PELTON ROUND BUTTE HYDROELECTRIC PROJECT
FERC PROJECT NO. 2030

MANUAL FOR BUILT RESOURCES

Portland General Electric Company and
The Confederated Tribes of Warm Springs

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Cover Photograph: Pelton Dam, c1964 (Portland General Electric Archives).
Title Page Photograph: Radial gate at the completed spillway intake, 1964 (Portland General Electric Archives).
SECTION 1

INTRODUCTION
1.1 PROJECT OVERVIEW

The following manual for the built resources at the Pelton Round Butte Hydroelectric Project is a component of the Cultural Resource Management Plan [CRMP] commissioned by Portland General Electric Company [PGE] and The Confederated Tribes of the Warm Springs Reservation of Oregon [CTWSRO]. Like the CRMP, this document was prepared as an element of the relicensing process for Federal Energy Regulatory Commission [FERC] License No. 2030. The historic significance of the Pelton Round Butte Project was evaluated in June 2008 and the project was Determined Eligible for listing on the National Register of Historic Places by the Oregon State Historic Preservation Office on September 8, 2008 (see Appendix A).

1.2 APPLICABILITY

The guidelines in this manual apply specifically to the built elements of the Pelton Round Butte Hydroelectric Project that are considered “contributing” to the historic significance of the facility as defined by the Section 106 request for Determination of Eligibility form approved by the Oregon State Historic Preservation Office in September 2008. Essentially, contributing built elements at Pelton Round Butte are those that were constructed prior to 1965 and retain integrity to their original design and character. “Built” as used here applies to constructed physical features standing within the natural landscape as well as manipulated or altered natural areas related to the project such as reservoirs.

This document also provides guidance for new construction that may have visual or other potential impact on the overall character of the Project. This might include work such as the design or location of new structures proximate to the existing historic contributing resources at the Ivan Flats complex. Issues related to water conveyance, generation, support, recreation and fish management features are documented by type. The intent here is to both define the “character-defining” features of the existing historic resources while providing guidance for any future development affecting them to minimize adverse effect.

As required by the CRMP, any proposed undertaking that is not detailed in these guidelines should be reviewed according to the process outlined in the CRMP. Review of all undertakings should occur during the planning phase so as to allow every opportunity to minimize any effect on the historic character of the Project to the greatest extent feasible.
1.3 Guidelines Format

The basic format for the manual is derived from a combination of standard formats developed by the National Park Service [NPS] and provided by the State Historic Preservation Office [SHPO], augmented by information supplied by the Advisory Council on Historic Preservation [ACHP]. To make the manual as clear as possible, much of the individual issue discussion follows the basic outline of the NPS-developed “Historic Structures Report” [HSR], a format devised to document existing conditions and repair strategies for individual built historic resources. The key element of the HSR is an organizational framework that covers specific issues in a logical order, providing practical guidance for resource management and maintenance personnel. The use of a consistent organizational system for each building type enables quick reference and easy access to information on an “as-needed” basis. The basic organization of these guidelines contains five sections, based upon the specific character of the built resources of the Pelton Round Butte Hydroelectric Project.

1. Introduction: This section, providing an overview of the guidelines document.

2. General Work: Concerning intrinsic site and landscape work such as roads, building placement, reservoir edge features, vegetation and similar issues, exclusive of typical construction-related, building-specific issues.

3. Generation and Related Structures: Concerning resources related to the actual generation of electricity and the industrial support structures associated with that function. This section includes all built water-management features such as the dams, spillways, intakes, headgates, transmission lines, and other similar elements built of concrete and steel. This section also includes structures and buildings related to fish passage, including the fish ladder and related facilities.

4. Support Structures: Concerning offices, equipment repair and storage facilities, communications facilities, and similar smaller buildings related to the operation and support functions associated with the project facilities. These buildings are generally wood frame and are of simple architectural design, generally gaining significance only through their relationship to the operation of the project.

5. Public Amenities: Concerning those resources related to the public recreation, education and day-use camping. These resources include landscapes, structures, and interpretation related elements, primarily concentrated at the Round Butte Overlook Park.
At most of the major sections (e.g., Section 3, “Generation and Industrial Related Structures”), a General Statement (e.g., 3.1) identifies the basic issues associated with that resource group. Next, individual ‘Items’ (e.g., 3.2, 3.3, etc.) cover specific features of the resources within the group, each focused on a particular aspect of the type of built resource under discussion. These Items are generally ordered from larger scale (site) to more specific issues (roofs, openings, etc.). For ease of use, these Items are divided into consistent sections, with most illustrated with examples to better inform the reader. Item divisions are as follows:

A. **Basic Description**: A simple narrative explanation of the feature.

B. **Historic Character-Defining Aspects**: Identifying the aspects of the feature that define its historic character.

C. **Alterations or Modifications Present**: A statement of “current condition,” including changes over time that either support or detract from the character-defining aspects.

D. **Goal**: The objective for all maintenance and management activities concerning this particular feature.

E. **Approach**: A general statement defining the basic approach to meet the goal. As appropriate, this section may include web links or other references to recommended products, materials or reference documents considered useful to the recommended approach.

While copies of the Manual for Built Resources may be bound and distributed as a whole volume as needed, the master copy is intended to be a loose-leaf document that allows easy update and, more importantly, ready copying and distribution. Individual resource or feature-related sheets are intended as “stand-alone” documents that can be easily used by field maintenance staff on an issue-by-issue basis. As specific solutions or materials are adopted to address particular Item goals, the guidelines should include that information (paint color, vendor sourcing, installation notes, etc.) so as to maintain consistency and inform similar work in the future. As new repair technologies or historically appropriate replacement products become available, individual elements of the guidelines should be updated and modified when needed, following the consultation and review process outline in the CRMP.
I.4 **THE TREATMENT OF HISTORIC RESOURCES**

By definition, *designated historic resources* associated with the Pelton Round Butte Hydroelectric Project, located within the boundary of the FERC-licensed activities, will be treated subject to different management and maintenance standards than non-historic resources.\(^1\) The National Park Service has developed four levels of the *Secretary of the Interior’s Standards for the Treatment of Historic Properties*. These are (1) Preserving, (2) Rehabilitating, (3) Restoring, and (4) Reconstructing (Weeks and Grimmer, 1995).

All SHPO or NPS review of activities concerning designated historic resources will find that a proposed activity either “meets the Standards” or does not. As established by the CRMP, PGE will use the Secretary’s Standards as the primary basis for its management and maintenance of historic resources at Pelton Round Butte.

In reference to the preservation of historic resources, the basic tenant of “do no harm” holds true, with the expectation that buildings and structures should be treated in a manner that retains their historic character and, when repair is required, does as little as possible to alter that historic character as is feasible. The basic “Four Step Approach” to the management of historic resources will be:

1. **IT IS BETTER TO MAINTAIN THAN TO REPAIR**
   Except for normal on-going maintenance issues or modifications required by changing uses, a well-maintained building is both less expensive to operate in the long run and more likely to retain its historic character. The costs of deferred maintenance, causing larger and more expensive problems to rectify, also include the unnecessary loss of historic materials through deterioration.

2. **DAMAGED ELEMENTS SHOULD BE REPAIRED RATHER THAN REPLACED**
   When a historic element is damaged, repair and retention is given priority over wholesale replacement of the feature so as to retain original material as possible.

3. **WHERE REPAIR IS NOT FEASIBLE, IN-KIND REPLACEMENTS THAT MATCH THE ORIGINAL IN ALL VISUAL CHARACTERISTICS WILL BE USED**
   Where historic materials are determined to be beyond salvage, or when changing uses require new work, new materials will be visually and physically compatible with historic materials.

   **IN-KIND replacement** materials are those that replicate the original element with new work that matches its scale, design, material, and all other physical and visual characteristics.

4. **BE CONSERVATIVE**
   Historic character is difficult to define. The existing quantity and quality of original materials at the site are fixed and irreplaceable. No changes that include removal of historic material will be undertaken unless determined unavoidable and necessary for continued operation. Prior to any

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\(^1\) A list of the designated resources, as detailed in the Determination of Eligibility, is included as Appendix B to this document.
project, all alternatives should be fairly considered. Strategies that allow for the retention of historic material, even when more costly or time-consuming, should be given preference if they accomplish the same final result in operation.

1.4.1 The Standards for Preservation

The majority of built resources identified at the Pelton Round Butte Hydroelectric Project remain largely “as built” (i.e., substantially unaltered or modified from the original design). As a result, most elements of Pelton Round Butte retain essential integrity and a high degree of original materials, meaning that the Secretary’s Standards for Preservation will serve as PGE’s primary guide for on-going maintenance and normal repair.

**STANDARDS FOR PRESERVATION**

*Preservation* is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project [NPS Website].

1. A property will be used as it was historically, or be given a new use that maximizes the retention of distinctive materials, features, spaces, and spatial relationships. Where a treatment and use have not been identified, a property will be protected and, if necessary, stabilized until additional work may be undertaken.

2. The historic character of a property will be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.

3. Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate, and conserve existing historic materials and features will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.

4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.

5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

6. The existing condition of historic features will be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair or limited replacement of a distinctive feature, the new material will match the old in composition, design, color, and texture.

7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

*Source: National Park Service, 1995:18*
1.4.2 The Standards for Rehabilitation

The Standards for Rehabilitation serve as the primary guide for additions to existing buildings, new construction, or any proposed changes that are not appropriately governed by the preservation standard. This includes modest system upgrades, such as changes required by new code issues such as ADA, energy or seismic retrofit.

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values [NPS Website].

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.

2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.

3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.

4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.

5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

I.5 The Management and Maintenance of Historic Resources

The normal maintenance process includes regularly scheduled maintenance and cyclical activities as well as periodic upgrade to maintain operations at an appropriate functional level. Each of these normal maintenance activities is subject to the Standards for Preservation.

*Regular maintenance* includes activities such as landscape maintenance (tree trimming, etc.), as well as less-than-monthly maintenance such as repairing winter damage, undergrowth removal, road grading, repainting minor building trim, gutter repair, touch-up painting, and similar work. In this context, maintenance by definition implies the “conservation” of existing elements by extending their useful life and responding to minor damage promptly and sensitively. An on-going maintenance program, grounded in a respect for the historic character of the resources, is the single most important factor in maintaining the significant historic character of the Pelton Round Butte Hydroelectric Project. Prompt and appropriate repair of normal wear and tear before it creates major problems both maintains the existing resources and, through familiarity, allows PGE maintenance personnel a regular opportunity to inspect and monitor buildings and provide an “early-warning” system for issues that require attention. A regular maintenance program, with appropriate oversight to assure compliance, is strongly recommended.

Over time, larger maintenance-related upgrades will also occur as the historic resources at Pelton Round Butte remain functional components of PGE’s normal operation. Such upgrades might include roof replacement for support structures, energy upgrades, the complete repainting of structures and facilities, installation of additional security fencing or monitoring devices, as well as interpretative or directional signage associated with project operations or recreational areas. Other changes to historic resources may result from compliance with FERC orders, or to safety for both the public and PGE personnel. Clearly compliance with license requirements, FERC-mandated improvements, and safety have priority. In all such situations every reasonable effort to satisfy project needs in compliance with this manual is preferred. Such activities, though not “regular” maintenance, are still subject to the Standards for Preservation and as a result should be planned and undertaken in ways that “…sustain the existing form, integrity, and materials…” of the historic property to the greatest extent feasible.

Specific guidance on various technical preservation issues is available on a wide range of topics via the “Preservation Briefs” series, published by the National Park Service. An index of this series, along with web-based copies of most of the issues, is available on line at [http://www.nps.gov/history/hps/tps/briefs/presbhom.htm](http://www.nps.gov/history/hps/tps/briefs/presbhom.htm). Where there are specific briefs related to the issues discussed in the following Sections, they are so noted, including a link to an online version of that brief when available.
1.5.1 Additions to Historic Resources

Since the initial development of generation facilities at the Pelton Round Butte Hydroelectric Project, changes in operation, technology, and society at large have resulted in minor modifications to original elements. This is particularly true for the support structures and communications facilities. Existing support, generation and water-conveyance elements may be subject to future expansion as the result of efforts to increase generation capacity, to improve fish passage, or simply to create more, or more efficient, storage, equipment repair, or office space at the project. All such additions to existing historic resources are subject to the Standards for Rehabilitation. In such cases, where an existing structure is to be expanded or modified, the Standards for Rehabilitation detail an approach that assures compatibility with the original character yet allows for a non-imitative approach and avoids the need for exact duplication of historic character. Specific guidance on massing, detailing, and other elements of this approach are covered in Item 2.2.

1.5.2 Historic Resource Removal or Demolition

The removal or demolition of any historic resource, whether as a result of changes in operation, natural disaster, compliance with another agency required mandate, or other company interests, is specifically EXCLUDED from these Management and Maintenance Guidelines. Such an activity, by definition an “Adverse Effect,” will require the standard consultation and mitigation process described in the HPMP.

1.5.3 Modifications to Non-Historic Resources

Non-historic historic resources at Pelton Round Butte are, by definition, those buildings and structures identified as “Non Contributing” in the resource identification table of the June 2008 Determination of Eligibility Request. Thirty (30) structures, 43% of the total, at Pelton Round Butte are so identified, and include virtually all of the buildings associated with the Round Butte Fish Hatchery, scattered structures at the Ivan Flats complex, the rebuilt recreation facilities at Pelton Park, and the ReReg dam powerhouse project facilities. While not themselves historic features, design and construction related to these non-historic resources may potentially impact the visual and historic setting and so affect Pelton Round Butte’s historic integrity. Please see Section 6 for additional guidance on modifications to non-historic resources in the Pelton Round Butte Hydroelectric Project.

1.5.4 New Construction within the Historic Area

Over the life of both the FERC License and the CRMP, there will almost certainly be situations in which PGE will require entirely new construction within the Project in order to

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2 The resource identification and evaluation table can be found in Appendix B to this manual.
address improved operation, fish passage, support or recreational-related needs. In such cases, though consisting of new, physically independent structures, new construction essentially creates a modification to the overall project and so is treated as such. New construction, subject to the pertinent elements of Section 2 General Work, are ultimately subject to the Standards for Rehabilitation so as to maintain the overall significant character of the Pelton Round Butte Hydroelectric project. New construction should be designed for compatibility with original resources while avoiding imitative design. It is understood and acknowledged that it is neither practical, nor desirable, for new construction to duplicate the character of historic resources. Please see Section 7 for additional guidance on new construction in the Pelton Round Butte Hydroelectric Project.

1.5.5 Cumulative Effects

Section 800.5a(1) of 36 CFR 800, as amended, provides guidance for evaluating adverse effects to historic resources and notes that “[a]dverse effect may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be further removed in distance or may be cumulative.” Cumulative effects result in incremental impacts, then when added to other past, present or future actions can result in a collective adverse effect on the identified characteristics of a historic resource. For example, a historic resource might be modified by a well-designed, fully compatible, addition but still retain a substantial connection to its historic significant design. A subsequent addition, although equally well designed and constructed, may nevertheless also impact that character with the combined result of the two individually appropriate actions nevertheless resulting in an adverse impact on historic character.

Cumulative effects at Pelton Round Butte may result from the incremental addition of new resources within a historic core, altering the visual or environmental character of individual or resource groupings without any physical modification. Effects may be more general in nature, as with viewshed impacts, yet still result from multiple modifications over time that change character. Most typically, cumulative effects result from serial alterations to a single built resource that collectively alter its original character in significant fashion, even when each alteration may have been designed according to the guidance in this manual. Cumulative effects are not always easily analyzed. Please see Section 8 for additional guidance on evaluating and avoiding cumulative effects at the Pelton Round Butte Hydroelectric Project.

1.5.6 Annual Reporting Requirement

All work undertaken in compliance with this manual is considered to meet the requirements of the Secretary of the Interior’s Standards for the Treatment of Historic Properties. Such work, documented under the Section 106 process, would be expected to yield either a Finding of No Adverse Effect or a Finding of No Effect, maintaining historic character while allowing PGE to continue to operate and upgrade its facilities. A primary benefit of this manual is in reducing
the necessity for individual project-by-project reporting and review of routine activities, allowing SHPO and PGE to streamline the process for normal maintenance and appropriately designed modifications.

To develop a detailed and accurate record of project modifications undertaken in compliance with this manual, PGE will document project activities undertaken during the prior 12 months, including any pertinent details, before-and-after photographs, and other materials as appropriate so as to provide continued up-to-date documentation of historic resources at the Pelton Round Butte Hydroelectric Project. This document will be submitted in partial compliance with Section 6.6 of the Pelton Round Butte Settlement Agreement (Exhibit J: Annual Report on Cultural Resources).

The Annual Report on project activities that involve historic built resources will be submitted to signatories of the Programmatic Agreement for comment at least 30 days prior to the scheduled annual meeting of the Cultural Resource Workgroup as required by the CRMP. Elements of the annual report for major modifications, including additions, significant upgrade, or change in use/materials involving identified historic contributing resources will include, at minimum, the following:

1. Affected resource, keyed by number per Appendix B of this document
2. Brief description of project
3. A statement of compliance with this manual, identifying the primary section that guided the work, including any key materials used
4. Project beginning and end dates
5. Photograph, showing the project as completed (digital images acceptable)

In addition to the above, any capital expenditures or non-routine maintenance activity (i.e., repainting or re-roofing *in-kind*) involving or impacting historic resources, will be documented via a simple table summary within the Annual Report and submitted to SHPO. Minimum requirements for this table include identification of the affected resource, keyed by number as per Appendix B; a brief description of the project; and the date the work was completed. This table will also document work on non-contributing resources, including any new construction or additions, so as to provide documentation for any future evaluation of cumulative effect.

### 1.5.7 Project Review Decision Matrix

The following decision matrix provides a clear delineation of the uses of this manual to assist PGE in determining the appropriate level of review and documentation for an individual project at the Pelton Round Butte Hydroelectric Project. All work that is by definition outside the manual’s authority or not otherwise covered will require direct contact and involvement between PGE and Oregon SHPO, following the standard Section 106 process.
The matrix is intended to assist in identifying proposed compliance with this manual based on the type of activity, to help assess the potential effects to historic resources from that activity and, based on that input, the required level of documentation under Section 106. Following such review, projects will either be documented by PGE for inclusion in the annual report (Section 1.5.6) or will require formal Findings of Effect and individual review by Oregon SHPO prior to construction.

Use of this matrix requires an understanding of the Section 106 process and the evaluation of effect process. All determinations of appropriate documentation requirements are to be made in consultation with both the PGE Cultural Resource Manager and a historic resources professional meeting the qualifications of the Secretary of the Interior as set forth in 36 CFR Part 61 Appendix A in the fields of history and architectural history. All projects to be reported via the Annual Report will be photo-documented both prior to and following construction, as per Section 1.5.6.

Failure to appropriately assess effect or the improper review under this manual may result in a SHPO decision to re-evaluate the Memorandum of Agreement. Repeated inappropriate evaluations or misuse of the Annual Reporting format, may ultimately lead to the individual mandatory project-by-project review of all proposed work.
Section 1: Introduction
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1.6 Historic Significance

In order to provide a basic foundation for the following manual for built resources it is important to understand the specific aspects of the Pelton Round Butte Hydroelectric Project that resulted in its having been Determined Eligible for listing on the National Register of Historic Places in 2008.

Planning for Pelton Round Butte began after World War II. Actual construction of the project began only after a contentious and lengthy process that encompassed significant legal and social issues including environmental concerns, the relationship between state and federal government and the growing influence of tribal governments as sovereign nations within the United States. As detailed in the June 2008 Request for Determination of Eligibility, “…the planning and construction process at Pelton Round Butte spanned more than a decade of Oregon’s post-WWII history, culminating in what is still considered a landmark US Supreme Court ruling regarding Federal authority” (PGE, 2008:33).

Construction of the project is significant not only for its association with Federal law, but for its impacts on the local level in transforming the economy of Madras and Jefferson County, Oregon. Before the completion of the Pelton Dam in 1958, Jefferson County was a sparsely populated, largely agricultural area with little government service or amenity beyond its striking setting. The influx of workers and investment, both by PGE and other private entities, created a near boom climate and increased economic strength that supported new public infrastructures including a community hospital and, in partnership with Deschutes County, a community college district. Area population swelled during construction and while some new residents left upon the completion of Round Butte in 1965, Jefferson County’s population rose sharply from the 1950s through the mid-1960s as the result of the project’s construction and operational needs.

From a design standpoint, the Pelton Round Butte Project gains significant character from its relation to the Deschutes River Canyon, relying in places on natural colors and natural-appearing materials that blend into or compliment the surrounding landscape. Maintaining this design relationship, both for new and existing project elements, is an important aspect of the project’s historic integrity. As detailed in the following Items, continued use of natural colors, materials, and sensitive siting, particularly for generation-related and water-conveyance features, is of high importance at Pelton Round Butte.

The formal request for Determination of Eligibility for the Pelton Round Butte Hydroelectric Project identified 69 individual “built” elements at the Project, the majority of which (39, or 57% of the total) were completed prior to 1965 and so are considered “contributing” elements to its historic significance. The majority of the non-contributing built resources (i.e., those built after 1965), are related to the construction of the Round Butte Fish Hatchery, the Re-
Regulating Powerhouse, or support structures at the Ivan Flats Complex. Virtually all generation or water-conveyance features associated with the initial development period, as well as the majority of the original Bechtel-built construction yard at the Ivan Flats Complex, collectively accounting for all 39 contributing resources, retain very high integrity to their original design and function.
SECTION 2
GENERAL WORK
2.1 GENERAL WORK: CHARACTER DEFINITION

A. BASIC DESCRIPTION
The built resources of the Pelton Round Butte Hydroelectric Project exist within the 6,000-acre FERC-licensed project boundary, the majority of which is owned by the United States Government, primarily within the Deschutes National Forest. The project is located within or immediately adjacent to the Deschutes River Canyon, cutting through the western edge of the Columbia Plateau. The character of the landscape, where the river channel is flanked by steep walls inset into the plateau that rise at some points up to 600 meters, is a key component of the overall project character. Effectively, this results in much of the Pelton Round Butte Project being a visually “closed” system, with all vistas existing only within the canyon, meaning generally within the project itself, as river-level viewpoint or overlooks from project components built at the plateau level.

B. HISTORIC CHARACTER-DEFINING ASPECTS
Built elements at Pelton Round Butte are generally of simple, industrial character, relying upon natural-tone materials in unassuming designs. With few exceptions built elements exhibit little or no decorative features, conveying a utilitarian style that creates enclosed space or serves a specific function without obvious “design” elements. The massive scale, in the case of generation-related or water-conveyance features, is significantly mitigated by the use of natural colors that substantially blend into the surrounding canyon landscape. Above grade appurtenances (mechanical equipment, air housings, cranes, etc.) are in most cases of darker colors and serve as “accent” elements.

As a modified run-of-the-river project set almost entirely within the Deschutes River canyon, water resources appear largely natural in character with little or no edge definition except at locations immediately abutting the dams. Spillways, fish ladders, and related up- and downstream elements to a large extent blend into the landscape, through use of materials, siting, or both. General character-defining aspects of all built elements at the Pelton Round Butte Hydroelectric Project include:

- Use of natural materials (rock, concrete, galvanized metals)
- Use of natural colors (tans, grays, browns)
- Use of accent colors for superstructure elements (zinc primers, red oxide, dark green)
C. Alterations or Modifications Present
Taken as a whole, very little modification to the general character of the original elements at Pelton Round Butte has occurred. Minor modifications do not seriously affect the overall compatibility of the project.

D. Goal
Maintain and retain the general and specific historic character of the Pelton Round Butte Hydroelectric Project in a manner that respects its historic association while allowing for its continued efficient operation.

E. Approach
Any proposed modification to existing structures or landscape elements at Pelton Round Butte should be undertaken in a manner that minimizes change or the introduction of new elements that visually impact or alter the existing character. Approaches that continue or add to existing elements are preferred over the creation of entirely new elements whenever possible. In addition to materials and construction, the spatial relationships between elements, including mass and scale, should be carefully considered to retain the existing character to the greatest extent feasible. As feasible, massing should be managed so that new structures are visually secondary to original elements.

Where modifications are required by Project operations or other goals, new work should utilize natural colored, utilitarian materials and treatments that minimize visual intrusion consistent with the original project character. To the greatest extent feasible, new work should be located with respect to existing “nodes” of built resources, respecting the clustered approach to visible built resources within the project boundaries. Construction of entirely new, isolated structures should only occur when project functionality demands that they be physically separate from existing project facilities. Construction of new, linear features (fish ladders, transmission or communication lines) should, to the greatest extent possible, follow existing corridors.

Care in matching existing character through color and materials is considered essential to maintaining the historic character of Pelton Round Butte. This can largely be accomplished through the consistent use of traditional industrial materials including concrete and painted steel.

The introduction of “designed” or “stylized” elements is not appropriate or consistent with the original character. The introduction of new colors, especially non-neutral or bright colors that create contrast with the surrounding landscape, should be avoided to the greatest extent possible.

Where new technology or changes in operation result in the replacement or abandonment of original historic features, efforts to retain those features as non-functional elements of the
project are preferred to the extent feasible. Examples of such “abandonment-in-place” include portions of the Round Butte Fish Ladder, retained on the project but largely non-functional, as well as some elements associated with the Round Butte fish tram, a crane-like structure that while part of the original design proved inadequate and was abandoned. As future improvements in fish management or water conveyance result in new methods of operation at Pelton Round Butte, efforts to retain earlier features on site, where safety and space allow, document the history of the operation and support an increased understanding of the development.
2.2 **General Work: Building Massing**

**A. Basic Description**

Structures throughout the Pelton Round Butte project tend toward discrete volumes of modest scale, arrayed in compounds (as at Ivan Flats) or within larger industrial sites (as at Round Butte) to provide required operations, office, storage and maintenance uses. Historically these have been largely single purpose structures related to fish management, maintenance/construction or other uses. This Item concerns building massing, the combination of size, shape, footprint and overall visual character of structure particularly as it concerns additions to existing historic volumes. Many of these same approaches work equally well for new construction within existing building areas. As noted in Item 1.5.1, additions to historic resources are expected and will be consistent with historic character when they follow the guidelines in this manual and utilize materials and treatments outlined in Sections 3 and 4. **New construction**, whether in addition to or replacement of existing historic structures is strongly encouraged to follow these same recommendations, especially when such new construction occurs within an established historic building area (refer to Section 7, New Construction).

**B. Character-defining aspects**

Discrete, often single-use volumes house required uses in compounds or multiple-building arrays.

**C. Alterations or Modifications Present**

N/A

**D. Goal**

To maintain or continue the historic character of the individual resources while expanding or replacing existing structures to provide efficient operation consistent with the historic industrial uses of the project.

**E. Approach**

When required, additions to historic resources shall to the extent feasible be clearly differentiated and subservient to the original volume. Additions to the rear of the historic volumes or otherwise opposite and away from public viewpoints are highly recommended. Transitions between original and new work will be expressed, through retention of small “wing walls,” offset volumes, in-filled openings, changes in materials and similar techniques (see attached details).
Design solutions that incorporate physical evidence or built “hints” of the development pattern are strongly encouraged where possible. Examples of such work might include a visible “seam” in the floor where new meets old, engaged columns and other features. There will be no effort to seamlessly blend new and old work into a single, uniform, or combined visual volume.

**Examples:**

![Diagram of Historic Bldg Addn](image)

- Remove Wall
- Retain Small "Wing," Offset Addn Volume

**PLAN VIEW**

In the upper plan the entire original elevation is removed for the addition, obscuring the historic pattern of growth. In the lower plan (preferred) small wings or returns remain from the original exterior (less than 1 foot) on one or both sides and, if possible, are also visible on the interior, at ceiling level. Combined with a slightly narrower addition footprint and changes in material, overall height, or construction make the addition smaller in scale and visually “subservient” to the original volume, providing clear physical evidence of the modification.
In the upper plan the addition is matched to the height of the original building while in the lower plan (preferred) the addition is reduced in height to “read” as an addition. Exaggerated in the drawing, the separation between new and old work can be of modest dimension while still achieving the desired goal.

A similar “stepped” or offset approach can additionally be of value in reducing the visual impact of entirely new construction. The following examples, in both plan and elevation views, give simple methods for reducing the visual impact of larger volumes by dividing or shifting the mass into smaller component elements that still meet the required space needs. It should be stressed that these approaches are only necessary when the proposed scale is significantly larger than the existing historic structures.
In plan view a simple rectangular footprint can be shifted or offset, or given an appended projection to break the mass. In elevation, a center volume can have a raised ridge, or even be turned 90-degrees to create a front-facing gable volume with attached subservient wings.

When a historic building is serially modified through multiple additions over time, several factors should be considered, beginning with the understanding that some additions to a historic structure may, as per the Secretary’s Standard for Rehabilitation No. 4, themselves achieve significance. Subsequent additions should, when possible, retain and respect the “additive” nature of the project to accurately reflect the passage of time and development history where possible. Removal of non-historic additions for the construction of a single, larger, additive volume must nevertheless be carefully scaled to avoid overwhelming the original, historic structures. In general, all additions should be of noticeably smaller scale than the original volume. Massive additions that reduce the visual prominence of the original are outside the purview of this manual and will normally result in a Finding of Adverse Effect.
In the above graphic, the top view shows a small addition that supports the visual prominence of the original historic volume. In the bottom view a significantly larger addition to the same building overwhelms the original volume and, despite the use of appropriate materials and other guidance in this manual regarding design, still results in an adverse effect to the historic building.

In the above graphic two additions, built separately over a span of time, augment the original volume in diminishing scale, retaining the visual prominence of the original and also documenting the serial development of the resource over time.
2.3 **General Work: Water Features**

**A. Basic Description**
Formed behind the various project dams, the reservoirs of the Pelton Round Butte Project are considered “built” resources in that they are not natural elements and were “constructed” as a part of the original hydroelectric development. Certainly Lake Billy Chinook, Lake Simtustus and the Reregulating Reservoir, as the three features are known, created new visual character along with increased recreational opportunities. All three reservoirs are historic contributing elements within the Project and as such have been Determined Eligible, contributing to the historic significance of the Pelton Round Butte Hydroelectric Project. Each reservoir holds water for project use behind its associated dam while providing important recreational opportunities for the public.

**B. Historic Character-Defining Aspects**
Water features of the Pelton Round Butte project have little vertical character, appearing as flat water bodies contained within a largely “unimproved” and natural appearing shoreline, where little or no vegetation meets the water line. Built vertical elements (intakes, spillway gates, cranes, etc.) located within the reservoirs are entirely at their edges, proximate to the dams, and are of comparatively modest size, materials, and design, reducing visual interruption. Other than the dams themselves, which project above the waterline, and the associated built elements associated with the dam and the project’s recreational features, few obviously “built” elements interrupt the water’s edge.

**C. Alterations or Modifications Present**
Few modifications to the visible water features of Pelton Round Butte are evident and those that have occurred are generally consistent with the original character. Changes related to the reconstruction of the project recreational areas (all considered non-historic) do not seriously alter the overall character of the historic reservoirs.

**D. Goal**
To retain and continue the existing flat-water character and natural-edge definition of the Pelton Round Butte reservoirs, minimizing any vertical intrusions or shoreline construction outside of existing recreational areas so as to avoid any disruption to that that character.
E. Approach

Modifications will be designed to reflect the existing conditions of the resource and reduce impact to the original character to the greatest extent feasible. Where new construction or modification is required, visual interruption will be minimized through creative placement to take advantage of topography, sightlines from publicly accessible locations, or built in proximity to existing features and structures as appropriate so as to concentrate disruptions in focused locations. Materials and colors for new work will continue the natural and/or utilitarian character of existing elements.

Modifications that alter the edge or surfaces of existing water features should be minimized to the extent feasible. Where any such modification is required, it should be built of compatible natural-colored, utilitarian materials.

Features that include a visible element above the waterline should be designed to be “transparent” to the extent feasible by utilizing narrow profile supporting members, light colors, and surface treatments that reduce visual impact. Placement near, or expansion of, existing vertical elements is preferred and recommended over the introduction of new, discrete, elements.

Where other project requirements necessitate new and isolated construction, efforts will be made to place them with respect to existing elements or to take advantage of existing natural formations that will serve to mask the change. Where no flexibility for placement exists, new work shall be undertaken using natural toned, utilitarian materials. Designs that minimize above-waterline impacts either through minimal height, transparency, or the use carefully selected colors are recommended.
2.4 General Work: Travel Corridors

A. Basic Description
Connecting the various elements of the project, travel corridors provide vehicular access between project facilities and, to a lesser degree, public access to recreational facilities.

Access roads wind down from the plateau to river level or project sites, with additional corridors that run parallel to the river along the eastern bank, connecting, via NW Pelton Dam Road, to Oregon Highway 26 (NW Warm Springs Hwy) and NW Dizney Lane. This Item concerns internal access roads, as owned and maintained by the licensee, only. Limited access control points are generally new, with card readers and swinging or other automatic gates of chain link or steel.

B. Historic Character-Defining Aspects
Asphalt-paved linear corridors, in general, slope down the canyon walls. Many were originally developed during project construction. Corridors generally lack any sharp edge defining feature, utilizing existing embankments, and so blending into the landscape, retaining a roughly “natural” appearance as opposed to a sharp-edged or formal character. Key aspects are:

- Asphalt wear surfaces
- Rolled edges, lack of “curbs”
- Minimal drainage swales or other designed elements

C. Alterations or Modifications Present
Minor changes related to on-going maintenance, such as repaving, have generally been in-kind with little visual impact. Access gates are non-original but do not seriously alter original character.

D. Goal
To maintain the existing character and avoid any further visual or physical intrusion in the viewshed as the result of future change or modifications.
E. APPROACH
Maintain existing linear corridors, expanding those where required, rather than developing new or additional corridors.

To the greatest extent feasible, internal travel corridors should be of simple and modest character, continuing the standardized use of asphalt wear surfaces. Any new corridors should, to the extent feasible, match the existing in road width, wear surface materials and all other visual characteristics. Where improved drainage must be provided, the use of rolled gutters or isolated drains or sumps are strongly recommended over continuous curbs, gutters, or any other form of linear hard-edge design. Buried culverts with small collection areas are acceptable and should be designed to minimize visual impacts. Any new or expanded corridors should be designed to minimize impact to adjacent topography, vegetation, and natural features to the extent possible.
2.5 **General Work: Guard Rails**

A. **Basic Description**

Guard rails, most of “W-beam” design, line downhill portions of access roads and entry points to project facilities. Painted and unpainted railings are mounted on painted and unpainted/pressure treated 8 x 8 wood posts.

Round, welded pipe railings lining other vehicular points, particularly the crest of the project dams (which function partially as bridges across the river), are covered under Item 3.5.

B. **Historic Character-Defining Aspects**

Available images of the Pelton Round Butte project document few crash rails lining project roadways or access roads, leading to the assumption that all, or at least most, existing railings are non-historic later modifications.

C. **Alterations or Modifications Present**

At least two generations of crash rails line the project roadways, all assumed non-original. Earlier versions are painted, mounted on white-painted wood standards. More recently (c. 2007) unpainted/natural steel rails have been installed in several locations in compliance with the interest of other resource areas (aesthetics). These second generation installations have natural pressure treated posts, currently a pale green tone, that stand out from the landscape visually but should weather to a dull pale gray over time. More recent installations employ white painted W-beam on 6” diameter concrete post supports, which exist in both painted (white) and natural gray variants.

D. **Goal**

To standardize these features at each project node though consistent design and treatment that is compatible with the original character of the project while providing appropriate protection.
E. Approach

As possible, during normal required maintenance, all guard rails through the project should be standardized to reflect a consistent design in either the natural or painted configurations. If the natural/pressure treated design is chosen, care to reduce cement splash during installation or the use of grey-tone stains over the pressure treatment would allow these features to better blend with the surrounding landscape and reduce visual impact.

Guard rails, located on both public and private travel corridors throughout the project, represent a key element in establishing the character of Pelton Round Butte as a significant industrial development. The continuation of the “node” specific variations for guard rail design (where one form of rail is used at Pelton, another at Round Butte or Ivan Flats, etc.) is considered appropriate and supports the development history of the project by maintaining the individual character of its multiple components.

Standard, near ubiquitous, w-beam is available from multiple vendors in galvanized, treated, and untreated iron sections. “W-beam” is the common name for the most widely used highway barrier, (AASHTO designation G4(1S) or SGR-04 in the Standardized Highway Barrier Hardware Guide).3

2.6 General Work: Transmission Corridors

A. Basic Description
Internal transmission corridors connect generation facilities to the Round Butte Switchyard and provide for project power consumption. The Pelton-Round Butte Transmission Line is built of standard “H” poles in wood and was counted as a contributing element of the project.

B. Historic Character-Defining Aspects
Built as part of original construction, transmission corridors are simple linear corridors with reduced or no ground cover. Overhead towers, typically visible from project or public roadways, create a lengthy visual feature that conveys the essential function of the project—the generation and transmission of electricity from one point to another.

Key visual elements include:
- Dual and single wood poles
- H Type, with X-Cross supports

C. Alterations or Modifications Present
Transmission lines have logically required some maintenance, including pole replacement, but do not appear to evidence any significant modifications from the original design or character.

D. Goal
To retain the existing character and, during any future modification or upgrade, strive to maintain historic character through the use of compatible materials and design.

E. Approach
Existing corridors should be maintained, with modifications required to meet project upgrades or new technologies installed within them as possible. Pole replacements should, to the extent feasible, duplicate the existing in materials and design. Where realignments are needed, the continuation of existing character through matched poles (material, design, height) will maintain character. Individual installation of new or replacement poles that do not match the existing designs is strongly discouraged.
2.7 **General Work: Project Lighting**

A. **Basic Description**
Project facilities are illuminated with a small selection of metal overhead light poles, lining internal vehicle corridors, dam/powerhouse locations and elsewhere. In general these are steel or aluminum mono-poles, with “cobra” type light sources. Elements are both painted or in natural aluminum, and are mounted on raised concrete bases or direct mounted into grade.

B. **Historic Character-Defining Aspects**
Universally of stock, manufactured elements, the project lighting is simple, utilitarian and consistent with the industrial character of the facilities.

Key visual elements include:

- SINGLE round or hexagonal poles
- SINGLE cobra-type head
- Arched horizontal support
- Site-specific treatments reflect project development history

C. **Alterations or Modifications Present**
Several light standards, especially at Round Butte Dam, appear to be recent installations that generally mimic the basic pattern. Standards at Ivan Flats are Union Metal-brand, all painted green; at Pelton/Pelton ReReg they are natural galvanized; and at Round Butte they are predominantly painted Red Oxide/Red Primer, in each case assumed to be original coloring. Luminaires and light arms at Ivan Flats appear to be later modifications, in galvanized with “cobra” type heads. Some poles at Pelton Dam have been modified with the installation of “box” halogen type heads. Lighting associated with new construction, at the Pelton Project Office (Site 12.79) are of non-historic designs.

D. **Goal**
To retain existing character and, during any future modification or upgrade, strive to continue historic character through the use of compatible materials and design.
E. Approach

Existing outdoor lighting should be maintained and retained to reflect historic character, including repainting in site-specific colors. Where possible, non-historic modifications should be replaced with more compatible designs during normal maintenance activities. Additional lighting is required by project modifications, attempts should be made to duplicate the existing lighting at the site in all visual characteristics, similar to recent installations at Round Butte Dam. A similar approach is appropriate project-wide, reflecting the individualized designs of each project area.

Upgrades required for improved energy efficiency, night sky, or other issues should be undertaken in a manner as consistent with the historic design as is feasible. In no situation should new lighting forms be introduced that are visually dissimilar from the historic pattern unless no alternative is available that is appropriate for other project goals. This includes either modern “box” light standards as well as “historic” globe or cast-iron lighting, both of which are in conflict with the general mid-century industrial character of the Pelton Round Butte Project. Where non-consistent installations are mandated, they should be finished or otherwise treated (powder-coated) to reflect the original color schemes and so better blend with the historic designs.

As noted above, lighting at the Ivan Flats area is marked as having been manufactured by Union Metal, one of the nation’s primary manufacturers of pole lighting. Links to Union Metal as well as other lighting vendors that manufacture designs comparable to those of the project are:

http://www.millerberndmfg.com/

http://www.unionmetal.com: Union Metal fabricates a variety of pole and luminaire options. Although the exact design that was used at Ivan Flats is not part of the current project line, it may be available on special order.

In installing any new light standards within the Pelton Round Butte area it is critical to recognize the area’s historic, industrial design and avoid any effort to install overly “historic” or decorative features that are incompatible with the essentially utilitarian fixtures used during the development period. Use of nostalgia-based globes or similar designs is not appropriate. Recommended designs, by project site, should match the following characteristics to the greatest extent possible:
IVAN FLATS:
Round, tapered posts with a square base support a cantilevered “cobra” type head mounted from a simple arm located BELOW the post top. Use of a finial at the top, if available, is preferred. A suggested product is available from NEX, Model NEMDO101, with a simplified light arm.

See product information at:
http://www.outdoorlightingn.com/pro/Sidewalk-lamp-pole-NEMD01-1.htm

ROUND BUTTE DAM:
Round Butte, built in the 1960s, demonstrates the design of the “modern” areas through round-section light poles that gracefully sweep to a cobra head luminaire, integrating the pole and the lighting arm into a single unit. This design element is the KEY differentiation between Round Butte and the other facilities at the project and so any new or replacement lighting should strive to continue the single-unit approach, as opposed to designs installed in recent years which, while largely similar in appearance, nevertheless retain a separate, attached arm. Original lighting at Round Butte is painted in red oxide, where new fixtures have been installed in natural aluminum or galvanized. This differentiation is appropriate and should continue, while still maintaining consistency in lighting form and design. A suggested product for use at Round Butte is available from Miller Bend, Mond TSLP-LD.


PELTON DAM:
Existing lighting at Pelton is of galvanized poles with galvanized arms and cobra heads, similar. Key elements, in addition to the section, material and basic design, are the small details at the arm/post connection. Similar to the now modified poles at Ivan Flats, a suggested product is available from NEX, Model NEMDO101, with a simplified light arm.
PELTON RE-REG DAM:
Lighting at the ReReg, of uncertain age, is similar to that at Pelton, but of aluminum poles with a separate, angled, light arm and cobra heads. Multiple vendors for similar product are available.
2.8 GENERAL WORK: VIEWSHEDS

A. BASIC DESCRIPTION

The Deschutes River Canyon setting of the Pelton Round Butte Hydroelectric Project is a key element in defining its historic character. Views of the project, both internally and externally, play an important role in defining historic character and should, to the degree feasible, be protected from adverse effects from any future project modifications.

External approaches of the project are significantly limited by the topography of the Deschutes River Canyon, which is defined by the narrow river channel inset into the plateau and so is essentially invisible from almost any external vantage point. Visible elements associated with the project from public roadways or generally available viewpoints are largely limited to transmission corridors.

Internal public viewsheds, meaning those entirely located within the canyon, are generally limited to narrow riverscapes from various recreational uses, project-related public amenities (i.e., the Round Butte Overlook, Pelton Park, etc.) or the public travel corridors that provide access to them.

Internal project viewsheds, meaning those from within the project looking outward or past project features, are not accessible to the public and so it is more difficult to assess impacts from any modification to their existing qualities.

B. HISTORIC CHARACTER-DEFINING ASPECTS

In general, the key aspects of most viewsheds related to the project are a combination of natural colors/topography and linearity, as defined by the relatively narrow vistas afforded within the river canyon walls. Project views may be of import either for their consistency with those natural qualities, as in the long, linear features associated with historic fish passage resources (i.e., the North Fork Fish Ladder) that somewhat mimic that linear quality and neutral coloration or they may be contradictory, where the construction by definition modified that character, as in the vertical “wall” looking upstream at either the Pelton or Round Butte dams, that cross the river channel. Alternate views of contradictory resources, from above, result from a large industrial character inserted into the landscape, providing a sense of scale.
and, to a degree, counterpoint that enhances the character of both the natural and built view qualities of the scene.

Roadways, both internal (private) and public, provide the primary access to various project viewsheds while additionally playing a major visual role in project character. Long, paved, guard-railed corridors, as documented in Section 2.5, traverse the landscape and serve as visual pathways to project and to some degree help convey and interpret its scale.

C. ALTERATIONS OR MODIFICATIONS PRESENT
Modifications to viewsheds are generally considered to consist of major construction or change to character as it existed at the end of the period of significance, or after 1965. Construction of the powerhouse at the ReReg dam, the expanded fish management facilities at Round Butte, and the new Pelton Round Butte Project Office at Ivan Flats are the only potential alterations to the viewshed although none are considered to be substantially out of character or detrimental to the post-construction project character.

D. GOAL
To maintain and respect existing viewshed character during the planning and construction of project modifications, additions and alterations.

E. APPROACH
The general guidance under specific resource issues addressed in this manual, in terms of massing for building additions and new constructions, provides information on the key concepts of project character that affect viewsheds. Assessing the visual impact of new construction from key points in the surrounding landscapes, particularly publicly accessible roadways and points of entry, is the key determinate in assessing impact to viewshed from any proposed project. Where large scale modifications are proposed, as in new or replacement construction that represents an increased development presence (visual impact) in a resource node, computer generated mockups or photo studies that demonstrate visual impacts are recommended.

As always, the use of similar scale volumes, compatible forms, materials and sensitive placement plays an important role in minimizing impacts to visual character and viewsheds.
SECTION 3

GENERATION AND INDUSTRIAL RELATED STRUCTURES
3.1 General Statement

The resources of the Pelton Round Butte Hydroelectric Project that are directly related to the actual process of hydroelectric generation, the dams and their various components, the powerhouses, and the switchyard, for the most part exhibit very little modification from their original construction and design. These resources retain high integrity, effectively conveying their significance, and as a result almost all have been identified as Historic Contributing resources within the Determination of Eligibility Request. Related features covered under this section, primarily support and fish-related resources, as might be expected, have been subject to a somewhat higher degree of modification that includes the outright abandonment or removal of some of the original design elements and the construction of entirely new resources that are not considered historic. These resources, whether modified or altered original features or entirely new construction, include mixed historic and non-historic resources, most of which still attain a general compatibility in historic character.

Overall, as the result of a generally sensitive approach to maintenance and modification, the generation related resources of the Pelton Round Butte Project, at all three generation nodes (Pelton, Round Butte and Pelton ReReg) effectively convey the project’s history and original character. The single greatest modification in this area, the 1982 construction of a new powerhouse at the Pelton Reregulating Dam, while not historic, is nevertheless a generally compatible modification from a visual and functional standpoint that almost by definition supports the Criterion A significance of the Pelton Round Butte Project and its effect on the economic vitality of The Confederated Tribes of the Warm Springs Reservation, now a FERC joint-licensee with PGE.

Built in the early 1960s of common utilitarian materials and forms, the historic character of most of the generation-related facilities at Pelton Round Butte is largely industrial. The thin arch concrete Pelton Dam and the concrete at the Regulating Dam are each typical of the original mid-1950s construction era. The massive rock-filled, and rock-faced, Round Butte Dam is also of significance, though for its associations, not its specific engineering or design features. These features are as they are, and much of their significance stems from their construction and their on-going function. Nothing in this manual is intended to imply that these resources should, in general, be improved or modified to become something visually different than what they already are. Instead, the over-riding goal is to provide guidance as to how these structures can continue to convey their historic character and maintain their significant association with the project’s historic development while, at the same time, providing economically efficient function as they were intended. Improvements required to upgrade or modify these resources so as to allow their continued operation to current standards are expected and entirely appropriate.
The intent of this Section is to provide guidance to assure that any future modifications to generation related resources at Pelton Round Butte are as sensitive to and compatible with the project’s historic character as is feasible. In general, work that continues the use of simple utilitarian materials, for any modifications, improvements or additions that are mandated by changes in operation or technology, provide the single best approach to maintaining their original character under the Standard for Preservation.
3.2 **Dams, Spillways & Tailraces**

**A. Basic Description**
Large poured concrete or earth/rock-faced dams hold back water to form reservoirs. Spillway portions are gated with movable steel elements and steel superstructures to allow controlled water release into concrete-lined aprons or similar channels to direct flow downriver. All resources are natural toned (grays/browns) and from upstream create little visual impact other than the superstructure elements that rise above water line. Downstream faces, reflecting the full dam height, tend toward imposing elements in the landscape.

**B. Historic Character-Defining Aspects**
Massive scale, industrial, and functional use of materials in largely rectilinear, unadorned forms with straight edges, corners, and no other relief. Poured concrete features can retain evidence of formwork. Key aspects are:

- Large scale
- Concrete or natural rock materials
- Neutral colors
- Sharp (flat) edge treatments
- Lack of “decoration” or adornment

Painted metal elements associated with spillway gates are, at Round Butte, faded safety orange or a pale red oxide, while at Pelton such features are painted green. Historic images and minimal physical inspection indicate each of these varied color treatments to have been original to their respective facility. Character defining features associated with spillways and spillway gates are:
• Massive concrete forms
• Painted, multi-component, steel gates of I and H beams or sheet steel
• Complex superstructures or mechanical features related to operation. The key character defining aspect of these elements is the comparatively modest scale of the individual parts in relation to the overall massive scale of the whole.

C. Alterations or Modifications Present
Neither Pelton nor Round Butte has been seriously altered from original construction. The Pelton Reregulating Dam has been modified by the construction of the ReReg Powerhouse on its western side. This project involved the demolition and removal of that portion of the original concrete graving dam and replacement with the concrete powerhouse and construction of the Reregulating Tailrace, neither of which are contributing features. Spillways show minimal evidence of alteration. Some additive elements (superstructure changes, modified equipment “houses,” etc.) have been added or modified, but none impact historic character.

D. Goal
Retain and respect the original character while providing for on-going and improved operation as required.

E. Approach
All repairs will be in-kind, using appropriate materials that continue the existing character with minimal visual change. Where new construction or modification requires alteration to original features, visual impact will be mitigated through use of comparable materials (concrete, rock), scale, and careful siting to maintain existing character. Construction of new features in proximity to historic ones will, to the extent feasible, strive to match scale, massing, materials, and all other visual qualities so as to minimize the introduction of discordant changes that detract from the overall character and appearance of the resource.

Retention of variation in paint schemes at Pelton and Round Butte is considered elemental in retention of historic character. As a result, efforts to standardize treatments into a unified, project-wide scheme are strongly discouraged and outside the recommendations of this
Careful paint analysis to determine original color tones to the extent feasible should guide any maintenance of painted metal features or the installation of any new work that is in close proximity to those features.

Compatible materials appropriate for use in modification, addition, or new construction in visual or physical proximity to historic resources include but are not necessarily limited to the following:

- Natural (grey-tone) concrete, poured-in-place or tilt-up forms
- Galvanized or painted sheet metal or other stock (angle-iron, bar stock, etc.)
- Grey-toned powder-coated metal (other colors may appropriate on a site-by-site basis, matched to existing character (i.e., green at Pelton, Iron Oxide red at Round Butte)
- Stainless Steel
- PVC and similar products for piping, etc., in neutral tones

In general, the use of residential designs and materials (stucco, T-111, log forms, brick) is not considered compatible with the generation features at Pelton Round Butte and is discouraged. Use of such materials, particularly in highly visible locations that disrupts the existing character may result in an Adverse Effect on historic resources.

Entirely new construction need not copy or imitate historic elements but should be treated in a compatible fashion both in terms of materials and, to the extent feasible, color. This may rely upon simple duplication of paint schemes, or it may rely upon the use of galvanized, unpainted, steel or the introduction of some new color. Color choice should be carefully considered, either to reduce visual impact (retaining primary visual focus on the historic elements) through use of neutral gray or other light tones, or it may rely upon a related shade that compliments the original color scheme (i.e., a lighter green or some shade of red oxide).

Test samples of any non-matched paint colors should be painted prior and viewed from a variety of viewpoints and distances prior to full scale painting to assure the desired effect is being accomplished.
3.3 **In-water Structures**

**A. Basic Description**

In-water structures associated with the dams include intake and control structures as well as project elements related to fish passage.

In-water features are generally smaller, metal and concrete structures that are located entirely within or at the edge of reservoirs, controlling water flow. These features, by design, are completely or substantially located below the average waterline. Some have no visual impact whatsoever (as in power tunnels or penstocks) and most others by the nature of their design, have only minimal visual impact on the project’s overall character.

**B. Historic Character-Defining Aspects**

Generally appearing as vertical elements projecting above the waterline and built of concrete and painted steel, these features, while of industrial scale, are largely transparent in character. Superstructures made of multiple smaller-dimensioned members avoid a “solid” character and allow segmented views of the landscape beyond and through the feature. Key aspects are:

- Concrete and steel construction
- Generally light colored exterior treatment
- Transparent “assembled” design of multiple small dimension members

**C. Alterations or Modifications Present**

Minor modifications or changes do not detract from essential character. The Selective Water Withdrawal Tower, completed in 2009, modifies the intake structure at Round Butte to provide for improved fish collection while managing water flows for power generation. A mammoth, one-of-a-kind project, the Tower above waterline follows the basic design of the Intake, utilizing multiple elements. While of significantly larger scale, it does not adversely impact the overall character of the Round Butte facility.
D. **Goal**
To maintain the character defining aspects of all features to the highest degree feasible.

E. **Approach**
In-water features add to character largely through providing a sense of scale in comparison to the proximate dams. While themselves of massive, industrial scale, in-water features appear from a distance (such as the Round Butte Overlook Park) to be of comparatively modest scale, reinforcing the massiveness of the proximate dams and other features. This “modest” character is reinforced by the generally small-element and transparent construction of the above-waterline portions of the in-water features.

Where modifications are required by changes in operations or improved technologies, designs that utilize multiple small elements are favored over large-scale modifications, particularly when doing so obscures existing character or reduces “transparency” through the feature. This approach, in essence, was incorporated into the design of the Selective Water Withdrawal tower (shown at right), where the majority of the structure is hidden almost entirely below waterline (and further will rise and fall, with the water level, maintaining a largely static visual impact above waterline).

Existing paint colors for above-waterline steel elements should follow the approach detailed in Section 3.2(E).
3.4 Powerhouses

A. Basic Description
Historic powerhouses, predominately of concrete, are visually characterized by the complex systems of the generation units, associated switchyards or transmission nodes, and the machinery required for operation and maintenance.

The outdoor powerhouse at Pelton consists of a large concrete deck pad with above-ground turbine housings, transformers, and support equipment augmented by multi-floor, below ground, control and equipment areas.

The semi-outdoor generating equipment at Round Butte consists of elements mounted outdoors, on the roof of the powerhouse, with all the generation equipment actually located inside the building, but still accessible via the outdoor, overhead crane. This Section predominately deals with exterior character of these features, as opposed to interior.

The powerhouse at the Pelton Regulating Dam is of differing design, reflecting its independent, later construction in 1982. While non-historic, the ReReg Powerhouse and dam clearly have their own, independent, character. This non-standardized approach is most clearly demonstrated through the use of site-specific paint schemes that emphasize the individual character of the three generation nodes within the project.

B. Historic Character-Defining Aspects
From the exterior, the visual character of the powerhouse is almost entirely created by the superstructure elements, multiple painted metal elements that rise from the massive deck levels.
Concrete decks and superstructure elements at powerhouse locations create an irregular, multi-part character that avoids any single focal point:

- Concrete flat surfaces
- Poured-in-place concrete “walls” with obvious form marks
- Surface applied systems (drainage, water, electrical, communication) set in linear fashion that follows primary building forms
- Steel gratings
- Site specific paint treatments emphasize individuality
- Small-scale, light-framed, steel superstructure elements create transparency
- Complexity, open/transparent character of multiple elements

The interiors of the powerhouses are neither accessible nor visible to the public and so from a design standpoint have little impact on the project historic character. In general, interiors are simple industrial or utilitarian spaces populated by large scale generation equipment or the control/support elements required by the function. Storage areas, wall treatments, and other elements are universally of plain, mid-20th century, industrial designs, characterized by painted concrete or vinyl-clad floors, simple painted concrete or gypsum board walls, open concrete beam or dropped ceilings, and other modest elements. Character defining features are limited to those that conform to mid-20th century industrial designs. This includes:

- Painted floors in generation areas
- Vinyl floors in office/control/support areas
- Fluorescent lighting throughout (exposed fixtures in generation area are set in rows)
- Simple, painted, wall treatments
C. ALTERATIONS OR MODIFICATIONS PRESENT
Most exterior changes at the powerhouses are minor modifications related to safety upgrades, the replacement of transmission elements (transformers) or improvement/redesign of non-historic fish passage features. Interior changes are minimal, generally limited to surface treatments. No changes significantly deviate from the original character.

D. GOAL
To retain the historic industrial character through continued use of original materials and colors.

E. APPROACH
New construction or maintenance work at the powerhouse locations should respect the original industrial character. This is best accomplished through consistent use of appropriate scale, use of materials (concrete, steel), and compatible paint colors. The multi-component nature of the powerhouse exterior easily allows the insertion of new elements, including expanded switchyard/transmission facilities, additional or replaced transformers, and other changes or modifications to generation, transmission or support-related elements, without any serious impact to historic character, provided color, scale, and essential physical layout are continued. Replacement in-kind, when required by other project needs, does not inherently reduce integrity, provided historic character is retained.

Attention to layout, including the linearity of generation units or the transformers (both active and spare) will significantly enhance historic character. At Round Butte, facilities adjacent to the powerhouse itself, primarily related to fish management, tend to dominate the base of the dam visually. Maintaining the relationship between these features (though non-historic) and the powerhouse itself should be a consideration in the siting of any new facilities at the site.

The downstream edge of the both the Round Butte and Pelton powerhouses reads as “rim” of concrete with the movable superstructure elements, and is considered an important visual element. Superstructure or ancillary work in this area should be designed to minimize visual interference with the existing, slab-like character.
3.5 **Powerhouse Detailing**

### A. Basic Description

The largely below-grade of the historic powerhouses at both Pelton and Round Butte result in considerable visual character being formed by superstructure elements and above-grade details. This Item covers powerhouse related details including safety railings, mechanical equipment, lighting, deck-mounted overhead or gantry cranes, sheds, storage facilities and other elements located above grade.

It additionally covers simple features located at the Pelton Reregulating Dam and, in the case of railings and lighting, similar features located at the crest of all project dams.

### B. Historic Character-Defining Aspects

By definition, features covered under this item are small scale, support, and safety-related features as well as some transmission related elements that included transformers and related equipment. Overall small scale component elements combine to create a visually complex character. Key character defining aspects are:

- Industrial materials (steel, concrete)
- Vertical elements rise from deck
- Painted steel (green, red oxide, blue)
- Galvanized steel, aluminum (gray/silver)
- Unpainted concrete
- Linear, orderly, placement of features
- Massive scale
- “Aerial” elements create a complex, multi-level appearance
- Railings, painted or not, are round in section, often with mechanical/expressed “knuckles” at the joints
- Painted steel, aerial, light fixtures (mixed colors)
C. ALTERATIONS OR MODIFICATIONS PRESENT
Although several elements have been added or replaced, in general these features exhibit little modification beyond painting. Railings in particular have been expanded or new areas constructed using a variety of designs, not all of which are consistent with the original character.

D. GOAL
To maintain essential historic character and appearance.

E. APPROACH
In general, any repair or alteration to the minor elements at all powerhouse locations should continue the defined original character through use of materials, color and design. Existing non-compatible modifications should, as possible, be replaced with more compatible designs or painted in matching tones to better integrate with the original elements. Where modifications over time have created multiple approaches to standardized elements at a specific site (i.e., multiple hand rail designs, mixed lighting designs, mixed paint colors for features that are related by type, etc.), adoption of a single standard approach based on the original design is proposed.

Vertical features, including gate lifts, aerial cranes, and similar, comprise key visual elements of each project. Uniformly of painted steel (although painted in site-specific colors), these elements play a significant role in overall character at each site. As per Item 3.4, site specific paint treatments should be maintained, either as existing or, pending paint analysis and review, in original colors where such can be determined.

Metal railings, generally of round section painted metal, are present at all powerhouse locations, again site specific in paint. These elements exhibit considerable variety, reflecting change and modification. Again, as possible, standardization on a single design/paint color at each site is recommended. Where OSHA or FERC rules require specific treatments for safety, consistent use of color, on a site-by-site basis, is recommended.

Small structures, generally of cast concrete, provide access to the powerhouse interior, protect control or operator areas (as in crane control), or otherwise house equipment on the
powerhouse deck. These “buildings” are important elements of the powerhouse and should be maintained “as-is” to the greatest extent feasible. Original elements, including metal-clad doorways, steel sash windows, flat roofs and other industrial materials, effectively convey the original design and the historic character. In order to preserve historic character, existing elements should be retained, maintained as needed, and where such is not feasible replaced in kind.

NOTE: The complex nature of the powerhouses, with multiple individual elements related to the function and operation of the project forming visually diverse character, are considered highly forgiving of change. These sites gain historic character through their “compound” appearance and construction from modest industrial materials, in simple and direct fashion.
New construction, modification, and necessary repair or change will rarely result in an adverse impact on these sites provided the materials, scale, and historic character of the original elements are respected and the historic features are retained as visually dominant elements in the overall character. Evaluation of serial change, to address the potential of cumulative effect that does significantly modify the overall character of the resource, should be undertaken prior to any major construction project. Cumulative effects, as addressed in Section 8, may result in overall negative impacts even when the design and construction of individual projects over times comply with the guidance of this manual and meet the Secretary of the Interior's standards.
3.6 **FISH RELATED**

**A. BASIC DESCRIPTION**

Historic fish-related elements of the Pelton Round Butte Hydroelectric Project are generally limited to the fish ladders and several bypass pipelines. These long linear features, built of concrete or painted steel, create highly visible elements that stretch between powerhouse locations or at the dam sites, adding considerable significance to the overall character.

Upon its completion the fish ladder at Pelton Round Butte was among the longest such features in the world. Portions of the ladders have been modified with PVC and shade cloth. Steel gates control flow. Painted steel piping runs down slopes, superimposing long, linear elements against the natural canyon walls.

Non-historic elements related to fish management, the Round Butte Fish Hatchery, are located at the powerhouse site and are not subject to this manual in any formal way. The recently completed Selective Water Withdrawal Tower, an integral element in improved fish passage at the project, was constructed in compliance with the guidelines for new work at the project presented in this manual (see Section 3.3).

**B. HISTORIC CHARACTER-DEFINING ASPECTS**

Natural-colored, low-head, concrete diversion features channel water into a stepped channel. Long concrete ladders follow topography, creating a linear built element in the natural landscape.

- Concrete and steel materials
- Low profile, low height
• Visible, linear, character, within the natural landscape
• Red Oxide (dull red) painted features at Round Butte

C. ALTERATIONS OR MODIFICATIONS PRESENT
Although the Round Butte ladder remains on-site, none of it provides for fish passage. The use of other components of the original fish management system at Round Butte, including the “Fish Tram,” was discontinued many years ago. Portions of these systems have been physically removed to make way for other construction. At Round Butte, modifications to the original fish passage elements occurred in connection with the construction of the non-historic Round Butte Fish Hatchery in 1972. Portions of the fish ladder, with PVC and shade cloth coverings, are used as holding tanks.

D. GOAL
To retain original elements as a functional part of the project as feasible, given changes in technology, even where that function is not original. Where improved technology results in the modifications to, or the replacement of, original elements particularly where those original elements have a significant visual impact on historic character, retaining those features as non-functional landscape to the greatest degree feasible will retain historic character.

E. APPROACH
In the area of fish passage, the majority of the current operations associated with the Pelton Round Butte Project are provided via the Round Butte Hatchery, operated by the Oregon Department of Fish and Wildlife. Built in 1972, and so non-historic, non-contributing elements of the Pelton Round Project, this compound of multiple structures nevertheless plays a significant visual role in the overall character of the Round Butte facility. Consisting of a series of concrete-lined ponds lined by small metal-sided, flat-roofed structures of modest scale, the Round Butte Hatchery generally continues and complements the “complex” visual character of the powerhouse site, matched in basic materials and color values. To the extent feasible, any future changes or additions to these non-historic features should strive to continue that basic design and character.

Retention of the existing fish ladder as a visual element of the project, even those portions no longer used for their original purpose, is considered a key element in retaining historic integrity. If the fish ladder is entirely bypassed, removal of in-water access or permanent
blockage of elements to the greatest extent practical while still meeting other project goals is recommended over physically removing the feature in its entirety. This approach, essentially amounting to a process of “abandonment in place,” will retain the feature and the technology as a part of the Pelton Round Butte Project, reflecting both the original design and the historically significant role of fish management issues in the project’s initial design and development.

Given the past history of replacing much of the original fish passage system at Pelton Round Butte with newer technology, the same approach recommended for the fish ladder should be the initial consideration for any other surviving elements identified as a part of the original design, if and when they cease to play a functional role in the project’s fish passage system. Maintaining elements, such as the fish “tram” to the degree possible, supports the historic integrity of the overall project and should be considered to the extent feasible.

Where new structures are required as elements of improved fish passage (as in the Selective Water Withdrawal Tower discussed in Item 3.3), designs that are compatible with the overall character of the project are preferred. This includes the continuation of the existing character through the use of materials (concrete, steel, etc.) as well as consistent use of color and sensitive placement. The constrained area at Round Butte and the other powerhouse locations complicates siting decisions; however, to the extent possible, retention of the multiple, small-scale structure approach is preferred.

As far as repair and maintenance of original elements (including any abandoned in place elements over time), continued use of the site-specific color schemes provides added prominence to original elements and helps to differentiate them from newer work. This dual approach toward design is appropriate and effectively conveys the development pattern at the project over time.
3.7 Transmission Towers

A. Basic Description
As distinct from transmission corridors (see Section 2.6), Transmission Towers are the individual built elements within the corridor that support high-voltage power lines both internally within the project boundary and then continuing to substations and beyond.

At Pelton Round Butte, internal towers are nearly all of wood-pole construction. Some are single poles; other are double- or triple- “H” frames with “X” pattern crossbars. At the Round Butte Switchyard (see Item 3.8) steel lattice work towers support portions of the line.

B. Historic Character-Defining Aspects
Wooden poles in the transmission corridor:
- One, two or three, round, treated wood poles
- Dark color (brown)
- Simple, single, cross arm
- “Light” structure with high transparency
- Multiple “hanging” insulators

Steel lattice tower at Switchyard:
- Three vertical poles
- Galvanized (silver) color
- Lattice work construction

C. Alterations or Modifications Present
Few noted. Some poles, particularly wood, have likely been repaired or replaced “in-kind.” No obvious changes that impact visual qualities or historic character.

D. Goal
To maintain the existing character through retention of original poles or compatible replacements as required.
E. Approach

Towers should be maintained and retained as is to the extent feasible. Where project upgrades or damage requires replacement of existing features, “in-kind” designs should be used, retaining the simple “H” patterns of the existing elements. Use of wood poles, as existing, is encouraged. Use of alternate materials (metal/steel) is acceptable but should follow the existing “H” pattern design. Dark color metal that both continues the existing character and blends into the landscape in a comparable fashion to the wood poles, is encouraged.

The few lattice work towers at Pelton Round Butte, of uncertain construction date, should serve as transition elements at the switchyard. Their use should be limited to that function if possible, retaining some differentiation between the switchyard and the simple transmission line itself.
3.8 **Switchyard**

A. **Basic Description**
The Round Butte Switchyard, established in 1965 and subsequently modified, is the focal point for all three project powerhouse lines and ties the project to the PGE, PacifiCorp, and regional electrical grid. Outdoor transformers, condensers, and other equipment are mounted on concrete slabs and within green-painted steel “A” and box frames within a chain-link defined compound. Several small structures of painted metal house control and support services.

B. **Historic Character-Defining Aspects**
- Complex, multi-component design
- Steel and concrete
- “Pelton Green” paint
- Small structures

C. **Alterations or Modifications Present**
Portions of the switchyard have been modernized and updated; however the overall character appears to be substantially intact.

D. **Goal**
To maintain the existing character while still allowing upgrades and modifications as required for safe and efficient service.

E. **Approach**
Existing character and features should be retained as possible, maintaining the complex, multi-element character that defines the historic character. Adding new features as discrete “groups” within the compound continues the character, as does consistent use of materials (steel, concrete) and, where appropriate, continuation of the use of “Pelton Green.”
4.1 General Statement

Support, maintenance, and office buildings at Pelton Round Butte are, in general, concentrated at Ivan Flats or the Round Butte office complex, although there are several independent structures located elsewhere throughout the project area. Ivan Flats was initially built and developed by the Bechtel Company as offices and service facilities during the construction of the Round Butte project in 1963-1965. After the project’s completion, the structures at Ivan Flats were adapted to serve as the operations, maintenance, and storage area for PGE. Over time the complex has been modified to provide additional office space, including facilities for the Oregon Department of Fish and Wildlife, and other various project uses. The 2008 Determination of Eligibility identified nineteen (19) individual resources at Ivan Flats, as well as two other related buildings within the project (see Appendix B). Of these twenty-one (21) resources, fourteen (14) have been determined as historic contributing resources in the Pelton Round Butte Hydroelectric Project.

Individual structures at Ivan Flats, most of wood or steel frame construction with galvanized metal siding and roofs, are of simple industrial design without any obvious “architectural” merit. Collectively, however, they form an important resource complex that effectively relates the original development period of Round Butte Project and provides one of the first views of the project for most visitors.

The relationship between the Ivan Flats structures and its site, with buildings formally arrayed around the central open, u-shaped, service yard, creates a shared character that benefits from repetitive design, basic scale, and use of materials. In this regard, Ivan Flats is a singular feature, a compound, made up of multiple individually significant, component parts that share a basic, character-supporting sameness. The following Items, each detailing a specific aspect of the individual structures at Ivan Flats, recognize the balance between the individual variation and overall uniformity of these resources as the single biggest challenge in maintaining the historic integrity of the Ivan Flats structures. At Ivan Flats, maintaining a cohesive approach in design, through siting and the use of common materials and colors, is more important to maintaining the area’s character than what materials or colors are chosen for the separate elements.

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4 Resource 12.30, the First Aid Bldg, was identified and documented prior to its demolition during DOE preparation, accounting for the discrepancy between total identified resources and the count of contributing/non-contributing presented here.
4.2 Site Design

A. Basic Description
The basic site plan at Ivan Flats consists of a group of inward facing structures arrayed around a central open yard in a roughly U-shaped pattern. These industrial buildings are irregularly placed, with ridgelines both parallel and perpendicular to the courtyard. Twin access points connect to the primary entry corridor, flanked by the office buildings, at the compound’s southeastern corner. The office buildings have a slightly different visual character, as detailed in the Items below. A secondary corridor is located along the southwestern boundary, leading to the current project office.

Within the compound, other than a small lawn outside the Original Office Building (Resource 12.35) and several adjacent structures, landscaping is essentially non-existent. Small lawns at the office areas, along with scattered single trees and concrete pads augment the otherwise plain asphalt or dirt surfaces. There are no curbs, walkways, tree-rings, or any other typical designed or “landscape” elements.

Open yard storage, including a sunken grade that tails off to a gravel pit related to original construction, are found at the north of the Ivan Flats compound. This area includes, in addition to the storage yard, modern elements including a helipad and a conical “Silo/Rotor Cover” made of galvanized metal and now used for storage. Worker parking is behind the buildings, outside the main courtyard, which is generally reserved for PGE work vehicles. In total, the storage areas, the variety of building sizes, and the overall “working” character of Ivan Flats creates a neat, if mildly “unplanned” or haphazard, character at grade level. This random scale and variety is supported by outdoor fuel tanks, storage facilities and other built and non-built features.

5 The Silo Cover is identified as Resource No. 12.75 and the Helipad as 12.76. Neither are historically significant.
The organizational structure of the compound is strongly evident from above and since the Ivan Flats Compound is located on a broad plateau overlooking the river canyon, accessed by the primary project access road that cuts down the plateau, Ivan Flats is often the first project element to be seen upon arrival to the Pelton Round Butte project from the main entry point. Its site plan, as described above, thus plays an important role in establishing the project’s character. From above, the regular plan of the site is visible to a far greater degree than from within the compound itself.

### B. Historic Character-Defining Aspects

Uniformly-designed buildings are arrayed around a largely open central courtyard:

- Uniform materials
- Simple, industrial, structures
- Broad open central yard with buildings arrayed around it
- Offices to the south, storage to the north
- “Haphazard” industrial character, with multiple, outdoor, elements

### C. Alterations or Modifications Present

The basic configuration of the Ivan Flats compound has been modified by the construction of newer, non-historic structures that deviate and somewhat alter the original spatial arrangement. Within the main historic compound area, the most significant among these is
Resource 12.77, an open boat/equipment storage shed located at the southern end of the compound and partially closing off the top of the “U-Shaped” plan. Other modifications include the demolition of several original elements, particularly smaller structures located to the southeast quadrant of the compound. PGE office functions were relocated to an entirely new facility located outside the original compound area that was constructed in 2006. The new office building is under construction at the top left in the above image, taken in 2005.

D. GOAL
To maintain and enhance the original overall character of Ivan Flats, integrating any proposed change or new construction into the existing site plan and character to the greatest extent feasible.

E. APPROACH
Existing structures should be maintained and remain occupied as a part of project operations to the extent possible. Combining or modifying uses, including the transformation of existing buildings into other functions or storage, where such changes have minimal exterior impact, do not adversely affect historic character.

When new construction or expansion of existing built resources is required, care in siting should respect the existing peripheral array and building orientation to maintain the “compound” character. For new construction within the Ivan Flats core area, individual building projects should follow the basic scale, use of materials, and design scheme that characterize the original construction at Ivan Flats so as to retain the homogenous “compound” character. As discussed in the general statement at the start of this Section, the array of individual small structures within the Ivan Flats compound is considered a key character defining feature in the overall historic character of the resource.

Where existing buildings within the core area are removed to permit construction of new or improved facilities (by definition beyond the purview of this manual and subject to individual Section 106 review as per Section 1.5.3 and the adopted CRMP), new work should replicate the discrete volumes of industrial design and maintain the basic configuration of the compound. Retention of surplus structures on site, to the fullest extent feasible, is strongly encouraged unless removal is necessary for safety reasons. Surplus buildings can be secured to avoid unauthorized entry or inappropriate uses but should not be removed unless absolutely necessary.

Entirely new structures, or relocated uses, can be located outside the Ivan Flats core area, as was done for the 2006 Project Office, without adverse effect on the historic character. Such new construction, sited “off grid” from the main compound, should be differentiated in materials or character to accurately reflect non-historic construction. In general, this approach should be used sparingly and only when all efforts to modify existing structures for the proposed use within the core area have been determined impractical.
4.3 Roofs

A. Basic Description
Roofs of maintenance and service structures at Ivan Flats, as well as the scattered resources, are low-pitched (approx. 5/12) gables with galvanized, corrugated metal roofing. Some smaller structures have single-slope or shed roofs and several of the gable buildings have non-original shed extensions over covered work areas, parking, or storage bays. Some of these structures also have shed “porches” at the front entry, not all of which are assumed to be original.

Office spaces, and some maintenance-related structures, have similar pitched gable roofs; however, these are clad with asphalt shingles. Several minor structures at Ivan Flats have standing seam metal roofs, as opposed to corrugated metal.

B. Historic Character-Defining Aspects
Original structures, and many built subsequently, share certain basic characteristics:

- Low-pitched gable roofs (approximately 5/12 pitch)
- Metal cladding (galvanized metal, corrugated roofing)
- Asphalt roofs for office/personnel spaces
- Generous eaves
- Simple detailing (no brackets or exposed rafters)

C. Alterations or Modifications Present
Some galvanized roofs show evidence of repair, probably carried out as a result of wind damage. Asphalt roofing has been replaced, most recently (on the original project office, above) with darker color, architectural grade shingles, rather than the original 3-tab asphalt.
D. GOAL
To maintain uniform roof treatments that reflect the original materials, integrating new work or modifications so as to support the compound character in recognition that aerial appearance, from the entry point, is a key visual element at Ivan Flats.

E. APPROACH
Roofing for all service and maintenance buildings at Ivan Flats should be maintained as possible and, when necessary, replaced in-kind with standard 2½" rib galvanized corrugated metal roofing in order to maintain or restore historic character. This material may be installed over sub-roofing or shear, including a built-up frame to allow for insulation etc., but should retain the existing visual character to the greatest extent possible while meeting other project goals. The use of standing seam galvanized roofing or Type B wide rib, although already present on some structures as a modification or addition, is not preferred and should be avoided.

Some buildings have fiberglass panels within the corrugated roof system, although it is not clear if these are original or later alteration. The continued introduction of fiberglass or other translucent corrugated panels into the roof system is an acceptable method of increasing interior daylight and is recommended over the installation of individual skylights.

Asphalt roofing should also be replaced in-kind, in compatible tan-brown colors. The use of architectural grade shingle in replacement of original 3-tab to reduce maintenance costs is not considered to adversely affect historic character. No specific colors within the tan-brown realm are recommended, provided that standardization of a single color over time is the intended goal.

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6 Most metal roofing now is installed directly over purlins, with no insulation.
4.4 Siding

A. Basic Description
The exterior cladding of the maintenance and repair buildings is predominately of vertical galvanized metal sheet, including typical corrugated 2½-inch pattern as well as other, more recent style, modifications. Some buildings within the core area are wood sided in mixed patterns, generally painted grey-tan to visually blend with the natural silver-grey tones of the galvanized metal. Minor structures are sided with smooth galvanized metal.

Siding reflects a general consistency in materials, if not always pattern, reinforced by basically consistent color values.

B. Historic Character-Defining Aspects
- Natural galvanized metal
- Painted board and batten wood in neutral/matching tones
- Vertical orientation
- Site-wide uniformity
- Lack of “trim” at openings and foundation

C. Alterations or Modifications Present
Existing metal siding is largely original, with some replacement and modifications, including additions that employ different siding treatments. This is largely limited to variety in pattern that differs from the standard 2½-inch corrugated sheet.

Wood siding, originally T-111 vertical scored sheet goods, has been partially replaced or modified with a more detailed board and batten design. While not original, this is still considered compatible in character. As shown above, the
façade of the original office (No. 12.35) has additionally been modified with a horizontal siding bulkhead treatment.

D. **Goal**

To maintain existing character and, as possible during normal maintenance, assure the original character is retained or, as necessary, re-established.

E. **Approach**

Existing metal siding should be repaired as needed and maintained. Dents, minor holes and other damage are not considered detrimental to the industrial/utilitarian quality and should be ignored or, when necessary, “patch” repaired. This would include “plugs” or applied layers to cover holes or removed equipment. Larger replacement sections can either be overlaid on top of damaged areas or, when required, installed in place. Replacements should be kept to the minimum size required for adequate performance and durability. *The replacement of entire panels or sections of existing siding is strongly discouraged and should not be undertaken unless there is no reasonable alternative.* Where such full-panel installation on an existing structure is necessary, galvanized metal should be rinsed with a weak 5% dilution of Muriatic (Hydrochloric) acid and water to remove the bright shine of new materials. Application prior to installation with a pump-type yard sprayer is an effective delivery system. All adequate care (exterior application, gloves, respirator, etc.) in application and drainage should be taken to avoid hazard.

In patch replacement, duplication of the underlying pattern is necessary to assure a quality solution. Toward that end, appropriate materials should be purchased for such work. When existing panels are removed as part of demolition, addition or other projects, surplus metal siding should be harvested and stored to provide matching supplies for future repair projects.

When new construction, major addition, or other exterior modification requires the installation of large amounts of new siding within the core Ivan Flats area, PGE shall utilize historically appropriate siding materials. This means vertically installed galvanized metal siding matched to the original, installed as per the original. To assure compatibility in new construction, no matter the structural system employed, new buildings within the core area will be clad with galvanized metal siding. Where an entire new structure or wing addition to an existing building is constructed, siding can be allowed to weather naturally or treated to create a compatible, dull silver finish with the same process described above.

Well-maintained, existing wood siding should remain useful for many years. Damaged or missing pieces should be replaced using similar materials that match the original in size, design, surface character, and all other visual characteristics. Siding should be fastened with galvanized nails, not screwed, and all nails must be sufficiently set and filled to reduce rust staining. In general, new siding for additions within the Ivan Flats core should be matched to the existing in materials, design, and all other visual characteristics.
4.5 EXTERIOR PAINTING

INDUSTRIAL [METAL-SIDED] BUILDINGS:

Much of the industrial character of the modest structures at the Ivan Flats area comes from their generally uniform use of materials, treatment, and design. As this manual documents, consistent use of materials, forms, treatments and design elements tie the buildings together and reinforce their original design to enhance their ability to successfully convey the associations for which they are significant. Careful attention to the use of color and paint, both for repair/maintenance and the treatment of any new structures or additions/modifications to existing ones, is a significant aspect of maintaining that uniformity of design.

In general, all painted surfaces of the Ivan Flats industrial buildings should be treated to maintain visual consistency with the galvanized metal siding/roofing of the structures. Trim should not be used as a strong accent element and the introduction of colors other than those generally compatible with this Item are prohibited by definition.

Windows, trim, and other painted surfaces for the industrial buildings shall be painted within a range of gray-to-gray/black tones as determined by PGE, with the goal of limiting contrast and blending window/door openings into the siding.

The trim scheme PGE determines, within these basic galvanized-metal values below, shall be consistently applied to all Ivan Flats industrial structures.

While some use of color for accent (mostly blue) at the Ivan Flats has occurred in the past, this practice is not compatible with the project’s history and shall, as possible during normal maintenance and repair, be discontinued and replaced by the recommended standardized approach.

Approximate Colors Only—Not True Tonal Reproduction
Existing windows on some buildings are painted a medium gray, similar in tone to Pittsburgh Paint Company 517-5 “Phoenix Fossil,” approximating Pantone 423C, shown above. Use of matching tones, in either slightly lighter or darker values (424 C or 425C) as shown, may be appropriate for entry doors, canopies, or other minor elements but should not be used as “trim” or in combination. The use of a lighter tone (Pantone 421C, for example, or similar may be appropriate for large equipment doors, as discussed in Item No. 4.7.

OFFICE [WOOD-SIDED] BUILDINGS:

As near as can be determined, the original colors of the painted wood-sided office buildings located to the south of the industrial core at Ivan Flats, were originally a light cream or tan, although this is not certain.

During the recent remodeling of the original office (Building 12.35), the exterior was repainted in a warm-grey reddish-tan with brick-red trim. The body, roughly compatible Pittsburgh Paint Company 516-4 “Ashen,” approximating Pantone Warm Gray 3C, shown below, is largely consistent with the uniform character of Ivan Flats, while still allowing some differentiation between the office and industrial structures that is both historically appropriate and consistent with the presumed original treatments. The introduction of the brick red trim color, however, particularly in tandem with the non-original white vinyl windows (See Item 4.6 below) creates obviously non-historic contrast that is inappropriate. Recommended colors, below, strive to better integrate the office areas into the overall complex character, retaining the tonal balance.

APPROXIMATE COLORS ONLY—NOT TRUE TONAL REPRODUCTION

7 The Pantone Color Match system is an industry standard set of calibrated colors used by printers during color reproduction. Colors here are for reference and approximation only, as the printed tones have not be Pantone Printed and so should NOT be considered accurate matches. Specified or standardized colors may rely of Federal Standard Fan Deck 595, computerized color match, or any other normalized system that assures standard color values over time (see http://www.colorserver.net/fandeck).
4.6 Openings—Windows

A. Basic Description
“Punched” windows allow light into the interior of the structures. Design and materials are highly varied, including original wood and steel sash, as well as non-original aluminum and vinyl windows. Windows are set both in single and ganged sash, generally square or horizontally oriented.

Wood frame/wood siding buildings have mixed windows, both in design and material.

B. Historic Character-Defining Aspects
Wood and steel windows are presumed to be original, although some structures show evidence of modification. In general, character defining aspects are:

- Multiple small panels, ganged for larger openings
- Multi-pane glazing
- Fixed windows or “transom” (top hinge) type openings (industrial buildings)
- Lack of window surround or “trim” enhanced punched installations
- Neutral colors visually blend with siding

C. Alterations or Modifications Present
As noted, various modifications to windows are found throughout the Ivan Flats complex. New or replacement white vinyl and aluminum windows exist on some structures (see below). It is not clear if these were to replace earlier wood or steel sash, on the industrial buildings, or if they are entirely new openings. Non-historic vinyl windows (horizontal sliders) were installed at the original office building sometime prior to the recent (2007) remodeling. Original windows on this structure were likely aluminum sash.
D. Goal
To retain all remaining original elements though maintenance and modification as necessary, while additionally working to replace non-original, non-compatible elements with more historically appropriate designs as part of any future work. PGE may seek to improve energy efficiency or operation either through improvement to existing openings or through replacement with compatible designs.

E. Approach
Existing early-appearing or original windows of multi-sash painted wood or steel shall be retained and maintained as part of normal project repair to the greatest extent feasible. If such windows require additional energy efficiency, efforts to improve the existing rather than wholesale replacement will assure continuation of historic character. Strategies include weather-stripping, the installation of interior storm windows or secondary panes. Application of UV-reflective films such as SM Prestige Series PR 70 offer a considerable increase in energy improvement with little or no visible change to character (http://www.3m.com/us/arch_construct/scpd/prestige/products.html).

Wood windows can be repaired, if needed, with epoxy consolidants such as those available from Abatron (http://www.abatron.com). Regular maintenance (paint, debris removal) will help avoid wood damage or deterioration. Currently painted in mixed colors, paint should be standardized on a neutral grey to blend with siding as per Item 4.5 unless paint analysis documents physical evidence of a different historic color. When existing windows on industrial buildings are determined to be beyond repair, or when existing non-original aluminum or vinyl windows are to be replaced, PGE will use metal clad wood windows or steel-sash windows that are comparable in appearance to the original designs. New work will match basic proportion, muntin pattern, and other visual characteristics to the greatest extent feasible so as to continue the historic character. While true wood windows may be installed, lower-maintenance options that include an exterior cladding to eliminate painting are
acceptable alternatives. Recommended projects include Kolbe brand “Magnum” series, with wood core interior and a paint free exterior coating (www.kolbe-kolbe.com). The K-Kron II finish is a colorfast synthetic that is available in more than 20 colors, including two shades of grey similar to the recommended treatment. Whatever window system is chosen, attention to detail, including sash and muntin profile, installation of standardized window systems in muted grey exterior colors will provide increased energy efficiency when required and improve historic character by better reflecting the original painted wood design.

Wood or wood-clad windows comparable to the above recommendation are appropriate for any new construction within the Ivan Flats core area.

Steel windows, in general, are easily repaired and retained. Where existing windows have air infiltration issues, rust, or no longer open properly, standard rebuilding can provide years of additional service in a cost effective way. Windows can be cleaned and re-grouted, weather-stripped, and caulked to improve performance. As with wood windows, above, application of 3M Prestige Series UV films will improve both winter and summer heat exchange.

Steel sash can be stripped in place or removed to clean off excess paint layers through wire brush or chemical stripping, following all required environmental and employee safety processes. Bare metal should be spray primed and repainted in neutral colors as existing. Depending upon the condition of the metal, it may be appropriate and cost-effective to powder-coat repaired steel sash windows to reduce future maintenance costs. In all cases, colors should match the basic grey tone specific for wood sash windows as per Item 4.5.

Where existing steel sash windows cannot be repaired, where additional windows are required in an existing structure, or when new construction within the Ivan Flats core area is required, new steel sash windows of designs similar to the existing are required (unless wood or wood-clad sash are used, as above). New, thermally efficient, steel sash windows comparable to the existing are available from various manufacturers, including the Torrance Steel Window Company, Inc., (www.Torrancesteelwindow.com). Additional information on steel window is available from the Steel Window Institute (www.steelwindows.com). The installation of entirely new windows in historic structures is strongly discouraged, especially on primary facades. Whenever new windows openings are created in an existing building, especial care to match rhythm, head-height, over-dimensions, muntin pattern, and all other physical and visual characteristics is required.

The installation of vinyl windows within the Ivan Flats core area is counter to the project’s historic character and prohibited by definition for all future work. Existing vinyl windows should be replaced as required during standard maintenance and upgrade as possible.
4.7 OPENINGS—DOORS

A. BASIC DESCRIPTION
“Punched” doors, with little or no surrounding trim, provide access for both personnel and equipment. Design and materials are highly varied, including wood, metal, and metal/glass elements in both single and double-door installations. Several entry doors are located beneath early-appearing metal barrel canopies.

Equipment doors include early appearing metal-clad wood hinged bi-fold door systems as well as more modern appearing roll-up designs.

B. HISTORIC CHARACTER-DEFINING ASPECTS
Pieced metal (metal clad) doors as shown in the lower photo are presumed to be original. Other doors, both entry and roll-up, are not easily categorized. Typical elements include:

- Metal surfaces
- Simple, industrial design
- “Punched” installation with little trim or “sense of entry” detailing
- Barrel canopies over entry doors, with varied steel support systems

C. ALTERATIONS OR MODIFICATIONS PRESENT
As noted, the original character of entry doors is presumed to be as at right, vertical seam metal (metal clad), but this is not certain and other materials and patterns may have also been present, including metal or wood with glass panels and other variations. Clearly some doors at Ivan Flats, including the wood panel in the top photo at right and residential-styles steel panel doors (see below) are not original.

Various modifications to windows and all forms of entry doors are found throughout the Ivan Flats complex. New or obvious replacement doors exist on some structures, including both single and double-entry, both wood and metal, with multiple glazing patterns. The earliest appearing doors are clad in metal sheet. All
roll-up equipment doors are presumed non-original, including both ribbed “industrial” designs and “paneled” residential-quality examples. In short, there is no clear evidence as to the original entry door design; however, many current entry doors are almost certainly later modifications (see below).

The original character of the equipment doors is also unknown but likely included bi-fold wood and, possibly, some roll-up forms. Other equipment bays may well have initially been open during the Bechtel period, then closed-in later after PGE assumed control of the Ivan Flats area. Today, a mixture of equipment doors is present, including commercial style slat-steel roll-up doors as well as more residential character sectional-panel doors.

**D. Goal**

To retain all remaining original elements though maintenance and modification as necessary, while working toward replacement of non-original, non-compatible elements with more historically appropriate designs as part of any future work. PGE may seek to improve energy efficiency or operation either through improvement to existing openings or through replacement with compatible designs.
E. APPROACH

ENTRY DOORS:
Existing early-appearing doors, with three-element metal sheeting, should be maintained, repaired and repainted as needed, and retained. Other non-original doors, especially wood panel and steel panel residential-character doors, should be replaced with more compatible doors as part of future maintenance and upgrade projects with the goal of developing a generally consistent door type(s) at Ivan Flats. Metal/glass doors that provide visibility and increased interior light are entirely appropriate; however, one or two styles (for single and/or double door installations) should be defined and used to replace other non-conforming doors as possible.

Of the available designs currently in use at Ivan Flats, the most historically appropriate metal/glass design are those with the large glazed panel above a plain lower panel (as shown in the white painted door at the extreme right above). It is recommended, but not required, that a door of similar design become the preferred replacement for both single and double-door applications. Such doors, available from numerous vendors, should be installed with minimal trim, reflecting the historic design. Thus, in terms of installation, the best model from the existing doors at Ivan Smith is the assumed more recent installation shown at right, with its minimal projection from the primary wall plane and simple, largely unobtrusive trim.

All entry doors, new and existing, should be painted in neutral gray tones as per the recommendations of Item 4.5 above to establish a compound-wide consistency. Existing non-conforming entry doors should be painted as well, pending their eventual replacement as part of some future maintenance or repair project.

EQUIPMENT DOORS:
Existing bi-fold equipment or loading doors, presumed to be original, should be maintained, repaired as needed, and retained to the greatest degree feasible.

As with entry doors, a “standard” design for equipment doors should be determined. In this case commercial-quality “slat-steel” visually comparable to existing (Overhead brand “Rolling Service doors,” 600 series or similar, see www.overheaddoor.com) with interior-mounted cage assemblies are both functional and compatible with the modest industrial/utilitarian character of the Ivan Flats compound. These doors are available in both insulated and non-insulated models, either of which is appropriate. Pre-coated options to reduce maintenance are
acceptable, provided they are generally consistent with the grey/light grey schemes recommended in Item 4.4.

The use of panel-type sectional doors is inconsistent with the industrial character of these resources and prohibited for future installation. For smaller scale openings or where a slat-steel design is not desirable for any reason, the use of site-built, stock, or custom manufactured vertical bi-fold garage doors (metal or wood frame) with corrugated panel or other plain steel cladding and without any horizontal divisions, is an acceptable alternative. Doors, for example, can be clad with simple sheet metal coverings over a wood or metal frame or, consistent with the presumed original entry door design, clad with multiple vertical sheet panels. Such doors may, if desirable, include glazed panels for additional light, again to mirror the basic proportions of the PGE adopted entry door standard.

New equipment doors shall be selected in colors that are compatible with the Item 4.5 standard, in an industrial gray. The selected tone may be compatible without matching the identical tone of the entry doors and should be consistently used throughout, for all roll-up or bi-fold equipment doors that require painting.
4.8 DECORATIVE FEATURES—CANOPIES

A. BASIC DESCRIPTION
Several entry doors within the Ivan Flats compound are located beneath barrel-shaped projecting canopies of varying design. It is not clear, but likely, that these represent in-the-field modifications by either Bechtel or PGE workers to provide weather protection. Barrel arches are made from heavy-gauge metal over metal supporting frames, with some features appearing to be cut sections from a 55-gallon barrel. Support is both cantilevered brackets and, in one case, ground-poles.

Distinct from the barrel forms, other buildings have more typical projecting shed canopies, supported by welded steel “A” frames bolted to the structure. Shed canopies are typically clad with metal sheet roofing, matching the structure to which they are attached. In one case a roof plane projects to shelter an equipment door.

B. HISTORIC CHARACTER-DEFINING ASPECTS
- Metal Construction
- Painted gray or natural metal
- “Decorative,” non-standard, metal supports
- Shed or barrel design

C. ALTERATIONS OR MODIFICATIONS PRESENT
As stated, it is not clear, and perhaps not likely, that the existing barrel canopies are original. They do, however, represent a unique and rare near-decorative element to the Ivan Flats industrial structures that supports historic character. Primarily appearing “as-built,” the newest appearing canopy as shown above is painted blue.

D. GOAL
To maintain and enhance existing character, providing weather protection with historically-compatible canopy designs as existing.
E. Approach

Existing awnings should be maintained, repaired as needed, and retained. Non-consistent paint colors (i.e., blue) should be modified during normal repair to match the standards of Item 4.6, using neutral gray tones. PGE may appropriately chose to use a varied shade of the basic 4.6 “Gray” to provide some accent or sense of entry to the canopies that moderately distinguishes them but remains within the basic mono-chromatic, industrial character of the project. It is strongly encouraged that entry door canopies be painted consistently with entry doors themselves, so as to reinforce a visual sense of entry.

Shed-roof type awnings, made of galvanized siding, should be left unpainted. Existing support brackets should be painted consisted with Item 4.4. New work may be powder-coated to reduce future maintenance, with compatible grey-value colors.

No standard approach to canopy supports exists, including both round and tube steel, of varying dimension and design. This variety is considered evidence of the “in field” modification aspect of the barrel canopies and should be continued within certain basic compatible parameters. Those required design characteristics are:

- Metal (steel) construction
- Half-round metal covering as existing, matched to door width
- Small scale (1 to 1-1/4 inch maximum diameter or width)
- Cantilevered or ground post-support
- Minimal projection from wall (maximum 3 feet)
- No “gable” ends, creating open half-circle to exposed wall siding (bottom tie-bar or stringers are acceptable)
PGE can either develop a “standard” barrel canopy support system that meets the above requirements or, preferably, PGE can promote variety within that standard. Possible examples are shown above. Other options including plate steel or other designs are possible and to the extent that various design motifs explore the basic geometric options, all are compatible with the basic character of Ivan Flats.

In order to avoid large scale and incompatible barrel canopies, any double-entry doors that required a canopy covering should rely upon the single-slope shed canopy design already present on the site. Here, modest variation of the “A” frame support brackets, as shown below, is again within the in-field character of the feature.

The installation of additional barrel or shed canopies within the “industrial/utilitarian” theme is considered a compatible opportunity to create visual distinction at Ivan Flats while reinforcing the overall character. These modifications, if required or desirable from a functional aspect, do not adversely impact character provided they follow the above guidelines for construction and Item 4.6 paint or powder-coated surfaces.
4.9 DECORATIVE FEATURES—TRIM

A. BASIC DESCRIPTION
Industrial buildings have modest painted wood trim around wood windows and doors, matched in some situations by 1x6 painted fascia boards. Corners are simply bridged by galvanized flashing.

Office buildings within the Ivan Flats core have more detailed trim kits, most dating from the recent exterior remodeling. These include inside and outside corners as well as simply framed window and door openings.

Steel-window openings in industrial building are entirely without trim, with the sash set into the wall, overlaid atop the metal siding.

B. HISTORIC CHARACTER-DEFINING ASPECTS
- Modest, limited, visual impact
- Functional, not decorative
- Colors matched to body

C. ALTERATIONS OR MODIFICATIONS PRESENT
Some wooden trim has been painted in accent colors. Some windows and doors have been trimmed with applied metal. Replacement windows are surface applied, and project from the wall plane.

D. GOAL
To maintain or reestablish original character and appearance.

E. APPROACH
Existing trim should be retained, repaired as necessary, and painted as per the standards of Item 4.6, including the repainting of existing, non-conforming, trim. Where new windows are installed, either to replace existing or to provide additional interior light, sash should be installed
within the wall cavity to minimize projection beyond the wall surface, keeping trim to a minimum. Where weather covering is required, minimal trim, including metal plates or siding, should be installed. Where wood trim is required, dimensions should be as minimal as possible with simple butt joints and no sill to minimize visual impact. All trim elements should be painted as per Item 4.6, in colors that match the new or replaced window sash, creating a single-unit appearance.

No trim shall be installed unless absolutely required for weather protection and, when so required, will be kept to a minimum dimension and painted in muted tones to create minimal visual distinction.
4.10 MISCELLANEOUS MINOR MODIFICATIONS

A. BASIC DESCRIPTION
In order to improve function from energy performance, seismic upgrade, water diversion, systems upgrades, or other common issues related to operations and maintenance, PGE will be obligated to make minor modifications that affect the exterior of Ivan Flats structures. Such work might include installation of gutters and downspouts where none currently exist, the installation of new or enlarged electrical or HVAC control units, roof-top communications installations or other penetrations to wall surfaces, or attachments to or near them. All these modifications have the potential to adversely affect the historic character of the Ivan Flats Compound. This Item provides general guidelines to inform the design and installation of such features so that they may be as compatible with the compound’s historic character as is feasible. Clearly, not all future modifications are addressed, the intent being to provide some general guidance toward appropriate design.

B. HISTORIC CHARACTER-DEFINING ASPECTS
N/A

C. ALTERATIONS OR MODIFICATIONS PRESENT
N/A

D. GOAL
To maintain and improve functionality while creating minimal visual impact to the historic character.

E. APPROACH
In general, exterior changes to historic structures that are required to improve function should be designed and, more importantly, placed so as to minimize visual impact on key facades and viewpoints. At Ivan Flats, that typically means that new equipment including HVAC units, transformers, tanks and other larger items should be installed to the rear, away from the central yard if at all possible. Equipment locations may benefit from screening behind metal fencing that visually blends into the siding.

Where installations must be placed to the front of a structure, or when the side elevation is visible due to siting, placement away from doors or windows minimizes impact. Installations should be sized or hidden by fencing to reflect the scale and proportion of the historic
structure. For example, installation of units that reflect window spacing, or are located as part of a series of window openings (either directly below a window or spaced as the next opening would be), are less visually jarring than a location that disrupts an existing pattern. The following graphic illustrates this concept.

Installation of roof-top elements or other major exterior modifications are often difficult to entirely hide and so should be designed to take advantage of the utilitarian/functional nature of the Ivan Flats compound. Again, use of muted grays and thoughtful siting can minimize impact to a high degree.

Penetrations required for new systems, including cabling, plumbing, or similar pipe or conduit, should be installed in a neat and workmanlike manner, with vertical runs, right-angle turns, and neat installations of parallel lines. To the greatest extent possible, parallel lines should be tightly installed to minimize visual “area” and impact as possible (see below). All installations, fittings, and other housings should be of compatible materials or, if needed, painted to blend with the siding.

Most buildings at Ivan Flats have no fascia and only a few have gutters. Where gutters are to be installed, standard profile metal, coated in gray tones, should be used. Downspouts should be neatly installed at building corners, away from the primary elevation if feasible, and made of
gray-tone materials to blend with siding. Unless required, gutters should be mounted to the rafters, without any fascia installed.

Installation of exterior lighting, fire suppression equipment, hose cradles, equipment racks or other “attached” elements to the historic exteriors are generally within the basic “industrial” character of the structures and so do not seriously diminish historic character. Careful location that respects existing design, neat installations that are parallel or perpendicular to existing openings or attachments, and matching in color or tonal value to the degree possible will help minimize visual impact. The installation of thru-the-wall AC units is discouraged but are preferable to window- or roof-mounted units that damage historic features (window mount) or create highly-visible and potentially disruptive new elements (roof mounts). Where thru-the-wall units are determined the least impactive alternative, installation that respects the existing opening pattern, as detailed above in this Section, shall guide placement.
4.11 Scattered Structures

A. Basic Description
Documented and in one case determined eligible within the basic Ivan Flats framework, scattered minor structures within the Pelton Round Butte Project are located outside that compound. These resources are few in number (three) and most are non-historic structures, each completed after the period of significance.

B. Character-Defining Aspects
Multiple materials, forms and other characteristics:
- Small scale structures
- Single-use
- Dispersed locations
- Non-uniform, inconsistent use of materials in various forms

Alterations or Modifications Present
Multiple, N/A

C. Goal
To retain the historic structure as possible, given project needs. To continue basic character for any new structures built within the project.

D. Approach
PGE currently uses the sole dispersed historic structure, the Construction Warehouse (Resource 12.80), for long-term storage with little maintenance. To the extent possible, this building should be maintained as part of the project and repaired “in-kind” following the approaches used for similar metal-sided structures within the core Ivan Flats area. At minimum, the Construction Warehouse should not be removed from the project unless such removal is required due to safety concerns.

PGE’s current approach to construction of new, dispersed structures within the Project follows an appropriate pattern of differentiation and level of detail that should be continued. Simple, largely utilitarian, small-scale structures comparable to the Communications Building (Resource 12.81) are appropriate for construction outside the Ivan Flats core area as required.
for continued project operations. These buildings may appropriately rely upon wood framing, wood siding, and other modest treatments similar to the wood frame structures at the Ivan Flats core, without any overt attempt to create an overly “designed” appearance that conflicts with the project’s general utilitarian/functional character.

For new buildings adjacent to the Ivan Flats core, as with the Pelton Round Butte Office Building (Resource 12.79), the use of a more elaborate exterior that includes coursed stone veneers, open large-beam framing details, and other elements of what is a more modern Central Oregon design character, successfully differentiate new work from historic while providing a modern, attractive addition to the Pelton Round Butte Project. This style and use of materials, therefore, is appropriate for any future construction within Ivan Flats but clearly outside the core historic area.
SECTION 5
PUBLIC AMENITIES
5.1 General Statement

Although there are multiple recreation related resources located within the Pelton Round Butte Project, the majority are centered at Pelton Park, located on the shores of Lake Simtustus. This facility was entirely rebuilt in the 1990s following a landslide that largely destroyed the original development. The small structures at that site, including the marina/store, office building, and minor support buildings that serve the publicly accessible campground, were evaluated as Non-Historic in the Determination of Eligibility and so are not directly covered by this manual. PGE’s established design program at those sites, largely consistent with the recommendations of Item 4.11 for dispersed structures, should be continued for any future development at those sites.

As a result of the reconstruction at Pelton Park, the relative significance of the remaining recreation/public amenity resources within the Pelton Round Butte Project have increased due to their rarity. Such resources are limited to the Round Butte Overlook Park and the scattered informational/directional signs that identify project resources for the public.
5.2 ROUND BUTTE OBSERVATORY

A. BASIC DESCRIPTION
Built in 1963 to provide the public a viewing opportunity and information center during the construction of the Round Butte Dam, this structure was later converted and renamed the “Round Butte Overlook Park.” Today it serves as the focal point of a publicly accessible day-use park. The exterior of the one story building, modified in 1998, now houses exhibits on the natural history, flora and fauna of the region as well as project information.

B. HISTORIC CHARACTER-DEFINING ASPECTS

- Flat, single story design
- Vertical T-111 painted siding
- Open center portion
- Applied, individual letter, signage
- Interior: clear knotty pine walls
- Interior: canted, wood-sash, plate glass overlook windows with exposed structure
- Interior: exposed beams, wood ceiling
- Interior: mid-century design fixtures

C. ALTERATIONS OR MODIFICATIONS PRESENT
As noted, the building was modified in 1998 with the most notable change being the construction of a largely free-standing gable porch at the entryway. Signage changes, along with new entry doors and repainting have also modified the exterior from its original design. Various changes to grounds and the surrounding park have occurred since the end of the historic period.
D. **GOAL**
To retain historic character and, where possible, re-establish character during future maintenance and repair.

E. **APPROACH**

**EXTERIOR:**
As possible during any future maintenance, efforts to return the Round Butte Observatory to a more historically based design are preferred. Designed as a simple flat-roofed slab volume, the original overlook is an example of so-called “Mid-Century Modern” design and effectively relates the mid-1960s period of its construction. Subsequent modifications, including the porch entry and adjacent deck, do not reflect this original character and, in part, obscure it. Future work may include changes to the modified entry to better reflect the character defining flat roof of the original design while utilizing materials, treatments, or column details that are based on historic models. One solution might be a shed projection over the full width of the open center recessed entryway.
While original T-111 siding and trim remains, the current paint scheme significantly decreases the contrast between them. Although paint analysis would help identify original color schemes, it is more important to reestablish the contrast between trim and body than to specifically duplicate original colors. Future repainting should utilize colors that reflect that historic differentiation but need not necessarily specifically duplicate the original tonal values.

Existing signage, using the acrylic panels and rounded “Pelton” standard lettering, is generally consistent with newer informational materials now throughout the project (see Section 5.4, Interpretation). The Overlook Park identification (see above) mimics that material but uses a different, linear and sans serif font. This sign could be replaced with individual cast aluminum letters patterned after the original design (see historic view, above) to identify the Round Butte Overlook Park in historically compatible fashion. The original cast aluminum sign lettering appears to be similar in character to either AVANT GARDE or HELVETICA LIGHT, both sans serif styles that are available in mixed heights from a variety of vendors (see, for example, Gemini Cast Letters, www.signletters.com).

Original entry doors at the observatory were decorated with a three-part tree or arrowhead detail on each opening (See historic view, above). This period-based and historically appropriate detail should be re-applied to the observatory to the degree possible, either via replacement entry doors (now glass and anodized aluminum) or as side-panels or decorative elements elsewhere on the façade. See, for example, Door Option 1, showing a possible modified design that retains an upper glazed panel for interior visibility with simple applied “tree” panels below, or Door Option 2, retaining the existing full glazed aluminum doors but shifting the decoration to panels mounted on side of the opening.
INTERIOR:
One of the few historic interior spaces at the Pelton Round Butte Project that is generally accessible to the public, the interior of the Round Butte Observatory retains considerable early or original-appearing detail. Key features include the clear-finish knotty pine walls (non-original) and reddish-stained open-beam and mixed v-groove lap and beadboard ceiling treatment. Canted, large fixed panel “viewing windows” with painted trim overlook the Round Butte dam. Surface mounted boxed lighting, augmented by “spun” mill-finish light fixtures, also remain. Commercial grade glue-down carpeting (in the elevated viewing area) and vinyl flooring, while clearly non-original, are generally consistent with the modest interior theme.

Replacement of glazing to increase energy efficiency must retain the existing “canted” or angled viewing position and the large over-sized panels without interior muntins or divisions of any kind. Any new work should generally replicate the existing character in all visual aspects other than the use of double-paned glass. No reflective coatings, tinted glazing or other changes shall be installed.

Continued use of low-pile commercial carpet is appropriate, in muted neutral colors. If at some future time the existing vinyl surface is to be upgraded or replaced, the use of a more characteristic materials such as vinyl composition tile (VCT) by Armstrong or similar is strongly encouraged. Applied in 12x12 inch squares, this solid color material is both durable and available in historically-based mottled designs that accurately reflect the early-1960s construction era of the building. Creative two-color checkerboard patterns, or even the introduction of the “tree” motif from the front entry way would support the historic character of the interior space. (For products, see www.armstrong.com)

Existing lighting, consists of white plastic box fixtures with mill-finish aluminum mountings and wooden bases, and is powered via surface mounted conduit. “Spot light” type fixtures with three heads provide point light as needed. All fixtures appear to be original to the building and shall be retained, modified as needed to accept energy efficient bulbs. Should additional lighting be required, both the ceiling-mount Cove fixture (AA6549, shown at left) and the Donald wall sconce (AB 6694) are available from Rejuvenation Lighting (www.rejuvenation.com) and offer a generally compatible design. Other fixtures in what is generally termed “Modern America” or “Atomic Age” designs may also be compatible with the interior character. Placement of new fixtures, especially any modification to the square boxes, should be carefully considered to retain the symmetrical placement within the ceiling beams.

8 Original wall surfaces, as per available plans, were Weyerhaeuser “Weytex” panels, a manufactured fiberboard product. The replacement of these panels with the existing knotty pine paneling is undocumented but appears to have been in the 1980s or earlier.
GROUNDs:
Pathways and perimeter plantings at the observatory were originally quite modest, with gravel paths and small beds. As use of the facility has increased, these have been replaced by stamped/stained concrete walkways leading to the side/rear wood deck with larger plantings and container plants located along the façade (memorial/interpretative issues are discussed in Section 5.4). In general, these treatments are compatible with the basic character of the site; however, the further use of stamped or stained concrete is not recommended. A more compatible solution would be a simple natural concrete in simple broom-finish without the introduction of any new color, patterns, or materials.

Fencing, including standard woven-wire chain link at the perimeter and a cedar/wire mesh deck enclosure (as shown at right) are generally appropriate and consistent with the basic character. Any new fencing installation should continue these designs and materials. In no situation should vinyl fencing or any bright colored materials be introduced into the site.
5.3 Day Use Area

A. Basic Description
In general, project recreational areas have no sharply defined “edges” or hard surfaces. Parking areas or travel lanes are gravel, without curbs. Grassy areas are interspersed with amenities including picnic tables or game areas (horseshoe pits, etc.), and lack tree rings, beds or other elements. Small stones provide informal edge definition in a natural, non-designed method.

B. Historic Character-Defining Aspects
- Natural materials
- Minimal “edge” character
- Modest improvements
- Neutral colors

C. Alterations or Modifications Present
N/A

D. Goal
To continue the historically-based modest character while providing safe, functional, attractive, and easy-to-maintain public amenities.

E. Approach
Site amenities at the Day-Use Area are modest, with gravel paths, gravel parking, and a few picnic tables, horseshoe pits and similar features. Scattered mature trees provide shade. Any future development at the site should be carefully designed to continue this modest character, relying upon natural or muted colors (galvanized metal, grey/brown wood or Trex type materials) and avoid the introduction of any new design elements with high visual impact to existing landscape.
The use of hard edge “curbs” or impervious pavement (asphalt, concrete) for the parking area is strongly discouraged and should be avoided unless determined absolutely necessary from some other program standpoint. Where such is necessary, as in an improved ADA off-loading space, consideration should be given toward minimizing the improvement area to meet that need only, rather than expanding the treatment site-wide.

Continued use of modest site-built amenities (horseshoe pits, benches, etc.) is preferred over the installation of manufactured products in most cases. Where manufactured features are installed, designs of simple galvanized metal and/or wood are preferred over any coated or brightly colored products.

Pathways should be maintained in their current “natural” appearance, surfaced with gravel or natural materials. Where more substantial paving is required, the use of natural broom-finish concrete without curb or edge definition is recommended. Again, such improvement should be minimized to address the specific need rather than expanded throughout the site to the greatest degree feasible.
5.4 Interpretation & Informational Signage

A. Basic Description
Internal and external way-finding at the project, directing visitors to publicly accessible amenities, is generally either of routed wood panels mounted on wood or metal poles or vinyl-applied white lettering on brown panels, as shown in Item 5.2. None of these features is considered historic, as all post-date the historic development period. Primary entry signage to the project office, of recent construction (c. 2007), is of burnished log and random course stone design with a matching routed wood panel. Interpretive signage and interpretive materials located at various project facilities is of mixed design, including brass or bronze cast plaques with stone bases as well as salvaged project elements (turbines) that illustrate aspects of the operation.

B. Historic Character-Defining Aspects
N/A. Signage is of mixed construction, design and graphic character. For the most part, signage is non-historic.

C. Alterations or Modifications Present
Although some interpretive markers appear to relate to the original construction at the project, none of the directional signage is believed to be original. Some signage, particularly one that formerly stood at the entry to the Pelton Dam, have been removed (see below).

D. Goal
To provide attractive, clear, and durable informational and directional signage for the public while respecting the overall character the project and its natural setting. All existing, historic or commemorative monuments will be maintained and retained as project elements.

E. Approach
In general, the current approach to retention of historic commemorative signage of one style and the installation of new directional or informational signage in a more modern form is appropriate and consistent with the project’s character. The
standardization on brown panels with routed wood or cut-vinyl letters in a standardized font (Benji HV for main text, Humanist 777 for smaller text)\(^9\) creates an internally consistent project identity that should be continued as new signage is required by project modifications. The use of natural tone wood and pressure-treated support posts is visually compatible with the landscape and appropriate.

As opposed to the non-historic way-finding signage, original interpretative or commemorative markers at the project generally remain in essentially original condition, including the Lake Billy Chinook and Madras-Jefferson Chamber of Commerce markers at Round Butte Overlook Park and the Lake Simtustus Marker near the Pelton Dam. Each of these commemorative installations has been identified as a historic contributing resource and should be retained. Where required or preferred, any new or additional commemorative installations within the project boundary should follow the established design precedent and should be of more permanent, substantial design than is used for the way-finding placards.

Significant modifications to historic interpretative materials include the replacement of the identification lettering at the Round Butte Overlook Park (see Item 5.2) and more recently the removal of the project identification sign at Pelton Dam, the steel support for which remains at the entry to the Dam.

\(^9\) Benji (also spelled Bengi) is a rounded, sans serif style, that is largely a-historic but has over time been standardized for the majority of project information signage. This is generally of light-toned (white) routed or applied letters on a brown background (see [www.simplewerx.com/bengihv.html](http://www.simplewerx.com/bengihv.html)).
Repair or replacement of this sign in its surviving original frame, could provide a model for future informational materials at the site. Although security concerns would naturally require modification to the text, replacement in the original sign frame could create a compatible, yet distinct, approach that differentiates between interpretative signage and the more common informational/site identification and directional signage.

Pelton Park, entirely rebuilt in the 1990s and so non-historic, is not directly subject to this manual; however, retaining essential compatibility with historic resources has helped to guide both the reconstruction of that facility and its continued management as a public amenity within the project boundary. A consistent approach to interpretative materials and any informational or directional signage between Pelton Park and the project’s designated historic elements is strongly encouraged.
SECTION 6

MODIFICATIONS TO
NON-HISTORIC RESOURCES
6.1 General Statement

Non-historic historic resources at Pelton Round Butte are, by definition, those buildings and structures identified as “Non Contributing” in the resource identification table of the June 2008 Determination of Eligibility Request.\(^{10}\) Thirty (30) structures, 43% of the total, at Pelton Round Butte are so-identified, include virtually of the buildings associated with the Round Butte Fish Hatchery, scattered structures at the Ivan Flats complex, the rebuilt recreation facilities at Pelton Park, and the ReReg dam powerhouse project facilities.

The following general approaches govern basic considerations that PGE will attempt to implement when undertaking any modification to existing historic resources, in recognition of the fact that many may, in time, be considered significant and all, by virtue of proximity, have the potential to impact adjacent historic resources either directly or indirectly.

To the greatest extent feasible, all work on Non-Historic, Non-Contributing Buildings at the Pelton Round Butte Hydroelectric Project should strive to follow the guidance of Section 2.0, General Work, of this document as it relates to massing, siting, and other basic factors of design.

Non-historic, non-contributing resources should be recognized as being of their own time and accurately reflect that character, even when it may not match current guidance for historic or new construction. Nothing in this document should be considered to encourage the creation of a false sense of history or “earlying” up these resources to reflect the historic period.

\(^{10}\) The resource identification and evaluation table can be found in Appendix B to this manual.
6.2 General Character

A. Basic Description
Non-historic buildings, including both Industrial/utilitarian structures as well as more finished spaces such as the project offices, reflect a variety of different design approaches and so employ a range of materials and scale. Some are typical, utilitarian, sheet metal cladding while others include stucco, wood siding, stone veneers and more elaborate treatments.

B. Historic Character-Defining Aspects
N/A. These buildings are not historic, although each does utilize materials and designs that generally reflect the original period of construction, whether it is the early 1980s, as at Pelton ReReg, the 1990s (at Pelton Park), or the 21st century.

C. Alterations or Modifications Present
N/A

D. Goal
To maintain the existing non-historic resources at Pelton Round Butte, especially those with a strong connection to the later development history of the project, as they were originally designed and constructed. Retention of these resources provides a valuable documentation of the history of the project over time.

E. Approach
Non-historic resources, in general, are compatible with the original developments at Pelton Round Butte or the ReReg Dam and so should be maintained and repaired “in-kind,” to accurately reflect their original construction. Where non-historic resources are located in close proximity to significant features, as at the Round Butte Hatchery, care in management should strive to maintain the existing relationship to the greatest degree feasible and in no case should modifications or changes result in a more visually dominant presence that adversely impacts adjacent historic properties.

In other locations, especially at Pelton Park, non-historic resources exist in essential isolation from any proximate historic features. Here, without any potential impact, changes to existing resources are largely outside any concern for historic impacts and so may be undertaken without constraint.
In general, subject to an inherently lesser standard of concern, modifications to non-historic, non-contributing built resources at the Pelton Round Butte Hydroelectric Project should follow the basic tenants of the pertinent sections of this document to the degree feasible. Although direct effects to identified non-historic resources, by definition, is outside the purview of Section 106 and this manual, PGE recognizes that such activity has the potential for indirect visual and contextual effect to historic contributing resources and will, to the degree feasible, attempt to minimize those effects while still operating the facility in a safe, efficient, and fully functional manner.
Section 7

New Construction
7.1 **General Statement**

Over the life of both the FERC License and the CRMP, there will almost certainly be situations in which PGE will require entirely new construction within the Project in order to address improved operation, fish passage, support or recreational-related needs. In such case, though consisting of new, physically independent structures, new construction essentially creates a modification to the overall project and so is treated as such. **New construction, subject to the pertinent elements of Section 2 General Work, is ultimately subject to the Standards for Rehabilitation** so as to maintain the overall significant character of the Pelton Round Butte Hydroelectric project. New construction should be designed for compatibility with original resources while avoiding imitative design. It is understood and acknowledged that it is neither practical, nor desirable, for new construction to duplicate the character of historic resources. Please see Section 7 for additional guidance on new construction in the Pelton Round Butte Hydroelectric Project.
7.2 Siting for New Construction

A. Basic Description
New buildings and structures at Pelton Round Butte may be located within existing clusters of historic resources--at one of the three generation/dam locations, at the Round Butte Switchyard, or at Ivan Flats—or they may be located as independent and largely discrete projects not associated with any proximate historic resource.

B. Historic Character-Defining Aspects
N/A

C. Alterations or Modifications Present
N/A

D. Goal
To integrate future construction for project need into the existing project character and design with minimal visual impact.

E. Approach
Site placement of any new construction within an established building area should be undertaken in recognition of the existing pattern of development. Where historic buildings are currently arrayed around a central feature (the open yard at Ivan Flats) or lined up parallel to a key feature (the dams or turbine lines), placement of new structures should maintain that pattern as feasible.

CONSTRUCTION WITHIN AN ESTABLISHED BUILDING AREA:
**Explanation:** In the above graphic (left), the new building intrudes into the existing pattern of historic structures, breaking the open yard. Better siting options for the same structure (right), either flanking an adjacent building within the pattern or “closing” the established yard, are preferred.

Consistent and thus compatible placement includes location within an existing site pattern or array and matched setback from any linear features (roadways, dam crests, linear fish passage features, etc.).

In addition to siting within an established pattern, new construction should be sited to the greatest degree feasible to maintain both the existing viewshed and the primary role of the historic structure at the site. New work, subject to the scale and massing guidance in the following Item (7.3), should be sited behind identified historic structures from the primary access point. In arrays, such as at Ivan Flats, multiple views both internal and external should be considered.

**Explanation:** In the above graphic, the new construction not only interrupts the established pattern of the yard, but also blocks visual access to the historic buildings from the primary access point (at right). The centrally placed new construction also impacts *internal* viewpoints within the yard, significantly altering the historic relationships between buildings. This approach, independent of scale or materials for the new construction, would logically be considered to have an adverse effect on the historic pattern of development.
APPROPRIATE SITING

**Explanation:** In the above graphic, the new construction has been located both outside the main central area and as far removed as feasible from the primary access point at the right, creating what amounts to a second layer of buildings. This approach, independent of scale materials for the new construction represents a more appropriate method of siting new construction that may not be determined to have an adverse effect on the historic pattern of development.

**CONSTRUCTION WITHIN NON-BUILDING AREAS:**
New structures proposed in *non-building* areas, or *in-water* areas, have a lesser threshold for compatibility due to lack of adjacent historic resources. Here siting concerns are generally outweighed by scale/mass and use of materials.
CONSTRUCTION WITHIN NEW BUILDING AREAS:
New construction entirely removed or separate from an established site with historic resources, such as at Pelton Park, is not directly subject to the requirements of this manual unless of such a scale as to have potential visual or other indirect impact on existing historic character. New construction within such areas in general is not governed by this document and does not impact identified historic resources.

That said, PGE will continue the essential character of Pelton Round Butte, being functional utilitarian designs to the degree practical. Entirely new nodes of development (e.g., new recreational areas) may include alternate design characteristics that reflect non-historic approaches or use of materials.
7.3 Massing for New Construction

A. Basic Description
Massing for new construction, as opposed to the siting issues addressed in Item 7.2, concerns the volume and scale of new construction as it relates to adjacent historic resources. New work, potentially of significantly larger size to accommodate new equipment, technology, or combined uses, can often require a much larger structure than was present during the period of significance. Massing—the volume (height, width) and scale of a new facility—should attempt to “fit” within an existing building area and not visually overwhelm and dwarf adjacent historic resources.

B. Historic Character-Defining Aspects
N/A

C. Alterations or Modifications Present
N/A

D. Goal
To provide for future needs at Pelton Round Butte while respecting the existing historic character of the project to the greatest degree feasible.

E. Approach
Continuing from the concepts presented in Item 2.2 of this document, appropriate massing for new construction at Pelton Round Butte is generally consistent with the existing scale. Matched ridge height, roof pitch, and width-to-length ratios for single volumes are generally compatible and will, even when of moderately larger scale, fit. Proximity and spacing between resources can also reduce impact.

When new construction of larger scale is required by the use, by program, or building function, careful siting and attention to design can minimize the visual impacts. The use of large, single-volume massing in close proximity to historically significant resources should be avoided where possible. Complex massing diminishes visual impact. Stepped volumes, both in elevation and plan, allow large structures to appear as a cluster of smaller, more compatibly-scaled volumes while still providing the same square footage. Multiple-function buildings often have internal “sections” that can be expressed by dividing a single large structure into component parts.
Avoid new construction in close proximity to historic resources.

Distance between historic and new construction reduces impacts.

Distance and a complex stepped mass is the preferred option for new construction in close proximity to historic resources.
Single large volumes have the greatest impact on visual character, since they tend to dwarf adjacent smaller buildings. Complex massing, breaking rooflines or shifting portions of the building to create multiple rooflines and irregular footprints are a recommended strategy to reduce impacts.

Even a single large use can be made more compatible through the use of minor projections, such as enclosed entry-areas, service bays, covered work areas and similar small additions to the main volume.
Projecting shed or gable roof volumes providing additional spaces or outdoor uses (i.e., open covered areas) serve to reduce the visual impact of a single large volume.

SINGLE LARGE VOLUME (AVOID) COMPARED TO PROJECTING SHED OR GABLE ROOF VOLUMES
7.4 Materials for New Construction

A. Basic Description
Historic structures at the Pelton Round Butte Hydroelectric Project rely on a variety of exterior materials including exposed concrete, galvanized metal, wood, and stucco in varying combinations. New construction, including the above as well as log, stone, and modern siding, can either replicate and continue the historic pattern or introduce new materials into the project.

B. Historic Character-Defining Aspects
See Sections 2, 3, and 4 for general comments on the role materials play in forming historic character.

C. Alterations or Modifications Present
N/A

D. Goal
New construction at the project will rely upon durable, cost-effective, and attractive materials that, where possible, will compliment historic character.

E. Approach
Most construction at Pelton Round Butte during the historic period was of simple design, relying upon industrial or standard materials including concrete, steel, wood and combinations thereof to create both functional and attractive volumes. Existing, non-historic structures within the project area have generally followed that trend. Generation-related features at the Reregulating Dam, for example, are uniformly of exposed concrete construction, while new buildings related to fish passage at Round Butte generally rely upon metal siding. Other resources, particularly the project office at Ivan Flats (Resource 12.79, built 2006), are more elaborate than previous resources at the project, but that impact is mitigated by its location outside the core Ivan Flats shop area.

New construction at Pelton Round Butte, when located within established building areas, should generally attempt to continue the existing character to the degree feasible by matching materials and appearance. Minor modifications in pattern, as in the use of varied metal siding profiles or colors, serves to distinguish new from old work. In no situation should new construction attempt to mimic or identically duplicate the design or materials of historic structures.
Section 8: Cumulative Effects

8.1 General Notes on Cumulative Effect

Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be further removed in distance or may be cumulative.

36 CFR 800.5a(1)

A. What is a Cumulative Effect?
Cumulative effects result from changes and modifications over time to a historic resource, be it a building or site. Cumulative effects can be direct, being those that physically impact the resource, or indirect, being those that alter the resource’s site, setting and relationship. Indirect effects can be visual or atmospheric, including noise, access or other factors that do not physically touch the resource. A cumulative effect may result from the combination of both indirect and direct effects on an identified historic resource.

Cumulative effects are subject to both Section 106 (the National Historic Preservation Act) and, where applicable, NEPA (National Environmental Protection Act).

Cumulative effects occur when incremental impacts—past, present and/or future actions—result in a collective adverse effect on the identified characteristics of a historic resource. For example, a historic resource might be modified by a well-designed, fully compatible, addition but still retain a substantial connection to its historically significant design or associations. A subsequent addition, although equally well designed and constructed, may nevertheless also impact that character. The combined result, even when both additions are compatibly designed, may result in an adverse effect.

B. Identifying Cumulative Effects
There is no set rule to identify a cumulative effect or to determine when a series of otherwise compatible actions may, when combined, result in one. Reviewers will factor in numerous elements of the project in an effort to determine if, in totality, the integrity of the historic resource has been so compromised that it constitutes an adverse effect. Perhaps the easiest way to begin to determine a cumulative effect is to compare photographs of the resource at the time it was determined significant (not necessarily as it appeared during the period of significance), with its appearance and setting at the completion of the proposed change.

C. Avoiding Cumulative Effect
In a functional industrial setting such as that at Pelton Round Butte, where multiple project needs are being addressed, change over time is a given. Repeated modifications to existing, often historic, structures to improve operations are likely to continue. While this document lays out appropriate strategies to manage that change, even strict adherence to these guidelines may, over time, still result in a cumulative change.
Since it is neither likely nor preferable that PGE will cease to need to update and modify resources at Pelton Round Butte, the best method to minimize cumulative change is to avoid concentration of modification at any given building or any given site. Construction of entirely new work, at some physical and, where possible, visual remove from existing facilities minimizes the potential for cumulative effect. In the case of the established nodes, following the guidelines for new construction in siting, scale, and use of materials serves to continue existing character to the greatest degree feasible while still meeting other project requirements.

**Example of Direct Effects:**

![Diagram of cumulative effects](image)

Even generally compatible additions can, when taken as a whole over time, overwhelm an historic resource and result in a cumulative adverse effect.
Example of Indirect Effects:

Construction of a new building, even a generally compatible new building, can have an indirect impact on the remaining historic resources and result in a cumulative effect.
The following selected publications provide source materials for the Management Plan or offer specific information on particular aspects of historic preservation technology that may be of use for planning future work at Pelton Round Butte.


APPENDIX A

SHPO LETTER OF CONCURRENCE
SEPTEMBER 8, 2008
September 08, 2008

Ms. Julie Keil
PGE
121 SW Salmon - 3WTC BRHL
Portland, OR 97204

RE: SHPO Case No. 08-1822
   Pelton Round Butte Hydro Project DOE - FERC No. 2030
   Deschutes River Canyon, Madras, Jefferson County

Dear Ms. Keil:

We have reviewed the materials submitted on the project referenced above, and we concur with the determination that the property is eligible for the National Register of Historic Places in accordance with 36 CFR Part 60.4.

Our response here is to assist you with your responsibilities under Section 106 of the National Historic Preservation Act (per 36 CFR Part 800). Please feel free to contact me if you have further questions, comments or need additional assistance.

Sincerely,

Sarah Jalving
Historic Compliance Specialist
(503) 986-0679 or Sarah.Jalving@state.or.us
APPENDIX B

PROJECT DESCRIPTION AND LIST OF BUILT RESOURCES
(FROM DETERMINATION OF ELIGIBILITY REQUEST, JUNE 2008)
Pelton Round Butte Hydroelectric Project Map,
Historic Resource Areas
(Source: USGS Madras 7.5-Min Quadrangle (1983), Annotated

Surveyor/Agency: Heritage Research Assoc./George Kramer Date Recorded: June 2008
## RESOURCE IDENTIFICATION AND EVALUATION

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<td>Round Butte Boat Dock</td>
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<td>Round Butte Boat Ramp</td>
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<td>Turbine Wheel</td>
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<td>11b</td>
<td>Lake Billy Chinook Monument</td>
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<td>11c</td>
<td>Madras-Jefferson County Chamber Marker</td>
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<td>RB Repair Bay (now Maintenance)</td>
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Surveyor/Agency: Heritage Research Assoc./George Kramer Date Recorded: June 2008
# RESOURCE IDENTIFICATION AND EVALUATION

## PELTON DAM AREA RESOURCES

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<tr>
<th>ID #</th>
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<th>Contributing</th>
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<td>23b Lake Simtustus Marker</td>
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## REREGULATING DAM AREA RESOURCES

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## TOTAL PROJECT RESOURCES

69 (100%)

Resource Totals: Historic Contributing 39 (57%)

Resource Totals: Non-Historic/Non-Contributing 30 (43%)

The majority of non-historic resources reflect later construction (i.e., post-1965) related to the Round Butte Fish Hatchery, the Reregulating Powerhouse or support structures related to the Ivan Flats Complex. Virtually all generation or water conveyance-related features, along with the majority of the original Bechtel construction buildings at Ivan Flats, accounting for all 38 contributing resources, retain very high integrity to their original design and function.
Pelton Round Butte Hydroelectric Project Map,
(Source: PGE)

Surveyor/Agency: Heritage Research Assoc./George Kramer  Date Recorded: June 2008
2. **PROJECT DESCRIPTION**

The Pelton Round Butte Hydroelectric Project consists of multiple individual elements located alongside and spanning the channel the Deschutes River Channel, downstream of the Deschutes, Metolius and Crooked rivers. Maps of individual concentrations of built resources, keyed to denote contributing and non-contributing resources, are included. The following list identifies built components related to water control/management, generation, and support, in the order of the water flow through the Project, as well as associated recreational facilities.11

**ROUND BUTTE DAM:**

1. **Lake Billy Chinook**  
   Built: 1963-1965  
   Historic Contributing  
   Formed behind the Round Butte Dam, Lake Billy Chinook has a total storage volume of 455,000 acre feet and a water surface area of 4,000 acres, creating more than 60 miles of shoreline that extend behind the dam for seven miles up the Crooked River, nine miles up the Deschutes, and thirteen miles up the Metolius. The lake was named by the Confederated Tribes of the Warm Springs after W. C. “Billy” Chinook, a Wasco tribal member who served with Kit Carson and was a guide for John C. Fremont in the 19th century.

2. **Round Butte Dam**  
   Built: 1963-1965  
   Evaluation: Historic Contributing  
   A rock-filled structure, the maximum embankment of the dam rises 440 feet above the river bed. The dam crest is 44 feet wide and 1,450 feet along across the Deschutes River channel. Built of multiple materials to control erosion, the total cubic volume of the dam is approximately 9.3 million yards.

   2(a) **Round Butte Boat Dock**: Located at the eastern side of the dam, this concrete pad includes a fenced storage area and houses miscellaneous equipment originally related to fish passage. It is now used by the Jefferson County Sheriff patrols on the lake. A small dock extends into the reservoir.

   2(b) **Round Butte Boat Ramp**: Located approximately in the middle of the dam, the boat ramp runs roughly parallel to the dam and enters the reservoir behind a small buoy line.

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11 This list, while detailed, may not include every single built element at the Project although it does document all major, and many minor, resources. Related resources are grouped under a single Resource ID number as X.1, X.2 etc are counted as contributing or non-contributing elements. Minor features associated with a major resource (i.e., commemorative features, smaller, integrated, built elements, etc.) are designated as “X(a), X(b)” etc., with “X” in all cases referring to the associated resource identification and are not counted in the resource quantification.
Round Butte Dam
3. **Round Butte Spillway**  
   **Built:** 1963-1965  
   **Evaluation:** Historic Contributing

   A concrete spillway intake, located approximately 600 feet upstream from the dam, leads to the spillway *tunnel* behind a steel 30 foot by 36 foot radial gate along with related operational equipment. The concrete-lined spillway tunnel itself varies in width from 36 feet wide to 21 feet at the base, with a total length of approximately 1,800 lineal feet. Downstream the spillway tunnel terminus is framed by concrete opening set into the canyon wall, with a small concrete extension pad and wing wall.

   3.1. **Emergency Spillway Gate Generator Building** (1964, Historic Contributing)  
      A small flat-roofed, concrete block structure, housing equipment. Located immediately upstream of the spillway tunnel opening, adjacent to the concrete housing for the radial gate.

4. **Round Butte Powerhouse Intake**  
   **Built:** 1963-1965  
   **Evaluation:** Historic Contributing

   Located upstream from the power tunnel on the west side of the lake, the intake is a reinforced concrete structure 85 feet long and varying from 68 feet to 32 feet in width. Three 15 foot by 67 foot high steel trash racks are located at the upstream face. A separate tower element, of concrete with a steel superstructure, is located nearby.

5. **Round Butte Power Tunnel/Penstocks**  
   **Built:** 1963-1965  
   **Evaluation:** Historic Contributing

   About 23 feet in diameter and 1,425 feet long, the power tunnel is of steel lined excavated rock, leading to three 14-foot diameter butterfly valves. Entirely hidden beneath the lake and entering the powerhouse through the dam base, the power tunnel has little visible character in normal operation.

6. **Round Butte Powerhouse**  
   **Built:** 1963-1965  
   **Evaluation:** Historic Contributing

   A semi-outdoor facility nestled against the downstream face of the dam, the Round Butte Powerhouse is a 170 feet by 116 feet concrete frame that rises approximately 82 feet high from bedrock. Three Francis type turbines, a 325-ton gantry crane, transformers, and other elements are located on the top, outdoor, deck. One level down, the generator floor contains the three 91,500 kVa generation units, actuators, a control room, and other related equipment. Two additional floor levels are located below the control room, housing turbine bays and other equipment.
6(a) Selective Water Withdrawal  Built: 2008-09
Non-Historic, Non-Contributing

An instream structure that draws water from both the surface and bottom of Lake Billy Chinook to lower temperatures and provide for improved fish management and river quality. The majority of this new structure is typically below water level, appearing as metal “dock” like platform located upstream from the dam.

Evaluation: Historic Contributing

A concrete lined channel downstream of the powerhouse, the tailrace contains water exiting the powerhouse along the western canyon wall until it enters Lake Simstusus, upstream of the Pelton Dam. The Round Butte Dam largely holds the entire flow of the river, exposing bedrock for a short distance immediately downstream of the dam face.

Evaluation: Historic Contributing

Designed as an element of original construction, this concrete and steel structure is located on the right (east) abutment of the dam and was intended to attract and trap downstream migrants prior to surface transport (no longer functional).


10. Round Butte Fish Hatchery  Built: 1972
Non-Historic, Non-Contributing

Built after the determination that the original fish protection measures (Nos. 8 and 9) were not functioning as hoped, the Fish Hatchery was built at the base of the dam to mitigate impacts to the fish run. A series of large rearing ponds allow fish to mature prior to transportation around the dam. “The original construction included 10 rearing ponds 17 feet by 75 feet by 5.5 feet and two adult holding ponds 15 feet by 50 feet by 5.5 feet. Twenty-eight 6-foot diameter by 4-foot high fiberglass rearing tanks were added later” (PGE, 1997:26).

The hatchery development includes several small shed and gable roof structures, all of metal frame and metal siding as well as concrete outdoor pools, holding tanks, and related features, as enumerated below. The hatchery is operated by the Oregon Fish and Game Commission. The operation also includes three Project-owned residential units to house ODFW employees that are located near the Ivan Flats Office Complex and are documented as part of that complex (see Resource No. 12).
10.1: Fish (Smolts) Tagging Facility (1972): A large shed-roofed metal structure with skylights, nestled against the dam face. Pipes for fish passage cut through the NE corner and continue up the dam face.

10.2 Hatchery Shop (1972): A small shallow gable storage building.

10.3 Rearing Ponds (1972): Open concrete-lined basins inset into grade in the middle of the hatchery area.

10.4 Building 3 (1972) Flat-roofed metal structure located at base of dam face.

10.5 Building 4 (1972): Covered tanks, located at base of dam face.

10.6 Fish Tram Control Room (1972): Small shed building holding hoisting equipment over rearing ponds.

10.7 Holding Ponds (1972): Open concrete-lined basins inset into grade at western portion of hatchery area.

10.8 Building 6 (1972): Small gable building located at west of Project area

10.9 Building 7 (1972): Gable office/storage building located at extreme west.

10.10 Building 8 (1972): Gable structure located at base of original aerial cable support

10.11 Rearing Tanks (c1990?): Multiple round fiberglass tanks added to the Project after original construction. These resources are located in multiple locations.


Evaluation: Historic Contributing

Built during construction to provide a public overview of the Project, the Observatory is a wood-framed, flat-roofed, single story building with a gabled entry porch. Substantially remodeled in 1998, it provides displays on the area’s natural history in addition to project information. While modified, the Observatory continues in its public interpretation function. A small surrounding parking area also provides services for as a seasonal day-use facility. Several minor elements are located at the site:

11(a) Turbine Wheel: A Francis-type turbine wheel, salvaged from PGE’s Clackamas River project, sits in the small landscaped area west of the entry door. An interpretive sign identifies the wheel and compares its small 6-foot diameter with the much larger turbines used at Pelton and Round Butte.

11(b) Lake Billy Chinook Monument: A small stone monument located near the observatory holds a bronze plaque that identifies Lake Billy Chinook and provides some history on the tribal member for whom it was named.

11(c) Madras-Jefferson Chamber of Commerce Marker: A bronze plaque presented to PGE by this group, in recognition of “its interest in and contribution to the development of Central Oregon’s natural resources” on June 17, 1965.
Round Butte Observatory Park
Round Butte Office Complex [Ivan Flats]
Evaluation: SEE BELOW

Including multiple structures, many built by Bechtel as office and service structures related to the construction of Round Butte, the Ivan Flats office complex provides storage, equipment repair facilities, crew quarters, and other offices related to the ongoing operation of the Pelton Round Butte Project. Specific structures are:12

12.10: Electrical Shop (now Storage), (1961, Historic Contributing): A small single story gable volume with galvanized siding, located at the northern end of the compound, this building appears “as built.”
12.29: Lube Shop (now Lube Building), (1961, Historic Contributing): A gable volume, somewhat modified but retaining basic integrity. A large vehicle door faces the center compound.
12.31: Warehouse/Storage-Machine Shop [Weld Shop], (1961, Historic Contributing): A rectangular wood-framed structure with galvanized metal siding, this structure appears largely “as-built.” The northern elevation of this structure is referred to as the Electrical Shop but is part of the original volume.
12.32: Repair Bay (now Maintenance Bldg) (1961, Historic Contributing): The largest service structure at Ivan Flats, this wood-frame structure includes a large concrete slab area to the west and is sided with galvanized metal. A small gable volume, a later addition used for crew quarters, is located to the rear north but the building otherwise appears largely as-built. Lining the front area is a concrete slab, referred to as the “wash pad,” assumed to date from the original construction period.
12.33: Carpenter Shop [Historic, now Storage], (1961, Historic Contributing), A single story gable volume with open shed cover and rear addition. The Carpenter Shop is clad with galvanized metal and appears largely “as built.”
12.34: Electric Shop [Historic, now Carpenter Shop], (1961, Historic Contributing): A single story gable volume with open shed cover and rear addition. The Carpenter Shop is clad with galvanized metal and appears largely “as built.”
12.35: Original PRB Office Building, (1961, Historic Contributing): A single-story gable volume. Remodeled (2007-08), with new siding and a return to original footprint, this structure retains basic integrity. This building is now used for wildlife/biology offices.

12 To aid in identification, non-sequential numbering reflects PGE’s internal building designation system. For example, “12.35,” the original Pelton Round Butte Office Building includes the prefix “12,” the resource ID number in this document and suffix “35” referring to the Building Number in the PGE system. Non-sequential numbers, reflect some undocumented pattern within PGE’s inventory. Structures NOT previously designated with a PGE building number are here documented with suffixes starting 12.80 and continuing numerically.
12.36: Tire Shop (now Tool Room), (1961, Historic Contributing): A gable volume with a projecting shed roof porch along its narrow width, this structure is clad with the standard galvanized metal siding and appears largely “as built.”

12.40: Communications Building, (1961, Historic Contributing): Although not entirely clear, this shed-roof metal clad building appears to have been a component of the original development. A newer appearing antenna tower is located to east.

12.41: Wash Supplies Shed/Wash Slab (n.d. Non-Historic, Not Contributing): Although the concrete wash slab to the west of this wood-frame structure appears in the 1965 site map, the modest building appears to be a later construction that varies with the historic building character.

12.43: Oxygen-Acetylene [now Paint Storage], (1961, Historic Contributing): This small steel storage building appears to have been the original Oxygen-Acetylene Shed.

12.44: Kokanee Study Building [Relocated], (c1963, Historic Contributing). This metal clad gable volume was originally located at the Pelton ReRegulating Dam (then identified as “Building 12) and occupied by ODFW biologists. Relocated to this site c1990, it is called the “Kokanee Study” building as it was occupied by biologists studied that species during the recent relicensing process. Currently used as ODFW offices, it will be converted to ODFW storage once conversion of the PRB Offices (ID 12.35) is completed (Steele, 2007).

12.47: Oil Product Building, (n.d., circa 1963): Although not shown on the 1965 map, this small flat-roofed, shed (possibly pre-fabricated) is of consistent design to other original compound elements and is assumed original.

12.75: Silo/Rotor Cover (now Storage), (c1980?, Non-Historic, Non-Contributing): Built to provide temporary covering for the outdoor turbines at Pelton during repair/maintenance activities, this large round structure with a conical roof is not actually a building but, given its scale, appears as one when stored at the Ivan Flats complex.

12.76: Helipad, (c1990s, Non-Historic, Non-Contributing): An asphalt-paved area located at the extreme north of the Ivan Flats compound.

12.77: Boat Storage Shed (c1990, addition c2004): A large steel framed and clad shed building that is used to protect various equipment.


The following two structures are located outside of the Ivan Flats Complex but are included here:

12.80: Pelton Construction Warehouse (c1956, Historic Contributing) A steel-clad, steel-framed gable volume with a salt-box extension is approximately 30 feet by 50 feet, this structure was built overlooking the right abutment of the dam during the original Pelton Construction period. It is currently used for storage of miscellaneous equipment and contains all of the core samples related to the original geologic analysis of the dam site.

13. **Round Butte Switchyard**

   **Built: 1965-1994**

   **Evaluation: Historic Contributing**

   The Round Butte Switchyard is the focal point for interconnection of all three Project powerhouses with the transmission grid. Twelve separate lines converge at this point connecting the Pelton Round Butte Project with PGE, PP&L and regional grid systems. Outdoor transformers and green-painted steel frames are located in a neat grid surrounding by chain link fencing. Several small buildings (see below) are included within the chain-link fenced area. PP&L’s Cove Switchyard, a result of the original Project agreement that inundated the original Cove Power development, is located here as well.

   **13.1: Switchyard Building (c1965)**

   A fireproof metal panel and concrete structure that sits on a raised elevation, this small gable volume housing switching and monitoring equipment. It is identified, above the door as Building 27.

14. **Transmission Lines**

   **Built: 1965, as modified**

   **Evaluation: n/a**

   As noted above, twelve transmission lines radiate from the Round Butte Switchyard, some connecting the Project’s powerhouses internally and others sending PRB power out to PGE’s distribution network. Two are named here.

   **14.1: Round Butte-Bethel Transmission Line:** Constructed as the primary transmission line *from* the project, the Round Butte-Bethel Transmission Line extends approximately 100 miles to PGE’s Bethel Substation, near Salem, in Marion County, Oregon. Towers are three-part steel lattice work frames with a single cross-member. As currently operated, multiple transmission lines radiate from the Round Butte Switchyard, reducing the relationship of this feature, which has been removed from the FERC license boundary it is outside the defined area and so is NOT COUNTED for evaluation purposes.

   **14.2: Pelton-Round Butte Transmission Line:** An internal line connecting the Pelton Powerhouse to the Round Butte Switchyard, this feature was constructed in 1965 as part of the Round Butte development. Built as standard “H” poles in wood, this feature is counted as a historic contributing element.
Pelton Dam

Surveyor/Agency: Heritage Research Assoc./George Kramer Date Recorded: June 2008
PELTON DAM

15. Lake Simtustus  
   Built: 1958  
   Evaluation: Historic Contributing  

The reservoir formed behind the Pelton Dam, Lake Simtustus, is approximately seven miles long, essentially being the portion of the Deschutes River channel upstream of Pelton and downstream of the Round Butte Dam and tailrace canal. Gross storage area of the narrow lake is 31,000 acre feet, with an average depth of 52 feet and a maximum depth of 155 feet. Lake Simtustus was named by the Confederated Tribes of the Warm Springs after a tribal member who has served as a scout for the US Cavalry during Oregon’s exploration and settlement. In addition to its functional purposes as the forebay for the Pelton Powerhouse, the lake is a popular recreational spot with three campgrounds located on its shorelines.

16. Pelton Dam  
   Built: 1958  
   Evaluation: Historic Contributing  

A 204-foot high thin arch variable radius dam, the Pelton Dam is 636 feet long at the crest. A cantilevered ‘shelf’ at the crest allows for a roadway across the dam. At the time of its completion, the Pelton Dam was reported as the thinnest arch dam built in the United States. The roadway across the top of the dam is highlighted by three painted steel structures, which are the hoisting mechanisms for the penstock gates at the dam’s base.

17. Pelton Spillway  
   Built: 1958  
   Evaluation: Historic Contributing  

A reinforced concrete structure on the left bank of the channel, the spillway is controlled by two 34-foot wide by 22-foot high steel tainter gates. A curved concrete approach wall extends upstream of the spillway and there is a downstream concrete channel section that directs water flow along the west side of the channel.

18. Pelton Intake  
   Built: 1958  
   Evaluation: Historic Contributing  

The intake is located in the upstream face of the Pelton Dam, below the surface of Lake Simtustus, and contains three 16-foot diameter gates, trash racks and hoist structures (located at the dam crest and mentioned previously under No. 16). Trash racks are about 40-feet high and 34-feet wide, while the 19.5-foot wide by 23-foot tall inlet gates are located just downstream at the penstock entry.

19. Pelton Penstocks  
   Built: 1958  
   Evaluation: Historic Contributing  

Three 16-foot diameter steel penstocks vary in length from 108 to 116 feet. Portions of the penstocks are embedded in the dam itself.
20. Pelton Powerhouse  
**Built:** 1958  
**Evaluation:** Historic Contributing

An outdoor concrete structure nestled into the downtown arch of the Pelton Dam, the powerhouse is 76 feet long and 168 feet wide within the downstream arch of the dam. Three General Electric units are each rated at 36,000 kVA and are operated by vertical Francis-type turbines. The rolling gantry crane is rated at 175 tons and rides upon embedded rails in the deck, spanning the exposed portions of the generator housings. A small substation is located immediately next to the dam face, the starting point for the transmission line that connects Pelton to the Round Butte Switchyard (No. 13).

21. Pelton Tailrace  
**Built:** 1958  
**Evaluation:** Historic Contributing

Geologic formations immediately below the dam led to the application of a concrete lining to the rock canyon walls for a distance of approximately 100 feet, also used to provide for an access road to the powerhouse.

22. Pelton Fish Ladder  
**Built:** 1958  
**Evaluation:** Historic Contributing

2.84 miles long (14,985 feet), the 10-foot wide and 7-foot deep concrete fish ladder connects the Pelton Dam downstream to the Reregulating dam and was initially used for both upstream and downstream migration. The ladder was removed from use between 1968 and 1973 and is no longer functional although some portions have been modified for use as rearing ponds in connection with the Round Butte Hatchery.

23. Pelton Park  
**Built:** 1958 (entirely rebuilt 1990s)  
**Evaluation:** Non-Historic, Non-Contributing

Approximately 15 acres in area, Pelton Park provides 71 overnight camping sites, a day use picnic area, along with boat launch and moorage facilities for the public. An element of the original development, Pelton Park was largely destroyed by a landslide and was closed for several years as it was reconstructed and reopened in 1992. Several small structures in the park house services.

23.1 Pelton Park Office Building (1990s, Non-Historic, Non-Contributing): A small wood-frame gable volume, this structure serves as the park check-in facility with a small office area. Resided with T-111 and a standing seam metal roof, the building has been somewhat modified but continues to serve its original purpose. Small storage areas are located to the rear.

23.2 Pelton Park Restroom/Shower (1990s, Non-Historic, Non-Contributing): A wood-framed gable volume with board and batten siding and standing seam metal roof.
23.3 *Pelton Marina-Store*: (1990s, Non-Historic, Non-Contributing) A two story wood-frame structure, this building includes a small store for services with the caretakers’ residence above.

23.4 *Pelton Boat Rental Building* (1990s, Non-Historic, Non-Contributing) A small cabin located adjacent to the ramp, wood frame construction with metal roofing.

23.5 *Pelton Fish Cleaning Station* (1990s, Non-Historic, Non-Contributing) A small gable-roof, wood-frame structure with shed rear extension located at base of grade, metal roofing added.

23.6 *Pelton Storage Building* (n.d., Non-Historic, Non-Contributing) A prefabricated metal structure and surround fenced yard used to store equipment and materials (non-historic, non-contributing)

Two small interpretative signs are also located at Pelton Park. The exact construction or history of these features is not clear and they were not counted as individual features.

23(a) *Trees are Precious Marker*: A wooden interpretative panel describing the Sierra Junipers (*Juniperus Occidentalis*) of the region.

23(b) *Lake Simtustus Monument*: Built of rock with an embedded bronze plaque commemorating Pipsher Simtustus, “Famed Warrior and Scout of the Warm Springs Tribe” for whom the lake is named.
Pelton Park
Reregulating Dam
REREGULATING DAM

24. Reregulating Reservoir  
   Built: 1956-1958  
   Evaluation: Historic Contributing

   Formed behind the ReReg Dam and extending upstream approximately 2.5 miles to the Pelton Dam Tailrace, the ReReg Reservoir capacity is approximately 3,500 acre feet. Built as an original element of the Project, the ReReg Reservoir is used to store the peaking flows from the Pelton Dam so as to maintain constant flow in the river downstream of the Project.

25. Reregulating Dam  
   Built: 1956-1958, 1982  
   Evaluation: Historic Contributing

   A rock-filled structure, the ReReg Dam has a maximum height of 88 feet and an overall crest length of 1,067 feet including a concrete gravity section (250 feet) and the spillway (see below). The remaining 817 foot long rockfill section is 15 feet wide at the crest, providing a roadway. The ReReg Dam was somewhat modified during construction of the ReReg Powerhouse in 1982.

26. Reregulating Spillway  
   Built: 1956-1958  
   Evaluation: Historic Contributing

   There are four spillway gates in the ReReg Dam, each approximately 14 feet high and 20 feet wide. Vertical concrete walls extend from the tops of the gate openings and then to the underside of the spillway deck, which also serves as a roadway. A steel superstructure supports gate hoists, with painted steel railings (currently blue) accenting the twin flanking stairwells built into the outer walls and lining the upper deck.

27. Reregulating Intake  
   Built: 1982  
   Evaluation: Non-Historic Non-Contributing

   Constructed as a part of Warm Springs Power Enterprises development and built into the upstream face of the dam, the intake has two inlets, each 14 feet wide by 50 feet high that merge into the bulb turbine inlet.

28. Reregulating Powerhouse  
   Built: 1982  
   Evaluation: Non-Historic Non-Contributing

   Located within the concrete gravity section of the dam, the 159 foot long by 44 foot wide powerhouse was constructed under the direction of the Confederated Tribes of the Warm Springs Reservation following a FERC license amendment in 1982. An 18,900 kW Hitachi generator is powered by a Voest-Alpine adjustable blade, bulb-type, turbine. Related features include mechanical equipment, transformers and exciters, as well as control room however the powerhouse is normally operated remotely from the control room at Pelton Dam.
28.1: ReReg Emergency Generator Building (1989, Non-Historic, Non-Contributing)
28.2: ReReg Warehouse (1989, Non-Historic, Non-Contributing)

29. **Reregulating Tailrace**
   
   Built: 1982
   Evaluation: Non-Historic Non-Contributing
   
   A trapezoidal channel excavated into the river bed immediately downstream of the powerhouse, the tailrace is approximately 32 feet wide at the base with sloping sides.

30. **Reregulating Fish Passage**
    
    Built: 1956-1958
    Evaluation: Historic Contributing
    
    There are five entrances to the ReReg Fish Ladder, two on the west side of the channel, one on the east side and two at the spillway. Though remaining a visual element in the Project, the functionality of this feature was altered with the abandonment of the upstream fish ladder at Pelton, a portion of which now serves as a fish trap and another of which is used to rear juvenile Chinook, both in support of the Round Butte Fish Hatchery.

31. **Regulating Wildlife Overlooks**
    
    Built: 1997
    Evaluation: Non-Historic Non-Contributing
    
    Built near the ReReg Reservoir, these two open platforms provide public opportunities to view waterfowl.