City of Tacoma
Department of Public Works

SPECIFICATION NO. PW21-0733F

PUYALLUP RIVER BRIDGE UPGRADES (MP 0.5C)

Project No. TRM-00044

CITY OF TACOMA

DEPARTMENT OF PUBLIC WORKS

REQUEST FOR BIDS, SPECIAL PROVISIONS, BID PROPOSAL AND CONTRACT

FOR

SPECIFICATION NO. PW21-0733F

PUYALLUP RIVER BRIDGE UPGRADES (MP 0.5)

PROJECT NO. TRM-00044

Christopher N. Storey, P.E.
Engineering Division
Public Works Department

Room 544, Tacoma Municipal Building
Tacoma, Washington 98421-2711

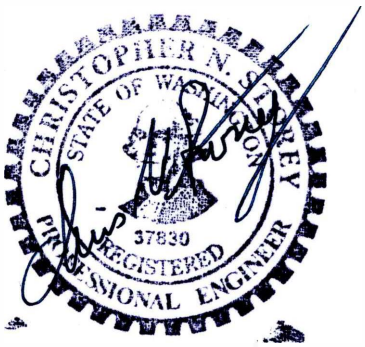
CITY OF TACOMA

DEPARTMENT OF PUBLIC WORKS

PUYALLUP RIVER BRIDGE UPGRADES (MP 0.5C)

SPECIFICATION NO. PW21-0733F

Christopher N. Storey, P.E.
Engineering Division
Public Works Department
733 Market Street Room Room 544
Tacoma, Washington 98421-2711



Mark C. Hatch, P.E.
Rail Bridge Engineer
HDR
700 SW Higgins Avenue, Suite 200
Missoula, MT 59803-1489

EXPIRES: 6-30-2022

SPECIFICATION NO. PW21-0733F

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City of Tacoma
TACOMA RAIL

REQUEST FOR BIDS PW21-0733F
Puyallup River Bridge Upgrades (MP 0.5C)

Submittal Deadline: 11:00 a.m., Pacific Time, Tuesday, January 11, 2022

Submittals must be received by the City's Procurement and Payables Division prior to 11:00 a.m. Pacific Time. For electronic submittals, the City of Tacoma will designate the time of receipt recorded by our email, bids@cityoftacoma.org, as the official time of receipt. This clock will be used as the official time of receipt of all parts of electronic bid submittals.

Submittal Delivery: Sealed submittals will be received as follows:

By Email: bids@cityoftacoma.org Maximum file size: 35 MB. Multiple emails may be sent for each submittal.
By Carrier: If possible, please include a flash drive of your full submittal. City of Tacoma Procurement & Payables Division Tacoma Public Utilities 3628 S 35th Street Tacoma, WA 98409
In Person: If possible, please include a flash drive of your full submittal. City of Tacoma Procurement & Payables Division Tacoma Public Utilities Administration Building North Guard House (east side of main building) 3628 S 35th Street Tacoma, WA 98409
By Mail: If possible, please include a flash drive of your full submittal. City of Tacoma Procurement & Payables Division Tacoma Public Utilities PO Box 11007 Tacoma, WA 98411-0007

Bid Opening: Held virtually each Tuesday at 11AM. Attend via this link or call 1 (253) 215 8782. Submittals in response to a RFB will be recorded as received. As soon as possible, after 1:00 PM, on the day of submittal deadline, preliminary results will be posted to www.TacomaPurchasing.org.

Solicitation Documents: An electronic copy of the complete solicitation documents may be viewed and obtained by accessing the City of Tacoma Purchasing website at www.TacomaPurchasing.org.

- Register for the Bid Holders List to receive notices of addenda, questions and answers and related updates.
- Click here to see a list of vendors registered for this solicitation.

Pre-Proposal Meeting: A pre-proposal meeting will be held on December 14, 2021, at 9:30 a.m. at the link below. Please click the link below to join the webinar:

https://us02web.zoom.us/j/85862885142?pwd=U3VEc0JlRjdLREU3WmgrcUd4Q1hDQT09

Passcode: 686155

Or Telephone:

Dial(for higher quality, dial a number based on your current location):

US: +1 253 215 8782

Scope: This Contract shall generally consist of making repairs to various elements of the Puyallup River Bridge. These repairs will include but not be limited to replacing guardrail, ties, tie spacers, timber walkway planks, replacing stringers and sway braces and making repairs to a steel truss.

Estimate: $420,000

Paid Sick Leave: The City of Tacoma requires all employers to provide paid sick leave as set forth in Title 18 of the Tacoma Municipal Code. For more information, visit our Minimum Employment Standards Paid Sick Leave webpage.

Americans with Disabilities Act (ADA Information: The City of Tacoma, in accordance with Section 504 of the Rehabilitation Act (Section 504) and the Americans with Disabilities Act (ADA), commits to nondiscrimination on the basis of disability, in all of its programs and activities. Specification materials can be made available in an alternate format by emailing Gail Himes at ghimes@cityoftacoma.org, or by calling her collect at 253-591-5785.

Title VI Information:
"The City of Tacoma" in accordance with provisions of Title VI of the Civil Rights Act of 1964, (78 Stat. 252, 42 U.S.C. sections 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin in consideration of award.

Additional Information: Requests for information regarding the specifications may be obtained by contacting Tina Eide, Senior Buyer by email to teide@cityoftacoma.org

Protest Policy: City of Tacoma protest policy, located at www.tacomapurchasing.org, specifies procedures for protests submitted prior to and after submittal deadline.

Meeting sites are accessible to persons with disabilities. Reasonable accommodations for persons with disabilities can be arranged with 48 hours advance notice by calling 253-502-8468.

SPECIAL REMINDER TO ALL BIDDERS

HEALTH & SAFETY: Be sure to comply with all City of Tacoma health and safety requirements.

1. This project has been deemed to be an essential project by the City of Tacoma and it is anticipated that the contract will be operational during the COVID-19 outbreak. Therefore the contractor shall complete a health and safety plan describing how the contractor will complete the work while combating the COVID-19 spread (social distancing practices) and what Personal Protective Equipment (PPE) will be in place.

PLEASE NOTE: Be sure you have complied with all specifications and requirements and have signed all required documents.

YOUR ATTENTION IS PARTICULARLY CALLED to the following forms, which must be executed in full before the bid is submitted:

1. BID PROPOSAL: The unit prices bid must be shown in the space provided. Check your computations for omissions and errors.

2. SIGNATURE PAGE: To be filled in and executed by a duly authorized officer or representative of the bidding entity. If the bidder is a subsidiary or doing business on behalf of another entity, so state, and provide the firm name under which business is hereby transacted.

3. BID BOND: The Bid Bond must be executed by the person legally authorized to sign the bid, and must be properly signed by the representatives of the surety company unless the bid is accompanied by a certified check. If Bid Bond is furnished, the form furnished by the City must be followed; no variations from the language thereof will be accepted. The amount of the Bid Bond must be not less than 5% of the total amount bid.

4. CERTIFICATION OF COMPLIANCE WITH WAGE PAYMENT STATUTES: Bidder shall complete this form in its entirety to ensure compliance with state legislation (SHB 2017).

5. STATE RESPONSIBILITY AND RECIPROCAL BID PREFERENCE INFORMATION: Bidder shall complete this form in its entirety to ensure compliance with state legislation (SHB 2010).

6. STATEMENT OF QUALIFICATIONS: The Contractor or subcontractor shall fill out this form in its entirety proving they meet the requirements as outlined in these specifications. It shall be the sole determination of the Engineer to determine if the Contractor/subcontractor does in fact meet the requirements. This is a condition of award of the contract.

   FAILURE TO LIST SUBCONTRACTORS WILL RESULT IN THE BID BEING NON-RESPONSIVE AND THEREFORE VOID.

POST AWARD FORMS EXECUTED UPON AWARD:

A. CONTRACT: Must be executed by the successful bidder.

B. PAYMENT BOND TO THE CITY OF TACOMA: Must be executed by the successful bidder and his/her surety company.

C. PERFORMANCE BOND TO THE CITY OF TACOMA: Must be executed by the successful bidder and his/her surety company.

D. CERTIFICATE OF INSURANCE: Shall be submitted with all required endorsements.

E. LEAP UTILIZATION PLAN: Shall be submitted at the Pre-Construction Meeting.

F. GENERAL RELEASE.

CODE OF ETHICS: The successful bidder agrees that its violation of the City's Code of Ethics contained in TMC Chapter 1.46 shall constitute a breach of the contract subjecting the contract to termination.

LOCAL EMPLOYMENT AND APPRENTICESHIP TRAINING PROGRAM (LEAP):

The Local Employment and Apprenticeship Training Program (LEAP) has been adopted to counteract economic and social ills, which accompany high rates of unemployment within the City of Tacoma. The Tacoma City Council established the mandatory LEAP program for public works contracts pursuant to Ordinance No. 28520. The primary goal is to provide an opportunity for City of Tacoma residents and Tacoma Public Utilities ratepayers to enter apprenticeship programs, acquire skills, and perform work that will provide living wages.

LEAP Goals:

1. Local Employment Utilization Goal – Prime contractor is required to ensure that 15 percent of the labor hours worked on the project are performed by residents of the City of Tacoma or economically distressed areas of the Tacoma Public Utilities service area.

2. Apprentice Utilization Goal - Prime contractor is required to ensure that 15 percent of the labor hours worked on the project are performed by apprentices who reside in the Tacoma Public Utilities service area.

NOTE: The two goals can be satisfied concurrently if the prime contractor utilizes individuals who simultaneously meet the requirements of both goals, such as an apprentice who resides in an economically distressed area of the Tacoma Public Utilities service area.

CITY OF TACOMA
FINANCE/PURCHASING DIVISION

SPECIAL NOTICE TO BIDDERS

Public works and improvement projects for the City of Tacoma are subject to Washington state law and Tacoma Municipal Code, including, but not limited to the following:

I. STATE OF WASHINGTON

A. RESPONSIBILITY CRITERIA – STATE OF WASHINGTON

In order to be considered a responsible bidder the bidder must meet the following mandatory state responsibility criteria contained in RCW 39.04.350:

1. Have a current certificate of registration as a contractor in compliance with chapter 18.27 RCW, which must have been in effect **at the time of bid submittal**;
2. Have a current Washington Unified Business Identifier (UBI) number;
3. If applicable:
   a. Have Industrial Insurance (workers' compensation) coverage for the bidder's employees working in Washington, as required in Title 51 RCW;
   b. Have a Washington Employment Security Department number, as required in Title 50 RCW;
   c. Have a Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW and;
4. Not be disqualified from bidding on any public works contract under RCW 39.06.010 (unlicensed or unregistered contractors) or 39.12.065(3) (prevailing wage).
5. Have received training on the requirements related to public works and prevailing wage under this chapter and chapter 39.12 RCW and must designate a person or persons to be trained on these requirements. The training must be provided by the department of labor and industries or by a training provider whose curriculum is approved by the department. Bidders that have completed three or more public works projects and have had a valid business license in Washington for three or more years are exempt from this subsection.

B. RECIPROCAL PREFERENCE FOR RESIDENT CONTRACTORS:

Effective March 30, 2012, RCW 39.04.380 imposes a reciprocal preference for resident contractors. Any bid received from a non-resident contractor from a state that provides an in-state percentage bidding preference is subject application of a comparable percentage disadvantage.

A non-resident contractor from a state that provides an in-state percentage bidding preference means a contractor that:

1. Is from a state that provides a percentage bid preference to its resident contractors bidding on public works projects, and
2. Does not have a physical office located in Washington at the time of bidding on the City of Tacoma public works project.

The state of residence for a non-resident contractor is the state in which the contractor was incorporated, or if not a corporation, the state in which the contractor's business entity was formed.

The City of Tacoma will evaluate all non-resident contractors for an out of state bidder preference. If the state of the non-resident contractor provides an in state contractor preference, a comparable percentage disadvantage will be applied to the non-resident contractor's bid prior to contract award. The responsive and lowest and best responsible bidder after application of any non-resident disadvantage will be awarded the contract.

The reciprocal preference evaluation does not apply to public works procured pursuant to RCW 39.04.155, RCW 39.04.280, federally funded competitive solicitations where such agencies prohibit the application of bid preferences, or any other procurement exempt from competitive bidding.

Bidders must provide the City of Tacoma with their state of incorporation or the state in which the business entity was formed and include whether the bidder has a physical office located in Washington.

The bidder shall submit documentation demonstrating compliance with above criteria on the enclosed State Responsibility and Reciprocal Bidder Information form.

C. SUBCONTRACTOR RESPONSIBILITY

1. The Contractor shall include the language of this subcontractor responsibility section in each of its first tier subcontracts, and shall require each of its subcontractors to include the same language of this section in each of their subcontracts, adjusting only as necessary the terms used for the contracting parties. The requirements of this section apply to all subcontractors regardless of tier.

2. At the time of subcontract execution, the Contractor shall verify that each of its first tier subcontractors meets the following bidder responsibility criteria:

    a. Have a current certificate of registration as a contractor in compliance with chapter 18.27 RCW, which must have been in effect at the time of subcontract bid submittal;

    b. Have a current Washington Unified Business Identifier (UBI) number;

    c. If applicable, have:

    a. Have Industrial Insurance (workers' compensation) coverage for the bidder's employees working in Washington, as required in Title 51 RCW;
    b. A Washington Employment Security Department number, as required in Title 50 RCW;
    c. A Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW;
    d. An electrical contractor license, if required by Chapter 19.28 RCW;
    e. An elevator contractor license, if required by Chapter 70.87 RCW and;

3. Not be disqualified from bidding on any public works contract under RCW 39.06.010 (unlicensed or unregistered contractors) or 39.12.065(3) (prevailing wage).

II. CITY OF TACOMA

A. SUPPLEMENTAL RESPONSIBILITY CRITERIA – CITY OF TACOMA:

In order to be considered a responsible bidder, the prospective bidder shall have all of the following qualifications set forth in Tacoma Municipal Code 1.06.262:

1. Adequate financial resources or the ability to secure such resources;
2. The necessary experience, stability, organization and technical qualifications to perform the proposed contract;
3. The ability to comply with the required performance schedule, taking into consideration all existing business commitments;
4. A satisfactory record of performance, integrity, judgment and skills; and
5. Be otherwise qualified and eligible to receive an award under applicable laws and regulations.
    a. Bidder Responsibility. Bidders shall not be in violation of 39.04.350 RCW Bidder Responsibility Criteria - Supplemental Criteria.

In addition to the mandatory bidder responsibility criteria listed immediately above, the City may, in addition to price, consider any or all of the following criteria contained in Tacoma Municipal Code Chapter 1.06.262 in determining bidder responsibility:

1. The ability, capacity, experience, stability, technical qualifications and skill of the respondent to perform the contract;
2. Whether the respondent can perform the contract within the time specified, without delay or interference;
3. Integrity, reputation, character, judgment, experience, and efficiency of the respondents, including past compliance with the City's Ethics Code;
4. Quality of performance of previous contracts;
5. Previous and existing compliance with laws and ordinances relating to contracts or services;
6. Sufficiency of the respondent's financial resources;
7. Quality, availability, and adaptability of the supplies, purchased services or public works to the particular use required;
8. Ability of the respondent to provide future maintenance and service on a timely basis;
9. Payment terms and prompt pay discounts;
10. The number and scope of conditions attached to the submittal;
11. Compliance with all applicable City requirements, including but not limited to the City's Ethics Code and its Small Business Enterprise and Local Employment and Apprenticeship programs;
12. Other qualification criteria set forth in the specification or advertisement that the appropriate department or division head determines to be in the best interests of the City.

The City may require bidders to furnish information, sworn or certified to be true, to demonstrate compliance with the City responsibility criteria set forth above. If the city manager or director of utilities is not satisfied with the sufficiency of the information provided, or if the prospective respondent does not substantially meet all responsibility requirements, any submittal from such respondent must be disregarded.

B. ADDITIONAL SUPPLEMENTAL CRITERIA

The Contractor shall have a Railroad Bridge Repair Project Manager who shall manage and coordinate the overall aspects of the bridge repairs. The Railroad Bridge Repair Project Manager's qualifications and experience must include:

1. At least five (5) years of progressively more responsible engineering, construction, and maintenance experience on a wide variety of railroad projects for a Class 1, or commuter railroad. A major portion of the individual's experience should include construction and maintenance work on a freight or commuter railroad with moderate to heavy traffic and limited work windows.
2. The individual shall be a qualified Bridge Supervisor per CFR 237.55.
3. Knowledge of FRA standards and FRA Track Safety Standards, Part 213.7, and Railroad Roadway Worker Protection rules and regulations.
4. Demonstrated ability to work safely and supervise individuals in safe work.
5. Previous positions and experience supervising and planning work activities of construction superintendents, project engineers and support personnel foreman and crews.
6. Ability to read and understand track and bridge construction plans and specifications, Site Specific Work Plans (SSWPs) and develop and work construction schedules.

The Railroad Bridge Repair Project manager shall be on the job for the full duration of the project and shall be able to respond immediately to emergency or problem calls, seven days a week, 24 hours a day.

The contractor's proposed Railroad Bridge Repair Project Manager, qualifications and experience shall be submitted with the bid documents.

C. MODIFICATIONS TO SUPPLEMENTAL CRITERIA

Potential bidders may request modifications to the City's **supplemental criteria** by submitting a written request to the Purchasing Division via email to bids@cityoftacoma.org no later than 5:00 p.m. Pacific Time, three days prior to the submittal deadline. Please include the Specification No. and Title when submitting such requests. Requests must include justification for why certain criteria should be modified. Requests received after this date and time will not be considered.

The City will respond to a timely submitted request prior to the bid opening date. Changes to the supplemental criteria, if warranted, will be issued by addendum to the solicitation documents and posted to the City's website for the attention of all prospective bidders.

D. DETERMINATION OF BIDDER RESPONSIBILITY

If the City determines the bidder does not meet the criteria above and is therefore not a responsible bidder, the City shall notify the bidder in writing with the reasons for its determination. If the bidder disagrees, the bidder may appeal the determination in a manner consistent with the City's Protest Policy. Appeals are coordinated by the Purchasing Division heard by the Procurement and Payables Division manager for contracts less than or equal to $500,000 and by Contracts and Awards Board for contracts greater than $500,000.

PART I

BID PROPOSAL AND CONTRACT FORMS

B I D P R O P O S A L

SPECIFICATION NO. PW21-0733F

Puyallup River Bridge Upgrades (MP0.5C)

The undersigned hereby certifies that he/she has examined the location and construction details of work as outlined on the Plans and Specifications for Project No. TRM-00044 and has read and thoroughly understands the Plans and Specifications and contract governing the work embraced in this improvement and the method by which payment will be made for said work, and hereby proposes to undertake and complete the work embraced in this improvement in accordance with said Plans, Specifications and contract and at the following schedule of rates and prices:

NOTE: 1. Unit prices of all items, all extensions and total amount of bid should be shown. Show unit prices in figures only.

2. The notations below the item numbers refer to the specification section where information may be found regarding each contract item. These notations are intended only as a guide and are not warranted to refer to all specification sections where information may be found.

ITEM NO.	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT PRICE	TOTAL AMOUNT
1. 8-31	COVID 19 Health and Safety Plan	1 Lump Sum	Lump Sum	$ _____
2. 1-07.15(1)	SPCC Plan	1 Lump Sum	Lump Sum	$ _____
3. 1-09.7	Mobilization	1 Lump Sum	Lump Sum	$ _____
4. 8-01	Stormwater Pollution Prevention Plan (SWPPP)	1 Lump Sum	Lump Sum	$ _____
5. 8-31	Spot replace Trtd. Timber Bridge Ties 8" x 10" x 10' (Spans 18-21) Contractor to verify tie dimensions	30 Each	$ _____	$ _____
6. 8-31	Spot replace Trtd. Timber Bridge Walkway Ties 8" x 10" x 15' (Spans 1-17 & 23-32) Contractor to verify tie dimensions	8 Each	$ _____	$ _____
7. 8-31	Spot replace Trtd. Timber Bridge Walkway Ties 8" x 10" x 15' (Spans 18-22 & 33) Contractor to verify tie dimensions	25 Each	$ _____	$ _____

Bidder Name: _____

ITEM NO.	ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT PRICE	TOTAL AMOUNT
8. 8-31	Spot Replace Treated Timber Tie Spacers Spans 1-33	1 Lump Sum	Lump Sum	$ _____
9. 8-31	Spot Replace Loose Bridge Tie Clips, Spans 18-21	1 Lump Sum	Lump Sum	$ _____
10. 8-31	Install new wire rope handrail, steel railing posts	1 Lump Sum	Lump Sum	$ _____
11. 8-31	Spot Replace Treated Timber Walk Planks	1 Lump Sum	Lump Sum	$ _____
12. 8-31	Install Treated Timber Helper Stringers & Sway Braces	1 Lump Sum	Lump Sum	$ _____
13. 8-31	Clean debris from Steel DPG spans (Spans 18-21)	1 Lump Sum	Lump Sum	$ _____
14. 8-31	Steel Truss Repairs - Spans 22 and 33	1 Lump Sum	Lump Sum	$ _____
15. 8-31	Re-install inner guardrail	100 Track Ft.	$ _____	$ _____
16. 8-31	Shims – Between Pile & Cap	1 Lump Sum	Lump Sum	$ _____

Subtotal Items Nos. 1 - 16	**$** _____	
10.3% Sales Tax (Items Nos. 1 - 16)	$ _____	
Force Account	$	30,0000.00
Base Bid (Subtotal Items Nos. 1 - 16, plus force account, plus Tax)	**$** _____	

Bidder Name: _____

SIGNATURE PAGE

CITY OF TACOMA
TACOMA RAIL

All submittals must be in ink or typewritten, executed by a duly authorized officer or representative of the bidding/proposing entity, and received and time stamped as directed in the **Request for Bids page near the beginning of the specification**. If the bidder/proposer is a subsidiary or doing business on behalf of another entity, so state, and provide the firm name under which business is hereby transacted.

REQUEST FOR BIDS SPECIFICATION NO. PW21-0733F
Puyallup River Bridge Upgrades (MP 0.5C)

The undersigned bidder/proposer hereby agrees to execute the proposed contract and furnish all materials, labor, tools, equipment and all other facilities and services in accordance with these specifications.

The bidder/proposer agrees, by submitting a bid/proposal under these specifications, that in the event any litigation should arise concerning the submission of bids/proposals or the award of contract under this specification, Request for Bids, Request for Proposals or Request for Qualifications, the venue of such action or litigation shall be in the Superior Court of the State of Washington, in and for the County of Pierce.

Non-Collusion Declaration

The undersigned bidder/proposer hereby certifies under penalty of perjury that this bid/proposal is genuine and not a sham or collusive bid/proposal, or made in the interests or on behalf of any person or entity not herein named; and that said bidder/proposer has not directly or indirectly induced or solicited any contractor or supplier on the above work to put in a sham bid/proposal or any person or entity to refrain from submitting a bid/proposal; and that said bidder/proposer has not, in any manner, sought by collusion to secure to itself an advantage over any other contractor(s) or person(s).

_____
Bidder/Proposer's Registered Name

_____
Address

_____
City, State, Zip

_____
E-Mail Address

_____
E.I.No. / Federal Social Security Number Used on Quarterly Federal Tax Return, U.S. Treasury Dept. Form 941

_____
E-Mail Address for Communications

_____
Signature of Person Authorized to Enter into Contracts for Bidder/Proposer — Date

_____
Printed Name and Title

_____
(Area Code) Telephone Number / Fax Number

_____
State Business License Number
in WA, also known as UBI (Unified Business Identifier) Number

_____
State Contractor's License Number
(See Ch. 18.27, R.C.W.)

Addendum acknowledgement #1_____ #2_____ #3_____ #4_____ #5_____

THIS PAGE MUST BE SIGNED AND RETURNED WITH SUBMITTAL.

Herewith find deposit in the form of a cashier's check in the amount of $_____ which amount is not less than 5-percent of the total bid.

SIGN HERE_____

BID BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, _____, as Principal, and _____, as Surety, are held and firmly bound unto the City of Tacoma, as Obligee, in the penal sum of _____ _____ dollars, for the payment of which the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, by these presents.

The condition of this obligation is such that if the Obligee shall make any award to the Principal for

according to the terms of the proposal or bid made by the Principal therefor, and the Principal shall duly make and enter into a contract with the Obligee in accordance with the terms of said proposal or bid and award and shall give bond for faithful performance thereof, with Surety or Sureties approved by the Obligee; or if the Principal shall, in case of failure to do so, pay and forfeit to the Obligee the penal amount of the deposit specified in the call for bids, then this obligation shall be null and void; otherwise it shall be and remain in full force and effect and the Surety shall forthwith pay and forfeit to the Obligee, as penalty and liquidated damages, the amount of this bond.

SIGNED, SEALED AND DATED THIS _____ DAY OF _____, 20_____.

PRINCIPAL: SURETY:

_____ _____

_____ _____

_____, 20_____

Received return of deposit in the sum of $ _____

_____

City of Tacoma

Certification of Compliance with Wage Payment Statutes

The bidder hereby certifies that, within the three-year period immediately preceding the bid solicitation date (December 8, 2021), that the bidder is not a "willful" violator, as defined in RCW 49.48.082, of any provision of chapters 49.46, 49.48, or 49.52 RCW, as determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction.

I certify under penalty of perjury under the laws of the state of Washington that the foregoing is true and correct.

Bidder

Signature of Authorized Official*

Printed Name

Title

Date | City | State

Check One:

Individual ☐ Partnership ☐ Joint Venture ☐ Corporation ☐

State of Incorporation, or if not a corporation, the state where business entity was formed:

If a co-partnership, give firm name under which business is transacted:

** If a corporation, proposal must be executed in the corporate name by the president or vice-president (or any other corporate officer accompanied by evidence of authority to sign). If a co-partnership, proposal must be executed by a partner.*

Specification No. _____

Name of Bidder: _____

State Responsibility and Reciprocal Bid Preference Information

Certificate of registration as a contractor (Must be in effect at the time of bid submittal):	Number: _____ Effective Date: _____ Expiration Date: _____
Current Washington Unified Business Identifier (UBI) Number:	Number: _____
Do you have industrial insurance (workers' compensation) Coverage nor your employees working in Washington?	☐ Yes ☐ No ☐ Not Applicable
Washington Employment Security Department Number	Number: _____ ☐ Not Applicable
Washington Department of Revenue state excise tax Registration number:	Number: _____ ☐ Not Applicable
Have you been disqualified from bidding any public works contracts under RCW 39.06.010 or 39.12.065(3)?	☐ Yes ☐ No If yes, provide an explanation of your disqualification on a separate page.
Do you have a physical office located in the state of Washington?	☐ Yes ☐ No
If incorporated, in what state were you incorporated?	State: _____ ☐ Not Incorporated
If not incorporated, in what state was your business entity formed?	State: _____
Have you completed the training required by RCW 39.04.350, or are you on the list of exempt businesses maintained by the Department of Labor and Industries?	☐ Yes ☐ No

Revised: 07/20/2007, 04/12/2012, 06/21/2019

STATEMENT OF QUALIFICATIONS FOR
RAIL CONTRACTOR

This form shall be completed in its entirety and submitted with the bid. **Failure to submit and meet the requirements as stated in Section 1-02.1 of the Special Provisions may be grounds for rejection of the bid.**

The City of Tacoma will be the sole judge in determining if the prospective contractor meets the minimum experience requirements.

The successful rail contractor shall have completed at least three self-performed rail projects of similar scope and purpose within the past three years. The contractor shall have a Railroad Bridge Repair Project Manager who shall also have at least five (5) years of progressively more responsible engineering, construction, and maintenance experience on a wide variety of railroad projects for a Class 1, or commuter railroad. A major portion of the individual's experience should include construction and maintenance work on a freight or commuter railroad with moderate to heavy traffic and limited work windows. Complete the contractor project experience summary below and identify the Railroad Bridge Repair Project Manager which will be assigned to the project.

Rail Contractor:

Name: _____

Address: _____

Phone: _____ Contact Person: _____

Project Experience

#1 Project Name: _____

Owner: _____ Contact Person: _____

Description of Work (including size of area treated): _____

_____

Completion Date: _____

#2 Project Name: _____

Owner: _____ Contact Person: _____

Description of Work (including size of area treated): _____

_____

Completion Date: _____

STATEMENT OF QUALIFICATIONS FOR
RAIL CONTRACTOR

#3 Project Name: _____

Owner:_____ Contact Person: _____

Description of Work (including size of area treated): _____

_____

Completion Date: _____

Railroad Bridge Repair Project Manager:

The Railroad Bridge Repair Project Manager shall have at least five years of railroad experience as defined above. Provide the name of the Railroad Bridge Repair Project Manager.

Name_____ Years employed by contractor:_____

#1 Project Name/Date: _____

Owner:_____ Contact Person: _____

Description of Work: _____

_____

Completion Date: _____

#2 Project Name/Date: _____

Owner:_____ Contact Person: _____

Description of Work: _____

_____

Completion Date: _____

CONTRACT

Resolution No.
Contract No.

This Contract is made and entered into effective this _____ day of ,20 , ("Effective Date") by and between the City of Tacoma, a Municipal Corporation of the State of Washington ("City"), and legal name of Supplier including type of business entity ("Contractor").

That in consideration of the mutual promises and obligations hereinafter set forth the Parties hereto agree as follows:

I. Contractor shall fully execute and diligently and completely perform all work and provide all services and deliverables described herein and in the items listed below each of which are fully incorporated herein and which collectively are referred to as "Contract Documents":

1. Specification No. Enter Spec Number and Enter Spec Title together with all authorized addenda.
2. Contractor's submittal (or specifically described portions thereof) dated Enter Submittal Date submitted in response to Specification No. Enter Spec Number and Enter Spec Title.
3. Describe with specific detail and list separately any other documents that will make up the contract (fee schedule, work schedule, authorized personnel, etc.) or any other additional items mutually intended to be binding upon the parties.

Delete this highlighted sentence, paragraph II and sub-bullets #1 and #2 if there are no additional attachments to the contract (attachments would be things other than a specific, contract, or bonds).

II. In the event of a conflict or inconsistency between the terms and conditions contained in this document entitled Contract and any terms and conditions contained the above referenced Contract Documents the following order of precedence applies with the first listed item being the most controlling and the last listed item the least controlling:

1. Contract
2. List remaining Contract Documents in applicable controlling order.

III. The Contract terminates on xxxxx. {May remove if not applicable]

IV. The total price to be paid by City for Contracts full and complete performance hereunder may not exceed:
$, plus any applicable taxes.

V. Contractor agrees to accept as full payment hereunder the amounts specified herein and in Contract Documents, and the City agrees to make payments at the times and in the manner and upon the terms and conditions specified. Except as may be otherwise provided herein or in Contract Documents Contractor shall provide and bear the expense of all equipment, work and labor of any sort whatsoever that may be required for the transfer of materials and for constructing and completing the work and providing the services and deliverables required by this Contract.

VI. The City's preferred method of payment is by ePayables (Payment Plus), followed by credit card (aka procurement card), then Electronic Funds Transfer (EFT) by Automated Clearing House (ACH), then check or other cash equivalent. CONTRACTOR may be required to have the capability of accepting the City's ePayables or credit card methods of payment. The City of Tacoma will not accept price changes or pay additional fees when ePayables (Payment Plus) or credit card is used. The City, in its sole discretion, will determine the method of payment for this Contract.

VII. Failure by City to identify a deficiency in the insurance documentation provided by Contractor or failure of City to demand verification of coverage or compliance by Contractor with these insurance requirements shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

VIII. Contractor acknowledges, and by signing this Contract agrees, that the Indemnification provisions set forth in the controlling Contract Documents, including the Industrial Insurance immunity waiver (if applicable), are totally and fully part of this Contract and, within the context of the competitive bidding laws, have been mutually negotiated by the Parties hereto.

IX. Contractor and for its heirs, executors, administrators, successors, and assigns, does hereby agree to the full performance of all the requirements contained herein and in Contract Documents.

X. It is further provided that no liability shall attach to City by reason of entering into this Contract, except as expressly provided herein.

IN WITNESS WHEREOF, the Parties hereto have accepted and executed, as of the Effective Date stated above, which shall be Effective Date for bonding purposes as applicable.

CITY OF TACOMA:	CONTRACTOR:
By:	By:

(City of Tacoma use only - blank lines are intentional)

Director of Finance: _____

City Attorney (approved as to form): _____

Approved By: _____

Approved By: _____

Approved By: _____

Approved By: _____

Approved By: _____

Approved By: _____

Approved By: _____

Approved By: _____

PAYMENT BOND
TO THE CITY OF TACOMA

Resolution No.
Bond No.

That we, the undersigned, _____

as principal, and _____

as a surety, are jointly and severally held and firmly bound to the CITY OF TACOMA, in the penal sum of,

$ _____ , for the payment whereof Contractor and Surety bind themselves,

their executors, administrators, legal representatives, successors and assigns, jointly and severally, firmly by these presents.

This obligation is entered into in pursuance of the statutes of the State of Washington, the Ordinances of the City of Tacoma.

WHEREAS, under and pursuant to the City Charter and general ordinances of the City of Tacoma, the said City has or is about to enter with the above bounden principal, a contract, providing for

Specification No.

Specification Title:

Contract No.

(which contract is referenced to herein and is made a part hereof as though attached hereto), and

WHEREAS, the said principal has accepted, the said contract, and undertake to perform the work therein provided for in the manner and within the time set forth.

This statutory payment bond shall become null and void, if and when the Principal, its heirs, executors, administrators, successors, or assigns shall pay all persons in accordance with RCW 39.08, 39.12, and 60.28, including all workers, laborers, mechanics, subcontractors, and materialmen, and all person who shall supply such contractor or subcontractor with provisions and supplies for the carrying on of such work, and all taxes incurred on said Contract under Titles 50 and 51 RCW and all taxes imposed on the Principal under Title 82 RCW; and if such payment obligations have not been fulfilled, this bond shall remain in full force and effect.

The Surety for value received agrees that no change, extension of time, alteration or addition to the terms of the Contract shall in any way affect its obligation on this bond, and waivers notice of any changes, extension of time, alteration or addition to the terms of the Contract or the work performed. The Surety agrees that modifications and changes to the terms and conditions of the Contract that increase the total amount to be paid the Principal shall automatically increase the obligation of the Surety on this bond and notice to Surety is not required for such increased obligation.

No suit or action shall be commenced hereunder by any claimant unless claimant shall have given the written notices to the City, and where required, the Contractor, in accordance with RCW 39.08.030.

The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of claims which may be properly filed in accordance with RCW 39.08 whether or not suit is commenced under and against this bond.

If any claimant shall commence suit and obtain judgment against the Surety for recovery hereunder, then the Surety, in addition to such judgment and attorney fees as provided by RCW 39.08.030, shall also pay such costs and attorney fees as may be incurred by the City as a result of such suit. Venue for any action arising out of or in connection with this bond shall be in Pierce County, WA.

Surety companies executing bonds must be authorized to transact business in the State of Washington as surety and named in the current list of “Surety Companies Acceptable in Federal Bonds” as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Department of the Treasury.

Resolution No.
Bond No.
Specification No.
Contract No.

One original bond shall be executed, and be signed by the parties' duly authorized officers. This bond will only be accepted if it is accompanied by a fully executed power of attorney for the office executing on behalf of the surety.

Principal: Enter Vendor Legal Name

_____

By: _____

Surety:

_____

By: _____

Agent's Name: _____

Agent's Address: _____

PERFORMANCE BOND
TO THE CITY OF TACOMA

Resolution No.
Bond No.

That we, the undersigned, _____

as principal, and _____

as a surety, are jointly and severally held and firmly bound to the CITY OF TACOMA, in the penal sum of

$ _____ , for the payment whereof Contractor and Surety bind themselves,

their executors, administrators, legal representatives, successors and assigns, jointly and severally, firmly by these presents.

This obligation is entered into in pursuance of the statutes of the State of Washington, the Ordinances of the City of Tacoma.

WHEREAS, under and pursuant to the City Charter and general ordinances of the City of Tacoma, the said City has or is about to enter with the above bounden principal, a contract, providing for

Specification No.

Specification Title:

Contract No.

(which contract is referenced to herein and is made a part hereof as though attached hereto), and

WHEREAS, the said principal has accepted, the said contract, and undertake to perform the work therein provided for in the manner and within the time set forth.

This statutory performance bond shall become null and void, if and when the principal, its heirs, executors, administrators, successors, or assigns shall well and faithfully perform all of the Principal's obligations under the Contract and fulfill all terms and conditions of all duly authorized modifications, additions and changes to said Contract that may hereafter be made, at the time and in the manner therein specified; and if such performance obligations have not been fulfilled, this bond shall remain in force and effect.

The Surety for value received agrees that no change, extension of time, alteration or addition to the terms of the Contract, the specifications accompanying the Contract, or to the work to be performed under the Contract shall in any way affect its obligation on this bond, and waives notice of any change, extension of time, alteration or addition to the terms of the Contract or the work performed. The Surety agrees that modifications and changes to the terms and conditions of the Contract that increase the total amount to be paid the Principal shall automatically increase the obligation of the Surety on this bond and notice to Surety is not required for such increase.

If the City shall commence suit and obtain judgment against the Surety for recovery hereunder, then the Surety, in addition to such judgement, shall pay all costs and attorney's fees incurred by the City in enforcement of its rights hereunder. Venue for any action arising out of in in connection with this bond shall be in Pierce County, Washington.

Surety companies executing bonds must be authorized to transact business in the State of Washington as surety and named in the current list of "Surety Companies Acceptable in Federal Bonds" as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Department of the Treasury.

One original bond shall be executed, and signed by the parties' duly authorized officers. This bond will only be accepted if it is accompanied by a fully executed power of attorney for the office executing on behalf of the surety.

Principal: Enter Vendor Legal Name

_____

By: _____

Surety:

_____

By: _____

Agent's Name: _____

Agent's Address: _____

GENERAL RELEASE TO THE CITY OF TACOMA

The undersigned, named as the contractor for _____
Project / Spec. #
between _____ and the City of Tacoma,
(Themselves or Itself)
dated _____, 20___, hereby releases the City of Tacoma, its departmental officers and agents from any and all claim or claims whatsoever in any manner whatsoever at any time whatsoever arising out of and/or in connection with and/or relating to said contract, excepting only the equity of the undersigned in the amount now retained by the City of Tacoma under said contract, to-wit the sum of $_____.

Signed at Tacoma, Washington this _____ day of _____, 20___.

_____
Contractor

By _____

Title _____

PART II

SPECIAL PROVISIONS

Table of Contents

INTRODUCTION
(April 1, 2018 Tacoma GSP)

The following special provisions shall be used in conjunction with the "2018 Standard Specifications for Road, Bridge and Municipal Construction" and "Standard Plans for Road, Bridge, and Municipal Construction" as prepared by the Washington State Department of Transportation (WSDOT). State Standard Specifications are available through WSDOT, by calling (360) 705-7430, emailing engrpubs@wsdot.wa.gov, or may be downloaded, free of charge, from this location on the WSDOT home page: http://www.wsdot.wa.gov/Publications/Manuals/M41-10.htm

These Special Provisions are made up of both General Special Provisions (GSPs) from various sources, which may have project-specific fill-ins; and project-specific Special Provisions. Each Provision either supplements, modifies, or replaces the comparable Standard Specification, or is a new Provision. The deletion, amendment, alteration, or addition to any subsection or portion of the Standard Specifications is meant to pertain only to that particular portion of the section, and in no way should it be interpreted that the balance of the section does not apply.

The GSPs are labeled under the headers of each GSP, with the date of the GSP and its source, as follows:

(May 18, 2007 APWA GSP)
(August 7, 2006 WSDOT GSP)
(April 2, 2007 Tacoma GSP)

The project specific Special Provisions are labeled under the headers of each Special Provision as follows:
(******)

A pre-bid conference will be held via video/phone conference on Tuesday December 14, at 9:30AM PST. The meeting will answer questions regarding the project, site access and the Local Employment and Apprenticeship Training Program (LEAP) requirements included in the contract. Prospective bidders are urged to attend.

Please click on the link below to join the webinar:

https://us02web.zoom.us/j/85862885142?pwd=U3VEc0JlRjdLREU3WmgrcUd4Q1hDQT09

Passcode: 686155

Or Telephone:

Dial(for higher quality, dial a number based on your current location):

US: +1 253 215 8782

DESCRIPTION OF WORK
(******)

This Contract shall generally consist of making repairs to various elements of the Puyallup River Bridge. These repairs will include but not be limited to replacing guardrail, ties, tie spacers, timber walkway planks, replacing stringers and sway braces and making repairs to a steel truss.

END OF SECTION

1-01 DEFINITIONS AND TERMS

1-01.3 Definitions
(January 4, 2016 APWA GSP)

Delete the heading Completion Dates and the three paragraphs that follow it, and replace them with the following:

Dates

Bid Opening Date
The date on which the Contracting Agency publicly opens and reads the Bids.

Award Date
The date of the formal decision of the Contracting Agency to accept the lowest responsible and responsive Bidder for the Work.

Contract Execution Date
The date the Contracting Agency officially binds the Agency to the Contract.

Notice to Proceed Date
The date stated in the Notice to Proceed on which the Contract time begins.

Substantial Completion Date
The day the Engineer determines the Contracting Agency has full and unrestricted use and benefit of the facilities, both from the operational and safety standpoint, any remaining traffic disruptions will be rare and brief, and only minor incidental work, replacement of temporary substitute facilities, plant establishment periods, or correction or repair remains for the Physical Completion of the total Contract.

Physical Completion Date
The day all of the Work is physically completed on the project. All documentation required by the Contract and required by law does not necessarily need to be furnished by the Contractor by this date.

Completion Date
The day all the Work specified in the Contract is completed and all the obligations of the Contractor under the contract are fulfilled by the Contractor. All documentation required by the Contract and required by law must be furnished by the Contractor before establishment of this date.

Final Acceptance Date
The date on which the Contracting Agency accepts the Work as complete.

Supplement this Section with the following:

All references in the Standard Specifications, Amendments, or WSDOT General Special Provisions, to the terms “Department of Transportation”, “Washington State Transportation Commission”, “Commission”, “Secretary of Transportation”, “Secretary”, “Headquarters”, and “State Treasurer” shall be revised to read “Contracting Agency”.

All references to the terms “State” or “state” shall be revised to read “Contracting Agency” unless the reference is to an administrative agency of the State of Washington, a State statute or regulation, or the context reasonably indicates otherwise.

All references to “State Materials Laboratory” shall be revised to read “Contracting Agency designated location”.

All references to “final contract voucher certification” shall be interpreted to mean the Contracting Agency form(s) by which final payment is authorized, and final completion and acceptance granted.

Additive
A supplemental unit of work or group of bid items, identified separately in the Bid Proposal, which may, at the discretion of the Contracting Agency, be awarded in addition to the base bid.

Alternate
One of two or more units of work or groups of bid items, identified separately in the Bid Proposal, from which the Contracting Agency may make a choice between different methods or material of construction for performing the same work.

Business Day
A business day is any day from Monday through Friday except holidays as listed in Section 1-08.5.

Contract Bond
The definition in the Standard Specifications for “Contract Bond” applies to whatever bond form(s) are required by the Contract Documents, which may be a combination of a Payment Bond and a Performance Bond.

Contract Documents
See definition for “Contract”.

Contract Time
The period of time established by the terms and conditions of the Contract within which the Work must be physically completed.

Notice of Award
The written notice from the Contracting Agency to the successful Bidder signifying the Contracting Agency’s acceptance of the Bid Proposal.

Notice to Proceed
The written notice from the Contracting Agency or Engineer to the Contractor authorizing and directing the Contractor to proceed with the Work and establishing the date on which the Contract time begins.

Traffic
Includes railroad, vehicular and non-vehicular traffic, such as pedestrians, bicyclists, wheelchairs, and equestrian traffic.

This section is supplemented with the following:
(April 15, 2020 Tacoma GSP)

All references to the acronym UDBE” shall be revised to read “DBE/EIC”.

All references in the Standard Specifications to the term “Proposal Bond” shall be revised to read “Bid Bond.”

Base Bid
The summation of Bid Item amounts (extensions) in the Bid Forms, excluding Additives, Alternates, Deductives, Force Accounts, and taxes collected separately pursuant to Section 1-07.2.

Calendar Day
The time period of 24 hours measured from midnight to the next midnight, including weekends and holidays.

Change Order
A written order to the Contractor, issued by the Contracting Agency after execution of the contract, authorizing an addition, deletion, or other revision in the Work, within the scope of the Contract Documents, and establishing the basis of payment and time adjustments, if any, for the Work affected by the change.

Day
Unless otherwise specified, a calendar day.

Deductive
A supplemental unit of work or group of Bid Items, identified separately in the Bid, which may, at the discretion of the Contract Agency, be deducted from the Base Bid should the Contract Agency choose not to Award the total Base Bid.

Grand Total Price
The Grand Total Price of the Contract will include the Base Bid, Additives, Alternates, Deductives, Force Accounts, and taxes collected separately pursuant to Section 1-07.2.

Standard Specifications
Divisions One through Nine of the specified edition of the WSDOT “Standard Specifications for Road, Bridge, and Municipal Construction.”

END OF SECTION

1-02 BID PROCEDURES AND CONDITIONS

1-02.1 Prequalification of Bidders

Delete this section and replace it with the following:

1-02.1 Qualifications of Bidder
(January 24, 2011 APWA GSP)

Before award of a public works contract, a bidder must meet at least the minimum qualifications of RCW 39.04.350(1) to be considered a responsible bidder and qualified to be awarded a public works project.

Add the following new section:

1-02.1(1) Supplemental Qualifications Criteria
(March 25, 2009 Tacoma GSP)

In addition, the Contracting Agency has established Contracting Agency-specific and/or project-specific supplemental criteria, in accordance with RCW 39.04.350(2), for determining Bidder responsibility, including the basis for evaluation and the deadline for appealing a determination that a Bidder is not responsible. These criteria are contained in the 1-02.14.

Add the following new section:

1-02.2 Plans and Specifications
(June 27, 2011 APWA GSP)

Delete this section and replace it with the following:

Information as to where Bid Documents can be obtained or reviewed can be found in the Call for Bids (Advertisement for Bids) for the work.

After award of the contract, plans and specifications will be issued to the Contractor at no cost as detailed below:

To Prime Contractor	No. of Sets	Basis of Distribution
Reduced plans (11" x 17")	6	Furnished automatically upon award.
Contract Provisions	6	Furnished automatically upon award.

Additional plans and Contract Provisions may be obtained by the Contractor from the source stated in the Call for Bids, at the Contractor's own expense.

1-02.4(1) General
(August 15, 2016 APWA GSP Option B)

The first sentence of the last paragraph is revised to read:

Any prospective Bidder desiring an explanation or interpretation of the Bid Documents, shall request the explanation or interpretation in writing by close of business 6 business days preceding the bid opening to allow a written reply to reach all prospective Bidders before the submission of their Bids.

1-02.5 Proposal Forms
(July 31, 2017 APWA GSP)
Delete this section and replace it with the following:

The Proposal Form will identify the project and its location and describe the work. It will also list estimated quantities, units of measurement, the items of work, and the materials to be furnished at the unit bid prices. The bidder shall complete spaces on the proposal form that call for, but are not limited to, unit prices; extensions; summations; the total bid amount; signatures; date; and, where applicable, retail sales taxes and acknowledgment of addenda; the bidder's name, address, telephone number, and signature; the bidder's UDBE/DBE/M/WBE commitment, if applicable; a State of Washington Contractor's Registration Number; and a Business License Number, if applicable. Bids shall be completed by typing or shall be printed in ink by hand, preferably in black ink. The required certifications are included as part of the Proposal Form.

The Contracting Agency reserves the right to arrange the proposal forms with alternates and additives, if such be to the advantage of the Contracting Agency. The bidder shall bid on all alternates and additives set forth in the Proposal Form unless otherwise specified.

1-02.6 Preparation of Proposal
(July 11, 2018 APWA GSP)

Supplement the second paragraph with the following:

4. If a minimum bid amount has been established for any item, the unit or lump sum price must equal or exceed the minimum amount stated.
5. Any correction to a bid made by interlineation, alteration, or erasure, shall be initialed by the signer of the bid.

Delete the last two paragraphs, and replace them with the following:

If no Subcontractor is listed, the Bidder acknowledges that it does not intend to use any Subcontractor to perform those items of work.

The Bidder shall submit with their Bid a completed Contractor Certification Wage Law Compliance form, provided by the Contracting Agency. Failure to return this certification as part of the Bid Proposal package will make this Bid Nonresponsive and ineligible for Award. A Contractor Certification of Wage Law Compliance form is included in the Proposal Forms.

The Bidder shall make no stipulation on the Bid Form, nor qualify the bid in any manner.

A bid by a corporation shall be executed in the corporate name, by the president or a vice president (or other corporate officer accompanied by evidence of authority to sign).

A bid by a partnership shall be executed in the partnership name, and signed by a partner. A copy of the partnership agreement shall be submitted with the Bid Form if any UDBE requirements are to be satisfied through such an agreement.

A bid by a joint venture shall be executed in the joint venture name and signed by a member of the joint venture. A copy of the joint venture agreement shall be submitted with the Bid Form if any UDBE requirements are to be satisfied through such an agreement.

1-02.7 Bid Deposit
(March 1, 2021 Tacoma GSP)
Delete this section and replace it with the following:

A deposit of at least 5 percent of the total Bid shall accompany each Bid. This deposit may be cash, certified check, cashier's check, or a proposal bond (Surety bond). Any proposal bond shall be on the Contracting Agency's form and shall be signed by the Bidder and the Surety. A proposal bond shall not be conditioned in any way to modify the minimum 5 percent required. The Surety shall: (1) be registered with the Washington State Insurance Commissioner, and (2) appear on the current Authorized Insurance List in the State of Washington published by the Office of the Insurance Commissioner.

The failure to furnish a Bid deposit of a minimum of 5 percent shall make the Bid nonresponsive and shall cause the Bid to be rejected by the Contracting Agency.

If submitting your bid electronically, a scanned version of the original bid bond must accompany your electronic bid submittal. The original bid bond shall be sent to the Contracting Agency and postmarked no later than the day of bid opening.

Original bid bonds or cashier's check will be delivered to:

City of Tacoma Procurement & Payables Division
Tacoma Public Utilities
P.O. Box 11007
Tacoma, WA 98411-0007

If so stated in the Contract Provisions, cash will not be accepted for a bid deposit.

1-02.9 Delivery of Proposal
(March 1, 2021 Tacoma GSP)

Delete this section and replace it with the following:

Each Proposal shall be submitted in a sealed envelope or shall be submitted electronically via email to bids@cityoftacoma.org, with the Project Name and Project Number as stated in the Call for Bids clearly marked on the outside of the envelope, or as otherwise required in the Bid Documents, to ensure proper handling and delivery.

To be considered responsive on a FHWA-funded project, the Bidder may be required to submit the following items, as required by Section 1-02.6:

- DBE Written Confirmation Document from each DBE firm listed on the Bidder's completed DBE Utilization Certification (WSDOT 272-056);
- Good Faith Effort (GFE) Documentation
- DBE Bid Item Breakdown (WSDOT 272-054)
- DBE Trucking Credit Form (WSDOT 272-058)

These documents, if applicable, shall be received either with the Bid Proposal or as a Supplement to the Bid. The documents shall be received **no later than 48 hours** (not including Saturdays, Sundays and Holidays) after the time for delivery of the Bid Proposal.

If submitted after the Bid Proposal is due, the document(s) shall be submitted as follows:

1. In a sealed envelope labeled the same as for the Proposal, with "Supplemental Information" added, or
2. By e-mail to bids@cityoftacoma.org with "Supplemental Information" noted in the subject line.

All other information required to be submitted with the Bid Proposal must be submitted with the Bid Proposal itself, at the time stated in the Call for Bids.

Proposals that are received as required will be publicly opened and read as specified in Section 1-02.12. The Contracting Agency will not open or consider any Bid Proposal that is received after the time specified in the Call for Bids for receipt of Bid Proposals, or received in a location other than that specified in the Call for Bids. The Contracting Agency will not open or consider any "Supplemental Information" (DBE confirmations or GFE documentation) that is received after the time specified above, or received in a location other than that specified in the Call for Bids.

If an emergency or unanticipated event interrupts normal work processes of the Contracting Agency so that Proposals cannot be received at the office designated for receipt of bids as specified in Section 1-02.12 the time specified for receipt of the Proposal will be deemed to be extended to the same time of day specified in the solicitation on the Tuesday on which the normal work processes of the Contracting Agency resume.

1-02.10 Withdrawing, Revising, or Supplementing Proposal
(March 16, 2016 Tacoma GSP)

Delete this section and replace it with the following*:*

After submitting a Bid Proposal to the Contracting Agency, the Bidder may withdraw, revise, or supplement it if:

1. The Bidder submits a written request signed by an authorized person, and
2. The Contracting Agency receives the request before the time set for receipt of Proposals.

3. The revised or supplemented Bid Proposal (if any) is received by the Contracting Agency before the time set for receipt of Bid Proposals.

The original Bid Proposal may be supplemented, or revised and resubmitted as the official Bid Proposal if the Contracting Agency receives it before the time set for receipt of Proposals.

1-02.12 Public Opening of Proposals
(March 1, 2021 Tacoma GSP)

Proposals will be opened and publicly read via webcast at the time indicated in the call for Bids unless the Bid opening has been delayed or canceled.

This public bid opening will be held via webinar. Please use the link below or on the Request for Bids page to join the webinar:

https://us02web.zoom.us/j/83250498294

Preliminary and final bid results are posted at www.TacomaPurchasing.org.

1-02.13 Irregular Proposals
(June 20, 2017 APWA GSP)
Delete this section and replace it with the following:

1. A Proposal will be considered irregular and will be rejected if:
   a. The Bidder is not prequalified when so required;
   b. The authorized Proposal form furnished by the Contracting Agency is not used or is altered;
   c. The completed Proposal form contains any unauthorized additions, deletions, alternate Bids, or conditions;
   d. The Bidder adds provisions reserving the right to reject or accept the award, or enter into the Contract;
   e. A price per unit cannot be determined from the Bid Proposal;
   f. The Proposal form is not properly executed;
   g. The Bidder fails to submit or properly complete a Subcontractor list, if applicable, as required in Section 1-02.6;
   h. The Bidder fails to submit or properly complete an Underutilized Disadvantaged Business Enterprise Certification, if applicable, as required in Section 1-02.6;
   i. The Bidder fails to submit written confirmation from each UDBE firm listed on the Bidder's completed UDBE Utilization Certification that they are in agreement with the bidder's UDBE participation commitment, if applicable, as required in Section 1-02.6, or if the written confirmation that is submitted fails to meet the requirements of the Special Provisions;
   j. The Bidder fails to submit UDBE Good Faith Effort documentation, if applicable, as required in Section 1-02.6, or if the documentation that is submitted fails to demonstrate that a Good Faith Effort to meet the Condition of Award was made;
   k. The Bid Proposal does not constitute a definite and unqualified offer to meet the material terms of the Bid invitation; or

l. More than one Proposal is submitted for the same project from a Bidder under the same or different names.

2. A Proposal may be considered irregular and may be rejected if:
   a. The Proposal does not include a unit price for every Bid item;
   b. Any of the unit prices are excessively unbalanced (either above or below the amount of a reasonable Bid) to the potential detriment of the Contracting Agency;
   c. Receipt of Addenda is not acknowledged;
   d. A member of a joint venture or partnership and the joint venture or partnership submit Proposals for the same project (in such an instance, both Bids may be rejected); or
   e. If Proposal form entries are not made in ink.

1-02.14 Disqualification of Bidders
(October 18, 2013 Tacoma GSP)
Delete this section and replace it with the following:

A Bidder will be deemed not responsible if:

1. the Bidder does not meet the mandatory bidder responsibility criteria in RCW 39.04.350(1), as amended; or
2. evidence of collusion exists with any other Bidder or potential Bidder. Participants in collusion will be restricted from submitting further bids; or
3. the Bidder, in the opinion of the Contracting Agency, is not qualified for the work or to the full extent of the bid, or to the extent that the bid exceeds the authorized prequalification amount as may have been determined by a prequalification of the Bidder; or
4. an unsatisfactory performance record exists based on past or current Contracting Agency work or for work done for others, as judged from the standpoint of conduct of the work; workmanship; or progress; affirmative action; equal employment opportunity practices; termination for cause; or Disadvantaged Business Enterprise, Minority Business Enterprise, or Women's Business Enterprise utilization; or
5. there is uncompleted work (Contracting Agency or otherwise) which in the opinion of the Contracting Agency might hinder or prevent the prompt completion of the work bid upon; or
6. the Bidder failed to settle bills for labor or materials on past or current contracts, unless there are extenuating circumstances acceptable to the Contracting Agency; or
7. the Bidder has failed to complete a written public contract or has been convicted of a crime arising from a previous public contract, unless there are extenuating circumstances acceptable to the Contracting Agency; or
8. the Bidder is unable, financially or otherwise, to perform the work, in the opinion of the Contracting Agency; or
9. there are any other reasons deemed proper by the Contracting Agency; or
10. the Bidder fails to meet the Project-specific supplemental bidder responsibility criteria listed in the below:
    The Contractor shall have a Railroad Bridge Repair Project Manager who shall manage and coordinate the overall aspects of the bridge repairs. The Railroad Bridge Repair Project Manager's qualifications and experience must include:

A. At least five (5) years of progressively more responsible engineering, construction, and maintenance experience on a wide variety of railroad projects for a Class 1, or commuter railroad. A major portion of the individual's experience should include construction and maintenance work on a freight or commuter railroad with moderate to heavy traffic and limited work windows.
B. The individual shall be a qualified Bridge Supervisor per CFR 237.55.
C. Knowledge of FRA standards and FRA Track Safety Standards, Part 213.7, , and Railroad Roadway Worker Protection rules and regulations.
D. Demonstrated ability to work safely and supervise individuals in safe work.
E. Previous positions and experience supervising and planning work activities of construction superintendents, project engineers and support personnel foreman and crews.
F. Ability to read and understand track and bridge construction plans and specifications, Site Specific Work Plans (SSWPs) and develop and work construction schedules.

The Railroad Bridge Repair Project manager shall be on the job for the full duration of the project and shall be able to respond immediately to emergency or problem calls, seven days a week, 24 hours a day.

The contractor's proposed Railroad Bridge Repair Project Manager, qualifications and experience shall be submitted with the bid documents.

11. The bidder fails to meet the EIC requirements as described in Section 1-02.6.

As evidence that the Bidder meets the bidder responsibility criteria above, the apparent two lowest Bidders must submit to the Contracting Agency within 24 hours of the bid submittal deadline, documentation (sufficient in the sole judgment of the Contracting Agency) demonstrating compliance with all applicable responsibility criteria, including all documentation specifically listed in the supplemental criteria. The Contracting Agency reserves the right to request such documentation from other Bidders as well, and to request further documentation as needed to assess bidder responsibility.

The basis for evaluation of Bidder compliance with these supplemental criteria shall be any documents or facts obtained by Contracting Agency (whether from the Bidder or third parties) which any reasonable owner would rely on for determining such compliance, including but not limited to: (i) financial, historical, or operational data from the Bidder; (ii) information obtained directly by the Contracting Agency from owners for whom the Bidder has worked, or other public agencies or private enterprises; and (iii) any additional information obtained by the Contracting Agency which is believed to be relevant to the matter.

If the Contracting Agency determines the Bidder does not meet the bidder responsibility criteria above and is therefore not a responsible Bidder, the Contracting Agency shall notify the Bidder in writing, with the reasons for its determination. If the Bidder disagrees with this determination, it may appeal the determination within 24 hours of receipt of the Contracting Agency's determination by presenting its appeal to the Contracting Agency. The Contracting Agency will consider the appeal before issuing its final determination. If

the final determination affirms that the Bidder is not responsible, the Contracting Agency will not execute a contract with any other Bidder until at least two business days after the Bidder determined to be not responsible has received the final determination.

1-02.15 Pre Award Information
(August 14, 2013 APWA GSP)

Revise this section to read:

Before awarding any contract, the Contracting Agency may require one or more of these items or actions of the apparent lowest responsible bidder:

1. A complete statement of the origin, composition, and manufacture of any or all materials to be used,
2. Samples of these materials for quality and fitness tests,
3. A progress schedule (in a form the Contracting Agency requires) showing the order of and time required for the various phases of the work,
4. A breakdown of costs assigned to any bid item,
5. Attendance at a conference with the Engineer or representatives of the Engineer,
6. Obtain, and furnish a copy of, a business license to do business in the city or county where the work is located.
7. Any other information or action taken that is deemed necessary to ensure that the bidder is the lowest responsible bidder.

END OF SECTION

1-03 AWARD AND EXECUTION OF CONTRACT

1-03.1 Consideration of Bids
(January 23, 2006 APWA GSP)

Revise the first paragraph to read:

After opening and reading proposals, the Contracting Agency will check them for correctness of extensions of the prices per unit and the total price. If a discrepancy exists between the price per unit and the extended amount of any bid item, the price per unit will control. If a minimum bid amount has been established for any item and the bidder's unit or lump sum price is less than the minimum specified amount, the Contracting Agency will unilaterally revise the unit or lump sum price, to the minimum specified amount and recalculate the extension. The total of extensions, corrected where necessary, including sales taxes where applicable and such additives and/or alternates as selected by the Contracting Agency, will be used by the Contracting Agency for award purposes and to fix the Awarded Contract Price amount and the amount of the contract bond.

1-03.2 Award of Contract
(March 27, 2003 Tacoma GSP)

All references to 45 calendar days shall be revised to read 60 calendar days.

1-03.3 Execution of Contract
(October 1, 2005 APWA GSP)

Revise this section to read:

Copies of the Contract Provisions, including the unsigned Form of Contract, will be available for signature by the successful bidder on the first business day following award. The number of copies to be executed by the Contractor will be determined by the Contracting Agency.

Within 10 calendar days after the award date, the successful bidder shall return the signed Contracting Agency-prepared contract, an insurance certification as required by Section 1-07.18, and a satisfactory bond as required by law and Section 1-03.4. Before execution of the contract by the Contracting Agency, the successful bidder shall provide any pre-award information the Contracting Agency may require under Section 1-02.15.

Until the Contracting Agency executes a contract, no proposal shall bind the Contracting Agency nor shall any work begin within the project limits or within Contracting Agency-furnished sites. The Contractor shall bear all risks for any work begun outside such areas and for any materials ordered before the contract is executed by the Contracting Agency.

If the bidder experiences circumstances beyond their control that prevents return of the contract documents within the calendar days after the award date stated above, the Contracting Agency may grant up to a maximum of 10 additional calendar days for return of the documents, provided the Contracting Agency deems the circumstances warrant it.

1-03.4 Contract Bond
(July 23, 2015 APWA GSP)
Delete the first paragraph and replace it with the following:

The successful bidder shall provide executed payment and performance bond(s) for the full contract amount. The bond may be a combined payment and performance bond; or be separate payment and performance bonds. In the case of separate payment and performance bonds, each shall be for the full contract amount. The bond(s) shall:

1. Be on Contracting Agency-furnished form(s);
2. Be signed by an approved surety (or sureties) that:
    a. Is registered with the Washington State Insurance Commissioner, and
    b. Appears on the current Authorized Insurance List in the State of Washington published by the Office of the Insurance Commissioner,
3. Guarantee that the Contractor will perform and comply with all obligations, duties, and conditions under the Contract, including but not limited to the duty and obligation to indemnify, defend, and protect the Contracting Agency against all losses and claims related directly or indirectly from any failure:
    a. Of the Contractor (or any of the employees, subcontractors, or lower tier subcontractors of the Contractor) to faithfully perform and comply with all contract obligations, conditions, and duties, or
    b. Of the Contractor (or the subcontractors or lower tier subcontractors of the Contractor) to pay all laborers, mechanics, subcontractors, lower tier subcontractors, material person, or any other person who provides supplies or provisions for carrying out the work;
4. Be conditioned upon the payment of taxes, increases, and penalties incurred on the project under titles 50, 51, and 82 RCW; and
5. Be accompanied by a power of attorney for the Surety's officer empowered to sign the bond; and
6. Be signed by an officer of the Contractor empowered to sign official statements (sole proprietor or partner). If the Contractor is a corporation, the bond(s) must be signed by the president or vice president, unless accompanied by written proof of the authority of the individual signing the bond(s) to bind the corporation (i.e., corporate resolution, power of attorney, or a letter to such effect signed by the president or vice president).

1-03.5 Failure to Execute Contract
(April 15, 2020 Tacoma GSP)
The first sentence is revised to read:

Failure to return the insurance certification and bond with the signed contract as required in Section 1-03.3, or failure to provide Equity In Contracting (EIC) information if required in the contract, or failure or refusal to sign the Contract, or failure to register as a contractor in the state of Washington shall result in forfeiture of the bid bond or deposit of this Bidder

END OF SECTION

1-04 SCOPE OF THE WORK

1-04.2 Coordination of Contract Documents, Plans, Special Provisions, Specifications, and Addenda
(March 13, 2012 APWA GSP)

Revise the second paragraph to read:

Any inconsistency in the parts of the contract shall be resolved by following this order of precedence (e.g., 1 presiding over 2, 2 over 3, 3 over 4, and so forth):

1. Addenda,
2. Proposal Form,
3. Special Provisions,
4. Contract Plans,
5. Amendments to the Standard Specifications,
6. Standard Specifications,
7. Contracting Agency's Standard Plans or Details (if any), and
8. WSDOT Standard Plans for Road, Bridge, and Municipal Construction.

END OF SECTION

1-05 CONTROL OF WORK

1-05.3 Working Drawings
(January 13, 2011 Tacoma GSP)

This section is deleted in its entirety and replaced with the following:

1-05.3 Submittals

The Contractor shall not install materials or equipment, which require submittals, until reviewed by the Contracting Agency.

The Contractor shall submit four (4) copies to the Engineer of all submittals required by the Contract Documents, unless otherwise required in these Special Provisions. This includes, but is not limited to:

- Field measurements required prior to ordering material
- Shop Drawings/Plans
- Product Data
- Samples
- Reports
- Material Submittals (Ref. 1-06)
- Progress Schedules (Ref. 1-08.3)
- Guarantees/Warranties (Ref. 1-05.10)

The Engineer will return one (1) copy to the Contractor.

1-05.3(1) Submittal Schedule

In conformance with section 1-08.3, the progress schedule shall be submitted and reviewed prior to commencing any work.

No claim will be allowed for damages or extension of time resulting from rejection of a submittal or the requirement of resubmittals as outlined by this section.

The Engineer's review will be completed as quickly as possible, but may require up to ten (10) working days from the date the submittals or resubmittals are received until they are sent to the Contractor. If more than ten (10) working days are required for the Engineer's review of any individual submittal or resubmittal, an extension of time will be considered in accordance with Section 1-08.8.

1-05.3(2) Submittal Procedures

Contractor submittals shall be in accordance with the following:

The Contractor shall thoroughly review each submittal for dimensions, quantities, and details of the material or item shown. The Contractor shall review each submittal and note any errors, omissions, or deviations with the Contract Documents. The Contractor shall accept full responsibility for the completeness of each submittal.

Each submittal shall have a unique number assigned to it, and the transmittals shall be sequentially numbered. The numbering of resubmittals shall meet the requirements of

Section 1-05.3(4). On each page, indicate the page number, and total number of pages in each submittal.

Each submittal shall indicate the intended use of the item in the work. When catalog pages are submitted, applicable items shall be clearly identified. The current revision, issue number, and data shall be indicated on all drawings and other descriptive data.

Each submittal should be transmitted with the "Submittal Transmittal Form" found at the end of this section. Upon request, an electronic copy of the Submittal Transmittal Form will be made available to the Contractor.

In lieu of utilizing the Submittal Transmittal Form, the Contractor may display the following information on each submittal, in a clear space on the front of the submittal:

- Project Name: Puyallup River Bridge Upgrades (MP 0.5C)
- Project Specification Number: PW21-0733F
- Project No. TRM-00044
- Submittal Date
- Description of Submittal
- Sequential, unique submittal number.
- Related Specification Section and/or plan sheet
- The following statement: "This document has been detail-checked for accuracy of content and for compliance with the Contract documents. The information contained herein has been fully coordinated with all involved Subcontractors."
- Printed or typed name and signature of Contractor.

When submitting product data, the Contractor shall modify drawings to delete any information not applicable to the project and add information that is applicable to the project. The Contractor shall mark copies of printed material to clearly identify the pertinent materials, products or models.

Samples submitted shall be of sufficient size and quantity to clearly illustrate functional characteristics of product or material and full range of colors available. Field samples and mock-ups, where required, shall be erected at the project site where directed by the Engineer.

The Contractor shall notify the Engineer, in writing at time of submission, of deviations in submittals from requirements of the Contract documents.

The City shall not be responsible for delays in reviewing submittals not submitted in accordance with these specifications.

1-05.3(3) Engineer's Review of Submittals

The Engineer's review of drawings and data submitted by the Contractor will cover only general conformity with the Contract drawings and specifications. The Engineer's review of submittals shall not relieve the Contractor from responsibility for errors, omissions, deviations, or responsibility for compliance with the Contract documents.
Review of a separate item does not constitute review of an assembly in which the item functions.

When the submittal or resubmittal is marked “REVIEWED”, or “REVIEWED WITH COMMENTS”, no additional copies need to be furnished. The Contractor shall comply with any comments on the return submittal.

1-05.3(4) Resubmittals

When a submittal is marked “AMEND AND RESUBMIT” or “REJECTED, SEE REMARKS,” the Contractor shall make the corrections as noted and instructed by the Engineer and resubmit four (4) copies. The Contractor shall not install material or equipment that has received a review status of “AMEND AND RESUBMIT” or REJECTED, SEE REMARKS”.

When corrected copies are resubmitted, the Contractor shall in writing direct specific attention to all revisions and shall list separately any revision made other than those called for by the Engineer on previous submittals. Resubmittals shall bear the number of the original submittal followed by a letter (A, B, etc.) to indicate the sequence of the resubmittal.

The Contractor shall revise returned submittals as required and resubmit until final review is obtained.

The Contractor shall verify that all exceptions previously noted by the Engineer have been accounted for.

1-05.3(5) Submittal Requirements by Section

The following is a summary of submittal requirements. This summary is not inclusive of all submittal requirements. The Contractor shall review each individual section in the applicable provisions or specifications, as noted below, for specific requirements.

Section	Description
1-05.3(6)	Project Red Line Drawings
1-06.1	Proposed Material Sources
1-06.1(2)	Request for Approval of Material
1-06.3	Manufacturer’s Certificate of Compliance
1-07.15	Temporary Water Pollution/Erosion Control Plan
1-07.15(1)	Spill Prevention, Control and Countermeasures (SPCC) Plan
1-07.16(1)	Property Owner Notification
1-08.3(2)	Progress Schedule
1-09.6	Equipment Rental Rates and Equipment Watch Sheets
1-09.9	Schedule Of Values
1-10.2	Traffic Control Plan
8-01.3(1)A	Stormwater Pollution Prevention Plan (SWPPP)

1-05.4 Conformity With and Deviations from Plans and Stakes

Add the following two new sub-sections:

1-05.4(1) Roadway and Utility Surveys
(October 1, 2005 APWA GSP)

The Engineer shall furnish to the Contractor one time only all principal lines, grades, and measurements the Engineer deems necessary for completion of the work. These shall generally consist of one initial set of:

1. Slope stakes for establishing grading;
2. Curb grade stakes;
3. Centerline finish grade stakes for pavement sections wider than 25 feet; and
4. Offset points to establish line and grade for underground utilities such as water, sewers, and storm drains.

On alley construction projects with minor grade changes, the Engineer shall provide only offset hubs on one side of the alley to establish the alignment and grade.

1-05.7 Removal of Defective and Unauthorized Work
(October 1, 2005 APWA GSP)
Supplement this section with the following:

If the Contractor fails to remedy defective or unauthorized work within the time specified in a written notice from the Engineer, or fails to perform any part of the work required by the Contract Documents, the Engineer may correct and remedy such work as may be identified in the written notice, with Contracting Agency forces or by such other means as the Contracting Agency may deem necessary.

If the Contractor fails to comply with a written order to remedy what the Engineer determines to be an emergency situation, the Engineer may have the defective and unauthorized work corrected immediately, have the rejected work removed and replaced, or have work the Contractor refuses to perform completed by using Contracting Agency or other forces. An emergency situation is any situation when, in the opinion of the Engineer, a delay in its remedy could be potentially unsafe, or might cause serious risk of loss or damage to the public.

Direct or indirect costs incurred by the Contracting Agency attributable to correcting and remedying defective or unauthorized work, or work the Contractor failed or refused to perform, shall be paid by the Contractor. Payment will be deducted by the Engineer from monies due, or to become due, the Contractor. Such direct and indirect costs shall include in particular, but without limitation, compensation for additional professional services required, and costs for repair and replacement of work of others destroyed or damaged by correction, removal, or replacement of the Contractor's unauthorized work.

No adjustment in Contract time or compensation will be allowed because of the delay in the performance of the work attributable to the exercise of the Contracting Agency's rights provided by this Section.

The rights exercised under the provisions of this section shall not diminish the Contracting Agency's right to pursue any other avenue for additional remedy or damages with respect to the Contractor's failure to perform the work as required.

1-05.11 Final Inspection
Delete this section and replace it with the following:

1-05.11 Final Inspections and Operational Testing
(October 1, 2005 APWA GSP)

1-05.11(1) Substantial Completion Date

When the Contractor considers the work to be substantially complete, the Contractor shall so notify the Engineer and request the Engineer establish the Substantial Completion Date. The Contractor's request shall list the specific items of work that remain to be completed in order to reach physical completion. The Engineer will schedule an inspection of the work with the Contractor to determine the status of completion. The Engineer may also establish the Substantial Completion Date unilaterally.

If, after this inspection, the Engineer concurs with the Contractor that the work is substantially complete and ready for its intended use, the Engineer, by written notice to the Contractor, will set the Substantial Completion Date. If, after this inspection the Engineer does not consider the work substantially complete and ready for its intended use, the Engineer will, by written notice, so notify the Contractor giving the reasons therefore.

Upon receipt of written notice concurring in or denying substantial completion, whichever is applicable, the Contractor shall pursue vigorously, diligently and without unauthorized interruption, the work necessary to reach Substantial and Physical Completion. The Contractor shall provide the Engineer with a revised schedule indicating when the Contractor expects to reach substantial and physical completion of the work.

The above process shall be repeated until the Engineer establishes the Substantial Completion Date and the Contractor considers the work physically complete and ready for final inspection.

1-05.11(2) Final Inspection and Physical Completion Date

When the Contractor considers the work physically complete and ready for final inspection, the Contractor by written notice, shall request the Engineer to schedule a final inspection. The Engineer will set a date for final inspection. The Engineer and the Contractor will then make a final inspection and the Engineer will notify the Contractor in writing of all particulars in which the final inspection reveals the work incomplete or unacceptable. The Contractor shall immediately take such corrective measures as are necessary to remedy the listed deficiencies. Corrective work shall be pursued vigorously, diligently, and without interruption until physical completion of the listed deficiencies. This process will continue until the Engineer is satisfied the listed deficiencies have been corrected.

If action to correct the listed deficiencies is not initiated within 7 days after receipt of the written notice listing the deficiencies, the Engineer may, upon written notice to the Contractor, take whatever steps are necessary to correct those deficiencies pursuant to Section 1-05.7.

The Contractor will not be allowed an extension of Contract time because of a delay in the performance of the work attributable to the exercise of the Engineer's right hereunder.

Upon correction of all deficiencies, the Engineer will notify the Contractor and the Contracting Agency, in writing, of the date upon which the work was considered physically complete. That date shall constitute the Physical Completion Date of the Contract, but shall not imply acceptance of the work or that all the obligations of the Contractor under the contract have been fulfilled.

1-05.11(3) Operational Testing

It is the intent of the Contracting Agency to have at the Physical Completion Date a complete and operable system. Therefore when the work involves the installation of machinery or other mechanical equipment; street lighting, electrical distribution or signal systems; irrigation systems; buildings; or other similar work it may be desirable for the Engineer to have the Contractor operate and test the work for a period of time after final inspection but prior to the physical completion date. Whenever items of work are listed in the Contract Provisions for operational testing they shall be fully tested under operating conditions for the time period specified to ensure their acceptability prior to the Physical Completion Date. During and following the test period, the Contractor shall correct any items of workmanship, materials, or equipment which prove faulty, or that are not in first class operating condition. Equipment, electrical controls, meters, or other devices and equipment to be tested during this period shall be tested under the observation of the Engineer, so that the Engineer may determine their suitability for the purpose for which they were installed. The Physical Completion Date cannot be established until testing and corrections have been completed to the satisfaction of the Engineer.

The costs for power, gas, labor, material, supplies, and everything else needed to successfully complete operational testing, shall be included in the unit Contract prices related to the system being tested, unless specifically set forth otherwise in the proposal.

Operational and test periods, when required by the Engineer, shall not affect a manufacturer's guaranties or warranties furnished under the terms of the Contract.

Add the following new section:

1-05.12(1) One-Year Guarantee Period
(March 8, 2013 APWA GSP)

The Contractor shall return to the project and repair or replace all defects in workmanship and material discovered within one year after Final Acceptance of the Work. The Contractor shall start work to remedy any such defects within 7 calendar days of receiving Contracting Agency's written notice of a defect, and shall complete such work within the time stated in the Contracting Agency's notice. In case of an emergency, where damage may result from delay or where loss of services may result, such corrections may be made by the Contracting Agency's own forces or another Contractor, in which case the cost of corrections shall be paid by the Contractor. In the event the Contractor does not accomplish corrections within the time specified, the work will be otherwise accomplished and the cost of same shall be paid by the Contractor.

When corrections of defects are made, the Contractor shall then be responsible for correcting all defects in workmanship and materials in the corrected work for one year after acceptance of the corrections by Contracting Agency.

This guarantee is supplemental to and does not limit or affect the requirements that the Contractor's work comply with the requirements of the Contract or any other legal rights or remedies of the Contracting Agency.

1-05.13 Superintendents, Labor and Equipment of Contractor
(August 14, 2013 APWA GSP)

Delete the sixth and seventh paragraphs of this section.

1-05.15 Method of Serving Notices
(March 25, 2009 APWA GSP)
Revise the second paragraph to read:

All correspondence from the Contractor shall be directed to the Project Engineer. All correspondence from the Contractor constituting any notification, notice of protest, notice of dispute, or other correspondence constituting notification required to be furnished under the Contract, must be in paper format, hand delivered or sent via mail delivery service to the Project Engineer's office. Electronic copies such as e-mails or electronically delivered copies of correspondence will not constitute such notice and will not comply with the requirements of the Contract.

Add the following new section:

1-05.16 Water and Power
(October 1, 2005 APWA GSP)

The Contractor shall make necessary arrangements, and shall bear the costs for power and water necessary for the performance of the work, unless the Contract includes power and water as a pay item.

SUBMITTAL TRANSMITTAL FORM

Puyallup River Bridge Upgrades (MP0,5C)
Project Number TRM-00044
Specification No. PW21-0733F

ATTN: Construction Division Date: _____

Submittal Number _____

Specification Number _____ Bid Item No. _____

Submittal Description _____

We are sending you:

Copies	Date	Page	Description

Transmitted: ☐ Submittals (Product Data) for information only.
☐ Submittals for review and comment.

Remarks: _____

_____

_____

_____

Certify Either A or B:

☐ A. This document has been detail-checked for accuracy of content and for compliance with the Contract documents **(no exceptions)**. The information contained herein has been fully coordinated with all involved Subcontractors.

☐ B. This document has been detail-checked for accuracy of content and for compliance with the Contract documents **except for the attached deviations**. The information contained herein has been fully coordinated with all involved Subcontractors.

Certified By: _____
Signature

END OF SECTION

1-06 CONTROL OF MATERIAL

1-06.1 Approval of Materials Prior To Use (September 15, 2010 Tacoma GSP)

The first sentence is revised to read:

All materials and equipment shall be submitted for review in accordance with section 1-05.3 of these special provisions.

For aggregates, the Contractor shall notify the Engineer of all proposed aggregates. The Contractor shall use the Aggregate Source Approval (ASA) Database.

All equipment, materials, and articles incorporated into the permanent Work:

1. Shall be new, unless the Special Provisions or Standard Specifications permit otherwise;

2. Shall meet the requirements of the Contract and be approved by the Engineer;

3. May be inspected or tested at any time during their preparation and use; and

4. Shall not be used in the Work if they become unfit after being previously approved.

1-06.1(1) Qualified Products List (QPL)

This section is revised in its entirety to read:

QPL's are not accepted by the City.

1-06.1(2) Request for Approval of Material (RAM)

This section is deleted in its entirety.

END OF SECTION

1-07 LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC

1-07.1 Laws to be Observed
(October 1, 2005 APWA GSP)
Supplement this section with the following:

In cases of conflict between different safety regulations, the more stringent regulation shall apply.

The Washington State Department of Labor and Industries shall be the sole and paramount administrative agency responsible for the administration of the provisions of the Washington Industrial Safety and Health Act of 1973 (WISHA).

The Contractor shall maintain at the project site office, or other well known place at the project site, all articles necessary for providing first aid to the injured. The Contractor shall establish, publish, and make known to all employees, procedures for ensuring immediate removal to a hospital, or doctor's care, persons, including employees, who may have been injured on the project site. Employees should not be permitted to work on the project site before the Contractor has established and made known procedures for removal of injured persons to a hospital or a doctor's care.

The Contractor shall have sole responsibility for the safety, efficiency, and adequacy of the Contractor's plant, appliances, and methods, and for any damage or injury resulting from their failure, or improper maintenance, use, or operation. The Contractor shall be solely and completely responsible for the conditions of the project site, including safety for all persons and property in the performance of the work. This requirement shall apply continuously, and not be limited to normal working hours. The required or implied duty of the Engineer to conduct construction review of the Contractor's performance does not, and shall not, be intended to include review and adequacy of the Contractor's safety measures in, on, or near the project site.

1-07.2 State Taxes
(January 6, 2015 TACOMA GSP)
Supplement this section with the following:

Washington State Department of Revenue Rules 170 and 171 shall apply as shown in the Proposal and per Section 1-07.2 of the WSDOT and APWA Standard Specifications for Road, Bridge, and Municipal Construction.

1-07.9 Wages

1-07.9(5) Required Documents
(March 1, 2004 Tacoma GSP)
The first sentence of the third paragraph is revised to read:

Weekly certified payrolls shall be submitted for the Contractor and all lower tier subcontractors or agents.

This section is supplemented with the following:

Where fringe benefits are paid in cash, certified payrolls shall include the fringe benefit dollar amount paid to each employee for each employee classification.

Where fringe benefits are paid into approved plans, funds, or programs, the amount of the fringe benefits shall be identified in the "Benefit Distribution" section of the Certified Payroll Affirmation form.

1-07.15 Temporary Water Pollution/Erosion Control
(March 23, 2010 Tacoma GSP)

This section is supplemented with the following:

Stormwater or dewatering water that has come in contact with concrete rubble, concrete pours, or cement treated soils shall be maintained to pH 8.5 or less before it is allowed to enter waters of the State or the City stormwater system. If pH exceeds 8.5, the Contractor shall immediately discontinue work and initiate treatment according to the plan to lower the pH. Work may resume, with treatment, once the pH of the stormwater is 8.5 or less or it can be demonstrated that the runoff will not reach surface waters or the City stormwater system.

High pH process water shall not be discharged to waters of the State or the City stormwater system. Unless specific measures are identified in the Special Provisions, high pH water may be infiltrated, dispersed in vegetation or compost, or discharged to a sanitary sewer system. Disposal shall be in accordance with the City of Tacoma Surface Water Management Manual or to City wastewater system with proper approval. Water being infiltrated or dispersed shall have no chance of discharging directly to waters of the State or the City stormwater system, including wetlands or conveyances that indirectly lead to waters of the State. High pH process water shall be treated to within a range of 6.5 to 8.5 pH units prior to infiltration to ensure the discharge does not cause a violation of groundwater quality standards. If water is discharged to the sanitary sewer, the Contractor shall provide a copy of permits and requirements for placing the material into a sanitary sewer system prior to beginning the work. Process water may be collected and disposed of by the Contractor off the project site. The Contractor shall provide a copy of the permit for an approved waste site for the disposal of the process water prior to the start of work that generates the process water. A Special Approved Discharge permit shall be required for all discharges to the sanitary sewer system.

1-07.15(1) Spill Prevention, Control and Countermeasures Plan
(February 9, 2011 Tacoma GSP)

This section is revised to read:

The Contractor shall prepare a project-specific spill prevention, control, and countermeasures plan (SPCC Plan) that will be used for the duration of the project. The Contractor shall submit the plan to the Project Engineer no later than the date of the preconstruction conference. No on-site construction activities may commence until the Contracting Agency accepts an SPCC Plan for the project.

The SPCC Plan shall address all fuels, petroleum products, hazardous materials, and other materials as defined in Chapter 447 of the WSDOT Environmental Procedures Manual (M 31-11). Occupational safety and health requirements that may pertain to

SPCC Plan implementation are contained in, but not limited to, WAC 296-824 and WAC 296-843.

Implementation Requirements

The SPCC Plan shall be updated by the Contractor throughout project construction so that the written plan reflects actual site conditions and practices. The Contractor shall update the SPCC Plan at least annually and maintain a copy of the updated SPCC Plan on the project site. All project employees shall be trained in spill prevention and containment, and they shall know where the SPCC Plan and spill response kits are located and have immediate access to them.

If hazardous materials are encountered or spilled during construction, the Contractor shall do everything possible to control and contain the material until appropriate measures can be taken. The Contractor shall supply and maintain spill response kits of appropriate size within close proximity to hazardous materials and equipment.

The Contractor shall implement the spill prevention measures identified in the SPCC Plan before performing any of the following:

1. Placing materials or equipment in staging or storage areas.

2. Refueling, washing, or maintaining equipment.

3. Stockpiling contaminated materials.

SPCC Plan Element Requirements

The SPCC Plan shall set forth the following information in the following order:

1. Responsible Personnel

   Identify the name(s), title(s), and contact information, including a 24/7 emergency contact number, for the personnel responsible for implementing and updating the plan, including all spill responders.

2. Spill Reporting

   List the names and telephone numbers of the Federal, State, and local agencies the Contractor shall notify in the event of a spill. The City of Tacoma contact will be the Wastewater Treatment Plant Operations number at 253.591.5595 and the City Source Control Spill Response number at 253.502.2222.

3. Project and Site Information

   Describe the following items:

   A. The project Work.
   B. The site location and boundaries.
   C. The drainage pathways from the site, including both stormwater and sanitary conveyance pathways.
   D. Nearby waterways and sensitive areas and their distances from the site.

4. Potential Spill Sources

   Describe each of the following for all potentially hazardous materials brought or generated on-site (including materials used for equipment operation, refueling, maintenance, or cleaning):

A. Name of material and its intended use.
B. Estimated maximum amount on-site at any one time.
C. Location(s) (including any equipment used below the ordinary high water line) where the material will be staged, used, and stored and the distance(s) from nearby waterways and sensitive areas.
D. Decontamination location and procedure for equipment that comes into contact with the material.
E. Disposal procedures.
F. Include a Material Safety Data Sheet (MSDS) for each potentially hazardous material.

5. Pre-Existing Contamination

Describe any pre-existing contamination and contaminant sources (such as buried pipes or tanks) in the project area that are described in the Contract documents. Identify equipment and work practices that will be used to prevent the release of contamination.

6. Spill Prevention and Response Training

Describe how and when all personnel (including refueling Contractors and Subcontractors) will be trained in spill prevention, containment, and response in accordance with the Plan. Describe how and when all spill responders will be trained in accordance with WAC 296-824.

7. Spill Prevention

Describe the following items:

A. Spill response kit contents and location(s).
B. Security measures for potential spill sources.
C. Secondary containment practices and structures for all containers to handle the maximum volume of potential spill of hazardous materials.
D. Methods used to prevent stormwater from contacting hazardous materials.
E. Site inspection procedures and frequency.
F. Equipment and structure maintenance practices.
G. Daily inspection and cleanup procedures that ensure all equipment used below the ordinary high water line is free of all external petroleum-based products.
H. Refueling procedures for equipment that cannot be moved from below the ordinary high water line.

8. Spill Response

Outline the response procedures the Contractor will follow for each scenario listed below. Include a description of the actions the Contractor shall take and the specific on-site spill response equipment that shall be used to assess the spill, secure the area, contain and eliminate the spill source, and clean up and dispose of spilled and contaminated material.

Response procedures shall be outlined in the Spill Response section and shall include notification to the City of Tacoma Wastewater Treatment Plant Operations number at 253.591.5595 and the City Source Control Spill Response number at 253.502.2222.

A. A spill of each type of hazardous material at each location identified in 4, above.
B. Stormwater that has come into contact with hazardous materials.
C. Drainage pathways from the site, including both stormwater and sanitary conveyance pathways.
D. A release or spill of any unknown pre-existing contamination and contaminant sources (such as buried pipes or tanks) encountered during project Work.
E. A spill occurring during Work with equipment used below the ordinary high water line.

If the Contractor will use a Subcontractor for spill response, provide contact information for the Subcontractor under item 1 (above), identify when the Subcontractor will be used, and describe actions the Contractor shall take while waiting for the Subcontractor to respond.

9. Project Site Map

Provide a map showing the following items:

A. Site location and boundaries.
B. Site access roads.
C. Drainage pathways from the site.
D. Nearby waterways and sensitive areas.
E. Hazardous materials, equipment, and decontamination areas identified in 4, above.
F. Pre-existing contamination or contaminant sources described in 5, above.
G. Spill prevention and response equipment described in 7 and 8, above.

10. Spill Report Forms

Provide a copy of the spill report form(s) that the Contractor will use in the event of a release or spill.

Payment

Payment will be made in accordance with Section 1-04.1 for the following Bid item when it is included in the Proposal:

"SPCC Plan," lump sum.

When the written SPCC Plan is accepted by the Contracting Agency, the Contractor shall receive 50-percent of the lump sum Contract price for the plan.

The remaining 50-percent of the lump sum price will be paid after the materials and equipment called for in the plan are mobilized to the project.

The lump sum payment for "SPCC Plan" shall be full pay for:

1. All costs associated with creating the accepted SPCC Plan.

2. All costs associated with providing and maintaining the on-site spill prevention equipment described in the accepted SPCC Plan.

3. All costs associated with providing and maintaining the on-site standby spill response equipment and materials described in the accepted SPCC Plan.

4. All costs associated with implementing the spill prevention measures identified in the accepted SPCC Plan.

5. All costs associated with updating the SPCC Plan as required by this Specification.

As to other costs associated with releases or spills, the Contractor may request payment as provided for in the Contract. No payment shall be made if the release or spill was caused by or resulted from the Contractor's operations, negligence, or omissions.

1-07.16 Protection and Restoration of Property

1-07.16(1) Private/Public Property
(January 13, 2011 Tacoma GSP)
This section is supplemented with the following:

Stockpiling in City of Tacoma right-of-way or on existing or new improvements shall not occur unless approved by the Engineer. All stockpile sites shall be restored to as good or better condition.

The Contractor shall contact all property owners and tenants in the vicinity of this project, via newsletter/mailing, a minimum of one (1) week prior to start of construction. The Contractor shall submit a draft of the property owner notification prior to posting/mailing.

The newsletter/mailing shall advise the owners and tenants of the construction schedule and indicate the Contractor's name, contact person, and telephone numbers.

1-07.17 Utilities and Similar Facilities
(March 7, 2017 Tacoma GSP)
The first paragraph is supplemented with the following:

Public and private utilities or their Contractors will furnish all work necessary to adjust, relocate, replace, or construct their facilities unless otherwise provided for in the Plans or these Special Provisions. Such adjustment, relocations, replacement, or construction will be done within the time for performance of this project. The Contractor shall coordinate their work with such adjustment, relocation, or replacement of utility work. This may require the Contractor to phase their work in a manner that will allow for the utility work.

The Contractor shall coordinate their work with all utilities and other organizations, which have to adjust or revise their facilities within the project area. These may include, but are not limited to:

- City of Tacoma Light Division, Contact: Kevin Kelley, phone: (253) 502-8229
- City of Tacoma Water Division, Contact: Kimberly Baard, phone: (253) 396-3317
- City of Tacoma Traffic Division, Signal/Streetlight Shop, phone: (253) 591-5287
- CLICK! Network, Contact: Ken Mathes, phone: (253) 502-8851

- Puget Sound Energy, Contact: Mike Klapperich, Electric, phone: (253) 313-3790 OR Amber Uhls, Gas, phone: (253) 476-6137
- CenturyLink, Contact: Eric Charity, phone: (206) 733-8871
- Comcast, Contact: Todd Gallant, phone: (253) 878-4955
- AT&T Broadband Information Services, Contact: Dan McGeough, phone: (425) 896-9830
- Level 3 Communications, Level3NetworkRelocations@Level3.com
- One-Number Locator Service "One Call System" telephone **1-800-424-5555**
- Verizon, Contact: David Lacombe, phone: (206) 305-5366
- MCI Metro Utility, Contact: Brad Landis, phone: (425) 229-3123

If the Contractor plans to excavate or trench within ten (10) feet of any utility pole or other electric or water utility structure owned by the City of Tacoma, the Contractor shall contact the City of Tacoma, Department of Public Utilities, Field Coordinator, telephone number 502-8044, and arrange for an inspection before proceeding. The Contractor shall perform, at the Contractor's expense, such additional work as is required to protect the pole or structure from subsidence. The Contractor may be directed to suspend work at the site of any such excavation until such utility structures are adequately protected.

1-07.18 Public Liability and Property Damage Insurance
Delete this section in its entirety, and replace it with the following:

1-07.18 Insurance
(December 17, 2019 Tacoma GSP)

During the course and performance of the services herein specified, the Contractor will maintain the insurance coverage in the amounts and in the manner specified in the City of Tacoma Insurance Requirements as is applicable to the services and deliverables provided under this Contract. The City of Tacoma Insurance Requirements document is fully incorporated herein by reference.

Failure by the Contracting Agency to identify a deficiency in the insurance documentation provided by the Contractor or failure of the Contracting Agency to demand verification of coverage or compliance by the Contractor with these insurance requirements shall not be construed as a waiver of the Contractor's obligation to maintain such insurance.

1-07.23 Public Convenience and Safety

1-07.23(1) Construction Under Traffic
(May 2, 2017 APWA GSP)

Revise the third sentence of the second paragraph to read:

Accessibility to existing or temporary pedestrian push buttons shall not be impaired; if approved by the Contracting Agency activating pedestrian recall timing or other accommodation may be allowed during construction.

1-07.23(1) Construction under Traffic
(March 1, 2004 Tacoma GSP)
This section is supplemented with the following:

The following special traffic requirements shall be adhered to during all phases of construction:

To minimize the disruption to access to adjacent properties, and to Pierce Transit operations, the lane closure area shall be limited to that area of active work and necessary for appropriate lane closure tapers. The Contractor shall stage work to maintain access to and egress from all properties at all times.

A safe pedestrian access shall be provided at all times through the project area. All lane closures shall be coordinated with the adjacent businesses, other contractors working within the project vicinity, local transit agencies and the City.

Where, in the opinion of the Engineer, parking is a hazard to through traffic or to the construction work, parking may be restricted either entirely or during the time when it creates a hazard. Signs for restricting parking shall be approved by the City and placed by the Contractor. The Contractor shall be responsible for and shall maintain all such signs. The replacement of signs restricting parking shall be as approved by the Engineer.

The Contractor shall notify all property owners and tenants of detours, street and alley closures, or other restrictions that may interfere with their access. Notification shall be at least twenty-four (24) hours in advance for residential property, and at least forty-eight (48) hours in advance for commercial property.

Emergency traffic, such as police, fire, and disaster units, shall be provided access at all times. In addition, the Contractor shall coordinate Contractor activities with all disposal firms and transit bus service that may be operating in the project area.

If street closures or lane restrictions, not provided for in the Specifications, are allowed subsequent to award of the contract, an equitable adjustment of the Contract amount shall be negotiated.

It is the intent of the Contract to effectively prevent the deposition of debris on streets in areas of public traffic or where such debris may be transported into a drainage system. When construction operations are such that debris from the work is deposited on the streets, the Contractor shall, at a minimum, remove on a daily basis any deposits or debris which may accumulate on the roadway surface. Should daily removal be insufficient to keep the streets clean, the Contractor shall perform removal operations on a more frequent basis. If the Engineer determines that a more frequent cleaning is impractical or if the Contractor fails to keep the streets free from deposits and debris resulting from the work, the Contractor shall, upon order of the Engineer, provide facilities for and remove all deposits from the tires or between wheels before trucks or other equipment will be allowed to travel over paved streets. Should the Contractor fail or refuse to clean the streets in question, or the trucks or equipment in question, the Engineer may order the work suspended at the Contractor's risk until compliance with Contractor's obligations is assured, or the Engineer may order the streets in question cleaned by others and such costs incurred by the City in achieving compliance with

these contract requirements, including cleaning of the streets, shall be deducted from moneys due or to become due the Contractor on monthly estimate. The Contractor shall have no claim for delay or additional costs should the Engineer choose to suspend the Contractor's work until compliance is achieved.

1-07.23(2) Construction and Maintenance of Detours
(April 1, 2018 Tacoma GSP)

This section is supplemented with the following:

Detour signing during any allowed road closures shall be in accordance with Detour Plans, when included in the Contract Documents. When plans are not included in the Contract Documents, the Contractor shall submit plans for detours in accordance with the "Manual on Uniform Traffic Control Devices (MUTCD)". In addition, where the Contractor believes an alternate plan will safely and adequately maintain vehicular and pedestrian traffic, the Contractor may submit alternate plans to those for traffic control and detours required by MUTCD or contract documents. Such alternate plans must comply with the MUTCD and shall be in writing and submitted to the Engineer at least fifteen (15) days in advance of their intended use. In general, detouring of arterial traffic must be accomplished on streets designated as City Arterials. Detouring of arterial traffic on non-arterial streets will not be allowed. The acceptance of any alternate plan shall be entirely at the discretion of the Engineer and the Contractor shall have no claim by reason of a plan being rejected or modified, nor shall there be any additional payment by reason of using a substitute plan.

The Contractor shall notify the Engineer three (3) working days in advance of implementation of any street closures/detours allowed under the Contract. Advance notice signing shall be placed a minimum of three (3) working days prior to implementation of any street closure/detour.

A minimum of three (3) working days prior to any street closure, the Contractor shall notify all entities below:

Tacoma Fire Dept.	(253-591-5775)
Tacoma Police Dept.	(253-591-5932)
LESA Communications Center	(253-798-4721 - Opt.#2)
Tacoma Public Schools Transportation Office	(253-571-1853)
Pierce Transit	(253-581-8001)
Tacoma Environmental Services Solid Waste	(253-591-5544)
Tacoma Public Works Engineering Division	(253-591-5500)
Tacoma Public Works Streets and Grounds	(253-591-5495)

1-07.24 Rights of Way
(July 23, 2015 APWA GSP)

Delete this section and replace it with the following:

Street Right of Way lines, limits of easements, and limits of construction permits are indicated in the Plans. The Contractor's construction activities shall be confined within these limits, unless arrangements for use of private property are made.

Generally, the Contracting Agency will have obtained, prior to bid opening, all rights of way and easements, both permanent and temporary, necessary for carrying out the work. Exceptions to this are noted in the Bid Documents or will be brought to the Contractor's attention by a duly issued Addendum.

Whenever any of the work is accomplished on or through property other than public Right of Way, the Contractor shall meet and fulfill all covenants and stipulations of any easement agreement obtained by the Contracting Agency from the owner of the private property. Copies of the easement agreements may be included in the Contract Provisions or made available to the Contractor as soon as practical after they have been obtained by the Engineer.

Whenever easements or rights of entry have not been acquired prior to advertising, these areas are so noted in the Plans. The Contractor shall not proceed with any portion of the work in areas where right of way, easements or rights of entry have not been acquired until the Engineer certifies to the Contractor that the right of way or easement is available or that the right of entry has been received. If the Contractor is delayed due to acts of omission on the part of the Contracting Agency in obtaining easements, rights of entry or right of way, the Contractor will be entitled to an extension of time. The Contractor agrees that such delay shall not be a breach of contract.

Each property owner shall be given 48 hours notice prior to entry by the Contractor. This includes entry onto easements and private property where private improvements must be adjusted.

The Contractor shall be responsible for providing, without expense or liability to the Contracting Agency, any additional land and access thereto that the Contractor may desire for temporary construction facilities, storage of materials, or other Contractor needs. However, before using any private property, whether adjoining the work or not, the Contractor shall file with the Engineer a written permission of the private property owner, and, upon vacating the premises, a written release from the property owner of each property disturbed or otherwise interfered with by reasons of construction pursued under this contract. The statement shall be signed by the private property owner, or proper authority acting for the owner of the private property affected, stating that permission has been granted to use the property and all necessary permits have been obtained or, in the case of a release, that the restoration of the property has been satisfactorily accomplished. The statement shall include the parcel number, address, and date of signature. Written releases must be filed with the Engineer before the Completion Date will be established.

END OF SECTION

1-08 PROSECUTION AND PROGRESS

Add the following new section:

1-08.0 Preliminary Matters
(May 25, 2006 APWA GSP)

1-08.0(1) Preconstruction Conference
(October 10, 2008 APWA GSP)

Prior to the Contractor beginning the work, a preconstruction conference will be held between the Contractor, the Engineer and such other interested parties as may be invited. The purpose of the preconstruction conference will be:

1. To review the initial progress schedule;
2. To establish a working understanding among the various parties associated or affected by the work;
3. To establish and review procedures for progress payment, notifications, approvals, submittals, etc.;
4. To establish normal working hours for the work;
5. To review safety standards and traffic control; and
6. To discuss such other related items as may be pertinent to the work.

The Contractor shall prepare and submit at the preconstruction conference the following:

1. A breakdown of all lump sum items;
2. A preliminary schedule of working drawing submittals; and
3. A list of material sources for approval if applicable.

Add the following new section:

1-08.0(2) Hours of Work
(March 3, 2008 Tacoma GSP)

Except in the case of emergency or unless otherwise approved by the Contracting Agency, the normal straight time working hours for the contract shall be any consecutive 8-hour period between 7:00 a.m. and 6:00 p.m. of a working day with a maximum 1-hour lunch break and a 5-day work week. The normal straight time 8-hour working period for the contract shall be established at the preconstruction conference or prior to the Contractor commencing the work.

If a Contractor desires to perform work on holidays, Saturdays, Sundays, or before 7:00 a.m. or after 6:00 p.m. on any day, the Contractor shall apply in writing to the Engineer for permission to work such times. Permission to work longer than an 8-hour period between 7:00 a.m. and 6:00 p.m. is not required. Such requests shall be submitted to the Engineer no later than noon on the working day prior to the day for which the Contractor is requesting permission to work.

Permission to work between the hours of 9:00 p.m. and 7:00 a.m. during weekdays and between the hours of 9:00 p.m. and 9:00 a.m. on weekends or holidays may also be subject to noise control requirements. Approval to continue work during these hours may be revoked at any time the Contractor exceeds the Contracting Agency's noise control regulations or complaints are received from the public or adjoining property owners regarding the noise from the Contractor's operations. The Contractor shall have no claim for damages or delays should such permission be revoked for these reasons.

Permission to work Saturdays, Sundays, holidays or other than the agreed upon normal straight time working hours Monday through Friday may be given subject to certain other conditions set forth by the Contracting Agency or Engineer. These conditions may include but are not limited to: requiring the Engineer or such assistants as the Engineer may deem necessary to be present during the work; requiring the Contractor to reimburse the Contracting Agency for the costs in excess of straight-time costs for Contracting Agency employees who worked during such times, on non Federal aid projects; considering the work performed on Saturdays and holidays as working days with regards to the contract time; and considering multiple work shifts as multiple working days with respect to contract time even though the multiple shifts occur in a single 24-hour period. Assistants may include, but are not limited to, survey crews; personnel from the Contracting Agency's material testing lab; inspectors; and other Contracting Agency employees when in the opinion of the Engineer, such work necessitates their presence.

Add the following new section:

1-08.0(3) Reimbursement for Overtime Work of Contracting Agency Employees (September 29, 2009 Tacoma GSP)

Where the Contractor elects to work on a Saturday, Sunday, or holiday, or longer than an 8-hour work shift on a regular working day, as defined in the Standard Specifications, such work shall be considered as overtime work. On all such overtime work, city staff may be required at the discretion of the Engineer. In such case, the Contracting Agency may deduct from amounts due or to become due to the Contractor for the costs in excess of the straight-time costs for employees of the Contracting Agency required to work overtime hours.

The Contractor by these specifications does hereby authorize the Engineer to deduct such costs from the amount due or to become due to the Contractor.

1-08.1 Subcontracting - D/M/WBE Reporting
(September 29, 2009 Tacoma GSP)

The eighth paragraph is revised to read:

On all projects funded with Contracting Agency funds only, the Contractor shall certify to the actual amounts paid Disadvantaged, Minority, or Women's Business Enterprise firms that were used as subcontractors, lower tier subcontractors, manufacturers, regular dealers, or service providers on the contract. <u>This certification shall be submitted to the Engineer, on the form provided by the Engineer, 20 calendar days after physical completion of the contract.</u>

1-08.1 Subcontracting
(May 17, 2018 APWA GSP, Option B)

Delete the eighth paragraph.

Revise the ninth paragraph to read:

The Contractor shall comply with the requirements of RCW 39.04.250, 39.76.011, 39.76.020, and 39.76.040, in particular regarding prompt payment to Subcontractors. Whenever the Contractor withholds payment to a Subcontractor for any reason including

disputed amounts, the Contractor shall provide notice within 10 calendar days to the Subcontractor with a copy to the Contracting Agency identifying the reason for the withholding and a clear description of what the Subcontractor must do to have the withholding released. Retainage withheld by the Contractor prior to completion of the Subcontractors work is exempt from reporting as a payment withheld and is not included in the withheld amount. The Contracting Agency's copy of the notice to Subcontractor for deferred payments shall be submitted to the Engineer concurrently with notification to the Subcontractor.

1-08.3(2)A Type A Progress Schedule
(March 13, 2012 APWA GSP)
Revise this section to read:

The Contractor shall submit 3 copies of a Type A Progress Schedule no later than at the preconstruction conference, or some other mutually agreed upon submittal time. The schedule may be a critical path method (CPM) schedule, bar chart, or other standard schedule format. Regardless of which format used, the schedule shall identify the critical path. The Engineer will evaluate the Type A Progress Schedule and approve or return the schedule for corrections within 15 calendar days of receiving the submittal.

1-08.4 Prosecution of Work
Delete this section and replace it with the following:

1-08.4 Notice to Proceed and Prosecution of Work
(July 23, 2015 APWA GSP)

Notice to Proceed will be given after the contract has been executed and the contract bond and evidence of insurance have been approved and filed by the Contracting Agency. The Contractor shall not commence with the work until the Notice to Proceed has been given by the Engineer. The Contractor shall commence construction activities on the project site within ten days of the Notice to Proceed Date, unless otherwise approved in writing. The Contractor shall diligently pursue the work to the physical completion date within the time specified in the contract. Voluntary shutdown or slowing of operations by the Contractor shall not relieve the Contractor of the responsibility to complete the work within the time(s) specified in the contract.

When shown in the Plans, the first order of work shall be the installation of high visibility fencing to delineate all areas for protection or restoration, as described in the Contract. Installation of high visibility fencing adjacent to the roadway shall occur after the placement of all necessary signs and traffic control devices in accordance with 1-10.1(2). Upon construction of the fencing, the Contractor shall request the Engineer to inspect the fence. No other work shall be performed on the site until the Contracting Agency has accepted the installation of high visibility fencing, as described in the Contract.

1-08.5 Time for Completion
(March 16, 2016 Tacoma GSP)
Revise the third and fourth paragraphs to read:

Contract time shall begin on the first working day following the Notice to Proceed Date.

Each working day shall be charged to the contract as it occurs, until the contract work is physically complete. If substantial completion has been granted and all the authorized working days have been used, charging of working days will cease. Each week the Engineer will provide the Contractor a statement that shows the number of working days: (1) charged to the contract the week before; (2) specified for the physical completion of the contract; and (3) remaining for the physical completion of the contract. The statement will also show the nonworking days and any partial or whole day the Engineer declares as unworkable. Within 10 calendar days after the date of each statement, the Contractor shall file a written protest of any alleged discrepancies in it. To be considered by the Engineer, the protest shall be in sufficient detail to enable the Engineer to ascertain the basis and amount of time disputed. By not filing such detailed protest in that period, the Contractor shall be deemed as having accepted the statement as correct. If the Contractor is approved to work 10 hours a day and 4 days a week (a 4-10 schedule) and the fifth day of the week in which a 4-10 shift is worked would ordinarily be charged as a working day then the fifth day of that week will be charged as a working day whether or not the Contractor works on that day.

Revise the sixth paragraph to read:

The Engineer will give the Contractor written notice of the completion date of the contract after all the Contractor's obligations under the contract have been performed by the Contractor. The following events must occur before the Completion Date can be established:

1. The physical work on the project must be complete; and
2. The Contractor must furnish all documentation required by the contract and required by law, to allow the Contracting Agency to process final acceptance of the contract. The following documents must be received by the Project Engineer prior to establishing a completion date:
   a. Certified Payrolls (per Section 1-07.9(5)).
   b. Material Acceptance Certification Documents
   c. Reports of Amounts Credited as EIC Participation, as required by the Contract Provisions.
   d. Final Contract Voucher Certification
   e. Copies of the approved "Affidavit of Prevailing Wages Paid" for the Contractor and all Subcontractors
   f. Property owner releases per Section 1-07.24

This section is supplemented with the following:
(March 1, 2004 Tacoma GSP)

This project shall be physically completed within *65* working days.

1-08.9 Liquidated Damages
(August 14, 2013 APWA GSP)
Revise the fourth paragraph to read:

When the Contract Work has progressed to Substantial Completion as defined in the Contract, the Engineer may determine that the work is Substantially Complete. The Engineer will notify the Contractor in writing of the Substantial Completion Date. For overruns in Contract time occurring after the date so established, the formula for liquidated damages shown above will not apply. For overruns in Contract time occurring

after the Substantial Completion Date, liquidated damages shall be assessed on the basis of direct engineering and related costs assignable to the project until the actual Physical Completion Date of all the Contract Work. The Contractor shall complete the remaining Work as promptly as possible. Upon request by the Project Engineer, the Contractor shall furnish a written schedule for completing the physical Work on the Contract.

END OF SECTION

1-09 MEASUREMENT AND PAYMENT

1-09.2(1) General Requirements for Weighing Equipment
(July 23, 2015 APWA GSP, Option 2)

Revise item 4 of the fifth paragraph to read:

4. Test results and scale weight records for each day's hauling operations are provided to the Engineer daily. Reporting shall utilize WSDOT form 422-027, Scaleman's Daily Report, unless the printed ticket contains the same information that is on the Scaleman's Daily Report Form. The scale operator must provide AM and/or PM tare weights for each truck on the printed ticket.

1-09.6 Force Account
(October 10, 2008 APWA GSP)

Supplement this Section with the following:

The Contracting Agency has estimated and included in the Proposal, dollar amounts for all items to be paid per force account, only to provide a common proposal for Bidders. All such dollar amounts are to become a part of Contractor's total bid. However, the Contracting Agency does not warrant expressly or by implication, that the actual amount of work will correspond with those estimates. Payment will be made on the basis of the amount of work actually authorized by Engineer.

(January 13, 2011 Tacoma GSP)

Item #3 of this Section is supplemented with the following:

The Contractor shall submit a comprehensive summary list of all equipment anticipated to be used on the project and their associated AGC/WSDOT Equipment Rental Rates. The list shall include the contractor's equipment number, make, model, year, operation rate, standby rate, applicable attachments and any other applicable information necessary to determine the applicable rates in accordance with this section. In addition, the contractor shall submit an Equipment Watch rate sheet (www.equipmentwatch.com) for each piece of equipment in the summary list. Access to the Equipment Watch web site is available at the City's Construction Management Office.

1-09.9 Payments
(March 13, 2012 APWA GSP)

Delete the first four paragraphs and replace them with the following:

The basis of payment will be the actual quantities of Work performed according to the Contract and as specified for payment.

The Contractor shall submit a breakdown of the cost of lump sum bid items at the Preconstruction Conference, to enable the Project Engineer to determine the Work performed on a monthly basis. A breakdown is not required for lump sum items that include a basis for incremental payments as part of the respective Specification. Absent a lump sum breakdown, the Project Engineer will make a determination based on information available. The Project Engineer's determination of the cost of work shall be final.

Progress payments for completed work and material on hand will be based upon progress estimates prepared by the Engineer. A progress estimate cutoff date will be established at the preconstruction conference.

The initial progress estimate will be made not later than 30 days after the Contractor commences the work, and successive progress estimates will be made every month thereafter until the Completion Date. Progress estimates made during progress of the work are tentative, and made only for the purpose of determining progress payments. The progress estimates are subject to change at any time prior to the calculation of the final payment.

The value of the progress estimate will be the sum of the following:

1. Unit Price Items in the Bid Form — the approximate quantity of acceptable units of work completed multiplied by the unit price.
2. Lump Sum Items in the Bid Form — based on the approved Contractor's lump sum breakdown for that item, or absent such a breakdown, based on the Engineer's determination.
3. Materials on Hand — 100 percent of invoiced cost of material delivered to Job site or other storage area approved by the Engineer.
4. Change Orders — entitlement for approved extra cost or completed extra work as determined by the Engineer.

Progress payments will be made in accordance with the progress estimate less:

1. Retainage per Section 1-09.9(1), on non FHWA-funded projects;
2. The amount of progress payments previously made; and
3. Funds withheld by the Contracting Agency for disbursement in accordance with the Contract Documents.

Progress payments for work performed shall not be evidence of acceptable performance or an admission by the Contracting Agency that any work has been satisfactorily completed. The determination of payments under the contract will be final in accordance with Section 1-05.1.

This section is supplemented with the following:
(January 6, 2015 Tacoma GSP)

Breakdowns of all lump sum items shall be provided for all lump sum items and shall include all costs for labor, equipment, materials, and taxes (as applicable) associated with the lump sum item. Washington State Department of Revenue Rules 170 and 171 apply to lump sum items per Section 1-07.2 of the WSDOT State Amendments to the Standard Specifications.

Stockpiled Material - The point of acceptance of stockpiled material for payment and quality shall be at the time of incorporation into the contract.

1-09.9(1) Retainage
(May 10, 2006 Tacoma GSP)
The fourth paragraph is supplemented with the following:

6. A "General Release to the City of Tacoma" is on file with the Contracting Agency.
7. A release has been obtained from the City of Tacoma's City Clerk's Office.

1-09.13(3)A Administration of Arbitration
(October 1, 2005 APWA GSP)
Revise the third paragraph to read:

The Contracting Agency and the Contractor mutually agree to be bound by the decision of the arbitrator, and judgment upon the award rendered by the arbitrator may be entered in the Superior Court of the county in which the Contracting Agency's headquarters are located. The decision of the arbitrator and the specific basis for the decision shall be in writing. The arbitrator shall use the contract as a basis for decisions.

END OF SECTION

1-10 TEMPORARY TRAFFIC CONTROL

1-10.1(2) Description
(July 22, 2019 Tacoma GSP)
The first sentence of the fourth paragraph is revised to read:

The Contractor shall keep lanes, on-ramps, and off-ramps open to traffic at all times except when Work requires closure(s) that have been requested and approved in accordance with section 1-10.2(2).

The third sentence of the fourth paragraph is revised to read:

Approved lane and ramp closures shall be for the minimum time required to complete the Work.

This section is supplemented with the following:

Only uniformed off-duty police officers shall be used to control traffic when it is necessary to override or provide traffic control at signalized intersections. Off-duty City of Tacoma Police Department officers are preferred within the jurisdiction of the Tacoma PD, and the Contractor shall grant the Tacoma PD the “first right of refusal” by contacting the Tacoma PD first as stated below.

The City will make all necessary temporary adjustments to existing traffic signals and traffic signal activators.

Existing signs shall not be removed until the Contractor has provided for temporary measures sufficient to safeguard and direct traffic after existing signs have been removed. Preservation of temporary traffic control and street name signs shall be the sole responsibility of the Contractor.

As the work progresses and permits, temporarily relocated and/or removed traffic signs shall be reset in their permanent location. Permanent signs and other traffic control devices damaged or lost by the Contractor shall be replaced or repaired at the Contractor’s expense.

Traffic Control Management
1-10.2(1) General
(January 3, 2017)
Section 1-10.2(1) is supplemented with the following:

Only training with WSDOT TCS card and WSDOT training curriculum is recognized in the State of Washington. The Traffic Control Supervisor shall be certified by one of the following:

The Northwest Laborers-Employers Training Trust
27055 Ohio Ave.
Kingston, WA 98346
(360) 297-3035

Evergreen Safety Council
12545 135th Ave. NE
Kirkland, WA 98034-8709
1-800-521-0778

The American Traffic Safety Services Association
15 Riverside Parkway, Suite 100
Fredericksburg, Virginia 22406-1022
Training Dept. Toll Free (877) 642-4637
Phone: (540) 368-1701

1-10.3(3)A Construction Signs
(January 11, 2006 Tacoma GSP)
The fifth paragraph is revised to read:

Signs, posts, or supports that are lost, stolen, damaged, destroyed, or which the Engineer deems to be unacceptable while their use is required on the project shall be replaced by the Contractor at their expense.

1-10.3(3)C Portable Changeable Message Sign
(August 4, 2010 Tacoma GSP)
This section is supplemented with the following:

Portable Changeable Message Signs shall be required on arterials streets where construction occurs for durations longer than seven (7) calendar days. Signs shall be solar charged and programmable. Signs shall be provided a minimum of seven (7) calendar days prior to construction and remain through the duration of the construction on the arterial street. Signs shall be provided on each end of the arterial street construction zone notifying oncoming traffic of the construction conditions. All costs associated with providing and maintain the signs for the required duration shall be included in the proposal item, “Project Temporary Traffic Control”, per lump sum

1-10.4(2) Item Bids with Lump Sum for Incidentals
(January 11, 2006 Tacoma GSP)
This section is supplemented with the following:

No unit of measure will apply to the position of traffic control manager and it will be considered included in other unit contract prices in the Bid Proposal.

1-10.5(2) Item Bids with Lump Sum for Incidentals
(January 11, 2006 Tacoma GSP)
This section is supplemented with the following:

“Uniformed Police Officer for Traffic Control”, per hour
The unit contract price, when applied to the number of units measured for this item in accordance with Section 1-10.4(2), shall be full compensation for all cost incurred by the Contractor in performing the work in accordance with Section 1-10.3.

END OF SECTION

8-01 EROSION CONTROL AND WATER POLLUTION CONTROL (April 1, 2018 Tacoma GSP)

8-01.1 Description

This section is supplemented with the following:

The City of Tacoma Stormwater Management Manual is available on the City's website at www.cityoftacoma.org/stormwatermanual.

8-01.3(1)A Submittals

This section is revised to read:

The Contractor shall prepare and implement a project-specific Construction Stormwater Pollution Prevention Plan (SWPPP) in accordance with the City of Tacoma Stormwater Management Manual (SWMM), Volume 2. The SWPPP is a document that describes the potential for pollution problems on a construction site and explains and illustrates the measures to be taken on the construction site to control those problems.

The Construction SWPPP shall be prepared as a stand-alone document consisting of two sections: Section 1) Construction SWPPP Narrative and Section 2) Temporary Erosion and Sediment Control (TESC) Plans.

The Contracting Agency has prepared the Construction Stormwater Pollution Prevention Plan Checklist to aid the Contractor in development of the SWPPP. This checklist provides the Contractor with a tool to determine if all the major items are included in the Construction SWPPP and on the TESC Plans and can be found in Volume 2, Chapter 2 of the SWMM. Contractors are encouraged to complete and submit this checklist with the Construction SWPPP.

The Department of Ecology has prepared a SWPPP template that can be used for projects in the City of Tacoma. The template can be found on Ecology's website at: http://www.ecy.wa.gov/programs/wq/stormwater/construction/resourcesguidance.html. The Contractor developing the SWPPP must ensure that all references are appropriate for the City of Tacoma.

The SWPPP is considered a "living" document that shall be revised to account for additional erosion control/pollution prevention BMPs as they become necessary and are implemented in the field during project construction. A copy of the most current SWPPP and TESC Plan shall remain on-site at all times and an additional copy shall be forwarded to the Engineer. At the Contractor's preference, revisions to the SWPPP and TESC Plan may be forwarded to the Engineer rather than submitting a complete document. Revisions to the SWPPP and TESC Plan may be kept on-site in a file along with the original SWPPP document.

The Contractor shall provide Stormwater Pollution Prevention Plan inspection reports or forms per 8-01.3(1) B to the Project Engineer no later than the end of the next working day following the inspection.

8-01.3(1)B Erosion and Sediment Control (ESC) Lead

This section is revised to read:

The Contractor shall identify the ESC Lead at the Preconstruction Meeting and the contact information for the ESC Lead shall be added to the Stormwater Pollution Prevention Plan (SWPPP) Report and the Temporary Erosion and Sediment Control (TESC) Plan Sheet. The ESC Lead shall maintain, for the life of the contract, a current Certified Erosion and Sediment Control Lead (CESCL) certificate or maintain a current Certified Professional in Erosion and Sediment Control (CPESC) certificate from a course approved by the Washington State Department of Ecology. The CESCL or CPESC shall be listed on the Emergency Contact List required under Section 1-05.13(1).

The CESCL or CPESC shall direct implementation of the measures identified in the SWPPP and as shown on the TESC plan. Implementation shall include, but is not limited to the following:

1. Installing and maintaining all temporary erosion and sediment control Best Management Practices (BMPs) included in the SWPPP and as shown on the TESC plan. Damaged or inadequate BMPs shall be corrected as needed to assure continued performance of their intended function in accordance with BMP specifications and Permit requirements.
2. Performing monitoring as required by the NPDES Construction Stormwater General Permit.
3. Inspecting all on-site erosion and sediment control BMPs at least once every calendar week and within 24 hours of any discharge from the site. A SWPPP Inspection report or form shall be prepared for each inspection and shall be included in the SWPPP file. A copy of each SWPPP Inspection report or form shall be submitted to the Engineer no later than the end of the next working day following the inspection. The report or form shall include, but not be limited to the following:
    a. When, where, and how BMPs were installed, maintained, modified, and removed.
    b. Observations of BMP effectiveness and proper placement.
    c. Recommendations for improving future BMP performance with upgraded or replacement BMPs when inspections reveal SWPPP inadequacies.
    d. Approximate amount of precipitation since last inspection and when last inspection was performed.
4. Updating and maintaining a SWPPP file on site that includes, but is not limited to the following:
    a. SWPPP Inspection Reports or Forms.
    b. SWPPP narrative.
    c. National Pollutant Discharge Elimination System Construction Stormwater General Permit (Notice of Intent).
    d. All documentation and correspondence related to the NPDES Construction Stormwater General Permit.
    e. Other applicable permits.

Upon request, the file shall be provided to the Engineer for review.

8-01.3(7) Stabilized Construction Entrance
The third paragraph is revised to read:

When the contract requires a wheel wash in conjunction with the stabilized entrance, the details for the wheel wash and the method for containing and treating the sediment-laden runoff shall be included as part of the SWPPP and TESC Plan.

8-01.3(8) Street Cleaning
The third paragraph is revised to read:

Street washing with water shall not be permitted.

8-01.3(9)D Inlet Protection
Replace the third paragraph of this section with the following:

When the depth of accumulated sediment and debris reaches approximately 1/3 the height of an internal device or 1/3 the height of the external device (or less when so specified by the manufacturer), or as designated by the Engineer, the sediment and debris shall be removed and disposed of per SWMM BMP C220 or as specified on the Plans or within the SWPPP.

The section is supplemented with the following:

Only bag-type filters are allowed for use in the public right of way.

8-01.3(10) Wattles
The fifth and sixth sentences are revised to read:

On gradually sloped or clay-type soils trenches shall be 3 to 5 inches deep. On loose soils, in high rainfall areas, or on steep slopes, trenches shall be 3 to 5 inches deep, or 1/2 to 2/3 the thickness of the wattle.

8-01.4 Measurement
The third paragraph is revised to read:
Check dams will be measured by the linear foot along the ground line of the completed check dam. No additional measurement will be made for check dams that are required to be rehabilitated or replaced due to wear.

This section is supplemented with the following:

No specific unit of measurement shall apply to the lump sum item “Stormwater Pollution Prevention Plan (SWPPP)”.

No specific unit of measurement shall apply to the lump sum item “Dewatering Plan”.

8-01.5 Payment

The pay item “Erosion/Water Pollution Control”, by force account as provided in Section 1-09.6 is revised to read:

Installation, maintenance, and removal of erosion and water pollution control devices including removal and disposal of sediment, stabilization and rehabilitation of soil disturbed by these activities and any additional Work deemed necessary by the Engineer to control erosion and water pollution will be paid by force account in accordance with Section 1-09.6. Directing implementation by ESC Lead of the measures identified in the SWPPP, shown on the TESC plan, and all other work as included in Section 8-01.3(1)B shall be paid by force account as provided in Section 1-09.6.

END OF SECTION

8-30 RAILROAD SAFETY

8-30.1 Railroad Coordination and Safety Program

A. This Section describes the requirements for rail coordination and rail safety.

B. Tacoma Rail operates the railroad tracks within the limits of this project to support freight rail service to various Tidelands area customers. There are no published schedules for freight rail service on this railroad. The Rail Roadmaster, who will be identified at the preconstruction conference, can provide general information about freight rail movements on the tracks. The Railroads do not guarantee the accuracy or completeness of any published or unpublished schedules and reserve the right to add, change or otherwise modify the level of activity across the tracks.

C. Contractor shall ensure that, at a minimum, its on-site Project Supervisor(s) have completed a Safety Orientation for Tacoma Rail through ContractorOrientation.com and that each of its employees, subcontractors, agents, or invitees has received the same Safety Orientation through sessions conducted by or through the Contractor Safety Officer before the individual performs any work on the Project.

D. Contractor shall comply with all requirements of Federal Railroad Administration (FRA) regulations regarding Railroad Workplace Safety included in Title 49, Part 214 and Control of Alcohol and Drug Use, Title 49, Part 219 of the Code of Federal Regulations.

E. Tacoma Rail requires that approved railroad flagger(s) or appropriate methods to establish inaccessible track to establish the work zone occupied by the contractor's men, materials, and equipment shall be used whenever work is being conducted on or within 15 feet of an adjacent yard track or whenever Tacoma Rail makes a determination that a qualified railroad flagger is required. The Contractor will be required to notify Tacoma Rail 72 hours in advance whenever work needs to be done within railroad rights-of-way or within 15 feet of any tracks. The final decision as to the number and location of qualified railroad flagger(s), or adequacy of inaccessible track work limits that will be required for the work will be made by Tacoma Rail. Repeated instances where the railroad flaggers are scheduled, and no effective work occurs will be considered when reviewing change order requests.

F. Tacoma Rail requires that the Contractor incorporate Tacoma Rail specific "Safety Action Plans" into its safety program, provide a copy of the "Safety Action Plan" to the Tacoma Rail Roadmaster prior to commencement of any work on Railway Property, and shall periodically audit the plans. Contractor shall adhere to and comply with Tacoma Rail "Basic Contractor Safety and Operating Requirements" and shall contact and adhere to any other requirements from the other partner railroads.

G. Operations of trains and rail facilities:

Railroad operating personnel will be responsible for operating the existing facilities throughout the performance of the work. Existing railroad track and signals must be available to Rail personnel at all times for use, maintenance, and repair. If the Railroad instructs the Contractor to move the Contractor's equipment, materials, or any installed material, which is located within a railroad right-of-way, the Contractor shall do

so promptly. The Contractor shall not adjust or operate serviceable or functioning railroad track or signal systems without prior written authorization from the appropriate rail authority.

The Contractor must coordinate its Work so that there will be no delays to trains or interference in any manner with the operation of trains without prior written authorization from the affected railroads.

The Contractor shall not take any rail facility or equipment out of service without prior written approval from a rail representative and the confirmation from the contracting agency as appropriate. Any requests by the Contractor to take rail facilities or equipment out of service shall be made to the affected railroad no less than one week prior to the time it is necessary to take the facility or equipment out of service.

H. The Contractor shall protect all railroad track and signals from exposure to concrete, debris, dirt, and water during the Work.

I. The Contractor shall be responsible for providing their own On Track Safety. The Contractor shall ensure that railroad flagging and/or protective services are established prior to commencement of any work within a railroad right-of-way. The Contractor shall comply with the instructions of the rail work forces.

J. If damage is sustained to any of the existing signal and communication equipment, underground or above ground, as a result of the Contractor's operations, whether the damage sustained was intentional or not, the Contractor shall immediately inform the affected railroad and the contracting agency.

The Contractor will be responsible for paying for the costs of repair or replacement, including, but not limited to, the following charges:

1. Replacement of the damaged equipment.

2. Any necessary inspection and testing of the system, before and after repair or replacement of the damaged equipment.

K. This project has been deemed to be an essential project by the City of Tacoma and it is anticipated that the contract will be operational during the COVID-19 outbreak. Therefore, the contractor shall complete a health and safety plan describing how the contractor will complete the work while combating the COVID-19 spread (social distancing practices) and what Personal Protective Equipment (PPE) will be in place.

8-30.1(1) GENERAL WORK REQUIREMENTS
(May, 17 2019)
Relations With Railroad

Railroad Company, as used in these specifications, shall be the railroad company or companies, or railway company or companies specified in these Special Provisions. The following provisions, though referring to a single Railroad Company, shall be applicable to each of the following railroad companies or railway companies:

Tacoma Rail
BNSF Railway Company
Union Pacific Railroad Company

Protection of Railroad Property

The Contractor shall exercise care in all operations and shall, at the Contractor's expense, protect the property of the Railroad Company and the Company's appurtenances, property in its custody, or persons lawfully upon its right of way, from damage, destruction, interference, or injury caused by the Contractor's operations. The Contractor shall prosecute the work to not interfere with the Railroad Company or its appurtenances, or any of the Railroad Company's trains or facilities, and shall complete the work to a condition that shall not interfere with or menace the integrity or safe and successful operations of the Railroad Company or its appurtenances, or any of the Railroad Company's trains or facilities.

The Contractor shall not transport equipment, machinery, or materials across the Railroad Company's tracks, except at a public crossing, without the written consent of the Railroad Company.

The Contractor shall keep the right of way and ditches of the Railroad Company open and clean from any deposits or debris resulting from its operations. The Contractor shall be responsible for the cost to clean and restore ballast of the Railroad Company which is disturbed or becomes fouled with dirt or materials when such deposits or damage result from the Contractor's operations, except as provided elsewhere.

The Contractor's work shall be conducted in such a manner that there will be a minimum of interference with the operation of railroad traffic. The Railroad Company will specify what periods will be allowed the Contractor for executing any part of the work in which the Railroad Company's tracks will be obstructed or made unsafe for operation of railroad traffic.

In the event that an emergency occurs in connection with the work specified, the Railroad Company reserves the right to do any and all work that may be necessary to maintain railroad traffic. If the emergency is caused by the Contractor, the Contractor shall pay the Railroad Company for the cost of such emergency work.

Protective services to protect the Railroad Company's facilities, property, and movement of its trains or engines, including railroad flagging and other devices, may be required by the Railroad Company as a result of the Contractor's operations.

The nature and extent of protective services, personnel and other measures required will in all cases be determined by the Railroad Company. Nothing in these specifications will

limit the Railroad Company's right to determine and assign the number of personnel, the classes of personnel for protective services, nor other protective measures it deems necessary.

When, in the opinion of the Railroad Company, the services of qualified railroad flaggers or security personnel are necessary for the protection of the Railroad Company's facilities by reason of the Contractor's operations, the Contractor will furnish such qualified railroad flaggers or security personnel as may be required. The Contractor shall work with the Railroad Company's contact to determine necessity of contacting the BNSF Railway or Union Pacific Railroad when Work will be performed on the Railroad Company's structure spanning over these other railroads.

The Railroad Company's contact is:

Kyle Kellem: Roadmaster, Tacoma Rail: 253-377-3554

No act of the Railroad Company in supervising or approving any work shall reduce or in any way affect the liability of the Contractor for damages, expense, or cost which may result to the Railroad Company from the construction of this Contract.

8-30.2 Materials

This Section left vacant intentionally. See material sections in Technical Specifications attached hereto.

8-30.3 Construction Requirements

A. Access to the work site is only available via 20th St. E, Cleveland Way, and via on-track from the bridge ends.

   There shall be no storage of material or equipment within 20-feet of the centerline of any railroad track without prior written approval of Tacoma Rail. Where work is required within 20-feet of the track centerline, it shall be coordinated daily with Tacoma Rail's representative.

   The Contractor will be allowed to use the area near and under spans 1 through 17 and 23-32 within Tacoma Rail's right-of-way. Contractor is responsible for lay down area site security and associated security fencing.

B. The contractor shall notify the railroad prior to each day of work to confirm track accessibility and determine the need for track safety and protection measures provided by any rail operators.

   Contact Kyle Kellem: Roadmaster, Tacoma Rail: 253-377-3554

   The work window is anticipated to be between the hours of 8 am and 5 pm, Monday through Friday, but is subject to change depending on Tacoma Rail's operational needs.

Tacoma Rail has routine train movements across this section of track and bridge and may need all tracks operational from time to time during construction. Therefore, the contractor shall have the track and bridge under construction safe for train operations at the end of each working day for nightly train operations unless otherwise approved in writing by Tacoma Rail. The contractor can expect at least several freight train movements per day through the work zone.

C. The contractor shall submit a Site Specific Work Plan every two weeks during construction detailing proposed operations for the forthcoming two weeks including:
    a. Work activities
    b. Manpower involved by trade
    c. Work hours
    d. Equipment involved
    e. Location of the work to be performed

8-30.4 Measurement

This Section left vacant intentionally.

8-30.5 Payment

Payment for all work in this Section shall be included in other related bid items as stated in the Bid Form and described in Section 8-31.

The contract prices shall be full compensation for furnishing all labor, equipment, and incidentals required to accomplish the submittal work.

8-31 RAILROAD BRIDGE IMPROVEMENTS

8-31.1 Description

The work under this section shall generally consist of the removal, disposal, furnishing, fabricating, framing, placing, and erecting of treated timber materials and associated hardware to repair existing treated timber trestle railroad bridges. The intent of all repairs should restore original line, profile, and gage plus or minus 1/8" as approved by the Engineer. Work that in anyway alters the profile and surfacing of the track on the bridge approaches must be repaired to tolerances found in Section 8-31.3(1) The contractor is responsible for all labor, equipment, and material(s) necessary to complete the work. All work shall be in accordance with the Specifications, Tacoma Rail Timber Bridge Repair Standards and Inner Guard Rail Plans, and the American Railway Engineering and Maintenance-of-Way Association (AREMA) and shall conform to 49 CFR Part 213 requirements prescribed for Class II track within the part.

The Project is broken down into the 5 following major categories of work.

1. Spot Removal & Replacement of Treated Timber Bridge Ties - Deck Work
    a. Spot Replace Treated Timber Bridge Ties
        i. Spot Replace Treated Timber Bridge Ties shall consist of spot replacing existing treated timber deck ties with new creosote treated timber bridge ties of similar size as specified in Appendix B in accordance with the Tacoma Rail Standard Plans. Treated timber ties shall be provided and treated with preservative in accordance with Section 8-31.2 of these Specifications.
        ii. Contractor shall field measure all ties to be replaced prior to ordering ties to verify the vertical dimension needed between the tie plate and top of tie supporting member, length of hold down bolts or timber screws to use and overall tie length dimensions. Contractor shall carefully measure, order and place spot replacement ties within zero to plus 1/8" thickness as required to obtain full, even bearing between ties and supporting members without creating gaps between rail, tie plates and ties on adjacent existing ties. Measurements shall be submitted to the Railroad Company's contact for review.
        iii. The contractor shall replace the bridge ties on spans 18 through 21 marked in the field by the engineer. Tacoma Rail will mark ties to be replaced prior to the start of construction. The project anticipates replacing approximately 15% of the bridge ties within the project limits. The contractor shall replace the bridge walkway support ties on spans 1 through 33 marked in the field by the engineer. Tacoma Rail will mark walkway support ties and to be replaced prior to the start of construction. The project anticipates replacing approximately 15% of the bridge walkway support ties within the project limits.
        iv. This work includes: Jacking or removal of the rail, tie plates and OTM as necessary; Removal and disposal of existing deck ties to be replaced; cleaning and inspection of the superstructure under the removed ties; furnishing and replacing treated timber deck ties; placement of rail, and tie-plates in accordance with Standard

Plans. Salvageable spikes will be reused with new track spikes placed as necessary.

v. Tie pads shall only be used when completely replacing decks on steel spans. Tie pads shall not be used when spot replacing or replacing an entire existing treated timber open deck on timber stringer spans.

b. Spot Replace Treated Timber Tie Spacers
   i. Spot Replace Treated Timber Ties Spacers shall consist of spot replacing existing treated timber tie spacers with new creosote treated timber tie spacers of similar size as needed during the replacement of treated timber bridge ties. Treated timber tie spacers shall be provided and treated with preservative in accordance with Section 8-31.2 of these Specifications.
   ii. Contractor shall field verify with the Railroad Contact the existing treated timber tie spacers to be replaced and field measure the treated timber tie spacers to match the existing prior to ordering material.
   iii. This work includes: Removal and disposal of existing tie spacers that cannot be reused and furnishing and replacing new treated timber tie spacers in accordance with the Standard Plans.
c. Replace Loose Tie Clips
   i. Replace loose tie clips shall consist of replacing loose tie clips on the DPG spans 18 through 21 with galvanized ¾" diameter hook bolts. The contractor shall verify the length and quantity of hook bolts prior to ordering material.
   ii. This work includes: Removing and disposing of the loose tie clip bolts and any associated hardware and installing new hook bolts per the Standard Plans.

2. Bridge Walkway and Timber Repairs
   a. Install New Wire Rope Handrail and Steel Railing Posts
      i. Install new wire rope handrail and steel railing posts shall consist of removing and disposal of existing wire rope handrail and timber handrail posts and fabricating, furnishing, and installing new galvanized steel handrail posts and wire rope handrail per Figure 1 "Handrail Post Details".
      ii. This work includes: Removal and disposal of the existing timber handrail posts and wire rope handrail, fabricating, furnishing, and installation of the new galvanized steel handrail posts and wire rope hand railing, and tightening and new and existing hardware associated with the walkway handrail.
   b. Spot Replace Treated Timber Walk Planks
      i. Spot replace treated timber walk planks shall consist of spot replacing existing treated timber walkway planks with new creosote treated timber walkway planks of similar size as specified in Appendix B "Bridge Schematic". Treated timber walkway planks shall be provided and treated with preservative in accordance with Section 8-31.2 of these Specifications.
      ii. This work includes: Removal and disposal of existing walkway planks and installing new treated timber walkway planks. The contractor shall replace the planks on spans 1 through 33 marked

in the field by the engineer. Tacoma Rail will mark walkway planks to be replaced prior to the start of construction. The project anticipates replacing approximately 15% of the walkway planks within the project limits.

c. Install Treated Timber Helper Stringers and Sway Braces

i. Helper Stringer Installation:

1. Helper stringer installation shall consist of installing the treated timber stringers, noted on the plans, with creosote treated timber stringers of equal size. Helper creosote treated timber stringers shall be supplied and treated with preservative in accordance with Section 8-31.2 of these Specifications.

2. Contractor shall carefully measure, order and field trim helper stringers to the length required within zero to minus ¼" tolerance. Depth of stringer at bearings to obtain full, even bearing on cap or cap scab within zero to plus 1/8" tolerance and provide full even bearing for ties on the replacement stringer within zero to plus 1/8" tolerance.

3. This work includes: Any required temporary shoring or false work for placement of helper stringers; furnishing, fabricating, framing, placing, and erection of the new helper stringers and associated hardware; and restoration of the surrounding area to equal or better conditions.

ii. Removal and Replacement or Repair of Existing Treated Timber Sway Bracing.

1. Removal and replacement or repair of existing treated timber sway bracing shall consist of removing existing treated timbers as identified in Appendix B "Bridge Schematic" and replace with new creosote treated timber members of the same size and length or performing repairs as noted in Appendix B and in accordance with the standard plans. Contractor shall verify dimensions of the timber member to be repaired or replaced prior to ordering material. Timber members being replaced shall be measured carefully to provide new members with zero or plus 1/8" tolerance to meet bent or pier and pile spacing needs. Timber members for cross and sash bracing, and diagonal bracing shall be supplied and treated with preservatives in accordance with Section 8-31.2 of these Specifications.

2. This work includes: Removal and disposal of the existing timber sway bracing including hardware for these members or repair such members as shown in the Tacoma Rail Timber Bridge Repair Standards, furnishing, fabricating and installation of new treated timber sway bracing members and any necessary hardware, excavation and temporary bridge support.

iii. Tighten Loose Hardware

1. Tighten loose hardware shall consist of sway brace connections on bent 28 and bent 29 and the stringer keeper angle connection on bent 26.

2. This work includes: Tightening the loose hardware on sway brace connections on bent 28 and bent 29 and the stringer keeper angle connection on bent 26.

3. Steel Span Repairs

a. Clean Debris from Steel DPG Spans (Spans 18-21)

i. Clean debris from steel DPG spans shall consist of cleaning debris from lateral bracing members including gusset plates and bearings and adding 1 ½" drain holes to the gusset plates of DPG spans 18 through 21.

ii. This work includes: The removal, hauling and proper disposal of all debris on the lateral bracing, gusset plates, and bearings. and the addition of 1 ½" diameter drain holes to the gusset plates of the DPG spans 18 through 21.

b. Steel Truss Repairs

i. Removal and Replacement of Bearing Stiffener

1. Removal and replacement of Bearing stiffener shall consist of removing and replacing in kind the bearing stiffener on the exterior face of stringer 4 on span 33 at abutment 34. The contractor shall verify dimension of the bearing stiffener to be replaced prior to ordering material.

2. This work includes: Removal and disposal of the existing bearing stiffener, fabricating and installation of the new bearing stiffener, and any necessary hardware and temporary bridge support.

ii. Clean and Regrease Bearings

1. Clean and regrease bearings shall consist of cleaning the seized expansion bearings of spans 22 and 33 and regreasing the expansion bearings.

2. This work includes: Disassembling the bearings as needed to properly clean and apply grease to the bearing, reassemble the bearing, any necessary hardware and temporary bridge support, and removal and proper disposal of old grease and the furnishing and application of new grease to the bearings.

iii. Tighten Loose Hardware
    1. Tighten loose hardware shall consist tightening the loose nut on the truss eye bar dampener on the left truss of span 22, member U7-L6.

    2. This work includes: Tightening the loose nut on the truss eye bar dampener on the left truss of span 22, and any necessary hardware.

iv. Replace Missing Bearing Roller Bolts
    1. Replace missing bearing roller bolts shall consist of replacing the roller bolts in the left truss expansion bearing of span 22. The contractor shall verify the dimensions and quantity of bolts required prior to ordering material.
    2. This work includes: The installation of missing bolts in the expansion bearing of the left truss of span 22 and any necessary hardware.

4. Inner Guardrail
    a. Inner guardrail shall consist of furnishing and installation of a new inner guardrail approach section to the bridge's west approach.

    b. This work includes: Removing the existing guardrail nose and relocating rail as appropriate, and furnishing, fabrication, and installation of the new guard rail extension and new guardrail nose in accordance with Tacoma Rail Inner Guardrail Standard.

5. Shimming
    a. Shims – Between Pile & Cap
        i. Placement of shims between pile and cap shall consist of removal of existing shims and/or placement of new creosote treated timber shims at locations as specified in Appendix B and in accordance with the Tacoma Rail Standard Plans. Continuous shims or shim caps that extend under both chords shall be creosote treated timber lumber per these specifications. Creosote Treated timber shims or shim caps shall be supplied and treated with preservative in accordance with Section 8-31.2 of these Specifications.

        ii. This work includes: Any required temporary shoring or false work for jacking of the bridge components, removal and disposal of existing timber shims, and furnishing and installing new treated timber shims, as specified in Appendix B Band in accordance with the Tacoma Rail Standard Plans.

        iii. Shims intended to correct profile over existing caps shall be single layer. Non tapered shims must not exceed zero to plus 1/8" inch difference under opposite cords on the same cap.

        iv. Shims between pile and cap shall be single layer. Shims shall be within zero to plus 1/8" thickness of that required to fill the gap between the two structural components.

v. Contractor shall carefully measure, order and field cut shims to thickness required to obtain full, even bearing between structural members within above tolerances.

vi. Timber shims less than 1" thick shall be creosote treated marine grade plywood, Grade A-A, High Density Overlay composed of Douglas-fir or Western Larch veneers. Shims greater than 1" thick shall be creosote treated solid hardwood timber.

8-31.2 Materials

Certificates of compliance and records of tests, inspections, analysis and processes shall be submitted to the Construction Inspector prior to material shipment. These records shall be as required to demonstrate compliance with the latest AREMA. Standards/Chapters as appropriate to the specified materials.
All deliveries and unloading operations shall be cleared with Tacoma Rail's representative prior to the commencement of work if deliveries will be made by rail to the site. Tacoma Rail must be kept operational during the term of this project.

8-31.2(1) Timber

Materials meeting the following specifications shall be furnished.

A. Lumber

a. Treated timber lumber shall be from the following Stress Graded Lumber species: Douglas-fir or Southern Pine. The wet condition bending stress shall be a minimum of 1450 psi and wet condition compression perpendicular to the grain shall be a minimum of 400 psi in accordance with Table 7-2-9, "Allowable Unit Stresses for Stress Graded Lumber – Railroad Loading (Visual Grading)" contained in Chapter 7 of the AREMA Manual. Material to be stress graded in accordance with the applicable grading rules for the species provided.

b. Treated timber lumber shall be pressure treated with creosote as required for structural elements in these specifications in conformance with AWPA Standard UC4C, "Ground Contact, Extreme Duty" and in accordance with the requirements of Chapter 7 and Chapter 30 of the AREMA Manual. Treated timber lumber sizes to be field verified by the Contractor prior to ordering.

c. Written certification shall be provided assuring that all treated timber used for replacing deficient members was produced in compliance with the Best Management Practices (BMP's) outlined in "Best Management Practices for Treated Wood in Aquatic and Other Sensitive Environments", latest edition published by the Western Wood Preservers Institute (WWPI), Wood Preservation Canada, and the Timber Piling Council. The written certification shall include a description and appropriate documentation of the applicable BMP's used.

B. Shims

   a. Treated timber shims shall be pressure treated with creosote in conformance with AWPA Standard UC4C, “Ground Contact – Extreme Duty” and in accordance with the requirements of Chapter 7 and Chapter 30 of the AREMA Manual. Shim thickness and size to be field verified by the Contractor prior to ordering.

C. Treated Timber Bridge Ties

   a. Treated timber bridge ties shall be from the following No. 1 Grade lumber species: Douglas fir or Southern Yellow Pine in accordance with AREMA Chapter 1 Part 1.7 Specifications for Timber Bridge Ties.
   b. Treated timber bridge ties shall be pressure treated with creosote as required for structural elements in these specifications in conformance with AWPA Standard UC4C, “Ground Contact, Extreme Duty” and in accordance with the requirements of Chapter 7 and Chapter 30 of the AREMA Manual. Treated timber ties sizes to be field verified by the Contractor prior to ordering.
   c. Written certification shall be provided assuring that all treated timber bridge ties used for replacing deficient ties were produced in compliance with the Best Management Practices (BMP’s) outlined in “Best Management Practices for Treated Wood in Aquatic and Other Sensitive Environments”, latest edition published by the Western Wood Preservers Institute (WWPI), Wood Preservation Canada, and the Timber Piling Council. The written certification shall include a description and appropriate documentation of the applicable BMP’s used.

8-31.2(2) Steel Fasteners

A. All new machine bolts, drift pins, bearing roller bolts, and dowels shall be medium carbon steel, conforming to the mechanical and chemical requirements of ASTM A307, Grade A unless otherwise specified. Plate or flat washers shall be used.

B. Machine bolts shall have square heads and nuts or locknuts for machine bolts.

C. Nails shall be cut or round wire of standard form. Spikes shall be cut or wire spikes, or boat spikes. All nails and spikes shall have grooved, barbed, spiral grooves or otherwise deformed shanks for greater holding capacity.

D. High strength bolts, nuts, and washers shall conform to ASTM F3125 Grade A325, Type 3.

E. All hardware, bolts, nuts, locknuts, washers, nails and spikes, shall be hot-dipped galvanized coated per ASTM A153.

8-31.2(3) Structural Steel

A. All structural steel shall conform to the requirements of ASTM A709 Grade 50W.

8-31.2(4) Handrail Post Steel

A. Steel for handrail posts shall conform to the requirements of ASTM A36.

8-31.2(5) Wire Rope Handrail

A. Wire rope shall conform to the requirements of ASTM A36.
B. Wire rope clips shall conform to the requirements of ASTM A338.

8-31.2(6) Zinc for Galvanizing

A. Zinc for galvanizing shall conform to ASTM Designation: B6 and the requirements stated in ASTM Designations: A123 and A153 as applicable.
B. Galvanized repair paint, Zinc Dust-Zinc Oxide Type I linseed oil paint, shall meet the Federal Specification, TT-P-641.

8-31.2(7) Field Preservatives

A. Field Preservative Treatment shall be a grease-based preservative compound such as COP-R-PLASTIC or Engineer approved equivalent meeting the requirements of AWPA M4-02, Care of Preservative Treated Wood Products, and containing copper naphthenate preservative.
B. Bridge cement to coat bolts and other hardware to be installed in treated timber shall be an epoxy resin such as Osmoweld or equivalent.
C. Treated timber plugs used to fill holes in treated timber shall be treated with creosote in accordance with 8-31.2(1).

8-31.2(8) Bearing Grease

A. Bearing grease shall be a lithium-based grease meeting the National Grease Lubricating Institute (NLGI) No. 3 requirement.

8-31.3 Construction Requirements

8-31.3(1) General Requirements

Track work shall be in conformance with the standards of the AREMA and the requirements set forth in these Special Provisions. Workmanship shall be of the best quality to produce a finished installation as specified.

The Contractor shall comply with all applicable FRA track and workplace safety regulations, and Tacoma Rail Rules. All contractors and subcontractors personnel protective equipment (PPE) must include steel toed boots and a high visibility safety vest at a minimum which must be worn while on Tacoma Rail facilities. Contractors and subcontractors may implement more comprehensive PPE requirements for their personnel.

The Contractor shall notify “One Call” Utility locate and locate existing underground utilities in the area of work prior to any excavation.

8-31.3(1)A Timber Construction

A. All places where cutting, boring, or other means breaks the surface of creosoted material shall be carefully trimmed and then thoroughly coated with Field Preservative Treatment. Field Preservative Treatment shall be placed in all bolt and nail holes to be reused and all field drilled bolt and nail holes. All bolts and drift pins shall be dipped in Bridge Cement before installation. Any unfilled holes not being reused for bridge hardware, after being treated with Field Preservative Treatment, shall be plugged with treated timber plugs.

B. All new material and members shall match dimensions and measurements made prior to ordering the material or plan dimensions within tolerances allowed in these Specifications. Material not meeting dimensional requirements or providing full even bearing, line, profile and gage within tolerances shall not be used for this project and shall be replaced at Contractor's expense.

C. Holes for dowels and nails shall be bored with a bit 1/16" less in diameter than the dowels or nails to be used. Holes for 3/4" diameter drift bolts shall be bored with a 3/4" diameter bit. Holes for 3/4" diameter bolts shall be bored with a 13/16" diameter bit. Holes for drive spikes shall be 1/8" less than the diameter of the spike. Holes for lag screws shall be bored with a bit not larger than the body of the screw at the base of the thread.

D. Holes for new bolts and drift pins may be relocated, as approved by the Engineer, to avoid conflicts with existing hardware that is still embedded in existing wood, old holes not to be reused or to avoid unsound material.

E. Pre-drilling existing timbers and new planking for bridge spikes and drift pins is required. All field drilled holes will be treated with Field Preservative Treatment.

F. All A307 machine bolts through timber shall have a 5/16" x 3" outside diameter cut washer or Engineer approved equivalent under both nut and head. Washers and bolts shall be in accordance with AREMA Chapter 7. All bolts shall be effectively checked after nuts have been finally tightened. The bolts shall be of a length which will extend entirely through the nuts but not more than 1/2" beyond or as approved by the Engineer. Contractor shall field verify bolt lengths prior to ordering due to variability of existing bridge material.

G. Removal of existing bolts and hardware with flame type or air-arc cutting equipment will not be permitted.

H. Mis-fitting timber elements in the new installation, and timber elements that are split, broken, or otherwise damaged by the Contractor's operations shall be replaced at the Contractor's expense.

I. The Contractor shall remove and dispose of all existing bridge components to be removed and/or replaced at an approved disposal site. Direct payment for removal and disposal of such items will not be made, and they shall be considered as included in the lump sum payment for each item.

J. Sway, sash, longitudinal girts and diagonal braces and timber pier protection members shall be full length pieces of sufficient length to allow for variances in field dimensions. Contractor shall field verify the final length of each piece before cutting in the field. Where necessary, treated timber filler blocks shall be used between piling and bracing to establish the bracing in a true plane. The replacement of any bracing damaged by the Contractor shall be at the Contractor's expense. Any bracing or timber pier protection needing replacement at the direction of the Field Engineer shall be treated as extra work in accordance with the contract documents.

K. The Contractor shall develop and have on hand fire protection measures to prevent fires from occurring and putting out any fires that occur before damaging the timber structures. Oxy-acetylene torch cutting is not permitted unless approved by the Engineer and fire protection measures are in place.

L. Field welding near or on the timber bridge shall only be conducted when approved fire protection methods are in place. The Contractor shall observe work locations for a minimum of one hour after welding is completed in addition to soaking treated timber around the area where welding took place to prevent any fire from occurring.

M. The Contractor shall meet the provisions of all permits, environmental or otherwise, previously obtained by the Owner for this project. Work shall be performed in accordance with the approved Site Specific Work Plan.

N. Any damage to any part of the structure that is remaining in service that occurs as a result of the Contractor's operations shall be repaired by the Contractor at the Contractor's expense to the original condition or better.

O. All existing hardware on the timber bridges shall be tightened as necessary.

P. Excess material (e.g. sawdust, wood chips, ballast, etc.) that may be generated from the work will be collected and removed from the worksite and disposed of at an approved location. Appropriate measures shall be implemented by the contractor to prevent contamination of the worksite or surface water, especially when working with treated wood of any type.

8-31.3(1)B Handling and Storage

A. The method of storing and handling timber materials shall be in accordance with Chapter 7, Section 3.1.3, "Handling and Storage of Material", of the AREMA Manual.
B. Lumber and timber, when delivered to the site of the work, shall be stored in neat piles, not fouling the track in areas approved by the Engineer.
C. Treated lumber and timber shall not be handled roughly or dragged across the ground. Handling shall be by rope slings or wooden equipment. No crowbars, cant hooks, or other sharp tools are permitted, except those used for and during necessary field cutting, framing, and erecting.

8-31.3(1)C Helper Stringer Installation

A. Helper stringer installation shall be performed at the locations indicated in Appendix B "Bridge Schematic". Installation of the new helper stringers shall be performed carefully, in accordance with the Standard Plans to avoid shifting or damaging the remainder of the stringers and structure. Contractor shall verify stringer measurements before ordering material.

B. Treated timber shims shall only be used between the cap and the helper stringers. Shims shall be nailed in place.

C. New helper stringers shall be reattached to the deck ties in the same manner and frequency as the existing stringers.

D. The ends and intermediate supports of new helper stringers and existing stringers that are cut when placing helper stringers shall be connected to the pile cap with drift pins. If access allows, a single drift pin can be driven through the deck from above; otherwise, a drift pin shall be driven from underneath on each side of the pile cap into the stringers.

E. All hardware loosened for installation of the helper stringer shall be reinstalled and tightened. Removed hardware shall be replaced in the existing configuration or as shown in the Tacoma Rail Timber Bridge Repair Standards if additional fasteners are indicated from existing. Existing hardware found to be non-reusable shall be replaced with new hardware. Contractor shall replace any damaged hardware at no cost to the project.

8-31.3(1)D Removal and Replacement of Walkway Planks and Handrail

A. The Contractor shall remove and dispose of the existing timber walkway planks and handrail posts required in Appendix B "Bridge Schematic".

B. Replacement walkway planks, meeting the material requirements of Section 8-31.2(1) of these Specifications, shall be installed on the existing walkway ties or sleepers using predrilled holes and nails. New walkway planks, handrail posts and railing shall be installed at locations indicated in Appendix B "Bridge Schematic" in accordance with the standard plans and Figure 1. New walkway material shall meet the requirements of Section 8-31.2(1)

Figure 1. Handrail Post Details

8-31.3(1)E Shims – Between Pile and Cap, Between Cap and Stringers

A. Placement of shims between pile and cap shall be done in a manner to create a tight joint with full even bearing with a zero to plus 1/8" tolerance for height change without causing a point load raise on the pile cap. If necessary, slots shall be cut in the shim to clear drift pins.

B. Shims between piles and cap shall be toe nailed in place or bolted as shown in the Tacoma Rail Timber Bridge Repair Standards.

C. Shims between piles and cap shall be sized for full even bearing between the two elements. Sizes shall be field verified before ordering material.

D. Shims between the cap and stringers shall be sized for full bearing in accordance with locations shown in the plans. Shims for a full stringer chord shall extend 6-inches beyond the AB bracket and fully under the chord. A shim or subcap extending under both stringer chords shall extend a minimum of 1-foot beyond the AB brackets on each side. Slots may be necessary to fit shims around drift pins.

E. All shims shall be placed to restore the track alignment, horizontal and vertical, to the structure's originally built condition.

F. Steel shims placed on steel caps shall be welded or bolted into place as shown in the Plans. Contractor to field drill holes in existing cap 1/16" larger than bolt size when bolts are to be used.

8-31.3(1)F Removal and Replacement of Bridge Ties and Other Deck Timber

A. For spot tie replacement, Contractor shall pull all spikes, bolts and other hardware in a careful manner to allow reuse of material. Contractor shall replace damaged material or material found non-reusable with similar new track and bridge hardware at no additional cost to the project. Tie spacer replacement will use existing fastener hardware pattern and materials. Damaged or defective hardware will be replaced in kind.

B. For spot tie replacement, Contractor shall carefully measure existing ties being replaced except plate cutting will not be used to determine tie thickness. With spot installation of new ties, rail profile shall be restored to originally built condition and gage shall meet tolerances indicated in applicable sections of 8-31.3(3). No shims or adzing of new ties will be allowed. Holes not pre-bored, shall be field pre-drilled and treated with Field Preservative Treatment in accordance with the Tacoma Rail Timber Bridge Repair Standards and these Specifications.

C. The Contractor shall remove and dispose of the existing treated timber ties and other material removed from the bridge as directed by the Engineer.

8-31.3(1)G Removal and Replacement or Repair of Existing Sway and Sash Bracing and Diagonal Bracing

A. Existing Sway and Sash Bracing and Diagonal Bracing shall be removed or repaired in accordance with Appendix B "Bridge Schematic" in accordance with the standard plans or as directed by the Engineer. Removed bolts to accomplish the replacement or repair work shall be replaced with new bolts. Loosened undamaged bolts shall be retightened upon completion of the work. All holes shall be field treated in accordance with the specifications prior to placement of bolts. Replacement timbers shall be measured carefully prior to ordering, and field cut and treated as necessary to ensure proper fit within zero or plus 1/8" tolerance. Treated wood shims may be necessary to fill gaps between piling and sway or sash bracing to obtain a tight fight without undue stress on the new timber.

B. Care shall be taken when removing existing bolts to minimize damage to existing bolt holes. Existing treated timber shims between pile and sway and sash bracing may be reused at the direction of the Engineer.

C. Contractor shall support existing bridge as necessary when removing all or part of the bracing.

D. The Contractor shall remove and dispose of the existing treated timber and other material removed from the bridge as directed by the Engineer.

8-31.3(1)H Miscellaneous Bridge Work

A. Contractor shall perform miscellaneous bridge work as identified in Appendix B "Bridge Schematic" or as directed by the Engineer. Realigning track on bridge, realigning stringers and other miscellaneous work shall be accomplished in a manner that does not cause additional damage to the structure and restores structure to condition consistent for safe train movement.

B. Original spike and bolt holes not reused shall be field treated, filled, and plugged. New holes will be predrilled as required in the plans and field treated prior to installation of spikes or bridge hardware. Damaged material shall be replaced in-kind.

8-31.3(2) Treated Railroad Bridge Tie and Timber Disposition

The following information on tie disposal is provided for bidder information:

Treated Timber Railroad Bridge Tie & Timber Disposition

The contractor will be responsible for the removal and disposal of all treated timber railroad ties and treated timber to be replaced as a result of this project in accordance with applicable Washington State and local regulations. Allowable disposal options include sale to the public for retaining walls, fencing, structural timbers, and landscape articles, sale to landscape supply businesses, and landfilling at a permitted solid waste landfill **which will accept the treated wood**. The contractor shall be responsible for all transportation of the ties as well as the securing of any required disposal authorizations

from the local health department and any necessary laboratory analyses. Most ties will not be of sufficient quality to be sold to the public and must be landfilled.

The proposal for this contract must include a plan for the disposal of the wood which details how and where any sale to the public will occur and where the unusable ties will be landfilled. The landfill proposal must also include a description of the required permits, authorizations, analyses, or other special requirements (such as size restrictions). The contractor must supply a copy of any dump receipts to the project inspector. Any disposal methods proposed other than those allowed above must be accompanied by a detailed plan for the disposal alternative.

8-31.3(3) Tolerances

Close tolerances are expected. Unless otherwise specified, the gauge, alignment, and surface of the track will meet the following standards:

A. Gauge Variation 1/8-inch

B. Cross Level (Changes between any two points less than 62 feet apart):

1. On tangents 1/4-inch
2. On curves (Variation from specified super elevation) 1/4-inch

C. Horizontal Track Alignment (Maximum allowable deviation of the middle ordinate from a 62-foot chord)

1. On curves 3/8-inch
2. On tangents 1/2-inch

D. Vertical Track Profile:

1. Maximum permissible runoff per 40-feet shall not exceed 1-inch
2. Deviation from profiles at middle ordinate of 62-feet chord 1/2-inch
3. Maximum permissible variation from design shall not exceed 1/2-inch

E. Mismatch of Rails at Joints:

1. On the tread of the rail ends 1/8-inch
2. On the gauge of the rail ends 1/8-inch

8-31.3(4) Super Elevation

Curved track will be super elevated as shown:

Degree of Curve	Elevation
3° - 12°	1/4-inch
Over 12°	TBD per specific location

Super elevation will be achieved by raising the outer rail and maintaining inner rail at the elevation shown on the profile. Contractor shall taper ties based on field measurements to match any existing curve superelevation.

8-31.3(5) Track Gauge

Track gauge shall be as follows:

Degree of Curve	Gauge
0° - 8°	4’ - 8-1/2-inch
Over 8°	4’ - 8-3/4-inch

8-31.4 Submittals

The Contractor shall submit the following items to the Engineer for approval in accordance with these specifications and bid documents.

A. All material specifications.
B. Field measurements made before ordering materials.
C. Material installation methods in addition to the Site Specific Work Plan required by these specifications.
D. Work tool and equipment specifications.
E. Other drawings or plans necessary to complete the Work.

8-31.5 Measurement

Measurement of various items of Work completed under this contract shall be in accordance with the items below. Lump sum measurement shall include all work including necessary fittings and accessories. Other quantities are computed in the contract units.

1. Spot Removal & Replacement of Treated Timber Bridge Ties shall be per each bridge tie of various size and length.

2. “Spot Replace Treated Timber Tie Spacers” shall be per lump sum.

3. “Spot Replace Loose Bridge Tie Clips” shall be per lump sum

4. “Install New Wire Rope Handrail and Steel Railing Posts” shall be per lump sum.

5. “Spot Replace Timber Walk Planks” shall be per lump sum.

6. “Install Treated Timber Helper Stringers & Sway Braces” shall be per lump sum.

7. “Clean Debris from Steel DPG Spans” shall be per lump sum

8. “Steel Truss Repairs” shall be pre lump sum

9. “Re-Install Inner Guardrail” shall be per linear track foot as marked in the field by the Tacoma Rail. Track feet will be measured along centerline of track.

10. “Shims – Between Pile and Cap” shall be per lump sum.

11. “COVID 19 Safety Plan” shall be per lump sum.

8-31.6 Payment

Payment will be made in accordance with Section 8-31.5, for each of the following bid items that are included in the proposal:

1. “Spot Removal & Replacement of Treated Timber Bridge Ties” per each.
    a. The price per each for “Spot Removal & Replacement of Treated Timber Bridge Ties” shall be full payment for labor, equipment, materials and contractor overheads necessary to remove and dispose of old timber ties and install new timber ties as described in the specifications.

2. “Spot Replace Treated Timber Tie Spacers” per lump sum.
    a. The price per lump sum for “Spot Replace Treated Timber Tie Spacers” shall be full payment for labor, equipment, materials and contractor overheads necessary to remove and dispose of old timber tie spacers and install new timber tie spacers as described in the specifications.

3. “Spot Replace Loose Bridge Tie Clips” per lump sum.
    a. The price per lump sum for “Spot Replace Loose Bridge Tie Clips” shall be full payment for labor, equipment, materials and contractor overheads necessary to remove and dispose of old bridge tie clips and install new bridge hook bolts as described in the specifications.

4. “Install New Wire Rope Handrail and Steel Railing Posts” per lump sum.
    a. The price per lump sum for “Install New Wire Rope Handrail and Steel Railing Posts” shall be full payment for labor, equipment, materials and contractor overheads necessary to remove and dispose of old wire rope handrailing and timber railing posts and install new wire rope handrailing and steel railing posts as described in the specifications.

5. “Spot Replace Timber Walk Planks” per lump sum.
    a. The price per lump sum for “Spot Replace Timber Walk Planks” shall be full payment for labor, equipment, materials and contractor overheads necessary to remove and dispose of old timber walk planks install new timber walk planks as described in the specifications.

6. “Install Treated Timber Helper Stringers & Sway Braces” per lump sum.
    a. The price per lump sum for “Install Treated Timber Helper Stringers & Sway Braces” shall be full payment for labor, equipment, materials and contractor overheads necessary to remove and dispose of old timber sway braces and install new timber helper stringers and sway braces as described in the specifications.

7. “Clean Debris from Steel DPG Spans” per lump sum.
    a. The price per lump sum for “Clean Debris from Steel DPG Spans” shall be full payment for labor, equipment, materials and contractor overheads necessary to remove and dispose of debris from the DPG spans lateral bracing and gusset plates and add drainage holes as described in the specifications.

8. “Steel Truss Repairs” pre lump sum.
    a. The price per lump sum for “Steel Truss Repairs” shall be full payment for labor, equipment, materials and contractor overheads necessary to replace Span 22 stringer bearing stiffener, clean and regrease the truss spans expansion bearings, tighten the loose nut on Span 22 left truss eye bar dampener, and replace missing roller bearing bolts as described in the specifications.

9. “Re-Install Inner Guardrail” per linear track foot.
    a. The price per linear track foot for “Re-Install Inner Guardrail” shall be full payment for labor, equipment, materials and contractor overheads necessary to remove and dispose of the old guardrail end section and install the new inner guardrail section as described in the specifications and the Tacoma Rail Inner Guardrail Standard Plan.

10. “Shims – Between Pile and Cap” per lump sum.
    a. The price per lump sum for “Clean Debris from Steel DPG Spans” shall be full payment for labor, equipment, materials and contractor overheads necessary to install timber shims as described in the specifications.

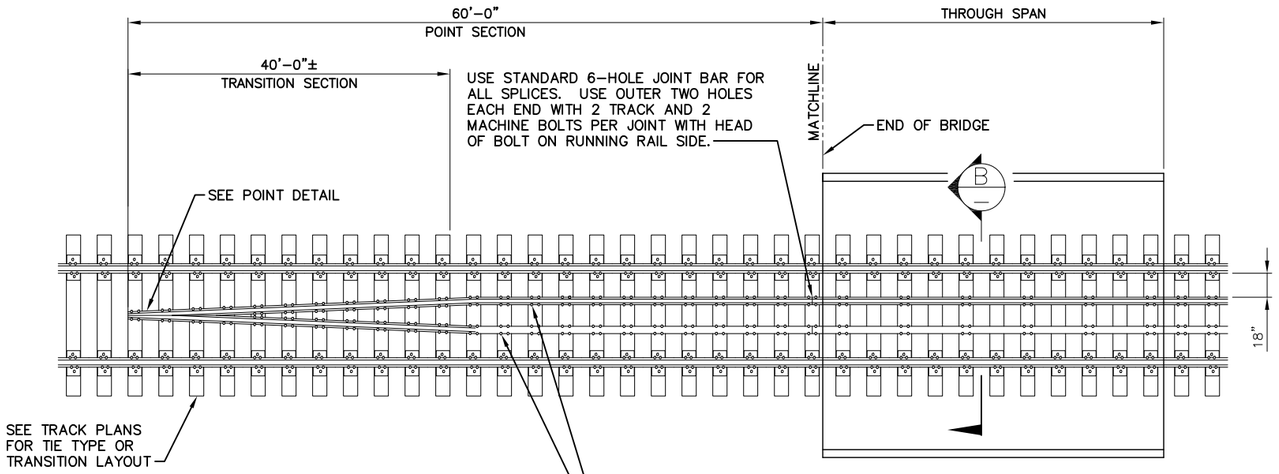
11. “COVID 19 Safety Plan” per lump sum.
    a. The price per lump sum for “COVID 19 Safety Plan” shall be full payment for all labor and equipment, and materials to develop and draft the plan.

END OF SECTION

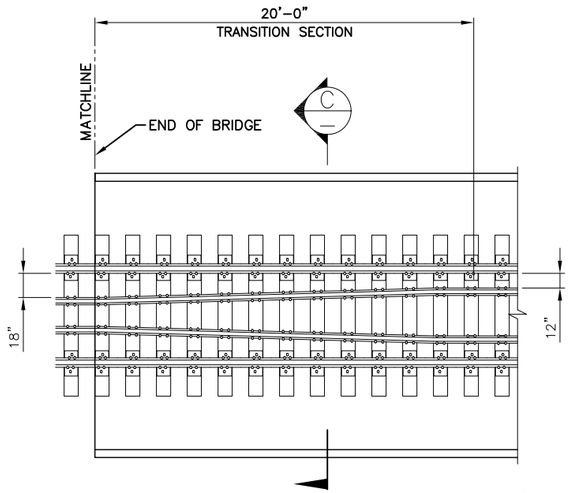
END OF SPECIAL PROVISIONS

APPENDIX A

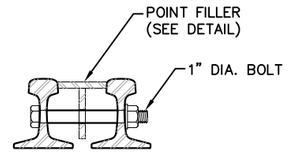
TACOMA RAIL STANDARD PLANS



BALLAST SPAN



OPEN DECK SPAN



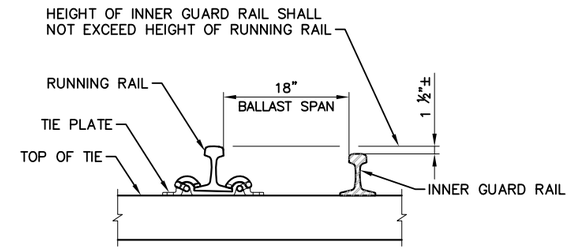
SECTION A
NO SCALE

NOTES:

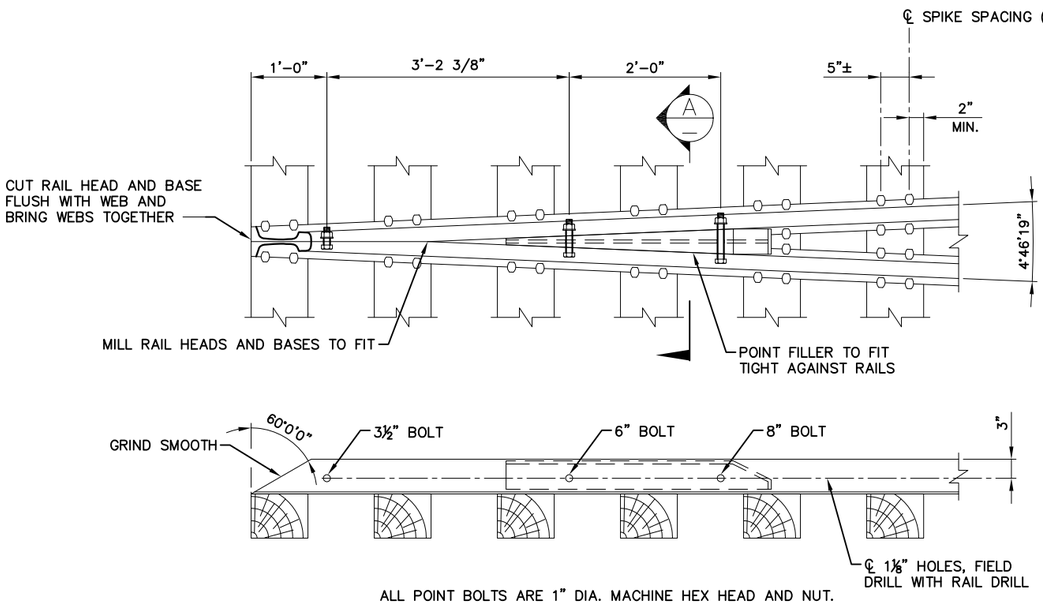
1. INNER GUARDRAIL FOR BALLAST DECK SPANS TO BE SPACED 18" BALL TO BALL (SEE SECTION B).
2. INNER GUARD RAIL FOR OPEN DECK SPANS TO BE SPACED 12" BALL TO BALL (SEE SECTION C).
3. INNER GUARD RAILS DO NOT REQUIRE TIE PLATES AND SHALL BE SPIKED EVERY TIE THROUGH THE POINT SECTION AND EVERY OTHER TIE BEYOND THE POINT WHEN ON TANGENT AND EVERY TIE WHEN ON A CURVE.
4. PRE–DRILL HOLES FOR INNER GUARD RAIL SPIKES USING 1/2" x 6" DRILL BITS.
5. INNER GUARD RAIL SHALL BE MADE FROM RAIL NOT LESS THAN 20 POUNDS LIGHTER OR NO HEAVIER THAN THE RUNNING RAIL.

INNER GUARD RAIL PLAN

NO SCALE
DETAIL SYMMETRICAL ABOUT BRIDGE.
SHOWN ON TANGENT.
ADJUST INNER GUARD RAIL LENGTHS TO FIT ON CURVE ON BRIDGE.



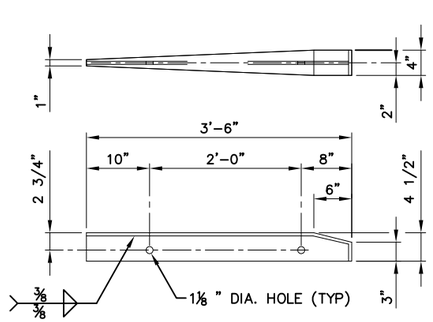
SECTION B
NO SCALE



ALL POINT BOLTS ARE 1" DIA. MACHINE HEX HEAD AND NUT.

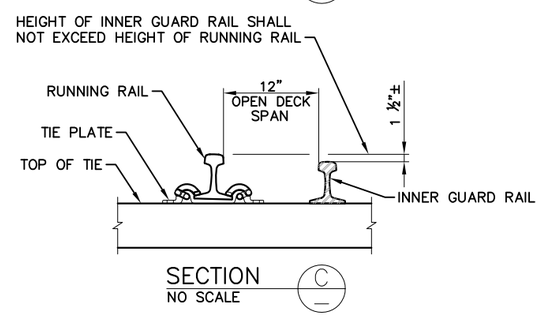
POINT DETAIL

NO SCALE



POINT FILLER DETAIL

NO SCALE
FROM ½" STEEL PLATE, ASTM A588 STEEL



SECTION C
NO SCALE

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY:_____

DATE:_____

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TIMBER BRIDGE REPAIR STANDARDS

INNER GUARD RAIL LAYOUT AND DETAILS

TACOMA RAIL

APPROVED:

KYLE KELLEM - ROADMASTER

REFERENCE		DATE	SCALE
		9-22-2017	NTS
		DESIGNED	CHECKED
		DLM - HDR	DLM - HDR
		DRAWN	PROJECT NAME
		AEP - HDR	
		DRAWING NAME	

NO	REVISION	DATE	APPD
4			
3			
2			
1			

DRAWING

SHEET OF

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

TIMBER BRIDGE REPAIR STANDARDS

DRAWING INDEX		
DRAWING NO.	SHEET NO.	DRAWING TITLE
CO1	1	COVER SHEET AND DRAWING INDEX
CO2	2	EXAMPLE BILLS OF MATERIAL, SHEET 1 OF 2
CO3	3	EXAMPLE BILLS OF MATERIAL, SHEET 2 OF 2
T1	4	DECK TIE REPLACEMENT DETAILS AND CONSTRUCTION PROCEDURE
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THESE REPAIR STANDARDS ARE APPLICABLE TO TIMBER BRIDGES ONLY. CONCRETE AND STEEL BRIDGE COMPONENTS SHALL BE INSPECTED AND REPAIRED AT THE DIRECTION OF THE BRIDGE SUPERVISOR. IF CONDITIONS IN THE FIELD DO NOT MATCH THE DETAILS FOUND IN THE TIMBER BRIDGE REPAIR STANDARDS, THE BRIDGE SUPERVISOR SHALL BE CONTACTED FOR DIRECTION.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1–12–12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TIMBER BRIDGE REPAIR STANDARDS
COVER SHEET
AND DRAWING INDEX

REFERENCE

DATE: 1-12-12
SCALE: NTS
DESIGNED: MJK - HDR
CHECKED: PJG - HDR
DRAWN: MRF - HDR
PROJECT NAME:
DRAWING NAME:
DRAWING: CO1
SHEET 1 OF 23

TACOMA RAIL
APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER

NO	REVISION	DATE	APPD
4			
3			
2			
1			

BILL OF MATERIAL – DECK TIE REPLACEMENT

SEE DRAWINGS T1 & T2 FOR DETAILS, CONSTRUCTION PROCEDURE, GENERAL NOTES AND MATERIAL SPECIFICATIONS

LINE	QUAN.	UNIT	DESCRIPTION	SIZE	LENGTH	REMARKS
1		EA	SPOT TIE REPLACEMENT, CREOSOTE TREATED	8"X8"	10'–0"	S2E 7¾" OR MATCH EXISTING
2		EA	FULL DECK TIE REPLACEMENT, CREOSOTE TREATED	8"X10"	10'–0"	S2E 7¾" OR MATCH EXISTING
3		EA	TIE SPACER, CREOSOTE TREATED	8"X4"	TBD IN FIELD	LENGTH TO MATCH EXISTING TIE SPACERS
4		EA	WASHER HEAD TIMBER DRIVE SPIKE	1/16" DIA.	10"	
5		EA	A307 WASHER HEAD MACHINE BOLT	¾" DIA.	14"	
6		EA	CUT WASHER	5/16" X 3"		INSTALLED UNDER BOLT NUT AND HEAD
7		LS	BRIDGE CEMENT, EPOXY RESIN			TO COAT HARDWARE
8		EA	TIMBER PLUG, CREOSOTE TREATED			TO FILL HOLES IN TREATED TIMBER
9		LS	FIELD PRESERVATIVE			TO TREAT EXPOSED WOOD AT FIELD DRILLED HOLES

NOTE: REPLACEMENT OTM IS CONSIDERED INCIDENTAL TO THE WORK PERFORMED.
EXISTING UNDAMAGED HARDWARE MAY BE REINSTALLED.

BILL OF MATERIAL – OUTER STRINGER REPLACEMENT

SEE DRAWINGS OS1 & OS2 FOR DETAILS, CONSTRUCTION PROCEDURE, GENERAL NOTES AND MATERIAL SPECIFICATIONS

LINE	QUAN.	UNIT	DESCRIPTION	SIZE	LENGTH	REMARKS
1		EA	STRINGER, CREOSOTE TREATED	9"X17"	30'–0"	S2E 16¾" OR MATCH EXISTING
2		EA	A307 MACHINE CHORD BOLT	¾" DIA.	39"	VERIFY LENGTH IN FIELD
3		EA	WASHER HEAD LINE DRIVE SPIKE	1/16" DIA.	14"	
4		EA	A307 MACHINE LINE BOLT	¾" DIA.	44"	VERIFY LENGTH IN FIELD
5		EA	A307 MACHINE BOLT	¾" DIA.	18"	CAP BOLTS
6		EA	CUT WASHER	5/16" X 3"		INSTALLED UNDER BOLT NUT AND HEAD
7		LS	BRIDGE CEMENT, EPOXY RESIN			TO COAT HARDWARE
8		EA	TIMBER PLUG, CREOSOTE TREATED			TO FILL HOLES IN TREATED TIMBER
9		LS	FIELD PRESERVATIVE			TO TREAT EXPOSED WOOD AT FIELD DRILLED HOLES

NOTE: REPLACEMENT OTM IS CONSIDERED INCIDENTAL TO THE WORK PERFORMED.
EXISTING UNDAMAGED HARDWARE MAY BE REINSTALLED.

BILL OF MATERIAL – INSIDE STRINGER REPLACEMENT

SEE DRAWINGS IS1 & IS2 FOR DETAILS, CONSTRUCTION PROCEDURE, GENERAL NOTES AND MATERIAL SPECIFICATIONS

LINE	QUAN.	UNIT	DESCRIPTION	SIZE	LENGTH	REMARKS
1		EA	STRINGER, CREOSOTE TREATED	9"X17"	30'–0"	S2E 16¾" OR MATCH EXISTING
2		EA	A307 MACHINE CHORD BOLT	¾" DIA.	39"	VERIFY LENGTH IN FIELD
3		EA	WASHER HEAD LINE DRIVE SPIKE	1/16" DIA.	14"	
4		EA	CUT WASHER	5/16" X 3"		INSTALLED UNDER BOLT NUT AND HEAD
5		LS	BRIDGE CEMENT, EPOXY RESIN			TO COAT HARDWARE
6		EA	TIMBER PLUG, CREOSOTE TREATED			TO FILL HOLES IN TREATED TIMBER
7		LS	FIELD PRESERVATIVE			TO TREAT EXPOSED WOOD AT FIELD DRILLED HOLES

NOTE: REPLACEMENT OTM IS CONSIDERED INCIDENTAL TO THE WORK PERFORMED.
EXISTING UNDAMAGED HARDWARE MAY BE REINSTALLED.

BILL OF MATERIAL – HELPER STRINGER INSTALLATION

SEE DRAWINGS HS1 & HS2 FOR DETAILS, CONSTRUCTION PROCEDURE, GENERAL NOTES AND MATERIAL SPECIFICATIONS

LINE	QUAN.	UNIT	DESCRIPTION	SIZE	LENGTH	REMARKS
1		EA	OUTSIDE HELPER STRINGER, CREOSOTE TREATED	9"X17"	30'–0"	S2E 16¾" OR MATCH EXISTING
2		EA	INSIDE HELPER STRINGER, CREOSOTE TREATED	9"X17"	15'–0"	S2E 16¾" OR MATCH EXISTING
3		EA	A307 MACHINE CHORD BOLT	¾" DIA.	39"	VERIFY LENGTH IN FIELD
4		EA	A307 MACHINE CHORD BOLT	¾" DIA.	50"	METHOD 3 CONNECTION
5		EA	SPACER BLOCK, CREOSOTE TREATED	"T"X16¾"	2'–0"	METHOD 1, 2 & 3 CONNECTION
6		EA	ANGLE MK AB	∠6"X3½"X½"	1'–3"	METHOD 1 CONNECTION
7		EA	WASHER HEAD LINE DRIVE SPIKE	1/16" DIA.	APPROX 20"	METHOD 1 CONNECTION
8		EA	STAINLESS STEEL BANDING STRAPS AND BUCKLES	¾" WIDE	TBD	METHOD 2 CONNECTION
9		EA	CORNER ANGLE (USE WITH BANDING STRAPS)	∠2"X2"X¼"	3"	METHOD 2 CONNECTION
10		EA	LAG BOLT	¾" DIA.	17"	METHOD 3 CONNECTION
11		EA	CUT WASHER	5/16" X 3"		INSTALLED UNDER BOLT NUT AND HEAD
12		LS	BRIDGE CEMENT, EPOXY RESIN			TO COAT HARDWARE
13		EA	TIMBER PLUG, CREOSOTE TREATED			TO FILL HOLES IN TREATED TIMBER
14		LS	FIELD PRESERVATIVE			TO TREAT EXPOSED WOOD AT FIELD DRILLED HOLES

NOTE: MATERIAL ORDER IS DEPENDENT ON THE HELPER STRINGER INSTALLATION METHOD.
REPLACEMENT OTM IS CONSIDERED INCIDENTAL TO THE WORK PERFORMED.
EXISTING UNDAMAGED HARDWARE MAY BE REINSTALLED.

USE OF BOM TABLES
THE INTENT OF THESE TABLES IS TO IDENTIFY POSSIBLE MATERIALS NEEDED TO COMPLETE EACH REPAIR. ACTUAL SIZES AND QUANTITIES WILL NEED TO BE FIELD VERIFIED AND DETERMINED BY THE PERSON IN CHARGE OF THE REPAIRS.

BILL OF MATERIAL – CAP REPLACEMENT

SEE DRAWINGS C1 & C2 FOR DETAILS, CONSTRUCTION PROCEDURE, GENERAL NOTES AND MATERIAL SPECIFICATIONS

LINE	QUAN.	UNIT	DESCRIPTION	SIZE	LENGTH	REMARKS
1		EA	DOUBLE TIMBER CAP, CREOSOTE TREATED	2~8"X16" S2E 15¾"	14'–0"	DETERMINE EXACT SIZE IN FIELD
2		EA	A307 DRIFT MACHINE BOLT	¾" DIA.	26"	CAP TO PILE CONNECTION
3		EA	A307 MACHINE BOLT	¾" DIA.	18"	DOUBLE TIMBER CAP BOLTS
4		EA	A307 MACHINE BOLT	¾" DIA.	22"	SWAY BRACE CONNECTION
5		EA	A307 MACHINE BOLT	¾" DIA.	18"	ANGLE A.B. BRACE CONNECTION TO CAP
6		EA	A307 DRIFT MACHINE BOLT	¾" DIA.	16"	CAP TO STRINGER CONNECTION
7		EA	CUT WASHER	5/16" X 3"		INSTALLED UNDER BOLT NUT AND HEAD
8		LS	BRIDGE CEMENT, EPOXY RESIN			TO COAT HARDWARE
9		EA	TIMBER PLUG, CREOSOTE TREATED			TO FILL HOLES IN TREATED TIMBER
10		LS	FIELD PRESERVATIVE			TO TREAT EXPOSED WOOD AT FIELD DRILLED HOLES

NOTE: MAY USE SINGLE SOLID 14"X14", 16"X16" (S2E 13¾" OR 15¾") OR MATCH EXISTING IN PLACE OF DOUBLE TIMBER CAP.
EXISTING UNDAMAGED HARDWARE MAY BE REINSTALLED.

BILL OF MATERIAL – FRAME BENT

SEE DRAWINGS F1 & F2 FOR DETAILS, CONSTRUCTION PROCEDURE, GENERAL NOTES AND MATERIAL SPECIFICATIONS

LINE	QUAN.	UNIT	DESCRIPTION	SIZE	LENGTH	REMARKS
1		EA	DOUBLE TIMBER CAP, CREOSOTE TREATED	2~8"X16" S2E 15¾"	14'–0"	AS DETAILED ON SHEET 14
2		EA	FRAME POST, CREOSOTE TREATED	12"X12"	TBD	
3		EA	DOUBLE TIMBER SILL, CREOSOTE TREATED	2~8"X16" S2E 15¾"	TBD	
4		EA	A307 MACHINE BOLT	¾" DIA.	18"	DOUBLE TIMBER CAP BOLTS
5		EA	A307 LAG BOLT	¾" DIA.	10"	ANGLE MK AB BRACKET TO CAP CONNECTION
6		EA	A307 MACHINE BOLT	¾" DIA.	18"	ANGLE MK AB BRACKET TO CAP CONNECTION
7		EA	A307 DRIFT MACHINE BOLT	¾" DIA.	26"	CAP TO POST CONNECTION
8		EA	A307 MACHINE BOLT	¾" DIA.	22"	SWAY BRACE CONNECTION
9		EA	A307 MACHINE BOLT	¾" DIA.	25"	SWAY BRACE POST CONNECTION
10		EA	A307 STEEL DOWELS	¾" DIA.	8"	POST TO SILL PIN CONNECTION
11		EA	A307 DRIFT BOLT	¾" DIA.	19"	SILL TO PILE PIN CONNECTION
12		EA	CUT WASHER	5/16" X 3"		INSTALLED UNDER BOLT NUT AND HEAD
13		LS	BRIDGE CEMENT, EPOXY RESIN			TO COAT HARDWARE
14		EA	TIMBER PLUGS, CREOSOTE TREATED			TO FILL HOLES IN TREATED TIMBER
15		LS	FIELD PRESERVATIVE			TO TREAT EXPOSED WOOD AT FIELD DRILLED HOLES

NOTE: EXISTING UNDAMAGED HARDWARE MAY BE REINSTALLED.
MAY USE SINGLE SOLID 14"X14", 16"X16" (S2E 13¾" OR 15¾") IN PLACE OF DOUBLE TIMBER CAP OR SILL.

NOTE:
S2E INDICATES THE MEMBER IS SURFACED ON 2 EDGES FOR EXACT MEASUREMENT.

NOTE:
CONFIRM DIMENSIONS AND SIZES IN FIELD PRIOR TO ORDERING MATERIAL.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1–12–12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TIMBER BRIDGE REPAIR STANDARDS

EXAMPLE BILLS OF MATERIAL

SHEET 1 OF 2

TACOMA RAIL

APPROVED: [ORIGINAL SIGNED BY]

ALAN MATHESON - ROADMASTER

REFERENCE			DATE	SCALE
			1-12-12	NTS
			DESIGNED	CHECKED
			MJK - HDR	PJG - HDR
			DRAWN	PROJECT NAME
			MRF - HDR	
			DRAWING NAME	

NO	REVISION	DATE	APPD
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DRAWING CO2

SHEET 2 OF 23

BILL OF MATERIAL – CHORD, CAP AND PILE SHIM INSTALLATION

SEE DRAWINGS SM1 & SM2 FOR DETAILS, CONSTRUCTION PROCEDURE, GENERAL NOTES AND MATERIAL SPECIFICATIONS

LINE	QUAN.	UNIT	DESCRIPTION	SIZE	LENGTH	REMARKS
1		EA	CHORD SHIM, CREOSOTE TREATED	1'–2"X"T"	5'–0"	DETERMINE NECESSARY THICKNESS IN FIELD
2		EA	MACHINE CHORD BOLT	¾" DIA.	TBD	LENGTH TO BE 3" LONGER THAN SHIM + CAP
3		EA	CAP SHIM, CREOSOTE TREATED	1'–2"X"T"	10'–0"	DETERMINE NECESSARY THICKNESS IN FIELD
4		EA	MACHINE CHORD BOLT	¾" DIA.	TBD	LENGTH TO BE 3" LONGER THAN SHIM + CAP
5		EA	LAG BOLT	¾" DIA.	10"	ANGLE MK AB BRACKET TO CAP CONNECTION
6		EA	PILE SHIM, CREOSOTE TREATED	PILE AREA X "T"		DETERMINE NECESSARY SIZE/THK IN FIELD
7		EA	FABRIC			TO COVER PILE TOP
8		EA	SEALING COMPOUND			TO SEAL FABRIC AND PILE TOP
9		EA	WASHER HEAD TIMBER DRIVE SPIKE	1/16" DIA.	10"	PILE TOP CAP CONNECTION
10		EA	CUT WASHER	5/16" X 3"		INSTALLED UNDER BOLT NUT AND HEAD
11		LS	BRIDGE CEMENT, EPOXY RESIN			TO COAT HARDWARE
12		EA	TIMBER PLUGS, CREOSOTE TREATED			TO FILL HOLES IN TREATED TIMBER
13		LS	FIELD PRESERVATIVE			TO TREAT EXPOSED WOOD AT FIELD DRILLED HOLES

NOTE: EXISTING UNDAMAGED HARDWARE MAY BE REINSTALLED.
VERIFY TRACK PROFILE CORRECTIONS WHEN INSTALLING CHORD SHIM OR SHIM CAP.

BILL OF MATERIAL – POST PILE REPAIR

SEE DRAWINGS P1 & P2 FOR DETAILS, CONSTRUCTION PROCEDURE, GENERAL NOTES AND MATERIAL SPECIFICATIONS

LINE	QUAN.	UNIT	DESCRIPTION	SIZE	LENGTH	REMARKS
1		EA	PILE, CREOSOTE TREATED	MATCH EXIST. DIA.	TBD	DETERMINE EXACT SIZE IN FIELD
2		EA	A307 DRIFT MACHINE BOLT	¾" DIA.	26"	CAP TO POST CONNECTION
3		EA	WASHER HEAD TIMBER DRIVE SPIKE	1/16" DIA.	10"	POST PILE TOP CAP CONNECTION
4		EA	FIBERGLASS JACKET KIT			
5		EA	STEEL PINS, 4 PINS PER JOINT	1" DIA.	1'–6"	
6		EA	STEEL SHIM WASHERS, 4 WASHERS PER JOINT	¼" THICK		
7		EA	FABRIC			TO COVER PILE TOP
8		EA	SEALING COMPOUND			TO SEAL FABRIC AND PILE TOP
9		LS	BRIDGE CEMENT, EPOXY RESIN			TO COAT HARDWARE
10		EA	TIMBER PLUGS, CREOSOTE TREATED			TO FILL HOLES IN TREATED TIMBER
11		LS	FIELD PRESERVATIVE			TO TREAT EXPOSED WOOD AT FIELD DRILLED HOLES

NOTE: EXISTING UNDAMAGED HARDWARE MAY BE REINSTALLED.

BILL OF MATERIAL – LONG. AND TRANS. BRACE REPLACEMENT

SEE DRAWINGS B1 & B2 FOR DETAILS, CONSTRUCTION PROCEDURE, GENERAL NOTES AND MATERIAL SPECIFICATIONS

LINE	QUAN.	UNIT	DESCRIPTION	SIZE	LENGTH	REMARKS
1		EA	SWAY BRACE, CREOSOTE TREATED	4"X8"	TBD IN FIELD	
2		EA	A307 MACHINE BOLT	¾" DIA.	22"	VERIFY BOLT LENGTHS IN FIELD
3		EA	A307 MACHINE BOLT	¾" DIA.	26"	VERIFY BOLT LENGTH IN FIELD
4						
5		EA	SASH BRACE, CREOSOTE TREATED	4"X8"	TBD IN FIELD	
6		EA	A307 MACHINE BOLT	¾" DIA.	26"	VERIFY BOLT LENGTHS IN FIELD
7						
8		EA	DIAGONAL BRACE, CREOSOTE TREATED	6"X8"	TBD IN FIELD	
9		EA	A307 MACHINE BOLT	¾" DIA.	31"	VERIFY BOLT LENGTHS IN FIELD
10						
11		EA	LONGITUDINAL BRACE, CREOSOTE TREATED	10"X18"		
12		EA	TIMBER BLOCK, CREOSOTE TREATED	6"X8"	1'–6"	
13		EA	A307 MACHINE BOLT	¾" DIA.	21"	VERIFY BOLT LENGTHS IN FIELD
14		EA	A307 MACHINE BOLT	¾" DIA.	15"	
15		EA	A307 MACHINE BOLT	¾" DIA.	TBD IN FIELD	
16		EA	CUT WASHER	5/16" X 3"		INSTALLED UNDER BOLT NUT AND HEAD
17		EA	SPIKE GRID	4⅛" X 4⅛"		ALL LONGITUDINAL BRACING BOLTED CONNECTIONS
18		LS	BRIDGE CEMENT, EPOXY RESIN			TO COAT HARDWARE
19		EA	TIMBER PLUGS, CREOSOTE TREATED			TO FILL HOLES IN TREATED TIMBER
20		LS	FIELD PRESERVATIVE			TO TREAT EXPOSED WOOD AT FIELD DRILLED HOLES

NOTE: EXISTING UNDAMAGED HARDWARE MAY BE REINSTALLED.

USE OF BOM TABLES
THE INTENT OF THESE TABLES IS TO IDENTIFY POSSIBLE MATERIALS NEEDED TO COMPLETE EACH REPAIR. ACTUAL SIZES AND QUANTITIES WILL NEED TO BE FIELD VERIFIED AND DETERMINED BY THE PERSON IN CHARGE OF THE REPAIRS.

BILL OF MATERIAL – BACKWALL PLANK REPLACEMENT

SEE DRAWINGS BW1 & BW2 FOR DETAILS, CONSTRUCTION PROCEDURE, GENERAL NOTES AND MATERIAL SPECIFICATIONS

LINE	QUAN.	UNIT	DESCRIPTION	SIZE	LENGTH	REMARKS
1		EA	NEW BACKWALL PLANK, CREOSOTE TREATED	8"X12"	TBD IN FIELD	
2						
3		EA	SECOND HAND BACKWALL PLANK, CREOSOTE TREATED	10"X18"	TBD IN FIELD	

NOTE: FILL AND BALLAST MATERIALS ARE CONSIDERED INCIDENTAL TO THE WORK.
ADDITIONALLY, FILL COMPACTION AND TRACK SURFACING IS CONSIDERED INCIDENTAL TO THE WORK.

NOTE:
S2E INDICATES THE MEMBER IS SURFACED ON 2 EDGES FOR EXACT MEASUREMENT.

NOTE:
CONFIRM DIMENSIONS AND SIZES IN FIELD PRIOR TO ORDERING MATERIAL.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1–12–12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TIMBER BRIDGE REPAIR STANDARDS

EXAMPLE BILLS OF MATERIAL
SHEET 2 OF 2

REFERENCE

DATE: 1-12-12
SCALE:
DESIGNED: MJK - HDR
CHECKED: PJG - HDR
DRAWN: MRF - HDR
PROJECT NAME:
DRAWING NAME:
DRAWING: CO3

TACOMA RAIL
APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER

NO	REVISION	DATE	APPD
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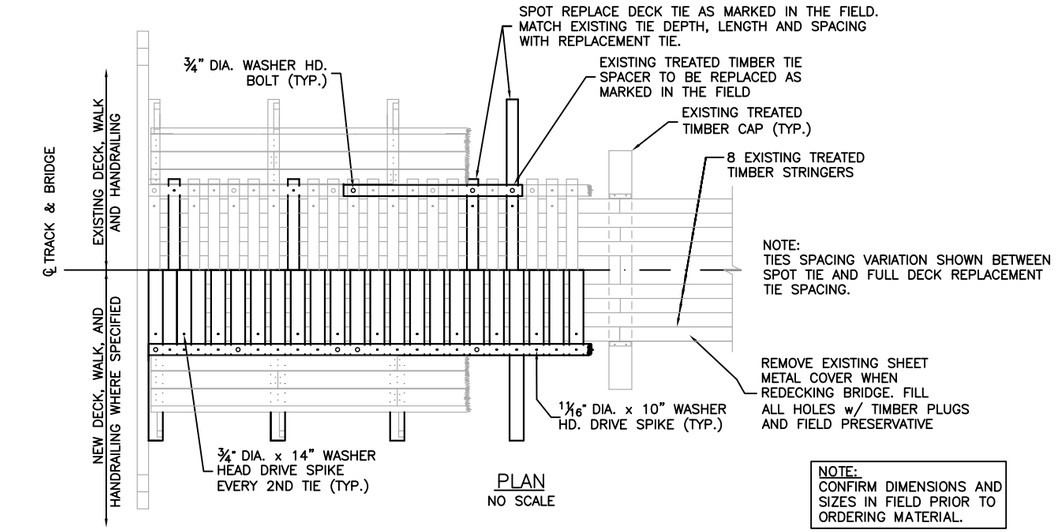

PLAN
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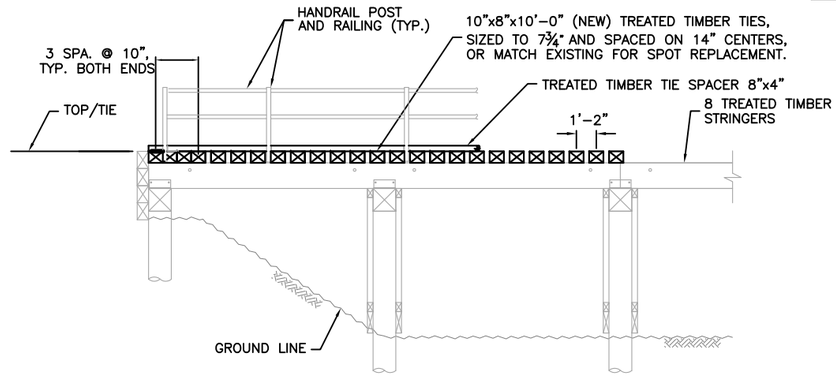
NOTE:
CONFIRM DIMENSIONS AND SIZES IN FIELD PRIOR TO ORDERING MATERIAL.



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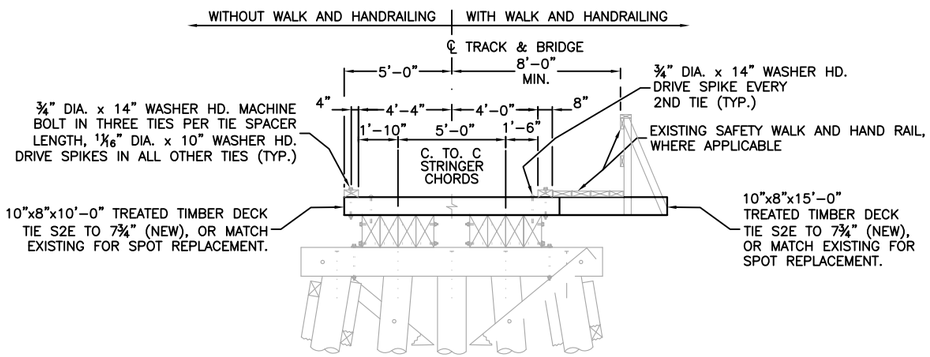
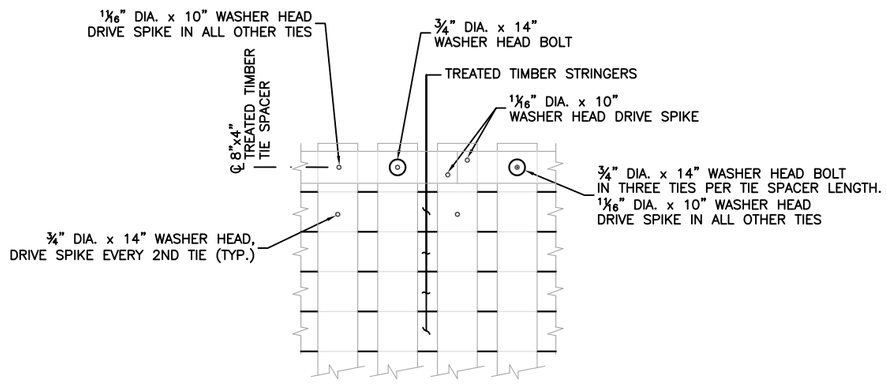


SECTION THRU BRIDGE
LOOKING AHEAD ON MILEPOST
NO SCALE

TIE REPLACEMENT CONSTRUCTION PROCEDURE

1. INSTALL SAFETY MEASURES IN ACCORDANCE WITH TACOMA RAIL SAFETY RULES TO SAFELY PERFORM THE WORK.
2. REMOVE SPIKES, BOLTS, ANCHORS, OR LAGS ON THE TIE THAT NEEDS TO BE CHANGED.
3. JACK RAIL OFF STRINGERS IN BETWEEN TIES.
4. IF NECESSARY REMOVE HOOK BOLTS ON STEEL GIRDERS AND/OR TIE SPACER (GUARD TIMBER).
5. REMOVE TIE PLATE.
6. REMOVE TIE AND INSTALL REPLACEMENT.
7. INSTALL TIE PLATE.
8. LOWER JACKS.
9. RE-SPIKE RAIL TO TIE, LAG TIE TO STRINGER, LAG/BOLT TIE TO TIE SPACER, HOOK BOLTS TO STEEL GIRDERS (IF APPLICABLE) AND INSTALL ANCHORS.
10. BEFORE CLEARING THE RAIL FOR TRAFFIC, BRIDGE SUPERVISOR SHALL INSPECT ALL WORK PERFORMED AND AUTHORIZE SAFE MOVEMENT OF TRAINS OVER THE REPAIRED STRUCTURE.
11. CLEAR TRACK AND RELEASE TRACK AUTHORITY.
12. CLEAN UP WORK SITE



TIE SPACER JOINT DETAIL
NO SCALE

REFERENCE

SEE DRAWING T2 FOR GENERAL NOTES AND MATERIAL SPECIFICATIONS.

APPROVED FOR
TACOMA RAIL
BY
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(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1-12-12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TIMBER BRIDGE REPAIR STANDARDS

DECK TIE REPLACEMENT
DETAILS AND CONSTRUCTION PROCEDURE

TACOMA RAIL

APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER

NO	REVISION	DATE	APPD
4			
3			
2			
1			

REFERENCE

DATE: 1-12-12
SCALE: NTS
DESIGNED: MJK - HDR
CHECKED: PJG - HDR
DRAWN: MRF - HDR
PROJECT NAME:
DRAWING NAME:
DRAWING: T1
SHEET 4 OF 23

GENERAL NOTES:

ALL TIES SHALL BE TREATED IN ACCORDANCE WITH THE MATERIAL SPECIFCIATIONS.

TREATED TIMBER MUST BE HANDLED CAREFULLY TO AVOID EXPOSING ANY PART OF THE UNTREATED INTERIOR WOOD. CANT HOOKS, PEAVIES, PIKES OR HOOKS SHALL NOT BE USED. WHEREVER DAMAGE HAS OCCURRED TO THE TREATED TIMBER, FIELD PRESERVATIVE TREATMENT SHALL BE APPLIED.

FIELD TREATMENT: HOLES, CUTS, AND ABRASIONS MADE IN TREATED TIMBER SHALL BE SWABBED WITH PRESERVATIVE. BOLTS SHALL BE DIPPED IN PRESERVATIVE OR BRIDGE CEMENT PRIOR TO PLACING.

HOLES FOR ¾" DIA. BOLTS SHALL BE 1 3/16" DIA. HOLES FOR ¾" DIA. DRIFT BOLTS SHALL BE ¾" DIA. IF BOLT HOLES NEED TO BE RELOCATED IT SHALL BE APPROVED BY THE ENGINEER.

HOLES FOR DRIVE SPIKES SHALL BE ⅛" LESS THAN DIAMETER OF SPIKE.

TIMBER OPEN DECK ON TIMBER STRINGERS: TREATED TIMBER TIES SHALL BE PLACED AT ABOUT 14" CENTERS IF COMPLETE REDECKING OF BRIDGE IS DONE, OR SHALL BE CENTERED BETWEEN EXISTING TREATED TIMBER TIES TO REMAIN IF ONLY SPOT REPLACED. TREATED TIMBER TIES SHALL BE BORED IN THE FIELD AND FIELD TREATMENT APPLIED. TREATED TIMBER TIE SPACERS SHALL BE CUT TO PROPER LENGTH AND BOLT HOLES BORED IN FIELD AND FIELD TREATMENT APPLIED.

NEW DECKS WILL HAVE SOLIDLY PLACED TREATED TIMBER TIES AS SHOWN AT EACH END OF BRIDGE OR ADJACENT TO BALLASTED DECK TO PREVENT BALLAST FROM FALLING ONTO BEARINGS. THE TOTAL QUANTITY OF TIES REQUIRED FOR A FULL DECK REPLACEMENT SHALL BE VERIFIED IN THE FIELD.

EXISTING TREATED TIMBER TIES TO BE SPOT REPLACED SHALL BE FIELD MEASURED PRIOR TO ORDERING MATERIAL AND SIZED TO THE APPROPRIATE DEPTH TO ENSURE THE RAIL AND TIE PLATE HAVE FULL EVEN BEARING ON EVERY TIE (NEW OR EXISTING).

SPOT AND FULL DECK TIE REPLACEMENT MATERIAL SPECIFICATIONS

GENERAL REQUIREMENTS

A. FOR SPOT TIE REPLACEMENT, PULL ALL SPIKES, BOLTS AND OTHER HARDWARE IN A CAREFUL MANNER TO ALLOW REUSE OF MATERIAL. REPLACE DAMAGED MATERIAL OR MATERIAL FOUND NON–REUSABLE WITH SIMILAR NEW TRACK AND BRIDGE HARDWARE. TIE SPACER REPLACEMENT WILL USE EXISTING FASTENER HARDWARE PATTERN AND MATERIALS. DAMAGED OR DEFECTIVE HARDWARE WILL BE REPLACED IN KIND.

B. FOR SPOT TIE REPLACEMENT, CAREFULLY MEASURE EXISTING TIES BEING REPLACED EXCEPT PLATE CUTTING WILL NOT BE USED TO DETERMINE TIE THICKNESS. WITH SPOT INSTALLATION OF NEW TIES, RAIL PROFILE SHALL BE RESTORED TO ORIGINALLY BUILT CONDITION AND GAGE SHALL MEET REQUIRED TOLERANCES. NO SHIMS OR ADZING OF NEW TIES WILL BE ALLOWED. HOLES NOT PREBORED SHALL BE FIELD PRE–DRILLED AND TREATED WITH FIELD PRESERVATIVE TREATMENT.

C. EXISTING RAIL, TRACK HARDWARE, TIE PLATES, AND OTM AND BRIDGE HARDWARE SHALL BE REUSED EXCEPT TRACK SPIKES AND WHERE NEW MATERIAL IS SHOWN AS PART OF THE DECK REPLACEMENT. MATERIAL DAMAGED OR FOUND NON–REUSABLE SHALL BE REPLACED.

D. AFTER A TREATED TIMBER TIE FULL DECK REPLACEMENT, RETURN TO THE BRIDGE AND RETIGHTEN ALL DECK HARDWARE AS NECESSARY BETWEEN FOUR AND SIX WEEKS AFTER THE DECK INSTALLATION HAS BEEN COMPLETED. DAMAGED HARDWARE DETERMINED TO NEED REPLACEMENT SHALL BE REPLACED AND INCLUDED AS INCIDENTAL TO THE WORK.

E. REMOVE AND DISPOSE OF THE EXISTING TREATED TIMBER TIES AND OTHER MATERIAL REMOVED FROM THE BRIDGE IN ACCORDANCE WITH TACOMA RAIL MATERIAL DISPOSAL STANDARDS, AND ANY CITY, COUNTY, STATE OR FEDERAL DISPOSAL REQUIREMENTS.

TIMBER BRIDGE MATERIAL REQUIREMENTS

1. DECK TIES

   A. DECK TIES SHALL CONFORM TO TACOMA RAIL TIE STANDARDS AND AREMA CHAPTER 7, PART 1, AND SHALL MATCH EXISTING DECK TIE SIZE.

   B. TIMBER TIES SHALL BE PRESERVATIVE TREATED WITH 50% BY VOLUME OF P–1 CREOSOTE OIL AS REQUIRED FOR STRUCTURAL ELEMENTS IN CONFORMANCE WITH AWPA STANDARDS (P3–09 AND P4–11 OR LATEST REVISION) AND 50% BY VOLUME OF AN APPROVED PETROLEUM RESIDUUM OIL.

2. STEEL FASTENERS

   A. ALL NEW MACHINE BOLTS, DRIFT PINS, AND DOWELS SHALL BE MEDIUM CARBON STEEL, CONFORMING TO THE MECHANICAL AND CHEMICAL REQUIREMENTS OF ASTM A 307 MACHINE BOLTS, GRADE A UNLESS OTHERWISE SPECIFIED. CUT WASHERS AS INDICATED ON THE PLANS, OR FOUND IN THE FIELD SHALL BE USED.

   B. BOLTS SHALL HAVE SQUARE HEADS AND NUTS OR LOCKNUTS, AS SHOWN IN THE PLANS OR OTHERWISE SPECIFIED.

   C. NAILS SHALL BE CUT OR ROUND WIRE OF STANDARD FORM. SPIKES SHALL BE CUT OR WIRE SPIKES, OR BOAT SPIKES AS SPECIFIED OR SHOWN IN THE PLANS. ALL NAILS AND SPIKES SHALL HAVE GROOVED, BARBED, SPIRAL GROOVES OR OTHERWISE DEFORMED SHANKS FOR GREATER HOLDING CAPACITY.

   D. ALL HARDWARE, BOLTS, NUTS, LOCKNUTS, WASHERS, NAILS AND SPIKES, SHALL BE HOT–DIPPED GALVANIZED COATED PER ASTM A153.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1–12–12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TIMBER BRIDGE REPAIR STANDARDS

DECK TIE REPLACEMENT

GENERAL NOTES AND MATERIAL SPECIFICATIONS

TACOMA RAIL

APPROVED: [ORIGINAL SIGNED BY]

ALAN MATHESON - ROADMASTER

NO	REVISION	DATE	APPD
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REFERENCE

DATE: 1-12-12
SCALE: NTS
DESIGNED: MJK - HDR
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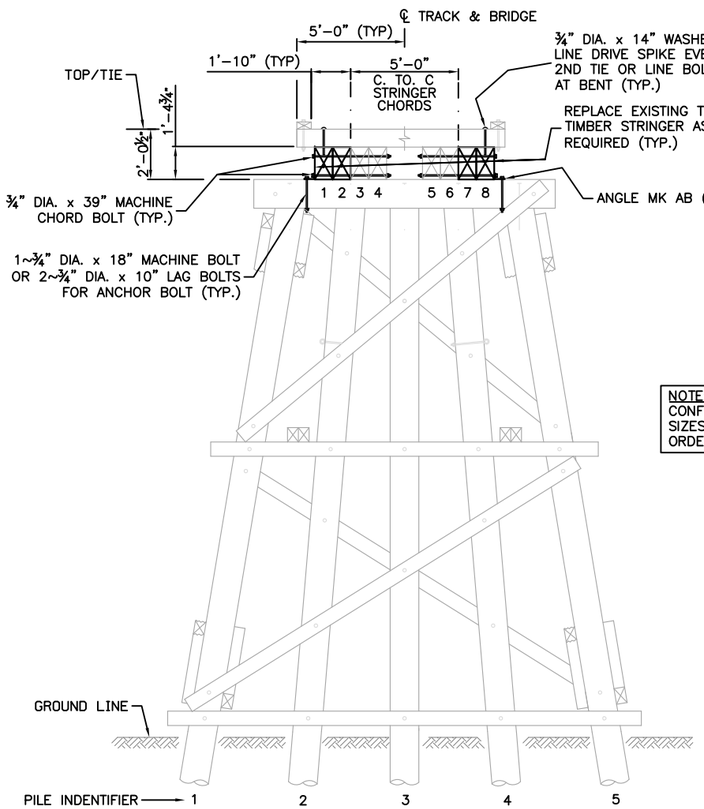

SECTION THRU BRIDGE

LOOKING AHEAD ON MILEPOST
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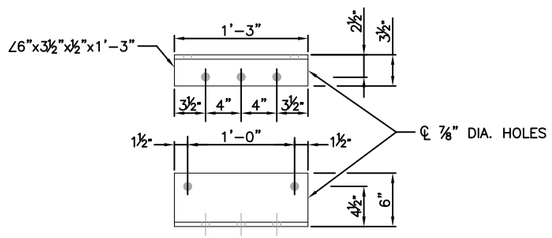


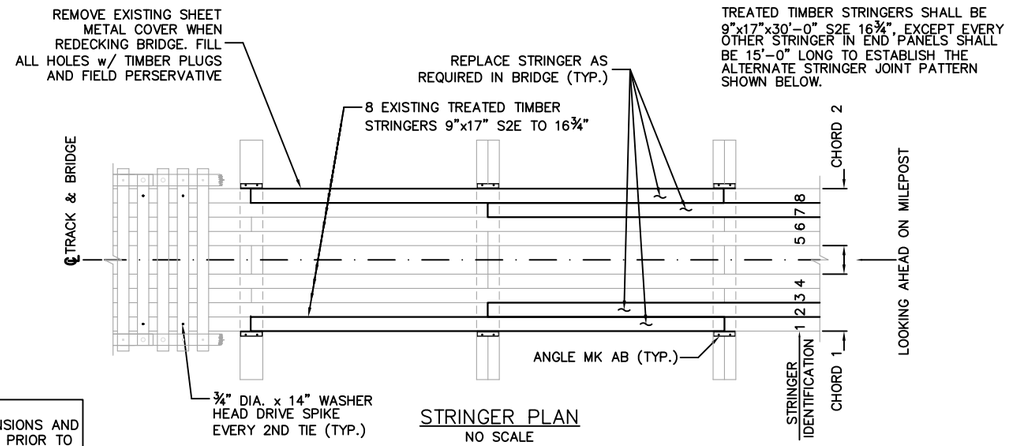
ANGLE MK AB

NO SCALE
REPLACE IF NECESSARY IN FIELD,
VERIFY HOLE SPACING AND SIZE IN FIELD.

REFERENCE

SEE DRAWING OS2 FOR GENERAL NOTES AND MATERIAL SPECIFICATIONS.

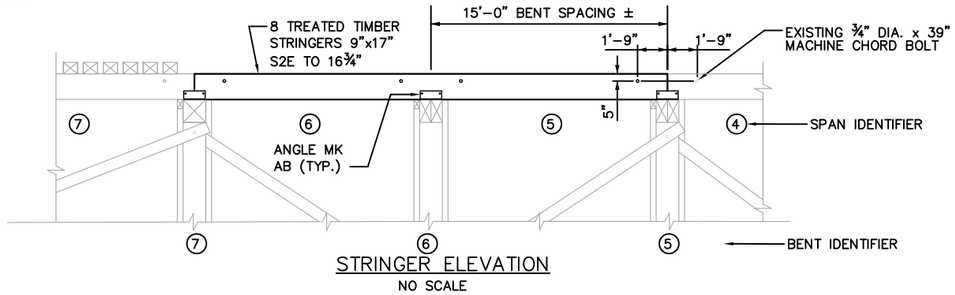
NOTE:
CONFIRM DIMENSIONS AND SIZES IN FIELD PRIOR TO ORDERING MATERIAL.



STRINGER PLAN

NO SCALE

NOTE:
TREATED TIMBER STRINGERS SHALL BE 9"x17"x30'-0" S2E 16¾", EXCEPT EVERY OTHER STRINGER IN END PANELS SHALL BE 15'-0" LONG TO ESTABLISH THE ALTERNATE STRINGER JOINT PATTERN SHOWN BELOW.



STRINGER ELEVATION

NO SCALE

OUTER STRINGER REPLACEMENT CONSTRUCTION PROCEDURE

1. HAUL SIZE VERIFIED MATERIAL TO THE JOB SITE.
2. OBTAIN TRACK AUTHORITY.
3. INSTALL SAFETY MEASURES IN ACCORDANCE WITH TACOMA RAIL SAFETY RULES TO SAFELY PERFORM THE WORK.
4. LOCATE THE STRINGER THAT NEEDS REPLACING. MARK THE RAIL AT EACH END. IF THE NUMBER 1 OR NUMBER 8 STRINGER IS BEING CHANGED (OUTSIDE STRINGER) THEN LOOSEN HARDWARE (LINE BOLTS AND DRIVE SPIKES) 30 FEET EACH WAY OF STRINGER TO BE REMOVED. REMOVE THE CHORD BOLTS, LINE BOLTS AND SCREWS FROM THE STRINGER TO BE REPLACED. IF IT IS A PACKED CHORD TRESTLE. THEN REMOVE THE 7/8 INCH ANCHORS AND CLIP ANGLES AT THREE LOCATIONS (OUTSIDE ONLY). REMOVE OR NIP UP THE SPACER BLOCKS OVER THE 30 FOOT STRINGER.
5. REMOVE ANGLE MK AB BRACKETS.
6. JACK UP RAIL AND TIES AND ROLL STRINGER OUT. REMOVE STRINGER AND SET NEW STRINGER IN PLACE. NOTE: IF HOLES ARE NOT IN NEW STRINGER, THEN PLACE THE OLD STRINGER ON THE NEW STRINGER, MARK AND DRILL HOLES BEFORE SETTING THE NEW STRINGER IN PLACE. ROLL STRINGER INTO PLACE.
7. INSTALL ANGLES AND CHORD BOLTS AND REPLACE THE 7/8 INCH ANCHOR BOLTS.
8. LOWER THE JACKS AND DRILL LINE BOLT HOLES. REPLACE THE 14 INCH DRIVE SPIKES AND DRIVE THE ONES THAT WERE RAISED UP BACK DOWN AND TIGHTEN THE OTHER LINE BOLT NUTS, REPLACING ALL HARDWARE AND RENAILING THE SPACER BLOCKS.
9. BEFORE CLEARING THE RAIL FOR TRAFFIC, BRIDGE SUPERVISOR SHALL INSPECT ALL WORK PERFORMED AND AUTHORIZE SAFE MOVEMENT OF TRAINS OVER THE REPAIRED STRUCTURE.
10. CLEAR TRACK AND RELEASE TRACK AUTHORITY.
11. CLEAN UP WORK SITE.

NOTE:
IF REPLACING THE NUMBER 2 OR 7 STRINGER, REMOVE ALL HARDWARE IN 60 FEET OF OUTSIDE STRINGER CENTERED AT STRINGER TO BE REPLACED AND LOOSEN DECK 30 FEET EACH SIDE.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1-12-12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

TIMBER BRIDGE REPAIR STANDARDS

OUTER STRINGER REPLACEMENT
DETAILS AND CONSTRUCTION PROCEDURE

HDR ENGINEERING INC.

TACOMA RAIL

APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER

REFERENCE		DATE	SCALE
		1-12-12	NTS
4		DESIGNED MJK - HDR	CHECKED PJG - HDR
3		DRAWN MRF - HDR	PROJECT NAME
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1			
NO	REVISION	DATE	APPD

DRAWING OS1

SHEET 6 OF 23

GENERAL NOTES:

ALL TIMBER SHALL BE TREATED IN ACCORDANCE WITH THE MATERIAL SPECIFICATIONS.

TREATED TIMBER MUST BE HANDLED CAREFULLY TO AVOID EXPOSING ANY PART OF THE UNTREATED INTERIOR WOOD. CANT HOOKS, PEAVIES, PIKES OR HOOKS SHALL NOT BE USED. WHEREVER DAMAGE HAS OCCURRED TO THE TREATED TIMBER, FIELD PRESERVATIVE TREATMENT SHALL BE APPLIED.

FIELD TREATMENT: HOLES, CUTS, AND ABRASIONS MADE IN TREATED TIMBER SHALL BE SWABBED WITH PRESERVATIVE. BOLTS SHALL BE DIPPED IN PRESERVATIVE OR BRIDGE CEMENT PRIOR TO PLACING.

ALL BOLTS THROUGH TIMBER SHALL HAVE A 5/16" x 3" O.D. CUT WASHER OR EQUIVALENT UNDER BOTH NUT AND HEAD.

USE APPROVED LOCK NUTS ON ALL BOLTS.

HOLES FOR 3/4" DIA. BOLTS SHALL BE 13/16" DIA. HOLES FOR 3/4" DIA. DRIFT BOLTS SHALL BE 3/4" DIA.

HOLES FOR DRIVE SPIKES SHALL BE 1/8" LESS THAN DIAMETER OF SPIKE.

OUTER STRINGER REPLACEMENT MATERIAL SPECIFICATIONS

GENERAL REQUIREMENTS

A. REMOVAL OF THE OLD STRINGERS AND INSTALLATION OF THE NEW STRINGERS SHALL BE PERFORMED CAREFULLY TO AVOID SHIFTING OR DAMAGING THE REMAINDER OF THE STRUCTURE. FIELD VERIFY STRINGER MEASUREMENTS BEFORE ORDERING MATERIAL.

B. TREATED TIMBER SHIMS SHALL ONLY BE USED BETWEEN THE CAP AND THE STRINGERS. SHIMS SHALL BE NAILED IN PLACE OR BOLTED AS SHOWN IN THE PLANS BASED ON SHIM THICKNESS.

C. NEW STRINGERS SHALL BE REATTACHED TO THE DECK TIES IN THE SAME MANNER AND FREQUENCY AS THE EXISTING STRINGERS.

D. THE ENDS AND INTERMEDIATE SUPPORTS OF NEW STRINGERS AND EXISTING STRINGERS THAT ARE CUT WHEN REPLACING DEFICIENT PORTIONS OF THE STRINGERS SHALL BE CONNECTED TO THE PILE CAP WITH DRIFT PINS. IF ACCESS ALLOWS, A SINGLE DRIFT PIN CAN BE DRIVEN THROUGH THE DECK FROM ABOVE; OTHERWISE, A DRIFT PIN SHALL BE DRIVEN FROM UNDERNEATH ON EACH SIDE OF THE PILE CAP INTO THE STRINGERS.

E. ALL HARDWARE LOOSENED FOR INSTALLATION OF THE STRINGER SHALL BE REINSTALLED AND TIGHTENED. REMOVED HARDWARE SHALL BE REPLACED IN THE EXISTING CONFIGURATION OR AS SHOWN IN THE TYPICAL PLANS IF ADDITIONAL FASTENERS ARE INDICATED FROM EXISTING. EXISTING HARDWARE FOUND TO BE NON-REUSABLE SHALL BE REPLACED WITH NEW HARDWARE. REPLACE ANY DAMAGED HARDWARE.

TIMBER BRIDGE MATERIAL REQUIREMENTS

1. LUMBER

   A. TREATED TIMBER LUMBER SHALL BE FROM THE FOLLOWING STRESS GRADED LUMBER SPECIES: DOUGLAS-FIR OR SOUTHERN PINE. THE WET CONDITION BENDING STRESS SHALL BE A MINIMUM OF 1450 PSI AND WET CONDITION COMPRESSION PERPENDICULAR TO THE GRAIN SHALL BE A MINIMUM OF 400 PSI IN ACCORDANCE WITH TABLE 7-2-9, "ALLOWABLE UNIT STRESSES FOR STRESS GRADED LUMBER – RAILROAD LOADING (VISUAL GRADING)" CONTAINED IN CHAPTER 7 OF THE AREMA MANUAL. MATERIAL TO BE STRESS GRADED IN ACCORDANCE WITH THE APPLICABLE GRADING RULES FOR THE SPECIES PROVIDED.

   B. TREATED TIMBER LUMBER SHALL BE PRESSURE TREATED WITH CREOSOTE AS REQUIRED FOR STRUCTURAL ELEMENTS IN THESE SPECIFICATIONS IN CONFORMANCE WITH AWPA STANDARD UC4C, "GROUND CONTACT, EXTREME DUTY" AND IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 7 AND CHAPTER 30 OF THE AREMA MANUAL. TREATED TIMBER LUMBER SIZES TO BE FIELD VERIFIED PRIOR TO ORDERING.

   C. WRITTEN CERTIFICATION SHALL BE PROVIDED ASSURING THAT ALL TREATED TIMBER USED FOR REPLACING DEFICIENT MEMBERS WAS PRODUCED IN COMPLIANCE WITH THE BEST MANAGEMENT PRACTICES (BMP'S) OUTLINED IN "BEST MANAGEMENT PRACTICES FOR TREATED WOOD IN AQUATIC AND OTHER SENSITIVE ENVIRONMENTS", LATEST EDITION PUBLISHED BY THE WESTERN WOOD PRESERVERS INSTITUTE (WWPI), WOOD PRESERVATION CANADA, AND THE TIMBER PILING COUNCIL. THE WRITTEN CERTIFICATION SHALL INCLUDE A DESCRIPTION AND APPROPRIATE DOCUMENTATION OF THE APPLICABLE BMP'S USED.

2. STEEL FASTENERS

   A. ALL NEW MACHINE BOLTS, DRIFT PINS, AND DOWELS SHALL BE MEDIUM CARBON STEEL, CONFORMING TO THE MECHANICAL AND CHEMICAL REQUIREMENTS OF ASTM A 307, GRADE A UNLESS OTHERWISE SPECIFIED. PLATE OR FLAT WASHERS AS INDICATED ON THE PLANS SHALL BE USED.

   B. MACHINE BOLTS SHALL HAVE SQUARE HEADS AND NUTS OR LOCKNUTS, AS SHOWN IN THE PLANS OR OTHERWISE SPECIFIED.

   C. NAILS SHALL BE CUT OR ROUND WIRE OF STANDARD FORM. SPIKES SHALL BE CUT OR WIRE SPIKES, OR BOAT SPIKES AS SPECIFIED OR SHOWN IN THE PLANS. ALL NAILS AND SPIKES SHALL HAVE GROOVED, BARBED, SPIRAL GROOVES OR OTHERWISE DEFORMED SHANKS FOR GREATER HOLDING CAPACITY.

D. ALL HARDWARE, BOLTS, NUTS, LOCKNUTS, WASHERS, NAILS AND SPIKES, SHALL BE HOT-DIPPED GALVANIZED COATED PER ASTM A153.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1-12-12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TACOMA RAIL

APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER

TIMBER BRIDGE REPAIR STANDARDS

OUTER STRINGER REPLACEMENT

GENERAL NOTES AND MATERIAL SPECIFICATIONS

NO	REVISION	DATE	APPD
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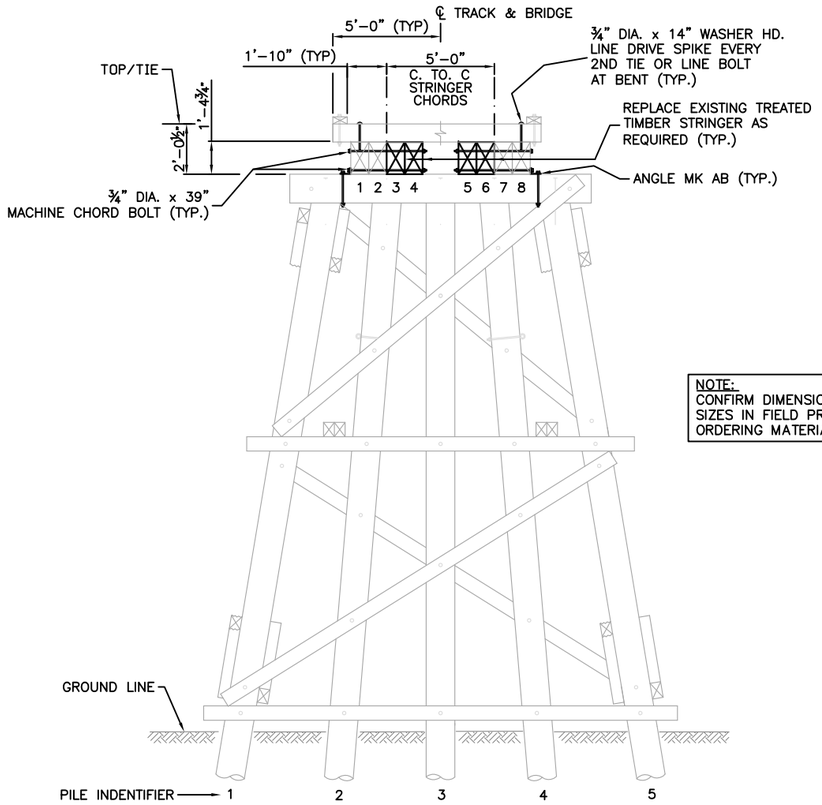
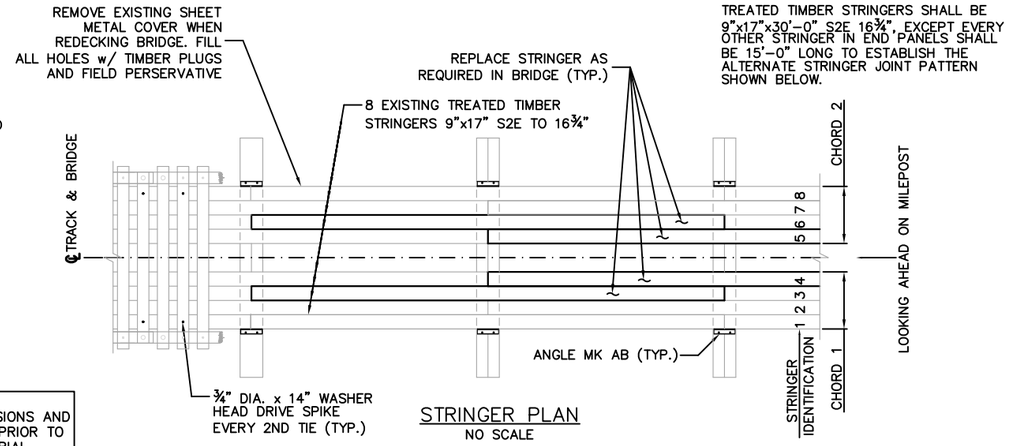
DATE: 1-12-12
SCALE: NTS
DESIGNED: MJK - HDR
CHECKED: PJG - HDR
DRAWN: MRF - HDR
PROJECT NAME:
DRAWING NAME:
DRAWING: OS2



SECTION THRU BRIDGE

LOOKING AHEAD ON MILEPOST
NO SCALE

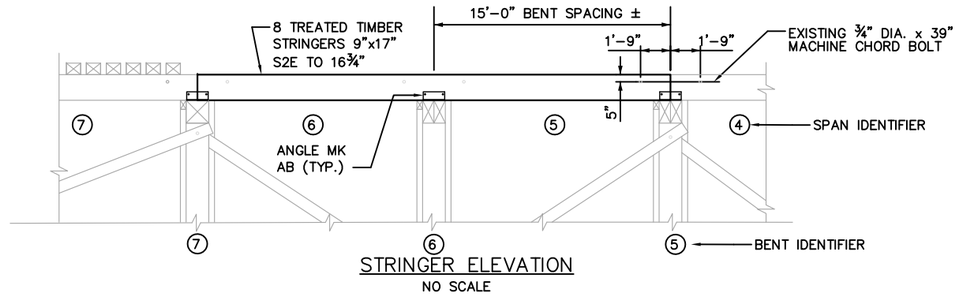
NOTE:
CONFIRM DIMENSIONS AND SIZES IN FIELD PRIOR TO ORDERING MATERIAL.



STRINGER PLAN

NO SCALE

NOTE:
TREATED TIMBER STRINGERS SHALL BE 9"x17"x30'-0" S2E 16¾", EXCEPT EVERY OTHER STRINGER IN END PANELS SHALL BE 15'-0" LONG TO ESTABLISH THE ALTERNATE STRINGER JOINT PATTERN SHOWN BELOW.



STRINGER ELEVATION

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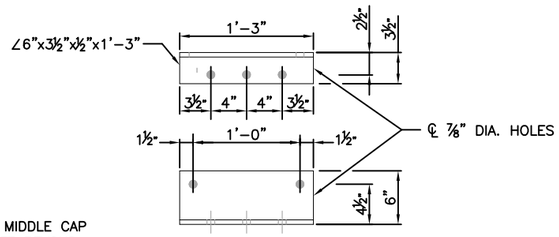

ANGLE MK AB

NO SCALE
REPLACE IF NECESSARY IN FIELD, VERIFY HOLE SPACING AND SIZE IN FIELD.

INNER STRINGER REPLACEMENT CONSTRUCTION PROCEDURE

1. HAUL SIZE VERIFIED MATERIAL TO JOB SITE.
2. OBTAIN TRACK AUTHORITY.
3. INSTALL SAFETY MEASURES IN ACCORDANCE WITH TACOMA RAIL SAFETY RULES TO SAFELY PERFORM THE WORK.
4. REMOVE LINE BOLTS AND DRIVE SPIKES FOR A MINIMUM OF 17 FEET OF DECK FOR BOTH RAILS. BE SURE HARDWARE IS REMOVED OVER THE MIDDLE CAP OF THE STRINGER TO BE REMOVED. IN ORDER TO RAISE THE DECK, LOOSEN LINE NUTS AND BOLTS AND RAISE THE DRIVE SPIKES FOR 30 FEET BEYOND BOTH ENDS OF THE STRINGERS TO BE REMOVED. LOOSEN LINE BOLTS AND DRIVE SPIKES AND RAISE SCREWS FOR 15 FEET EACH WAY OPPOSITE RAIL.
5. REMOVE ANGLE MK AB BRACKETS.
6. IN THE 17 FOOT SECTION, PULL ALL SPIKES ON OUTSIDE OF ONE RAIL AND THE INSIDE SPIKES ON OTHER RAIL AND NIP THE OTHER SPIKES. REMOVE THE LINE BOLTS AND DRIVE SPIKES.
7. JACK UP BOTH RAILS.
8. SLIDE THE TIES BACK TO CLEAR THE OPENING BETWEEN THE CHORDS. REMEMBER, THE TIE PLATES ARE ATTACHED TO THE TIE WITH RAISED OR NIPPED UP SPIKES ON OUTSIDE OF ONE PLACE AND INSIDE SPIKES ON OPPOSITE RAIL. AFTER TIES ARE BACK ENOUGH TO CLEAR THE CENTER, REMOVE THE JACK OPPOSITE BAD STRINGER. CONTINUE TO RAISE THE OTHER JACK UNTIL THERE IS ROOM TO PLACE 1-1/2" OF SHIMS BETWEEN THE TIE AND THE INSIDE STRINGER. PLACE THE SHIMS AT EACH END AND CENTER OF THE STRINGER ADJACENT TO THE STRINGER BEING REPLACED. REMOVE THE JACK.
9. ROLL THE BAD STRINGER OVER TO LAY FLAT BETWEEN THE CHORDS.
10. STRADDLE THE STRINGER WITH DERRICK CAR. PICK UP WITH CHAIN OR STRAP. MOVE THE DERRICK CAR AS THE STRINGER IS BEING PICKED UP. THE BOOM WILL NEED TO BE FACING THE OPENING WHERE THE TIES HAVE BEEN SLID BACK. KEEP MOVING AND PICKING UP UNTIL THE STRINGER IS ABOVE THE TIES AND UNDER THE DERRICK CAR. CARRY THE STRINGER TO THE END OF THE BRIDGE OR WHERE THE NEW STRINGER IS LOCATED. IF NEW STRINGER IS NOT BORED, LAY THE OLD STRINGER ON TOP. USING A BOLT, MARK EACH HOLE TO BE BORED BY STRIKING WITH A MAUL. BORE HOLES AND REVERSE REMOVAL PROCEDURE TO INSTALL THE NEW STRINGER.
11. ROLL STRINGER UP AND DRIVE CHORD BOLTS IN PLACE. REPLACE ANGLES AND ALL CHORD BOLT NUTS.
12. SET JACKS AND SLIDE TIES BACK IN PLACE. REMOVE ALL SHIMS, LOWER JACKS AND RESPIKE.
13. REPLACE ALL HARDWARE (BOLTS, NUTS, DRIVE SPIKES AND ANCHOR BOLTS).
14. BEFORE CLEARING THE RAIL FOR TRAFFIC, BRIDGE SUPERVISOR SHALL INSPECT ALL WORK PERFORMED AND AUTHORIZE SAFE MOVEMENT OF TRAINS OVER THE REPAIRED STRUCTURE.
15. CLEAR TRACK AND RELEASE TRACK AUTHORITY.
16. CLEAN UP WORK AREA.

REFERENCE

SEE DRAWING IS2 FOR GENERAL NOTES AND MATERIAL SPECIFICATIONS.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1-12-12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TIMBER BRIDGE REPAIR STANDARDS

INNER STRINGER REPLACEMENT
DETAILS AND CONSTRUCTION PROCEDURE

TACOMA RAIL

APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER

NO	REVISION	DATE	APPD
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DATE: 1-12-12
SCALE: NTS
DESIGNED: MJK - HDR
CHECKED: PJG - HDR
DRAWN: MRF - HDR
PROJECT NAME:
DRAWING NAME:
DRAWING: IS1
SHEET 8 OF 23

GENERAL NOTES:

ALL TIMBER SHALL BE TREATED IN ACCORDANCE WITH THE MATERIAL SPECIFICATIONS.

TREATED TIMBER MUST BE HANDLED CAREFULLY TO AVOID EXPOSING ANY PART OF THE UNTREATED INTERIOR WOOD. CANT HOOKS, PEAVIES, PIKES OR HOOKS SHALL NOT BE USED. WHEREVER DAMAGE HAS OCCURRED TO THE TREATED TIMBER, FIELD PRESERVATIVE TREATMENT SHALL BE APPLIED.

FIELD TREATMENT: HOLES, CUTS, AND ABRASIONS MADE IN TREATED TIMBER SHALL BE SWABBED WITH PRESERVATIVE. BOLTS SHALL BE DIPPED IN PRESERVATIVE OR BRIDGE CEMENT PRIOR TO PLACING.

ALL BOLTS THROUGH TIMBER SHALL HAVE A 5/16" x 3" O.D. CUT WASHER OR EQUIVALENT UNDER BOTH NUT AND HEAD.

USE APPROVED LOCK NUTS ON ALL BOLTS.

HOLES FOR 3/4" DIA. BOLTS SHALL BE 13/16" DIA. HOLES FOR 3/4" DIA. DRIFT BOLTS SHALL BE 3/4" DIA.

HOLES FOR DRIVE SPIKES SHALL BE 1/8" LESS THAN DIAMETER OF SPIKE.

INNER STRINGER REPLACEMENT MATERIAL SPECIFICATIONS

GENERAL REQUIREMENTS

A. REMOVAL OF THE OLD STRINGERS AND INSTALLATION OF THE NEW STRINGERS SHALL BE PERFORMED CAREFULLY TO AVOID SHIFTING OR DAMAGING THE REMAINDER OF THE STRUCTURE. FIELD VERIFY STRINGER MEASUREMENTS BEFORE ORDERING MATERIAL.

B. TREATED TIMBER SHIMS SHALL ONLY BE USED BETWEEN THE CAP AND THE STRINGERS. SHIMS SHALL BE NAILED IN PLACE OR BOLTED AS SHOWN IN THE PLANS BASED ON SHIM THICKNESS.

C. NEW STRINGERS SHALL BE REATTACHED TO THE DECK TIES IN THE SAME MANNER AND FREQUENCY AS THE EXISTING STRINGERS.

D. THE ENDS AND INTERMEDIATE SUPPORTS OF NEW STRINGERS AND EXISTING STRINGERS THAT ARE CUT WHEN REPLACING DEFICIENT PORTIONS OF THE STRINGERS SHALL BE CONNECTED TO THE PILE CAP WITH DRIFT PINS. IF ACCESS ALLOWS, A SINGLE DRIFT PIN CAN BE DRIVEN THROUGH THE DECK FROM ABOVE; OTHERWISE, A DRIFT PIN SHALL BE DRIVEN FROM UNDERNEATH ON EACH SIDE OF THE PILE CAP INTO THE STRINGERS.

E. ALL HARDWARE LOOSENED FOR INSTALLATION OF THE STRINGER SHALL BE REINSTALLED AND TIGHTENED. REMOVED HARDWARE SHALL BE REPLACED IN THE EXISTING CONFIGURATION OR AS SHOWN IN THE TYPICAL PLANS IF ADDITIONAL FASTENERS ARE INDICATED FROM EXISTING. EXISTING HARDWARE FOUND TO BE NON-REUSABLE SHALL BE REPLACED WITH NEW HARDWARE. REPLACE ANY DAMAGED HARDWARE.

TIMBER BRIDGE MATERIAL REQUIREMENTS

1. LUMBER

   A. TREATED TIMBER LUMBER SHALL BE FROM THE FOLLOWING STRESS GRADED LUMBER SPECIES: DOUGLAS-FIR OR SOUTHERN PINE. THE WET CONDITION BENDING STRESS SHALL BE A MINIMUM OF 1450 PSI AND WET CONDITION COMPRESSION PERPENDICULAR TO THE GRAIN SHALL BE A MINIMUM OF 400 PSI IN ACCORDANCE WITH TABLE 7-2-9, "ALLOWABLE UNIT STRESSES FOR STRESS GRADED LUMBER – RAILROAD LOADING (VISUAL GRADING)" CONTAINED IN CHAPTER 7 OF THE AREMA MANUAL. MATERIAL TO BE STRESS GRADED IN ACCORDANCE WITH THE APPLICABLE GRADING RULES FOR THE SPECIES PROVIDED.

   B. TREATED TIMBER LUMBER SHALL BE PRESSURE TREATED WITH CREOSOTE AS REQUIRED FOR STRUCTURAL ELEMENTS IN THESE SPECIFICATIONS IN CONFORMANCE WITH AWPA STANDARD UC4C, "GROUND CONTACT, EXTREME DUTY" AND IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 7 AND CHAPTER 30 OF THE AREMA MANUAL. TREATED TIMBER LUMBER SIZES TO BE FIELD VERIFIED PRIOR TO ORDERING.

   C. WRITTEN CERTIFICATION SHALL BE PROVIDED ASSURING THAT ALL TREATED TIMBER USED FOR REPLACING DEFICIENT MEMBERS WAS PRODUCED IN COMPLIANCE WITH THE BEST MANAGEMENT PRACTICES (BMP'S) OUTLINED IN "BEST MANAGEMENT PRACTICES FOR TREATED WOOD IN AQUATIC AND OTHER SENSITIVE ENVIRONMENTS", LATEST EDITION PUBLISHED BY THE WESTERN WOOD PRESERVERS INSTITUTE (WWPI), WOOD PRESERVATION CANADA,AND THE TIMBER PILING COUNCIL. THE WRITTEN CERTIFICATION SHALL INCLUDE A DESCRIPTION AND APPROPRIATE DOCUMENTATION OF THE APPLICABLE BMP'S USED.

2. STEEL FASTENERS

   A. ALL NEW MACHINE BOLTS, DRIFT PINS, AND DOWELS SHALL BE MEDIUM CARBON STEEL, CONFORMING TO THE MECHANICAL AND CHEMICAL REQUIREMENTS OF ASTM A 307, GRADE A UNLESS OTHERWISE SPECIFIED. PLATE OR FLAT WASHERS AS INDICATED ON THE PLANS SHALL BE USED.

   B. MACHINE BOLTS SHALL HAVE SQUARE HEADS AND NUTS OR LOCKNUTS, AS SHOWN IN THE PLANS OR OTHERWISE SPECIFIED.

   C. NAILS SHALL BE CUT OR ROUND WIRE OF STANDARD FORM. SPIKES SHALL BE CUT OR WIRE SPIKES, OR BOAT SPIKES AS SPECIFIED OR SHOWN IN THE PLANS. ALL NAILS AND SPIKES SHALL HAVE GROOVED, BARBED, SPIRAL GROOVES OR OTHERWISE DEFORMED SHANKS FOR GREATER HOLDING CAPACITY.

   D. ALL HARDWARE, BOLTS, NUTS, LOCKNUTS, WASHERS, NAILS AND SPIKES, SHALL BE HOT-DIPPED GALVANIZED COATED PER ASTM A153.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1-12-12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TACOMA RAIL

APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER

TIMBER BRIDGE REPAIR STANDARDS

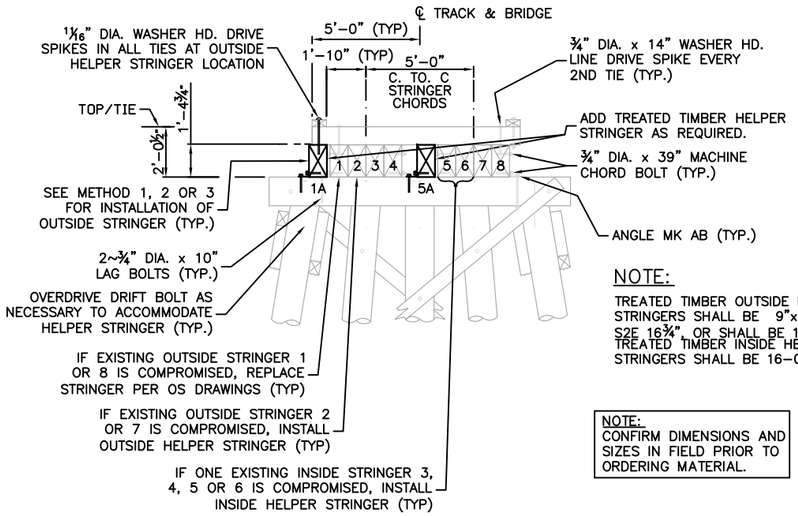
INNER STRINGER REPLACEMENT

GENERAL NOTES AND MATERIAL SPECIFICATIONS

NO	REVISION	DATE	APPD
4			
3			
2			
1			

REFERENCE

DATE: 1-12-12
SCALE: NTS
DESIGNED: MJK - HDR
CHECKED: PJG - HDR
DRAWN: MRF - HDR
PROJECT NAME:
DRAWING NAME:
DRAWING: IS2

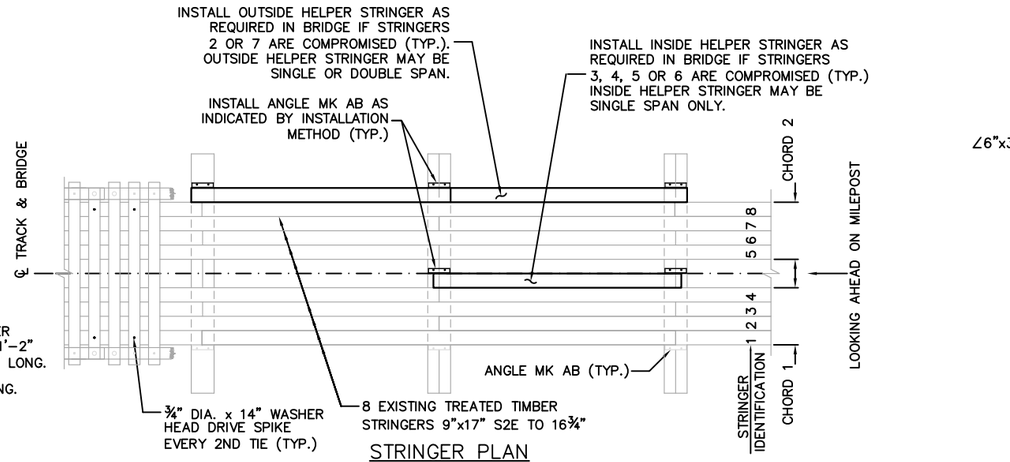


SECTION THRU BRIDGE
LOOKING AHEAD ON MILEPOST
NO SCALE

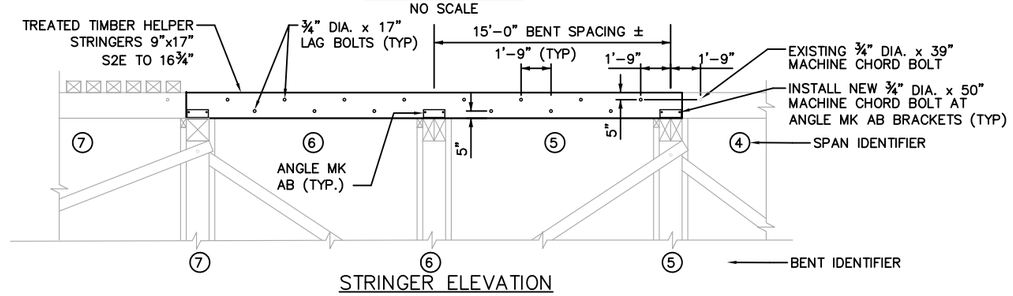
NOTE:

TREATED TIMBER OUTSIDE HELPER STRINGERS SHALL BE 9"x17"x31'-2" S2E 16¾", OR SHALL BE 16'-2" LONG.
TREATED TIMBER INSIDE HELPER STRINGERS SHALL BE 16-0" LONG.

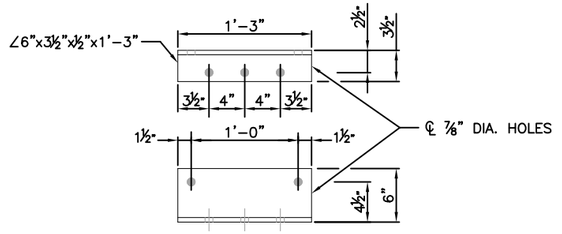
NOTE:
CONFIRM DIMENSIONS AND SIZES IN FIELD PRIOR TO ORDERING MATERIAL.



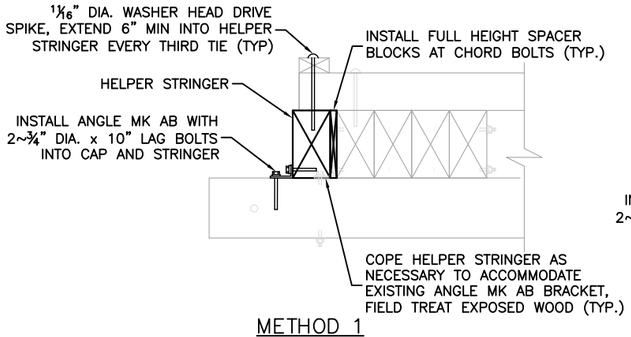
STRINGER PLAN
NO SCALE



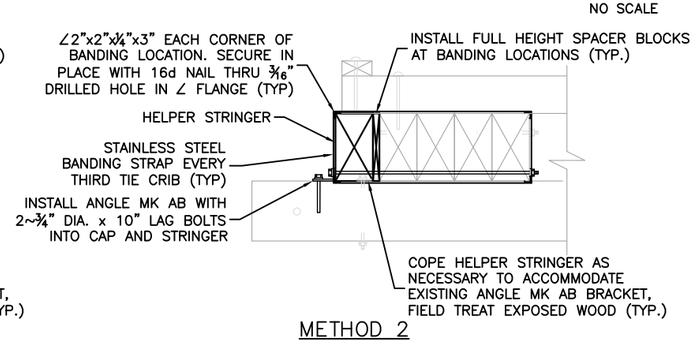
STRINGER ELEVATION
NO SCALE



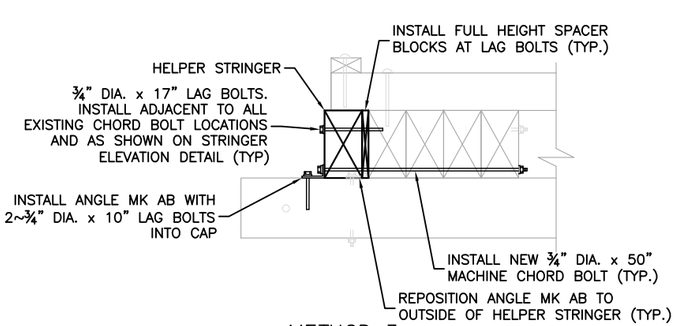
ANGLE MK AB
NO SCALE
VERIFY HOLE SPACING AND SIZE IN FIELD



METHOD 1



METHOD 2

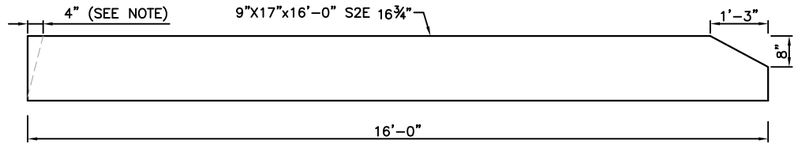


METHOD 3

OUTSIDE HELPER STRINGER CONNECTION METHODS
(INSIDE HELPER STRINGER SIMILAR)
NO SCALE

REFERENCE

SEE DRAWING HS2 FOR HELPER STRINGER INSTALLATION PROCEDURE, GENERAL NOTES AND MATERIAL SPECIFICATIONS.



NOTE:

FOUR INCHES TOP TO ZERO INCHES BOTTOM IS ALLOWED ONLY ON BULKHEAD BENT OR WHERE AN OBSTRUCTION IS ENCOUNTERED AND A SQUARE CUT END OF HELPER WILL NOT FIT.

INSIDE HELPER STRINGER FRAMING
NO SCALE

APPROVED FOR
TACOMA RAIL
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DONALD L. McCAMMON

DATE: 1-12-12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TIMBER BRIDGE REPAIR STANDARDS

HELPER STRINGER
DETAILS

TACOMA RAIL

APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER

NO	REVISION	DATE	APPD
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CHECKED: PJG - HDR
DRAWN: MRF - HDR
PROJECT NAME:
DRAWING NAME:
DRAWING: HS1
SHEET 10 OF 23

HELPER STRINGER INSTALLATION PROCEDURE

1. IF STRINGER 1, 4, 5 OR 8 IN A CHORD IS DEFECTIVE, IT SHALL BE REMOVED AND REPLACED – SEE OS1 & OS2 OR IS1 & IS2 DRAWINGS.
2. IF STRINGER 2 OR 7 IN A CHORD IS DEFECTIVE, SET A HELPER STRINGER TO THE OUTSIDE OF THE RESPECTIVE CHORD.
3. HAUL SIZE VERIFIED MATERIAL TO THE JOB SITE.
4. OBTAIN TRACK AUTHORITY.
5. INSTALL SAFETY MEASURES IN ACCORDANCE WITH TACOMA RAIL SAFETY RULES TO SAFELY PERFORM THE WORK.
6. IF HELPER STRINGER IS INSTALLED, IT IS PREFERRED THE DECK IS JACKED UP, THE HELPER STRINGER BE PLACED AGAINST THE OLD OUTSIDE STRINGER (WITH CHORDS IN PLACE) AND ANCHOR BY ONE OF THREE METHODS SHOWN ON SHEET HS1, MAKING SURE THAT WHEN DONE, THE DECK OF THE TRESTLE IS NOT RESTING PRIMARILY ON THE HELPER STRINGER. THE LOAD MUST BE DISTRIBUTED OVER ALL STRINGERS.
7. THE FOLLOWING ARE DESCRIPTIONS THE THREE METHODS SHOWN ON SHEET HS1:
   A. METHOD #1 SHOWS USING AN ANGLE MK AB BRACKET AND LAG BOLTS. THIS IS NOT REQUIRED IF THE DRIFT PIN OR BOLT SHOWN IS DRIVEN AT LEAST SIX INCHES INTO THE CAP.
   B. METHOD #2 SHOWS USING STAINLESS STEEL BANDING STRAPS. BANDING STRAPS SHOULD BE INSTALLED EVERY OTHER TIE CRIB, AND AT THE ENDS OF THE HELPER STRINGER. USE 3/4" STAINLESS STEEL BANDING STRAPS AND BUCKLES, USE 2"X2"X¼"X6" LONG ANGLE AT STRINGER CORNERS SUCH AS TO PREVENT BANDING FROM CRUSHING WOOD OR DAMAGING WOOD TREATMENT.
   C. METHOD #3 SHOWS USING LAG BOLTS. INSTALL 12" LAG BOLTS A HORIZONTAL DISTANCE OF 3" FROM THE EXISTING CHORD BOLTS, AND 3" MINIMUM FROM ANY EDGE OF THE HELPER AND EXISTING STRINGERS.
8. BEFORE CLEARING THE RAIL FOR TRAFFIC, BRIDGE SUPERVISOR SHALL INSPECT ALL WORK PERFORMED AND AUTHORIZE SAFE MOVEMENT OF TRAINS OVER THE REPAIRED STRUCTURE.
9. RELEASE TRACK AUTHORITY.
10. CLEAN UP AREA.

INSIDE HELPER STRINGER INSTALLATION PROCEDURE

1. IF THE HELPER STRINGER IS PLACED ON THE INSIDE, FRAME HELPER STRINGER AS PER THE DETAIL ON SHEET HS1.
2. HAUL SIZE VERIFIED MATERIAL TO THE JOB SITE.
3. OBTAIN TRACK AUTHORITY.
4. INSTALL SAFETY MEASURES IN ACCORDANCE WITH TACOMA RAIL SAFETY RULES TO SAFELY PERFORM THE WORK.
5. WITH BOOM TRUCK OR CRANE, PLACE HELPER STRINGER ON SCAFFOLDING.
6. POSITION HELPER STRINGER ON SCAFFOLDING SO IT LINES UP WITH THE OPENING IT IS TO BE PLACED.
7. JACK UP DECK TO ALLOW INSTALLATION SPACE.
8. RAISE "B" END OF STRINGER UP FIRST, ALONG SIDE THE DEFECTIVE STRINGER. WHEN "B" END OF STRINGER IS UP AGAINST THE DECK BOARDS, SLIDE "B" END OVER CAP ABOUT 15 INCHES AND SET IT ON CAP.
9. LOOSEN CABLE AND PLACE A SIX INCH OR EIGHT INCH BLOCK BETWEEN CABLE AND HELPER.
10. SECURE HELPER IN CENTER OF PANEL AND DRILL 3/4" HOLE IN HELPER AT 45 DEGREE ANGLE AND INTO DEFECTIVE STRINGER. DRIVE A DRIFT OR 3/4" BOLT 18 INCHES IN HOLE, OR PUT A DRIFT AT EACH END OF HELPER ALONG SIDE OF CAPS.
11. REMOVE SCAFFOLDING.
12. BEFORE CLEARING THE RAIL FOR TRAFFIC, BRIDGE SUPERVISOR SHALL INSPECT ALL WORK PERFORMED AND AUTHORIZE SAFE MOVEMENT OF TRAINS OVER THE REPAIRED STRUCTURE.
13. RELEASE TRACK AUTHORITY.
14. CLEAN UP AREA.

GENERAL NOTES:

ALL TIMBER SHALL BE TREATED IN ACCORDANCE WITH THE MATERIAL SPECIFICATIONS..

TREATED TIMBER MUST BE HANDLED CAREFULLY TO AVOID EXPOSING ANY PART OF THE UNTREATED INTERIOR WOOD. CANT HOOKS, PEAVIES, PIKES OR HOOKS SHALL NOT BE USED. WHEREVER DAMAGE HAS OCCURRED TO THE TREATED TIMBER, FIELD PRESERVATIVE TREATMENT SHALL BE APPLIED.

FIELD TREATMENT: HOLES, CUTS, AND ABRASIONS MADE IN TREATED TIMBER SHALL BE SWABBED WITH PRESERVATIVE. BOLTS SHALL BE DIPPED IN PRESERVATIVE OR BRIDGE CEMENT PRIOR TO PLACING.

ALL BOLTS THROUGH TIMBER SHALL HAVE A 5/16" x 3" O.D. CUT WASHER OR EQUIVALENT UNDER BOTH NUT AND HEAD.

USE APPROVED LOCK NUTS ON ALL BOLTS.

HOLES FOR ¾" DIA. BOLTS SHALL BE 13/16" DIA. HOLES FOR ¾" DIA. DRIFT BOLTS SHALL BE ¾" DIA.

HOLES FOR DRIVE SPIKES SHALL BE ⅛" LESS THAN DIAMETER OF SPIKE.

HELPER STRINGER MATERIAL SPECIFICATIONS

GENERAL REQUIREMENTS

A. INSTALLATION OF HELPER STRINGERS SHALL BE PERFORMED CAREFULLY TO AVOID SHIFTING OR DAMAGING THE REMAINDER OF THE STRUCTURE. FIELD VERIFY STRINGER MEASUREMENTS BEFORE ORDERING MATERIAL.

B. TREATED TIMBER SHIMS SHALL ONLY BE USED BETWEEN THE CAP AND THE STRINGERS. SHIMS SHALL BE NAILED IN PLACE.

C. OUTSIDE HELPER STRINGERS SHALL BE REATTACHED TO THE DECK TIES IN THE SAME MANNER AND FREQUENCY AS THE EXISTING STRINGERS.

D. THE ENDS AND INTERMEDIATE SUPPORTS OF HELPER STRINGERS SHALL BE CONNECTED TO THE PILE CAP WITH DRIFT PINS OR OTHER MEANS. IF ACCESS ALLOWS, A SINGLE DRIFT PIN CAN BE DRIVEN THROUGH THE DECK FROM ABOVE; OTHERWISE, A DRIFT PIN SHALL BE DRIVEN FROM UNDERNEATH ON EACH SIDE OF THE PILE CAP INTO THE HELPER STRINGERS.

E. ALL HARDWARE LOOSENED FOR INSTALLATION OF THE HELPER STRINGER SHALL BE REINSTALLED AND TIGHTENED. REMOVED HARDWARE SHALL BE REPLACED IN THE EXISTING CONFIGURATION OR AS SHOWN IN THE TYPICAL PLANS IF ADDITIONAL FASTENERS ARE INDICATED FROM EXISTING. EXISTING HARDWARE FOUND TO BE NON–REUSABLE SHALL BE REPLACED WITH NEW HARDWARE. REPLACE ANY DAMAGED HARDWARE.

TIMBER BRIDGE MATERIAL REQUIREMENTS

1. LUMBER
   A. TREATED TIMBER LUMBER SHALL BE FROM THE FOLLOWING STRESS GRADED LUMBER SPECIES: DOUGLAS–FIR OR SOUTHERN PINE. THE WET CONDITION BENDING STRESS SHALL BE A MINIMUM OF 1450 PSI AND WET CONDITION COMPRESSION PERPENDICULAR TO THE GRAIN SHALL BE A MINIMUM OF 400 PSI IN ACCORDANCE WITH TABLE 7–2–9, "ALLOWABLE UNIT STRESSES FOR STRESS GRADED LUMBER – RAILROAD LOADING (VISUAL GRADING)" CONTAINED IN CHAPTER 7 OF THE AREMA MANUAL. MATERIAL TO BE STRESS GRADED IN ACCORDANCE WITH THE APPLICABLE GRADING RULES FOR THE SPECIES PROVIDED.
   B. TREATED TIMBER LUMBER SHALL BE PRESSURE TREATED WITH CREOSOTE AS REQUIRED FOR STRUCTURAL ELEMENTS IN THESE SPECIFICATIONS IN CONFORMANCE WITH AWPA STANDARD UC4C, "GROUND CONTACT, EXTREME DUTY" AND IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 7 AND CHAPTER 30 OF THE AREMA MANUAL. TREATED TIMBER LUMBER SIZES TO BE FIELD VERIFIED PRIOR TO ORDERING.
   C. WRITTEN CERTIFICATION SHALL BE PROVIDED ASSURING THAT ALL TREATED TIMBER USED FOR REPLACING DEFICIENT MEMBERS WAS PRODUCED IN COMPLIANCE WITH THE BEST MANAGEMENT PRACTICES (BMP'S) OUTLINED IN "BEST MANAGEMENT PRACTICES FOR TREATED WOOD IN AQUATIC AND OTHER SENSITIVE ENVIRONMENTS", LATEST EDITION PUBLISHED BY THE WESTERN WOOD PRESERVERS INSTITUTE (WWPI), WOOD PRESERVATION CANADA, AND THE TIMBER PILING COUNCIL. THE WRITTEN CERTIFICATION SHALL INCLUDE A DESCRIPTION AND APPROPRIATE DOCUMENTATION OF THE APPLICABLE BMP'S USED.
2. STEEL FASTENERS
   A. ALL NEW MACHINE BOLTS, DRIFT PINS, AND DOWELS SHALL BE MEDIUM CARBON STEEL, CONFORMING TO THE MECHANICAL AND CHEMICAL REQUIREMENTS OF ASTM A 307, GRADE A UNLESS OTHERWISE SPECIFIED. PLATE OR FLAT WASHERS AS INDICATED ON THE PLANS SHALL BE USED.
   B. MACHINE BOLTS SHALL HAVE SQUARE HEADS AND NUTS OR LOCKNUTS, AS SHOWN IN THE PLANS OR OTHERWISE SPECIFIED.
   C. NAILS SHALL BE CUT OR ROUND WIRE OF STANDARD FORM. SPIKES SHALL BE CUT OR WIRE SPIKES, OR BOAT SPIKES AS SPECIFIED OR SHOWN IN THE PLANS. ALL NAILS AND SPIKES SHALL HAVE GROOVED, BARBED, SPIRAL GROOVES OR OTHERWISE DEFORMED SHANKS FOR GREATER HOLDING CAPACITY.
   D. ALL HARDWARE, BOLTS, NUTS, LOCKNUTS, WASHERS, NAILS AND SPIKES, SHALL BE HOT–DIPPED GALVANIZED COATED PER ASTM A153.
   E. ALL BANDING MATERIAL SHALL BE STAINLESS STEEL. STAINLESS STEEL BANDING SHALL BE ¾" X 0.030 (MIN) SIZE WITH A MINIMUM BREAKING STRENGTH OF 2000 LBS. STAINLESS STEEL BANDING AND BUCKLES SHALL BE INSTALLED PER THE MANUFACTURES INSTRUCTIONS USING THE CORRECT TOOLS TO STRETCH THE BANDING AND INSTALL BUCKLES.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1–12–12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TACOMA RAIL
APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER

TIMBER BRIDGE REPAIR STANDARDS

HELPER STRINGER GENERAL NOTES,
INSTALLATION PROCEDURE AND MATERIAL SPECIFICATIONS

NO	REVISION	DATE	APPD
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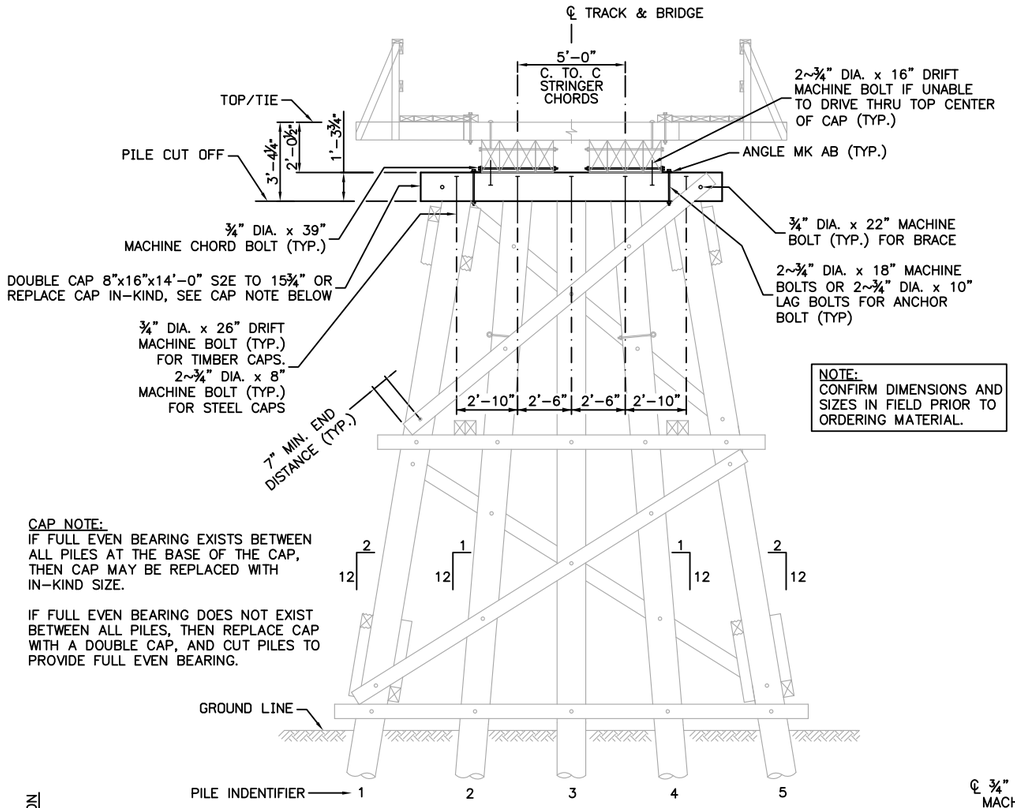
REFERENCE

DATE: 1-12-12
SCALE: NTS
DESIGNED: MJK - HDR
CHECKED: PJG - HDR
DRAWN: MRF - HDR
PROJECT NAME:
DRAWING NAME:
DRAWING: HS2
SHEET 11 OF 23



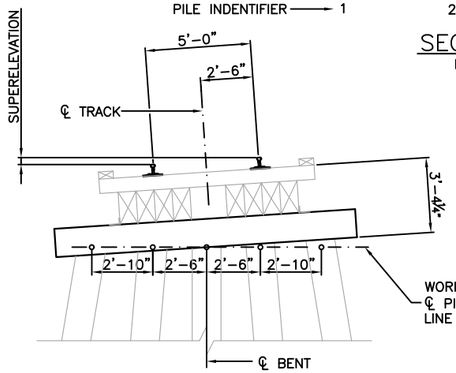
NOTE:
CONFIRM DIMENSIONS AND SIZES IN FIELD PRIOR TO ORDERING MATERIAL.

CAP NOTE:
IF FULL EVEN BEARING EXISTS BETWEEN ALL PILES AT THE BASE OF THE CAP, THEN CAP MAY BE REPLACED WITH IN-KIND SIZE.

IF FULL EVEN BEARING DOES NOT EXIST BETWEEN ALL PILES, THEN REPLACE CAP WITH A DOUBLE CAP, AND CUT PILES TO PROVIDE FULL EVEN BEARING.

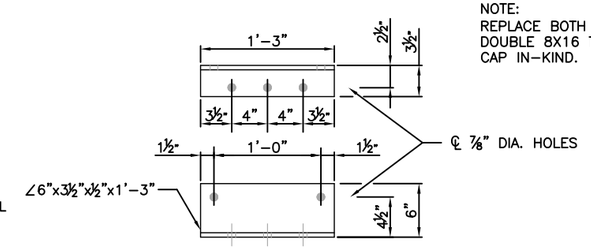
SECTION THRU BRIDGE

LOOKING AHEAD ON MILEPOST
NO SCALE



BRIDGE ON CURVE

NO SCALE

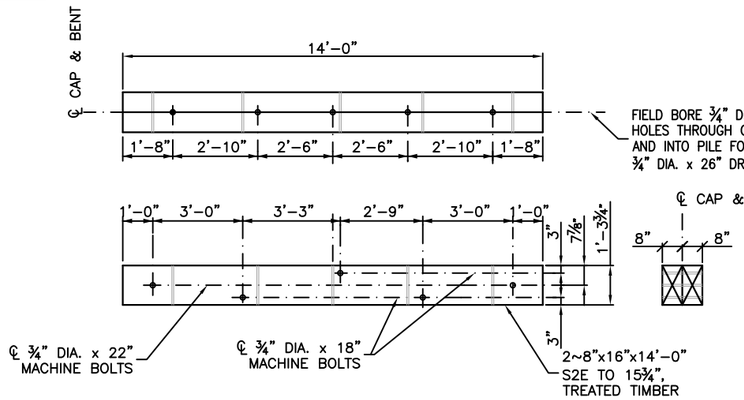


ANGLE MK AB

NO SCALE
VERIFY HOLE SPACING AND SIZE IN FIELD

CAP REPLACEMENT CONSTRUCTION PROCEDURE

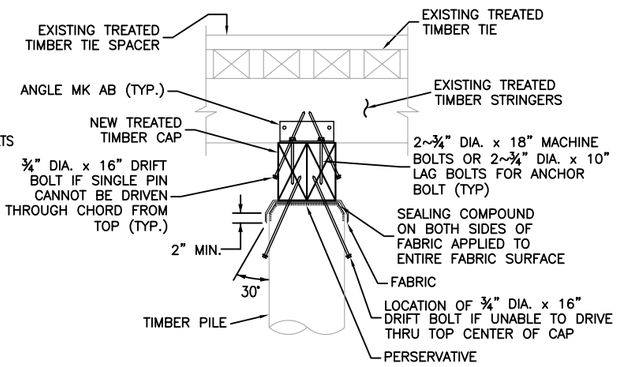
1. HAUL SIZE VERIFIED MATERIAL TO JOB SITE.
2. OBTAIN TRACK AUTHORITY.
3. INSTALL SAFETY MEASURES IN ACCORDANCE WITH TACOMA RAIL SAFETY RULES TO SAFELY PERFORM THE WORK.
4. LOOSEN OR REMOVE ANGLE MK AB BRACKET CAP BOLTS IN ADJACENT CAPS ONE BENT EACH DIRECTION FROM THE BENT CAP TO BE REPLACED.
5. THE DECK NEEDS TO BE FASTENED TO THE STRINGERS USING 4 CLAMPS PER BENT. THESE CLAMPS ARE PLACED ON EACH SIDE OF THE CAP, TWO PER CHORD OVER EACH CAP ON ALL FOUR CORNERS. THIS PREVENTS THE CHORD FROM TWISTING WHILE BEING JACKED.
6. HYDRAULIC JACKS ARE PLACED ON ALL FOUR CORNERS OF THE ADJACENT CAPS AT THE EDGE OF THE BRIDGE DECK TIES. USING ALUMINUM HEADERS BETWEEN THE JACKS AND BRIDGE DECK, THE DECK WILL BE RAISED EVENLY ONE BENT AT A TIME.
7. REMOVE CAP WITH USE OF DERRICK CAR OR BOOM TRUCK.
8. INSTALL NEW CAP. LOWER JACKS, CHECK SURFACE AND LINE.
9. DRILL AND INSTALL HARDWARE.
10. BEFORE CLEARING THE RAIL FOR TRAFFIC, BRIDGE SUPERVISOR SHALL INSPECT ALL WORK PERFORMED AND AUTHORIZE SAFE MOVEMENT OF TRAINS OVER THE REPAIRED STRUCTURE.
11. CLEAR TRACK AND RELEASE TRACK AUTHORITY.
12. REMOVE JACK SEATS AND SCAFFOLDING, AS APPLICABLE.
13. CLEAN UP WORK AREA.



DOUBLE 8x16 TIMBER CAP DETAIL

NO SCALE

NOTE:
REPLACE BOTH ANGLE MK AB'S IF CAP IS BEING REPLACED.
DOUBLE 8X16 TIMBER CAP DETAIL APPLICABLE IF NOT REPLACING CAP IN-KIND.



PILE HEAD FIELD PROTECTION FOR TIMBER CAP

NO SCALE
SEALING COMPOUND SHALL BE SELF-HEALING BRIDGE "CEMENT".

FABRIC SHALL BE 5 OUNCES OR MORE WITH 25 TO 36 THREADS PER INCH.

REFERENCE

SEE DRAWING C2 FOR GENERAL NOTES AND MATERIAL SPECIFICATIONS.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1-12-12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TIMBER BRIDGE REPAIR STANDARDS

CAP REPLACEMENT
DETAILS AND CONSTRUCTION PROCEDURE

TACOMA RAIL

APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER

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DESIGNED: MJK - HDR
CHECKED: PJG - HDR
DRAWN: MRF - HDR
PROJECT NAME:
DRAWING NAME:
DRAWING: C1
SHEET 12 OF 23

GENERAL NOTES:

ALL TIMBER SHALL BE TREATED IN ACCORDANCE WITH THE MATERIAL SPECIFICATIONS.

TREATED TIMBER MUST BE HANDLED CAREFULLY TO AVOID EXPOSING ANY PART OF THE UNTREATED INTERIOR WOOD. CANT HOOKS, PEAVIES, PIKES OR HOOKS SHALL NOT BE USED. WHEREVER DAMAGE HAS OCCURRED TO THE TREATED TIMBER, FIELD PRESERVATIVE TREATMENT SHALL BE APPLIED.

FIELD TREATMENT: HOLES, CUTS, AND ABRASIONS MADE IN TREATED TIMBER SHALL BE SWABBED WITH PRESERVATIVE. BOLTS SHALL BE DIPPED IN PRESERVATIVE OR BRIDGE CEMENT PRIOR TO PLACING.

TOP OF PILES SHALL BE CUT AND PROTECTED AS DETAILED.

USE 6" WIDE CREOSOTED TIMBER FILLER BETWEEN CAP AND SWAY BRACE IF PILES ARE OVER 16" DIAMETER.

ALL BOLTS THROUGH TIMBER SHALL HAVE A 5/16" x 3" O.D. CUT WASHER OR EQUIVALENT UNDER BOTH NUT AND HEAD.

USE APPROVED LOCK NUTS ON ALL BOLTS.

HOLES FOR 3/4" DIA. BOLTS SHALL BE 13/16" DIA. HOLES FOR 3/4" DIA. DRIFT BOLTS SHALL BE 3/4" DIA.

HOLES FOR DRIVE SPIKES SHALL BE 1/8" LESS THAN DIAMETER OF SPIKE.

CAP REPLACEMENT MATERIAL SPECIFICATIONS

GENERAL REQUIREMENTS

A. REMOVAL OF THE OLD AND INSTALLATION OF THE NEW CAPS SHALL BE PERFORMED CAREFULLY TO AVOID SHIFTING OR DAMAGING THE REMAINDER OF THE STRUCTURE. TRIM EXISTING PILE TO ACCOMMODATE THE DEEPER NEW DOUBLE PILE CAP. GAP BETWEEN THE PILE CUT-OFF AND EXISTING STRINGERS IN NORMAL POSITION SHALL BE ZERO TO 1/8" LESS THAN THE DEPTH OF THE NEW REPLACEMENT PILE CAP. PILES SHALL BE CAREFULLY CUT TO PROVIDE FULL EVEN BEARING BETWEEN ALL PILING AND THE REPLACEMENT CAP MAINTAINING LINE AND PROFILE OF THE TRACK ON THE BRIDGE WITHIN THE TOLERANCES OF THESE SPECIFICATIONS.

B. EACH STRINGER SHALL BE CONNECTED TO THE PILE CAP WITH DRIFT PINS. IF ACCESS ALLOWS, A DRIFT PIN MAY BE DRIVEN THROUGH THE DECK; OTHERWISE, A DRIFT PIN SHALL BE DRIVEN FROM UNDERNEATH ON EACH SIDE OF THE PILE CAP.

C. EACH PILE SHALL BE CONNECTED TO THE PILE CAP WITH DRIFT PINS. IF POSSIBLE, THE EXISTING PIN MAY BE REUSED IN ITS CURRENT POSITION RELATIVE TO THE PILE; OTHERWISE, TWO EVENLY SPACED DRIFT PINS SHOULD BE DRIVEN FROM BELOW.

D. EXPOSED PILE CUTOFFS AT THE PILE CAP LEVEL, EXISTING OR NEW, SHALL FIRST BE TREATED WITH A COATING OF FIELD PRESERVATIVE TREATMENT, THEN TREATED WITH A COATING OF SEALING COMPOUND CONSISTING OF ASPHALT OR TAR BASED MATERIAL, THEN COVERED BY A 30" BY 30" FABRIC, WITH ANOTHER COATING OF SEALING COMPOUND APPLIED TO THE ENTIRE SURFACE OF THE FABRIC. THE FABRIC SHALL BE ATTACHED WITH NAILS 4 FROM THE TOP OF THE PILE, AND SHALL BE TRIMMED TWO INCHES BELOW THE NAILS.

TIMBER BRIDGE MATERIAL REQUIREMENTS

1. LUMBER

   A. TREATED TIMBER LUMBER SHALL BE FROM THE FOLLOWING STRESS GRADED LUMBER SPECIES: DOUGLAS-FIR OR SOUTHERN PINE. THE WET CONDITION BENDING STRESS SHALL BE A MINIMUM OF 1450 PSI AND WET CONDITION COMPRESSION PERPENDICULAR TO THE GRAIN SHALL BE A MINIMUM OF 400 PSI IN ACCORDANCE WITH TABLE 7-2-9, "ALLOWABLE UNIT STRESSES FOR STRESS GRADED LUMBER – RAILROAD LOADING (VISUAL GRADING)" CONTAINED IN CHAPTER 7 OF THE AREMA MANUAL. MATERIAL TO BE STRESS GRADED IN ACCORDANCE WITH THE APPLICABLE GRADING RULES FOR THE SPECIES PROVIDED.

   B. TREATED TIMBER LUMBER SHALL BE PRESSURE TREATED WITH CREOSOTE AS REQUIRED FOR STRUCTURAL ELEMENTS IN THESE SPECIFICATIONS IN CONFORMANCE WITH AWPA STANDARD UC4C, "GROUND CONTACT, EXTREME DUTY" AND IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 7 AND CHAPTER 30 OF THE AREMA MANUAL. TREATED TIMBER LUMBER SIZES TO BE FIELD VERIFIED PRIOR TO ORDERING.

   C. WRITTEN CERTIFICATION SHALL BE PROVIDED ASSURING THAT ALL TREATED TIMBER USED FOR REPLACING DEFICIENT MEMBERS WAS PRODUCED IN COMPLIANCE WITH THE BEST MANAGEMENT PRACTICES (BMP'S) OUTLINED IN "BEST MANAGEMENT PRACTICES FOR TREATED WOOD IN AQUATIC AND OTHER SENSITIVE ENVIRONMENTS", LATEST EDITION PUBLISHED BY THE WESTERN WOOD PRESERVERS INSTITUTE (WWPI), WOOD PRESERVATION CANADA, AND THE TIMBER PILING COUNCIL. THE WRITTEN CERTIFICATION SHALL INCLUDE A DESCRIPTION AND APPROPRIATE DOCUMENTATION OF THE APPLICABLE BMP'S USED.

2. STEEL FASTENERS

   A. ALL NEW MACHINE BOLTS, DRIFT PINS, AND DOWELS SHALL BE MEDIUM CARBON STEEL, CONFORMING TO THE MECHANICAL AND CHEMICAL REQUIREMENTS OF ASTM A 307, GRADE A UNLESS OTHERWISE SPECIFIED. PLATE OR FLAT WASHERS AS INDICATED ON THE PLANS SHALL BE USED.

   B. MACHINE BOLTS SHALL HAVE SQUARE HEADS AND NUTS OR LOCKNUTS, AS SHOWN IN THE PLANS OR OTHERWISE SPECIFIED.

   C. NAILS SHALL BE CUT OR ROUND WIRE OF STANDARD FORM. SPIKES SHALL BE CUT OR WIRE SPIKES, OR BOAT SPIKES AS SPECIFIED OR SHOWN IN THE PLANS. ALL NAILS AND SPIKES SHALL HAVE GROOVED, BARBED, SPIRAL GROOVES OR OTHERWISE DEFORMED SHANKS FOR GREATER HOLDING CAPACITY.

   D. ALL HARDWARE, BOLTS, NUTS, LOCKNUTS, WASHERS, NAILS AND SPIKES, SHALL BE HOT-DIPPED GALVANIZED COATED PER ASTM A153.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1-12-12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

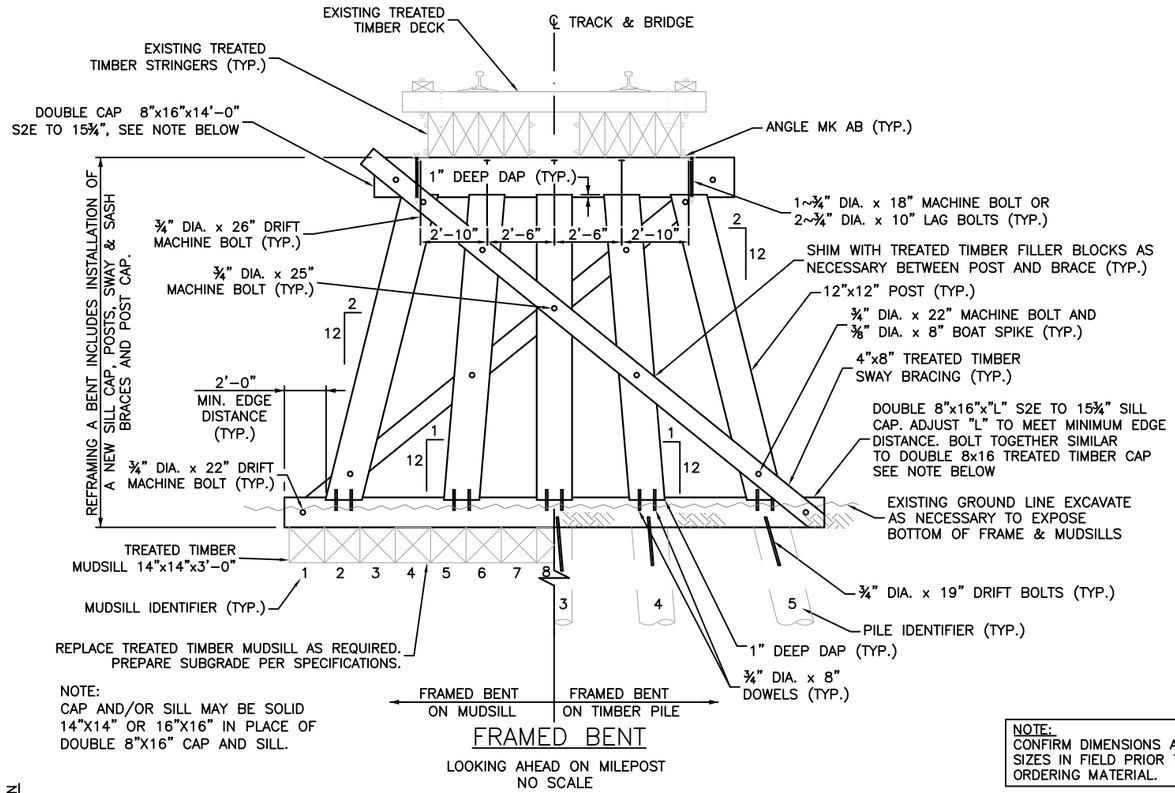
HDR ENGINEERING INC.

TIMBER BRIDGE REPAIR STANDARDS
CAP REPLACEMENT
GENERAL NOTES AND MATERIAL SPECIFICATIONS

REFERENCE		DATE	SCALE	
		1-12-12	NTS	
4		DESIGNED MJK - HDR	CHECKED PJG - HDR	DRAWING C2
3		DRAWN MRF - HDR	PROJECT NAME	
2				
1		DRAWING NAME		

NO	REVISION	DATE	APPD

TACOMA RAIL
APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER



NOTE:
CAP AND/OR SILL MAY BE SOLID 14"X14" OR 16"X16" IN PLACE OF DOUBLE 8"X16" CAP AND SILL.

FRAMED BENT

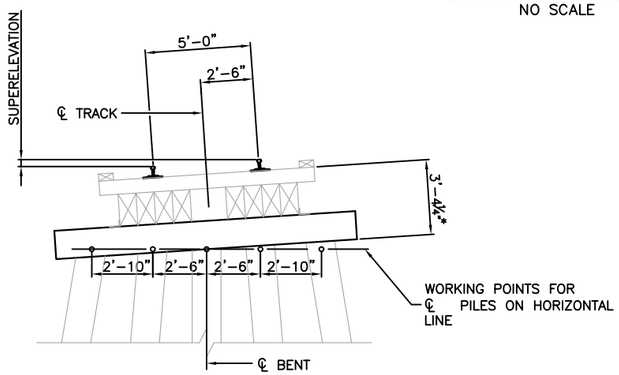
LOOKING AHEAD ON MILEPOST
NO SCALE

NOTE:
CONFIRM DIMENSIONS AND SIZES IN FIELD PRIOR TO ORDERING MATERIAL.

FRAME BENT CONSTRUCTION PROCEDURE

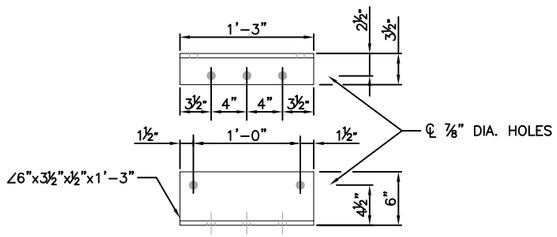
1. INSTALL SAFETY MEASURES IN ACCORDANCE WITH TACOMA RAIL SAFETY RULES TO SAFELY PERFORM THE WORK.
2. HAUL MATERIAL TO JOB SITE. CHECK PROPER POST LENGTHS. SILL. BRACING. DRIFT PINS AND BOLTS.
3. DETERMINE HEIGHT OF BENT TO BE BUILT.
4. LAY BENT OUT IN AN AREA WHERE IT CAN BE FABRICATED USING SECOND HAND STRINGER OR OTHER MATERIAL FOR SUPPORT. (IF SEVERAL BENTS ARE TO BE BUILT, THE STRINGERS OR TIMBERS CAN ALSO BE FORMED INTO A TEMPLATE TO FACILITATE BENT LAYOUT.)
5. PLACE CAP AND SILL ON STRINGER IN PROPER POSITION, MEASURE LENGTH OF POST TO BE CUT AND BATTER (MAKE CERTAIN THAT CENTER LINE ON CAP AND SILL ARE RIGHT AND CAP AND SILL ARE PARALLEL WITH EACH OTHER).
6. NAIL A 2 x 6 BETWEEN CAP AND SILL TO HOLD IN PLACE WHILE POSTS ARE INSTALLED.
7. DRILL 13/16" HOLES IN CAP AND SILL SO 7/8" DRIFT PINS CAN BE INSTALLED.
8. PLACE SWAY BRACING ON TOP SIDE OF BENT IN PROPER LOCATION AND TOE NAIL TO HOLD IN PLACE. DRILL HOLES AND INSTALL BOLTS IN BRACE. USING A CRANE OR OTHER TYPE OF EQUIPMENT, PICK BENT UP BY CAP AND TURN THE BENT OVER AND INSTALL THE OTHER SWAY BRACE.
9. OBTAIN TRACK AUTHORITY.
10. INSTALL APPROPRIATE ACCESS AND SAFETY MEASURES.
11. PLACE 2 x 4 OR 2 x 6 CUT OFF GUIDE OR STRAIGHTEDGE ON BOTH SIDES OF BENT. CHECK STRAIGHT EDGES WITH A LEVEL WITH THE BENT AND ACROSS THE STRAIGHT EDGES.
12. PUT JACKING POST OR JACKING BENT IN PLACE TO RAISE DECK.
13. REMOVE ANCHOR BOLTS AND JACK DECK 1–1/2 INCHES TO TWO INCHES.
14. WITH CRANE OR BOOM TRUCK ATTACH LINE TO CAP (IT MAY BE NECESSARY TO WRAP A CHOKER AROUND SWAY BRACING, POSTS AND CAP TO KEEP BENT FROM FALLING APART IN SOME CASES) AND TAKE STRAIN.
15. WITH CHAIN SAWCUT PILES ALONG TOP OF STRAIGHT EDGE. (A STRINGER OR HANDLE WITH GUIDE IS RECOMMENDED AND IS PLACED ON TOP OF CHAIN SAW BAR. THIS ALLOWS A VERY ACCURATE CUT.)
16. REMOVE BENT IN ONE PIECE AND SET IN AN OUT OF THE WAY AREA.
17. PICK UP NEW BENT AND INSTALL ON CUT OFF PILES. DRILL AND DRIFT PIN THROUGH SILL INTO PILES.
18. LOWER JACKS AND INSTALL ANCHOR BOLTS. BE SURE TO DOUBLE CHECK YOUR BRACING REQUIREMENTS FOR YOUR PARTICULAR TYPE AND SIZE TRESTLE. THIS CANNOT BE EMPHASIZED TOO MUCH. IF LONGITUDINAL, DIAGONAL OR SWAY BRACING IS REQUIRED, IT MUST BE INSTALLED AS WORK PROGRESSES.
19. BEFORE CLEARING THE RAIL FOR TRAFFIC, BRIDGE SUPERVISOR SHALL INSPECT ALL WORK PERFORMED AND AUTHORIZE SAFE MOVEMENT OF TRAINS OVER THE REPAIRED STRUCTURE.
20. CLEAR TRACK AND RELEASE AUTHORITY.
21. FIRST TRAIN OVER BENT SHOULD BE RELEASED AT 10 MPH AND OBSERVE BRIDGE FOR LOOSE CONNECTIONSOR UNEVEN BEARINGS. FIX DEFECTIVE AREAS AS NECESSARY AND THEN REOPEN STRUCTURE.
22. CLEAN UP AREA.

NOTE:
1. BE SURE THE NEW CAP IS CHECK BOLTED.
2. IF BENT IS OVER 12 FEET HIGH OR IF SEVERAL BENTS ARE BEING REPLACED, OR WHERE EXCESSIVE DYNAMIC FORCES MIGHT BE APPLIED BY TRAINS, CONTACT YOUR SUPERVISOR FOR INSTRUCTION.
3. FOR FRAME BENT PROCEDURE UNDER TRAFFIC LOAD SEE DRAWING F2.



BRIDGE ON CURVE

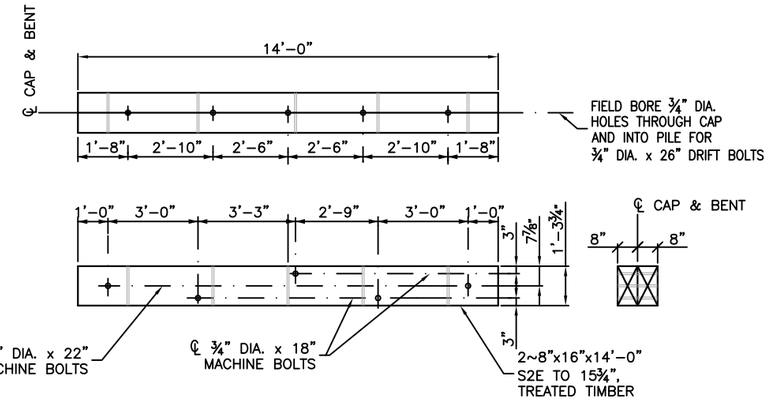
NO SCALE



ANGLE MK AB

NO SCALE
VERIFY HOLE SPACING AND SIZE IN FIELD

REFERENCE
SEE DRAWING F2 FOR GENERAL NOTES AND MATERIAL SPECIFICATIONS.



DOUBLE 8x16 TIMBER CAP DETAIL

NO SCALE
NOTE: REPLACE BOTH ANGLE MK AB'S IF CAP IS BEING REPLACED.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1–12–12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

TIMBER BRIDGE REPAIR STANDARDS

FRAME BENT
DETAILS AND CONSTRUCTION PROCEDURE

HDR ENGINEERING INC.

TACOMA RAIL
APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER

NO	REVISION	DATE	APPD
4			
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2			
1			

REFERENCE

DATE: 1-12-12
SCALE: NTS
DESIGNED: MJK - HDR
CHECKED: PJG - HDR
DRAWN: MRF - HDR
PROJECT NAME:
DRAWING NAME:
DRAWING: F1
SHEET 14 OF 23

FRAME BENT UNDER TRAFFIC CONSTRUCTION PROCEDURE

1. INSTALL SAFETY MEASURES IN ACCORDANCE WITH TACOMA RAIL SAFETY RULES TO SAFELY PERFORM THE WORK.
2. DELIVER PROPER LENGTH PILES, SILL AND BRACES THAT NEED REPLACING, TO THE JOB SITE.
3. EXCAVATE TWO FEET OR MORE TO SOLID TIMBER. IF PILES ARE STILL NOT SOLID AFTER EXCAVATING THREE OR FOUR FEET, PLACE THREE FOOT LONGER STRINGER BLOCK EACH SIDE OF THE PILES.
4. NAIL STRAIGHT EDGES ON THE PILES AT POINT TO BE CUT. PLACE THE FIRST ONE AGAINST THE PILES AND SECURE WITH A 30D COMMON NAIL IN ONE OUTSIDE PILING, LEVEL THE STRAIGHT EDGE AND NAIL THE OTHER END. AFTER BOTH ENDS ARE SECURED. USE THE LEVEL WHILE SECURING TO THE OTHER PILES WITH 30D COMMON NAILS. PLACE A SECOND STRAIGHT EDGE ON THE OPPOSITE SIDE OF THE BENT. USING TWO LEVELS, PLACE A LEVEL ACROSS EACH END. WHEN BOTH ENDS ARE LEVEL. NAIL THE PILES. IF THE STRAIGHT EDGES ARE NOT STEADY ENOUGH, ADD MORE NAILS.
5. INSTALL SCAFFOLDING ACCORDING TO SAFETY STANDARDS.
6. OBTAIN TRACK AUTHORITY. IF THERE IS NOT ENOUGH TRACK TIME TO COMPLETE THE ENTIRE BENT (USUALLY ABOUT A FIVE OR SIX HOUR JOB). IT WILL BE NECESSARY TO INSTALL THE SILL FIRST. THEN SPLICE PILES SEPARATELY. EXISTING PILES SHALL BE SHIMMED USING TWO 2" X 8" X 16" TAPERED SHIMS. THE SHIMS ARE TO BE TAPERED FROM FULL DEPTH ON ONE END TO 1/4" ON THE OTHER END. THIS SHOULD BE DONE PRIOR TO OBTAINING TRACK AUTHORITY.
7. CUT PILES ALONG THE STRAIGHT EDGE.
   A. FIRST CUT A QUARTER PILE ON EACH SIDE. AFTER THE TWO QUARTER PILES ARE CUT OFF ALONG THE STRAIGHT EDGE, MEASURE UP THE SILL THICKNESS PLUS 1–1/2" AND CUT THE QUARTER PILE AGAIN. LEVEL AS POSSIBLE BY EYE. REMOVE THE PLUG AND SET A JACK ON EACH SIDE AND JACK UP SLIGHTLY. THIS IS TO KEEP THE SAW FROM PINCHING WHILE CUTTING THE OTHER PILES.
   B. NEXT, CUT THE REMAINDER OF PILE OFF IN THE SAME MANNER, CUTTING A PLUG OUT OF EACH ONE. WHEN ALL PILES ARE CUT AND PLUGS REMOVED, PLACE THE SILL IN POSITION, THEN REMOVE THE TWO JACKS AND SLIDE THE SILL INTO PLACE. TOE DRIFT THE SILL SO IT CAN'T MOVE.
   C. NOW, USING THE TWO TAPERED 2" X 8" X 16" WEDGES, PLACE BETWEEN SILL AND PILING, ONE FROM EACH SIDE OF THE PILE AND DRIVE TIGHT AND DO THIS FOR EACH PILE. TRAFFIC MAY NOW BE ALLOWED. THIS PROCEDURE SHOULD TAKE ABOUT ONE HOUR. BE SURE TO DRIFT EACH PILE BEFORE ALLOWING A TRAIN OVER IT.
8.
   A. NOW REPLACE ONE PILE AT A TIME. A TRAIN MAY BE CLEARED BETWEEN EACH PILE SPLICE REPLACEMENT. PREPARE ALL THE PILE SPLICES BEFORE INSTALLING ANY IF DESIRED. BUT USUALLY TWO OR THREE BAD PILES WILL NEED TO BE REPLACED FIRST. IF SO, DO NOT TAKE TIME TO FRAME THEM ALL BEFORE REPLACING THE BAD ONES UNLESS THERE ARE ENOUGH PEOPLE TO BE DOING BOTH.
   B. IF ADDITIONAL TRACK AUTHORITY IS NOT OBTAINED. DOUBLE THE TAPERED SHIMS, NAIL AND DRIFT PILE TO PREVENT MOVEMENT UNDER TRAFFIC. (CONDITION OF THE OLD PILES IN THE BENT MAY REQUIRE PLACEMENT OF A SLOW ORDER).
   C. NEXT, REMOVE BRACING FROM ONE SIDE OF THE BENT. FASTEN THE DERRICK CABLE OR BOOM TRUCK CABLE TO THE TOP OF THE PILE. REMOVE THE TAPER SHIMS AND DRIFT PINS AND CUT ANOTHER PLUG OFF THE BOTTOM OF THE PILE IN ORDER TO REMOVE IT. ESPECIALLY IF IT HAS A DRIFT PIN THROUGH THE CAP INTO THE PILE.
   D. REMOVE EACH PILE AND BEFORE REPLACING THE NEW SPLICE, DRILL THROUGH THE SILL AND DRIFT INTO THE PILE STUMP USING A 22 INCH DRIFT PIN INSTALL NEW SPLICE, DRIFT BOTTOM WITH TWO 22 INCH PINS. REPLACE THE ONE BRACE BOLT AND DRIFT THE TOP TO THE CAP. REPEAT THE PROCEDURE FOR THE OTHER PILES.
9. REPLACE THE BRACING AND ADD A LONGITUDINAL BRACE ON OUTSIDE PILES. IF SILL OF BENT IS ABOVE GROUND, UNLESS IT ALREADY HAD THEM.
10. BEFORE CLEARING THE RAIL FOR TRAFFIC, BRIDGE SUPERVISOR SHALL INSPECT ALL WORK PERFORMED AND AUTHORIZE SAFE MOVEMENT OF TRAINS OVER THE REPAIRED STRUCTURE.
11. CLEAR TRACK AND RELEASE TRACK AUTHORITY.
12. BACKFILL AND CLEAN UP THE AREA.

NOTE: IF PROPER EQUIPMENT IS AVAILABLE, ENTIRE BENT MAY BE FRAMED AS A UNIT.

A. TO FRAME, SET TWO 20 FOOT STRINGERS UP ON EDGE. SEPARATED ENOUGH TO PROVIDE SUPPORT FOR THE FRAME LEVEL AND SQUARE WITH EACH USING A SQUARE, PLACE CENTER MARKS ON BOTH STRINGERS. USE A SQUARE AND TAPE TO LAYOFF AND PLACE MARKS ON THE STRINGER TOP FOR A FIVE PILE BENT. (REFER TO TIMBER BRIDGE STANDARD DRAWINGS FOR SPACING AND BATTER FOR THE TYPE OF FRAME BENT NEEDED).
B. AFTER THE BENT IS LAID OUT WITH MARKS SCRIBED ON THE STRINGERS WHERE THE PILING WILL BE LOCATED, PLACE THE PILES ON THE CRIB AND LINE EACH PILE UP WITH THE MARKS. PLACE A STRAIGHT EDGE ON THE BOTTOM OF PILES AT THE CAP END, AGAINST THE STRINGER CRIB. NAIL IT TO THE BOTTOM OF THE PILES.
C. NEXT, USE TWO LEVELS AND PLUMB AT EACH END OF THE STRAIGHT EDGE AND NAIL THE TOP STRAIGHT EDGE TO THE PILES. LAY A STRAIGHT EDGE ON THE OTHER END OF THE PILES AND MEASURE SQUARE ACROSS AT EACH END AND NAIL THE TOP STRAIGHT EDGE ON. USE A LEVEL AT EACH END AND NAIL THE BOTTOM STRAIGHT EDGE. THEN CUT PILES OFF AND ATTACH CAP, SILL AND BRACING.

GENERAL NOTES:

ALL TIMBER AND PILING SHALL BE TREATED.

TREATED TIMBER MUST BE HANDLED CAREFULLY TO AVOID EXPOSING ANY PART OF THE UNTREATED INTERIOR WOOD. CANT HOOKS, PEAVIES, PIKES OR HOOKS SHALL NOT BE USED. WHEREVER DAMAGE HAS OCCURRED TO THE TREATED TIMBER, FIELD PRESERVATIVE TREATMENT SHALL BE APPLIED.

FIELD TREATMENT: HOLES, CUTS, AND ABRASIONS MADE IN TREATED TIMBER SHALL BE SWABBED WITH PRESERVATIVE. BOLTS SHALL BE DIPPED IN PRESERVATIVE OR BRIDGE CEMENT PRIOR TO PLACING.

FRAMING: EXISTING TREATED PILES MUST NOT BE CUT FOR FASTENING BRACES. IF NECESSARY, CREOSOTED FILLER BLOCKS SHALL BE USED TO FILL SPACES BETWEEN PILES AND BRACING.

TOP OF PILES SHALL BE CUT AND PROTECTED AS DETAILED.

SWAY BRACING SHALL BE FASTENED TO CAPS WITH ¾" DIA. BOLTS.

USE 6" WIDE CREOSOTED TIMBER FILLER BETWEEN CAP AND SWAY BRACE IF PILES ARE OVER 16" DIAMETER.

ALL BRACING SHALL BE FASTENED TO PILES WITH ¾" DIA. BOLTS. WHEN BRIDGE IS LOCATED ON A HORIZONTAL CURVE OF 2° OR MORE, SPIKE GRIDS SHALL BE USED WITH BOLTS ON ALL BRACING CONNECTIONS.

ALL BOLTS THROUGH TIMBER SHALL HAVE A 5/16" x 3" O.D. CUT WASHER OR EQUIVALENT UNDER BOTH NUT AND HEAD.

USE APPROVED LOCK NUTS ON ALL BOLTS.

HOLES FOR ¾" DIA. BOLTS SHALL BE 13/16" DIA. HOLES FOR ¾" DIA. DRIFT BOLTS SHALL BE ¾" DIA.

HOLES FOR DRIVE SPIKES SHALL BE 1/8" LESS THAN DIAMETER OF SPIKE.

FRAME BENT MATERIAL SPECIFICATIONS

GENERAL REQUIREMENTS

A. CAREFULLY MEASURE THE EXISTING TIMBER FRAME BENT PRIOR TO REMOVING ALL OR PART OF THE BENT AS REQUIRED. NEW MEMBERS OR NEW FRAME BENTS SHALL MATCH THE EXISTING FRAME BENT. NEW HARDWARE AND FASTENINGS SHALL BE PROVIDED AS SHOWN IN THE PLANS OR TO REPLACE HARDWARE FOUND TO BE NON–REUSABLE. THE WORK SHALL RESULT IN NO CHANGE TO THE PROFILE OR ALIGNMENT OF THE TRACK SUPPORTED BY THE BRIDGE.

B. SUPPORT EXISTING BRIDGE AS NECESSARY WHEN REMOVING ALL OR PART OF THE FRAME BENT.

C. REMOVE AND DISPOSE OF THE EXISTING TREATED TIMBER AND OTHER MATERIAL REMOVED FROM THE BRIDGE.

TIMBER BRIDGE MATERIAL REQUIREMENTS

1. LUMBER

   A. TREATED TIMBER LUMBER SHALL BE FROM THE FOLLOWING STRESS GRADED LUMBER SPECIES: DOUGLAS–FIR OR SOUTHERN PINE. THE WET CONDITION BENDING STRESS SHALL BE A MINIMUM OF 1450 PSI AND WET CONDITION COMPRESSION PERPENDICULAR TO THE GRAIN SHALL BE A MINIMUM OF 400 PSI IN ACCORDANCE WITH TABLE 7–2–9, "ALLOWABLE UNIT STRESSES FOR STRESS GRADED LUMBER – RAILROAD LOADING (VISUAL GRADING)" CONTAINED IN CHAPTER 7 OF THE AREMA MANUAL. MATERIAL TO BE STRESS GRADED IN ACCORDANCE WITH THE APPLICABLE GRADING RULES FOR THE SPECIES PROVIDED.

   B. TREATED TIMBER LUMBER SHALL BE PRESSURE TREATED WITH CREOSOTE AS REQUIRED FOR STRUCTURAL ELEMENTS IN THESE SPECIFICATIONS IN CONFORMANCE WITH AWPA STANDARD UC4C, "GROUND CONTACT, EXTREME DUTY" AND IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 7 AND CHAPTER 30 OF THE AREMA MANUAL. TREATED TIMBER LUMBER SIZES TO BE FIELD VERIFIED PRIOR TO ORDERING.

   C. WRITTEN CERTIFICATION SHALL BE PROVIDED ASSURING THAT ALL TREATED TIMBER USED FOR REPLACING DEFICIENT MEMBERS WAS PRODUCED IN COMPLIANCE WITH THE BEST MANAGEMENT PRACTICES (BMP'S) OUTLINED IN "BEST MANAGEMENT PRACTICES FOR TREATED WOOD IN AQUATIC AND OTHER SENSITIVE ENVIRONMENTS", LATEST EDITION PUBLISHED BY THE WESTERN WOOD PRESERVERS INSTITUTE (WWPI), WOOD PRESERVATION CANADA, AND THE TIMBER PILING COUNCIL. THE WRITTEN CERTIFICATION SHALL INCLUDE A DESCRIPTION AND APPROPRIATE DOCUMENTATION OF THE APPLICABLE BMP'S USED.

2. STEEL FASTENERS

   A. ALL NEW MACHINE BOLTS, DRIFT PINS, AND DOWELS SHALL BE MEDIUM CARBON STEEL, CONFORMING TO THE MECHANICAL AND CHEMICAL REQUIREMENTS OF ASTM A 307, GRADE A UNLESS OTHERWISE SPECIFIED. PLATE OR FLAT WASHERS AS INDICATED ON THE PLANS SHALL BE USED.

   B. MACHINE BOLTS SHALL HAVE SQUARE HEADS AND NUTS OR LOCKNUTS, AS SHOWN IN THE PLANS OR OTHERWISE SPECIFIED.

   C. NAILS SHALL BE CUT OR ROUND WIRE OF STANDARD FORM. SPIKES SHALL BE CUT OR WIRE SPIKES, OR BOAT SPIKES AS SPECIFIED OR SHOWN IN THE PLANS. ALL NAILS AND SPIKES SHALL HAVE GROOVED, BARBED, SPIRAL GROOVES OR OTHERWISE DEFORMED SHANKS FOR GREATER HOLDING CAPACITY.

   D. ALL HARDWARE, BOLTS, NUTS, LOCKNUTS, WASHERS, NAILS AND SPIKES, SHALL BE HOT–DIPPED GALVANIZED COATED PER ASTM A153.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1–12–12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TIMBER BRIDGE REPAIR STANDARDS

FRAME BENT GENERAL NOTES,
CONSTRUCTION PROCEDURES AND MATERIAL SPECIFICATIONS

TACOMA RAIL

APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER

NO	REVISION	DATE	APPD
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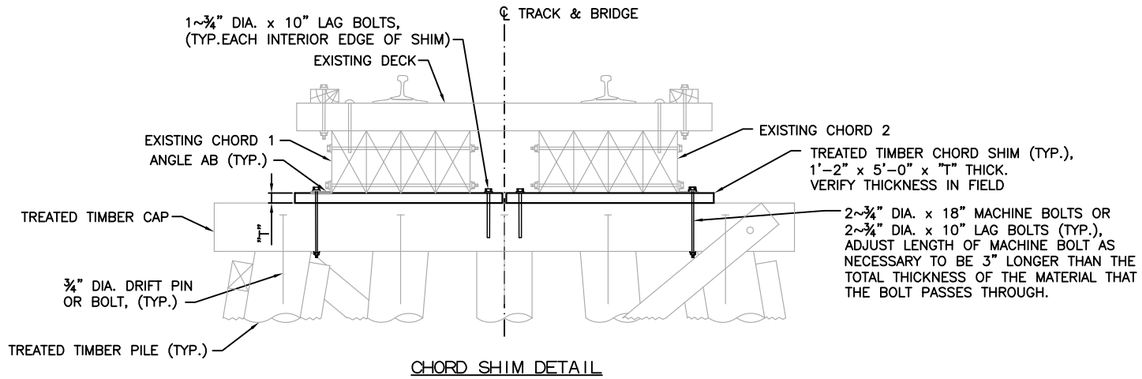
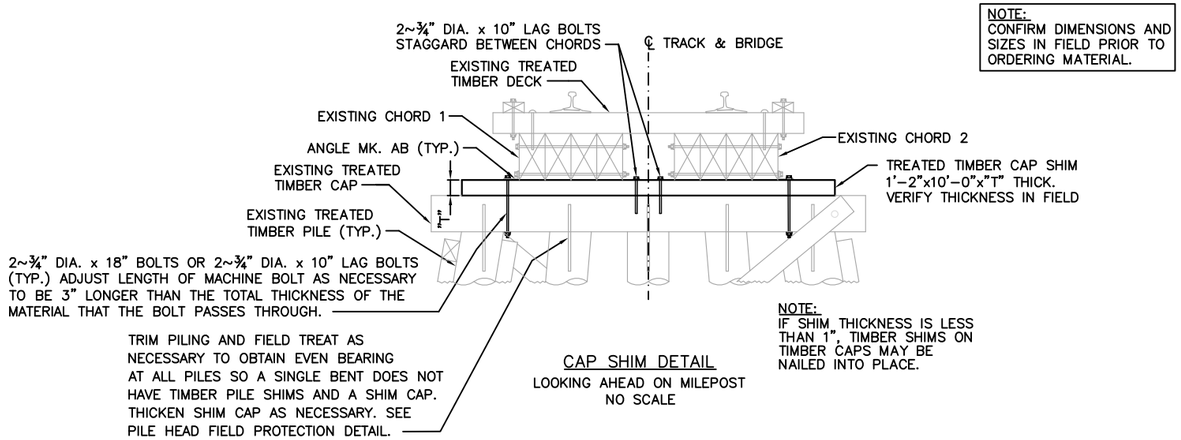
REFERENCE

DATE: 1-12-12
SCALE: NTS
DESIGNED: MJK - HDR
CHECKED: PJG - HDR
DRAWN: MRF - HDR
PROJECT NAME
DRAWING NAME
DRAWING: F2



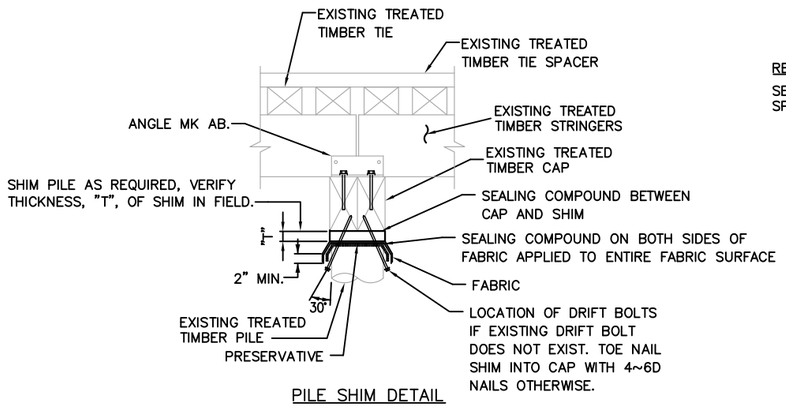
CHORD SHIM DETAIL
LOOKING AHEAD ON MILEPOST
NO SCALE



CAP SHIM DETAIL
LOOKING AHEAD ON MILEPOST
NO SCALE

NOTE:
CONFIRM DIMENSIONS AND SIZES IN FIELD PRIOR TO ORDERING MATERIAL.

NOTE:
IF SHIM THICKNESS IS LESS THAN 1", TIMBER SHIMS ON TIMBER CAPS MAY BE NAILED INTO PLACE.



PILE SHIM DETAIL
NO SCALE

SEALING COMPOUND SHALL BE SELF-HEALING BRIDGE "CEMENT".

FABRIC SHALL BE 5 OUNCES OR MORE WITH 25 TO 36 THREADS PER INCH.

REFERENCE

SEE DRAWING SM2 FOR GENERAL NOTES AND MATERIAL SPECIFICATIONS.

CHORD SHIM CONSTRUCTION PROCEDURE (CAP SHIM CONSTRUCTION PROCEDURE SIMILAR)

1. HAUL SIZE VERIFIED MATERIAL TO JOB SITE.
2. OBTAIN TRACK AUTHORITY.
3. INSTALL SAFETY MEASURES IN ACCORDANCE WITH TACOMA RAIL SAFETY RULES TO SAFELY PERFORM THE WORK.
4. LOOSEN OR REMOVE ANGLE MK AB BRACKET CAP BOLTS IN ADJACENT CAPS ONE BENT EACH DIRECTION FROM THE BENT CAP TO BE REPLACED.
5. THE DECK NEEDS TO BE FASTENED TO THE STRINGERS USING 4 CLAMPS PER BENT. THESE CLAMPS ARE PLACED ON EACH SIDE OF THE CAP, TWO PER CHORD OVER EACH CAP ON ALL FOUR CORNERS. THIS PREVENTS THE CHORD FROM TWISTING WHILE BEING JACKED.
6. HYDRAULIC JACKS ARE PLACED ON ALL FOUR CORNERS OF THE ADJACENT CAPS AT THE EDGE OF THE BRIDGE DECK TIES. USING ALUMINUM HEADERS BETWEEN THE JACKS AND BRIDGE DECK, THE DECK WILL BE RAISED EVENLY ONE BENT AT A TIME.
7. REMOVE BRACE BOLTS IN CAP AND REMOVE ANGLE MK AB BOLTS. LOOSEN ANCHOR BOLTS IN ONE BENT EACH DIRECTION FROM THE BENT WHICH WILL BE SHIMMED.
8. JACK UP BOTH JACKS AT THE SAME TIME.
9. INSTALL NEW SHIM(S). LOWER JACKS, CHECK SURFACE AND LINE.
10. DRILL AND INSTALL HARDWARE.
11. BEFORE CLEARING THE RAIL FOR TRAFFIC, BRIDGE SUPERVISOR SHALL INSPECT ALL WORK PERFORMED AND AUTHORIZE SAFE MOVEMENT OF TRAINS OVER THE REPAIRED STRUCTURE.
12. CLEAR TRACK AND RELEASE TRACK AUTHORITY.
13. REMOVE JACK SEATS, SAFETY AND ACCESS MEASURES.
14. CLEAN UP WORK AREA.

PILE SHIM CONSTRUCTION PROCEDURE

1. HAUL SIZE VERIFIED MATERIAL TO JOB SITE.
2. OBTAIN TRACK AUTHORITY.
3. INSTALL SAFETY MEASURES IN ACCORDANCE WITH TACOMA RAIL SAFETY RULES TO SAFELY PERFORM THE WORK.
4. LOOSEN OR REMOVE ANGLE MK AB BRACKET CAP BOLTS IN ADJACENT CAPS ONE BENT EACH DIRECTION FROM THE BENT CAP TO BE REPLACED.
5. THE DECK NEEDS TO BE FASTENED TO THE STRINGERS USING 4 CLAMPS PER BENT. THESE CLAMPS ARE PLACED ON EACH SIDE OF THE CAP, TWO PER CHORD OVER EACH CAP ON ALL FOUR CORNERS. THIS PREVENTS THE CHORD FROM TWISTING WHILE BEING JACKED.
6. HYDRAULIC JACKS ARE PLACED ON ALL FOUR CORNERS OF THE ADJACENT CAPS AT THE EDGE OF THE BRIDGE DECK TIES. USING ALUMINUM HEADERS BETWEEN THE JACKS AND BRIDGE DECK, THE DECK WILL BE RAISED EVENLY ONE BENT AT A TIME.
7. IF UNLEVEL OR UNSOUND MATERIAL IS FOUND AT TOP OF PILE, CUT OFF UNLEVEL OR UNSOUND MATERIAL. IF MORE THAN 3" OF UNSOUND MATERIAL IS REMOVED FROM THE TOP OF PILE, FOLLOW THE POST PILE REPAIR DETAILS ON DRAWINGS P1 & P2 BY REMOVING ADDITIONAL PILE LENGTH TO ACCOMMODATE THE POST PILE REPAIR.
8. IF REPLACING AN EXISTING DEFECTIVE SHIM, REMOVE EXISTING SHIM AND REPLACE IN KIND AS SIZE VERIFIED.
9. INSTALL PILE SHIM PER DETAIL ON THIS DRAWING. ENSURE CAP PIECE HAS LEVEL AND EVEN BEARING ON ALL PILES WITH SHIM(S) INSTALLED.
10. LOWER JACKS AND INSTALL HARDWARE. VERIFY SURFACE AND PROFILE.
11. REMOVE JACK SEATS, SAFETY AND ACCESS MEASURES.
12. BEFORE CLEARING THE RAIL FOR TRAFFIC, BRIDGE SUPERVISOR SHALL INSPECT ALL WORK PERFORMED AND AUTHORIZE SAFE MOVEMENT OF TRAINS OVER THE REPAIRED STRUCTURE.
13. CLEAR TRACK AND RELEASE AUTHORITY.
14. CLEAN UP WORK AREA.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1-12-12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TIMBER BRIDGE REPAIR STANDARDS

CHORD, CAP AND PILE SHIM INSTALLATION
DETAILS AND CONSTRUCTION PROCEDURE

REFERENCE		DATE	SCALE
		1-12-12	NTS
		DESIGNED MJK - HDR	CHECKED PJG - HDR
		DRAWN MRF - HDR	PROJECT NAME
		DRAWING NAME	

DRAWING SM1

TACOMA RAIL
APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER

NO	REVISION	DATE	APPD
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GENERAL NOTES:

ALL TIMBER SHALL BE TREATED IN ACCORDANCE WITH THE MATERIAL SPECIFICATIONS.

TREATED TIMBER MUST BE HANDLED CAREFULLY TO AVOID EXPOSING ANY PART OF THE UNTREATED INTERIOR WOOD. CANT HOOKS, PEAVIES, PIKES OR HOOKS SHALL NOT BE USED. WHEREVER DAMAGE HAS OCCURRED TO THE TREATED TIMBER, FIELD PRESERVATIVE TREATMENT SHALL BE APPLIED.

FIELD TREATMENT: HOLES, CUTS, AND ABRASIONS MADE IN TREATED TIMBER SHALL BE SWABBED WITH PRESERVATIVE. BOLTS SHALL BE DIPPED IN PRESERVATIVE OR BRIDGE CEMENT PRIOR TO PLACING.

ALL BOLTS THROUGH TIMBER SHALL HAVE A 5/16" x 3" O.D. CUT WASHER OR EQUIVALENT UNDER BOTH NUT AND HEAD.

USE APPROVED LOCK NUTS ON ALL BOLTS.

HOLES FOR 3/4" DIA. BOLTS SHALL BE 13/16" DIA. HOLES FOR 3/4" DIA. DRIFT BOLTS SHALL BE 3/4" DIA.

SHIM MATERIAL SPECIFICATIONS

GENERAL REQUIREMENTS

A. EXISTING SHIMS SHALL BE REMOVED, DISPOSED OF, AND REPLACED WITH NEW SHIMS OF EQUAL SIZE AND LENGTH. THE NEW SHIMS SHALL MEET THE MATERIAL AND TREATMENT SPECIFICATIONS. THE NEW SHIMS SHALL BE CONNECTED AS INDICATED IN THESE PLANS. THE SHIMS SHALL BE TRIMMED TO MATCH THE WIDTH OF ADJACENT MEMBERS.

B. FIELD PRESERVATIVE TREATMENT SHALL BE APPLIED TO ALL TRIMMED SHIM SURFACES.

C. POSTS AT THE PILE CAP LEVEL, SHALL FIRST BE TREATED WITH A COATING OF FIELD PRESERVATIVE TREATMENT, THEN TREATED WITH A COATING OF SEALING COMPOUND CONSISTING OF ASPHALT OR TAR BASED MATERIAL, THEN COVERED BY A 30" BY 30" FABRIC, WITH ANOTHER COATING OF SEALING COMPOUND APPLIED TO THE ENTIRE SURFACE OF THE FABRIC. THE FABRIC SHALL BE ATTACHED WITH NAILS 4" FROM THE TOP OF THE PILE, AND SHALL BE TRIMMED TWO INCHES BELOW THE NAILS.

TIMBER BRIDGE MATERIAL REQUIREMENTS

1. TREATED TIMBER LUMBER

   A. TREATED TIMBER LUMBER SHALL BE FROM THE FOLLOWING STRESS GRADED LUMBER SPECIES: DOUGLAS–FIR OR SOUTHERN PINE. THE WET CONDITION BENDING STRESS SHALL BE A MINIMUM OF 1450 PSI AND WET CONDITION COMPRESSION PERPENDICULAR TO THE GRAIN SHALL BE A MINIMUM OF 400 PSI IN ACCORDANCE WITH TABLE 7–2–9, "ALLOWABLE UNIT STRESSES FOR STRESS GRADED LUMBER – RAILROAD LOADING (VISUAL GRADING)" CONTAINED IN CHAPTER 7 OF THE AREMA MANUAL. MATERIAL TO BE STRESS GRADED IN ACCORDANCE WITH THE APPLICABLE GRADING RULES FOR THE SPECIES PROVIDED.

   B. TREATED TIMBER LUMBER SHALL BE PRESSURE TREATED WITH CREOSOTE AS REQUIRED FOR STRUCTURAL ELEMENTS IN THESE SPECIFICATIONS IN CONFORMANCE WITH AWPA STANDARD UC4C, "GROUND CONTACT, EXTREME DUTY" AND IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 7 AND CHAPTER 30 OF THE AREMA MANUAL. TREATED TIMBER LUMBER SIZES TO BE FIELD VERIFIED PRIOR TO ORDERING.

   C. WRITTEN CERTIFICATION SHALL BE PROVIDED ASSURING THAT ALL TREATED TIMBER USED FOR REPLACING DEFICIENT MEMBERS WAS PRODUCED IN COMPLIANCE WITH THE BEST MANAGEMENT PRACTICES (BMP'S) OUTLINED IN "BEST MANAGEMENT PRACTICES FOR TREATED WOOD IN AQUATIC AND OTHER SENSITIVE ENVIRONMENTS", LATEST EDITION PUBLISHED BY THE WESTERN WOOD PRESERVERS INSTITUTE (WWPI), WOOD PRESERVATION CANADA, AND THE TIMBER PILING COUNCIL. THE WRITTEN CERTIFICATION SHALL INCLUDE A DESCRIPTION AND APPROPRIATE DOCUMENTATION OF THE APPLICABLE BMP'S USED.

2. STEEL FASTENERS

   A. ALL NEW MACHINE BOLTS, DRIFT PINS, AND DOWELS SHALL BE MEDIUM CARBON STEEL, CONFORMING TO THE MECHANICAL AND CHEMICAL REQUIREMENTS OF ASTM A 307, GRADE A UNLESS OTHERWISE SPECIFIED. PLATE OR FLAT WASHERS AS INDICATED ON THE PLANS SHALL BE USED.

   B. MACHINE BOLTS SHALL HAVE SQUARE HEADS AND NUTS OR LOCKNUTS, AS SHOWN IN THE PLANS OR OTHERWISE SPECIFIED.

   C. NAILS SHALL BE CUT OR ROUND WIRE OF STANDARD FORM. SPIKES SHALL BE CUT OR WIRE SPIKES, OR BOAT SPIKES AS SPECIFIED OR SHOWN IN THE PLANS. ALL NAILS AND SPIKES SHALL HAVE GROOVED, BARBED, SPIRAL GROOVES OR OTHERWISE DEFORMED SHANKS FOR GREATER HOLDING CAPACITY.

   D. ALL HARDWARE, BOLTS, NUTS, LOCKNUTS, WASHERS, NAILS AND SPIKES, SHALL BE HOT–DIPPED GALVANIZED COATED PER ASTM A153.

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TACOMA RAIL
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DONALD L. McCAMMON

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PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TIMBER BRIDGE REPAIR STANDARDS

CHORD, CAP AND PILE SHIM INSTALLATION
GENERAL NOTES AND MATERIAL SPECIFICATIONS

TACOMA RAIL
APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER

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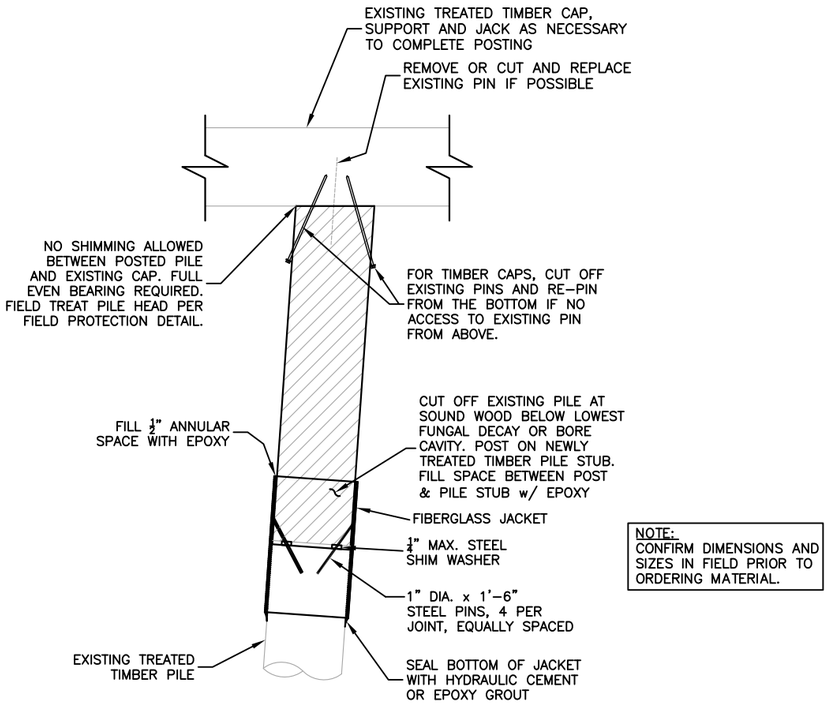
REFERENCE

DATE: 1-12-12
SCALE: NTS
DESIGNED: MJK - HDR
CHECKED: PJG - HDR
DRAWN: MRF - HDR
PROJECT NAME:
DRAWING NAME:
DRAWING: SM2

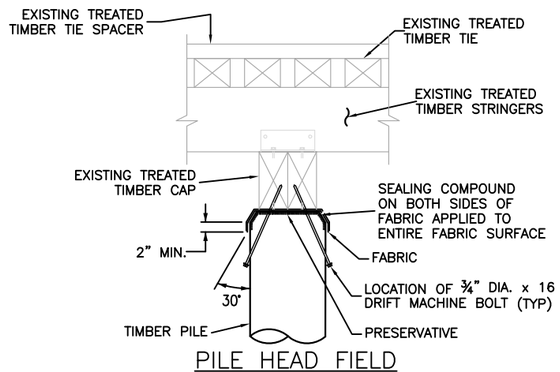


NOTE:
CONFIRM DIMENSIONS AND SIZES IN FIELD PRIOR TO ORDERING MATERIAL.

POST PILE DETAIL

PILES SHALL BE POSTED PER A.R.E.M.A. CHAPTER 7, PART 4, FIGURE 7-4-1 (EXCEPT AS SHOWN ABOVE) DURING A TRACK OUTAGE WINDOW.

NO SCALE



PILE HEAD FIELD PROTECTION FOR TIMBER CAP

NO SCALE

SEALING COMPOUND SHALL BE SELF-HEALING BRIDGE "CEMENT".

FABRIC SHALL BE 5 OUNCES OR MORE WITH 25 TO 36 THREADS PER INCH.

POST PILE REPAIR PROCEDURE

1. DELIVER PILING. ABOUT THE SAME DIAMETER AS THAT OF THE PILING BEING REPLACED, TO THE JOB SITE.
2. INSTALL SAFETY MEASURES IN ACCORDANCE WITH TACOMA RAIL SAFETY RULES TO SAFELY PERFORM THE WORK.
3. EXCAVATE BELOW GROUND LINE TO SOLID TIMBER. NOTE: IF SOLID TIMBER IS NOT FOUND AFTER EXCAVATING THREE OR FOUR FEET BELOW THE GROUND LINE. AND THE SPLICE IS FOR A SINGLE PILE (OR IF FOR TWO ADJACENT PILES, AND PILES ARE SOLID), A CONCRETE COLLAR SYSTEM WILL BE NECESSARY.
4. THE CUT OFF CAN BE ACCOMPLISHED BY:
   - 4.1. STRETCH A STRING OR TAPE IN CENTER OF PILE AND PLACE A LEVEL AT CENTER. MEASURE ONE FOOT ON LEVEL THEN MEASURE AT THE ONE FOOT MARK TO THE STRING TO GET THE BATTER IN THE PILE.
   - 4.2. NEXT, PLACE A SQUARE ON THE MARK OR STRING WITH THE BODY OF THE SQUARE LINED UP ON THE CENTER MARK WITH THE TONGUE OF THE SQUARE LOWERED TO THE POINT WHERE THE PILE IS SOLID. MAKING SURE THE TONGUE IS LINED UP WITH OTHER PILES IN THE BENT, THEN MARK ALONG THE TONGUE, TURN THE SQUARE OVER AND CONTINUE THE MARK ON THE OTHER SIDE OF THE CENTER LINE.
   - 4.3. NEXT, USING A 2" X 4" X 2' STRAIGHT EDGE, HOLD IT ON THE LINE MARKED AT THE TONGUE OF THE SQUARE. NAIL THE 2" X 4" IN PLACE WITH TWO 30D COMMON NAILS. USING TWO LEVELS AND ANOTHER TWO FOOT 2" X 4", PLACE THE LEVELS AT BOTH ENDS AND NAIL THE 2" X 4" WITH TWO 30D COMMON NAILS.
5. SECURE TRACK AUTHORITY.
6. IT MAY BE NECESSARY TO REMOVE ONE BRACE TO REPLACE THE SECTION OF PILING.
7. USE A ROPE TO TIE OFF THE PILING NEAR THE TOP OR FASTEN THE CABLE FROM DERRICK OR BOOM TRUCK.
8. CUT THE PILING OFF ALONG THE STRAIGHT EDGES – UTILIZE METHOD 1 OR 2, DRAWING P2.
9. AN ON-TRACK MACHINE, WINCH OR BOOM TRUCK MAY BE USED TO REMOVE AND REPLACE THE PILE SPLICE. WHEN PLACING THE NEW PILE, HOOK THE CABLE SO IT WILL BE TURNED CORRECTLY WHEN IT IS INSTALLED. FIRST, SET THE BOTTOM ON THE STUMP AND PUSH THE TOP UNDER THE CAP. WHEN THE BEST FIT IS ACHIEVED, PUSH THE TOP STRAIGHT OUT UNTIL IN PROPER POSITION. BORE HOLES FOR TOE DRIFT PINS. PINS SHOULD BE 22 INCHES LONG. PLACE TWO PINS IN THE BOTTOM CUT. REPLACE THE BRACE.
10. BEFORE CLEARING THE RAIL FOR TRAFFIC, BRIDGE SUPERVISOR SHALL INSPECT ALL WORK PERFORMED AND AUTHORIZE SAFE MOVEMENT OF TRAINS OVER THE REPAIRED STRUCTURE.
11. CLEAR TRACK AND RELEASE TRACK AUTHORITY.
12. BACK FILL ANY EXCAVATION AND CLEAN UP THE AREA.

SEE DRAWING P2 FOR PILE CUTOFF METHODS 1 & 2.

REFERENCE

SEE DRAWING P2 FOR PILE CUTOFF METHODS, GENERAL NOTES AND MATERIAL SPECIFICATIONS.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1-12-12

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PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TIMBER BRIDGE REPAIR STANDARDS

POST PILE REPAIR
DETAILS AND REPAIR PROCEDURE

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	DESIGNED: MJK - HDR	CHECKED: PJG - HDR
	DRAWN: MRF - HDR	PROJECT NAME
	DRAWING NAME	DRAWING: P1

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APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER

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POST PILE REPAIR PROCEDURE CONTINUATION

METHOD #1

THE NEW PILE SPLICE MAY BE CUT TO FIT AHEAD OF TIME. TO DO THIS;

A. MEASURE ALONG THE CENTER MARK FROM THE CAP TO THE STRAIGHT EDGE TO GET THE LENGTH. (THE BATTER IS ALREADY KNOWN.)

B. NEXT, FIND A PLACE LEVEL ENOUGH FOR THE PILE LENGTH AND LAY A TIMBER, USUALLY A 4" X 8" X 4', AT EACH END OF THE PILE AND MAKE IT LEVEL. POSITION THE PILE ON TOP AND LINE THE 4" X 8" LIMBERS UP WITH THE ANGLES WANTED TO CUT THE NEW PILE, USING A LINE DOWN THE CENTER OF THE PILE AND A SQUARE TO MARK FOR THE ANGLES.

C. NOTE: IF NOT USING STRINGERS AND A SILL, THE BOTTOM WILL BE SQUARE AND THE TOP WILL HAVE THE BATTER CUT IN IT. IF USING STRINGER BLOCKS AND A SILL, CUT THE BATTER IN BOTH TOP AND BOTTOM.

C. USE A SQUARE BY HOLDING THE BODY OF THE SQUARE ALONG THE CENTER MARK AND MARK ALONG THE TONGUE OF THE SQUARE, THEN MEASURE THE LENGTH ALONG THE CENTER LINE.

D. NEXT, BE SURE THE 4" X 8" UNDER THE PILE IS LINED UP WITH THE ANGLE OR SQUARE CUTS. THEN TAKE FOUR 2" X 4"S TWO FEET LONG FOR EACH SIDE OF EACH END OF THE PILE. STAND ONE 2" X4" STRAIGHT EDGE UP AT THE POINT TO BE CUT.

E. USING THE CENTER OF THE SQUARE OR LEVEL, LINE UP ACROSS PILE HOLDING THE SQUARE ON THE MARK THAT WAS SCRIBED ALONG THE TONGUE EARLIER. USE A LEVEL ON THE STRAIGHT EDGE AND MOVE IT UNTIL IT TOUCHES THE SQUARE AND IS PLUMB, THEN NAIL WITH TWO 30D COMMON NAILS. DO THE SAME PROCEDURE FOR THE OTHER THREE SIDES. THE BOTTOM OF THE STRAIGHT EDGE MAY NEED TO BE TOE NAILED TO THE 4" X 8" IF IT IS NOT STEADY ENOUGH. THEN CUT THE PILE ON BOTH ENDS.

F. MARK THE TOP CENTER OF THE PILE AND SIDE CENTER WITH YELLOW CHALK, SO AS TO DETERMINE WHEN IT IS POSITIONED CORRECTLY SO THE BATTER WILL FIT THE CAP WHEN LIFTED INTO POSITION ON THE STUMP OR ON THE SILL.

METHOD #2

ANOTHER METHOD OF FRAMING THE NEW PILE STUB (AFTER TOTAL LENGTH AND ANGLES HAVE BEEN TAKEN FROM OLD PILE) IS TO:

A. LAYOUT NEW PILING, ON GROUND, AND LEVEL ON GOOD SOLID BLOCKING (4" X 8" OR OTHER SUITABLE MATERIALS).

B. MARK CENTER OF PILE WITH NAILS BOTH AT THE TOP CUT AND BOTTOM CUT AND EITHER RUN A STRING BETWEEN THEM OR MARK WITH CHALK.

C. TAKE TWO PIECES OF LIGHT WOOD, LIKE 1" X 4". ONE PIECE SHOULD BE APPROXIMATELY FOUR FEET LONG, AND THE OTHER ABOUT TWO FEET LONG. PLACE A "T" SHAPE (USE A SQUARE TO GET 90 DEGREE ANGLE).

D. PLACE THE TOP OF "T" AT THE TOP CUT NAIL, CENTER AND NAIL WITH ONE NAIL SO IT WILL SWIVEL. ROTATE THE "T" UNTIL THE CORRECT ANGLE OF CUT AND NAIL SECURELY. WHEN DONE, ADD ONE MORE NAIL AT THE TOP CROSS PIECE.

E. THE ANGLE IS NOW DETERMINED AND BY USING A SQUARE AND SCRATCH AWL (USING THE TOP OF THE "T" FOR A GUIDE) MARK THE FACE AND BOTH SIDES OF THE PILE.

F. TAKE OFF THE "T" AND USE THE SCRATCH MARKS AS A GUIDE FOR THE SAW.

G. THE BOTTOM CUT IS THE SAME PROCEDURE, WHETHER MAKING A SQUARE CUT OR A LEVEL CUT.

GENERAL NOTES:

ALL TIMBER AND PILING SHALL BE TREATED IN ACCORDANCE WITH THE MATERIAL SPECIFICATIONS.

TREATED TIMBER MUST BE HANDLED CAREFULLY TO AVOID EXPOSING ANY PART OF THE UNTREATED INTERIOR WOOD. CANT HOOKS, PEAVIES, PIKES OR HOOKS SHALL NOT BE USED. WHEREVER DAMAGE HAS OCCURRED TO THE TREATED TIMBER, FIELD PRESERVATIVE TREATMENT SHALL BE APPLIED.

FIELD TREATMENT: HOLES, CUTS, AND ABRASIONS MADE IN TREATED TIMBER SHALL BE SWABBED WITH PRESERVATIVE. BOLTS SHALL BE DIPPED IN PRESERVATIVE OR BRIDGE CEMENT PRIOR TO PLACING.

FRAMING: EXISTING TREATED PILES MUST NOT BE CUT FOR FASTENING BRACES. IF NECESSARY, CREOSOTED FILLER BLOCKS SHALL BE USED TO FILL SPACES BETWEEN PILES AND BRACING.

TOP OF PILES SHALL BE CUT AND PROTECTED AS DETAILED.

SWAY BRACING SHALL BE FASTENED TO CAPS WITH ¾" DIA. BOLTS.

USE 6" WIDE CREOSOTED TIMBER FILLER BETWEEN CAP AND SWAY BRACE IF PILES ARE OVER 16" DIAMETER.

ALL BRACING SHALL BE FASTENED TO PILES WITH ¾" DIA. BOLTS. WHEN BRIDGE IS LOCATED ON A HORIZONTAL CURVE OF 2° OR MORE, SPIKE GRIDS SHALL BE USED WITH BOLTS ON ALL BRACING CONNECTIONS.

ALL BOLTS THROUGH TIMBER SHALL HAVE A 5/16" x 3" O.D. CUT WASHER OR EQUIVALENT UNDER BOTH NUT AND HEAD.

USE APPROVED LOCK NUTS ON ALL BOLTS.

HOLES FOR ¾" DIA. BOLTS SHALL BE 13/16" DIA. HOLES FOR ¾" DIA. DRIFT BOLTS SHALL BE ¾" DIA.

HOLES FOR DRIVE SPIKES SHALL BE ⅛" LESS THAN DIAMETER OF SPIKE.

POST PILE MATERIAL SPECIFICATIONS

GENERAL REQUIREMENTS

A. PILE POSTING SHALL BE PERFORMED IN ACCORDANCE WITH AREMA CHAPTER 7, SECTION 4.8, "SUPPORT, REPAIR, PRESERVE OR REPLACE DAMAGED PORTIONS OF THE STRUCTURE" AND THESE DETAILS. THE EXTENT AND LOCATION OF THE POSTED SECTION SHALL BE AS AGREED UPON IN THE FIELD WITH THE BRIDGE SUPERVISOR.

B. THE EXISTING DETERIORATED PILES SHALL BE CUT OFF AT SOUND WOOD, ABOVE THE HIGHEST AND BELOW THE LOWEST FUNGAL DECAY OR BORER CAVITY FOR PARTIAL POSTING AND TO THE LOWEST FUNGAL DECAY OR BORER CAVITY IF THE ENTIRE PILE IS BEING POSTED FROM THE CAP TO THE SOUND PORTION OF THE PILE. CUTOFFS SHALL BE MADE SQUARE AND TRUE TO THE SLOPE OF THE PILING EXCEPT AT THE TOP OF AN ENTIRE PILE BEING POSTED AT WHICH TIME THE PILE SHALL BE CUT TO MATCH THE CAP WITHIN A TOLERANCE OF ZERO TO 1/8" TOLERANCE FOR DIMENSION AND THE TOP CUT–OFF SURFACE SHALL PROVIDE A SMOOTH EVEN BEARING BETWEEN THE CAP BOTTOM AND THE POST.

C. PILE CUT OFFS AT THE PILE CAP LEVEL SHALL BE MADE ACCURATELY TO ENSURE PERFECT BEARING BETWEEN THE CAP AND PILES. SHIMMING ON TOP OF THE PILES WHERE CAPS ARE PLACED SHALL NOT BE PERMITTED. THE TIMBER CAP SHALL HAVE FULL BEARING ON THE POST WITHOUT ANY GAPS OR CREATION OF HIGH SPOTS. IF ACCESS ALLOWS, THE EXISTING DRIFT PIN CAN BE REUSED IN ITS CURRENT POSITION RELATIVE TO THE PILE CAP; OTHERWISE, TWO EVENLY SPACED DRIFT PINS SHOULD BE DRIVEN FROM BELOW. OSMOSE PILE POSTING KIT MAY BE USED PER THE MANUFACTURER'S INSTRUCTIONS, HOWEVER THIS SYSTEM SHALL BE SUPPLEMENTED WITH OTHER REQUIREMENTS OF THIS SECTION, INCLUDING PILE JACKET.

D. ONLY ONE POSTED SECTION IS ALLOWED PER PILE. THE POSTED SECTION SHALL INCLUDE ALL DETERIORATED SECTIONS IN THE PILE.

E. PILE JACKETS EXTENDING 18" ABOVE AND BELOW THE JOINT WITH THE EXISTING PILE SHALL BE USED TO PROTECT THE SPLICED AREA. PILE JACKETS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR SHALL FIELD VERIFY DIAMETER OF PILE JACKETS BEFORE ORDERING. CONTRACTOR SHALL LOOSEN AND REINSTALL SWAY OR SASH BRACING AS NECESSARY FOR THE INSTALLATION OF THE JACKETS. HOLES MAY BE DRILLED THROUGH THE JACKETS AND TREATED IN ACCORDANCE WITH THESE DRAWINGS TO MAINTAIN SWAY OR SASH BRACE POSITIONS.

F. EPOXY GROUT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, AREMA CHAPTER 7, PART 4, AND DETAILS IN THESE DRAWINGS. VOIDS DISCOVERED IN THE TOPS OF PILES AFTER CUT OFF SHALL BE CLEANED OF DECAYED MATERIAL AND FILLED WITH EPOXY GROUT TO CREATE A SMOOTH LEVEL BEARING SURFACE.

G. EXPOSED PILE CUTOFFS AND POSTS AT THE PILE CAP LEVEL, EXISTING OR NEW, SHALL FIRST BE TREATED WITH A COATING OF FIELD PRESERVATIVE TREATMENT, THEN TREATED WITH A COATING OF SEALING COMPOUND CONSISTING OF ASPHALT OR TAR BASED MATERIAL, THEN COVERED BY A 30" BY 30" FABRIC, WITH ANOTHER COATING OF SEALING COMPOUND APPLIED TO THE ENTIRE SURFACE OF THE FABRIC. THE FABRIC SHALL BE ATTACHED WITH NAILS 4" FROM THE TOP OF THE PILE, AND SHALL BE TRIMMED TWO INCHES BELOW THE NAILS.

TIMBER BRIDGE MATERIAL REQUIREMENTS

1. LUMBER

   A. TREATED TIMBER LUMBER SHALL BE FROM THE FOLLOWING STRESS GRADED LUMBER SPECIES: DOUGLAS–FIR OR SOUTHERN PINE. THE WET CONDITION BENDING STRESS SHALL BE A MINIMUM OF 1450 PSI AND WET CONDITION COMPRESSION PERPENDICULAR TO THE GRAIN SHALL BE A MINIMUM OF 400 PSI IN ACCORDANCE WITH TABLE 7–2–9, "ALLOWABLE UNIT STRESSES FOR STRESS GRADED LUMBER – RAILROAD LOADING (VISUAL GRADING)" CONTAINED IN CHAPTER 7 OF THE AREMA MANUAL. MATERIAL TO BE STRESS GRADED IN ACCORDANCE WITH THE APPLICABLE GRADING RULES FOR THE SPECIES PROVIDED.

   B. TREATED TIMBER LUMBER SHALL BE PRESSURE TREATED WITH CREOSOTE AS REQUIRED FOR STRUCTURAL ELEMENTS IN THESE SPECIFICATIONS IN CONFORMANCE WITH AWPA STANDARD UC4C, "GROUND CONTACT, EXTREME DUTY" AND IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 7 AND CHAPTER 30 OF THE AREMA MANUAL. TREATED TIMBER LUMBER SIZES TO BE FIELD VERIFIED PRIOR TO ORDERING.

   C. WRITTEN CERTIFICATION SHALL BE PROVIDED ASSURING THAT ALL TREATED TIMBER USED FOR REPLACING DEFICIENT MEMBERS WAS PRODUCED IN COMPLIANCE WITH THE BEST MANAGEMENT PRACTICES (BMP'S) OUTLINED IN "BEST MANAGEMENT PRACTICES FOR TREATED WOOD IN AQUATIC AND OTHER SENSITIVE ENVIRONMENTS", LATEST EDITION PUBLISHED BY THE WESTERN WOOD PRESERVERS INSTITUTE (WWPI), WOOD PRESERVATION CANADA, AND THE TIMBER PILING COUNCIL. THE WRITTEN CERTIFICATION SHALL INCLUDE A DESCRIPTION AND APPROPRIATE DOCUMENTATION OF THE APPLICABLE BMP'S USED.

2. STEEL FASTENERS

   A. ALL NEW MACHINE BOLTS, DRIFT PINS, AND DOWELS SHALL BE MEDIUM CARBON STEEL, CONFORMING TO THE MECHANICAL AND CHEMICAL REQUIREMENTS OF ASTM A 307, GRADE A UNLESS OTHERWISE SPECIFIED. PLATE OR FLAT WASHERS AS INDICATED ON THE PLANS SHALL BE USED.

   B. MACHINE BOLTS SHALL HAVE SQUARE HEADS AND NUTS OR LOCKNUTS, AS SHOWN IN THE PLANS OR OTHERWISE SPECIFIED.

   C. NAILS SHALL BE CUT OR ROUND WIRE OF STANDARD FORM. SPIKES SHALL BE CUT OR WIRE SPIKES, OR BOAT SPIKES AS SPECIFIED OR SHOWN IN THE PLANS. ALL NAILS AND SPIKES SHALL HAVE GROOVED, BARBED, SPIRAL GROOVES OR OTHERWISE DEFORMED SHANKS FOR GREATER HOLDING CAPACITY.

   D. ALL HARDWARE, BOLTS, NUTS, LOCKNUTS, WASHERS, NAILS AND SPIKES, SHALL BE HOT–DIPPED GALVANIZED COATED PER ASTM A153.

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TACOMA RAIL

HDR ENGINEERING INC.

TIMBER BRIDGE REPAIR STANDARDS

POST PILE REPAIR

GENERAL NOTES AND MATERIAL SPECIFICATIONS

REFERENCE		DATE 1-12-12	SCALE NTS
		DESIGNED MJK - HDR	CHECKED PJG - HDR
		DRAWN MRF - HDR	PROJECT NAME
		DRAWING NAME	DRAWING P2

TACOMA RAIL

APPROVED: [ORIGINAL SIGNED BY]

ALAN MATHESON - ROADMASTER

NO	REVISION	DATE	APPD
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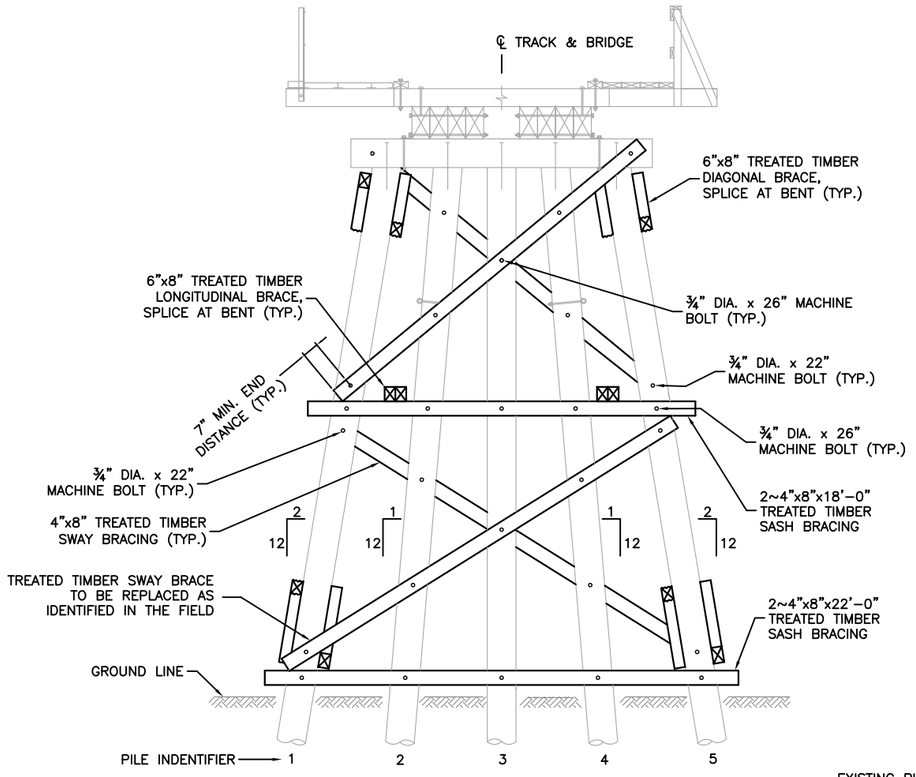
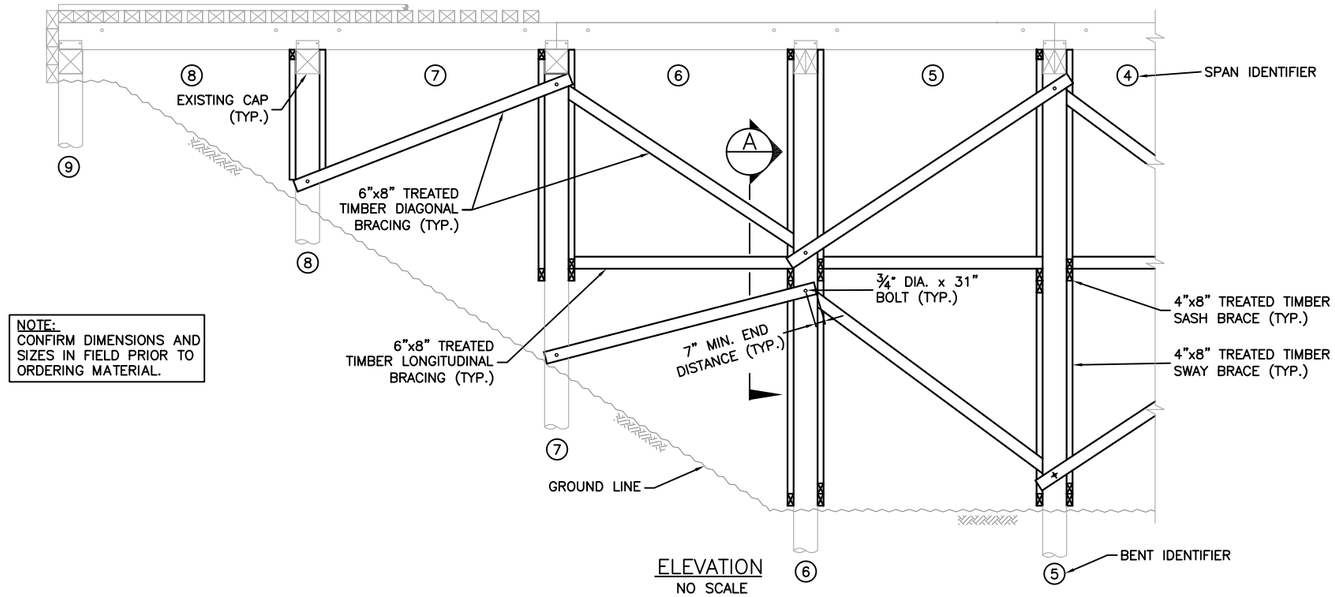
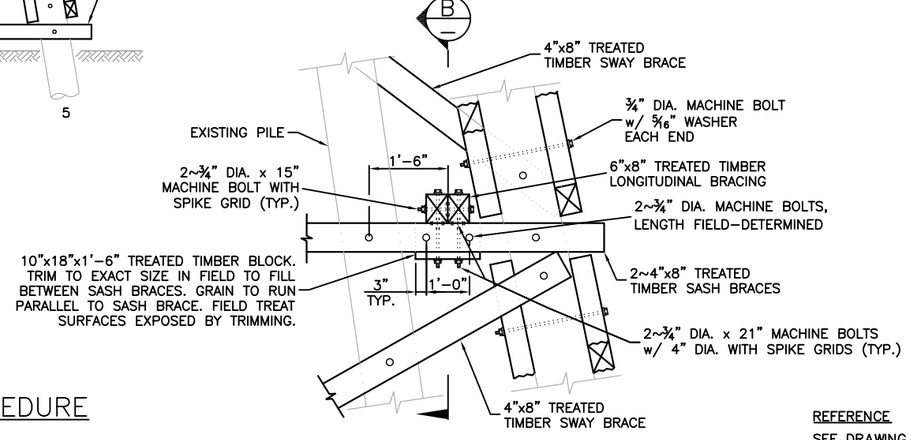


SECTION THRU BRIDGE
LOOKING AHEAD ON MILEPOST
NO SCALE

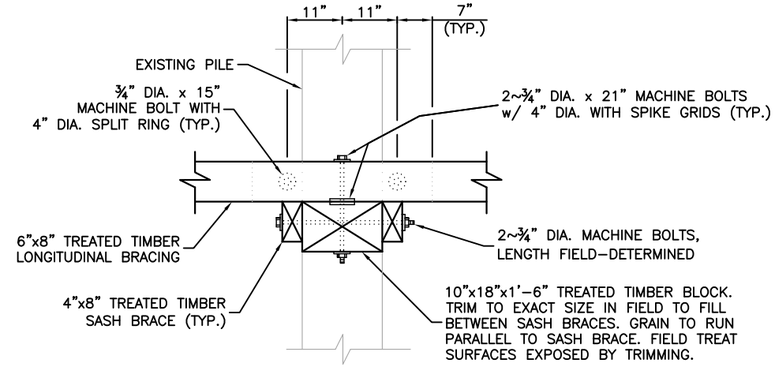


NOTE:
CONFIRM DIMENSIONS AND SIZES IN FIELD PRIOR TO ORDERING MATERIAL.

ELEVATION
NO SCALE



SECTION A-A
NO SCALE



SECTION B-B
NO SCALE

BRACE REPLACEMENT CONSTRUCTION PROCEDURE

1. HAUL PROPER SIZE MATERIAL TO JOB SITE.
2. INSTALL APPROPRIATE SAFETY MEASURES IN ACCORDANCE WITH TACOMA RAIL SAFETY RULES TO SAFELY PERFORM THE WORK.
3. REMOVE BRACING WITH USE OF DERRICK CAR OR BOOM TRUCK.
4. INSTALL NEW BRACING.
5. DRILL AND INSTALL HARDWARE.
6. BEFORE CLEARING THE RAIL FOR TRAFFIC, BRIDGE SUPERVISOR SHALL INSPECT ALL WORK PERFORMED AND AUTHORIZE SAFE MOVEMENT OF TRAINS OVER THE REPAIRED STRUCTURE.
7. CLEAR TRACK AND RELEASE TRACK AUTHORITY.
8. CLEAN UP WORK AREA.

REFERENCE

SEE DRAWING B2 FOR GENERAL NOTES AND MATERIAL SPECIFICATIONS.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1-12-12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

TIMBER BRIDGE REPAIR STANDARDS

LONGITUDINAL AND TRANSVERSE BRACE REPLACEMENT DETAILS AND CONSTRUCTION PROCEDURE

HDR ENGINEERING INC.

TACOMA RAIL

APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER

NO	REVISION	DATE	APPD
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1			

REFERENCE

DATE: 1-12-12
SCALE: NTS
DESIGNED: MJK - HDR
CHECKED: PJG - HDR
DRAWN: MRF - HDR
PROJECT NAME:
DRAWING NAME:
DRAWING: B1
SHEET 20 OF 23

GENERAL NOTES:

ALL TIMBER AND PILING SHALL BE TREATED IN ACCORDANCE WITH THE MATERIAL SPECIFICATIONS.

TREATED TIMBER MUST BE HANDLED CAREFULLY TO AVOID EXPOSING ANY PART OF THE UNTREATED INTERIOR WOOD. CANT HOOKS, PEAVIES, PIKES OR HOOKS SHALL NOT BE USED. WHEREVER DAMAGE HAS OCCURRED TO THE TREATED TIMBER, FIELD PRESERVATIVE TREATMENT SHALL BE APPLIED.

FIELD TREATMENT: HOLES, CUTS, AND ABRASIONS MADE IN TREATED TIMBER SHALL BE SWABBED WITH PRESERVATIVE. BOLTS SHALL BE DIPPED IN PRESERVATIVE OR BRIDGE CEMENT PRIOR TO PLACING.

FRAMING: EXISTING TREATED PILES MUST NOT BE CUT FOR FASTENING BRACES. IF NECESSARY, CREOSOTED FILLER BLOCKS SHALL BE USED TO FILL SPACES BETWEEN PILES AND BRACING.

SWAY BRACING SHALL BE FASTENED TO CAPS WITH ¾" DIA. BOLTS.

USE 6" WIDE CREOSOTED TIMBER FILLER BETWEEN CAP AND SWAY BRACE IF PILES ARE OVER 16" DIAMETER.

ALL BRACING SHALL BE FASTENED TO PILES WITH ¾" DIA. BOLTS. WHEN BRIDGE IS LOCATED ON A HORIZONTAL CURVE OF 2° OR MORE, SPIKE GRIDS SHALL BE USED WITH BOLTS ON ALL BRACING CONNECTIONS.

ALL BOLTS THROUGH TIMBER SHALL HAVE A 5/16" x 3" O.D. CUT WASHER OR EQUIVALENT UNDER BOTH NUT AND HEAD.

USE APPROVED LOCK NUTS ON ALL BOLTS.

HOLES FOR ¾" DIA. BOLTS SHALL BE 13/16" DIA. HOLES FOR ¾" DIA. DRIFT BOLTS SHALL BE ¾" DIA.

HOLES FOR DRIVE SPIKES SHALL BE ⅛" LESS THAN DIAMETER OF SPIKE.

LONGITUDINAL AND TRANSVERSE BRACE MATERIAL SPECIFICATIONS

GENERAL REQUIREMENTS

A. EXISTING SWAY AND SASH BRACING AND LONGITUDINAL GIRTS, DIAGONAL BRACING AND TIMBER PIER PROTECTION SHALL BE REMOVED OR REPAIRED IN ACCORDANCE WITH THE PLANS OR AS DIRECTED BY THE BRIDGE SUPERVISOR. REMOVED BOLTS TO ACCOMPLISH THE REPLACEMENT OR REPAIR WORK SHALL BE REPLACED WITH NEW BOLTS. LOOSENED UNDAMAGED BOLTS SHALL BE RETIGHTENED UPON COMPLETION OF THE WORK. ALL HOLES SHALL BE FIELD TREATED PRIOR TO PLACEMENT OF BOLTS. REPLACEMENT TIMBERS SHALL BE MEASURED CAREFULLY PRIOR TO ORDERING AND FIELD CUT AND TREATED AS NECESSARY TO INSURE PROPER FIT WITHIN ZERO OR PLUS 1/8" TOLERANCE. TREATED WOOD SHIMS MAY BE NECESSARY TO FILL GAPS BETWEEN PILING AND SWAY OR SASH BRACING TO OBTAIN A TIGHT FIGHT WITHOUT UNDUE STRESS ON THE NEW TIMBER.

B. CARE SHALL BE TAKEN WHEN REMOVING EXISTING BOLTS TO MINIMIZE DAMAGE TO EXISTING BOLT HOLES. EXISTING TREATED TIMBER SHIMS BETWEEN PILE AND SWAY AND SASH BRACING MAY BE REUSED AT THE DIRECTION OF THE BRIDGE SUPERVISOR.

C. THE EXISTING BRIDGE SHALL BE SUPPORTED AS NECESSARY WHEN REMOVING ALL OR PART OF THE BRACING.

E. REMOVE AND DISPOSE OF THE EXISTING TREATED TIMBER AND OTHER MATERIAL REMOVED FROM THE BRIDGE IN ACCORDANCE WITH TACOMA RAIL MATERIAL DISPOSAL STANDARDS, AND ANY CITY, COUNTY, STATE OR FEDERAL DISPOSAL REQUIREMENTS.

TIMBER BRIDGE MATERIAL REQUIREMENTS

1. LUMBER

   A. TREATED TIMBER LUMBER SHALL BE FROM THE FOLLOWING STRESS GRADED LUMBER SPECIES: DOUGLAS–FIR OR SOUTHERN PINE. THE WET CONDITION BENDING STRESS SHALL BE A MINIMUM OF 1450 PSI AND WET CONDITION COMPRESSION PERPENDICULAR TO THE GRAIN SHALL BE A MINIMUM OF 400 PSI IN ACCORDANCE WITH TABLE 7–2–9, "ALLOWABLE UNIT STRESSES FOR STRESS GRADED LUMBER – RAILROAD LOADING (VISUAL GRADING)" CONTAINED IN CHAPTER 7 OF THE AREMA MANUAL. MATERIAL TO BE STRESS GRADED IN ACCORDANCE WITH THE APPLICABLE GRADING RULES FOR THE SPECIES PROVIDED.

   B. TREATED TIMBER LUMBER SHALL BE PRESSURE TREATED WITH CREOSOTE AS REQUIRED FOR STRUCTURAL ELEMENTS IN THESE SPECIFICATIONS IN CONFORMANCE WITH AWPA STANDARD UC4C, "GROUND CONTACT, EXTREME DUTY" AND IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 7 AND CHAPTER 30 OF THE AREMA MANUAL. TREATED TIMBER LUMBER SIZES TO BE FIELD VERIFIED PRIOR TO ORDERING.

   C. WRITTEN CERTIFICATION SHALL BE PROVIDED ASSURING THAT ALL TREATED TIMBER USED FOR REPLACING DEFICIENT MEMBERS WAS PRODUCED IN COMPLIANCE WITH THE BEST MANAGEMENT PRACTICES (BMP'S) OUTLINED IN "BEST MANAGEMENT PRACTICES FOR TREATED WOOD IN AQUATIC AND OTHER SENSITIVE ENVIRONMENTS", LATEST EDITION PUBLISHED BY THE WESTERN WOOD PRESERVERS INSTITUTE (WWPI), WOOD PRESERVATION CANADA, AND THE TIMBER PILING COUNCIL. THE WRITTEN CERTIFICATION SHALL INCLUDE A DESCRIPTION AND APPROPRIATE DOCUMENTATION OF THE APPLICABLE BMP'S USED.

2. STEEL FASTENERS

   A. ALL NEW MACHINE BOLTS, DRIFT PINS, AND DOWELS SHALL BE MEDIUM CARBON STEEL, CONFORMING TO THE MECHANICAL AND CHEMICAL REQUIREMENTS OF ASTM A 307, GRADE A UNLESS OTHERWISE SPECIFIED. PLATE OR FLAT WASHERS AS INDICATED ON THE PLANS SHALL BE USED.

   B. MACHINE BOLTS SHALL HAVE SQUARE HEADS AND NUTS OR LOCKNUTS, AS SHOWN IN THE PLANS OR OTHERWISE SPECIFIED.

   C. NAILS SHALL BE CUT OR ROUND WIRE OF STANDARD FORM. SPIKES SHALL BE CUT OR WIRE SPIKES, OR BOAT SPIKES AS SPECIFIED OR SHOWN IN THE PLANS. ALL NAILS AND SPIKES SHALL HAVE GROOVED, BARBED, SPIRAL GROOVES OR OTHERWISE DEFORMED SHANKS FOR GREATER HOLDING CAPACITY.

   D. ALL HARDWARE, BOLTS, NUTS, LOCKNUTS, WASHERS, NAILS AND SPIKES, SHALL BE HOT–DIPPED GALVANIZED COATED PER ASTM A153.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1–12–12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TIMBER BRIDGE REPAIR STANDARDS

LONGITUDINAL AND TRANSVERSE BRACE REPLACEMENT
GENERAL NOTES AND MATERIAL SPECIFICATIONS

TACOMA RAIL

APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER

NO	REVISION	DATE	APPD
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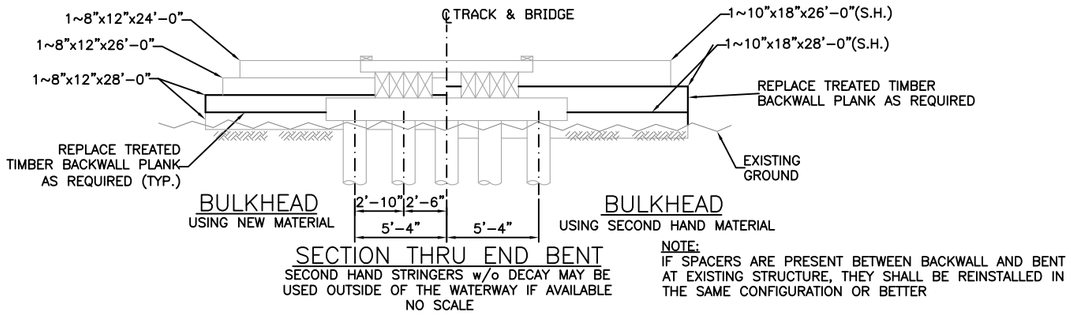
REFERENCE

DATE: 1-12-12
SCALE: NTS
DESIGNED: MJK - HDR
CHECKED: PJG - HDR
DRAWN: MRF - HDR
PROJECT NAME:
DRAWING NAME:
DRAWING: B2



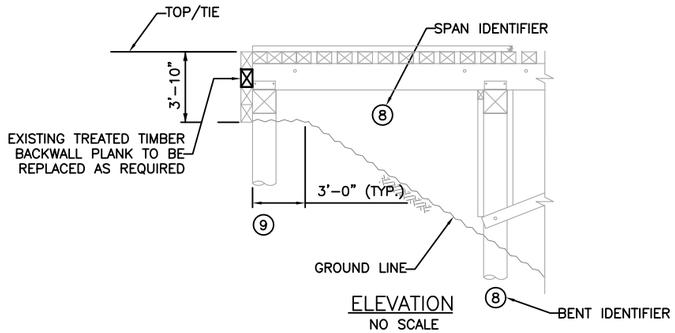
SECTION THRU END BENT

SECOND HAND STRINGERS w/o DECAY MAY BE USED OUTSIDE OF THE WATERWAY IF AVAILABLE

NO SCALE

NOTE:
IF SPACERS ARE PRESENT BETWEEN BACKWALL AND BENT AT EXISTING STRUCTURE, THEY SHALL BE REINSTALLED IN THE SAME CONFIGURATION OR BETTER

NOTE:
CONFIRM DIMENSIONS AND SIZES IN FIELD PRIOR TO ORDERING MATERIAL.



ELEVATION

NO SCALE

BACKWALL PLANK REPLACEMENT CONSTRUCTION PROCEDURE

1. HAUL MATERIAL TO THE JOB SITE.
2. INSTALL SAFETY MEASURES IN ACCORDANCE WITH TACOMA RAIL SAFETY RULES TO SAFELY PERFORM THE WORK.
3. IF EXCAVATING BY HAND, USING PICK AND SHOVEL, SHORING MAY BE REQUIRED FOR SAFETY. OSHA TRENCHING AND SHORING REQUIREMENTS SHOULD BE MET IF EXCAVATION EXCEEDS OSHA DEPTH THRESHOLD.
4. DIG OUT THE BULKHEAD. USE A BACKHOE IF IT IS AVAILABLE AND THE GROUND OR SLOPE IS NOT TOO STEEP TO WORK THE EQUIPMENT. KEEP THE HOLE FAIRLY LEVEL AS IT IS DUG OUT SO IF NEED BE, A DEAD BLOCK COULD BE PLACED ON THE GROUND UNDER EACH RAIL AND STRUT BETWEEN IT AND THE RAIL.
5. STRUT BETWEEN BACKWALL AND SOIL A 3/4" X 8' LONG PIECE OF PLYWOOD FOR A TEMPORARY BULKHEAD TO KEEP SOIL FROM CAVING IN. OSHA TRENCHING AND SHORING REQUIREMENTS SHOULD BE MET IF EXCAVATION EXCEEDS OSHA DEPTH THRESHOLD.
6. REMOVE OLD BACKWALL TIMBER. THIS CAN USUALLY BE DONE BY HAND UNLESS IT CONSISTS OF LONG STRINGERS, IN WHICH CASE A DERRICK CAR OR BOOM TRUCK IS NEEDED.
7. INSTALL NEW BACKWALL. CHECK TO SEE IF NEW 4" X 8" SPACERS ARE NEEDED ON BACK SIDE OF PILING. THESE SERVE TWO PURPOSES, FIRST THEY LET THE BACKWALL TIMBER, STRINGER END AND CAP GET AIR SO THEY WILL NOT BECOME SATURATED WITH MOISTURE AND DECAY QUICKER, AND SECOND THEY WILL KEEP THE NEW BACKWALL STRAIGHT. AFTER THE BOARDS ARE INSTALLED, BOLT TWO 4" X 8" SPACERS ON EACH END.
8. BACK FILL AND CLEAN UP WORK SITE. INSTALL WING TIMBERS TO HELP HOLD BALLAST AT THE BRIDGE END.
9. SURFACE AND DRESS BRIDGE APPROCH TO MEET TACOMA RAIL TRACK STANDARDS BEFORE OPENING THE BRIDGE TO TRAFFIC. CONTACT TRACK FORCES TO MAINTAIN SURFACE AT BRIDGE ENDS.
10. BEFORE CLEARING THE RAIL FOR TRAFFIC, BRIDGE SUPERVISOR SHALL INSPECT ALL WORK PERFORMED, CONFIRM THAT THE TRACK SECTION BACKFILL IS COMPLETED AND THAT TIES REMOVED HAVE BEEN REPLACED AND TAMPED, AND AUTHORIZE SAFE MOVEMENT OF TRAINS OVER THE REPAIRED STRUCTURE.
11. CLEAN UP WORK SITE. CLEAR TRACK AND RELEASE TRACK AUTHORITY.
12. CONTACT TRACK FORCES TO MAINTAIN SURFACE AT BRIDGE ENDS.

REFERENCE

SEE DRAWING BW2 FOR GENERAL NOTES AND MATERIAL SPECIFICATIONS.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1-12-12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TACOMA RAIL

APPROVED: [ORIGINAL SIGNED BY]

ALAN MATHESON - ROADMASTER

TIMBER BRIDGE REPAIR STANDARDS

BACKWALL PLANK REPLACEMENT
DETAILS AND CONSTRUCTION PROCEDURE

NO	REVISION	DATE	APPD
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REFERENCE

DATE: 1-12-12
SCALE: NTS
DESIGNED: MJK - HDR
CHECKED: PJG - HDR
DRAWN: MRF - HDR
PROJECT NAME:
DRAWING NAME:

DRAWING: BW1

SHEET 22 OF 23

GENERAL NOTES:

ALL NEW TIMBER SHALL BE TREATED IN ACCORDANCE WITH THE MATERIAL SPECIFICATIONS, OR BE SECONDHAND CREOSOTE TREATED TIMBER.

TREATED TIMBER MUST BE HANDLED CAREFULLY TO AVOID EXPOSING ANY PART OF THE UNTREATED INTERIOR WOOD. CANT HOOKS, PEAVIES, PIKES OR HOOKS SHALL NOT BE USED. WHEREVER DAMAGE HAS OCCURRED TO THE TREATED TIMBER, FIELD PRESERVATIVE TREATMENT SHALL BE APPLIED.

FIELD TREATMENT: HOLES, CUTS, AND ABRASIONS MADE IN TREATED TIMBER SHALL BE SWABBED WITH PRESERVATIVE. BOLTS SHALL BE DIPPED IN PRESERVATIVE OR BRIDGE CEMENT PRIOR TO PLACING.

ALL BOLTS THROUGH TIMBER SHALL HAVE A 5/16" x 3" O.D. CUT WASHER OR EQUIVALENT UNDER BOTH NUT AND HEAD.

USE APPROVED LOCK NUTS ON ALL BOLTS.

HOLES FOR 3/4" DIA. BOLTS SHALL BE 13/16" DIA. HOLES FOR 3/4" DIA. DRIFT BOLTS SHALL BE 3/4" DIA.

HOLES FOR DRIVE SPIKES SHALL BE 1/8" LESS THAN DIAMETER OF SPIKE.

BACKWALL PLANK MATERIAL SPECIFICATIONS

GENERAL REQUIREMENTS

A. THE EXISTING DEFECTIVE ABUTMENT BACKWALL PLANKS SHALL BE REMOVED, DISPOSED OF, AND REPLACED WITH NEW OR SECONDHAND PLANKS OF EQUAL SIZE AND LENGTH. THE NEW OR SECONDHAND PLANK SHALL MEET THE MATERIAL AND TREATMENT SPECIFICATIONS. THE NEW OR SECONDHAND PLANKS SHALL BE CONNECTED TO THE ABUTMENTS IN THE SAME FASHION AS THE EXISTING PLANKS. THE PLANKS SHALL BE TRIMMED TO MATCH THE CONTOURS OF THE SLOPE.

B. BACKFILL AND COMPACT ABUTMENTS WHERE FILL HAS BEEN DISTURBED TO PLACE NEW OR SECONDHAND BACKWALL PLANKS.

C. PLACE AND COMPACT SUBGRADE MATERIALS IS NEEDED TO BACKFILL TO TACOMA RAIL TRACK STANDARDS.

D. INSTALL BALLAST AND SURFACE TRACK TO TACOMA RAIL TRACK STANDARDS.

TIMBER BRIDGE MATERIAL REQUIREMENTS

1. TREATED TIMBER LUMBER

   A. TREATED TIMBER LUMBER SHALL BE FROM THE FOLLOWING STRESS GRADED LUMBER SPECIES: DOUGLAS–FIR OR SOUTHERN PINE. THE WET CONDITION BENDING STRESS SHALL BE A MINIMUM OF 1450 PSI AND WET CONDITION COMPRESSION PERPENDICULAR TO THE GRAIN SHALL BE A MINIMUM OF 400 PSI IN ACCORDANCE WITH TABLE 7–2–9, "ALLOWABLE UNIT STRESSES FOR STRESS GRADED LUMBER – RAILROAD LOADING (VISUAL GRADING)" CONTAINED IN CHAPTER 7 OF THE AREMA MANUAL. MATERIAL TO BE STRESS GRADED IN ACCORDANCE WITH THE APPLICABLE GRADING RULES FOR THE SPECIES PROVIDED.

   B. TREATED TIMBER LUMBER SHALL BE PRESSURE TREATED WITH CREOSOTE AS REQUIRED FOR STRUCTURAL ELEMENTS IN THESE SPECIFICATIONS IN CONFORMANCE WITH AWPA STANDARD UC4C, "GROUND CONTACT, EXTREME DUTY" AND IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 7 AND CHAPTER 30 OF THE AREMA MANUAL. TREATED TIMBER LUMBER SIZES TO BE FIELD VERIFIED PRIOR TO ORDERING.

   C. WRITTEN CERTIFICATION SHALL BE PROVIDED ASSURING THAT ALL TREATED TIMBER USED FOR REPLACING DEFICIENT MEMBERS WAS PRODUCED IN COMPLIANCE WITH THE BEST MANAGEMENT PRACTICES (BMP'S) OUTLINED IN "BEST MANAGEMENT PRACTICES FOR TREATED WOOD IN AQUATIC AND OTHER SENSITIVE ENVIRONMENTS", LATEST EDITION PUBLISHED BY THE WESTERN WOOD PRESERVERS INSTITUTE (WWPI), WOOD PRESERVATION CANADA, AND THE TIMBER PILING COUNCIL. THE WRITTEN CERTIFICATION SHALL INCLUDE A DESCRIPTION AND APPROPRIATE DOCUMENTATION OF THE APPLICABLE BMP'S USED.

APPROVED FOR
TACOMA RAIL
BY
HDR ENGINEERING, INC.
(MISSOULA, MT)

BY: [ORIGINAL SIGNED BY]
DONALD L. McCAMMON

DATE: 1–12–12

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

HDR ENGINEERING INC.

TIMBER BRIDGE REPAIR STANDARDS

BACKWALL PLANK REPLACEMENT
GENERAL NOTES AND MATERIAL SPECIFICATIONS

TACOMA RAIL
APPROVED: [ORIGINAL SIGNED BY]
ALAN MATHESON - ROADMASTER

NO	REVISION	DATE	APPD
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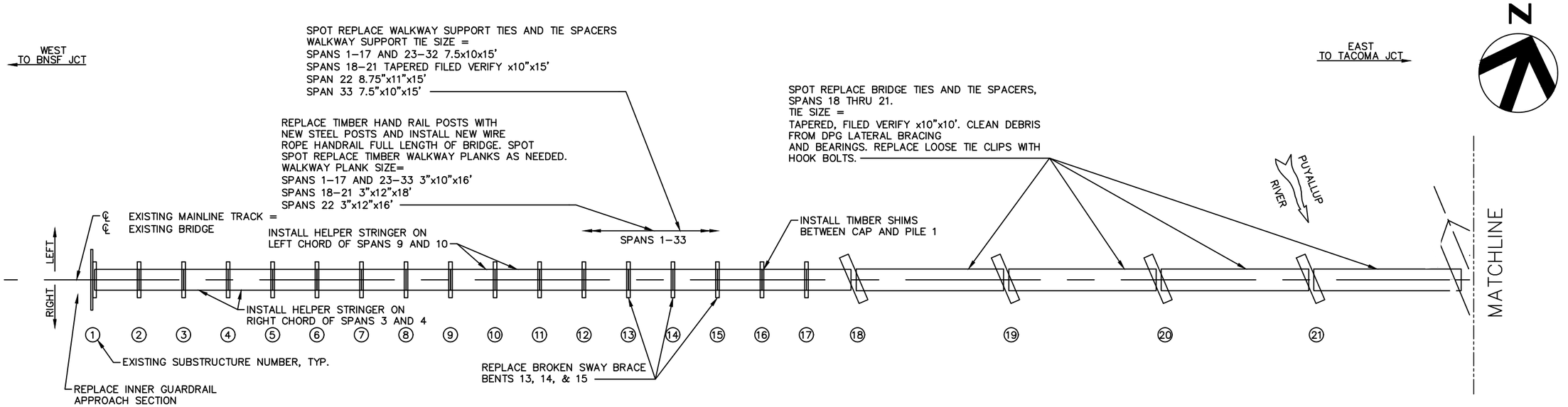
REFERENCE

DATE: 1-12-12
SCALE: NTS
DESIGNED: MJK - HDR
CHECKED: PJG - HDR
DRAWN: MRF - HDR
PROJECT NAME
DRAWING NAME
DRAWING: BW2

APPENDIX B

Bridge Repair Schematic



GENERAL LAYOUT SCHEMATIC
NO SCALE

NOTES:

1. SEE PROJECT SPECIFICATIONS SECTION 8–31, RAILROAD BRIDGE IMPROVEMENTS FOR MATERIAL SPECIFICATIONS.
2. BEFORE ORDERING ANY MATERIAL, THE CONTRACTOR SHALL MAKE A DETAILED FIELD INSPECTION OF THE SITE VERIFYING ALL PERTINENT DIMENSIONS.

REFERENCES:

FOR SPAN 22 EXPANSION BEARING SEE	CHICAGO, MILWAUKEE, ST PAUL & PACIFIC RAILROAD DWG E2868 "180' THROUGH TRUSS SPAN SKEW"
FOR SPAN 22 EYE BAR SEE	CHICAGO, MILWAUKEE, ST PAUL & PACIFIC RAILROAD DWG E2867 "180' THROUGH TRUSS SPAN SKEW"
FOR SPAN 33 EXPANSION BEARING SEE	CHICAGO, MILWAUKEE, ST PAUL & PACIFIC RAILROAD DWG D8167 "DETAILS OF END BEARINGS"
FOR DECK PLANS SEE	CHICAGO, MILWAUKEE, ST PAUL & PACIFIC RAILROAD DWG H2025 "FLOOR PLAN" CHICAGO, MILWAUKEE, ST PAUL & PACIFIC RAILROAD DWG D8542 "FLOOR PLAN" CHICAGO, MILWAUKEE, ST PAUL & PACIFIC RAILROAD DWG F6603 "FLOOR PLAN" CHICAGO, MILWAUKEE, ST PAUL & PACIFIC RAILROAD DWG WA2268 "FLOOR PLAN" CHICAGO, MILWAUKEE, ST PAUL & PACIFIC RAILROAD DWG E3243 "FLOOR PLAN"
FOR STANDARD PLANS SEE	TACOMA RAIL TIMBER BRIDGE REPAIR STANDARDS AND TACOMA RAIL INNER GUARD RAIL STANDARD

PRELIMINARY - NOT FOR CONSTRUCTION

CITY OF TACOMA
PUBLIC WORKS DEPARTMENT / TACOMA PUBLIC UTILITIES
TACOMA RAIL

BRIDGE 0.5C OVER PUYALLUP RIVER
GENERAL LAYOUT REPAIR SCHEMATIC

TACOMA RAIL

APPROVED:

NO	REVISION	DATE	APPD
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REFERENCE

DATE: 10-15-2021
SCALE: AS NOTED
DESIGNED: LLD - HDR
CHECKED: MCH - HDR
DRAWN: KJA - HDR
PROJECT NAME:
DRAWING NAME:
DRAWING: S1
SHEET 1 OF 1

PART III

LOCAL EMPLOYMENT

AND

APPRENTICESHIP

TRAINING PROGRAM (LEAP)

REGULATIONS

FOR

PUBLIC WORKS CONTRACTS

LOCAL EMPLOYMENT AND APPRENTICESHIP TRAINING PROGRAM (LEAP)
INSTRUCTIONS AND GOAL FORM

LEAP REQUIREMENTS & PROCEDURES:

The LEAP office enforces post-award mandatory requirements. Bidders do not have to submit any information in the bid submittal package to be in compliance with LEAP.

Post-award Submittals:

- Prime Contractor LEAP Utilization Plan - This form is to be completed and presented at the Pre-Construction Meeting.
- LEAP Apprentice Verification Form - This form is to be completed for every qualifying Apprentice employee.

The forms above, LEAP Program Requirements, and all related LEAP documents can be accessed on the City of Tacoma LEAP website by navigating to LEAP Forms at the following link: http://cityoftacoma.org/leap.

The City of Tacoma's LEAP office enforces two mandatory goals on City projects above certain monetary thresholds.

The Local Employment Utilization Goal requires the Prime Contractor performing a qualifying public works project to ensure that 15 percent of the total labor hours worked on the project are performed by residents of the City of Tacoma or Economically Distressed Areas of the Tacoma Public Utilities Service Area.

The Apprentice Utilization Goal requires the Prime Contractor performing a qualifying public works project to ensure that 15 percent of the total labor hours worked on the project are performed by Apprentices who are residents of the City of Tacoma or Tacoma Public Utilities Service Area. The accompanying LEAP Regulations, forms, and maps are included in these specifications.

*Exceptions: If the project is located outside of the retail service area of the Tacoma Public Utilities Service Area, then Apprentices may come from the county in which the work is performed.

This project is above $1 million and is thusly subject to the:

1. 15% Local Employment Utilization Goal
2. 15% Apprentice Utilization Goal

LEAP staff can assist contractors in the recruitment, screening and selection of qualified City of Tacoma residents, Economically Distressed Area residents, and Apprentices. Contractors may obtain further information by contacting the City's LEAP Office at (253) 591-5826. The LEAP Office is located in the Tacoma Municipal Building, 747 Market Street, Room 808, Tacoma, WA 98402.

City of Tacoma
LEAP Office
747 Market Street, Room 900
Tacoma, WA 98402
Phone (253) 591-5826
FAX (253) 591-5232

LEAP

Document Submittal Schedule

In the attached packet, you will find the LEAP forms that are required to be submitted by the Prime and Sub Contractors.

- **LEAP Instructions and Goal Form**: brief overview of LEAP Program requirements
- **Prime Contractor *LEAP* Utilization Plan**: to be submitted at or by the Pre-Construction Meeting **(*Required by Prime Contractor Only*)**
- **LEAP Apprentice Verification Form**: to be submitted on an ongoing basis for each qualified Apprentice employee via LCP Tracker
- **Tacoma Public Utilities Service Area List, Economically Distressed ZIP Codes List**: for your reference on LEAP-qualified zoning areas

In addition, the LEAP Office will also require from the Prime Contractor and all its Subcontractors:

- **Weekly Certified Payrolls**: to be submitted weekly, biweekly or monthly via LCP Tracker
- **Document Verification**: provide required information when requested from LEAP Office

Please submit above documents as instructed by the Project Manager.

If you have any questions or request further information, please feel free to contact the City of Tacoma's LEAP Program at (253) 591-5826, Fax (253) 591-5232, or email **carmstrong@cityoftacoma.org**.

Chapter 1.90

LOCAL EMPLOYMENT AND APPRENTICESHIP TRAINING PROGRAM

Sections:

1.90.010 Purpose.

The purpose of this Chapter is to establish a means of providing for the development of a trained and capable workforce possessing the skills necessary to fully participate in the construction trades.

(Ord. 26301 § 1; passed Oct. 6, 1998)

1.90.020 Scope.

The provisions of this Chapter shall apply to all Public Works or Improvements funded in whole or in part with City funds or funds which the City expends or administers in accordance with the terms of a grant.

(Ord. 26301 § 1; passed Oct. 6, 1998)

1.90.030 Definitions.

As used in this chapter, the following terms shall have the following meanings:

A. “Apprentice” shall mean a person enrolled in a course of training specific to a particular construction trade or craft, which training shall be approved by the Washington State Apprenticeship and Training Council established pursuant to RCW 49.04.010.

B. “Building Projects” shall mean all Public Works or Improvements having an Estimated Cost greater than $750,000.00, and for which a building permit must be issued pursuant to Chapter 1 of the current edition of the state building code (Uniform Building Code).

C. “City” shall mean all divisions and departments of the City of Tacoma, and all affiliated agencies, provided, however, that the Tacoma Community Redevelopment Authority shall not be included within this definition.

D. “Civil Projects” shall mean all Public Works or Improvements that are not defined as a “Building Project,” provided that those projects having an Estimated Cost of less than $250,000.00 shall not be included in this definition.

E. “Contractor or Service Provider” means a person, corporation, partnership, or joint venture entering into a contract with the City to construct a Public Work or Improvement.

F. “Director” shall mean the Director of Community and Economic Development, or the Director’s Designee.

G. “Economically Distressed ZIP Codes” shall mean ZIP codes in the Tacoma Public Utilities Service Area that meet two out of three (2/3) of the thresholds of:

1. High concentrations of residents living under 200% of the federal poverty line in terms of persons per acre (69th percentile)
2. High concentrations of unemployed people in terms of persons per acre (45th percentile)

3. High concentrations of people 25 years or older without a college degree in terms of persons per acre (75th percentile)

Said thresholds shall be updated within 30 days following any Prevailing Wage updates issued by the Washington State Labor and Industry. All updates are to be published on the first business day in August and in February of each calendar year.

H. “Electrical Utility” and “Water Utility” shall mean, respectively, the Light Division of the Department of Public Utilities of the City of Tacoma, and shall include the electrical and telecommunications services of that Division, and the Water Division of the Department of Public Utilities of the City of Tacoma.

I. “Estimated Cost” shall mean the anticipated cost of a Public Work or Improvement, as determined by the City, based upon the expected costs of materials, supplies, equipment, and labor, but excluding taxes and contingency funds.

J. “Estimated Labor Hours” shall mean the anticipated number of Labor Hours determined by the City to be necessary to construct a Public Work or Improvement and set forth in the specifications for the project, or as may be subsequently revised due to contract or project adjustment, or pursuant to an agreed upon change order.

K. “Existing Employee” shall mean an employee whom the Contractor or Service Provider can demonstrate was actively employed by the Contractor or Service Provider for at least 1000 hours in the calendar year prior to bid opening plus one month following bid opening, and who was performing work in the construction trades.

L. “Labor Hours” shall mean the actual number of hours worked by workers receiving an hourly wage who are employed on the site of a Public Work or Improvement, and who are subject to state or federal prevailing wage requirements. The term “Labor Hours” shall include hours performed by workers employed by the Contractor or Service Provider and all Subcontractors, and shall include additional hours worked as a result of a contract or project adjustment or pursuant to an agreed upon change order. The term “Labor Hours” shall not include hours worked by workers who are not subject to the prevailing wage requirements set forth in either RCW 39.12 or the Davis-Bacon Act - 40 U.S.C. 276 (a).

M. “LEAP Coordinator” shall mean the City of Tacoma staff member who administers LEAP.

N. “LEAP Program” or “Program” shall mean the City of Tacoma’s Local Employment and Apprenticeship Training Program, as described in this chapter.

O. “LEAP Regulations” or “Regulations” shall mean the rules and practices established in this document.

P. “LEAP Utilization Plan” shall mean the document submitted by the Contractor to the LEAP Coordinator which outlines how the associated goals will be met on the project.

Q. “Priority Hire Resident” shall mean any resident within the Economically Distressed ZIP Codes.

R. “Project Engineer” shall mean the City employee who directly supervises the engineering or administration of a particular construction project subject to this chapter.

S. “Public Work or Improvement” shall have the same meaning as provided in Section 39.04.010 RCW, as that Section may now exist or hereafter be amended.

T. “Resident of Tacoma” shall mean any person, not defined as a Resident of the Economically Distressed ZIP Codes within the Tacoma Public Utilities Service Area, who continues to occupy a dwelling within the boundaries of the City of Tacoma, has a present intent to continue residency within the boundaries of the City, and who demonstrates the genuineness of that intent by producing evidence that the person’s presence is more than merely transitory in nature.

U. “Service Area - Electrical” or “Electrical Service Area” shall mean that area served with retail sales by the Electrical Utility of the City of Tacoma at the time a bid is published by the Electrical Utility for a Public Work or Improvement to be performed primarily for the Electrical Utility.

V. “Service Area - Water” or “Water Service Area” shall mean that area served with retail sales by the Water Utility of the City of Tacoma at the time a bid is published by the water utility for a Public Work or Improvement to be performed primarily for the Water Utility.

W. “Service Contract” shall mean all City contracts relating to a Public Work or Improvement which utilize labor at a City site and which are not within the exceptions to nor defined as “Building Projects” or “Civil Projects.”

X. “Subcontractor” means a person, corporation, partnership, or joint venture that has contracted with the Contractor or Service Provider to perform all or part of the work to construct a Public Work or Improvement by a Contractor.

Y. “Tacoma Public Utilities Service Area” shall mean every ZIP code listed by Tacoma Public Utilities as an area that either receives services or maintains infrastructure to provide services.

Z. Washington State Labor and Industry Prevailing Wage shall mean the hourly wage, usual benefits and overtime, paid in the largest city in each county, to the majority of workers, laborers, and mechanics. Prevailing wages are established, by the Department of Labor & Industries, for each trade and occupation employed in the performance of public work. They are established separately for each county, and are reflective of local wage conditions.

AA. “Tacoma Public Utilities” means the City of Tacoma, Department of Public Utilities.

(Ord. 28147 Ex. B; passed May 7, 2013: Ord. 28110 Ex. C; passed Dec. 4, 2012: Ord. 27815 Ex. A; passed Jun. 30, 2009: Ord. 27368 § 1; passed Jun. 21, 2005: Ord. 26698 § 1; passed Sept. 12, 2000: Ord. 26301 § 1; passed Oct. 6, 1998)

1.90.040 LEAP goals.

A. Utilization Goals.

1. All Contractors constructing Civil Projects or Building Projects, and all Service Providers involved with the construction of a Public Work or Improvement, shall ensure that at least 15 percent of the total Labor Hours actually worked on the Project are performed by persons having their residence within the boundaries of the City of Tacoma or Economically Distressed ZIP Codes, whether or not any such person is an Apprentice.

a. The thresholds for this section shall be $250,000.00 for Civil Projects and $750,000.00 for Building Projects.

2. Fifteen percent (15%) of the Total Labor Hours on contracts above one-million dollars ($1,000,000.00) shall have work performed by Apprentices who are residents of the Tacoma Public Utilities Service Area consistent with RCW 39.04.320(1)(a), subject to waiver based on exceptions as specified in RCW 39.04.320(2)(a), (b), and (c).

3. Labor Hours performed by non-residents of the State of Washington will be deducted from a project’s total Labor Hours for purposes of determining compliance with the requirements of this chapter.

4. All Contractors and Service Providers shall submit a LEAP Utilization Plan as provided for in the regulations adopted under this chapter, and shall meet with the LEAP Coordinator to review said Plan prior to being issued a Notice to Proceed. Failure to submit a LEAP Utilization Plan may be grounds for the City to withhold remittance of a progress payment until such Plan is received from the responsible Contractor or Provider. A meeting with the LEAP Coordinator prior to issuance of a Notice to Proceed shall be excused only when the LEAP Coordinator is unavailable to meet prior to the scheduled date for issuance of the Notice to Proceed and the Contractor and the LEAP Coordinator have otherwise scheduled a meeting for the coordinator to review the Contractor’s or Provider’s plan.

The Contractor or Service Provider shall be responsible for meeting the LEAP utilization goal requirements of the contract, including all amendments and change orders thereto, and shall be responsible for overall compliance for all hours worked by Subcontractors. To the extent possible, the Contractor or Service Provider shall recruit Apprentices from multiple trades or crafts.

B. Failure to Meet Utilization Goal.

1. Contracts for the construction of Building projects or Civil Projects and Service Contracts shall provide that Contractors or Service Providers failing to meet the LEAP utilization goals shall be assessed an amount for each hour that is not achieved. The amount per hour shall be based on the extent the Contractor or Service Provider met its goal. The amount per hour that shall be assessed shall be as follows:

Percent of Goal Met	Assessment per unmet hour
100%	$ 0.00
90% - 99%	$ 2.00
75% to 89%	$ 3.50
50% to 74%	$ 5.00
1% to 49%	$ 7.50
0%	$10.00

When determining the percent of goal that is met, all rounding shall be down to the nearest whole percent. No penalty shall be waived by the City unless it is determined by the Director to be in the best interests of the City, which determination shall be made after consultation with the LEAP Coordinator.

2. Deposit of Assessments. All assessments imposed pursuant to this section shall be deposited into a separate account and utilized to support the City's pre-apprenticeship and training program. The policies and regulations adopted by the City Manager and Director of Utilities pursuant to this chapter shall address issues pertaining to a Contractor's existing workforce. Contributions need not be made for Labor Hours that have been adjusted in accordance with Section 1.90.040(E).

C. LEAP Reports. Notwithstanding the provisions of TMC 1.90.100, the Director shall, not less than annually, publish a LEAP report setting forth Contractor compliance with this chapter. Said report shall include information on all contracts and all Contractors to which this chapter applies, and shall detail the level and nature of LEAP participation by contract and by Contractor, The Director's LEAP report may include such other information as may be helpful to assuring fair and accurate representation of the contracts, Contractors or projects covered in the report. The Director's LEAP reports may be considered by the Board of Contracts and Awards in its determinations as to bidder responsibility.

D. LEAP Goal Adjustments.

1. LEAP utilization goals may be adjusted prior to bid opening and/or as a result of a contract amendment or change order on a Building Project, Civil Project, or Service Contract.

a. If LEAP utilization goals are adjusted prior to bid opening, they shall be set forth in the bid or Request For Proposal advertisement and specification documents or in an addendum timely provided to prospective bidders, provided that such adjustment shall be based upon a finding by the Project Engineer that the reasonable and necessary requirements of the contract render LEAP utilization unfeasible at the required levels. The Director shall concur with the Project Engineer's finding, provided that should the Project Engineer and the Director fail to reach agreement on the Project Engineer's finding, then in that circumstance the matter shall be referred to the City Manager or the Director of Utilities, as appropriate, for ultimate resolution. Notwithstanding any other provision of this chapter to the contrary, the decision of the City Manager or the Director of Utilities with regard to LEAP goal adjustment may not be appealed.

b. If LEAP utilization goals are adjusted due to contract amendment or change order, the amount of adjustment shall be consistent with the utilization goals set forth in this chapter and shall be determined pursuant to regulations adopted pursuant to this chapter for administration of LEAP utilization goal adjustments.

2. The methodology of determining the appropriate adjustments to LEAP utilization goals shall be determined in consultation with the LEAP Advisory Committee, established pursuant to this ordinance for so long as the LEAP Advisory Committee remains in existence.

3. LEAP utilization goals shall not apply to those portions of a project that are funded by sources other than (a) City funds, or (b) funds which the City expends or administers in accordance with the terms of a grant to the City, provided that the Project Engineer shall notify the Director of such non-application prior to bid advertisement. For the purposes of this paragraph, credits extended by another entity for the purpose of providing project funding shall not be considered to be City funds.

E. Utilization - Electrical Projects Outside Electrical Service Area. Civil Projects or Building Projects that are constructed primarily for the benefit or use by the City's Electrical Utility, which are wholly situated outside the

Electrical Service Area, and for which the estimated cost is less than $1,000,000.00, are exempt from the requirements of this chapter.

F. Utilization - Water Projects Outside Water Service Area. Civil Projects or Building Projects that are constructed primarily for the benefit or use by the City's Water Utility, which are wholly situated outside the Water Service Area, and for which the estimated cost is less than $1,000,000.00 are exempt from the requirements of this chapter.

G. Utilization –Projects Outside Tacoma Public Utilities Service Area. Civil Projects or Building Projects that are constructed primarily for the benefit or use by Tacoma Public Utilities, which are wholly situated outside the retail service area of the Tacoma Public Utilities Service Area, and for which the estimated cost is less than $1,000,000.00 are exempt from the requirements of this chapter. Projects wholly situated outside the Tacoma Public Utilities Service Area, and for which the estimated cost is more than $1,000,000.00, shall be exempt from 15% utilization goal specified in subsection A1. of this section. The 15% utilization goal specified in subsection A2. of this section may be met if project work is performed by Apprentices who are enrolled in a course of training specific to a particular construction trade or craft, provided such training has been approved by the Washington State Apprenticeship and Training Council in accordance with Chapter 49.04, RCW.

H. Emergency. This chapter shall not apply in the event of an Emergency. For the purposes of this section, an "Emergency" means unforeseen circumstances beyond the control of the City that either: (a) present a real, immediate threat to the proper performance of essential functions; or (b) will likely result in material loss or damage to property, bodily injury, or loss of life if immediate action is not taken.

I. Conflict with State or Federal Requirements. If any part of this chapter is found to be in conflict with federal or state requirements which are a prescribed condition to the allocation of federal or state funds to the City, then the conflicting part of this chapter is inoperative solely to the extent of the conflict and with respect to the City departments directly affected. This provision does not affect the operation of the remainder of this chapter. Administrative rules or regulations adopted under this chapter shall meet federal and state requirements which are a necessary condition to the receipt of federal or state funds by the City.

(Ord. 28147 Ex. B; passed May 7, 2013: Ord. 27815 Ex. A; passed Jun. 30, 2009: Ord. 27368 § 2; passed Jun. 21, 2005: Ord. 26992 § 1; passed Oct. 15, 2002: Ord. 26698 § 2; passed Sept. 12, 2000: Ord. 26301 § 1; passed Oct. 6, 1998)

1.90.050 Good faith efforts. *Repealed by Ord. 27368.*

(Ord. 27368 § 3; passed Jun. 21, 2005: Ord. 26698 § 3; passed Sept. 12, 2000: Ord. 26301 § 1; passed Oct. 6, 1998)

1.90.060 Effect of program on prime contractor/service provider - subcontractor relationship.

The LEAP Program shall not be construed so as to modify or interfere with any relationship between any Contractor or Service Provider and Subcontractor. The LEAP Program shall not grant the City any authority to control the manner or method of accomplishing any construction work that is additional to any authority retained by the City in a Public Works or Improvement contract.

(Ord. 26698 § 4; passed Sept. 12, 2000: Ord. 26301 § 1; passed Oct. 6, 1998)

1.90.070 Apprentice utilization requirements – Bidding and contractual documents.

All packages of bid documents for every Building Project and every Civil Project shall incorporate provisions satisfactory to the City Attorney so as to allow enforcement of the provisions contained in this Chapter. Such contractual provisions may include liquidated damages, calculated to reimburse the City for the Contractor's breach of these performance requirements, which shall be published with the City's call for bids.

(Ord. 26301 § 1; passed Oct. 6, 1998)

1.90.080 Enforcement.

A. The Director shall review the Contractor's or Service Provider's and all Subcontractor's employment practices during the performance of the work for compliance with LEAP Program requirements. On-site visits may be conducted as necessary to verify compliance with the requirements of the LEAP Program. The Contractor, Service Provider, or Subcontractors shall not deny to the City the right to interview its employees, provided that the Director shall make reasonable efforts to coordinate employee interviews with employers.

B. Any knowing failure or refusal to cooperate in compliance monitoring may disqualify the defaulting Contractor, Service Provider, or Subcontractor from eligibility for other City contracts.

C. The making of any material misrepresentation may disqualify the defaulting Contractor, Service Provider, or Subcontractor from eligibility for other City contracts.

D. Any action by the City, its officers and employees, under the provisions of this Chapter may be reviewed by the Board of Contracts and Awards, upon written application of the party so affected. Application shall be made within twenty (20) days of the date of the action upon which the appeal is based, and provided to the City by certified mail or by personal service. Any action taken by the Board of Contracts and Awards may be appealed to the City Council or Public Utility Board, as appropriate, and thereafter if desired, to the Superior Court of Pierce County, Washington, within fifteen (15) days of the previous decision.

(Ord. 26698 § 5; passed Sept. 12, 2000; Ord. 26301 § 1; passed Oct. 6, 1998)

1.90.090 Compliance with applicable law.

Nothing in this Chapter shall excuse a Prime Contractor, Service Provider, or Subcontractor from complying with all relevant federal, state, and local laws.

(Ord. 26698 § 6; passed Sept. 12, 2000; Ord. 26301 § 1; passed Oct. 6, 1998)

1.90.100 Review and reporting.

The City Manager and Director of Utilities shall review the Program on or before January 1, 2000, and every two (2) years thereafter, and shall report to the City Council and Public Utility Board the Manager's and Director's findings, conclusions, and recommendations as to the continued need for the Program, and any revisions thereto that should be considered by the Council and Board.

(Ord. 26301 § 1; passed Oct. 6, 1998)

1.90.105 Authority.

The City Manager and the Director of Utilities shall have authority to jointly adopt policies and regulations consistent with this chapter to implement the LEAP program.

(Ord. 26698 § 7; passed Sept. 12, 2000: Ord. 26301 § 1; passed Oct. 6, 1998)

1.90.110 Interpretation.

This Chapter shall not be interpreted or construed so as to conflict with any state or federal law, nor shall this Chapter be enforced such that enforcement results in the violation of any applicable judicial order.

(Ord. 26301 § 1; passed Oct. 6, 1998)

City of Tacoma
LEAP Office
747 Market Street, Room 900
Tacoma WA 98402
Telephone (253) 591-5826
Fax (253) 591-5232

PRIME CONTRACTOR
LEAP UTILIZATION PLAN

Failure to submit this plan at the Pre-Construction Meeting may result in Progress Payments being withheld.

Part A

Contractor:		**Date:**
Specification Number:	**Contract/Work Order Number(s):**	**Contract Dollar Amount:**
Project Description:		**Notes:**

PART B **PLANNED LEAP HOURS***

Trade or Craft	City of Tacoma Resident	Economic Distressed Area Resident	Tacoma Public Utilities Service Area Apprentice Resident	WA State Apprentice *(Contracts outside of TPU Service Area Only)	
	hrs.	hrs.	hrs.	hrs.	
	hrs.	hrs.	hrs.	hrs.	**Date**
	hrs.	hrs.	hrs.	hrs.	
	hrs.	hrs.	hrs.	hrs.	
	hrs.	hrs.	hrs.	hrs.	
	hrs.	hrs.	hrs.	hrs.	**Rejected**
	hrs.	hrs.	hrs.	hrs.	
	hrs.	hrs.	hrs.	hrs.	**Date**
	hrs.	hrs.	hrs.	hrs.	
Totals					
					TOTAL hrs.

Part C

Provide a description of how the Contractor plans to ensure that the LEAP Utilization Goals on the project will be met. (Use additional sheets if necessary)

General Instructions for completing Prime Contractor LEAP Utilization Plan

Part A

Contractor/Contract Information Section: The Prime Contractor is responsible for completing this section. Failure to submit this plan at the Pre-Construction Meeting may result in Progress Payments being withheld.

Part B

Planned LEAP Hours Section: This section should be completed by the Prime Contractor. The information required in Part B is described below.

Trade or Craft: Indicate the Trade or Craft being used.

LEAP Employee Categories: Indicate the number of hours that will be utilized by the Prime Contractor and all Sub Contractors for each craft and broken down by City of Tacoma Resident, Economically Distressed Area Resident, Tacoma Public Utilities Service Area Apprentice Resident, WA State Apprentice *(Contracts outside of TPU Service Area Only).

Totals: Total the number of hours in each of the five (5) columns.

Part C

Description of how the Contractor plans to ensure fulfillment of the LEAP Utilization Goal: This section is to be completed by the Prime Contractor. Please describe how you plan to satisfy the LEAP Utilization Goal on this project. Provide a summary of your outreach and recruitment procedures to hire LEAP Qualified Employees to work on this project.

City of Tacoma LEAP Office
747 Market Street, Room 808
Tacoma, WA 98402
(253) 591-5826 fax (253) 591-5232
www.cityoftacoma.org/leap

LEAP APPRENTICE VERIFICATION FORM

Contractor/Sub:_____ Specification Number:_____

Project Description:_____

Employee Name:_____ Craft:_____

Ethnic Group (*optional*): ☐ Asian/Pac Isl. ☐ Black ☐ Hispanic ☐ Native American ☐ White ☐ Other

Gender (*optional*): ☐ MALE ☐ FEMALE

Complete Physical Address (No PO Boxes):_____

City:_____ State:_____ Zip:_____Telephone:_____ Date of Hire:_____

Apprenticeship County:_____ Apprentice Registration I.D. *(if applicable):*_____

Age:_____ Copy of DD-214:_____

*********Please fill out entire form for tracking LEAP performance*********

LEAP qualified Apprentice categories: (check all that apply and provide evidence for each check)

_____a. WA State Approved Apprentice living in Tacoma Public Utilities Service Area

_____b. WA State Approved Apprentice *(Only valid for contracts where 100% of work is performed outside of Pierce County)

Signature of Employee:_____ Date:_____

Contractor Representative:_____ Date:_____

LEAP APPRENTICE VERIFICATION FORM

To be Completed by Contractor or Subcontractor

Please attach a legible copy of the following document(s) showing the address of residence as proof of local (Tacoma) and/or Pierce County residency and apprentice status, youth status, or veteran status.

.....

_____ For Youth - Copy of Birth Certificate or WA State ID or WA Driver's License (projects advertised after 05-20-13)

_____ For Veterans – Copy of DD-214(Projects advertised after 05-20-13)

_____ Driver's License with current address

_____ Utility Bill/Phone Bill/Cell Bill/Cable Bill with current address

_____ Copy of current tax form W-4

_____ Rental Agreement/Lease (residential)

_____ Computer Printout From Other Government Agencies

_____ Property Tax Records

_____ Apprentice Registration I.D.

_____ Food Stamp Award Letter

_____ Housing Authority Verification

_____ Insurance Policy (Residence/Auto)

*Any of the above must have a complete physical address verified by the www.govme.org website.

No PO Boxes

Contractor Representative:_____ Date:_____

Title:_____

No Work Performed (NWP) Report

Prime/Sub Contractor: _____

Specification Number: _____

Project Description: _____

Payroll Week Ending Date: _____ Payroll Number: _____

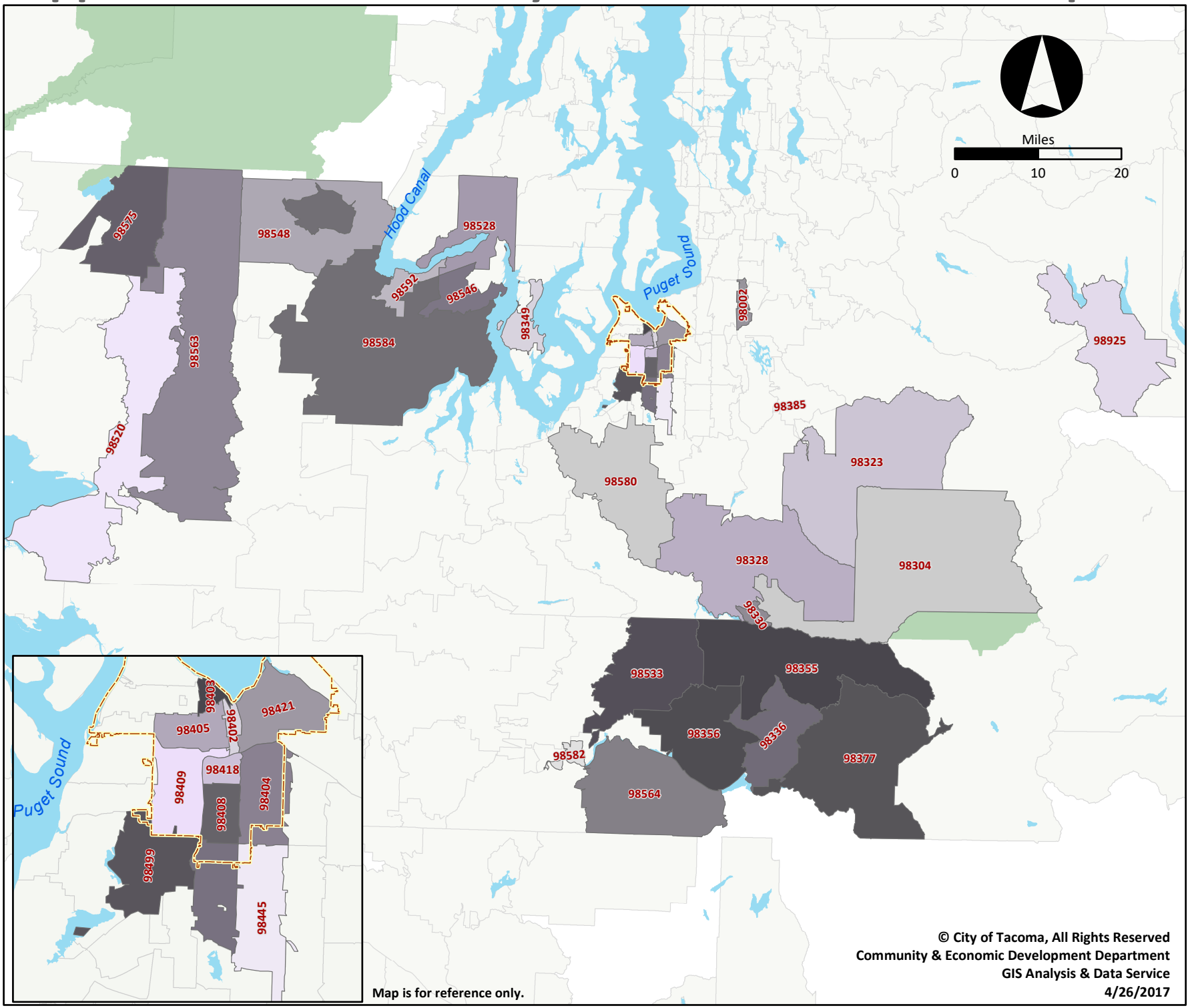
NO WORK PERFORMED

I, the undersigned, do hereby certify under penalty of perjury, that the information contained herein is true and correct.

_____ _____ _____

Signature of Responsible Officer Title Date

Appendix C: Economically Distressed ZIP Codes Map



Tacoma

City Limits
98002
98304
98323
98328
98330
98336
98349
98355
98356
98377
98385
98520
98528
98533
98546
98548
98563
98564
98575
98580
98582
98584
98592
98925
98402
98403
98404
98405
98408
98409
98418
98421
98444
98445
98499

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Economically Distressed ZIP Codes

Zip Code	200% Pov	Unemployed	25+ College	Area
98002		Y	Y	Auburn
98030	Y	Y		Kent
98032	Y	Y		Kent
98198	Y	Y		Seattle
98304	Y	Y	Y	Ashford
98323		Y	Y	Carbonado
98330	Y		Y	Elbe
98336	Y		Y	Glenoma
98355	Y	Y	Y	Mineral
98356	Y	Y	Y	Morton
98377		Y	Y	Randle
98385		Y	Y	South Prairie
98424	Y	Y		Fife
98433		Y	Y	JBLM
98439	Y	Y		Lakewood
98444	Y	Y	Y	Parkland
98467	Y	Y		University Place
98499	Y	Y		Lakewood
98520	Y	Y		Aberdeen
98528	Y		Y	Belfair
98548	Y	Y	Y	Hoodsport
98564	Y		Y	Mosssyrock
98575		Y	Y	Quinault
98580		Y	Y	Roy
98584	Y	Y		Shelton
98597	Y	Y		Yelm
98925	Y	Y	Y	Easton

"200% Pov" = People at or below 200% of the federal poverty line. (69^{th} percentile)
"Unemployed" = Unemployment rate (45^{th} percentile)
"25+ College" = People at or above 25 years old without a college degree. (75^{th} percentile)

Tacoma Public Utility Service Area

98001	Auburn
98002	Auburn
98003	Federal Way
98010	Black Diamond
98022	Enumclaw
98023	Federal Way
98030	Kent
98032	Kent
98038	Maple Valley
98042	Kent
98045	North Bend
98051	Ravensdale
98070	Vashon
98092	Auburn
98198	Seattle
98304	Ashford
98321	Buckley
98323	Carbonado
98327	DuPont
98328	Eatonville
98329	Gig Harbor
98330	Elbe
98332	Gig Harbor
98333	Fox Island
98335	Gig Harbor
98336	Glenoma
98338	Graham
98349	Lakebay
98354	Milton
98355	Mineral
98356	Morton
98360	Orting
98371	Puyallup
98372	Puyallup
98373	Puyallup
98374	Puyallup
98375	Puyallup
98377	Randle
98385	South Prairie
98387	Spanaway
98388	Spanaway
98390	Sumner
98391	Bonney
98402	Tacoma
98403	Tacoma
98404	Tacoma
98405	Tacoma
98406	Tacoma
98407	Tacoma
98408	Tacoma
98409	Tacoma
98416	UPS
98418	Tacoma
98421	Tacoma
98422	Tacoma
98424	Tacoma
98430	Camp Murray
98433	Tacoma
98438	McChord
98439	Lakewood
98443	Tacoma
98444	Tacoma
98445	Tacoma
98446	Tacoma
98447	PLU
98465	Tacoma
98466	Tacoma
98467	University Place
98498	Lakewood
98499	Lakewood
98520	Aberdeen
98524	Allyn
98528	Belfair
98533	Cinebar
98546	Grapeview
98548	Hoodsport
98555	Lilliwaup
98563	Montesano
98564	Mossyrock
98575	Quinault
98580	Roy
98582	Salkum
98584	Shelton
98585	Silver Creek
98591	Toledo
98592	Union
98597	Yelm
98925	Easton

Apprentices may come from **any** of the ZIP codes listed under this page. If an apprentice lives in a Economically Distressed ZIP code, they may count towards those labor hours as well.
Journeyman must be from the Economically Distressed ZIP codes.

PART IV

STATE PREVAILING WAGE RATES AND GENERAL REQUIREMENTS

PREVAILING WAGE RATES

This project requires prevailing wages under 39.12 RCW. Any worker, laborer, or mechanic employed in the performance of any part of the work shall be paid not less than the applicable prevailing rate of wage.

The project site is located in Pierce County.

The effective date for prevailing wages on this project will be the **submittal deadline** with these exceptions:

a. If the project is not awarded within six months of the submittal deadline, the award date is the effective date.
b. If the project is not awarded pursuant to a competitive solicitation, the date the contract is executed is the effective date.
c. Janitorial contracts follow WAC 296-127-023.

Except for janitorial contracts, these rates shall apply for the duration of the contract unless otherwise noted in the solicitation.

Look up prevailing rates of pay, benefits, and overtime codes from this link:
https://secure.lni.wa.gov/wagelookup/

REQUIRED FILINGS

The contractor and all subcontractors covered under 39.12 RCW shall submit to the Department of Labor and Industries (L&I) for work provided under this contract:

1. A Statement of Intent to Pay Prevailing Wages must be filed with and approved by L&I upon award of contract.

2. An Affidavit of Wages Paid must be filed with and approved by L&I upon job completion.

Payments cannot be released by the City until verification of these filings are received by the engineer. Additional information regarding these filings can be obtained by calling the Department of Labor & Industries, Prevailing Wage at 360-902-5335, https://www.lni.wa.gov/ or by visiting their MY L&I account.

CITY OF TACOMA
INSURANCE REQUIREMENTS FOR CONTRACTS

The Contractor (Contractor) shall maintain at least the minimum insurance set forth below. By requiring such minimum insurance, the City of Tacoma shall not be deemed or construed to have assessed the risk that may be applicable to Contractor under this Contract. Contractor shall assess its own risks and, if it deems appropriate and/or prudent, maintain greater limits and/or broader coverage.

1. GENERAL REQUIREMENTS

The following General Requirements apply to Contractor and to Subcontractor(s) of every tier performing services and/or activities pursuant to the terms of this Contract. Contractor acknowledges and agrees to the following insurance requirements applicable to Contractor and Contractor's Subcontractor(s):

1.1. City of Tacoma reserves the right to approve or reject the insurance provided based upon the insurer, terms and coverage, the Certificate of Insurance, and/or endorsements.

1.2. Contractor shall not begin work under the Contract until the required insurance has been obtained and approved by City of Tacoma.

1.3. Contractor shall keep this insurance in force during the entire term of the Contract and for Thirty (30) calendar days after completion of all work required by the Contract, unless otherwise provided herein.

1.4. Insurance policies required under this Contract that name "City of Tacoma" as Additional Insured shall:
- 1.4.1. Be considered primary and non-contributory for all claims.
- 1.4.2. Contain a "Separation of Insured provision and a "Waiver of Subrogation" clause in favor of City of Tacoma.

1.5. Section 1.4 above does not apply to contracts for purchasing supplies only.

1.6. Verification of coverage shall include:
- 1.6.1. An ACORD certificate or equivalent.
- 1.6.2. Copies of all endorsements naming the City of Tacoma as additional insured and showing the policy number.
- 1.6.3. A notation of coverage enhancements on the Certificate of Insurance shall not satisfy these requirements – actual endorsements must be submitted.

1.7. Liability insurance policies, with the exception of Professional Liability and Workers' Compensation, shall name the City of Tacoma and its officers, elected officials, employees, agents, and authorized volunteers as additional insured.
- 1.7.1. No specific person or department should be identified as the additional insured.
- 1.7.2. All references on certificates of insurance and endorsements shall be listed as "City of Tacoma".

1.7.3. The City of Tacoma shall be additional insured for both ongoing and completed operations using Insurance Services Office (ISO) form CG 20 10 04 13 and CG 20 37 04 13 or the equivalent for the full available limits of liability maintained by the Contractor irrespective of whether such limits maintained by the Contractor are greater than those required by this Contract and irrespective of whether the Certificate of Insurance describes limits lower than those maintained by the Contractor.

1.8. Contractor shall provide a Certificate of Insurance for each policy of insurance meeting the requirements set forth herein when Contractor provides the signed Contract for the work to City of Tacoma. Contractor shall provide copies of any applicable Additional Insured, Waiver of Subrogation, and Primary and Non-contributory endorsements. Contract or Permit number and the City Department must be shown on the Certificate of Insurance.

1.9. Insurance limits shown below may be written with an excess policy that follows the form of an underlying primary liability policy or an excess policy providing the required limit.

1.10. Liability insurance policies shall be written on an “occurrence” form, except for Professional Liability/Errors and Omissions, Pollution Liability, and Cyber/Privacy and Security

1.11. If coverage is approved and purchased on a “Claims-Made” basis, Contractor warrants continuation of coverage, either through policy renewals or by the purchase of an extended reporting period endorsement as set forth below.

1.12. The insurance must be written by companies licensed or authorized in the State of Washington pursuant to RCW 48 with an (A-) VII or higher in the A.M. Best's Key Rating Guide www.ambest.com.

1.13. Contractor shall provide City of Tacoma notice of any cancellation or non-renewal of this required insurance within Thirty (30) calendar days.

1.14. Contractor shall not allow any insurance to be cancelled or lapse during any term of this Contract, otherwise it shall constitute a material breach of the Contract, upon which City of Tacoma may, after giving Five (5) business day notice to Contractor to correct the breach, immediately terminate the Contract or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith; with any sums so expended to be repaid to City of Tacoma by Contractor upon demand, or at the sole discretion of City of Tacoma, offset against funds due Contractor from City of Tacoma.

1.15. Contractor shall be responsible for the payment of all premiums, deductibles and self-insured retentions, and shall indemnify and hold the City of Tacoma harmless to the extent such a deductible or self-insured retained limit may apply to the City of Tacoma as an additional insured. Any deductible or self-insured retained limits in excess of Twenty Five Thousand Dollars ($25,000) must be disclosed and approved by City of Tacoma Risk Manager and shown on the Certificate of Insurance.

1.16. City of Tacoma reserves the right to review insurance requirements during any term of the Contract and to require that Contractor make reasonable adjustments when the scope of services has changed.

1.17. All costs for insurance shall be incidental to and included in the unit or lump sum prices of the Contract and no additional payment will be made by City of Tacoma to Contractor.

1.18. Insurance coverages specified in this Contract are not intended and will not be interpreted to limit the responsibility or liability of Contractor or Subcontractor(s).

1.19. Failure by City of Tacoma to identify a deficiency in the insurance documentation provided by Contractor or failure of City of Tacoma to demand verification of coverage or compliance by Contractor with these insurance requirements shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

1.20. If Contractor is a State of Washington or local government and is self-insured for any of the above insurance requirements, a certification of self-insurance shall be attached hereto and be incorporated by reference and shall constitute compliance with this Section.

2. CONTRACTOR

As used herein, "Contractor" shall be the Supplier(s) entering a Contract with City of Tacoma, whether designated as a Supplier, Contractor, Vendor, Proposer, Bidder, Respondent, Seller, Merchant, Service Provider, or otherwise.

3. SUBCONTRACTORS

It is Contractor's responsibility to ensure that each subcontractor obtain and maintain adequate liability insurance coverage. Contractor shall provide evidence of such insurance upon City of Tacoma's request.

4. REQUIRED INSURANCE AND LIMITS

The insurance policies shall provide the minimum coverages and limits set forth below. Providing coverage in these stated minimum limits shall not be construed to relieve Contractor from liability in excess of such limits.

4.1 Commercial General Liability Insurance

Contractor shall maintain Commercial General Liability Insurance policy with limits not less than One Million Dollars ($1,000,000) each occurrence and Two Million Dollars ($2,000,000) annual aggregate. The Commercial General Liability Insurance policy shall be written on an Insurance Services Office form CG 00 01 04 13 or its equivalent. Products and Completed Operations shall be maintained for a period of three years following Substantial Completion of the Work related to performing construction services.

This policy shall include product liability especially when a Contract solely is for purchasing supplies. The Commercial General Liability policy shall be endorsed to include:

4.1.1 A per project aggregate policy limit, using ISO form CG 25 03 05 09 or an equivalent endorsement.

4.1.2 Contractual Liability-Railroad using ISO form CG 24 17 10 01 or equivalent if Contractor is performing work within Fifty (50) feet of a City of Tacoma railroad right of way.

4.2 Commercial (Business) Automobile Liability Insurance

Contractor shall maintain Commercial Automobile Liability policy with limits not less than One Million Dollars ($1,000,000) each accident for bodily injury and property damage and bodily injury and property damage coverage for owned (if any), non-owned, hired, or leased vehicles. Commercial Automobile Liability Insurance shall be written using ISO form CA 00 01 or equivalent. Contractor must also maintain an MCS 90 endorsement or equivalent and a CA 99 48 endorsement or equivalent if "Pollutants" are to be transported.

4.3 Workers' Compensation

4.3.1 Contractor shall comply with Workers' Compensation coverage as required by the Industrial Insurance laws of the State of Washington, as well as any other similar coverage required for this work by applicable federal laws of other states. The Contractor must comply with their domicile State Industrial Insurance laws if it is outside the State of Washington.

4.4 Employers' Liability Insurance

Contractor shall maintain Employers' Liability coverage with limits not less than One Million Dollars ($1,000,000) each employee, One Million Dollars ($1,000,000) each accident, and One Million Dollars ($1,000,000) policy limit.

4.5 Excess or Umbrella Liability Insurance

Contractor shall provide Excess or Umbrella Liability Insurance with limits not less than Five Million Dollars ($5,000,000) per occurrence and in the aggregate. This coverage shall apply, at a minimum, in excess of primary underlying Commercial General Liability, Employer's Liability, Pollution Liability, Marine General Liability, Protection and Indemnity, and Automobile Liability if required herein.

4.6 Builder's Risk Insurance

Contractor shall maintain during the term of the Contract and until final acceptance of the work by the City of Tacoma, a policy of Builder's Risk Insurance providing coverage for all-risk of physical injury to all structures to be constructed according to the Contract. City of Tacoma shall be included as a named insured (not named as additional insured) on the policy. Builder's Risk Insurance policy shall:

4.6.1 Have a deductible of no more than Five Thousand Dollars ($5,000) for each occurrence, the payment of which will be the responsibility of Contractor. Any increased deductibles accepted by City of Tacoma will remain the responsibility of Contractor.

4.6.2 Be on an ISO Special Form Causes of Loss or equivalent and shall insure against the perils flood, earthquake, theft, vandalism, malicious mischief, and collapse.

4.6.3 Include coverage for temporary buildings, debris removal, and damage to materials in transit or stored off-site.

4.6.4 Be written in the amount of the completed value of the structures, with no coinsurance provisions exposure on the part of Contractor or City of Tacoma.

4.6.5 Contain a Waiver of Subrogation provision whereby each insured waives their subrogation rights to the extent the loss is covered by this insurance.

4.6.6 Grant permission to occupy, allowing the building or structure to be partially occupied prior to completion, without detrimental effect to the coverage provided.

4.6.7 Include coverage for the testing and startup of the building's operating systems.

4.6.8 Include coverage for City of Tacoma's loss of use or business interruption arising out of a covered loss which delays completion.

4.6.9 Include resultant damage coverage for loss due to faulty workmanship and defective material.

Contractor and City of Tacoma waive all rights against each other, their respective subcontractors, agents, and representatives for damages caused by fire or other perils to the extent covered by Builder's Risk Insurance or other property insurance applicable to the work. The policies shall provide such waivers by endorsement or otherwise.

4.7 Railroad Protective Liability Insurance

Contractor shall maintain Railroad Protective Liability coverage with limits of Two Million Dollars ($2,000,000) per occurrence and Six Million Dollars ($6,000,000) in the aggregate during the term of the Contract if Contractor's work will involve working on, above, under or being within Fifty (50) feet of City of Tacoma railroad right of ways.
The policy must be issued on a standard ISO form CG 00 35 (04-13), or equivalent, with City of Tacoma as a named insured (not named as an additional insured) and shall include the following:

4.7.1 Endorsed to include Limited Seepage and Pollution Endorsement

4.7.2 Endorsed to include Evacuation Expense Coverage Endorsement.

4.8 Other Insurance

Other insurance may be deemed appropriate to cover risks and exposures related to the scope of work or changes to the scope of work required by City of Tacoma. The costs of such necessary and appropriate Insurance coverage shall be borne by Contractor.

4.9 Other Conditions

Contractor will be responsible to comply with all specific insurance requirements associated with any highway or rail crossings, e.g., Washington State Department of Transportation (WSDOT), Burlington Northern Santa Fe Railway (BNSF), and Union Pacific Railroad (UPRR).