ASTORIA FAIRFIELD

HISTORIC DESIGN REVIEW APPLICATION

PART 1

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ASTORIA FAIRFIELD

HISTORIC DESIGN REVIEW

PROJECT INFORMATION

Project Name:	Astoria Fairfield
Applicant:	Craig Riegelnegg – Carleton Hart Architecture 830 SW 10th Avenue, #200 Portland OR 97205 (503) 206-3191 craig.riegelnegg@carletonhart.com
Owner:	Hollander Hospitality Contact: Mark Hollander 119 North Commercial Street Bellingham WA 98225
Property Address:	Second Street and Marine Drive (part of northwest block) Project Address TBD – Subdivision/consolidation to be submitted for multiple parcels; former Ship Inn address is 1 2nd St., Astoria OR 97103
Zoning Designation:	C-3 – General Commercial Bridge Vista Overlay Zone
Date Submitted:	April 10, 2018

Project Description

The proposed Astoria Fairfield is a hotel established under the Marriott chain. Rather than adhere to one of Marriott's prototypes, the proposed hotel is a unique design that takes cues from historical and existing local and context to make a sensitive contribution to this unique Oregon waterfront community. The design of the project is informed by the diverse working waterfront and hotel precedents throughout the City, as well as, drawing inspiration from the context of its neighborhood and site along the Columbia River Trail, or Riverwalk. The existing structure at the northeast corner of the site, the well-known Ship Inn restaurant, will be rehabilitated and repurposed as the entry lobby and dining area for the project. To the west of the existing building, a new addition will include 66 guestrooms and hotel amenities distributed across four floors.

Site

The project is in a C-3 (General Commercial) Zone, on a site northwest of the intersection of Marine Drive and Second Street. The site sits between the Columbia River estuary waterfront to the north and a 76 gas station/ convenience store and Josephson's Smokehouse to the south. The former Stephanie's Cabin, owned by Hollander Hospitality (HH), sits at the southwest corner of the block. Though there is currently no plan for reuse, HH is exploring options and discussing the Stephanie's Cabin property with potential tenants. This structure is a part of the overall property and as such is included in any calculations involving the entire project site. Given that it is currently unknown when and for what use Stephanie's Cabin will be rehabilitated,

any future renovation will be a separately permitted project and all code requirements, including parking, will be addressed for that building at that time.

The site is in the Bridge Vista Overlay Zone. This zone has additional design guidelines established to honor and preserve the working waterfront character along this portion of the Columbia River frontage. The project's responses to BVO requirements are thoroughly documented in the corresponding Design Review submittal for this Project, and their point-by-point adherence to the codified requirements as detailed. The development's overarching design approach draws from the aesthetic character, construction methods, durable material selection and simple functionally-minded detailing of applicable context to suit a new piece of architecture built for the City of Astoria.

Design Considerations

Though Marriott is a corporate hotel chain with standard prototypes, the proposed Fairfield Inn and Suites is a unique, site-specific design respectful of the past and present of Astoria, and the human-scale experience of visitors to and residents of the City. As prescribed by the BVO, the scale and size of the building is smaller than typical hotels to avoid crowding the River Trail or growing out of scale with the surrounding context. The appearance of the building on the site is given careful consideration with regards to the civic elements that face each exposure.

The building's north elevation (Part 2, pp. 44) faces the public River Trail/Riverwalk, a pedestrian pathway elevated over the water's edge on a trestle structure. The Riverwalk is frequently used by visitors to the City passing on foot or riding on the Riverfront Trolley. The building elevation facing this route is articulated to maximize visual interest while addressing the industrial historical context through material choice and articulation. White, synthetic wood cladding covers the guestroom wing reminiscent of the industrial structures from Astoria's fishing and canning heyday. Guestroom windows are proportioned and arranged in a nod to the windows of these structures. Trim and accent components adapt the simple geometry and depth of the former warehouses and canneries to functionally terminate cladding at openings and transitions. The glazing and guestroom roof decks along this elevation promote a connection to the activity and history to the north of the site, creating sightlines between hotel guests, users of the Riverwalk below and the landmarked site on the river to the north.

The south elevation follows the same design strategy as the north, paying attention to window detailing ad arrangement providing a visually interesting and appropriate design response to site, historical context and Bridge Vista Overlay requirements. Semi-open metal panels with a classic design repeat the proportions and logic of the windows at the ground floor and conceal covered parking in a way that enlivens the drive frontage. The enclosed southeast egress stair and elevator create a circulation tower where a splash of rust color on the same synthetic wood cladding recalls historic industrial stock, like the White Star Cannery boiler in the landmarked site, and creates a visual separation between the old and new portions of the hotel.

The east side of the development is the repurposed Ship Inn finding new life as the lobby and dining area that greets visitors to the hotel. The Ship Inn's key design features - cedar shake cladding, mansard roof, and decorative smoke stack - will be replaced/rebuilt and while the building form will largely remain the same, the exterior facades have streamlined wall planes and larger, more orderly openings to increase natural light and views. The window jambs are accentuated with the same white cladding as the new addition. Along the north elevation, existing punched openings along are combined to allow a large folding glass window system that can fully open the dining area up to the Riverwalk when the weather is fair, allowing the breeze and sounds of the river and trellis to drift inside.

The west elevation displays the white cladding and window trim detailing as the rest of the new structure. This elevation is accented with a rust-colored open egress stair. Simply by following the structural support needs of the stair, the assembly creates a vivid architectural feature at this end of the building and promotes visual interest in tandem with some more subtle interplay of windows and cladding at the west end.

In addition to the accessible and compact parking spots included at the building's covered parking just below grade level, parking is provided in a landscape-screened lot west of the hotel and additional spots along the drive at the west edge of the site. The remainder of the parking required will be met pending a lease agreement meeting code requirements. Besides serving to screen parking areas, site landscaping animates the ground plane around the restrained geometry of the architecture with a broad variety of green vegetation. Sitework for the project is designed to facilitate the pedestrian connection to and across the hotel's lot, to introduce veins of natural growth to the riverfront block and to enhance the relationship of the project to the City.

ARTICLE 6: Historic Properties

Note: Citations from the Astoria Development Code are referenced as they are relevant to the proposed project. Where code sections are not relevant, they are omitted for brevity.

Citation: *6.010. PURPOSE. It is the purpose of the City to promote and encourage the preservation, restoration, rehabilitation, and adaptive use of buildings, structures, appurtenances, objects, sites, and districts that are indicative of Astoria's historical heritage; to carry out certain provisions of the Land Conservation and Development Commission Goal 5 "Open Spaces, Scenic and Historic Areas, and Natural Resources"; to establish a historic design review process for historic structures, and to assist in providing the means by which property owners may qualify for Federal and State financial assistance programs assisting historical properties.*

Response: The design team recognizes and appreciates the City's goal of preserving Astoria's historical heritage through the built environment, and intends to observe conformance with this objective as it is stated in the pertinent sections of the Development Code.

Note that while the Code text above most directly addresses preservation of existing structures, this is not applicable to the proposed Project. The proposed Project is a mix of rehabilitation of an existing non-historic structure (Ship Inn) on the site, with most of the project square footage to be a newly constructed, four-story wing of guestrooms to the west of this structure.

It is understood that the proposed Project is required to undergo Historic Design Review due to its proximity to the landmarked site, including piles, a boiler remaining from the Whitestar Cannery, and a pile of ballast rock. The existing Ship Inn is a recognized local fixture, but holds no landmark status in any local, state or national register. As such the proposed project aims to rehabilitate and repurpose the Ship Inn structure to honor its status in the community, but the design of the newly constructed portion of the building does not take the Ship Inn as the basis for historical conformance established in this section.

The basis for historical conformance used in the design is detailed below in the Response to 6070.B.

Citation: *6.020. SPECIAL PROVISIONS. A. Signs.*

[Only applicable listings shown]

1. Signs or plaques denoting a historic District, building or site will be permitted in accordance with the sign regulations for the zone in which it is located. Such signs will be of dignified design and positioned in a manner that is compatible with the building or site.

2. Any signs constructed or placed on or in association with a historic building will be reviewed by the Historic Preservation Officer to ensure that they are in scale and relate well to the architectural style of the building.

Response: As part of the proposed development, the Owner will install an informational plaque that explains the history and significance of the landmarked site that establishes the Historic Design Review requirements for this project. As proposed, the plaque will sit at the end of Second Street in a new plaza including benches and landscaping. The plaza will be a public amenity and its design specifics will be coordinated with the City. The Owner will consult a local historian for the appropriate textual and photographic content, and will coordinate the final design of the plaque for conformance to applicable historic and design standards and for compatibility with similar installations in the City. In addition, the plaque will conform to any requirements established by the Historic Preservation Officer for the site.

Citation: *6.070. NEW CONSTRUCTION. A. Certificate of Appropriateness. No person, corporation, or other entity shall construct a new structure adjacent to or across a public right-of-way from a Historic Landmark as described in Section 6.040, without first obtaining a Certificate of Appropriateness from the Historic Landmarks Commission.*

In obtaining a Certificate of Appropriateness as required above, the applicant shall file an application on a form furnished for that purpose with the Community Development Department.

The requirement for Historic Design Review on the merit of proximity to the landmarked site has been most recently summarized in a letter from the City Attorney dated January 23, 2018.

The project has filed an application for a Certificate of Appropriateness with the delivery of this Historic Design Review submittal and all included and attached materials.

Citation: *6.050.E. Type III Certificate of Appropriateness –Historic Landmarks Commission Review. Projects that do not meet the criteria for a Type I or Type II review are classified as Type III Certificate of Appropriateness permits. Historic Design review performed by the Historic Landmarks Commission based upon the standards in the Development Code shall be considered discretionary and shall require a public hearing, notice, and opportunity for appeal in accordance with Article 9 of the Astoria Development Code.*

Response: This definition is cited from the portion of the code concerning Exterior Alterations to historic structures, but appears to define the document and process that are required for this Project. This submittal and the application delivered with it are assumed to apply to a Type III Certificate of Appropriateness.

Citation: *6.070.B. Historic Landmarks Commission Historic Design Review Criteria. A request to construct a new structure shall be reviewed by the Historic Landmarks Commission following receipt of the request. In reviewing the request, the Historic Landmarks Commission shall consider and weigh the following criteria:*

1. The design of the proposed structure is compatible with the design of adjacent historic structures considering scale, style, height, architectural detail and materials.

2. The location and orientation of the new structure on the site is consistent with the typical location and orientation of adjacent structures considering setbacks, distances between structures, location of entrances and similar siting considerations.

Response: Due to length, the 6.070.B response is formatted by topic for clarity. Please see below:

HISTORIC LANDMARK

The historic landmark that establishes the requirement for Historic Design Review occupies Tax Lots 100 and 14200, formerly the site of the White Star Cannery. As described in the landmark application Staff Report and Findings of Fact, dated November 9, 2015, the constituents of the landmark are "the remains of those canneries including the White Star boiler, pilings that once supported the various canneries, and ballast rock left by the fishing vessels." The significance of the site as it pertains to Astoria's history is "due to the unique structural feature remains of the cannery and as a good representation of the many canneries that once were so vital to Astoria's culture and economy." Furthermore, "the remaining pile fields tell the story of these former canneries and the development of the Astoria waterfront…it is important to preserve this pile field as an example of the support structures of the many former fish processing facilities in Astoria."

As it pertains the landmark status, the document distinguishes the current state of the site from the architecture that formerly occupied it and is now destroyed. "The buildings at this site no longer exist. The remaining features include the pilings that once supported the docks and buildings, a boiler from the White Star Cannery, and ballast left by the fishing vessels. The nomination is for the site and appurtenances, not for a building."

BASIS OF CONFORMANCE

The requirement for Historic Design Review has been established by the City in discussions with the Planning Commission and the City Attorney, due to the proximity of the proposed project to the landmarked site. Due to the fact that landmark is not a structure, but remnants of a former structure, there is some ambiguity as to how the conformance criteria applies. Designing a new building to be contextually appropriate to a site consisting of only pilings, ballast rock, and a boiler is certainly unusual. City staff gave verbal direction during a meeting on March 5, 2018 that conformance should be not only with the existing elements of the landmarked site, but also with historic "working waterfront" structures.

Further feedback from the City and community of Astoria, including a community meeting held on March 5, 2018, the design team received broad feedback that the building should be more conformant to and harmonious with Astoria at large. Whereas documented historical industrial waterfront architecture in Astoria is flat, unadorned, economically built and purely utilitarian, the design team has received feedback from the City and reiterated by the community to add depth and visual interest, ornament, richness of materials and application of details that are a more modern approach to historic than the plain and functional working waterfront buildings in the area.

The project is also subject to the requirements of the Bridge Vista Overlay as enumerated in Article 14 of the Development Code. This portion of the code includes some provisions that contradict the documented elements of the industrial waterfront buildings of Astoria's heyday as a powerful fishing center and port. Examples include deep-set windows, prohibition of corrugated metal siding, ubiquity and complexity of window trim profiles, all three of which are not indicative of traditional working waterfront architecture. One conclusion is that this overlay code may have been written to update and adapt these traditional types to contemporary taste and construction methods. However, since this overlay code also governs the proposed project, some negotiation between opposing requirements is needed.

Based on the need to balance these considerations and on the overall goal of providing the community of Astoria with architecture that honors its City, the team designed the building as illustrated throughout Part 2 of this document. The current design is a sensitive response to Astoria's character and history. The hotel design is neither a replica of a 19th century cannery, nor a misappropriation of random traditional-looking features that do not belong to this City's history. Instead the design is a synthesis of the governing design requirements and a response to the varied bank of historical references in Astoria:

1. Landmarked Site – The ruins of the former canneries, White Star and subsequent, are referenced in the hotel's material and color selections. These references are seen in the board-formed concrete at the base of the building and the rust-colored cladding at several locations.
2. Historic Astoria Working Waterfront (or Industrial Waterfront, used interchangeably in a historic context) – The design team primarily referenced landmarks and other historic resources listed as Warehouses33 and Canneries35 in the City's 2006 assessment[1].
3. Historic Astoria Hotels – The team also examined local hotels, some of landmark status and some not. Although all were constructed after 1922, the hotels referenced in the design are defined as historic resources in the City's 2006 assessment[2].
4. Historic Astoria, General – In a few cases where suitable or comprehensive precedent information was not available in one of the categories above, or in the process of describing the diverse content of historical Astoria at large, the information references elements in Astoria's broader historic districts, including Astoria Downtown Historic Districts, Shively-McClure Historic District and Uniontown-Alameda Historic District.
5. Contemporary Working Waterfront – Referenced only in the supporting case of the west egress stair, which takes design inspiration from other waterfront structures. The stair is not a feature that would have been required by historic laws or code, nor would it have been sufficiently durable to last 100-150 years. As a result, modern references from the City are drawn upon.
6. Contemporary Hotels – These are not used as the basis for the design, but are occasionally referenced for context, as they are similar uses and locations where noted.

SCALE

As required by the Bridge Vista Overlay, the project is less than 30,000 square feet. This square footage may be greater than the original White Star Cannery due to comparatively low ceiling heights of hotel rooms to industrial uses, though the comparative mass of the building appears to be similar based on the historical data available in Sanborn maps from the late 1800's and early 1900's. The proposed building mass is smaller than many recorded canneries at other waterfront locations. Reference Sanborn map overlay, Part 2 pp. 03.

The flat roof helps to reduce the overall scale of the building. The location of the building on the land side of the old railroad trellis (Riverwalk) preserves views to the Columbia River from the Riverwalk and from oblique angles on the land side, whereas a building projecting into the River would obscure views from these locations, creating a distorted sense of its size. The proposed

[1] John Goodenberger. *Astoria's Historic Resources and Heritage*. (City of Astoria, 2006) 33-35.
[2] John Goodenberger. *Astoria's Historic Resources and Heritage*. (City of Astoria, 2006) 5-7.

project conforms with the historical context for this criterion, and its massing and location further minimize the perception of scale to put it well within the range of historical precedents.

STYLE

The Staff Findings report cited above for the cannery ruin lists the Style as "Waterfront industrial". Historical buildings designed for industrial uses in the working waterfront style were the primary resource in crafting the design for the proposed Project (see above).

It should be noted, however, that the array of historic architecture in Astoria, even among a category as specific as "waterfront industrial," is eclectic. The submittal materials in Part 2 trace the origin of specific design elements, and of the proposed architecture, from local precedents through detailing of the new Project. Reference context photos in Part 2 pp. 4-12.

Feedback from the City and community established a need to research and reference other categories (such as historic hotels), which brought to bear their own stylistic considerations. The design of the proposed project is a synthesis of elements, from which emerged a final language that is referential to historical and local context. The proposed project conforms with the historical context for this criterion.

HEIGHT

The height of the proposed Project is 43'-4", with a flat roof to minimize building height. Many historical working waterfront buildings, particularly canneries, were of comparable height. These structures may have been only two stories plus a monitor, or three stories in the case of Fisherman's Union Cooperative buildings, as opposed to four stories as proposed for the new building. However, the taller ten- to twelve-foot clear heights within, a function of their industrial use, pushed them to its approximate height[3]. The proposed project conforms with the historical context for this criterion.

ARCHITECTURAL DETAIL

Coordination of details with material separations ad openings, changes in plane and direction, and the many other transitional conditions is critical to the design. The detailing addresses the historic criteria, as well as, adheres to contemporary requirements of the building code and use as they relate to performance and durability. Several stand out as particularly illustrative examples of the reference to historical context through the design process.

Openings in historic canneries were traditionally organized primarily by function, with geometry and symmetry subordinate, especially at the time concurrent with the White Star Cannery

[3] Sarah Steen. Expanding Context: A Look at the Industrial Landscapes of Astoria, Oregon, 1880-1933. MS Thesis (University of Oregon, 2009) 95-104.

operation[4]. The proposed project elevations recognize the deviated regularity of window spacing in the sliding play of openings as they move vertically across the floor lines. This organization is not a direct cut-and-paste of a historic example, in part because the open plan and industrial layout inside does not translate to the regularity of a hotel guestroom layout that would allow such an appropriation. However, the interrupted and manipulated functional regularity is captured in the language of the elevation in a unique but conformant adaptation of the historic trend. Reference Part 2 pp. 14 and elevations.

The proposed window trim detailing accommodates some varied and opposing contextual factors. Window trim at historical working waterfront buildings was frequently simple and minimal and, based on available photographs, sometimes not used at all. Windows were similarly unadorned and installed close to the plane of the siding creating a relatively flat and undecorated façade. Contrary to these basic, industrial waterfront buildings, the BVO Development Code requires inset windows and a more detailed set of jamb, head, and sill trim conditions. To resolve this, the proposed project creates a simple trim configuration with a projecting surround that captures the mulled window with a packaged terminal heat pump (PTHP) below. As the PTHP is not a historical component, but a modern, mechanical requirement for the approved use, its necessary inclusion is resolved by applying the same simple and unified language as other detail elements, running a single oversized louver through the header above and wall panel adjacent in order to eliminate awkward cladding infill, and wrapping the 1x4 trim around the entire window/mechanical assembly. Note that this configuration draws on historical hotel uses, even those with masonry walls, to satisfy code requirements for depth and to provide guests with large operable casement window lites separated by a center mullion. Reference Part 2 pp. 59.

The building's storefront glazing and entry doors took inspiration from historical hotels. These features appear mainly in the Ship Inn component of the proposed project, but also appear in the northeast corner of the new guestroom wing, outside the fitness area. Less common in industrial buildings, storefront glazing is typically a feature in commercial projects like the hotel precedents, occurring in recessed configurations with a variety of frame materials and style. Contemporary storefront glazing does occur at historical working waterfront projects such as the Callendar Navigation Company, where it is woven into more traditional cladding details. Reference Part 2 pp. 60.

A cornice and band top the guestroom wing. Though a gable roof with a monitor window is a traditional roof form for a cannery, flat roofs are found on numerous overland historical buildings within view of the River, from Fire House No. 2 to the Douglas Hotel. Given the use and building type, as well as, the height limitations for the site, the flat roof is most compatible for this project. With the decision to provide a flat roof, the building required cornice detailing in lieu of eaves to articulate the roof termination. Historic hotels provided many precedents for cornices, and by drawing on shapes and proportions of these examples, and adapting them to wood framing and siding from masonry yielded the proposed cornice design. The project also added a band above the ground floor, another feature common in hotel typology. On the south elevation the band is shown as a sort of shallow awning, taking on the rust color used in other accent locations listed below. Together with the cornice it breaks up the vertical progress of the building mass and gives the working waterfront character of the flat façade a more resolved appearance. Reference Part 2 pp. 61.

[4] Sarah Steen. Expanding Context: A Look at the Industrial Landscapes of Astoria, Oregon, 1880-1933. MS Thesis (University of Oregon, 2009) 104.

An open egress stair stands at the west end of the proposed Project. It is the one building feature informed by contemporary context, because as noted above it stems from contemporary code requirements. Notwithstanding, a similar stair design used at the historic landmark John Jacob Astor Hotel and at Fire House No. 2. As a modern solution placed in a historical context it has significant precedent. Reference Part 2 pp. 62.

The project's exterior lighting draws from specific examples among the historic districts and landmarks in the City. Fixtures either minimize their appearance, as in the step lights and deck sconces shown, or reference a unified maritime/industrial aesthetic, as in the wall packs and pole lights. Both approaches to compatible lighting design, are found at historic landmarks in Astoria, and the proposed design attempts to mix the approaches to optimize the effect of exterior lighting on the building appearance. Reference Part 2 pp. 37.

Auxiliary structures like the transformer enclosure (Part 2 pp. 67) and trash enclosure (Part 2 pp. 66) illustrated in Part 2 were prevalent in the industrial historical context, particularly as buildings developed and agglomerated additional uses over time[5]. Structures were constructed as new needs dictated, as additions or outbuildings, with whatever cladding was convenient at the time. In the interest of design unity, the enclosures included at this project are both clad in the same sidings as the building body. The proposed project conforms with the historical context for this criterion.

MATERIALS

Both the landmark ruin to the north and "working waterfront" typologies inspired material selections. One example is the base of the building. Being constructed on land, the design could not pursue the same foundation strategy as the piles that supported the construction of the series of canneries that occupied the river-side landmark site. However, the building base materials seek to respond to the boiler base pier left in place at the landmark site, and to newer precedents for land-side working waterfront architecture by using exposed board-formed concrete on the ground level of the new building. This raw, unadorned material ties the building to the earth, the riprap, ballast rock, and boiler pier within view of the building, and the pragmatic construction methods of other industrial buildings in the immediate area. Reference Part 2 pp. 17.

The body of the new portion of the building is clad primarily with a "synthetic wood" product made from rice hulls. This material, product name "Resysta" is sustainable and long-lasting, as it is not subject to rot like wood siding. It exhibits a lively grainy texture, not an unconvincing faux-wood pressed imprint like that found in some builder-grade fiber cement siding products. While waterfront industrial buildings were constructed with a bevy of cladding types, including corrugated metal, board and batten, v-groove and clapboard from the late 19th century onward, the cladding chosen here hearkens to shiplap wood, another typical selection for the industrial shed typology in Astoria. The body color, a faded white, is intended to evoke the commonly white-

[5] Sarah Steen. Expanding Context: A Look at the Industrial Landscapes of Astoria, Oregon, 1880-1933. MS Thesis (University of Oregon, 2009) 104-110.

painted industrial sheds that have weathered over time[6].. It is not reasonable to achieve this weathering through reducing the maintenance schedule of the modern hotel to a frequency on par with an 19th century industrial building, but by utilizing a light coat of white stain over the absorbent natural components of the cladding, the face of the new building matches the effect. Reference Part 2 pp. 50-52.

The east stair tower, west end open stair, and accent areas on the cornice and south elevation band employ a "rust" color, also in the Resysta material, as an aesthetic nod to the corroded steel of the remnant boiler visible across the Riverwalk. This color appears in some form from every vantage point along the building and seeks to enliven the otherwise neutral-colored façade with a direct reference to the cannery ruin in its current state. Reference Part 2 pp. 50-52.

Though less regionally specific than the cladding types listed above, cedar shake is found in Astoria and it is an iconic part of the Ship Inn slated for reuse in the proposed project. The cedar shake, both the primary cladding and roofing component for this part of the building, will be replaced in kind as part of the rehabilitation. Reference Ship Inn illustrations throughout Part 2.

Even the deck coating at the project embraces an industrial appearance. The cementitious coating is applied over wood framing, but appears as a solid, jointless concrete face over the deck. While this coating is not visible from below, it establishes a connection to the concrete building base and the natural materials beyond for the hotel guests. Reference Part 2 pp. 53 and 63.

Except at the rust colored egress stair, railings are made of neutral dark gray powder-coated steel. Other metal flashing, gutter and coping components required by building code for modern conformance are the same dark gray, to maintain the appearance of simplicity and utility while dictating the functional transitions between floors, openings, materials and other features. The proposed project is conformant with the historical context for this criterion.

LOCATION

Located on a site currently occupied by a parking lot, the proposed project is sited south of the Riverwalk and directly to the west of and incorporating the existing Ship Inn restaurant, 1 2nd Street. In its history, buildings of various scales and uses have dotted this waterfront site and the edge of the River to the north. During the late 1800's, the period which is the focus of historical reference for the project, the waterfront had a very different profile. White Star Cannery occupied the current landmark site to the north with smaller buildings on the land side in the approximate location of the proposed project. Later in Astoria's history, the density of the entire waterfront increased to a level greater than that proposed for this site[7]. The proposed project does not match the exact location of a previously documented building, but its position relative to the water's edge, the Riverwalk, the nearby streets and buildings surrounding it, such as Josephson's

[6] Sarah Steen. Expanding Context: A Look at the Industrial Landscapes of Astoria, Oregon, 1880-1933. MS Thesis (University of Oregon, 2009) 95-101.
[7] Sarah Steen. Expanding Context: A Look at the Industrial Landscapes of Astoria, Oregon, 1880-1933. MS Thesis, University of Oregon, 2009. 85

Smokehouse and the 76 gas station, is in conformance with relationships among similar buildings and natural and built features in the historical context. The proposed project is conformant with the historical context for this criterion.

ORIENTATION

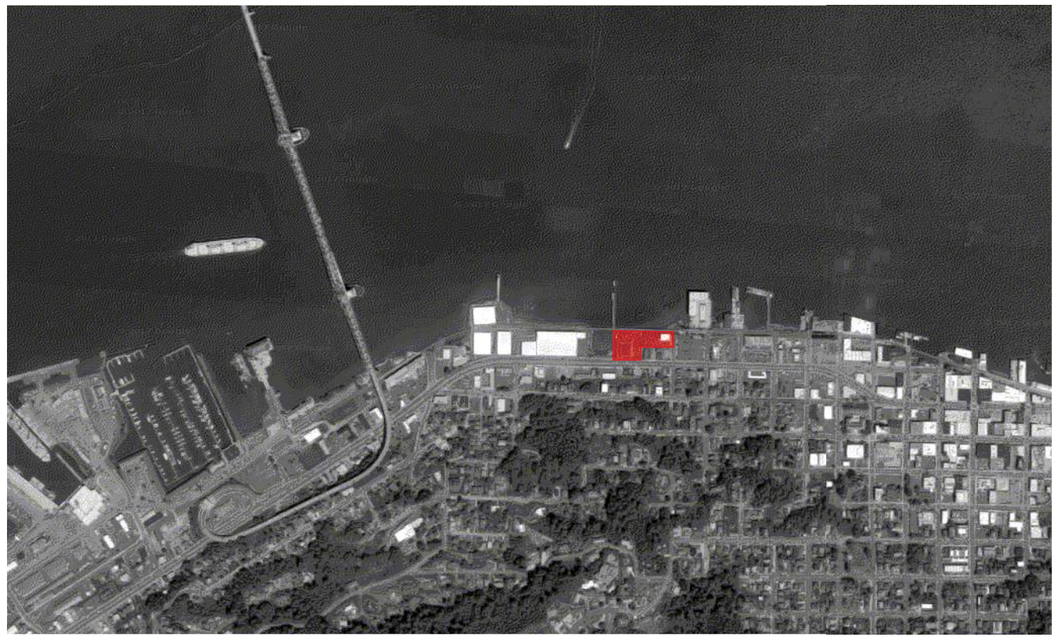
The building proposed for the site is oriented east-to-west, with the long side parallel to the River. The ruined White Star Cannery was oriented north-south, which was common among overwater buildings along the historical waterfront, since orientation parallel to the river lent itself to efficient approach and mooring of boats as well as the projection of wharfs into the water. Many if not most overland buildings along the river oriented themselves east-to-west, to maximize view and access. Reference Sanborn map overlay, pp. 03. The proposed Project is conformant with the historic context for this criterion.

ASTORIA FAIRFIELD

HISTORIC DESIGN REVIEW APPLICATION

PART 2

TABLE OF CONTENTS



project site - 2nd street & marine drive

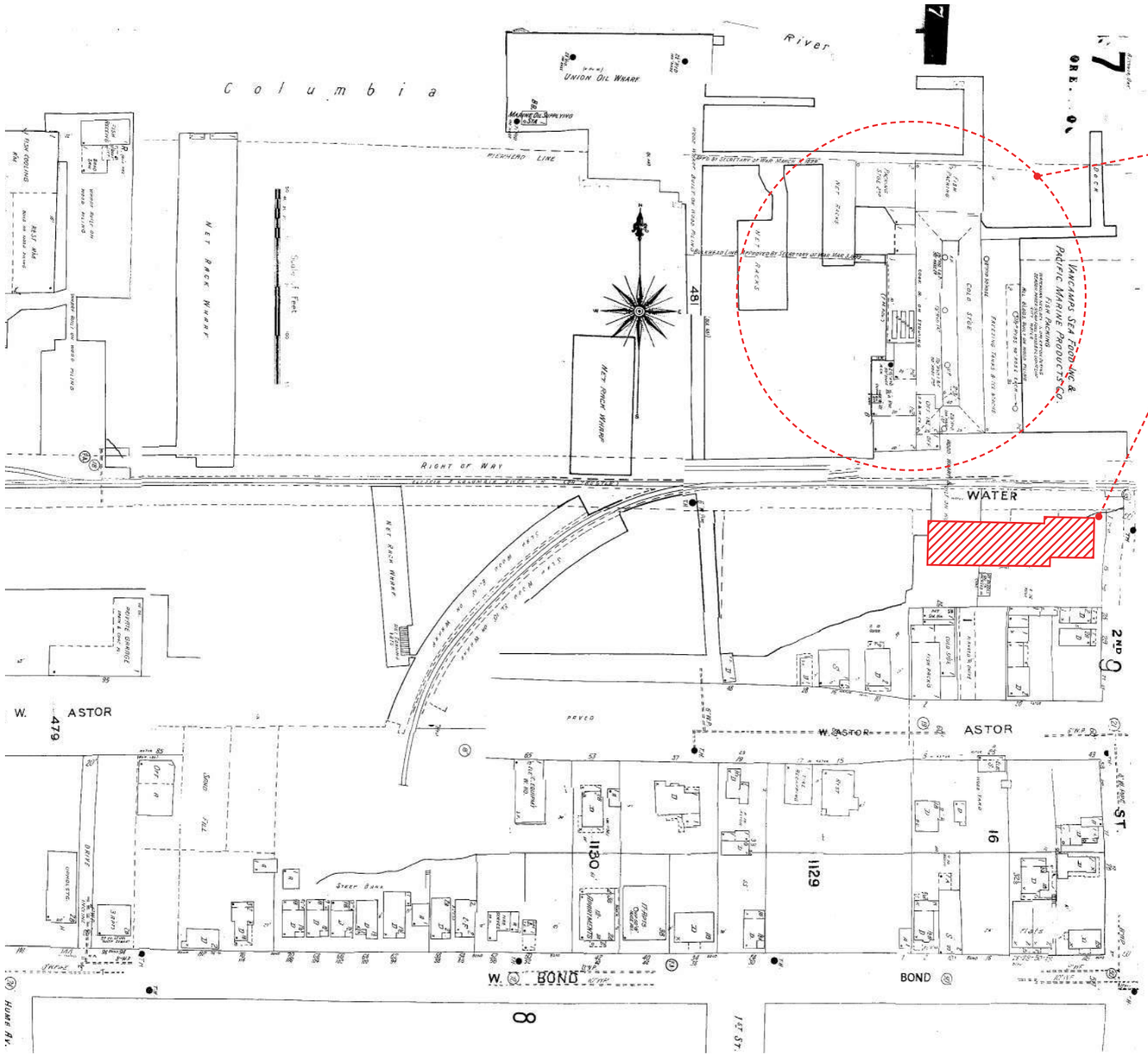
property line

proposed building

existing building-
future renovation

DATE 04.09.2018

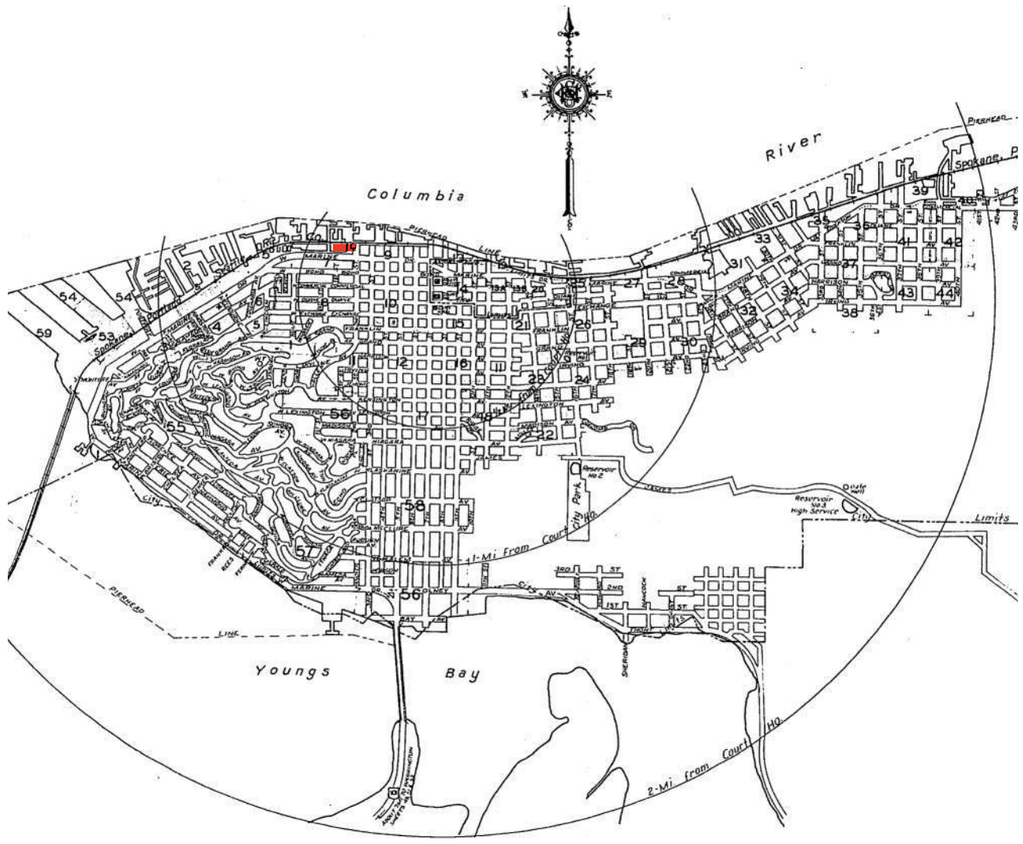
LOCATION AND PROJECT SITE



1908

White Star Sea Food inc.

proposed building



1948

HISTORIC CONTEXT - Sanborn Map

A - Astoria Firehouse No. 2 -2968 Marine Drive

B - Bonded Warehouse - 1 4th Street

C - Callendar Navigation Company - 175 14th Street

D - Union Fishermen's Cooperative - 4880 Ash Street

E - Fisher Brothers Building - 1210 Marine Drive

F - Hanthorn Cannery - 100 39th Street

G - Ludwig Larsen - 3025 Marine Drive

H - Union Fisherman's Cooperative - 100 31st Street

DATE 04.09.2018

HISTORIC CONTEXT - Working Waterfront

A - John Jacob Astor Hotel - 14th Street

B - Barton Hotel - 1255 Commercial Street

C - Commodore Hotel - 258 14th Street

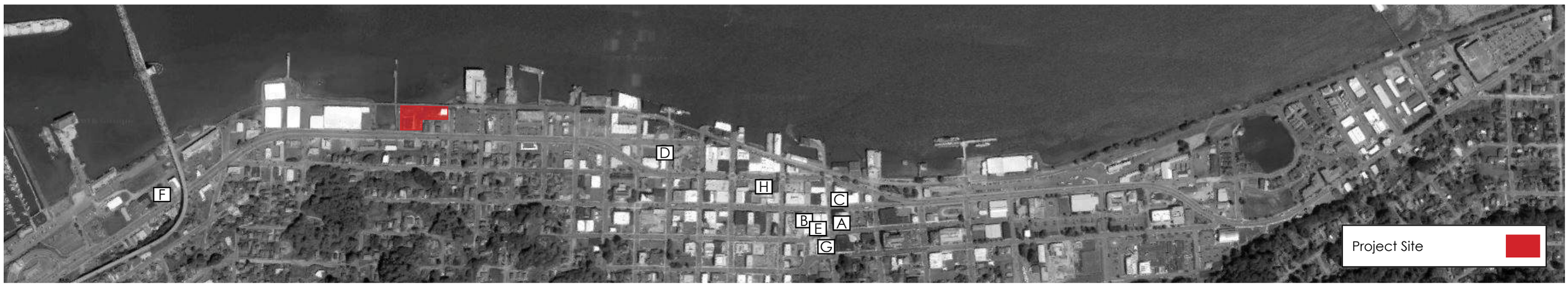
D - Douglas Hotel - 143 9th Street

E - Hotel Eliot - 375 12th Street

F - Karhuvaara Boarding House - 286 W Marine Drive

G - Norblad Hotel - 443 14th Street

H - State Hotel - 1167 Marine Drive



A - The Illahee Apartments - 1046 Grand Ave

B- Bank of Astoria - 1215 Duane Street

C - T. Paul's Supper Club - 360 12th Street

D - Svenson Blacksmith - 1796 Exchange Street

E - Owens Adair Apartments - 1508 Exchange Street

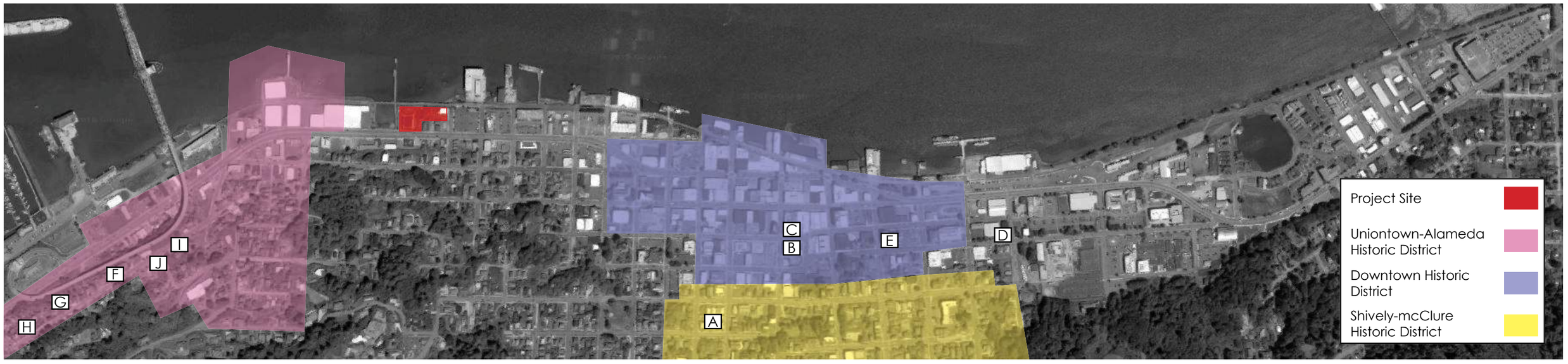
F - Uniontown-Alameda Historic District

G - Uniontown-Alameda Historic District

H - Uniontown-Alameda Historic District

I - Uniontown-Alameda Historic District

J - Uniontown-Alameda Historic District



A - Union Waterfront Industrial -1230 Marine Drive

B - Vintage Hardware - 1162 Marine Drive

C - Pier 12 - 151 12th Street

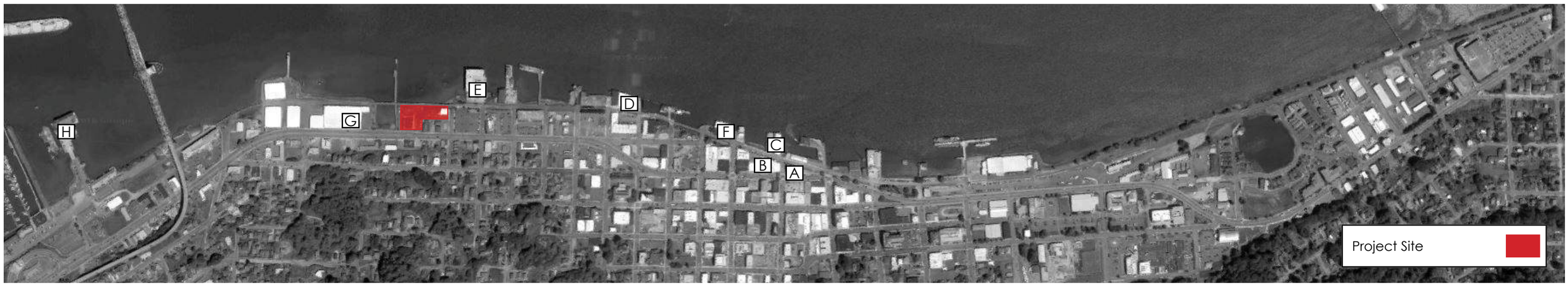
D - Buoy Beer Company - 1 8th street

E - Columbia House Condos - 1 3rd Street

F - Pier 11 - 77 11th Street

G - Astoria Warehousing - 12 Marine Drive

H - Cannery Pier Hotel - 10 Basin Street



A - Holiday Inn Express & Suites - 204 W Marine Drive

B - Holiday Inn Express & Suites -

C - Best Western Astoria Bayfront Hotel - 555 Hamburg Avenue

D - Comfort Suites Columbia River - 3420 Leif Erikson Drive

E - Hampton Inn & Suites - 201 39th Street

F - Hampton Inn & Suites

G - Hampton Inn & Suites

H - Astoria Riverwalk Inn - 400 Industry Street

A - Bonded Warehouse - 1 4th Street

B - Columbia House Condos - 1 3rd Street

C - Subway / Beach Burrito - 11 W Marine Drive

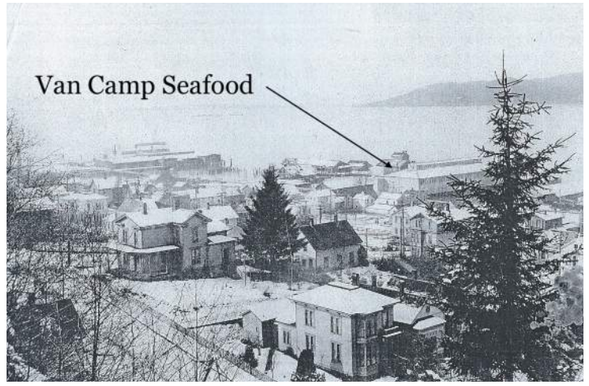
D - Sewage Lift Station - 175 E Columbia River Hwy

E - River Shore - 75 W Marine Drive

F - Dots N Doodles Art Supplies - 303 Marine Drive

G - Residential - 9 W Marine Drive

H - Hi Casual - 193 Marine Drive



Historic aerial view of Van Camp Seafood

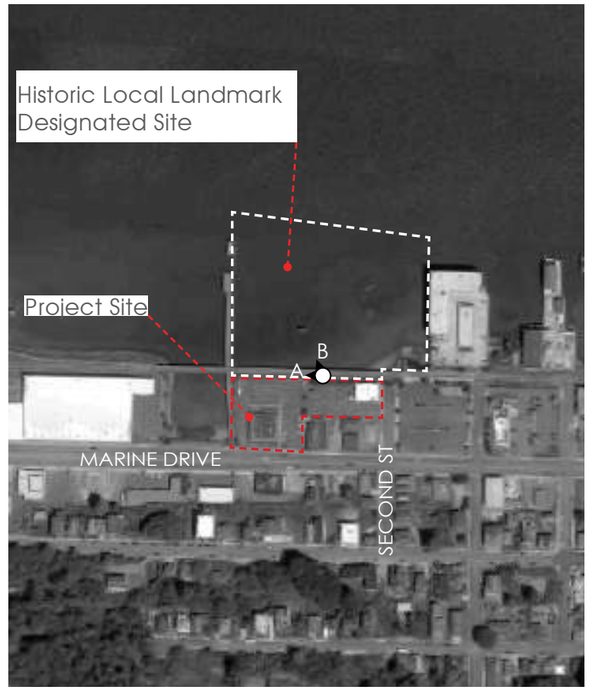
Historic view of Van Camp Seafood

B - Fire at Van Camp Seafood Cannery

Historic view of Van Camp Seafood

A - View of existing White Star Boiler and Pilings

B - View of existing White Star Boiler



Key Plan: Not to scale

From 2015 Historic Local Landmarks Designation Application:

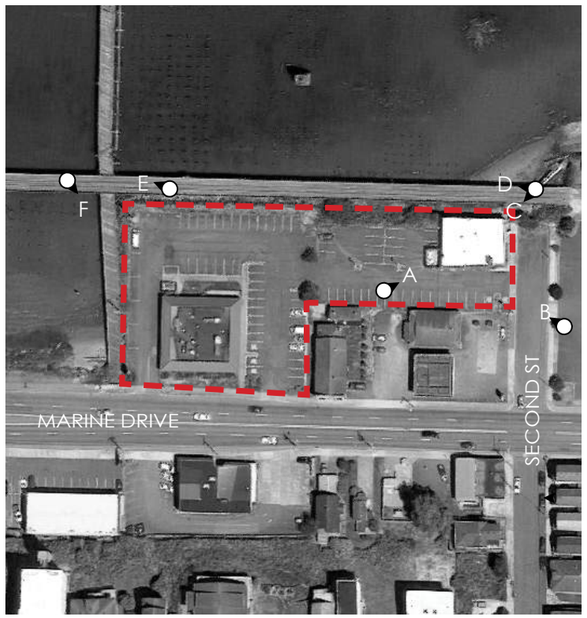
"There are no buildings remaining on the site. This site is signifcant due to the unique structural feature remains of the cannery and as a good representation of the many canneries that once were so vital to Astoria's culture and economy." (pg.2)

Historic view of Ship Inn restaurant

A - Looking northeast towards existing Ship Inn

B - Looking northwest towards existing Ship Inn

C - Looking southwest towards existing Ship Inn



Key Plan: Not to scale

A - Looking west on riverwalk towards Astoria-Megler bridge

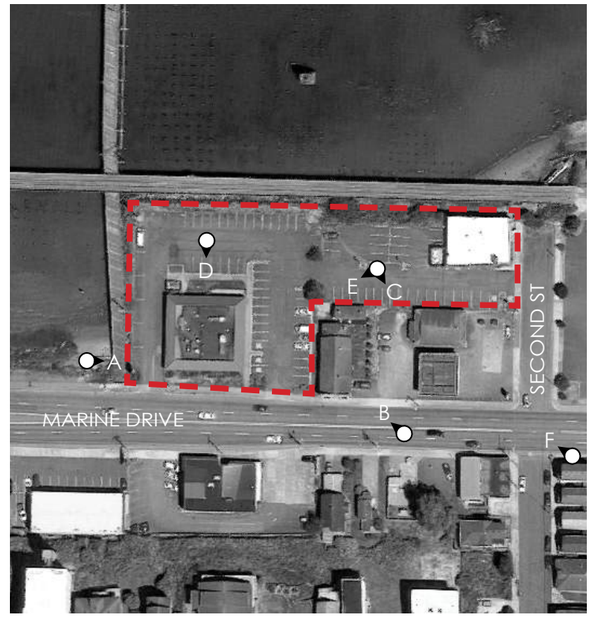
C - Looking north on riverwalk towards pier

C - Looking east on riverwalk toward 2nd Street

A - Looking northeast towards Stephanie's Cabin

B - Looking northwest from Marine Drive towards existing Josephson's smokehouse

C - Looking southeast towards existing gas station



Key Plan: Not to scale

D - Looking south towards Stephanie's Cabin

E - Looking southwest towards existing Josephson's smokehouse

F - Looking northwest on Marine Drive towards site

BUILDING FORM

Notable Features:

I. Simple geometric form
II. Flat facade
III. Stepped smaller forms

Commodore Hotel
258 14th Street

Fire House No. 2
2968 Marine Drive

Karhuvaara Boarding House
286 W Marine Drive

Uniontown District
Marine Drive, west of Astoria-Megler Bridge

Peter & Maria Larsen House
647 31st Street
-historic landmark

BUILDING OPENINGS

Notable Features:

I. Punched openings
II. Varying rhythms of placement
III. Located for utility
IV. Primary elevations more rigidly composed, end elevations more freeform

Union Fisher Cooperative
100 31st Street

Hotel Elliott
375 12th Street

Downtown District
8th and Grand - Residential example

Hanthorn Cannery
100 39th Street

Norblad Hotel 2
443 14th Street

Warren Housing
11th and Grand

WINDOW ARTICULATION AND TRIM

Notable Features:

I. Mulled openings
II. Window setback
III. Trim in painted solid material
IV. Simple geometry; composed rectangles
V. Various sizes of window lites

Commodore Hotel
258 14th Street

Illahee Apartments
1046 Grand Avenue
-historic district, modern style

Downtown District
12th and Harrison
-residential example

Karhuvaara Boarding House
286 W Marine Drive

STOREFRONT GLAZING AND ENTRIES

Notable Features:

I. Mix of frame materials
II. Rectangular frame profiles
III. Glazing focused at entries and public ground floor frontages

Douglas Hotel
143 9th Street

Commodore Hotel
58 14th Street

Norblad Hotel 2
443 14th Street

Callendar Navigation Company
175 14th Street

CLADDING MATERIALS

Notable Features:

I. Horizontal board siding
II. Window trim
III. Multiple siding materials

Hanthorn Cannery
100 39th Street

Callendar Navigation Company
175 14th Street

Warren Investment Company Housing
74 11th Street

Residential near site
184 Bond Street

Callendar Navigation Company
175 14th Street

Ship Inn
2nd and Marine Dr.
-on project site

EXTERIOR FINISH

Notable Features:

I. Exposed concrete
II. Horizontal articulation from board formwork

Fisher Brothers Company
1210 Marine Drive
-parge coat over concrete

Contemporary waterfront industrial
1230 Marine Drive

Contemporary waterfront industrial
-closeup of previous

State Hotel
1167 Marine Drive

Contemporary waterfront industrial
1162 Marine Drive

BUILDING CORNICES AND BANDS

Notable Features:

I. Parapet articulation
II. Termination of flat wall with overhang
III. Different appearance for masonry / concrete and for wood
IV. Projecting band above ground floor
V. continous horizontal profile- mininum interval details

Hotel Elliott
375 12th Street

Bonded Warehouse
1 4th Street

Karhuvaara Boarding House
286 West Marine Drive

State Hotel
1167 Marine Drive

EXTERIOR LIGHTING

Notable Features:

I. Downward directed light
II. Shade with goosneck or standoff
IV. Black, bronze or raw metal finish

Fisher Brothers Company
1210 Marine Drive

Callendar Navigation Company
175 14th Street

Union Fisher Cooperative
39th and Columbia River

EXTERIOR OPEN STAIR

Notable Features:

I. Exposed and uncovered
II. Steel construction
III. Simple column support
IV. Utilitarian rail design, vertical or horizontal pickets

(examples all contemporary - code requirement egress stair not a historic type)

Fire House No. 2
2968 Marine Drive

John Jacob Astor Hotel
1401 Commercial Street

Downtown Waterfront
20 Basin Street

Fisher Brothers Company
1210 Marine Drive
deck access, not eagress stair

DECKS AND RAILINGS

Notable Features:

I. Exposed and uncovered
II. Rail design to maximize views

(examples all contemporary - decks are a function of use and code requirement - not a historic type

Illahee Apartments
10th and Grand

Mill Pond Apartments
23rd and Marine Dr.

A - North elevation between 6th & 4th

B - South elevation between 6th & 4th

Aerial map of Marine Drive

A - North elevation between 4th & 2nd

B - South elevation between 4th & 2nd

Aerial map of Marine Drive

A - North elevation between 2nd & Pier

B - South elevation between 2nd & Pier

Aerial map of Marine Drive

A - North elevation between Pier and Flavel

B - South elevation between Pier and Flavel

Aerial map of Marine Drive

A - East elevation between Columbia River and Marine Drive

B - West elevation between Columbia River and Marine Drive

Aerial map of 2nd Street

A - East elevation between Columbia River and Marine Drive

B - West elevation between Columbia River and Marine Drive

Aerial map of 2nd Street

view of proposed project massing - looking east from Marine Drive

view of proposed project massing - looking northwest from Second Street, south of Marine Drive

PROPOSED BUILDING IN CONTEXT

view of proposed project massing from River Trail, west of project site

view of proposed project massing from Bond Street, south of project site

GENERAL NOTES

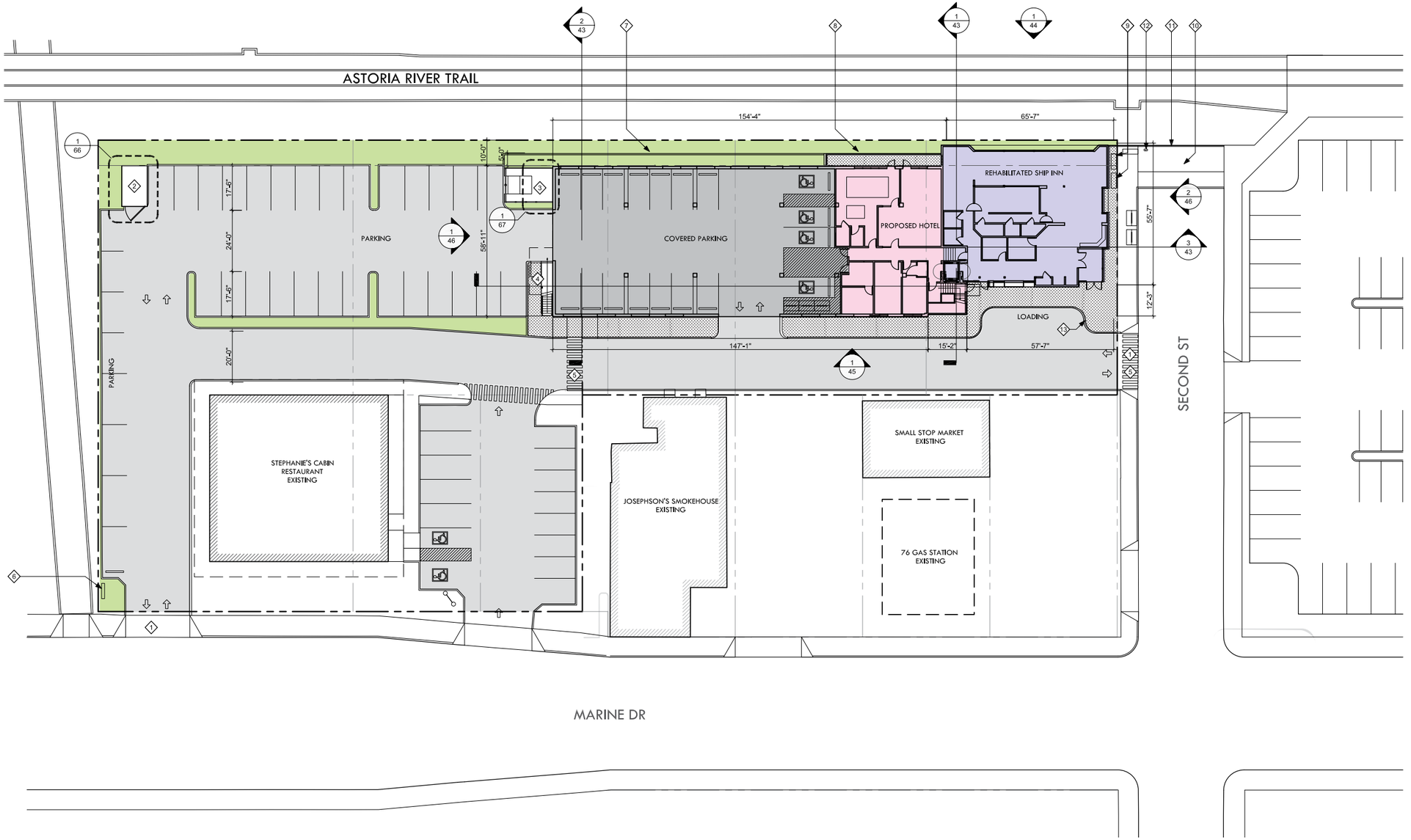
A. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES.
B. DIMENSIONS ARE TO FACE OF STUD UNLESS OTHERWISE NOTED.
C. REFERENCE PARKING PLAN FOR INFORMATION ON AUTO AND BICYCLE PARKING
D. REFERENCE PLANTING PLAN FOR INFORMATION ON LANDSCAPING

KEY NOTES

1. EXISTING DRIVE ENTRIES TO BE IMPROVED AS NEEDED
2. TRASH ENCLOSURE
3. TRANSFORMER ENCLOSURE
4. EXTERIOR STAIR
5. CROSSWALK
6. MONUMENT SIGN
7. RETAINING WALL WITH PLANTER
8. CONCRETE PATIO
9. BENCH - MATCH RIVER TRAIL DESIGN
10. NEW CONCRETE PAVING IN R.O.W. - COORDINATE WITH CITY
11. 42" STEEL RAIL - POWDER COAT BLACK
12. INFORMATIONAL SIGN ON POWDER COATED BLACK STEEL PODIUM/POST
13. MOUNTABLE CURB

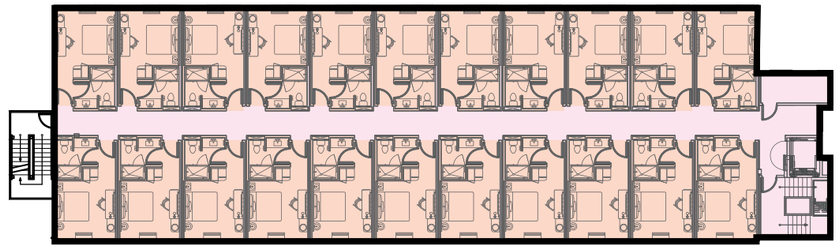
LEGEND

- LANDSCAPED AREA - SEE PLANTING PLAN
- EXISTING BUILDING - NOT ON SITE
- PARKING AREA - SEE PARKING PLAN
- PROPERTY LINE
- PROPERTY LINE - PARCEL/ TAXLOT DIVISION
- SETBACK



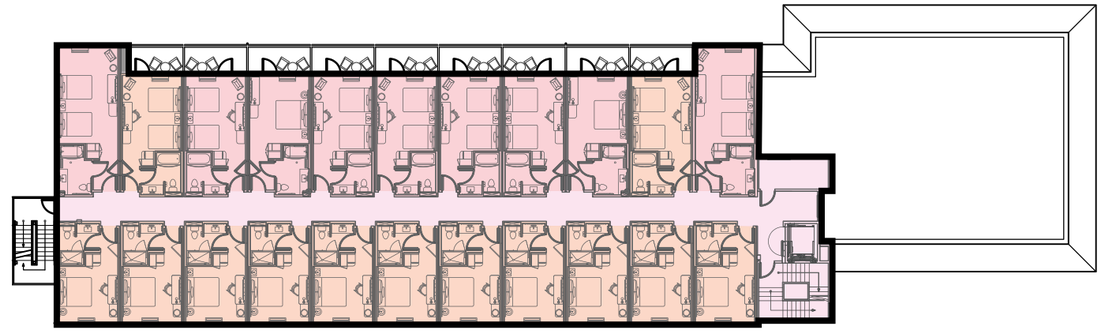
DATE 04.09.2018

SITE PLAN

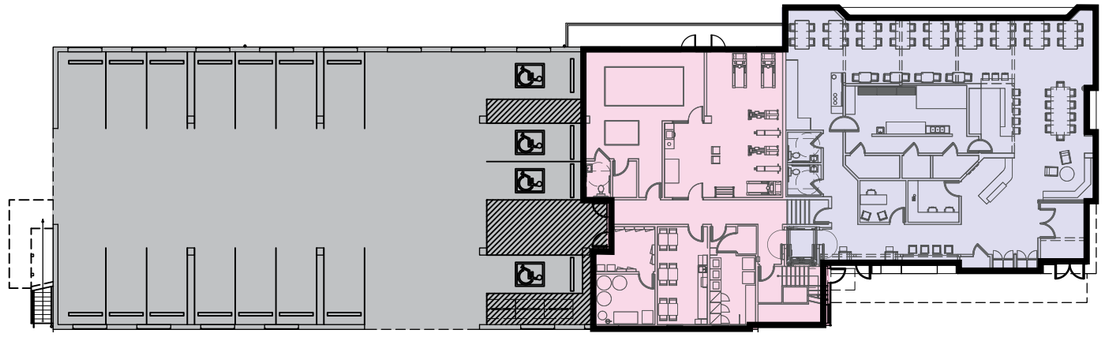


FOURTH FLOOR

THIRD FLOOR



SECOND FLOOR

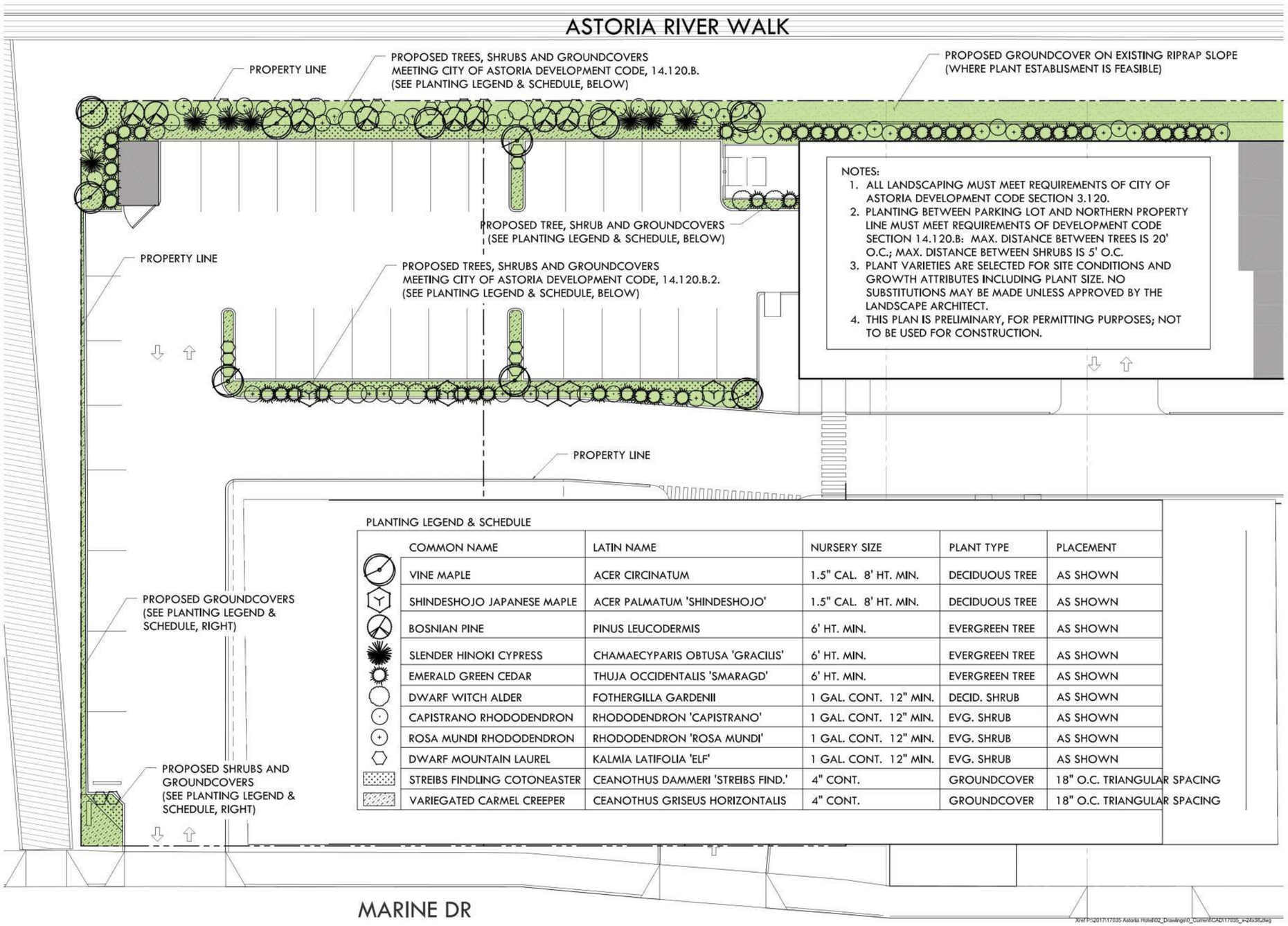


FIRST FLOOR

FLOOR	AREA
FIRST FLOOR	5,952 SF
SECOND FLOOR	8,444 SF
THIRD FLOOR	7,693 SF
FOURTH FLOOR	7,693 SF
TOTAL FLOOR AREA	29,782 SF
FLOOR AREA ALLOWED	30,000 SF

GUEST ROOM TYPE	AREA	QTY
KING	283 SF	55
DOUBLE QUEEN	335 SF	7
ACCESIBLE KING	335 SF	2
ACCESIBLE DOUBLE QUEEN	425 SF	2

ASTORIA RIVER WALK



NOTES:

1. ALL LANDSCAPING MUST MEET REQUIREMENTS OF CITY OF ASTORIA DEVELOPMENT CODE SECTION 3.120.
2. PLANTING BETWEEN PARKING LOT AND NORTHERN PROPERTY LINE MUST MEET REQUIREMENTS OF DEVELOPMENT CODE SECTION 14.120.B: MAX. DISTANCE BETWEEN TREES IS 20' O.C.; MAX. DISTANCE BETWEEN SHRUBS IS 5' O.C.
3. PLANT VARIETIES ARE SELECTED FOR SITE CONDITIONS AND GROWTH ATTRIBUTES INCLUDING PLANT SIZE. NO SUBSTITUTIONS MAY BE MADE UNLESS APPROVED BY THE LANDSCAPE ARCHITECT.
4. THIS PLAN IS PRELIMINARY, FOR PERMITTING PURPOSES; NOT TO BE USED FOR CONSTRUCTION.

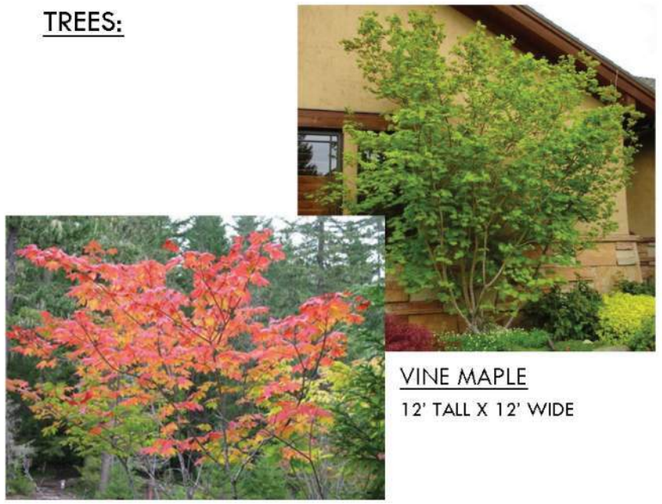
PLANTING LEGEND & SCHEDULE

	COMMON NAME	LATIN NAME	NURSERY SIZE	PLANT TYPE	PLACEMENT
	VINE MAPLE	ACER CIRCINATUM	1.5" CAL. 8' HT. MIN.	DECIDUOUS TREE	AS SHOWN
	SHINDESHOJO JAPANESE MAPLE	ACER PALMATUM 'SHINDESHOJO'	1.5" CAL. 8' HT. MIN.	DECIDUOUS TREE	AS SHOWN
	BOSNIAN PINE	PINUS LEUCODERMIS	6' HT. MIN.	EVERGREEN TREE	AS SHOWN
	SLENDER HINOKI CYPRESS	CHAMAECYPARIS OBTUSA 'GRACILIS'	6' HT. MIN.	EVERGREEN TREE	AS SHOWN
	EMERALD GREEN CEDAR	THUJA OCCIDENTALIS 'SMARAGD'	6' HT. MIN.	EVERGREEN TREE	AS SHOWN
	DWARF WITCH ALDER	FOTHERGILLA GARDENII	1 GAL. CONT. 12" MIN.	DECID. SHRUB	AS SHOWN
	CAPISTRANO RHODODENDRON	RHODODENDRON 'CAPISTRANO'	1 GAL. CONT. 12" MIN.	EVG. SHRUB	AS SHOWN
	ROSA MUNDI RHODODENDRON	RHODODENDRON 'ROSA MUNDI'	1 GAL. CONT. 12" MIN.	EVG. SHRUB	AS SHOWN
	DWARF MOUNTAIN LAUREL	KALMIA LATIFOLIA 'ELF'	1 GAL. CONT. 12" MIN.	EVG. SHRUB	AS SHOWN
	STREIBS FINDLING COTONEASTER	CEANOTHUS DAMMERI 'STREIBS FIND.'	4" CONT.	GROUNDCOVER	18" O.C. TRIANGULAR SPACING
	VARIEGATED CARMEL CREEPER	CEANOTHUS GRISEUS HORIZONTALIS	4" CONT.	GROUNDCOVER	18" O.C. TRIANGULAR SPACING

PLANTING PALETTE

TREES:

BOSNIAN PINE
12' TALL X 5' WIDE



VINE MAPLE
12' TALL X 12' WIDE

EMERALD GREEN CEDAR
15' TALL X 4' WIDE

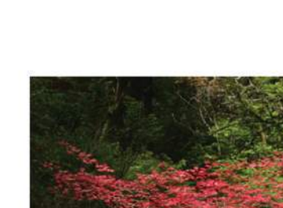
SHINDESHOJO JAPANESE MAPLE
8' TALL X 6' WIDE

SLENDER HINOKI CYPRESS
15' TALL X 6' WIDE

SHRUBS:

CAPISTRANO RHODODENDRON
4' TALL X 4' WIDE

DWARF MOUNTAIN LAUREL
3' TALL X 3' WIDE



DWARF WITCH ALDER
5' TALL X 5' WIDE

ROSA MUNDI RHODODENDRON
4' TALL X 4' WIDE

GROUNDCOVERS:

VARIEGATED CARAMEL CREEPER
1' TALL X 4' WIDE

STREIBS FINDLING COTONEASTER
0.5' TALL X 6' WIDE

COLUMBIA RIVER

RAILROAD TRESTLE
RIVERWALK

RETAINING WALL

TOW EL=16.00

TOW EL=16.00

PROPOSED
BUILDING
FFE = 16.0

EXTG
BUILDING
FFE = ±19.0

SLAB EL=16.00

SLAB EL=16.00

STEP IN
BLDG PAD

DATUM - LOW POINT FOR
NEW CONSTRUCTION
GRADING

PROPOSED
BLDG PAD

FIELD OF
DETERMINATION
FOR DATUM

FILTER
CATCHBASIN

RIM EL=14.42

RIM EL=16.21

RIM EL=15.29

RIM EL=15.30

DEMO EXTG
CATCHBASIN

DEMO EXTG
CATCHBASIN

EL=15.68

EL=14.96

EL=15.92

EL=15.65

EL=15.88

EL=15.53

EL=15.22

EL=15.50

EL=15.41

EL=15.53

EL=15.88

EL=15.92

EL=15.65

EL=16.70

EL=15.84

EL=15.72

EL=16.79

EL=15.71

EL=15.71

EL=15.91

EL=16.79

EL=16.99

EL=18.36

EL=18.19

EL=18.67

EL=18.46

EL=18.15

EL=18.05

EL=18.86

DCVA
EL=18.38
DDCVA

EL=17.73

EL=17.84

EL=17.97

EL=18.00

2ND STREET ℄

MARINE DRIVE ℄

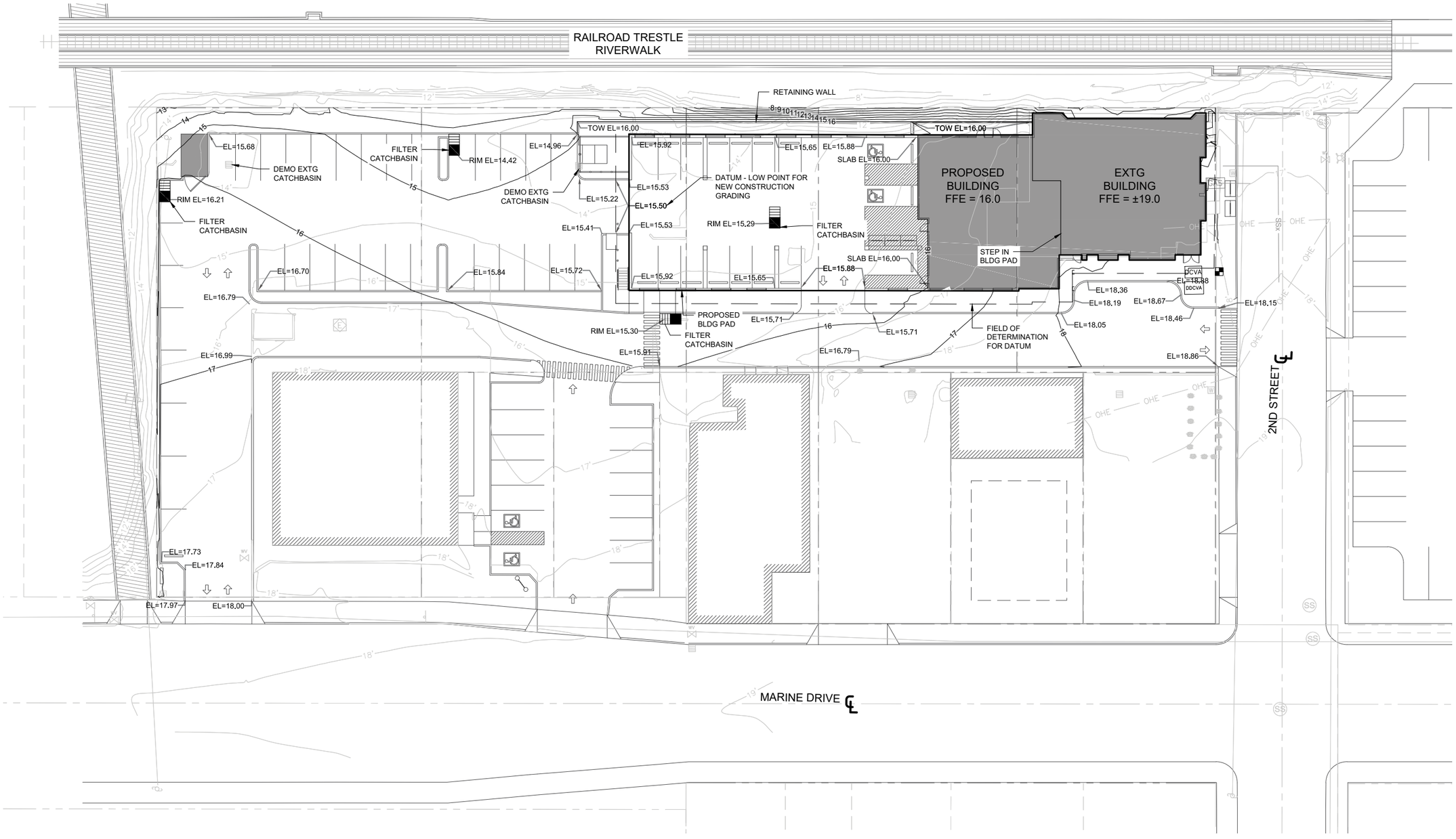
0 10 20 40

SCALE: 1" = 20'

GRADING PLAN

DATE 04.09.2018

COLUMBIA RIVER



0 10 20 40

SCALE: 1" = 20'

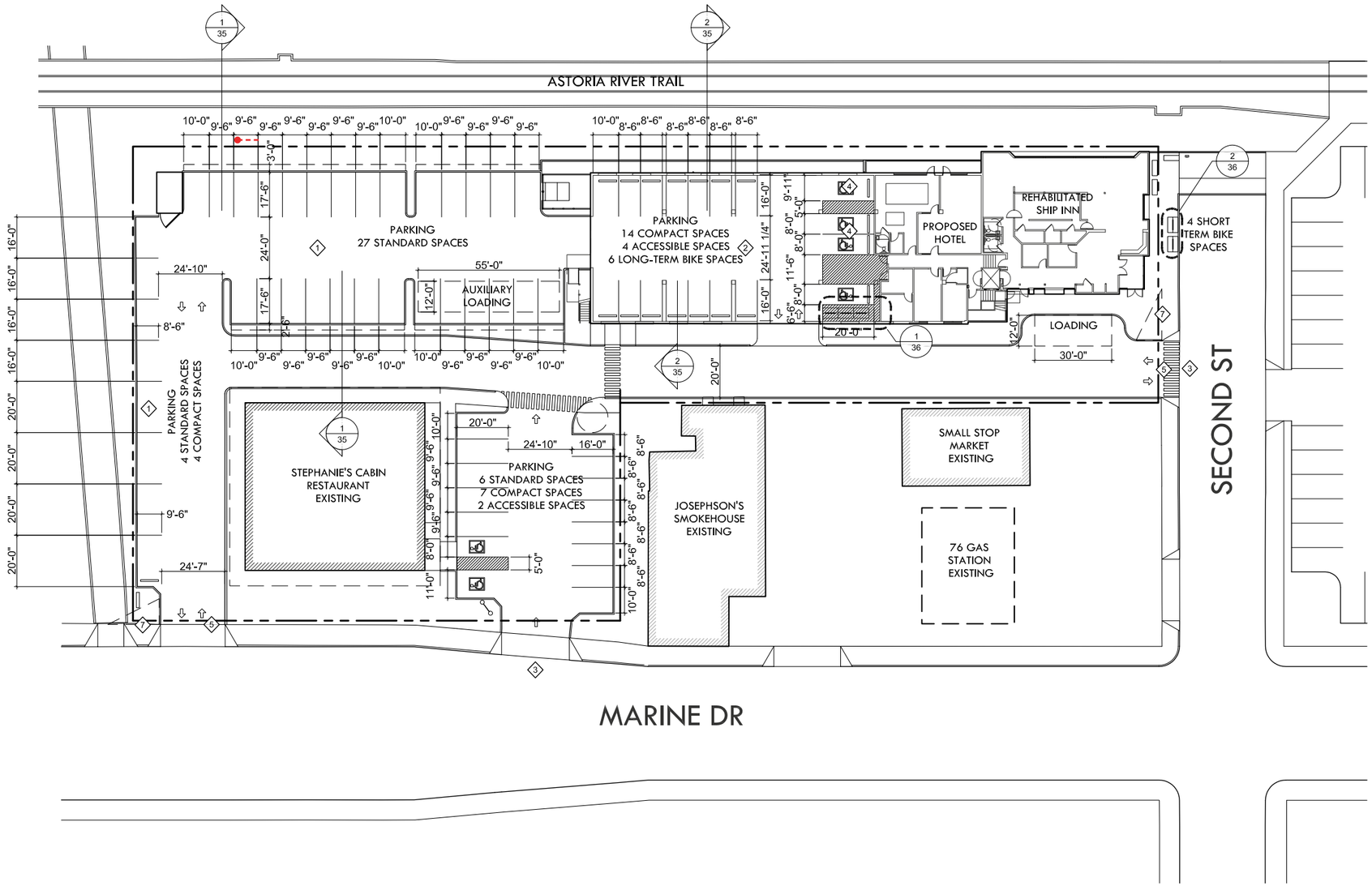
UTILITY PLAN

LEGEND

- ENCLOSED BUILDING AREA - PROJECT
- EXISTING BUILDING - NOT ON SITE

KEY NOTES

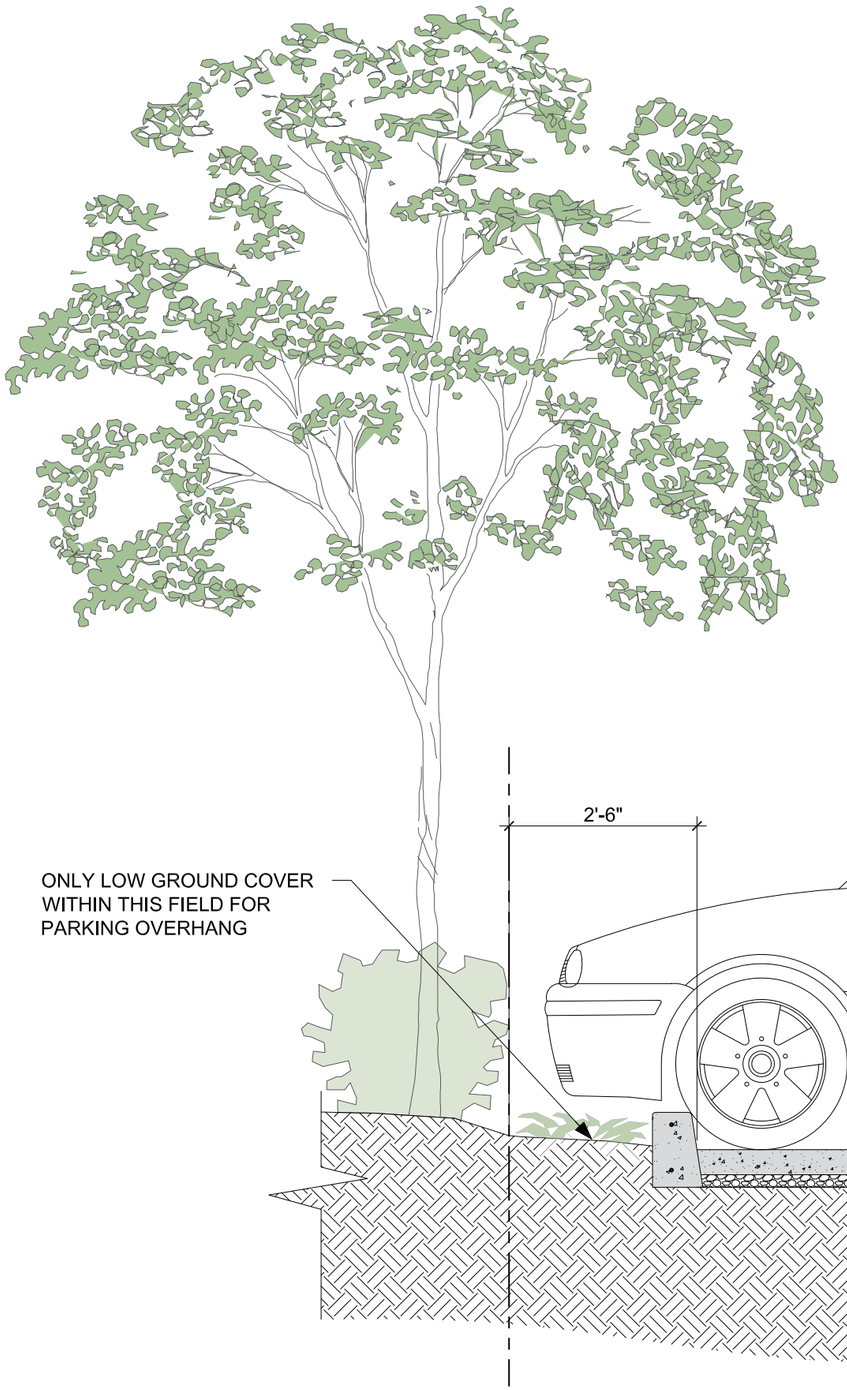
1. EXTERIOR PARKING LOT
2. COVERED PARKING AREA
3. EMERGENCY VEHICLE ACCESS
4. ACCESSIBLE PARKING SPACE
5. PROJECT DRIVE ACCESS
6. EXISTING CURB CUT / DRIVE ENTRY - IMPROVEMENTS TO ROW TO BE COORDINATED WITH CITY REQUIREMENTS
7. VISION CLEARANCE TRIANGLE - 10' X 20'

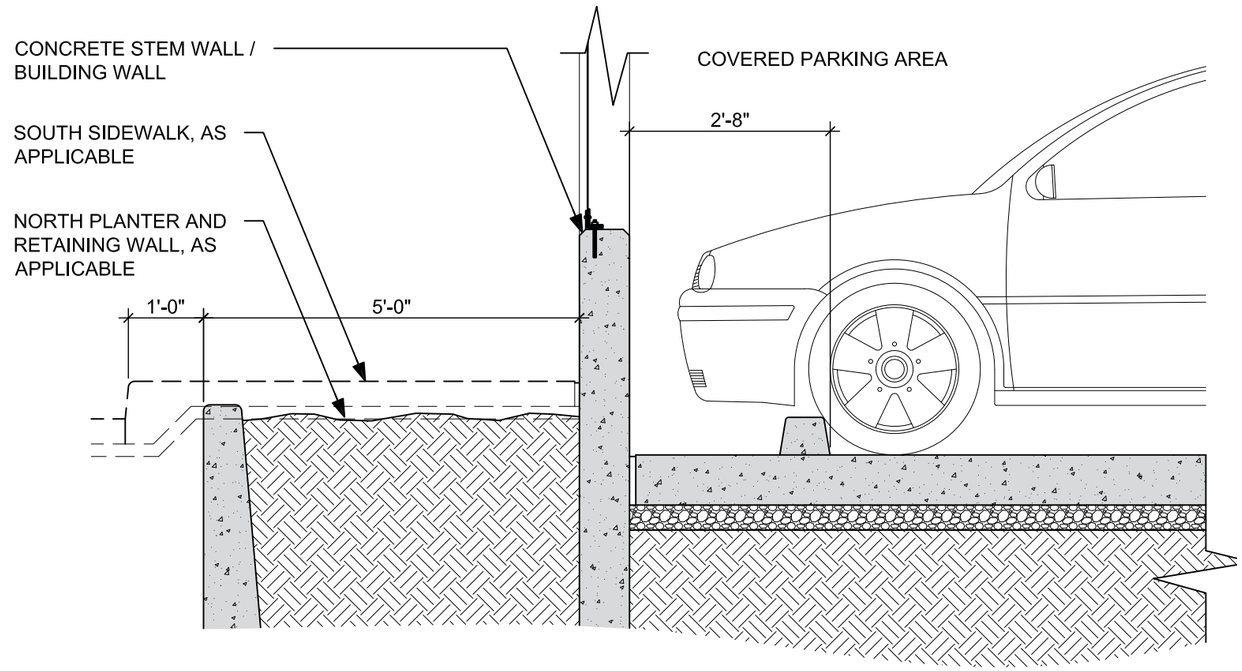


1 PARKING PLAN
SCALE: 1" = 50'

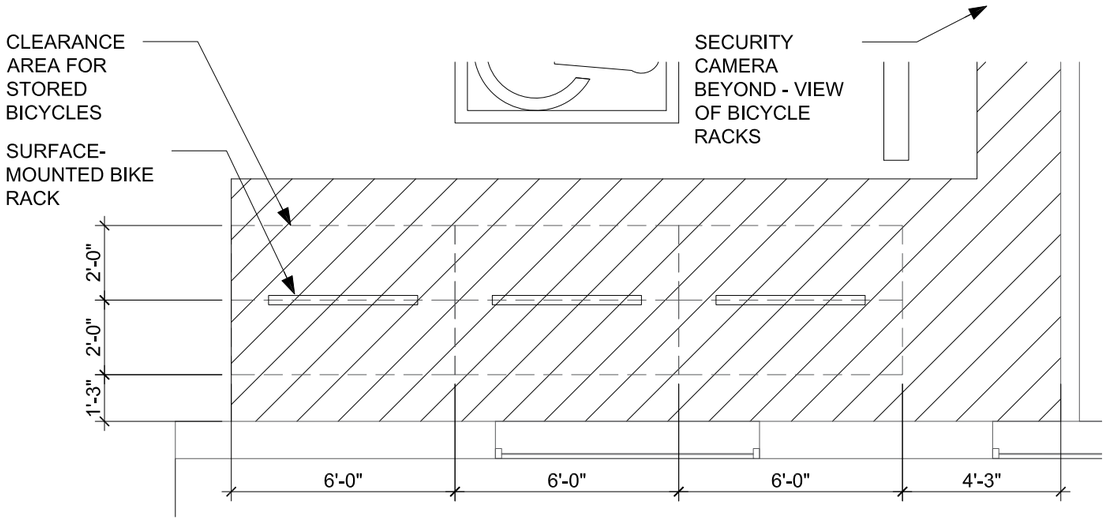
N

DATE 04.09.2018



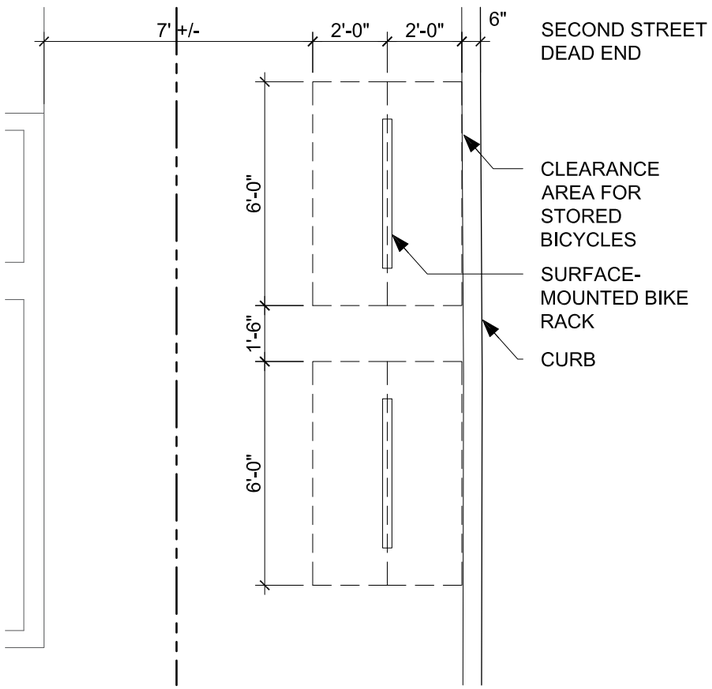


PARKING DETAILS

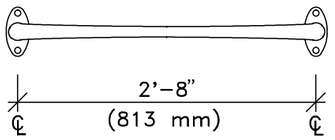


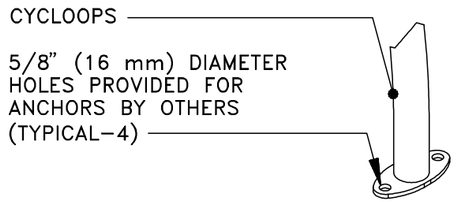
1 LONG-TERM BIKE PARKING
SCALE: 1/4" = 1'-0"

ALSO MEET SHORT TERM REQUIREMENTS

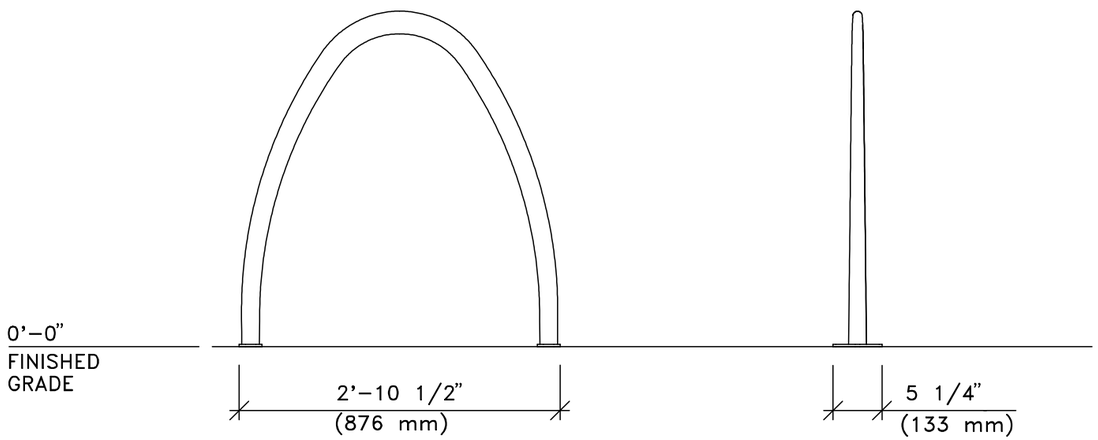


2 SHORT-TERM BIKE PARKING
SCALE: 1/4" = 1'-0"





2178–84–SM (SURFACE MOUNT)



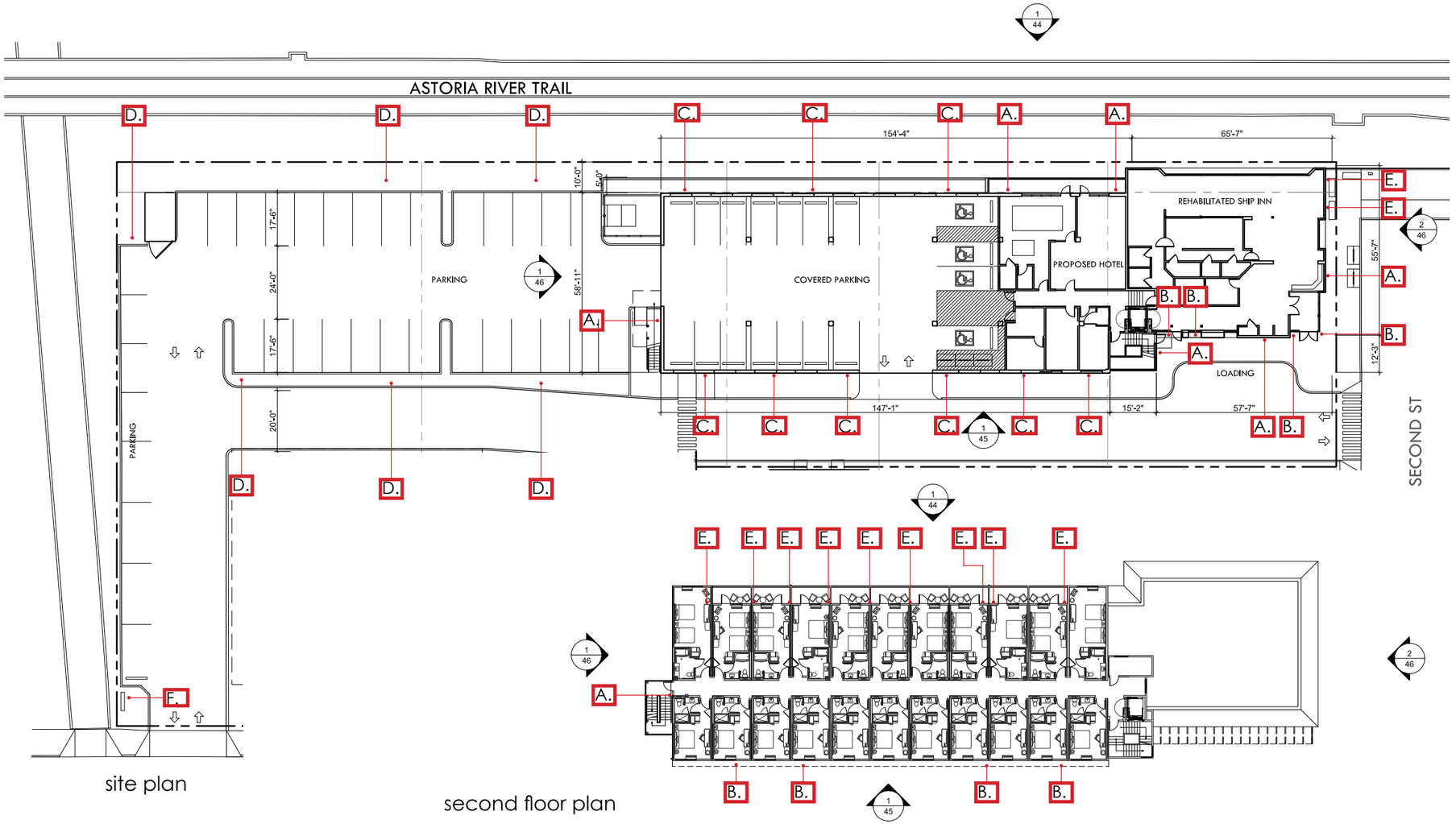
FRONT VIEW

SIDE VIEW

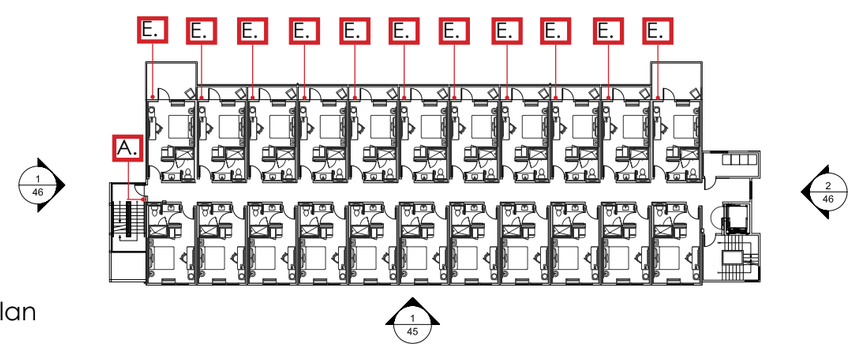
BICYCLE PARKING DETAILS

DATE 04.09.2018

site plan



second floor plan



third floor plan

lighting fixture legend

A. wall-mounted downlight

B. recessed can downlight at underside of canopy (6"/4")

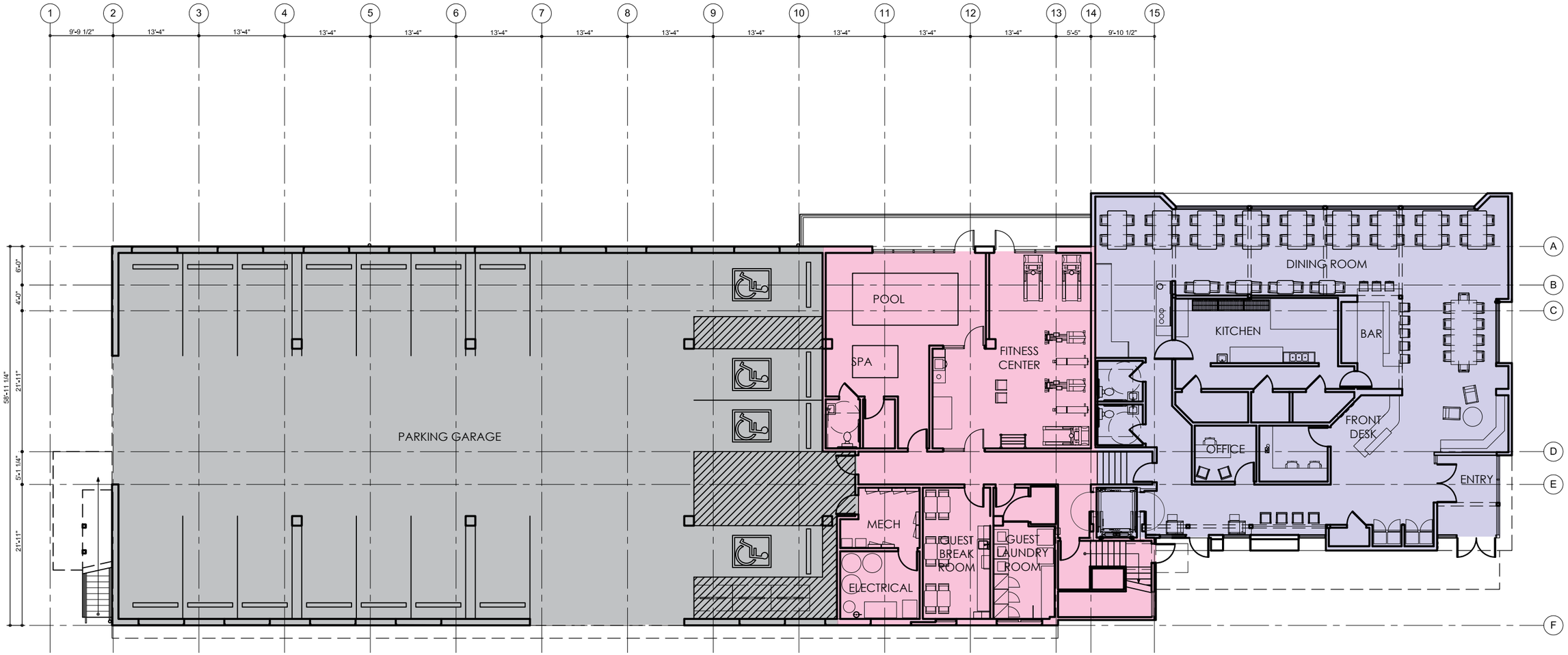
C. wall-mounted step light

D. 14' parking pole lights

E. deck downlight - bronze

E. accent light at sign - bronze

Note: Refer to Appendix for lighting fixture cut sheets.



FLOOR	AREA
FIRST FLOOR	5,952 SF

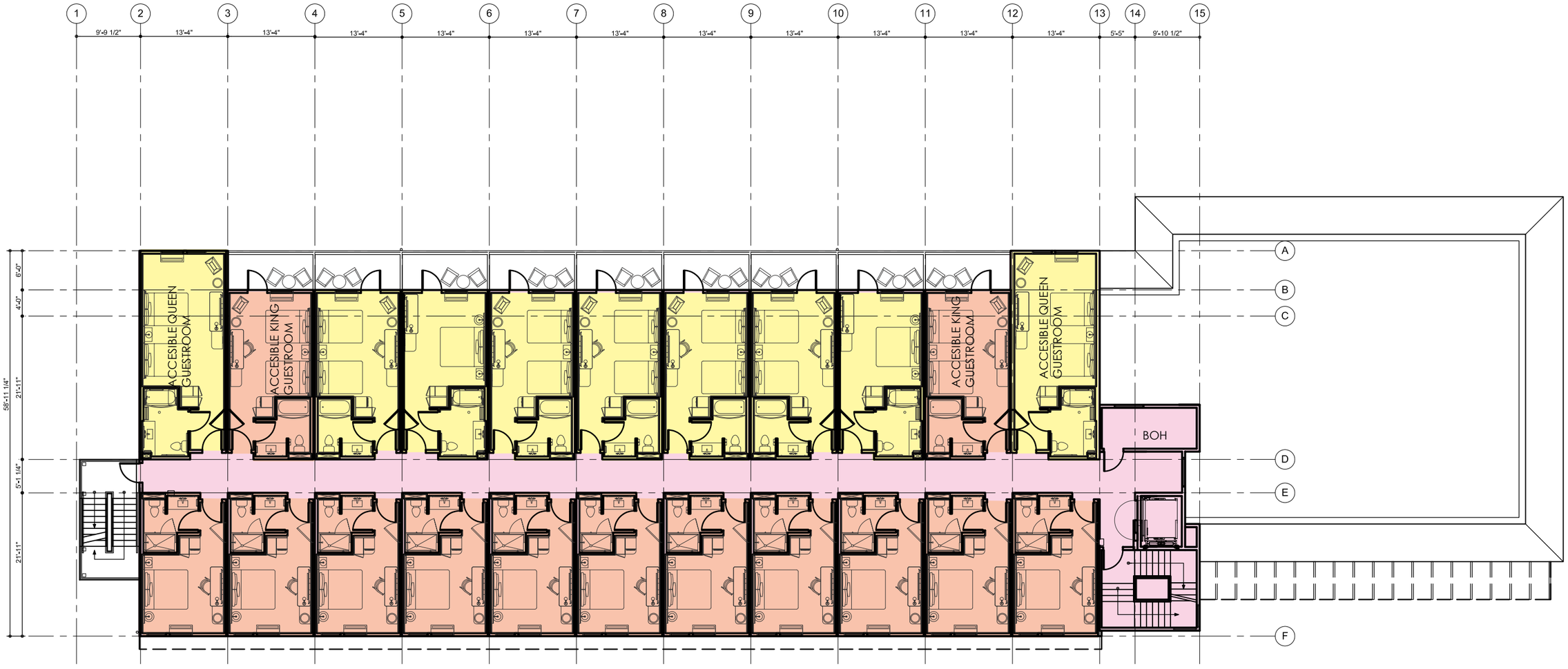
PARKING GARAGE

EXISTING BUILDING

NEW BUILDING

FIRST FLOOR PLAN

DATE 04.09.2018



GUEST ROOM TYPE	QTY
KING	11
DOUBLE QUEEN	7
ACCESIBLE KING	2
ACCESIBLE DOUBLE QUEEN	2

FLOOR	AREA
SECOND FLOOR	8,444 SF

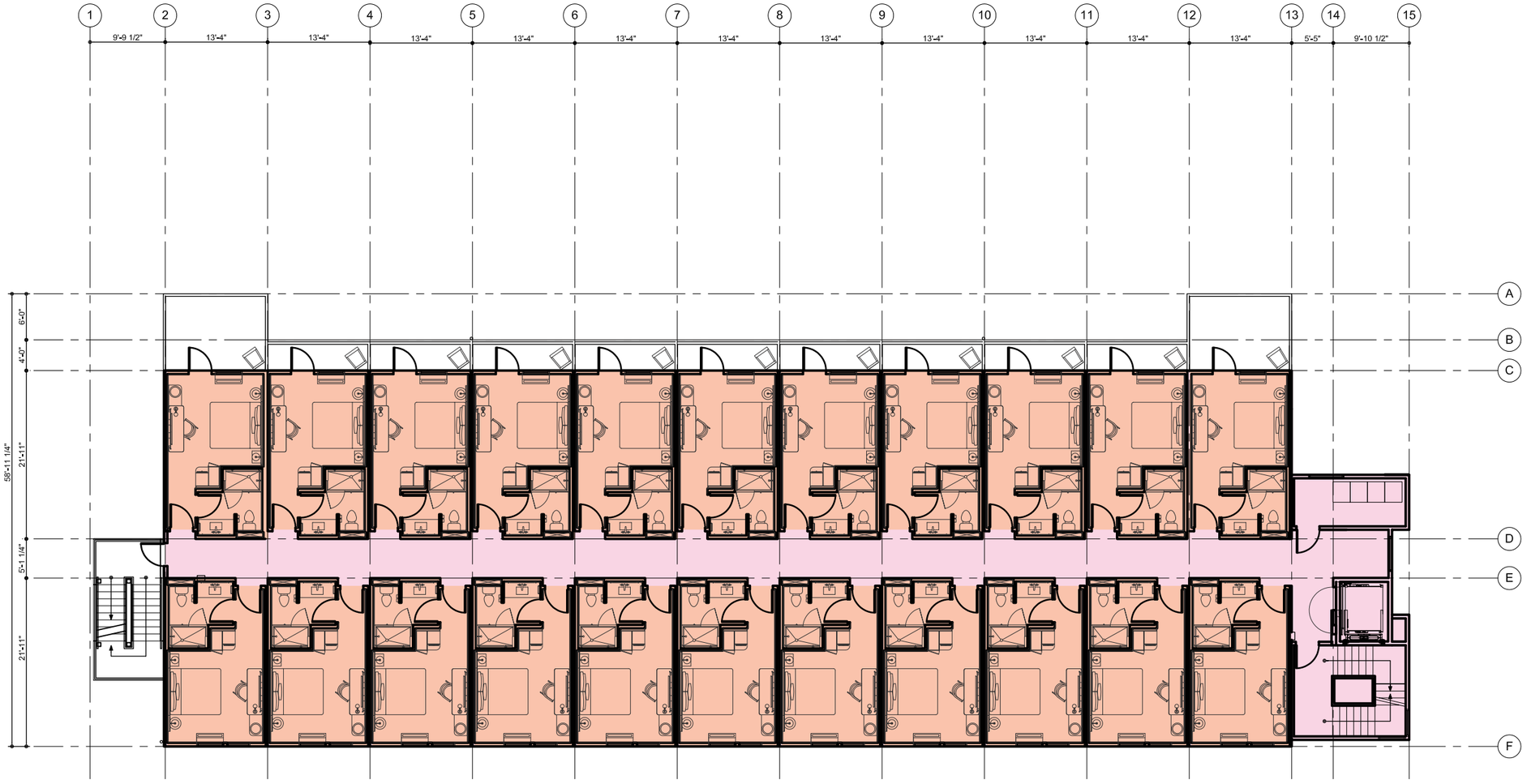
COMMON SPACE

DOUBLE QUEEN GUESTROOM

KING GUESTROOM

SECOND FLOOR PLAN

DATE 04.09.2018



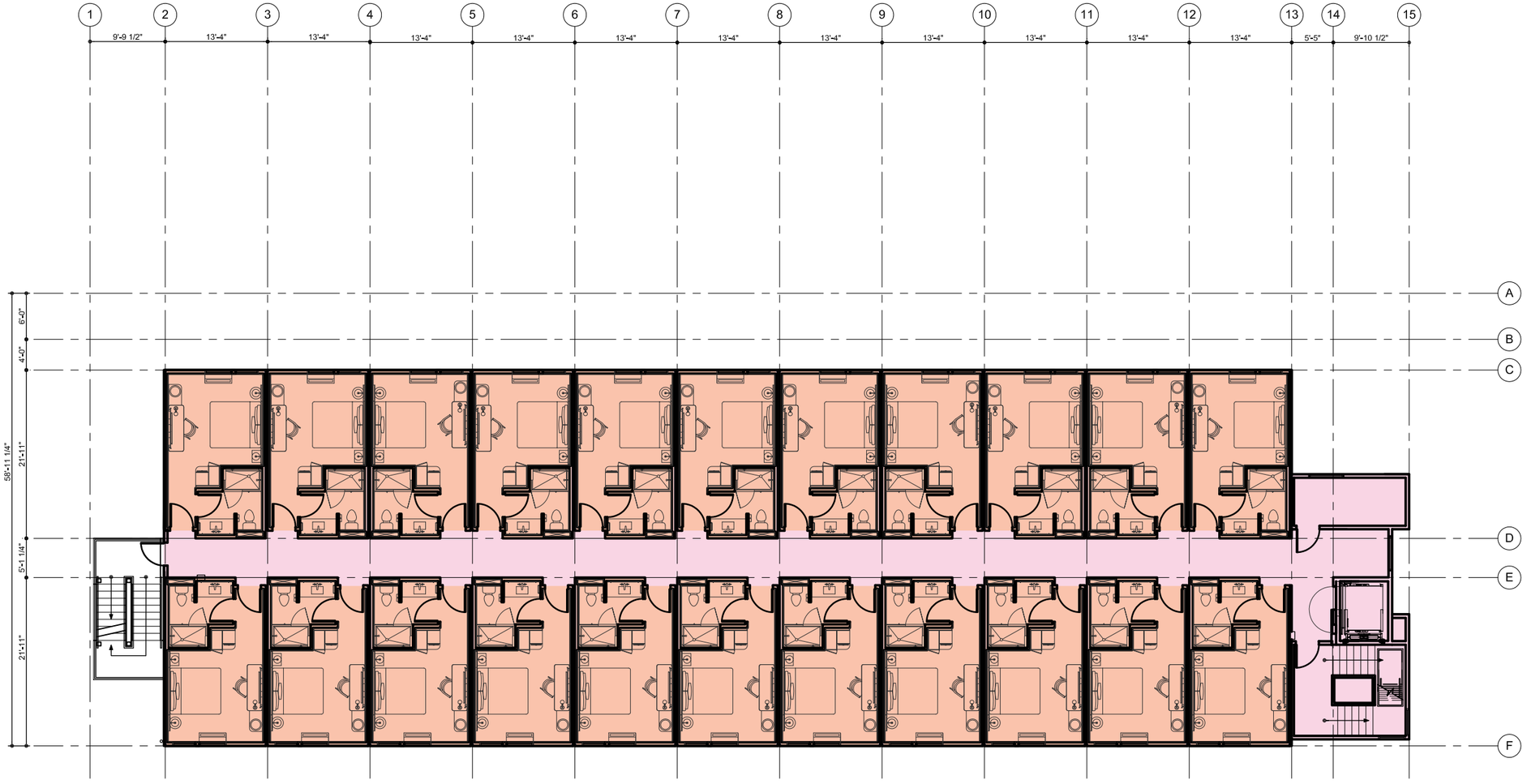
GUEST ROOM TYPE	QTY
KING	22

FLOOR	AREA
THIRD FLOOR	7,693 SF

COMMON SPACE

KING GUESTROOM

THIRD FLOOR PLAN



GUEST ROOM TYPE	QTY
KING	22

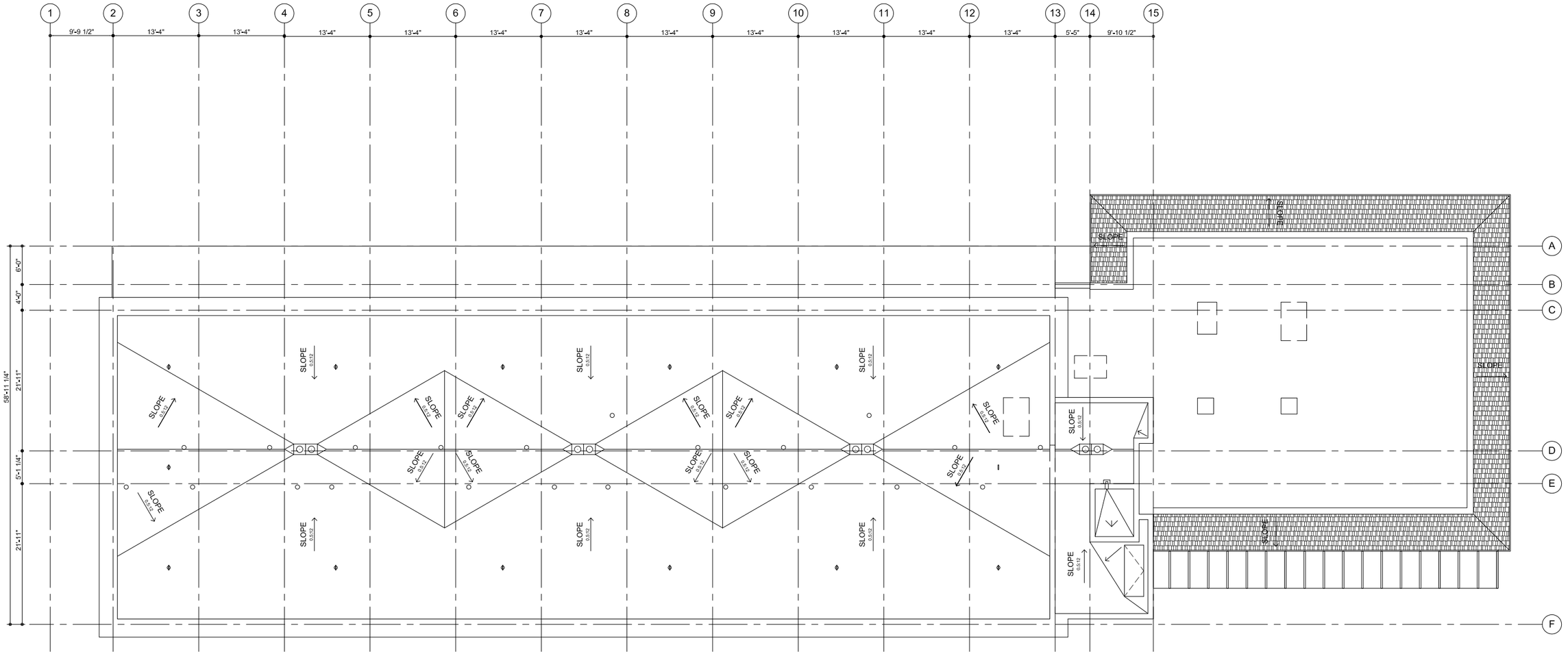
FLOOR	AREA
FOURTH FLOOR	7,693 SF

COMMON SPACE

KING GUESTROOM

FOURTH FLOOR PLAN

DATE 04.09.2018



DATE 04.09.2018

ROOF PLAN

CARLETON HART ARCHITECTURE

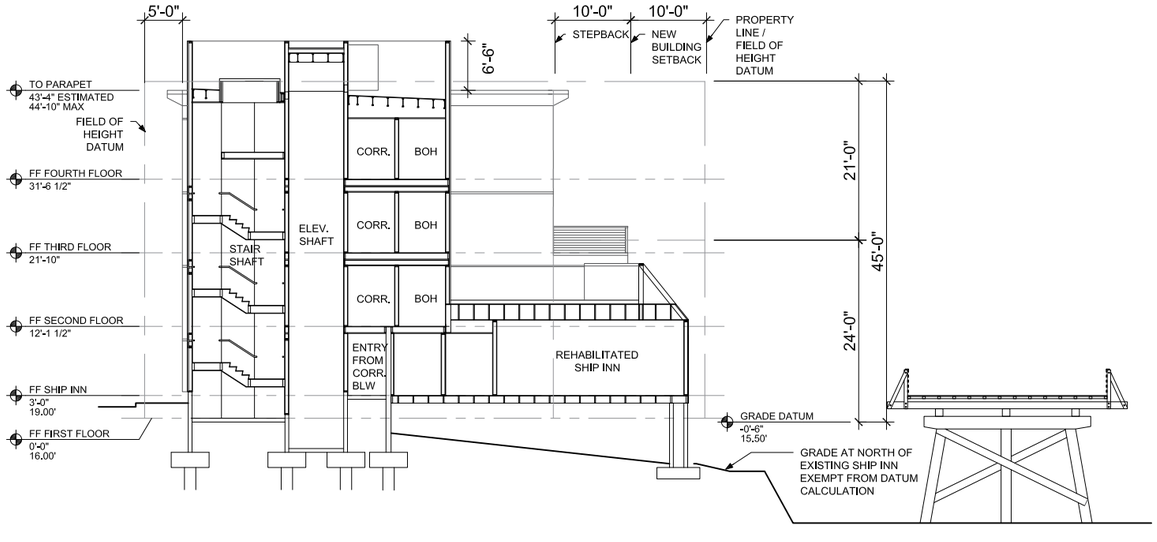
HOLLANDER HOSPITALITY

ASTORIA FAIRFIELD

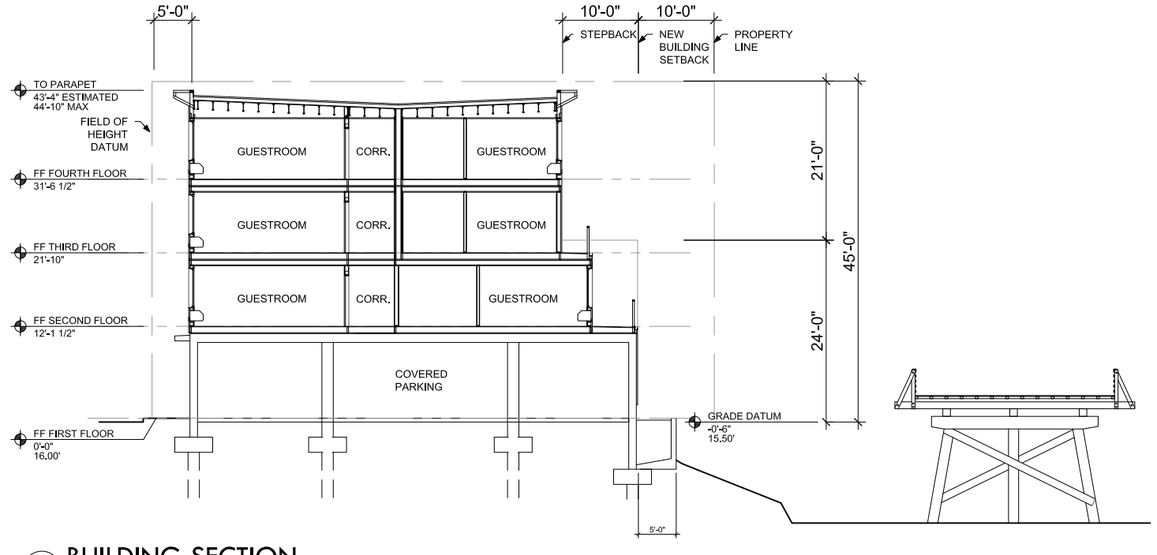
HISTORIC DESIGN REVIEW APPLICATION

0 8-0" 16-0"

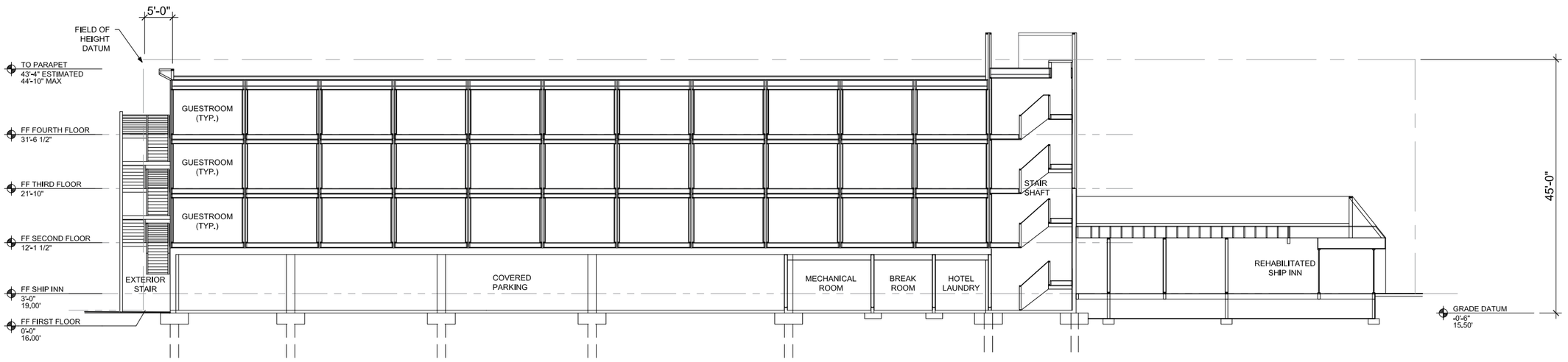
N



1 BUILDING SECTION
SCALE: 1" = 20'



2 BUILDING SECTION
SCALE: 1" = 20'



3 BUILDING SECTION
SCALE: 1" = 20'

DATE 04.09.2018

BUILDING SECTION

GENERAL NOTES

A. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES.

B. DIMENSIONS ARE TO FACE OF STUD UNLESS OTHERWISE NOTED.

KEY NOTES

1. SYNTHETIC WOOD SIDING
2. SYNTHETIC WOOD PLANK CLADDING
3. METAL AWNING
4. CEDAR SHAKE ROOFING
5. CEDAR SHAKE SIDING
6. ALUMINUM STOREFRONT DOOR AND GLAZING MULL
7. ALUMINUM STOREFRONT GLAZING MULL
8. FIBERGLASS WINDOW, TYP.
9. FIBERGLASS SWINGING PATIO DOOR, TYP.
10. OPERABLE GLASS WALL SYSTEM
11. METAL GRATE - POWDER COATED
12. PACKAGED TERMINAL HEAT PUMP WITH ARCHITECTURAL GRILLE
13. HORIZONTAL BOARD FORM CONCRETE WALL
14. PREFINISHED METAL PARAPET COPING
15. FIBER CEMENT TRIM
16. PREFABRICATED STEEL RAILING - POWDER COATED
17. STEEL FRAMING
18. DOWNLIGHTING FIXTURE
19. HOLLOW METAL EGRESS DOOR - MATCH ADJACENT WALL FINISH
20. OPEN TO COVERED PARKING BEYOND
21. RETAINING WALL AND PLANTER BEYOND
22. MECH. EXHAUST CONCEALED BEHIND
23. DRYER EXHAUST VENTS
24. TRANSFORMER GATE AND SCREEN
25. WALL-MOUNTED SIGNAGE
26. EXISTING TRESTLE
27. RECESSED STEP LIGHT
28. SYNTHETIC WOOD PLANK SOFFIT
29. PREFABRICATED STEEL STAIR - POWDER COAT
30. EXISTING SHIP INN SIGN TOWER - PRESERVE & REHABILITATE

1 NORTH ELEVATION
SCALE: 1/16" = 1'-0"

DATE 04.09.2018

NORTH ELEVATION

GENERAL NOTES

A. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES.

B. DIMENSIONS ARE TO FACE OF STUD UNLESS OTHERWISE NOTED.

KEY NOTES

1. SYNTHETIC WOOD SIDING
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25. WALL-MOUNTED SIGNAGE
26. EXISTING TRESTLE
27. RECESSED STEP LIGHT
28. SYNTHETIC WOOD PLANK SOFFIT
29. PREFABRICATED STEEL STAIR - POWDER COAT
30. EXISTING SHIP INN SIGN TOWER - PRESERVE & REHABILITATE

1 SOUTH ELEVATION
SCALE: 1/16" = 1'-0"

DATE 04.09.2018

SOUTH ELEVATION

GENERAL NOTES

A. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES.

B. DIMENSIONS ARE TO FACE OF STUD UNLESS OTHERWISE NOTED.

KEY NOTES

1. SYNTHETIC WOOD SIDING
2. SYNTHETIC WOOD PLANK CLADDING
3. METAL AWNING
4. CEDAR SHAKE ROOFING
5. CEDAR SHAKE SIDING
6. ALUMINUM STOREFRONT DOOR AND GLAZING MULL
7. ALUMINUM STOREFRONT GLAZING MULL
8. FIBERGLASS WINDOW, TYP.
9. FIBERGLASS SWINGING PATIO DOOR, TYP.
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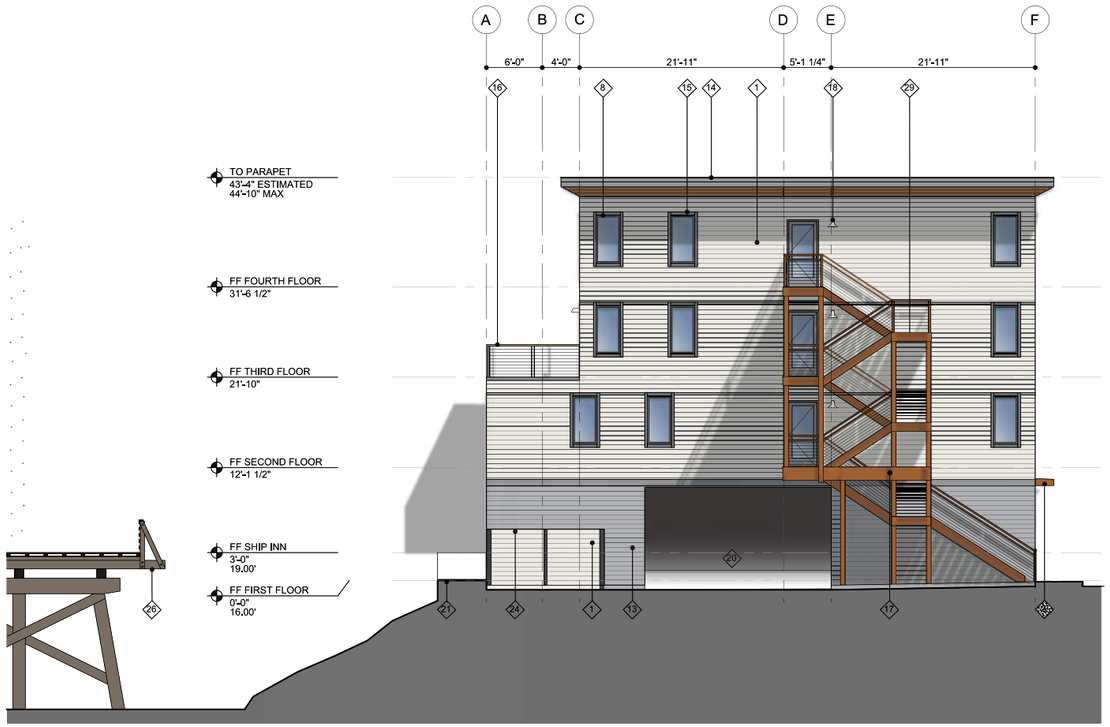
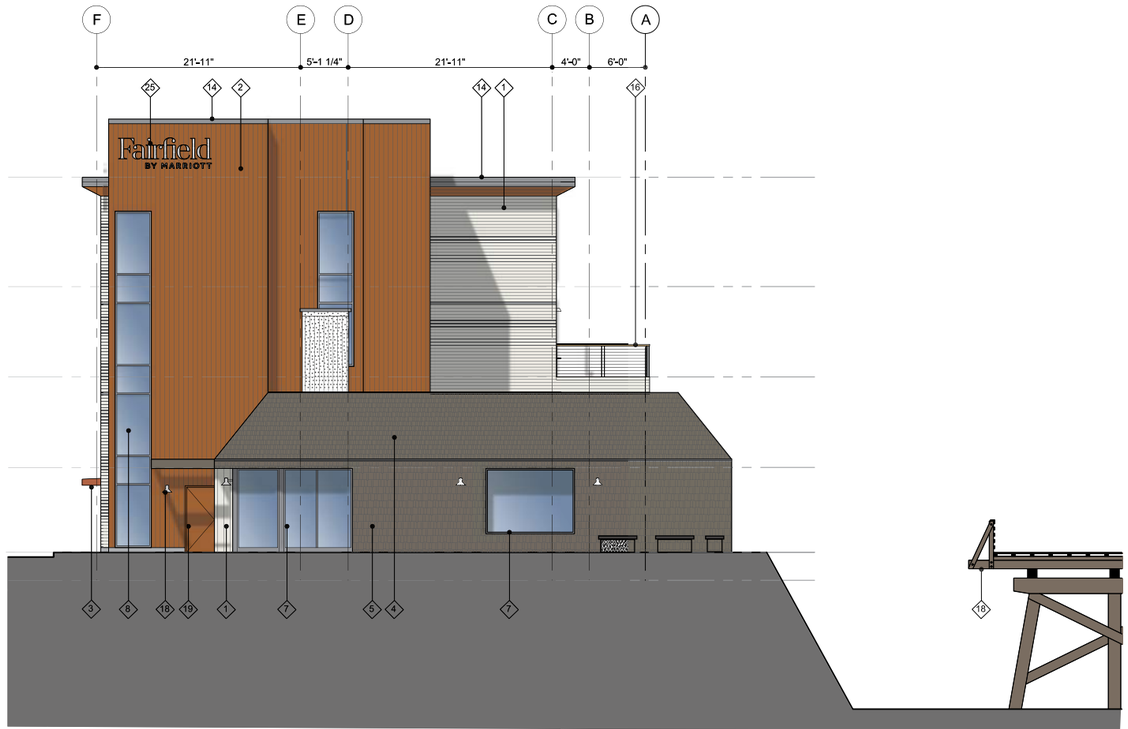
18. DOWNLIGHTING FIXTURE
19. HOLLOW METAL EGRESS DOOR - MATCH ADJACENT WALL FINISH
20. OPEN TO COVERED PARKING BEYOND
21. RETAINING WALL AND PLANTER BEYOND
22. MECH. EXHAUST CONCEALED BEHIND
23. DRYER EXHAUST VENTS
24. TRANSFORMER GATE AND SCREEN
25. WALL-MOUNTED SIGNAGE
26. EXISTING TRESTLE
27. RECESSED STEP LIGHT
28. SYNTHETIC WOOD PLANK SOFFIT
29. PREFABRICATED STEEL STAIR - POWDER COAT
30. EXISTING SHIP INN SIGN TOWER - PRESERVE & REHABILITATE



1 WEST ELEVATION
SCALE: 1/16" = 1'-0"



2 EAST ELEVATION
SCALE: 1/8" = 1'-0"

view from northeast, along River Trail

PERSPECTIVE RENDERING 1

view from southeast along drive

PERSPECTIVE RENDERING 2

view from northeast along River Trail

PERSPECTIVE RENDERING 3

view from Second Street & Marine Drive

PERSPECTIVE RENDERING 4

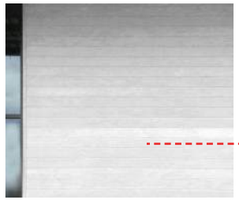
CLADDING ALTERNATE: Perspective

CLADDING ALTERNATE: Perspective

TOWER HEIGHT ALTERNATE: Perspective

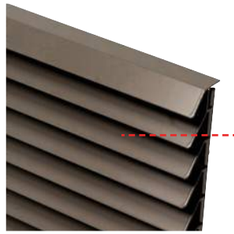
STAIR SCREEN ALTERNATE: Perspective

synthetic wood siding - color at guest rooms

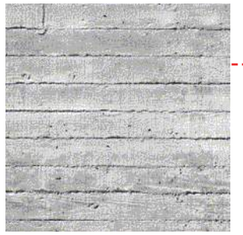


dark gray casement fiberglas window system

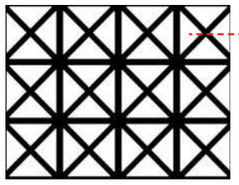
PTHP architectural grille



horizontal board form concrete



perforated aluminum panel



glass canopy

synthetic wood siding - color at stair tower

natural cedar shakes. weathered appearance shown

storefront glazing and entry door

existing Ship Inn tower to remain

DATE 04.09.2018

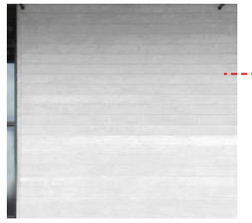
MATERIALS ELEVATION

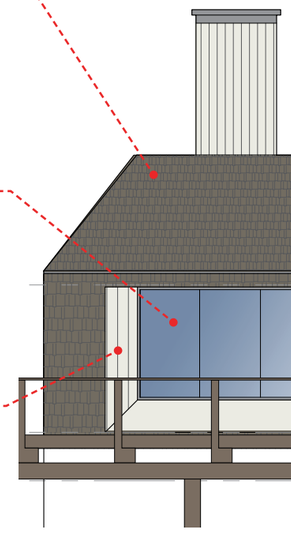
synthetic wood siding - color at stair tower

natural cedar shakes. weathered appearance shown

moveable glass wall system

synthetic wood siding - color at guest rooms

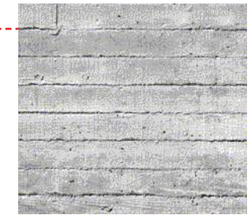




synthetic wood siding - color at guest rooms

dark gray casement fiberglas window system

cementitious deck coating

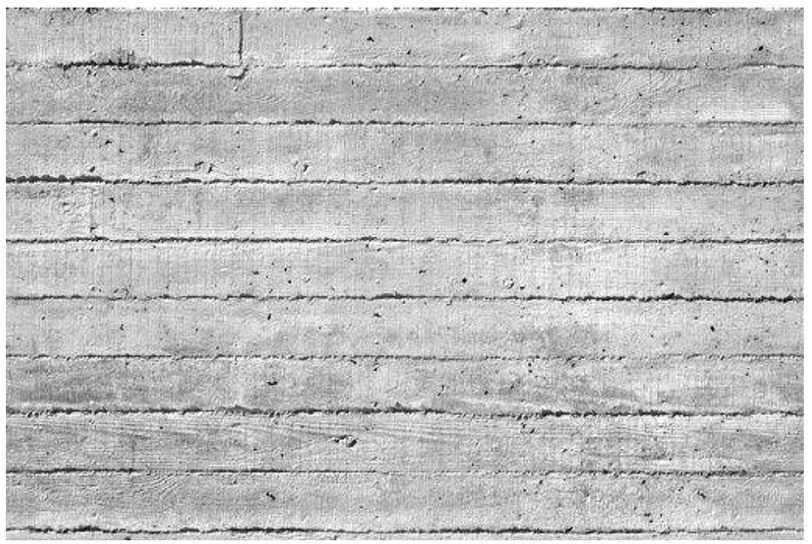


horizontal board form concrete

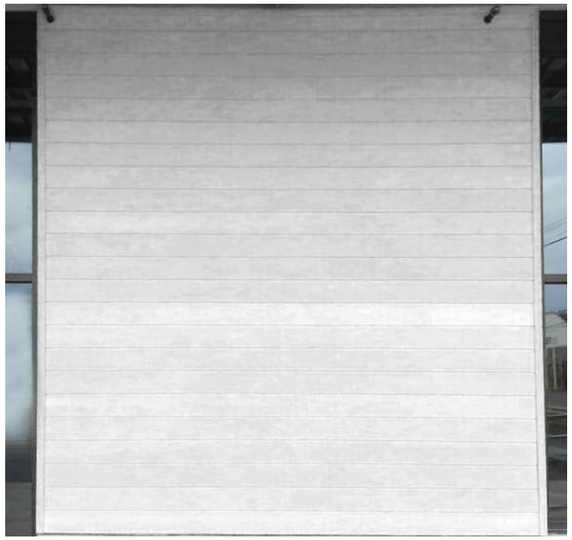
storefront glazing and entry door

synthetic wood siding - “rust” accent color

cedar shake - Ship Inn exterior wall and mansard roof



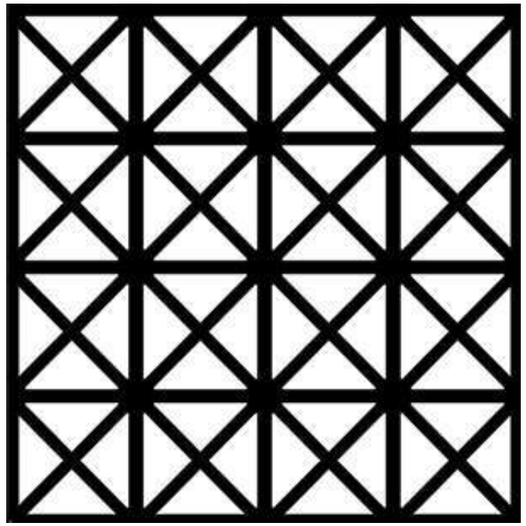
horizontal board foarm concrete



synthetic wood siding - typical body color

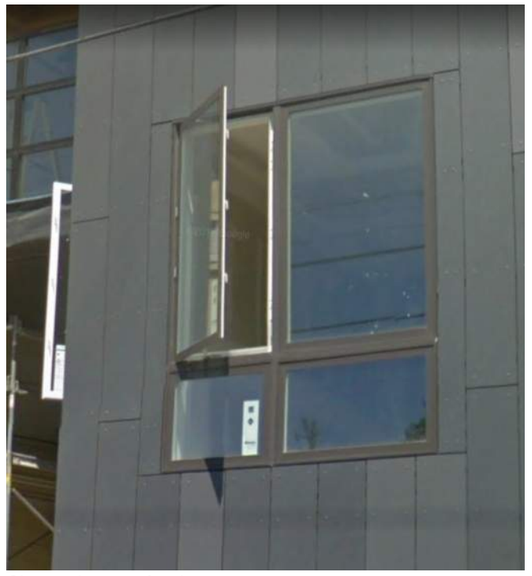
cementitious deck coating

built-up roofing - grey color



metal grate pattern

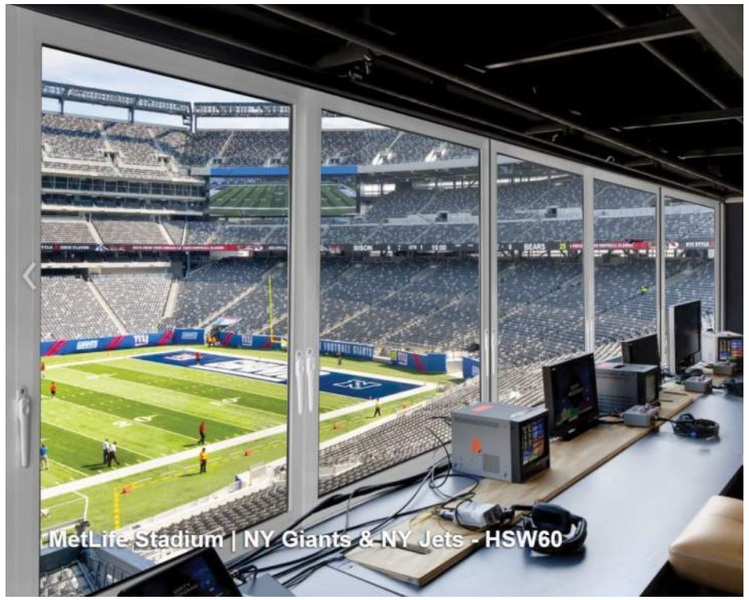
outdoor plaza bench



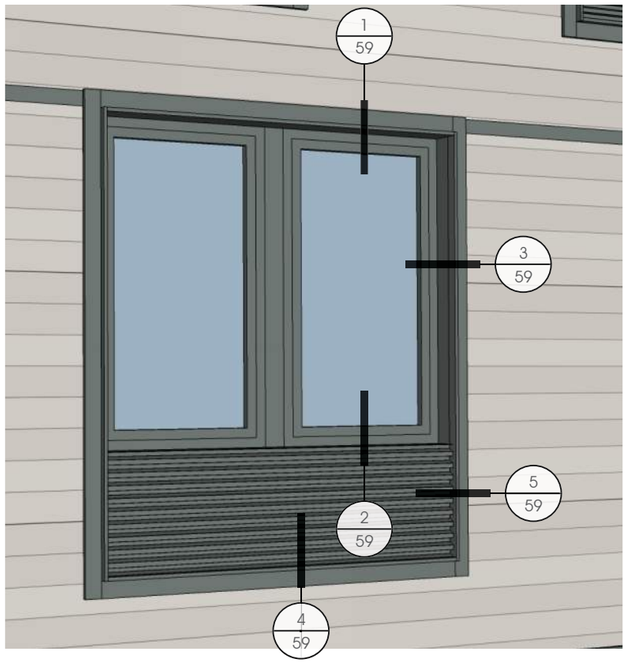
fiberglass window

PTHP architectural grille

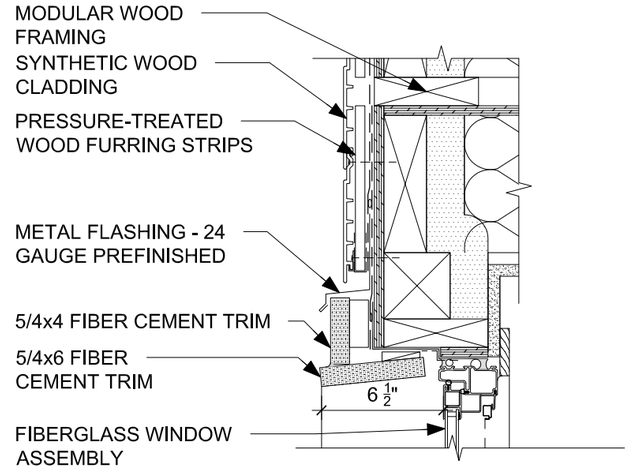
storefront glazing and entry doors



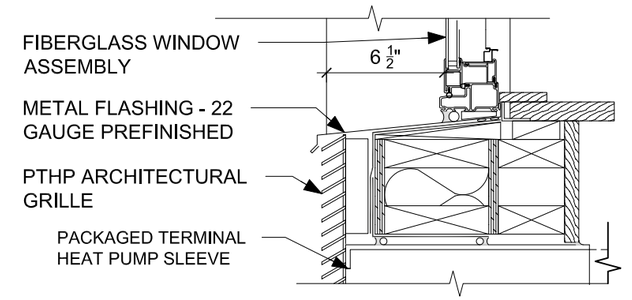
movable glass wall system



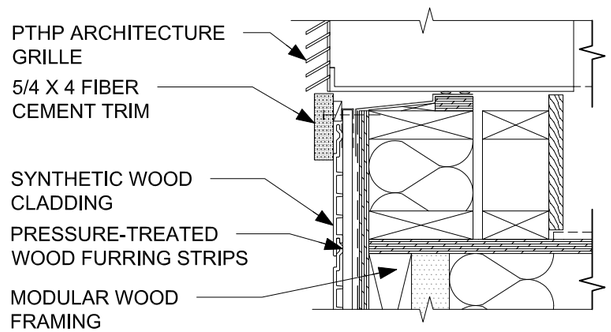
view of typical window



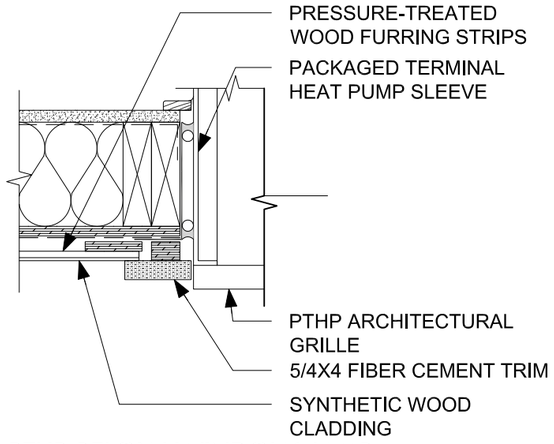
1 WINDOW HEAD
SCALE: 1 1/2" = 1'-0"



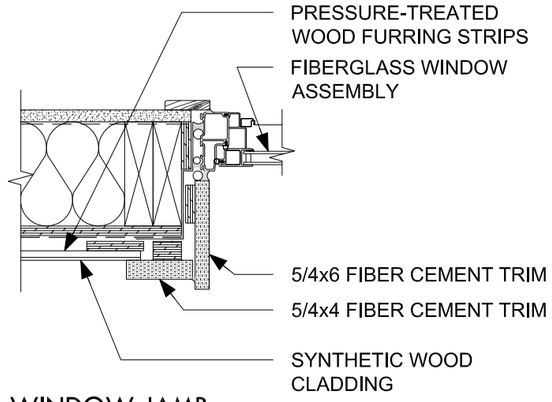
2 WINDOW SILL ABOVE PTHP
SCALE: 1-1/2" = 1'-0"



4 BOTTOM OF PTHP
SCALE: 1-1/2" = 1'-0"



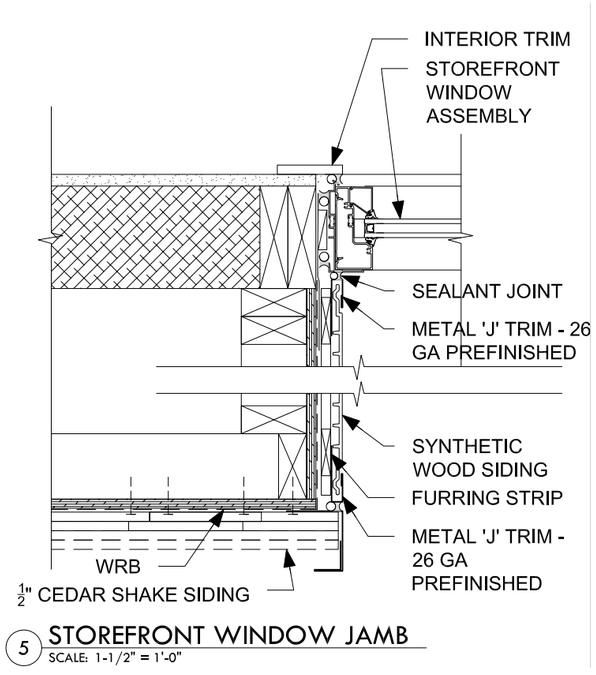
5 PTHP BELOW WINDOW JAMB
SCALE: 1 1/2" = 1'-0"



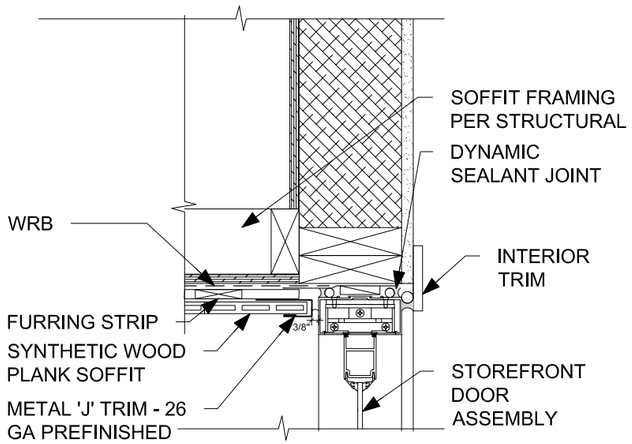
3 WINDOW JAMB
SCALE: 1-1/2" = 1'-0"

DETAILS - Windows

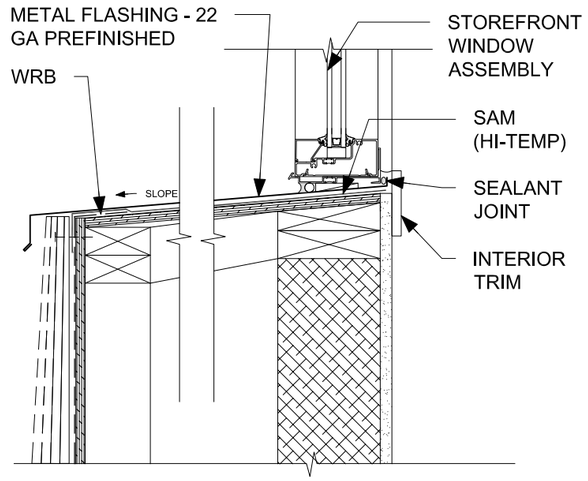
view of storefront entry



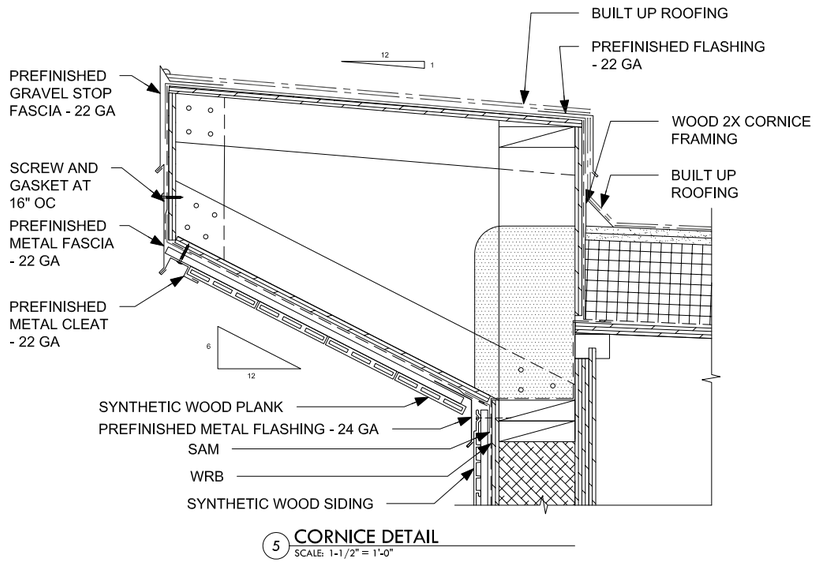
5 STOREFRONT WINDOW JAMB
SCALE: 1-1/2" = 1'-0"



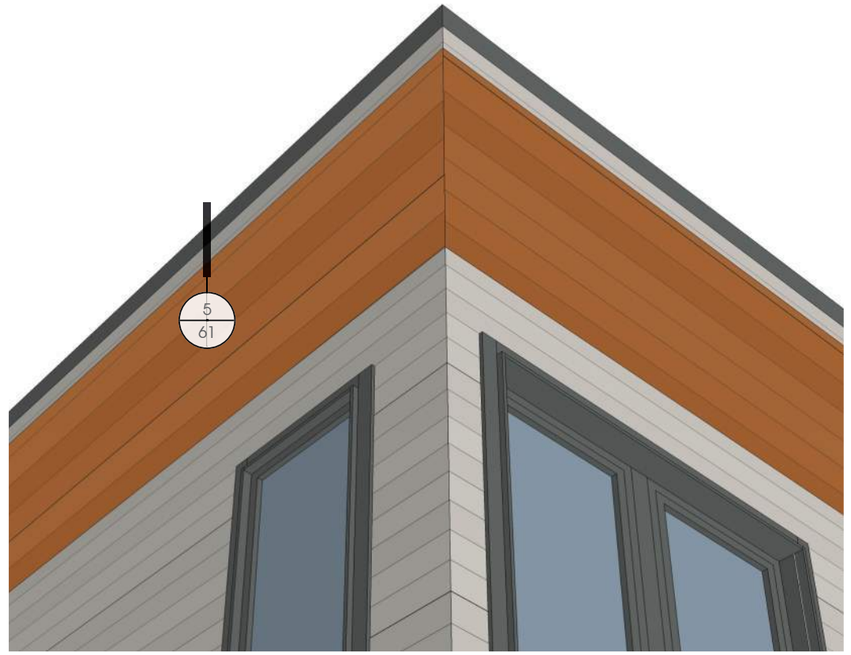
4 STOREFRONT DOOR HEAD AT SOFFIT
SCALE: 1-1/2" = 1'-0"



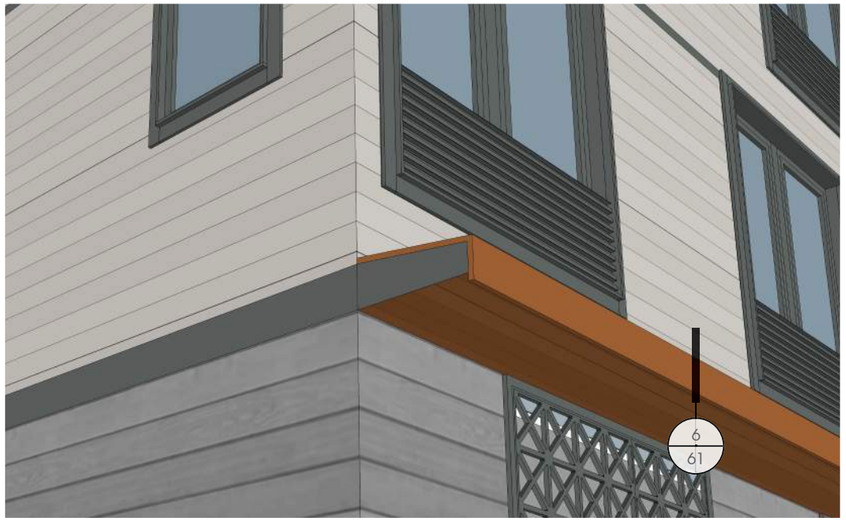
6 STOREFRONT WINDOW SILL
SCALE: 1-1/2" = 1'-0"



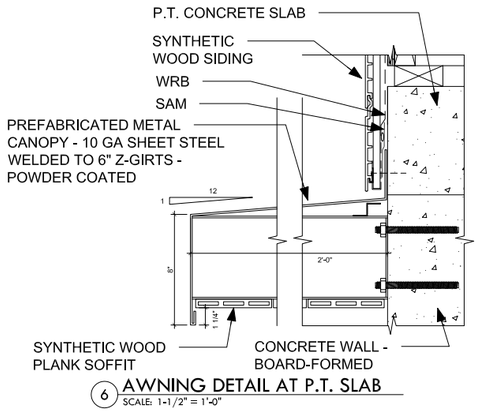
5 CORNICE DETAIL
SCALE: 1-1/2" = 1'-0"



view of cornice

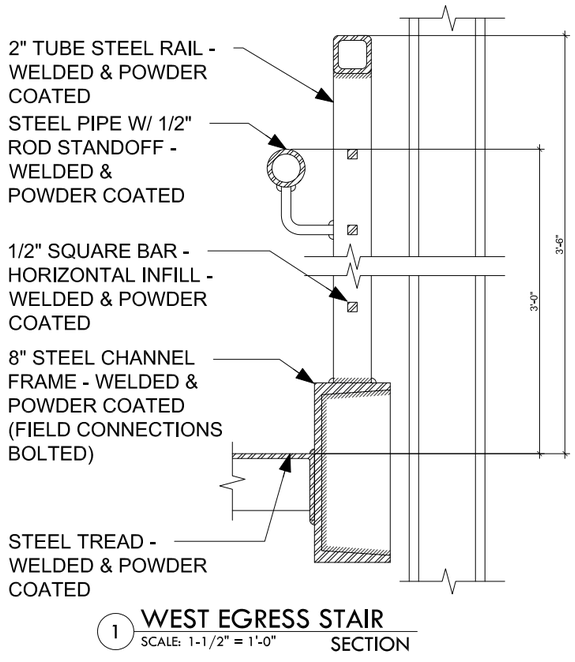


view of awning

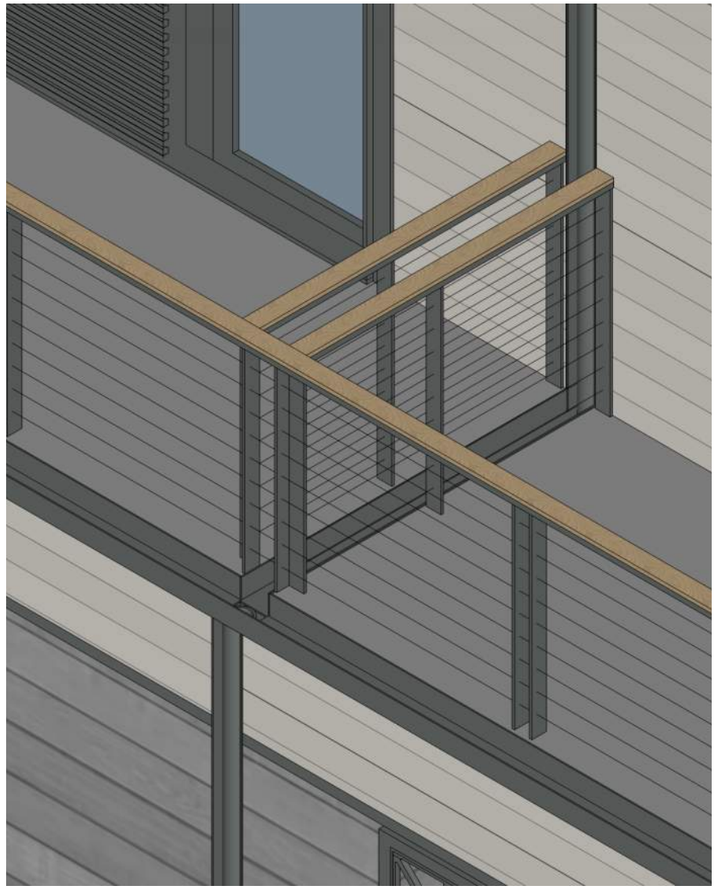


6 AWNING DETAIL AT P.T. SLAB
SCALE: 1-1/2" = 1'-0"

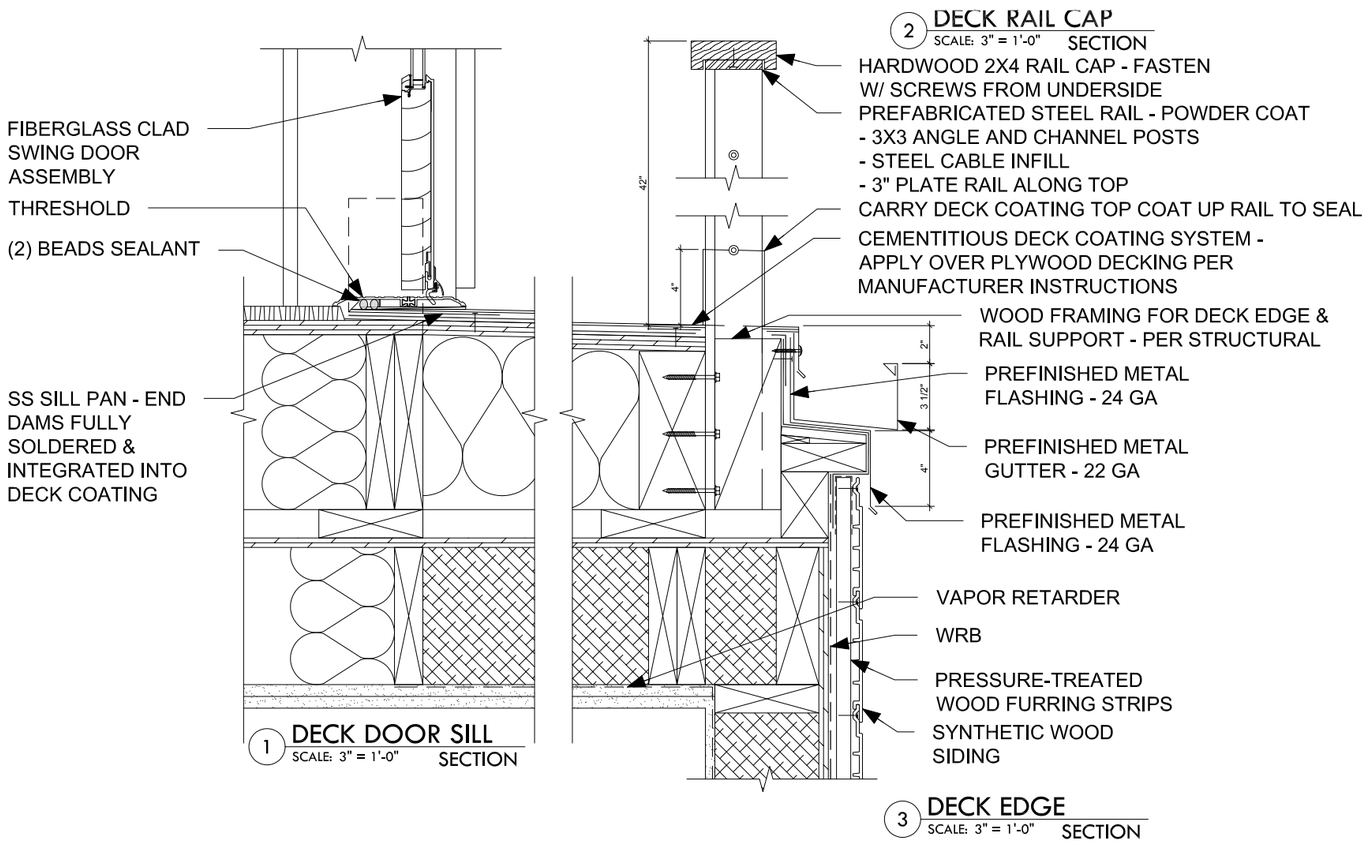
view of exterior west stair



1 WEST EGRESS STAIR SECTION
SCALE: 1-1/2" = 1'-0"



view of exterior deck

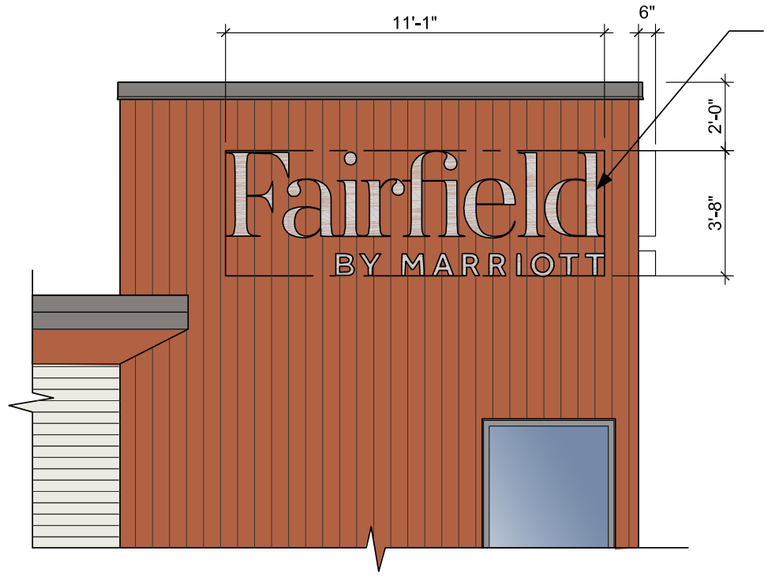


2 DECK RAIL CAP
SCALE: 3" = 1'-0" SECTION

1 DECK DOOR SILL
SCALE: 3" = 1'-0" SECTION

3 DECK EDGE
SCALE: 3" = 1'-0" SECTION

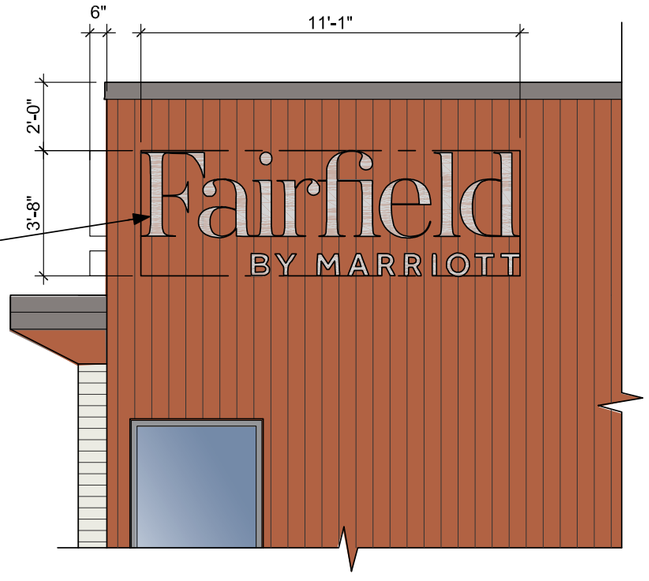
sign precedent from similar project



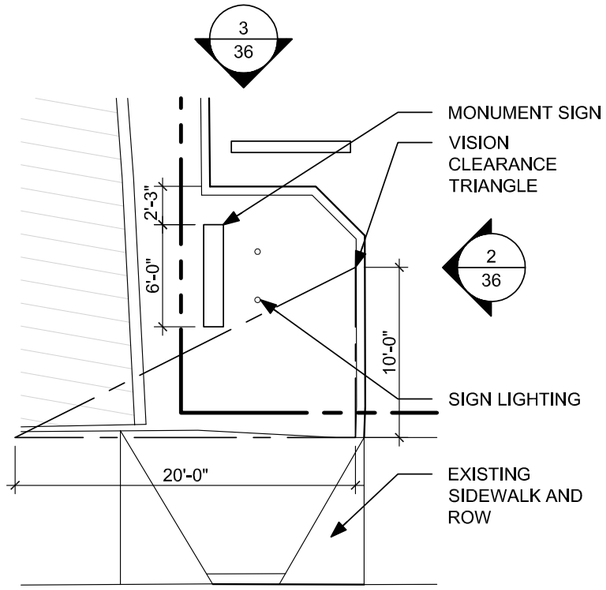
1 WALL SIGN - SOUTH ELEVATION
SCALE: 1/4" = 1'-0"

SIGNAGE TO BE INDIVIDUAL FABRICATED BACKLIT LETTERS - BLACK DURING DAY AND BACKLIT WHITE AT NIGHT - SEE PRECEDENT IMAGES

SIGNAGE TO BE INDIVIDUAL FABRICATED BLACK LETTERS - SEE PRECEDENT IMAGES



2 WALL SIGN - EAST ELEVATION
SCALE: 1/4" = 1'-0"

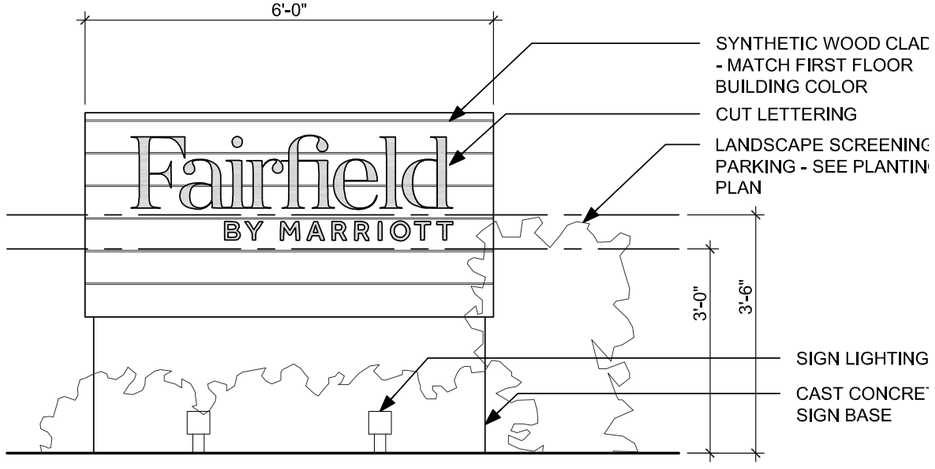


1 MONUMENT SIGN

SCALE: 1/8" = 1'-0"

SW CORNER OF SITE

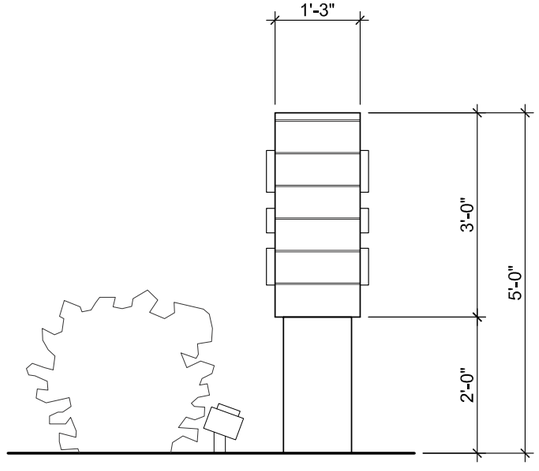
sign precedents from similar projects



2 EAST ELEV - MONUMENT SIGN

SCALE: 1/2" = 1'-0"

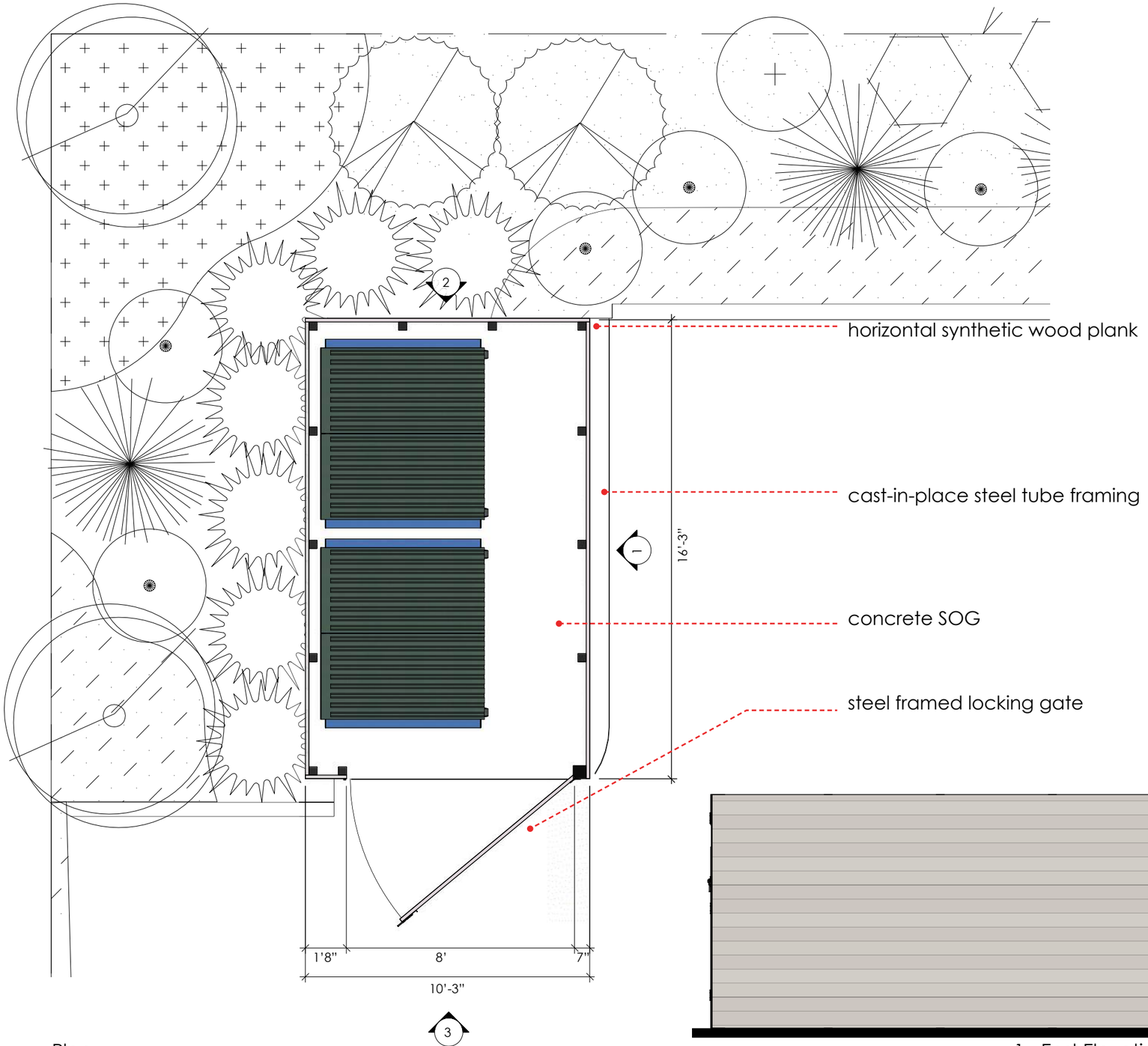
WEST SIMILAR



3 NORTH ELEV - MONUMENT SIGN

SCALE: 1/2" = 1'-0"

SOUTH SIMILAR

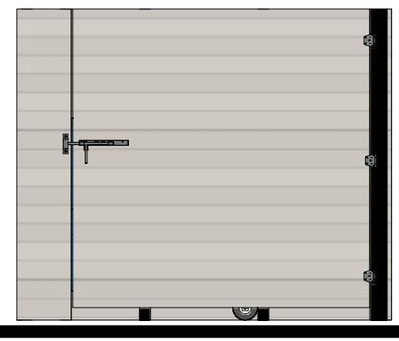


Plan

Perspective

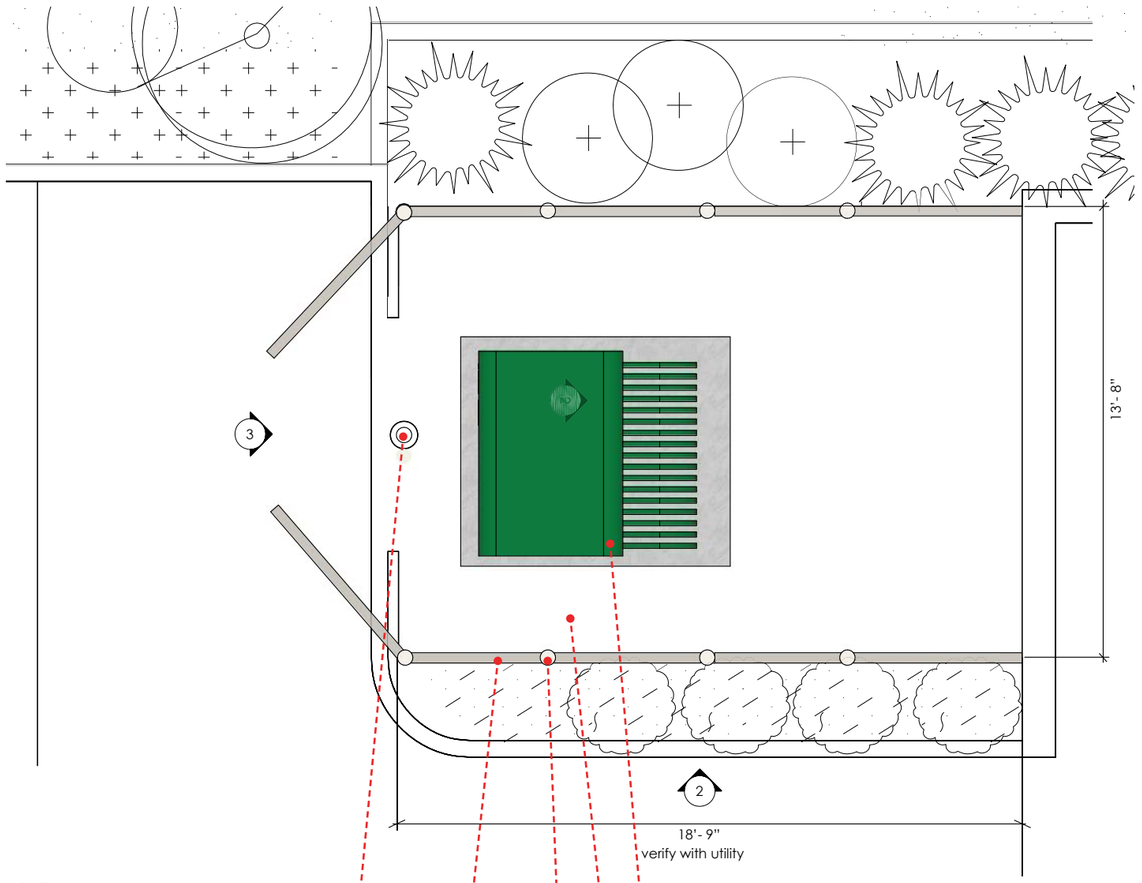
1 - East Elevation

2 - North Elevation



3 - South Elevation

TRASH ENCLOSURE



1-Plan

Perspective

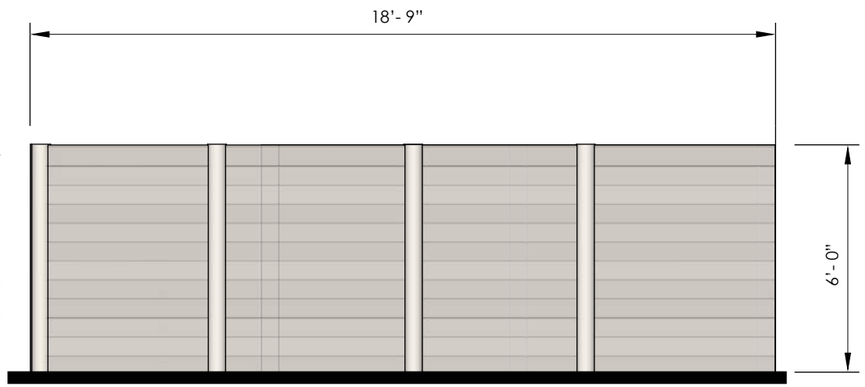
removable steel bollard

horizontal synthetic wood plank

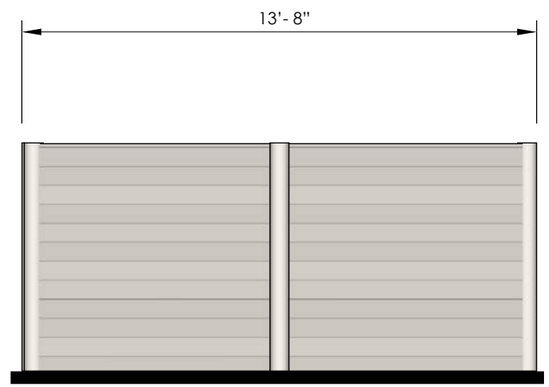
transformer vault per utility

concrete SOG

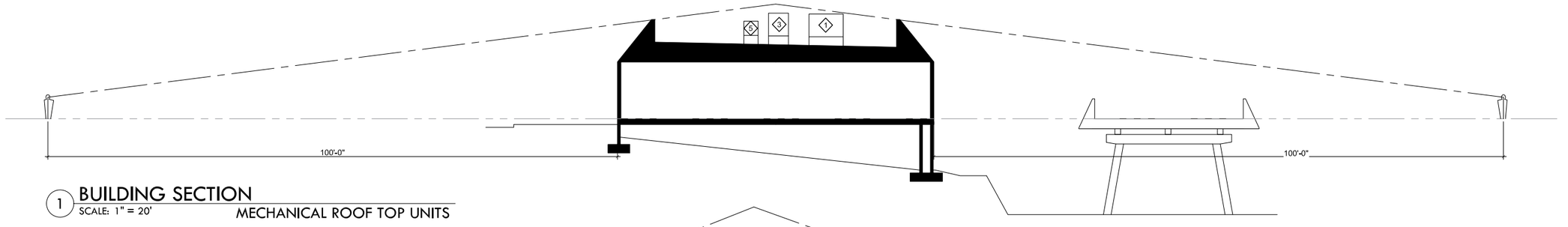
steel pole bollard - fill with concrete



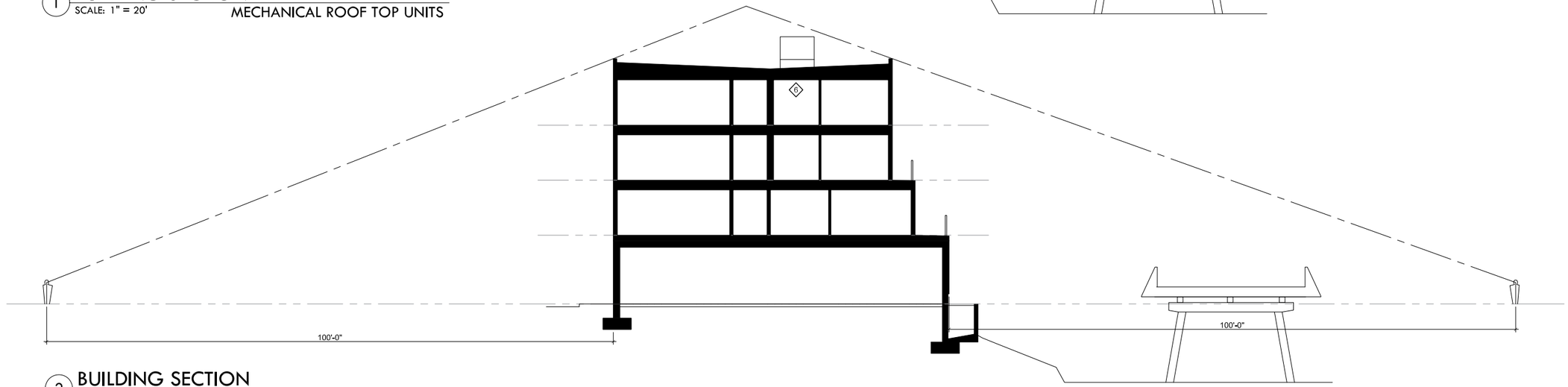
2-South Elevation



3-West Elevation



1 BUILDING SECTION
SCALE: 1" = 20'
MECHANICAL ROOF TOP UNITS



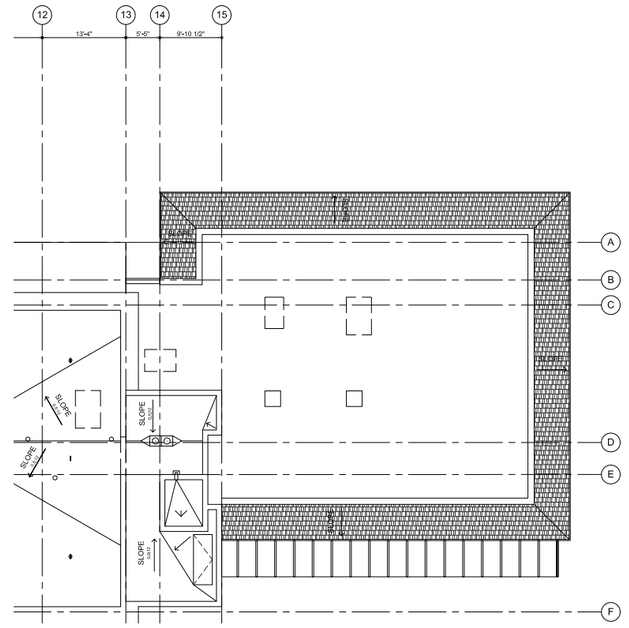
2 BUILDING SECTION
SCALE: 1" = 20'
MECHANICAL ROOF TOP UNITS

Rooftop Equipment - Rehabilitated Ship Inn

Keynote	Unit	Area/Use Served	Approximate Size	Curb Height
1	5-ton HVAC RTU	Dining Area	4' W x 6' L x 4' H	1'-8"
2	2-ton HVAC RTU	Kitchen	3' W x 5' L x 4' H	1'-8"
3	2.5-ton HVAC RTU	Fitness/Service Areas	3'-6" w x 5' L x 4' H	1'-8"
4	Condenser	Refrigeration	2'-6" cubic	1'-8"
5	Condenser	Refrigeration	2'-6" cubic	1'-8"

Rooftop Equipment – Guestroom New Construction

Keynote	Unit	Area/Use Served	Approximate Size	Curb Height
1	4-ton HVAC RTU	Guestroom Corridors	4' W x 6' L x 4' H	1'-8"



1 PARTIAL ROOF PLAN
SCALE: 1" = 20'

RTU SCREENING

CARLETON HART ARCHITECTURE P.C.
830 sw 10th avenue #200 portland oregon 97205
503 243 2252 | www.carletonhart.com

APPENDIX A:

HISTORICAL SITE INFORMATION

CARLETON HART ARCHITECTURE P.C.
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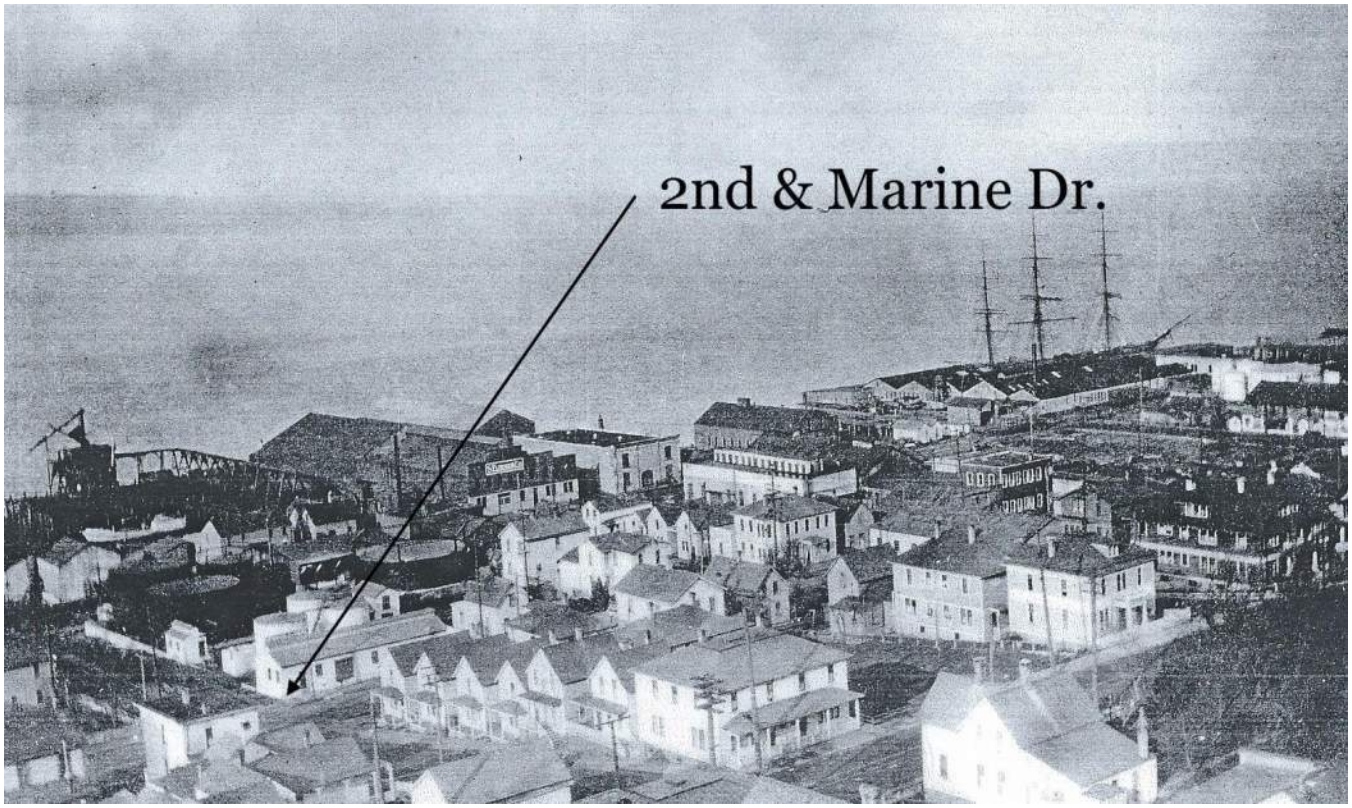
HISTORICAL SITE INFORMATION

SECOND AVENUE AND MARINE DRIVE RIVERFRONT AREA

Photo: Second Avenue and Marine Drive, exact date unknown



Astoria's Traditional Industrial Waterfront Buildings

Constructed on the north side of the railroad tracks, these buildings were built specifically for waterfront use and functioned as net drying, cold storage, boat storage, fish canneries or machine shops. Their essential siting, form, construction techniques and materials changed little during Astoria's initial 60-year period of industrial waterfront development.

The buildings were vernacular, or low-style, rather than referencing any particular architectural style. The buildings were always grouped by function, unattached, and connected by adjoining piers. Most buildings stood perpendicular to the railroad and shoreline, but there were exceptions. A handful of historic waterfront buildings were constructed parallel to the river because it was more efficient to load or unload their contents to/from ships and/or trains.

All waterfront buildings stood on wood pilings driven into the river bank. The pilings were set on a 10' x 10' grid. Many of these piling fields remain today and give a sense of the massive scale of the over-the-water building clusters.

All complexes had a primary structure. It usually had a large central volume with smaller forms stepping down from it. Over time, the structures would expand or contract according to their function. Roofs were generally low-pitched gable or hip roofs with shallow eaves. Monitor roofs were sometimes constructed over the main ridge to allow additional light and ventilation into the buildings. Roofs were clad in wood shingle, corrugated iron or rolled paper. Exterior walls were wrapped in horizontal wood drop siding or vertical board and batten. Corrugated iron was sometimes applied over old, weathered, wood siding. The typically long, flat facades, were punctuated with evenly-spaced, repetitive, wood framed double-hung windows. Eventually, multi-light, pivoting windows were introduced to the buildings.

Photo: Van Camp Seafood Building

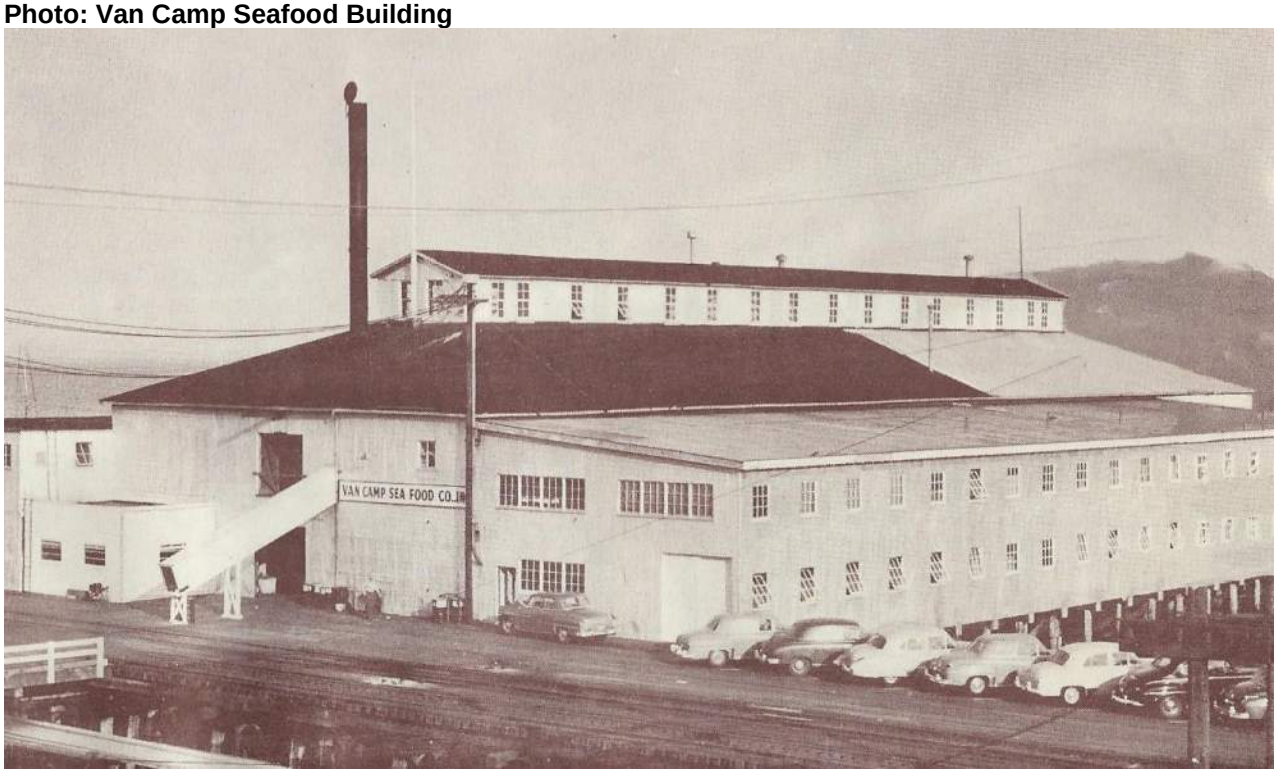


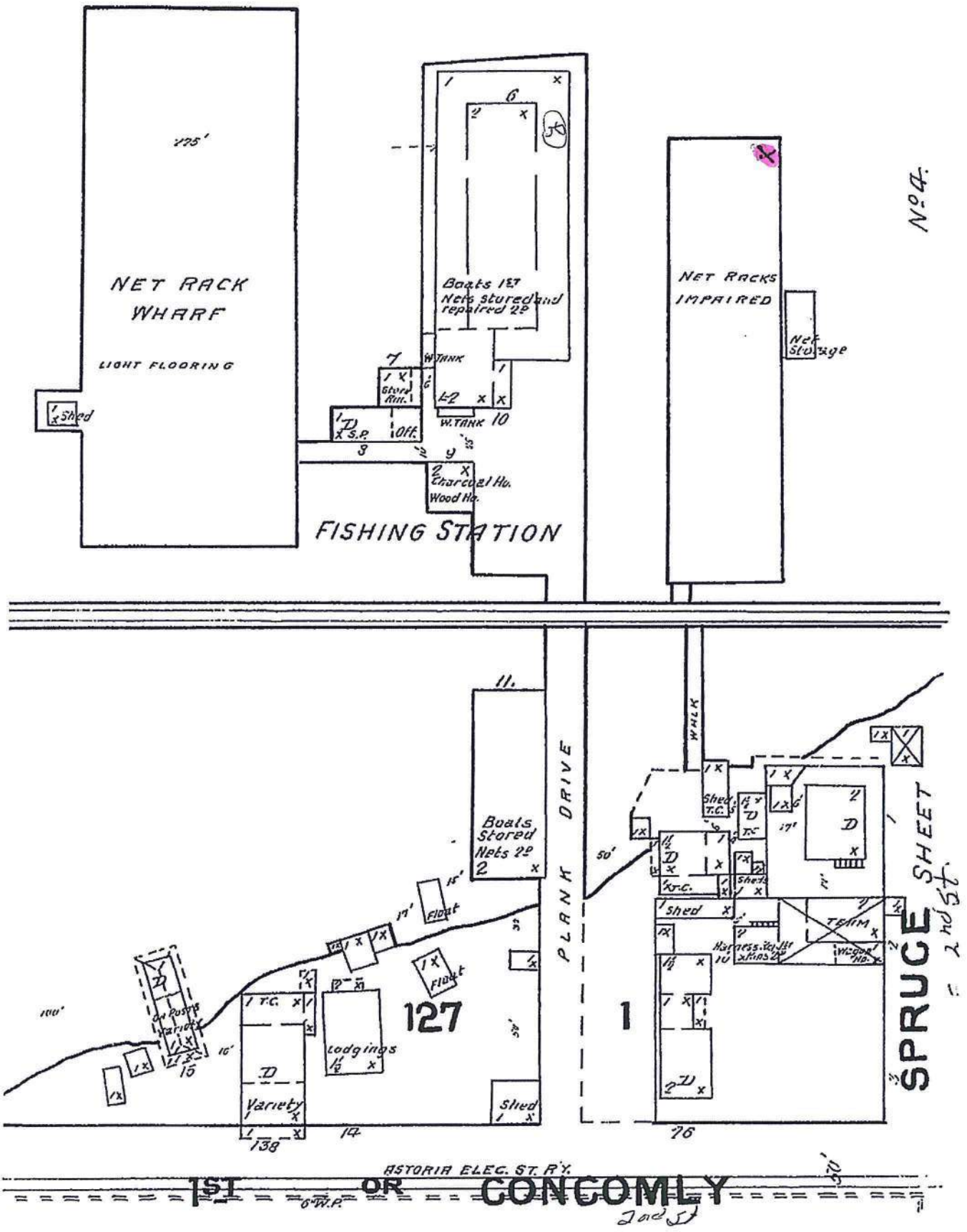
Photo: Bonded Warehouse

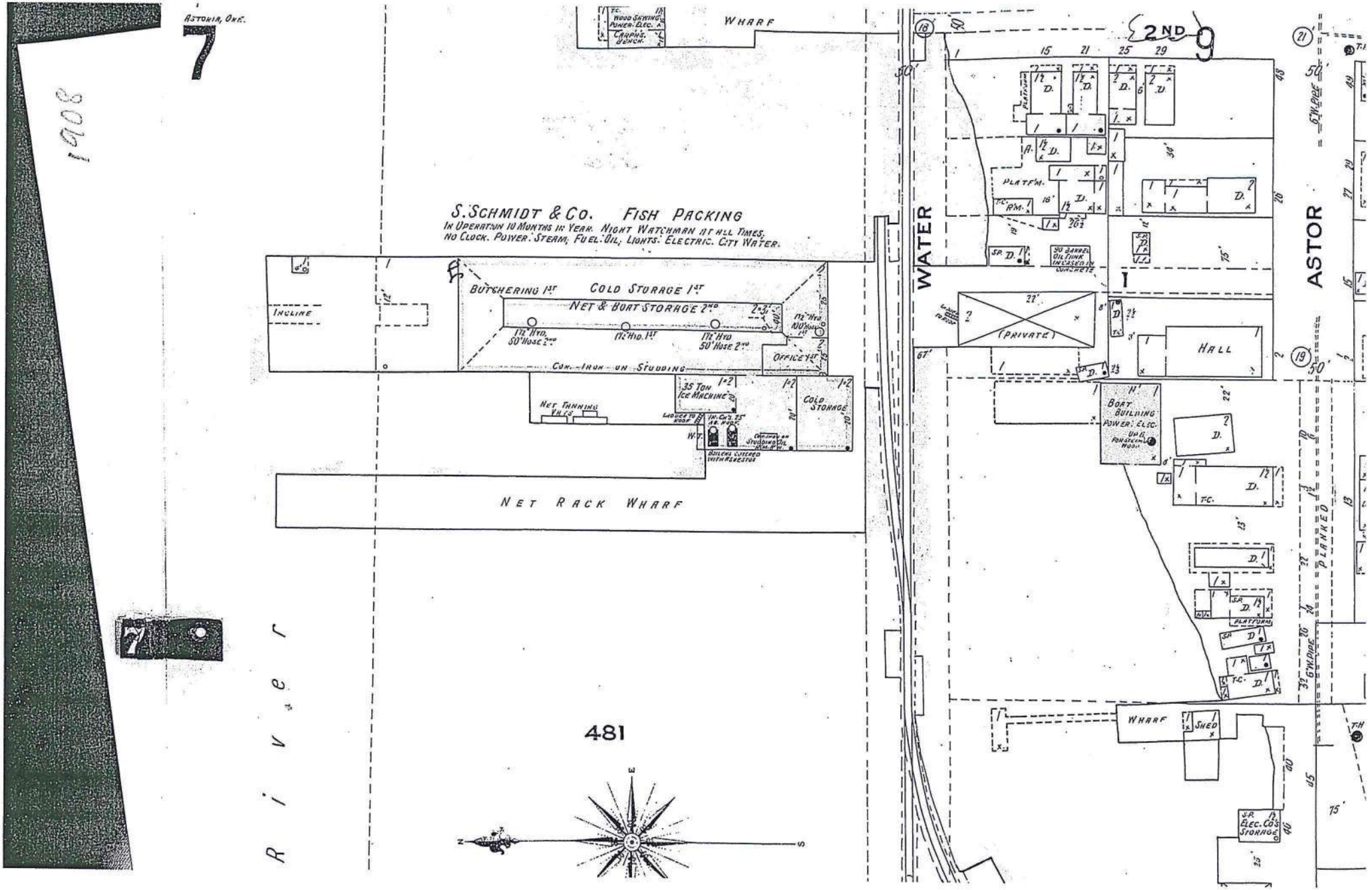
Photo: Ships Inn

1892

THE JOE HUME "SALMON CANNERY

PROPERTY OF ASTORIA PACKING CO.
OCCUPIED AS FISHING STATION.
NOT OPERATED AS CANNERY SINCE
ABOUT 1888. MACH'Y REMOVED.
BUILDINGS IN GOOD REPAIR. MAN IN
CHARGE OF PREMISES AT ALL TIMES.
NO FIRE APP.




ASTORIA, ORE.
7
1908
WHARF
2ND
9
WATER
ASTOR
S. SCHMIDT & CO. FISH PACKING
IN OPERATION 10 MONTHS IN YEAR. NIGHT WATCHMAN AT ALL TIMES.
NO CLOCK. POWER. STEAM; FUEL. OIL; LIGHTS. ELECTRIC. CITY WATER.
INCLINE
BUTCHERING 1ST
COLD STORAGE 1ST
NET & BOAT STORAGE 2ND
OFFICE 1ST
CON. IRON UN STUDDING
35 TON ICE MACHINE
NET THINNING
COLD STORAGE
NET RACK WHARF
(PRIVATE)
HALL
BOAT BUILDING
POWER: ELEC.
WHARF
SHED
S.P. ELEC. CO'S STORAGE
PLANKED
RIVER
481
N
S
E

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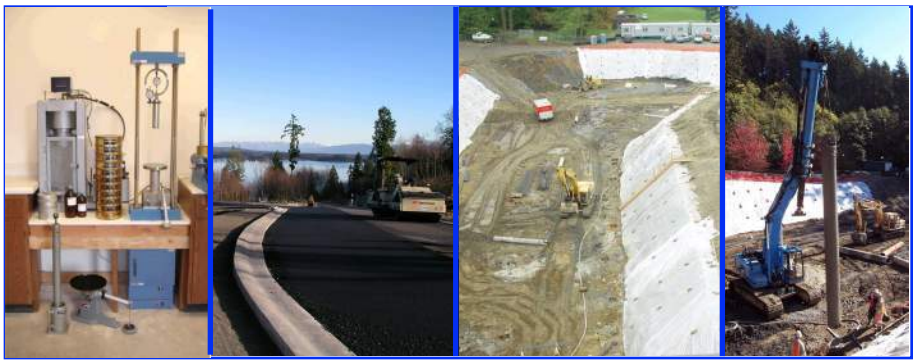
APPENDIX B:

SITE GEOTECHNICAL REPORT

MERIT ENGINEERING INC.

GEOTECHNICAL ENGINEERING INVESTIGATION

Proposed Hotel Building
Ship Inn Site
Astoria, Oregon



Prepared For:
Hollander Investments
119 N Commercial St, # 165
Bellingham, WA 98225

October 2, 2017
Project No. YF0228814

10129 Main Street, #201
Bellevue, Washington 98004
Tel: (425)454-2133
Cell: (360)224-4888
e-mail: merit@MeritEngineering.com
http:/ / www.MeritEngineering.com

MERIT ENGINEERING INC.

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Telephone: 425-454-2133
Fax: 425-454-2133
merit@MeritEngineering.com
http://www.MeritEngineering.com

October 2, 2017
Project No. YF0228814

2004 ACEC Washington Gold Award Recipient Engineering Excellence

Sam Mullen
Hollander Investments
119 N Commercial St, #165
Bellingham, WA 98225
sam@hollanderhospitality.com

Re: Proposed Hotel Building
Ship Inn Site
Astoria, Oregon

Dear Sam:

At your request, we have conducted a geotechnical engineering investigation at the above referenced site. The following geotechnical engineering report represents the results of our visual site reconnaissance, test hole observations, engineering analysis, and derived conclusions on the foundation support of proposed buildings.

Thank you for this opportunity to work with you on this project. Please contact us if you have any questions about this report.

Sincerely,

Austin X. Huang, Ph.D., P.E., L.G., D.GE., F.ASCE
Principal

F.ASCE: Fellow - American Society of Civil Engineering
D.GE - Diplomate - Academy of GeoProfessionals

D.GEs provide successful projects that benefit their clients.
The D.GE certification recognizes geotechnical engineers who possess specialty education, extensive experience, integrity, and good judgment.

GEOTECHNICAL ENGINEERING REPORT

Proposed Hotel Building
Ship Inn Site
Astoria, Oregon

Prepared for:

Hollander Investments
Ship Inn Site
Astoria, Oregon

by

October 2, 2017

Austin X. Huang, Ph.D., P.E., L.G., G.DE, F.ASCE
Principal

October 2, 2017
Project No. YF0228814

TABLE OF CONTENTS

1. INTRODUCTION

Hollander Investment, Inc. of Bellingham, Washington, requested that Merit Engineering, Inc. to conduct a geotechnical engineering study for the proposed new hotel at 180 Marine Dr. in Astoria, Oregon (referred as Ship Inn Site).

The property site is bound by Marine Drive and Columbia River shoreline at south and north, and bordered to east by 2nd street, and west by a boardwalk accessing to Astoria Riverwalk. The project area currently is covered by asphalt with two closed restaurants at southwest corner and northeast corner. The property area and vicinity is shown in Figure 1.

We understand that the proposed site development consists of construction of a five stories wood frame light weight structure (location shown in Figure 2). The site is water front along the shoreline of Columbia River, which falls in Geologically Hazardous Area concern for seismic according to the City of Astoria Critical Areas Ordinance (CAO).

Therefore, the objective of this study was to investigate surface, subsurface soil and ground water conditions at the proposed building location, conduct an engineering analysis with particular concern of seismic hazard, derive conclusions, and provide preliminary engineering recommendations for the design of foundations to support the proposed structure.

2. SCOPE

The scope of work for this study is in compliance with our proposal No. PYF0616608 dated June 28, 2017, in particular includes:

- Conducting visual site reconnaissance;
- Review available documents done on the site;
- Conduct six (6) test borings to a maximum depth of 65.0´;
- Observe four (4) test pits to a maximum depth of 10´;
- Log soil and groundwater conditions;
- Perform engineering analysis;

- Prepare a geotechnical engineering report addressing:

  (1) surface conditions,
  (2) subsurface soil conditions,
  (3) groundwater conditions,
  (4) seismic impact and potential for liquefaction, and

  Recommendations for:

  (5) site preparations and grading,
  (6) foundation design parameters,
  (7) structural fill and compaction criteria,
  (8) seismic design parameters,
  (9) drainage and erosion control, and
  (10) pavement design parameters.

3. SITE INVESTIGATION

3.1 Surface Conditions

The proposed project site consists of asphalt surface parking lot with two closed restaurants at the northwest corner of Marine Drive and 2nd street in Astoria, Oregon. The site is on the south side of the Columbia River shoreline, alone the Astoria Riverwalk. The entire site is proposed for the hotel building and associated parking and driveway.

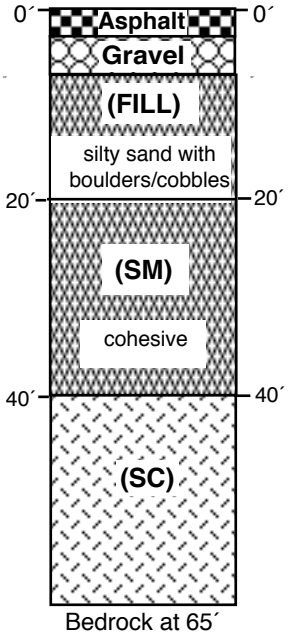
The southwest corner of the site is a one story closed restaurant building with a surrounding asphalt drive and parking. Northeast conner of the site is another one-story closed restaurant with surrounding asphalt drive and parking area. A convenience store and seafood restaurant is along the southern boundary of the site. A gas station is located at the southeast corner of the site. The proposed hotel building will be located on the northern edge of the land along the shoreline, while the hotel will be almost occupy the entire width of the land from west to east.

The subject property is flat with very gentle slope to southeast. The shoreline is protected with rip-rap rock boulders and cobbles.

3.2 Subsurface Conditions

Subsurface soil and groundwater conditions were investigated by conducting six (6) geotechnical test borings up to 65´ depth on August 1, 2017, and four (4) test pits to a maximum depth of 10´ on September 6, 2017. Procedure for test borings included soil sampling at every 5´ (from 2.5´ to total depth of drilling), pocket penetrometer tests where cohesive soils were encountered, and logging of soil and groundwater conditions. Procedure for test pits included logging soil and groundwater conditions to 10´, while taking samples and pocket penetrometer readings where necessary. The results of test borings and test pits are presented in the Appendix (Figures 4 through 13). The descriptions of soil symbols and classifications used in this report also are presented in the Appendix (Figure 3).

Site soils are generalized in the adjacent schematic drawing. As shown, the soils at this site consist of:



a. Asphalt and road base of Sand and Gravel

b. Fill - silty sand (SM) with rock cobbles and boulders

c. Silty Sand (SM) with cohesive

d. Clayey Sand (SC)

e. Bedrock (shale stone at 65´)

a. Asphalt and road base of Sand and Gravel (SM-SP)

The site is covered entirely with asphalt pavement of 2″ to 3″ thickness underlain by ~ 12″ thick import sand and gravel as road base.

b. Fill: Silty Rock Cobbles and Boulders in Sand (SM) Matrix

A layer of silty sand, which varies in thickness from 24″ to 30″ generally below the asphalt and road base sand and gravel. The silty sand is gray, damp, cohesive and

cohesion less varying in places, silt increasing with depth, brown near surface. Vegetation roots appeared in test boring #4. Pebbles and boulders were also observed in spots. The soil contents vary from places.

At the depth ~ 7′ to 17′-20′, significant amount of large size rock fragments such as cobbles and boulders were encountered in all test borings and test pits except for Test Boring #4, where is a grass area by the shoreline. The drilling in the layer is difficult.

c. Cohesive Silty Sand (SM)

At the depth of ~ 17′-20′, the soil became native silty sand, gray, damp to wet and cohesive. The extracted sand samples were soft in boring #2, #4, #5 to medium stiff in boring #3. The penetrometer reading were generally $q_u \approx 0.5$ tsf (*tons per square foot*).

d. Clayey Sand (SC)

The sand grades to gray clayey sand from 40′ to 65′ depth. This layer was moist to dry, very dense and hard, penetrometer reading was larger than 5 tsf. The shale stone was encountered at the 60′.

e. Bedrock of Shale-stone

Shale stone was encountered at the bottom of the drilling 60′ to 65′ below ground surface.

3.3 Geologic Background

The project area is located in the Astoria basin. This area has more than 10,000-ft-thick Tillamook Volcanics representing economic basement in the area. These rocks are exposed in uplifted fault blocks in the southeast part and overly the volcanic basement, generally thin over the gravity high and thicken towards the basins. The deepest part of the basin in northwest Oregon lies approximately 7 mi southeast of Astoria and contains more than

10,000 ft of upper Eocene to middle Miocene strata. The sedimentary section probably exceeds 15,000 ft in the offshore part of the basin (Snavely and others, 1977; Armentrout and Suek, 1985).

This site is mapped as Wickiup Mountain member (middle to lower Miocene) according to Oregon Interactive Geological Map. The soils are descirbed as 400 m of structureless to laminated shallow - water feldspathic sandstone (Taw). Generally fine grained, locally trough cross-bedded, and fossiliferous. Sandstone is blue gray when fresh but commonly is weathered to yellowish to greenish gray. Upper part (Tawu) consists of friable, very fine - grained sandstone and micaceous southwest, and contains molluscan fossils referrable to Pillarian and Newportian Stages of Addicott, according to the geologic units shown on the "Geologic Map of Astoria Basin, Clatsop and Northernmost Tillamook Counties, Northwest Oregan"by Alan R. Niem and Wendy A. Niem (1985).

3.4 Surface and Ground Water Conditions

The site is mostly covered by pavement. No surface water was observed on the site at the time of our visit on August 1, 2017. The groundwater level at the site was consistently at ~ 8.0´ below ground surface in test borings during August 1 to 3, 2017 and in test pits on September 6, 2017. The water level was consistency with NOAA Tide Predictions Application during August and September. From the rip-rap rock shore and the timber piles remaining in the water, we can observe the high water mark will be approximately one foot higher than the water level observed at the time of our field investigation. So, we anticipate that the water table at the site may be as high as about 7´ below ground surface.

4. EVALUATION OF GEOTECHNICAL FEASIBILITY

4.1 Seismic Impact

The subsurface soil conditions were investigated in this study by both test pits and borings

(Section 3. 2). Upon finding sand and the groundwater table near the surface, we investigated for possible liquefaction under earthquake loading. Liquefaction is a phenomenon associated primarily with saturated cohesion-less soils under zero effective stress. Effective stress equals the confining pressure of the soil minus the pore pressure. When saturated cohesion-less soils undergo cyclic earthquake loading, the induced excessive pore water pressure cannot dissipate and thus grows larger. When the pore water pressure becomes equal to the confining pressure from the overburden load, the effective stress of the soil becomes zero and therefore, the soil losses its strength or stiffness and becomes liquefied. This will consequently result in the settlement of buildings or ground breaking.

In order to assess the risk of liquefaction at the site, two tests were conducted:

1. Grain size distribution analysis (Figures 14 through 19)
2. Test borings with SPT (Standard Penetration Tests) (Figures 4 - 9).

The grain size distribution curves of the sand on site are plotted in the Chart below. As shown in Chart 1, the silty soils on site fall into the range of the most liquefiable soils. Therefore, the

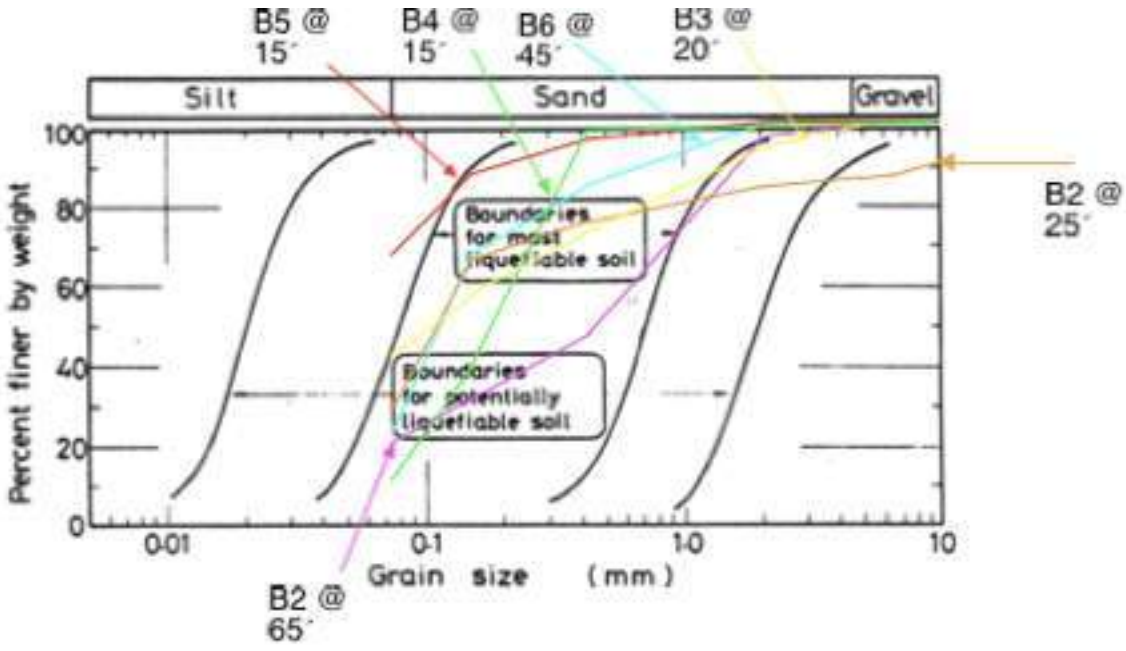


CHART 1: Ranges of grain size for potential liquefaction during earthquaeke (after National Researh Council (NRC), 1985).

SPTs from the five test borings were utilized in order to determine the strength of the soil in terms of blow count (N).

In the seismic analysis, we first determined the total overburden stress at depth (σ_o) and effective overburden stress (σ_o') for every five feet within each borehole. This was necessary to determine the overburden correction factor (C_N) for each five foot interval. Once a C_N value was calculated for each five foot interval, a blow count correction, $(N_1)_{60}$, was also necessary. Upon determining the blow count correction, the intensity of the ground motion on site, $\frac{\tau_d}{\sigma_o}$ was determined by the following equation:

$$\frac{\tau_d}{\sigma_o'} = 0.65 a_{max} \sigma_o \gamma_d \frac{\gamma_d}{\sigma_o' g}$$

Where:

a_{max} = The maximum acceleration at ground surface

γ_d = stress reduction factor

g = acceleration due to gravity

σ = overburden stress

For these calculations, a_{max} was set to 0.2g as prescribed by the International Building Code (IBC) (2015). The value of γ_d was determined from the stated relationship that at the ground surface the γ_d value equals 1 and at a depth of 35´ the value equals 0.9. This equation defined a series of points on a graph that shows the relationship between stress ratios causing liquefaction and $(N_1)_{60}$ values for silty sands for magnitude 7.5 earthquakes. These five figures appear in the Appendix (Figures 20-24) and take into account a factor of safety of 1.35, which is suggested as adequate by the NRC (*National Research Council*) (1985).

4.2 Discussion of Seismic Study Results

At first, we need to mention that the site conditions are summarized as follow for discussion:

1. Ground water depth is at the typical around 8´, so the soil samples above 10´ is not considered since above water table including 7.5´, 5´, and 2.5´ depth;

2. Large amount of rock fragments in size of cobble and boulders were found at the depth between ~ 7.5´ to 17´. The drill rigs encountered the rocks in all borings except for Boring No. 4 where is in a grass area, where appeared no fills. Therefore, the layer of rocks are apparently in entire areas of developed area under asphalt paving or buildings. The samples were very limited due to the presence of the rock fills. The rock fragments are so big a size so the collected sandy soil samples in the grain size analysis could not include the weight of the rocks. In our opinion that if the rocks are included in the analysis for grain size distribution, the soil will be classified as gravel rather than sand. So for the soil layer with the large amount of rocks, the liquefaction potential will be low.

3. The silty sands between 17´ and 40´ depth are cohesive in nature, pocket penetrometer readings from the collected samples are consistent q_u = 0.5 tsf or cohesion C = 2,000 psf (*pounds per square foot*). So, the liquefaction potential is low for the cohesiveness.

4. The clayey sands below are both with clay content and high blow count numbers, so the soil are not liquefiable.

However, for the sensitivity study, we still did seismic analysis using the soil samples collected, which ignored the existence of the rocks and cohesion in the soils. Based on our seismic calculations and the results shown in Figures 20 - 24. Results for locations at Test Borings 4 and 6 show that the area (please see Figure 2 Site Plan) has less or no rocks fill. While the other locations show less depths of liquefaction potential. When considering the typical factor of safety of 1.35 within calculations, the results for soils in between ~10´ to 30´ plot further close to the non liquefaction side.

The referenced NRC document states that the presence of a non-liquefiable surface layer that is 10´ thick or greater may effectively prevent the observable effects of at-depth liquefaction from reaching the surface (NRC 1985). The local fill layer that consists pebbles and boulders with mix silty sands is about 10´ thick, which increase voids of sub-surface significantly, will also result in reduction in potential for liquefaction. In addition, liquefaction potential tends to decrease with depth and greater overburden pressure. For the subject site, the proposed hotel above the test borings covers about 300 X 50 area. The overburden pressure provided by proposed hotel would decrease the liquefaction potential. Based on these understood behaviors, and the results of site observations and testing, it is our opinion that the site is subject to low liquefaction concern and even if liquefaction occurs, which will be spots and not in thick layer and not near surface. Therefore, with the upper 10´ of site soil to be compacted and with grade-beam type rigid system, the site may be suitable for the proposed development with shallow foundation.

5. CONCLUSIONS AND RECOMMENDATIONS

We conclude, based on this investigation, that the site may be suitable for the proposed development if the recommendations in this report are followed.

5.1 Site Preparation and Grading

We recommend reworking the upper ~ 8´ of soils above water table and above the larger rock cobbles and boulders by removing the asphalt and any organic and unsuitable loose and soft soils from the areas under the proposed structure. Backfill with a layer 4´ thickness of compacted 8˝ minus quarry rocks below the footing. On site sandy soils may be re-used for fill in other areas than the 4´ thickness of compacted 8˝ minus quarry rocks.

We recommend grading the exposed subgrade away from footing and slab-on-grade locations to minimize the potential for accumulation of surface water. We anticipate that soil excavation can be accomplished with conventional equipment.

Due to the groundwater and wet nature of the on-site undersoil, we recommend that care be taken to the maximum extent possible for erosion and ground control if work is done in the wet season. It should be understood that significant additional costs and construction difficulty could be incurred if work proceeds in wet weather comparing with dry weather construction.

The exposed subgrade soils at the areas of the proposed buildings and parking should be proof-rolled with a loaded dump truck to reveal soft or yielding surficial soils. Any soft subgrade soils encountered during site excavation or exposed during proof-rolling should be removed and replaced with structural fill as recommended in the Structural Fill section of this report.

A temporary cut slope at the site should be no steeper than 2:1 (Horizontal to Vertical). Temporary shoring is required for excavation below the water table. We recommend that we evaluate the site conditions for suitable cut slope during site excavation.

We recommend that we observe and verify site excavation to suitable soil stratum, observe proof-roll, test to verify imported fill materials, and observe and test compaction of structural fill materials.

5.2 Foundation Design Parameters

We recommend placing the footings on import backfill of 4′ thickness of compacted 8″ minus quarry rocks.

Under condition of satisfying the above recommended footing dimensions, a soil bearing pressure of 4,500 psf (*pounds per square foot*) is recommended. Bearing pressure may be increased by ⅓ for transient wind or seismic loads. This bearing recommendation is preliminary pending building design details. We recommend that we be contacted in the design phase to evaluate building details with our soils information and revise bearing allowances accordingly, since this site is with special liquefaction concerned soil conditions.

All perimeter footings should be at least 18-inches below the final outside grade for frost protection. The base width of the footings should be at least 18 inches and 24 inches for continuous and isolated column spread footings (to be connected by grade beams), respectively.

With the above recommended soil bearing capacity, the anticipated load on the footings, and the soil conditions from the test borings, we estimate that the total potential settlement of the foundations should be less than 1″. While most settlement will occur in the short term as loads are applied, some settlement may occur over a long period of time after construction.

We recommend proof-rolling building pads before placement of concrete with a loaded dump truck to reveal soft or yielding surficial soils. Any loose or soft subgrade soils encountered during site excavation or exposed during proof-rolling should be replaced with compacted structural fill.

We recommend that we review those portions of plans and specifications that pertain to earthwork and foundations for they are consistent with the recommendations in this report.

We also recommend that we observe and verify site excavation to suitable soil stratum, a proof roll test to verify imported fill materials, and observe and test compaction of structural fill materials.

5.3 Seismic Design Parameters

The site may be defined as Site Class D according to IBC (International Building Code) 2015, representing a soil profile with dense and stiff soil conditions, where the soil depth exceeds 200′. The seismic design parameters for this site class and location, from *Seismic Hazard Curves and Uniform Hazard Response Spectra* (v5.0.9), are summarized in the following table:

Table 1: Spectral Response Acceleration (SRA)

SRA and Site Conditions	Short Period (0.2 sec)	1- Second Period
Mapped SRA	S_S =1.273	S_1 = 0.665
Site Coefficients	F_a = 1.2	F_v = 1.7
Max. Considered Earthquake SRA	S_{MS} = 1.528	S_{M1} = 1.313
Design SRA	S_{DS} = 1.019	S_{D1} = 0.754

5.4 Slab-on-Grade Floor

The slab-on-grade-floor may be supported on the building pad prepared as recommended above. At least 8-inches of drain rock of $^3/_4$" maximum size should be placed between the slab and the slab subgrade.

A vapor barrier visquine should be placed between the slab and the capillary break material. An additional 1 to 2 inches of sand may be placed on top of the vapor barrier if desired to aid in concrete curing. In addition, use of a commercial concrete slab sealant for moisture protection may prove to be very helpful.

We recommend floor slabs be reinforced with 6 x 6 wire mesh as a minimum to reduce potential crack separation and vertical offsets at the cracks. The reinforcement should be set at or above the mid-depth of the slabs.

To reduce cracking potentials, we suggest exterior patios and other flatworks contain reinforcement as recommended above for floor slabs. Flatwork should have frequent joint controls.

Additional measures to reduce potential cracking are considered warranted at critical areas where slab movement could impair use; such critical areas include stairways and any exterior patio slabs that meet the interior floor level at doorways. For such areas we recommend that the upper 12-inches of native soil be over excavated and replaced with import structural materials as specified in the Structural Fill section of this report.

5.5 Foundation and Site Drainage

A perimeter drainage system should consist of at least 6-inch diameter, perforated, rigid pipe. The pipes should be placed along the exterior base of the foundation perimeter and tight lined to a storm drain system or a natural drain course. The pipe should be bedded on 2-inch, and backfilled with a minimum of 12-inch, of pea gravel.

Under-slab cross-drains may be helpful, especially for daylight basement, to maintain a dry slab floor and facilitate drainage. A cross-drain system should be overlain by drain rock beneath the slab.

Roof downspouts should be tight lined to a storm drain system separately from the footing drains. In addition, the site should be graded so that surface water runoff is directed to catch basins that are attached to a storm sewer drain.

In addition, the site general parameter drain shall be installed for general site improvement. And we recommend that we be retained to consult and review on the drainage installation work.

5.6 Lateral Earth Pressure

We recommend placing structural fill behind subsurface and retaining stem-wall. The Horizontal thickness of the fill should be at least $^1/_2$ the height of the wall. For structural fill, as recommended in the Structural Fill section of this report with a level ground, the parameters of lateral earth pressures are listed in Table 2.

TABLE 2: Lateral Earth Pressures Parameters

Soil	Active, K_a	Passive, K_p	At Rest, K_o
Structural Fills	0.28	3.54	0.44
Equivalent Fluid Pressure* (pcf):			
Structural Fills	34	425	53

*Equivalent fluid pressure is the product of lateral earth pressure coefficient and the unit weight of the soil.

Design of subsurface walls should include appropriate lateral load due to adjacent surcharge. Under uniform surcharge q_o, lateral load due to a uniformly distributed lateral pressure σ, should be added to active and at rest soil lateral pressure, respectively, as defined in the following equation:

$$\sigma = \begin{cases} K_a q_o & \text{for active case} \\ K_o q_o & \text{for at rest case} \end{cases}$$

A coefficient of base friction of 0.55 and 0.45 may be used between concrete and structural fill and between concrete and fine sandy soil, respectively. However, if passive pressures are used in conjunction with frictional resistance to determine lateral resistance to sliding, only $^1/_2$ the value of passive pressure presented above should be used since larger strains are required to mobilize passive soil resistance as compared to frictional resistance.

5.7 Structural Fill

We recommend import structural fill be well graded sandy gravel or gravelly sand meeting specification below, that is typical in this area as base granular materials with exception that percent passing U.S. No. 200 Sieve shall not exceed 5% and all materials smaller than 4″. The specification is summarized below:

Table 3: Specification of Imported Fill Materials

Sieve Size	Percent Passing by Weight
4″ Square	100
2″ Square	75-100
U.S. No. 4	22-66
U.S. No. 200	5.0 max.
Dust Ratio $\frac{\%\ Passing\ U.S.\ No.\ 200}{\%\ Passing\ U.S.\ No.\ 40}$	$^2/_3$ max.
Sand Equivalent	30 min.

Structural fill should be placed on a firm, horizontal subgrade in about 10-inch thick loose lifts and compacted to at least 95% of the ASTM D-1557 maximum dry density.

Backfill immediately behind retaining walls or adjacent to foundation stem walls should be compacted to about 90% of the ASTM D-1557 maximum dry density. Care must be taken to avoid over-compaction immediately behind walls. Backfill behind retaining walls must be free draining material.

It is important that plumbing and utility trenches be properly backfilled. Backfill in the trenches should meet the appropriate compaction criteria described above.

5.8 Pavement Design Parameters

Pavement for roads and parking must be placed over the firm subgrade - the firm native silty or sandy soil or on import structural fill. The recommended pavement design parameters for soils at the site and imported structural fill as recommended in the Structural Fill section of this report are listed in Table 4.

Table 4: Soil Parameters for Pavement Design

Soil	CBR[1]	R[2]	k[3]
On Site Sandy Soil	3.5	20	75
Structural Fill/Qaurry Rock	6.7	34	95

1. *California Bearing Ratio*
2. *Hveem's Resistance*
3. *Subgrade Modulus*

In Table 4, the CBR values were estimated on the basis of soil classifications while R and k values were determined from correlation between CBR and R values, and between R and k, respectively.

We recommend compacting the base course to a minimum 95% of ASTM D-1557 maximum dry density. Efforts should be made to limit the amount of water entering the base course in order to prevent the road base from saturation so as to assure the pavement durability.

Frost damage sometimes affects pavement in this area where moist silty subgrade is encountered. To fully protect against this type of damage, a pavement section including granular base must extend to a depth of at least 18 inches total. However, thinner sections may be used if occasional damage is acceptable in return for the more economical pavement section.

We recommend asphalt concrete be Class B aggregate material conforming to Section 5-04 of the Washington State Department of Transportation Standard Specifications for Road, Bridge, and Municipal Construction.

Construction equipment having loads greater than those expected on the asphalt pavement should be avoided on the parking areas. A haul road or increased pavement section should be installed to allow heavier construction equipment movement.

6. GENERAL CONDITIONS

The recommendations provided herein are based on our understanding of the project at this time. We expect the on-site soil conditions to reflect our findings, however, some variations may occur. Should soil conditions be encountered that cause concern and/or are not discussed herein, Merit Engineering, Inc. should be contacted immediately to determine if additional or alternate recommendations are required.

We recommend that we review those portions of the plans and specifications that pertain to site earthwork, removal of unsuitable fill and installation of import to ensure that they are consistent with the recommendations in this report.

We recommend that we verify site excavation to suitable soil stratum, observe proof-roll, verify imported fill materials and observe and test compaction of structural fill.

This report is prepared for Hollander Investment, Inc. for the specific application to the proposed hotel at the 180 Marine Dr, in the City of Astoria, Oregon. This report is completed in accordance with generally accepted geotechnical/geological engineering practices in this area. No other warranty, expressed or implied, is made.

This report is an instrument of our professional service, and we (Merit Engineering, Inc.) shall retain an ownership and property interest therein. We grant Hollander Investment, Inc. a license to use the instrument of our professional service for the purpose of constructing the above mentioned proposed buildings. We do not permit reuse or modification of this document for application to a different structure other than that proposed at the site or to another property because soil and subsurface conditions are unique and site specific for different locations.

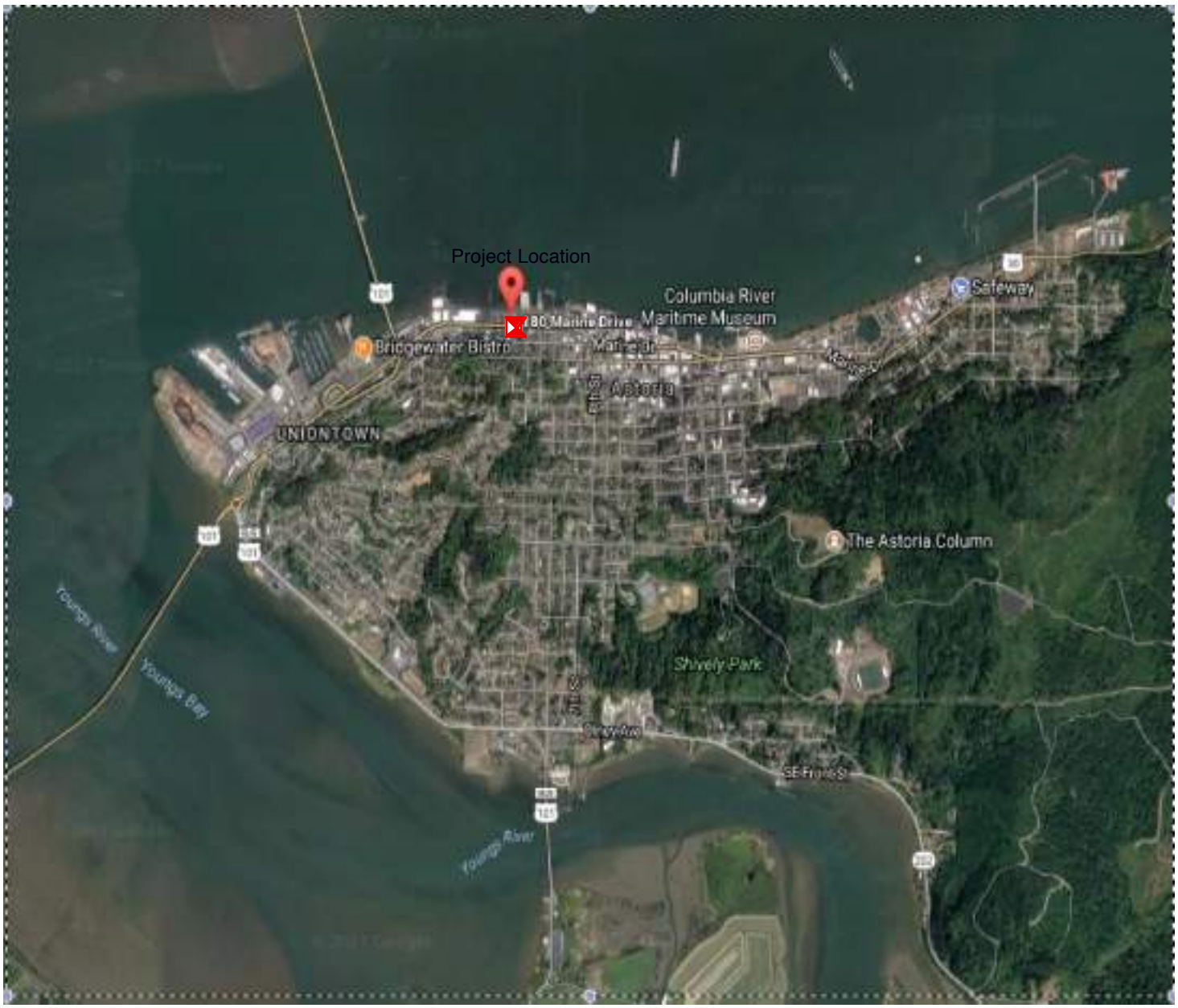
The owners and/or their representatives should understand that they are willing to take the risk to live in a geologically critical area and, therefore, agree to indemnify and hold Merit Engineering, Inc. harmless, including its owners and employees, for the property owners are ultimately responsible for potential adverse consequences of living in a geologically critical area.

APPENDIX

Subsurface conditions at the site were investigated by conducting three (6) test borings to a maximum depth of 65.0 feet on August 1, 2017, and four (4) soil test pits to a maximum depth of 10 feet on September 6, 2017. The approximate building area was predetermined by CARLETON HART ARCHITECTURE. Test boring and test pit locations were determined by a representative of Merit Engineering Inc. as shown approximately on the Site Plan (Figure 2) presented in the Appendix of this report. Tests borings and test pits were conducted within each proposed building footprint to generalize the subsurface soil conditions. Depths referred to in this report are relative to the existing ground surface at the time of the field investigations.

The description of subsurface conditions is based on the observations made at the site at the time of the field investigations. Soil logs are presented in Figures 10 through 13, with test boring logs in Figures 4-9. The soils observed at the site were classified using the USCS (Unified Soils Classification System) in accordance with ASTM D-2488-69 and ASTM D 2487. This classification system is also presented in the Appendix (Figure 3). Sieve and seismic analysis results are presented in Figures 14-24.

Google Map https://www.google.com/maps/place/180+Marine+Dr,+Astoria,+OR+97103/@46.1851



Project No. YF0222814	**PROJECT LOCATION & VICINITY MAP**	Date: 9/25/2017	*Figure 1*

Geotechnical Report
Proposed Hollander Hotel
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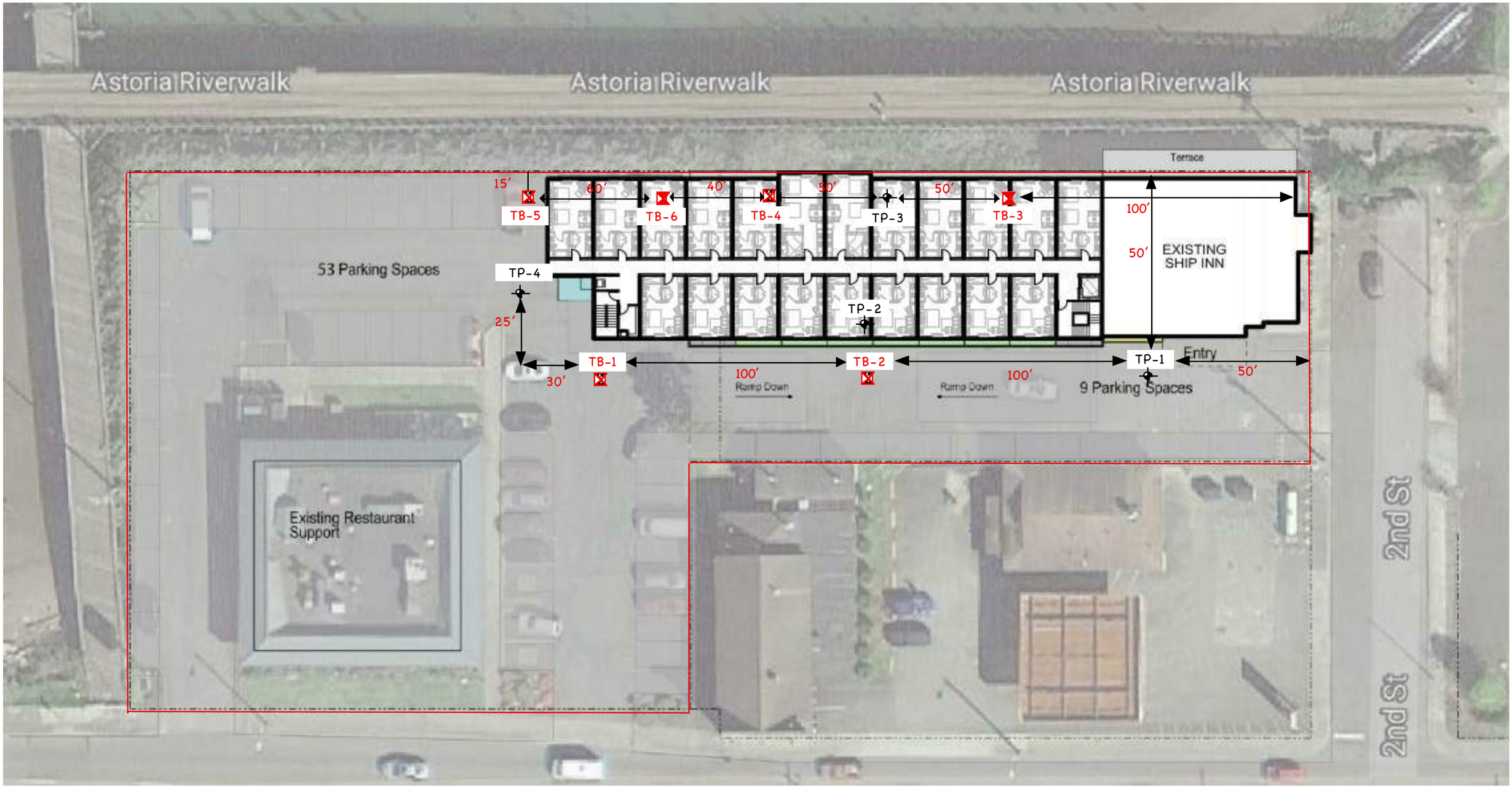

LEGEND

Property Boundary

Approximate Test Boring Location

Approximate Test Pit Location

ASTORIA OREGAN

Note:
The site plan was based on the information provided by CARLETON HART ARCHITECTURE

Project No. YF0222814	**SITE PLAN**	Date: 9/25/2017	*Parcel 1*

Geotechnical Report
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UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS				DESCRIPTION
COARSE GRAINED SOILS more than 50% retained on #200 sieve	GRAVELS more than 50% coarse fraction is larger than No. 4 sieve size	Gravels with less than 5% fines	GW	Well graded gravels, gravel-sand mixtures
			GP	Poorly graded gravels, gravel-sand mixtures
		Gravels with more than 12% fines	GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS more than 50% coarse fraction is smaller than No. 4 sieve size	Sands with less than 5% fines	SW	Well graded sands, gravelly sands
			SP	Poorly graded sands, gravelly sands
		Sands with more than 12% fines	SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, sand-clay mixtures
FINE GRAINED SOILS more than 50% passing #200 sieve	SILTS AND CLAYS Liquid Limit less than 50		ML	Inorganic silts & very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, or lean clays
			OL	Organic clays and organic silty clays of low plasticity
	SILTS AND CLAYS Liquid Limits greater than 50		MH	Inorganic silts, micaceous or diatomacious fine, sandy or silty soils, elastic silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS			PT	Peat and other highly organic soils
UNCONTROLLED FILL				Uncontrolled, with highly variable constituents

LEGEND

SAMPLE	SYMBOL
SPLIT SPOON SAMPLER	GROUNDWATER TABLE
SHELBY TUBE SAMPLER	q_u PENETROMETER READING TSF (*tons per square foot*)

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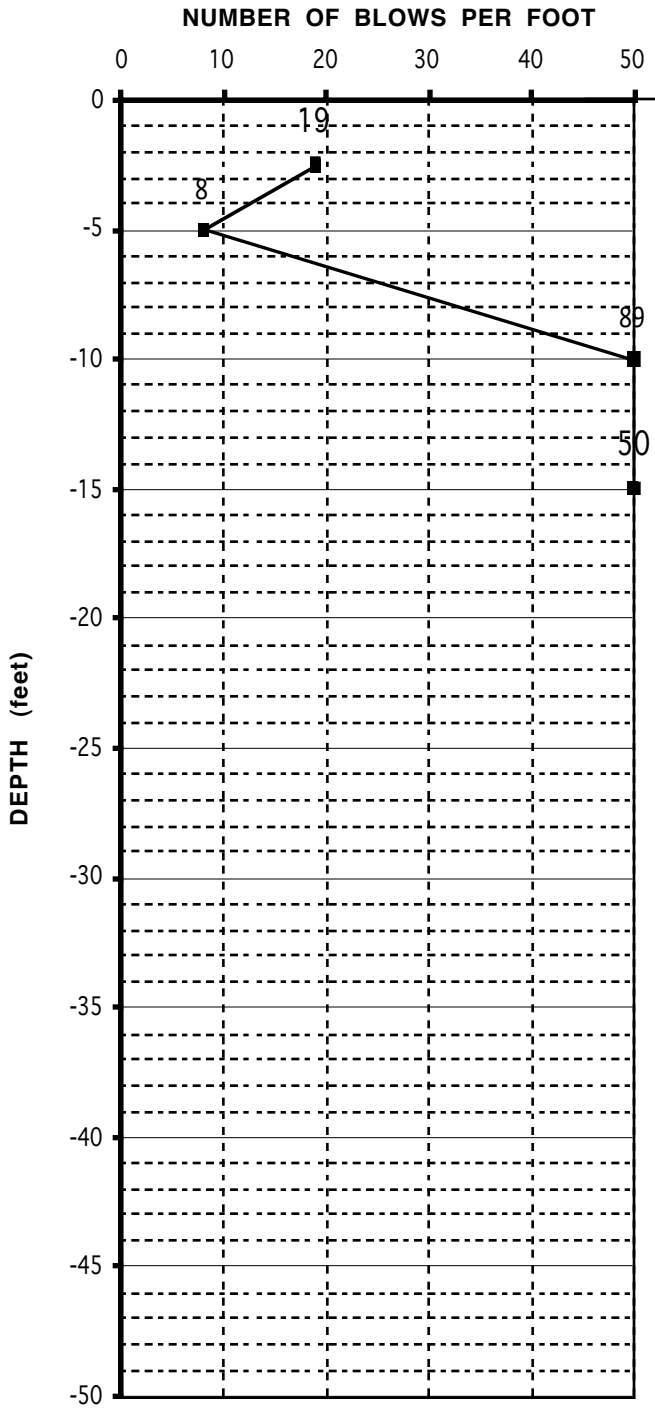
SOIL CLASSIFICATION & LEGEND

Figure 3

B-1	STANDARD PENETRATION TEST	SOIL DESCRIPTION AND CLASSIFICATION



X, Y =
Surface Elevation =
Surface Conditions = Asphalt

Asphalt Pavement ~4" .
Roadbase sandy gravel ~4".

UNCONTROLLED FILL (SM)

Uncontrolled fill material consisting of brown silt, tine sand and clay mixed with gravel. Pebbles, boulders, bricks, black asphalt and other debris. Dense to very dense, damp to wet.

Refusal due to the hard pebbles and bolders.

END@15´

Project No. YF0222814	Date: 9/25/2017	**LOG OF BORING**	Approved by A.X.H.	*Figure 4*

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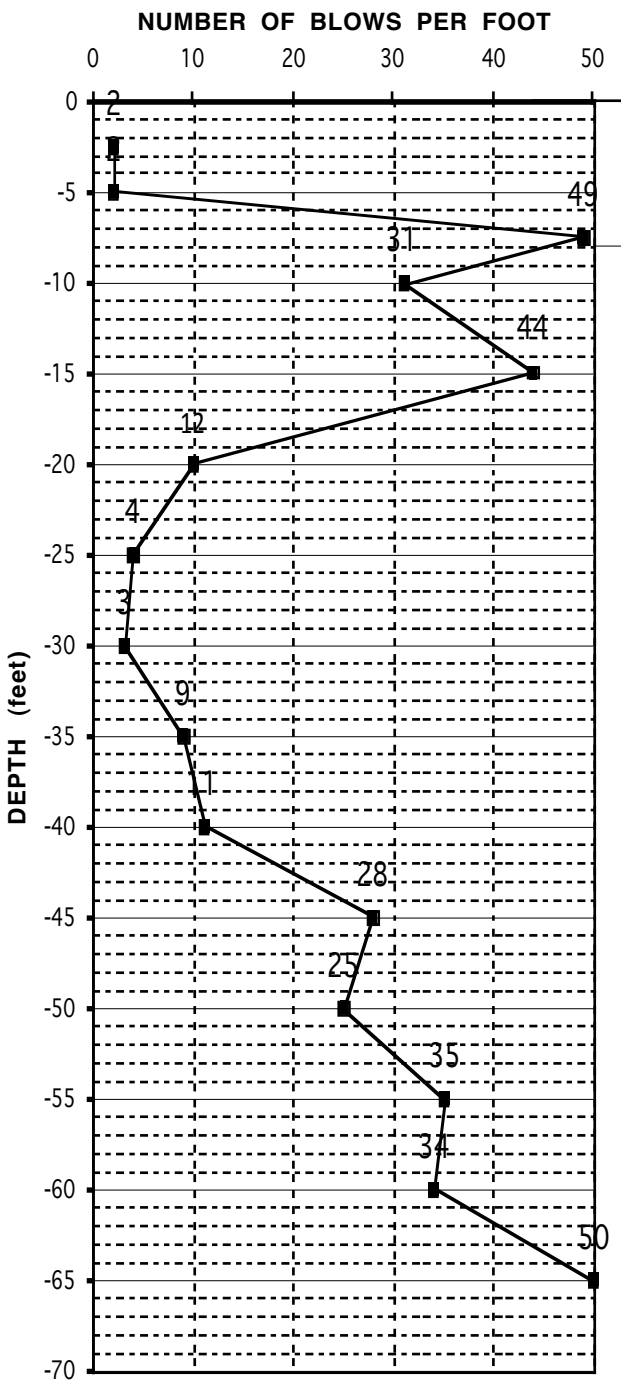
B-2	STANDARD PENETRATION TEST	SOIL DESCRIPTION AND CLASSIFICATION



X, Y =
Surface Elevation =
Surface Conditions = Asphalt

Asphalt pavement surface ~4" .
Roadbase sandy gravel ~4".

FILL (SM)

Fill material consisting of brown silt, tine sand and clay mixed with gravel.

Pebbles, boulders, bricks, black asphalt and other debris with brown silty sand. Dense to very dense, damp to wet. End @17'.

SILTY SAND (SM)

Silty sands with some gravels, gray, damp, cohesive, soft. Qu = +0.5 TSF@25"

CLAYEY SAND (SC)

Clayey sand, gray, very stiff, damp.
Qu = +4.0 TSF@45".
Qu = +3.5 TSF@55".
Qu > +5.0 TSF@60".
Plastic Limit (PL) = 19 @65'
Plastic Limit (LL) = 49.3@65'
Shale stone below 65ft.

END@65´

Project No. YF0222814	Date: 9/25/2017	**LOG OF BORING**	Approved by A.X.H.	*Figure 5*

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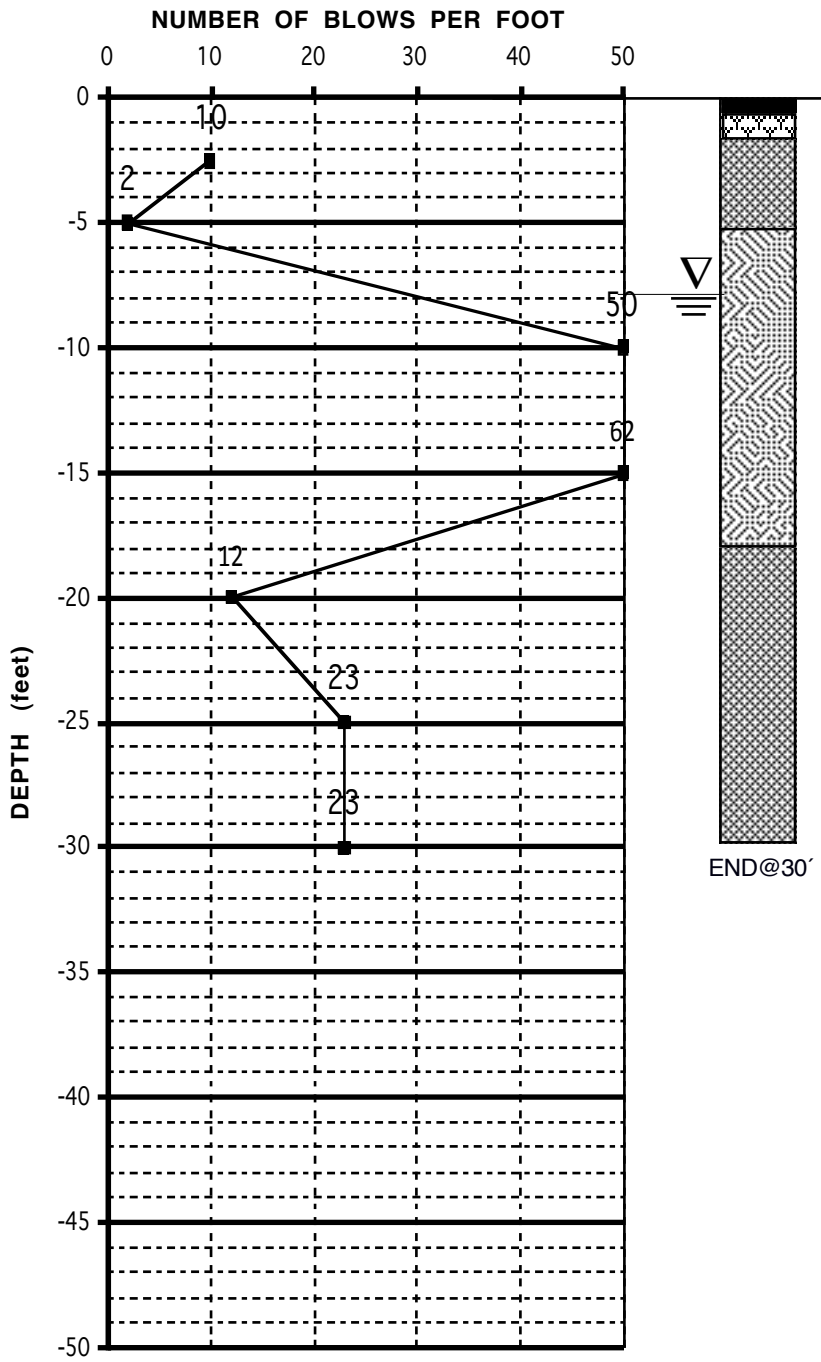
B-3	STANDARD PENETRATION TEST	SOIL DESCRIPTION AND CLASSIFICATION



X, Y =
Surface Elevation =
Surface Conditions = Asphalt

Asphalt pavement surface ~4" .
Roadbase sandy gravel ~4".

FILL (SM)

Fill material consisting of brown silt, tine sand and clay mixed with gravel.

Pebbles, boulders, bricks, black asphalt and other debris with silty sand.

Dense to very dense, wet. End @18'

SILTY SAND (SM)

Silty sands, gray, damp, cohesive, soft.
Qu = +0.5 TSF@25"
Plastic Limit (PL) = 25.4 @20'
Plastic Limit (LL) = 32.2@20'

Project No. YF0222814	Date: 9/25/2017	**LOG OF BORING**	Approved by A.X.H.	*Figure 6*

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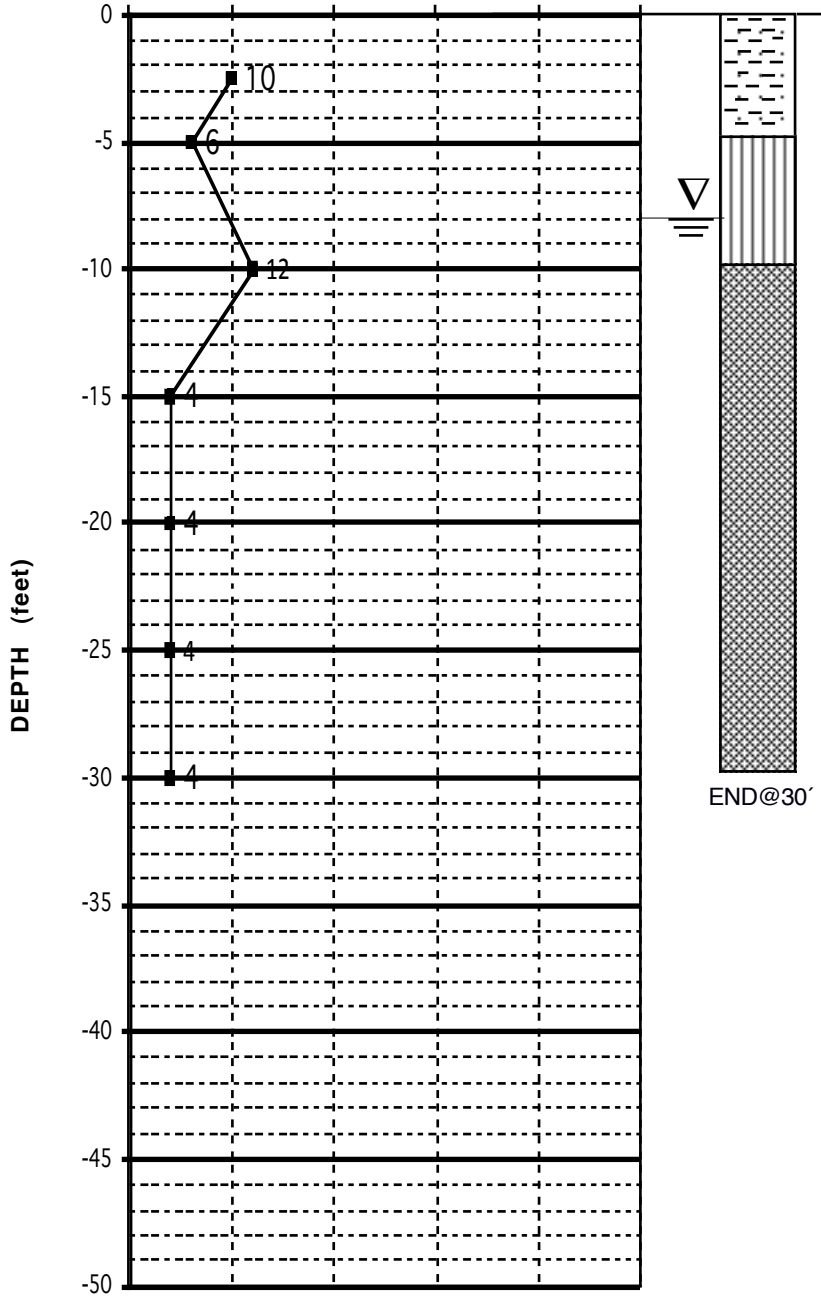
B-4	STANDARD PENETRATION TEST	SOIL DESCRIPTION AND CLASSIFICATION



X, Y =
Surface Elevation =
Surface Conditions = Asphalt

TOPSOIL (OL)
Gray organic silt with roots, vegetaion roots, damp.

INORGANIC SILT(ML)
Tan-brown silt with some pebbles, wet, soft.

SILTY SAND (SM)
Silty sands, gray, damp, cohesive, soft.
Qu = +0.5 TSF@15"
Plastic Limit (PL) = 26.4 @15'
Plastic Limit (LL) = 29.3@15'

Project No. YF0222814	Date: 9/25/2017	**LOG OF BORING**	Approved by A.X.H.	*Figure 7*

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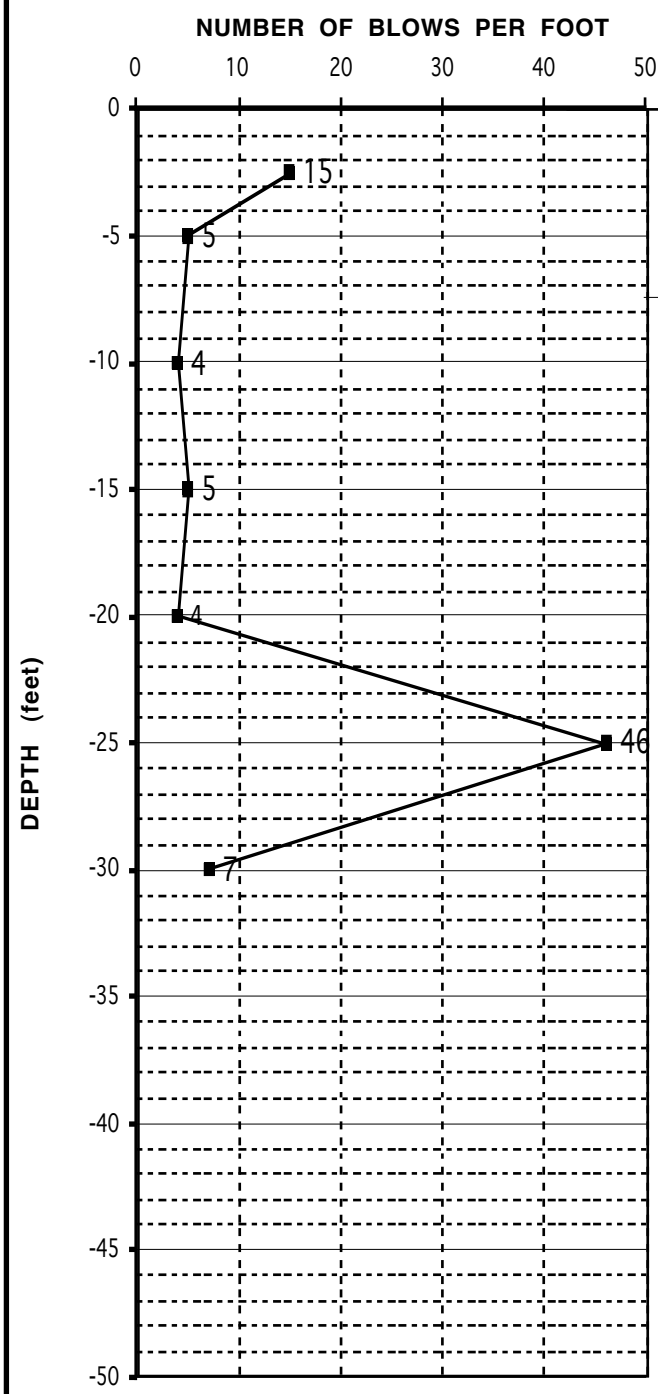
B-5	STANDARD PENETRATION TEST	SOIL DESCRIPTION AND CLASSIFICATION



X, Y =
Surface Elevation =
Surface Conditions = Asphalt

Asphalt pavement surface ~4" .
Roadbase sandy gravel ~4".
Brown silty sands with some gravels.

INORGANIC SILT(ML)

Tan-brown silt with some pebbles, wet, soft.
Qu = +0.5 TSF@15"

SILTY SAND (SM)

Silty sands with some gravels, gray, damp, cohesive, soft.
Qu = +0.5 TSF@20"

FILL (SM)

Fill material consisting of brown silt, tine sand and clay mixed with gravel. Pebbles, boulders, bricks, black asphalt and other debris. Very dense, damp.

SILTY SAND (SM)

Silty sands with some gravels, gray, damp, cohesive, soft.
Qu = +0.5 TSF@30"

END@30´

Project No. YF0222814	Date: 9/25/2017	**LOG OF BORING**	Approved by A.X.H.	*Figure 8*

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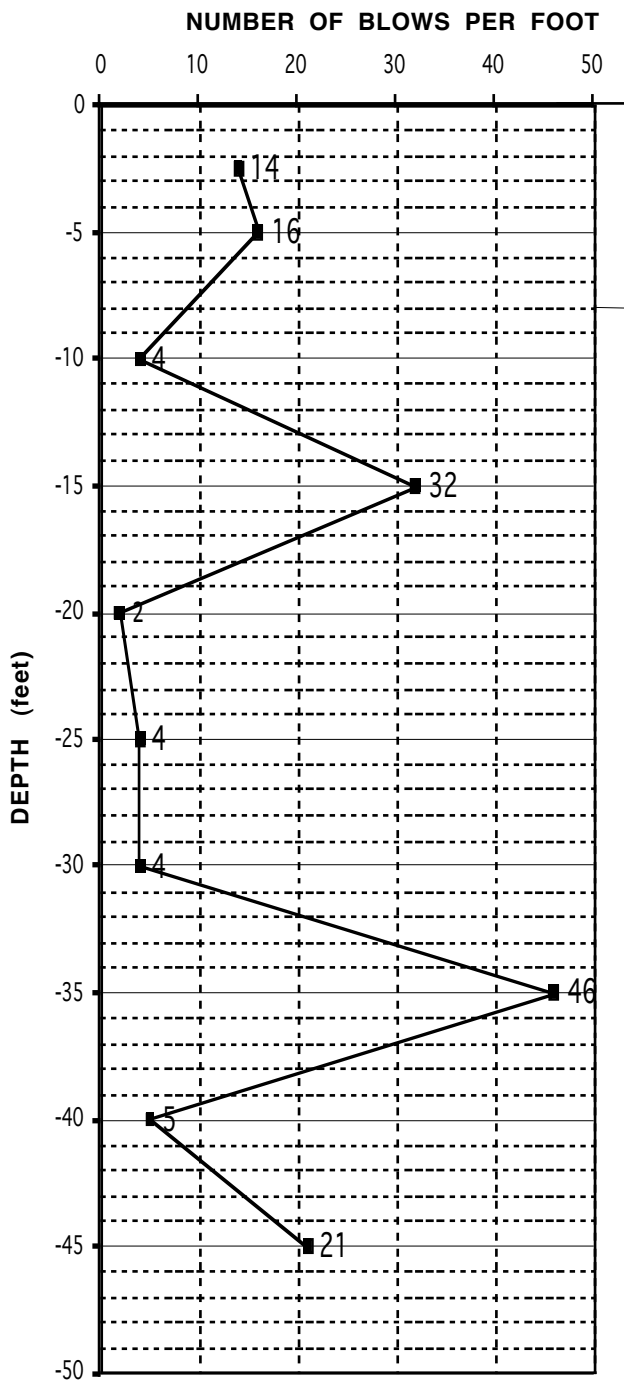
B-6	STANDARD PENETRATION TEST	SOIL DESCRIPTION AND CLASSIFICATION



X, Y =
Surface Elevation =
Surface Conditions = Asphalt

Asphalt pavement surface ~4" .
Roadbase sandy gravel ~4" .
Brown silty sands with gravels,damp, cohesive.

INORGANIC SILT(ML)
Tan-brown silt with some pebbles, wet, soft.

FILL
Fill material consisting of brown silt, tine sand and clay mixed with gravel. Pebbles, boulders, brickes, black asphalt and other debris. Dense, damp.

SILTY SAND (SM)

Silty sands with some gravels, gray, damp, cohesive, soft.
Qu = +0.5 TSF@20"

FILL
Fill material consisting of silt, tine sand and clay mixed with gravel. Pebbles, boulders, bricks, black asphalt and other debris. Very dense, damp.

SILTY SAND (SM)

Silty sands with some gravels, gray, damp, cohesive, soft to stiff.

END@45´

Project No. YF0222814	Date: 9/25/2017	**LOG OF BORING**	Approved by A.X.H.	*Figure 9*

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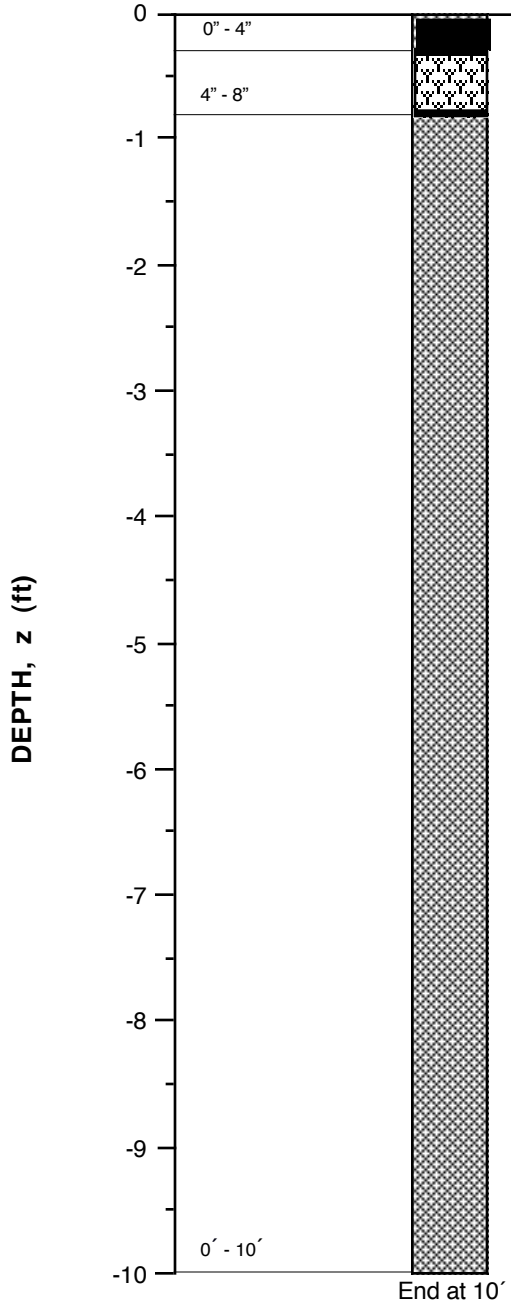
TP-1	Surface Elevation ≈ X = Y=	SOIL DESCRIPTION AND CLASSIFICATION



Asphalt Pavement surface.

Roadbase sandy gravel .

FILL (SM)

Uniform pebbles, boulders,with brown silty sand.

Notes: Excavation on 9/06/2017 ended at 10´. Groundwater seepage was not observed.

Project No. YF0222814	Date: 9/25/2017	Approved by A.X.H.	*Figure 10*

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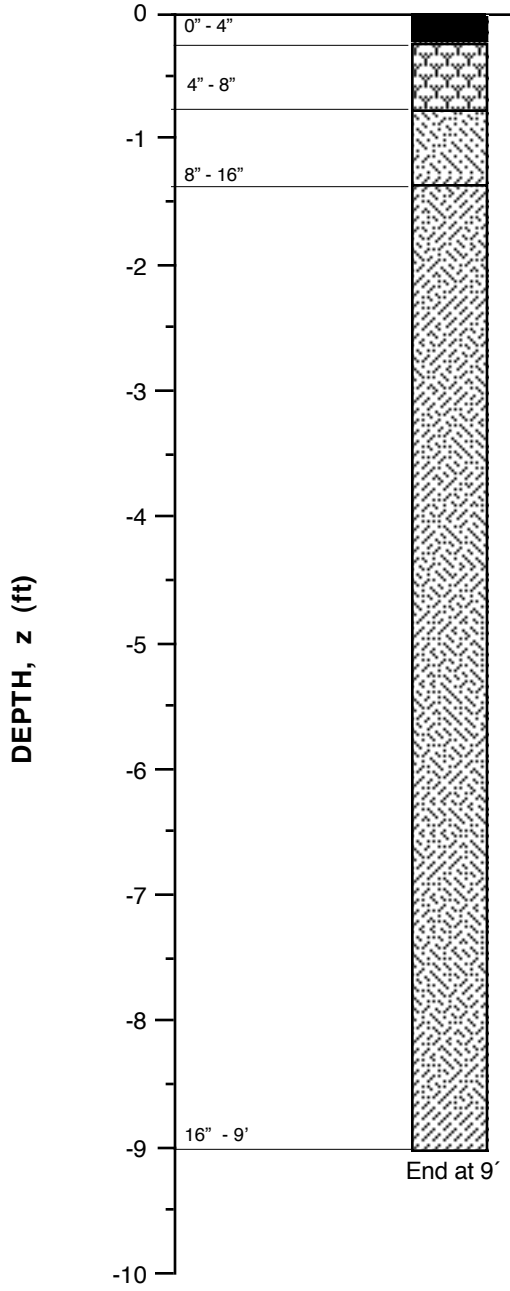
TP-2	Surface Elevation ≈ X = Y=	SOIL DESCRIPTION AND CLASSIFICATION



Asphalt Pavement surface

Roadbase sandy gravel

Brown silty sands with some gravels, cohesive.

FILL (SM)

Brown silty sands and clay mixed with some gravels, cohesive, some pebbles and boulders.

Backfills,hard, black gravel, pebbles, bolders, wood piles, bricks with brown silty sand.

Notes: Excavation on 9/06/2017 ended at 9´ with no groundwater seepage observed.

Project No. YF0222814	Date: 9/25/2017	Approved by A.X.H.	*Figure 11*

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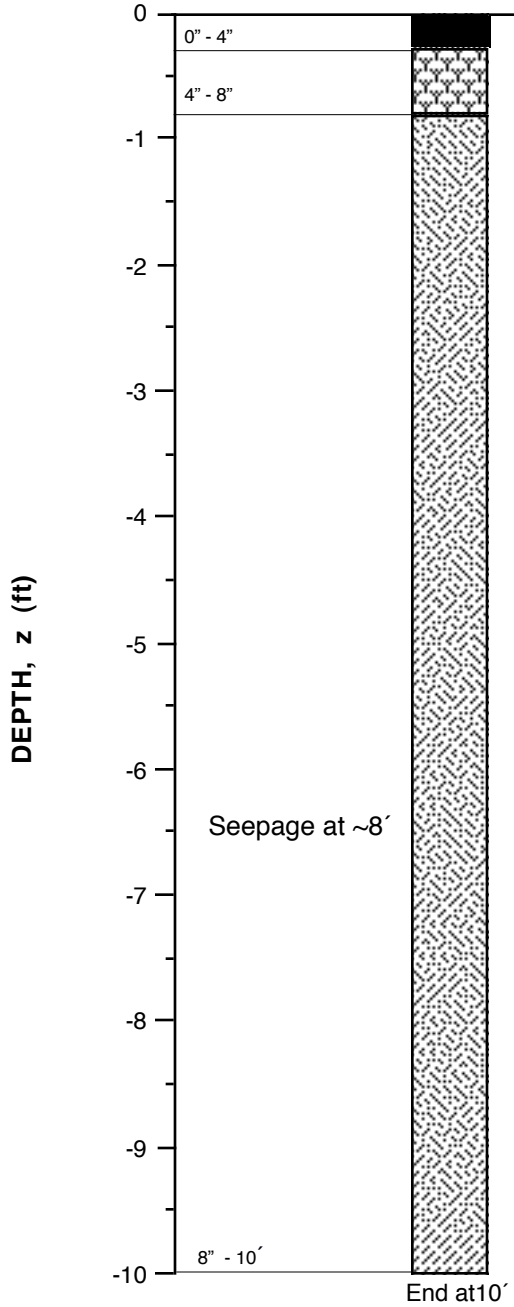
TP-3	Surface Elevation ≈ X = Y=	SOIL DESCRIPTION AND CLASSIFICATION



Asphalt Pavement surface

Roadbase sandy gravel

FILL (SM)

Brown silty sands and clay mixed with some gravels, cohesive, some pebbles and buolders.

FILL (SM)

Black asphalt, pebbles, boulders,bricks with brown silty sand.

Notes: Excavation on 9/06/2017 ended at 10´ with groundwater seepage observed at ~8´.

Project No. YF0222814	Date: 9/25/2017	Approved by A.X.H.	*Figure 12*

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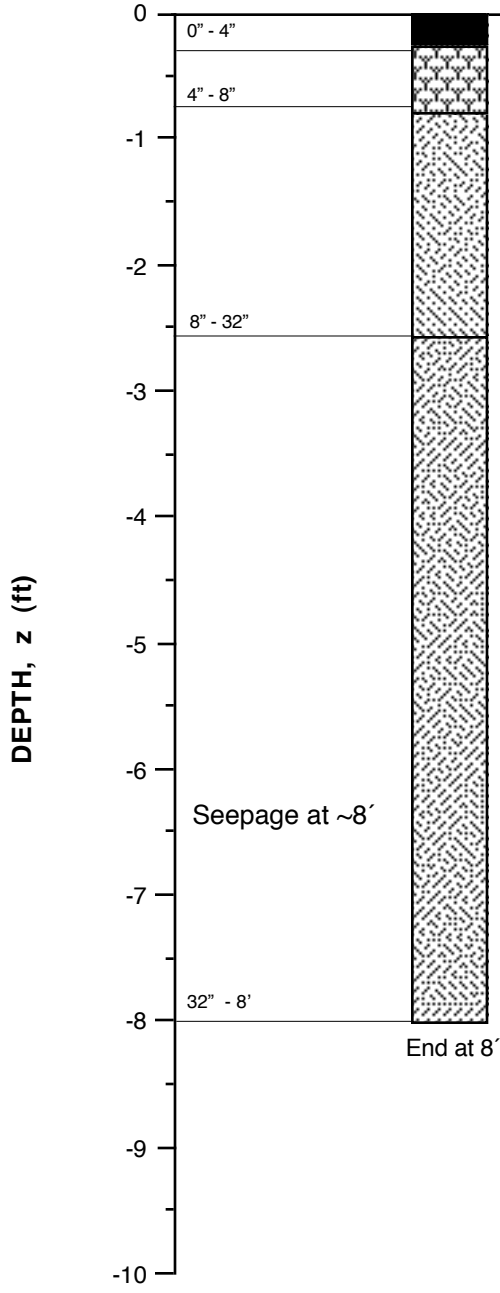
Telephone: (425) 454-2133
http://www.MeritEngineering.com

TP-4	Surface Elevation ≈ X = Y=	SOIL DESCRIPTION AND CLASSIFICATION



Asphalt Pavement surface

Roadbase sandy gravel

Silty Sand (SM)

Silty sands with some gravels, gray, cohesive

FILL (SM)

Brown silty sands and clay mixed with some gravels, cohesive, some pebbles and boulders.

Notes: Excavation on 9/06/2017 ended at 8´ with groundwater seepage observed at ~8´.

Project No. YF0222814	Date: 9/25/2017	Approved by A.X.H.	*Figure 13*

Geotechnical Report
Proposed Hollander Hotel
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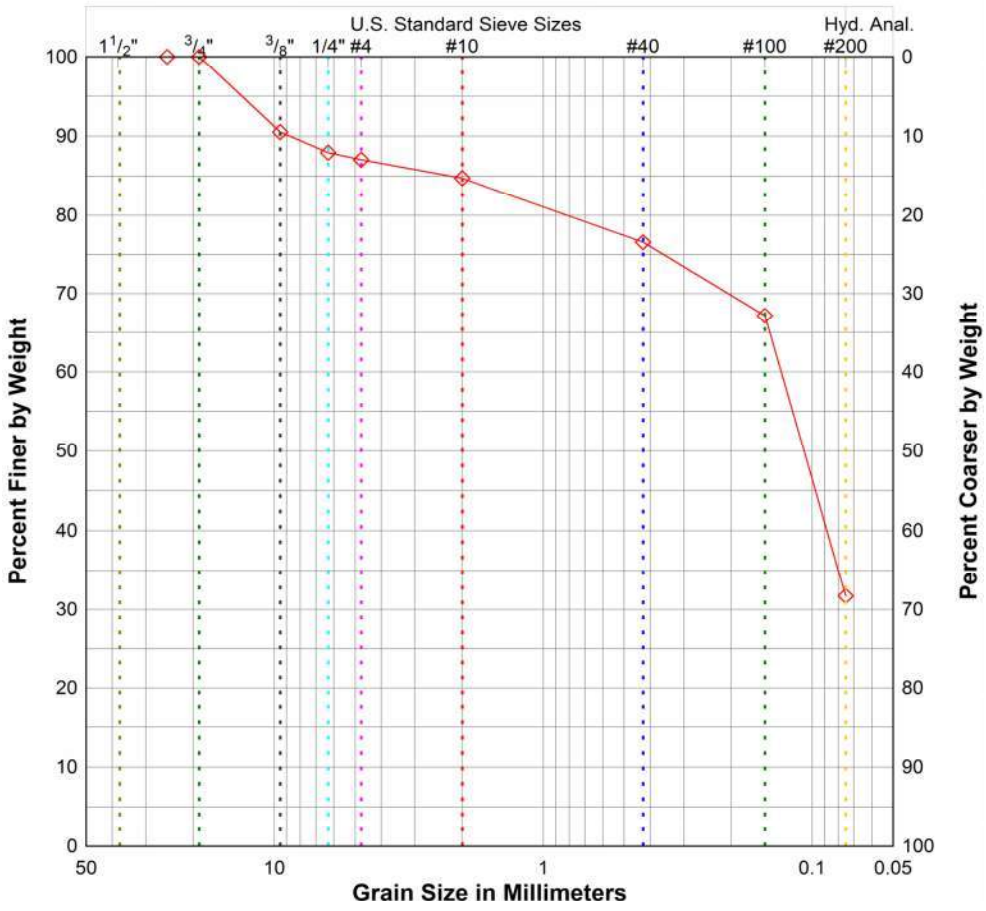
http://www.MeritEngineering.com

Grain Size Distribution



SAMPLE SOURCE: Test Boring-2
SAMPLED DEPTH: 25´
SOIL TYPE: Silty sand (SM)

SIEVE SIZE	% PASSING
3″	100.0
1-1/2″	100.0
1″	100.0
3/4″	100.0
3/8	90.52
1/4″	87.96
#4	87.07
#10	84.76
#40	76.56
#60	-
#100	67.16
#200	31.76

Soil Classicifation Note: Coarse-Grained Soil, silty sand (SM) (<50% passing #200 sieve), sands with fines, more than 12% fines. (Adapted from ASTM D2487)

Project No. YF0222814	Date: 9/25/2017	**TEST BORING 2**	Approved by : A.X.H.	*Figure 14*

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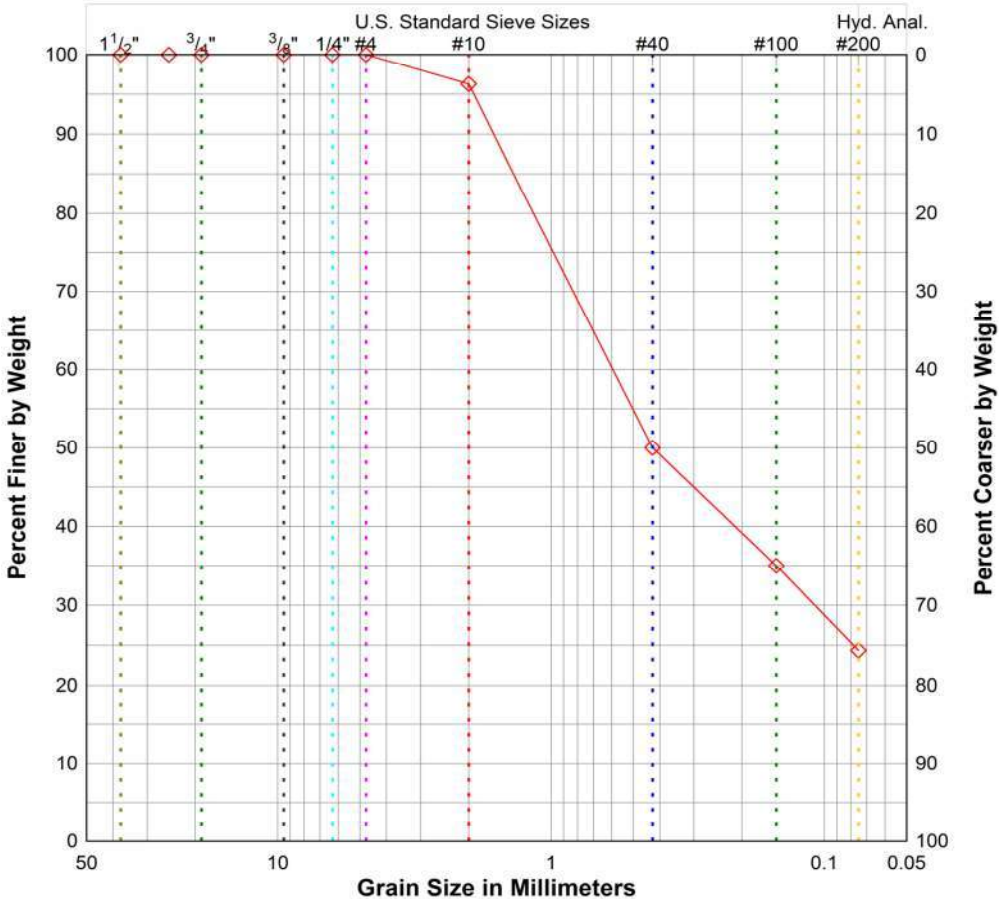
Grain Size Distribution



SAMPLE SOURCE: Test Boring-2
SAMPLED DEPTH: 65´
SOIL TYPE: Clayey sands,sand-clay mixtures (SC)

SIEVE SIZE	% PASSING
3″	100.0
1-1/2″	100.0
1″	100.0
3/4″	100.0
3/8	100.6
1/4″	100.8
#4	100.6
#10	96.3
#40	50.0
#60	-
#100	35.0
#200	24.4

Soil Classicifation Note: Fine-Grained Soil, Clayey sand with gravel (SC) (>50% passing #200 sieve), sands with fines, more than 12% fines,PI>7 . (Adapted from ASTM D2487)

Project No. YF0222814	Date: 9/25/2017	**TEST BORING 2**	Approved by : A.X.H.	*Figure 15*

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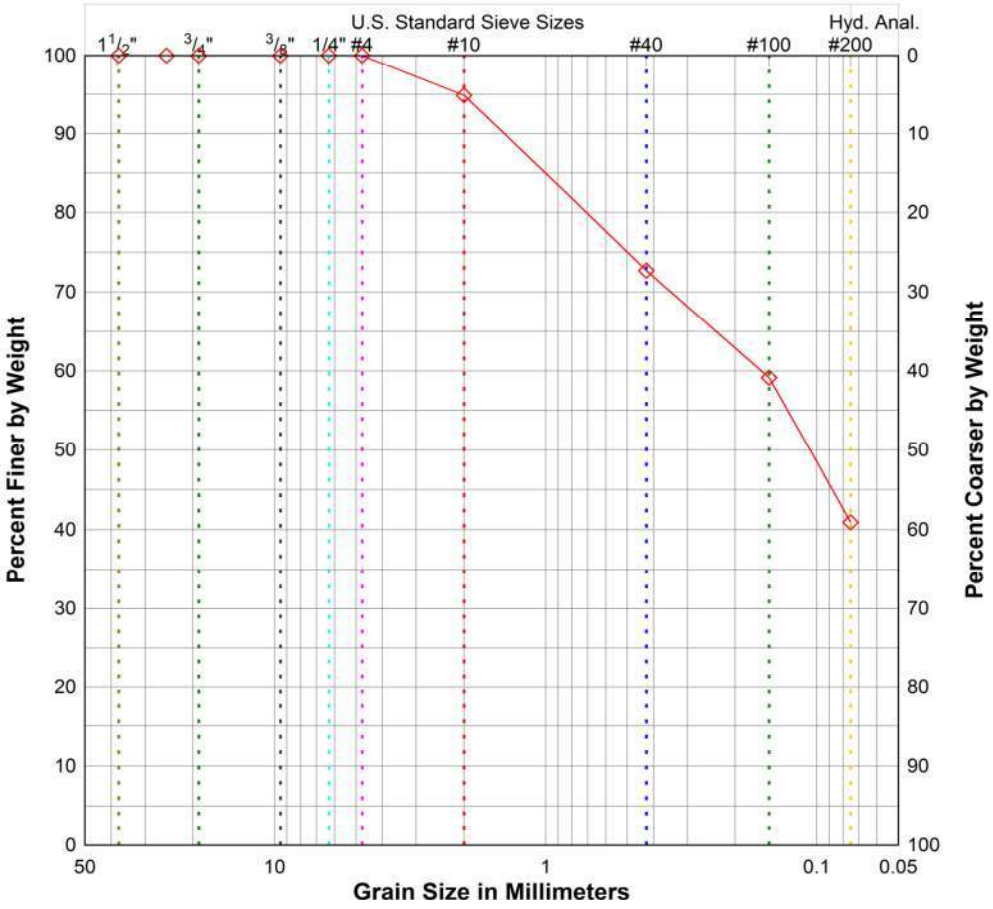
Grain Size Distribution



SAMPLE SOURCE: Test Boring-3
SAMPLED DEPTH: 20´
SOIL TYPE: Silty sand (SM)

SIEVE SIZE	% PASSING
3″	100.0
1-1/2″	100.0
1″	100.0
3/4″	100.0
3/8	100.0
1/4″	100.0
#4	100.0
#10	94.91
#40	72.71
#60	-
#100	59.14
#200	40.94

Soil Classicifation Note: Coarse-Grained Soil, silty sand (SM) (<50% passing #200 sieve), sands with fines, more than 12% fines. (Adapted from ASTM D2487)

Project No. YF0222814	Date: 9/25/2017	**TEST BORING 3**	Approved by : A.X.H.	*Figure 16*

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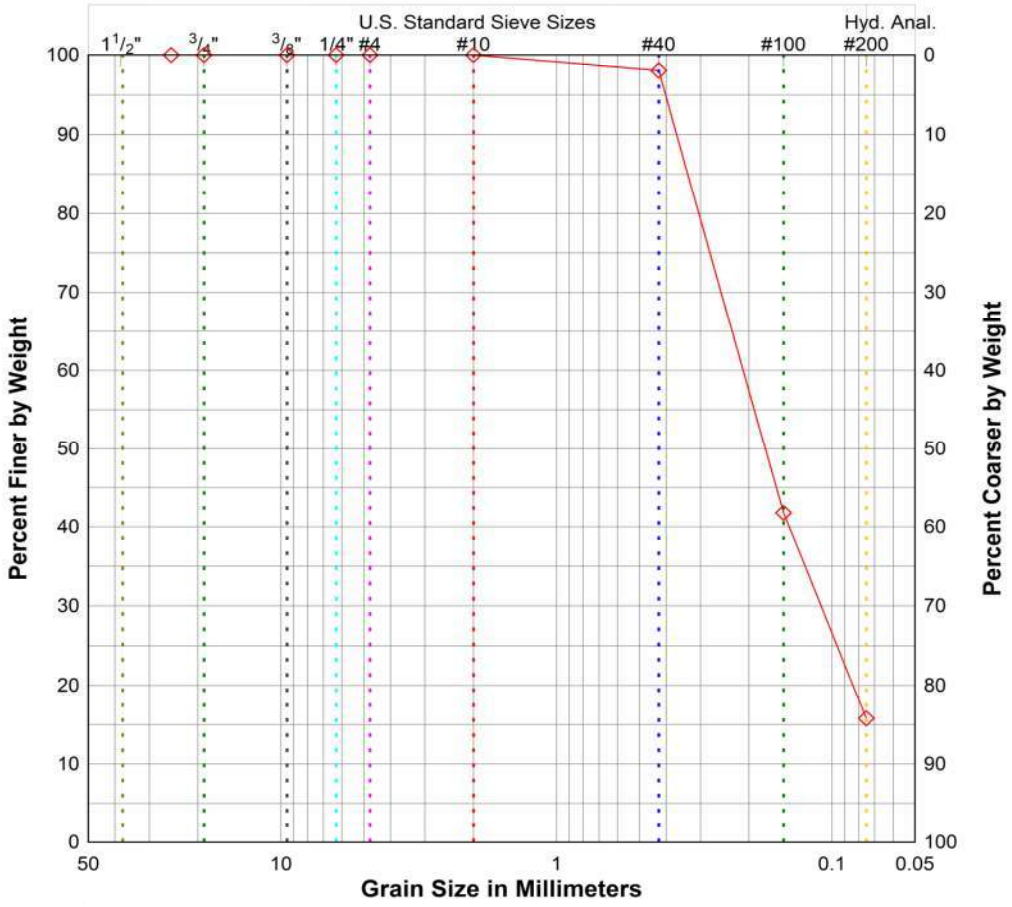
http://www.MeritEngineering.com

Grain Size Distribution



SAMPLE SOURCE: Test Boring-4
SAMPLED DEPTH: 10´
SOIL TYPE: Silty sand (SM)

SIEVE SIZE	% PASSING
3″	100.0
1-1/2″	100.0
1″	100.0
3/4″	100.0
3/8	100.0
1/4″	100.0
#4	100.0
#10	100.0
#40	98.07
#60	-
#100	41.79
#200	15.79

Soil Classicifation Note: Coarse-Grained Soil, silty sand (SM) (<50% passing #200 sieve), sands with fines, more than 12% fines. (Adapted from ASTM D2487)

Project No. YF0222814	Date: 9/25/2017	**TEST BORING 4**	Approved by : A.X.H.	*Figure 17*

Geotechnical Report
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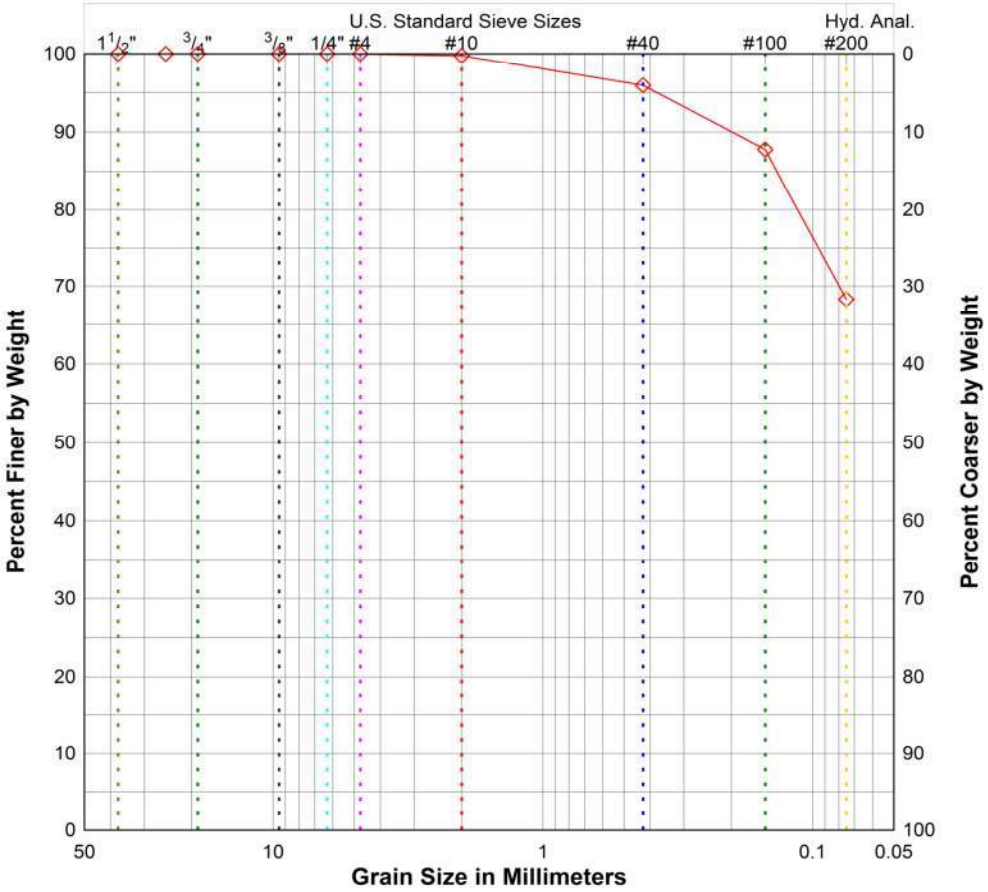
Grain Size Distribution



SAMPLE SOURCE: Test Boring-5
SAMPLED DEPTH: 15´
SOIL TYPE: SIlts and Clay (ML)

SIEVE SIZE	% PASSING
3″	100.0
1-1/2″	100.0
1″	100.0
3/4″	100.0
3/8	100.0
1/4″	100.0
#4	100.0
#10	99.76
#40	95.95
#60	-
#100	87.8
#200	68.30

Soil Classicifation Note: Fine-Grained Soil, inorganic clay (ML) (>50% passing #200 sieve), PI>7and plots above A line. (Adapted from ASTM D2487)

Project No. YF0222814	Date: 9/25/2017	**TEST BORING 5**	Approved by : A.X.H.	*Figure 18*

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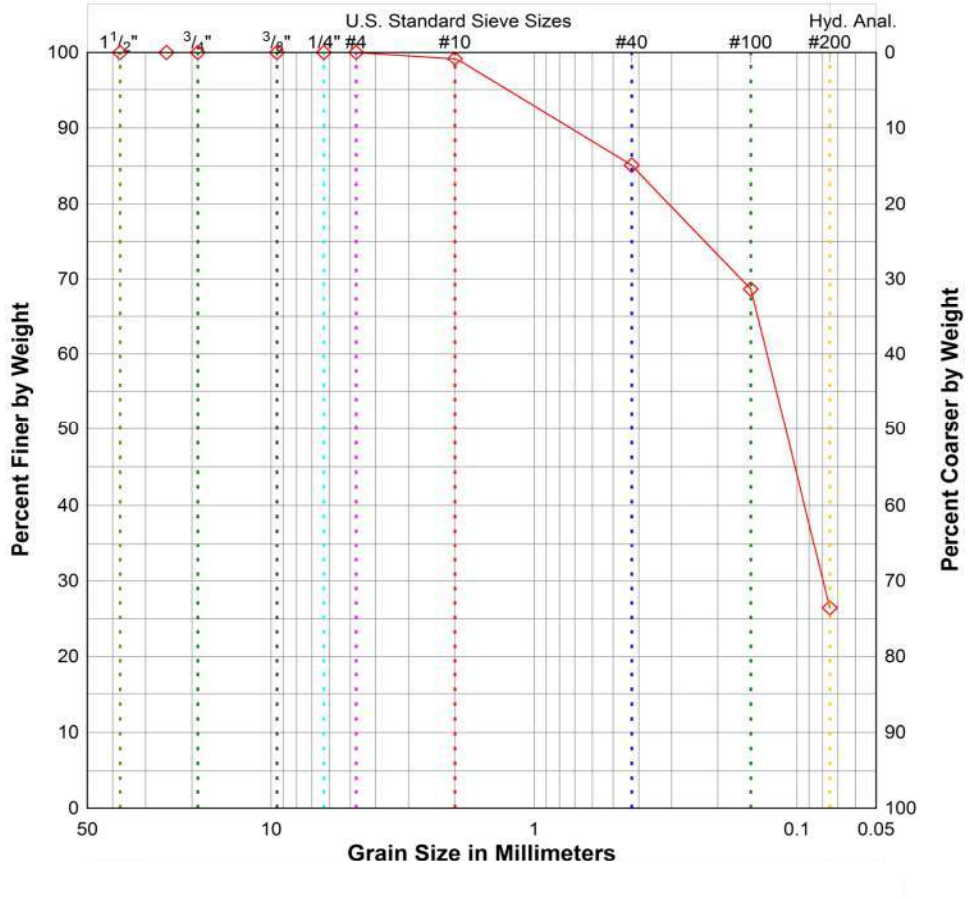
Grain Size Distribution



SAMPLE SOURCE: Test Boring-6
SAMPLED DEPTH: 45´
SOIL TYPE: Silty sand (SM)

SIEVE SIZE	% PASSING
3″	100.0
1-1/2″	100.0
1″	100.0
3/4″	100.0
3/8	100.0
1/4″	100.0
#4	100.0
#10	99.14
#40	85.14
#60	-
#100	68.64
#200	26.44

Soil Classicifation Note: Coarse-Grained Soil, silty sand (SM) (<50% passing #200 sieve), sands with fines, more than 12% fines. (Adapted from ASTM D2487)

Project No. YF0222814	Date: 9/25/2017	**TEST BORING 6**	Approved by : A.X.H.	*Figure 19*

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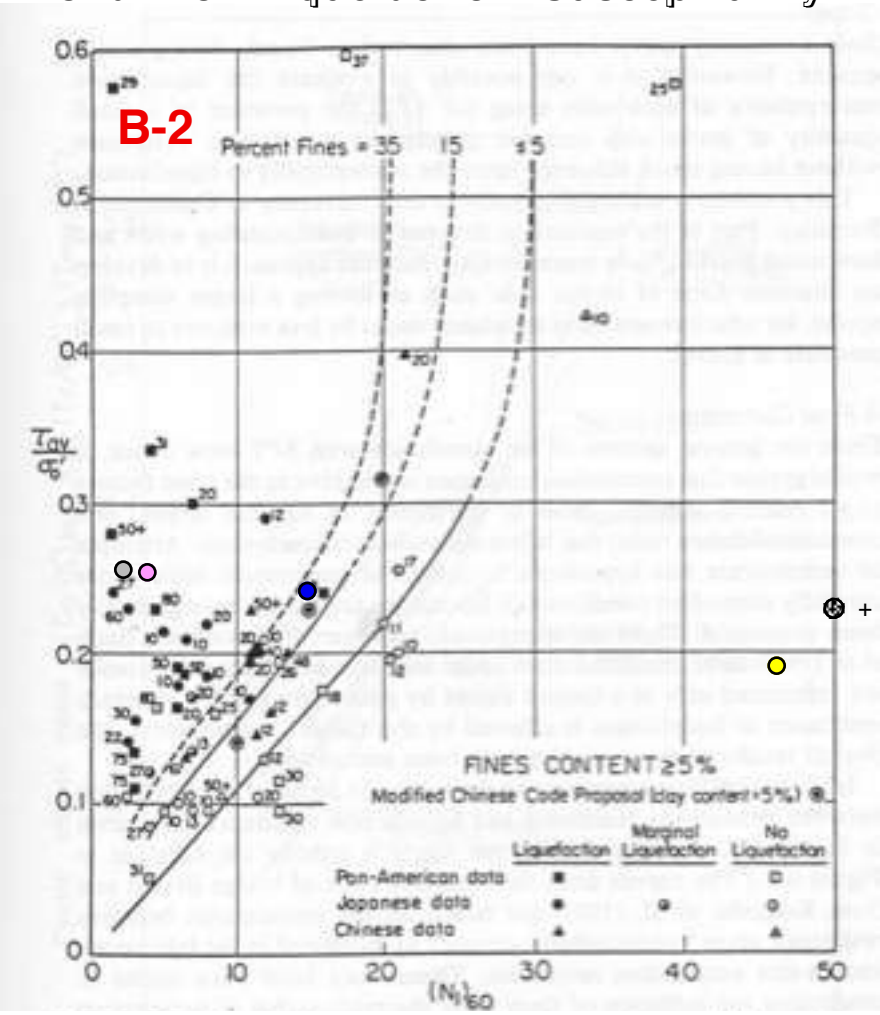
Chart of Liquefaction Susceptibility



After Seed et al., 1984

Depth	σ'	N (blows)	N´	τ_{av}/σ' (x 1.35 FS)	
10´	915	31	45.8	0.194	○
15´	1203	44	56.7	0.229	◍
20´	1491	12	13.9	0.249	●
25´	1779	4	4.2	0.260	◉
30´	2067	3	3.0	0.267	◉

Project No. YF0222814	Date: 9/25/2017	**SEISMIC ANALYSIS: B2**	Approved by A.X.H.	*Figure 20*

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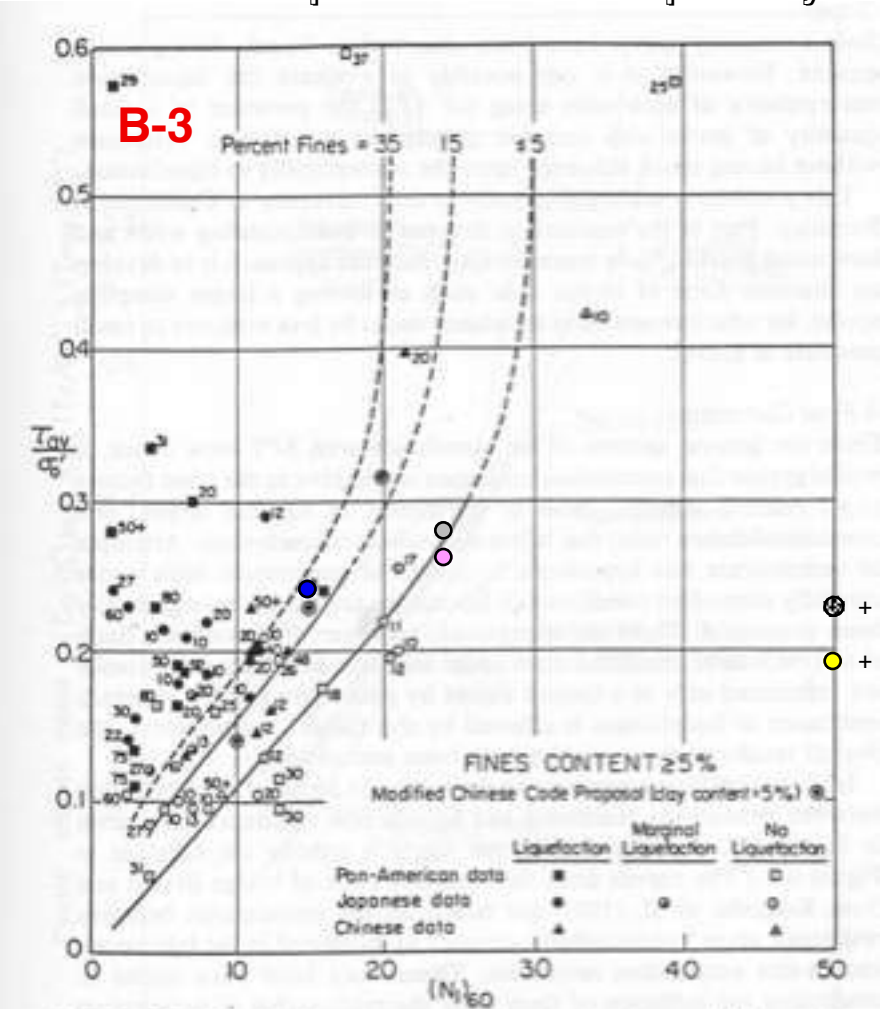
Chart of Liquefaction Susceptibility



After Seed et al., 1984

Depth	σ'	N (blows)	N´	τ_{av}/σ' (x 1.35 FS)	
10´	915	50	73.9	0.194	○
15´	1203	62	79.9	0.229	◍
20´	1491	12	13.9	0.249	●
25´	1779	23	24.4	0.260	◉
30´	2067	23	22.3	0.267	◉

Project No. YF0222814	Date: 9/25/2017	**SEISMIC ANALYSIS: B3**	Approved by A.X.H.	*Figure 21*

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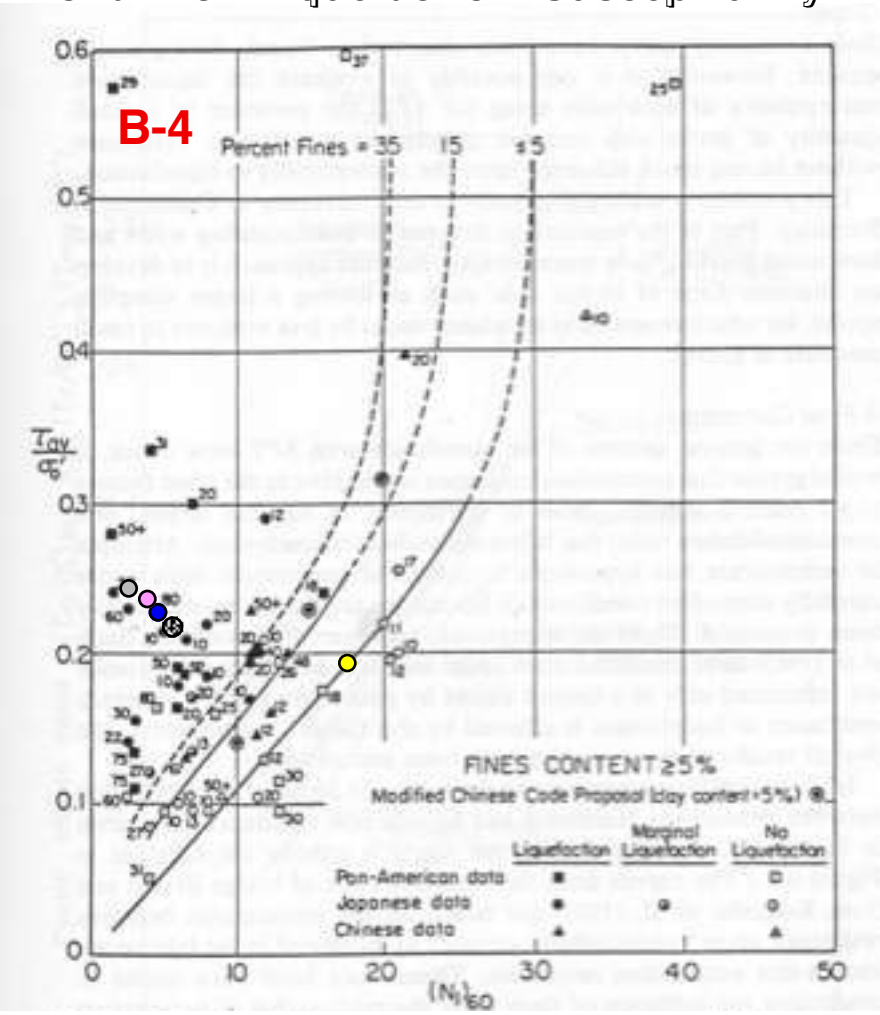
http://www.MeritEngineering.com

Chart of Liquefaction Susceptibility



After Seed et al., 1984

Depth	σ'	N (blows)	N´	τ_{av}/σ' (x 1.35 FS)	
10´	915	12	17.7	0.194	○
15´	1203	4	5.2	0.229	◐
20´	1491	4	4.6	0.249	●
25´	1779	4	4.2	0.260	◑
30´	2067	4	3.9	0.267	◑

Project No. YF0222814	Date: 9/25/2017	**SEISMIC ANALYSIS: B4**	Approved by A.X.H.	*Figure 22*

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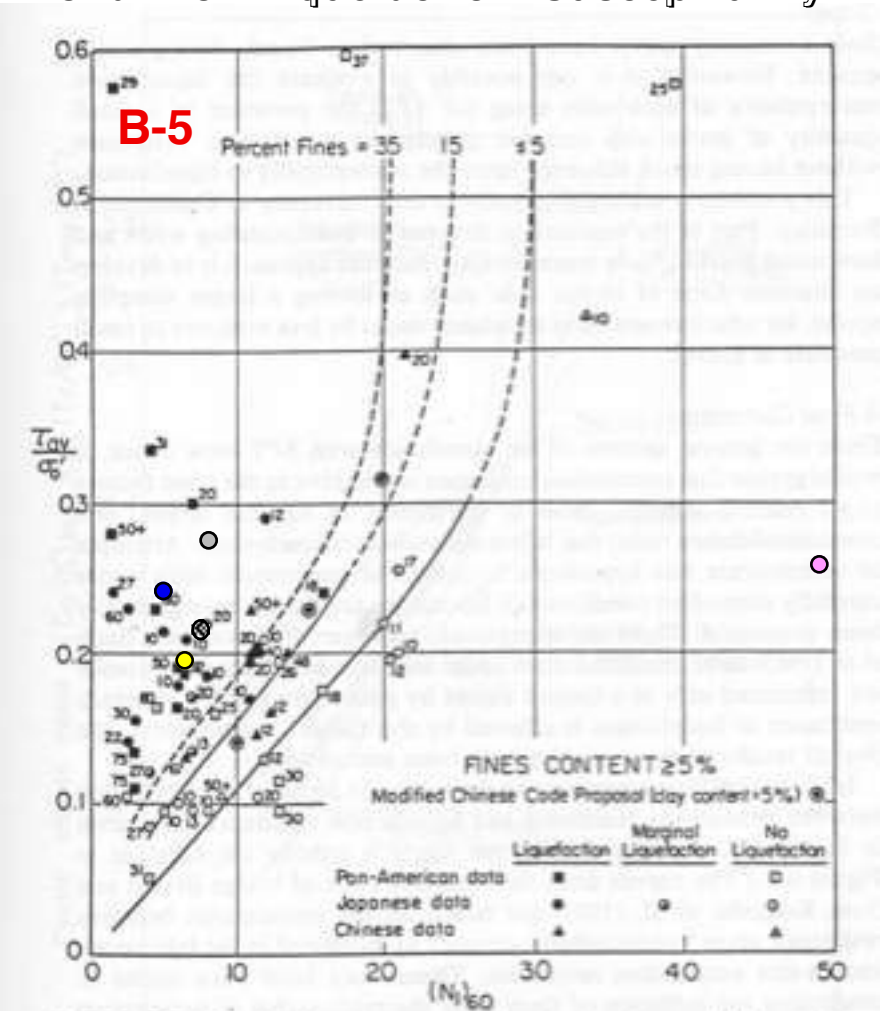
Chart of Liquefaction Susceptibility



After Seed et al., 1984

Depth	σ'	N (blows)	N´	τ_{av}/σ' (x 1.35 FS)	
10´	915	4	5.9	0.194	○
15´	1203	5	6.4	0.229	◔
20´	1491	4	4.6	0.249	●
25´	1779	46	48.8	0.260	◑
30´	2067	7	6.9	0.267	◕

Project No. YF0222814	Date: 9/25/2017	**SEISMIC ANALYSIS: B5**	Approved by A.X.H.	*Figure 23*

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10129 Main Street #201
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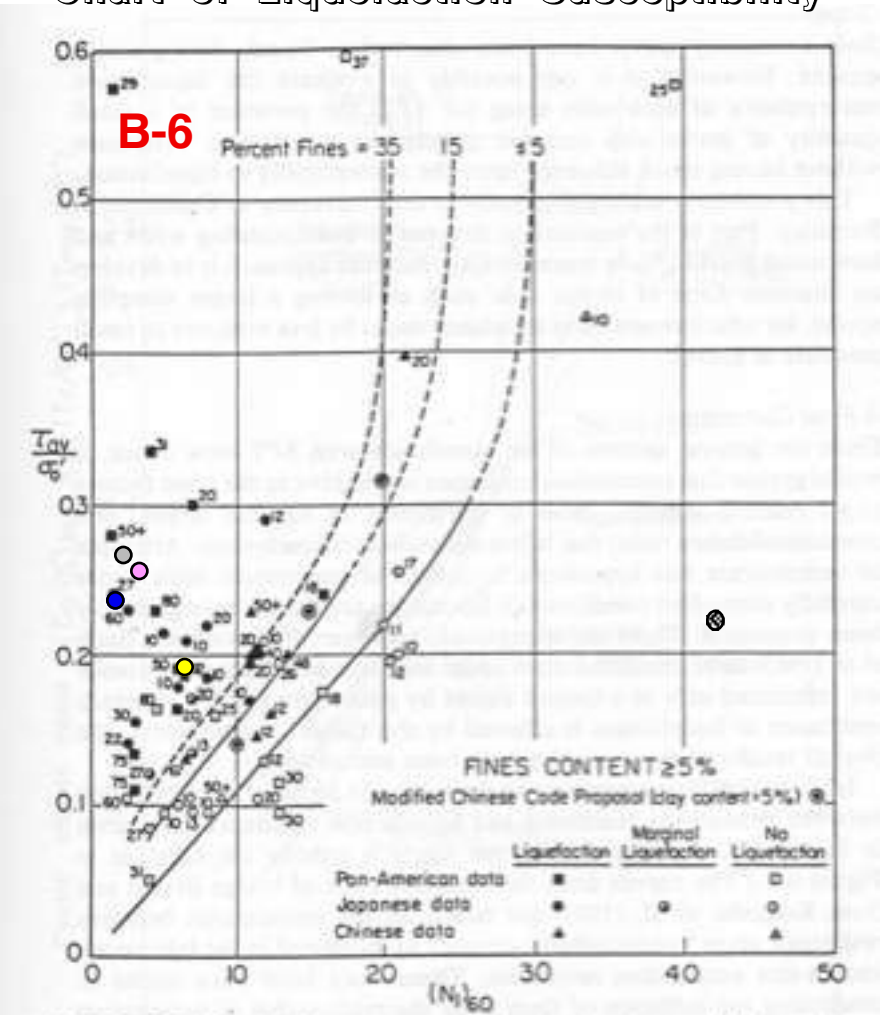
http://www.MeritEngineering.com

Chart of Liquefaction Susceptibility



After Seed et al., 1984

Depth	σ'	N (blows)	N´	τ_{av}/σ' (x 1.35 FS)	
10´	915	4	5.9	0.194	○
15´	1203	32	41.3	0.229	◍
20´	1491	2	2.3	0.249	●
25´	1779	4	4.2	0.260	◎
30´	2067	4	3.9	0.267	◎

Project No. YF0222814	Date: 9/25/2017	**SEISMIC ANALYSIS: B6**	Approved by A.X.H.	*Figure 24*

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CARLETON HART ARCHITECTURE P.C.
830 sw 10th avenue #200 portland oregon 97205
503 243 2252 | www.carletonhart.com

APPENDIX C:
SITE SURVEY

TOPOGRAPHIC SURVEY FOR
HOLLANDER PROPERTIES, LLC

SHOWING PARCELS I–IV PER TICOR TITLE POLICY 360416021193–JC, DATED MARCH 20, 2017
AND
PARCELS 1 & 2 (EXCLUDING PARCEL 3) PER TICOR TITLE POLICY 360415018943 DATED, MAY 25, 2016
ALL PARCELS SHOWN ARE IN SECTION 7, TOWNSHIP 8 NORTH, RANGE 9W, WILLAMETTE MERIDIAN,
CITY OF ASTORIA, COUNTY OF CLATSOP, STATE OF OREGON

REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

OREGON
JULY 12, 2016
MICHAEL G. MAGYAR
PLS 90788

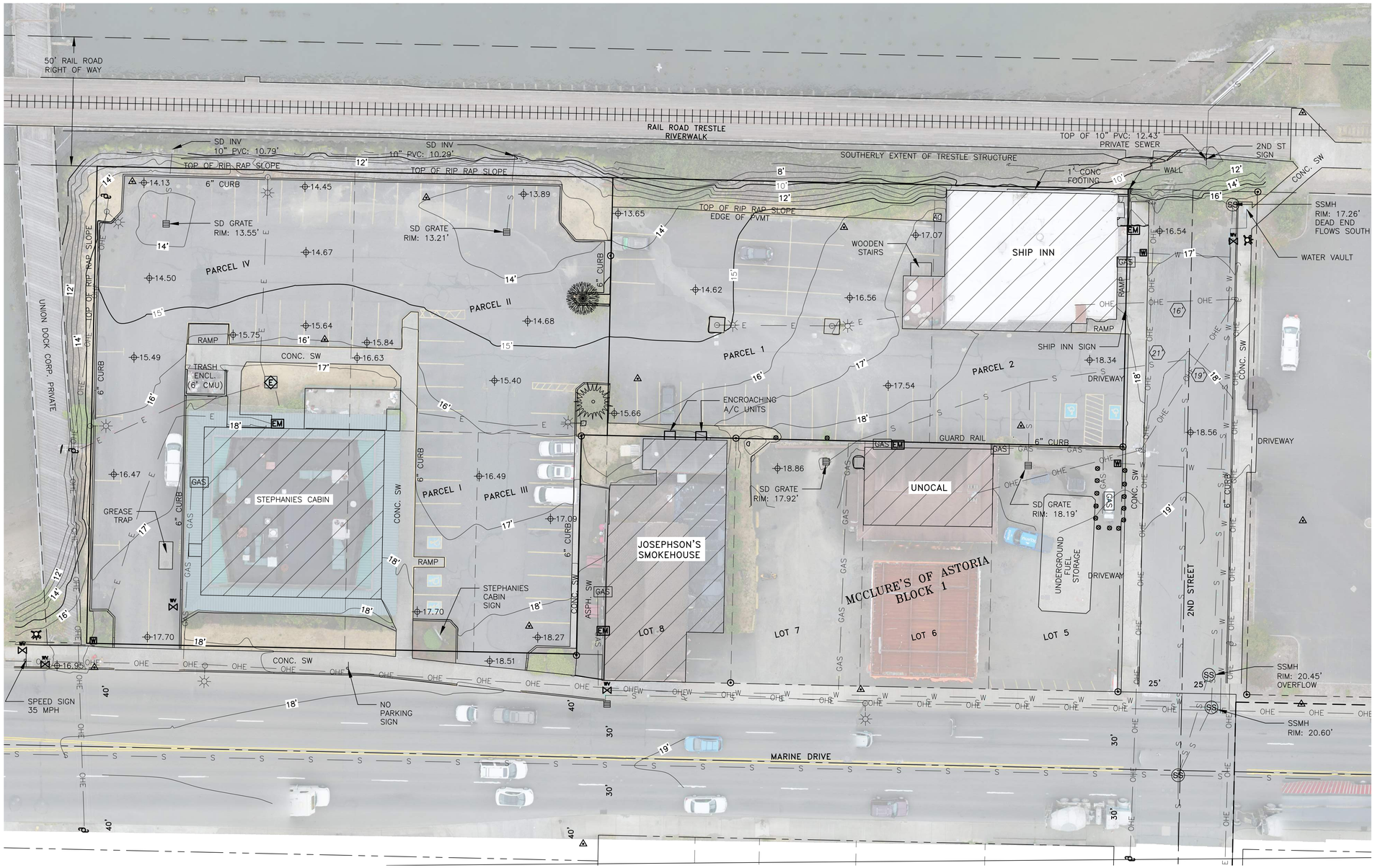
EXPIRES: DEC. 31, 2018

MAGYAR LAND SURVEYING LLC
PO BOX 1309
ASTORIA, ORE. 97103
503–468–5500

0 40 80 FEET

LEGEND

- SANITARY SEWER MANHOLE
- WATER VALVE
- WATER METER
- FIRE HYDRANT
- STORM DRAIN GRATE
- ELECTRIC TRANSFORMER
- ELECTRIC METER
- STREET LIGHT
- UTILITY POLE
- GUY ANCHOR
- GAS METER
- BOLLARD
- SINGLE POLE SIGN
- PROJECT BOUNDARY
- TAX LOT LINE
- STREET CENTERLINE
- STREET RIGHT OF WAY
- RAILROAD RIGHT OF WAY
- UNDERGROUND STORM SEWER
- UNDERGROUND WATER LINE
- UNDERGROUND GAS LINE
- UNDERGROUND ELECTRIC LINE
- UNDERGROUND ELECTRIC LINE
- CONIFER TREE
- DECIDUOUS TREE
- CONSTRUCTION MONUMENT
- PROPERTY CORNER MONUMENT
- 25.25 SPOT ELEVATION (NAVD 88)
- 15' CLEARANCE OF OVERHEAD UTIL. LINE ABOVE GROUND (ROUNDED DOWN TO THE NEAREST FOOT)



METADATA

HORIZONTAL DATUM: NAD83 (2011) ORGN
VERTICAL DATUM: NAVD88 (GEOID 12B)
UNITS: INTERNATIONAL FOOT
COORDINATE SYSTEM: OREGON COORDINATE REFERENCE SYSTEM, OREGON COAST ZONE

FIELD SURVEY CONDITIONS OBSERVED AUGUST, 2017

UNDERGROUND UTILITY LOCATION DISCLAIMER: MAGYAR LAND SURVEYING LLC MAKES NO CLAIMS AS TO THE POSITIONAL ACCURACY OR VALIDITY OF ANY UNDERGROUND UTILITY FEATURES SHOWN HEREIN. ALL UNDERGROUND FEATURES ARE SHOWN RELATIVE TO PAINTED MARKS OBSERVED ON THE GROUND AS OF THE AFOREMENTIONED DATE.

DRAWING 17007sv52 – 12/4/2017

COLUMBIA RIVER

VACATED 6-3-1974
ORD# 74-05
BOOK 387 PAGE 735

55 4TH ST

HEADWALL
14.70

OUTFALL @ RIP RA
14.98

TROLLEY SHELTER

S.P. & S. RAILROAD

RIVERWALK

TRESTLE

TRESTLE

STEEL OUTFALL
14.98

TIMBER BULKHEAD
6x12 PLANKING AGAINST
EXISTING PILINGS

SHIPS INN

1

2-10-SD

6" PLAS. 1977

6" ABANDONED

1" GAS

6" P.V.C. 1973

STORM

SAN

1" PLAS.

STATE PARKING LOT

2ND ST

MINI MART

180

106

2-96-D

2-95-D

144' BOBS TIMES MAP
EL. 14.61

MD-202-CS

MD-250-CO

MD-256-CO

2" & 6" GAS

MD-302-CS

MD-300-I

MD-200-I

MD-201-CS

EL. 14.52

2-110-CS

MD-251-CO

MD-261-CO

MD-301-CS

3RD ST

BURGER KING

W.M. ASTORIA SEAFOOD

2" P.V.C. 1981

4" C.I. ABANDONED

3" P.V.C. 1981

4" PLUGGED

4" C.I.

4" C.I. LAID 1895

8" SS
EL. 17.51

MD-350-CO

MD-360-CO

MD-349-CO

350

CLOSED & ABANDONED

4TH ST

18" Casing

Partial Video Survey

4" C.I. 1918

4" C.I. LAID 1918

4" C.I. 1979

4" C.I. 1981

4" C.V.

4" ABAND.

8" C.I. ABAND.

8" C.I. LAID 1918

8" C.I.

8" P.V.C.

8" S.S.

12" S.D.

12" D.I.P. 2011

30" R.C.P. S. S.

24" R.C.P. 1975

12" D.I.P.

MD-173-I

MD-177-I

MD-175-I

Pump Station #4

MCB.P. MAIN SEWER

MD-315-CO

MD-402-CS

MD-400-I

MD-401-CS

MD-359-CO

4-112-CS

4-154-CS

4-156-D

FL. 19.63

EL. 11.98

4" GAS

1" Cap

SEE MAP 409c

SEE MAP 411

SEE MAP 510

106 115 125 175 195 180 203 241 261 256 110 122 134 146 145 303 321 331 349 389 397 155

2/10/2016

410

COLUMBIA RIVER

RIVERWALK

1" Meter New Eag. Fish

2" Meter Union Oil Dock

1" Cop.

1 1/4" Drain Valve

SEE MAP 409d

COLUMBIA RIVER

3" Plastic ABAND.

SEE MAP 410

18" CSP

WM-66-SD

70

44

Fireline Valve

W. MARINE DR.

W MARINE DR.

HP GAS

2" & 6" GAS

30" Sewer

8" D.I. ABAND.

8" C.I. ABAND.

30"

WM-64-I

8" PVC

Connect to Exist. 8" Under Exit.

12" D.I.P. 2011

8" C.I. 1895

8" PVC in 30" Casing

ABAND. 6" C.I.

WM-75-CO

6" PVC Sewer

WM-66-CS

WM-73-CO

Pipeline

15' Utility Easement INST.# 202005646

EASE #R-04301

Contact Rob Hood of DEQ
Before Excavating Around
or Adjacent to the Property

1ST ST
(VACATED R.O.W.)

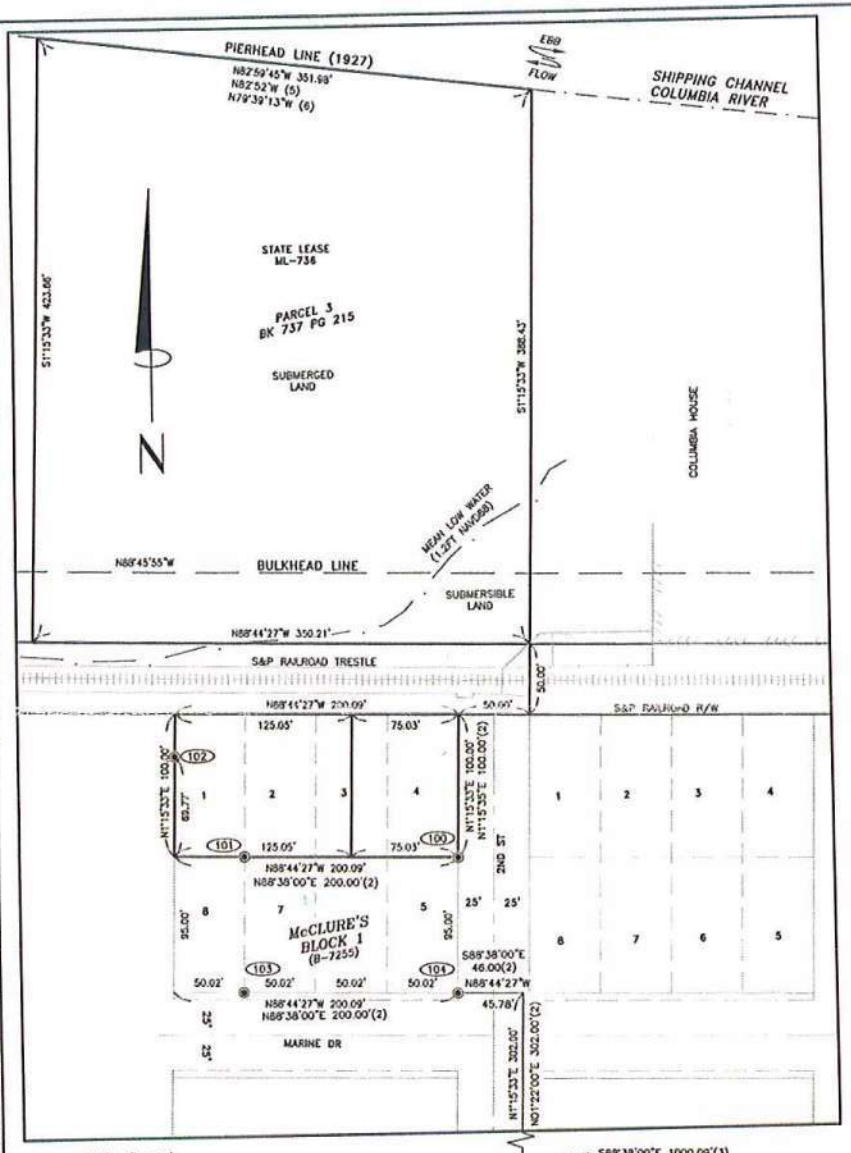
Storm (Applied)

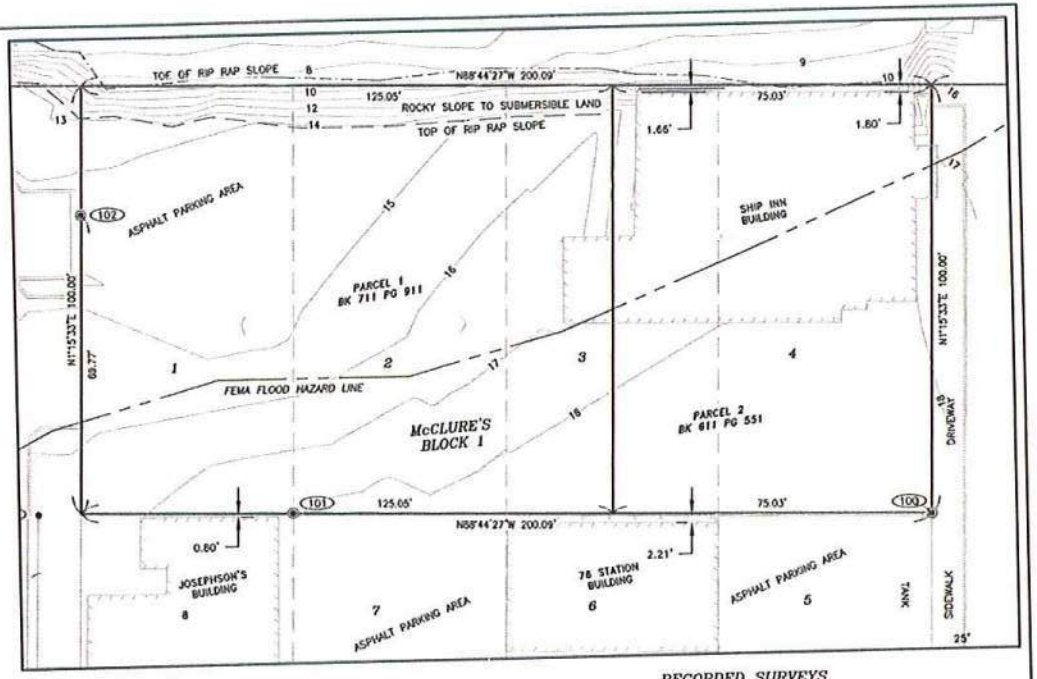
C.O.

SEE MAP 609a

4/6/2015

409c





DETAIL 'B' 1"=20'

SURVEY NARRATIVE

THE PURPOSE OF THIS SURVEY IS TO SHOW THE BOUNDARY FOR LOTS 1-4, BLOCK 1 OF McCLURE'S ASTORIA AND THE LIMITS OF A CERTAIN STATE LANDS LEASE FOR M-L 736 AS DESCRIBED IN PRELIMINARY TITLE REPORT # 0051572-OC AS ISSUED BY TICOR.

THE CONTROLLING MONUMENTS AS SHOWN HEREON ARE A CITY OF ASTORIA ENGINEERING LEAD PLUG AT THE CORNER OF 6TH AND BOND STREET (105) AS SHOWN IN CITY OF ASTORIA ENGINEERING DRAWING No. 3-4 AND A BRASS SCREW AND DISK AS AT THE CORNER OF 2ND AND BOND STREET (105) AS PERPETUATED IN CS# B-12199.

IN 1981 ROBERT HOVDEN PERFORMED A BOUNDARY SURVEY FOR LOTS 5-7 OF McCLURE'S BLOCK 1 (CS# B-7255) AND KARL FOESTE PERFORMED A BOUNDARY SURVEY FOR THE PARCEL TO THE WEST OF McCLURE'S BLOCK 1 (CS# B-7435). CONTROLLING MONUMENTS FOR THE EAST LINE OF SAID BLOCK 1 ARE HOVDEN'S (100) AND (104). ADDITIONALLY HOVDEN'S (101) AND (103) WERE USED TO PROPORTION THE WEST LINE OF SAID BLOCK 1. FOESTE'S (102) IS A CHECK ON THAT PRORATION.

TO DETERMINE THE PIERHEAD AND BULKHEAD LINE, THIS SURVEY REFERENCED THE 1927 USACE DRAWING HARBOR LINES ASTORIA AND VICINITY AND A SURVEY FOR: No. 10 SIXTH STREET BY FOESTE (CS#B-12025).

BASIS OF BEARING

THE LINE BETWEEN MONUMENT (105) & (106) AS SHOWN HEREON BEARS S88°44'27"E 1000.22'.

METADATA STATEMENT

UNITS: INTERNATIONAL FOOT
GEOMETRIC DATUM: NAD 83 (2011) AS DEFINED BY THE ORGN.
VERTICAL DATUM: NAVD 88 (GEOID 12B)
COORDINATE SYSTEM: OCRS, OREGON COAST ZONE

CONTROLLING COORDINATE FOR #105
N: 1736140.093'
E: 496131.805'
HT: 20.12'

RECORDED SURVEYS

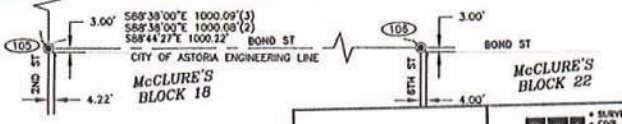
(1) McCLURE'S ASTORIA MAP BOOK 0-1
(2) RECORD OF SURVEY FOR L. SHIMER CS# B-7255
(3) RECORD OF SURVEY FOR SAMBO'S RESTAURANT CS# B-7435
(4) BOUNDARY LINE ADJUSTMENT FOR CHARLES BARKER CS# B-12199
(5) HARBOR LINES ASTORIA OREGON AND VICINITY, USACE, 1927
(6) SURVEY FOR No. 10 SIXTH STREET, CS#B-12025
(7) CITY OF ASTORIA ENGINEERING DRAWING 3-4.

MONUMENT NOTES

(100) FOUND 5/8" REBAR W/ YELLOW PLASTIC CAP, ILLEGIBLE (CS# B-7255 HOVDEN 1981)
(101) FOUND 5/8" REBAR W/ YELLOW PLASTIC CAP "LS 954" (CS# B-7255 HOVDEN 1981), NORTH 0.11' OF CALCULATED POSITION.
(102) FOUND 5/8" REBAR W/ YELLOW PLASTIC CAP "LS 849" UNDER CONCRETE CURB (CS# B-7435 FOESTE 1981), SOUTH 30.22' AND WEST 0.79' OF CALCULATED POSITION OF NW CORNER OF LOT 1. MONUMENT IS 0.04' WEST OF LINE, HELD FOR LINE.
(103) FOUND 5/8" REBAR 0.16' NORTH OF SIDEWALK (CS# B-7255 HOVDEN 1981), NORTH 0.22' OF CALCULATED POSITION.
(104) FOUND 5/8" REBAR W/ YELLOW PLASTIC CAP "LS 954" UNDER CONCRETE SIDEWALK (CS# B-7255 HOVDEN 1981), EAST 0.06' OF CALCULATED POSITION.
(105) FOUND BRASS SCREW AND 3/4" BRASS WASHER "HLB OTAK INC." IN CONCRETE SIDEWALK (CS# B-12199 BARRETT 2007), WEST 0.14' OF RECORD POSITION.
(106) FOUND BRASS TACK IN LEAD PLUG IN CONCRETE SIDEWALK (CS# B-7255 HOVDEN 1981), HELD AS CITY ENGR'S MONUMENT.

LEGEND

- FOUND BOUNDARY MONUMENT AS NOTED
- FOUND ASTORIA ENGINEERING MONUMENT AS NOTED
- FOUND MONUMENT AS NOTED
- PROPERTY LINE
- LOT LINE
- EDGE OF ASPHALT
- BUILDING FOOTPRINT
- GUARD RAIL



FLOOD INSURANCE RATE MAP INFORMATION

COUNTY: CLATSOP
MAP NUMBER: 41007C0229E
EFFECTIVE DATE: SEPTEMBER 17, 2010
BASE FLOOD ELEVATION: 12 FEET

S:\67951\B129.DWG

otak
• SURVEYING
• CIVIL ENGINEERING
• PLANNING
• WATER & NATURAL RESOURCES
• WETLAND CONSULTING
CLATSOP COUNTY
4253-A HWY 101 N.
GEARHART, OR 97138
(503) 738-3433
FAX: (503) 738-7455
TILLAMOOK COUNTY
PHONE (503) 368-5394
PACIFIC COUNTY
PHONE (360) 642-4464
WWW.OTAK.COM

DATE	JOB NO.	EQUIPMENT	FIELD	DRAWN	CHECKED
MAY 12, 2016	67951	R8/S8/TSC3	MSM/MAG	MAG	DNB

SURVEY FOR:
HOLLANDER INVESTMENTS SHIP INN BOUNDARY SURVEY
LOTS 1-4, BLOCK 1, McCLURE'S ASTORIA & SUBMERGED LEASE SITE ML-736

SW1/4 SECTION 8, T8N, R9W, W.M.
CLATSOP COUNTY

REGISTERED PROFESSIONAL LAND SURVEYOR
Dale Barrett
OREGON
JULY 16, 1982
DALE N. BARRETT
1979
RENEWS: DECEMBER 31, 2017

N:\Project\67900\67951\Survey\Maps\s67951b129.dwg Plotted: May 12, 2016 - 1:01pm By: mkem

CARLETON HART ARCHITECTURE P.C.
830 sw 10th avenue #200 portland oregon 97205
503 243 2252 | www.carletonhart.com

APPENDIX D:

ASTORIA CITY CODE 6.100 VISION CLEARANCE AREA

the stop must not interfere with a bus or taxicab about to enter or using the zone.

(2) Except as provided in subsection (3), use of the bus zones shall not exceed 15 minutes.

(3) A driver of a vehicle may stop, stand or park in a bus stand between the hours of 8:00 PM and 6:00 AM when the buses are not scheduled to run and are not using the bus stands.

(4) The city manager, by written rules and regulations, may allow other uses of bus stands at times when they are not required for bus use. *[Section 6.085 amended by Ordinance No. 86-21, passed November 17, 1986.]*

6.090 **Lights on Parked Vehicles**. No lights need be displayed on a vehicle parked in accordance with this code that is on a street where there is sufficient light to reveal a person or object on the street within a distance of 500 feet.

6.095 **Exemption**. The provisions of this code regulating parking or standing of vehicles shall not apply to any vehicle of a city department or public utility while necessarily in use for construction or repair work on the street or any vehicle owned by the United States while in use for the collection, transportation or delivery of United States mail.

6.100 **Vision Clearance Area**.

(1) Definitions.

As used in this ordinance or in the interpretation of this ordinance, the following terms will have the meanings indicated:

Central Business District: An area bounded to the west by 7th Street, on the east by 16th Street, on the north by the Columbia River and on the south by properties abutting Exchange Street.

Non-Residential Zones: All zones other than the R-1 Zone (Low Density Residential), R-2 Zone (Medium Density Residential), and R-3 Zone (High Density Residential).

(2) Clearance Area.

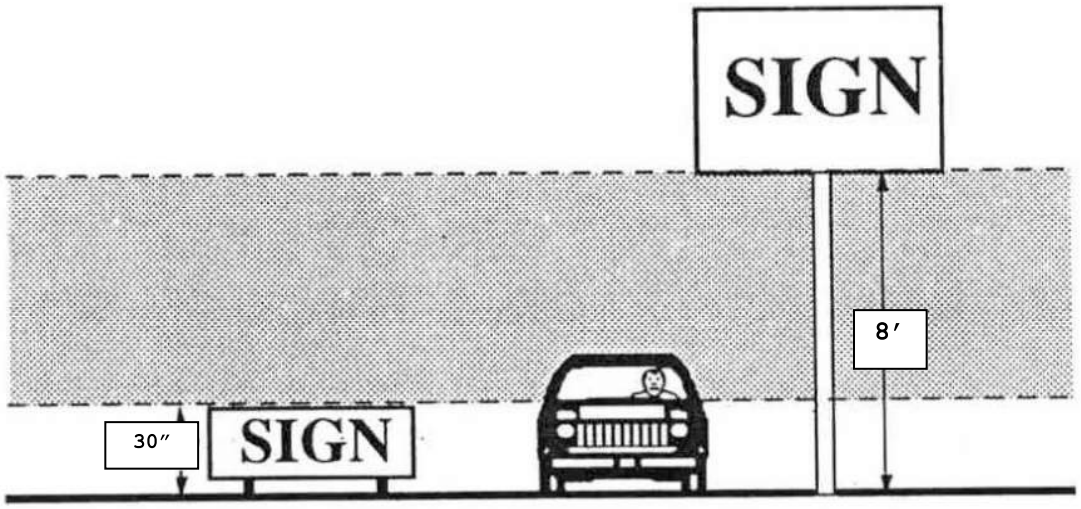
The vision clearance area shall not contain any plantings, walls, structures or temporary or permanent obstructions to vision between thirty (30) inches and eight (8) feet in height above the street (Figure 1) except as follows:

a. Supporting pillar, post, or trunk not greater than twelve (12) inches in diameter or twelve (12) inches on the diagonal of a rectangular pillar or post.

b. Posts or supporting members of street signs, street lights, and traffic control signs installed as directed by the Department of Public Works or any other sign erected for public safety.

c. Sign portion of traffic control signs installed by the Department of Public Works or Oregon Department of Transportation in compliance with the Manual on Uniform Traffic Control Devices.

Figure 1: Vision Clearance Area Height



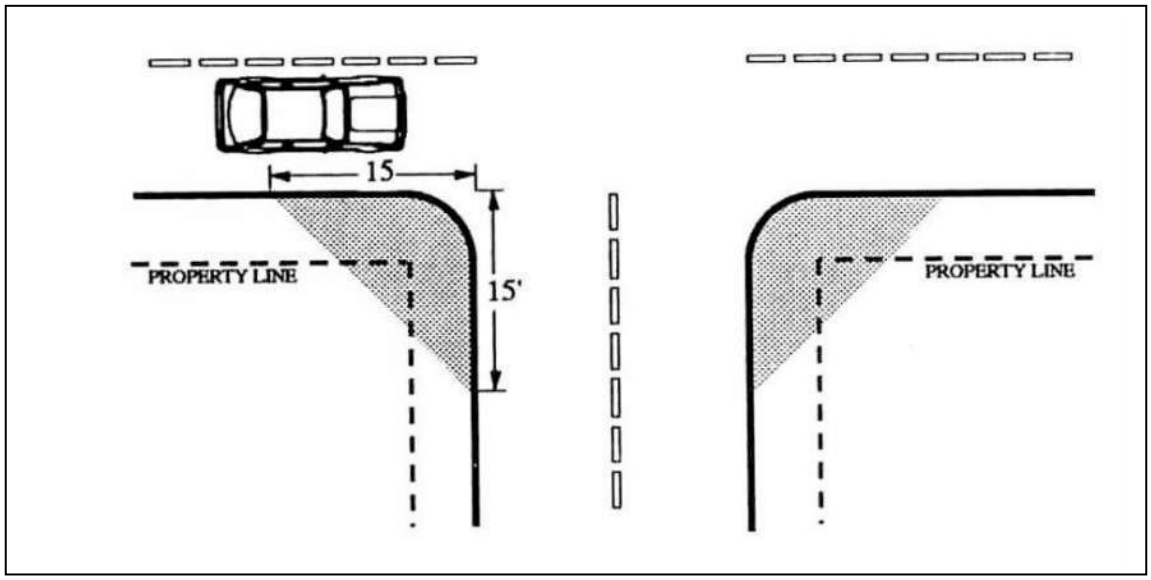
Vision clearance shall not be required at a height of eight (8) feet or more above the street or on hills above opposing drivers' eye level.

The City Engineer may adjust vision clearance area requirements as needed for safety, depending on intersection angle, topography, or other conditions, including the clustering of poles in an area.

(3) Streets and railroads.

A vision clearance area shall consist of a triangular area, two sides of which are 25-foot lengths along the outside curb edges of streets, or the paved area of a street without a curb, and/or edges of gravel beds of railroads and the third side of which is a line across the corner of the lot connecting the ends of the other two sides (Figure 2).

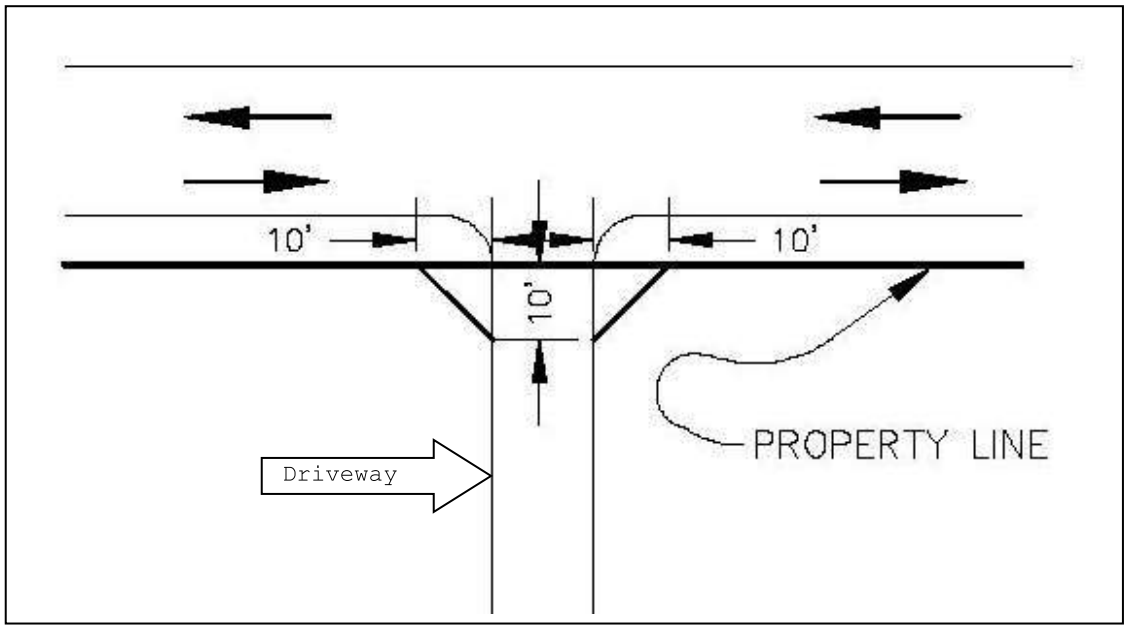
Figure 2: Vision Clearance Area for Streets and Railroads



(4) Alleys and residential driveways.

A vision clearance area shall consist of a triangular area, two sides of which are 10-foot lengths along the property line and edge of the driveway or alley and the third side of which is a line across the corner of the lot connecting the ends of the other two sides (Figure 3).

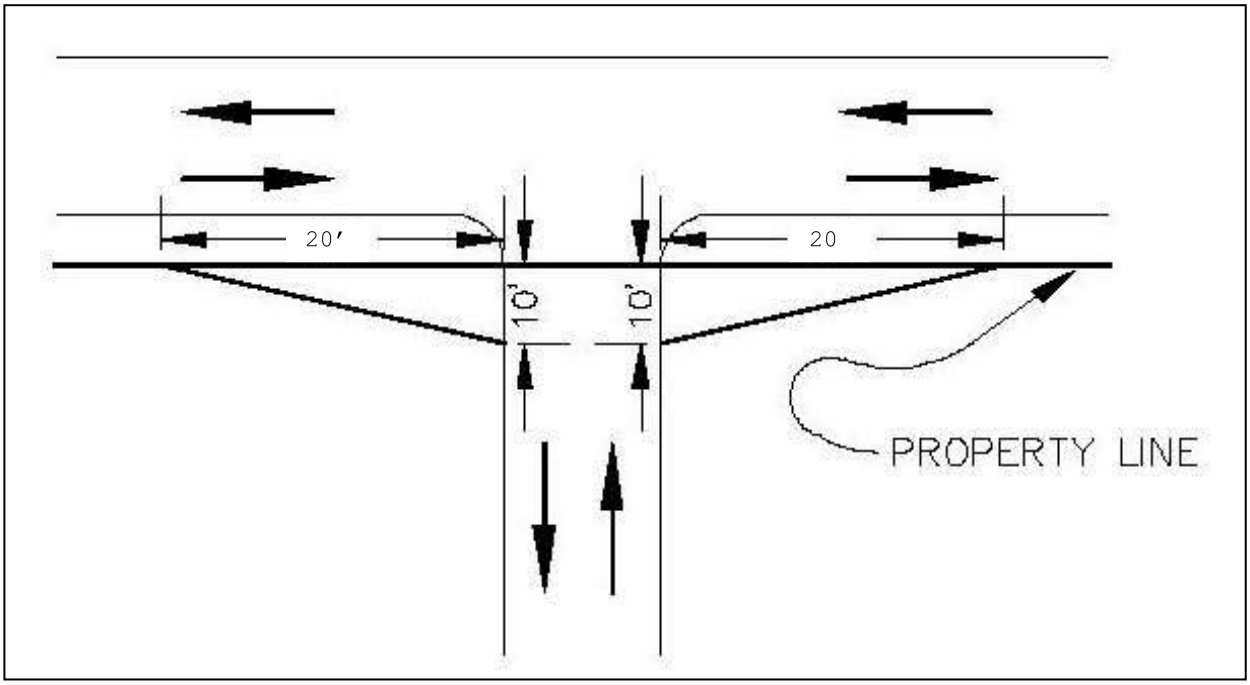
Figure 3: Vision Clearance Area for Alleys and Residential Driveways



(5) Non-residential driveways.

A vision clearance area shall consist of a triangular area, two sides of which are 20-foot and 10-foot lengths along the property line and edge of the driveway, respectively, and the third side of which is a line across the corner of the lot connecting the ends of the other two sides (Figure 4).

Figure 4: Vision Clearance Area for Non-Residential Driveways



(6) Intersection Parking.

In the Central Business District and Non-Residential Zones, no vehicle over five (5) feet in height, with shaded windows, blocked windows, or no windows shall park or stand in a marked parking space within twenty (20) feet of the intersection, unless the intersection is controlled by a traffic signal or the parking stall is located on the departing leg of a one-way street.

(7) The above sections shall not be construed as a waiving or altering of any yard requirements or setback requirements that may be required by this or any other ordinance. *[Section 6.100 amended by Ordinance No. 14-04, passed April 21, 2014.]*

CARLETON HART ARCHITECTURE P.C.
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APPENDIX E:
TRAFFIC IMPACT STUDY

KITTELSON & ASSOCIATES
851 SW 6th AVENUE, SUITE 600
PORTLAND, OR 97204
P 503.228.5230 F 503.273.8169

March 14, 2018 Project #: 22383

Nathan Crater, P.E.
City of Astoria
1095 Duane Street
Astoria, OR 97103

Keith P. Blair, P.E.
Oregon Department of Transportation (ODOT) Region 2
455 Airport Road SE, Building A
Salem, Oregon 97301

RE: Astoria Fairfield Inn & Suites Transportation Impact Study – Astoria, OR

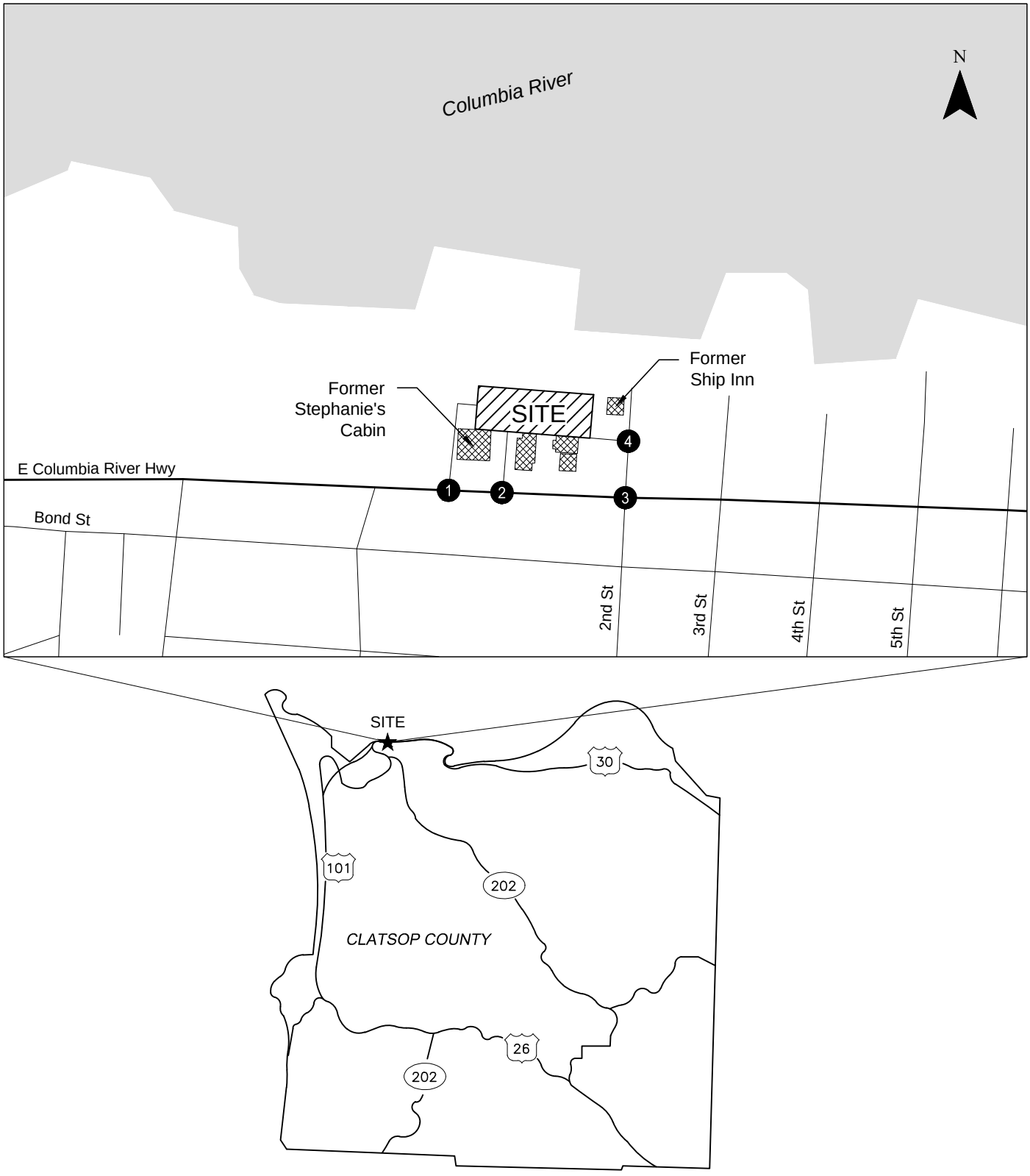
Dear Nathan and Keith,

This Transportation Impact Study (TIS) has been prepared to support development of the proposed Fairfield Inn & Suites hotel in Astoria, OR. This letter includes the following analyses:

- Operational assessment of the Marine Drive/2nd Street intersection, a proposed new 2nd Street/site access driveway, and two existing private access driveways off of Marine Drive that would provide access to the site.
- Trip generation and trip distribution estimate for the proposed Fairfield Inn & Suites.
- Operational and safety assessment of the Marine Drive/2nd Street intersection and adjacent driveways under full site build-out of the proposed hotel.
- Intersection sight distance evaluations at the adjacent Marine Drive driveways.

BACKGROUND

Hollander Hospitality and Carleton Hart Architecture are proposing to develop a 66-room Fairfield Inn & Suites hotel in Astoria. The hotel will be located on the northern half of the block bounded by Marine Drive to the south, 2nd Street to the east and the Columbia River/Astoria Riverwalk to the north/west. Figure 1 shows the site vicinity. The hotel will have a full access driveway located off of its 2nd Street frontage. This driveway will provide access to the hotel loading zone as well as access to the hotel's parking located in the northwest corner of the site. In addition to this driveway, the site can be accessed off of Marine Drive via two existing driveways that serve a currently vacant restaurant (formerly Stephanie's Cabin). A site plan illustrating the Fairfield Inn & Suites and noted site driveways is shown in Figure 2. For the purposes of this analysis, it has been assumed that full build out and occupancy of the Fairfield Inn & Suites will occur in 2019.

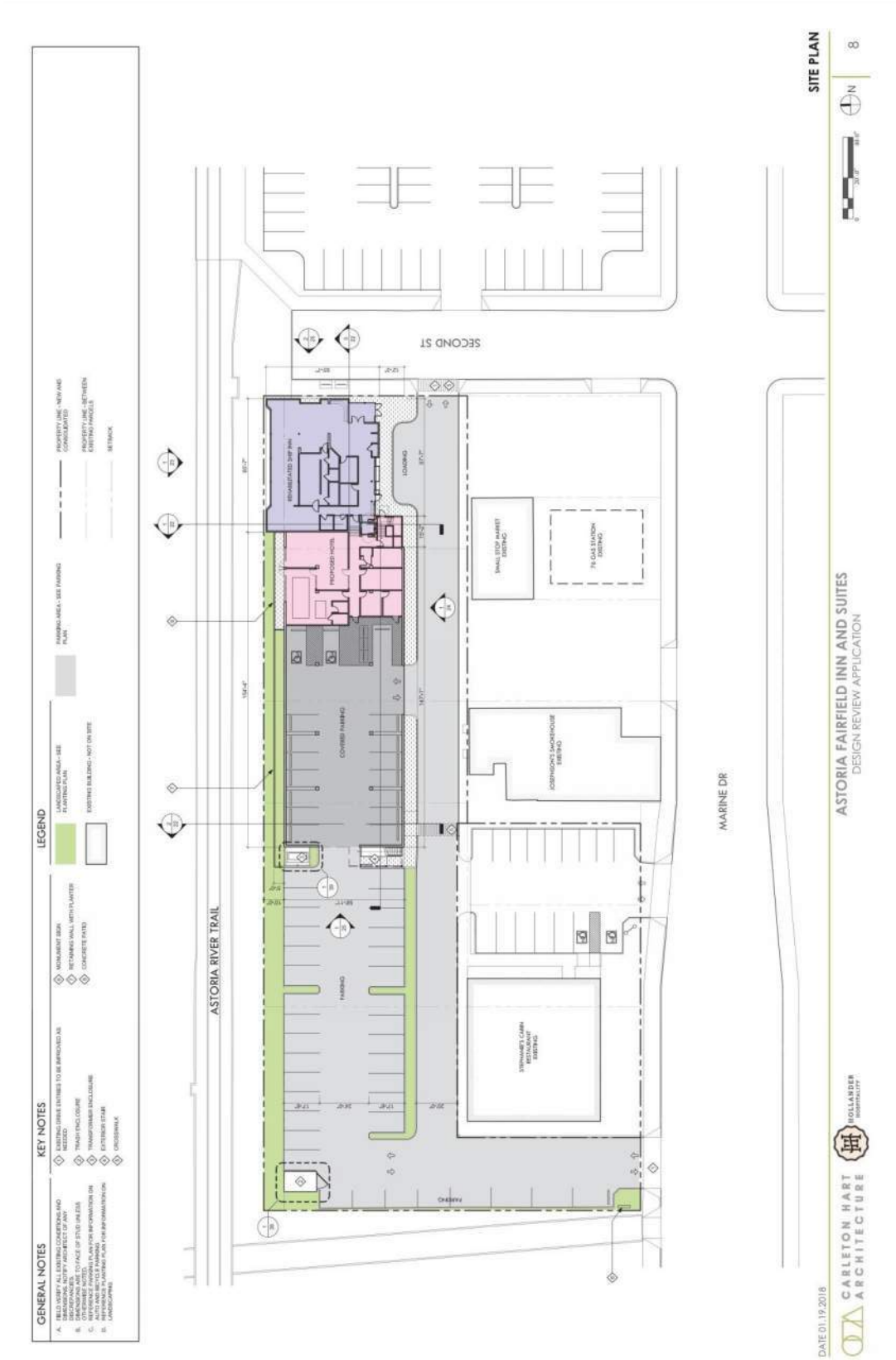


(##)- Study Intersections

Site Vicinity Map
Astoria, Oregon

Figure
1

Figure 2 – Site Plan (Prepared by Carleton Hart Architecture)



STUDY SCOPE & ANALYSIS METHODOLOGY

This section provides an overview of the TIS study scope, study methodology, applicable operating standards, and the report structure.

Study Scope

This analysis identifies the transportation-related impacts associated with the proposed hotel. The study was prepared in accordance with the City of Astoria's traffic impact study requirements and supplemental direction provided by ODOT. The study scope and overall study area for this project were selected based on an analysis of current and future traffic volumes at the study intersections and discussions with both City and ODOT staff.

Traffic Analysis Time Periods and Horizon Year

At the request of City staff, study intersection operations were analyzed during the weekday evening peak hour (intersection peak hour between 3:00-6:00 PM). On- and off-site infrastructure needs were assessed assuming completion and occupancy of the hotel by 2019.

- Existing PM peak hour conditions;
- 2019 PM peak hour background conditions (prior to site development); and
- 2019 PM peak hour total traffic conditions (upon completion and occupancy of the proposed hotel).

Analysis Methodology

The unsignalized intersection operational analyses presented in this report were prepared following Highway Capacity Manual 2010 analysis procedures using Synchro 9 software.

Performance Measures & Operating Standards

Intersection performance measures reported in this study include level of service (LOS), volume-to-capacity ratio (V/C), and delay according to the following requirements.

ODOT Mobility Standard

ODOT's mobility target for the stop-controlled minor street approach to intersections along Marine Drive is an intersection V/C ratio no greater than 0.85 during the peak 15-minutes as identified in the Oregon Highway Plan.

City of Astoria Operating Standard

The City of Astoria has not adopted intersection operating standards and therefore generally relies on ODOT standards.

EXISTING CONDITIONS TRAFFIC ANALYSIS

The existing conditions analysis identifies field conditions and the current operational, traffic control, and geometric characteristics of the roadways and other transportation facilities within the study area. These conditions will be compared with future opening year conditions later in this report. KAI staff visited the study area and inventoried the existing transportation system to identify lane configurations, traffic control devices, bicycle and pedestrian facilities, geometric features, and sight distances at the study intersections in January 2018.

Site Conditions and Adjacent Land Uses

The proposed development site is located west of 2nd Street on the northerly half of land between Marine Drive and the Columbia River/Astoria Riverwalk. An existing vacant structure (the former Ship Inn Restaurant) is located on the northeast corner of the site. Immediately south of the site is an existing gas station and Josephson's Smokehouse. Southwest of the site is an existing vacant structure that was formerly Stephanie's Cabin restaurant.

Transportation Facilities

This section provides a multi-modal overview of transportation facilities in the site vicinity.

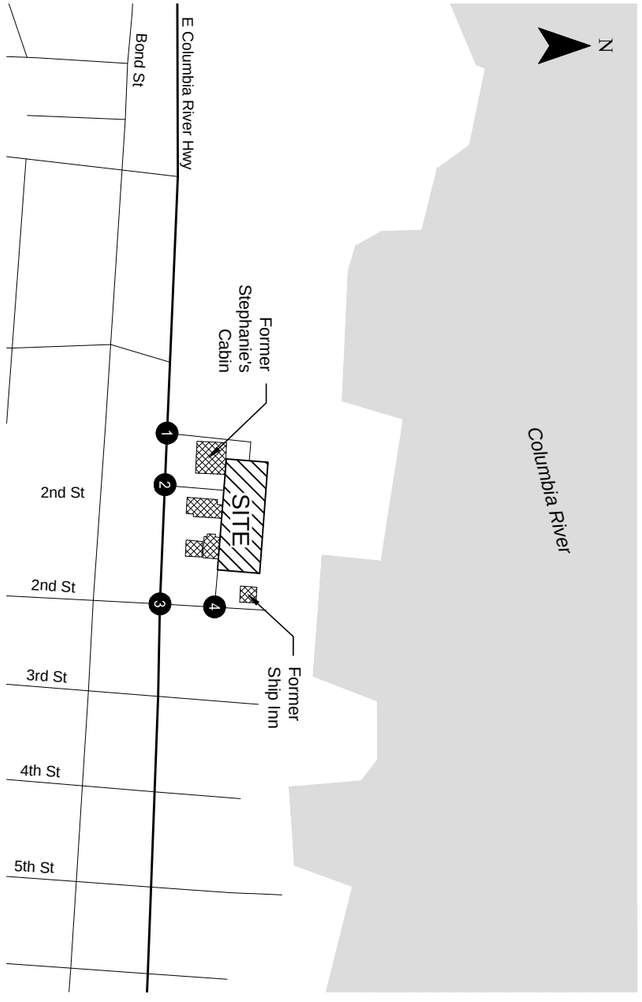
Roadway Facilities

Figure 3 summarizes the existing lane configurations and traffic control devices at the study intersection and driveways. Table 1 summarizes roadways in the site vicinity that are assessed as part of the traffic impact study.

Table 1 - Existing Transportation Facilities

Roadway	Functional Classification	Jurisdictional Authority	Number of Auto Lanes	Posted Speed (mph)	Sidewalks Present?	Bicycle Lanes Present	On-Street Parking Allowed?
Marine Drive (US 30)	Statewide Highway	ODOT	4[1]	25[2]	Yes	No	No
2nd Street	Mixed Use Local Street (north of Highway 30) Residential Local Street (south of Highway 30)	City of Astoria	2	Not posted	Yes	No	Yes

[1] Marine Drive transitions into a five-lane cross section just west of the site.
[2] The posted speed on Marine Drive/US 30 increases to 30 mph just west of the site.



EXISTING LANE CONFIGURATIONS & TRAFFIC CONTROL DEVICES

EXISTING TRAFFIC VOLUMES
PM PEAK HOURS

BACKGROUND TRAFFIC VOLUMES
PM PEAK HOURS

ADDED TRAFFIC VOLUMES
PM PEAK HOURS

TOTAL TRAFFIC VOLUMES
PM PEAK HOURS

CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = CRITICAL MOVEMENT LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL CRITICAL VOLUME-TO-CAPACITY RATIO

- STOP SIGN
- TRAFFIC SIGNAL

Existing Lane Configurations & Traffic Control Devices
Existing & Future Traffic Operations, PM Peak Hour Volumes
Astoria, Oregon

Figure 3

KITTELSON & ASSOCIATES

Existing Traffic Volumes

Turning movement counts were conducted at the Marine Drive/2nd Street intersection and noted driveways between 3:00 PM and 6:00 PM on a mid-week day in January 2018. Peak traffic volumes were observed at the intersection and driveways between 4:20 and 5:20 PM. Per the ODOT Analysis Procedures Manual (APM) (Reference 3), the existing traffic volumes along Marine Drive were seasonally adjusted based on guidance contained in the APM. Specific details and information related to these calculations are provided in Appendix A. Figure 3 shows the resulting turning movement counts at the study intersections and driveways during the weekday PM peak hour. *Appendix "A" contains the traffic count worksheets used in this study and the seasonal adjustment calculations.*

Existing Intersection Operations

Operations of the study intersections were assessed using the previously described methodology and were compared to the ODOT mobility targets. Figure 3 summarizes the individual intersection/driveway performance in terms of V/C ratio and delay. As shown, the side-street movements at the study intersections/driveways satisfy ODOT's V/C ratio target (less than or equal to 0.85 for unsignalized intersections). While the critical side-street movements will have sufficient capacity, these movements can experience relatively long delays during the peak time periods. *Appendix "B" includes the existing conditions intersection operations analysis worksheets*.

Intersection Crash History

The crash histories at the individual study intersections were obtained and reviewed in an effort to identify potential safety issues. ODOT provided crash records for the study intersections for the five-year period from January 1, 2010 through December 31, 2014. Table 2 summarizes the ODOT crash data.

Table 2 - Study Intersection Crash Summary (2011-2015)

Intersection	Total	Collision Type						Severity		
		Rear-end	Turning	Pedestrian	Angle	Fixed Object	Other	PDO	Injury	Fatal
Marine Drive/2nd Street	2	1	1	0	0	0	0	2	0	0
Marine Drive/East Driveway	2	2	0	0	0	0	0	1	1	0
Marine Drive/West Driveway	1	1	0	0	0	0	0	1	0	0

PDO = Property Damage Only

Given the relatively low number of reported crashes, no trends or safety deficiencies were identified in the study area that require a more detailed safety analysis. *Appendix "C" includes the crash data sheets.*

While the crash data alone did not result in identification of safety-based mitigation needs attributable to the proposed Fairfield Inn & Suites, some changes were identified for consideration in conjunction with site development. In particular, field observations noted that intersection sight lines at the Marine Drive driveway flanking the east side of the former Stephanie's Cabin Restaurant /east driveway are limited by the Josephson's Smokehouse building. Currently, signage has been placed at the driveway indicating drivers should not exit onto Marine Drive via this driveway. It is recommended that the driveway continue to be operated as an ingress-only.

YEAR 2019 BACKGROUND TRAFFIC CONDITIONS

The year 2019 background traffic analysis identifies how the study area's transportation system will operate prior to development of the proposed hotel. This analysis includes traffic attributed to planned developments within the study area and to general growth in the region, but does not include traffic from the proposed development.

Planned Developments & Transportation Improvements

No formally approved in-process developments were identified by City or ODOT staff that would materially impact study intersection/driveway operations. Further, no planned improvements were identified at the study intersection and driveways that would impact operations.

As previously stated, a currently vacant restaurant (formerly Stephanie's Cabin) is located southwest of the site between the two Marine Drive study driveways. Based on conversations with the Fairfield Inn & Suites development team (who also own the former restaurant site), it is likely that the restaurant building will be reopened as a new eating establishment at some point in the future. While this will occur as a separate land use review process, future occupancy of the restaurant was conservatively

assumed as part of this study given its significance as a future trip generator that is located immediately adjacent to the proposed hotel site. To account for this trip potential, weekday PM peak hour vehicle trips were calculated for a 3,500 square-foot high-turnover sit-down restaurant as summarized in *Trip Generation, 9th Edition,* published by the Institute of Transportation Engineers (Reference 4). These trips were then assigned to the two Marine Drive study driveways and incorporated into the year 2019 background traffic volumes.

Table 3 – Trip Generation for the Assumed Reuse of Stephanie's Cabin Restaurant

Lane Use	ITE Code	Size	Total Daily Trips	Weekday PM Peak Hour		
				Total	In	Out
High-Turnover (Sit-Down) Restaurant	932	3,500 sq. ft.	446	34	20	14

2019 Future Traffic Volumes & Intersection Operations

A 1.4 percent annual growth rate was assumed at the Marine Drive/2nd Street intersection and on the east-west through movements at the two Marine Driveway study driveways. This growth rate was calculated based on future year growth projections developed in the City of Astoria's 2013 Transportation System Plan (TSP). Figure 3 shows the projected 2019 turning movements at the study intersection and study driveways along with the corresponding operations. As shown in the figure, operations are forecast to continue to satisfy the applicable ODOT mobility target. However, like existing conditions, the critical side-street movements are forecast to continue to experience relatively long delays during the peak time periods. *Appendix "D" contains the year 2019 background traffic analysis worksheets.*

DEVELOPMENT PROPOSAL

Hollander Hospitality is proposing to develop a new 66-room Fairfield Inn and Suites hotel. The hotel will be located immediately west of the former Ship Inn restaurant. This former restaurant will be rehabilitated and repurposed as the entry lobby and dining area for the Fairfield Inn & Suites. Hotel parking will be provided along the west end of the project site. In addition to this parking, approximately 35 spots are planned to be leased (pending an agreement with the owner) from the parking lot located on the east side of 2nd Street.

Primary vehicular access to the hotel will be via a new driveway located off of 2nd Street near the hotel lobby. In addition, the site will have access via internal parking lot crossover connections to the former Stephanie's Cabin restaurant which is located adjacent to and southwest of the hotel site. As such, vehicular access will also be available via the two existing Marine Drive driveways that flank this former restaurant.

Hotel Trip Generation Estimate

Estimates of daily and weekday PM peak hour vehicle trip ends were calculated from empirical observations at other similar developments obtained from *Trip Generation, 9th Edition*. Table 4 shows the resulting estimated trip generation for the proposed hotel.

Table 4 – Hotel Trip Generation Estimate

Land Use	ITE Code	Size	Total Daily Trips	Weekday PM Peak Hour		
				Total	In	Out
Hotel	310	66-rooms	540	40	20	20

Trip Distribution and Assignment

The distribution of site-generated trips was estimated based on current turn movement patterns along Marine Drive and roadway connectivity in the site vicinity. The resulting trip distribution pattern and assignment of site-generated trips at the study intersection and driveways are graphically illustrated in Figure 3.

YEAR 2019 TOTAL TRAFFIC CONDITIONS

The total traffic conditions analysis forecasts how the study intersections will operate with the traffic generated by the proposed Fairfield Inn & Suites. The weekday PM peak hour site-generated traffic was added to 2019 background traffic volumes to arrive at the total traffic volumes shown in Figure 3. *Appendix "E" contains the year 2019 total traffic analysis worksheets.*

As shown in Figure 3, all of the study intersections and driveways are projected to continue to satisfy the applicable ODOT V/C mobility target. However, like existing and background conditions, the critical side-street movements are forecast to continue to experience relatively long delays during the peak time periods.

DRIVEWAY INTERSECTION SIGHT DISTANCE

As previously noted, the driveway flanking the east side of the former Stephanie's Cabin restaurant is signed on site for no egress onto Marine Drive. This appears to be due to the limited intersection sight distance created by the adjacent Josephson's Smokehouse building as shown in Exhibits 1.

Given the site-generated trips from the proposed Fairfield Inn & Suites will be able to access this driveway, it is recommended that supplemental signage be installed on the Fairfield Inn & Suites internal drive aisle directing drivers to the driveway flanking the west side of Stephanie's Cabin in order to access Marine Drive.

Exhibit 1 – Facing East Along Marine Drive from the Eastern Study Driveway

SUMMARY AND RECOMMENDATIONS

The results of this traffic impact study indicate that the proposed Fairfield Inn & Suites can be accommodated by the surrounding transportation system. The findings and recommendations of this analysis are discussed below.

Findings

- All of the study intersections satisfy the applicable ODOT V/C mobility target during the weekday PM peak hour under existing and forecast 2019 conditions.
- With the inclusion of new traffic from the proposed Fairfield Inn & Suites, all of the study intersections and site driveways are projected to continue to satisfy the applicable ODOT V/C mobility target.
- The study driveway flanking the east side of the former Stephanie's Cabin restaurant should continue to be operated as ingress only due to the existing sight distance limitations associated with egress movements.

Recommendations

Based on the traffic analysis, the following transportation improvements are suggested in conjunction with site development:

- Signage should be placed along the Fairfield Inn & Suites drive aisle directing drivers destined for Marine Drive to use 2nd Street or the driveway flanking the west side of the former Stephanie's Cabin restaurant.
- On-site landscaping and any above ground utilities at the site access driveways and internal roadways should be maintained to provide adequate sight distance.

We trust this study adequately addresses the traffic impacts associated with the proposed Fairfield Inn & Suites. Please contact us if you have any questions or comments regarding the contents of this report or the analyses performed.

Sincerely,
KITTELSON & ASSOCIATES, INC.

Matt Hughart, AICP
Associate Planner

Kylie Caviness
Transportation Analysis

Appendix A Traffic Count Worksheets and Seasonal Factor Calculations

Seasonal Adjustment Factor

30th Hour Volumes (30 HV) were calculated based on the traffic counts collected in January of 2018 and the application of a seasonal adjustment factor. The APM identifies three methods for identifying seasonal adjustment factors for highway traffic volumes. All three methods utilize information provided by Automatic Traffic Recorders (ATR) found in select locations throughout the State Highway System that collect traffic data 24-hours a day/365 days a year.

The first method, the On-site ATR method, is typically used when there is an ATR located nearby. In this case, ATR 04-004 is located west of the site on the Astoria-Megler Bridge. However, based on feedback provided by ODOT, it was felt that this ATR and the traffic volumes that it captures does not provide a sufficient representation of volumes on Marine Drive near the project site. ODOT staff also felt that the study section of Marine Drive is not reasonably represented using the larger collection of ATRs in the ATR Characteristic Table Method. As such, the Seasonal Trend Method was utilized.

It was determined in consultation with ODOT staff that this section of Marine Drive fits an average of the "Coaster Destination" and "Coastal Destination Route".

Table 5 – Seasonal Trend Table

	Count Month (Jan.) Value	Peak Period Seasonal
Coastal Destination	1.2255	0.8202
Coastal Destination Route	1.5007	0.7660

- Coastal Destination
  - Count Date Seasonal Factor/Peak Period Seasonal Factor = 1.2205/0.8202 = 1.49
- Coastal Destination Route
  - Count Date Seasonal Factor/Peak Period Seasonal Factor = 1.5007/0.7660 = 1.96
- Average of Coastal Destination and Coastal Destination Route = **1.73**

While the resulting seasonal adjustment factor of 1.73% exceeds ODOT's desired maximum value of 1.30%, the use of this factor was approved by ODOT staff given the lack of other available information. The specific application of this factor at the study intersection and driveways is summarized as follows:

- At the Marine Drive/2nd Street intersection:
  - 1.73 for all east-west through volumes on Marine Drive
  - 1.73 for all movements to/from the north leg of 2nd Street in recognition that 2nd Street is used to access the gas station as well as the vacant parking lot to the east of 2nd Street
  - No seasonal factor to/from the south leg of 2nd Street in recognition that this portion of 2nd Street has no commercial properties, is not a city-wide connector, and appears to be mostly residential in nature.
- At the two driveways flanking the former Stephanie's Cabin restaurant (and that also serve an existing Subway restaurant on the south side of Marine Drive):

- 1.73 for all east-west through volumes on Marine Drive
- 1.73 for all movements to/from the Subway restaurant under the assumption that Subway business is likely higher under 30th highest hour travel conditions.
- 1.73 for the few cars that are still using the former Stephanie's Cabin driveways (presumably visiting Josephson's Smokehouse)

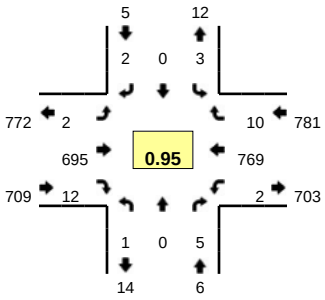
Type of peak hour being reported: User-Defined

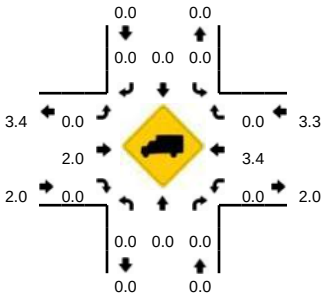
Method for determining peak hour: Total Entering Volume

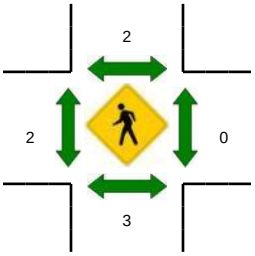
LOCATION: 2nd St -- Marine Dr
CITY/STATE: Astoria, OR

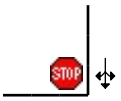
QC JOB #: 14601901
DATE: Wed, Jan 17 2018

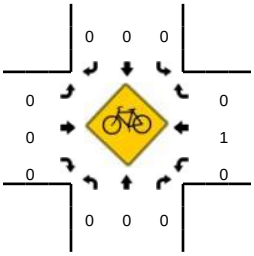
Peak-Hour: 4:20 PM -- 5:20 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

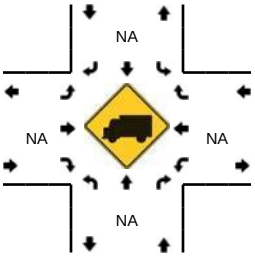


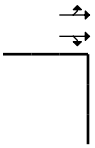


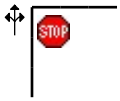


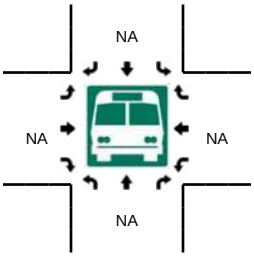












5-Min Count Period Beginning At	2nd St (Northbound)				2nd St (Southbound)				Marine Dr (Eastbound)				Marine Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:50 PM	0	0	0	0	0	0	0	0	0	58	0	0	1	68	1	0	128	
3:55 PM	0	0	0	0	0	0	0	0	0	61	3	0	0	40	1	0	105	1474
4:00 PM	0	0	0	0	0	0	0	0	0	47	0	0	0	63	0	0	110	1455
4:05 PM	0	0	0	0	0	0	0	0	0	58	0	0	1	69	1	0	129	1474
4:10 PM	0	0	1	0	0	0	0	0	0	56	1	0	0	69	0	0	127	1459
4:15 PM	0	0	0	0	0	0	0	0	0	40	1	0	0	54	0	0	95	1430
4:20 PM	0	0	1	0	1	0	0	0	0	52	1	0	1	61	2	0	119	1430
4:25 PM	0	0	0	0	0	0	1	0	1	59	1	0	1	59	0	0	122	1438
4:30 PM	0	0	1	0	0	0	0	0	0	45	0	0	0	55	0	0	101	1411
4:35 PM	0	0	1	0	1	0	0	0	0	67	1	0	0	55	2	0	127	1411
4:40 PM	0	0	0	0	0	0	0	0	0	65	1	0	0	62	0	0	128	1407
4:45 PM	0	0	1	0	0	0	0	0	0	66	0	0	0	69	0	0	136	1427
4:50 PM	0	0	1	0	0	0	0	0	1	61	2	0	0	64	2	0	131	1430
4:55 PM	0	0	0	0	1	0	0	0	0	53	2	0	0	54	1	0	111	1436
5:00 PM	0	0	0	0	0	0	1	0	0	49	1	0	0	80	1	0	132	1458
5:05 PM	1	0	0	0	0	0	0	0	0	60	2	0	0	67	1	0	131	1460
5:10 PM	0	0	0	0	0	0	0	0	0	55	0	0	0	79	0	0	134	1467
5:15 PM	0	0	0	0	0	0	0	0	0	63	1	0	0	64	1	0	129	1501
5:20 PM	0	0	0	0	0	0	0	0	0	66	0	0	0	43	0	0	109	1491
5:25 PM	0	0	0	0	0	0	0	0	1	48	0	0	0	49	0	0	98	1467
5:30 PM	1	0	0	0	0	0	0	0	0	57	0	0	0	60	1	0	119	1485
5:35 PM	0	0	0	0	0	1	0	0	0	52	3	0	0	48	1	0	105	1463
5:40 PM	0	0	0	0	0	0	0	0	0	52	0	0	0	42	1	0	95	1430
5:45 PM	0	0	2	0	0	0	0	0	0	70	2	0	0	55	1	0	130	1424

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	0	0	0	0	4	0	0	656	12	0	0	904	8	0	1588
Heavy Trucks	0	0	0		0	0	0		0	12	0		0	36	0		48
Pedestrians		4				0				4				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 2/5/2018 7:35 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: Subway East Dwy -- Marine Dr

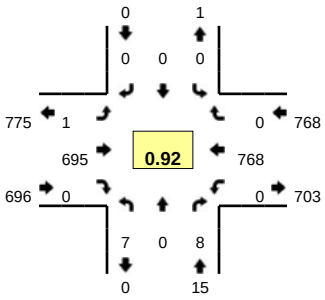
CITY/STATE: Astoria, OR

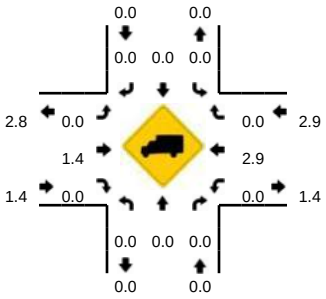
QC JOB #: 14601902

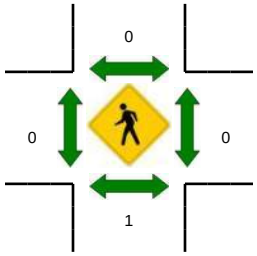
DATE: Wed, Jan 17 2018

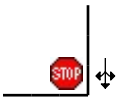
Peak-Hour: 4:20 PM -- 5:20 PM

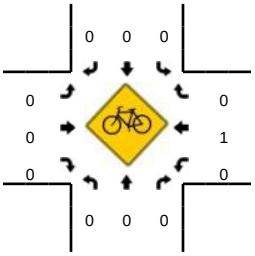
Peak 15-Min: 5:00 PM -- 5:15 PM

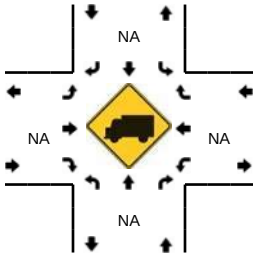


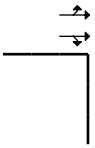


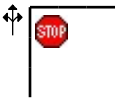


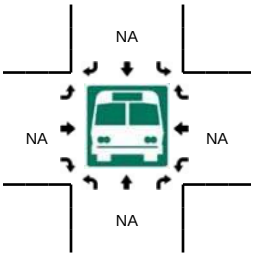












5-Min Count Period Beginning At	Subway East Dwy (Northbound)				Subway East Dwy (Southbound)				Marine Dr (Eastbound)				Marine Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:50 PM	0	0	0	0	0	0	0	0	0	59	0	0	0	70	0	0	129	
3:55 PM	1	0	2	0	0	0	0	0	0	61	0	0	0	37	0	0	101	1486
4:00 PM	1	0	0	0	0	0	0	0	0	46	0	0	0	60	0	0	107	1463
4:05 PM	0	0	0	0	0	0	0	0	0	58	1	0	0	71	0	0	130	1486
4:10 PM	1	0	1	0	0	0	0	0	0	57	0	0	0	69	0	0	128	1463
4:15 PM	1	0	0	0	0	0	0	0	0	42	0	0	0	54	0	0	97	1440
4:20 PM	1	0	0	0	0	0	0	0	0	54	0	0	0	60	0	0	115	1433
4:25 PM	0	0	1	0	0	0	0	0	0	58	0	0	0	61	0	0	120	1436
4:30 PM	1	0	1	0	0	0	0	0	1	45	0	0	0	54	0	0	102	1407
4:35 PM	0	0	1	0	0	0	0	0	0	65	0	0	0	59	0	0	125	1407
4:40 PM	1	0	0	0	0	0	0	0	0	68	0	0	0	60	0	0	129	1398
4:45 PM	0	0	0	0	0	0	0	0	0	64	0	0	0	69	0	0	133	1416
4:50 PM	0	0	0	0	0	0	0	0	0	63	0	0	0	57	0	0	120	1407
4:55 PM	1	0	2	0	0	0	0	0	0	56	0	0	0	53	0	0	112	1418
5:00 PM	1	0	0	0	0	0	0	0	0	50	0	0	0	90	0	0	141	1452
5:05 PM	0	0	3	0	0	0	0	0	0	59	0	0	0	65	0	0	127	1449
5:10 PM	2	0	0	0	0	0	0	0	0	54	0	0	0	80	0	0	136	1457
5:15 PM	0	0	0	0	0	0	0	0	0	59	0	0	0	60	0	0	119	1479
5:20 PM	2	0	1	0	0	0	0	0	0	64	0	0	0	45	0	0	112	1476
5:25 PM	0	0	1	0	0	0	0	0	1	49	0	0	0	50	0	0	101	1457
5:30 PM	0	0	1	0	0	0	0	0	0	56	0	0	0	63	0	0	120	1475
5:35 PM	1	0	0	0	0	0	0	0	0	55	0	0	0	47	0	0	103	1453
5:40 PM	0	0	1	0	0	0	0	0	0	53	0	0	0	42	0	0	96	1420
5:45 PM	1	0	1	0	0	0	0	0	0	65	0	0	0	56	0	0	123	1410

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	0	12	0	0	0	0	0	0	652	0	0	0	940	0	0	1616
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	32	0		36
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 2/5/2018 7:35 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

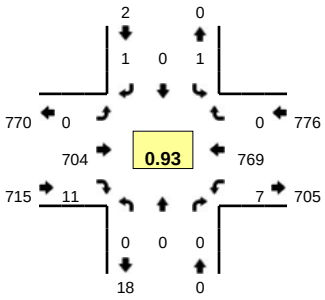
LOCATION: Subway West Dwy -- Marine Dr

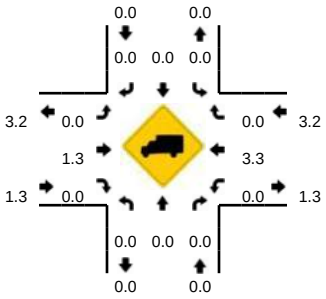
CITY/STATE: Astoria, OR

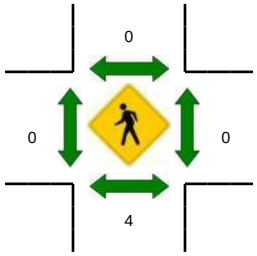
QC JOB #: 14601903

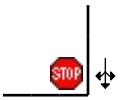
DATE: Wed, Jan 17 2018

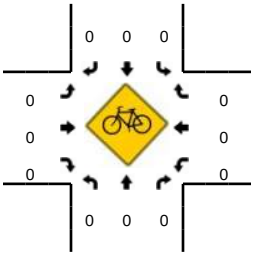
Peak-Hour: 4:20 PM -- 5:20 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

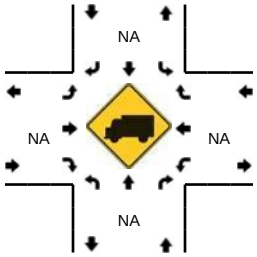


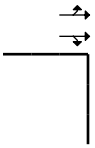


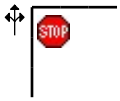


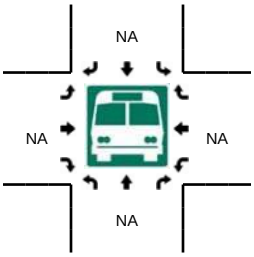












5-Min Count Period Beginning At	Subway West Dwy (Northbound)				Subway West Dwy (Southbound)				Marine Dr (Eastbound)				Marine Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:50 PM	0	0	0	0	0	0	0	0	0	58	0	0	1	69	0	0	128	
3:55 PM	0	0	0	0	0	0	0	0	0	61	1	0	1	38	0	0	101	1476
4:00 PM	0	0	0	0	0	0	0	0	0	46	1	0	0	61	0	0	108	1454
4:05 PM	0	0	0	0	0	0	0	0	0	59	1	0	0	74	0	0	134	1481
4:10 PM	0	0	0	0	0	0	0	0	0	57	0	0	0	70	0	0	127	1458
4:15 PM	0	0	0	0	0	0	0	0	0	42	1	0	1	55	0	0	99	1441
4:20 PM	0	0	0	0	0	0	0	0	0	54	0	0	1	60	0	0	115	1434
4:25 PM	0	0	0	0	0	0	0	0	0	58	1	0	1	59	0	0	119	1440
4:30 PM	0	0	0	0	0	0	0	0	0	47	1	0	0	55	0	0	103	1410
4:35 PM	0	0	0	0	1	0	0	0	0	66	3	0	2	55	0	0	127	1412
4:40 PM	0	0	0	0	0	0	0	0	0	68	1	0	0	60	0	0	129	1405
4:45 PM	0	0	0	0	0	0	0	0	0	63	1	0	0	74	0	0	138	1428
4:50 PM	0	0	0	0	0	0	1	0	0	62	1	0	1	57	0	0	122	1422
4:55 PM	0	0	0	0	0	0	0	0	0	58	1	0	1	52	0	0	112	1433
5:00 PM	0	0	0	0	0	0	0	0	0	52	0	0	0	88	0	0	140	1465
5:05 PM	0	0	0	0	0	0	0	0	0	61	0	0	0	67	0	0	128	1459
5:10 PM	0	0	0	0	0	0	0	0	0	53	1	0	0	81	0	0	135	1467
5:15 PM	0	0	0	0	0	0	0	0	0	62	1	0	1	61	0	0	125	1493
5:20 PM	0	0	0	0	0	0	0	0	0	64	2	0	0	47	0	0	113	1491
5:25 PM	0	0	0	0	0	0	0	0	0	50	2	0	0	49	0	0	101	1473
5:30 PM	0	0	0	0	0	0	0	0	0	54	0	0	1	60	0	0	115	1485
5:35 PM	0	0	0	0	0	0	0	0	0	57	2	0	1	46	0	0	106	1464
5:40 PM	0	0	0	0	0	0	0	0	0	52	1	0	0	44	0	0	97	1432
5:45 PM	0	0	0	0	0	0	0	0	0	64	0	0	0	53	1	0	118	1412

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	664	4	0	0	944	0	0	1612
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	36	0		36
Pedestrians		8				0				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 2/5/2018 7:35 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

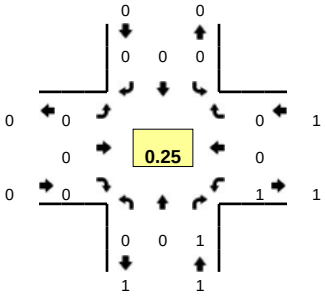
Type of peak hour being reported: User-Defined

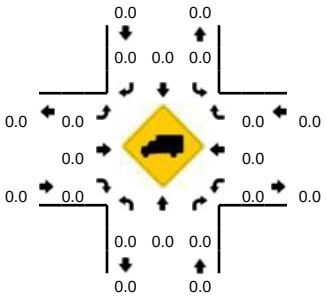
Method for determining peak hour: Total Entering Volume

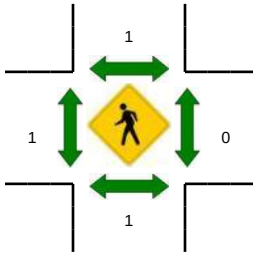
LOCATION: 2nd St -- Site Access
CITY/STATE: Astoria, OR

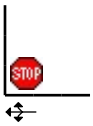
QC JOB #: 14601904
DATE: Wed, Jan 17 2018

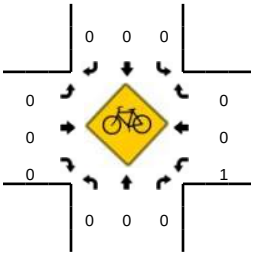
Peak-Hour: 4:20 PM -- 5:20 PM
Peak 15-Min: 4:20 PM -- 4:35 PM

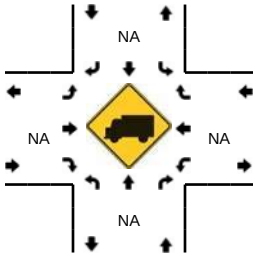


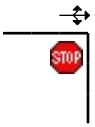


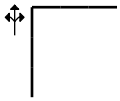


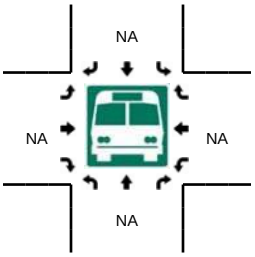












5-Min Count Period Beginning At	2nd St (Northbound)				2nd St (Southbound)				Site Access (Eastbound)				Site Access (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:25 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	3
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	4	0	0	0	0	0	0	0	0	0	4	0	0	0	8
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 2/5/2018 7:35 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Appendix B Existing Conditions Intersection Operations Worksheets

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1202	19	12	1329	0	0	0	0	1	0	1
Future Vol, veh/h	0	1202	19	12	1329	0	0	0	0	1	0	1
Conflicting Peds, #/hr	0	0	4	4	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	1	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	0	1292	20	13	1429	0	0	0	0	1	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1429	0	0	1317	0	0	2047	2762	660	2101	2772	715
Stage 1	-	-	-	-	-	-	1307	1307	-	1455	1455	-
Stage 2	-	-	-	-	-	-	740	1455	-	646	1317	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	482	-	-	532	-	-	33	20	410	30	19	378
Stage 1	-	-	-	-	-	-	172	232	-	139	197	-
Stage 2	-	-	-	-	-	-	379	197	-	431	229	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	482	-	-	532	-	-	30	18	408	27	17	378
Mov Cap-2 Maneuver	-	-	-	-	-	-	30	18	-	27	17	-
Stage 1	-	-	-	-	-	-	171	231	-	139	174	-
Stage 2	-	-	-	-	-	-	333	174	-	431	228	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.8	0	80.2
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	482	-	-	532	-	-	50
HCM Lane V/C Ratio	-	-	-	-	0.024	-	-	0.043
HCM Control Delay (s)	0	0	-	-	11.9	0.7	-	80.2
HCM Lane LOS	A	A	-	-	B	A	-	F
HCM 95th %tile Q(veh)	-	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1202	0	0	1329	0	12	0	14	0	0	0
Future Vol, veh/h	1	1202	0	0	1329	0	12	0	14	0	0	0
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	1	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	1	1307	0	0	1445	0	13	0	15	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	1445	0	0	1308	0	0	2032	2755	654
Stage 1	-	-	-	-	-	-	1310	1310	-
Stage 2	-	-	-	-	-	-	722	1445	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.8	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.8	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	475	-	-	536	-	-	51	20	414
Stage 1	-	-	-	-	-	-	220	231	-
Stage 2	-	-	-	-	-	-	447	199	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	475	-	-	536	-	-	51	0	414
Mov Cap-2 Maneuver	-	-	-	-	-	-	51	0	-
Stage 1	-	-	-	-	-	-	218	0	-
Stage 2	-	-	-	-	-	-	447	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0	56.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	97	475	-	-	536	-	-
HCM Lane V/C Ratio	0.291	0.002	-	-	-	-	-
HCM Control Delay (s)	56.7	12.6	0.1	-	0	-	-
HCM Lane LOS	F	B	A	-	A	-	-
HCM 95th %tile Q(veh)	1.1	0	-	-	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1202	14	2	1330	17	1	0	6	5	0	3
Future Vol, veh/h	3	1202	14	2	1330	17	1	0	6	5	0	3
Conflicting Peds, #/hr	2	0	3	3	0	2	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	2	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	3	1265	15	2	1400	18	1	0	6	5	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1420	0	0	1283	0	0	1988	2706	643	2054	2704	713
Stage 1	-	-	-	-	-	-	1282	1282	-	1415	1415	-
Stage 2	-	-	-	-	-	-	706	1424	-	639	1289	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	486	-	-	548	-	-	37	22	421	33	22	379
Stage 1	-	-	-	-	-	-	178	238	-	147	206	-
Stage 2	-	-	-	-	-	-	397	204	-	436	236	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	485	-	-	548	-	-	35	21	420	31	21	378
Mov Cap-2 Maneuver	-	-	-	-	-	-	35	21	-	31	21	-
Stage 1	-	-	-	-	-	-	174	232	-	143	202	-
Stage 2	-	-	-	-	-	-	386	200	-	420	230	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	28.1	97.6
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	163	485	-	-	548	-	-	47
HCM Lane V/C Ratio	0.045	0.007	-	-	0.004	-	-	0.179
HCM Control Delay (s)	28.1	12.5	0.1	-	11.6	0.1	-	97.6
HCM Lane LOS	D	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.6

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	0	0	0	0	1	0	0	0
Future Vol, veh/h	0	0	0	1	0	0	0	0	1	0	0	0
Conflicting Peds, #/hr	1	0	1	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	0	2	0	2	2	2	0	0	2	2	0	0
Mvmt Flow	0	0	0	1	0	0	0	0	1	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	4	3	3	3	3	2	2	0	0	1	0	0
Stage 1	2	2	-	1	1	-	-	-	-	-	-	-
Stage 2	2	1	-	2	2	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	1022	893	1087	1019	893	1082	1634	-	-	1622	-	-
Stage 1	1026	894	-	1022	895	-	-	-	-	-	-	-
Stage 2	1026	895	-	1021	894	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	1020	892	1085	1018	892	1081	1632	-	-	1620	-	-
Mov Cap-2 Maneuver	1020	892	-	1018	892	-	-	-	-	-	-	-
Stage 1	1025	893	-	1022	895	-	-	-	-	-	-	-
Stage 2	1025	895	-	1020	893	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.5	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1632	-	-	-	1018	1620	-	-
HCM Lane V/C Ratio	-	-	-	-	0.001	-	-	-
HCM Control Delay (s)	0	-	-	0	8.5	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-

Appendix C Crash Data

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Marine Dr Lower Columbia River Hwy (092) & 2nd St
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2011														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2011 TOTAL	0	0	2	2	0	0	0	2	0	2	0	2	0	0
FINAL TOTAL	0	0	2	2	0	0	0	2	0	2	0	2	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

092 LOWER COLUMBIA RIVER

Marine Dr Lower Columbia River Hwy (092) & 2nd St
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	SPED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00377	N	N	N			09/01/2011	CLATSOP	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						Thu 10A	ASTORIA	MN 0	MARINE DR	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E W										000		00
							ASTORIA UA	98.71	2ND ST	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	59	M	OR-Y		026	000		07
No						*46 11 26.01 -123 50 26.08*		009200100S00	1															OR>25					
																02	NONE 0	STOP											
																	PRVTE	E W									011		00
																	PSNGR CAR		01	DRVR	NONE	70	M	OR-Y		000	000		00
																								OR<25					
00271	N	N	N			07/08/2011	CLATSOP	1 14		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L											02
NO RPT						Fri 3P	ASTORIA	MN 0	MARINE DR	CN		STOP SIGN	N	DRY	TURN		PRVTE	S W									015		00
							ASTORIA UA	98.71	2ND ST	01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	19	M	OR-Y		028	000		02
No						*46 11 26.01 -123 50 26.08*		009200100S00	1															OR<25					
																02	NONE 1	STRGHT											
																	PRVTE	E W									000		00
																	PSNGR CAR		01	DRVR	NONE	00	M	UNK		000	000		00
																								OR>25					

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
014	EMR V PKD	EMERGENCY VEHICLE LEGALLY PARKED IN THE ROADWAY
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED OR DISABLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRACT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING
055	SPRAY	BLINDED BY WATER SPRAY

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
088	OTHER	OTHER ACTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHIN
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER
51	FAIL LN	FAILED TO MAINTAIN LANE
52	OFF RD	RAN OFF ROAD

COLLISION TYPE CODE TRANSLATION LIST

COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OTH	MISCELLANEOUS
-	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANEUVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST

CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-1TURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1 L-TURN	FROM OPPOSITE DIRECTION-ONE LEFT TURN,ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER LICENSE CODE TRANSLATION LIST

LIC CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)
1	OR-Y	VALID OREGON LICENSE
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY
3	SUSP	SUSPENDED/REVOKED

DRIVER RESIDENCE CODE TRANSLATION LIST

RES CODE	SHORT DESC	LONG DESCRIPTION
1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
4	N-RES	NON-RESIDENT
9	UNK	UNKNOWN IF OREGON RESIDENT

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DIS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHIC
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDRAIL
043	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRRGL PVMT	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL WTNSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY
134	TORRENTIAL	TORRENTIAL RAIN (EXCEPTIONALLY HEAVY RAIN)

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

FUNC CLASS	DESCRIPTION
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE
02	RURAL PRINCIPAL ARTERIAL - OTHER
06	RURAL MINOR ARTERIAL
07	RURAL MAJOR COLLECTOR
08	RURAL MINOR COLLECTOR
09	RURAL LOCAL
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP
14	URBAN PRINCIPAL ARTERIAL - OTHER
16	URBAN MINOR ARTERIAL
17	URBAN MAJOR COLLECTOR
18	URBAN MINOR COLLECTOR
19	URBAN LOCAL
78	UNKNOWN RURAL SYSTEM
79	UNKNOWN RURAL NON-SYSTEM
98	UNKNOWN URBAN SYSTEM
99	UNKNOWN URBAN NON-SYSTEM

HIGHWAY COMPONENT TRANSLATION LIST

CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUPLET
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

INJURY SEVERITY CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY
2	INJA	INCAPACITATING INJURY - BLEEDING, BROKEN BONES
3	INJB	NON-INCAPACITATING INJURY
4	INJC	POSSIBLE INJURY - COMPLAINT OF PAIN
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE

LIGHT CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MILEAGE TYPE CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SPUR
Z	OVERLAPPING

MOVEMENT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY

PEDESTRIAN LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE

ROAD CHARACTER CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

PARTICIPANT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	UNK	UNKNOWN TYPE OF NON-MOTORIST

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING

095	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
00	PDO	NOT COLLECTED FOR PDO CRASHES
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

WEATHER CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SLT	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Marine Dr Lower Columbia River Hwy (092) & 3rd St

January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2015 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FINAL TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

092 LOWER COLUMBIA RIVER

Marine Dr Lower Columbia River Hwy (092) & 3rd St
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# CMPT/MLG MILEPNT LRS	FC	CONN # FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00107	N	N	N	N	N	03/12/2015	CLATSOP	1	14		INTER	CROSS	N		N	CLR	ANGL-OTH	01	NONE 0	STRGHT										02
CITY						Thu 2P	ASTORIA	MN 0		MARINE DR	CN		STOP SIGN		N	DRY	ANGL		PRVTE	S N									015	00
							ASTORIA UA	98.63		3RD ST	04	0			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	71	M	OTH-Y		028	000	02
No						*46 11 25.95 -123 50 22.53*		009200100		S00 1																N-RES				
																	02	NONE 0	STRGHT											
																		PRVTE	W E										000	00
																		PSNGR CAR		01	DRVR	NONE	29	F	OR-Y		000	000		00
																									OR<25					

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
014	EMR V PKD	EMERGENCY VEHICLE LEGALLY PARKED IN THE ROADWAY
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED OR DISABLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRACT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING
055	SPRAY	BLINDED BY WATER SPRAY

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
088	OTHER	OTHER ACTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHIN
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER
51	FAIL LN	FAILED TO MAINTAIN LANE
52	OFF RD	RAN OFF ROAD

COLLISION TYPE CODE TRANSLATION LIST

COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OTH	MISCELLANEOUS
-	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANEUVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST

CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-1TURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1 L-TURN	FROM OPPOSITE DIRECTION-ONE LEFT TURN,ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER LICENSE CODE TRANSLATION LIST

LIC CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)
1	OR-Y	VALID OREGON LICENSE
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY
3	SUSP	SUSPENDED/REVOKED

DRIVER RESIDENCE CODE TRANSLATION LIST

RES CODE	SHORT DESC	LONG DESCRIPTION
1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
4	N-RES	NON-RESIDENT
9	UNK	UNKNOWN IF OREGON RESIDENT

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DIS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHIC
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDRAIL
043	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRRGL PVMT	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL WTNSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY
134	TORRENTIAL	TORRENTIAL RAIN (EXCEPTIONALLY HEAVY RAIN)

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

FUNC CLASS	DESCRIPTION
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE
02	RURAL PRINCIPAL ARTERIAL - OTHER
06	RURAL MINOR ARTERIAL
07	RURAL MAJOR COLLECTOR
08	RURAL MINOR COLLECTOR
09	RURAL LOCAL
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP
14	URBAN PRINCIPAL ARTERIAL - OTHER
16	URBAN MINOR ARTERIAL
17	URBAN MAJOR COLLECTOR
18	URBAN MINOR COLLECTOR
19	URBAN LOCAL
78	UNKNOWN RURAL SYSTEM
79	UNKNOWN RURAL NON-SYSTEM
98	UNKNOWN URBAN SYSTEM
99	UNKNOWN URBAN NON-SYSTEM

HIGHWAY COMPONENT TRANSLATION LIST

CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUPLET
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

INJURY SEVERITY CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY
2	INJA	INCAPACITATING INJURY - BLEEDING, BROKEN BONES
3	INJB	NON-INCAPACITATING INJURY
4	INJC	POSSIBLE INJURY - COMPLAINT OF PAIN
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE

LIGHT CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MILEAGE TYPE CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SPUR
Z	OVERLAPPING

MOVEMENT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY

PEDESTRIAN LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE

ROAD CHARACTER CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

PARTICIPANT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	UNK	UNKNOWN TYPE OF NON-MOTORIST

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING

095	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
00	PDO	NOT COLLECTED FOR PDO CRASHES
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

WEATHER CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SLT	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Marine Dr Lower Columbia River Hwy (092) 600 feet West of 2nd St (excludes intersection at 2nd St)
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2015														
REAR-END	0	1	0	1	0	4	0	1	0	1	0	0	0	0
2015 TOTAL	0	1	0	1	0	4	0	1	0	1	0	0	0	0
YEAR: 2014														
REAR-END	0	0	2	2	0	0	0	2	0	2	0	0	0	0
2014 TOTAL	0	0	2	2	0	0	0	2	0	2	0	0	0	0
YEAR: 2011														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	0	0	0
2011 TOTAL	0	0	1	1	0	0	0	1	0	1	0	0	0	0
FINAL TOTAL	0	1	3	4	0	4	0	4	0	4	0	0	0	0

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

092 LOWER COLUMBIA RIVER — Marine Dr Lower Columbia River Hwy (092) 600 feet West of 2nd St (excludes intersection at 2nd St)
January 1, 2011 through December 31, 2015

SER# / INVEST / UNLOC?	SPEED	ALC	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# CMPT/MLG MILEPNT LRS	FC CONN # FIRST STREET SECOND STREET INTERSECTION SEQ#	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF-CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00495	N	N	N			10/04/2014	CLATSOP	1 14		STRGHT		N	N	CLR	S-1STOP	01	NONE 0	STRGHT										092	29
NO RPT						Sat 1P	ASTORIA	MN 0	MARINE DR	W	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	E W									000		00
							ASTORIA UA	98.73	2ND ST	04			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	47	F	OR-Y		026	000		29
No						*46 11 26.06 -123 50 27.81*		009200100S00	1		(04)													OR<25					
																02	NONE 0	STOP									011	092	00
																	PRVTE	E W											
																	PSNGR CAR		01	DRVR	NONE	85	M	OR-Y		000	000		00
																								OR<25					
00268	N	N	N	N	N	06/23/2014	CLATSOP	1 14		ALLEY		N	N	CLR	S-1STOP	01	NONE 0	STRGHT										092	07
NONE						Mon 11A	ASTORIA	MN 0	MARINE DR	S	(NONE)	NONE	N	DRY	REAR		PRVTE	W E									000		00
							ASTORIA UA	98.76	2ND ST	05			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	58	F	OR-Y		026	000		07
No						*46 11 26.13 -123 50 30.41*		009200100S00	1		(04)													OR<25					
																02	NONE 0	STOP									011	092	00
																	PRVTE	W E											
																	PSNGR CAR		01	DRVR	NONE	78	F	OR-Y		000	000		00
																								OR<25					
00357	N	N	N	N	N	07/17/2015	CLATSOP	1 14		ALLEY		N	N	CLR	S-1STOP	01	NONE 0	STRGHT										004	27,07
CITY						Fri 7P	ASTORIA	MN 0	MARINE DR	W	(NONE)	NONE	N	DRY	REAR		PRVTE	E W									000	004	00
							ASTORIA UA	98.76	2ND ST	04			N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	17	M	OR-Y		016,043	038		27,07
No						*46 11 26.13 -123 50 30.41*		009200100S00	1		(04)													OR<25					
																			02	PSNG	INJC	20	M			000	000		00
																02	NONE 0	STOP									012		00
																	PRVTE	E W											
																	PSNGR CAR		01	DRVR	INJC	25	F	OR-Y		000	000		00
																								OR<25					
																			02	PSNG	INJC	30	F			000	000		00
00456	N	N	N			10/09/2011	CLATSOP	1 14		ALLEY		N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07,27
CITY						Sun 4P	ASTORIA	MN 0	MARINE DR	W	(NONE)	UNKNOWN	N	DRY	REAR		PRVTE	E W									000		00
							ASTORIA UA	98.79	2ND ST	04			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	17	M	OR-Y		043,016	038		07,27
No						*46 11 26.17 -123 50 33.01*		009200100S00	1		(04)													OR<25					
																02	NONE 0	STOP									012		00
																	PRVTE	E W											
																	PSNGR CAR		01	DRVR	NONE	68	F	OR-Y		000	000		00
																								OR<25					

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
014	EMR V PKD	EMERGENCY VEHICLE LEGALLY PARKED IN THE ROADWAY
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED OR DISABLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRACT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING
055	SPRAY	BLINDED BY WATER SPRAY

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
088	OTHER	OTHER ACTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHIN
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER
51	FAIL LN	FAILED TO MAINTAIN LANE
52	OFF RD	RAN OFF ROAD

COLLISION TYPE CODE TRANSLATION LIST

COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OTH	MISCELLANEOUS
-	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANEUVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST

CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-1TURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1 L-TURN	FROM OPPOSITE DIRECTION-ONE LEFT TURN,ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER LICENSE CODE TRANSLATION LIST

LIC CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)
1	OR-Y	VALID OREGON LICENSE
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY
3	SUSP	SUSPENDED/REVOKED

DRIVER RESIDENCE CODE TRANSLATION LIST

RES CODE	SHORT DESC	LONG DESCRIPTION
1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
4	N-RES	NON-RESIDENT
9	UNK	UNKNOWN IF OREGON RESIDENT

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DIS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHIC
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDRAIL
043	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRRGL PVMT	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL WTNSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY
134	TORRENTIAL	TORRENTIAL RAIN (EXCEPTIONALLY HEAVY RAIN)

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

FUNC CLASS	DESCRIPTION
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE
02	RURAL PRINCIPAL ARTERIAL - OTHER
06	RURAL MINOR ARTERIAL
07	RURAL MAJOR COLLECTOR
08	RURAL MINOR COLLECTOR
09	RURAL LOCAL
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP
14	URBAN PRINCIPAL ARTERIAL - OTHER
16	URBAN MINOR ARTERIAL
17	URBAN MAJOR COLLECTOR
18	URBAN MINOR COLLECTOR
19	URBAN LOCAL
78	UNKNOWN RURAL SYSTEM
79	UNKNOWN RURAL NON-SYSTEM
98	UNKNOWN URBAN SYSTEM
99	UNKNOWN URBAN NON-SYSTEM

HIGHWAY COMPONENT TRANSLATION LIST

CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUPLET
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

INJURY SEVERITY CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY
2	INJA	INCAPACITATING INJURY - BLEEDING, BROKEN BONES
3	INJB	NON-INCAPACITATING INJURY
4	INJC	POSSIBLE INJURY - COMPLAINT OF PAIN
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE

LIGHT CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MILEAGE TYPE CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SPUR
Z	OVERLAPPING

MOVEMENT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY

PEDESTRIAN LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE

ROAD CHARACTER CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

PARTICIPANT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	UNK	UNKNOWN TYPE OF NON-MOTORIST

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING

095	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
00	PDO	NOT COLLECTED FOR PDO CRASHES
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

WEATHER CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SLT	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH

Marine Dr Lower Columbia River Hwy (092) 600 feet West of 2nd St (excludes intersection at 2nd St)
January 1, 2011 through December 31, 2015

SERIAL NO	DATE	TIME	DAY	*COUNTY OR CITY NAME	COMP NT	MLG TYP	CRASH LOCATION	COLL TYPE	EVENT	CAUSE	ERROR	SUR F	TOT VEH	VEHICLE TYP/OWN #1	VEHICLE TYP/OWN #2	--PEOPLE-- KIL L	INJ	INJ A	INJ C	SPE D
00495	10/04/2014	1P	SA	Astoria	MN	R HY	092, LOWER COLUMBIA RIVER AT MP 98.73	REAR	092	29	026	DRY	2	011	011	0	0	N	N	
00268	06/23/2014	11A	MO	Astoria	MN	R HY	092, LOWER COLUMBIA RIVER AT MP 98.76	REAR	092	07	026	DRY	2	011	011	0	0	N	N	
00357	07/17/2015	7P	FR	Astoria	MN	R HY	092, LOWER COLUMBIA RIVER AT MP 98.76	REAR	004	27,07	016,043	DRY	2	011	011	0	4	N	N	
00456	10/09/2011	4P	SU	Astoria	MN	R HY	092, LOWER COLUMBIA RIVER AT MP 98.79	REAR		07,27	043,016	DRY	2	011	011	0	0	N	N	

VEHICLE OWNERSHIP CODES

Code	Short Description	Long Description
0	N/A	Not collected for PDO Crashes
1	PRVTE	Private
2	GOVMT	Government
3	PUBLC	Public
4	RENTL	Rental vehicle
5	STOLN	Stolen vehicle
9	UNKN	Unknown ownership

VEHICLE TYPE CODES

Code	Short Description	Long Description
00	PDO	Not collected for PDO Crashes
01	PSNGR CAR	Passenger car, pickup, light delivery, etc.
02	BOBTAIL	Truck tractor with no trailers (bobtail)
03	FARM TRCTR	Farm tractor or self-propelled farm equipment
04	SEMI TOW	Truck Tractor with trailer/mobile home in tow
05	TRUCK	Truck with non-detachable bed, panel, etc.
06	MOPED	Moped, minibike, seated motor scooter, motor bike
07	SCHL BUS	School bus (includes van)
08	OTH BUS	Other bus
09	MTRCYCLE	Motorcycle, dirt bike
10	OTHER	Other: forklift, backhoe, etc.
11	MOTRHOME	Motorhome
12	TROLLEY	Motorized Street Car/Trolley (no rails/wires)
13	ATV	ATV
14	MTRSCTR	Motorized scooter (standing)
15	SNOWMOBILE	Snowmobile
99	UNKNOWN	Unknown vehicle type

CAUSE CODES

Code	Short Description	Medium Description	Long Description
00	NO CODE	NO CODE APPLICABLE	No cause associated at this level
01	TOO-FAST	TOO FAST FOR COND	Too fast for conditions (not exceed posted speed)
02	NO-YIELD	FAILED YIELD ROW	Did not yield right-of-way
03	PAS-STOP	PASSED STOP SIGN	Passed stop sign or red flasher
04	DIS SIG	DISREGRD TRAF SIGNAL	Disregarded traffic signal
05	LEFT-CTR	LEFT OF CTR/STRADDLE	Drove left of center on two-way road; straddling
06	IMP-OVER	IMPROPER PASSING	Improper overtaking
07	TOO-CLOS	FOLLOW TOO CLOSE	Followed too closely
08	IMP-TURN	IMPROPER TURN	Made improper turn
09	DRINKING	ALC OR DRUGS	Alcohol or Drug Involved
10	OTHR-IMP	OTHER DRIVE ERR	Other improper driving
11	MECH-DEF	MECH DEFECT	Mechanical defect
12	OTHER	OTHER	Other (not improper driving)
13	IMP LN C	IMP LANE CHANGE	Improper change of traffic lanes
14	DIS TCD	DISRG OTHR TCD	Disregarded other traffic control device
15	WRNG WAY	WRONG WAY / 1-WAY RD	Wrong way on one-way road; wrong side divided road
16	FATIGUE	DRIVER FATIGUED	Driver drowsy/fatigued/sleepy
17	ILLNESS	PHYSICAL ILLNESS	Physical illness
18	IN RDWY	ILLEGALLY IN RDWY	Non-motorist illegally in roadway
19	NT VISBL	NOT VISIBLE	Non-motorist not visible; non-reflective clothing
20	IMP PKNG	IMPROPER PARKING	Vehicle improperly parked
21	DEF STER	DEFECTIVE STEERING	Defective steering mechanism
22	DEF BRKE	DEFECTIVE BRAKES	Inadequate or no brakes
24	LOADSHFT	LOAD SHIFTED	Vehicle lost load or load shifted
25	TIREFAIL	TIRE FAILURE	Tire Failure
26	PHANTOM	PHANTOM VEHICLE	Phantom / Non-contact Vehicle
27	INATTENT	INATTENTION	Inattention
28	NM INATT	NON-MTRST INATTENT	Non-Motorist Inattention
29	F AVOID	FAIL AVOID VEH AHEAD	Failed to avoid vehicle ahead
30	SPEED	EXCED POSTED SPEED	Driving in excess of posted speed
31	RACING	SPEED RACING	Speed Racing (per PAR)
32	CARELESS	CARELESS DRIVING	Careless Driving (per PAR)
33	RECKLESS	RECKLESS DRIVING	Reckless Driving (per PAR)
34	AGGRESV	AGGRESSIVE DRIVING	Aggressive Driving (per PAR)
35	RD RAGE	ROAD RAGE	Road Rage (per PAR)
40	VIEW OBS	VIEW OBSCURED	View obscured
50	USED MDN	IMP USE MEDIAN/SHLDR	Improper use of median or shoulder
51	FAIL LN	F MAINT LANE	Failed to maintain lane
52	OFF RD	RAN OFF RD	Ran off road

ERR CODES

Code	Short Description	Medium Description	Long Description
000	NONE	NO ERROR	No error
001	WIDE TRN	WIDE TURN	Wide turn
002	CUT CORN	CUT CORNER	Cut corner on turn
003	FAIL TRN	F OBEY TRN	Failed to obey mandatory traffic turn signal, sign or lane markings
004	L IN TRF	LTRN FNT TRAF	Left turn in front of oncoming traffic
005	L PROHIB	LTRN PROHIB	Left turn where prohibited
006	FRM WRNG	T FRM WRNG LN	Turned from wrong lane
007	TO WRONG	T TO WRONG LN	Turned into wrong lane
008	ILLEG U	ILLEG U-TURN	U-turned illegally
009	IMP STOP	IMP STOP	Improperly stopped in traffic lane
010	IMP SIG	IMP/FAIL SIG	Improper signal or failure to signal
011	IMP BACK	IMP BACKING	Backing improperly (not parking)
012	IMP PARK	IMP PARKED	Improperly parked
013	UNPARK	IMP STRT PARK	Improper start leaving parked position
014	IMP STRT	IMP STRT STOP	Improper start from stopped position
015	IMP LGHT	IMP/NO LIGHTS	Improper or no lights (vehicle in traffic)
016	INATTENT	INATTENTION	Inattention (Failure to Dim Lights prior to 4/1/97)
017	UNSF VEH	DR UNSAFE VEH	Driving unsafe vehicle (no other error apparent)
018	OTH PARK	PRK MAN N/CLR	Entering/exiting parked position w/ insufficient clearance; other improper parking maneuver
019	DIS DRIV	DISRG DR SIG	Disregarded other driver's signal
020	DIS SGNL	DISRG TRF SIG	Disregarded traffic signal
021	RAN STOP	DISRG STP SGN	Disregarded stop sign or flashing red
022	DIS SIGN	DISRG WRN SGN	Disregarded warning sign, flares or flashing amber
023	DIS OFCR	DISRG POL/FLG	Disregarded police officer or flagman
024	DIS EMER	DISRG SIR/EMR	Disregarded siren or warning of emergency vehicle
025	DIS RR	DISRG RR SIG	Disregarded RR signal, RR sign, or RR flagman
026	REAR-END	F AVOID STP V	Failed to avoid stopped or parked vehicle ahead other than school bus
027	BIKE ROW	F/YLD ROW BIK	Did not have right-of-way over pedalcyclist
028	NO ROW	NO R-O-W	Did not have right-of-way
029	PED ROW	F/YLD ROW PED	Failed to yield right-of-way to pedestrian
030	PAS CURV	PASS ON CURVE	Passing on a curve
031	PAS WRNG	PASS WRNG SID	Passing on the wrong side
032	PAS TANG	PASS TANGENT	Passing on straight road under unsafe conditions
033	PAS X-WK	PASS STP4PED	Passed vehicle stopped at crosswalk for pedestrian
034	PAS INTR	PASS AT INTER	Passing at intersection
035	PAS HILL	PASS ON HILL	Passing on crest of hill
036	N/PAS ZN	PASS N/PASSNG	Passing in "No Passing" zone
037	PAS TRAF	PASS ONC TRAF	Passing in front of oncoming traffic
038	CUT-IN	CUTTING IN	Cutting in (two lanes - two way only)
039	WRNGSIDE	DR WRONG SIDE	Driving on wrong side of the road (2-way undivided roadways)
040	THRU MED	DR THRU MEDN	Driving through safety zone or over island
041	F/ST BUS	F/STP SCHLBUS	Failed to stop for school bus
042	F/SLO MV	F/SLO SLO VEH	Failed to decrease speed for slower moving vehicle
043	TOO CLOSE	FOLLW TO CLOS	Following too closely (must be on officer's report)
044	STRDL LN	STRD/DR WRNG	Straddling or driving on wrong lanes
045	IMP CHG	IMP LANE CHG	Improper change of traffic lanes

ERR CODES

Code	Short Description	Medium Description	Long Description
046	WRNG WAY	WRNG WY/1 WAY	Wrong way on one-way roadway; wrong side divided road
047	BASCRULE	V BASIC RULE	Driving too fast for conditions (not exceeding posted speed)
048	OPN DOOR	OPN DOOR TRAF	Opened door into adjacent traffic lane
049	IMPEDING	IMPEDING TRAF	Impeding Traffic
050	SPEED	SPEED	Driving in excess of posted speed
051	RECKLESS	RECKLSS DRVNG	Reckless driving (per PAR)
052	CARELESS	CARELSS DRVNG	Careless driving (per PAR)
053	RACING	RACING	Speed Racing (per PAR)
054	X N/SGNL	X-INT NO SGNL	Crossing at intersection, no traffic signal present
055	X W/SGNL	X-INT W/ SGNL	Crossing at intersection, traffic signal present
056	DIAGONAL	X-INT DIAGNL	Crossing at intersection - diagonally
057	BTWN INT	X-BTWN INTER	Crossing between intersections
059	W/TRAF-S	W SHLD W/TRAF	Walking, running, riding, etc., on shoulder WITH traffic
060	A/TRAF-S	W SHLD A/TRAF	Walking, running, riding, etc., on shoulder FACING traffic
061	W/TRAF-P	W PAVE W/TRAF	Walking, running, riding, etc., on pavement WITH traffic
062	A/TRAF-P	W PAVE A/TRAF	Walking, running, riding, etc., on pavement FACING traffic
063	PLAYINRD	PLAY IN RDWY	Playing in street or road
064	PUSH MV	PUSH MV IN RD	Pushing or working on vehicle in road or on shoulder
065	WORK IN RD	WORK IN RD	Working in roadway or along shoulder
070	LAY ON RD	LYING IN RD	Standing or lying in roadway
071	NM IMP USE	N-M IMP USE	Improper use of traffic lane by non-motorist
073	ELUDING	ELUDING	Eluding / Attempt to elude
079	F NEG CURV	FAIL NEG CURV	Failed to negotiate a curve
080	FAIL LN	F MAINT LANE	Failed to maintain lane
081	OFF RD	RAN OFF RD	Ran off road
082	NO CLEAR	MISJUDGE CLR	Driver misjudged clearance
083	OVRSTEER	OVERSTEER	Over-correcting
084	NOT USED	NOT USED	Code not in use
085	OVRLOAD	OVERLOAD	Overloading or improper loading of vehicle with cargo or passengers
097	UNA DIS TC	UNA DISRG TCD	Unable to determine which driver disregarded traffic control device

EVENT CODES

Code	Short Description	Medium Description	Long Description
001	FEL/JUMP	FELL/JUMPED MV	Occupant fell, jumped or was ejected from moving vehicle
002	INTERFER	PSNGR INTERFERED	Passenger interfered with driver
003	BUG INTF	ANML INTERFERED	Animal or insect in vehicle interfered with driver
004	INDRCT PED	PED INDRCTLY INVLV	Pedestrian indirectly involved (not struck)
005	SUB-PED	SUBSEQUENT PED	"Sub-Ped": pedestrian injured subsequent to collision, etc.
006	INDRCT BIK	BIKE INDRCTLY INVLV	Pedalcyclist indirectly involved (not struck)
007	HITCHIKR	HITCHHIKER	Hitchhiker (soliciting a ride)
008	PSNGR TOW	PSNGR TOWED	Passenger or non-motorist being towed or pushed on conveyance
009	ON/OFF V	ON/OFF STOP VEH	Getting on/off stopped/parked vehicle (occupants only; must have physical contact w/ vehicle)
010	SUB OTRN	SUBSEQ OVERTURN	Overturned after first harmful event
011	MV PUSHD	VEH BEING PUSHED	Vehicle being pushed
012	MV TOWED	VEH TOWED/TOWING	Vehicle towed or had been towing another vehicle
013	FORCED	FORCED BY IMPACT	Vehicle forced by impact into another vehicle, pedalcyclist or pedestrian
014	SET MOTN	MV SET IN MOTION	Vehicle set in motion by non-driver (child released brakes, etc.)
015	RR ROW	RAILROAD ROW	At or on railroad right-of-way (not Light Rail)
016	LT RL ROW	LIGHT RAIL ROW	At or on Light-Rail right-of-way
017	RR HIT V	TRAIN HIT VEH	Train struck vehicle
018	V HIT RR	VEH HIT TRAIN	Vehicle struck train
019	HIT RR CAR	VEH HIT RR CAR	Vehicle struck railroad car on roadway
020	JACKNIFE	JACKKNIFE	Jackknife; trailer or towed vehicle struck towing vehicle
021	TRL OTRN	TRAILER O'TURN	Trailer or towed vehicle overturned
022	CN BROKE	TRLR CONN BROKE	Trailer connection broke
023	DETACH TRL	DETCHD TRLR STRKNG	Detached trailing object struck other vehicle, non-motorist, or object
024	V DOOR OPN	V DOOR OPN IN TRAF	Vehicle door opened into adjacent traffic lane
025	WHEELOFF	WHEEL CAME OFF	Wheel came off
026	HOOD UP	HOOD FLEW UP	Hood flew up
028	LOAD SHIFT	LOAD SHIFTED	Lost load, load moved or shifted
029	TIREFAIL	TIRE FAILURE	Tire failure
030	PET	PET	Pet: cat, dog and similar
031	LVSTOCK	LIVESTOCK	Stock: cow, calf, bull, steer, sheep, etc.
032	HORSE	HORSE	Horse, mule, or donkey
033	HRSE&RID	HORSE & RIDER	Horse and rider
034	GAME	GAME NO DEER/ELK	Wild animal, game (includes birds; not deer or elk)
035	DEER ELK	DEER OR ELK	Deer or elk, wapiti
036	ANML VEH	ANIMAL-DRAWN VEH	Animal-drawn vehicle
037	CULVERT	CULVERT/MANHOLE	Culvert, open low or high manhole
038	ATENUATN	IMPACT CUSHION	Impact attenuator
039	PK METER	PARKING METER	Parking meter
040	CURB	CURB	Curb (also narrow sidewalks on bridges)
041	JIGGLE	JIGGLE BAR N/MED	Jiggle bar or traffic snake for channelization

EVENT CODES

Code	Short Description	Medium Description	Long Description
042	GDRL END	GUARDRAIL END	Leading edge of guardrail
043	GARDRAIL	GUARDRAIL	Guard rail (not metal median barrier)
044	BARRIER	MEDIAN BARRIER	Median barrier (raised or metal)
045	WALL	WALL	Retaining wall or tunnel wall
046	BR RAIL	BRIDGE RAIL	Bridge railing or parapet (on bridge or approach)
047	BR ABUTMNT	BRIDGE ABUTMENT	Bridge abutment (included "approach end" thru 2013)
048	BR COLMN	BRIDGE COLUMN	Bridge pillar or column
049	BR GIRDR	BRIDGE GIRDER	Bridge girder (horizontal bridge structure overhead)
050	ISLAND	TRAFFIC ISLAND	Traffic raised island
051	GORE	GORE	Gore
052	POLE UNK	POLE-UNKNOWN	Pole – type unknown
053	POLE UTL	POLE-UTILITY	Pole – power or telephone
054	ST LIGHT	POLE-ST LIGHT	Pole – street light only
055	TRF SGNL	POLE-TRAF SIGNAL	Pole – traffic signal and ped signal only
056	SGN BRDG	POLE-SIGN BRIDGE	Pole – sign bridge
057	STOPSIGN	STOP/YIELD SIGN	Stop or yield sign
058	OTH SIGN	OTHER SIGN	Other sign, including street signs
059	HYDRANT	HYDRANT	Hydrant
060	MARKER	DELINEATOR	Delineator or marker (reflector posts)
061	MAILBOX	MAILBOX	Mailbox
062	TREE	TREE/STUMP	Tree, stump or shrubs
063	VEG OHED	VEGTN OVER RDWY	Tree branch or other vegetation overhead, etc.
064	WIRE/CBL	CABLE ACROSS RD	Wire or cable across or over the road
065	TEMP SGN	TEMP SIGN/BARR	Temporary sign or barricade in road, etc.
066	PERM SGN	PERM SIGN/BARR	Permanent sign or barricade in/off road
067	SLIDE	SLIDE/ROCKS	Slides, fallen or falling rocks
068	FRGN OBJ	FOREIGN OBJECT	Foreign obstruction/debris in road (not gravel)
069	EQP WORK	EQUIP WORKING	Equipment working in/off road
070	OTH EQP	OTHER EQUIPMENT	Other equipment in or off road (includes parked trailer, boat)
071	MAIN EQP	MAINTNCE EQUIP	Wrecker, street sweeper, snow plow or sanding equipment
072	OTHER WALL	OTHER WALL	Rock, brick or other solid wall
073	IRRGL PVMT	IRREGULAR PAVEMENT	Other bump (not speed bump), pothole or pavement irregularity (per PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJ	Other overhead object (highway sign, signal head, etc.); not bridge
075	CAVE IN	CAVE IN	Bridge or road cave in
076	HI WATER	HIGH WATER	High Water
077	SNO BANK	SNOW BANK	Snow Bank
078	LO-HI EDGE	LOW-HIGH PVMNT EDGE	Low or high shoulder at pavement edge
079	DITCH	CUT SLOPE/DITCH	Cut slope or ditch embankment
080	OBJ FRM MV	OBJ FRM OTHR VEH	Struck by rock or other object set in motion by other vehicle (incl. lost loads)
081	FLY-OBJ	OTHER MOVING OBJ	Struck by rock or other moving or flying object (not set in motion by vehicle)
082	VEH HID	VEH OBSCURE VIEW	Vehicle obscured view
083	VEG HID	VEG OBSCURE VIEW	Vegetation obscured view

EVENT CODES

Code	Short Description	Medium Description	Long Description
084	BLDG HID	BLD OBSCURE VIEW	View obscured by fence, sign, phone booth, etc.
085	WIND GUST	WIND GUST	Wind Gust
086	IMMERSED	IMMERSION	Vehicle immersed in body of water
087	FIRE/EXP	FIRE/EXPLOSION	Fire or explosion
088	FENC/BLD	FENCE/BUILDING	Fence or building, etc.
089	OTHR CRASH	REFER OTHR CRASH	Crash related to another separate crash
090	TO 1 SIDE	TWO WAY ONE SIDE	Two-way traffic on divided roadway all routed to one side
091	BUILDING	BUILDING	Building or other structure
092	PHANTOM	PHANTOM VEH	Other (phantom) non-contact vehicle
093	CELL PHONE	CELL PHONE PER PAR	Cell phone (on PAR or driver in use)
094	VIOL GDL	VIOL GRAD DR LIC	Teenage driver in violation of graduated license pgm
095	GUY WIRE	GUY WIRE	Guy wire
096	BERM	BERM	Berm (earthen or gravel mound)
097	GRAVEL	GRAVEL IN RDWY	Gravel in roadway
098	ABR EDGE	ABRUPT EDGE	Abrupt edge
099	CELL WTNSD	CELL PHONE WITNESSED	Cell phone use witnessed by other participant
100	UNK FIXD	UNK FIX OBJ	Fixed object, unknown type.
101	OTHER OBJ	OTHER OBJ NOT FIXED	Non-fixed object, other or unknown type
102	TEXTING	TEXTING	Texting
103	WZ WORKER	WZ WORKER	Work Zone Worker
104	ON VEHICLE	RIDE ON VEH EXTERIOR	Passenger riding on vehicle exterior
105	PEDAL PSGR	PSNGR ON PEDALCYCLE	Passenger riding on pedalcycle
106	MAN WHLCHR	NONMOTOR WHEELCHAIR	Pedestrian in non-motorized wheelchair
107	MTR WHLCHR	MOTORIZED WHEELCHAIR	Pedestrian in motorized wheelchair
108	OFFICER	POLICE OFFICER	Law Enforcement / Police Officer
109	SUB-BIKE	SUBSEQUENT BICYCLIST	"Sub-Bike": pedalcyclist injured subsequent to collision, etc.
110	N-MTR	NM STR VEH	Non-motorist struck vehicle
111	S CAR VS V	ST CAR STRUCK VEH	Street Car/Trolley (on rails or overhead wire system) struck vehicle
112	V VS S CAR	VEH STRUCK ST CAR	Vehicle struck Street Car/Trolley (on rails or overhead wire system)
113	S CAR ROW	STREET CAR ROW	At or on street car or trolley right-of-way
114	RR EQUIP	VEH STRUCK RR EQUIP	Vehicle struck railroad equipment (not train) on tracks
115	DSTRCT GPS	DISTRACT GPS DEVICE	Distracted by navigation system or GPS device
116	DSTRCT OTH	DISTRACT OTHR DEVICE	Distracted by other electronic device
117	RR GATE	RR DROP-ARM GATE	Rail crossing drop-arm gate
118	EXPNSN JNT	EXPANSION JOINT	Expansion joint
119	JERSEY BAR	JERSEY BARRIER	Jersey barrier
120	WIRE BAR	WIRE BARRIER	Wire or cable median barrier
121	FENCE	FENCE	Fence
123	OBJ IN VEH	LOOSE OBJ IN VEHICLE	Loose object in vehicle struck occupant
124	SLIPPERY	SLIPPERY SURFACE	Sliding or swerving due to wet, icy, slippery or loose surface (not gravel)
125	SHLDR	SHLDR GAVE	Shoulder gave way
126	BOULDER	ROCKS / BOULDER	Rock(s), boulder (not gravel; not rock slide)

EVENT CODES

Code	Short Description	Medium Description	Long Description
127	LAND SLIDE	ROCK OR LAND SLIDE	Rock slide or land slide
128	CURVE INV	CURVE PRESENT	Curve present at crash location
129	HILL INV	HILL PRESENT	Vertical grade / hill present at crash location
130	CURVE HID	CURVE OBSCURED VIEW	View obscured by curve
131	HILL HID	HILL OBSCURED VIEW	View obscured by vertical grade / hill
132	WINDOW HID	WINDOW VIEW OBSCURED	View obscured by vehicle window conditions
133	SPRAY HID	SPRAY OBSCURED VIEW	View obscured by water spray
134	TORRENTIAL	TORRENTIAL RAIN	Torrential Rain (exceptionally heavy rain)

Appendix D 2019 Background Traffic Conditions

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	1222	19	12	1348	3	0	0	0	8	0	8
Future Vol, veh/h	7	1222	19	12	1348	3	0	0	0	8	0	8
Conflicting Peds, #/hr	0	0	4	4	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	1	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	8	1314	20	13	1449	3	0	0	0	9	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1453	0	0	1338	0	0	2094	2821	671	2149	2830	726
Stage 1	-	-	-	-	-	-	1343	1343	-	1477	1477	-
Stage 2	-	-	-	-	-	-	751	1478	-	672	1353	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	472	-	-	522	-	-	31	18	404	28	18	372
Stage 1	-	-	-	-	-	-	163	223	-	135	192	-
Stage 2	-	-	-	-	-	-	373	192	-	416	220	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	472	-	-	522	-	-	26	15	402	24	15	372
Mov Cap-2 Maneuver	-	-	-	-	-	-	26	15	-	24	15	-
Stage 1	-	-	-	-	-	-	152	207	-	126	167	-
Stage 2	-	-	-	-	-	-	317	167	-	389	205	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.9	0	127.9
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	472	-	-	522	-	-	45
HCM Lane V/C Ratio	-	0.016	-	-	0.025	-	-	0.382
HCM Control Delay (s)	0	12.8	0.4	-	12.1	0.8	-	127.9
HCM Lane LOS	A	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	-	0	-	-	0.1	-	-	1.3

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	1226	0	0	1351	7	12	0	14	0	0	0
Future Vol, veh/h	4	1226	0	0	1351	7	12	0	14	0	0	0
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	1	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	4	1333	0	0	1468	8	13	0	15	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	1476	0	0	1334	0	0	2076	2818	667
Stage 1	-	-	-	-	-	-	1342	1342	-
Stage 2	-	-	-	-	-	-	734	1476	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.8	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.8	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	462	-	-	524	-	-	47	18	406
Stage 1	-	-	-	-	-	-	212	223	-
Stage 2	-	-	-	-	-	-	441	192	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	462	-	-	524	-	-	45	0	406
Mov Cap-2 Maneuver	-	-	-	-	-	-	45	0	-
Stage 1	-	-	-	-	-	-	205	0	-
Stage 2	-	-	-	-	-	-	441	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	0	66.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	86	462	-	-	524	-	-
HCM Lane V/C Ratio	0.329	0.009	-	-	-	-	-
HCM Control Delay (s)	66.1	12.9	0.2	-	0	-	-
HCM Lane LOS	F	B	A	-	A	-	-
HCM 95th %tile Q(veh)	1.3	0	-	-	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1226	14	2	1359	17	1	0	6	5	0	3
Future Vol, veh/h	3	1226	14	2	1359	17	1	0	6	5	0	3
Conflicting Peds, #/hr	2	0	3	3	0	2	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	2	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	3	1291	15	2	1431	18	1	0	6	5	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1450	0	0	1308	0	0	2028	2762	656	2098	2761	728
Stage 1	-	-	-	-	-	-	1307	1307	-	1446	1446	-
Stage 2	-	-	-	-	-	-	721	1455	-	652	1315	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	473	-	-	536	-	-	34	20	413	30	20	370
Stage 1	-	-	-	-	-	-	172	232	-	141	199	-
Stage 2	-	-	-	-	-	-	389	197	-	428	230	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	472	-	-	536	-	-	32	19	412	29	19	369
Mov Cap-2 Maneuver	-	-	-	-	-	-	32	19	-	29	19	-
Stage 1	-	-	-	-	-	-	168	226	-	137	195	-
Stage 2	-	-	-	-	-	-	378	193	-	412	224	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	29.7	105.3
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	153	472	-	-	536	-	-	44
HCM Lane V/C Ratio	0.048	0.007	-	-	0.004	-	-	0.191
HCM Control Delay (s)	29.7	12.7	0.1	-	11.7	0.1	-	105.3
HCM Lane LOS	D	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.6

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	1	0	0	0	0	1	0	0	0
Future Vol, veh/h	0	0	0	1	0	0	0	0	1	0	0	0
Conflicting Peds, #/hr	1	0	1	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	0	2	0	2	2	2	0	0	2	2	0	0
Mvmt Flow	0	0	0	1	0	0	0	0	1	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	4	3	3	3	3	2	2	0	0	1	0	0
Stage 1	2	2	-	1	1	-	-	-	-	-	-	-
Stage 2	2	1	-	2	2	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	1022	893	1087	1019	893	1082	1634	-	-	1622	-	-
Stage 1	1026	894	-	1022	895	-	-	-	-	-	-	-
Stage 2	1026	895	-	1021	894	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	1020	892	1085	1018	892	1081	1632	-	-	1620	-	-
Mov Cap-2 Maneuver	1020	892	-	1018	892	-	-	-	-	-	-	-
Stage 1	1025	893	-	1022	895	-	-	-	-	-	-	-
Stage 2	1025	895	-	1020	893	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	8.5	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1632	-	-	-	1018	1620	-	-
HCM Lane V/C Ratio	-	-	-	-	0.001	-	-	-
HCM Control Delay (s)	0	-	-	0	8.5	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0	0	-	-

Appendix E 2019 Total Traffic Conditions

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	1226	19	12	1350	5	0	0	0	11	0	16
Future Vol, veh/h	11	1226	19	12	1350	5	0	0	0	11	0	16
Conflicting Peds, #/hr	0	0	4	4	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	1	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	12	1318	20	13	1452	5	0	0	0	12	0	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1457	0	0	1343	0	0	2108	2839	673	2163	2846	728
Stage 1	-	-	-	-	-	-	1356	1356	-	1480	1480	-
Stage 2	-	-	-	-	-	-	752	1483	-	683	1366	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	470	-	-	520	-	-	30	18	402	27	17	370
Stage 1	-	-	-	-	-	-	160	219	-	134	191	-
Stage 2	-	-	-	-	-	-	373	191	-	410	217	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	470	-	-	520	-	-	24	14	400	22	13	370
Mov Cap-2 Maneuver	-	-	-	-	-	-	24	14	-	22	13	-
Stage 1	-	-	-	-	-	-	143	196	-	120	166	-
Stage 2	-	-	-	-	-	-	309	166	-	369	194	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.9	0	149.1
HCM LOS			A	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	470	-	-	520	-	-	50
HCM Lane V/C Ratio	-	0.025	-	-	0.025	-	-	0.581
HCM Control Delay (s)	0	12.9	0.6	-	12.1	0.8	-	149.1
HCM Lane LOS	A	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	-	0.1	-	-	0.1	-	-	2.2

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	1233	0	0	1355	8	12	0	14	0	0	0
Future Vol, veh/h	4	1233	0	0	1355	8	12	0	14	0	0	0
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	1	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	4	1340	0	0	1473	9	13	0	15	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	1482	0	0	1341	0	0	2086	2832	671
Stage 1	-	-	-	-	-	-	1350	1350	-
Stage 2	-	-	-	-	-	-	736	1482	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.8	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.8	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.8	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	460	-	-	521	-	-	47	18	404
Stage 1	-	-	-	-	-	-	210	221	-
Stage 2	-	-	-	-	-	-	440	191	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	460	-	-	521	-	-	45	0	404
Mov Cap-2 Maneuver	-	-	-	-	-	-	45	0	-
Stage 1	-	-	-	-	-	-	203	0	-
Stage 2	-	-	-	-	-	-	440	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	0	66.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	86	460	-	-	521	-	-
HCM Lane V/C Ratio	0.329	0.009	-	-	-	-	-
HCM Control Delay (s)	66.1	12.9	0.2	-	0	-	-
HCM Lane LOS	F	B	A	-	A	-	-
HCM 95th %tile Q(veh)	1.3	0	-	-	0	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	1229	14	2	1362	26	1	0	6	12	0	5
Future Vol, veh/h	7	1229	14	2	1362	26	1	0	6	12	0	5
Conflicting Peds, #/hr	2	0	3	3	0	2	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	2	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	7	1294	15	2	1434	27	1	0	6	13	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1463	0	0	1311	0	0	2042	2786	657	2116	2780	735
Stage 1	-	-	-	-	-	-	1319	1319	-	1454	1454	-
Stage 2	-	-	-	-	-	-	723	1467	-	662	1326	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	468	-	-	534	-	-	34	19	412	30	19	367
Stage 1	-	-	-	-	-	-	169	229	-	139	197	-
Stage 2	-	-	-	-	-	-	388	194	-	422	227	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	467	-	-	534	-	-	31	18	411	28	18	366
Mov Cap-2 Maneuver	-	-	-	-	-	-	31	18	-	28	18	-
Stage 1	-	-	-	-	-	-	159	216	-	131	193	-
Stage 2	-	-	-	-	-	-	374	190	-	393	214	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.1	30.4	165.8
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	149	467	-	-	534	-	-	38
HCM Lane V/C Ratio	0.049	0.016	-	-	0.004	-	-	0.471
HCM Control Delay (s)	30.4	12.8	0.3	-	11.8	0.1	-	165.8
HCM Lane LOS	D	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	1.6

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	9	1	0	0	13	0	1	0	0	0
Future Vol, veh/h	0	0	9	1	0	0	13	0	1	0	0	0
Conflicting Peds, #/hr	1	0	1	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	0	2	0	2	2	2	0	0	2	2	0	0
Mvmt Flow	0	0	13	1	0	0	19	0	1	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	41	41	3	47	40	2	2	0	0	1	0	0
Stage 1	2	2	-	38	38	-	-	-	-	-	-	-
Stage 2	39	39	-	9	2	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	968	851	1087	954	852	1082	1634	-	-	1622	-	-
Stage 1	1026	894	-	977	863	-	-	-	-	-	-	-
Stage 2	981	862	-	1012	894	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	957	840	1085	933	841	1081	1632	-	-	1620	-	-
Mov Cap-2 Maneuver	957	840	-	933	841	-	-	-	-	-	-	-
Stage 1	1013	893	-	965	853	-	-	-	-	-	-	-
Stage 2	968	852	-	999	893	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	8.9	6.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1632	-	-	1085	933	1620	-	-
HCM Lane V/C Ratio	0.011	-	-	0.012	0.002	-	-	-
HCM Control Delay (s)	7.2	0	-	8.4	8.9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

CARLETON HART ARCHITECTURE P.C.
830 sw 10th avenue #200 portland oregon 97205
503 243 2252 | www.carletonhart.com

APPENDIX F:
PRODUCT DATA

DESCRIPTION

The EPIC Collection delivers custom luminaire flexibility with high quality, yet availability expectations of standard specification grade product. The EPIC Collection can be dressed to suit any application. Recognizing evolving environmental and legislative trends, the EPIC Collection delivers world class LED optical and performance solutions to the decorative luminaire marketplace.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Construction

TOP: Cast aluminum top housing attaches to cast aluminum mounting arm hub with four stainless steel fasteners. One-piece silicone gasket between mounting hub and top casting seals out moisture and contaminants. (See the mounting accessories section for a full selection of mounting arms. (Only these arms are compatible with the Epic luminaire). MIDSECTION: Continuous silicone gaskets seal lens to top casting and shade. The mid section features cast aluminum construction and stainless steel assembly. SHADES: Heavy gauge precision spun aluminum shades offer superior surface finish and consistency in form. DOORFRAME: Die-cast aluminum 1/8" thick door and doorframe seal to underside of shade with a thick wall continuous silicone gasket. Mounting hub ships attached to mounting arm.

Optics

Choice of twelve patented, high-efficiency AccuLED Optic™ technology manufactured from injection-molded acrylic. Optics are precisely designed to shape the optics, maximizing efficiency and application spacing. AccuLED Optic technology, creates consistent distributions with the scalability to meet customized application requirements. Offered Standard in 4000K (+/- 275K) CCT and nominal 70 CRI. Optional 3000K CCT and 5000K CC. For the ultimate level of spill light control, an optional house-side shield accessory can be field or factory installed. The house-side shield is designed to seamlessly integrate with the SL2, SL3 or SL4 optics.

Electrical

LED drivers mount to die-cast aluminum back housing for optimal heat sinking, operation efficacy, and prolonged life. Standard drivers feature electronic universal voltage (120-277V 50/60Hz), 347V 60Hz or 480V 60Hz operation, greater than 0.9 power factor, less that 20% harmonic distortion, and is suitable for operation in -40°C to 40°C ambient environments. All fixtures are shipped standard with 10kV/10kA common – and differential – mode surge protection. LightBARs feature and IP66 enclosure rating and maintain greater than 95% lumen maintenance at 60,000 hours per IESNA TM-21. Occupancy sensor and dimming options available.

Finish

Housing is finished in five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. LightBAR™ cover plates are standard white and may be specified to match finish of luminaire housing. Standard colors include black, bronze, grey, white, dark platinum and graphite metallic. RAL and custom color matches available. Consult Outdoor Architectural Colors brochure for a complete selection.

Warranty

Five-year warranty.

ECM/EMM
EPIC MEDIUM LED

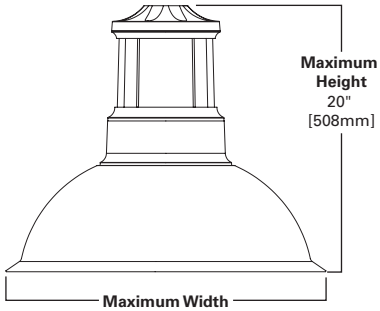
1 - 4 LightBARs

Solid State LED

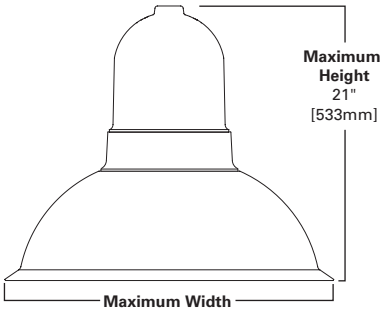
DECORATIVE AREA LUMINAIRE

DIMENSIONS

ECM Classical



EMM Modern



See configurations for more detailed information.

CERTIFICATION DATA

UL/cUL Listed
IP66 LIghtBARs
LM79 / LM80 Compliant
2G Vibration Tested
ISO 9001

ENERGY DATA

Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V 50/60Hz, 347V/60Hz, 480V/60Hz
-40°C Minimum Temperature
40°C Ambient Temperature Rating

EPA

Effective Projected Area: (Sq. Ft.) 0.94

SHIPPING DATA

Approximate Net Weight:
45 lbs. [20 kgs.]

Powering Business Worldwide

CONFIGURATIONS

HOUSING

Classical
8-5/8" H x 8-3/4" W

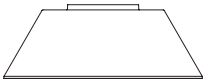
Modern
9-3/8" H
x 8-7/8" W

MID SECTION

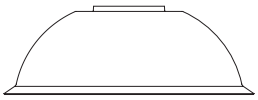
Solid
3-7/16" H x 9-15/16" W

Solid Rings
3-7/16" H x 12" W

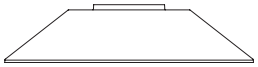
SHADE



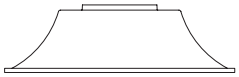
Straight Narrow
6-5/8" H x 19-1/8" W



Bell
8" H x 24" W

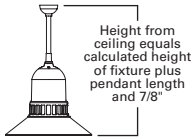


Straight Wide
5-1/8" H x 23-15/16" W



Flute
6" H x 22-1/2" W

MOUNTING OPTION



POWER AND LUMENS BY BAR COUNT (21 LED LIGHTBARS)

Number of LightBARs		E01	E02	E03	E04
Drive Current		350mA Drive Current			
Power (Watts)		25W	52W	75W	97W
Current @ 120V (A)		0.22	0.44	0.63	0.82
Current @ 277V (A)		0.10	0.20	0.28	0.36
Power (Watts)		31W	58W	82W	99W
Current @ 347V (A)		0.11	0.19	0.28	0.29
Current @ 480V (A)		0.09	0.15	0.20	0.21
T2	Lumens	2,948	5,896	8,844	11,792
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3
T3	Lumens	2,936	5,873	8,809	11,745
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3
T4	Lumens	2,876	5,752	8,627	11,503
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G3
5MQ	Lumens	3,054	6,108	9,161	12,215
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2
5WQ	Lumens	2,987	5,975	8,962	11,949
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2
5XQ	Lumens	2,982	5,963	8,945	11,926
	BUG Rating	B2-U0-G1	B3-U0-G2	B3-U0-G3	B4-U0-G3
SL2	Lumens	2,878	5,756	8,634	11,512
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2
SL3	Lumens	2,894	5,788	8,682	11,576
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2
SL4	Lumens	2,823	5,647	8,470	11,294
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2
RW	Lumens	2,957	5,915	8,872	11,829
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3
SLL/SLR	Lumens	2,616	5,231	7,847	10,462
	BUG Rating	B1-U0-G2	B1-U0-G2	B1-U0-G3	B2-U0-G3

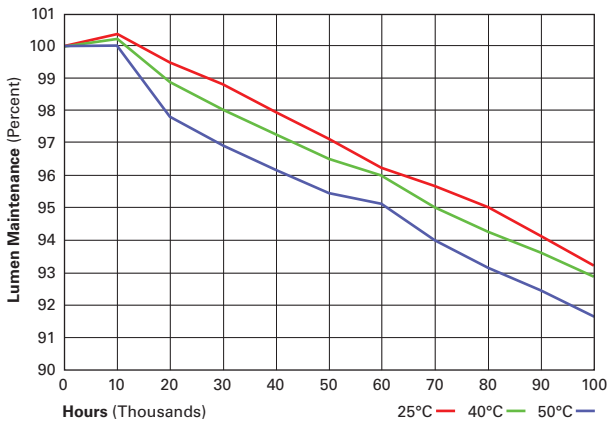
POWER AND LUMENS BY BAR COUNT (7 LED LIGHTBARS)

Number of LightBARs		F01	F02	F03	F04
Drive Current		1A Drive Current			
Power (Watts)		26W	55W	78W	102W
Current @ 120V (A)		0.22	0.46	0.66	0.86
Current @ 277V (A)		0.10	0.21	0.29	0.37
Power (Watts)		32W	60W	85W	105W
Current @ 347V (A)		0.11	0.19	0.28	0.30
Current @ 480V (A)		0.09	0.15	0.21	0.22
T2	Lumens	2,434	4,867	7,301	9,735
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3
T3	Lumens	2,424	4,848	7,272	9,696
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3
T4	Lumens	2,374	4,748	7,122	9,496
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G2
5MQ	Lumens	2,521	5,042	7,563	10,084
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2
5WQ	Lumens	2,466	4,932	7,398	9,864
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2
5XQ	Lumens	2,461	4,923	7,384	9,845
	BUG Rating	B2-U0-G1	B3-U0-G2	B3-U0-G2	B4-U0-G3
SL2	Lumens	2,376	4,752	7,127	9,503
	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2
SL3	Lumens	2,389	4,778	7,167	9,556
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G2	B2-U0-G2
SL4	Lumens	2,331	4,662	6,993	9,323
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G2
RW	Lumens	2,441	4,883	7,324	9,765
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3
SLL/SLR	Lumens	2,159	4,318	6,478	8,637
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G3	B1-U0-G3

LUMEN MAINTENANCE

Ambient Temperature	25,000 Hours*	50,000 Hours*	60,000 Hours*	100,000 Hours	Theoretical L70 (Hours)
25ºC	> 99%	> 97%	> 96%	> 93%	> 450,000
40ºC	> 98%	> 97%	> 96%	> 92%	> 425,000
50ºC	> 97%	> 96%	> 95%	> 91%	> 400,000

* Per IESNA TM-21 data.



LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
10ºC	1.02
15ºC	1.01
25ºC	1.00
40ºC	0.99
50ºC	0.96

Powering Business Worldwide

Eaton
1121 Highway 74 South
Peachtree City, GA 30269
P: 770-486-4800
www.eaton.com/lighting

CONTROL OPTIONS

0-10V (DIM)
This fixture is offered standard with 0-10V dimming driver(s). The DIM option provides 0-10V dimming wire leads for use with a lighting control panel or other control method.

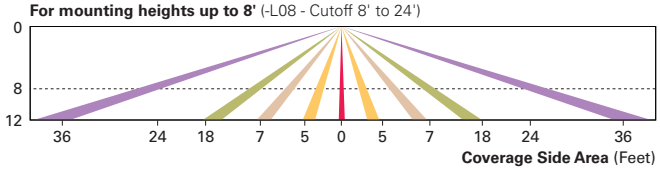
Photocontrol (PC, PER and PER7)
Optional button-type photocontrol (PC) and photocontrol receptacles (PER and PER7) provide a flexible solution to enable "dusk-to-dawn" lighting by sensing light levels. Advanced control systems compatible with NEMA 7-pin standards can be utilized with the PER7 receptacle.

Dimming Occupancy Sensor (MS/DIM-LXX, MS/X-LXX and MS-LXX)
These sensors are factory installed in the luminaire housing. When the MS/DIM-LXX sensor option is selected, the occupancy sensor is connected to a dimming driver and the entire luminaire dims when there is no activity detected. When activity is detected, the luminaire returns to full light output. The MS/DIM sensor is factory preset to dim down to approximately 50 percent power with a time delay of five minutes. The MS-LXX sensor is factory preset to turn the luminaire off after five minutes of no activity. The MS/X-LXX is also preset for five minutes and only controls the specified number of light engines to maintain steady output from the remaining light engines.

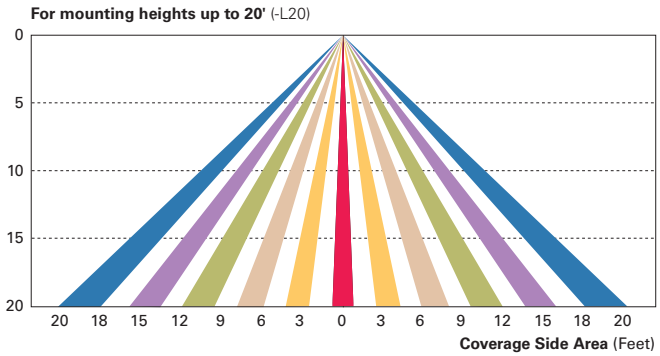
These occupancy sensors includes an integral photocell that can be activated with the FSIR-100 accessory for "dusk-to-dawn" control or daylight harvesting - the factory preset is OFF. The FSIR-100 is a wireless tool utilized for changing the dimming level, time delay, sensitivity and other parameters.

A variety of sensor lens are available to optimize the coverage pattern for mounting heights from 8'-40'.

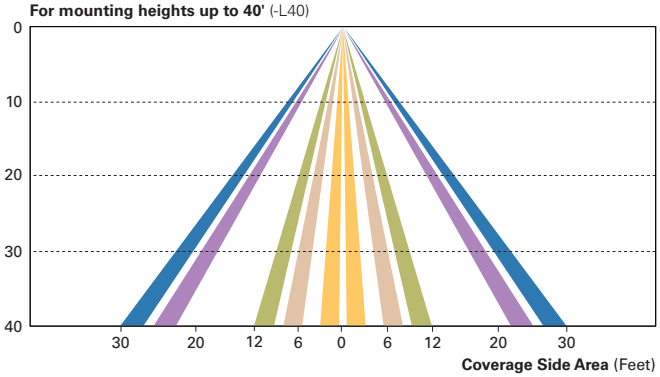
For mounting heights up to 8' (-L08 - Cutoff 8' to 24')



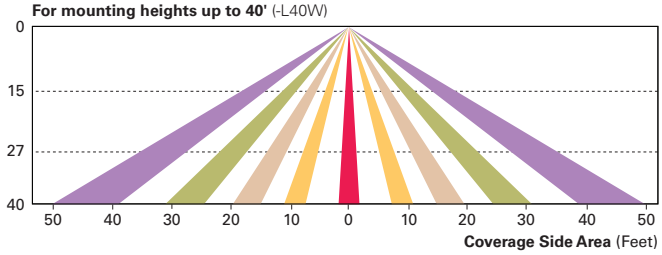
For mounting heights up to 20' (-L20)



For mounting heights up to 40' (-L40)



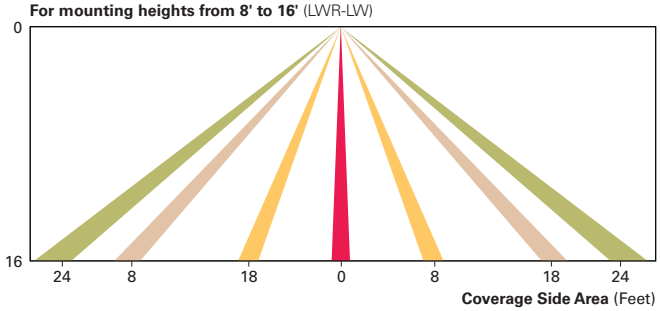
For mounting heights up to 40' (-L40W)



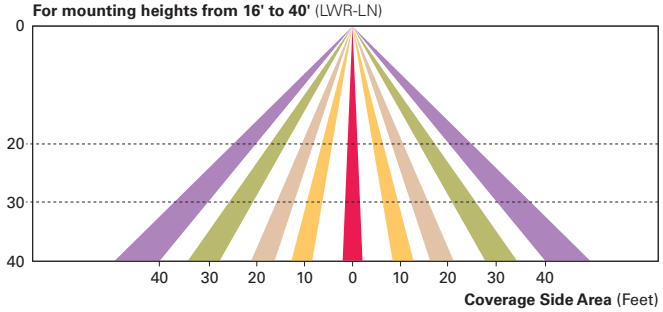
LumaWatt Pro Wireless Control and Monitoring System (LWR-LW and LWR-LN)
The LumaWatt Pro system is a peer-to-peer wireless network of luminaire-integral sensors for any sized project. Each sensor is capable of motion and photo sensing, metering power consumption and wireless communication. The end-user can securely create and manage sensor profiles with browser-based management software. The software will automatically broadcast to the sensors via wireless gateways for zone-based and individual luminaire control. The LumaWatt Pro software provides smart building solutions by utilizing the sensor to provide easy-to-use dashboard and analytic capabilities such as improved energy savings, traffic flow analysis, building management software integration and more.

For additional details, refer to the LumaWatt Pro product guides.

For mounting heights from 8' to 16' (LWR-LW)



For mounting heights from 16' to 40' (LWR-LN)



ORDERING INFORMATION

Sample Number: ECM-E04-LED-E1-T2-FL-GM

Product Family [1]	Number of LightBARs [2, 3]	Lamp Type	Voltage	Distribution	Mid Section Type	Shade Type	Color [5]
ECM=Epic Classical Medium **EMM**=Epic Modern Medium	**E01**=(1) 21 LED LightBAR **E02**=(2) 21 LED LightBARs **E03**=(3) 21 LED LightBARs **E04**=(4) 21 LED LightBARs **F01**=(1) 7 LED LightBAR **F02**=(2) 7 LED LightBARs **F03**=(3) 7 LED LightBARs **F04**=(4) 7 LED LightBARs	**LED**=Solid State Light Emitting Diodes	**E1**=Electronic (120-277V) **347**=347V **480**=480V [4]	**T2**=Type II **T3**=Type III **T4**=Type IV **SL2**=Type II w/Spill Control **SL3**=Type III w/Spill Control **SL4**=Type IV w/Spill Control **5MQ**=Type V Square Medium **5WQ**=Type V Square Wide **5XQ**=Type V Square Extra Wide **RW**=Rectangular Wide **SLL**=90° Spill Light Eliminator Left **SLR**=90° Spill Light Eliminator Right	**SO**=Solid **SR**=Solid Rings	**SN**=Straight Narrow **SW**=Straight Wide **BL**=Bell **FL**=Flute	**AP**=Grey **BZ**=Bronze **BK**=Black **DP**=Dark Platinum **GM**=Graphite Metallic **WH**=White

Options (Add as Suffix)

2L=Two Circuits [6]
7030=70 CRI / 3000K CCT [7]
7050=70 CRI / 5000K CCT [7]
8030=80 CRI / 3000K CCT [7]
LCF=LightBAR Cover Plate Matches Housing Finish
MS-LXX=Motion Sensor for ON/OFF Operation [8]
MS/X-LXX=Motion Sensor for Bi-Level Switching [9]
PMXX=Pendant Mount (XX=Pendant Length in Inches, 9.5" min - 48.0" max) [10]
HSS=Factory Installed House Side Shield [11]
DIM=0-10V Dimming Driver [12]
LWR-LW=LumaWatt Pro Wireless Sensor, Wide Lens for 8' - 16' Mounting Height [13]
LWR-LN=LumaWatt Pro Wireless Sensor, Narrow Lens for 16' - 40' Mounting Height [13]

Accessories (Order Separately) [14]

Classical
VA6150-XX=Bishop Wall Mount Arm
VA6151-XX=Bishop Wall Mount Arm with Cross Rod
VA6152-XX=Traditional Wall Mount Arm
VA6153-XX=Traditional Wall Mount Arm with 45° Strap
VA6154-XX=Bishop Single Pole Mount Arm
VA6155-XX=Bishop Single Pole Mount Arm with Cross Rod
VA6156-XX=Bishop Twin Pole Mount Arm
VA6157-XX=Bishop Twin Pole Mount Arm with Cross Rods
VA6158-XX=Traditional Single Pole Mount Arm
VA6159-XX=Traditional Single Pole Mount Arm with Rounded Upper Bar
VA6160-XX=Traditional Single Pole Mount Arm with Rounded Lower Bar [15]
VA6161-XX=Traditional Single Pole Mount Arm with 45° Upper Bar
VA6162-XX=Traditional Single Pole Mount Arm with 45° Lower Bar [15]
VA6163-XX=Traditional Single Pole Mount Arm with 45° Upper Strap
VA6165-XX=Traditional Twin Pole Mount Arm
VA6166-XX=Traditional Twin Pole Mount Arm with Rounded Upper Bars
VA6167-XX=Traditional Twin Pole Mount Arm with Rounded Lower Bars [15]
VA6168-XX=Traditional Twin Pole Mount Arm with 45° Upper Bars
VA6169-XX=Traditional Twin Pole Mount Arm with 45° Lower Bars [15]
VA6170-XX=Traditional Twin Pole Mount Arm with 45° Upper Straps
VA6171-XX=Mast Arm Adapter

Modern
VA6101-XX=Bishop Wall Mount Arm
VA6102-XX=Bishop Wall Mount Arm with Cross Rod
VA6103-XX=Traditional Wall Mount Arm
VA6104-XX=Traditional Wall Mount Arm with 45° Strap
VA6105-XX=Bishop Single Pole Mount Arm
VA6106-XX=Bishop Single Pole Mount Arm with Cross Rod
VA6107-XX=Bishop Twin Pole Mount Arm
VA6108-XX=Bishop Twin Pole Mount Arm with Cross Rods
VA6109-XX=Traditional Single Pole Mount Arm
VA6110-XX=Traditional Single Pole Mount Arm with Rounded Upper Bar
VA6111-XX=Traditional Single Pole Mount Arm with Rounded Lower Bar [15]
VA6112-XX=Traditional Single Pole Mount Arm with 45° Upper Bar
VA6113-XX=Traditional Single Pole Mount Arm with 45° Lower Bar [15]
VA6114-XX=Traditional Single Pole Mount Arm with 45° Upper Strap
VA6116-XX=Traditional Twin Pole Mount Arm
VA6117-XX=Traditional Twin Pole Mount Arm with Rounded Upper Bars
VA6118-XX=Traditional Twin Pole Mount Arm with Rounded Lower Bars [15]
VA6119-XX=Traditional Twin Pole Mount Arm with 45° Upper Bars
VA6120-XX=Traditional Twin Pole Mount Arm with 45° Lower Bars [15]
VA6121-XX=Traditional Twin Pole Mount Arm with 45° Upper Straps
VA6122-XX=Mast Arm Adapter

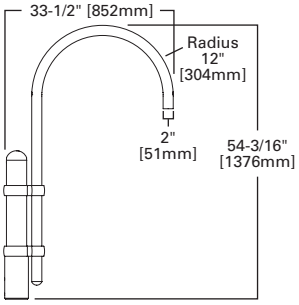
OA/RA1016=NEMA Twistlock Photocontrol - Multi-Tap
OA/RA1027=NEMA Twistlock Photocontrol - 480V
OA/RA1201=NEMA Twistlock Photocontrol - 347V
OA/RA1013=Photocontrol Shorting Cap
LB/HSS-21=Field Installed House Side Shield for "E" LightBARs [11, 16]
LB/HSS-07=Field Installed House Side Shield for "F" LightBARs [11, 16]

Accessory Options [17]
V=Victorian Finial [18]
M=Modern Finial [18]
A=Architectural Finial [18]
N=Nostalgic Finial [18]
R=NEMA Twistlock Photocontrol Receptacle [19]

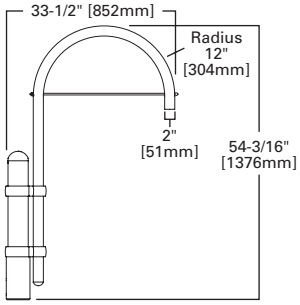
NOTES:
1. Arm not included. Order separately. See accessories.
2. Standard 4000K CCT and greater than 70 RI.
3. 21 LED LightBAR powered by 350mA and 7 LED LightBAR powered by 1A.
4. Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
5. Custom and RAL color matching available upon request. Consult your lighting representative at Eaton for more information.
6. Low-level output varies by bar count. Consult factory. Requires quantity of two or more LightBARs.
7. Consult customer service for lead times and multiplier.
8. Sensor mounted to the luminaire. Available in E01-E04 and F01-F04 configurations. Replace "XX" with mounting height in feet for proper lens selection, (e.g., MS-L25). Consult factory for additional information.
9. Sensor mounted to the luminaire. Available in E02-E04 and F02-F04 configurations. Replace "X" with number of LightBARs operating in low output mode and replace XX with mounting height in feet for proper lens selection, (e.g., MS/3-L25). Maximum four bars in low output mode. Consult factory for additional information.
10. Pendant mount option "PMXX" must be used with Invue Pendant mount kit only. Includes pendant pipe, swivel hangar and canopy cover. Other pendant lengths can be specified in inches (XX). Minimum pendant length is 9-1/2". For lengths above 48", consult your lighting representative at Eaton for more information.
11. Only for use with SL2, SL3 and SL4 distributions.
12. Dimming leads provide for external 0-10V control system (by others).
13. LumaWatt wireless sensors are factory installed only, requiring network components LWP-EM-1, LWP-GW-1, and LWP-PoE8 in appropriate quantities. See www.eaton.com/lighting for LumaWatt application information.
14. Replace XX with color suffix.
15. Only available with traditional arms.
16. One required for each LightBAR.
17. Add as suffix to accessory. Example: VA6109-BK-R.
18. Not available with finials, pendant mount "PM48" or bishop wall mounts.
19. Requires use of 4" O.D. round straight pole.

MOUNTING ACCESSORIES

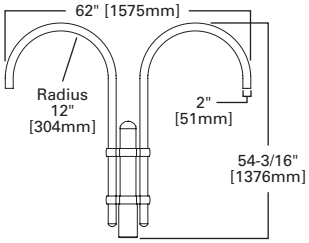
Pole mount arms are designed to fit both medium ECM/EMM housings. (Only these arms are compatible with the Epic luminaire). Arms feature a precision welded cast aluminum mounting hub for attachment of fixture head to arm with four stainless steel fasteners. Wall mount arms compliment pole mount luminaires and attractively transition fixture scale in lower mounting height pedestrian environments. Wall mount arms are designed to fit both medium ECM/EMM housings. Arms feature a precision welded cast aluminum mounting hub for attachment of fixture head to arm with four stainless steel fasteners.



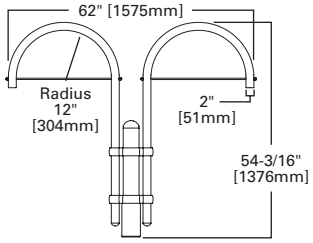
BISHOP SINGLE POLE MOUNT ARM
VA6105 (Modern), VA6154 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon.
Weight: 24 lbs. E.P.A: 0.92



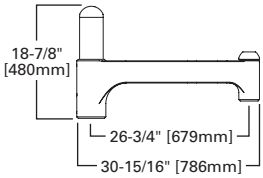
BISHOP SINGLE POLE MOUNT ARM WITH CROSS ROD
VA6106 (Modern), VA6155 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon.
Weight: 25 lbs. E.P.A: 0.98



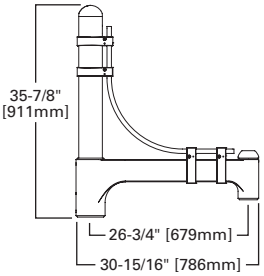
BISHOP TWIN POLE MOUNT ARM
VA6107 (Modern), VA6156 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon.
Weight: 37 lbs. E.P.A: 1.43



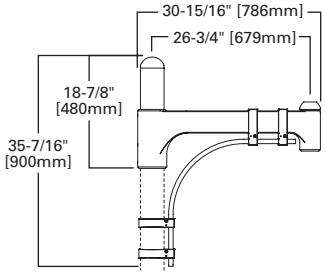
BISHOP TWIN POLE MOUNT ARM WITH CROSS RODS
VA6108 (Modern), VA6157 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon.
Weight: 39 lbs. E.P.A: 1.55



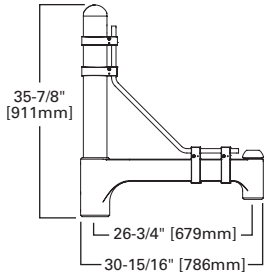
TRADITIONAL SINGLE POLE MOUNT ARM
VA6109 (Modern), VA6158 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon.
Weight: 20 lbs. E.P.A: 0.86



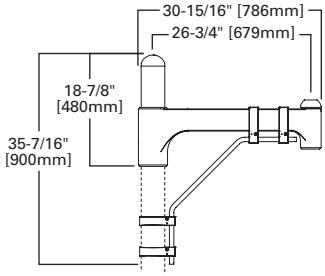
TRADITIONAL SINGLE POLE MOUNT ARM WITH ROUNDED UPPER BAR
VA6110 (Modern), VA6159 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon.
Weight: 28 lbs. E.P.A: 1.4



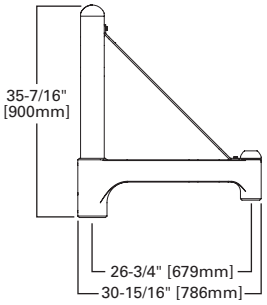
TRADITIONAL SINGLE POLE MOUNT ARM WITH ROUNDED LOWER BAR
VA6111 (Modern), VA6160 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon.
Weight: 25 lbs. E.P.A: 1.16



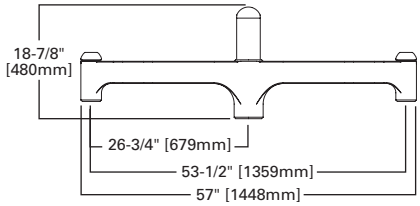
TRADITIONAL SINGLE POLE MOUNT ARM WITH 45° UPPER BAR
VA6112 (Modern), VA6161 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon.
Weight: 28 lbs. E.P.A: 1.38



TRADITIONAL SINGLE POLE MOUNT ARM WITH 45° LOWER BAR
VA6113 (Modern), VA6162 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon.
Weight: 24 lbs. E.P.A: 1.17

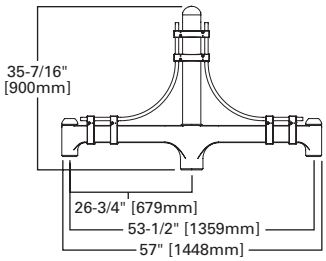


TRADITIONAL SINGLE POLE MOUNT ARM WITH 45° UPPER STRAP
VA6114 (Modern), VA6163 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon.
Weight: 24 lbs. E.P.A: 1.17

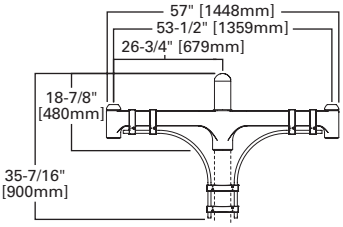


TRADITIONAL TWIN POLE MOUNT ARM
VA6116 (Modern), VA6165 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon.
Weight: 30 lbs. E.P.A: 1.44

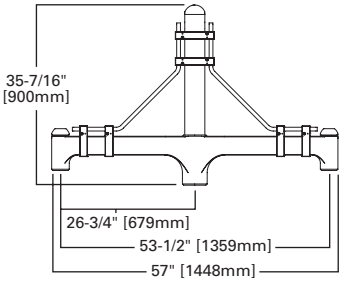
MOUNTING ACCESSORIES



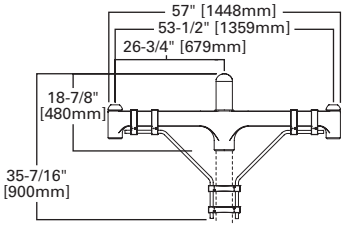
TRADITIONAL TWIN POLE MOUNT ARM WITH ROUNDED UPPER BARS
VA6117 (Modern), VA6166 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon.
Weight: 43 lbs. E.P.A: 2.28



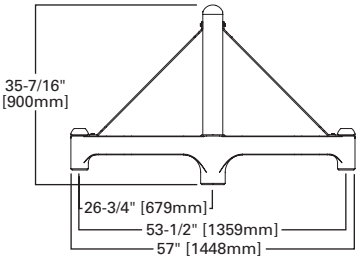
TRADITIONAL TWIN POLE MOUNT ARM WITH ROUNDED LOWER BARS
VA6118 (Modern), VA6167 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon.
Weight: 40 lbs. E.P.A: 2.04



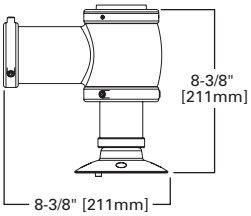
TRADITIONAL TWIN POLE MOUNT ARM WITH 45° UPPER BARS
VA6119 (Modern), VA6168 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon.
Weight: 43 lbs. E.P.A: 2.24



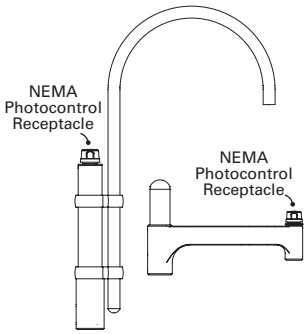
TRADITIONAL TWIN POLE MOUNT ARM WITH 45° LOWER BARS
VA6120 (Modern), VA6169 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon.
Weight: 40 lbs. E.P.A: 2.0



TRADITIONAL TWIN POLE MOUNT ARM WITH 45° UPPER STRAPS
VA6121 (Modern), VA6170 (Classical)
Slipfits over 4" round straight pole, or 4" O.D. by 6" tall tenon.
Weight: 37 lbs. E.P.A: 1.81

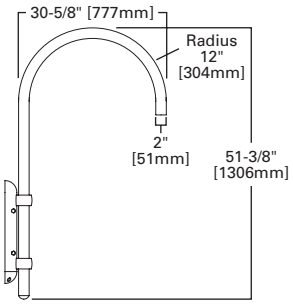


MAST ARM ADAPTER
VA6122 (Modern), VA6171 (Classical)
Secures fixture to nominal 2" pipe (2-3/8" horizontal O.D.)
Weight: 4 lbs.

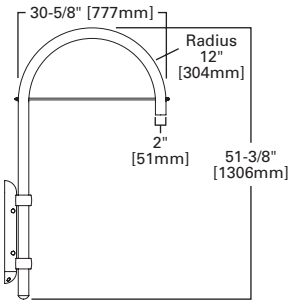


NEMA TWISTLOCK PHOTOCONTROL (R)
Order separately (Not compatible with finials or wall mount bishop arms)

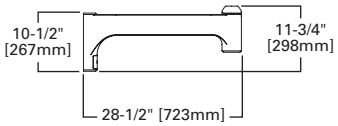
Wall Mount Accessories



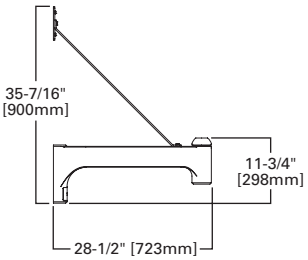
BISHOP WALL MOUNT ARM
VA6101 (Modern), VA6150 (Classical)
Mounts to wall with four stainless steel lag bolts (provided by other).
Weight: 16 lbs.



BISHOP WALL MOUNT ARM WITH CROSS ROD
VA6102 (Modern), VA6151 (Classical)
Mounts to wall with four stainless steel lag bolts (provided by other).
Weight: 17 lbs.



TRADITIONAL WALL MOUNT ARM
VA6103 (Modern), VA6152 (Classical)
Mounts to wall with four stainless steel lag bolts (provided by other).
Weight: 17 lbs.



TRADITIONAL WALL MOUNT ARM WITH 45° STRAP
VA6104 (Modern), VA6153 (Classical)
Mounts to wall with four stainless steel lag bolts (provided by other).
Weight: 18 lbs.

PITCH SINGLE WALL SCONCE

TECH LIGHTING®

An architectural profile reminiscent of beautifully classic roof lines delivers significant light output in this modern LED wall sconce suitable for both indoor and outdoor applications. The Pitch Single's die-cast metal body houses powerful LED light sources that create visual appeal as light cascades down along a wall.

High quality LM80-tested LEDs
for consistent long-life performance and color

Outstanding protection against the elements:
- Marine-grade powder coat finishes
- Stainless Steel mounting hardware
- Impact-resistant, UV stabilized frosted acrylic lensing

Can be mounted for up lighting or down lighting

SPECIFICATIONS

DELIVERED LUMENS	823
WATTS	26.1
VOLTAGE	120V, 277V
DIMMING	ELV
LIGHT DISTRIBUTION	Symmetric
MOUNTING OPTIONS	Downlight or Uplight
CCT	3000K
CRI	80+
COLOR BINNING	3 Step
BUG RATING	B1-U0-G0
DARK SKY	Compliant (Downlight)
WET LISTED	IP65
GENERAL LISTING	ETL
CALIFORNIA TITLE 24	Can be used to comply with CEC 2016 Title 24 Part 6 for outdoor use. Registration with CEC Appliance Database not required.
START TEMP	-30°C
FIELD SERVICEABLE LED	No
CONSTRUCTION	Aluminum
HARDWARE	Stainless Steel
FINISH	Marine Grade Powder Coat
LED LIFETIME	L70; 70,000 Hours
WARRANTY*	5 Years

* Visit techlighting.com for specific warranty limitations and details.

PITCH SINGLE
shown in black

PITCH SINGLE
shown in bronze

PITCH SINGLE
shown in charcoal

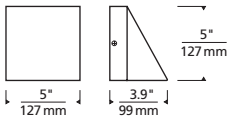
PITCH SINGLE
shown in silver

ORDERING INFORMATION

700WSPIT	SIZE	FINISH	LAMP	
	S SINGLE	**B** BLACK	**-LED830**	LED 80 CRI, 3000K 120V
		Z BRONZE	**-LED830277**	LED 80 CRI, 3000K 277V
		H CHARCOAL		
		I SILVER		

PITCH SINGLE WALL SCONCE

TECH LIGHTING®



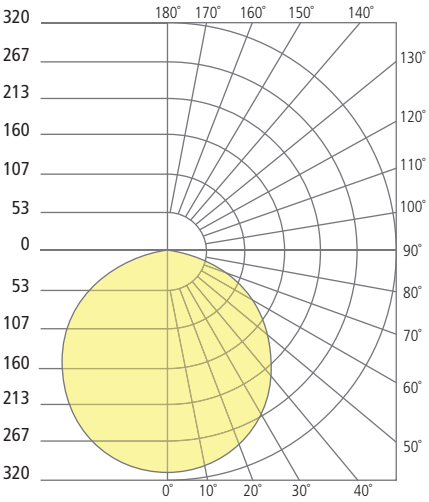
Pitch Single

PHOTOMETRICS*

*For latest photometrics, please visit www. techlighting.com/OUTDOOR

PITCH SINGLE

Total Lumen Output:	823
Total Power:	26.2
Luminaire Efficacy:	31.4
Color Temp:	3000K
CRI:	80+
BUG Rating:	B1-U0-G0



PROJECT INFO

FIXTURE TYPE & QUANTITY

JOB NAME & INFO

NOTES

TECH LIGHTING®

GENERATION BRANDS

7400 Linder Avenue, Skokie, Illinois 60077
T 847.410.4400 F 847.410.4500

LITHONIA LIGHTING®

Catalog Number	
Notes	
Type	

FEATURES & SPECIFICATIONS

INTENDED USE — Our recessed LED module is the most economical means to create a well lit environment with exceptional energy efficiency and near zero maintenance. Great for retrofit into existing downlight cans or new construction and remodel applications. Unique torsion spring and friction clip retention allows fitment into nearly 100% of installed cans. The LED module maintains at least 70% light output for 50,000 hours.

CONSTRUCTION — Aluminum die cast reflector with deep baffle configuration for reduced glare. Combined LED and driver printed circuit board attached. Inner reflector cone funnels light through the pressed-in diffused lens.

Baffle and open trim inserts are available in multiple finishes.

OPTICS — Diffused lens at end of mixing chamber to provide even light distribution for general illumination, equivalent to 65W BR30 or 100W BR30 lamp.

Wide flood beam angle at >45°.

ELECTRICAL — Center 2 Edge™ (patent pending) technology created for a single point source. Primary power disconnect provided for simple connection to a dedicated LED connector in the housing.

Dimming down to 10%. For compatible dimmers, refer to Compatible Dimmers Chart.

725-lumen P series has an input wattage of 12.7 watts, 57 lumens per watt, equivalent to 65-watt incandescent.

P Series' patent pending driver has zero inrush, which allows power loads to be calculated with actual rated wattages.

Example: 47 units of 6BPMW LED fixtures can be installed in line with a 600-watt dimmer. 600W/12.7W = 47 fixtures.

950-lumen P series has an input wattage of 15.2 watts, 63 lumens per watt, equivalent to 100-watt incandescent.

*Actual wattage may differ by +/-5% when operating at 120V +/-10%.

INSTALLATION — Suitable for installation in standard and shallow-height rough-in sections.

E26 socket adapter and splice kit ships standard. This enables easy installation or permanent conversion to an LED source for Title 24 compliance.

Twin torsion springs ensure easy installation.

Friction clips included to allow fitment into cans without torsion brackets from an inside diameter of 6.0" to 7.0".

LISTINGS — CSA certified to US and Canadian safety standards. ENERGY STAR® qualified; California T24 compliant. Wet location listed for indoor use only. WSEC ASTM E283 for Air-Tight (with IC housings).

WARRANTY — 5-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Actual performance may differ as a result of end-user environment and application.

Note: Specifications subject to change without notice.

PATENTS PENDING.

Torsion mount shown

Friction clip shown
(included)

LED Recessed Downlighting

6BP/60P

6" LED Module

IC/Non-IC
Retrofit

DIMMABLE LED · Center2Edge™ · ENERGY STAR · WET LOCATION™

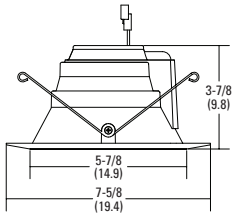
E26 adaptor
(included)

Splice kit
(included)

Specifications

Aperture: 5-7/8 (14.9)
Ceiling opening: Determined by rough-in
Overlap trim: 7-5/8 (19.4)
Height: 3-7/8 (9.8)

All dimensions are inches (centimeters) unless otherwise indicated.



ORDERING INFORMATION Lead times will vary depending on options selected. Consult with your sales representative.

Example: 6BP TRMW LED 27K 90CRI

Series/Finish		Lamp	CCT / CRI / W / Lumens[1]		Voltage		Options	
6BPMW	6" Baffle LED module, matte white	LED	(blank)	3000 K / 83 CRI / 12.7W / 725L	(blank)	120V	L7XLED T24	New construction rough-in LED base
6BP TRMW	6" Baffle LED module, black baffle, matte white flange		27K 90CRI	2700 K / 93 CRI / 10.25W / 600L			L7XRLED T24	Remodel rough-in LED base
6BPBN	6" Baffle LED module, brushed nickel		30K 90CRI	3000 K / 93 CRI / 10.25W / 600L			LC6LED T24	New construction rough-in LED base
6BPORB	6" Baffle LED module, oil-rubbed bronze		40K 90CRI	4000K / 92CRI / 9.9W / 650L			L7X	New construction rough-in[2]
							L7XR	Remodel rough-in[2]
		HL LED	(blank)	3000 K / 83 CRI / 15.2W / 950L			L7XP	New construction shallow rough-in[2]
			27K 90CRI	2700 K / 93 CRI / 16.7W / 860L			L7XPR	Remodel shallow rough-in[2]
			30K 90CRI	3000 K / 93 CRI / 16.7W / 860L			LC6	New construction rough-in[2]
			40K 90CRI	4000K / 92CRI / 16.4W / 950L			LCP	New construction shallow rough-in[2]
60PA	6" Open LED module, clear diffuse	LED	(blank)	3000 K / 83 CRI / 12.7W / 725L	(blank)	120V	L7XLED T24	New construction rough-in LED base
60PAZ	6" Open LED module, clear specular		27K 90CRI	2700 K / 93 CRI / 10.25W / 600L			L7XRLED T24	Remodel rough-in LED base
60PA TRMW	6" Open LED module, clear diffuse, matte white flange		30K 90CRI	3000 K / 93 CRI / 10.25W / 600L			LC6LED T24	New construction rough-in LED base
60PAZ TRMW	6" Open LED module, clear specular, matte white flange		40K 90CRI	4000K/ 92CRI / 9.9W / 650L			L7X	New construction rough-in[2]
							L7XR	Remodel rough-in[2]
		HL LED	(blank)	3000 K / 83 CRI / 15.2W / 950L			L7XP	New construction shallow rough-in[2]
			27K 90CRI	2700 K / 93 CRI / 16.7W / 860L			L7XPR	Remodel shallow rough-in[2]
			30K 90CRI	3000 K / 93 CRI / 16.7W / 860L			LC6	New construction rough-in[2]
			40K 90CRI	4000K/ 92CRI / 16.4W / 950L			LCP	New construction shallow rough-in[2]

Accessories: *Order as separate catalog number.*

TSA6	Makes non-bracket housing compatible with the LED module; ships as units, J6 or J25
FL2LED	Makes L7XF housings compatible with the LED module

Notes
1 Total system delivered lumens.
2 Must be ordered on a separate line.

See page 2 for Trim Inserts.

6" LED Module

TRIM INSERTS

TRIM INSERTS (for field configuration; ordered separately) **Example:** 6BP TRMW R12

Series/Finish				Packaging	
6BP TRMW	6" Baffle black, matte white flange insert	6OPAZ	6" Open clear specular insert	R12	Retail pack of 12 units
6BPBN	6" Baffle brush nickel insert	6OPA TRMW	6" Open clear diffuse, matte white flange insert	U	Unit
6BPORB	6" Baffle oil-rubbed bronze insert	6OPAZ TRMW	6" Open clear specular, matte white flange insert		
6OPA	6" Open clear diffuse insert				

Black Baffle with Mattte White Trim Ring **(TRMW)**

Brushed Nickel Baffle **(BN)**

Oil-rubbed Bronze Baffle **(ORB)**

Clear Diffuse with Matte White Trim Ring **(A TRMW)**

Clear Diffuse **(A)**

Clear Specular with Matte White Trim Ring **(AZ TRMW)**

Clear Specular **(AZ)**

ADDITIONAL DATA

ENERGY DATA* - 3000K Standard Lumens		
	CRI - 83	CRI - 93
Lumens	725	600
Min. starting temp	-18°C (0°F)	-18°C (0°F)
Max. temp	46°C (115°F)	46°C (115°F)
EMI/RFI	FCC Title 47 CFR, Part 15, Class B	FCC Title 47 CFR, Part 15, Class B
Sound rating	A standards	A standards
Input voltage	120V	120V
Min. power factor	0.97	0.97
Input frequency	50/60 Hz	50/60 Hz
Rated wattage	12.7W	10.5W
Input power	12.7W	10.5W
Input current	.11A	.09A

*Values at non-dimming line voltage.

ENERGY DATA* - 3000K Hi Lumens		
	CRI - 83	CRI - 93
Lumens	950	860
Min. starting temp	-18°C (0°F)	-18°C (0°F)
Max. temp	46°C (115°F)	46°C (115°F)
EMI/RFI	FCC Title 47 CFR, Part 15, Class B	FCC Title 47 CFR, Part 15, Class B
Sound rating	A standards	A standards
Input voltage	120V	120V
Min. power factor	0.97	0.97
Input frequency	50/60 Hz	50/60 Hz
Rated wattage	15.2W	16.7W
Input power	15.2W	16.7W
Input current	.13A	.14A

*Values at non-dimming line voltage.

Trim finish	Lumen multiplier
Matte White	1.00 (Baseline)
Clear Diffuse	0.99
Clear Specular	0.99
Brushed Nickel	0.83
Black Baffle	0.76
Oil Rubbed Bronze	0.78

Color temperature	Lumen multiplier
2700K	0.97
3000K	1.00 (Baseline)
4000K	1.08

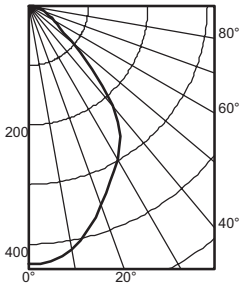
DOWNLIGHTING: One Lithonia Way, Conyers, GA 30012 Phone: 800-315-4935 Fax: 770-860-3129 www.lithonia.com

6" LED Module

PHOTOMETRICS

Distribution Curve | **Distribution Data** | **Output Data** | **Coefficient of Utilization** | **Illuminance Data at 30" Above Floor for a Single Luminaire**

6BPMW LED, 3000 K LEDs, input watts: 12.7, delivered lumens: 703, LM/W=55.4 , test no. LTL25711P, tested in accordance with IESNA LM 79-08



	Ave	Lumens
0	434	
5	430	41
15	388	109
25	325	150
35	267	164
45	149	115
55	63	59
65	38	38
75	20	21
85	5	6
90	0	

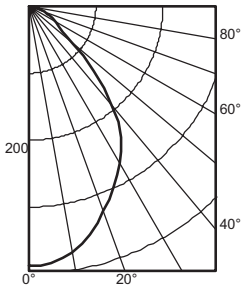
Zone	Lumens	% Lamp
0° - 30°	299.1	42.6
0° - 40°	463.5	66.0
0° - 60°	637.8	90.8
0° - 90°	702.6	100.0
90° - 180°	0.0	0.0
0° - 180°	702.6	*100.0

*Efficiency

pf	80%			20%			50%		
pc	80%			70%			50%		
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	107	104	101	105	102	99	101	98	96
2	97	91	86	95	90	85	91	87	84
3	87	81	75	86	80	75	83	78	73
4	79	72	66	78	71	66	76	70	65
5	72	65	59	71	64	59	69	63	58
6	66	59	53	65	58	53	64	57	52
7	61	53	48	60	53	48	59	52	48
8	56	49	44	56	49	44	54	48	43
9	52	45	40	52	45	40	51	44	40
10	49	42	37	48	41	37	47	41	37

		50% beam - 55.1°		10% beam - 92.6°	
Mounting Height	Inital FC Center Beam	Diameter	FC	Diameter	FC
8.0	14.3	5.7	7.2	11.5	1.4
10.0	7.7	7.8	3.9	15.7	0.8
12.0	4.8	9.9	2.4	19.9	0.5
14.0	3.3	12.0	1.6	24.1	0.3
16.0	2.4	14.1	1.2	28.3	0.2

6BPMW LED 90CRI, 3000 K LEDs, input watts: 10.3, delivered lumens: 634, LM/W= 62, test no. LTL 23864P, tested in accordance with IESNA LM 79-08



	Ave	Lumens
0	389	
5	384	36
15	353	99
25	299	137
35	239	148
45	137	106
55	57	54
65	33	33
75	16	17
85	4	4
90	0	

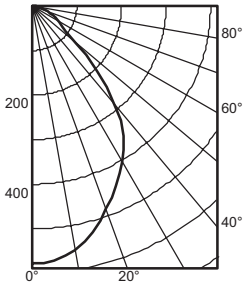
Zone	Lumens	% Lamp
0° - 30°	272.6	43.0
0° - 40°	420.3	66.2
0° - 60°	579.6	91.4
0° - 90°	634.5	100.0
90° - 180°	0.0	0.0
0° - 180°	634.5	*100.0

*Efficiency

pf	80%			20%			50%		
pc	80%			70%			50%		
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	107	104	101	105	102	99	101	99	96
2	97	91	87	95	90	86	92	87	84
3	87	81	76	86	80	75	83	78	74
4	79	72	67	78	71	66	76	70	65
5	72	65	59	71	64	59	69	63	58
6	66	59	53	66	58	53	64	57	53
7	61	54	48	60	53	48	59	52	48
8	57	49	44	56	49	44	55	48	44
9	52	45	40	52	45	40	51	44	40
10	49	42	37	48	42	37	47	41	37

		50% beam - 56.0°		10% beam - 93.1°	
Mounting Height	Inital FC Center Beam	Diameter	FC	Diameter	FC
8.0	12.8	5.8	6.4	11.6	1.3
10.0	6.9	8.0	3.5	15.8	0.7
12.0	4.3	10.1	2.2	20.1	0.4
14.0	2.9	12.2	1.5	24.3	0.3
16.0	2.1	14.4	1.1	28.5	0.2

6BPMW HL LED 80CRI, 3000 K LEDs, input watts: 15.2, delivered lumens: 950, LM/W=63 , test no. LTL23864, tested in accordance with IESNA LM 79-80



	Ave	Lumens
0	578	
5	572	54
15	525	147
25	444	204
35	355	220
45	204	157
55	85	80
65	50	49
75	24	26
85	5	6
90	0	

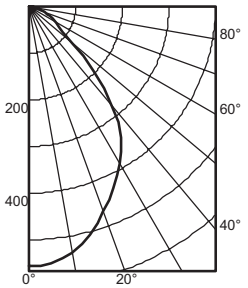
Zone	Lumens	% Lamp
0° - 30°	405.5	43.0
0° - 40°	625.2	66.2
0° - 60°	862.2	91.4
0° - 90°	943.9	100.0
90° - 180°	0.0	0.0
0° - 180°	943.9	*100.0

*Efficiency

pf	80%			20%			50%		
pc	80%			70%			50%		
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	107	104	101	105	102	99	101	99	96
2	97	91	87	95	90	86	92	87	84
3	87	81	76	86	80	75	83	78	74
4	79	72	67	78	71	66	76	70	65
5	72	65	59	71	64	59	69	63	58
6	66	59	53	66	58	53	64	57	53
7	61	54	48	60	53	48	59	52	48
8	57	49	44	56	49	44	55	48	44
9	52	45	40	52	45	40	51	44	40
10	49	42	37	48	42	37	47	41	37

		50% beam - 56.0°		10% beam - 93.1°	
Mounting Height	Inital FC Center Beam	Diameter	FC	Diameter	FC
8.0	19.1	5.8	9.6	11.6	1.9
10.0	10.3	8.0	5.1	15.8	1.0
12.0	6.4	10.1	3.2	20.1	0.6
14.0	4.4	12.2	2.2	24.3	0.4
16.0	3.2	14.4	1.6	28.5	0.3

6BPMW HL LED 90CRI, 3000 K LEDs, input watts: 16.6, delivered lumens: 910, LM/W= 55, test no. LTL 23864P1, tested in accordance with IESNA LM 79-08



	Ave	Lumens
0	557	
5	551	52
15	506	142
25	428	197
35	343	212
45	196	151
55	82	77
65	48	48
75	23	25
85	5	6
90	0	

Zone	Lumens	% Lamp
0° - 30°	390.9	43.0
0° - 40°	602.6	66.2
0° - 60°	831.1	91.4
0° - 90°	909.8	100.0
90° - 180°	0.0	0.0
0° - 180°	909.8	*100.0

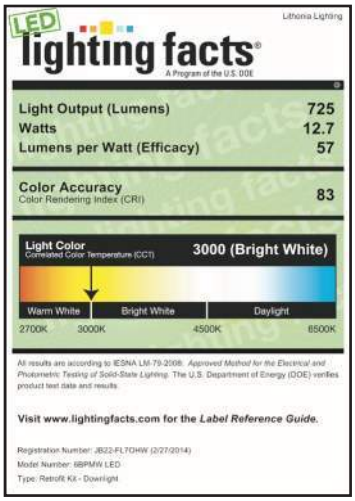
*Efficiency

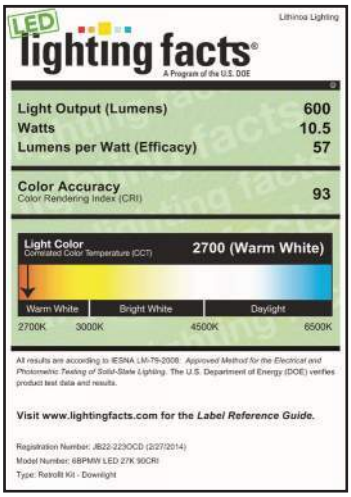
pf	80%			20%			50%		
pc	80%			70%			50%		
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	116	116	116	111	111	111
1	107	104	101	105	102	99	101	99	96
2	97	91	87	95	90	86	92	87	84
3	87	81	76	86	80	75	83	78	74
4	79	72	67	78	71	66	76	70	65
5	72	65	59	71	64	59	69	63	58
6	66	59	53	66	58	53	64	57	53
7	61	54	48	60	53	48	59	52	48
8	57	49	44	56	49	44	55	48	44
9	52	45	40	52	45	40	51	44	40
10	49	42	37	48	42	37	47	41	37

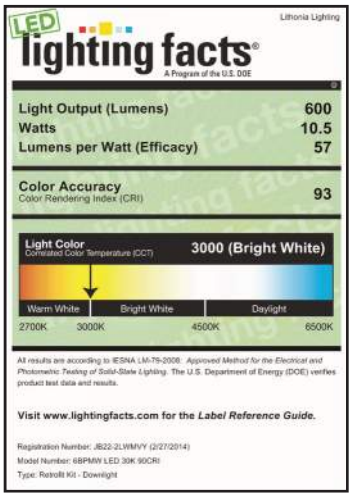
		50% beam - 56.0°		10% beam - 93.1°	
Mounting Height	Inital FC Center Beam	Diameter	FC	Diameter	FC
8.0	18.4	5.8	9.2	11.6	1.8
10.0	9.9	8.0	5.0	15.8	1.0
12.0	6.2	10.1	3.1	20.1	0.6
14.0	4.2	12.2	2.1	24.3	0.4
16.0	3.1	14.4	1.5	28.5	0.3

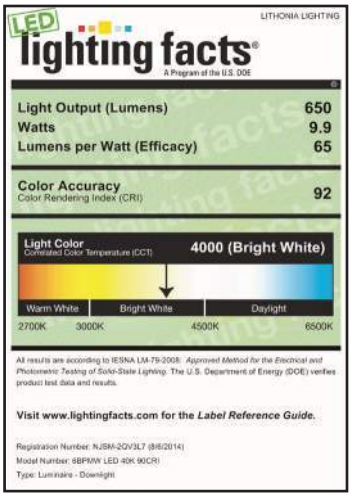
6" LED Module

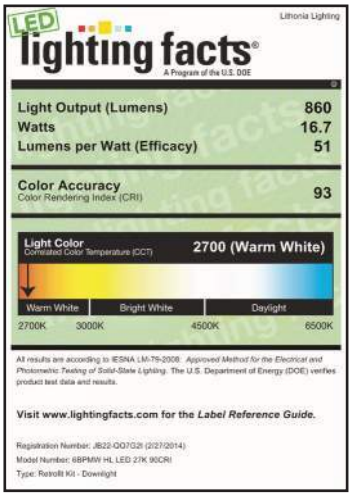
LIGHTING FACTS

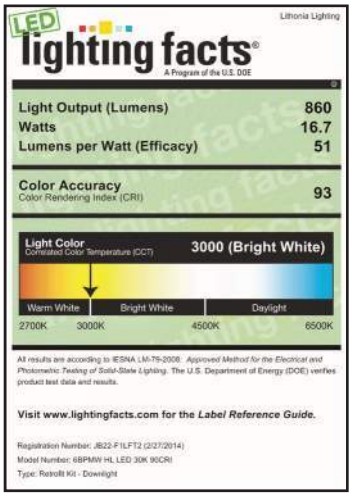


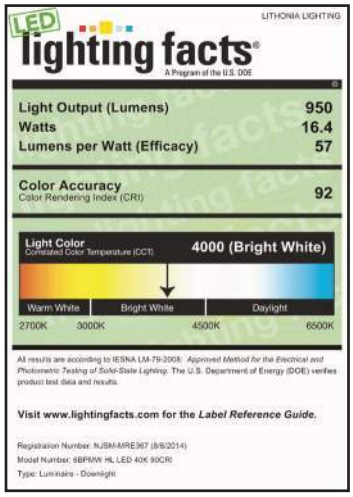












Catalog #: Type:

Project: Date:

Notes:

2-1/2” x 4-3/4” LED Step Light

120V Input

Fits a single gang box

Electrical Data

Catalog Number	Wattage	Source Lumens	Efficacy
SS3006	3W	120lm	40lpw

Construction

Die-cast aluminum housing with solite lens. Surface mount luminaire illuminates stairs, steps or pathways. Energy-saving LED emits through the solite glass lens.

LED Light Engine

- Wattage: 3W
- Lumens: 120lm
- Color Temperature: 2700K (available in amber, see SS3006-AMB)
- Color Rendering Index: 90 CRI

Electrical

- Integral 120V input driver
- Consult factory for dimming options

Finishes

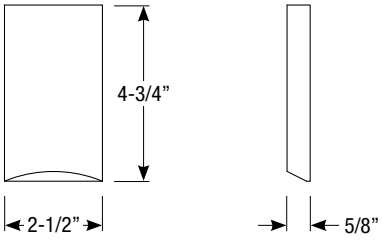
Available in bronze, silver metallic or white.

Installation

Fits in standard single-switch box, and a 2” x 3” handy box.
Junction box mounts vertically.

Listings

- UL listed to US and Canadian standards for wet locations
- ADA compliant



Order Matrix

Step Light Order Matrix (Example: SS3006-BZ)

Series
SS3006-BZ (Bronze LED Step Light) **SS3006-SM** (Silver Metallic LED Step Light) **SS3006-WT** (White LED Step Light)

Revised 06/16/17

14508 Nelson Ave. City of Industry, CA 91744 • tel: 626.336.4511 • fax: 626.330.4266 • www.csllighting.com

ECOSENSE®

RISE™

OVERVIEW • SPECIFICATIONS • ORDERING

INTERIOR + EXTERIOR | **F080 SINGLE**

DATE	PROJECT	FIRM	TYPE

RISE IS A SYSTEM OF BEAUTIFULLY DESIGNED OUTDOOR RATED LUMINAIRES THAT PROVIDE EFFICIENT AND POWERFUL LIGHT USING THE LATEST IN LED TECHNOLOGY. RISE F080 SINGLE IS A POWERFUL AND COMPACT LED LIGHT FIXTURE, DELIVERING UP TO 745 LUMENS, THAT CAN BE USED IN SPOT, ACCENT, LANDSCAPE AND FLOODLIGHT APPLICATIONS. ITS UNIQUE MACRO™ LOCK FEATURE ALLOWS FOR FULL 180 DEGREE TILT AND 360 DEGREE PAN AIMABILITY USING ONLY ONE TWIST.

FEATURES :

- POWERFUL CBCP
- ONLY 5° LASER SPOT
- EXTREMELY COMPACT
- POWERFUL OUTPUT 300-745LMS
- MACRO™ LOCK - 180° TILT AND 360° PAN
- 11 UNIQUE BEAM ANGLES
- MULTIVOLT (110V-277V)
- 8 CCTS: 2200K THROUGH 6500K
- 80+ AND 90+ CRI
- DIMMABLE TO 5%
- IP66 RATED

FIXTURE MODEL	FIXTURE CONFIG.	POWER/ LUMEN OUTPUT*	CCT/ COLOR	CRI	BEAM ANGLE	FINISHES	ACCESSORIES	WIRING AND MOUNTING
F080	1S							
F080	1S - Single Head	LO - Low Output MO - Medium Output HO - High Output	22 - 2200K 25 - 2500K 27 - 2700K 30 - 3000K 35 - 3500K 40 - 4000K 50 - 5000K 65 - 6500K RD - Red GR - Green BL - Blue AM - Amber	8 - 80 9 - 90* X - For RD, GR, BL, AM *90 CRI not available in 2200K, 2500K, 5000K, and 6500K	05 - Laser Spot (5°) 10 - Very Narrow Spot (10°) 15 - Narrow Spot (15°) 20 - Spot (20°) 40 - Flood (40°) 60 - Wide Flood (60°) 80 - Very Wide Flood (80°) E1 - Elliptical 1 (15°x60°) E2 - Elliptical 2 (30°x60°) E3 - Elliptical 3 (60°x15°) E4 - Elliptical 4 (60°x30°)	K - Black Z - Bronze S - Silver W - White C - Custom* *Select color at pantone.com	X - No Accessory H - Half Snoot F - Full Snoot C - Custom Will ship as X if not specified	A - 19" Flying Leads - Internal Cable IC; Bottom Exit; 1/2" NPT ; UL/CE Rated B* - 10' External Cable Side Exit; Surface Mount ; UL/CE Rated C* - 10' External Cable Bottom Exit; Surface Mount - 1/2" NPT ; UL/CE Rated Will ship as A if not specified

EXAMPLE: F080-1S-LO-22-8-05-S-X-A

*See Photometry Chart for Lumen Data

PERFORMANCE	WATTS	POWER	LUMEN OUTPUT	OPTIC	EFFICACY	CBCP
	4	Low Output	309	5°	77	21,991
	7.5	Medium Output	531	5°	71	37,824
	11.5	High Output	745	5°	65	53,048

ALL LUMEN DATA IS FROM 4000K 80CRI FIXTURES. PLEASE SEE PHOTOMETRY SPEC SHEET FOR ADDITIONAL LUMEN DATA.

COLOR RENDERING INDEX 80+, 90+

COLOR CONSISTENCY 3-STEP MACADAM ELLIPSE

LUMEN DEPRECIATION / RATED LIFE

WATTS	L70 @ 25C	L70 @ 50C	L90 @ 25C	L90 @ 50C
HIGH	>60,500* >(181,000)**	36,300* >(109,000)**	>60,500* >(69,800)**	>31,700*

* ENERGY STAR REPORTED TESTING HOURS TO DATE. CALCULATIONS FOR LED FIXTURES ARE BASED ON MEASUREMENTS THAT COMPLY WITH IES LM-80 TESTING PROCEDURES AND IES TM-21 CALCULATOR

** ESTIMATED HOURS

NOTE: Information on this Spec Sheet is subject to change, please visit ecosenselighting.com/rise for the most updated information.

ECOSENSE LIGHTING INC.
837 NORTH SPRING STREET
SUITE 103
LOS ANGELES, CA 90012

P • 310.496.6255
F • 310.496.6256
T • 855.632.6736
855.6.ECOSEN

DATE	PROJECT	FIRM	TYPE

ELECTRICAL	**WATTAGE**	LOW OUTPUT = 4W; MEDIUM OUTPUT = 7.5W; HIGH OUTPUT = 11.5W
	POWER FACTOR	>0.9 for 120V (HO, MO, LO), 230V (HO, MO), 277V (HO)
	THD	<0.2 for 120V (HO, MO, LO), 230V (HO, MO), 277V (HO)
	OPERATING VOLTAGE	MULTIVOLT: 110-277VAC, 50/60 Hz
	DRIVER	INTEGRAL TO FIXTURE; DE-RATED POWER AND SYNCHRONOUS START-UP AT FULL BRIGHTNESS
	STARTUP TEMPERATURE	-40˚F TO 122˚F (-40˚C TO 50˚C)
	OPERATING TEMPERATURE	-40˚F TO 122˚F (-40˚C TO 50˚C)
	STORAGE TEMPERATURE	-40˚F TO 176˚F (-40˚C TO 80˚C)
CONTROL	**DIMMING**	110-277VAC, ELV TYPE, REVERSE PHASE, TRAILING EDGE
PHYSICAL	**DIMENSIONS**	W 2.49" x H 8.13" x L 6.97" ; (63.33mm x 206.45mm x 177.05mm)
	HOUSING/LENS	EXTRUDED ALUMINUM; UV STABILIZED POLYCARBONATE; STAINLESS STEEL FASTENERS
	WEIGHT	1.25LBS / 0.56KG
	ENVIRONMENT	OUTDOOR • UL CERTIFIED FOR WET LOCATIONS IP66 IMPACT RATED TO IK10 MEETS 3G ANSI C136.31 VIBRATION STANDARD FOR BRIDGE APPLICATIONS
	MOUNTING OPTIONS	A - FLYING LEADS - INTERNAL CABLE IC; BOTTOM EXIT; 1/2" NPT ; UL/ CE RATED B - EXTERNAL CABLE SIDE EXIT; SURFACE MOUNT ; UL/CE RATED C - EXTERNAL CABLE BOTTOM EXIT; 1/2" NPT ; UL/CE RATED
	WIRING	LENGTH OF FLYING LEADS 19" (482.6mm) LENGTH OF EXTERNAL CABLE 10' (3.05m)
	TOOLS	2.5mm HEX KEY AND PHILLIPS #0 SCREWDRIVER FOR INTERCHANGEABLE LENS + SNOOTS 4mm HEX KEY FOR AIMING 5mm HEX KEY FOR MAIN TILT ARM
	WIND LOAD (EPA)	EFFECTIVE PROJECTED AREA 0.14ft²
	CORROSION RESISTANT	RISE HAS A HIGH-PERFORMING, CORROSION-RESISTANT FINISH THAT USES HIGH DURABILITY TRIGLYCIDYL ISOCYANURATE (TGIC) POWDER COATINGS SPECIFICALLY DESIGNED FOR EXTERIOR AND WEATHER EXPOSURE. THIS FINISH IS TESTED AGAINST THE MOST SEVERE SPECIFICATIONS, PROVIDING SIGNIFICANT RESISTANCE TO COLOR CHANGE.
FIXTURE RATING & CERTIFICATIONS	**CE, UL CERTIFIED** **RoHS COMPLIANT, IK10**	CE · c UL us LISTED · RoHS COMPLIANT · IK10
LIMITED WARRANTY	**5 YEARS**	

0-10V CONTROL OPTIONS

100-120VAC / 277VAC Linear Dimming Control Module 0-10V - Plenum Rated **LDCM-PL-120-277-010V-GR**

All products come standard with ELV dimming capabilities. 0-10V Control options required for operation at 0-10V.

OPTIONAL ACCESSORIES

Snoots

Half Snoot, Color Finish (K=Black, Z=Bronze, S=Silver, W=White, C=Custom) ..... **F080-H-(K,Z,S,W,C)**

Full Snoot, Color Finish (K=Black, Z=Bronze, S=Silver, W=White, C=Custom) ..... **F080-F-(K,Z,S,W,C)**

Interchangeble Lens

5 Degree **F080-LENS-05**

10 Degree **F080-LENS-10**

15 Degree **F080-LENS-15**

20 Degree **F080-LENS-20**

40 Degree **F080-LENS-40**

60 Degree **F080-LENS-60**

80 Degree **F080-LENS-80**

15x60 or 60x15 Degree **F080-LENS-E1E3**

30x60 or 60x30 Degree **F080-LENS-E2E4**

Full Set of Beam Angle Lens Degree (5, 10, 15, 20, 40, 60, 80, 15x60 or 60x15, 30x60 or 60x30) **F080-LENS-FULLSET**

Canopy Plate

RISE Canopy Plate (K=Black, Z=Bronze, S=Silver, W=White, C=Custom) ..... **RISE-CANOPY-04-(K,Z,S,W,C)**

NOTE: Information on this Spec Sheet is subject to change, please visit ecosenselighting.com/rise for the most updated information.

ECOSENSE LIGHTING INC.
837 NORTH SPRING STREET
SUITE 103
LOS ANGELES, CA 90012

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855.6.ECOSEN

DATE	PROJECT	FIRM	TYPE

Color Filters

Red	F080-FILTER-RED
Blue	F080-FILTER-BLUE
Green	F080-FILTER-GREEN
Amber	F080-FILTER-AMBER

F080 Wall Mount Arm (for use only with Wiring Option C – External Cable Bottom Exit)

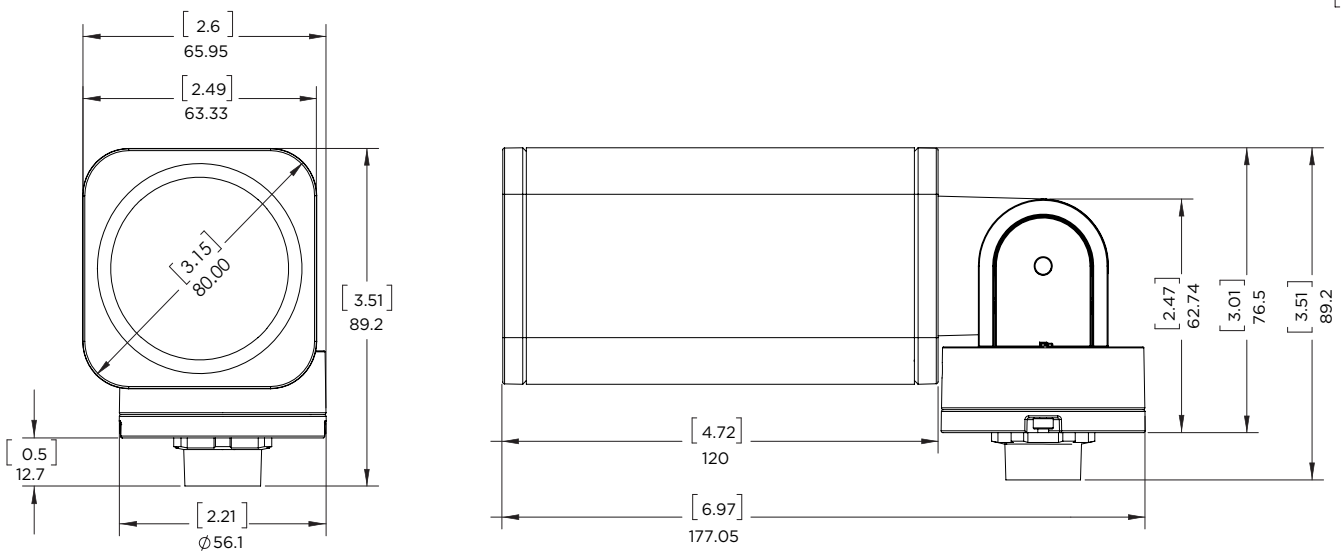
Wall Mount Arm, 6 inch, Color Finish (K=Black, S=Silver, C=Custom)	F080-WMA-06-(K,S,C)
Wall Mount Arm, 12 inch, Color Finish (K=Black, S=Silver, C=Custom)	F080-WMA-12-(K,S,C)
Wall Mount Arm, 18 inch, Color Finish (K=Black, S=Silver, C=Custom)	F080-WMA-18-(K,S,C)
Wall Mount Arm, 24 inch, Color Finish (K=Black, S=Silver, C=Custom)	F080-WMA-24-(K,S,C)

Ground Stake (for use only with Wiring Option A and C Only– 1/2" NPT, not for use with multi-fixture units)

Landscape Stake, 12in (for use with F080 Single Head only, not for use with multi-fixture units)	F080-LS-1S-STK-12

DIMENSIONS

[inch]
mm



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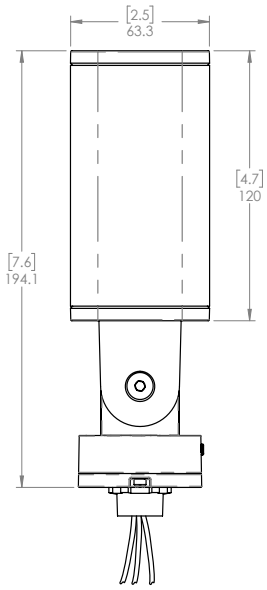
WIRING GUIDE

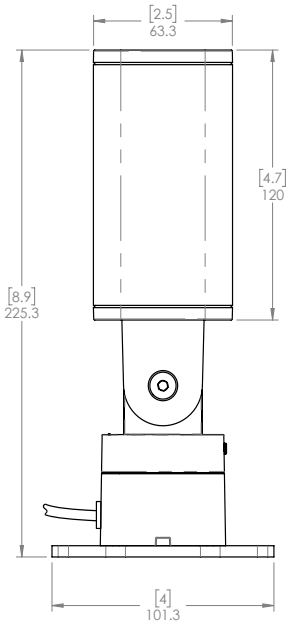
RISE is and exterior rated (IP66) fixture that is available in three different wiring options:

Flying Leads - Internal Cable
(UL + CE Rated)



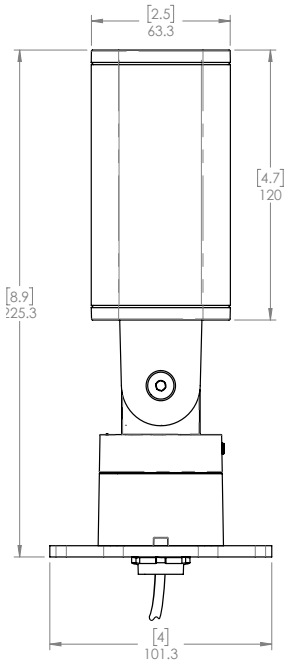
- For use with standard junction boxes
- 1/2” NPT Taper, Cable Length is 19”
- Compatible with EcoSense Canopy junction Box Cover
- 18 AWG Stranded Copper Cable - 3 Conductors

External Cable Side Exit
(UL + CE Rated)



- For use when external, exterior rated cable is required to run to remote junction box or mains
- Cable exits the side of the base
- Comes with a Surface Mount Plate, for mounting direct to surface
- Cable Length is 10’ (3.05m)

External Cable Bottom Exit
(UL + CE Rated)



- For use when external, exterior rated cable is required to run to remote junction box or mains
- Cable exits the bottom for use with various accessories such as Wall Mount Arm and Ground Stake
- 1/2” NPT taper for mounting
- Comes with a Surface Mount Plate, for mounting direct to surface
- Cable Length is 10’ (3.05m)

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*Visit **www.timberform.com** to view and download drawings (PDF or DWG), product specifications and placement guidelines.*

CYCLOOPS® TWIST™

U.S. Design Patent D665,709 (2) 2178-83-E-C

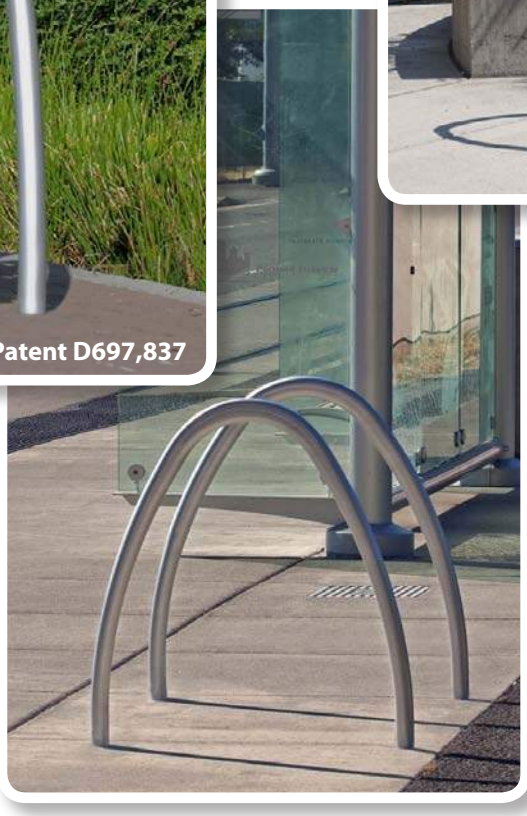
Formed from a single 1-1/2" (38mm) I.D. ASTM schedule 40 steel pipe.

2 POINT CONTACT

CYCLOOPS® ARCH™

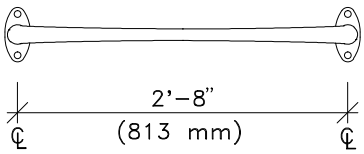
(2) 2178-84-E-C U.S. Design Patent D697,837

2 POINT CONTACT

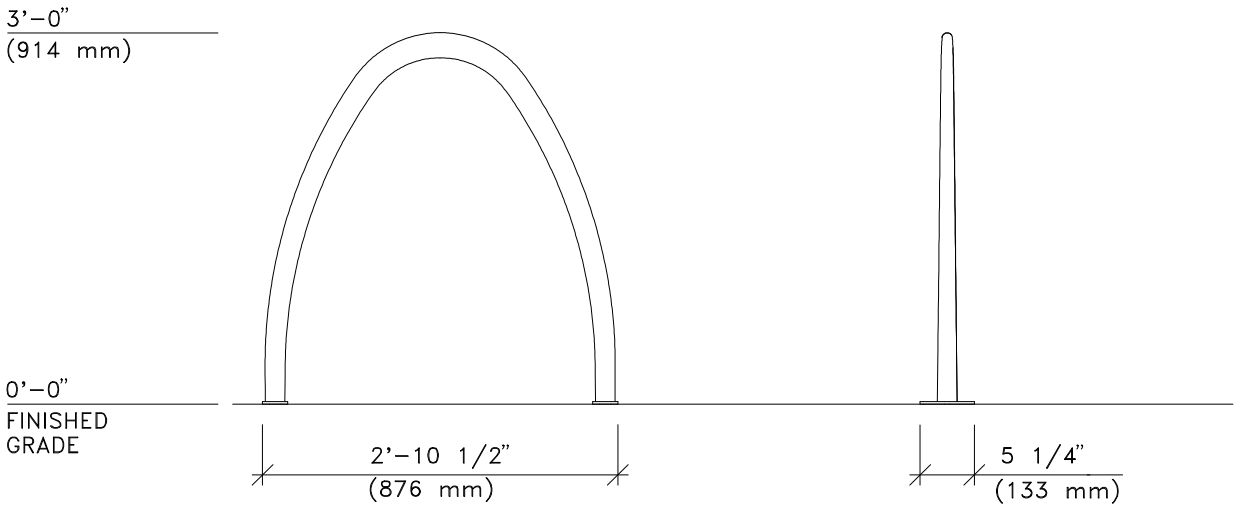


Formed from a 1-1/2" (38mm) I.D. ASTM schedule 40 steel pipe.

Designs marked "2 POINT CONTACT" provide two bicycle contact points for increased stability and security.

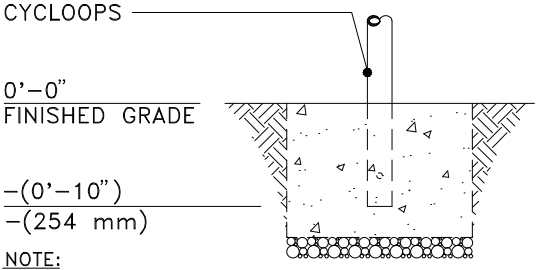


TOP VIEW



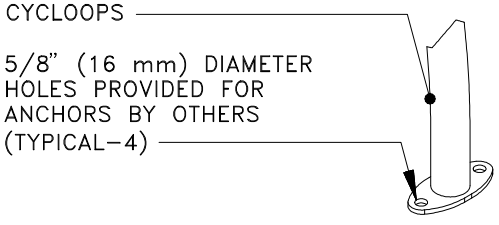
FRONT VIEW

SIDE VIEW



NOTE:
CONCRETE FOOTING AND NO. 4 REBAR (BY OTHERS) PER LOCAL SOIL CONDITIONS. CONSULT PROJECT ENGINEER FOR EXACT REQUIREMENTS.

2178-84-E (EMBEDMENT)



2178-84-SM (SURFACE MOUNT)

△

Scale	Drawn by: CL	09-10-11
3/4"=1'-0"	Ck'd by:	

COLUMBIA CASCADE COMPANY
Makers of TimberForm®, PipeLine® RePlay,® TimberForm®-2, InterPlay® CycLoops® and CycLocker® Products.
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Portland, Oregon 97201-3464 Facsimile 503/223-4530
U.S.A.
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Title:
TIMBERFORM
MODEL NO. 2178-84
CYCLOOPS ARCH

Drawing No.	Sheet
W-2178-84	1 of 1