. 90 after Apparent Low Bidder Letter | 5 working days after submittal or working day no. 95, whichever is later. |
| 7 | Corrected Baseline including narrative | Working Day No 100 after Apparent Low Bidder Letter | 10 working days after submittal, or working day no. 110 |

All submittal reports, including graphs, plots, and files on disk, shall meet the requirements contained herein. In the event that the Baseline Schedule is not approved by Working Day No. 110, the Department may, at its option, withhold any further progress payments until the Baseline Schedule is accepted by the Engineer.

- 1) Schedule Framework Submittal (Step 1): No later than the deadline specified in the Baseline Schedule Submittal Schedule, the Contractor shall submit the Schedule Framework Submittal, which shall include the following components:
 - a) Work Breakdown Structure (WBS):
 - b) Activity Codes: All Contractor defined activity code values.
 - c) Calendars: All Contractor defined working day calendars and resource calendars.
 - d) Submittal List: The CSL including all submittals required by the Contract documents. These are also to be in the schedule file as described in section B.4 of this specification.
 - e) Computer Disk(s) with Files
- 2) Schedule Structure Re-submittal (Step 2): No later than the deadline specified in the Baseline Schedule Submittal Schedule, the Contractor shall resubmit the following schedule structure components:
 - a) Work Breakdown Structure
 - b) Activity Data for all milestones, submittals, procurement, work by others, construction and all other work elements included in the contract. Specific data to include, at a minimum: Activity ID, Activity Description, Activity Type, Calendar ID, WBS ID, Responsibility Code.
 - c) Activity Codes: Contractor defined activity code values complete and incorporating all Engineer comments to date.

- d) Resource Definitions: Labor resources, work types, and equipment resources complete and incorporating all Engineer comments to date.
 - e) Calendars: All Contractor defined working day calendars and resource calendars complete and incorporating all Engineer comments to date.
 - f) Submittal List: All submittals required by the Contract Documents, incorporating all Engineer comments to date.
 - g) Computer Disk(s) with Files
- 3) Logic and Narrative Submittal (Step 3): No later than the deadline specified in the Baseline Schedule Submittal Schedule, the Contractor shall complete the logic submittal including all activities, durations, and logic representing all work required by the Contract. The logic submittal shall meet all of the requirements of these Special Provisions with the exception of resource loading and cost loading. The logic submittal shall include the coding for each activity. The logic submittal shall include three (3) copies of the following:
- a) Narrative Report
 - b) Computer Disk(s) with all Files
- 4) Resource and Cost Loading Submittal (Step 4): No later than the deadline specified in the Baseline Schedule Submittal Schedule, the Contractor shall complete the resource and cost loading submittal including all resource and cost loading of all activities in the schedule. Resources are defined as labor, equipment, materials, subcontractors, and suppliers. The resource and cost loading submittal shall meet all of the requirements as specified herein. The resource and cost loading submittal shall include three (3) copies of the following:
- a) Computer Disk(s) with files
 - b) Activity Budget Report
 - c) Identification and explanation of all logic changes since the logic submittal
- 5) Logic, Narrative, Resource and Cost Re-submittal (Step 5): No later than the deadline specified in the Baseline Schedule Submittal Schedule, the Contractor shall complete the logic re-submittal including all activities and logic representing all work required by the Contract Documents. The logic re-submittal shall meet all of the requirements as specified herein. The logic re-submittal shall include three (3) copies of the following:
- a) Narrative Report
 - b) Computer Disk(s) with files
 - c) Identification and explanation of all logic, resource, and cost changes, since the resource and cost loading submittal
- 6) Baseline Schedule Submittal (Step 6): No later than the deadline specified in the Baseline Schedule Submittal Schedule, the Contractor shall complete the initial Baseline Schedule submittal representing all work required by the Contract Documents as bid. The Baseline Schedule submittal shall meet all of the requirements as specified herein. All report definitions will be discussed at the schedule development meeting. The Baseline Schedule submittal shall include three (3) copies of the following:
- a) Narrative Report
 - b) Computer Disk(s) with files
 - c) Activity Budget Report
 - d) Labor Resource Report
 - e) Equipment Resource Report
 - f) Predecessor / Successor Report
 - g) Milestone Report
 - h) Submittal Report
 - i) Organizational Chart/Staffing Plan

- j) Cumulative and Monthly Cost Curves for the Contractor Prime and all Subcontractors
 - k) Cumulative and Monthly Resource Curves for the Contractor and all Subcontractors
 - l) Network Plot
- 7) Corrected Baseline Submittal (Step 7): In the event that the Baseline Schedule submittal is not accepted without qualification, no later than the deadline specified in the Baseline Schedule Submittal Schedule, the Contractor shall complete the corrected Baseline Schedule. The Contractor shall correct this Baseline Schedule submittal by only incorporating all of the Engineer's comments on the Baseline Schedule submittal. No additional changes shall be made. The corrected Baseline Schedule submittal shall include three (3) copies of each Baseline Schedule submittal component affected by the corrections and a narrative of how each of the Engineer's comments was addressed. The corrected Baseline Schedule submittal shall be revised and resubmitted until receipt of Engineer acceptance without qualification. The BL07 schedule name designation will be used until acceptance of the Baseline Schedule once accepted by the Engineer without qualification. The Engineer will return the Baseline Schedule, named BL00, to the Contractor, which will be known as the Current Baseline Schedule.

C. Master Resource Loaded Schedule

If RIDOT specifies that a Master Resource Loaded Schedule (MRLS) is required this section will be followed. Unless otherwise noted in the contract documents, or formally requested by RIDOT, a MRLS is not required as part of this contract. In general, a Master Resource Loaded Schedule is a schedule that identifies all work to complete all open contracts that the Contractor has with RIDOT, any other public agency, all projects in which the Contractor has been identified as the Apparent Low Bidder, and any other projects that may impact the resource requirements and performance of any RIDOT Project. The intent of the MRLS is to have all current project schedules, and schedules for the project(s) that the Contractor has bid on and is identified as the apparent low bidder, resource loaded and merged into a MRLS. This requirement is in addition to the schedule requirements set forth in the contract documents. All existing contracts must reflect the most current updated and accepted schedule.

The MRLS must identify all resources that will be utilized to complete the activities defined in the schedule. Resources are defined as labor, equipment, materials, subcontractors, and suppliers. The MRLS must identify all work in detail for the first calendar year of the project and the remaining work in summary. In addition all work for the first year of the project must also include all resources required to complete the work. It shall be the Contractor's responsibility to identify all labor and equipment employed by the company, their respective planned utilization and how the contract under review by RIDOT will utilize these resources

The MRLS must utilize the Project Group/Subproject structure utilized by Primavera's P3 Software. If any alternate program is proposed, the Contractor must provide 5 licensed copies of the software including maintenance and support for the duration of the projects, and sufficient training for 10 RIDOT personnel. Whereas time is of the essence in the Award Process, a modified format may be presented to the Apparent Low Bidder in the event the Department believes it is necessary. This format will be discussed at the meeting held within five days after the Notice of Apparent Low Bidder.

The MRLS must utilize the following WBS Structure:

| | |
|-------|---------------------------|
| WH. | Project Name |
| WH.05 | Milestones |
| WH.10 | Summary Activities |
| WH.20 | Procurement/Shop Drawings |
| WH.60 | Construction |

The MRLS must utilize the following Schedule/Level Calculation Options:

When interproject relationships exist:

Check the box that states “ignore interproject relationships”

Project Group scheduling:

Clear the check box that states “Replace project data dates when scheduling”

Project Scheduling:

Check the box that states “Allow scheduling and leveling of individual project”

Resource Leveling will be recognized as a tool for individual projects only. Interproject relationships and leveling of the MRLS is not acceptable. It must be shown that each project is an independent project that has a set of dedicated resources to execute and complete the project within the time allowed in the contract. Except for work determined by the department to be specialty work, a delay on one project that impacts the projects resources is not an acceptable excuse as a delay on another project that was planned to utilize the impacted resources.

If any of the projects contained in the MRLS indicate a trend that the project is falling behind schedule, the following must be submitted with the MRLS:

1. Documentation that a valid and justifiable Recovery Schedule has been submitted and accepted.
2. A valid and justifiable Time Extension Request has been submitted and accepted.

The MRLS Submission must contain the following:

1. Primavera P3 Backup file on CD ROM
2. A MRLS Milestone Report printed on 11x17 paper that is a direct output from the MRLS file that identifies the following:
 - a. Show all Milestone Activities that have not been completed or have been completed over the past month prior to the date of the bid opening.
 - b. Grouped and Organized by Project, then by WBS
 - c. Display the following columns:
 - i. Act. ID
 - ii. Act Description
 - iii. Calendar ID
 - iv. Original Duration
 - v. Early Dates
 - vi. Late Dates
 - vii. Total Float For the Current Period
 - viii. Total Float for the Previous Months Period
 - ix. Variance in Early Finish Dates between this period and Last Month

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- d. Display the following Timeline
 - i. Bid Opening minus 30 days to 30 days after the latest milestone date
 - e. Display the following bars
 - i. Milestone Diamond representing the Early Dates of the Milestone
 - ii. Activity Description to the right of the Bar
3. A MRLS Activities Report printed on 11x17 paper that is a direct output from the MRLS file that identifies the following:
- a. Show all Activities that have not been completed and have been completed over the past month prior to the date of the bid opening.
 - b. Grouped and Organized by Project, then by WBS
 - c. Display the following columns:
 - i. Act. ID
 - ii. Act Description
 - iii. Calendar ID
 - iv. Original Duration
 - v. Early Dates
 - vi. Late Dates
 - vii. Total Float For the Current Period
 - viii. Total Float for the Previous Months Period
 - ix. Variance in Early Finish Dates between this period and Last Month
 - d. Display the following Timeline
 - i. Bid Opening minus 30 days to 30 days after the latest milestone date
 - e. Display the following bars
 - i. Bars representing the Early Dates of the Activities
 - ii. Activity Description to the right of the Bar
4. A Narrative containing the following:
- a. Contractor Name and Data Date of the MRLS
 - b. List of all projects contained in the MRLS with the corresponding completion dates, and a number indicating the quantity of calendars days the projects are ahead or behind, a positive number for ahead, negative for behind. This must be displayed in a tabular format.
 - c. The next 12 months of Monthly Resource Requirements for all existing projects for all classifications of resources required, i.e. Laborers, Carpenters, Operators, Iron Workers. This must be grouped by project, then totaled at the bottom of the table
 - d. The next 12 months of Monthly Resource Requirements for all projects that are currently in the post qualification process for all classifications of resources required, i.e. Laborers, Carpenters, Operators, Iron Workers. This must be grouped by project, then totaled at the bottom of the table
5. Monthly Updates
- a. On a monthly basis, the Contractor must provide a monthly update of the MRLS.
 - b. On a monthly basis the Contractor must attend a Monthly MRLS Meeting to discuss the MRLS. Appropriate representation of the Contractor must attend and be prepared to participate in the meeting.
 - c. The Updated MRLS must be submitted to the department 3 working days prior to the meeting
 - d. The Updated MRLS must contain all current projects, an update of the resource utilization, including actual resources utilized, and the forecast for the next 12 months. The schedules utilized will be the latest approved biweekly updates.

D. SCHEDULE REQUIREMENTS

For the purpose of enabling both the Engineer and the Contractor to readily evaluate the Project Schedules, including derived data and reports, the Project Schedules shall be administered in accordance with the following requirements.

1. Project Group Naming Standards:

- (a) Preliminary Project Schedule: PS00. Required revisions would be named PS01, PS02, etc.
- (b) Project Schedule Baseline: BL00. Required revisions would be named BL01, BL02, etc.
- (c) Bi-Weekly Status Schedule: U??? where ??? is a sequential number for each bi-weekly submittal starting at a number provided by the Department.
- (d) Recovery Schedule: R??? where ??? matches the latest Bi-Weekly Status Schedule number for which the recovery was developed from

2. Project Name / Project ID Standards;

This contract will utilize the Project Name "PVWH" and the Project ID (Activity ID) of "WH".

3. Project Specific Milestones

The Contractor shall include the following milestones and the corresponding activity IDs and activity descriptions in the development of all project schedules.

| | | |
|------------|------------------------|------------------|
| WH10000010 | Phase 1 Completion | Finish Milestone |
| WH10000020 | Phase 2 Completion | Finish Milestone |
| WH10000030 | Substantial Completion | Finish Milestone |

The completion dates listed above are Contractual Completion Dates. These Contractual Completion Dates are included in the requirements stipulated in the contract documents. A Late Finish Constraint shall be applied to this milestone in accordance with the contract completion dates specified in the Proposal.

4. Activity Data

a. Activity Descriptions

All Activity Descriptions will end with the text string ",WH". All Activity Descriptions will be typed in "Title Case".

The activity description shall identify the scope of the activity. There shall not be any two activities with the same activity description. It shall not be necessary to investigate activity code assignments or logic relationships to identify the scope of an activity. For example, the description "Pour Footing" will not be acceptable; the description "Pour Footing Ramp Rt-Sta. 42+00-42+50 will be acceptable. The terms "Miscellaneous," "Misc," and other vague adjectives shall not be used in an activity description. The Contractor shall standardize the use of terms and their spelling in all activity descriptions. Abbreviations used in activity descriptions shall be consistent with the abbreviations used throughout the Contract Documents and summarized on the Contract Drawings. Each activity description shall be left justified.

b. Activity Duration:

The Contractor shall minimize activities having a duration less than two (2) working days (a short duration) or greater than twelve (12) working days (a long duration). At the request of the Engineer, the Contractor shall substantiate the need for specific activities having short or long durations than stated herein. If the Contractor fails to substantiate this need, then the Contractor shall modify activity durations and the corresponding work scope of the activities to the satisfaction of the Engineer.

c. Activity Type:

The implementation of scheduling software features that may impact activity float calculations shall be in accordance with the software manufacturer's recommendations and shall be accepted by the Engineer. For example, P3 has the default activity type of "task". Contract Milestones and only Contract Milestones as specified in Section 108.03 Section D, Paragraph 3 of the Special Provisions shall be assigned the activity type, milestone.

d. Activity Dates:

Early and late, start and finish dates of activities shall be calculated for each activity based upon the schedule data date, actual dates, schedule logic, schedule constraints, calendars, and original duration or remaining duration, in accordance with the scheduling parameters defined in this section. If the use of multiple calendars causes the software to calculate incorrect early and late, start and finish dates, the Contractor shall be responsible to identify all such errors and to determine correct dates consistent with the parameters specified in Section 108.03. Activity actual start and actual finish dates shall be entered in the Project Schedules only after Engineer acceptance in accordance with the update requirements of Section 108.03.

e. Activity Predecessors and Successors:

Every activity shall have logically assigned predecessors and successors in conformance with the requirements of Section 108.03. Unless otherwise specified, Notice to Proceed shall be the only activity in the Project Schedules without a predecessor. Unless otherwise specified, Contract Completion and each Contract Milestone(s) shall be the only activity in the Project Schedules without a successor.

f. Activity Constraints:

Activity Constraints can affect activity float calculations and shall not be used unless accepted by the Engineer. Unless otherwise authorized by the Engineer, Constraint types shall be limited to Start-No-Earlier-Than, and Finish-No-Later-Than. The imposition of a date constraint on any activity other than the Contract Milestone(s) specified in corresponding section of the Special Provisions shall only be permitted when the Contractor demonstrates the need for such a constraint to the satisfaction of the Engineer. All date constraints shall be reviewed and corrected as part of the monthly update procedure, which includes review during the Bi-Weekly Joint Update Meeting.

g. Resource Loading:

As detailed more fully below, the Contractor will resource load activities for itself and subcontractors to include labor, commodities and construction equipment.

5. Activity Codes, Definitions, and Activity ID Coding

The Project Schedules shall contain activity code classifications and code values. The Contractor shall propose a coding structure for the Engineer's review and acceptance. The activity code structure combined with the activity identification number shall provide the capability to organize information by location, road or ramp, structure, work type, subcontractor, discipline, etc., as deemed necessary by the Engineer. The Contractor shall reserve three (3) code classifications (fields) and a minimum of six (6) characters for the Engineer's use.

RESP code will be utilized for identification of responsible party. RESP values shall be discussed at the Schedule Development Meetings.

The Activity IDs shall be coded in accordance with the following convention:

- a. First two characters: "WH"
- b. Next characters: WBS codes levels 2 through 5 (two to six digits) assigned to the activity, without the decimal points.
- c. Last two characters: unique alpha numeric characters as designated by the Contractor.

All 10 characters shall be utilized in the activity ID. Sample Activity ID numbers: **WH10200000**

6. WBS Codes and Dictionary

A WBS code will be identified for each activity. A WBS dictionary will be developed with the Contractor at the Schedule Development Meeting. This dictionary must be utilized in the definition and development of all schedule activities. The WBS dictionary maybe appended where further detail may be required throughout the project with the approval of the Engineer. Title Case shall be utilized in the development of the WBS descriptions. The WBS will be the primary code for displaying and organizing the graphical output schedules utilized for the project, unless otherwise directed by the Engineer.

7. Summary Schedule Activities

The Contractor shall maintain a summary schedule of Hammock activities. These schedule activities must remain in all of the schedule submittals. The Hammocks' predecessors and successors shall be modified to include all those activities that are entered into the schedule that would be considered inclusive with the scope of work of the respective Hammock activity.

8. Calendars

The following calendar formats (to be provided by the Department if necessary) will be the only ones used on all Department contracts unless otherwise approved by the Engineer:

- Calendar 1- 5-day workweek (includes Holidays and Winter Shut Down)
- Calendar 2- Procurement
- Calendar 3- 6-day workweek (includes Holidays and Winter Shut Down)
- Calendar 4- 7-day workweek (includes Holidays and Winter Shut Down)
- Calendar 5-5-day workweek (includes Holidays and No Winter Shut Down)
- Calendar 6-6-day workweek (includes Holidays and No Winter Shut Down)
- Calendar 7-7-day workweek (includes Holidays and No Winter Shut Down)
- Calendar 8- Interstate 5-day workweek (includes Holidays & Winter Shut Down)
- Calendar 9- Interstate 6-day workweek (includes Holidays & Winter Shut Down)
- Calendar A - Seeding
- Calendar B - Wetland Seeding
- Calendar C- Plants B&B

9. Resource Loading

The Project Schedules shall be resource loaded for both the Contractor and all of its subcontractors as detailed below, or as otherwise specified by the Engineer. The Contractor may propose additional or alternative resource loading for the Engineer's review and acceptance. Defining a resource shall consist of identifying the resource name, resource description, unit of measure, and calendar assignment.

1. Labor Resources: Labor shall refer to all craft labor including foremen. Labor shall be measured in person-days. The labor resource definitions shall be consistent with the Contractor/subcontractor work scope.
2. Commodities: Commodities typically tracked are concrete, rebar, and segment fabrication and erection. Commodities to be tracked for this contract shall be as designated by the Engineer.
3. Construction Equipment Resources: The planned use of equipment requiring a licensed operator shall be reflected in equipment resource assignments to activities.
4. Limits on Resources: The Contractor shall indicate in its narrative the expected amount of a resource and shall define the normal or expected usage along with a maximum limit available to the Contractor. Resource limits may vary for different stages of the work. Resource limits shall be revised to reflect the Contractor's current plan for the timely completion of the work.

10. Cost Loading

The Project Schedules shall be cost loaded. The Contractor shall allocate a value for Unit Price or Lump Sum bid items to each activity in the schedule. Each bid item, including items added by Change Order shall be allocated directly to an activity or distributed to a group of activities. The summed value of that portion of the activities allocated to each bid item shall equal the total value of the corresponding bid item.

No costs shall be assigned to activities prior to the written execution of a Contract Change Order by the Engineer authorizing the cost of the extra work or the credit.

The practice of front-end loading lump sum bid items will not be permitted. When the Contractor plans to request payment for material not incorporated into the Work, the delivery activity for that material shall be cost loaded up to a maximum value of the purchase price of the material delivered. When the installation of material delivered to the site will commence within five (5) working days of delivery or will finish within twenty (20) working days of delivery, the cost of that material shall be assigned to installation activities, not to delivery activities. When permanent materials are not paid for prior to their incorporation into the Work, the cost of the materials shall be included in the budgeted cost assigned to the corresponding installation activity or activities.

11. Cost Accounts /Resource Codes

When allocating values (dollars) from Unit Price Bid Items to activities, cost account codes shall be assigned utilizing the following convention

Cost Account Number – W07

Cost Account Number - Fields 3 through 9: Bid Item Code.

The Resource Code "W07xxxx" where xxxx is the bid item number in the contract, shall be used for all allocated values (dollars) from Unit Price Bid Items.

12. Logic

Activity Relationships: The schedule logic for each activity shall be constructed in conformance with the following requirements:

Determine predecessors — Activities that must be completed before the activity can start.

Determine parallel activities — Activities that can occur simultaneously with the activity.

Determine successors — Activities that cannot start until the activity is complete

Determine the impact of all resource limitations on activity sequencing, activity durations, and activity dates.

All paths through the Project Schedules shall proceed in the direction representing the progression of time. Activity lag durations shall not have a negative value, unless the Contractor substantiates to the satisfaction of the Engineer that this is the best representation of reality. Activity lags shall not be used in lieu of logic relationships. Redundant ties to preceding activities in a sequential series of activities will not be permitted. For example, if activity C is the successor in a Finish-Start relationship to activity B, and activity B is the successor in a Finish-Start relationship to activity A, then activity A shall not have a redundant Finish-Start relationship to activity C. A tie representing a different constraint will not be considered redundant. For example, a logic tie showing that the completion of the work scope of a predecessor is required before the successor can start is different from a logic tie representing a resource limitation and will not be considered redundant.

13. Use of Constraints

The use of constraints within the schedule is limited to Late Start constraints for Access Restraints and Late Finish constraints for Completion Milestone(s) defined in the Contract Documents. Any other use of constraints is prohibited. This includes the following: Zero Free Float, Start on, Expected Finish, Mandatory Start or Finish, along with early and late constraints for starts and finishes for activities other than access restraints and Milestone(s) defined in the Contract Documents. The use of negative lags or the use of any other float suppression techniques is also prohibited from use in Project Schedules. The use of "Project Must Finish By" constraint, located in the "Project Overview" dialogue box and the Standard Global Calendar Information" dialogue box, are not allowed unless otherwise specified by the Department.

14. Resource Leveling

The Contractor may use manpower or equipment restraints to optimize and level manpower and equipment requirements. The individual activities involved must be sequenced within the limits of the available total float. When this leveling technique is used in establishing the Baseline Schedule, the accompanying narrative shall indicate how this technique is being used, along with a log note in the activity as which successor tie(s) is a resource restraint. The use of this technique shall be kept to a minimum in producing critical or near critical paths. Near critical paths shall be defined as those paths having fourteen (14) days or less of total float, based on the initial baseline submission. The Engineer considers the use of resource ties and leveling as preferential logic and must be removed when requesting a time extension to any Contract Milestone(s).

15. Out-of-Sequenced Logic

The Contractor shall correct all incorrect logic relationships in the Schedule Update to eliminate any out-of-sequenced logic. The Contractor shall make all changes in the logic or other adjustments found to be incorrect by the Engineer.

16. Schedule Data Dates

The following data date definitions are provided for each schedule submittal required in Section 108.03. For the:

- Preliminary Project Schedule - Date of the projected Notice to Proceed.
- Project Schedule Baseline - Notice to Proceed Date.
- Bi-Weekly Status Schedule – TBD at Schedule Development Meetings.

17. Layouts and Layout Numbers

At the schedule development meeting, the Contractor will be given standard layouts to be utilized in the schedule submissions and update meetings, these layouts will be utilized.

18. Schedule Calculation Options - Schedule calculation options shall have the following settings:

- Turn off automatic scheduling and leveling.
- When scheduling activities, apply retained logic.
- Calculate the start-to-start lag from early start.
- Schedule durations as: contiguous.
- Show open ends as: non-critical.
- Calculate total float as: finish float.
- Summary calculations shall use Calendar No. 1 and the weighting factor for determining percent complete shall be duration.
- Set the auto-inserting option on automatic with a minimum increment of three (3).
- Initially set critical activities using defined critical as: total float less than one (1). This option may be changed at the direction of the Engineer.
- Set language for output as: U.S. English.

19. Auto Cost Rules

- Rule No. 1: Unlink Remaining Duration and Scheduled Percent Complete
- Rule No. 2: Freeze Resource Units Per Time Period
- Rule No. 3: Subtract Actual From Estimate At completion
- Rule No. 4: Turn off allow negative ETC
- Rule No. 5: When Quantities Change, Use Current Unit Prices to Re-compute Costs of Budget, Actual to Date, and Estimate to Complete
- Rule No. 6: Do not use the Update Percent Complete Against Budget to Estimate the Actual quantity and Cost to Date
- Rule No. 7: Link Budget and EAC for Non-Progressed Activities
- Rule No. 8: Calculate Variance as Budget – EAC
- Rule No. 9: Do not perform these calculations during each schedule computation.
- Rule No. 10: Apply these rules when moving from one resource to another

20. Project Schedule Submittals

In addition to the schedule submittal requirements set forth in this section, the Contractor will be required to email a backup copy of each schedule submittal to the Department's representative(s). The email addresses will be provided at the Schedule Development Meeting.

21. Narratives

Preliminary Schedule Narrative

The Preliminary Schedule narrative shall contain the following information:

- i. Identification of the data date and schedule file name.
- ii. A description of the planned flow of work, identifying all key or driving resources for the first 120 days in detail and remaining project in summary. Identify key constraints and potential problems influencing the Contractor's approach to the work. Describe all construction interfaces with existing plant operations and with third parties at the project site. Also identify temporary Contractor plants, facilities or fixed equipment that the Contractor or subcontractor plan to use whether within the Contract ROW or Contract easement or offsite. Include in this discussion the length of time the plant is to be used, any planned moves, and any potential conflicts that could arise, if the plan is not adhered to.
- iii. A summary of planned labor utilization for the Contract for the first 120 days in detail and remaining project in summary, identifying the average and maximum number of workers by craft designation on site each month based on the resource loaded Project Schedules and the shifts to be worked. Identify actual and potential labor resource limitations.
- iv. A summary of planned equipment utilization for the Contract for the first 120 days in detail and remaining project in summary, identifying each type of operated equipment to be used on the Work, the planned quantity of each type of operated equipment utilized each month, and the criteria for mobilizing and demobilizing each piece of equipment to and from the site. Identify actual and potential equipment resource limitations.
- v. An explanation of how adverse weather has been addressed in the Baseline Schedule for the first 120 days in detail and remaining project in summary. Identify all activities, if any that contain contingency days for adverse weather. Not prepared for normal adverse weather is unacceptable.
- vi. Response to all the owner's comments. The identification and explanation of all changes made to the schedule submission.

Baseline Schedule Narrative

The Baseline Schedule narrative shall contain the following information:

- i. Identification of the data date and schedule file name.
- ii. A description of the planned flow of work, identifying all key or driving resources. Identify key constraints and potential problems influencing the Contractor's approach to the work. Describe all construction interfaces with existing plant operations and with third parties at the project site. Also identify temporary Contractor plants, facilities or fixed equipment that the Contractor or subcontractor plan to use whether within the Contract ROW or Contract easement or offsite. Include in this discussion the length of time the plant is to be used, any planned moves, and any potential conflicts that could arise, if the plan is not adhered to.
- iii. A summary of planned labor utilization for the Contract, identifying the average and maximum number of workers by craft designation on site each month based on the resource loaded Project Schedules and the shifts to be worked. Identify actual and potential labor resource limitations.

- iv. A summary of planned equipment utilization for the Contract, identifying each type of operated equipment to be used on the Work, the planned quantity of each type of operated equipment utilized each month, and the criteria for mobilizing and demobilizing each piece of equipment to and from the site. Identify actual and potential equipment resource limitations.
- v. An explanation of how adverse weather has been addressed in the Baseline Schedule. Identify all activities, if any that contain contingency days for adverse weather. Not prepared for normal adverse weather is unacceptable.
- vi. Response to all of the Owner's comments and the identification and explanation of all changes made to the schedule submission.

Schedule Update Narrative

The Schedule Update narrative shall contain the following information:

- i. Identification of the update period, the data date, and the schedule file name.
- ii. Narrative of work accomplished in the past two weeks and work planned for the next two weeks.
- iii. Narrative of the current critical path to each contractual completion milestone
- iv. Identification of activities with critical or near critical float (within ten (10) Working Days of the Critical Path) that were planned to occur during the update period, but which did not occur or occurred later than the scheduled late start or late finish date, and an explanation of these delays. Identification of delays occurring to activities taking place off the project site, e.g., submittal preparation, fabrication, and delivery activities.
- v. Provide a listing of all activities which have overrun their planned duration by more than twenty (20) percent and any justification for maintaining original planned durations for future activities of like Work.
- vi. A summary of any changed plans for labor utilization for the Contract, identifying the average and maximum number of workers on site each month. Identify actual and potential labor resource limitations. A summary of the actual labor utilization used over the past month.
- vii. A summary of any changed plans for equipment utilization for the project, identifying each type of operated equipment to be used on the Work, the planned quantity of each type of operated equipment utilized each month, and all changes to the criteria for mobilizing and demobilizing each piece of equipment to and from the site. Identify actual and potential equipment resource problems. A summary of the actual equipment utilized over the past month.
- viii. Response to all of the owner's comments and the identification and explanation of all changes made to the schedule submission.
- ix. Elective Change: An elective change is defined as a revision to logic or duration(s) by the Contractor to effectively use labor and resources which has no affect on Contract Milestone(s). The Engineer may use this as a request to a change in the schedule. Mutual agreement on the change must be gained to implement either request. The elective change narrative shall contain the following information:
 - (a) Identification of the activities changed.
 - (b) A description of the scope of the elective change and identification of the advantages and disadvantages of implementing the change. Identify all driving resources, if any. Identify key constraints influencing the Contractor's approach to the Work.

E. SCHEDULE UPDATES

The Contractor shall update the Current Baseline Schedule, or the current approved schedule, on a bi-weekly basis. The purpose of Schedule Updates shall be to accurately document the progress of the Work to-date and to correct the schedule to accurately reflect the Contractor's current plan for the timely completion of the Work. Schedule Updates shall be used to record progress and make minor adjustments to reflect how the Work is being performed or as otherwise directed by the Engineer.

Schedule Updates Submittals shall never be used as the basis for any adjustment in the Contract Time(s) regardless of any acceptance or approval by the Engineer. Any acceptance or approval of the Schedule Update Submittal by the Engineer, either expressed or implied, shall only apply to the issue of progress and not to any issue of acceptability or accuracy of the Schedule Update submittal for use as a basis for measuring adjustments in Contract Time(s).

A Joint Update Meeting shall be scheduled every two weeks from the Notice to Proceed date through the completion of the contract. The Contractor shall come to the updating meetings with the data prepared in advance to provide, as of the end of the updating period, a complete and accurate report of current project progress including all procurement, on and off site progress, and a depiction of how the Contractor plans to continue the work to meet contract completion dates. The status date (data date) for each update will be the day previous to the meeting date, unless otherwise directed by the Engineer. Failure to attend meetings will result in Progress Payments being withheld. The Contractor shall provide copies of a schedule update form for use by the attendees in facilitating the update. The format of this update form shall be provided by the Engineer at the Schedule Development Meeting.

The Engineer review period for the Schedule Update data submittal is five (5) working days. The Schedule Update data submittal shall consist of three copies of the following submittal components:

1. A schedule Narrative consistent with Section 108.03 Section C, paragraph 21.
2. Computer Disk(s) with record schedule incorporating all submitted Schedule Update Data (UXXX).
3. Activity Column/Bar Chart Diagram utilizing the layouts provided by the Department at the first Schedule development meeting. This will highlight the past period progress and be utilized for the update information.
4. A detailed predecessor/successor report for all activities with logic revisions, sorted by Activity ID.
5. An activity cost report listing all activities submitted for payment for the current period.
6. An activity cost report listing all activities submitted and approved for payment to date.
7. An activity cost report listing total Contract value sorted by Bid Section.
8. A comparison report showing all changes made to the schedule since the last Schedule Update.

All Schedule Update data shall be discussed at the Joint Update Meeting, prior to submittal to minimize differences between the Contractor and the Engineer. In the event of discrepancies between the submitted data and Engineer's records, Engineer's records shall govern. The Engineer's decision shall be final regarding all Schedule Update data. The Contractor shall not process information (durations, logic, resources, etc.) in the Schedule Updates, which has not been approved by the

Engineer. The submittal of incomplete, illegible, or unchecked data or of reports that do not conform to the requirements of Section 108.03.C may result in the rejection of Schedule Update data, and, require a revision and re-submittal. Failure to submit an acceptable Schedule Update for any reason including the fact that the Contractor has failed to provide an acceptable Baseline Schedule in accordance with the requirements of Section 108.03.B., shall be a basis for the rejection of the submittal and basis to stop progress payments until the submittal is approved.

Upon the Engineer's acceptance of the Schedule Update, the Contractor's progress payment will be initiated. Acceptance of the Schedule Update shall not relieve the Contractor of its obligation to make appropriate corrections to all of the Project Schedules.

The Department shall not be liable for delays to the Contractor's Work that occur during a time when the Contractor has failed to provide a Schedule Update in accordance with the requirements of the Contract Documents, when having the Schedule Update at the specified time could have influenced the Engineer's decisions or actions.

The Schedule Update submittal shall reflect updated progress to the data date, forecasted finish for in-progress activities, and re-forecasted Early Dates and Late Dates for remaining activities. The Contractor shall submit any changes in activity durations, logic ties or restraints for review and acceptance by the Engineer prior to inclusion of the change into the current Schedule Update. The Engineer may also submit changes to the Contractor for inclusion in the current Schedule Update. These changes should be forwarded to the Contractor for review prior to the Joint Update Meeting for discussion in that meeting. Acceptance of the Engineer's changes should be mutual, but can be required by the Engineer. The reason for any change will be to adjust the schedule to reflect the Contractor's current plan for the Work. The acceptance and inclusion of these changes in the schedule shall not be a basis of acceptance of entitlement for any time extension(s) or cost(s).

Progress Delays

The Contractor shall identify and promptly report to the Engineer all schedule and progress delays during the prosecution of the Work. The Contractor shall promptly take appropriate action to develop a schedule recovery plan whenever the Contractor's actual physical progress is behind schedule when compared to the Current Baseline Schedule, or whenever requested by the Engineer. At a minimum, the Contractor shall submit a schedule recovery plan in the form of a Proposal Schedule, whenever the Project Schedule Update becomes thirty (30) or more Days late to any Milestone(s) designated in section 108.03, Milestones. The Proposal Schedule shall be in accordance with corresponding section contained herein. The development and submission of a recovery schedule does not relieve the Contractor from continuing with the submission of the Project Schedule Update Submittal or Status Schedule Submittal. The submission of the recovery plan shall be at no cost to the Engineer and shall be submitted within thirty (30) calendar days of the submittal of the Project Schedule Update indicating the Project is thirty (30) or more days late at the Engineer's request. Failure to submit such a recovery plan shall provide a basis for future Payment Application withholdings, either in whole, or in part, by the Engineer.

F. BASELINE SCHEDULE REVISIONS

Any proposed changes and/or revisions to the Current Baseline Schedule approved by the Engineer pursuant to its review of a Proposal Schedule submitted by the Contractor shall be incorporated into the Current Baseline Schedule and submitted as a Baseline Schedule Revision Submittal. A Baseline Schedule Revision Submittal shall be due within 5 days following the Engineer's acceptance of the proposed schedule changes and/or revisions, as submitted in a Proposal Schedule, and shall consist of the requirements of Baseline Schedule, as supplemented below. The Baseline Schedule Revision shall include a cost distribution for added Work and/or Costs for review and acceptance by the Engineer.

Baseline Schedule Revision Submittals shall include a comprehensive listing of all activities added to or deleted from the Current Baseline Schedule Revision of Record as well as a complete listing of all logic and activity relationship changes, which have been made. All changes in the schedule must be fully described in an accompanying narrative. No Baseline Schedule Revision Submittal will be approved unless it satisfies the following:

1. Any out-of-sequenced logic is corrected or explained to the satisfaction of the Engineer,
2. Start and Finish dates are verified for accuracy, and
3. The schedule accurately reflects the Contractor's plan (including accurate logic and durations) for completing the remaining Work.

Once a Baseline Schedule Revision Submittal is approved by the Engineer it shall become the Current Baseline Schedule Revision of Record (and be used for subsequent Schedule Update Submittals), and shall be referred to by its revision number.

Except as otherwise designated by Change Order, no Current Baseline Schedule Revision that extends performance beyond any Contract Time and/or Contract Milestone(s) shall qualify as a Current Baseline Schedule Revision of Record allowing it to be used to demonstrate entitlement to an extension in Contract time. In no case shall a Schedule Update be construed as a Baseline Schedule Revision of Record unless it is specifically submitted and approved as such by the Engineer pursuant to this Subsection.

G. SHORT TERM CONSTRUCTION SCHEDULES

Bi-weekly, or as requested by the Engineer, the Contractor's Project Management Team (PMT) shall meet with the Engineer to review the progress of the Work. At this meeting, the Contractor shall provide a Short Term Construction Schedule, electronically produced or hand drawn, in bar chart format that details the daily work activities including multiple shift work that the Contractor intends to conduct. The daily activities shall correspond to the Current Baseline Schedule activities but shall be at a greater level of detail. The Short Term Construction Schedule shall display all completed work of the preceding three (3) weeks, a comparison of the work planned versus the work actually completed for the preceding three (3) weeks and all planned work for the next four (4) weeks. The Short Term Construction Schedule shall be submitted within ten (10) Days after notice to proceed for the Work and continue through the duration of the performance of the Work.

The Contractor is to be prepared to discuss the Short Term Construction Schedules, in detail, with the Engineer to coordinate field inspection staff requirements, schedule of Work affecting any abutter and corresponding work with affected utilities.

The Contractor may utilize the bar chart to indicate proposed revisions to the Project Schedules, such as the representation of unforeseen events. All proposed revisions to the Current Baseline Schedule contained within the seven (7)-week bar chart are for discussion purposes only.

Failure to submit, timely and complete, Short Term Construction Schedule submittals that are consistent with the Project Schedules in accordance with the requirements of Section 108.03 shall be a basis for the Engineer to withhold the progress payment for the corresponding monthly update period and all payments thereafter until such schedule has been submitted and accepted.

H. BASELINE SCHEDULE PROGRAM ADMINISTRATION PLAN

No later than working day No. 45 of the Baseline Schedule preparation period, the Contractor shall submit a Project Schedule Administration Plan, which shall explain how the Contractor intends to meet the scheduling requirements of the Contract Documents. The Project Schedule Administration Plan Submittal shall consist of a narrative explaining the Contractor's plan for providing a Project Schedule Program consistent with the requirements of the Contract Documents. At a minimum the narrative shall address the following:

The Schedule Update requirements, the Baseline Revision requirements, and the preparation of requests for time extensions including the following:

1. Data input into the Project Schedules.
2. Verification that the Project Schedules accurately represents the progress of the work to date.
3. Verification that the Project Schedules accurately represents the Contractor's current plan for the timely completion of the work.
4. Preparation of schedule submittals.
5. Internal quality control of schedule submittals prior to submission to the Engineer.
6. Development of subnets and insertion of subnets.

The Project Schedule Administration Plan shall identify all personnel who will administer the Project Schedules. The plan shall include an organizational chart indicating the flow of communication and lines of authority for ensuring the Project Schedule is administered in accordance with the requirements of the Contract Documents.

The purpose of the Project Schedule Administration Plan is the use of a Joint Scheduling Meeting between the Contractor and the Engineer. The purpose of this meeting is to agree on actual start and finish dates, actual progress on activities and remaining duration of these in-progress activities. The primary supporting documentation will be the Quantity Verification Sheets that shall be signed by both parties and include start and finish dates for the activity, along with the remaining duration required to finish the Work.

The review of submitted subnets from both the Contractor and the Engineer, which if agreed to shall be placed into the current update schedule. Review of productivity trending charts, along with discussion as to the affect the trending has on the Contract Milestone(s) and whether duration adjustments are warranted. The Engineer review period for the Project Schedule Administration Plan is fifteen (15) working days from receipt of the plan by the Engineer. The Engineer's acceptance of the Contractor's Project Schedule Administration Plan shall be a condition precedent to acceptance of the Baseline Schedule by the Engineer.

I. REVIEW AND APPROVAL OF PROJECT SCHEDULE SUBMITTALS

Failure to meet any of the following conditions shall result in the rejection of the schedule submittal:

1. The project budgeted cost shall equal the Contract Price.
2. The schedule submittal shall show the timely completion of each Contract Milestone(s), as well as, reflect all contractual access requirements and limitations of operations specified.
3. All resources used within this schedule, shall have defined normal and maximum limits. The timely completion of each Contract Milestone(s) shall be based upon the utilization of each resource being worked between its normal and its maximum limit.
4. All activity relationships and date constraints shall comply with the requirements of the Contract Documents.
5. The Submittal shall be complete in accordance with the requirements of this Section 108.03.

If the schedule submittal is accepted by the Engineer with comments, the submittal shall not be considered acceptable until all of the Engineer's comments are incorporated into the schedule to the Engineer's satisfaction. If the comments are not satisfactorily incorporated into the schedule by the Contractor within ten (10) Days of its return by the Engineer, the submittal shall be considered unacceptable by the Engineer.

Upon receipt of the schedule submittal without qualification or comments, the schedule shall be considered accepted.

It is the Contractor's responsibility to ensure that all Project Schedules are in compliance with all of the requirements of the Contract Documents. Errors in any Project Schedule accepted by the Engineer, including but not limited to activity durations, relationships between activities, resource allocation or other float suppression techniques that do not accurately reflect the work, may be identified at any time and once identified shall be corrected by the Contractor. The acceptance of any Project schedule by the Engineer does not constitute acceptance or approval of any change to the requirements of the Contract Documents including but not limited to any mandated construction sequences.

The Engineer is not responsible for any erroneous assumptions or information in any Project Schedule, regardless of origin.

During the review of any Project Schedule Submittal, if any of the following conditions are discovered, the submittal shall be returned by the Engineer without further review for correction and re-submittal:

1. The submittal is incomplete.
2. The submittal does not comply with the specified format.

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3. A component of the submittal has not been prepared in accordance with the requirements of this section.
4. The quality of the submittal indicates that the Contractor has failed to perform an internal quality control review prior to submission.
5. There is an inconsistency between electronic files and printed material.
6. The Contractor has made unauthorized changes to the Project Schedule.
7. The Contractor has failed to incorporate Engineer comments concerning the Project Schedules.

The Engineer's failure to return a submittal shall not be construed to mean that the submittal is in compliance with the requirements of the Contract Documents. The Engineer may, at its discretion, choose to complete a submittal review even though the submittal fails to meet one or more of the conditions for rejection stated herein. The Contractor shall be responsible for all delays due to its failure to submit complete Project Schedule Submittals in accordance with the requirements of the Contract Documents.

The Engineer's acceptance of a Project Schedule Submittal indicates only that the submittal appears to comply with the requirements of the Contract Documents. It is the Contractor's responsibility to ensure that each submittal is in compliance with the requirements of the Contract Documents. Inconsistencies or errors in any Project Schedule, including, but not limited to, activity relationships or date constraints that do not accurately reflect the work may be identified at any time and if so identified shall be immediately corrected by the Contractor.

The Engineer shall review schedule submittals for conformance with the requirements of the Contract Documents. Schedule review comments by the Engineer may address whether items of Work are omitted, activity durations are reasonable or that the level of labor, materials, and equipment, the means, methods, timing and sequencing of the Work are practicable. The planning, scheduling or execution of the Work and the accuracy of any Project Schedule shall remain the sole responsibility of the Contractor.

Notwithstanding any review, review comments, approval, acceptance, scheduling assistance or direction to change and/or revise any Project Schedule by the Engineer the Project Schedules shall at all times be the Contractor's schedule for performing the Work and not be considered as any Engineer direction constituting a change. The Contractor shall not be relieved from satisfactorily completing the Work within the Contract Time(s) and from meeting the Contract Milestone(s) due to the failure of the Contractor to submit acceptable Project Schedules.

J. REQUIREMENTS FOR DEMONSTRATING ENTITLEMENT TO AN ADJUSTMENT IN THE CONTRACT TIME OR OBTAINING APPROVAL OF A PLAN TO RECOVER DELAY

1. Schedule Analysis Requirements

The Contractor shall develop and submit a Proposal Schedule when one or more of the following conditions occur:

- a. The Contractor's plan for the Work as reflected in the Current Baseline Schedule is materially changed;
- b. The Engineer has approved a Change Order that affects the Critical Path of the Work necessitating an adjustment in the Contract Time(s);

- c. The Contractor's progress on the Work for any Milestone is behind the Current Baseline Schedule by thirty (30) Days or more;
- d. In the Engineer's opinion, the Current Baseline Schedule no longer accurately reflects the Contractor's plan for performing the Work, or
- e. The Contractor is required by some other Section of the Contract Documents to submit a Schedule Analysis demonstrating entitlement to an adjustment in Contract Time(s) or to submit a plan demonstrating how the Contractor intends to recover delay.

The Contractor shall submit a Proposal Schedule within ten (10) Days following a request by the Engineer or within ten (10) Days from the initial occurrence of any of the conditions listed in a. through e. above, which caused a deviation from the Contractor's Current Baseline Schedule. This required ten (10) Day period may be extended as necessary subject to the approval of the Engineer. The Proposal Schedule shall be developed using duplicate electronic files of the Current Baseline Schedule and shall include all status to reflect current progress using information from agreed to Schedule Updates or other sources of agreed to validated information, but shall not allocate costs to any proposed activities. Costs may be allocated to activities only when the proposed change has been accepted by the Engineer. Under no circumstances shall a Schedule Analysis based on Schedule Update(s) be acceptable as a basis for an adjustment in Contract Time.

Proposal Schedules shall be used by the Contractor to; (i) request revisions to logic ties and activities in the Current Baseline Schedule, (ii) propose changes in the Current Baseline Schedule required to implement schedule recovery plans, (iii) to negotiate the schedule impact of a Change Order with the Engineer, or (iv) to propose changes for any other reason in the Current Baseline Schedule.

Proposal Schedules shall comply with the submittal requirements specified in paragraph. Proposal Schedules shall code affected and added activities to each Change Order or schedule recovery plan. Furthermore, Proposal Schedules shall accurately reflect all revisions and/or adjustments made to activities, logic ties and restraints that are necessary to reflect the Contractor's current approach for work remaining. At a minimum, Proposal Schedules shall: (I) incorporate all proposed activities and logic ties required to implement any proposed revisions, (ii) detail all impacts on pre-existing activities and logic ties, and (iii) attach separate time scaled logic diagrams with the proposed and pre-existing activities and logic ties involved in or affected by each Change Order or other proposed revision, and (iv) a narrative describing the causes of any delay and actions planned to recover schedule to meet Contract Time(s) and Contract Milestone(s) specified.

Each Proposal Schedule shall include a subnet demonstrating how the Contractor proposes to incorporate a Change Order or other change and/or revision into the Current Baseline Schedule. A subnet is defined as a sequence of new or revised activities that are proposed to be added to the Current Baseline Schedule.

In the event, the Proposal Schedule is submitted as a forward priced proposal to the Contract, the analysis shall demonstrate the estimated time impact based on the forward priced proposal. The proposal should include crew sizing, anticipated work hours and shifts, and crew productivity, which should generate activity durations and planned sequencing, along with the interface to the existing work. Once a Contract Change Order is executed the approved subnet should be included in a Baseline Schedule Revision.

Accepted changes shall be submitted as a "Baseline Schedule Revision" in accordance with the requirements of this specification.

The Contractor shall have no claim for damages of any kind, or extension or increase to the Contract Time(s) or Contract Milestone(s), or adjustment of Contract Price, on account of any delay, interruption or suspension of the Work or any portion thereof (herein after collectively referred to as "Delay"), due to whatever cause, unless the prerequisites of this Subsection are met. The requirements of this Subsection are in addition to and not in lieu of the requirements of any other applicable subsection.

No Claim by the Contractor for extension of or increase to Contract Time(s) or Contract Milestone(s) and no claims by the Contractor for adjustment in the Contract Price on account of any delay shall be allowed unless the Contractor shall have notified the Engineer in writing of its claim not more than three (3) Work days after the commencement of the event causing such claimed delay and complied with the requirements for timely submission of time impact analysis. If the Contractor does not submit a Schedule Analysis for a specific change order or delay within the specified period of time, the Contractor shall be deemed to have irrevocably waived any rights to additional time and cost.

2. Mitigation of Delays

The Contractor shall be responsible to develop mitigation measures for all delays, regardless of responsibility for the delays, and to identify all time and cost impacts to the work associated with those mitigation measures. Unless circumstances otherwise require, the Contractor shall not pursue mitigation action for which it expects the Engineer to be liable, prior to notifying the Engineer and receiving Engineer authorization to proceed with the mitigation action. Any action taken by the Contractor prior to receiving approval from the Engineer shall be at the Contractor's risk.

When the need for mitigation arises to ensure timely completion, the Contractor shall review all uncompleted activities on critical paths to the subject contract milestone for errors in scope, duration, and logic, and for the feasibility of performing in parallel, work currently scheduled sequentially. All Contractor proposals for mitigation action, including proposed revisions for timely completion, shall confirm that the Contractor has verified the accuracy of all critical paths to the subject Contract Milestone(s).

Whenever it is possible for the Contractor to mitigate delay without added cost, the Contractor shall do so. The Contractor shall mitigate all delays as efficiently and economically as possible, with the objective of minimizing both the time and cost impact of the delay, regardless of responsibility for the delay. The Engineer will not be liable for damages which the Contractor could have avoided by reasonable means, such as prudent scheduling of the Work and judicious handling of forces, equipment, or plant. The Engineer will not be liable for damages incurred by the Contractor during any period of time when the Contractor has failed to provide notification of delay in accordance with the contract requirements, when having the notification at the specified time could have influenced the Engineer's decisions or actions.

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The Contractor shall promptly take appropriate action to develop schedule recovery plans whenever the Contractor's actual physical progress is behind schedule when compared with the current Project Schedule. The Contractor shall submit a schedule recovery plan, to accompany the next Bi-weekly Status Submission immediately following the identification of such schedule and/or progress delays. The Recovery Schedule shall be submitted as a Revision to the Project Schedule. The Recovery Schedule shall be submitted in accordance with specification contained in this specification for the Baseline Schedule. The Department will return the schedule, within ten (10) working days of receipt, to the Contractor marked either "Acceptable" or "Revise and Resubmit." If revisions are required prior to acceptance, the Contractor shall provide, within ten (10) working days of receipt of Department comments, a revised schedule addressing all comments. Failure to comply with the above will result in Progress Payments being withheld. The Recovery Schedule Submittal upon acceptance shall become the Project Schedule of Record." Failure to submit such recovery plan shall provide a basis for future Progress Payment withholdings, either in whole, or in part, by the Department.

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JOB SPECIFIC**CODE 824.9903 TEMPORARY JACKING AND SHORING BEAM END AT PIER
BRIDGE NO. 428****CODE 824.9904 TEMPORARY JACKING AND SHORING BEAM END AT PIER
BRIDGE NO. 429**

DESCRIPTION: Work covered under this Special Provision shall consist of all operations required to provide temporary shoring systems and jacking of the existing bridge superstructures of Bridge Nos. 428 and 429 as indicated on the plans and/or as directed by the Engineer. It shall also include the removal and disposal of the systems upon the completion of all the required work. All work shall be in accordance with Section 824 "Structural Steel" of the Standard Specifications and this Special Provision.

Also included within this work shall be the furnishing and installation of three (3) cable supports at the Wanskuck Bridge No. 428 as detailed on the Plans and as directed by a representative of Providence Communications.

MATERIALS: All materials shall conform to the requirements of the Standard Specifications and the following:

1. Steel tubing shall be ASTM A500 Grade B ($f_y=46$ ksi).
2. Steel plates and angles shall be AASHTO M270 Grade 50.
3. Jacks shall be single-acting, pancake lock nut cylinders with integral tilt saddle, Model Number CLP-1002, manufactured by Enerpac, Milwaukee, WI or approved equal. Jacks shall have a minimum nominal load capacity of 100 tons.
4. Pivot plates shall be furnished with a polytetrafluoroethylene (TFE) sliding surface. TFE shall be in accordance with Subsection 828.02.3(c) of the Standard Specifications
5. Sole plates shall be furnished with a stainless steel mating surface for the TFE sliding surface. Stainless steel shall be in accordance with Subsection 828.02.3(b) of the Standard Specifications. Stainless steel mating surface shall have a surface finish less than 20 micro-inches (rms) and shall be polished as necessary to produce a low friction surface between the stainless steel and TFE with a friction coefficient of 0.05 or less.
6. All anchor bolts and mounting hardware shall meet the minimum load requirements as specified on the Plans.

1. In the case of a jack failure, the entire system shall be carefully and immediately secured to allow for jack replacement. All repairs to the jacking system as required by the Engineer (including associated design) shall be performed by the Contractor prior to any further jacking, at no additional cost to the State. The Contractor shall provide emergency back-up jacks, equal in number to at least 10 percent of the total number of jacks required for the specific jacking operation. Emergency back-up jacks shall meet or exceed the nominal load capacity of the shoring jacks and be accepted by the Engineer.
2. Upon the completion of the required work, the Contractor shall carefully lower the structure by using the hydraulic system of the jacks. The Contractor shall pressure test all jacks within the system and verify that all jacking loads are as previously recorded prior to lock-off before releasing any locking devices. Upon approval from the Engineer, the Contractor shall release the jack locking devices and lower the structure. Such lowering shall be performed simultaneously for all jacks.

METHOD OF MEASUREMENT: “Temporary Jacking and Shoring Beam End at Pier” will be measured by the number of beam ends actually shored and jacked for each type of shoring in accordance with the Plans and/or as directed by the Engineer.

BASIS OF PAYMENT: The accepted quantities of “Temporary Jacking and Shoring Beam End at Pier” will be paid for at their respective contract unit prices per each as listed in the Proposal. The prices so-stated constitute full and complete compensation for all labor, materials (including, but not limited to, all structural steel columns, bracing, load distribution beams, plates, and jacking pedestal elements; jacks and jacking equipment; sole plates with stainless steel; tapered pivot plates with TFE sheet; installation of anchor bolts; bolts; and other miscellaneous hardware), and equipment, including obtaining all dimensions necessary for fabricating the shoring system, all costs associated with the jack manufacturer’s field representative, removal and disposal of entire shoring system after the work is complete, restoration of any concrete masonry damaged by shoring attachments, and all other incidentals required to finish the work, complete and accepted by the Engineer.

All costs associated with the installation of the three (3) cable supports for Providence Telecommunications shall be considered incidental to and included within the contract unit price per each for Item Code 824.9903, “Temporary Jacking and Shoring Beam End At Pier Bridge No. 428”. There shall be no separate payment for furnishing and installation of the supports.

Surface preparation and painting of existing structural steel will be paid for separately under Item Codes 825.8025 and 825.8040 respectively as listed in the Proposal.

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| 201.0407 | REMOVE AND DISPOSE PAVEMENT AND RIGID BASE | 1 |
| 201.0409 | REMOVE AND DISPOSE FLEXIBLE PAVEMENT | 1 |
| 201.0410 | REMOVE AND DISPOSE CATCH BASINS | 1 |
| 201.0416 | REMOVE AND DISPOSE LOT CURB (ALL SIZES) | 1 |
| 201.0420 | REMOVE AND DISPOSE CONCRETE SLAB | 2 |
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Distribution of Quantities

Project Name - Wanskuck & Hawkins Street Bridges, 428 & 429 - Repairs

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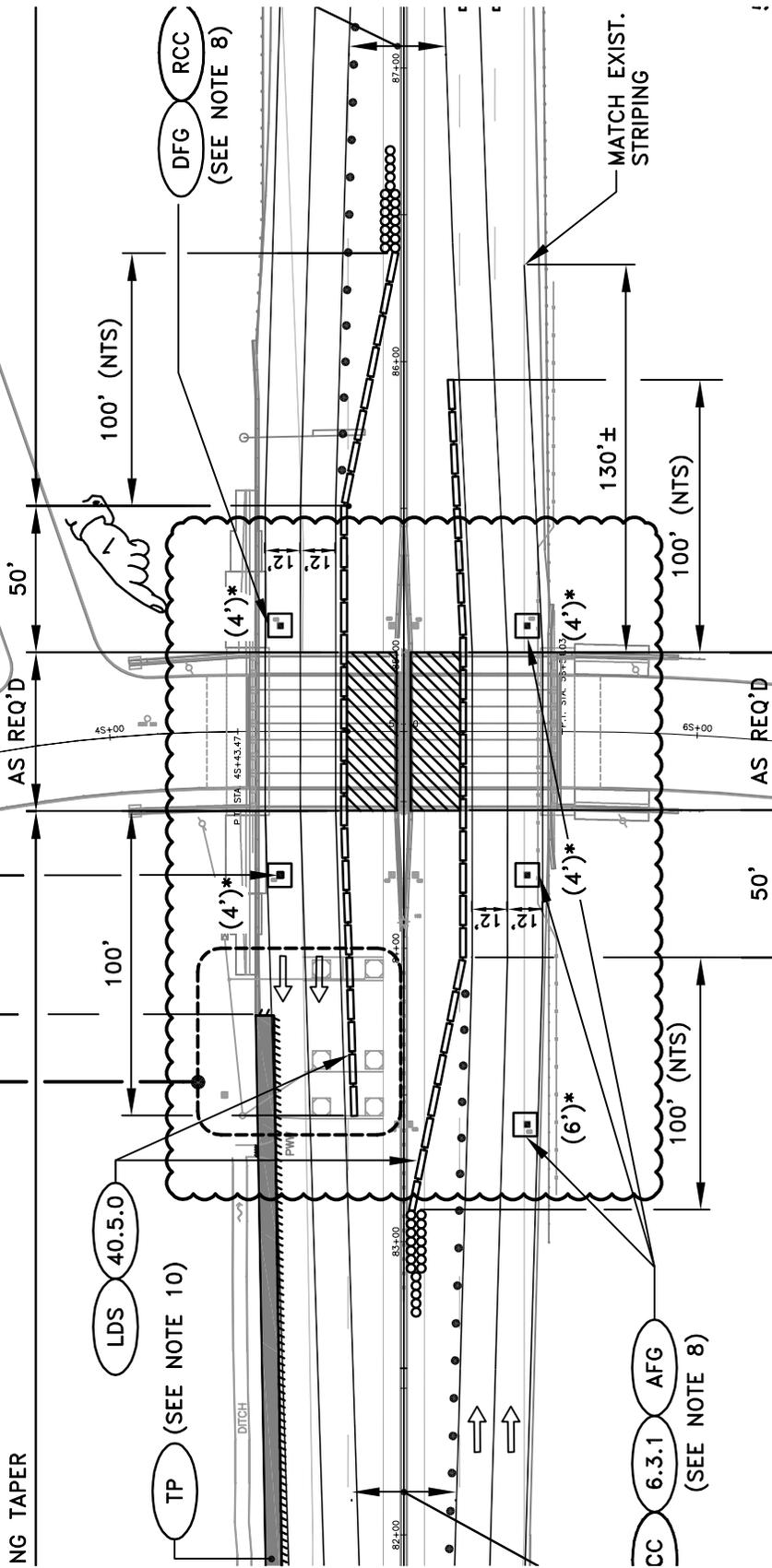
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| Item No. | Item Code | Description | UM | Qty. | Pay Code | Seq. No. |
|-----------------------------|----------------|----------------------------------|------|--------------------|----------|----------|
| 021 | 501.0103 Cont. | L 06+28 - L 07+76 | | 99.00 | 0014 | 01 |
| | | R 06+70 - R 08+15 | | 97.00 | 0014 | 01 |
| Item 501.0103 Total: | | | | 196.00 | | |
| 022 | 601.0300 | CLASS A PORTLAND CEMENT CONCRETE | CY | | | |
| | | BRIDGE 428 | | | | |
| | | L 06+28 - L 07+76 (CURBLOCK) | | 6.00 | 0014 | 01 |
| | | R 06+70 - R 08+15 (CUREBLOCK) | | 6.00 | 0014 | 01 |
| Item 601.0300 Total: | | | | **DELETED** | | |
| 023 | 603.1000 | CONTROLLED LOW STRENGTH MATERIAL | CY | | | |
| | | BRIDGE 429 | | | | |
| | | L 84+25 | | 4.00 | 0014 | 01 |
| | | L 85+10 | | 4.00 | 0014 | 01 |
| | | R 83+40 | | 4.00 | 0014 | 01 |
| | | R 84+25 | | 4.00 | 0014 | 01 |
| | | R 85+10 | | 4.00 | 0014 | 01 |
| Item 603.1000 Total: | | | | **DELETED** | | |
| 024 | 702.0513 | FRAME AND GRATE STANDARD 6.3.1 | EACH | | | |
| | | BRIDGE 429 | | | | |
| | | L 84+10 | | 1.00 | 0014 | 01 |
| | | L 84+25 | | 1.00 | 0014 | 01 |
| | | R 83+40 | | 1.00 | 0014 | 01 |
| | | R 84+25 | | 1.00 | 0014 | 01 |
| | | R 85+10 | | 1.00 | 0014 | 01 |
| Item 702.0513 Total: | | | | 5.00 | | |
| 025 | 702.0517 | FRAME AND GRATE, STANDARD 6.3.2 | EACH | | | |
| | | BRIDGE 428 | | | | |
| | | L 06+92 | | 1.00 | 0014 | 01 |
| | | R 07+04 | | 1.00 | 0014 | 01 |
| Item 702.0517 Total: | | | | 2.00 | | |

(SEE NOTE 8)

SEE CS PAGES OF THE CONTRACT DOCUMENTS FOR PIEZO SENSOR REMOVAL AND RADAR VEHICLE DETECTOR INSTALLATION



(X')* INDICATES DIAMETER OF EXISTING CATCH BASIN AS INDICATED ON THE ORIGINAL CONSTRUCTION DRAWINGS. FOR INFORMATIONAL PURPOSES ONLY. HAS NOT BEEN FIELD VERIFIED.



PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
8 BLACKSTONE VALLEY PLACE
LINCOLN, RI 02865
401-334-1100

TITLE OF PLAN
MAINTENANCE AND PROTECTION OF TRAFFIC
PLAN No. 3

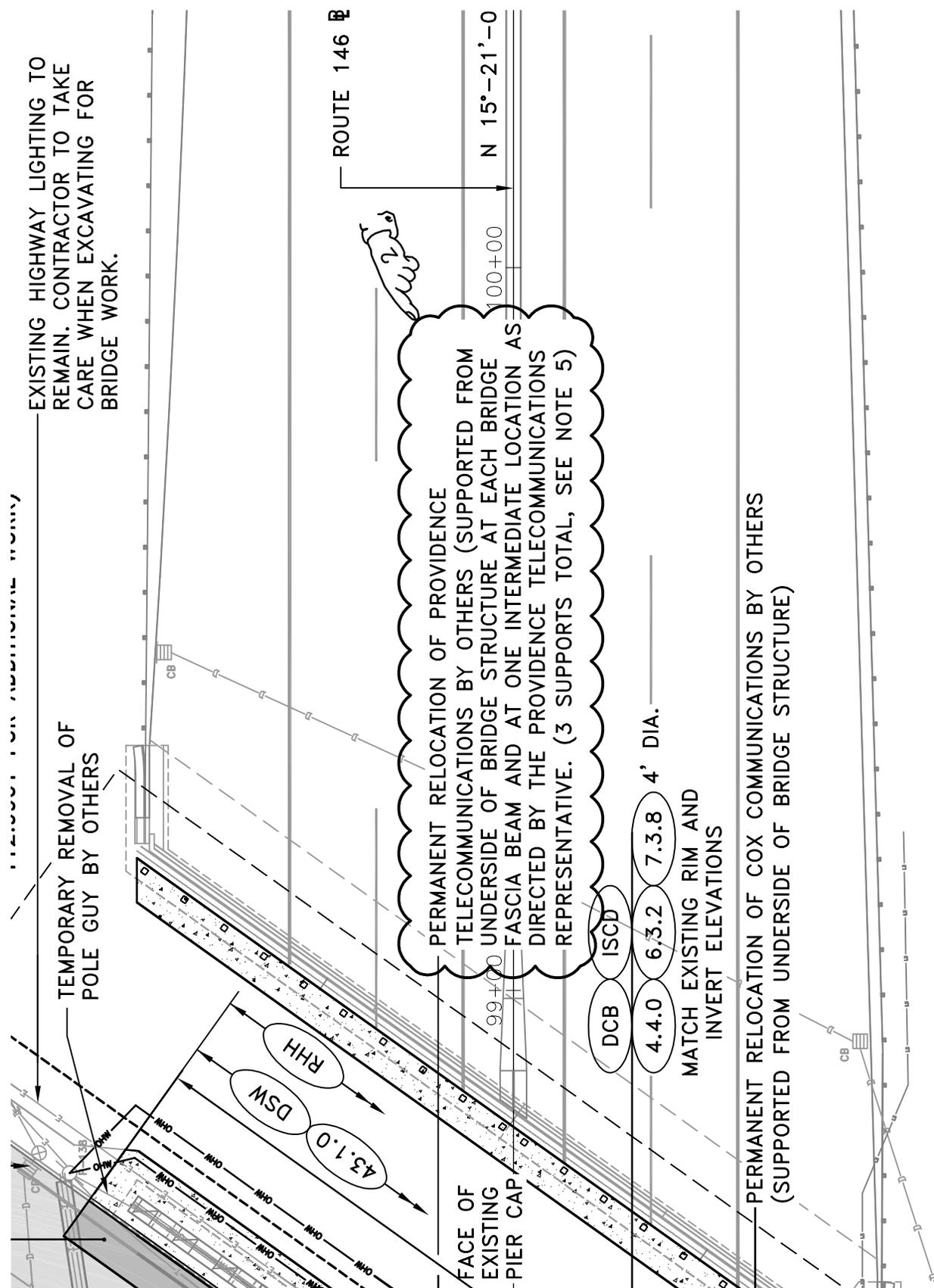
R.I. CONTRACT No.
2007-CB-030

SKETCH No.
1

05/23/07

ADDENDUM No. 2

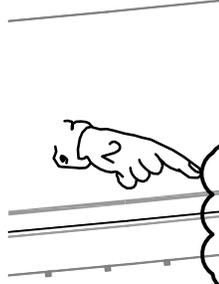
REVISION TO SHEET - 8



| | | | |
|---|--|--|-----------------------------------|
|  <p>PARE CORPORATION ENGINEERS - SCIENTISTS - PLANNERS 8 BLACKSTONE VALLEY PLACE LINCOLN, RI 02865 401-334-4100</p> | <p>TITLE OF PLAN</p> <p>BRIDGE NO. 428</p> <p>GENERAL PLAN</p> | <p>R.I. CONTRACT</p> <p>No.</p> <p>2007-CB-030</p> | <p>SKETCH</p> <p>No.</p> <p>2</p> |
| <p>05/23/07</p> | <p>ADDENDUM No. 2</p> | <p>REVISION TO SHEET - 12</p> | |

NOTES:

1. THE ROADWAY BASELINES ARE DRAWN FROM INFORMATION OBTAINED FROM THE "3R HIGHWAY IMPROVEMENTS – ROUTE 146" (R.I. CONTRACT No. 8859) AND HAVE NOT BEEN VERIFIED BY SURVEY.
2. WATER SERVICES ARE SHOWN AS APPROXIMATE ONLY. PROVIDENCE WATER SUPPLY BOARD WAS UNABLE TO CONFIRM EXACT LOCATION OR STATUS OF SERVICES.
3. BRIDGE No. 428 SUPERSTRUCTURE NOT SHOWN FOR CLARITY.
4. THE USE OF ANY OTHER AREA FOR STOCKPILING MATERIAL IS STRICTLY PROHIBITED WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER. UPON COMPLETION OF ALL WORK CONTRACTOR SHALL REMOVE ALL STOCKPILED MATERIALS AND RESTORE THE AREA TO ITS PRE-CONSTRUCTION CONDITION IN A TIMELY FASHION.



5. CONTRACTOR TO INSTALL SUPPORTS FOR RELOCATED PROVIDENCE TELECOMMUNICATIONS LINE. REFER TO "TYPICAL DETAILS" SHEET FOR SUPPORT INSTALLATION DETAILS.

25+

| | | | |
|---|--|---|------------------------------------|
|  <p>PARE CORPORATION ENGINEERS - SCIENTISTS - PLANNERS 8 BLACKSTONE VALLEY PLACE LINCOLN, RI 02865 401-334-4100</p> | <p>TITLE OF PLAN BRIDGE NO. 428 GENERAL PLAN</p> | <p>R.I. CONTRACT No. 2007-CB-030</p> | <p>SKETCH No. 3</p> |
| <p>05/23/07</p> | <p>ADDENDUM No. 2</p> | <p>REVISION TO SHEET – 12</p> | |

STRUCTURAL STEEL NOTES

14. PRIOR TO PAINTING, ALL CORNERS AND EDGES OF STEEL WHICH HAVE BEEN FLAME CUT OR OTHERWISE HARDENED SHALL BE SOFTENED BY GRINDING OR BLAST-CLEANING TO PROVIDE A SURFACE SUITABLE FOR APPLICATION OF THE SPECIFIED PAINT SYSTEM.

15. ALL SHOPS FABRICATING MAJOR BRIDGE STEEL COMPONENTS, SHALL BE CERTIFIED FOR MAJOR STEEL BRIDGES (CBR) IN ACCORDANCE WITH THE AISC QUALITY CERTIFICATION PROGRAM OR EQUIVALENT, SHOPS FABRICATING MINOR COMPONENTS (SUCH AS EXPANSION JOINTS, STEEL RAILING, AND BEARINGS) SHALL AT A MINIMUM, BE CERTIFIED FOR SIMPLE STEEL BRIDGE STRUCTURES (SBR).

16. WHEN STEEL DIE STAMPS ARE USED TO IDENTIFY PIECES AND MEMBERS, FABRICATORS SHALL UTILIZE LOW STRESS STAMPS.

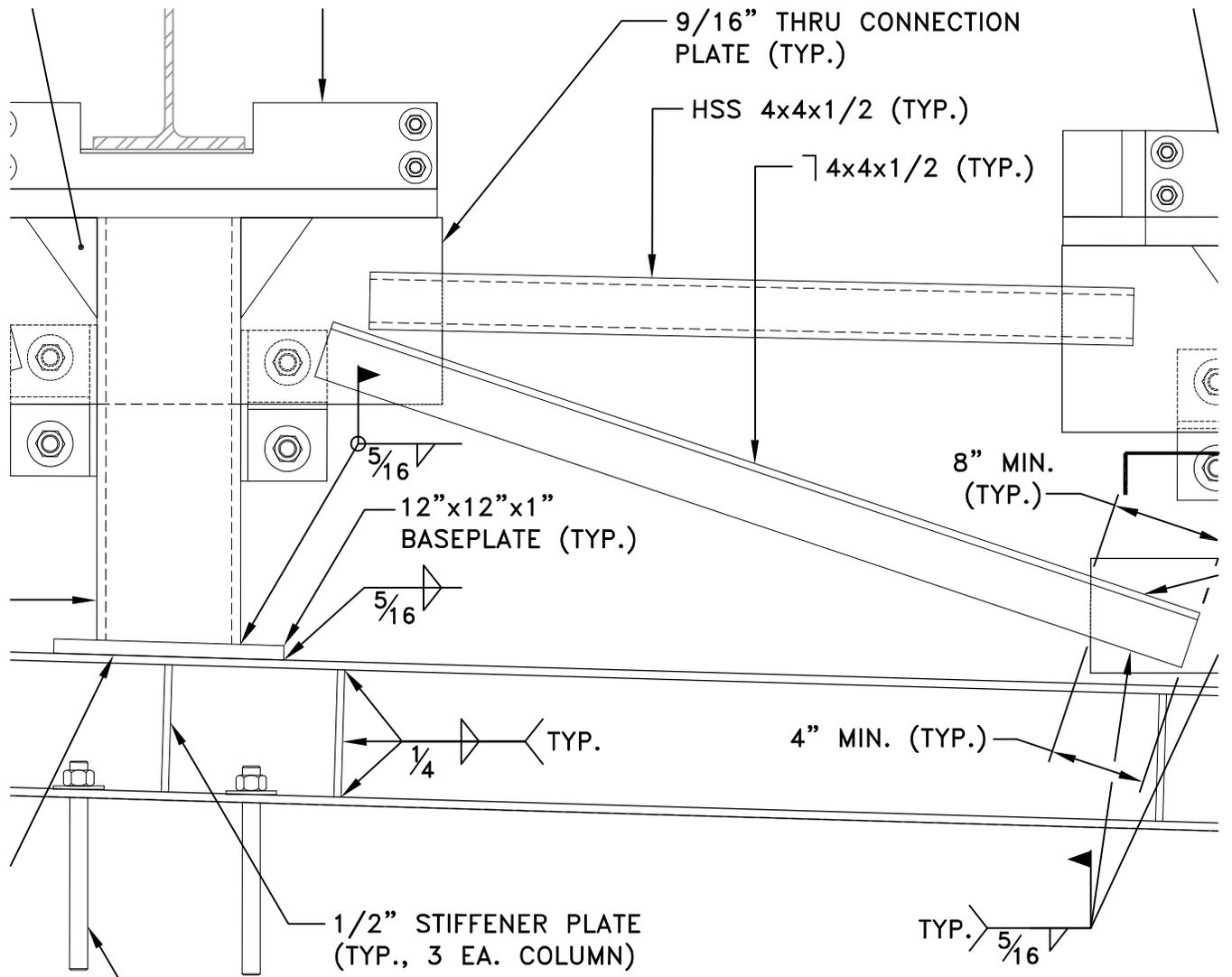
TEMPORARY JACKING AND SHORING NOTES

1. REFER TO JOB SPECIFIC 824.9903 AND 824.9904 FOR ALL WORK RELATED TO TEMPORARY JACKING AND SHORING OF BRIDGE STRUCTURES.

2. THE CONTRACTOR MUST SUBMIT A SEQUENCE OF CONSTRUCTION FOR THE JACKING OPERATIONS, IN ACCORDANCE WITH THE SPECIAL PROVISIONS, TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF WORK.

3. LOADS GIVEN IN THE TABLES BELOW ARE APPROXIMATE; HOWEVER, IF ACTUAL FIELD JACKING LOADS SHOULD EXCEED 115% OF THESE VALUES, WORK SHALL STOP, AND THE REASON INVESTIGATED PRIOR TO FURTHER JACKING. ALL LOADS HAVE BEEN CALCULATED AT THE JACK.

| | | | |
|---|---|--|-----------------------------------|
|  <p>PARE CORPORATION ENGINEERS - SCIENTISTS - PLANNERS 8 BLACKSTONE VALLEY PLACE LINCOLN, RI 02865 401-334-4100</p> | <p>TITLE OF PLAN</p> <p>BRIDGE NOTES - 2</p> | <p>R.I. CONTRACT No.</p> <p>2007-CB-030</p> | <p>SKETCH No.</p> <p>4</p> |
| <p>05/23/07</p> | <p>ADDENDUM No. 2</p> | <p>REVISION TO SHEET - 17</p> | |



1 1/4" \varnothing ADHESIVE ANCHOR
 (NEAR FACE ONLY, 2 PER COLUMN)
 (MIN. TENSILE STRENGTH = 66.7k)
 (MIN. SHEAR STRENGTH = 40.0k)
 W/12" MIN. EMBEDMENT

EXISTING FOOT

TYPICAL BRACING DETAIL

SCALE: 1"=1'-0"

| | | | |
|--|--|---|--|
|  <p>PARE CORPORATION ENGINEERS - SCIENTISTS - PLANNERS 8 BLACKSTONE VALLEY PLACE LINCOLN, RI 02865 401-334-4100</p> | <p>TITLE OF PLAN BRIDGE NO. 428 TYPICAL ABUTMENT SHORING DETAILS</p> | <p>R.I. CONTRACT No. 2007-CB-030</p> | <p>SKETCH No. 5</p> |
| <p>05/23/07</p> | <p>ADDENDUM No. 2</p> | <p>REVISION TO SHEET - 23</p> | |

