IMPROVING OUR COMMUNITY

COLUMBIA GATEWAY URBAN RENEWAL AGENCY

CITY OF THE DALLES

SPECIAL MEETING AGENDA

COLUMBIA GATEWAY URBAN RENEWAL AGENCY BOARD

Meeting Conducted in a Room in Compliance with ADA Standards

Wednesday, September 11, 2019

5:30 p.m.

City Hall Council Chambers
313 Court Street
The Dalles, Oregon

I. CALL TO ORDER

II. ROLL CALL

III. PLEDGE OF ALLEGIANCE

IV. APPROVAL OF AGENDA

V. PUBLIC COMMENT

VI. ACTION ITEM

A. Declaration of Emergency Authorizing Demolition of a portion of the agency-owned property known as the Recreation Building (213 – 215 East 2nd Street, The Dalles) exempting the contract from competitive bidding requirements, and authorizing award of a contract for partial demolition of the Recreation Building, and waiving the requirement of furnishing a performance and payment bond for the contract

VII. STAFF COMMENTS

Next Regular Meeting Date: September 17, 2019

VIII. BOARD MEMBERS COMMENTS OR QUESTIONS

IX. ADJOURNMENT

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IMPROVING OUR COMMUNITY

COLUMBIA GATEWAY URBAN RENEWAL AGENCY

CITY OF THE DALLES

AGENDA STAFF REPORT
AGENDA LOCATION: VI. A.

MEETING DATE: September 11, 2019

TO: Urban Renewal Agency Board

FROM: Steve Harris, Urban Renewal Manager

Gene Parker, City Attorney

ISSUE: Declaration of emergency circumstances requiring partial demolition of Recreation Building, exempting the contract for demolition from competitive bidding requirements, and authorization of award of contract for partial demolition of Recreation Building and waiver of performance and payment bonds

BACKGROUND

During the evening of August 9th and 10th, there was an extreme weather event. During the following weekend (August 17th), Todd Carpenter, who along with Carla McQuade signed a Disposition and Development Agreement for purchase of the building, notified City staff that the roof over the westerly portion of the building (previously used as a bowling alley) had partially collapsed and the East 2nd exterior wall had partially separated from the building.

Public safety barricades were put into place closing the sidewalk and restricting the vehicular travel lanes on East 2nd for the block between Washington Street and Court Street. The travel lanes barricades were replaced by concrete barriers the week of August 19th.

Mr. Carpenter directed his work crew to install temporary bracing and shoring in the interior of the building to stabilize the situation shortly following the event. This shoring remained in place while Mr. Carpenter retained Tenneson Engineering to inspect the building. On August 21st, Darrin Eckman from Tenneson Engineering conducted an inspection of the building. A copy of his written report dated August 28, 2019 is included with this staff report.

Mr. Eckman wrote it was his opinion that the intense rainfall which occurred on August 9th and 10th ponded on the roof system possibly due to blockage within the drainage system or just due to the settlement and deformation that had already occurred to the roof. This ponding created significant additional loading on an already stressed “glu-lam truss” and possibly caused additional damage and failure. Mr. Eckman stated there was an imminent risk of collapse of the roof system and resulting damage/collapse to the exterior walls. Mr. Eckman recommended that the roof system be removed in a controlled fashion. This could include placing bracing under the original 12” by 12” beam at a minimum of the joint locations. He also recommended bracing the northerly and southerly walls to prevent roof collapse once the roof diaphragm was

removed. In addition, he recommended that the roof rafters be disengaged and disconnected from the adjacent structures to prevent damage to those structures.

City staff contacted representatives from City County Insurance Services (CIS) who provide the property and liability insurance coverage for properties owned by the Urban Renewal Agency. An insurance adjuster from CIS, and a structural engineer from EFI Global (a company retained by CIS) inspected the building on August 29th. A copy of the report prepared by Kirk Vance from EFI Global is included with his report. Mr. Vance stated in his opinion that the exact cause of the roof failure could not be determined as the truss system for the roof could not be safely accessed to assess the nature of the failure. He also noted the additional load pressure placed on the roofing system due to the heavy rainfall, which he calculated to be 4 psf, would be insufficient to cause the failure of a "properly designed and maintained roof in otherwise good condition". He recommended that the building be demolished or properly shored immediately.

With the assistance of Mr. Carpenter, City staff obtained three written bids for partial demolition of the Recreation Building. Copies of the bids are included with this staff report. All three of the bidders are contractors licensed with the Oregon Construction Contractors Board (CCB). A review of the CCB records for Custom Design and Construction indicates they do not carry worker's compensation insurance. Staff believes the complexity of the partial demolition project is such that it is likely the selected contractor would have to have employees to be able to complete the project in a timely manner.

Staff is recommending that the Agency Board award a contract for the partial demolition project to Charles T. Wilson Jr. The insurance agent for the Urban Renewal Agency has recommended the Agency request the selected contractor provide proof of commercial general liability insurance with single limit coverage of $1,000,000 and $2,000,000 aggregate. The contract will also include a provision requiring the contractor to comply with all state and federal regulations related to the handling and disposal of hazardous materials, and a provision requiring the contractor to make portions of the roof trusses available for a follow-up inspection by the structural engineer from EFI Global.

BUDGET IMPLICATIONS

The recommended bid is for $59,870.00. Agency budget account No. 200-6700-419.75-20 (Capital Projects by UR) will used to fund the cost of the demolition. At this time it is unknown if the loss and associated expenses will be determined to be a covered insurance loss.

BOARD ALTERNATIVES

1. *Staff recommendation:* The Urban Renewal Agency Board move to declare an emergency exists due to the damage to a portion of the roof of the Recreation Building, which is in imminent danger of collapsing, and that the Board authorize award of a contract in an amount not to exceed $59,870 to Charles T. Wilson, Jr., with the contract being exempt from competitive bidding requirements, and that the requirement of performance and payment bonds be waived.
2. The Agency Board move to declare an emergency exists due to the damage to a portion of the roof of the Recreation Building, which is in imminent danger of collapsing, and authorize the award of a contract to Custom Design & Construction in an amount not to exceed $69,750 contingent upon the contractor providing proof of workers compensation coverage, with that contract being exempt from competitive bidding requirements, and that the requirement of performance and payment bonds be waived.
3. Decline to declare an emergency, and provide an alternative direction to staff.

Proposal From

Wilson Trucking & Excavating

Wilson Exc Inc CCB# 174781

David Wilson
General Contractor
7100 Seven Mile Rd.
The Dalles, OR 97058
Office/Fax: (541) 296-3060
Cell: (541) 490-3730

Proposal No. 1

Sheet No. 1

Date 9/2/11

Proposal Submitted To	Work To Be Performed At
Name Tod Carpentor	Street 2nd St
Street 2nd St	City The Dalles State Or
City The Dalles	Date of plans N/A
State Or.	Architect N/A
Telephone Number 503-705-2889	

We hereby propose to furnish all the materials and perform all the labor necessary for the completion of

Remove 1 of Recreation Room to almost side walk grade or the Main Floor
Grinding all material and Hauling it Away
All water, gas, & Power to Be Turned off By City
Power line to Be Removed to Pole

All material is guaranteed to be as specified, and the above work to be performed in accordance with the drawings and specifications submitted for above work and completed in a substantial workmanlike manner for the sum of Dollars ($ 135,000 00).

With payments to be made as follows:
25% Down The remainder to Be Paid in Full Within 10 Days of Completion

Any alteration or deviation from above specifications involving extra costs, will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance upon above work. Workmen's Compensation and Public Liability Insurance on above work to be taken out by Wilson Exc Inc DBA DZ Grinding

Respectfully submitted David Wilson

Per Pres

Note – This proposal may be withdrawn by us if not accepted within 30 days

ACCEPTANCE OF PROPOSAL

The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Accepted _____ Signature _____

Date _____ Signature _____

CUSTOM
DESIGN &
CONSTRUCTION

Robert Ward, Owner / Operator
CCB# 193804 / Bonded / Insured
4275 SW 165th Street
Beaverton, OR 97078
Phone:971.400.2452
Email: customdesigncon@
cdandconstruction.com

PROPOSAL FOR CONTRACT

JOB DESCRIPTION

This proposal is for 213 E 2nd Street, The Dalles OR commonly referred to as The Recreation Facility. The purpose of this bid is to recommend an estimate of work to be competed. On inspection it appears the west end building roof need to be demolished in a controlled manner to the 2nd street level, the front wall braced from inside, and the façade across the face of all three buildings removed. A structural engineer will need to be consulted for work that may need to be done following this demo. We can prepare another quote for structured trusses and a new roof installation at that time. Quote is for all equipment, labor and materials needed to perform work defined below.

Rates: additional hours not defined in scope 55.00 per hour Full time equivalent for all work on site.

Materials: additional materials Cost plus 2%

Description	Qty/Hrs	Cost	Extended
Install any needed safety fencing			
Safety Brace South Wall on bowling side from inside			
Remove Red metal façade across front of entire south side wall			
Strip south wall to studs on bowling side, cover exposed usable studs with plywood and replace any needed studs			
Controlled demolition of Bowling area (west building) roof and trusses and material disposal			
Remove and save Recreation Sign – need location to store			
Total Due:			**$ 69,750.00**

_____ _____

Contractor **Date**

_____ _____

Client Acceptance **Date**

NC3824 - 3-part carbonless adams additional work author

CT Wilson
28 Bryan Way
Lyle WA 98635
541 980 1537 CCB# 118584

Additional Work Authorizat

CHANGE ORDER # DATE 9/4/19

CUSTOMER NAME Todd Carpenter

STREET 2nd St

CITY The Dalles STATE/ZIP OR 970

Original Job Information:

JOB NAME Rec / Bowling alley

JOB/CONTRACT #

LOCATION

DATE

We hereby submit the following specifically described additional work:

Install safety fence
Cover floor in basement
Brace front Wall
Remove Recreation Sign
Remove overhang over sidewalk
Strip front wall to the Studs
Dismantle and Remove main Roof
Remove all Material and debris

Labor and Material included for

$59,870-

dditional charge for above described work is: $

h payments to be made as follows:

itional work to be performed under same conditions as specified in original contract unless other

9316 Lakeview Avenue SW, Bldg 21-C
Lakewood, WA 98496
Tel: 253-588-2730

Structure Damage Assessment

EFI Global File No.: 027.00739
August 30, 2019

Columbia Gateway Urban Renewal Agency
200-298 E. 2nd Street
The Dalles, OR 97058

Date of Loss: 8/10/19
Claim No. PRCGUR2019084637

Prepared For:

CIS City County Insurance

Attn: Carol Drouet
P.O. Box 1469
Lake Oswego, OR 97035

ASSIGNMENT

The assignment was received by EFI Global, Inc. (EFI), on August 22, 2019 from Carol Drouet with CIS City County Insurance. The scope of this assignment was to determine the cause of the failure of the roof structure of the subject building.

In response to this request, Kirk Vance, P.E. (EFI) visited the site on August 29, 2019. A representative of Columbia Gateway Urban Renewal Agency (CGURA), Steve Harris, was present during the inspection and provided access. Carol Drouet was also present during the inspection.

This report contains a discussion of the information gathered during the assessment and an analysis and conclusions with respect to the condition of the subject site at the time of EFI's assessment. The conclusions contained herein are based on information available to date.

BACKGROUND

The subject property consisted of three attached individual structures which were primarily one-story with one section that was two-story. The area of failure was previously a bowling alley. The bowling alley structure was a single-story wood and masonry structure and had an address of 213 East 2nd Avenue. The structure was purchased by the insured with the intent to redevelop the subject land. The front of the structure, which faced East 2nd Avenue, faced approximately southwest. For the purposes of this report it will be considered to face south.

The following information was gathered during the site visit and through a conversation with Mr. Harris:

- The structure was originally built as three different buildings in the early 1900s.
- It was subsequently renovated in the 1950's to convert it to a bowling alley and recreation center.
- During this renovation, the three buildings were merged into one.
- The subject property was originally purchased by the CGURA 5-10 years ago with the intent of demolishing the structure and developing the property as a hotel.
- The developer subsequently backed out of the project and the structure sat vacant since purchase.
- He was not sure if an inspection was performed on the structure prior to purchase.
- He was not sure what, if any, maintenance had been performed on the structure since its purchase by the CGURA.
- The structure was subsequently sold to Todd Carpenter. Approximately $15,000 was included from the CGURA as part of this sale to perform roof repairs.
- A large rainstorm occurred on or about the date of loss with more than 0.7 inches of rain and the roof structure collapsed.

METHODOLOGY FOR SITE ASSESSMENT

The assignment was conducted utilizing a systematic approach identified as the scientific method. The scientific method is a principle of inquiry that forms a basis for legitimate scientific and engineering processes. The following is a list of the procedures used in this investigation.

1. A visual site examination was conducted by Kirk Vance, PE, on August 29, 2019.
2. The scene was photographed and measured.
3. A representative of the CGURA, Mr. Harris, was interviewed during the scene examination.
4. The original rehabilitation drawings provided by Mr. Harris were reviewed.
5. Weather data was reviewed.

6. Building Codes were reviewed.

BUILDING SYSTEM DESCRIPTION

The subject structure in the area of failure was a single-story commercial structure configured as a bowling alley. The structure was constructed with joists oriented in the east-west direction supported by exterior masonry walls and an interior wood beam. The interior wood beam was oriented in the north-south direction and supported by exterior masonry walls and intermediate brackets connected to a wood truss constructed above the roof. The truss was contained in a superstructure above the roof. The structure had partially collapsed at the time of inspection; as such, it was considered unsafe to access the roof to inspect the condition of the truss.

OBSERVATIONS

Observations were photographed to document distress and relevant conditions at the subject property on the date of the site visit. Not all damage or distress that may be present was necessarily observed or photographed; however, the selected photographs provide an indication of their types, severity, and distribution. They may also document unusual or contributing conditions that may exist. Photographs taken to document our findings and observations are attached to this report. The following observations were noted during the claim examination:

Exterior Observations

1. The front of the structure faced approximately south.
2. The south face of the façade was visibly tilting towards the south.

Roof Observations

3. The roof of the subject structure was observed from the third floor of the adjacent building to the west. The roof examination was limited to what was visible from this location.
4. The roofing material appeared to have been patched in some areas somewhat recently.
5. The roofing material had been pulled away from the masonry wall to the west. A visible gap was present.
6. The lateral braces supporting the superstructure were visibly sagging.
7. The roof was visibly sagging.
8. The area of roof that was visible generally appeared to be in poor condition.

Interior Observations

9. The interior was inspected in the area of the roof collapse.
10. A beam oriented in the north-south direction which spanned from the north wall to the south wall was fractured.
11. The beam had intermediate support brackets spaced approximately every 15 feet.
12. The supports roughly corresponded to locations where it appeared intermediate columns had been removed.
13. Temporary shoring had been installed to support the failed beam; however, it was bearing directly on the existing bowling alley and was not braced laterally.
14. The roof joists appeared to be weathered and there were indications of long-term water intrusion and deterioration in some locations.

RESEARCH

Review of Rehabilitation Drawings

The rehabilitation drawings converting the subject structure to a bowling alley were reviewed. These drawings were dated June 1958. These drawings included the installation of a truss spanning from the front to the back of the structure which supported the existing beam. This was done in order to eliminate the columns supporting the beam. Hangers were installed approximately every 15 feet per these drawings to support the beam using the newly installed truss. The cables which were noted to be loose during the inspection were lateral bracing for the truss. Selected details from these drawings are included below as Figures 1 and 2.

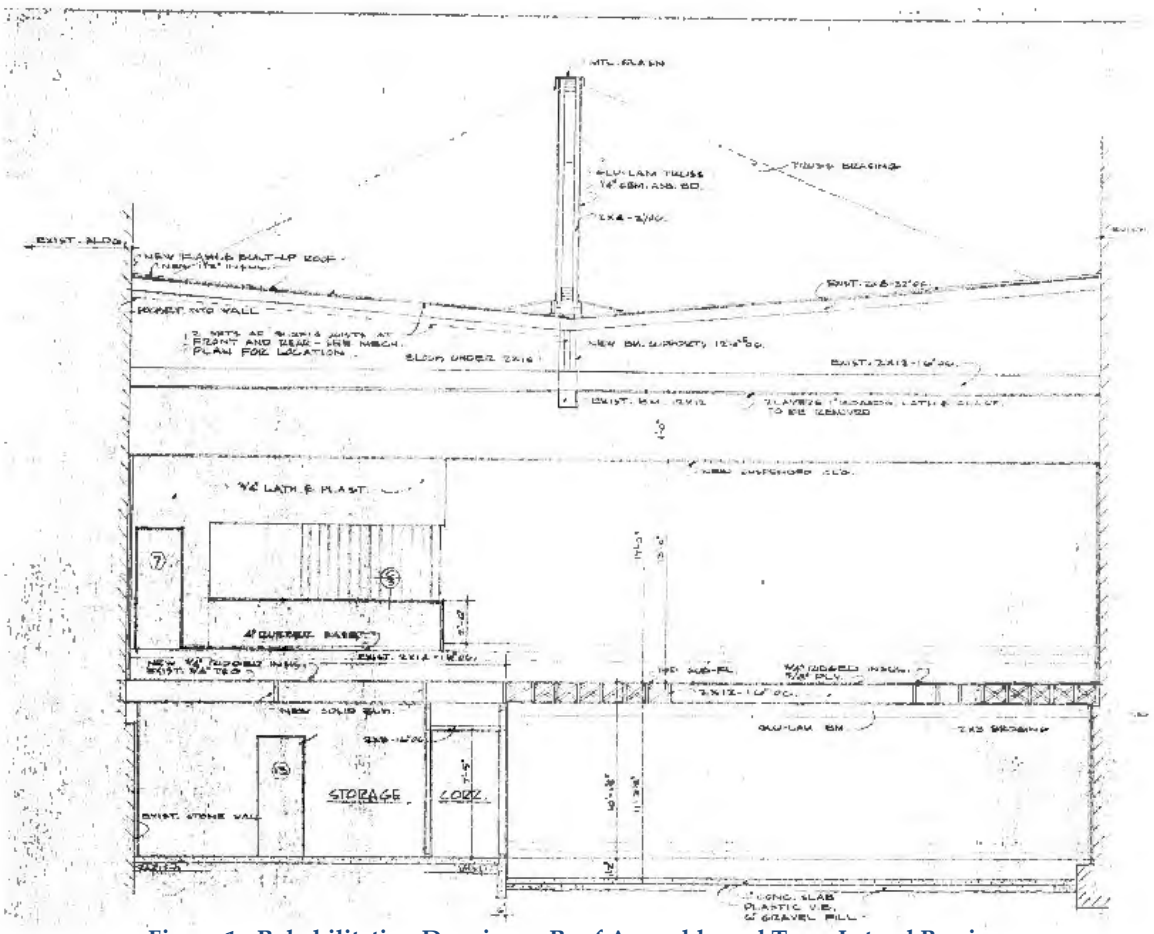

Figure 1 - Rehabilitation Drawings - Roof Assembly and Truss Lateral Bracing

Figure 2 - Rehabilitation Drawings - Beam Hanger Detail

Weather Data

Historic weather data for the subject vicinity was researched. The listed date of loss was August 10, 2019. Mr. Harris reported a substantial rain event occurred which may have resulted in the failure of the roof structure. Historic weather data was researched via the National Centers for Environmental Information from the NOAA[1]. Weather for the month of August 2019 was not yet available using this resource. The nearest weather station to the subject property was The Dalles Airport, USW00024219, at an elevation of 235 feet. The weather from January 2010 to May of 2019 is presented in Appendix C. The maximum observed 24-hour precipitation during this period was 1.63 inches on December 7, 2015. Observations of nearly an inch were observed on several other instances during this period. The maximum 24-hour precipitation from January to May of 2019 was 0.99 inches on April 7, 2019. The total rainfall over the storm from April 6 to April 7 was 1.27 inches.

A review of historic weather data for Portland, Oregon from Weather Underground noted a substantial storm on August 9 and 10 which recorded approximately 0.79 inches[2]. Local news stories noted the City of The Dalles waste treatment plant was flooded during an extreme rain event on August 9, 2019[3]. This source did not list the quantity of rainfall.

0.79 inches of rainfall if it remained trapped and ponded on a roof would correspond to approximately 4 psf of load, 1.64 inches would correspond to approximately 8 psf of roof load.

Building Code Review

A commonly used building code during the period of rehabilitation of the subject structure was the 1958 Uniform Building Code. Table 32-B of this code specifies a minimum design roof live load of 12 psf.

[1] https://www.ncdc.noaa.gov/cdo-web/datatools/findstation
[2] https://www.wunderground.com/history/daily/us/or/portland/KPDX/date/2019-8-10
[3] https://gorgenewscenter.com/2019/08/12/wastewater-treatment-plant-was-flooded-during-an-extreme-rain-event/

DISCUSSION AND ANALYSIS

The subject structure experienced a partial roof structural failure which resulted in the apparent failure of a beam running the length of the structure. The structure had been previously modified to replace the intermediate column supports for the subject beam with a full-length truss spanning the length of the structure supporting the subject beam. Given the condition of the structure, the exact cause of the failure could not be determined as the truss system could not be safely accessed to assess the nature of the failure.

The failure was consistent with the failure of the main truss supporting the subject beam. This failure subsequently resulted in the beam being over-spanned and failing as well. The estimated load experienced on the subject roof on the date of loss, even if the roof drainage system was fully clogged and all water from the rainstorm was retained on the structure, was approximately 4 psf. This load would be insufficient to cause the failure of a properly designed and maintained roof in otherwise good condition. Common building codes used during the time of the rehabilitation of the structure specified minimum design roof live loads of 12 psf. The failure is thus attributed to long-term deterioration of truss components due to lack of maintenance.

The out-of-plumb condition of the front façade resulted from the beam and truss failure which pushed the top of the wall outward.

EFI advised Mr. Harris during the inspection that the structure in its current condition is unsafe and should be demolished or properly shored immediately. The condition of the front façade poses an immediate safety risk to pedestrians and vehicles on 2nd Street. The shoring that has been installed to support the failed beam and truss is inadequate. The subject structure should be demolished or properly shored immediately.

EFI can return to the scene when the structure is demolished to confirm the conclusions in this report.

CONCLUSIONS AND RECOMMENDATIONS

The analysis of available evidence related to this project supports the following:

1. The roof structure failure was the result of long-term deterioration of the truss supporting the beam which spanned the length of the structure.
2. The estimated applied loading due to the rain event on the listed date of loss was insufficient to cause a structural failure to a properly designed and maintained structure.
3. The structure in its current condition poses an immediate safety risk to the public. It should be demolished or properly shored immediately.
4. These construction activities should be executed by a licensed and experienced contractor who is familiar with these types of activities. Note that the means and methods of these repairs, and obtaining a building permit, are the responsibility of the chosen contractor. Additional required code related upgrades including energy efficiency, mechanical, plumbing and electrical should be reviewed with the local Building Code Official.

APPENDICES

Representative photographs are included with this report. Additional photographs taken at the time of the inspection are available upon request.

- Appendix 1 – Satellite view of structure from Google Earth
- Appendix 2 – Photographs
- Appendix 3 – Historic weather data

LIMITATIONS

The information presented in this report addressed the limited objectives related to the evaluation of the subject property. This report only describes the conditions present at the time of our evaluation and is based upon a visual and cursory observation of the subject property. Removal of finish materials, qualitative testing, excavation, or other work not specifically described herein was not conducted. This report is not intended to fully delineate or document every defect or deficiency throughout the subject property. If any additional information is encountered which relates to this evaluation, EFI reserves the right to alter the opinions contained in this report. In some cases, additional studies may be warranted to fully evaluate concerns noted.

The findings noted herein do not constitute a scope of work for repair or offer of repair. Detailed design documents should be prepared to accurately reflect the scope of any repair work and competitive bids be obtained to determine actual repair costs. All means and methods of construction are the responsibility of others and not that of EFI. All existing portions of the building should be properly supported and stabilized during the repair process.

Our services have been performed using that degree of skill and care ordinarily exercised under similar conditions by reputable members of EFI's profession practicing in the same or similar locality at the time of performance. Any verbal statements made before, during, or after the course of the assessment were made as a courtesy only and are not considered a part of this report. This report is furnished as privileged and confidential to the addressee. Release to any other company, concern, or individual is solely the responsibility of the addressee.

CLOSING

EFI appreciates this opportunity to provide consulting services in this matter. Please contact us should any questions arise concerning this report, or if we may be of further assistance.

Respectfully submitted,

Kirk Vance, P.E.
Forensic Engineer
OR P.E. #91837

I hereby certify that this engineering document was prepared under my supervision and that I am a duly licensed Professional Engineer under the laws of Oregon. This seal covers pages 1 through 7 and attachments.

Reviewed by,

Michael J. OConnor
Senior Principal Forensic Engineer

Photo No. 1: Google Earth view of subject structure

Photo No. 2: Front, south face, of subject structure

Photo No. 3: Alternate view

Photo No. 4: Condition of framing beneath front awning

Photo No. 5: Alternate view

Photo No. 6: View of roof collapse from structure to the west

Photo No. 7: Alternate view

Photo No. 8: Alternate view

Photo No. 9: Condition of roofing material, visible gap

Photo No. 10: Alternate view

Photo No. 11: Alternate view

Photo No. 12: Closer view of superstructure containing truss

Photo No. 13: Alternate view

Photo No. 14: Alternate view

Photo No. 15: View of interior

Photo No. 16: View of beam, beam support bracket

Photo No. 17: View of beam support bracket at previous column locations

Photo No. 18: Alternate view

Photo No. 19: Alternate view

Photo No. 20: Fractured beam and shoring

Photo No. 21: Alternate view

Photo No. 22: View of shoring

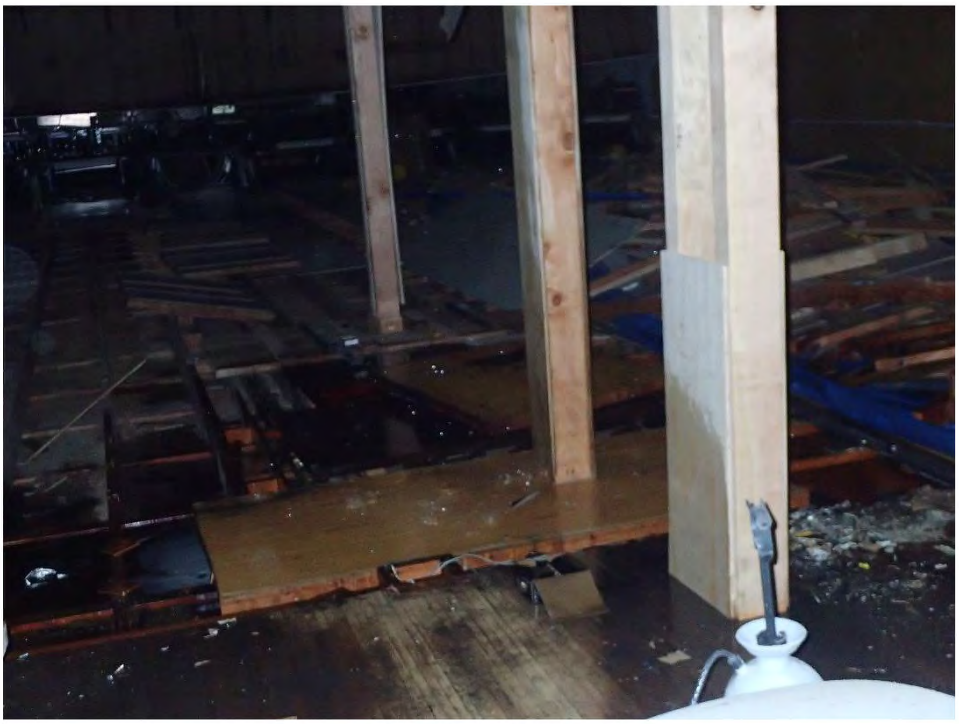

Photo No. 23: View of shoring

Photo No. 24: Alternate view

Photo No. 25: View of ceiling joists

Photo No. 26: Alternate view

Photo No. 27: Roof structure, water intrusion

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Global Summary of the Month for 2010

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 235 ft. Lat: 45.6194° N Lon: -121.1661° W

Station: **DALLESPORT AIRPORT, WA US USW00024219**

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	39.8	45.0	34.6	782	0	56	31	29	24	0	0	6	0	2.70	0.70	24				18	8	0
Feb	43.9	52.2	35.5	591	0	63	28	22	22	0	0	9	0	1.44	0.38	26				14	6	0
Mar	47.3	58.9	35.7	549	0	69	24	27	14	0	0	12	0	0.74	0.19	29				9	3	0
Apr	52.3	63.1	41.4	382	0	79	18	28	10	0	0	2	0	0.70	0.25	02				11	3	0
May	58.3	69.8	46.9	219	12	85	14	35	09	0	0	0	0	1.36	0.36	10				12	6	0
Jun	65.1	76.2	53.9	62	64	90	24	46	08	1	0	0	0	1.41	0.45	04				7	5	0
Jul	73.9	88.5	59.3	3	279	104	09	48	06	16	0	0	0	0.00	0.00	02				0	0	0
Aug	73.3	87.3	59.4	4	262	105	17	48	24	13	0	0	0	0.06	0.04	28				3	0	0
Sep	66.7	79.4	54.0	32	84	95	03	46	22	1	0	0	0	0.85	0.28	19				7	4	0
Oct	55.8	67.7	43.9	290	5	85	01	32	17	0	0	1	0	0.75	0.21	28				10	3	0
Nov	41.9	48.6	35.1	693	0	70	02	11	24	0	4	10	0	2.20	0.45	09				16	7	0
Dec	36.9	41.0	32.8	872	0	53	14	19	31	0	0	14	0	3.54	1.14	11				17	10	1

Notes

(Blank) Data element not reported or missing.

\+ Occurred on one or more previous dates during the month. The date in the Date field is the last day of occurrence.

A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Global Summary of the Month for 2011

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 235 ft. Lat: 45.6194° N Lon: -121.1661° W

Station: **DALLESPORT AIRPORT, WA US USW00024219**

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	39.5	46.6	32.4	790	0	59	25	15	01	0	5	13	0	1.32	0.47	16				12	4	0
Feb	39.1	48.9	29.4	724	0	61	12	9	26	0	1	19	0	0.75	0.63	28				7	1	0
Mar	45.0	54.7	35.3	620	0	65	31	27	03	0	0	8	0	1.74	0.25	20				15	7	0
Apr	48.9	58.5	39.4	482	0	73	01	31	23	0	0	2	0	1.57	0.61	25				8	4	0
May	57.1	68.3	45.9	244	0	80	20	34	01	0	0	0	0	2.22	0.68	14				11	5	0
Jun	64.9	76.3	53.6	43	42	91	21	41	03	1	0	0	0	0.10	0.10	28				1	1	0
Jul	70.6	83.9	57.3	0	173	99	24	48	09	9	0	0	0	0.48	0.19	18				4	2	0
Aug	74.4	87.9	60.8	0	290	99	21	50	16	14	0	0	0	0.00	0.00	26				0	0	0
Sep	69.2	85.3	53.0	26	151	102	11	42	29	10	0	0	0	0.02	0.02	18				1	0	0
Oct	55.9	65.5	46.3	282	0	74	22	26	26	0	0	1	0	0.93	0.25	10				14	3	0
Nov	43.3	52.4	34.2	651	0	64	22	25	11	0	0	11	0	1.24	0.26	17				12	5	0
Dec	35.7	43.0	28.4	909	0	57	29	18	22	0	2	25	0	2.20	0.86	28				7	4	0

Notes

(Blank) Data element not reported or missing.

\+ Occurred on one or more previous dates during the month. The date in the Date field is the last day of occurrence.

A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 235 ft. Lat: 45.6194° N Lon: -121.1661° W
Station: **DALLESPORT AIRPORT, WA US USW00024219**

Global Summary of the Month for 2012

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	36.1	44.0	28.3	895	0	56	14	16	12	0	1	25	0	2.91	0.92	18				16	5	0
Feb	40.8	48.9	32.8	701	0	60	21	22	28	0	0	12	0	0.82	0.23	09				12	3	0
Mar	45.1	55.1	35.1	617	0	67	09	26	08	0	0	10	0	2.31	0.56	21				13	8	0
Apr	53.7	65.6	41.8	348	9	90	23	28	07	1	0	3	0	0.58	0.18	26				8	2	0
May	60.2	73.1	47.4	172	24	96	14	35	12	2	0	0	0	0.59	0.29	03				4	2	0
Jun	64.7	76.0	53.5	72	64	91	21	46	27	2	0	0	0	1.36	0.62	04				9	4	0
Jul	73.8	86.9	60.6	2	274	100	08	47	04	10	0	0	0	0.00	0.00	20				0	0	0
Aug	75.5	91.0	60.0	0	326	105	17	46	25	14	0	0	0	0.00	0.00	21				0	0	0
Sep	68.2	84.4	51.9	14	109	94	05	39	12	9	0	0	0	0.00	0.00	30				0	0	0
Oct	54.4	66.2	42.6	331	2	86	01	31	07	0	0	4	0	1.88	0.42	15				11	6	0
Nov	45.6	52.1	39.2	580	0	72	05	27	26	0	0	4	0	1.78	0.34	20				17	7	0
Dec	38.2	44.6	31.9	830	0	56	01	21	30	0	1	20	0	2.46	0.56	25				16	7	0

Notes

(Blank) Data element not reported or missing.

\+ Occurred on one or more previous dates during the month. The date in the Date field is the last day of occurrence.

A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Global Summary of the Month for 2013

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 235 ft. Lat: 45.6194° N Lon: -121.1661° W

Station: **DALLESPORT AIRPORT, WA US USW00024219**

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	34.2	39.6	28.7	955	0	56	07	18	13	0	10	25	0	0.32	0.16	05				5	1	0
Feb	42.4	52.6	32.2	633	0	59	13	22	19	0	0	17	0	0.37	0.16	28				5	2	0
Mar	47.2	58.5	35.8	552	0	76	31	23	04	0	0	11	0	0.91	0.40	06				6	4	0
Apr	53.1	64.6	41.6	358	1	85	26	28	23	0	0	4	0	0.47	0.20	07				5	2	0
May	61.1	73.9	48.3	161	41	92	11	31	01	3	0	1	0	1.50	0.48	27				9	6	0
Jun	69.1	81.3	56.9	16	140	103	30	48	15	5	0	0	0	0.93	0.80	25				6	1	0
Jul	76.4	91.7	61.0	0	352	102	02	52	14	17	0	0	0	0.00	0.00	17				0	0	0
Aug	75.4	88.9	61.9	0	323	98	07	54	27	17	0	0	0	0.60	0.32	25				5	2	0
Sep	67.9	79.6	56.2	69	156	99	11	44	19	7	0	0	0	1.56	0.40	28				9	6	0
Oct	52.1	66.0	38.1	401	0	75	21	26	29	0	0	2	0	0.40	0.29	01				3	1	0
Nov	41.6	49.4	33.7	703	0	65	01	17	22	0	0	11	0	1.06	0.23	02				10	7	0
Dec	33.5	41.9	25.2	975	0	62	01	-4	08	0	7	25	2	1.43	1.19	01				5	2	1

Notes

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\+ Occurred on one or more previous dates during the month. The date in the Date field is the last day of occurrence.

A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 235 ft. Lat: 45.6194° N Lon: -121.1661° W
Station: **DALLESPORT AIRPORT, WA US USW00024219**

Global Summary of the Month for 2014

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	37.5	43.5	31.4	854	0	57	11	19	05	0	0	18	0	1.34	0.38	08				9	5	0
Feb	36.0	42.4	29.6	811	0	57	17	8	07	0	6	13	0	3.11	0.67	14				16	8	0
Mar	47.2	58.4	36.1	550	0	68	24	25	22	0	0	11	0	1.98	0.70	05				15	6	0
Apr	54.1	65.8	42.3	327	0	82	30	32	14	0	0	1	0	1.06	0.39	21				8	5	0
May	62.0	75.1	49.0	115	24	90	14	39	05	1	0	0	0	0.36	0.15	08				6	1	0
Jun	67.3	79.1	55.4	24	91	90	30	48	21	1	0	0	0	0.25	0.24	27				2	1	0
Jul	77.6	91.7	63.4	2	393	104	12	52	25	20	0	0	0	0.62	0.48	23				2	2	0
Aug	77.4	91.3	63.5	0	384	107	11	53	25	20	0	0	0	0.24	0.16	30				2	1	0
Sep	67.7	82.2	53.1	16	96	93	21	40	12	5	0	0	0	0.19	0.18	24				2	1	0
Oct	59.2	70.2	48.3	202	22	90	07	41	03	2	0	0	0	1.93	0.58	30				14	7	0
Nov	40.5	48.4	32.7	734	0	66	06	8	16	0	7	14	0	1.57	0.48	21				10	4	0
Dec	39.0	44.2	33.9	805	0	57	21	13	31	0	4	9	0	2.10	0.89	20				17	7	0

Notes

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A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Global Summary of the Month for 2015

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 235 ft. Lat: 45.6194° N Lon: -121.1661° W

Station: **DALLESPORT AIRPORT, WA US USW00024219**

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	39.4	44.9	34.0	792	0	62	24	13	01	0	1	9	0	2.17	1.35	17				8	5	1
Feb	46.3	55.6	36.9	525	0	65	24	20	23	0	0	7	0	1.67	0.49	09				10	6	0
Mar	51.5	64.3	38.6	419	0	78	27	23	04	0	0	6	0	0.65	0.14	15				8	4	0
Apr	53.7	67.4	40.1	338	0	84	20	31	03	0	0	1	0	0.12	0.11	05				2	1	0
May	64.6	77.7	51.4	82	68	93	29	38	07	2	0	0	0	0.26	0.25	11				2	1	0
Jun	76.0	90.0	62.1	0	332	108	26	51	14	14	0	0	0	0.00	0.00	29				0	0	0
Jul	78.7	92.7	64.8	0	425	109	31	55	28	17	0	0	0	0.00	0.00	13				0	0	0
Aug	76.0	90.0	62.1	0	342	109	01	51	23	17	0	0	0	0.03	0.02	29				2	0	0
Sep	65.0	79.2	50.8	62	62	95	11	38	28	4	0	0	0	0.05	0.04	06				2	0	0
Oct	59.4	71.9	46.9	174	2	81	06	35	27	0	0	0	0	0.76	0.27	31				7	3	0
Nov	42.4	50.2	34.6	678	0	65	17	17	29	0	2	11	0	1.68	0.55	19				11	5	0
Dec	38.9	44.2	33.7	808	0	66	08	26	31	0	1	17	0	6.02	1.63	07				20	15	2

Notes

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A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 235 ft. Lat: 45.6194° N Lon: -121.1661° W
Station: **DALLESPORT AIRPORT, WA US USW00024219**

Global Summary of the Month for 2016

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	38.0	42.8	33.1	838	0	57	28	22	04	0	5	11	0	2.85	0.57	19				17	8	0
Feb	44.8	54.1	35.5	586	0	64	15	27	23	0	0	11	0	1.25	0.31	18				13	6	0
Mar	48.4	58.7	38.2	514	0	79	31	27	18	0	0	3	0	1.61	0.47	09				17	6	0
Apr	59.4	72.4	46.4	173	6	89	20	35	16	0	0	0	0	0.18	0.09	13				3	0	0
May	63.5	76.5	50.6	80	35	91	07	41	20	2	0	0	0	0.59	0.23	04				4	3	0
Jun	68.5	82.5	54.4	53	151	104	05	39	15	8	0	0	0	0.07	0.07	17				1	0	0
Jul	73.6	85.9	61.2	0	265	104	28	55	24	10	0	0	0	0.25	0.17	07				4	1	0
Aug	75.1	90.7	59.6	0	314	103	18	52	23	18	0	0	0	0.00	0.00	31				0	0	0
Sep	65.8	78.9	52.8	35	60	92	10	42	14	3	0	0	0	0.21	0.15	06				3	1	0
Oct	54.2	62.9	45.7	333	0	73	08	34	12	0	0	0	0	3.07	0.42	26				20	13	0
Nov	48.5	57.0	39.9	496	0	69	09	31	22	0	0	2	0	1.21	0.43	14				10	4	0
Dec	31.7	37.8	25.6	1032	0	54	03	12	17	0	9	28	0	2.44	0.61	14				12	8	0

Notes

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A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Global Summary of the Month for 2017

Generated on 09/04/2019

Current Location: Elev: 235 ft. Lat: 45.6194° N Lon: -121.1661° W

Station: **DALLESPORT AIRPORT, WA US USW00024219**

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	25.3	29.9	20.6	1231	0	41	22	4	06	0	16	29	0	1.15	0.47	20				11	5	0
Feb	35.5	42.1	28.9	825	0	52	20	19	14	0	3	19	0	2.04	0.40	21				14	8	0
Mar	47.3	55.4	39.1	550	0	64	31	30	07	0	0	4	0	2.37	0.43	09				19	7	0
Apr	51.4	61.5	41.4	407	0	68	21	32	09	0	0	1	0	1.66	0.41	19				13	7	0
May	63.2	77.2	49.2	135	79	99	29	38	12	5	0	0	0	0.21	0.08	16				6	0	0
Jun	68.7	81.6	55.8	36	148	103	25	45	11	7	0	0	0	0.38	0.28	08				4	1	0
Jul	76.7	91.1	62.3	0	362	101	31	53	21	19	0	0	0	0.00	0.00	31				0	0	0
Aug	78.3	93.9	62.7	0	412	108	03	51	25	20	0	0	0	0.05	0.05	13				1	0	0
Sep	68.2	81.7	54.7	53	149	104	02	45	16	7	0	0	0	0.77	0.33	20				5	3	0
Oct	52.6	65.5	39.8	383	0	74	06	28	31	0	0	2	0	1.60	0.63	21				5	3	0
Nov	44.6	51.6	37.6	612	0	67	23	28	19	0	0	4	0	2.43	0.61	20				17	9	0
Dec	35.9	40.9	30.9	902	0	55	18	19	24	0	4	16	0	1.13	0.43	28				6	5	0

Notes

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A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 235 ft. Lat: 45.6194° N Lon: -121.1661° W
Station: **DALLESPORT AIRPORT, WA US USW00024219**

Global Summary of the Month for 2018

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	41.4	47.3	35.5	732	0	56	12	28	06	0	0	9	0	1.40	0.46	11				16	7	0
Feb	42.3	50.6	34.0	635	0	66	07	13	23	0	0	14	0	0.71	0.19	01				8	4	0
Mar	46.7	57.7	35.7	567	0	68	29	26	06	0	0	11	0	0.84	0.20	01				9	4	0
Apr	54.3	65.8	42.8	320	0	86	26	30	03	0	0	1	0	0.65	0.18	05				10	3	0
May	67.4	80.2	54.6	27	102	94	14	41	02	4	0	0	0	0.02	0.02	08				1	0	0
Jun	68.7	81.4	55.9	25	135	99	24	43	10	4	0	0	0	0.45	0.29	16				3	2	0
Jul	78.6	94.7	62.6	0	423	107	29	54	08	22	0	0	0	0.00	0.00	31				0	0	0
Aug	75.6	89.6	61.7	1	332	106	07	49	28	15	0	0	0	0.00	0.00	31				0	0	0
Sep	63.8	78.4	49.1	78	42	92	07	39	25	3	0	0	0	0.02	0.02	12				1	0	0
Oct	53.6	65.9	41.2	355	0	75	12	32	15	0	0	1	0	0.95	0.25	08				10	3	0
Nov	42.6	50.4	34.8	672	0	69	01	22	19	0	0	14	0	1.08	0.33	27				12	5	0
Dec	38.7	44.5	33.0	814	0	57	29	26	31	0	0	14	0	2.57	0.96	18				15	5	0

Notes

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A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Global Summary of the Month for 2019

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 235 ft. Lat: 45.6194° N Lon: -121.1661° W

Station: **DALLESPORT AIRPORT, WA US USW00024219**

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	38.2	43.5	32.9	830	0	57	23	23	02	0	0	13	0	1.73	0.81	18				9	3	0
Feb	29.6	34.8	24.3	992	0	49	02	10	10	0	11	26	0	2.69	0.38	04				17	10	0
Mar	38.7	48.7	28.6	817	0	69	31	6	05	0	6	19	0	0.35	0.17	06				5	2	0
Apr	54.4	64.6	44.1	319	0	80	18	31	29	0	0	2	0	2.01	0.99	07				7	4	0
May	63.0	75.1	51.0	112	51	90	11	34	01	1	0	0	0	0.49	0.14	19				7	2	0
Jun	67.5	80.4	54.6	37	112	99	12	44	09	4	0	0	0	0.09	0.06	26				3	0	0
Jul	72.7	85.0	60.4	0	238	96	26	52	21	8	0	0	0	0.08	0.08	15				1	0	0

Notes

(Blank) Data element not reported or missing.

\+ Occurred on one or more previous dates during the month. The date in the Date field is the last day of occurrence.

A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 150 ft. Lat: 45.6069° N Lon: -121.2047° W
Station: **THE DALLES, OR US USC00358407**

Global Summary of the Month for 2010

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	38.7	43.9	33.4	817	0	55	22	27	03	0	0	11	0	3.97	0.88	25	7.5			21	10	0
Feb	42.5	51.6	33.3	586	0	61	28	23	23	0	0	11	0	1.30	0.30	27	0.0	0	28	12	6	0
Mar	45.5	57.8	33.2	585	0	67	25	27	15	0	0	16	0	0.34	0.15	03	0.0	0	31	5	2	0
Apr	50.4	61.7	39.0	439	0	77	20	28	10	0	0	4	0	0.64	0.32	03	0.0	0	30	8	2	0
May	56.5	68.2	44.8	259	13	84	15	35	05	0	0	0	0	1.05	0.36	27	0.0	0	31	10	4	0
Jun	63.1	74.6	51.6	95	42	89	24	44	05	0	0	0	0	1.31	0.51	04	0.0	0	30	9	5	0
Jul	72.3	87.6	56.9	19	238	102	25	47	06	16	0	0	0	0.00	0.00	02	0.0	0	31	0	0	0
Aug	71.6	86.6	56.6	6	198	103	17	46	24	10	0	0	0	0.04	0.04	29	0.0	0	31	1	0	0
Sep	64.5	77.8	51.2	67	53	90	28	44	23	2	0	0	0	0.63	0.30	18	0.0	0	30	6	2	0
Oct	54.8	68.5	41.1	317	2	84	02	31	18	0	0	2	0	1.30	0.33	24	0.0	0	31	10	4	0
Nov	41.4	49.3	33.5	708	0	69	03	11	24	0	3	10	0	1.63	0.61	23	0.0			10	4	0
Dec	36.2	40.9	31.5	864	0	54	15	19	31	0	0	21	0	5.70	2.00	18	2.0	0	31	17	11	2

Notes

(Blank) Data element not reported or missing.

\+ Occurred on one or more previous dates during the month. The date in the Date field is the last day of occurrence.

A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 150 ft. Lat: 45.6069° N Lon: -121.2047° W
Station: **THE DALLES, OR US USC00358407**

Global Summary of the Month for 2011

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	38.6	46.8	30.5	791	0	61	24	14	03	0	4	14	0	1.35	0.56	16				6	4	0
Feb	37.9	48.4	27.5	703	0	62	13	11	26	0	2	21	0	0.26	0.08	28				8	0	0
Mar	43.5	53.7	33.3	624	0	63	31	27	06	0	0	13	0	2.84	1.08	01				22	9	1
Apr	47.4	57.6	37.2	510	0	71	02	29	12	0	0	6	0	3.53	2.20	05				11	4	1
May	55.6	67.0	44.3	274	2	80	21	33	01	0	0	0	0	2.03	1.08	15				7	3	1
Jun	63.4	74.8	52.1	89	43	90	22	42	03	1	0	0	0	0.07	0.05	01				2	0	0
Jul	69.3	83.2	55.5	16	150	99	25	48	09	10	0	0	0	0.40	0.29	19				4	1	0
Aug	71.9	87.1	56.7	2	209	97	25	48	16	10	0	0	0	0.00	0.00	26				0	0	0
Sep	66.9	83.4	50.4	56	112	101	12	38	30	10	0	0	0	0.00	0.00	26				0	0	0
Oct	54.6	65.7	43.4	324	0	82	01	26	27	0	0	3	0	0.72	0.35	11				11	1	0
Nov	41.8	52.1	31.5	697	0	62	23	24	03	0	0	17	0	1.30	0.34	17				10	4	0
Dec	34.6	42.9	26.2	913	0	56	01	17	23	0	4	28	0	2.18	0.89	30				5	3	0

Notes

(Blank) Data element not reported or missing.

\+ Occurred on one or more previous dates during the month. The date in the Date field is the last day of occurrence.

A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Global Summary of the Month for 2012

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 150 ft. Lat: 45.6069° N Lon: -121.2047° W

Station: **THE DALLES, OR US USC00358407**

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	35.1	43.8	26.5	926	0	54	15	16	13	0	1	29	0	1.97	0.72	20				7	4	0
Feb	40.2	48.8	31.7	669	0	63	23	23	28	0	0	14	0	1.49	1.01	22				9	4	1
Mar	44.0	54.8	33.3	609	0	66	10	25	08	0	0	14	0	1.69	0.58	22				13	4	0
Apr	52.2	64.1	40.2	385	13	89	24	28	08	0	0	5	0	1.13	0.67	20				9	3	0
May	58.5	72.2	44.9	195	13	94	15	34	13	1	0	0	0	0.42	0.15	22				3	3	0
Jun	63.0	74.3	51.7	112	53	90	22	43	10	1	0	0	0	0.97	0.52	05				5	4	0
Jul	72.7	86.7	58.8	8	240	103	10	46	04	12	0	0	0	0.00	0.00	15				0	0	0
Aug	73.6	89.8	57.4	7	273	105	18	45	25	12	0	0	0	0.00	0.00	31				0	0	0
Sep	65.5	83.2	47.8	38	52	95	19	40	15	8	0	0	0	0.00	0.00	30				0	0	0
Oct	53.1	66.6	39.6	358	0	86	02	31	07	0	0	3	0	1.74	0.43	16				13	5	0
Nov	45.8	53.1	38.5	576	0	73	06	27	27	0	0	6	0	1.76	0.56	20				14	6	0
Dec	38.7	45.7	31.6	817	0	57	11	21	31	0	1	20	0	3.33	0.81	26				17	10	0

Notes

(Blank) Data element not reported or missing.

\+ Occurred on one or more previous dates during the month. The date in the Date field is the last day of occurrence.

A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 150 ft. Lat: 45.6069° N Lon: -121.2047° W
Station: **THE DALLES, OR US USC00358407**

Global Summary of the Month for 2013

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	33.4	39.9	26.9	948	0	55	08	18	13	0	8	27	0	0.43	0.17	06				7	2	0
Feb	41.8	53.3	30.3	626	0	61	16	23	20	0	0	19	0	0.31	0.13	25				5	1	0
Mar	46.5	58.4	34.7	554	0	76	31	24	05	0	0	15	0	1.99	0.90	07				10	6	0
Apr	52.2	65.5	38.9	384	0	83	27	30	23	0	0	8	0	0.73	0.20	07				8	3	0
May	60.9	73.7	48.1	180	54	94	11	33	03	4	0	0	0	1.58	0.39	28				12	7	0
Jun	67.5	80.0	54.9	32	106	97	29	47	14	5	0	0	0	0.85	0.58	26				5	2	0
Jul	75.1	91.8	58.5	0	314	103	02	51	13	20	0	0	0	0.00	0.00	31				0	0	0
Aug	73.8	87.1	60.5	0	274	96	08	54	28	10	0	0	0	0.47	0.27	26				4	2	0
Sep	67.3	80.9	53.7	79	141	98	15	42	20	8	0	0	0	1.09	0.35	30	0.0	0	30	6	4	0
Oct	51.9	67.3	36.6	365	0	78	22	27	30	0	0	7	0	0.43	0.22	02				8	1	0
Nov	41.3	50.6	32.1	710	0	68	02	16	23	0	0	11	0	1.07	0.17	07				14	5	0
Dec	33.4	42.6	24.3	938	0	62	02	-6	09	0	6	26	1	1.52	1.24	02				7	2	1

Notes

(Blank) Data element not reported or missing.

\+ Occurred on one or more previous dates during the month. The date in the Date field is the last day of occurrence.

A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 150 ft. Lat: 45.6069° N Lon: -121.2047° W
Station: **THE DALLES, OR US USC00358407**

Global Summary of the Month for 2014

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	37.0	44.3	29.8	839	0	58	15	19	06	0	0	20	0	1.62	0.50	29				6	4	0
Feb	35.3	43.0	27.7	830	0	57	18	6	08	0	7	18	0	3.70	0.63	14				18	10	0
Mar	46.0	58.2	33.8	589	0	68	16	25	22	0	1	15	0	2.10	0.59	06				15	6	0
Apr	52.7	65.4	39.9	358	0	78	08	31	14	0	0	3	0	1.38	0.54	22				12	4	0
May	60.7	74.8	46.7	143	24	89	23	40	13	0	0	0	0	0.76	0.43	04				6	2	0
Jun	66.3	78.3	54.3	38	77	89	23	49	22	0	0	0	0	0.23	0.21	27				3	1	0
Jul	76.7	92.1	61.2	0	339	104	13	51	25	18	0	0	0	0.45	0.30	24				2	2	0
Aug	76.2	91.7	60.6	1	335	107	13	52	25	19	0	0	0	0.24	0.15	31				2	1	0
Sep	66.1	82.0	50.3	31	64	96	22	38	13	4	0	0	0	0.17	0.17	25				1	1	0
Oct	58.1	70.5	45.8	217	11	91	06	40	05	1	0	0	0	2.02	0.75	31				15	9	0
Nov	40.7	50.5	31.0	728	0	67	07	5	17	0	5	14	0	1.83	0.60	22				11	5	0

Notes

(Blank) Data element not reported or missing.

\+ Occurred on one or more previous dates during the month. The date in the Date field is the last day of occurrence.

A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Global Summary of the Month for 2015

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 150 ft. Lat: 45.6069° N Lon: -121.2047° W

Station: **THE DALLES, OR US USC00358407**

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	38.1	44.7	31.6	832	0	64	25	12	01	0	1	12	0	2.35	1.48	18				10	4	1
Mar	50.2	64.7	35.7	458	0	78	28	23	04	0	0	9	0	0.63	0.18	24				8	3	0
Apr	52.0	65.8	38.2	377	0	85	21	30	03	0	0	2	0	0.19	0.13	06				3	1	0
May	64.1	77.4	50.7	90	62	92	29	35	07	2	0	0	0	0.25	0.25	12				1	1	0
Sep	63.2	79.2	47.3	90	42	97	13	36	29	4	0	0	0	0.04	0.04	07				1	0	0
Oct	58.1	72.8	43.4	186	0	84	03	36	27	0	0	0	0	0.61	0.30	31				3	3	0

Notes

(Blank) Data element not reported or missing.

\+ Occurred on one or more previous dates during the month. The date in the Date field is the last day of occurrence.

A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 150 ft. Lat: 45.6069° N Lon: -121.2047° W
Station: **THE DALLES, OR US USC00358407**

Global Summary of the Month for 2016

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	36.2	41.8	30.6	777	0	59	24	19	05	0	6	16	0	3.20	0.62	20				16	11	0
Feb	43.6	54.8	32.4	556	0	63	16	26	25	0	0	15	0	1.25	0.40	20				8	6	0
Mar	47.1	58.4	35.9	500	0	74	31	27	19	0	0	4	0	1.80	0.55	10				10	6	0
Apr	57.8	72.8	42.8	211	3	88	20	34	17	0	0	0	0	0.29	0.10	14				4	2	0
Jun	67.5	82.0	53.1	70	144	105	06	39	15	7	0	0	0	0.09	0.09	18				1	0	0
Sep	62.9	78.1	47.7	82	24	92	28	39	14	3	0	0	0	0.01	0.01	02				1	0	0
Oct	52.9	63.3	42.5	339	0	72	01	32	13	0	0	2	0	2.54	0.35	07				18	11	0
Nov	46.3	56.3	36.3	487	0	69	10	28	10	0	0	6	0	1.40	0.50	15				10	4	0
Dec	30.7	38.7	22.8	891	0	54	05	10	17	0	9	25	0									

Notes

(Blank) Data element not reported or missing.

\+ Occurred on one or more previous dates during the month. The date in the Date field is the last day of occurrence.

A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Current Location: Elev: 150 ft. Lat: 45.6069° N Lon: -121.2047° W
Station: **THE DALLES, OR US USC00358407**

Global Summary of the Month for 2017

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	25.2	31.3	19.1	1113	0	44	01	2	07	0	15	28	0									
Feb	34.1	42.0	26.2	803	0	53	11	18	15	0	4	24	0	1.82	0.40	05				9	7	0
Mar	45.3	54.7	36.0	570	0	64	13	29	05	0	0	9	0	2.30	0.45	10				13	10	0
Apr	50.2	61.7	38.7	414	0	69	22	31	10	0	0	3	0	1.60	0.51	13				9	6	0
May														0.21	0.15	17				3	1	0
Jul	74.4	90.6	58.1	0	262	101	06	52	17	15	0	0	0	0.00	0.00	31				0	0	0
Oct	51.4	65.9	36.9	408	0	74	07	27	31	0	0	4	0	1.69	1.20	22				5	2	1
Nov	43.7	52.4	34.9	597	0	66	25	27	19	0	0	8	0	2.06	0.50	23				12	5	0
Dec	34.8	41.0	28.6	936	0	54	19	16	24	0	5	26	0	1.44	0.95	29				4	4	0

Notes

(Blank) Data element not reported or missing.

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A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Global Summary of the Month for 2018

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 150 ft. Lat: 45.6069° N Lon: -121.2047° W

Station: **THE DALLES, OR US USC00358407**

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Jan	40.0	46.7	33.4	749	0	58	14	28	07	0	0	14	0	1.37	0.45	12				9	8	0
Feb	40.6	50.3	31.0	682	0	67	08	12	23	0	1	16	0	0.49	0.17	18				4	3	0
Mar	44.0	55.9	32.1	629	0	67	29	25	07	0	0	18	0	0.93	0.25	01				6	5	0
May	65.7	79.6	51.7	51	69	93	25	40	02	4	0	0	0	0.04	0.04	09				1	0	0
Jul	75.4	92.8	58.0	0	290	105	30	40	09	19	0	0	0	0.00	0.00	31				0	0	0
Sep	62.4	78.4	46.4	98	28	92	07	38	25	3	0	0	0	0.04	0.04	13				1	0	0
Oct	53.2	67.2	39.3	306	0	75	15	31	16	0	0	3	0	0.90	0.30	09				8	3	0

Notes

(Blank) Data element not reported or missing.

\+ Occurred on one or more previous dates during the month. The date in the Date field is the last day of occurrence.

A Accumulated amount.

X Monthly means or totals based on incomplete time series.

T Trace Amount.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Global Summary of the Month for 2019

Generated on 09/04/2019

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Current Location: Elev: 150 ft. Lat: 45.6069° N Lon: -121.2047° W

Station: **THE DALLES, OR US USC00358407**

Date	Temperature (F)													Precipitation (Inches)								
Elem ->	TAVG	TMAX	TMIN	HTDD	CLDD	EMXT		EMNT		DX90	DX32	DT32	DT00	PRCP	EMXP		SNOW	EMSD		DP01	DP10	DP1X
Month	Mean	Mean Max.	Mean Min	Heating Degree Days	Cooling Degree Days	Highest	High Date	Lowest	Low Date	Number of Days				Total	Greatest Observed		Snow, Sleet			Number of Days		
										Max >= 90	Max <= 32	Min <= 32	Min <= 0		Amount	Date	Total Fall	Max Depth	Max Date	>=.01	>=.10	>=1.0
Feb	31.0	37.7	24.3	782	0	50	03	12	10	0	6	21	0	0.84	0.39	17				5	3	0
Mar	37.2	48.0	26.5	777	0	67	31	8	05	0	7	20	0	0.00	0.00	30				0	0	0
Apr	53.7	65.2	42.2	316	0	82	20	33	30	0	0	0	0	1.77	0.67	08				7	4	0
May	61.5	74.1	48.9	126	31	88	12	33	01	0	0	0	0	0.06	0.03	16				3	0	0

Notes

(Blank) Data element not reported or missing.

\+ Occurred on one or more previous dates during the month. The date in the Date field is the last day of occurrence.

A Accumulated amount.

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T Trace Amount.

TENNESON
ENGINEERING CORPORATION
CONSULTING ENGINEERS • SURVEYORS • PLANNERS

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THE DALLES, OR 97058

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August 28, 2019

Mr. Todd Carpenter
P.O. Box 2688
The Dalles, Oregon 97058

Structural Inspection at 213 East Second Street, The Dalles, Oregon (Recreation Building)

Tenneson Engineering Corporation was retained by Todd Carpenter, the building owner, to inspect the roof structure of the commercial building located at 213 East Second Street in The Dalles, Oregon, also known as the Recreation Building or the Rec Building. Mr. Carpenter, who is also the owner of the buildings to the east and west of the subject parcel, had noticed a partial roof collapse occur over the weekend of August 17 and 18. He contacted our office on August 19 to conduct a preliminary inspection. The purpose of Tenneson's inspection was to examine the roof and its support system to determine the safety of the structure and its possible influence on adjacent structures. On August 21, 2019, representatives of Tenneson Engineering Corporation conducted the inspection. At this time Mr. Carpenter also provided us with an eleven page plan set dated 1958 and prepared by Jensen & Gilham Architects of Portland, Oregon, for a bowling alley at the same location. The drawings appear to depict an addition to and remodel of the original structure. The following are the findings, conclusions, and recommendations of said inspection.

EXISTING CONDITIONS

The existing structure is a two-story building with a wood-framed roof and main level floor area and a concrete slab-on-grade within the basement. It should be noted that the basement was the original first main floor level when the structure was built prior to the raising of the roadways in the downtown area. The structure is approximately 58 feet in plan dimension east-west by 119 feet in the north-south direction (perpendicular to East Second Street). It appears, based upon the 1958 plans, that this structure was constructed as infill between two existing buildings to the east and west. Thus, it utilizes the brick walls of the adjacent building on the east side and the southerly 100 feet of brick wall on the west side to enclose the building space and it does not have an independent exterior wall on the east side or for a majority of the west side. It appears, based on the 1958 plans, that the original building was 100 feet in the north-south direction. With the 1958 remodel to convert it to a bowling alley, the existing north, or rear wall, was removed and the building was extended by 19 feet with construction of a concrete spandrel beam and column system, along with concrete masonry unit (CMU) infill between the concrete beams and columns. This extension was done to create a long enough area to create the bowling lanes within the building from north to south. In addition, the building roof it appears had originally been supported by a 12" x 12" beam that was installed slightly off-center in the east-west direction spanning approximately 24.5 feet between supports. With the conversion of the structure to a bowling alley, a series of posts supporting the 12" x 12" roof beam had to be

removed and the beam re-supported by a glu-lam truss that spanned from the new exterior north wall to a new 8" diameter steel pipe column located approximately 13.5 feet in from the south wall. In addition, the south wall was reconstructed of new 2" x 4" stud construction. The 12" x 12" beam, which had joints at approximately 24 to 25 feet apart, was then hung off of the bottom chord of the glu-lam truss utilizing 1 inch diameter hanger rods that were drilled through the 12" x 12" beam and suspended by a steel angle iron that sat atop the bottom chord of the truss. These anchor rods were placed at the beam ends and at mid-span of each beam. The glu-lam truss had a top chord in an arch configuration with the bottom chord being flat and level. The truss actually sat slightly above the original roof system, which was left intact as much as possible, and then flashed down to the built up roof. The existing roof system consists of built up roofing over 2" x 8" rafters at 32" on-center with a 2" x 12" ceiling joists at 16" on-center below it. These members were part of the original building and appear to have been pocketed approximately 2 inches into the brick walls on either side and then supported by the 12" x 12" beam that runs longitudinally through the structure. There is no information provided in the plans that describe the glu-lam truss or its design data.

Upon visual inspection of the building, it was immediately noted that the south wall facing East Second Street has bowed out approximately 12 to 16 inches at the top of the wall at mid-point of the building. The roof was then inspected from the adjacent building to the west. In looking at the roof system the diaphragm had detached from the brick wall to the west with some joists/rafters actually coming out of the pocket recesses and a gap of 4 to 6 inches between the roof flashing/diaphragm and the brick wall had occurred at mid-span. A similar detachment between the roof diaphragm and flashing had occurred on the south wall. The north and east walls were not visible from the vantage point that was utilized. During this top side inspection it was also noted that the bracing rods utilized to stabilize the top chord of the glu-lam truss were slack and had no tension within them and the truss had actual deformation noted within the bottom chord and damage within its exterior siding.

I then entered the building from the East Second Street entrance and stayed on the main floor. Upon entering the structure, it was noted that the 12" x 12" beam had deformed and deflected up to approximately 3 feet from its original location. The 8" diameter steel pipe column at the south end of the glu-lam truss was tipped out of plumb approximately 6 inches to 1 foot with the top being south of the base. In addition, there was separation at numerous joints within the 12" x 12" beam and the cap block that was placed underneath the joints to support them. From the interior I also witnessed where the roof rafters were unseating themselves from the pockets within the brick wall on the west side of the Rec Building and it appeared that there was some detachment of the roof diaphragm and rafters from the easterly wall; however, it was not possible to determine if these were seated or if they were attached with a ledger. From the north side, damage to the concrete column that supported the glu-lam beam was noted with shear cracks occurring from the truss seat extending downward to the top of spandrel beam and possibly through the spandrel beam. It was not possible to access this north wall or any further than approximately the southerly 30 feet of the building nor the basement level for fear of collapse.

On the day of our meeting, Mr. Carpenter presented me with a series of three photographs dated July 17, 2019 that he had taken. These photographs are of the glu-lam truss and were taken after the exterior siding had been removed, which had been done by a construction crew due to the

appearance of deformation within the truss. It appears that the glu-lam truss consisted of two glu-lam beam members for the bottom chord that had what appears to be solid sawn 6" x 6" for web members. The photo also shows the angle iron bracket that was utilized to suspend the original 12" x 12" roof beam below it but more importantly the photos show that at least at this node location the vertical member was completely cracked through above and through the joint and it appears that one of the glu-lam bottom chords was also cracked with possible damage to one of the web members. Once again, it should be noted that these photos appear to have been taken at 7:46 a.m. on July 17, almost one month prior to the reports of significant roof damage. It should also be noted that you had a crew working within the Recreation Building prior to the weekend of August 17 and 18 placing support columns underneath the original 12" x 12" beam and supporting those on the 9" x 21" glu-lam beams that are within the floor system.

CONCLUSIONS

It is my professional opinion that the roof system deformation has occurred due to ongoing damage within the glu-lam truss. This damage, evidenced by your photos of July 17, indicate that members and connections within the glu-lam truss were likely compromised when you had already noticed deformation within the roof system occurring prior to the weekend of August 17 as evidenced by your temporary bracing underneath the original 12" x 12" beam. A significant rainfall event occurred on August 9 where the City of The Dalles saw approximately 3/4 of an inch of rainfall occur over a period of 20 minutes. It is my opinion that this intense rainfall ponded on the roof system possibly due to blockage within the drainage system or just due to the settlement and deformation that had already occurred. This ponding created significant additional loading on the already stressed glu-lam truss and possibly caused additional damage and/or failure. This mode of failure caused the roof to sag approximately another 3 feet vertically. This vertical deformation then created longitudinal force on the supports of the glu-lam truss; thus, pushing the 8" steel pipe column to the south and causing the south wall to bow out over the sidewalk and also likely causing the stress fractures in the concrete column at the north end of the glu-lam truss. With the significant deformation and failure of the glu-lam truss, this then allowed the original 12" x 12" roof beam to sag a similar distance and with that vertical deformation the roof and ceiling rafters that were pocketed or attached to the adjacent buildings then began to disengage.

It is my professional opinion that the structural integrity of the roof system has been compromised to the point that it has become dangerous and must be removed in a controlled fashion. Failure to do so will likely result in sudden and catastrophic collapse of the roof system with that collapse possibly also causing the north and south walls to collapse as well and also possibly doing damage to the adjacent building walls on the east and west sides of the structure. A sudden and catastrophic collapse could also cause the main floor system of the Rec Building to be damaged and/or collapse as well.

RECOMMENDATIONS

Based on this inspection, I do feel that there is imminent danger of collapse of the roof system and the resulting damage/collapse to the exterior walls and would recommend that the roof system be removed in a controlled fashion. This likely would occur first with removal or support of the glu-lam truss to remove the weight of it from the roof. Also this glu-lam truss has a high possibility of overturning due to the lack of tension within the bracing rods. This truss, if it fell

on its side uncontrolled, could be the instigator of a sudden and catastrophic collapse. Once the glu-lam truss has been supported and/or removed, bracing should then be placed under the original 12" x 12" beam at a minimum of the joint locations. The roof framing should then be removed in sections that are manageable and controllable and do not impact the adjacent structures to the east and west. During the removal process, the northerly and southerly walls should be braced to prevent collapse once the roof diaphragm is removed. At some point, the southerly wall should be demolished as well due to it being severely compromised from the longitudinal force of the glu-lam truss. The northerly wall, if properly braced, could be left in place until a proper inspection of it could be conducted. The same can be said of the main floor system of the building, which, once again, could not be inspected at this time due to the danger of collapse. It should be noted that the roof system, once again, must be supported as the demolition occurs and that the roof rafters must be disengaged and disconnected from the adjacent structures to prevent damage to said structures.

Please feel free to contact me should you have any questions concerning this report.

Sincerely,

TENNESON ENGINEERING CORPORATION
Darrin O. Eckman, P.E.

EXPIRES 12.31.19

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