

April 20, 2012

Tom Soppe, Associate Planner
West Linn Planning Department
22500 Salamo Road
West Linn, OR 97068

RE: DR-12-09/WAP 12-01 Bolton Primary School

Dear Tom,

In response to your April 6th letter indicating the Design Review application was incomplete, we made the requested changes. Attached are three sets of the narrative, amended plan sheets, reduced 11X17-inch versions of the plan sheets, and a CD of all the materials.

The information related to the Community Development Code sections in your letter have been provided in the following manner:

- **55.120(A)** - This information is provided on the site plan (Sheet A2.00).
- **55.120(B),(D) and 32.060(B)(2,4)** - This information is provided on the site plan (Sheet A2.00).
- **55.120(F)(1)** - This information is provided on the site plan (Sheet A2.00).
- **32.040(G)** - This is provided in the narrative description of the site.
- **32.060(B)(2)** - This information is provided on a new Sheet C1201.
- **32.070(B)** - The proposed fee-in-lieu arrangement proposed in coordination with parks is described in more detail in the narrative.

Please contact me if you need anything further.

Sincerely,



Keith S. Liden, AICP

cc: Nancy Hubbard
Pat Tortora, GHD



Tel: (503) 274-8772
Fax: (503) 274-1412

from: Keith Liden

date: 4.20.12

project: Bolton Primary School DR I

file number: DR-12-09/WAP-12-01

X application packages

Please direct questions or requests for additional information to:
Keith Liden, 503.224.4066 / liden@pbworld.com

copy to:

DEVELOPMENT REVIEW APPLICATION

For Office Use Only		
STAFF CONTACT	PROJECT No(s).	
NON-REFUNDABLE FEE(S)	REFUNDABLE DEPOSIT(S)	TOTAL

Type of Review (Please check all that apply):

- | | | |
|---|--|--|
| <input type="checkbox"/> Annexation (ANX)
<input type="checkbox"/> Appeal and Review (AP) *
<input type="checkbox"/> Conditional Use (CUP)
<input checked="" type="checkbox"/> Design Review (DR)
<input type="checkbox"/> Easement Vacation
<input type="checkbox"/> Extraterritorial Ext. of Utilities
<input type="checkbox"/> Final Plat or Plan (FP)
<input type="checkbox"/> Flood Management Area
<input type="checkbox"/> Hillside Protection & Erosion Control | <input type="checkbox"/> Historic Review
<input type="checkbox"/> Legislative Plan or Change
<input type="checkbox"/> Lot Line Adjustment (LLA) */**
<input type="checkbox"/> Minor Partition (MIP) (Preliminary Plat or Plan)
<input type="checkbox"/> Non-Conforming Lots, Uses & Structures
<input type="checkbox"/> Planned Unit Development (PUD)
<input type="checkbox"/> Pre-Application Conference (PA) */**
<input type="checkbox"/> Street Vacation | <input type="checkbox"/> Subdivision (SUB)
<input type="checkbox"/> Temporary Uses *
<input type="checkbox"/> Time Extension *
<input type="checkbox"/> Variance (VAR)
<input checked="" type="checkbox"/> Water Resource Area Protection/Single Lot (WAP)
<input type="checkbox"/> Water Resource Area Protection/Wetland (WAP)
<input type="checkbox"/> Willamette & Tualatin River Greenway (WRG)
<input type="checkbox"/> Zone Change |
|---|--|--|

Home Occupation, Pre-Application, Sidewalk Use, Sign Review Permit, and Temporary Sign Permit applications require different or additional application forms, available on the City website or at City Hall.

Site Location/Address:

**5933 HOLMES STREET
WEST LINN, OR 97068**

Assessor's Map No.: **2S 2E 30BC**

Tax Lot(s): **2300**

Total Land Area: **3.3 acres**

Brief Description of Proposal: ENCLOSE TRASH AREA, INSTALL TRASH COMPACTOR, STABILIZE STREAM BANK OF BOLTON CREEK ON THE BOLTON PRIMARY SCHOOL SITE

Applicant Name: TIM WOODLEY

(please print)

Address: 2755 SW BORLAND RD

City State Zip: TUALATIN, OR 97062

Phone: **503-673-7995**

Email: **woodleyt@wlwv.k12.or.us**

Owner Name (required): WEST LINN WILSONVILLE

(please print)

Address: 22210 SW STAFFORD RD

City State Zip: TUALATIN, OR 97062

Phone: **503-673-7995**

Email: **woodleyt@wlwv.k12.or.us**

Consultant Name: KEITH LIDEN, PARSONS BRINCKERHOFF

(please print)

Address: 400 SW 6TH AVE., SUITE 802

City State Zip: PORTLAND OR 97204

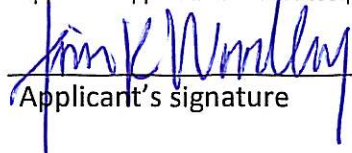
Phone: **503-478-2348**

Email: **liden@pbworld.com**

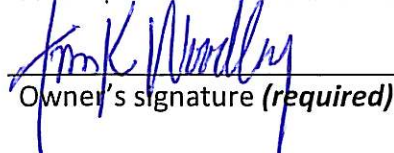
1. All application fees are non-refundable (excluding deposit). Any overruns to deposit will result in additional billing.
2. The owner/applicant or their representative should be present at all public hearings.
3. A denial or approval may be reversed on appeal. No permit will be in effect until the appeal period has expired.
4. Three (3) complete hard-copy sets (single sided) of application materials must be submitted with this application.
One (1) complete set of digital application materials must also be submitted on CD in PDF format.
If large sets of plans are required in application please submit only two sets.

* No CD required / ** Only one hard-copy set needed

The undersigned property owner(s) hereby authorizes the filing of this application, and authorizes on site review by authorized staff. I hereby agree to comply with all code requirements applicable to my application. Acceptance of this application does not infer a complete submittal. All amendments to the Community Development Code and to other regulations adopted after the application is approved shall be enforced where applicable. Approved applications and subsequent development is not vested under the provisions in place at the time of the initial application.


Applicant's signature

3-27-12
Date


Owner's signature (required)

3-27-12
Date

BOLTON PRIMARY SCHOOL
Class I Design Review and Water Resources Area Permit
April 20, 2012

APPLICATION SUMMARY

Class I Design Review and Water Resources Area Permit for bank and slope stabilization and erosion prevention project at Bolton Primary School.

GENERAL INFORMATION

Location

5933 Holmes St. (2S 2E Section 30 BC, Tax Lot 2300). Its location is shown in Figure 1.

Comprehensive Plan and Zoning Designations

The Comprehensive Plan designation is Low Density.

Consistent with the Comprehensive Plan, the property is zoned Single Family Residential Detached (R10).

Applicant and Owner

Tim Woodley, Director of Operations
West Linn-Wilsonville School District
2755 SW Borland Road
Tualatin, OR 97062
Phone: 503-673-7976
E-mail: woodleyt@wlwv.k12.or.us

Applicant's Representatives

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Hubbard & Associates
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Tualatin, OR 97062
Phone: 503-819-7505
E-mail: hubbard.associates@frontier.com

Plan Sheets and Supplemental Information

C100	Cover Sheet
A2.00	Site Plan
BO-C1	Compactor Site Plan
BO-C2	Compactor Notes and Specifications
C101	General Notes
C102	Erosion Control Notes
C200	Existing Conditions and Demolition Plan
C201	Stream Bank Remediation Plan
C300	Site, Storm Drainage, Grading and Erosion Control Plan
C400	Cross Sections and Storm Drainage Outfall Profile
C500	Details
C501	Details
L501	Landscape Restoration Plan
Attachment A	Wetland Delineation for the Bolton Primary School Stream Bank Stabilization Project
Attachment B	Compactor Information

Figure 1: Aerial Photo



Source: Metro

BACKGROUND INFORMATION

Site Description

The site is developed with a primary school, driveway, parking, and play fields as shown in Figure 1 and Sheet A2.00. The entire site is approximately 3.3 acres. In addition to the school building, a play area is located on the north side of the school. Parking is located on the north and south sides of the building.

Bolton Creek runs along the northern edge of the site. It is designated as a significant riparian corridor. The creek bank is quite steep, and it is eroding to the point of jeopardizing the adjacent play area to the south. The Creek ranges in width from 4 to 10 feet and averages less than 1 foot in depth. During field work completed by Pacific Habitat Services, Inc. (PHS) on December 29, 2011 the limits of ordinary high water (OHW) were noted as visually apparent based on topographic break, obvious water marks, and changes in vegetation. PHS flagged the OHW for subsequent inclusion on the topographic survey. A wetland delineation was conducted by Pacific Habitat Services, Inc., and no wetlands were identified (Attachment A). The resource area is 6,755 square feet, and the estimated tree canopy is 3,225 square feet, or 47%.

Surrounding Area Description

The zoning designations and current land use of the surrounding area are summarized in Table 1.

Table 1
Land Use Summary

<i>Properties in the Vicinity</i>	<i>Zone Designation</i>	<i>Land Use</i>
<u>Subject Property</u>		
2S 2E Section 30 BC, Tax Lot 2300 (3.3 acre school site owned by school district)	R10	Primary school building, ancillary facilities, and parking
<u>Surrounding Properties</u>		
North	R10	Single family residences
South	R10	Single family residences
East	R10	Hammerle Park (City of West Linn)
West	R10	Single family residences

PROPOSED IMPROVEMENTS

Trash and Recycling Area

The district would like to replace the existing trash dumpster with a trash compactor to allow less frequent trash pick-up (Sheet A2.00). The new compactor will be screened from view by a new fence and is located in the vicinity of the existing trash and recycle containers on the south side of the school. The compactor, which will only be operated intermittently between the hours of 7 am to 7 pm, will be able to satisfy the city's noise standards as documented in Attachment B. Additionally, the compactor will reduce the trash pick-up frequency from weekly to once a month. The trash compactor is not permanently affixed to the ground, and as such is not subject to the side yard setback requirements. The permanent aspects of the installation, the electrical power hook-up will be within the required property line setbacks. The fence will be on or within the property line.

Stream Bank Stabilization

The bank of Bolton Creek is proposed to be stabilized to end the erosion and creek sedimentation that is occurring. The existing slopes along Bolton Creek are steep, in some areas vertical and unsafe. Sloughing of soil and localized slides are apparent and have created an unstable condition at the west top of slope that interfaces with the school playground. The grades will be altered significantly beginning from approximately 2 feet above ordinary high water line (the delineated wetland). From there the slope will be graded at a two horizontal to one vertical (2:1) slope up to the top of the slope or within 5 feet of playground existing perimeter fence where a Gabion retaining wall will be installed (Sheet C300). This grade is significantly flatter than the existing slope and will require encroachment onto a portion of the playground. At the top of the modified slope a fence will be replaced. A portion of the re-graded slope will require a gabion retaining structure to allow for a stable 2:1 slope. The gabion structure will extend approximately 69-feet along the top and with the highest point (6-feet) located in the center of the alignment, then tapering to no height at the north and south ends of the structure (Sheet C300). This project will not modify the Bolton Creek alignment or include any work within the stream channel. A total area of 6,184 square feet will be affected and subject to the city's mitigation requirement in CDC 32.

The slope stabilization work will also include stabilization of an existing drainage ditch, which has been created over time by storm water from two existing storm pipe outfalls (15- and 6-inch storm water pipes). This ditch is not armored, causing erosion. These two existing storm drainage lines are proposed to terminate in a new, concrete manhole, which will then have a new 15-inch storm water pipe extending approximately 20 feet toward the creek, where it will daylight into the newly re-graded and armored ditch. The horizontal alignment of the existing drainage ditch will not be changed, and the re-grading will stabilize the slope and prevent long-term erosion. The new bank will consist of a series of buried gabion, intended to spread the storm water flow, and riprap to armor the slope. This drainage way will extend from a new storm water pipe outfall to Bolton Creek (see civil plan sheets). The existing chain link fence along the top of the bank will be replaced by a new 6-foot high chain link fence.

This work will required the removal of 10 deciduous trees ranging in diameter from 7 to 22

inches (Sheet C200). On February 28, 2012 a site visit was conducted with City Arborist Mike Perkins. It was determined there are no heritage trees on site, and the existing trees can be removed within the limits of the project. The re-graded area will be replanted with an appropriate combination of native ground covers, shrubs, and trees (Sheet L501). The new plantings will be hand watered while they are getting established.

The district has initiated preliminary discussions with the West Linn Parks Department to provide the off-site mitigation on city park property. The details of the specific location and design of the off-site mitigation has not yet been determined. Therefore, some of the information requested in Section 32.070(B) regarding location, design, and schedule cannot be provided at this time.

DESIGN REVIEW CRITERIA

Section 55.090(A) refers to specific portions of Section 55.100 that apply to Class I Design Review applications. The applicable portions of Section 55.100 are addressed below, including sections identified by the city staff.

Section 55.090(B) states that adequate public facilities must be available. This criterion is satisfied because the school is currently served by a full range of public utilities and streets.

Section 55.100 contains the applicable approval standards for a Class I Design Review. At the conclusion of the preapplication conference, the planning staff determined that the application must meet the following criteria in Chapter 55:

- 55.100(A)(2) Accessory structures
- 55.100(A)(6) Fences
- 55.100(A)(8) Access, egress, and circulation (truck maneuvering)
- 55.100(C) Compatibility, buffering, and screening
- 55.100(D)(4) Noise
- 55.100(I)(5) Solid waste storage areas
- 55.100 (J)(3) Lighting of solid waste area
- 55.100(J)(8) Utility fencing

These criteria are addressed below.

A. The provisions of the following chapters shall be met:

2. Chapter 34 - Accessory Structures

CDC 34.040 states that noise-producing accessory uses and structures must comply with the applicable building setback requirements. The only permanent portion of the trash compactor installation is the new electrical power source and it is proposed to be located in compliance with the side yard setback requirement of 7.5 feet.

6. Chapter 44 - Fences

The proposed fencing satisfies the city's fence provisions because it will be a maximum of 6 feet high in a rear yard. Because the fencing is not near a street intersection or driveway, it

does not pose any conflict with the clear vision area requirements in Chapter 42.

8. Chapter 48 - Access, Egress, and Circulation

The trash compactor will be located in the general vicinity currently used for the trash and recycling bins. The district has coordinated the location and accessibility with the waste disposal company. No other vehicular or pedestrian access will be affected by this proposal.

C. Compatibility Between Adjoining Uses, Buffering and Screening

The school has been a fixture in the neighborhood for many years, and it has maintained a compatible relationship with surrounding neighbors. The school operation will not be changed by either the trash compactor or the stream bank stabilization. The compactor will not generate noise above the city's noise standards, and it will offer the advantage of fewer garbage truck visits and the associated vehicle noise.

D.4. Privacy and Noise

School activities and associated noise is compatible with the surrounding neighborhood. Building entrances, vehicle circulation, and outdoor activity areas will remain in their current location. Proposed screening of the trash and recycling area will improve the situation for neighbors nearby, and the compactor will not generate noise that exceeds city standards.

I.5. Public Facilities

The general location of the solid waste and recycling area will not be changed, and in fact, less area will be required for the trash and recycling because of the new trash compactor. Additionally, the new compactor will be screened with new fencing.

J.3. Lighting of Solid Waste Area

As noted above, new compactor will be in the same general location as the existing solid waste and recycling area and the existing site lighting will remain consistent with previous city approvals.

J.8. Utility Fencing

As noted above, the proposed fence surrounding the trash and recycling area shall be 6-feet high, meeting the maximum height standards of 8 feet.

WATER RESOURCES AREA PERMIT CRITERIA

At the conclusion of the preapplication conference, the city staff determined that the Water Resource Area permit application must meet the following criteria in Chapter 32 – Water Resource Area Protection of the Community Development Code (CDC):

- 32.040 Application
- 32.050 Approval Criteria
- 32.060 Site Plan
- 32.070 Mitigation Plan
- 32.080 Revegetation Plan Requirements

Section 32.040 Application

This section is satisfied because the plan sheet package and the report in Attachment A provide all of the information and narrative responses required by this section.

Section 32.050 Approval Criteria

This section contains a number of requirements relating to the protection of water resources.

- A.** This section is satisfied because the required information and evaluation is provided as part of this application, including analysis and design by a registered civil engineer.
- B.** This section calls for maintaining existing natural drainageways. In this case, the district proposes to minimize encroachment on the southern bank sloping down to Bolton Creek. This project does not propose modifying the Bolton Creek alignment or conducting any work within the creek channel. The proposed slope stabilization is intended to eliminate the erosion and siltation created over time by storm water from an existing storm pipe outfall. The bank will be re-graded to stabilize the slope and prevent long term erosion. The new bank will consist of a series of buried gabions intended to spread the storm water flow and riprap to armor the slope. This drainage way will extend from the new storm water pipe outfall to Bolton Creek.
- C.** The existing condition is currently causing environmental damage due to the erosion, bank instability, and presence of non-native vegetation. The proposed bank stabilization and replanting will create a stable situation with greatly reduced erosion and the re-introduction of appropriate native vegetation in this area.
- D.** The district is committed to protect the water resource areas on the site into the future. It will work with the city staff during final design and permitting to accomplish this. The retention of the chain link fence along the southern boundary of the creek area will further protect the natural resource quality of this area. Buildings and structures on the site (existing including fencing and play equipment) will not be moved closer to the creek, and therefore, existing setbacks shall be maintained.
- E.** This section describes how the protected water resource area setback and transition areas are determined. As noted in D. above, a chain link fence and some play equipment are

within the setback areas for the creek. These structures shall remain in their current locations.

- F.** This criterion does not apply because no roads, driveways, or utility crossings are proposed over Bolton Creek.
- G.** The district will work with the city to maximize the protection of the resource as intended by this criterion, which calls for chain link fencing (or approved equivalent). Due to the steep slopes, installing an anchored chain link construction fence perpendicular to the slope from the top of the bank to the bottom of the bank is not recommended. Orange construction fencing is proposed as an alternative. As noted above, a permanent 6-foot chain link fence shall be installed at the top of bank after work is completed.
- H.** This criterion does not apply because no new paved surfaces are proposed.
- I.** All plans have been developed by experienced civil engineers and environmental scientists with the goal of maintaining and enhancing the water and natural resources on the site. The design of these elements will meet the city of West Linn and Oregon Stated Department of Environment Quality requirements.
- J.** All erosion control measures prescribed by the city shall be followed at all times. Design of these elements will meet the city of West Linn and Oregon Stated Department. of Environment Quality requirements.
- K.** Due to the nature of this project and the amount of disturbance, a re-vegetation plan is required. The re-vegetation plan proposed by the district will provide the combination of ground cover, shrubs, and trees required by this section and CDC 32.080 (addressed below).
- L.** As noted above, the existing chain link fence and play equipment are proposed to remain in their current location and no new structures are proposed within the setback area.
- M.** This criterion does not apply because storm water treatment facilities are not proposed.
- N.** This criterion is not applicable because opening a covered or piped drainage is not proposed.
- O.** These criteria do not apply because no new buildings or building remodeling is proposed.
- P.** This criterion is not applicable because all relevant storm drainage channels have been identified.

Section 32.060 Site Plan

This section is satisfied because the plan sheet package and the report in Attachment A provide all of the information required by this section.

Section 32.070 Mitigation Plan

This section contains a number of requirements relating to the mitigation of potential adverse impacts on water resource areas.

- A.** This section is satisfied because the proposed stream bank restoration is proposed to correct existing erosion and bank instability issues rather than accommodate development. The erosion and bank instability problems extend along virtually the entire south bank of the creek. In addition, non-native vegetation covers much of the area. This restoration work includes the minimum area necessary, and it avoids any work in the stream channel. The problems are clearly identified in the wetland delineation report (Attachment A), and the restoration will improve the current poor condition of the stream area.
- B.** As noted, this project is not designed to accommodate new development. The current condition of the creek is related to urbanization that has occurred over many years, and this project, as shown in the plan sheets, will provide appropriate mitigation. As noted in the application, the district and its contractors will be responsible for the work and assuring its proper completion.

Because of the limited size of the site, there is no room available for 1:1 on-site mitigation, and the district has initiated preliminary discussions with the West Linn Parks Department to pay a fee-in-lieu to provide off-site mitigation on city park property. However, the location, design, and schedule have not been determined at this time.

- C.** Because of the small size of the school site and lack of available space for mitigation, off-site mitigation is proposed. Conversations with city staff concur with this approach, and preliminary coordination has begun between the district and parks department.
- D.** This criterion is not applicable because no wetland areas are involved.
- E.** With the off-site mitigation proposed to occur on city park property, permanent protection will be provided.

Section 32.080 Revegetation Plan Requirements

This section contains a number of requirements relating to revegetating water resource areas. These standards were followed when the landscaping and planting plans were developed for this application.

- A.** Temporary irrigation shall be provided as noted in the Landscape Restoration Plan (Sheet L501).
- B.** As shown in the Landscape Restoration Plan, the non-native plants shall be removed in the area of work and replaced with native vegetation.
- C.** Replacement trees and shrubs shall meet the minimum size standards of this section, as shown on Sheet L501.

- D.** The replacement trees and shrubs are proposed to be planted with spacing and density required by this section (Sheet L501).
- E.** The proposed landscaping plan contains a variety of trees and shrubs, which comply with the requirements in this section.
- F.** The district shall provide the necessary assurances for plant survival as required by the city.

CONCLUSION

The proposed compactor and stream bank restoration satisfy all of the relevant criteria as demonstrated above. The restoration work will result in an environmentally improved segment of Bolton Creek.

ATTACHMENT A
Wetland Delineation Report

**Wetland Delineation
for the Bolton Primary School
Streambank Stabilization Project
in West Linn, Oregon**

(Township 2 South, Range 2 East,
Section 30BC, portion of Tax Lot 2300)

Prepared for
West Linn-Wilsonville School District
Attn: Tim Woodley

Prepared by
Pacific Habitat Services, Inc.
Wilsonville, Oregon 97070
(503) 570-0800
(503) 570-0855 FAX

February 8, 2012



**Wetland Delineation
for the Bolton Primary School
Streambank Stabilization Project
in West Linn, Oregon**

(Township 2 South, Range 2 East,
Section 30BC, portion of Tax Lot 2300)

Prepared for

West Linn-Wilsonville School District

Attn: Tim Woodley

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Tualatin, Oregon 97062

Prepared by

Caroline Rim

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PHS Project Number: 4938

February 8, 2012

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I. INTRODUCTION

Pacific Habitat Services, Inc. (PHS) has delineated the limits of potentially jurisdictional waters of the state/US for the Bolton Primary School streambank stabilization project in West Linn, Oregon (Township 2 South, Range 2 East, Section 30BC, Clackamas County, portion of Tax Lot 2300).

This report presents the results of PHS's wetland delineation within the study area. Figures, including a map depicting the location of wetlands within the study area, are located in Appendix A. Data sheets documenting on-site conditions are provided in Appendix B. Ground-level photos of the site are located in Appendix C. A discussion of the wetland delineation methodology (for the client) is provided in Appendix D.

II. RESULTS AND DISCUSSION

A. Landscape Setting and Land Use

The study area is located in the eastern portion of the City of West Linn, Oregon, approximately ½ mile west of the confluence of the Willamette River and the Clackamas River. The study area is located along Bolton Creek, a perennial tributary of the Willamette River. Bolton Primary School is located at 5933 Holmes Street, West Linn, Oregon 97068, and the creek is situated within a steep ravine that is located along the north side of the Bolton Primary School playground.

Bolton Creek enters the northwestern corner of the property and flows in an eastwardly direction, eventually flowing off-site through the northeastern portion of the site. The creek is narrow and shallow. Steep slopes rise above the streambanks along the north and south sides of the creek. The slope along the south bank of the creek, immediately downslope of the north edge of the playground, is quite unstable, which is evident by the presence of a recent landslide in this area. Near the east end of the creek, a seep located along the south slope joins the creek.

The riparian overstory includes red alder (*Alnus rubra*), big-leaf maple (*Acer macrophyllum*), Douglas fir (*Pseudotsuga menziesii*), and Oregon white oak (*Quercus garryana*). The understory primarily consists of English ivy (*Hedera helix*), which extends from the top of slope down to the edge of the creek. Also present within the understory are Himalayan blackberry (*Rubus discolor*), evergreen blackberry (*Rubus laciniatus*), Pacific dewberry (*Rubus ursinus*), and sword fern (*Polystichum munitum*).

Within the study area, there is one stream, Bolton Creek, and a seep flowing into the southeast side of the creek. No wetlands were identified. The delineated features are discussed in more detail in Section E.

B. Site Alterations

PHS did not observe any fill or other alterations that would have affected the location of wetlands/waters within the study area.

C. Precipitation Data and Analysis

Precipitation data recorded in Portland on December 29, 2011, was 0.69 inches. Total precipitation for the two weeks prior to the site visit was 1.36 inches. Total observed precipitation for the water-year (October 1, 2011 through December 29, 2011) was 10.77 inches, which is approximately 22 percent less than normal (National Weather Service, October 2011 through December 2011).

Table 1 compares the average monthly precipitation to the observed monthly precipitation, as well as to the normal precipitation range, as identified in the NRCS WETS Table for the City of Portland. As shown in Table 1, observed precipitation was below normal in September and October, and above normal in November. However, in October and November, the observed precipitation was within the normal range, and only slightly below in September. Although precipitation contributes to site hydrology, it is not a dominant hydrologic influence on the site. Therefore, it is PHS's best professional judgment (BPJ) that precipitation did not significantly affect the hydrologic conditions observed during the wetland delineation field work and that "normal circumstances" were present at that time.

Table 1: Comparison of Average and Observed Precipitation in Portland for Three Full Months Prior to the Wetland Delineation Field Work

Month	Average Precipitation*	30% Chance Will Have		Observed Precipitation**	Percent of Normal
		Less Than Average*	More Than Average*		
September	1.65	0.65	2.06	0.63	43
October	2.88	1.57	3.52	2.14	71
November	5.61	3.72	6.73	6.57	117

*Source: NRCS WETS Table

**Source: National Weather Service

D. Methods

PHS delineated the limits of the wetlands on the site based on the presence of wetland hydrology, hydric soils, and hydrophytic vegetation, in accordance with the Routine On-site Determination, as described in the *Corps of Engineers Wetland Delineation Manual, Wetlands Research Program Technical Report Y-87-1* ("The 1987 Manual") and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*.

PHS's delineation and data collection was completed on December 29, 2011. The limits of ordinary high water (OHW) along Bolton Creek and the hillside seep were based on topographic break, obvious water marks, and changes in vegetation.

E. Description of all Wetlands and Other Non-Wetland Waters

PHS identified the limits of Bolton Creek and an adjoining hillside seep within the study area. Approximately 1,183 square feet (0.03 acre) of Bolton Creek and the adjoining seep are located within the study area. No potentially jurisdictional wetlands were identified. A description of the delineated features is provided below.

Bolton Creek

The creek ranges in width from approximately 4 to 10 feet, and averages less than 1 foot deep. The Cowardin class for the creek is Riverine Lower Perennial Unconsolidated Bottom Permanently Flooded (R2UBH), and the HGM class is Riverine Flow Through (RFT). The limits of OHW were delineated using indicators such as topographic break, water marks, and changes in vegetation.

Seep

The seep is relatively narrow, approximately 3 to 4 feet wide, and has a defined bed and bank. It extends upslope along the south side of the creek. A 15-inch concrete stormwater outfall pipe is located at the upper end of the seep. A 6-inch concrete stormwater outfall pipe is located further upslope but not connected to the seep. No water was observed flowing out of either pipe during the site visit. Situated into the slope at the upper end of the seep is a small hollow, approximately 3 feet high, 4 feet long, and 3 to 4 feet deep. Subsurface flow was visibly entering the hollow and flowing into the seep. The Cowardin class for the seep is Riverine Intermittent Unconsolidated Bottom Saturated/Semipermanent/Seasonal (R4UBY), and the HGM class is Headwater Slope (SH).

F. Deviation from LWI

The Local Wetland Inventory (LWI) map for the City of West Linn has mapped Bolton Creek as being present within the study area; no wetlands were mapped. The LWI mapping is consistent with PHS's findings in the field.

G. Mapping Method

PHS flagged the OHW boundary of the creek and the seep with blue surveyor's tape. Data point locations were flagged with lime green surveyor's tape. These flags were subsequently surveyed by Compass Engineering. The estimated accuracy of the survey is sub-centimeter.

H. Additional Information

Bolton Creek is not designated as Essential Salmonid Habitat (ESH).

I. Results and Conclusions

PHS identified Bolton Creek and an adjoining hillside seep within the study area. The total area of potentially jurisdictional waters of the State/US is 1,183 square feet (0.03 acre) within the project area.

J. Required Disclaimer

This report documents the investigation, best professional judgment and conclusions of the investigators. It is correct and complete to the best of our knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon Department of State Lands in accordance with OAR 141-090-0005 through 141-090-0055.

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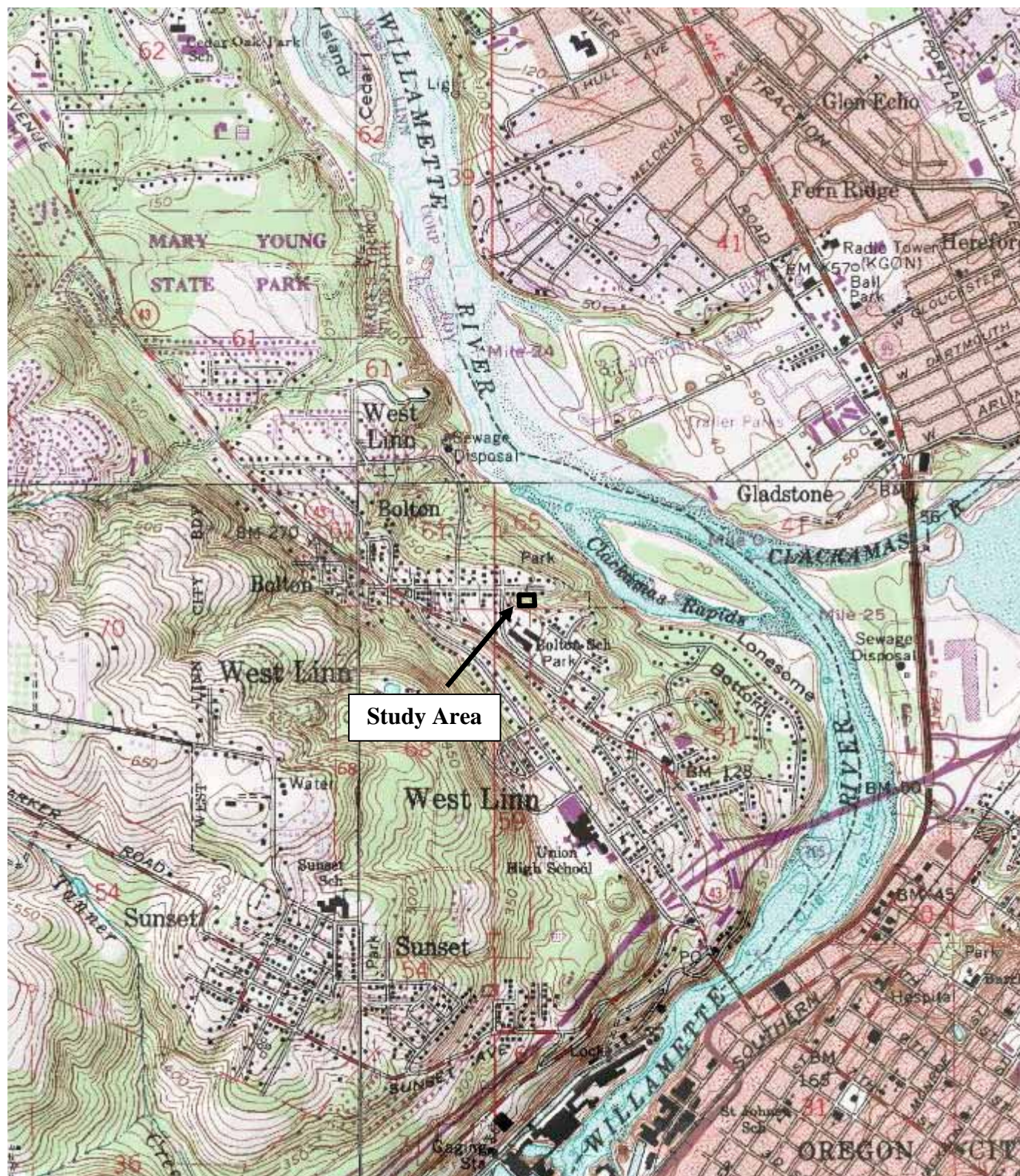
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Appendix A

Figures





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Location and general topography for the Bolton Primary School streambank stabilization project in West Linn, Oregon (USGS Oregon City, OR quadrangle. Courtesy of MyTopo.com, 2012).

FIGURE
1



—Pacific Habitat Services, Inc.—

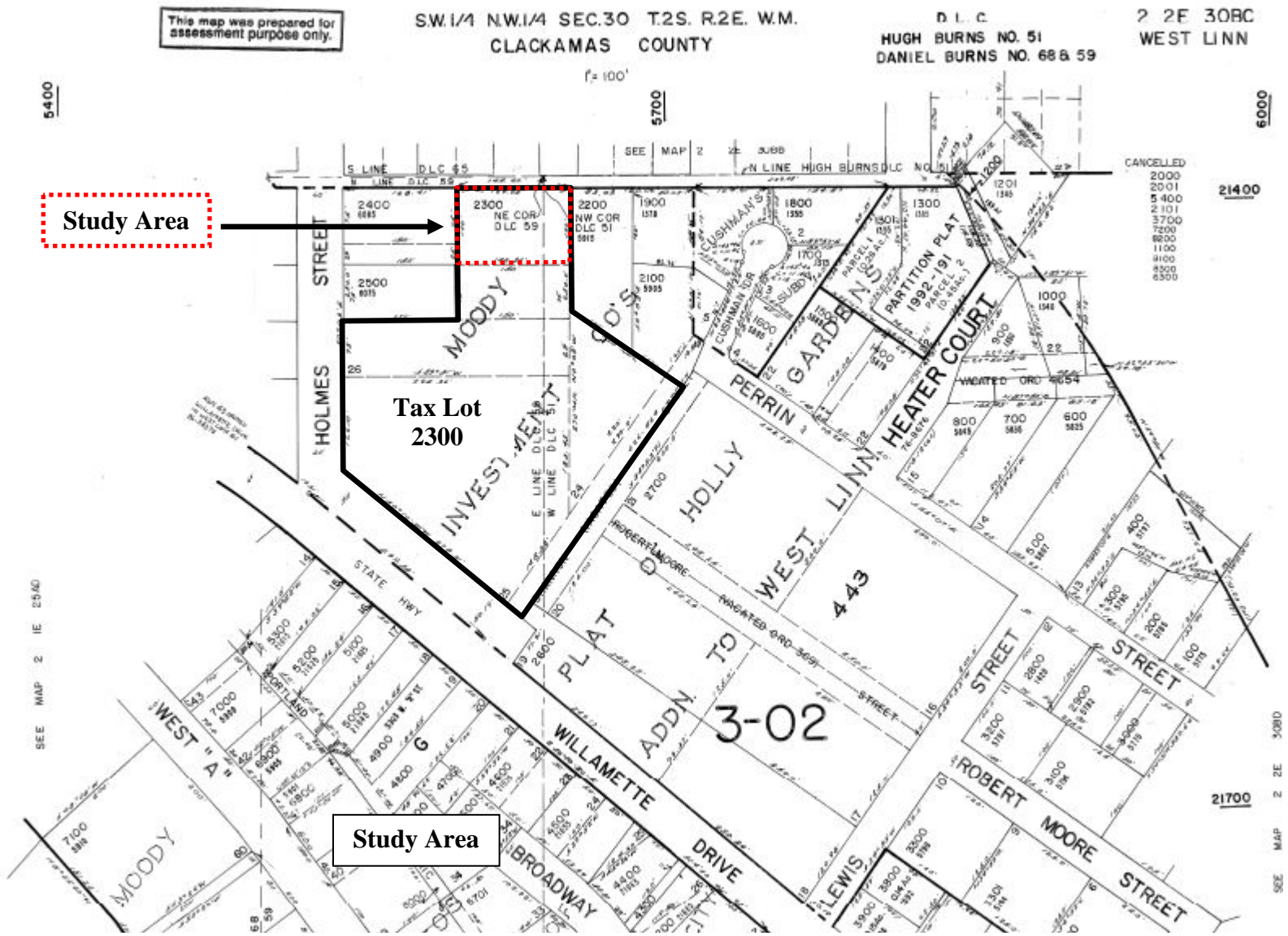


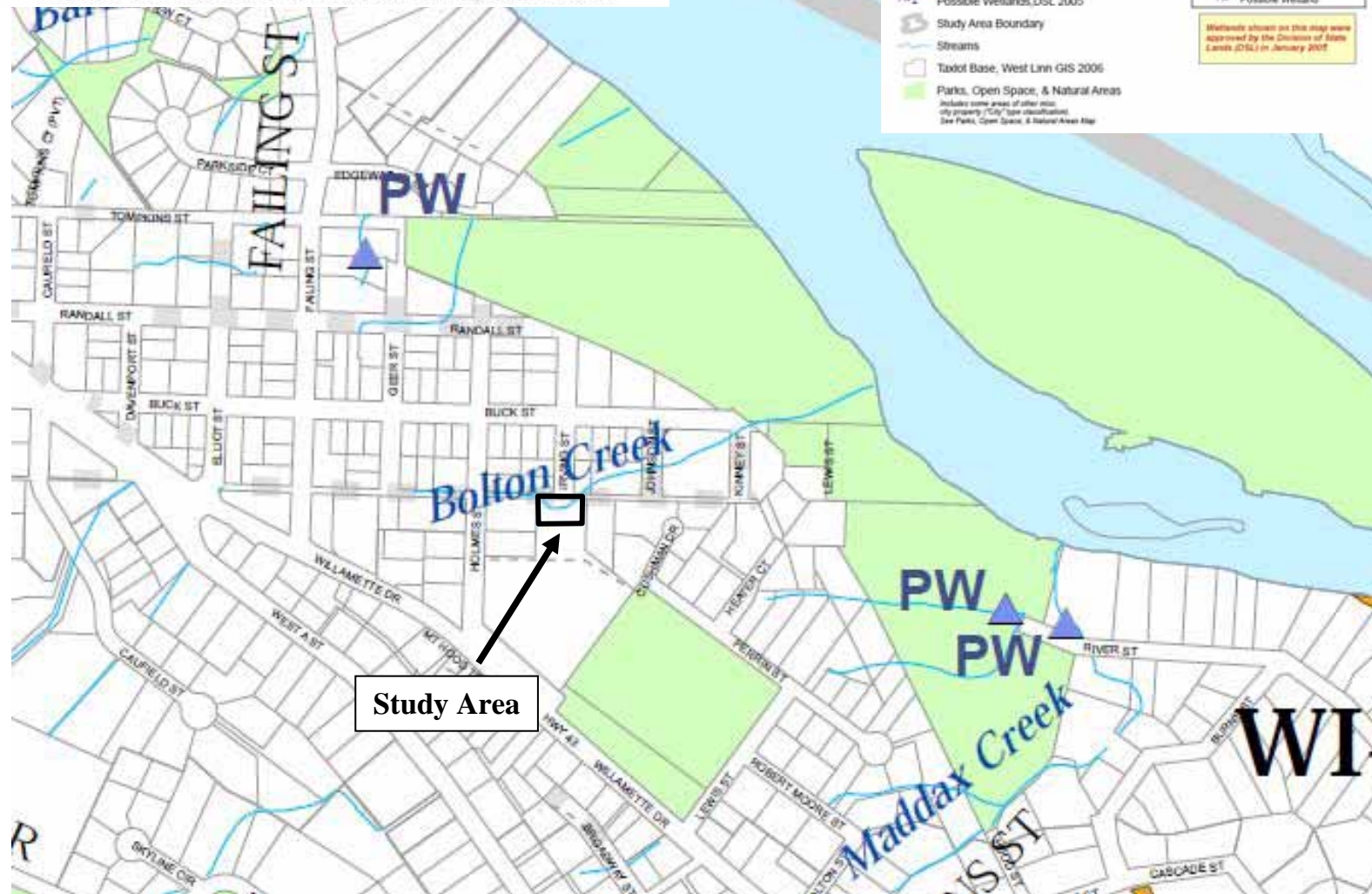
FIGURE
2

Tax lot map for the Bolton Primary School streambank stabilization project in West Linn, Oregon (ORMAP Tax Map T2S R2E, Section 30, portion of Tax Lot 2300).



Local Wetland Inventory

WEST LINN GOAL 5 INVENTORY, JAN 2005



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FIGURE
3

City of West Linn Local Wetland Inventory map for the Bolton Primary School streambank stabilization project in West Linn, Oregon (Winterbrook Community Resource Planning, January 2005).



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FIGURE
4

Soil series map for the Bolton Primary School streambank stabilization project in West Linn, Oregon (USDA Web Soil Survey, 2012).

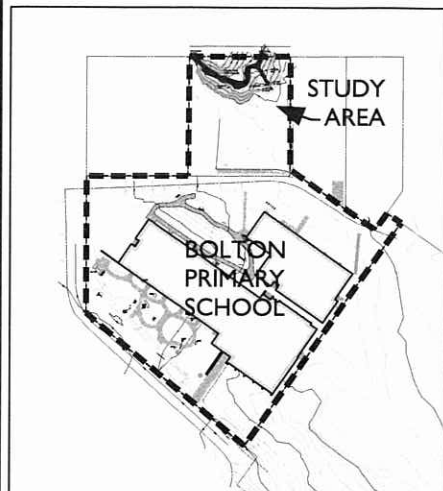


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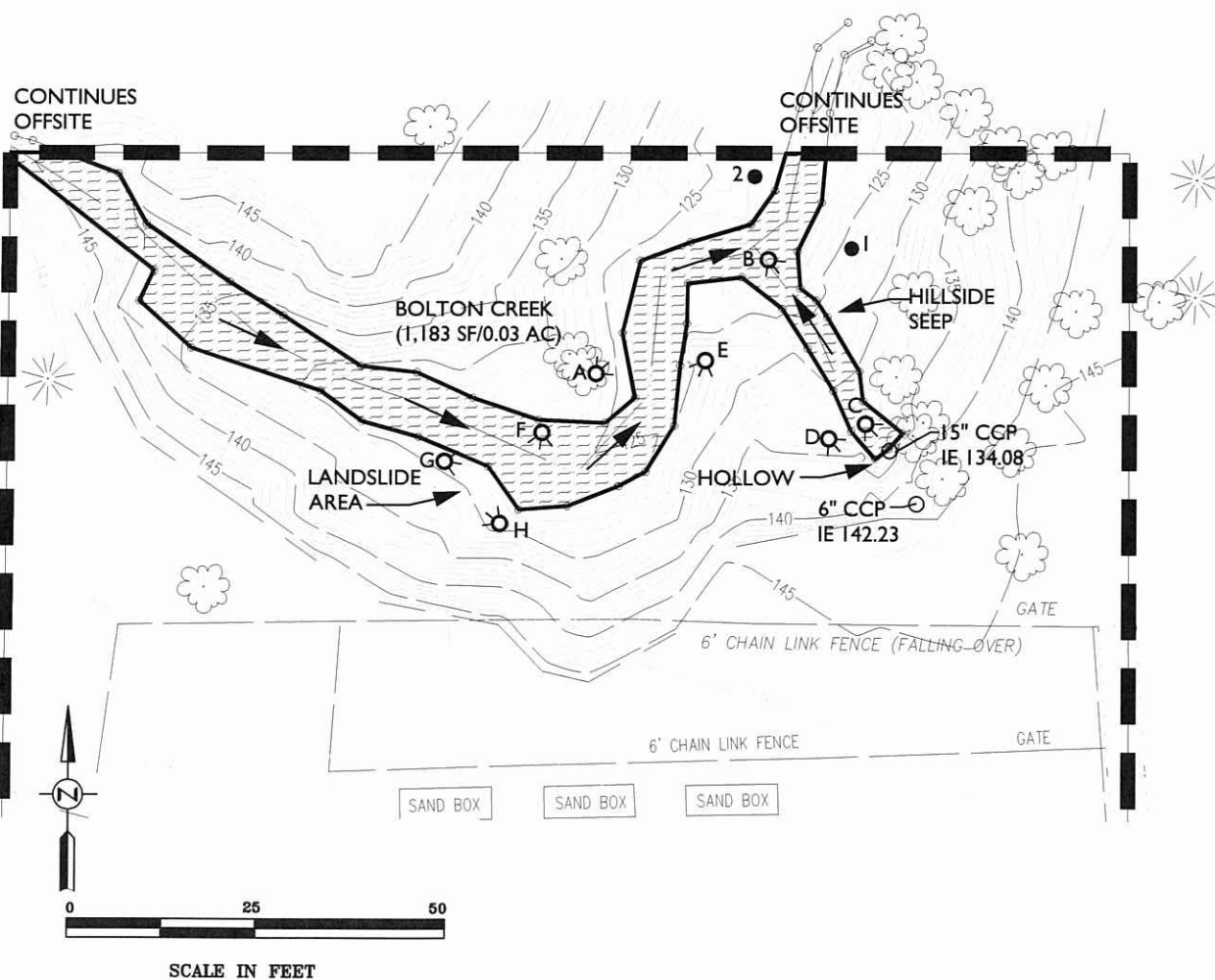
FIGURE
5

Aerial photograph for the Bolton Primary School streambank stabilization project in West Linn, Oregon (Portland Maps 2010).



OVERVIEW OF TAX MAP 2 2E 30BC 02300

- I SAMPLE POINT
- B Q PHOTODOCUMENTATION POINT



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1/31/12



Existing conditions and locations of potentially jurisdictional waters of the State/US, sample points, and photodocumentation points for the Bolton Primary School streambank stabilization project in West Linn, Oregon. Survey and base map provided by Compass Engineering, 2011. Survey accuracy is subcentimeter. Pacific Habitat Services, Inc.

FIGURE

6

Appendix B

Wetland Determination Data Sheets



WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: Bolton Primary School City/County: Clackamas Sampling Date: 12/29/2011

Applicant/Owner: Bolton Primary School State: OR Sampling Point: 1

Investigator(s): C. Rim / A. Hawkins Section, Township, Range: Sec 30, T 2 South, R 2 East

Landform (hillslope, terrace, etc.): toe of hillslope Local relief (concave, convex, none): none Slope (%): _____

Subregion (LRR): LRRA Lat: 45.370753 Long: 122.618725 Datum: DD

Soil Map Unit Name: Aloha silt loam NWI Classification: _____

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)

Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:	

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: <u>30</u>)			
1 <u>Acer macrophyllum</u>	<u>30</u>	<u>X</u>	<u>FACU</u>
2 <u>Quercus garryana</u>	<u>10</u>		<u>UPL</u>
3 <u>Alnus rubra</u>	<u>20</u>	<u>X</u>	<u>FAC</u>
4 _____			
	<u>60</u>	= Total Cover	
Sapling/Shrub Stratum (plot size: <u>5</u>)			
1 <u>Acer macrophyllum</u>	<u>20</u>	<u>X</u>	<u>FACU</u>
2 <u>Rubus discolor</u>	<u>10</u>	<u>X</u>	<u>FACU</u>
3 _____			
4 _____			
5 _____			
	<u>30</u>	= Total Cover	
Herb Stratum (plot size: <u>5</u>)			
1 <u>Polystichum munitum</u>	<u>30</u>	<u>X</u>	<u>FACU</u>
2 _____			
3 _____			
4 _____			
5 _____			
6 _____			
7 _____			
8 _____			
	<u>30</u>	= Total Cover	
Woody Vine Stratum (plot size: _____)			
1 <u>Hedera helix</u>	<u>40</u>	<u>X</u>	<u>UPL</u>
2 <u>Rubus ursinus</u>	<u>10</u>	<u>X</u>	<u>FACU</u>
	<u>50</u>	= Total Cover	
% Bare Ground in Herb Stratum _____			
Remarks:			

Dominance Test worksheet:

Number of Dominant Species _____

That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 14% (A/B)

Prevalence Index Worksheet:

Total % Cover of	Multiply by:	
OBL Species _____	x 1 =	<u>0</u>
FACW species _____	x 2 =	<u>0</u>
FAC Species _____	x 3 =	<u>0</u>
FACU Species _____	x 4 =	<u>0</u>
UPL Species _____	x 5 =	<u>0</u>
Column Totals <u>0</u> (A)		<u>0</u> (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2- Dominance Test is >50%

_____ 3-Prevalence Index is ≤ 3.0¹

_____ 4-Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)

_____ 5- Wetland Non-Vascular Plants¹

_____ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 3/2	100					Silt loam	gravelly
12-16	10YR 4/2	90	7.5YR 4/6	10	C	M	Silt	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)(except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:None

Depth (inches):

Hydric Soil Present? YesNoX

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water stained Leaves (B9) (Except MLRA1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Fac-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present? YesNoX

Water Table Present? YesNoX

Saturation Present? YesNoX

(includes capillary fringe)

Depth (inches):

Depth (inches):

Depth (inches):

Wetland Hydrology Present? YesNoX

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

None

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: Bolton Primary School City/County: Clackamas Sampling Date: 12/29/2011

Applicant/Owner: Bolton Primary School State: OR Sampling Point: 2

Investigator(s): C. Rim / A. Hawkins Section, Township, Range: Sec 30, T 2 South, R 2 East

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): _____

Subregion (LRR): LRRA Lat: 45.370753 Long: 122.618725 Datum: DD

Soil Map Unit Name: Aloha silt loam NWI Classification: _____

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (if no, explain in Remarks)

Are vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? (Y/N) Y

Are vegetation _____ Soil _____ or Hydrology _____ naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:	

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: <u>5</u>)			
1 <u>Acer macrophyllum</u>	<u>30</u>	<u>X</u>	<u>FACU</u>
2 _____	_____	_____	_____
3 _____	_____	_____	_____
4 _____	_____	_____	_____
	<u>30</u>	= Total Cover	
Sapling/Shrub Stratum (plot size: _____)			
1 _____	_____	_____	_____
2 _____	_____	_____	_____
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____
	<u>0</u>	= Total Cover	
Herb Stratum (plot size: <u>5</u>)			
1 <u>Polystichum munitum</u>	<u>20</u>	<u>X</u>	<u>FACU</u>
2 _____	_____	_____	_____
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____
8 _____	_____	_____	_____
	<u>20</u>	= Total Cover	
Woody Vine Stratum (plot size: <u>5</u>)			
1 <u>Hedera helix</u>	<u>80</u>	<u>X</u>	<u>UPL</u>
2 _____	_____	_____	_____
	<u>80</u>	= Total Cover	
% Bare Ground in Herb Stratum _____			
Remarks:			

Dominance Test worksheet:

Number of Dominant Species _____

That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

Total % Cover of	Multiply by:
OBL Species _____	x 1 = <u>0</u>
FACW species _____	x 2 = <u>0</u>
FAC Species _____	x 3 = <u>0</u>
FACU Species _____	x 4 = <u>0</u>
UPL Species _____	x 5 = <u>0</u>
Column Totals <u>0</u> (A)	<u>0</u> (B)

Prevalence Index =B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

_____ 1- Rapid Test for Hydrophytic Vegetation

_____ 2- Dominance Test is >50%

_____ 3-Prevalence Index is ≤ 3.0¹

_____ 4-Morphological Adaptations¹ (provide supporting data in Remarks or on a separate sheet)

_____ 5- Wetland Non-Vascular Plants¹

_____ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Appendix C

Site Photos





Photo A:
Bolton Creek. View to
NE / downstream.

Photo A

Photo B:
View to SE, hillside seep
on south slope.



Photo B

1/27/2012

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Photos for the Bolton Primary School streambank stabilization project in West Linn,
Oregon. Photos taken on 12/29/2011.



—Pacific Habitat Services, Inc.—



Photo C

Photo C:

Upper end of hillside seep. Left: 15-inch concrete cylinder pipe (CCP). Right: "hollow" within hillside, behind blue flagging tape on right.

Photo D:

6-inch CCP upslope of the hillside seep.



Photo D

1/27/2012

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Photos for the Bolton Primary School streambank stabilization project in West Linn, Oregon. Photos taken on 12/29/2011.



—Pacific Habitat Services, Inc.—



Photo E:
Landslide along south
slope. View to
southwest.

Photo E

Photo F:
Landslide along south
slope. View to south.



Photo F

1/27/2012

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Photos for the Bolton Primary School streambank stabilization project in West Linn,
Oregon. Photos taken on 12/29/2011.



—Pacific Habitat Services, Inc.—



Photo G

Photo G:

Landslide along south slope. View to east.

Photo H:

Bolton Creek. View to NW / upstream.



Photo H

1/27/2012

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Photos for the Bolton Primary School streambank stabilization project in West Linn, Oregon. Photos taken on 12/29/2011.



—Pacific Habitat Services, Inc.—

Appendix D

Wetland Definitions, Methodology



WATERS OF THE STATE AND WETLAND DEFINITION AND CRITERIA

Regulatory Jurisdiction

Wetlands and water resources in Oregon are regulated by the Oregon Department of State Lands (DSL) under the Removal-Fill Law (ORS 196.800-196.990) and by the U.S. Army Corps of Engineers (COE) through Section 404 of the Clean Water Act.

The primary source documents for wetland delineations within Oregon is the *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (U.S. Army Corps of Engineers, 2010), which are required by both DSL and COE.

Waters of This State and Wetland Definition

Waters of This State are defined as “all natural waterways, all tidal and non-tidal bays, intermittent streams, constantly flowing streams, lakes, wetlands, that portion of the Pacific Ocean that is in the boundaries of this state, all other navigable and nonnavigable bodies of water in this state and those portions of the ocean shore ...” (DSL, 2009).

Wetlands are defined as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (DSL 2009).

Wetland Criteria

Based on the above definition, three major factors characterize a wetland: hydrology, substrate, and biota.

Wetland Hydrology

Wetland hydrology is related to duration of saturation, frequency of saturation, and critical depth of saturation. The 1987 manual defines wetland hydrology as inundation or saturation within a major portion of the root zone (usually above 12 inches), typically for at least 12.5% of the growing season. The wetland hydrology criterion can be met, however, if saturation within the major portion of the root zone is present for only 5% of the growing season, depending on other evidence.

The growing season is defined as the portion of the year when soil temperatures at 12.0 inches below the soil surface are higher than biological zero (41 degrees Fahrenheit, 5 degrees Celsius), but also allows approximation from frost-free days, based on air temperature. The growing season for any given site or location is determined from US Natural Resources Conservation Service, (formerly Soil Conservation Service) data and information.

Wetland hydrologic indicators include the following: visual observation of inundation or saturation, watermarks, drift lines, sediment deposits, and/or oxidized rhizospheres with living roots. Oxidized rhizospheres are defined as yellowish-red zones around the roots and rhizomes of some plants that grow in frequently saturated soils. Other indicators of hydrology, including algal mats or crust, iron deposits, surface soil cracks, sparsely vegetated concave surface, salt crust, aquatic invertebrates, hydrogen sulfide odor, reduced iron, iron reduction in tilled soils, and stunted or stressed plants can also be used to determine the presence of wetland hydrology.

Wetland Substrate (Soils)

Most wetlands are characterized by hydric soils. Hydric soils are those that are ponded, flooded, or saturated for long enough during the growing season to develop anaerobic conditions. Periodic saturation of soils causes alternation of reduced and oxidized conditions, which leads to the formation of redoximorphic features (gleying and mottling). Mineral hydric soils will be either gleyed or will have bright mottles and/or low matrix chroma. The redoximorphic feature known as gley is a result of greatly reduced soil conditions, which result in a characteristic grayish, bluish or greenish soil color. The term mottling is used to describe areas of contrasting color within a soil matrix. The soil matrix is the portion of the soil layer that has the predominant color. Soils that have brightly colored mottles and a low matrix chroma are indicative of a fluctuating water table.

Hydric soil indicators include organic content of greater than 50% by volume, and/or presence of redoximorphic features and dark soil matrix, as determined by the use of a Munsell Soil Color Chart. This chart establishes the chroma, value and hue of soils based on comparison with color chips. Mineral hydric soil must meet one of the 16 definitions for hydric soil indicators, or be classified as a “problem soil” in the Interim Regional Supplement.

Wetland Biota (Vegetation)

Wetland biota is defined as hydrophytic vegetation. A hydrophyte is a plant species that is capable of growing in substrates that are periodically deficient in oxygen as a result of saturated soil conditions. The U.S. Fish and Wildlife Service, in the *National List of Plant Species that Occur in Wetlands*, has established five basic groups of vegetation based on their frequency of occurrence in wetlands. These categories, referred to as the “wetland indicator status”, are as follows: obligate wetland plants (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and obligate upland (UPL). Table 1 gives a definition of the plant indicator codes.

Table 1. Description of Wetland Plant Indicator Status Codes

Indicator Code	Status
OBL	Obligate wetland. Estimated to occur almost exclusively in wetlands (>99%)
FACW	Facultative wetland. Estimated to occur 67-99% of the time in wetlands.
FAC	Facultative. Occur equally in wetlands and non-wetlands (34-66%).
FACU	Facultative upland. Usually occur in non-wetlands (67-99%).
UPL	Obligate upland. Estimated to occur almost exclusively in non-wetlands (>99%). If a species is not assigned to one of the four groups described above it is assumed to be obligate upland.
NI	Has not yet received a wetland indicator status, but is probably not obligate upland.

Observations of hydrology, soils, and vegetation, were made using the "Routine On-site" delineation method as defined in the 1987 manual and the Interim Regional Supplement for areas that were not currently in agricultural production. One-foot diameter soil pits were excavated to 20 inches and soil profiles were examined for hydric soil and wetland hydrology field indicators. In addition, a visual absolute-cover estimate of the dominant species of the plant community was performed using soil pit locations as a center of reference. Dominant plant species are based on estimates of absolute cover for herbaceous, and shrub species within a 5-foot radius of the sample point, and basal area cover for tree and woody vine species within a 30 foot radius of the sample point. Plant species in each vegetative layer, which are estimated at less than 20% of the total cover, are not considered dominant. The wetland indicator status is then used to determine if there is an overall dominance (greater than 50%) of wetland or upland plant species. If less than 50% of the dominant species are hydrophytic, then the prevalence index may be used to determine if the subdominant species are hydrophytic. If the prevalence index is less than or equal to three, hydrophytic vegetation criterion is met.

During data collection, the soil profiles were examined for hydric soil and wetland hydrology field indicators. Plant species and cover were recorded. Data was recorded on standard data sheets, which contain the information specified in the 1987 Corps Manual and the Interim Regional Supplement.

ATTACHMENT B
Compactor Information

RJ-88SC Self Contained Compactor



[[Specifications](#) | [Literature](#) | [Operational & Steel Options](#)]

Marathon's **RJ-88SC Self-Contained Compactor/ Containers** are ideal for waste with high liquid content and for applications where space is limited. Each RJ-88 series compactors store liquid and controls insect and odor problems.

RJ-250SC Features:

The RJ-88SC is ideal for...

Shopping Centers
Supermarkets
Restaurants
Hotels
Inflight Kitchens
Hospitals and institutions

Components are selected for longevity and minimum maintenance, with special attention given to the selection of highly sensitive components. Stress engineering provides the optimum degree of structural integrity. Only the best materials are used. The highest standards of quality are observe in the manufacturing process. That's why you'll find Marathon Compactors "packing trash" long after other makes have failed!

The **RJ-88 SC**'s smaller size makes it excellent for restaurant and fast food applications. They normally fit easily in waste corrals for an attractive and convenient installation at minimum installation cost.

With standard double end pick-up, the unit can be loaded for hauling from either end. This is especially useful if installed perpendicular to a dock (Packer End pick-up option does not include front ground rollers).

The RJ-88 SC uses a **Remote Power Pack** that remains on-site while the self-contained compactor container is taken to the landfill.

Factory testing to assure leakproof construction.



The RJ-250SC uses a Remote Power Pack that remains on-site while the self-contained compactor container is taken to the landfill.



Also See the RJ-88 HT. The RJ-88 HT features a Hydraulic Tailgate and is well suited for security chute-fed and dock-fed applications where maneuvering space for the collection vehicle is limited.

The RJ-88 Series Self-Contains can be used with a hopper to double or triple your loading capacity!

They are equally easy to load from ground or dock level and can be continuously fed while the unit is cycling!

Total odor and pest control via Marathon's **Ozone Odor Control option**

Easy and fast installation! Installation costs are cut by half over conventional compaction systems.

Fire hose connection provided on each unit.

RJ-88C Compactors can be customized with a variety of loading arrangements to suit your specific needs.



Marathon's RJ-88SC Self Contained Compactor is UL Listed!

Features & Benefits of Marathon's Self-Contained Wet Waste Compaction Equipment:

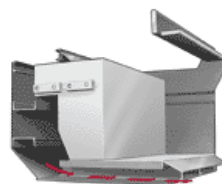
Marathon's **CYCON Life-Xtender® Cyclic Control System**: eliminates troublesome limit and pressure cycle control switches. It also reduces trash removal cost by producing superior payloads and dramatically improving cold weather performance.

Marathon's compactors meet all of ANSI and OSHA standards.

Each unit is **UL Listed** to assure quality and maintains the highest industry standards (does not apply to GreenBuilt).

Standard **double end pick-up** (except HT models) which allows the unit to be loaded for hauling from either end. This is especially useful if the self-contained unit is perpendicular to a dock.

Through-the-wall feed chutes offer convenience to employees that reduces labor cost and improves security.



The **Qwik Clean Tank®** funnels any liquid seepage during compaction into an enclosed area underneath the charge box floor. The liquid is automatically discharged at the disposal site, in effect flushing the container and the area behind the ram.




Rear door retains wet waste effectively with its patented "**Double-Hinge**" and custom designed "**P**" Seal.



The innovative "**Bubble Gate**" adds a cubic yard to the container capacity. Its curved shape also produces superior compaction ratios.

Specifications:

 RJ-88 SC Self-Contained

RJ-88SC Specifications

Dimension	A*	B	C	D	E	Weight
15 cu yds	43"	30 1/2"	70"	187"	89"	7200 lbs.
	1092mm	777mm	1778mm	4750mm	2261mm	3265 kg.
20 cu yds	43"	30 1/2"	70"	222"	89"	7600 lbs.
	1092mm	777mm	1778mm	5639mm	2261mm	3447 kg.
24 cu yds	43"	30 1/2"	70"	256"	89"	8000 lbs.
	1092mm	777mm	1778mm	6502mm	2261mm	3628 kg.

Charge Box Capacity

[Mfr's. Rating]	1.0 cy	.76 m ³
[WASTEC Rating]	0.70 cy	.54 m ³
Clear Top Opening	30.5" L X 48" W	775mm x 1219mm

Performance Data:

Cycle Time	44 sec	44 sec
Total Normal Force	36,600 lb	162 kN
Total Maximum Force	43,100 lb	192 kN
Normal Ram Face Pressure	34.7 psi	239 kPa
Maximum Ram Face Pressure	40.8 psi	281 kPa
Ram Penetration	60	152 mm

Electrical Equipment

Electric Motor 3/60/230-460	5 hp	3.7 kW
Electric Control Voltage	120 VAC	120 VAC
Panel Box Assembly UL Listed		
All Circuits Fused Key Operated		
3 Push Button Station Start/Stop/Reverse		

Hydraulic Equipment

Hydraulic Pump	6 gpm	23 L/min
Normal Pressure	1700 psi	117 bar
Maximum Pressure	2000 psi	138 bar
Cylinder Bore	2 @ 4" each	102 mm
Cylinder Rod	2 @ 2.5"	64 mm

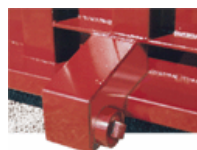
Optional Features:

TrashMinder®



The optional **TrashMinder®** is the most advanced method for reporting and measuring container fullness as well as for managing user access and billing. **Get More Details.**

The StreamLine® Option



allows excess liquid to be drained from the container reducing net payload weight and significantly reducing hauling costs! Liquid is routed to four interconnected 4" drain

Qwik Clean Door®



The innovative Qwik Clean Door provides access to the area behind the ram of self-contained compactors. It allows for quick, easy cleaning and other routine

maintenance without having to unbolt panels or break welds.

The Qwik Clean Door features our Auto-Relatch to hold the door closed while the door is being ratcheted and our patented "P" Seal for a tight, leak proof seal.

Pictures on this page are illustrative only. Specifications are subject to change without notice to accommodate improvements to the equipment. Certified in compliance with ANSI Regulation Z245.2, all OSHA standards, and certified under WASTEC's Stationary Compactor Certification Program. Products must be used with safe practice and in accordance with said regulations and standards.

outlets located at each corner of the StreamLine unit. Connection can be made to a hose, piping, or pump.

See how the StreamLine System works.

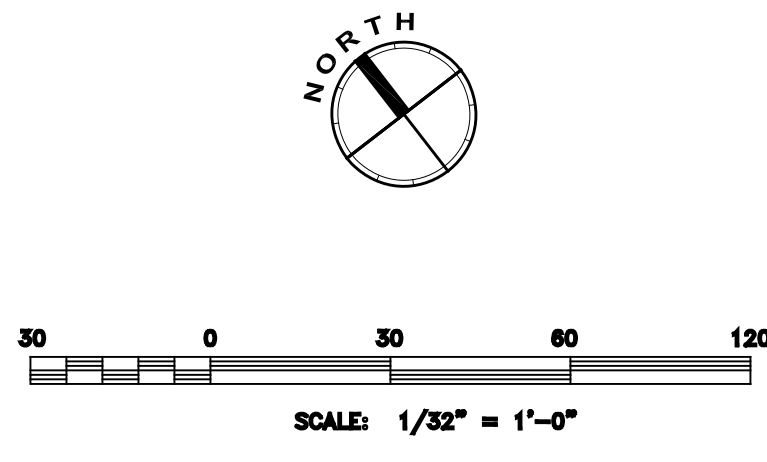
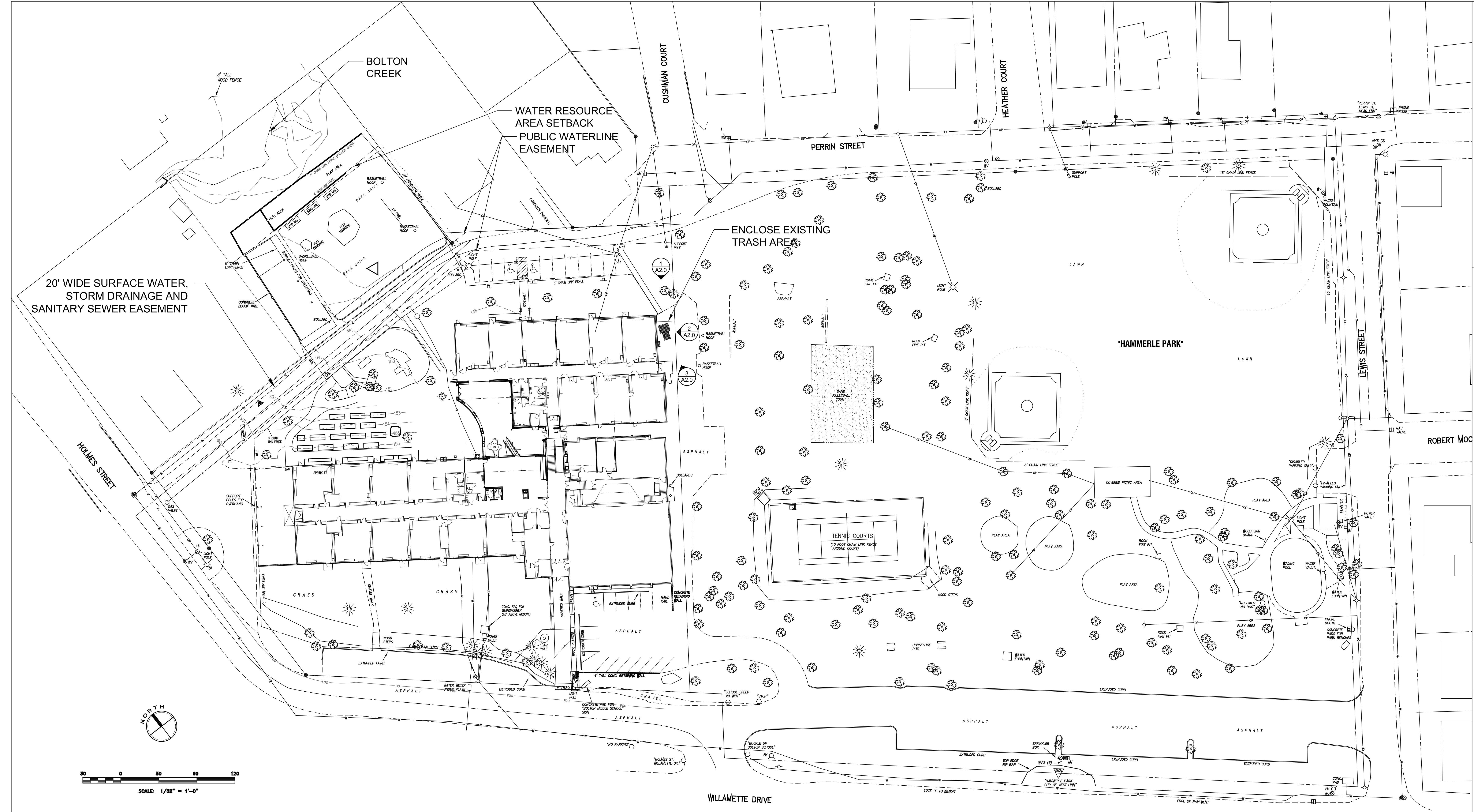
Cart Dumpers



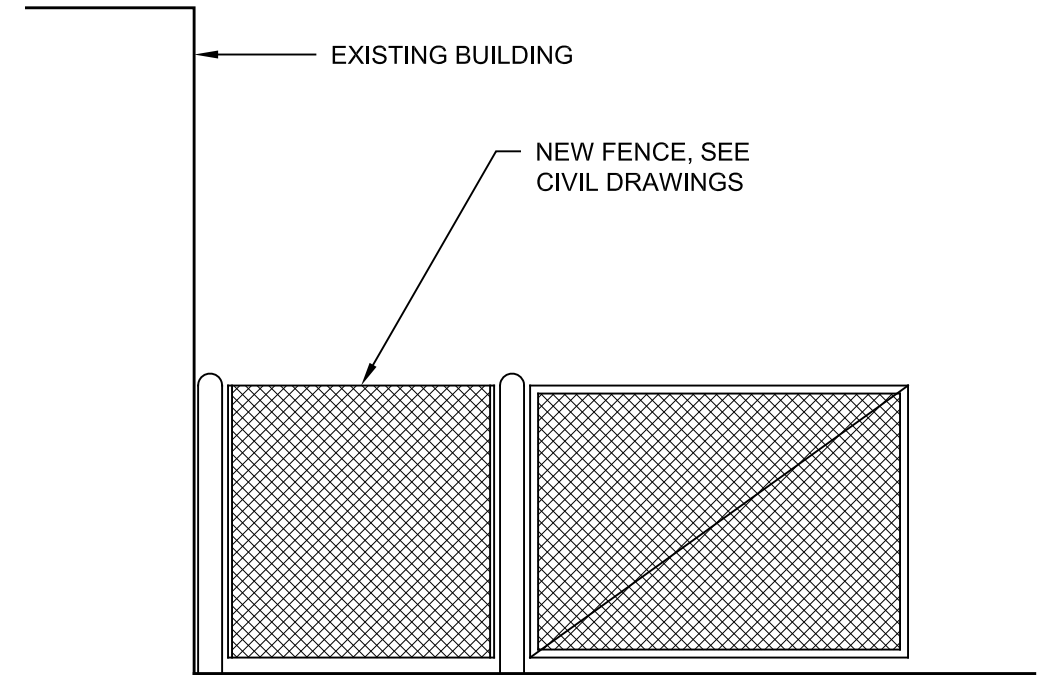
Your Self-Contained can be fitted with various configurations of cart dumper systems. Other options include: multi-cycle timer, dual controls, ozone odor control system, security chutes, hoppers,

and many much more.

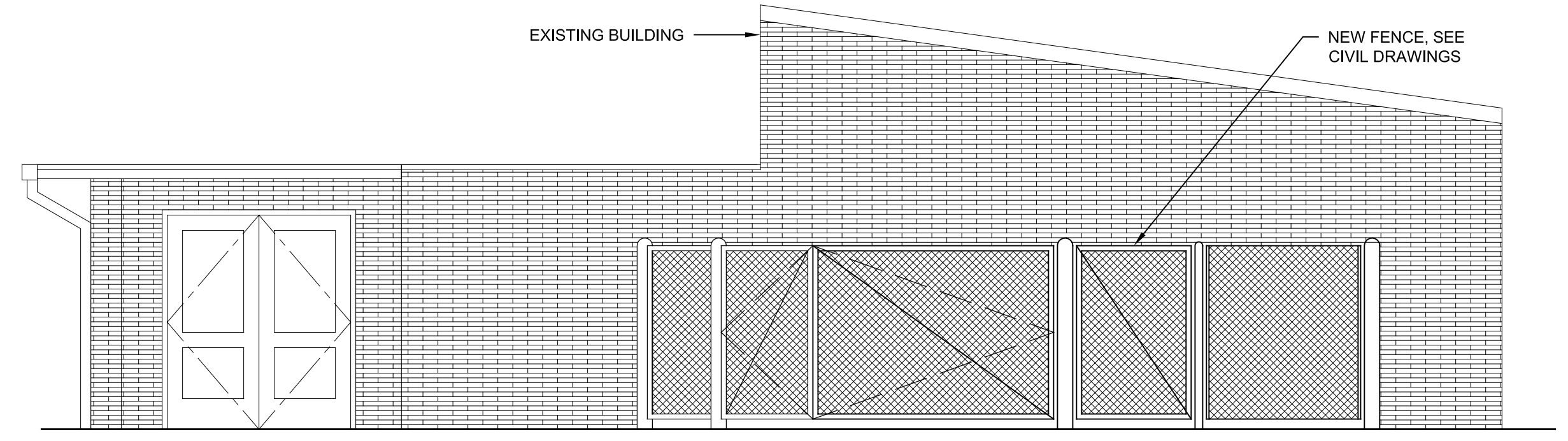
Top of Page



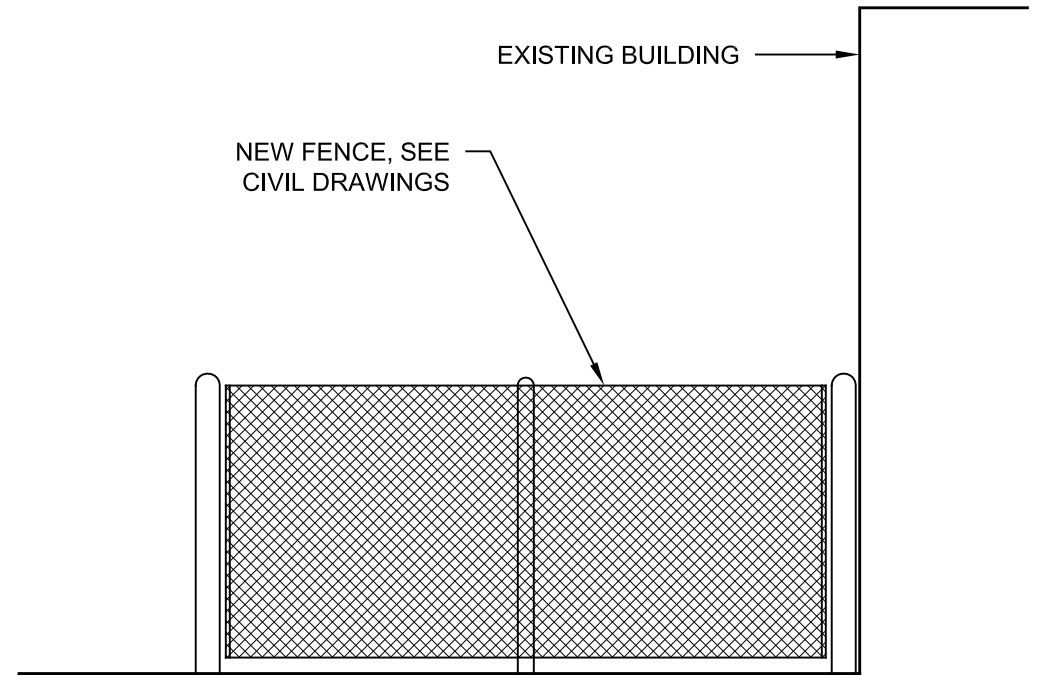
SITEPLAN 4
SCALE: 1/32" = 1'-0"



TRASH AREA ELEVATION 3
SCALE: 1/4" = 1'-0"



TRASH AREA ELEVATION 2
SCALE: 1/4" = 1'-0"



TRASH AREA ELEVATION 1
SCALE: 1/4" = 1'-0"

ARCHITECTURE • INTERIORS • PLANNING

DULL OLSON WEEKES • IBI GROUP
architects inc.

BOLTON TRASH COMPACTOR

WEST LINN WILSONVILLE SCHOOL DISTRICT

22210 SW STAFFORD RD., TUALATIN OR
t: (503) 673 7000
f: (503) 673 7001

key plan	
phase	Bid Set
date	03 / 15 / 2012
revisions	
project # 11096	
SITE PLAN ELEVATIONS	
A2.00	

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$1'' = 20' - 0''$

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0 ISSUE FOR BID AND PERMIT				KPT	PRT	DMW	04/20/12					This Drawing shall not be used for Construction unless Signed and Sealed For Construction		Original Size Ansi D		Drawing No: C201		Sheet of Rev:	
No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing		Drawn	Job Manager	Project Director	Date												