

AGENDA
PLANNING COMMISSION MEETING
WEDNESDAY, SEPTEMBER 9, 2020
7:00 P.M.
Maggie Osgood Library
70 N. Pioneer Street

This meeting will be held electronically through Zoom. Limited seating is available at the Library. Members of the public are encouraged to provide comment or testimony through the following:

- Joining by phone, tablet, or PC. For details, click on the event at www.ci.lowell.or.us.
- In writing, by using the drop box at Lowell City Hall, 107 East Third Street, Lowell, OR 97452
- By email to: mmiller@ci.lowell.or.us

1. Call to Order/Roll Call

Commissioners: Dragt ____ Kintzley ____ Wallace ____

2. Approval of Agenda

3. Approval of Minutes

- a. March 18, 2020
- b. April 14, 2020

4. Old Business

5. New Business

- a. Land Use File 2019-06 – Crestview Subdivision (Map 10-01-11-00, Tax Lot 501)
 - Public Hearing
 - Commission Deliberation
 - Commission Decision

6. Other Business

7. Adjourn

The meeting location is accessible to persons with disabilities. A request for an interpreter for the hearing impaired or for other accommodations for persons with disabilities should be made at least 48 hours before the meeting to the City Clerk, Joyce Donnell, at 541-937-2157.

**City of Lowell, Oregon
Minutes of the Planning Commission Meeting
March 18, 2020**

The meeting was called to order at 7:41 PM by Commissioner Chair Dragt.

Members Present: Lon Dragt, Mary Wallace, Suzanne Kintzley

Member Absent: John Myers

Staff Present: CA Cobb, Henry Hearley – City Planner, LCOG

Approval of Planning Commission Minutes: Commissioner Kintzley moved to approve the minutes of January 15, 2020, second by Commissioner Wallace. PASS 3:0

Old Business: None

New Business:

- a. Land Use File 2019-08 – Partition for Gerald Franklin (Map 19-01-11-33, Tax Lot 6703)

Close Public Meeting: 7:45 PM

Open Public Hearing: 7:45 PM

- b. Land Use File 2019-08 – Partition for Gerald Franklin (Map 19-01-11-33, Tax Lot 6703)

- **Staff Report** – Henry Hearley-City Planner with LCOG, presented report.
- **Applicant Comments** – Jim McLaughlin representing applicant had no comments.
- **Public Comments** – Clarke Davidson 97 E. 6th Street asked about infrastructure that would be required, including stormwater. Mr. Hearley explained that water, sewer, and access are required as part of the approval.

Public Hearing Closed: 8:11 PM

Reconvene Public Meeting: 8:11 PM

- **Commission Deliberation** - None
- **Commission Decision** – Commissioner Kintzley moved to approve application for a partition based on the standards, findings, conclusions and recommendation stated in the staff report with the addition of Condition #4 - Upon building permit submittal, the City Engineer shall review the proposed development plans for conformance with Section 9.520 Storm Drainage, of the Lowell Development Code. The City Engineer will determine which actions, if any, are required for conformance with Section 9.520, prior to the issuance of building permits, second by Commissioner Wallace. PASS 3:0

Other Business: None

Adjourn: 8:22 PM

Approved: _____
Lon Dragt - Chair

Date: _____

Attest: _____
Jared Cobb, City Recorder

Date: _____

**City of Lowell, Oregon
Minutes of the Planning Commission Meeting
April 14, 2020**

The meeting was called to order at 7:03 PM by Commissioner Chair Dragt.

Members Present: Lon Dragt, John Myers, Suzanne Kintzley

Member Absent: Mary Wallace

Staff Present: CA Cobb, Henry Hearley – City Planner, LCOG

Approval of Planning Commission Minutes: None

Old Business: None

New Business:

- a. **Land Use File 2019-06 – Crestview Subdivision (Map 19-01-11-00, Tax Lot 501)**

Close Public Meeting: 7:05 PM

Open Public Hearing: 7:05 PM

- a. **Land Use File 2019-06 – Crestview Subdivision (Map 19-01-11-00, Tax Lot 501)**
 - **Staff Report** – Henry Hearley-City Planner with LCOG, presented report.

Commissioner Wallace joined the meeting at 7:10 PM.

- **Applicant Comments** – Philip Velie representing applicant had no comments.
- **Public Comments** – Mia Nelson, 40160 E 1st St. Lowell, spoke in favor of project.

Public Hearing Closed: 7:27 PM

Reconvene Public Meeting: 7:27 PM

- **Commission Deliberation** - None
- **Commission Decision** – Commissioner Myers moved that the Planning Commission approve recommendation to the City Council, this application for a subdivision based on the standards, findings, conclusions and recommendation stated in the staff report, second by Commissioner Kintzley. **PASS 4:0**

Other Business: None

Adjourn: 7:32 PM

Approved: _____
Lon Dragt - Chair

Date: _____

Attest: _____
Jared Cobb, City Recorder

Date: _____

**Staff Report
Subdivision
Assessor's Map 19-01-14-21, Tax Lots 05000
Sunset Hills Subdivision
LU 2019-04
Staff Report Date: September 1, 2020**

Referrals: Lane County Transportation Planning, Oregon Department of Transportation, Civil West Engineering, and Lowell Rural Fire Protection District.

Mailed Notice: August 14, 2020

Staff Report Date: September 1, 2020

Planning Commission
Public Hearing: September 9, 2020

City Council
Public Hearing: September 15, 2020

BASIC DATA

Application Request: Subdivision

Agent: Engineer and Planning: Boeger & Associates
1011 S. Bertelsen Rd.
Eugene, OR 97402
Surveyor: Tolbert and Associates
PO BOX 22603
Eugene, OR 97405

Property Owner: Bahen Investment Group, LCC Investments
195 Melton Road
Creswell, OR 97426

Location: East of Fourth Street. No Addresses Assigned

Assessors map: 19-01-14-21

Tax lot: 05000

Area: 3.26 acres

Plan Designation: Low Density Residential

Zoning:

R-1 Single-Family Residential District

1. **Proposal.** The Planning Commission is being asked to review and render a recommendation onto City Council for final action, on a 17-lot subdivision for property located at Assessor's Map 19-01-14-021, Tax Lot 05000. The subject property is owned by Bahen Investment Group, LCC Investments. The surveyor for the project is Lloyd Tolbert of Tolbert Associates, LCC and the engineer is Dennis Boeger of Boeger Associates, LCC. The subject property is zoned R-1 Single Family Residential. The subject property currently is vacant but cleared of most trees and brush. The proposed subdivision is the next phase of the Sunset Hills subdivision that is currently located adjacent to the subject property. The applicant is proposing to create 17-lots as shown on the tentative map and are intended to have single-family homes built on them.

2. **Issues / Items of Note.** Staff have identified several issues for Planning Commission and City Council to be aware of at the outset of this staff report and accompanying staff presentation. All issues and associated applicable approval criteria are further addressed in the body of the staff report.
 - Three Lots contain slopes of 15 percent or greater. A Geotech report has been completed.

 - Drainage will largely be handled by existing infrastructure. May require some minor additions of culverts, other minor improvements. Extensive conversations between applicant's engineer and City Engineer have occurred to get drainage in an acceptable place for the City and the subdivision.

 - Turnaround for fire access will be required at dead-ends.

 - Wetland Delineation Report currently being reviewed by DSL.

2. **Approval Criteria.** Section 9.204 Application Site Plan. Section 9.223 General Information. Section 9.220 Subdivision or Partition Tentative Plan. Section 9.224 Existing Conditions Information. Section 9.518 and Section 9.228 Decision Criteria. Section 9.230 Subdivision or Partition Plat. Section 9.516 Access. Section 9.517 Streets. Section 9.518 Sidewalks. Section 9.519 Bikeways. Section 9.520 Storm Drainage. Section 9.521 Water. Section 9.522 Sanitary Sewer. Section 9.523 Utilities. Section 9.630 Hillside Development. Section 9.524 Easements. Section 9.805 Improvements Agreement. Section 9.806 Security. Section 9.807 Noncompliance Provisions. Section 9.231 Submission Requirements. Comprehensive Plan Policies: Housing Need Policy (c) 4 & 5; Development Constraints (c) (1) & (2). Notice of decision will be sent to the applicant, and parties of record.

3. **Staff review of applicable criteria for subdivision.**

LDC 9.204 Application Site Plan

Recommended FINDING for approval: The applicant has submitted the necessary information as required for an application site plan, and application narrative in order for staff to make findings

on the proposal. Criterion met.

LDC 9.220. Subdivision or Partition Tentative Plan

(a) The Planning Commission shall have the authority to review and approve Land Partitions and the City Council, with recommendation from the Planning Commission, shall have the authority to review and approve all Subdivisions, under the provisions of this Code.

(b) In the event that a single land use application requires more than one decision, the highest deciding authority will make all decision requested in the application.

Discussion: The requested land use action is a subdivision. As such, per LDC, the proposal will go through a two-step land use process: a public hearing in front of Planning Commission for a recommendation and a public hearing in front of City Council for decision/final action.

Recommended FINDING for approval: The City of Lowell has followed the required processes for approval of a subdivision. The proposal will receive a recommendation from Planning Commission which will be forwarded onto City Council for decision/final action. Criterion met.

LDC 9.223. General Information.

(b) No Tentative Plan shall be approved which bears a name using a word which is the same as, similar to or pronounced the same as a word in the name of any other subdivision in the same county, except for the words “town,” “city,” “place,” “court,” “addition,” or similar words, unless the land Platted is contiguous to and Platted by the same party that Platted the subdivision bearing that name or unless the party files and records the consent of the party that Platted the subdivision bearing that name. All Plats must continue the lot and block numbers of the Plat of the same last filed.

Recommended FINDING for approval: The proposed name of the subdivision is “Sunset Hills.” The proposed subdivision is the next phase in the Sunset View Ranch. “Sunset Hills” is not the same as, similar to or pronounced the same as any other subdivision in Lane County. Staff find this criterion met.

LDC 9.224 Existing Conditions Information.

(a) The location, widths and names of both opened and unopened streets within or adjacent to the land division, together with easements, other rights-of-ways and other important locational information such as section line, corners, city boundary lines and monuments.

Discussion: As seen on Sheets 1 through 12, the applicant has identified the required information in order for staff to make an informed recommendation to Planning Commission. The proposal will involve the extension of 4th Street (a road width of 30-feet, with 5-foot wide sidewalks). The applicant has identified two easements: one being a 10-foot utility/grading easement and the second a 16-foot easement for access and utilities between lots 25 and 26. The proposed extension of 4th

Street will extend to the boundary of the subdivision. The proposed tentative plan and associated sheets include the necessary information.

(b) The location of all existing sewers, septic tanks and drain fields, water lines, storm drains, culverts, ditches, and utilities, together with elevation data, on the site and on adjoining property or streets, if applicable.

Discussion: The applicant’s engineer has displayed existing and proposed utilities, including storm drain, wastewater and water line as seen on Sheet 5 (**Attachment B**). The applicant will utilize existing city stormwater infrastructure to handle stormwater and drainage. The applicant proposes to connect to all city services.

Recommended FINDING for approval: The applicant has submitted the necessary information as required in Section 9.224 for a subdivision as seen on Sheets 1 through 12 (See **Attachment C for all sheets**). Criterion met.

LCD 9.225 Proposed Plan Information.

...

(c) The location, width, and purpose of existing and proposed easements.

Discussion: As seen on Sheet 2 The applicant has identified two easements: one being a 10-foot utility/grading easement and the second a 16-foot easement for access and utilities between lots 25 and 26. All easements associated with the proposal shall be included on the final plat and recorded and filed in accordance with ORS 92, and Lane County. The general requirement for the proper recording of all easements in accordance with ORS 92 and Lane County will be a condition of approval. This has been included as Conditions of Approval #20 and #27.

(d) The total acreage and the proposed land use for the land division including sites for special purposes or those allocated for public use.

Discussion: The total acreage of the subject property is 3.27 acres. The proposed subdivision is the next phase of the 4th Street Subdivision. The lots proposed will be developed for single family homes. The extension of 4th Street has already been dedicated as public right of way. The applicant has appropriately represented this information on Sheets 1 through 12.

(e) The location and approximate location dimensions of lots or parcels and the proposed lot or parcel numbers. Where the property division results in any lots or parcels that are larger than 2 and one-half times the minimum lot size, the applicant shall provide a sketch plan showing how the parcels may be re-divided in the future to provide for at least 80% of maximum density within current minimum lot sizes, existing site constraints and requirements of this Code.

Discussion: The proposed subdivision is to create 17 single family residential lots as seen on Sheet 2. The proposed subdivision is the last and final phase of the 4th Street Subdivision; all property owned by the applicant/owner will be fully slated for residential development. 4th Street will be extended to serve the proposed 17 lots and will terminate at the boundary of the subdivision. A

future connection to existing right of way, to the south is anticipated but is not part of this development. The extension and connection of 4th Street to the south is consistent with the Lowell Master Road Map.

...

(g) a general layout of all public utilities and facilities to be installed including provisions for connections and extensions beyond the proposed land division.

Discussion: A general layout of all public utilities and facilities to be installed has been shown on Sheet 5. The applicant proposes to connect to city services for lots 16-27. Included on Sheet 5 (**Attachment B**) are proposed connections to utilities along the extended 4th Street.

(h) The proposed method of connection to all drainage channels located outside of the proposed land division and the proposed method of flood control (retention ponds, swales.) and contamination protection (settling basins, separators, etc.)

Discussion: The proposal will largely utilize existing city stormwater infrastructure. There is an existing 18-inch culvert onsite with adequate capacity to handle flows generated by the subdivision. The storm system will include two new storm manholes and several different drains along the curb and gutter. The applicant has completed a drainage report and can be found in Attachment XX.

(i) Identification of all proposed public dedications including streets, pedestrian or bike ways, parks, or open spaces.

Discussion: As seen on Sheet 2, the proposed subdivision will extend 4th Street to the boundary of the subdivision. The extension of 4th Street has already been dedicated but is not presently improved. The applicant will also be installing public sidewalks on both sides of 4th Street.

(j) Identification of any requirements for future streets and easements required for extension of public infrastructure beyond the development together with restrictions on building within those future streets and easements as well as future setback areas required by this Code.

Discussion: 4th Street will be extended and improved to City standards. Upon completion, the street will become public right of way. The future extension of 4th Street to the south is consistent with the Lowell Master Road Map. Further dedication requirements, including the requirement of 1-foot buffer strips, and street requirements will be addressed later in this staff report under Section 9.517 Streets and Section 9.236 Dedication Requirements.

(k) Identification and layout of all special improvements. Special improvements may include, but are not limited to, signs, lighting, benches, mailboxes, bus stops, greenways, bike or pedestrian paths.

Discussion: Staff does not identify any special improvements.

Recommended FINDING for approval: The applicant has submitted the necessary information, as seen on Sheets 1 through 12, and in the application narrative, for staff to determine the necessary

criteria contained in LDC 9.225 are met, or can be met conditionally, where applicable. Criterion met.

LDC 9.226 Accompanying Statements. The Tentative Plan shall be accompanied by written statements from the applicant giving essential information regarding the following matters:

(a) Identify the adequacy and source of water supply including:

(1) Certification that water will be available to the lot line of each and every lot depicted on The Tentative Plan for a subdivision, or,

(2) A bond, contract or other assurance by the applicant that a public water supply system will be installed by or on behalf of the applicant to each and every lot depicted on the Tentative Plan.

Discussion: The proposed subdivision is adjacent to an existing residential development. City services are available to each of the proposed lots. A bond, contract or other assurance will be required on behalf of the developer. Bonds on public infrastructure will be further discussed later in this staff report under Section 9.805, Improvement Agreements.

(b) Identify the proposed method of sewage disposal including:

(1) Certification that a sewage disposal system will be available to the lot line of each and every lot depicted on the Tentative Plan for a subdivision, or,

(2) A bond, contract or other assurance by the applicant that a public water supply system will be installed by or on behalf of the applicant to each and every lot depicted on the Tentative Plan.

Discussion: See staff's discussion above in response to LDC 9.226(a).

(c) Protective covenants, conditions and deed restrictions (CC&R's) to be recorded, if any.

Discussion: Any additional CC & Rs, will be identified and recorded at the time of final plat filing.

(d) Identify all proposed public dedications including streets, pedestrian or bike ways, parks or open space areas.

(e) Identify all public improvements proposed to be installed, the approximate time installation is anticipated and the proposed method of financing. Identify required improvements that are proposed to not be provided and the reason why they are not considered necessary for the proposed land division.

Discussion: 4th Street will be extended and improved to City standards. Upon completion, the street will become public right of way. The future extension of 4th Street, into Wetleau Drive, to the south is consistent with the Lowell Master Road Map. The initial plans call for 4th Street to contain 4-foot sidewalks on both sides of the road. This is inconsistent with Lowell Development Code, which require 5-foot sidewalks. The construction of 5-foot sidewalks will be a condition of approval. A timeline for the installation of required public improvements will be drafted up between the applicant and City.

(f) A statement that the declarations required by ORS 92.075 on the final plat can be achieved by the fee owner, vendor and/or the mortgage or trust deed holder of the property.

Discussion: Prior to issuance of building permits, the property owner shall submit the final plat in accordance with ORS 92.075.

Recommended FINDING for approval (LDC 9.226 ((a)-(e)): The applicant has submitted the necessary information, as seen on Sheets 1 through 12, and in the written narrative, for staff to determine the necessary criteria contained in LDC 9.226 are met, or can be met conditionally, where applicable. Criterion met.

LDC 9.227 Supplemental Information. Any of the following may be required by the City, in writing to the applicant, to supplement the Tentative Plan.

(d) If lot areas are to be graded, a plan showing the nature of cuts and fill and information on the character of the soil.

Discussion: The applicant's engineer has submitted a preliminary grading plan as seen on Sheets 3 and 4. Final grading plans will have to be submitted for review by the City Engineer before any earth moving can commence. Final grading plans can be submitted after tentative approval, but before earth-moving activities commence. The proposal is consistent with this criterion with the condition of approval that:

Condition of Approval #1: Prior to any earth moving activities on the site, final grading plans, showing the nature of cuts and fills and information on the character of the soil, , shall be submitted to the City Administrator, or his or her designee for review and approval.

(e) Specifications and details of all proposed improvements.

Discussion: The applicant has shown all proposed improvements on Sheets 1 through 12. The proposed improvements include the improvement and extension of 4th Street, complete with sidewalks on both sides. Staff note, the applicant currently shows the sidewalk widths as 4-feet, but the standard in Lowell is 5-feet. Improvements of sidewalks to Lowell standards will be a condition of approval. Staff find it feasible for specifications and details of all proposed improvements to be included and shown on maps and plans that will be drawn up as part of the construction phase for each respective area of infrastructure.

(f) Wetland delineation if identified as an existing condition in Section 9.224(f).

Discussion: The proposed subdivision crosses mapped areas indicating wetlands may be present on the subdivision. Staff used the Local Wetlands Inventory Map to gauge the possible presence of wetlands. On October 31, 2019, staff submitted the local wetland land use notification to DSL for comment and review. On November 18, 2019 DSL responded that there may be waters/wetlands that are subject to state-removal fill law. A state permit may be required. The applicant is in the process of submitting a wetland delineation report to DSL for review and concurrence. Staff recommend a condition of approval that before any earthmoving activates commence, the applicant receive concurrence from DSL with respect to the presence of wetlands and follow and/or obtain all

necessary permits required per DSL's decision. See **Attachment D** Wetland Land Use Notice and initial response from DSL. The proposal is consistent with this criterion with the condition of approval that:

Condition of Approval #2: Prior to the commencement of any earth-moving activities on the subject property, the applicant shall receive DSL concurrence on the wetland delineation report and comply with any requirements of DSL in terms of obtaining a fill-removal permit or appropriate mitigation.

Recommended FINDING for approval: The applicant has submitted the necessary information, as seen on Sheets 1 through 5, and in the application narrative, for staff to determine the necessary criteria contained in LDC 9.227 are met, or can be met conditionally, where applicable. Wetland Delineation report has yet to be approved by DSL and shall be required as a condition of approval, prior to any earthmoving activities, as discussed above. Criterion met, conditionally.

LDC 9.228 Decision Criteria. A Partition Tentative Plan may be approved by the Planning Commission and a Subdivision Tentative Plan may be approved by the City Council. Approval shall be based upon compliance with the submittal requirements specified above and the following findings.

(a) That the proposed land division complies with applicable provision of City Codes and Ordinances, including zoning district standards.

Discussion: The applicant is proposing to create a 17-lot subdivision as the next phase of the 4th Street development. The underlying zoning classification is Single-Family residential and is consistent with the proposal. As seen on the tentative map (see **Attachment E**), all of the proposed lots are above the minimum lot size, **except for lot 19, which is 6,985 square feet**. All lots meet the minimum lot depth and width. Staff finds the proposal complies with the applicable provision of City Codes and Ordinances, including zoning district standards, with the exception of Lot 19, which does not meet minimum lot standards. The applicant's surveyor indicated to staff that lot 19 can easily be adjusted to be in compliance with minimum lot size. This will be a condition of approval.

Recommended FINDING for approval: As seen on the tentative subdivision map, Staff can find the proposed subdivision complies with conditions with applicable provisions of City Codes and Ordinances, including zoning district standards, as discussed, with the exception of Lot 19, which does not meet minimum lot size. As a condition of approval, and prior to final plat approval, final plat shall reflect Lot 19 has been adjusted to meet the minimum lot size of at least 7,000 square feet. Criterion met, conditionally.

Condition of Approval #3: Prior to final plat approval, a final plat showing Lot 19 to consist of at least 7,000 sq. ft, consistent with minimum lot size, shall be submitted for review.

(b) Where the property division results in any lots or parcels that are larger than 2 and one-half times the minimum lot size, the applicant shall provide a sketch plan showing how the parcels may be re-divided in the future to provide for at least 80% of maximum density within current minimum lot sizes, existing site constraints and requirements of this Code.

Discussion: The proposed subdivision is the final phase and build out of property owned by the applicant. The proposed subdivision is the next phase of the series of homes immediately adjacent to the proposed subdivision. There are no lots involved in the subdivision that are 2.5 times the minimum lot size. Staff find this criterion does not apply.

Recommended FINDING for approval: The proposed subdivision is the final phase and build of the property owner owned by the applicant. The proposed subdivision is the next phase of the series of homes immediately adjacent to the proposed subdivision. There are no lots involved in the subdivision that are 2.5 times the minimum lot size. Staff find this criterion does not apply.

(c) The applicant has demonstrated that the proposed land division does not preclude development on properties in the vicinity to at least 80% of maximum density possible within current minimum lot sizes, existing site conditions and the requirements of this Code.

Discussion: The proposal will not preclude developed on properties in the vicinity. The extension of Fourth Street will be stubbed to the north and south at what will become Wetleau Drive. The Master Road Map of Lowell shows streets extending to the north and south of the subject property. The subdivision will not preclude the extension of future rights-of-way. Located to the east of the proposed subdivision there exists two large lots consisting of 6.23 acres (00100) and 2.53 acres (tax lot 00200), respectively. These two areas are not owned by the applicant. To preserve access to these parcels, the applicant has included a 16-foot access/utility easement and maintenance agreement. Staff will further address this access easement to lots 100 and 200, under the Access section. Future development on tax lots 00100 and 00200 is still possible because the northern extension of Wetleau can serve the properties and the eventual southern connection of Wetleau Drive to East 1st Street could serve the properties from the south.

Recommended FINDING for approval: As discussed above, the proposal does not preclude development on nearby properties. Wetleau Drive will be stubbed to the north and south to allow for the future extension of rights-of-way and development. A shadow plat is not necessary as this is the final phase of development for the Fourth Street subdivision and the property owner owns no more land to be developed in the vicinity. Criterion met.

(d) The proposed street plan:

(1) Is in conformance with City standards and with the Master Road Plan or other transportation planning document.

Discussion: The extension of Fourth Street is currently dedicated right-of-way and **will be extended to the boundary of the property of the proposed subdivision.** The extension of Fourth Street will be completed with sidewalks and conform to City standards. The proposed extension of Fourth Street is in conformance with the Master Road Plan and Map. To address the deficiency in the proposed sidewalk width of 4-feet, which is 1-foot below the standard of 5-feet, staff will implement a condition of approval in this staff report.

(2) Provides for adequate and safe traffic and pedestrian circulation both internally and in relation to the existing City street system.

Discussion: The Fire Chief of the Lowell Rural Fire Protection District (LRFPD) has issued comment that turnarounds are needed at the dead-ends of Wetleau Drive. Lowell Development calls for turnarounds on dead-end streets that are planned to extend in the future. Per the Master Road Map, both the northerly and southerly extensions of Wetleau Drive are planned to extend to connect future rights-of-way. These two dead-ends streets will need fire-department approved turnarounds placed at the terminus to allow for adequate and safe fire and emergency vehicle backing and turnaround. The inclusion of two turnaround at the dead-ends of Wetleau Drive will be a condition of approval, prior to final plat approval.

Lowell Public Works and the Lowell Rural Fire Department have both expressed to the applicant the need for these two turnarounds. Along with the development code, the fire department is also looking at Oregon Fire Code. Oregon Fire Code calls for any dead-end street over 150 feet require a turn around. Both proposed streets are over 150 feet. To see conversations between the City, Staff and Fire Chief, relating to the need for turnarounds, please see **Attachment F**. Examples of fire-department turnarounds can be found in **Attachment G**. Staff will recommend a condition of approval, for the applicant to construct and show a revised plat with two fire department approved turnaround on both dead ends of Wetleau Drive, prior to final plat approval.

Recommended FINDING for approval: The proposal has two dead-end streets, both of which are planned for future extension. Per the Lowell Development Code, dead-end streets may be approved with a turnaround instead of a cul-de-sac. The current tentative map does not show the inclusion of any turnarounds at the northern or southern termination of Wetleau Drive. Additionally, the LRFPD has issued comment that turnarounds are required at these two dead-ends, because the streets are greater than 150 feet in length. Staff find the proposal needs to incorporate two turnarounds at both dead ends of Wetleau Drive and have conditioned the proposal appropriately to ensure for the future extension of rights-of-way and to provide for fire access and safety. The proposal is consistent with this criterion with the condition of approval that:

Condition of Approval #4: Prior to final plat approval, applicant shall construct and show two fire-department approved turnarounds on the final plat at both dead ends of Wetleau Drive. Details for construction of turnarounds shall be submitted to the City Engineer for review and approval, as part of the construction drawing phase. Staff include **Attachment G**, as fire-department approved turnarounds.

(3) Will not preclude the orderly extension of streets and utilities on undeveloped and underdeveloped portions of the subject property or on surrounding properties.

Discussion: The proposal will not preclude the orderly extension of streets. The applicant’s proposal with respect to the placement and location of Wetleau Drive to the north and south of the proposed subdivision, correctly align with the future extension of streets in Lowell, according to the Lowell Master Road Map. However, as noted in this staff report, the two dead-end portions of Wetleau Drive will be required to have turnarounds placed at the end of them.

Recommended FINDING for approval: Staff find the proposal will not preclude the orderly extension of streets and utilities on undeveloped or underdeveloped portions of the subject property or on surrounding properties. Criterion met.

(e) Adequate public facilities and services are available to the site, or if public services and

facilities are not presently available, the applicant has demonstrated that the services and facilities will be available prior to need, by providing at least one of the following:

- (1) Prior written commitment of public funds by the appropriate public agency.*
- (2) Prior acceptance of public funds by the appropriate public agency of a written commitment by the applicant or other party to provide private services and facilities.*
- (3) A written commitment by the applicant or other party to provide for offsetting all added public costs or early commitment of public funds made necessary by development, submitted on a form acceptable to the City.*

Discussion: No public funds are requested to install public services. The City has the ability to provide adequate public services. Adequate public facilities are proposed to be constructed in order to deliver city services to lots 16-32, at the applicant's expense. The proposed subdivision is the next phase of an already developed subdivision, which public infrastructure has been placed and can readily be extended to lots 16-32.

Recommended FINDING for approval: No public funds are requested for the required public facilities required for lots 16-32. Adequate public city services are available to lots 16-32. The applicant, at their own expense, will construct the public facilities in order to provide the city services to lots 16-32. Criterion met.

(f) That proposed public utilities can be extended to accommodate future growth beyond the proposed land division.

Discussion: All utilities required for the proposal will be installed at the expense of the applicant. Adequate public facilities are proposed to be constructed in order to deliver city services to lots 16-32, at the applicant's expense. The proposed subdivision is the next phase of an already developed subdivision, which public infrastructure has been placed and can readily be extended to lots 16-32. In Lowell, obtaining city water service above ~880 feet is not currently practical, due to elevation and the need for additional pumps and city services above that elevation. The proposed lots can all receive city services. There is no proposed development outside of the subject property, which tops out right near 880 feet. If, in the future, the City invests in further public infrastructure for the ability for water to reach higher elevations, the existing infrastructure that will be in place because of the subdivision will make it more practical, as there are existing pipes and lines to tie into.

Recommended FINDING for approval: No future land division, other than what is presented on the tentative map. Presently, there are public utility deficiencies in that city water cannot be provided above 880 feet elevation. There are adequate city services in place to full-service Lots 16-32, as proposed in this subdivision. Criterion met.

(g) Stormwater runoff from the proposed land division will not create significant and unreasonable negative impacts on natural drainage courses either on-site or downstream, including, but not limited to, erosion, scouring, turbidity, or transport of sediment due to increased peak flows and velocity.

Discussion: The applicant's engineering team has submitted a drainage study, see **Attachment C**. The applicant is proposing to utilize existing city infrastructure to handle drainage and stormwater and to add minor upgrades, as necessary. The applicant's proposal to utilize mainly existing drainage infrastructure and catch basins, has been preliminary approved by the City Engineer. There may be

the need for some additional culverts and inlets. The applicant shall submit final drainage plans and details for review and approval by the City Engineer. Stormwater infrastructure details shall be worked through between the City Engineer and applicant's engineering team and finalized during the construction drawing phase.

Recommended FINDING for approval: The applicant has submitted a drainage plan for the proposed subdivision, and it has been preliminary approved by the City Engineer. The addition of minor improvements, such as culverts and inlets, may be required. The applicant shall submit final drainage plans/details for review and approval by the City Engineer, prior to the commencement of construction of public improvement facilities. These details will be worked through between the City Engineer and applicant's engineering team during the construction drawing phase. The proposal is consistent with this criterion with the condition of approval that:

Condition of Approval #5: The applicant shall submit final drainage plans/details for review and approval by the City Engineer, prior to the commencement of construction of public improvement facilities.

(h) The proposed land division does not pose a significant and unreasonable risk to public health and safety, including but not limited to fire, slope failure, flood hazard, impaired emergency response or other impacts identified in Section 9.204(u).

Discussion: The proposed subdivision is not expected to pose a significant and unreasonable risk to public health and safety. However, there are inherent risks involved with the proposal due to hillside development, emergency service access and circulation. There are measures that the City and applicant are taking to address these issues. Regarding the risk to health and safety with respect to emergency vehicle access, staff, and the LRFPD implemented **a condition of approval**, as listed in this staff report, for the requirement of an approved emergency vehicle turnaround. Relatedly, the LRFPD indicates a need for an additional fire hydrant to be placed at or near the western edge of the proposed northern extension of Wetleau Drive. This will be a condition of approval.

Additionally, lots 23,25, and 26 have slopes of 15 percent or greater. Special hillside development standards will apply to these lots.

Recommended FINDING for approval: The proposed subdivision is not anticipated to pose any significant or unreasonable risk to public health and safety. The City and LRFPD are requiring the implementation of fire-department approved turnaround on dead-ends, with respect to emergency vehicle access and the addition of one fire hydrant to be placed at or near the western edge of the proposed northern extension of Wetleau Drive. Conditions of Approval have been added and decision maker consideration noted where appropriate, to address any potential risks to public health and safety. The specific details relating to the placement and design of the additional fire hydrant on Wetleau Drive, will be discussed amongst LRFPD, City Engineer and the applicant's engineering team. Staff find the criterion met with the following conditions of approval, as discussed in this staff report.

Conditions of Approval #6: Applicant shall install fire hydrant at or near the western edge of the northerly extension of Wetleau Drive. Details of design and placement to be worked out amongst LRFPD, City Engineer, and the applicant's engineering team, during the construction drawing phase. Prior to final plat approval, evidence of the installation of the fire hydrant shall be shown at or near

the western edge of the northerly extension of Wetleau Drive.

LDC 9.518 Sidewalks. Public sidewalk improvements are required for all land divisions and property development in the City of Lowell. Sidewalks may be deferred by the City where future road or utility improvements will occur and on property in the rural fringe of the City where urban construction standards have not yet occurred. The property owner is obligated to provide sidewalk when requested by the City or is obligated to pay their fair share if sidewalks are installed by the City at a later date. An irrevocable Waiver of Remonstrance shall be recorded with the property to guarantee compliance with this requirement.

Discussion: As per LDC all land divisions in Lowell require public sidewalk improvements to be installed. As such, , the applicant will be required to install public sidewalks, including curb and gutter, in accordance with Section 9.518 and the Lowell Standards Documents for engineering and construction. The addition of sidewalks along both sides of the extensions of Fourth Street and both extensions of Wetleau Drive will be a condition of approval. Presently, as seen on the tentative map, sidewalks are indicated to a width of 4-feet. The standard for sidewalks in Lowell is 5-feet. This is the standard the applicant will be held to.

Recommended FINDING for approval: Presently, as seen on the tentative map, sidewalks are indicated to a width of 4-feet. The standard for sidewalks in Lowell is 5-feet. This is the standard the applicant will be held to. The creation of a subdivision is a land division that requires the installation of public sidewalks, including curb and gutter along both sides of the extension of Fourth Street and Wetleau Drive (both north and south extensions). Prior to the issuance of building permits, the applicant/developer shall construct 5' wide sidewalks, including curb and gutter along both sides of the extension of Fourth Street. Sidewalks shall be inspected by the City of Lowell before acceptance. Sidewalks shall be constructed to a width of 5-feet. The proposal is consistent with this criterion with the condition of approval that:

Condition of Approval #7: Prior to the issuance of building permits, the applicant/developer shall construct sidewalks, including curb and gutter along both sides of the extension of Fourth Street and the northly and southerly extensions of Wetleau Drive. Sidewalks shall be inspected by the City of Lowell before acceptance. Sidewalks shall be constructed to a width of 5-feet and in accordance with Lowell Standards Documents for engineering and construction.

LDC 9.516 Access.

(a) Every property shall abut a street other than an alley for a minimum width of 16 feet, of which 12 foot must be paved, except where the City has approved an access to multiple lots sharing the same access in which case the total width must be at least 16 feet. No more than two properties may utilize the same access unless more are approved with the tentative plan.

(b) The following access alternatives to Panhandle properties may be approved by the City:

(1) Approval of a single access road easement to serve proposed parcels. The City may require a provision for conversion to a dedicated public road right-of-way at some future date, in which case the easement shall have the same width as a required right-of-way.

(2) Approval of a road right-of-way without providing the road improvements until the lots

are developed. This places the burden for road improvements on the City although the City can assess all of the benefiting properties when improvements are provided in the future. As a condition of approval, the City may require an irrevocable Waiver of Remonstrance to be recorded with the property.

(3) Approval of a private road. This approach should only be used for isolated short streets serving a limited number of sites and where future City street alignments will not be needed.

Discussion: All lots have legal access onto a right of way. A 20-foot wide access and utility easement will be placed between lots 16 and 17. Lots 16 and 17 are flag lots but will share access. Per LDC, access to two lots may be approved as part of the tentative map approval process and in which case, the total width of the access easement must be at least 16-feet. In the case of the access easement between lots 16 and 17, the total width is 20-feet, which is above the 16-foot minimum. The access easement between lots 16 and 17 shall include paving to a width of at least 16-feet.

A second access and utility easement is shown in between lots 25 and 26. The proposed width of this easement is 16-feet with a 15-foot roadway width. The proposed easement is meant to serve lots 100 and 200, which are above the proposed subdivision. Per LDC, lots being served by an access easement must abut a public right-of-way for at least 16-feet. The proposed 15-foot roadway width shall be expanded to a width of 16-feet to meet this requirement. Further, the access easement shall be paved to a width of 16-feet. Since the access easement and road are the same width and the easement is intended to have utilities placed underneath or along side of it, it may be beneficial for the applicant to adjust the width of the access easement to accommodate for additional space for underground utilities. Staff find a minor adjustment to the width of the easement between lots 25 and 26 can be discussed amongst the City and applicant during the construction drawing phase. The roadway width will need to be at least 16-feet in width and paved to 16-feet.

Lastly, lots 25 and 26 shall not take their legal access from the access easement placed in between said lots. Lots 25 and 26 will need to take access from public right-of-way, this being the extension of Fourth Street or Wetleau Drive.

The paving widths for the access easements in between lots 16 and 17 and lots 25 and 26 will be conditions of approval. As will the restriction from lots 25 and 26 utilizing the easement placed in between them to obtain their legal access.

Recommended FINDING for approval: All lots proposed as part of the subdivision have the ability to have legal access onto a public right-of-way. Lots 16 and 17 will share a common access/utility easement which will be a width of 20-feet with a paved width of 16-feet up until at least the crest of the panhandle. Lots 25 and 26 will have a 16-foot wide access and utility easement placed in between them that provides access to lots 100 and 200, located above the subject property. This access and utility easement shall be paved to a width of at least 16-feet with a road width of at least 16 feet. Access criteria are met with the following Conditions of Approval:

Condition of Approval #8: Lots 16 and 17 share a common access and utility easement which has a width of 20-feet, of the 20-feet, 16-feet shall be paved up until at least the crest of the panhandle.

Condition of Approval #9: Lots 25 and 26 are proposed to have a common access and utility easement. The road width shall be expanded to at least 16-feet. The proposed width of 16-feet for the

easement is acceptable. This access and utility easement shall be paved to a width of 16-feet.

LDC 9.517 Streets.

(a) Urban public street improvements including curbs, gutters and storm drainage are required for all land divisions and property development in the City of Lowell. Urban street improvements may be deferred by the City if there is not existing sidewalk or storm drain system to which connection can be made, conditional upon the responsible party agreeing to an irrevocable waiver of remonstrance to a future assessment at the time of construction of a sidewalk which is otherwise required to be constructed.

Discussion: The applicant intends to bear all cost and install all required urban public street improvements consistent with the standards of the City of Lowell. The extension of Fourth Street has already been dedicated, but not improved to City standards. The extension of Fourth Street will be completed to City standards and shall be inspected by the City of Lowell for compliance, before acceptance of public improvements. Both the northly and southerly extensions of Wetleau Drive will also be improved to City Standards.

(b) The location and grade of streets shall be considered in their relation to existing and planned streets, topographical conditions, public convenience and safety, and to the proposed use of land to be served by the streets. The street system shall assure an adequate traffic circulation system with intersection angles, grades, tangents and curves appropriate for the traffic to be carried considering the terrain. The arrangement of streets shall either:

- (1) Provide for the continuation or appropriate extension of existing principal streets in the surrounding area; or***
- (2) Conform to a plan for the neighborhood approved or adopted by the City to meet a particular situation where topographical or other conditions make continuance or conformance to existing streets impractical.***

Discussion: The proposed subdivision can be designed per the City of Lowell design requirements as seen on Sheets 1 through 12. The tentative map shows the extension of Fourth Street and the northern and southern extensions of Wetleau Drive. All roads involved in the proposed subdivision will be built to the edge of the property. As noted earlier, the tentative map incorrectly shows a sidewalk width of 4-feet, the applicant shall extend sidewalks to a width of 5-feet, consistent with Lowell Development Code and Standards. This has been addressed as a condition of approval, as previously outlined in this staff report. Final inspection of street improvements prior to final plat approval and acceptance of improvements will be a condition of approval.

Recommended FINDING for approval: Applicant has shown as seen on the Sheets 1 through 12 that urban public street improvements including curbs, gutters and storm drainage can be constructed to City of Lowell standards. Prior to final plat approval and acceptance by the City, the urban public street improvements shall be inspected by the City of Lowell for compliance.

Condition of Approval #10: Prior to final plat approval and acceptance of urban public street improvements, the applicant shall install urban public street improvements to City standards. Public street improvements will be inspected by Lowell Public Works or the City Engineer for compliance with Lowell Standards.

(c) Minimum right-of-way and roadway widths. Right-of-way widths and the paved width of streets and sidewalks shall be as prescribed in the City's most current Standards for Public Improvements. Right-of-way widths may be reduced to that needed only for construction of streets and sidewalks if a minimum of a five-foot utility easement is dedicated on both sides of the right-of-way.

Discussion: The proposed subdivision will be designed per the City of Lowell design requirements and reviewed by the City of Lowell for compliance. This proposal meets the City of Lowell's minimum standards. Further inspection of urban public street improvements will be inspected for compliance with Lowell Standards, prior to acceptance.

Recommended FINDING for approval: As shown on Sheets 1 through 12, the proposal meets the minimum right-of-way and roadway widths. Criterion met.

(d) Where conditions, particularly topography or the size and shape of the tract make strict adherence to the standards difficult, narrower developed streets may be approved by elimination of parking on one or both sides of the street and/or elimination of sidewalks on one side of the street.

Discussion: Narrower streets are not proposed. The proposed subdivision will be designed per the City of Lowell design requirements and reviewed by the City of Lowell for compliance. Sidewalks are proposed for both sides of the street. This criterion is not applicable.

Recommended FINDING for approval: This criterion is not applicable because all streets proposed meet standard street requirements.

(e) Where topographical conditions necessitate cuts or fills for proper grading of streets, additional rights-of-way or slope easements may be required.

Discussion: The applicant anticipates some slope easements will be required to be used for construction of a slope on certain lots due to topographical conditions. Slope easements are generally used to adjust the elevation difference between adjoining properties. The proposed subdivision does have hillside development conditions located on lots 23, 25 and 26. Slope easements will be determined at the time of construction drawings. If it is determined, between the applicant's engineer and the City Engineer, during the construction drawing phase, that no slope easements are necessary or non-existent, then the final plat shall contain a plat note stating such. This will be a condition of approval to be shown on the final plat.

Recommended FINDING for approval: Due to topographical conditions and hillside development constraints on lots 23, 25 and 26, which contain slopes of 15 percent or greater, slope easements may be required. Slope easements shall be determined at the time of submittal of construction drawings, as such, prior to final plat approval, the applicant shall submit plans for slope easements for review by the City Administrator or his or her designee. If it is determined, between the applicant's engineer and the City Engineer, during the construction drawing phase, that no slope easements are necessary or non-existent, then the final plat shall contain a plat note stating such. Staff find compliance is feasible and this criterion can be met, conditionally.

Condition of Approval #11: Prior to final plat approval, the applicant shall submit plans to the City Administrator or his or her designee, showing slope easements as required where topographical conditions necessitate cuts or fills for proper grading of streets, additional right-of-way or slope easements. If it is determined, between the applicant’s engineer and the City Engineer, during the construction drawing phase, that no slope easements are necessary or non-existent, then the final plat shall contain a plat note stating such.

(f) Reserve Strips: A reserve strip is a 1-foot strip of land at the end of a right-of-way extending the full width of the right-of-way used to control access to the street. Reserve strips will not be approved unless necessary for the protection of the public welfare or of substantial property rights. The control of the land comprising such strips shall be placed within the jurisdiction of the City by deed under conditions approved by the City. In addition, a barricade shall be constructed at the end of the street by the land divider which shall not be removed until authorized by the City. The cost shall be included in the street construction costs by the land divider.

Discussion: Reserve strips shall be provided at the terminus of the northerly and southerly termination of Wetleau Drive and shall remain in place until the extension is constructed. If one extension of Wetleau Drive develops before the other, the reserve strip at the undeveloped extension point shall remain until an extension is constructed. The control of the land comprising the 1-foot reserve strips shall be placed within the jurisdiction of the City by deed under conditions approved by the City.

As alluded to earlier, the City will require two-hammerhead or fire department equivalent turnarounds at both ends to Wetleau Drive. At the hammerhead turnarounds, a “No Parking” sign shall be installed. These will be conditions of approval.

Recommended FINDING for approval: Reserve strips are presently not indicated or shown on the tentative map and shall be required at the terminus of both ends of Wetleau Drive and shall remain in place until Wetleau Drive is extended. If one extension of Wetleau Drive develops before the other, the undeveloped extension shall remain until extended. The control of the land comprising the 1-foot reserve strips shall be placed within the jurisdiction of the City by deed. At the hammerhead turnarounds, at both ends of Wetleau Drive, a “No Parking” sign shall be installed. The proposal is consistent with the criterion with the condition of approval that:

Condition of Approval #12: Prior to final plat approval, the applicant shall show 1-foot reserve strips on the final plat at both ends of Wetleau Drive. The land comprising the 1-foot reserve strips shall be placed within the jurisdiction of the City by deed. Additionally, at the hammerhead turnarounds, at both ends of Wetleau Drive, a “No Parking” sign shall be installed.

(g) Alignment: As far as is practicable, streets shall be in alignment with existing streets by continuations of the center lines thereof. Staggered street alignment resulting in "T" intersections shall, wherever practical, leave a minimum distance of 260 feet between the center lines of streets having approximately the same direction.

Recommended FINDING for approval: The extension of Fourth Street will be a continuation of the presently dedicated and existed Fourth Street located immediately to the west of the proposed subdivision. The proposed intersection will result in a “T-intersection” at the intersection of the

extension of Fourth Street and the northerly portion of Wetleau Drive. There are no other existing “T-intersections” to the north or south of the subject property.

(h) Future Extensions of Streets: Where necessary to give access to or permit a satisfactory future division of adjoining land, streets shall be extended to the boundary of the subdivisions or partition and the resulting dead-end streets may be approved with a turn-around instead of a cul-de-sac. Reserve strips and street plugs may be required to preserve the objectives of street extensions.

Discussion: The northerly and southerly extensions of Wetleau Drive are planned to extend in the future, as show on the Lowell Master Road Map. The applicant will be required to pave streets to the boundary of subdivision. As indicated earlier, both dead-ends of Wetleau Drive will require a turnaround or other fire-department approved turnaround for emergency access vehicles.

Recommended FINDING for approval: As discussed, and conditioned elsewhere in this staff report, the proposal complies with the future extension of streets.

(i) Intersection Angles: Streets shall be laid out to intersect at angles as near to right angles as practical except where topography require a lesser angle, but in no case shall the acute angle be less than 60 degrees unless there is a special intersection design.

Recommended FINDING for approval: As shown on Sheets 1 through 12, the street intersection angels are at right angles or as near as possible. From staff’s visual inspection of the intersection at Fourth Street and the northly extension of Welteau Drive, it is right-angle, or as near as is practical. Criterion met.

(j) Existing Streets: Whenever existing streets adjacent to or within a tract are of inadequate width, additional right-of-way shall be provided at the time of approval of the land division or land use approval.

Recommended FINDING for approval: The only existing adjacent street is Fourth Street, which was constructed during the first portion of the subdivision. The newly constructed extension of Fourth Street and the northly and southerly extensions of Wetleau Drive will all be constructed to current Lowell street standards. No additional rights-of-way of adjacent or streets within the tract are required. As discussed herein, staff find the criterion met, or can be met conditionally.

(k) Half Street: Half streets, while generally not acceptable, may be approved where essential to the reasonable development of the subdivision or partition when in conformity with the other requirements of these regulations and when the Planning Commission finds it will be practical to require the dedication of the other half when the adjoining property is divided. Whenever a half street is adjacent to a tract to be divided, the other half of the street shall be provided within such tract. Reserve strips and street plugs may be required to preserve the objectives of half streets.

Recommended FINDING for approval: Half streets are not proposed. This criterion is not applicable.

(l) Cul-de-sacs: A cul-de-sac should have a maximum length of 500 feet but may be longer

where unusual circumstances exist. A cul-de-sac shall terminate with a circular or hammerhead turn-around.

Discussion: the dead-end extension of Weteau Drive will terminate with a hammerhead or equivalent turnaround. Lowell Code allows for dead ends to terminate in a hammerhead rather than a cul-de-sac.

Recommended FINDING for approval: A hammerhead turnaround will be required at both dead ends of Weteau Drive. This requirement has been conditioned appropriately in this staff report and can be met conditionally, as discussed in this staff report.

(m) Street Name Signs: Street name signs shall be installed at all street intersections to City standards.

Discussion: The applicant will be required to install street signs in accordance with LDC. Street name signs shall be included on the final plat. This will be a condition of approval.

Recommended FINDING for approval: The applicant shall submit evidence, prior to final plat approval, street name signs are installed in accordance with LDC. This will be a condition of approval. Criterion met with the following Condition of Approval.

Condition of Approval #13: Prior to final plat approval, applicant shall submit evidence to the City Administrator or his or her designee, that the proposal complies with the street name signs standards as listed in the LDC.

(n) Street Lights: Street lights shall be installed to City standards and shall be served from an underground utility.

Discussion: Street lights will be installed at the expense of the applicant and shall be served from an underground utility, consistent with LDC. This will be a condition of approval.

Recommended FINDING for approval: The applicant shall submit evidence, prior to final plat approval, demonstrating the proposed streetlights are in compliance with LDC standards. Criterion met with the following Condition of Approval.

Condition of Approval #14: Prior to final plat approval, applicant shall submit evidence to the City Administrator or his or her designee, that the proposal complies with streetlights standards as listed in the LDC.

(o) Traffic Signs/Signals: Where a proposed intersection will result in the need for street signals to serve the increased traffic generated by the proposed development, they shall be provided by the developer or land divider and the costs shall be borne by the developer or land divider unless an equitable means of cost distribution is approved by the City.

Discussion: A “No Parking” sign has been identified as being required at the two hammerhead turnarounds at the northly and southerly extensions of Weteau Drive. This has been appropriately conditioned in this staff report.

Recommended FINDING for approval: A “No Parking” sign has been identified as being required at the two hammerhead turnarounds at the northly and southerly extensions of Wetleau Drive. This has been appropriately conditioned in this staff report.

(p) Private Streets: Private streets are permitted within Planned Developments, Manufactured Home Parks, singularly owned developments of sufficient size to warrant interior circulation on private streets or on small developments where integration into the public road system is impractical. Design standards shall be the same as those required for public streets unless approved otherwise by the City. The City shall require verification of legal requirements for the continued maintenance of private streets.

Discussion: Private streets are not part of the proposal.

Recommended FINDING for approval: Private streets are not part of the proposal. Criterion not applicable.

(q) Mailboxes: Provisions for mailboxes shall be provided in all residential developments where mail service is provided. Mailbox structures shall be placed as recommended by the Post Office having jurisdiction and shall be noted on the plan.

Discussion: The applicant has not addressed this specific criterion related to mailboxes nor can staff locate any proposed mailboxes or mail structures on the tentative map. As such, evidence of compliance with the criteria for mailboxes shall be shown, prior to final plat approval.

Recommended FINDING for approval: There is no indication how the applicant intends to comply with this specific criterion. Staff will impose a condition of approval, prior to final plat approval.

Condition of Approval #15: Prior to final plat approval, the applicant shall provide evidence that the proposed mailbox structure has been approved by the local Post Office having jurisdiction and shall be noted on the plan as a plat note.

(r) Clear Vision Areas: In all districts a clear vision area shall be maintained at the corners of all property located at the intersection of two streets or a street-alley. A clear vision area shall also be maintained at all driveways intersecting a street. See Figure 9.5-2 All properties shall maintain a clear triangular area at street intersections, alley- street intersections and driveway-street intersections for safety vision purposes. The two sides of the triangular area shall be 15 feet in length along the edge of roadway at all street intersections and 10 feet in length at all alley-street intersections and driveway-street intersections. Where streets intersect at less than 30 degrees, the triangular sides shall be increased to 25 feet in length. The third side of the triangle shall be a line connecting the two exterior sides.

A clear vision area shall contain no plantings, fences, walls, structures, or temporary or permanent obstruction exceeding 3 feet in height, measured from the top of the curb, or, where no curb exists, from the established street center line grade. Trees exceeding this height may be located in this area, provided all branches or foliage are removed to a height

of 8 feet above grade.

Discussion: Fourth Street and the northerly extension of Wetleau Drive will be at an intersection to each other, as such the Clear Vision Area standards will apply. All properties shall maintain a clear triangular area at street intersections. The two sides of the triangular area shall be 15 feet in length along the edge of the roadway at all street intersections and 10 feet in length at all alley-street and driveway-street intersections. Where streets intersect at less than 30 degrees, the triangular sides shall be increased to 25 feet in length. The third side of the triangle shall be a line connecting the two exterior sides. Additionally, a clear vision area shall contain no planting, fences, walls, structures or temporary or permeant obstruction exceeding 3 feet in height. Trees exceeding this height may be located in this area, provided all branches or foliage are removed to a height of 8 feet above grade. The applicant has not specifically addressed how the proposal will comply with Clear Vision Areas, as presented above. As such, staff will recommend a condition of approval for Clear Vision Areas plans to be presented to the City Administrator or his or her designee for compliance, prior to final plat approval. Staff find compliance with the Clear Vision Area standards are feasible to be met by the applicant. This will be a condition of approval.

Recommended FINDING for approval: Standards for Clear Vision Areas have not been addressed at time of tentative map submittal. As such, the applicant shall provide evidence that Clear Vision Standards have been addressed in accordance with LDC 9.517 (r) (r). Staff find compliance with Clear Vision Area standards as indicated in LDC 9.517 (r) feasible for the applicant to meet. As such, plans for compliance shall be presented to the City Administrator or his or her designee for review and approval, prior to final plat approval.

Condition of Approval #16: Prior to final plat approval, plans for compliance with Clear Vision Areas shall be presented to the City Administrator or his or her designee and reviewed and verified for compliance with the Clear Vision Areas standards as listed in the LDC 9.517(r).

LDC 9.519 Bikeways. Bikeways are required along Arterial and Major Collector streets. Currently the only Bikeway requirements are those required by the County as a part of the County owned Major Collector streets within the City. Future requirements for Bikeways may be addressed at such time that a Transportation System Plan (TTSP) is completed for the City., but until specific Bikeway requirements are adopted, travel lanes of all streets that do not require Bikeways are approved for joint use with bicycles.

Discussion: The extension of Fourth Street and Wetleau Drive are not Arterials or Major Collectors, as such this criterion does not apply.

LDC 9.520 Storm Drainage. Until completion of a Storm Drainage Master Plan for the City of Lowell, Section IV, of the Standards for Public Improvements and the following shall apply. In the event of a conflict, the following takes precedence.

(a) General Provisions. It is the obligation of the property owner to provide proper drainage and protect all runoff and drainage ways from disruption or contamination. On-site and off-site drainage improvements may be required. Property owners shall provide proper drainage and shall not direct drainage across another property except as a part of an approved drainage plan. Paving, roof drains and catch basin outflows may require detention ponds or cells and discharge permits. Maintaining proper drainage is a

continuing obligation of the property owner. The City will approve a development request only where adequate provisions for storm and flood water run-off have been made as determined by the City. The storm water drainage system must be separate and independent of any sanitary sewerage system. Inlets should be provided so surface water is not carried across any intersection or allowed to flood any street. Surface water drainage patterns and proposed storm drainage must be shown on every development plan submitted for approval. All proposed drainage systems must be approved by the City as part of the review and approval process.

Recommended FINDING for approval: The applicant's engineer team has submitted a drainage study, see **Attachment C**. The applicant is proposing to utilize existing city infrastructure to handle drainage and stormwater and to add minor upgrades, as necessary. The applicant's proposal to utilize mainly existing drainage infrastructure and catch basins, has been preliminary approved by the City Engineer. There may be the need for some additional culverts and inlets. The applicant shall submit final drainage plans and details for review and approval by the City Engineer. These details will be worked through between the City Engineer and applicant's engineering team during the construction drawing phase.

(b) Urban level inlets, catch basins, and drainage pipe improvements are required for all land divisions and property development in the City of Lowell. Urban storm drainage systems may be deferred by the City in lieu of a rural system of culverts and open drainageways.

Discussion: Some minor, urban storm drainage improvements are being proposed by the applicant. The site contains some level of existing stormwater infrastructure. There will be a need for some minor site upgrades with respect to stormwater, but by-in-large, the catch basin can accommodate the projected stormwater runoff.

(c) Natural Drainageways. Open natural drainageways of sufficient width and capacity to provide for flow and maintenance are permitted and encouraged. For the purposes of this Section, an open natural drainageway is defined as a natural path which has the specific function of transmitting natural stream water or storm water run-off from a point of higher elevation to a point of lower elevation. Significant natural drainageways shall be protected as a linear open space feature wherever possible and shall be protected from pollutants and sediments. A 15-foot setback is required from the centerline of any significant drainageway.

Discussion: As seen on Sheet 3 of 12, Lot 27 has a seasonal drainage route running across it. The map notes indicate the seasonal drainage will be intercepted and diverted around the development and the drainage will continue on to use its existing discharge point. Additionally, As seen in the City Engineer's review comments, drainage easements will be required on lots in which water drains onto, or across any lot. See **Attachment H** for City Engineer's comments, dated July 10, 2019.

(d) Easements. Where a land division is traversed by a water course, drainageway, channel or stream, there shall be provided a public storm water easement or drainage right-of-way conforming substantially with the lines of such water course and such further width as the City determines will be adequate for conveyance and maintenance.

Improvements to existing drainageways may be required of the property owner. The property owner is also responsible for the continuing maintenance and protection of natural drainageways.

Discussion: As discussed above, easements will be required on lots in which water drains onto or across. In addition to Lot 27, The City Engineer has identified lots 17,19, 20, 21, 23, 28, and 29 as likely requiring drainage easements. The inclusion of drainage easements will be a condition of approval, and required to be shown on the final plat, proper to final plat approval. Staff recommend a condition of approval related to drainage easements. Criterion met with the following Condition of Approval:

Condition of Approval #17: Prior to final plat approval, drainage easements of sufficient widths so as to ensure adequate conveyance and maintenance shall be shown on final plat. Specific identification of which lots will require drainage easements will be determined by the applicant's engineering staff and the City Engineer. Drainage easements shall be applied to any and all lots on which water drains onto or across.

(e) Accommodation of Upstream Drainage. A culvert or other drainage facility shall be large enough to accommodate potential run-off from its entire upstream drainage area, whether inside or outside of the development. The City must review and approve the necessary size of the facility, based on sound engineering principles and assuming conditions of maximum potential watershed development permitted by the Comprehensive Plan.

(f) Effect on Downstream Drainage. Where it is anticipated by the City that the additional run-off resulting from the development will overload an existing drainage facility, the City may deny approval of the development unless mitigation measures have been approved.

(g) Drainage Management Practices. Developments within the City must employ drainage management practices approved by the City. The City may limit the amount and rate of surface water run-off into receiving streams or drainage facilities by requiring the use of one or more of the following practices:

(1) Temporary ponding or detention of water to control rapid runoff.

(2) Permanent storage basins.

(3) Minimization of impervious surfaces.

(4) Emphasis on natural drainageways.

(5) Prevention of water flowing from the development in an uncontrolled fashion.

(6) Stabilization of natural drainageways as necessary below drainage and culvert discharge points for a distance sufficient to convey the discharge without channel erosion.

(7) Runoff from impervious surfaces must be collected and transported to a natural drainage facility with sufficient capacity to accept the discharge; and

(8) Other practices and facilities designed to transport storm water and improve water quality.

Discussion: The applicant's preliminary storm drainage plan has been submitted and adequately addresses storm drainage as part of the tentative map approval process. As noted earlier, there may be the need for the installation of additional culverts and other minor improvements related to storm drainage. Staff find it reasonable those minor details can be worked out between the City Engineer and the applicant's engineering team during the construction drawing phase.

(h) NPDES Permit Required. A National Pollutant Discharge Elimination System (NPDES) permit must be obtained from the Department of Environmental Quality (DEQ) for construction activities (including clearing, grading, and excavation) that disturb one or more acres of land.

Discussion: A NPDES Permit will be required before earth-moving work is performed as the subject site is largely going to be disturbed for the construction of public infrastructure and preparation of home sites. This will be a condition of approval, prior to any earth-moving work is performed.

Condition of Approval #18: Prior to the commencement of any site preparation, clearing, grading, or fill, the applicant shall obtain an approved NPDES Permit. Applicant shall submit evidence of an approved NPDES Permit to the City Administrator, or his or her designee, prior to any site preparation, grading, or fill.

LDC 9.521 Water.

(a) All new development must connect to the public water system unless specifically approved otherwise as a part of a development approval for parcels exceeding 5 acres in size after division for which the public water system is located further than 300 feet from any property line. All water line extensions, required fire hydrants, and related appurtenances shall be installed and paid for by the developer unless the City has approved otherwise as a part of the tentative plan decision process.

(b) All public water system improvements shall comply with Section II of the City's Standard for Public Improvements, dated September 1994. The City may modify those requirements upon a recommendation by the City Engineer in the event of special circumstances.

(c) Water Line Extensions. Water distribution lines must be extended along the full length of the property's frontage along the right-of-way or to a point identified by the City Administrator as necessary to accommodate likely system expansion. Water line extensions may be required through the interior of properties, within dedicated public utility easements, when necessary to provide for service to other properties or to provide system looping for fire flows. All public water system line extensions shall have a minimum 6-inch diameter unless a smaller size is recommended by the City Engineer and approved by the City. The City Engineer may also require a larger size if needed to extend transmission capacity or for fire hydrant flow where looping is not available.

(d) Water Plan Approval. All proposed plans for extension and installation of the public water system must be approved by the City as part of the tentative plan review and approval process.

(e) Restriction of Development. The Planning Commission or City Council may limit or deny development approvals where a deficiency exists in the water system or portion thereof which will not be corrected as a part of the proposed development improvements.

Discussion: The applicant has submitted a preliminary Site Utilities Plan as seen on Sheet 5 of 12 the plan outlines the proposed new water line extensions required. City water, electric and sewer service is available to each proposed lot. The Site Utilities Plan provided is preliminary for tentative map approval. A final utilities plan shall be submitted for review and approval by the City Engineer prior to the commencement of any construction activities with respect to water, sewer and utilities.

Recommended FINDING for approval: The utilities plan as seen on Sheet 3 is preliminary and provided for tentative map approval. A final utilities plan shall be submitted for review and approval by the City Engineer prior to commencement of any construction activities with respect to water, sewer and utilities. Criterion met with the following Condition of Approval.

Condition of Approval #19: The utilities plan as seen on Sheet 5 is preliminary and for tentative map approval. A final utilities plan, consistent with LDC 9.521, shall be submitted for review and approval by the City Engineer prior to commencement of any construction activities with respect to water, sewer and utilities.

LDC 9.522 Sewer.

(a) All new development must extend and connect to the public sewer system unless specifically approved otherwise as a part of a development approval for parcels exceeding 5 acres in size after division for which the public sewer system is located further than 300 feet from any property line. All sewer line extensions, manholes, required lift stations and related appurtenances shall be installed and paid for by the developer unless the City has approved otherwise as a part of the tentative plan decision process.

(b) All public sewer system improvements shall comply with Section III of the City's Standards for Public Improvements, dated September 1994. The City may modify those requirements upon a recommendation by the City Engineer in the event of special circumstances.

(c) Sewer Line Extensions. Sewer collection lines must be extended along the full length of the property's frontage along the right-of-way or to a point identified by the City Administrator as necessary to accommodate likely system expansion.

(d) Sewer Plan Approval. All proposed sewer plans and systems must be approved by the City as part of the tentative plan review and approval process.

(e) restriction of Development. The City may limit or deny development approvals where a deficiency exists in the sewer system or portion thereof which will not be corrected as a part of the development improvements.

Discussion: Lots 16-32 can and will be connected to city sewer services. Connections either exist nearby or are proposed to adequately provide city sewer service to lots 16-32. As discussed above, the utilities plan has been preliminary approved by the City Engineer for tentative map approval purposes. A final utilities plan will need to be submitted to the City Engineer for final approval before any construction activities with respect to public utilities take place.

Recommended FINDING for approval: The utilities plan as seen on Sheet 3 is preliminary and provided for tentative map approval. A final utilities plan shall be submitted for review and approval by the City Engineer prior to any construction activities commence with respect to water, sewer and utilities. The need for a final utilities plan has been conditioned in this staff report.

LDC 9.523 Utilities.

(a) It is the policy of the City to place all utilities underground except as otherwise exempted below. Developers shall make all necessary arrangements with serving utility companies for installation of such utilities.

Discussion: All utilities will be placed underground. Staff is not aware of any exceptions that would preclude the placement of utilities underground. Utilities will be placed in accordance with Lowell Development Code.

(b) Exceptions. The City may permit overhead utilities as a condition of approval where the Applicant can demonstrate one of the following conditions:

- (1) Underground utility locations are not feasible.***
- (2) Temporary installations.***
- (3) Major transmission facilities located within rights-of-way or easement***
- (4) Surface mounted structures, substations or facilities requiring above ground locations by the serving utility.***

Recommended FINDING for approval: Per the applicant’s written narrative, staff find the applicant has sufficiently indicated their proposal can meet the requirement that all utilities be placed underground and placed within public right-of-way or in a public utility easement. Criterion met.

LDC 9.524 Easements.

(a) Easements granting limited use of property for any defined purpose may be approved for any lot or parcel.

(b) Access easements may be approved by the City as provided in Section 9.516. The Planning Commission or City Council may require wider access easements if special circumstances exist.

(c) Utility easements shall be provided for sewers, water mains and public or private utilities necessary to provide full service to all developments. Land dividers shall show on the Tentative Plan and on the final Plat all easements and shall provide all dedications,

covenants, conditions or restrictions with the Supplemental Data submitted for review. Minimum interior utility easements shall be 10 feet wide centered on lot or parcel lines where feasible. A wider easement may be required if multiple utilities will be utilizing the same easement or if topography dictates otherwise. An exterior utility easement adjacent to the public right-of-way will be required if at least five feet of unimproved public right-of-way is not available.

(d) Water Courses. If a tract is traversed by a water course such as a drainage way, channel or stream, there shall be provided a storm water easement or drainage right-of-way containing the top of bank, vegetative fringe, and such further width as will be adequate for protection and maintenance purposes. Culverts or other drainage facilities shall be sized to accommodate storm and flood run-off from the entire upstream drainage area at full build out and shall be verified and approved by the City.

Discussion: As discussed in this staff report, there will be a need for access, utility, and water course/drainage easements. The inclusion of all required easements, as shown on the applicant's Sheets 1 through 12, where necessary, will be a condition of approval.

Recommended FINDING for approval: Easements granting limited use of a property for any defined purpose, access easements, utility easements, and water courses/drainage easements all shall be shown and recorded on the final plat as with all dedications, covenants, conditions, or restrictions. The easements shall be consistent with Lane County recording requirements and procedures and ORS 92.

Condition of Approval #20: Prior to final plat approval, the applicant shall include all easements, dedications, covenants, conditions or restrictions along with any supplemental data for review by the City Administrator or his or her designee. Easements shall be consistent with Lane County recording requirements and procedures and ORS 92.

LDC 9.630 Hillside Development. The purpose of this Section is to provide standards governing development of hillside land within the City to alleviate harmful and damaging effects of on-site erosion, sedimentation, runoff, access issues and to regulate the effects of excavation and grading on hillsides.

LDC 9.631 Scope. This Section shall apply to all areas of the City where the slope of the land is 15 percent or greater. In all areas of the City, concurrent with application for a building permit, excavation or fill permit or land division, the applicant shall provide elevation data adequate to determine slope characteristics of the property or portions thereof being developed. If the City determines that the property does have areas of 15 percent slope or greater, then the proposed development shall, in addition to other applicable City ordinances, rules and regulations, also be reviewed for compliance with the requirements of Sections 9.630 through 9.635.

LDC 9.632 Hillside Development Standards.

(a) General grading. Any grading performed within the boundaries of a hillside development shall be kept to a minimum and shall take into account the environmental characteristics of that property, including but not limited to prominent geological features,

existing streambeds, drainage ways, and vegetative cover.

Discussion: Lots 23, 25, and 26 contain slopes of 15 percent greater. The applicant has submitted preliminary grading and drainages plans as seen on Sheet 3 and 4 and a Geotech Report (see **Attachment I**). The applicant will be required to submit final grading plans during the construction phase of the development for review and approval by the City Engineer. The standards listed in the Hillside Development section of the Lowell Development Code will largely be addressed post tentative map approval, during the construction plan drawing phase of the project. The applicant will be required to submit plans that show conformance with Hillside Development standards on Lots 23, 25 and 26. As listed in the LDC, specific engineered plans may be required. This will be a condition of approval.

(b) Slope stability. Potential slope instability problems such as slip planes, clay layers and dome-shaped bedrock shall be identified. Mitigation measures sufficient to render these areas safe for structures and infrastructure development shall be applied.

(c) Building sites. Building sites shall be designed to minimize the need to alter the natural grade during construction of individual buildings. Mass pad grading or continuous terracing of building sites is not allowed. Lot development plans must demonstrate that the lot is large enough to safely accommodate both the planned structure(s) and the needed cuts and/or fills.

(d) Retaining walls. Especially on cutbanks, retaining structures are preferred in lieu of larger excavations to minimize the amount of disturbed area. Retaining walls over 4 feet high shall be engineered. Smaller walls shall be constructed in conformance with the soils and geology report recommendations and the engineer's plans. Designs for retaining structures shall give consideration to aesthetics and shall use mitigations such as terracing and/or landscaping plants to reduce the structures' apparent height and mass.

(e) Cut and Fill Standards.

(1) All cut and fill slopes generally must not exceed a two (horizontal) to one (vertical) ratio. Slopes which are steeper (i.e. 1:1/2 or 1:1) may be conditionally approved by the City upon certification, by a qualified engineer that the slope will remain stable under foreseeable conditions. The certification must delineate any specific stabilization measures deemed necessary by the engineer.

(2) Cuts and fills shall be designed to avoid movement or episodic erosion during heavy rains or earthquakes, mechanical overloading of underlying soils and undercutting of adjacent areas. Fills shall be benched as required to provide a proper bond with the existing terrain.

(3) Unless proven otherwise by specific soils information to the contrary, cuts shall be presumed to be incapable of revegetation without special treatments, such as importation and retention of topsoil. Plans must be submitted for all cuts in excess of 2 feet deep, showing either a covering for the cut, such as stonework, or a revegetation plan that does not rely on the ability of the exposed subsoil to support plant growth.

(f) Revegetation. Earthwork shall be designed so that all disturbed areas will be restored to have at least 6” of topsoil. Revegetation of projects exposing soil shall be aggressively pursued so that bare ground will not be unnecessarily exposed to the weather between November 1 and May30. Construction schedules shall be drawn up to limit the period of time that soil is exposed and unprotected. The existing vegetative ground cover should not be destroyed, removed, or disturbed more than 15 days prior to grading or construction of required improvements. Soil exposed during the removal or significant disturbance of ground cover vegetation shall be built upon (i.e. covered with gravel, a slab, foundation or other construction), landscaped (i.e. seeded or planted with ground cover) or otherwise protected within 15 days of grading or other pre- development activity. Provided, however, that these restrictions do not apply during the months of June, July, August and September.

(g) Modification of Public Street Standards. Street width, grade and alignment, right-of-way width, and sidewalks in hillside areas shall be designed to minimize changes to existing topography and provide adequate access to adjacent properties. Cuts and fills in excess of four feet deep shall be considered significant and should be avoided where feasible. Modifications to established standards, if necessary, to meet these requirements, shall be made as provided below.

(1) Street grades may exceed the maximum grade standards of the Lowell Standards for Public Improvements where topographical conditions make it impractical to meet those standards, subject to the following conditions:

(A) Driveways and intersections shall not be permitted where street grades exceed 15 percent.

(B) Street grades of over 15 percent shall not be permitted for a distance of more than 200 feet in any 600-foot-long section of street.

(C) Street grades shall not exceed 20 percent for any distance.

(2) Requirements specified in the Lowell Standards for Public Improvements for public right-of-way width, pavement width, and/or installation of sidewalk may be modified where topographical conditions make it impractical to meet those standards, subject to the following conditions:

(A) Reduction in public right-of-way width may be made if the proposed right-of-way is large enough to accommodate the street and sidewalk(s), and 5-foot public utility easement is provided on each side of the right-of-way and slope easement is provided where required.

(B) Reduction in pavement width to 21 feet may be made for access lanes with less than 250 vehicle trips per day, that are not dead-end, and that will be no parking on one side. For not more than one 200 foot section of street per block, any road may be reduced to 20 feet if the road is not dead-end, will be no parking on both sides along the narrowed portion, and if at least one parking space is provided for each lot taking driveway access from the narrowed portion; said parking shall be within 200 feet of the driveway access. On all other roadways, the City Council may allow the above described pavement width reductions only after

consultation with the City Engineer and the local fire official, and upon a finding that the proposed width will provide adequate parking and emergency vehicle access. All no parking areas shall be signed, and curbs shall be painted yellow.

(C) All sidewalks shall be a minimum of 5 feet wide. All streets shall have vertical curbs adjacent to sidewalks. For short distances, street-side sidewalks may be relocated to an off-street location that will provide equivalent service, conditional upon right-of-way being available or public access easements being provided. Sidewalks may be approved for only one side of the street for access lanes with less than 250 vehicle trips per day. On all other roadways, the City Council may allow sidewalks on only one side upon a finding that a single sidewalk will provide adequate pedestrian safety.

(3) The City may require modification of street improvement construction standards for any portion of proposed street improvements being constructed in areas of special concern identified in the Soils and Geology Report.

(h) Storm Drainage. In addition to City-wide storm drainage system development standards contained in Section 9.520, hillside storm drainage systems shall be designed to:

(1) Protect cuts, fills, roadways, retaining walls and structures from saturation, slope failure and settling.

(2) To anticipate and mitigate the rapid movement of debris into catch basins, and storm water flows bypassing catch basins.

(3) Ensure that concentrated storm water is disposed of in a controlled manner does not create significant erosion or adverse effects on downhill properties.

(i) Preservation of Trees and Existing Vegetation. Construction shall be done in a manner that avoids unnecessary disruption to vegetation and trees. Temporary protective fencing shall be established around all trees designated for protection prior to the commencement of grading or other soil disturbance. Grade changes and trenching shall not be made within 5 feet of the dripline of such trees without written concurrence from an arborist that such changes will not cause permanent damage to the tree.

Recommended FINDING for approval: Lots 23, 25, and 26 contain slopes of 15 percent or greater, therefore the Hillside Development Standards listed in LDC 9.632 apply to the proposal. The applicant has submitted a Geotech Report. Prior to the issuance of building permits, the applicant shall submit specific construction plans to the City Administrator, or his or her designee, for review and approval. Plans submitted shall be consistent with the Hillside Development Standards listed in LDC 9.632.

Condition of Approval #21: Because Hillside Development Standards apply, prior to the commencement of any site preparation, grading, or fill, on lots 23, 25 or 26, the applicant shall submit specific construction plans for review and approval by the City Administrator, or his or her designee. Plans submitted shall be consistent with the Hillside Development Standards listed in LDC 9.632.

LDC. 9.633 Submission Requirements for Land Divisions. When land division application is submitted in which all or a portion of the development contain slopes which are 15% or greater, the following additional reports and plans shall be submitted:

(a) Surveyor's Report. A scale drawing of the property prepared by a licensed surveyor, showing existing topography at two-foot contour intervals, watercourses both permanent and intermittent, and natural physical features such as rock outcroppings, springs and wetlands. Also show the location and dimensions of any existing buildings or structures on the property where the work is to be performed, the location of existing buildings or structures on land of adjacent owners that are within 100 feet of the property.

Discussion: The applicant's surveyor submitted a map showing the above features, including the slope of each lot, sufficient for staff to make findings upon. **See Attachment J.** Criterion met.

Recommended FINDING for approval: The applicant's surveyor submitted a map showing the above features, including the slope of each lot, sufficient for staff to make findings upon. **See Attachment J.** Criterion met.

(b) Soils and Geology Report. This report shall be prepared by a suitably experienced and qualified licensed engineering geologist or geotechnical engineer, and shall include the following for each proposed lot and for public right-of-way areas proposed for development which have slopes greater than 15%:

(1) Data regarding the subsurface condition of the whole site such as the nature, depth and strength of existing soils, depth to bedrock, location of soft soils, hard stratum, potential slip planes, geological weak zones, clay seams or layers, unconsolidated deposits, and previous grading activities. The report shall also address existing water tables, springs, watercourses and drainage patterns, seismic considerations, and any offsite geologic features or conditions that could impact or be impacted by onsite development. Locations of exploratory boreholes shall take into consideration the terrain and geology of the site instead of following a general grid pattern.

(2) Conclusions and recommendations regarding the stability of underlying slopes and of proposed cuts and fills, any remedial or preventative actions that are required, any limitations upon the use of the site, grading procedures, requirements for vegetation preservation and revegetation, special coverings or treatments for areas that cannot be readily revegetated, erosion control methods, drainage systems, setbacks from slopes or other geologic features, foundation and building design, and backfills.

Discussion: Lots 23, 25, and 26 contain slopes of 15 percent or greater. The applicant has submitted a Geotech Report that the City Engineer will use when reviewing site specific construction plans.

Recommended FINDING for approval: Lots 23, 25, and 26 contain slopes of 15 percent or greater. The applicant has submitted a Geotech Report that the City Engineer will use when reviewing site specific construction plans. Criterion met.

(c) Engineer's Plans. Detailed plans shall be prepared for all proposed public

improvements by a suitably qualified licensed civil engineer. Detailed plans for private development on each parcel may also be provided and if provided, will be accepted as required building permit submittals. These plans shall be based upon the findings of the required soils and geology report, and shall include the following information:

(1) Infrastructure Plan. A scale drawing plan showing the location and approximate grade of all proposed streets, walkways and alleys, and the location of proposed easements, lots, common areas, parks, open space and other land proposed for dedication to the City. Also indicate the locations of utilities such as sewer and water lines.

(2) Grading Plan. A scale drawing grading plan of the property, showing existing and proposed finished grades at two-foot contour intervals, retaining walls or other slope stabilization measures, cuts and fills, and all other proposed changes to the natural grade. Include cross-sectional diagrams of typical cuts and fills, drawn to scale and indicating depth, extent and approximate volume, and indicating whether and to what extent there will be a net increase or loss of soil.

(3) Drainage Plan. Detailed plans and locations of all proposed surface and subsurface drainage devices, catch basins, area drains, dewatering provisions, drainage channels, dams, sediment basins, storage reservoirs, and other protective devices together with a map showing drainage areas, the complete drainage network, including outfall lines and natural drainageways which may be affected by the proposed development, and the estimated run-off of the area(s) served by the drains.

(4) Erosion Control Plan. Descriptions and/or drawings of proposed changes to soils and/or existing vegetation on the site; specific methods proposed to restore disturbed topsoil, minimize the identified potential erosion problems, and revegetate areas which will be stripped of existing vegetation; and a schedule showing when each stage of the project will be started and completed, including the total area of soil surface which is to be disturbed during each stage and the length of time soils will be left exposed.

(5) Affidavit. The authoring engineer shall include a statement that the plans are consistent with the soils and geology report required by this Section, and with the standards of Section 9.632.

Discussion: Engineer's Plans (1 through 5) will be required following tentative plat approval and shall be submitted for review and approval by the City Administrator or his or her designee, as part of the construction plan drawing process and before issue of building permits. Engineer's Plan submitted by the applicant to the City shall be in conformance with the standards and specifications as cited in LDC 9.633 (c) (1-5).

Recommended FINDING for approval: The proposal is consistent with these criteria with the condition of approval the applicant shall submit Engineer's Plan 1 through 5. for review and approval by the City Administrator or his or her designee, prior to the issuance of building permits.

Condition of Approval #22: Prior to any site preparation, grading or fill, the applicant shall submit for review and approval by the City Administrator or his or her designee, Engineer's Plan, 1 through 5 as indicated in LDC 9.633 (c) (1-5).

(d) One copy of each individual lot survey, geotechnical report and development engineering plans submitted and approved with the tentative plan shall be filed with the City at the time of submission of the final plat and one copy shall be provided to the purchaser of the individual lot.

Recommended FINDING for approval: Consistent with subsection (d) of LDC 9.632, above, upon final plat submittal to the City, the applicant shall include one copy of each individual lot survey, geotechnical report and development engineering plans. One copy shall be provided to the purchasers of lots that contain 15 percent slopes or greater. The proposal is consistent with this criterion with the condition of approval that:

Condition of Approval #23: Prior to final plat approval, the applicant shall submit final copies of each individual lot survey, geotechnical report, and development engineering plans for the City's record keeping purposes. Additionally, prior to the issuance of certificate of occupancy for the proposed residential lots 23, 25 and 26, evidence shall be submitted to the City Administrator that shows compliance with subsection (d) of LDC 9.633 with the purchaser of each respective lot receiving a copy as described above.

LDC 9.236 Dedication Requirements

(a) All lots or parcels of land shown on the final Plat intended for public use shall be offered for dedication to the City at the time the Plat is filed. Exception: Those lots or parcels, or common linear open spaces which are intended for the exclusive use of the owners, their licensees, visitors, tenants or employees; and also excepted are those parcels of land reserved for public acquisition.

(b) All streets, pedestrian ways, drainage channels, open spaces, easements and other rights-of-way shown on the final Plat intended for public use shall be offered for dedication for public use at the time the final Plat is filed.

(c) All rights of access to and from streets, lots and parcels of land shown on the final Plat intended to be surrendered shall be offered for dedication at the time the final Plat is filed.

(d) The land divider shall provide and designate one-foot reserve strips across the ends of stubbed streets adjoining undivided land or along half streets adjoining undivided land. The reserve strip shall be included in the dedication granting to the City the right to control access over the reserve strip to assure the continuation or completion of the street. This reserve strip shall overlay the dedicated street right-of-way.

Recommended FINDING for approval: The proposal is consistent with these criteria with the condition of approval the applicant shall submit a final plat in consistent with the dedication requirements as indicated in LDC 9.236. Dedications requirements will be required as part of final plat approval, and prior to final plat approval.

Condition of Approval #24: Prior to final plat approval, dedication requirements in LDC 9.236 shall be met by the applicant.

LDC 9.805 Improvement Agreement.

Before City final approval of a development, site plan or land division, the developer or land divider shall file with the City an agreement between developer or land divider and the City, specifying the period within which required improvements and repairs shall be completed and providing that, if the work is not completed within the period specified, the City may complete the work and recover the full cost and expense, together with court costs and attorney fees necessary to collect said amounts from the developer or land divider. The agreement shall also provide for reimbursement of the City's cost of inspection in accordance with Section 9.801 (f).

Discussion: The requirement, as specified in LDC 9.805, for an agreement between the developer or land divided and the City specifying the period within which required improvements and repairs will be completed, will be a condition of approval, prior to final plat approval. The agreement shall include language consistent with the City completing the work and recovering of full cost and expenses, together with court costs and attorney's fees, if necessary. Criterion met with condition of approval.

Recommended FINDING for approval: Prior to final plat approval, the applicant and or developer shall enter into an agreement, with the City of Lowell, consistent with the specification of LDC 9.805. Criterion met as conditioned.

Condition of Approval #25: Prior to final plat approval, the applicant and/or developer shall enter into an agreement, with the City of Lowell, consistent with the specification of LDC 9.805.

LDC 9.806 Security.

(a) The developer or land divider shall file with the agreement, to assure full and faithful performance thereof, one of the following:

(1) A surety or performance bond executed by a surety company authorized to transact business in the State of Oregon in a form approved by the City Attorney; or

(2) A personal bond co-signed by at least one additional person together with evidence of financial responsibility and resources of those signing the bond sufficient to provide reasonable assurance of ability to proceed in accordance with the agreement to the satisfaction of the City Council: or

(3) A cash or negotiable security deposit.

(b) Such assurance of full and faithful performance shall be for a sum approved by the City as sufficient to cover the cost of the improvements and repairs, including related engineering and incidental expenses, and to cover the cost of City inspections and other costs.

(c) Prior to acceptance of required public improvements, the developer or land divider shall file one of the above listed assurances with the City, in an amount equal to 20% of actual construction costs, as a warranty towards defects in materials and workmanship identified

*for a period of no less than one year after City acceptance of the public improvements.
The City may agree to a longer warranty period in lieu of the above required assurances.*

Discussion: Securities in the form of a surety or performance bond, or a personal bond co-signed by at least one additional person together with evidence of financial responsibility or a cash or negotiable security deposit shall be required of the applicant / developer to ensure public improvements are performing adequately for a period of not less than one year after city acceptance. This will be a condition of approval.

Recommended FINDING for approval: Securities in the form(s) listed above in LDC 9.806 shall be required to assure performance of public improvements installed by the applicant. Prior to final plat approval, the applicant shall provide the City Administrator evidence showing that the requirements as listed in LDC 9.806 are satisfied and an agreement has been reached between the applicant and the City. Criterion met as conditioned.

Condition of Approval #26: Prior to final plat approval, the applicant shall provide the City Administrator evidence showing that the requirements as listed in LDC 9.806 are satisfied and an agreement has been reached between the applicant and the City.

LDC 9.807 Noncompliance Provisions.

(a) If the developer or land divider fails to carry out provisions of the agreement, the City shall provide written notice to the developer or land divider and the surety specifying the details of noncompliance. Unless the City allows more time for compliance because of circumstances beyond the developer or land divider's control, within 30 days after receiving the notice, the developer or land divider or the surety shall commence compliance and proceed diligently to comply with the agreement.

(b) If the developer or land divider or the surety does not begin compliance within the 30 days or the additional time allowed by the City, or compliance is not completed within the time specified in granting the land division approval, the City may take the following action:

(1) Notify the developer or land divider and the surety of the developer or land divider's failure to perform as required by this Code and the agreement.

(2) Demand payment from the developer or land divider or the developer or land divider's surety for the unfulfilled obligation.

(3) Enter upon the site and carry out the obligation in accordance with the provisions of the approval and agreement.

(4) If the security for the obligation is a performance bond, notify the surety that reimbursement for City expenses for fulfillment of the obligation is due and payable to the City. If the security is a deposit of cash or other assets, appropriate as much of the deposit as is necessary to recoup City expenses.

(5) Void all approvals granted in reliance on the agreement.

(c) If the bond or other required security is not sufficient to compensate the City for expenses incurred to fulfill the obligation, the amount due to the City for the obligation is a lien in favor of the City upon the entire contiguous real property of the owner of the land subject to the obligation.

(d) The lien attaches upon the filing with the City Recorder of notice of the claim for the amount due for the fulfillment of the obligation. The notice shall demand the amount due, allege the insufficiency of the bond or other security to compensate the City fully for the expense of the fulfillment of the obligation, and allege the developer or land divider's failure to fulfill the required obligation.

(e) The lien may be foreclosed in the manner prescribed by law for foreclosing other liens on real property.

(f) The remedies set forth for non-compliance are cumulative. In addition to the remedies set forth above, non-compliance by the developer or his surety with any term of a performance guarantee shall entitle the City to pursue any civil remedy permitted by law.

Recommended FINDING for Approval: In the event the developer or land divider cannot fulfill its obligation, as provided for in LDC 9.807, the City has the authority to commence the securities provision of LDC 9.806, or enter upon the site and carry out the obligation in accordance with provision of the approval and agreement. In such events, the City will work closely with the City Attorney to initiate proceedings, if necessary. Criterion met as discussed.

LDC 9.231 Submission Requirements. Within 18 months after approval of the Tentative Plan, the land divider shall cause the land division to be surveyed and a Plat prepared and submitted to the City for approval. This time period may be extended for up to one year upon the approval of the Deciding Authority. The Plat shall be in conformance with the approved tentative Plan. All public improvements required by the tentative plan approval must be completed and accepted prior to the City's approval of the Plat, unless the applicant provides security to assure public improvements will be completed. If the land divider fails to submit the Plat for approval within 18 months or as extended, he must reapply for approval and resubmit the Tentative Plan with any revision necessary to comply with changed conditions.

Recommended FINDING for Approval: Within 18 months after approval of the Tentative Plan, the land divider shall cause the land division to be surveyed and a plat prepared and submitted to the City for approval. This time period may be extended for up to one (1) year upon the approval of the Deciding Authority, in the case of a subdivision, the Deciding Authority shall be City Council. All public improvements required by the tentative plan approval must be completed and accepted prior to the City's approval of the final plat. If the land divider fails to submit the final plat for approval within 18 months or as extended, they must reapply for approval and resubmit the tentative plan with any revision necessary to comply with and changed conditions. The tentative plat approval will expire 18 months after final City tentative approval or as extended, by the Deciding Authority. Criterion met as discussed.

5. Consistency with applicable Comprehensive Plan policies.

Housing Need Policy (c) 4. The City shall insure that residential development is supported by the timely and efficient extension of public facilities and services.

Recommended FINDING for approval: The timely and efficient extension of public facilities and services can readily be supplied. The proposed subdivision is the next logical extension of the existing subdivision immediately to the west. The two dead-ends of Wetleau Drive can be further extended for future development, as called for in the Lowell Master Road Plan and Map. The proposal is consistent with the timely and efficient extension of public facilities and services.

Housing Need Policy (c) 5. The City shall continue to support increased residential development while also encouraging businesses and commercial activities that support residential community needs.

Recommended FINDING for approval: The City is continuing to support residential growth because the addition of a 17-lot single family residential home development has the ability to attract more people that wish to live and work in Lowell, thereby, spurring the chance for increased business and commercial activity. The proposal is consistent with Housing Need Policy (c) 5.

Development Constraints (c) (1) Topography and Slope.

Recommended FINDING for approval: The Lowell Comprehensive Plan lists topography and slope as a development constraint. As such, Lowell adopted specific Hillside Development Standards that developers shall adhere to in the event development occurs on slopes of 15 percent or greater. As contained in this staff report and associated findings and conditions of approval. Hillside Development standards apply and will be enforced by the City. The proposal as conditioned is consistent with addressing the development constraints of topography and slope.

Development Constraints (c) (2) Soils & Geology/Landslide Hazards.

Recommended FINDING for approval: The City has no comprehensive geological study related to the potential for landslide hazards as a result of additional development. As such the City is unable to quantify the extended of landslide hazard development constraints. However, as included in the Hillside Development Standards of the LDC and the reports required for development in areas that quantify as hillside development, the City does require a Soils and Geology Report, which has been completed by the applicant.

6. Recommendation

As discussed, and conditioned in this staff report, staff recommend the Planning Commission issue a recommendation for APPROVAL onto City Council for final action for a tentative plat for a 17-lot single family home subdivision.

7. Conditions of Approval

Staff have included a running list of all condition approval applicable to this proposal:

Condition of Approval #1: Prior to any earth moving activities on the site, final grading plans, showing the nature of cuts and fills and information on the character of the soil, , shall be submitted to the City Administrator, or his or her designee for review and approval.

Condition of Approval #2: Prior to the commencement of any earth-moving activities on the subject property, the applicant shall receive DSL concurrence on the wetland delineation report and comply with any requirements of DSL in terms of obtaining a fill-removal permit or appropriate mitigation.

Condition of Approval #3: Prior to final plat approval, a final plat showing Lot 19 to consist of at least 7,000 sq. ft, consistent with minimum lot size, shall be submitted for review.

Condition of Approval #4: Prior to final plat approval, applicant shall construct and show two fire-department approved turnarounds on the final plat at both dead ends of Wetleau Drive. Details for construction of turnarounds shall be submitted to the City Engineer for review and approval, as part of the construction drawing phase. Staff include **Attachment G**, as fire-department approved turnarounds.

Condition of Approval #5: The applicant shall submit final drainage plans/details for review and approval by the City Engineer, prior to the commencement of construction of public improvement facilities.

Conditions of Approval #6: Applicant shall install fire hydrant at or near the western edge of the northerly extension of Wetleau Drive. Details of design and placement to be worked out amongst LRFPD, City Engineer, and the applicant's engineering team, during the construction drawing phase. Prior to final plat approval, evidence of the installation of the fire hydrant shall be shown at or near the western edge of the northerly extension of Wetleau Drive.

Condition of Approval #7: Prior to the issuance of building permits, the applicant/developer shall construct sidewalks, including curb and gutter along both sides of the extension of Fourth Street and the northly and southerly extensions of Wetleau Drive. Sidewalks shall be inspected by the City of Lowell before acceptance. Sidewalks shall be constructed to a width of 5-feet and in accordance with Lowell Standards Documents for engineering and construction.

Condition of Approval #8: Lots 16 and 17 share a common access and utility easement which has a width of 20-feet, of the 20-feet, 16-feet shall be paved up until at least the crest of the panhandle.

Condition of Approval #9: Lots 25 and 26 are proposed to have a common access and utility easement. The road width shall be expanded to at least 16-feet. The proposed width of 16-feet for the easement is acceptable. This access and utility easement shall be paved to a width of 16-feet.

Condition of Approval #10: Prior to final plat approval and acceptance of urban public street improvements, the applicant shall install urban public street improvements to City standards. Public street improvements will be inspected by Lowell Public Works or the City Engineer for compliance with Lowell Standards.

Condition of Approval #11: Prior to final plat approval, the applicant shall submit plans to the City Administrator or his or her designee, showing slope easements as required where topographical conditions necessitate cuts or fills for proper grading of streets, additional right-of-way or slope easements. If it is determined, between the applicant's engineer and the City Engineer, during the construction drawing phase, that no slope easements are necessary or non-existent, then the final plat shall contain a plat note stating such.

Condition of Approval #12: Prior to final plat approval, the applicant shall show 1-foot reserve strips on the final plat at both ends of Wetleau Drive. The land comprising the 1-foot reserve strips shall be placed within the jurisdiction of the City by deed. Additionally, at the hammerhead turnarounds, at both ends of Wetleau Drive, a "No Parking" sign shall be installed.

Condition of Approval #13: Prior to final plat approval, applicant shall submit evidence to the City Administrator or his or her designee, that the proposal complies with the street name signs standards as listed in the LDC.

Condition of Approval #14: Prior to final plat approval, applicant shall submit evidence to the City Administrator of his or her designee, that the proposal complies with streetlights standards as listed in the LDC.

Condition of Approval #15: Prior to final plat approval, the applicant shall provide evidence that the proposed mailbox structure has been approved by the local Post Office having jurisdiction and shall be noted on the plan as a plat note.

Condition of Approval #16: Prior to final plat approval, plans for compliance with Clear Vision Areas shall be presented to the City Administrator or his or her designee and reviewed and verified for compliance with the Clear Vision Areas standards as listed in the LDC 9.517(r).

Condition of Approval #17: Prior to final plat approval, drainage easements of sufficient widths so as to ensure adequate conveyance and maintenance shall be shown on final plat. Specific identification of which lots will require drainage easements will be determined by the applicant's engineering staff and the City Engineer. Drainage easements shall be applied to any and all lots on which water drains onto or across.

Condition of Approval #18: Prior to the commencement of any site preparation, clearing, grading, or fill, the applicant shall obtain an approved NPDES Permit. Applicant shall submit evidence of an approved NPDES Permit to the City Administrator, or his or her designee, prior to any site preparation, grading, or fill.

Condition of Approval #19: The utilities plan as seen on Sheet 5 is preliminary and for tentative map approval. A final utilities plan, consistent with LDC 9.521, shall be submitted for review and approval by the City Engineer prior to commencement of any construction activities with respect to water, sewer and utilities.

Condition of Approval #20: Prior to final plat approval, the applicant shall include all easements, dedications, covenants, conditions, or restrictions along with any supplemental data for review by the City Administrator or his or her designee. Easements shall be consistent with Lane County recording requirements and procedures and ORS 92.

Condition of Approval #21: Because Hillside Development Standards apply, prior to the commencement of any site preparation, grading, or fill, on lots 23, 25 or 26, the applicant shall submit specific construction plans for review and approval by the City Administrator, or his or her designee. Plans submitted shall be consistent with the Hillside Development Standards listed in LDC 9.632.

Condition of Approval #22: Prior to any site preparation, grading or fill, the applicant shall submit for review and approval by the City Administrator or his or her designee, Engineer's Plan, 1 through 5 as indicated in LDC 9.633 (c) (1-5).

Condition of Approval #23: Prior to final plat approval, the applicant shall submit final copies of each individual lot survey, geotechnical report, and development engineering plans for the City's record keeping purposes. Additionally, prior to the issuance of certificate of occupancy for the proposed residential lots 23, 25 and 26, evidence shall be submitted to the City Administrator that shows compliance with subsection (d) of LDC 9.633 with the purchaser of each respective lot receiving a copy as described above.

Condition of Approval #24: Prior to final plat approval, dedication requirements in LDC 9.236 shall be met by the applicant.

Condition of Approval #25: Prior to final plat approval, the applicant and/or developer shall enter into an agreement, with the City of Lowell, consistent with the specification of LDC 9.805.

Condition of Approval #26: Prior to final plat approval, the applicant shall provide the City Administrator evidence showing that the requirements as listed in LDC 9.806 are satisfied and an agreement has been reached between the applicant and the City.

Condition of Approval #27: Prior to the issuance of certificates of occupancy, the final plat map shall be submitted and recorded in accordance with ORS 92 and all state and Lane County recording laws. A copy of the final plat map shall also be retained by the City of Lowell for their records.

8. Informational items

- Appropriate permits to perform work within City of Lowell rights-of-way will have to be obtained by the property owner/applicant/contractor before any work in public rights-of-way can be undertaken. For questions related to performing work within City rights of way, please contact the Lowell Public Works department at 541-937-2776.

9. Attachments

Attachment A: Application and Supplemental Materials

Attachment B: Sheet 5 – Site Utilities

Attachment C: Sheets 1 through 12, includes initial drainage study

Attachment D: Initial DSL Wetland Response.

Attachment E: Tentative Subdivision Map

Attachment F: Turnarounds Required

Attachment G: Fire Code Standards

Attachment H: City Engineer's Comments Dated July 10, 2019.

Attachment I: Geotech Report

Attachment J: Map Showing Slopes

Attachment K: Referral Comments from Lane County and LRFPD

Attachment L: Notice

By signing, the undersigned certifies that he/she has read and understood the submittal requirements outlined, and that he/she understands that incomplete applications may cause delay in processing the application. I (We), the undersigned, acknowledge that the information supplied in this application is complete and accurate to the best of my (our) knowledge. I (We) also acknowledge that if the total cost to the City to process this application exceeds 125% of the application fee, we will be required to reimburse the City for those additional costs in accordance with Ordinance 228.

PROPERTY OWNER

Name (print): ~~Bob~~ Bahen Investment Group LLC Phone: 541 513 7623
Address: 195 Melton Rd
City/State/Zip: Creswell OR 97426
Signature: Matt Bahen

APPLICANT, if Different

Name (print): Matthew Bahen Phone: 541 513 7623
Company/Organization: _____
Address: 84598 Drew Lane
City/State/Zip: Pleasant Hill OR 97455
Signature: Matt Bahen
E-mail (if applicable): speedyluc@gmail.com

APPLICANTS REPRESENTATIVE, if applicable

Name (print): _____ Phone: _____
Company/Organization: _____
Address: _____
City/State/Zip: _____
E-mail (if applicable): _____

For City Use. Application Number _____
Date Submitted: 6/25/19 Received by: Jared Cobb Fee Receipt # _____
Date Application Complete: _____ Reviewed by: _____
Date of Hearing: _____ Date of Decision _____ Date of Notice of Decision _____

Jared Cobb

From: The Bahens <speedylu@gmail.com>
Sent: Tuesday, June 25, 2019 11:37 AM
To: Jared Cobb
Subject: Applicant statement

In regards to the subdivision application sent to the city on behalf of Bahen Investment Group. I would like to take this opportunity to state the reasons for this application.

As I have been building houses in Lowell for the last two years, I have noted that the demand for affordable, quality, family homes is far outstripping the supply. I've had several families express interest in our second phase of construction on the Sunset View Ranch Subdivision since our first phase of houses were pre sold-out at the end of last summer. This application would add 17 more lots to the subdivision and allow the city to move forward with eventually connecting Wetleau road to the south and Hyland lane to the north with the right of ways we are providing. I believe that the approval of the second phase of this subdivision will positively affect the economy, tax base, school support and overall public interest for the city of Lowell.

Thank you
Matthew Bahen
Bahen Investment Group

APPLICATION SITE PLAN REQUIREMENTS CHECKLIST
Lowell Land Development Code, Section 2.140

Applications for land divisions or land use requests that require a site plan shall submit the site plan on 8 1/2 x 11 inch or 11 x 17 inch black/white reproducible sheets for copying and distribution. Larger drawings may be required for presentation and City review. Drawings shall be drawn to scale. The scale to be used shall be in any multiple of 1 inch equals 10 feet (1" = 20', 1" = 30", 1" = 100', etc.) and may be increased or decreased as necessary to fit the sheet size. The Application and site plan shall show clearly and with full dimensioning the following information, as applicable, for all existing and proposed development. It is understood that some of the requested information may not apply to every application.

_____ The names of the owner(s) and applicant, if different.

_____ The property address or geographic location and the Assessor Map number and Tax Lot number.

_____ The date, scale and northpoint.

_____ A vicinity map showing properties within the notification area and roads. An Assessor Map, with all adjacent properties, is adequate.

_____ Lot dimensions.

_____ The location, size, height and uses for all existing and proposed buildings.

_____ Yards, open space and landscaping.

_____ Walls and fences: location, height and materials.

_____ Off-street parking: location, number of spaces, dimensions of parking area and internal circulation patterns.

_____ Access: pedestrian, vehicular, service, points of ingress and egress.

_____ Signs: location, size, height and means of illumination.

_____ Loading: location, dimension, number of spaces, internal circulation.

_____ Lighting: location and general nature, hooding devices.

_____ Street dedication and improvements.

_____ Special site features including existing and proposed grades and trees, and plantings to be preserved and removed.

- _____ Water systems, drainage systems, sewage disposal systems and utilities.
- _____ Drainage ways, water courses, flood plain and wetlands.
- _____ The number of people that will occupy the site including family members, employees or customers.
- _____ The number of generated trips per day from each mode of travel by type: employees, customers, shipping, receiving, etc.
- _____ Time of operation, where appropriate. Including hours of operation, days of the week and number of work shifts.
- _____ Specifications of the type and extent of emissions, potential hazards or nuisance characteristics generated by the proposed use. The applicant shall accurately specify the extent of emissions and nuisance characteristics relative to the proposed use. Misrepresentation or omission of required data shall be grounds for denial or termination of a Certificate of Occupancy.
- _____ Uses which possess nuisance characteristics or those potentially detrimental to the public health, safety and general welfare of the community including, but not limited to; noise, water quality, vibration, smoke, odor, fumes, dust, heat, glare or electromagnetic interference, may require additional safeguards or conditions of use as required by the Planning Commission or City Council.
- _____ All uses shall meet all applicable standards and regulations of the Oregon State Board of Health, the Oregon Department of Environmental Quality, and any other public agency having appropriate regulatory jurisdiction. City approval of a land use application shall be conditional upon evidence being submitted to the City indicating that the proposed activity has been approved by all appropriate regulatory agencies.
- _____ Such other data as may be necessary to permit the deciding authority to make the required findings.

NOTE: Additional information may be required after further review in order to adequately address the required criteria of approval.

1



TITLE NO. 0301200 ^{GL}
ESCROW NO. EU17-1171
TAX ACCT. NO.
MAP/TAX LOT NO.

Lane County Clerk
Lane County Deeds and Records

2017-022776



\$47.00

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RPR-DEED Cnt=1 Str=41 CASHIER 02
\$5.00 \$11.00 \$21.00 \$10.00

GRANTOR
WILLIAM D. GEORGE and RUTH M. GEORGE
GRANTEE
BAHEN INVESTMENT GROUP LLC
195 MELTON ROAD
CRESWELL, OR 97426

Until a change is requested
all tax statements shall be
sent to the following address:
SAME AS GRANTEE

After recording return to:
CASCADE TITLE CO.
811 WILLAMETTE
EUGENE, OR 97401

WARRANTY DEED – STATUTORY FORM

WILLIAM D. GEORGE and RUTH M. GEORGE, as tenants by the entirety, Grantor,

conveys and warrants to

BAHEN INVESTMENT GROUP LLC, an Oregon Limited Liability Company, Grantee,

the following described real property free of encumbrances except as specifically set forth herein:

Lots 4, 5, 6, 7, 10, 11, 12 and 16, SUNSET VIEW RANCH, as platted and recorded July 26, 2006, Reception No. 2006-053104, Lane County Deeds and Records, in Lane County, Oregon.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

Except the following encumbrances: Covenants, Conditions, Restrictions and Easements of record.

Grantor does hereby assign, and Grantee does hereby assume, any and all special declarant rights held by Grantor in connection with the property conveyed by this deed.

The true consideration for this conveyance is \$415,000.00.

Dated this 8 day of May, 2017.

William D. George
WILLIAM D. GEORGE

Ruth M. George
RUTH M. GEORGE

State of Oregon
County of Lane

This instrument was acknowledged before me on May 8, 2017 by WILLIAM D. GEORGE and RUTH M. GEORGE.

[Signature]

(Notary Public for Oregon)

My commission expires 1/5/20



AFTER RECORDING RETURN TO:
CASCADE TITLE COMPANY
811 WILLAMETTE ST., EUGENE, OR 97401
E017-1171 6L
CT0301200

Lane County Clerk
Lane County Deeds and Records

2017-022777



\$102.00

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RPR-DTR Cnt=1 Stn=41 CASHIER 02
\$60.00 \$10.00 \$11.00 \$21.00

2

After recording, return to:
Rebecca S. Schwarzkopf
Arnold Gallagher P.C.
800 Willamette Street, Suite 800
Eugene, Oregon 97401

TRUST DEED

This Trust Deed is made on MAY 8, 2017, between, **BAHEN INVESTMENT GROUP LLC**, an Oregon limited liability company, with an address of 195 Melton Road, Creswell, Oregon 97426 ("Grantor"), **CASCADE TITLE CO.**, with an address of 811 Willamette Street, Eugene, Oregon 97401 ("Trustee") and **WILLIAM D. GEORGE** and **RUTH M. GEORGE****, with an address of PO Box 305, Lowell, OR 97452 ("Beneficiary"), for the purpose of securing performance of each agreement of the Grantor contained herein, and payment of the sum Three Hundred Seventy-Two Thousand Five Hundred and No/100th Dollars (\$372,500.00), according to the terms of a Promissory Note made by the Grantor, payable to the Beneficiary, of an even date herewith, with the final payment, if not sooner paid, to be due and payable on the third anniversary of the date of such Promissory Note (the "Note").

The Grantor irrevocably grants, bargains, sells and conveys to the Trustee in trust, with power of sale, together with all and singular the tenements, hereditaments and appurtenances, and all other rights belonging thereto or in any other way now or hereafter appertaining to, and the rents, issues, and profits thereof, and all fixtures now or hereafter attached to or used in connection with the property located in Lowell, Lane County, Oregon, consisting of eight vacant lots (collectively, the "Trust Property"), more particularly described as:

Lots 4, 5, 6, 7, 10, 11, 12 and 16 of SUNSET VIEW RANCH, as platted and recorded July 26, 2006, Reception No. 2006-053104, Lane County Oregon Deeds and Records, in Lane County, Oregon.

To protect the security of this Trust Deed, Grantor covenants and agrees as follows:

ARTICLE I

Particular Covenants and Warranties of Grantor

1.01 Obligations Secured. This Trust Deed secures the payment of all indebtedness, including but not limited to principal and interest, and the performance of all covenants and obligations of Grantor, under the Note, this Trust Deed, and all other agreements executed at any time in connection therewith, as they may be amended or supplemented from time to time (collectively, the "Loan Documents"), whether such payment and performance is now due or becomes due in the future (collectively, the "Obligations"). This Trust Deed also secures the payment and performance of any and all other indebtedness and obligations of Grantor to Beneficiary, present and future, of any nature whatsoever, whether direct or indirect, primary or

**** AS TENANTS BY THE ENTIRETY**

Handwritten initials: MS, RB

1 - TRUST DEED

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secondary, joint or several, liquidated or unliquidated, whenever and however arising, and whether or not reflected in a written agreement or instrument.

1.02 Payment and Performance. Grantor shall pay and perform all of the Obligations when due.

1.03 Property. Grantor warrants that it holds good and merchantable title to the Trust Property, free and clear of all liens, encumbrances, reservations, restrictions, easements, and adverse claims except those specifically listed in **Exhibit A** attached hereto. Grantor covenants that it shall forever defend Beneficiary's and Trustee's rights hereunder and the priority of this Trust Deed against the adverse claims and demands of all persons.

1.04 Further Assurances. Grantor shall execute, acknowledge, and deliver, from time to time, such further instruments as Beneficiary or Trustee may require to accomplish the purposes of this Trust Deed.

1.05 Compliance with Laws. Grantor represents, warrants, and covenants that the Trust Property is currently in material compliance with, and will at all times be maintained in material compliance with, all applicable laws, and all covenants, conditions, easements, and restrictions affecting the Trust Property.

1.06 Environmental Compliance

(1) For purposes of this section, "Environmental Law" means any federal, state, or local law or regulation now or hereafter at any time pertaining to Hazardous Substances or environmental conditions. For purposes of this section, "Hazardous Substance" includes, without limitation, any substance that is or becomes classified as hazardous, dangerous, or toxic under any federal, state, or local law or regulation.

(2) Grantor will not use, generate, store, release, discharge, or dispose of on, under, or about the Trust Property or the groundwater thereof any Hazardous Substance and will not permit any other person to do so, except for storage and use of such Hazardous Substances (and in such quantities) as may commonly be used for household purposes, provided such substances are stored and used in compliance with all Environmental Laws. Grantor will keep and maintain the Trust Property in compliance with all Environmental Laws.

(3) Beneficiary shall have the right to participate in any legal proceeding initiated with respect to the Trust Property in connection with any Environmental Law and have its attorney fees paid by Grantor. If, at any time, Beneficiary has reason to believe that any violation of this Section 1.06 has occurred or is threatened, Beneficiary may require Grantor to obtain or may itself obtain, at Grantor's expense, an environmental assessment by a qualified environmental consultant. Grantor shall promptly provide to Beneficiary a complete copy of any environmental assessment obtained by Grantor.

(4) If any investigation, monitoring, containment, cleanup, or other remedial work of any kind is required on the Trust Property under any applicable Environmental Law or by any governmental agency or person in connection with a release of a Hazardous Substance, Grantor shall promptly complete all such work at Grantor's expense.

(5) All representations, warranties, and covenants in this Section 1.06 shall survive the satisfaction of the Obligations, the reconveyance of the Trust Property, or the foreclosure of this Trust Deed.

1.07 Liens. Grantor shall pay when due all claims for labor and materials that, if unpaid, might become a lien on the Trust Property. Grantor shall not create or suffer any lien, security interest, or encumbrance on the Trust Property that may be prior to, or on a parity with, the lien of this Trust Deed, except as specifically provided in Exhibit A attached hereto.

1.08 Impositions. Grantor shall pay when due all taxes, assessments, fees, and other governmental and nongovernmental charges of every nature now or hereafter assessed against any part of the Trust Property or on the lien or estate of Beneficiary or Trustee therein (collectively, the "Impositions"); provided, however, that if by law any such Imposition may be paid in installments, Grantor may pay the same in installments, together with accrued interest on the unpaid balance thereof, as they become due. Grantor shall furnish to Beneficiary promptly on request satisfactory evidence of the payment of all Impositions. Beneficiary is hereby authorized to request and receive from the responsible governmental and nongovernmental personnel written statements with respect to the accrual and payment of all Impositions.

1.09 Insurance

(1) *Property and Other Insurance.* Grantor shall obtain and maintain during the term of this Trust Deed all-risk property insurance (including flood insurance unless waived by Beneficiary) in an amount not less than the full remaining principal balance of the Note or, if greater, in the amount of the full replacement cost of the Trust Property, without reduction for coinsurance.

(2) *Insurance Companies and Policies.* All insurance shall be written by a company or companies reasonably acceptable to Beneficiary; shall contain a long-form mortgagee endorsement in favor of Beneficiary with proceeds under any policy payable to Beneficiary, subject to the terms of this Trust Deed; shall require 10 days' prior written notice to Beneficiary of cancellation or reduction in coverage; and shall contain a waiver of subrogation. Grantor shall furnish to Beneficiary on request a certificate evidencing the coverage required under this Trust Deed and a copy of each policy.

1.10 Actions to Protect Trust Property; Reserves

(1) If Grantor shall fail to pay, perform, or observe any of its covenants hereunder, Beneficiary may, but shall not be required to, take such actions as it deems appropriate to remedy such failure. All sums, including reasonable attorney fees, so expended, or expended to maintain the lien or estate of this Trust Deed or its priority, or to protect or enforce any of Beneficiary's rights

hereunder, shall be a lien on the Trust Property, shall be secured by this Trust Deed, and shall be paid by Grantor on demand, together with interest thereon at the rate provided in the Note. No payment or other action by Beneficiary under this section shall impair any other right or remedy available to Beneficiary or constitute a waiver of any Event of Default. The following notice is provided pursuant to ORS 746.201(1):

WARNING:

Unless Grantor provides Beneficiary with evidence of the insurance coverage required by the Note, Beneficiary may purchase insurance at Grantor's expense to protect Beneficiary's interest. This insurance may, but need not, also protect Grantor's interest. If the Trust Property becomes damaged, the coverage Beneficiary purchases may not pay any claim Grantor makes or any claim made against Grantor. Grantor may later cancel this coverage by providing evidence that Grantor has obtained property coverage elsewhere.

Grantor is responsible for the cost of any insurance purchased by Beneficiary. The cost of this insurance may be added to Grantor's loan balance. If the cost is added to Grantor's loan balance, the interest rate on the underlying loan will apply to this added amount. The effective date of coverage may be the date Grantor's prior coverage lapsed or the date Grantor failed to provide proof of coverage.

The coverage Beneficiary purchases may be considerably more expensive than insurance Grantor can obtain on its own and may not satisfy any need for property damage coverage or any mandatory liability insurance requirements imposed by applicable law.

(2) If Grantor fails to promptly perform any of its obligations under Section 1.08 or 1.09 of this Trust Deed, Beneficiary may require Grantor thereafter to pay and maintain with Beneficiary reserves for payment of such obligations. In that event, Grantor shall pay to Beneficiary each month a sum estimated by Beneficiary to be sufficient to produce, at least 20 days before due, an amount equal to the Impositions, insurance premiums, or both. If the sums so paid are insufficient to satisfy any Imposition or insurance premium when due, Grantor shall pay any deficiency to Beneficiary on demand. The reserves may be commingled with Beneficiary's other funds. Beneficiary shall credit to Grantor interest on such reserves at the minimum rate required from time to time by applicable law. Beneficiary shall not hold the reserves in trust for Grantor, and Beneficiary shall not be the agent of Grantor for payment of the taxes and assessments required to be paid by Grantor.

1.14 Estoppel Certificates. Grantor, within five days of request therefor, shall furnish Trustee and Beneficiary a written statement, duly acknowledged, of the amount of the Obligations secured by this Trust Deed and whether any offsets or defenses exist against the Obligations secured hereby. If Grantor shall fail to furnish such a statement within the time allowed, Beneficiary shall be authorized, as Grantor's attorney-in-fact, to execute and deliver such statement.

**ARTICLE II
Condemnation**

Should the Trust Property or any part thereof be taken or damaged by reason of any public improvement, eminent domain, condemnation proceeding, or in any other manner (a

“Condemnation”), or should Grantor receive any notice or other information regarding such action, Grantor shall give immediate notice thereof to Beneficiary. Beneficiary shall be entitled to all compensation, awards, and other payments or relief therefor (“Condemnation Proceeds”) up to the full amount of the Obligations, and may appear in any Condemnation proceeding in its own or Grantor’s name and make any settlement in connection therewith. Beneficiary may, at its option, apply the Condemnation Proceeds to the Obligations or release the proceeds to Grantor, on such terms and conditions as Beneficiary elects, for restoration of the Trust Property.

ARTICLE III Development Cooperation

3.01 Cooperation. Provided that no Event of Default exists under the terms of this Trust Deed or the Note beyond any applicable cure period, Beneficiary will release any single lot included in the Trust Property (a "Lot") by executing a request for partial reconveyance and delivering such request for partial reconveyance and any other document required by the Trust Deed to the Trustee, within ten (10) days after written request from Grantor and payment to Grantor of the sum of \$35,000 as consideration for any such single lot release.

3.02 Lot Release. Provided that no Event of Default exists under the terms of this Trust Deed or the Note beyond any applicable cure period, Beneficiary will subordinate the lien of this Trust Deed on any one Lot to any construction loan obtained by Grantor secured by such Lot for construction on such Lot by executing a commercially reasonable subordination agreement for the Lot the subject of the construction within ten (10) days after written request by Grantor.

3.03 Subordination. Provided that no Event of Default exists under the terms of this Trust Deed or the Note beyond any applicable cure period, Beneficiary will subordinate the lien of this Trust Deed to any construction loan obtained by Grantor for construction on the Trust Property by executing a commercially reasonable subordination agreement within ten (10) days after written request by Grantor.

ARTICLE IV Security Agreement and Fixture Filing

To secure the Obligations, Grantor grants to Beneficiary a security interest in the following: (1) the Trust Property to the extent that it is not encumbered by this Trust Deed as a first priority real estate lien; (2) all personal property that is used or will be used in the construction of any Improvements on the Trust Property; (3) all personal property that is now or will hereafter be placed on or in the Trust Property or Improvements; (4) all personal property that is derived from or used in connection with the use, occupancy, or enjoyment of the Trust Property; (5) all property defined in Oregon’s version of the Uniform Commercial Code as accounts, equipment, fixtures, and general intangibles, to the extent that they are used at, or arise in connection with the ownership, maintenance, or operation of, the Trust Property; (6) all causes of action, claims, security deposits, advance rental payments, utility deposits, refunds of fees or deposits paid to any governmental authority, refunds of taxes, and refunds of insurance premiums relating to the Trust Property; (7) all options, agreements, and contracts for the purchase or sale of all or any part or parts of the Trust

Property or interests in the Trust Property; and (8) all present and future attachments, accessions, amendments, replacements, additions, products, and proceeds of every nature of the foregoing. This Trust Deed constitutes a security agreement and a "fixture filing" under the Oregon's version of the Uniform Commercial Code regarding secured transactions. The mailing address of Grantor and the address of Beneficiary from which information may be obtained are set forth on the first page of this Trust Deed. The organizational identification number of Grantor is 468846-98. Grantor authorizes Beneficiary to file with all applicable governmental entities financing statements and continuation statements evidencing the security interest granted herein.

ARTICLE V

Events of Default; Remedies

5.01 Events of Default. Each of the following shall constitute an Event of Default under this Trust Deed and under each of the other Loan Documents:

(1) *Nonpayment.* Failure of Grantor to pay any of the Obligations on or within 15 days after written notice from Beneficiary of such failure.

(2) *Breach of Other Covenants.* Failure of Grantor to perform or abide by any other covenant included in the Obligations, including without limitation those covenants in the Note, in this Trust Deed, or in any other Loan Document.

(3) *Misinformation.* Falsity when made in any material respect of any representation, warranty, or information furnished by Grantor or its agents to Beneficiary in connection with any of the Obligations.

(4) *Other Default.* The occurrence of any other event of default under the Note, the Loan Documents, or any of the other Obligations.

(5) *Other Indebtedness, Secondary Financing.* Grantor's default beyond applicable grace periods in the payment of any other indebtedness secured by all or any portion of the Trust Property.

(6) *Bankruptcy.* The occurrence of any of the following with respect to Grantor, any guarantor of the Obligations, or the then-owner of the Trust Property: (a) appointment of a receiver, liquidator, or trustee for any such party or any of its properties; (b) adjudication as a bankrupt or insolvent; (c) filing of any petition by or against any such party under any state or federal bankruptcy, reorganization, moratorium, or insolvency law; (d) inability to pay debts when due; or (e) any general assignment for the benefit of creditors.

(7) *Transfer; Due-on-Sale.* Any sale, gift, conveyance, contract for conveyance, transfer, or assignment of the Trust Property, or any part thereof or any interest therein, either voluntarily, involuntarily, or by the operation of law (a "Transfer"), without Beneficiary's prior written consent. Any lease for a term in excess of three years, and any lease containing an option to purchase the Trust Property or any portion thereof, shall be a Transfer. The provisions of this subsection (7) shall apply to each and every Transfer, regardless of whether or not Beneficiary has consented or waived

its rights in connection with any previous Transfer. Beneficiary may attach such conditions to its consent under this subsection (7) as Beneficiary may determine in its sole discretion, including without limitation an increase in the interest rate or the payment of transfer or assumption fees, and the payment of administrative and legal fees and costs incurred by Beneficiary.

5.02 Remedies in Case of Default. If an Event of Default shall occur, Beneficiary or Trustee, as the case may be, may exercise any one or more of the following rights and remedies, in addition to any other remedies that may be available by law, in equity, or otherwise:

(1) *Acceleration.* Beneficiary may declare all or any portion of the Obligations immediately due and payable.

(2) *Receiver.* Beneficiary may have a receiver appointed for the Trust Property. Beneficiary will be entitled to the appointment of a receiver as a matter of right whether or not the apparent value of the Trust Property exceeds the amount of the indebtedness secured by this Trust Deed. Employment by Trustee or Beneficiary will not disqualify a person from serving as a receiver. Grantor consents to the appointment of a receiver at Beneficiary's option and waives any and all defenses to such an appointment.

(3) *Possession.* Beneficiary may, either through a receiver or as lender-in-possession, enter and take possession of all or any part of the Trust Property and use, operate, manage, and control it as Beneficiary deems appropriate in its sole discretion. On request after an Event of Default, Grantor will peacefully relinquish possession and control of the Trust Property to Beneficiary or any receiver appointed under this Trust Deed.

(4) *Power of Sale.* Beneficiary may direct Trustee, and Trustee will be empowered, to foreclose this Trust Deed by advertisement and sale under applicable law.

(5) *Foreclosure.* Beneficiary may judicially foreclose this Trust Deed and obtain a judgment foreclosing Grantor's interest in all or any part of the Property and giving Beneficiary the right to collect any deficiency remaining due after disposition of the Trust Property.

(6) *Fixtures and Personal Property.* With respect to any Improvements and other personal property subject to a security interest in favor of Beneficiary, Beneficiary may exercise any and all of the rights and remedies of a secured party under the Uniform Commercial Code.

(7) *Abandonment.* Beneficiary may abandon all or any portion of the Trust Property by written notice to Grantor.

5.03 Sale. In any sale under this Trust Deed or pursuant to any judgment, the Trust Property, to the extent permitted by law, may be sold as an entirety or in one or more parcels and in such order as Beneficiary may elect. The purchaser at any such sale shall take title to the Trust Property or the part thereof so sold, free and clear of the estate of Grantor, the purchaser being hereby discharged from all liability to see to the application of the purchase money. Any person, including Beneficiary, may purchase at any such sale. Beneficiary is hereby irrevocably appointed

Grantor's attorney-in-fact, with power of substitution, to make all appropriate transfers and deliveries of the Trust Property or any portions thereof so sold. Nevertheless, Grantor shall ratify and confirm any such sale or sales by executing and delivering to Beneficiary or to such purchaser or purchasers all such instruments requested by Beneficiary for such purpose.

5.04 Cumulative Remedies. All remedies under this Trust Deed are cumulative. Any election to pursue one remedy shall not preclude the exercise of any other remedy. No delay or omission in exercising any right or remedy shall impair the full exercise of that or any other right or remedy or constitute a waiver of any Event of Default.

5.05 Application of Proceeds. All proceeds from the exercise of the rights and remedies under this Article V shall be applied (1) to costs of exercising such rights and remedies; (2) to the Obligations, in such order as Beneficiary shall determine in its sole discretion; and (3) the surplus, if any, shall be paid to the clerk of the court in the case of a judicial foreclosure proceeding, otherwise to the person or persons legally entitled thereto.

5.06 Deficiency. No sale or other disposition of all or any part of the Trust Property pursuant to Section 5.02 will be deemed to relieve Grantor of any of the Obligations, except to the extent that the proceeds are applied to the payment of the Obligations. If the proceeds of a sale, a collection, or other realization of or on the Trust Property are insufficient to cover the costs and expenses of such realization and the payment in full of the Obligations, Grantor will remain liable for any deficiency to the fullest extent permitted by law.

5.07 Waiver of Stay, Extension, Moratorium, and Valuation Laws. To the fullest extent permitted by law, Grantor waives the benefit of any existing or future stay, extension, or moratorium law that may affect observance or performance of the provisions of this Trust Deed and any existing or future law providing for the valuation or appraisal of the Trust Property before any sale.

ARTICLE VI General Provisions

6.01 Time Is of the Essence. Time is of the essence with respect to all covenants and obligations of Grantor under this Trust Deed.

6.02 Reconveyance by Trustee. At any time on the request of Beneficiary, payment of Trustee's fees, if any, and presentation of this Trust Deed, without affecting the liability of any person for payment of the Obligations, Trustee may reconvey, without warranty, all or any part of the Trust Property. The grantee in any reconveyance may be described as the "person or persons legally entitled thereto," and the recitals therein of any facts shall be conclusive proof of the truthfulness thereof.

6.03 Notice. Except as otherwise provided in this Trust Deed, all notices shall be in writing and may be delivered by hand, or mailed by first-class certified mail, return receipt requested, postage prepaid, and addressed to the appropriate party at its address set forth at the outset of this

Trust Deed. Any party may change its address for such notices from time to time by notice to the other parties. Notices given by mail in accordance with this paragraph shall be deemed to have been given on the date of mailing; notices given by hand shall be deemed to have been given when actually received.

6.04 Substitute Trustee. In the event of dissolution or resignation of Trustee, Beneficiary may substitute one or more trustees to execute the trust hereby created, and the new trustee(s) shall succeed to all the powers and duties of the prior trustee(s).

6.05 Trust Deed Binding on Successors and Assigns. This Trust Deed shall be binding on and inure to the benefit of the heirs, legatees, personal representatives, successors, and assigns of Grantor, Trustee, and Beneficiary.

6.06 Indemnity. Grantor shall, to the fullest extent allowed by law, hold Beneficiary and Trustee and, if either is a corporation or other legal entity, their respective directors, officers, employees, agents, and attorneys harmless from and indemnify them for any and all claims, demands, damages, liabilities, and expenses, including but not limited to attorney fees and court costs, arising out of or in connection with Trustee's or Beneficiary's interests and rights under this Trust Deed.

6.07 Expenses and Attorney Fees. Grantor shall pay all fees and expenses, taxes, assessments, and charges arising out of or in connection with the execution, delivery, and recording of this Trust Deed. If Beneficiary refers any of the Obligations to an attorney for collection or seeks legal advice following a default; if Beneficiary is the prevailing party in any litigation instituted in connection with any of the Obligations; or if Beneficiary or any other person initiates any judicial or nonjudicial action, suit, or proceeding in connection with any of the Obligations or the Trust Property (including but not limited to bankruptcy, eminent domain, or probate proceedings), and a lawyer is employed by Beneficiary to appear in any such proceeding or seek relief from a judicial or statutory stay, or otherwise enforce Beneficiary's interests, then in any such event Grantor shall pay reasonable attorney fees, costs, and expenses incurred by Beneficiary in connection with the above mentioned events and any appeals. Such amounts shall be secured by this Trust Deed and, if not paid on demand, shall bear interest at the rate specified in the Note.

6.08 Applicable Law. This Trust Deed shall be governed by the laws of the state of Oregon.

6.09 Person Defined. As used in this Trust Deed, the word *person* shall mean any natural person, partnership, trust, corporation, or other legal entity of any nature.

6.10 Severability. If any provision of this Trust Deed shall be held to be invalid, illegal, or unenforceable, the other provisions of this Trust Deed shall not be affected.

6.11 Entire Agreement. This Trust Deed contains the entire agreement of the parties with respect to the Trust Property. No prior agreement or promise made by any party to this Trust Deed that is not contained herein shall be binding or valid.

6.12 Joint and Several Liability. If this Trust Deed is executed by two or more persons as Grantor, all of such persons shall be liable, jointly and severally, for payment of all sums and performance of all other covenants in this Trust Deed.

6.13 Standard for Discretion. If this Mortgage is silent on the standard for any consent, approval, determination, or similar discretionary action, the standard shall be sole and unfettered discretion as opposed to any standard of good faith, fairness, or reasonableness.

6.14 Rights of Prior Mortgagee. If all or any portion of the Trust Property is subject to a superior mortgage or trust deed specifically permitted in **Exhibit A**, the rights of Beneficiary with respect to insurance and condemnation proceeds, and all other rights granted under this Trust Deed that have also been granted to such a superior mortgagee or trust deed beneficiary, will be subject to the rights of the superior mortgagee or trust deed beneficiary. Grantor hereby authorizes all such superior mortgagees and beneficiaries, on satisfaction of the indebtedness secured by their mortgage or trust deed, to remit all remaining insurance or Condemnation proceeds and all other sums held by them to Beneficiary to be applied in accordance with this Trust Deed.

6.15 Commercial Property. Grantor covenants and warrants that the Trust Property is used by Grantor exclusively for business and commercial purposes. Grantor also covenants and warrants that the Trust Property is not now, and at no time in the future will be, occupied as the principal residence of Grantor, Grantor's spouse, or Grantor's minor or dependent child.

6.16 ORS 93.040 Warning. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

[Remainder of page intentionally left blank.]

Exhibit A

Permitted Exceptions

Easements, notes, conditions and restrictions, as shown, set forth and/or delineated on the recorded Land Partition Plat No. 2003-P1708, recorded September 24, 2003, Reception No. 2003-093517, Lane County Deeds and Records.

Declaration of Maintenance and Access Agreement, including the terms and provisions thereof, as set forth in instrument recorded September 24, 2003, Reception No. 2003-093518, Lane County Deeds and Records.

Right-of-Way Easement Electric Line, including the terms and provisions thereof, granted the Lane Electric Cooperative, Inc., a cooperative association, by instrument recorded January 2, 2004, Reception No. 2004-000164, Lane County Deeds and Records. (Blanket Easement)

Easements, notes, conditions and restrictions shown, set forth and/or delineated on the recorded Plat of Sunset View Ranch, recorded July 26, 2006, Reception No. 2006-053104, Lane County Deeds and Records.

Declaration of Private Joint Access Easement and Maintenance Agreement, including the terms and provisions thereof, as set forth in instrument recorded July 26, 2006, Reception No. 2006-053105, Lane County Deeds and Records. (Lots 6 & 7)

Easements for utilities over and across the premises formerly included within the boundaries of 4th Street and Wetleau Drive now vacated, including the terms and provisions thereof, as reserved by City of Lowell, Oregon, Ordinance 249, and Vacating Order recorded April 27, 2006, Reception No. 2006-028868, Lane County Deeds and Records.

Covenants, conditions and restrictions, including the terms and provisions thereof (but omitting covenants or restrictions, if any, based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law) in Declaration recorded July 26, 2006, Reception No. 2006-053107, Lane County Deeds and Records.

Private Reciprocal Private Utility Easement and Maintenance Agreement, including the terms and provisions thereof, recorded August 3, 2015, Reception No. 2015-038691, Lane County Deeds and Records.

Declaration of Private Utility Easement and Maintenance Agreement, including the terms and provisions thereof, recorded January 26, 2017, Reception No. 2017-003743, Lane County Deeds and Records.

First Amendment to Declaration of Sunset View Ranch Protective Covenants, Conditions, and Restrictions, including the terms and provisions thereof, recorded May 2, 2017, Reception No. 2017-021394, Lane County Deeds and Records.

**TENTATIVE PARTITION PLAN
FOR
BAHEN INVESTMENT GROUP
ASSESSOR'S MAP 19-01-14-21, TAX LOT 5000**

**RESPONSE TO ADDITIONAL REVIEW
DATED NOVEMBER 7, 2019**

This "Additional Review Response" acts to address the incomplete items as listed on the Application for Subdivision letter from LCOG dated November 7, 2019:

Please include the following items for further review of your application:

Section 9.228 Decision Criteria. A Partition Tentative Plan may be approved by the Planning Commission and a Subdivision Tentative Plan may be approved by the City Council. Approval shall be based upon compliance with the submittal requirements specified above and the following findings.

(a) *That the proposed land division complies with applicable provisions of City Codes and Ordinances, including zoning district standards.*

- *Thank you for your narrative dated October 10, 2019. Please indicate how the proposed land division specifically complies with the Development Standards of the underlying zoning district as contained in **Section 9.411(d)**.*

(d) *Development Standards.*

(1) *Minimum lot area: 7,000 square feet.*

All lots exceed the 7,000 minimum lot area.

(2) *Minimum lot width: 60 feet, except for corner lots which must have no less than 65 feet on any property line adjoining a street*

All lots exceed the minimum lot width of 60 feet on and 65 feet on corner lots.

(3) *Minimum Lot Depth: 80 feet*

All lots exceed the minimum lot depth of 80 feet.

(4) *Maximum Building coverage including accessory buildings, provided that any patio structure used solely for open space and swimming pool not structurally covered shall not be counted as a structure for ascertaining coverage: 35%*

The applicant understands that the maximum building coverage including accessory buildings, provided that any patio structure used solely for open space and swimming pool not structurally covered shall not be counted as a structure for ascertaining coverage: 35%

- (5) Maximum building height – 2 stories, excluding basements/daylight basements, or 30 feet, whichever is lower. Accessory buildings are limited to one story.

The applicant understands that Maximum building height will be 2 stories, excluding basements/daylight basements, or 30 feet, whichever is lower and that accessory buildings are limited to one story.

- (6) *Yards (all measurements are from the property line unless indicated otherwise):*

A. *Front Yard*

1. *For Streets with constructed or planned curbs and/or sidewalks, 20 feet from the outside edge of the curb or sidewalk but no less than 10 feet from the property line.*
2. *Where no curbs or sidewalks are constructed or planned, 15 feet, except all garages, carports or other parking structures taking access from the front of the property shall be set back 20 feet.*

B. *Side yard setbacks:*

1. *Interior side yard: 5 feet for single story and 7 ½ feet for two story structures.*
2. *Alley side yard: 5 feet*
3. *Street side yard: For Streets with constructed or planned curbs and/or sidewalks, 15 feet from the outside edge of the curb or sidewalk but no less than 5 feet from the property line except for parking structures which shall be set back at least 20 feet from a curb or sidewalk. Where no curbs or sidewalks are constructed or planned, 10 feet, except all parking structures taking access from the side street shall be set back 20 feet.*

C. *Rear yard: 10 feet*

The applicant understands the building standards (6) (A-C), which will be employed at the time building permits are applied for.

- (c) The applicant has demonstrated that the proposed land division does not preclude development on properties in the vicinity to at least 80% of maximum density possible within current minimum lot sizes, existing site conditions and the requirements of this Code.

- Thank you for your narrative dated, October 10, 2019. The above criterion goes beyond ensuring connectivity alone, it relates to lot development siting standards, and whether or not the configuration and dimensions of the proposed lots may or may not preclude the ability of future lots to meet certain basic lot standards.

The proposed subdivision does not preclude development of adjacent properties in the vicinity. 4th Street and Wetleau Drive are dedicated rights-of-way per Sunset View Ranch (attached). The proposed subdivision acts only to infill Lot 16. No public streets are proposed per this application.

(d) The proposed street plan:

(1) *Is in conformance with City standards and with the Master Road Plan or other transportation planning documents.*

- Staff are including Lowell 's Master Road Plan for your reference. Please provide a response to the criteria listed above.

4th Street and Wetleau Drive are dedicated rights-of-way per Sunset View Ranch (attached) and in conformance with the Master Road Plan.

(2) Provides for adequate and safe traffic pedestrian circulation both internally and in relation to the existing City street system.

- In your October 10, 2019 narrative, you indicate sidewalks are proposed to handle pedestrian traffic, however, Staff do not see the proposed sidewalks on the tentative plan. Please submit a revised tentative plan that includes sidewalks, and their width. **Please see LDC Section 9.411 Single Family Residential and Section 9.518 Sidewalks, for standards related to sidewalks. Additionally, please explain the pedestrian connection to the existing sidewalks along 4th Street.**

The attached tentative plan has been revised to depict the propose curb lines and sidewalks.

(3) Will not preclude the orderly extension of streets and utilities on undeveloped and underdeveloped portions of the subject property or on surrounding properties.

- Please refer to the Master Road Plan for reference and submit a revised response to the criteria above.

4th Street and Wetleau Drive are dedicated rights-of-way per Sunset View Ranch (attached) and will not preclude the orderly extension of streets and utilities to undeveloped and underdeveloped portions of the subject property or on surrounding properties.

SUNSET VIEW RANCH

A RE-PLAT OF A PORTION OF PARCEL 1 OF
 LAND PARTITION PLAT NO. 2003-PI708
 NE & NW 1/4, SECTION 14, T. 19 S., R. 1 W., W. M.
 LOWELL, LANE COUNTY, OREGON
 MAY 15, 2006

RECORDED
 DATE: 26 July 2006
 COUNTY CLERK
 BY: *[Signature]*

LANE COUNTY SURVEYORS OFFICE
 C.S. FILE NO. 39941
 FILING DATE: 26 July 2006 S

Division of Chief Deputy Clerk
 Lane County Deeds and Records 2006-053104
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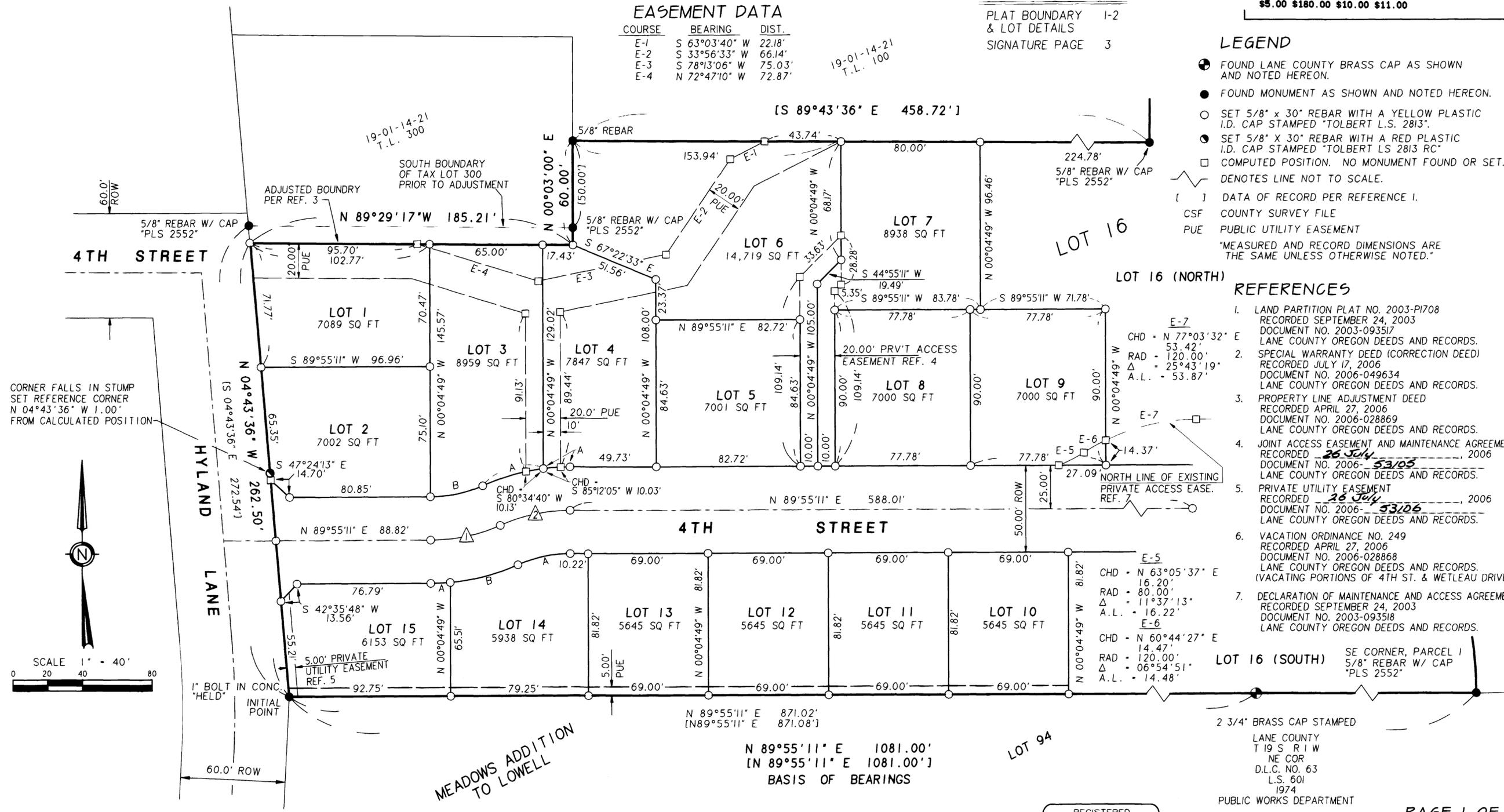
PLAT INDEX PAGE
 PLAT BOUNDARY 1-2
 & LOT DETAILS
 SIGNATURE PAGE 3

LOT-STA.	BEARING	DIST.	RADIUS	AL.	DELTA
3-A	S 74°34'43" W	36.19'	125.00'	36.31'	16°38'43"
3-B	S 78°05'16" W	30.76'	75.00'	30.98'	23°39'50"
4-A	S 86°24'38" W	15.30'	125.00'	15.31'	07°01'07"
14-A	S 78°05'16" W	30.76'	75.00'	30.98'	23°39'50"
14-B	S 75°30'26" W	40.19'	125.00'	40.37'	18°30'10"
15-A	S 87°20'21" W	11.26'	125.00'	11.26'	05°09'40"

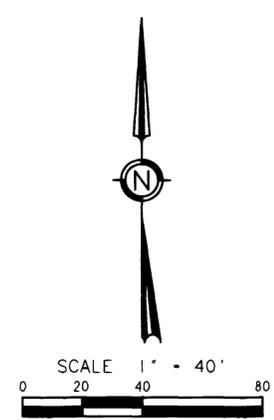
COURSE	BEARING	DIST.
E-1	S 63°03'40" W	22.18'
E-2	S 33°56'33" W	66.14'
E-3	S 78°13'06" W	75.03'
E-4	N 72°47'10" W	72.87'

- LEGEND**
- FOUND LANE COUNTY BRASS CAP AS SHOWN AND NOTED HEREON.
 - FOUND MONUMENT AS SHOWN AND NOTED HEREON.
 - SET 5/8" x 30" REBAR WITH A YELLOW PLASTIC I.D. CAP STAMPED "TOLBERT L.S. 2813".
 - SET 5/8" x 30" REBAR WITH A RED PLASTIC I.D. CAP STAMPED "TOLBERT LS 2813 RC"
 - COMPUTED POSITION. NO MONUMENT FOUND OR SET.
 - DENOTES LINE NOT TO SCALE.
 - [] DATA OF RECORD PER REFERENCE I.
 - CSF COUNTY SURVEY FILE
 - PUE PUBLIC UTILITY EASEMENT
 - "MEASURED AND RECORD DIMENSIONS ARE THE SAME UNLESS OTHERWISE NOTED."

- REFERENCES**
- LAND PARTITION PLAT NO. 2003-PI708 RECORDED SEPTEMBER 24, 2003 DOCUMENT NO. 2003-093517 LANE COUNTY OREGON DEEDS AND RECORDS.
 - SPECIAL WARRANTY DEED (CORRECTION DEED) RECORDED JULY 17, 2006 DOCUMENT NO. 2006-049634 LANE COUNTY OREGON DEEDS AND RECORDS.
 - PROPERTY LINE ADJUSTMENT DEED RECORDED APRIL 27, 2006 DOCUMENT NO. 2006-028869 LANE COUNTY OREGON DEEDS AND RECORDS.
 - JOINT ACCESS EASEMENT AND MAINTENANCE AGREEMENT RECORDED 26 July 2006 DOCUMENT NO. 2006-53105 LANE COUNTY OREGON DEEDS AND RECORDS.
 - PRIVATE UTILITY EASEMENT RECORDED 26 July 2006 DOCUMENT NO. 2006-53106 LANE COUNTY OREGON DEEDS AND RECORDS.
 - VACATION ORDINANCE NO. 249 RECORDED APRIL 27, 2006 DOCUMENT NO. 2006-028868 LANE COUNTY OREGON DEEDS AND RECORDS. (VACATING PORTIONS OF 4TH ST. & WETLEAU DRIVE)
 - DECLARATION OF MAINTENANCE AND ACCESS AGREEMENT RECORDED SEPTEMBER 24, 2003 DOCUMENT NO. 2003-093518 LANE COUNTY OREGON DEEDS AND RECORDS.



CORNER FALLS IN STUMP
 SET REFERENCE CORNER
 N 04°43'36" W 1.00'
 FROM CALCULATED POSITION



NOTE
 THIS PROPERTY IS AFFECTED BY AN UNLOCATABLE RIGHT-OF-WAY EASEMENT IN FAVOR OF LANE ELECTRIC COOPERATIVE, RECORDED JANUARY 2, 2004 DOCUMENT NO. 2004-000164, LANE COUNTY OREGON DEEDS AND RECORDS.

STREET CENTERLINE DATA

CURVE	BEARING	DIST.	RADIUS	AL.	DELTA
△	N 78°05'16" E	41.01'	100.00'	41.30'	23°39'50"
△	N 78°05'16" E	41.00'	100.00'	41.30'	23°39'50"

REGISTERED PROFESSIONAL LAND SURVEYOR
[Signature]
 LLOYD L. TOLBERT
 2813
 EXPIRES: JUNE 30, 2008

TOLBERT ASSOCIATES, LLC
 LAND SURVEYING & LAND USE PLANNING
 P.O. BOX 70224
 EUGENE, OREGON 97401
 (541) 359-8426 FAX (541) 747-0177
 LLOYD@TOLBERTASSOCIATES.COM
 CADD FILE - GEORGE PLAT 1 OF 3.GXD DWN BY: LLT

OWNER/APPLICANT
 WILLIAM D. GEORGE
 P.O. BOX 305
 LOWELL, OREGON 97452
 CITY OF LOWELL PLANNING ACTION NO. LU 05-009 & LU 06-007
 ASSESSOR'S MAP NO. 19-01-14-21 TAX LOT 3400

SUNSET VIEW RANCH

A RE-PLAT OF PARCEL 1 OF LAND PARTITION PLAT NO. 2003-PI708
NE & NW 1/4, SECTION 14, T. 19 S., R. 1 W., W. M.
LOWELL, LANE COUNTY, OREGON
MAY 15, 2006

RECORDED
DATE: 26 July 2006
COUNTY CLERK
BY: Dea Walker

LANE COUNTY SURVEYORS OFFICE
C.S. FILE NO. 39941
FILING DATE: 26 July 2006 **S**

Division of Chief Deputy Clerk
Lane County Deeds and Records 2006-053104
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RPR-SUBD Cnt=1 Stn=8 CASHIER 01
\$5.00 \$180.00 \$10.00 \$11.00

OWNER/APPLICANT
WILLIAM D. GEORGE
P.O. BOX 305
LOWELL, OREGON 97452

SURVEYOR'S CERTIFICATE

I, LLOYD L. TOLBERT, A REGISTERED PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I HAVE CORRECTLY SURVEYED AND MARKED WITH PROPER MONUMENTS THE HEREON DESCRIBED PLAT, THAT THE INITIAL POINT IS REFERENCED BY A 1 INCH BOLT SET IN CONCRETE AS DESCRIBED AND SHOWN HEREON.

PARCEL 1 OF LAND PARTITION PLAT NO. 2003-PI708 AS FILED SEPTEMBER 24, 2003, DOCUMENT NO. 2003-093517, LANE COUNTY DEEDS AND RECORDS, IN LANE COUNTY, OREGON.

EXCEPT:

BEGINNING AT THE NORTHWEST CORNER OF PARCEL 1, LAND PARTITION PLAT NO. 2003-PI708, RECORDED SEPTEMBER 24, 2003, DOCUMENT NO. 2003-093517, LANE COUNTY DEEDS AND RECORDS, IN LANE COUNTY, OREGON; THENCE ALONG THE NORTH BOUNDARY OF SAID PARCEL 1 SOUTH 89°29'17" EAST 186.05 FEET; THENCE LEAVING SAID NORTH BOUNDARY OF PARCEL 1 BEARING SOUTH 00°03'00" WEST 10.00 FEET; THENCE PARALLEL WITH SAID NORTH BOUNDARY OF PARCEL 1 NORTH 89°29'17" WEST 185.21 FEET TO THE EAST MARGIN OF HYLAND LANE; THENCE ALONG SAID EAST MARGIN OF HYLAND LANE NORTH 04°43'36" WEST 10.04 FEET TO THE POINT OF BEGINNING, ALL IN LANE COUNTY, OREGON.


LLOYD L. TOLBERT L.S. NO. 2813

NARRATIVE

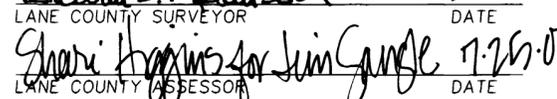
THIS SURVEY WAS MADE AT THE REQUEST OF THE OWNER TO SUBDIVIDE A PORTION OF PARCEL 1 OF LAND PARTITION PLAT NO. 2003-PI708. THE SUBDIVISION WAS GRANTED APPROVAL PER CITY OF LOWELL PLANNING ACTION FILE NO. LU 05-009. MONUMENTS FOUND WERE FOUND TO REFLECT THEIR RECORD POSITIONS PER SAID LAND PARTITION PLAT. WITH THE EXTERIOR BOUNDARIES SO DEFINED, THE PROPERTY WAS THEN SUBDIVIDED AT THE DIRECTION OF THE OWNER, AND IN ACCORDANCE WITH THE PRELIMINARY PLAN.

THIS SURVEY ALSO REFLECTS THE ADJUSTMENT OF THE COMMON BOUNDARY BETWEEN SAID PARCEL 1 AND TAX LOT 300 AS DESCRIBED IN REFERENCE 3 AND APPROVED PER CITY OF LOWELL PLANNING ACTION FILE NO. LU 06-007.

PROTECTIVE COVENANTS, CONDITIONS AND RESTRICTIONS

RECORDED 26 July, 2006
DOCUMENT NO. 2006 - 53107
LANE COUNTY OREGON DEEDS & RECORDS
CONCURRENCES: LCODR #2006-53108 & 2006-53109

APPROVALS:

 7/18/06
CITY ADMINISTRATOR, CITY OF LOWELL DATE
 7/25/06
LANE COUNTY BOARD OF COMMISSIONERS DATE
 7/24/06
LANE COUNTY SURVEYOR DATE
 7/25/06
LANE COUNTY ASSESSOR DATE

PUBLIC DEDICATIONS ACCEPTED BY
THE CITY OF LOWELL:

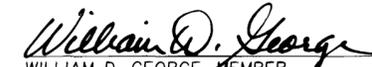
 7/18/06
MAYOR, CITY OF LOWELL DATE

REGISTERED
PROFESSIONAL
LAND SURVEYOR


OREGON
JUNE 30, 1997
LLOYD L. TOLBERT
2813
EXPIRES: JUNE 30, 2008

OWNERS DECLARATION

KNOWN ALL PEOPLE PRESENTS THAT THE GEORGE FAMILY TRUST IS THE OWNER OF THE LAND HEREON DESCRIBED AND DID CAUSE THE SAME TO BE SUBDIVIDED AS HEREON SHOWN ACCORDING TO THE PROVISIONS OF THE OREGON REVISED STATUTES, CHAPTER 92, DOES DEDICATE TO THE PUBLIC FOREVER ALL STREETS AND PUBLIC UTILITY EASEMENTS AS SHOWN HEREON AND DOES CREATE A 5.0' PRIVATE UTILITY EASEMENT ACROSS LOT 15 FOR THE BENEFIT OF THAT CERTAIN TRACT OF LAND DESCRIBED IN A QUITCLAIM DEED RECORDED JANUARY 15, 1998, DOCUMENT NO. 98-02693, LANE COUNTY DEEDS AND RECORDS, IN LANE COUNTY, OREGON AS SHOWN AND REFERENCED HEREON, A 20.0' PRIVATE ACCESS EASEMENT AND JOINT MAINTENANCE AGREEMENT ACROSS LOTS 6 AND 7 FOR THE BENEFIT OF LOTS 6 AND 7 AS SHOWN AND REFERENCED HEREON AND A 10.0' PRIVATE ACCESS EASEMENT AND JOINT MAINTENANCE AGREEMENT FOR THE BENEFIT OF PARCELS 2 AND 3 OF LAND PARTITION PLAT NO. 2003-PI708 RECORDED SEPTEMBER 24, 2003, DOCUMENT NO. 2003-093517, LANE COUNTY DEEDS AND RECORDS, IN LANE COUNTY, OREGON AS SHOWN AND REFERENCED HEREON.


WILLIAM D. GEORGE, MEMBER
GEORGE FAMILY, LLC

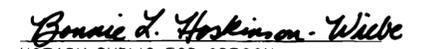
ACKNOWLEDGMENT

STATE OF OREGON)
)SS
COUNTY OF LANE)

THERE APPEARED BEFORE ME, A NOTARY PUBLIC IN AND FOR THE SAID STATE AND COUNTY, THE HEREON NAMED WILLIAM D. GEORGE ACTING IN HIS CAPACITY AS MEMBER OF GEORGE FAMILY LLC, KNOWN TO ME OR PROVED BY SATISFACTORY EVIDENCE TO BE THE SAME PERSON WHOM EXECUTED THE DECLARATION HEREON SHOWN, AND ACKNOWLEDGED THE SAME TO BE HIS VOLUNTARY DEED, IN WITNESS WHEREOF, I HAVE HERUNTO SET MY HAND AND AFFIXED MY SEAL.

SUBSCRIBED AND SWORN TO BEFORE ME
THIS 17 DAY OF July 2006.




NOTARY PUBLIC FOR OREGON
MY COMMISSION EXPIRES: Sept. 7, 2009

PAGE 3 OF 3

TOLBERT ASSOCIATES, LLC

LAND SURVEYING & LAND USE PLANNING
P.O. BOX 70224
EUGENE, OREGON 97401
(541) 359-8426 FAX (541) 747-0177
LLOYD@TOLBERTASSOCIATES.COM
CADD FILE - GEORGE PLAT.GXD DWN BY: LLT

CITY OF LOWELL PLANNING ACTION NO. LU 05-009 & LU 06-007
ASSESSOR'S MAP NO. 19-01-14-21 TAX LOT 3400

PLOTTER: HP DESIGN JET 500
INK: HP #4844A INK
FILM: CONTINENTAL MYLAR JPC 4M2

TENTATIVE SUBDIVISION PLAN SUNSET HILLS

NE 1/4, NW 1/4, SECTION 14, T. 19 S., R. 1 W., W.M.
ASSESSOR'S MAP 19-01-14-21, TAX LOT 5000
LOWELL, LANE COUNTY, OREGON
OCTOBER 10, 2019

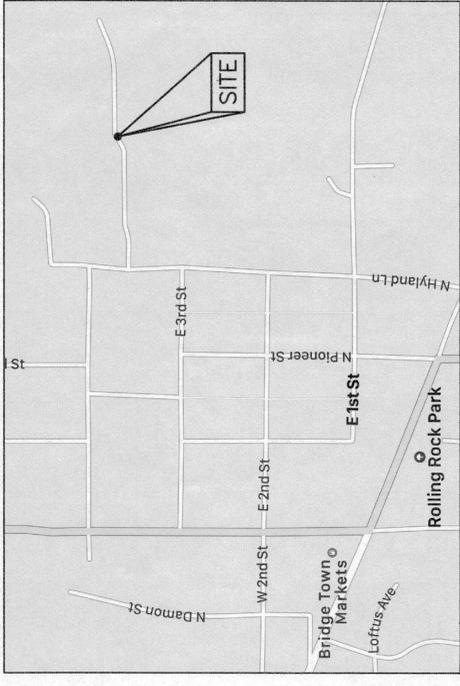
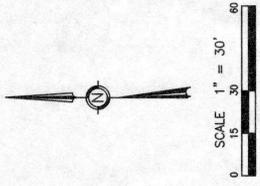
OWNER/APPLICANT
BAHEN INVESTMENT GROUP, LLC
195 MELTON RD
CREWELL, OR 97426

LOT AREA
142,116 SQ. FT. / 3.26 ACRES

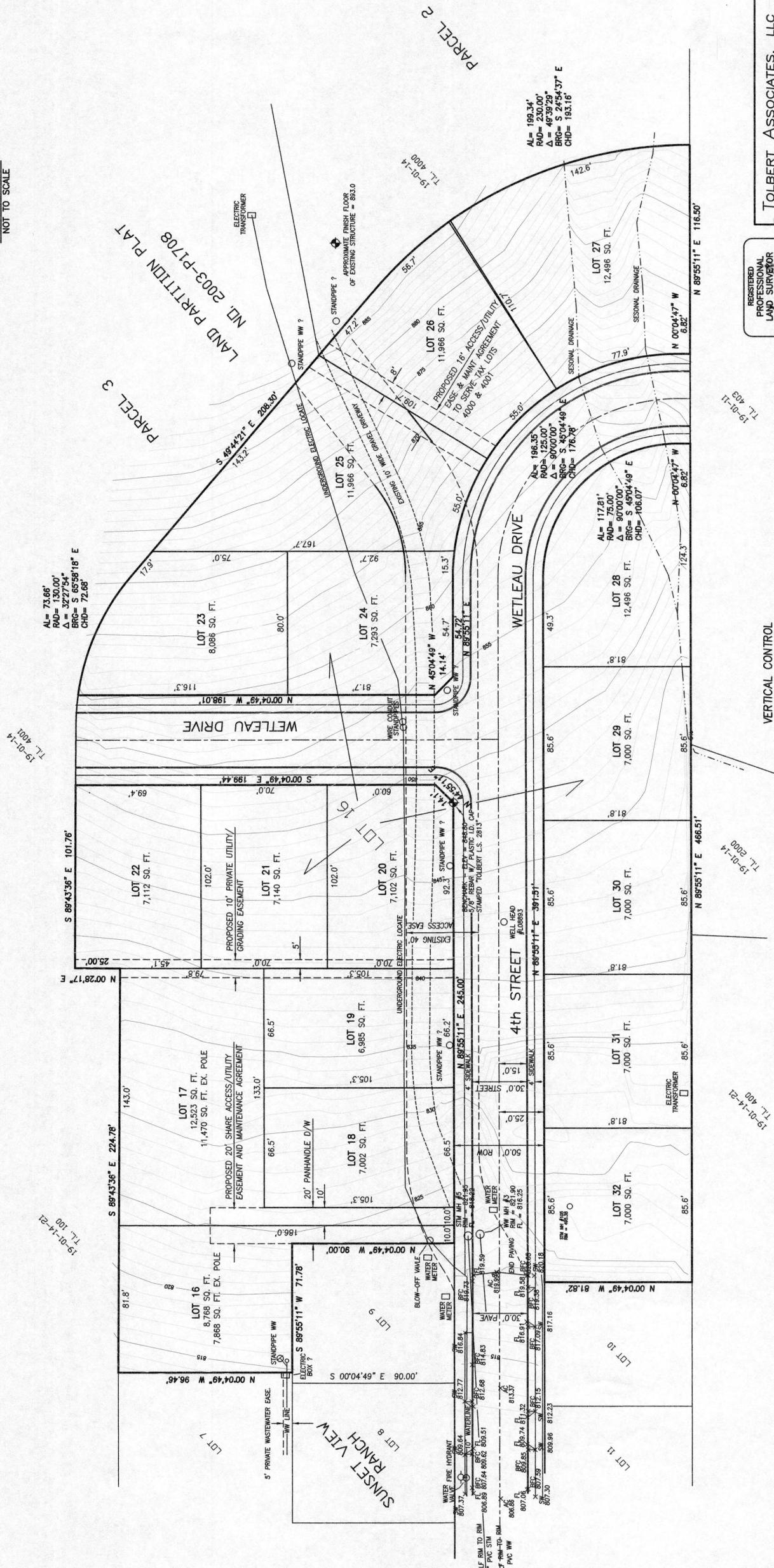
ZONING
R1 - SINGLE FAMILY RESIDENTIAL

SURVEYOR
LLOYD L. TOLBERT, LS
TOLBERT ASSOCIATES, LLC
P.O. BOX 22603
EUGENE, OR 97402
541-359-8426

ENGINEER
DENNIS J. BOEGER, PE, CWRP
BOEGER & ASSOCIATES, LLC
P.O. BOX 1623
EUGENE, OR 97402
541-302-4986



VICINITY MAP
NOT TO SCALE



VERTICAL CONTROL
ELEVATIONS ARE BASED ON LANE COUNTY BENCHMARK LCCM 1177
ELEVATION 742.20 (NGVD29) - LOCATED AT THE INTERSECTION OF PENROA
ROAD AND JASPER-LOWELL ROAD.

TOLBERT ASSOCIATES, LLC
LAND SURVEYING & LAND USE PLANNING
P.O. BOX 22603
EUGENE, OREGON 97402
(541) 359-8426
WWW.TOLBERTASSOCIATES.COM
CADD FILE-146812.DWG DWN BY: LLT

REGISTERED
PROFESSIONAL
LAND SURVEYOR
LLOYD L. TOLBERT
JUNE 30, 1997
2813
EXPIRES: JUNE 30, 2020

SITE PLAN

CONSTRUCTION NOTES

- STORM**
- CONST STORMWATER DROP INLET PER DETAIL SHEET 7
 - CONST SOUTHERN DRAINAGE SWALE PER DETAIL SHEET 7
 - CONST STD DRAINAGE SWALE PER DETAIL SHEET 7
 - CONST 18" CMP CULVERT FOR FUTURE ROAD CROSSING AT SLOPES AND LENGTH AS SHOWN
 - CONST 8" PVC D-3034 STORMWATER LINE WITH 14 GA. GREEN TRACER WIRE AT SLOPES INDICATED
 - CONST 12" PVC D-3034 STORMWATER LINE WITH 14 GA. GREEN TRACER WIRE AT SLOPES INDICATED
 - CONST SIDEWALK AND CURB DRAIN DETAIL PER DETAIL SHEET 7
 - CONST CUSTOM CATCH BASIN CONFIGURATION PER DETAIL SHEET 7
 - REMOVE OR ABANDON EXISTING STORMWATER MANHOLE AND STORMWATER PIPE TO NEW CONNECTION POINT
 - CONST SWALE TO CONNECT WITH EXISTING DRAINAGE

WATER

- CONST DUAL OR SINGLE WATER SERVICE LINE PER DETAIL SHEET 9
- LOCATE END OR STUB OF EXISTING WATER LINE AND CONST DI TO C-900 ADAPTER FOR WATER LINE EXTENSION
- CONST 10" DIA C900 PVC WATER LINE WITH 14 GA. BLUE TRACER WIRE
- CONST FIRE HYDRANT ASSEMBLY PER DETAIL SHEET 9
- CONST 10" DUCTILE IRON GATE VALVE IN VALVE BOX, PER DETAIL SHEET 9
- CONST THRUST BLOCKING PER DETAIL SHEET 9
- NOTIFY RESIDENTS 48 HOURS IN ADVANCE TO ANY WATER SHUT-OFFS NECESSARY FOR CONSTRUCTION OF NEW WATER LINE
- CONST BLOW-OFF VALVE PER DETAIL SHEET 7
- STUB WATER SERVICE LINES AT PROPERTY LINE AND MARK LOCATION WITH 2X4 WITH BLUE MARKINGS
- MAINTAIN ALL UTILITIES TO EXISTING HOME DURING CONSTRUCTION
- ABANDON EXISTING WELL PER OREGON WATER RESOURCE DEPARTMENT GUIDELINES
- ABANDON AND REMOVE WATER SERVICE LINES AFTER NEW UTILITIES HAVE BEEN PROVIDED.

SANITARY SEWER

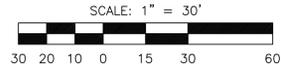
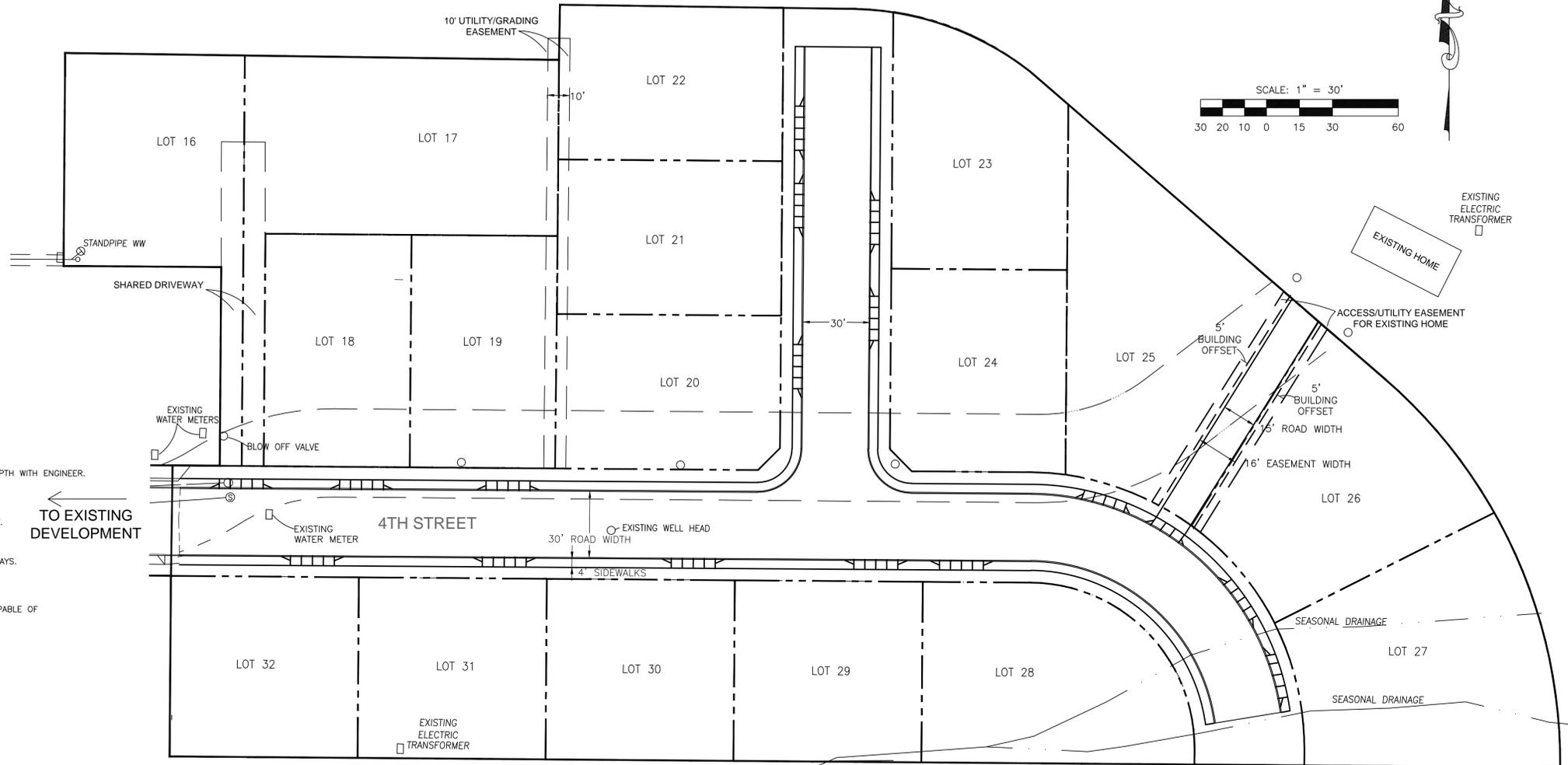
- CONST 4" DIA PVC D-3034 SEWER PIPE WITH 14 GA. GREEN TRACER WIRE AT S = 2.0% MIN. UNLESS NOTED
- CONST 8" DIA PVC D-3034 WW SEWER PIPE WITH 14 GA. GREEN TRACER WIRE
- CONST 4" PVC SCH 40 CLEANOUT, STUB CLEANOUT TO GRADE IN BOX WITH LID. SEE DETAIL SHEET 7
- CONST 4" PVC D-3034 SEWER PIPE STUB AT PROPERTY LINE PER DETAIL SHEET 8
- CONST SANITARY SEWER MANHOLE, PER DETAIL SHEET 8
- CONST SEWER LATERAL CONNECTIONS PER DETAIL SHEET 8
- CONNECT NEW SEWER LINE TO THE EXISTING SEWER LINE STUB
- ABANDON AND REMOVE SEWER SERVICE LINES AFTER NEW UTILITIES HAVE BEEN PROVIDED

PAVING, GRADING & MISCELLANEOUS

- POT-HOLE TO EXPOSE EXISTING SEWER, STORM OR WATER LINES, CONFIRM PIPE DIAMETER, PIPE MATERIAL AND DEPTH WITH ENGINEER.
- CLEAR & GRUB AREAS OF ORGANICS
- CLEAN SOIL (FREE OF ORGANICS) MAYBE USED ON SITE AS COMPACTED FILL MATERIAL FOR DRIVEWAYS, PADS.
- EXCAVATE AND REMOVE TREE STUMPS AND ORGANICS WITHIN SPACES, DRIVE WAYS OR PAD AREAS.
- SEE GEOTECHNICAL REPORT FOR HOME FOUNDATION PREPARATION AND TESTING REQUIREMENTS.
- END AC STREET PAVING AFTER LAST DRIVEWAY. TRANSITION PROPOSED TO EXISTING GRADE AT PROPERTY BOUNDARY.
- SEE EROSION CONTROL PLANS FOR SEDIMENT MANAGEMENT DURING MASS GRADING AND CONSTRUCTION ACTIVITIES.
- CONST STABILIZED ROCK SLOPE FOR SLOPES WITH 1:1.5 OR STEEPER PER DETAIL SHEET 7
- CONST AC STREET PAVING, BASE AND SUB-BASE MATERIAL PER CROSS SECTION DETAIL ON SHEET 2
- CONST 3 1/2" PCC ON 8" OF 3/4" MINUS CRUSHED ROCK OVER SERIES-N MRAFI GEOTEXTILE FABRIC FOR DRIVEWAYS.
- SAWCUT AND REMOVE EXISTING AC PAVING TO CUTLINE, USE CLEAN EDGE FOR NEW ASPHALT PLACEMENT
- ALL JOINTS TO BE TACK SEALED AND SANDED
- BEGIN CONSTRUCTION OF NEW SIDEWALK AT THE EDGE OF EXISTING CONCRETE SIDEWALK
- CONST SIDEWALKS AND DRIVEWAY SECTIONS PER DETAIL SHEET 7
- COMPACTED FILL IN DRIVEWAY AND HOME PAD AREAS MUST OBTAIN A SOIL COMPACTION TEST TO ASSURE IT IS CAPABLE OF SUPPORTING THE LOADS PROPOSED. SEE GEOTECHNICAL REPORT FOR SPECIFICS
- PLACE TRAFFIC BARRICADES AND APPROPRIATE SIGNAGE AT END OF ROAD SECTIONS
- CONST V-GUTTER IN INTERSECTION PER DETAIL SHEET 8
- CONST CURB & GUTTER PER DETAIL SHEET 7
- CONST SIDEWALK ACCESS RAMPS PER DETAIL SHEET 7

POWER

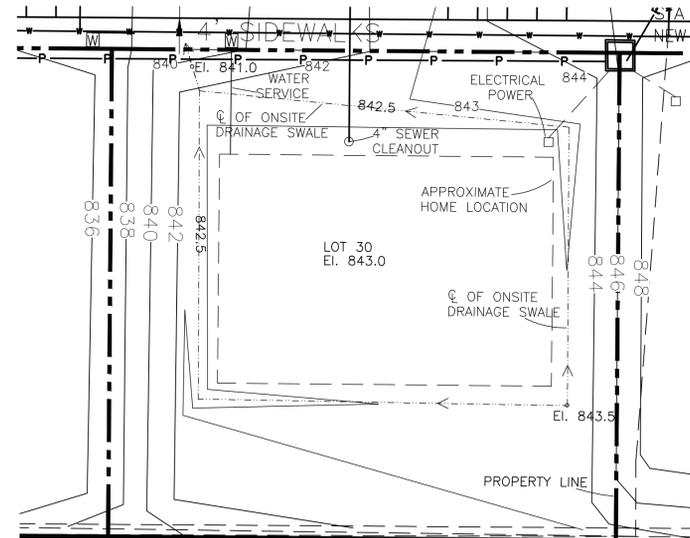
- INSTALL TRANSFORMER PER LANE ELECTRIC SPECIFICATIONS
- INSTALL SERVICE JUNCTION VAULTS PER LANE ELECTRIC SPECIFICATIONS
- CONST PRIMARY SERVICE CONDUIT PER LANE ELECTRIC SPECIFICATIONS
- CONST SECONDARY SERVICE CONDUIT PER LANE ELECTRIC SPECIFICATIONS
- ABANDON AND REMOVE EXISTING ELECTRICAL SERVICE TO HOME AFTER NEW SERVICE HAS BEEN ESTABLISHED



TO EXISTING DEVELOPMENT

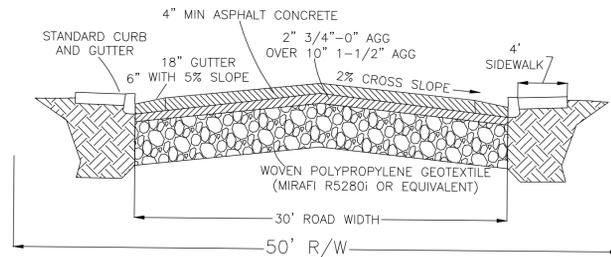
VERTICAL CONTROL

ELEVATIONS ARE BASED ON LANE COUNTY BENCHMARK, LCCM 1177, ELEVATION 742.20 (NGVD29) - LOCATED AT THE INTERSECTION OF PENGRA ROAD AND JASPER-LOWELL ROAD.



TYPICAL LOT DRAINAGE + LAYOUT

NTS



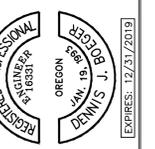
TYPICAL STREET SECTION DETAIL

LEGEND

- | | | | | | |
|-----|-------------------------|-----|---------------------------|-----|-----------------------|
| --- | PROPERTY LINE (P) | ⊗ | WATER METER | ▨ | NEW GRAVEL |
| --- | PRIVATE LOT LINE | ⊗ | WATER VALVE | ▨ | NEW RETAINING WALL |
| W | NEW WATER LINE | --- | RIGHT OF WAY | ⊗ | NEW WATER METER |
| SS | NEW SEWER LINE | --- | RIGHT OF WAY | ⊗ | NEW STORM DRAIN INLET |
| ST | NEW STORM LINE | ⊗ | NEW SANITARY CLEANOUT | ⊗ | EXISTING WATER VALVE |
| □ | NEW POWER VAULT | ⊗ | NEW SANITARY MANHOLE | ⊗ | EXISTING CATCH BASIN |
| P | PRIMARY POWER CONDUIT | ⊗ | EXISTING SANITARY MANHOLE | --- | NEW MINOR CONTOUR |
| --- | SECONDARY POWER CONDUIT | --- | EXISTING SANITARY MANHOLE | --- | NEW MAJOR CONTOUR |
| ⊗ | EXISTING ELECTRIC METER | --- | EXISTING STORM | --- | 47 |
| □ | JUNCTION BOX | --- | EXISTING WATER | --- | SPACE NUMBER |

Boeger & Associates, LLC
Civil and Environmental Engineering

B & A



REGISTERED PROFESSIONAL ENGINEER
MATTHEW BAHEN
OREGON LICENSE NO. 16831
DENVER, CO
EXPIRES: 12/31/2019

SUNSET HILLS
RESIDENTIAL SUBDIVISION
ASSESSORS MAP 19-01-14-21, Tax Lot 5000

Developer
Matthew Bahen
Bahen Investments
541-513-1625
mboeger@u@gmail.com

W.O. No. 314
Design J. BRENNER
Drawn Z. BOEGER
Check D. BOEGER
Date 6/5/2019
Dwg 314 SUNSET HILLS

Sheet
2 of 12

REVISIONS	
No.	Description/Date

GRADING & DRAINAGE 1

Cut/Fill Summary

Name	Area	Cut	Fill	Net
FINISHED GRADE	179560 Sq. Ft.	*6685 Cu. Yd.	6559 Cu. Yd.	126 Cu. Yd.<CUT>

*CALCULATED USING .9 COMPACTION %



FOR LOT 16 CONSTRUCTION NOTES, SEE SHEET 6.



- CONSTRUCTION NOTES**
1. CONST STORMWATER DROP INLET PER DETAIL SHEET 7
 2. CONST SOUTHERN DRAINAGE SWALE PER DETAIL SHEET 7
 3. CONST STD DRAINAGE SWALE PER DETAIL SHEET 7
 4. CONST 18" CMP CULVERT FOR FUTURE ROAD CROSSING AT SLOPES AND LENGTH AS SHOWN
 5. CONST 8" PVC D-3034 STORMWATER LINE WITH 8 GA. GREEN TRACER WIRE AT SLOPES INDICATED
 6. CONST 12" PVC D-3034 STORMWATER LINE WITH 8 GA. GREEN TRACER WIRE AT SLOPES INDICATED
 7. CONST SIDEWALK AND CURB DRAIN DETAIL PER DETAIL SHEET 7
 8. CONST CUSTOM CATCH BASIN CONFIGURATION PER DETAIL SHEET 7
 9. REMOVE OR ABANDON EXISTING STORMWATER MANHOLE AND STORMWATER PIPE TO NEW CONNECTION POINT.
 10. CONST SWALE TO CONNECT WITH EXISTING DRAINAGE

- PAVING, GRADING & MISCELLANEOUS**
60. POT-HOLE TO EXPOSE EXISTING SEWER, STORM OR WATER LINES, CONFIRM PIPE DIAMETER, PIPE MATERIAL AND DEPTH WITH ENGINEER.
 61. CLEAR & GRUB AREAS OF ORGANICS
 62. CLEAN SOIL (FREE OF ORGANICS) MAYBE USED ON SITE AS COMPACTED FILL MATERIAL FOR DRIVEWAYS, PADS, EXCAVATE AND REMOVE TREE STUMPS AND ORGANICS WITHIN SPACES, DRIVEWAYS OR PAD AREAS.
 63. SEE GEOTECHNICAL REPORT FOR HOME FOUNDATION PREPARATION AND TESTING REQUIREMENTS.
 64. END AC STREET PAVING AT STA SHOWN. TRANSITION PROPOSED TO EXISTING GRADE AT PROPERTY BOUNDARY.
 65. SEE EROSION CONTROL PLANS FOR SEDIMENT MANAGEMENT DURING MASS GRADING AND CONSTRUCTION ACTIVITIES.
 66. CONST STABILIZED ROCK SLOPE FOR SLOPES WITH 1:1.5 OR STEEPER PER DETAIL SHEET 7
 67. CONST AC STREET PAVING, BASE AND SUB-BASE MATERIAL PER CROSS SECTION DETAIL ON SHEET 2
 68. CONST 3 1/2" PCC ON 8" OF 3/4" MINUS CRUSHED ROCK OVER SERIES-N MRAFI GEOTEXTILE FABRIC FOR DRIVEWAYS.
 69. SAWCUT AND REMOVE EXISTING AC PAVING TO OUTLINE. USE CLEAN EDGE FOR NEW ASPHALT PLACEMENT
 70. ALL JOINTS TO BE TACK SEALED AND SANDED
 71. BEGIN CONSTRUCTION OF NEW SIDEWALK AT THE EDGE OF EXISTING CONCRETE SIDEWALK
 72. CONST SIDEWALKS AND DRIVEWAY SECTIONS PER DETAIL SHEET 7
 73. COMPACTED FILL IN DRIVEWAY AND HOME PAD AREAS MUST OBTAIN A SOIL COMPACTION TEST TO ASSURE IT IS CAPABLE OF SUPPORTING THE LOADS PROPOSED. SEE GEOTECHNICAL REPORT FOR SPECIFICS
 74. PLACE TRAFFIC BARRIAGES AND APPROPRIATE SIGNAGE AT END OF ROAD SECTIONS
 75. CONST V-GUTTER IN INTERSECTION PER DETAIL SHEET 8
 76. CONST CURB & GUTTER PER DETAIL SHEET 7
 77. CONST SIDEWALK ACCESS RAMP PER DETAIL SHEET 7

- LEGEND**
- P--- PROPERTY LINE (P)
 - L--- PRIVATE LOT LINE
 - ST--- NEW STORM LINE
 - 10+00--- NEW ALIGNMENT
 - TBSW TOP BACK OF SIDEWALK
 - EAP EDGE OF ASPHALT PAVING
 - M--- MINOR CONTOUR
 - MAJ--- MAJOR CONTOUR
 - [Symbol] NEW GRAVEL
 - [Symbol] RIGHT OF WAY
 - [Symbol] NEW RETAINING WALL
 - [Symbol] NEW WATER SERVICE
 - [Symbol] NEW STORM DRAIN INLET
 - [Symbol] EXISTING WATER VALVE
 - ST--- EXISTING STORM
 - [Symbol] EXISTING CATCH BASIN
 - 47 SPACE NUMBER

NOTE:
SEASONAL DRAINAGE TO BE INTERCEPTED AND DIVERTED AROUND NE DEVELOPMENT DRAINAGE WILL CONTINUE TO USE ITS EXISTING DISCHARGE POINT.

Boeger & Associates, LLC
Civil and Environmental Engineering

B & A

REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 12/31/2019

1011 S. Bernebban Road
P.O. Box 21623
Eugene, OR 97402
Ph: 541.302.4986
Cell: 541.558.5779
Fax: 541.302.4988
dboeger@boegerassociates.com

SUNSET HILLS
RESIDENTIAL SUBDIVISION
ASSESSORS MAP 19-01-14-21, Tax Lot 5000

Developer:
Matthew Bahen
Bahen Investments
541-513-7625
speedy@u@gmail.com

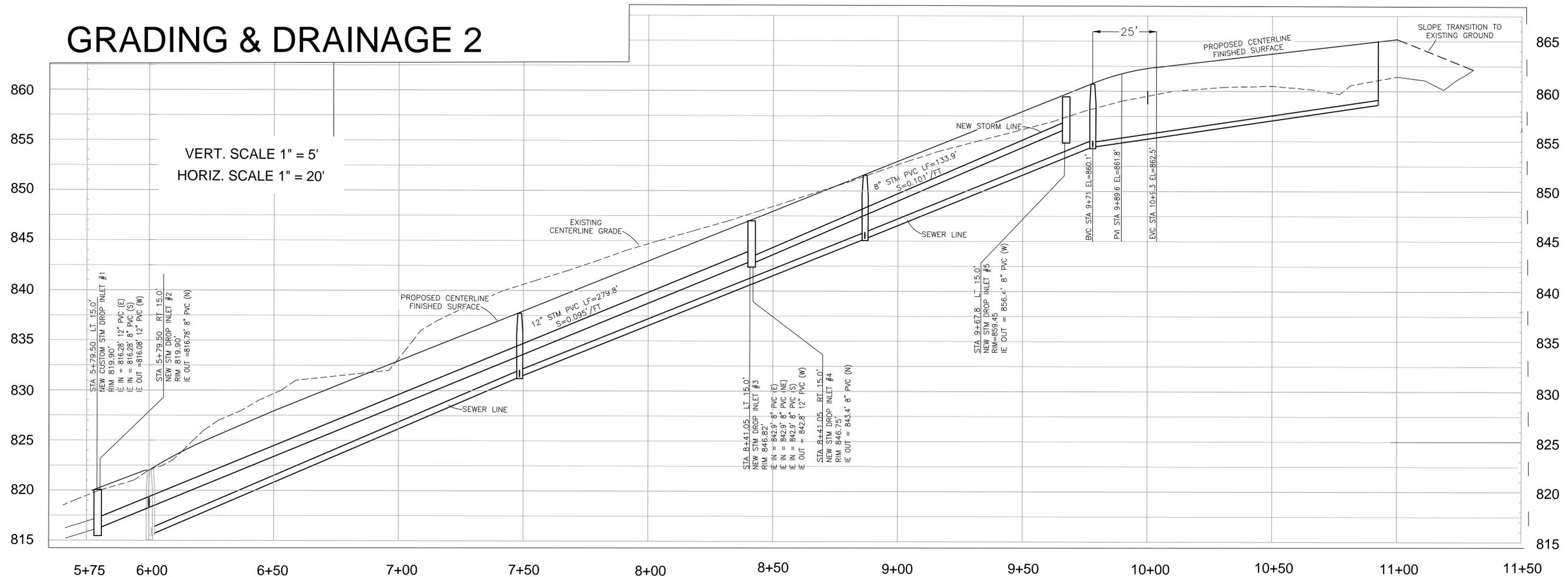
W.O. No. 314
Design J. BRENNER
Drawn Z. BOEGER
Check D. BOEGER
Date 6/5/2019
Dwg 314 SUNSET HILLS

Sheet
3 of 12

REVISIONS

No.	Description/Date	By

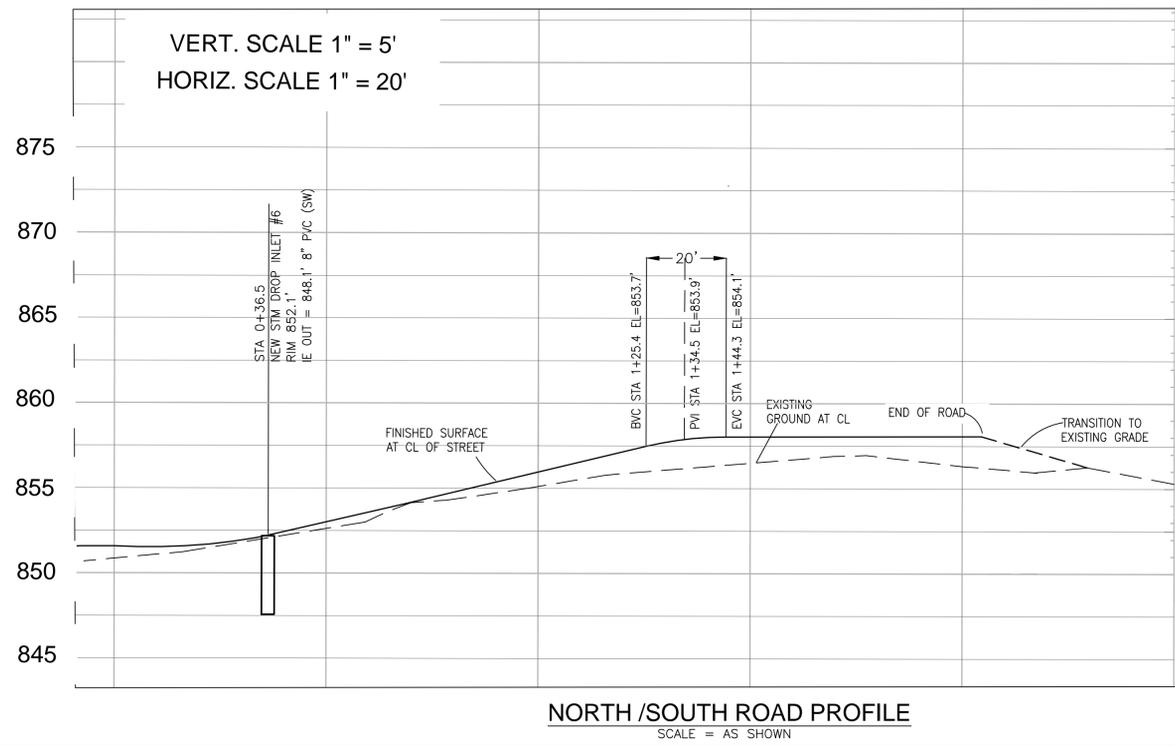
GRADING & DRAINAGE 2



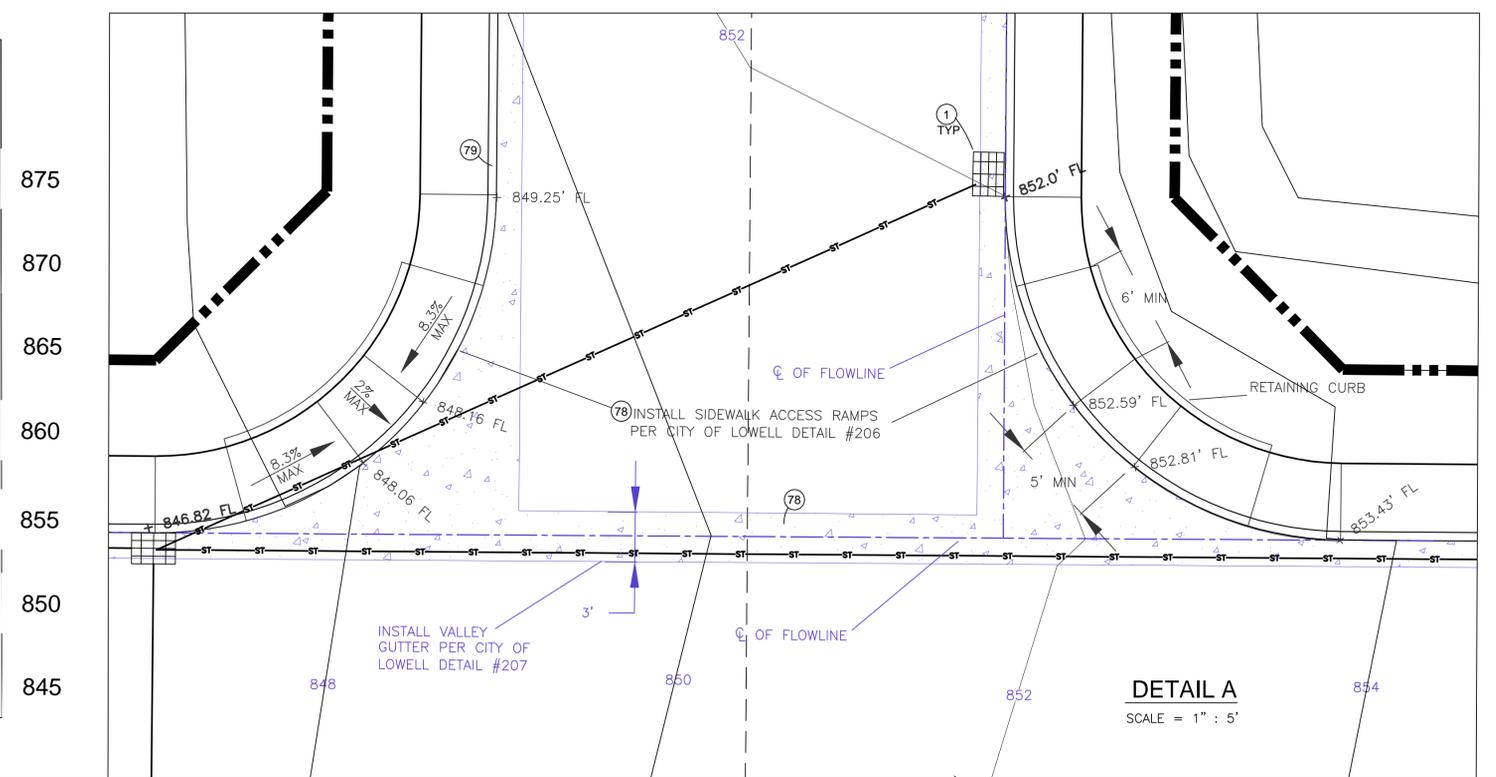
4th Street Profile
SCALE = AS SHOWN

NOTE:
CONSTRUCTION NOTES
STORM
1 CONST STORMWATER DROP INLET PER DETAIL SHEET 8

NOTE:
PAVING, GRADING & MISCELLANEOUS
78 CONST V-GUTTER IN INTERSECTION PER DETAIL SHEET 8
79 CONST CURB & GUTTER PER DETAIL SHEET 7



NORTH/SOUTH ROAD PROFILE
SCALE = AS SHOWN



DETAIL A
SCALE = 1" : 5'

B & A
Boeger & Associates, LLC
Civil and Environmental Engineering

1011 S. Bernebban Road
P.O. Box 21623
Eugene, OR 97402
Ph: 541.302.4986
Cell: 541.556.5779
Fax: 541.302.4988
dboeger@boeogerassociates.com

REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 12/31/2019

OREGON
JENNIFER J. DENNIS
NO. 13387
EXPIRES: 12/31/2019

SUNSET HILLS
RESIDENTIAL SUBDIVISION
ASSESSORS MAP 19-01-14-21, Tax Lot 5000

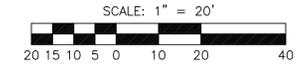
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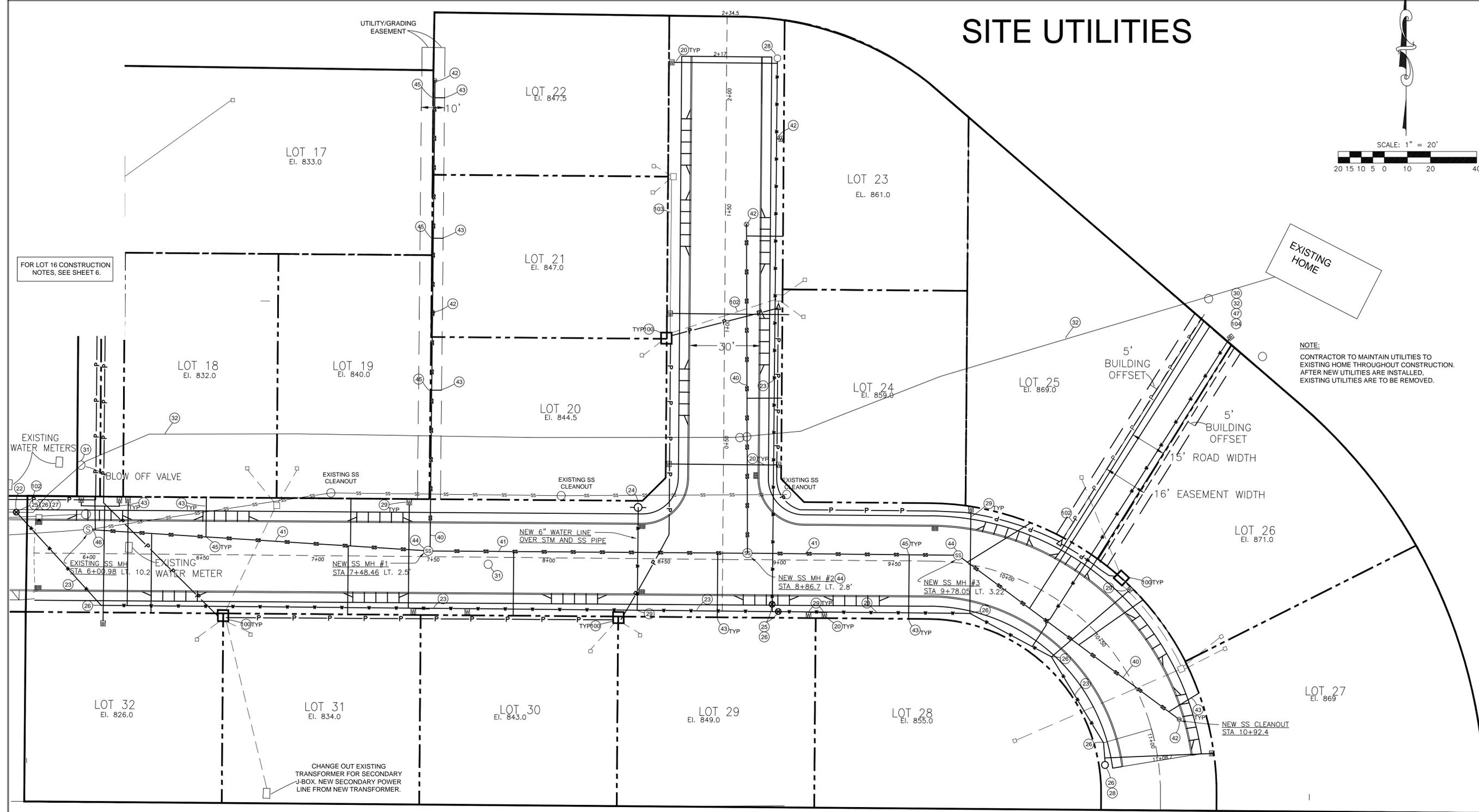
Sheet
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REVISIONS		
No.	Description/Date	By

SITE UTILITIES



SCALE: 1" = 20'

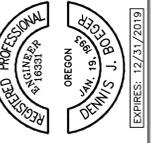


FOR LOT 16 CONSTRUCTION NOTES, SEE SHEET 6.

NOTE:
CONTRACTOR TO MAINTAIN UTILITIES TO EXISTING HOME THROUGHOUT CONSTRUCTION. AFTER NEW UTILITIES ARE INSTALLED, EXISTING UTILITIES ARE TO BE REMOVED.

Boeger & Associates, LLC
Civil and Environmental Engineering

B & A



SUNSET HILLS
RESIDENTIAL SUBDIVISION
ASSESSORS MAP 19-01-14-21, Tax Lot 5000

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5 of 12

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No.	Description/Date

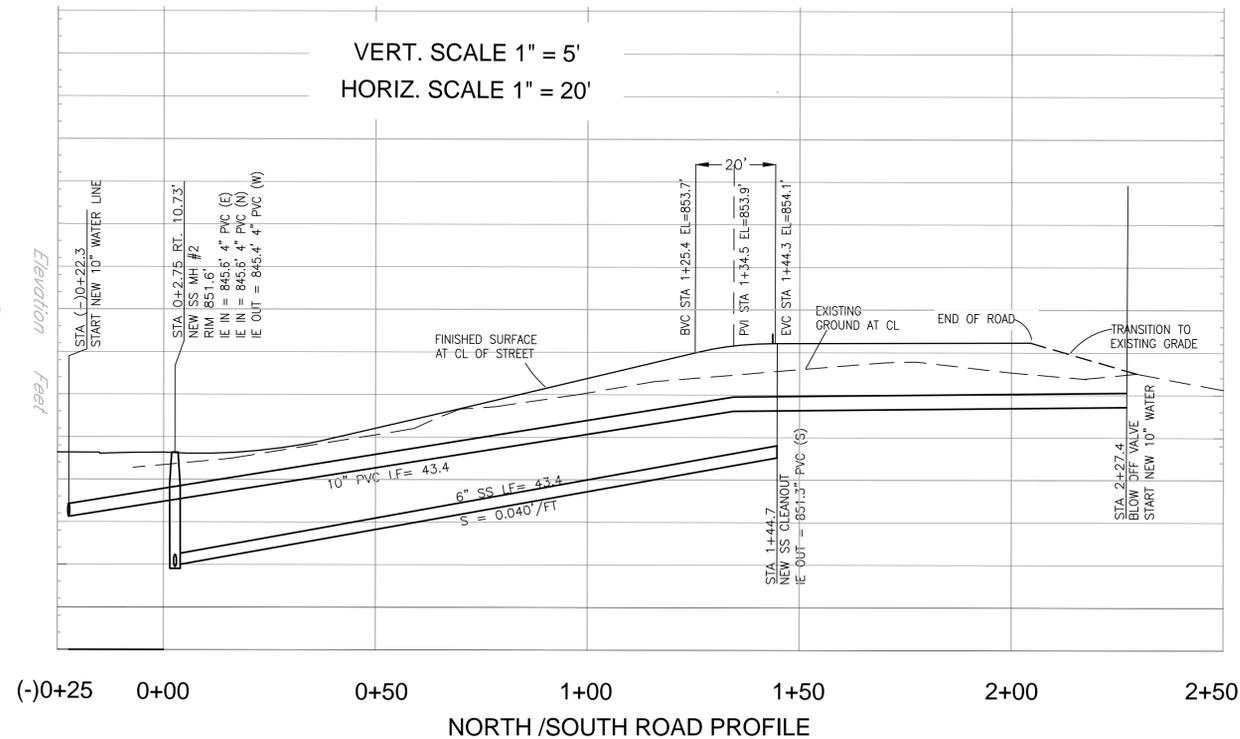
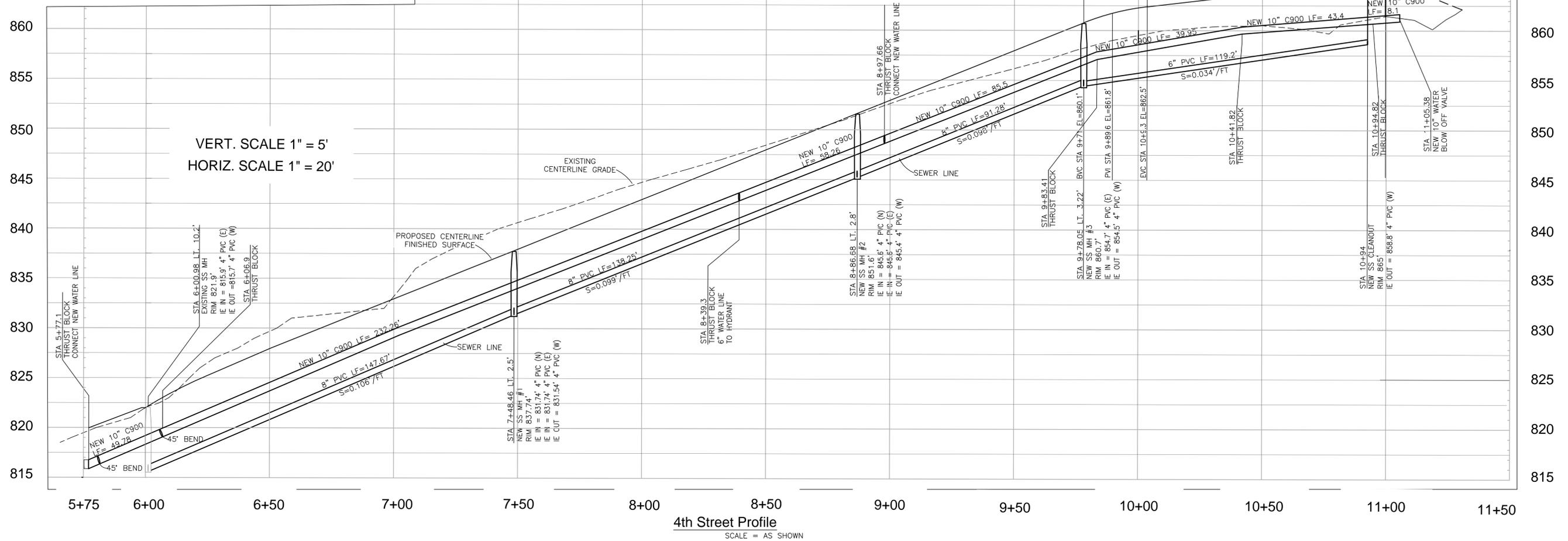
- WATER**
- 20 CONST DUAL OR SINGLE WATER SERVICE LINE PER DETAIL SHEET 9
 - 22 LOCATE END OR STUB OF EXISTING WATER LINE AND CONST DI TO C-900 ADAPTER FOR WATER LINE EXTENSION
 - 23 CONST 10" DIA C900 PVC WATER LINE WITH 14 GA. BLUE TRACER WIRE
 - 24 CONST FIRE HYDRANT ASSEMBLY PER DETAIL SHEET 9
 - 25 CONST 10" DUCTILE IRON GATE VALVE IN VALVE BOX, PER DETAIL SHEET 9
 - 26 CONST THRUST BLOCKING PER DETAIL SHEET 9
 - 27 NOTIFY RESIDENTS 48 HOURS IN ADVANCE TO ANY WATER SHUT-OFFS NECESSARY FOR CONSTRUCTION OF NEW WATER LINE
 - 28 CONST BLOW-OFF VALVE PER DETAIL SHEET 7
 - 29 STUB WATER SERVICE LINES AT PROPERTY LINE AND MARK LOCATION WITH 2X4 WITH BLUE MARKINGS
 - 30 MAINTAIN ALL UTILITIES TO EXISTING HOME DURING CONSTRUCTION
 - 31 ABANDON EXISTING WELL PER OREGON WATER RESOURCE DEPARTMENT GUIDELINES
 - 32 ABANDON AND REMOVE WATER SERVICE LINES AFTER NEW UTILITIES HAVE BEEN PROVIDED.
- SANITARY SEWER**
- 40 CONST 6" DIA PVC D-3034 SEWER PIPE WITH 14 GA. GREEN TRACER WIRE AT S = 2.0% MIN. UNLESS NOTED
 - 41 CONST 8" DIA PVC D-3034 WW SEWER PIPE WITH 14 GA. GREEN TRACER WIRE
 - 42 CONST 4" PVC SCH 40 CLEANOUT, STUB CLEANOUT TO GRADE IN BOX WITH LID. SEE DETAIL SHEET 7
 - 43 CONST 4" PVC D-3034 SEWER PIPE STUB AT PROPERTY LINE PER DETAIL 8
 - 44 CONST SANITARY SEWER MANHOLE, PER DETAIL SHEET 8
 - 45 CONST SEWER LATERAL CONNECTIONS PER DETAIL SHEET 8
 - 46 CONTRACTOR TO VERIFY SIZE OF EXISTING SS PIPE. IF EXISTING PIPE IS SMALLER THAN PROPOSED SS PIPE, CONTRACTOR TO CORE DRILL MH TO FIT PROPOSED PIPE AT THE SPECIFIED ELEVATIONS.
 - 47 ABANDON AND REMOVE SEWER SERVICE LINES AFTER NEW UTILITIES HAVE BEEN PROVIDED

- POWER**
- 100 INSTALL TRANSFORMER PER LANE ELECTRIC SPECIFICATIONS
 - 101 INSTALL SERVICE JUNCTION VAULTS PER LANE ELECTRIC SPECIFICATIONS
 - 102 CONST PRIMARY SERVICE CONDUIT PER LANE ELECTRIC SPECIFICATIONS
 - 103 CONST SECONDARY SERVICE CONDUIT PER LANE ELECTRIC SPECIFICATIONS
 - 104 ABANDON AND REMOVE EXISTING ELECTRICAL SERVICE TO HOME AFTER NEW SERVICE HAS BEEN ESTABLISHED

LEGEND

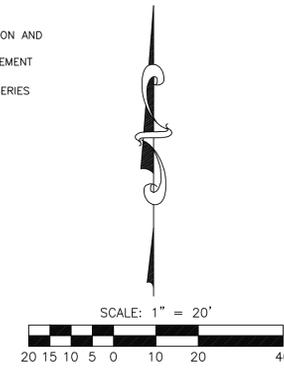
- PROPERTY LINE (R)
- PRIVATE LOT LINE
- NEW WATER LINE
- NEW SEWER LINE
- NEW POWER VAULT
- PRIMARY POWER CONDUIT
- SECONDARY POWER CONDUIT
- EXISTING ELECTRIC METER
- JUNCTION BOX
- ⊗ WATER METER
- ⊗ WATER VALVE
- +10+00--- NEW ALIGNMENT
- RIGHT OF WAY
- ⊗ NEW SANITARY CLEANOUT
- ⊗ NEW SANITARY MANHOLE
- ⊗ EXISTING SANITARY MANHOLE
- SS --- EXISTING SANITARY SEWER LINE
- 47 SPACE NUMBER

SITE UTILITIES



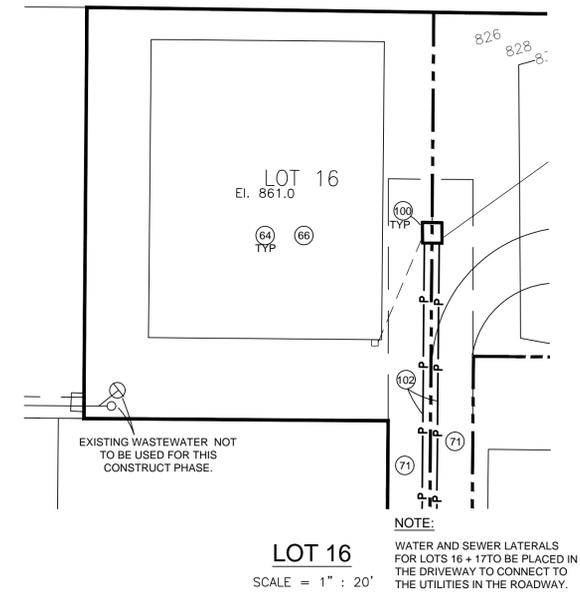
- POWER**
- 100 INSTALL TRANSFORMER PER LANE ELECTRIC SPECIFICATIONS
 - 101 INSTALL SERVICE JUNCTION VAULTS PER LANE ELECTRIC SPECIFICATIONS
 - 102 CONST PRIMARY SERVICE CONDUIT PER LANE ELECTRIC SPECIFICATIONS
 - 103 CONST SECONDARY SERVICE CONDUIT PER LANE ELECTRIC SPECIFICATIONS
 - 104 ABANDON AND REMOVE EXISTING ELECTRICAL SERVICE TO HOME AFTER NEW SERVICE HAS BEEN ESTABLISHED

- PAVING, GRADING & MISCELLANEOUS**
- 64 SEE GEOTECHNICAL REPORT FOR HOME FOUNDATION PREPARATION AND TESTING REQUIREMENTS.
 - 66 ADHERE TO EROSIONAL CONTROL PLANS FOR SEDIMENT MANAGEMENT DURING MASS GRADING AND CONSTRUCTION ACTIVITIES.
 - 71 CONST 3 1/2" PCC ON 8" OF 3/4" MINUS CRUSHED ROCK OVER SERIES N-MRAFI GEOTEXTILE FABRIC FOR DRIVEWAYS.



LEGEND

- NEW POWER VAULT
- P — PRIMARY POWER CONDUIT
- S — SECONDARY POWER CONDUIT
- RIGHT OF WAY



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SUNSET HILLS
RESIDENTIAL SUBDIVISION
ASSESSORS MAP 19-01-14-21, Tax Lot 5000

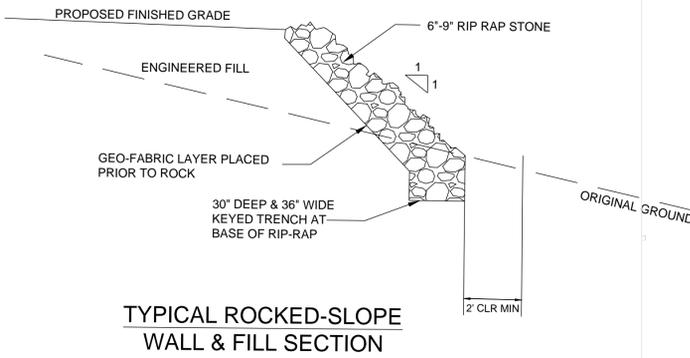
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speedy@u@gmail.com

W.O. No. 314
Design J. BRENNER
Drawn Z. BOEGER
Check D. BOEGER
Date 6/5/2019
Dwg 314 SUNSET HILLS

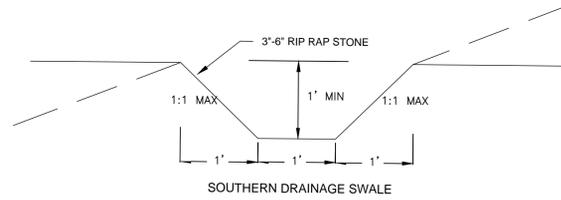
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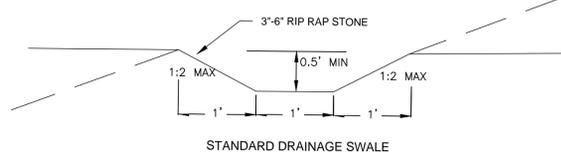
DETAILS #1



TYPICAL ROCKED-SLOPE WALL & FILL SECTION

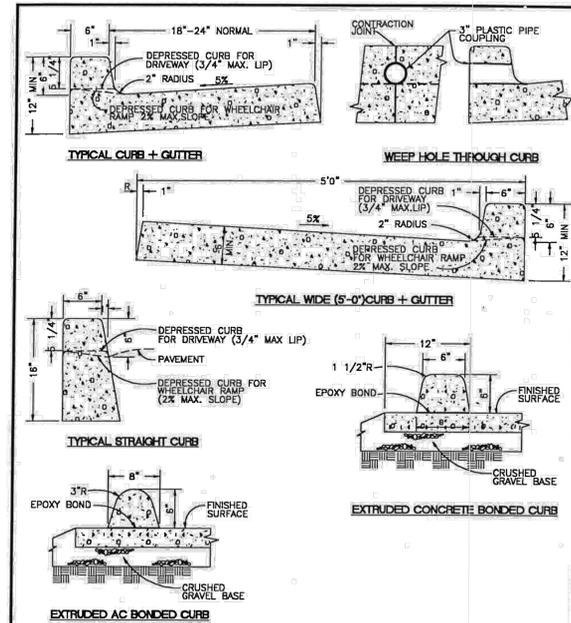


SOUTHERN DRAINAGE SWALE



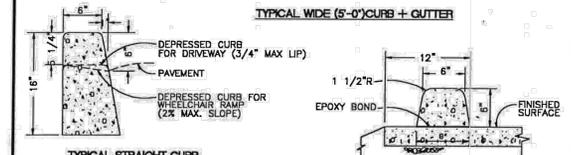
STANDARD DRAINAGE SWALE

SWALE INSTALLATION DETAIL
NTS



TYPICAL CURB + GUTTER

WEEP HOLE THROUGH CURB



TYPICAL WIDE (6'-0\") CURB + GUTTER

TYPICAL STRAIGHT CURB

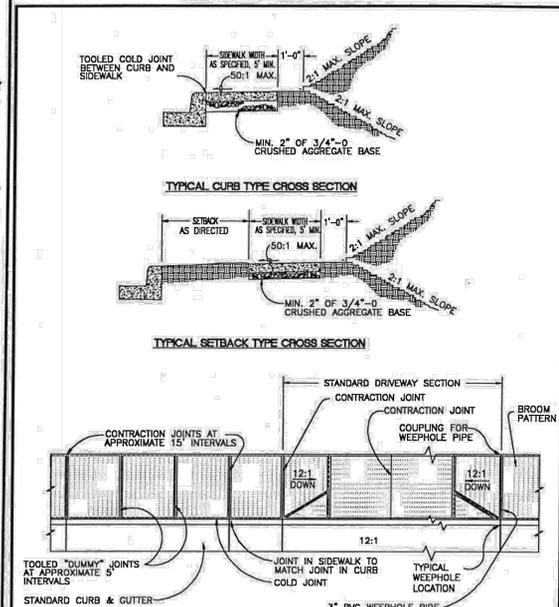
EXTRUDED CONCRETE BONDED CURB

EXTRUDED AC BONDED CURB

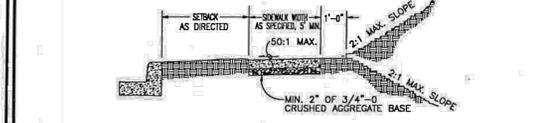
- NOTES:
1. ALL RADII SHALL BE 3/4" EXCEPT AS OTHERWISE SHOWN.
 2. ISOLATION JOINTS SHALL BE PLACED ONLY AS SPECIFIED.
 3. CONTRACTION JOINTS SHALL BE PLACED AT 15' INTERVALS AND SHALL EXTEND AT LEAST 50% THROUGH THE CURB OR CURB AND GUTTER.
 4. A CONTRACTION JOINT SHALL BE PLACED ALONG AND OVER WEEP HOLE THROUGH THE CURB AND THROUGH THE SIDEWALK.
 5. WHEN SIDEWALKS ARE CONSTRUCTED, EXTEND 3" PIPE TO BACK OF SIDEWALK AND INSTALL COUPLING.

CITY OF LOWELL	
CURB AND GUTTER, CURB AND WEEPHOLE	
DATE:	DRAWING NO.:
APRIL 2002	202

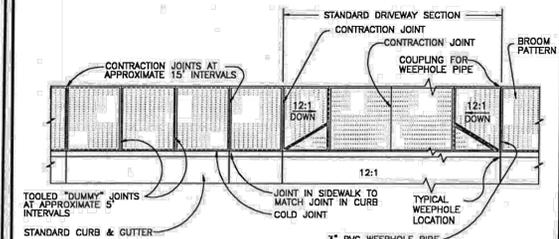
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TYPICAL CURB TYPE CROSS SECTION



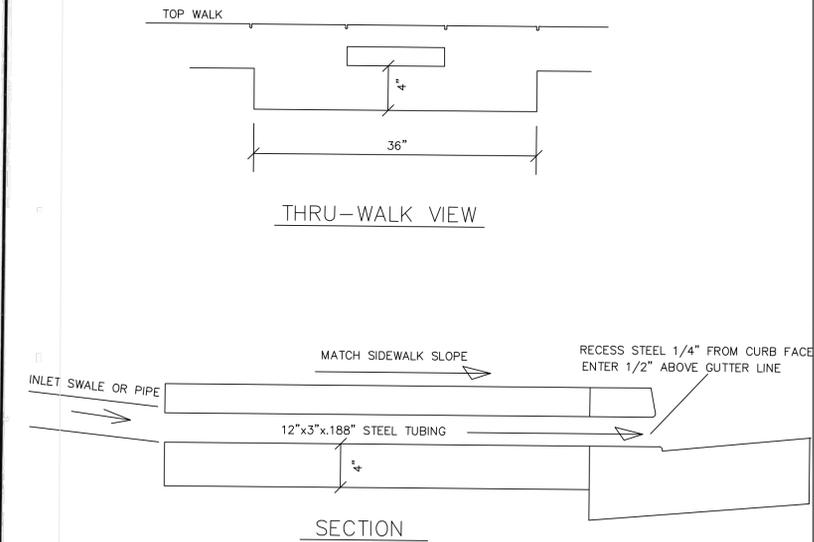
TYPICAL SETBACK TYPE CROSS SECTION



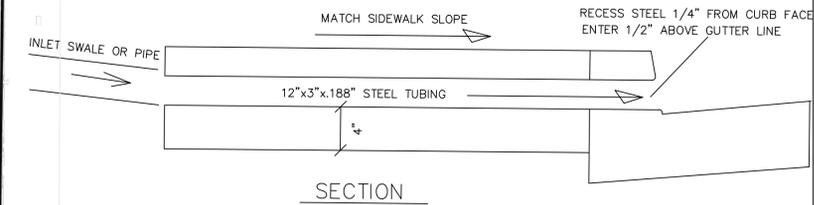
TYPICAL PLAN VIEW

- NOTE:
1. SIDEWALKS 8 FEET AND WIDER SHALL HAVE A LONGITUDINAL CONTRACTION JOINT AT THE MIDPOINT.
 2. CONCRETE DEPTH FOR STANDARD SIDEWALKS SHALL BE NOMINAL 4" MIN. THICKNESS IN DRIVEWAY SHALL MATCH EXISTING DRIVEWAY.
 3. INSTALL 3" PVC WEEPHOLE PIPES IN SIDEWALKS IN LOCATIONS AS DIRECTED BY THE ENGINEER. PLACE CONTRACTION JOINT OVER THE TOP OF THE PIPE.

CITY OF LOWELL	
SIDEWALK	
DATE:	DRAWING NO.:
APRIL 2002	204

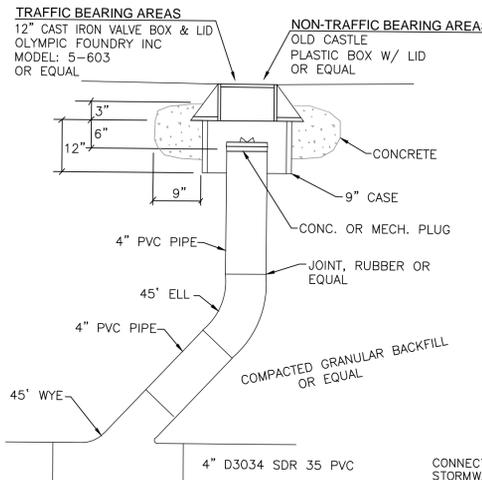


THRU-WALK VIEW

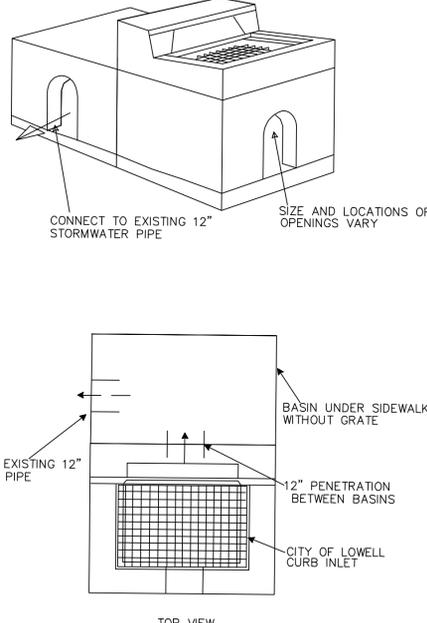


SECTION

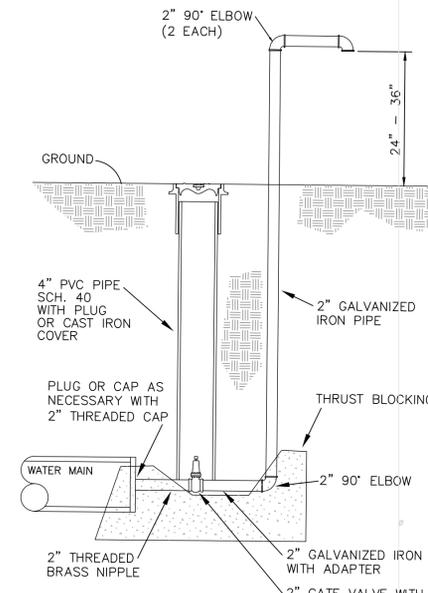
SIDEWALK AND CURB DRAIN
NTS



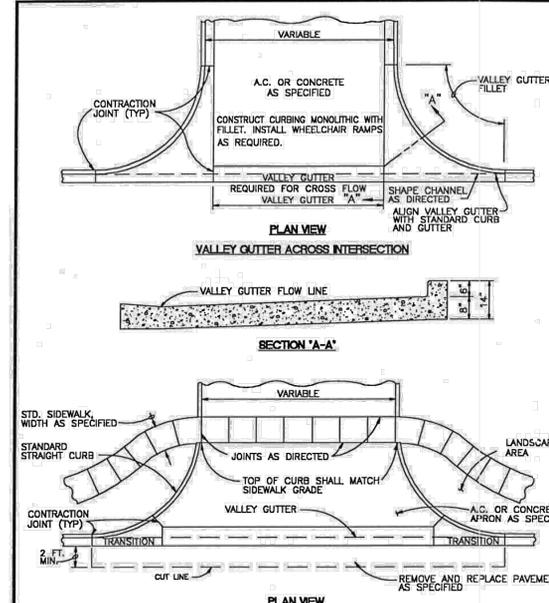
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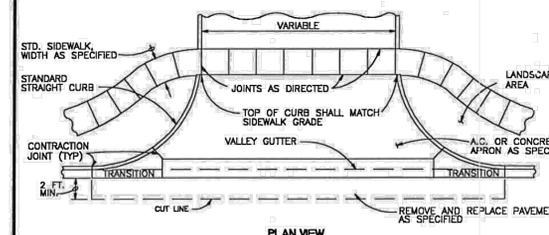
CUSTOM CATH BASIN INLET #1
NTS



2\"/>



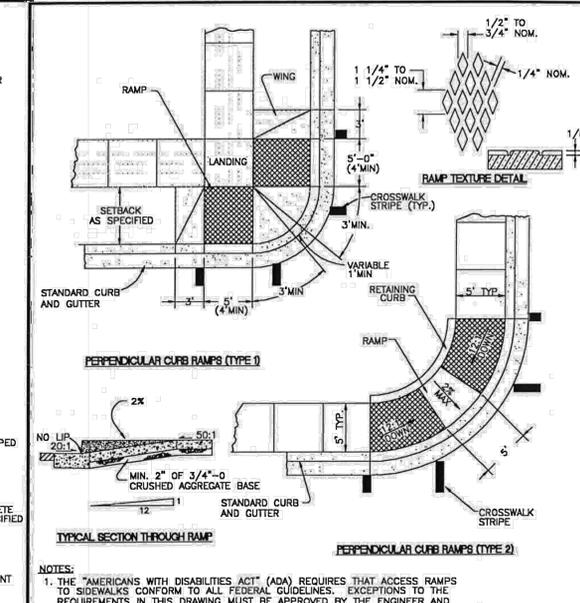
VALLEY GUTTER ACROSS INTERSECTION



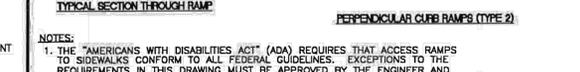
COMMERCIAL DRIVEWAY APPROACH

CITY OF LOWELL	
INTERSECTION AND COMMERCIAL DRIVEWAYS	
DATE:	DRAWING NO.:
APRIL 2002	207

FILENAME: APW0056.DWG



PERPENDICULAR CURB RAMPS (TYPE 1)



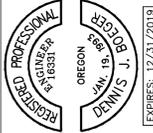
PERPENDICULAR CURB RAMPS (TYPE 2)

- NOTES:
1. THE "AMERICANS WITH DISABILITIES ACT" (ADA) REQUIRES THAT ACCESS RAMPS TO SIDEWALKS CONFORM TO ALL FEDERAL GUIDELINES. EXCEPTIONS TO THE REQUIREMENTS IN THIS DRAWING MUST BE APPROVED BY THE ENGINEER AND MUST COMPLY WITH ADA.
 2. NO ABOVE GROUND UTILITIES ARE PERMITTED WITHIN RAMP AREA.
 3. LANDINGS SHALL BE PLACED AT THE TOP OF EACH RAMP. LANDING SLOPES SHALL NOT EXCEED 50:1 IN ANY DIRECTION. THE SLOPE OF THE SURFACING AT THE BOTTOM OF THE RAMP SHALL NOT EXCEED 20:1 FOR A DISTANCE OF 2' (SEE TYPICAL SECTION ABOVE).
 4. MINIMUM LANDING DIMENSIONS SHALL BE 4' X 4'.
 5. RAMP SURFACE SHALL BE TEXTURED WITH RAISED DIAMOND TEXTURE. TEXTURING SHALL BE DONE WITH AN EXPANDED METAL GRATE STAMPED INTO THE CONCRETE.
 6. CONCRETE STRENGTH SHALL BE 3300 PSI.

CITY OF LOWELL	
SIDEWALK ACCESS RAMPS	
DATE:	DRAWING NO.:
APRIL 2002	208

FILENAME: APW0058.DWG

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Civil and Environmental Engineering



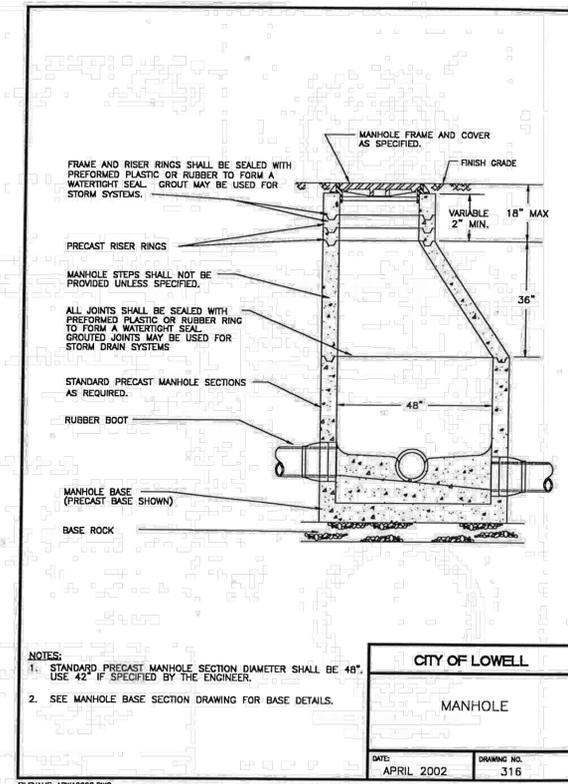
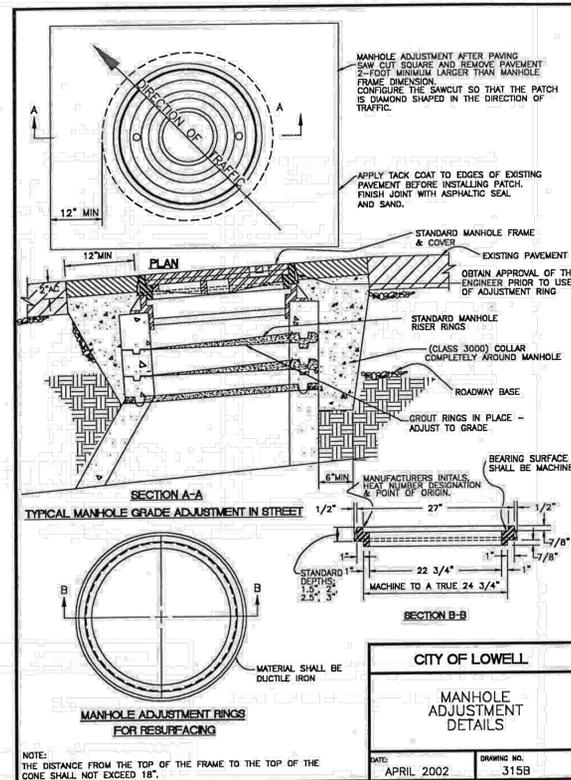
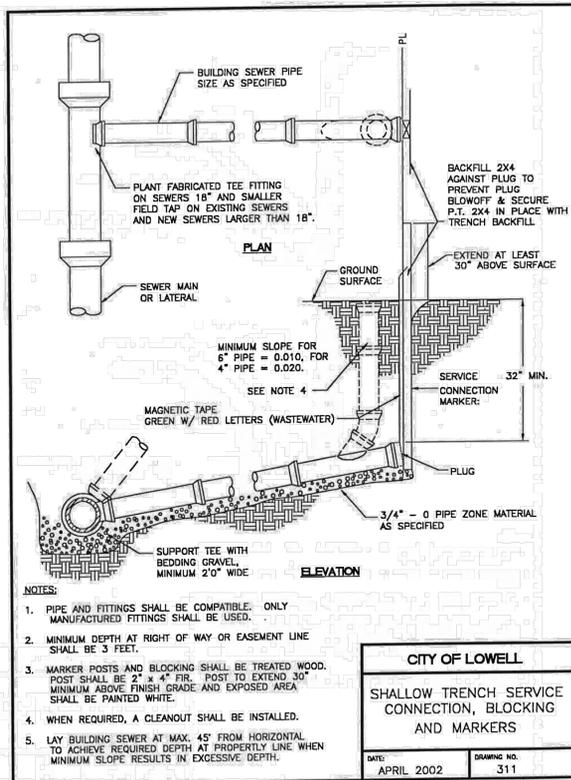
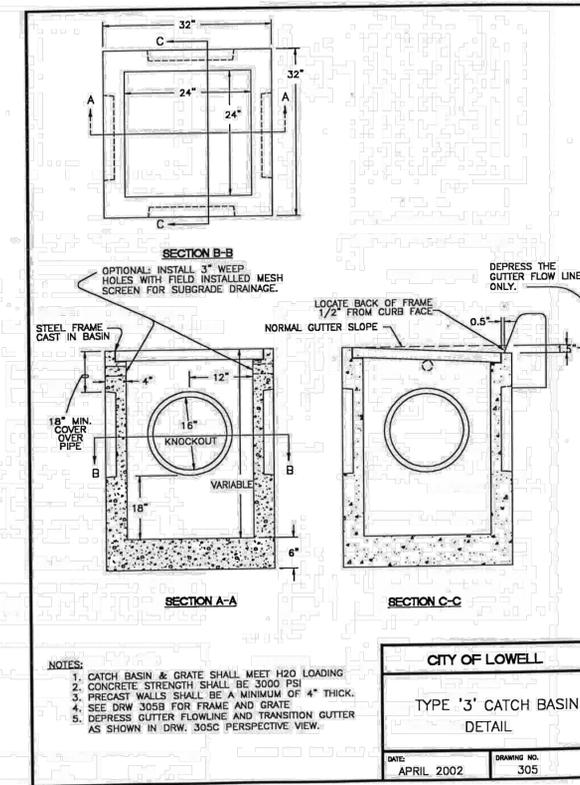
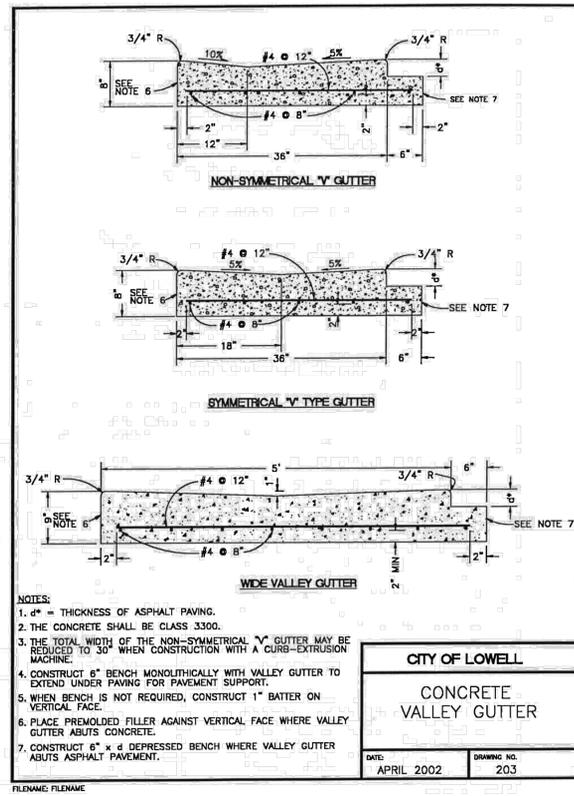
SUNSET HILLS
RESIDENTIAL SUBDIVISION
ASSESSORS MAP 19-01-14-21, Tax Lot 5000

Developer:
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Bahen Assessments
541-513-7625
speedy@u@gmail.com

W.O. No. 314
Design J. BRENNER
Drawn Z. BOEGER
Check D. BOEGER
Date 6/5/2019
Dwg 314 SUNSET HILLS

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No.	Description/Date	By

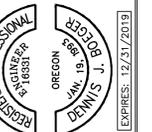
DETAILS # 2



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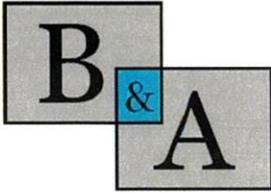
SUNSET HILLS
RESIDENTIAL SUBDIVISION
ASSESSORS MAP 19-01-14-21, Tax Lot 5000

Developer:
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Behan Investments
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W.O. No. 314
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Drawn Z. BOEGER
Check D. BOEGER
Date 6/5/2019
Dwg 314 SUNSET HILLS

Sheet
8 of 12

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No.	Description/Date



Boeger & Associates, LLC
Civil and Environmental - Engineering and Planning

DRAINAGE REPORT FOR SUNSET VIEW SUBDIVISION PHASE 2

**Prepared for: Matthew Bahen
Property owner**



**Prepared by: Jesten Brenner, P.E.
Project Engineer
Boeger & Associates, LLC**

**March 21, 2019
B&A W.O. #314**

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DRAINAGE REPORT

FORWARD

The Sunset View Subdivision is a residential subdivision located on 4th Street in Lowell Oregon. This residential subdivision is the second phase of the planned development. The first phase included placing a road, utilities, and homes along the westernmost edge of the property. The second phase will include extending the road and utilities eastward into the subject property for the addition of 17 new home sites. The total area of the subject property is 3.8 acres.

This report analyzes the Pre-Development and Post-Development stormwater runoff conditions for the various storm events to determine the net increase in runoff produced by the development. Stormwater pipes between manholes, drainages swales, and culverts were also analyzed to determine their efficacy and capacity during the different storm events.

PROCEDURE

In Appendix F of the ODOT Hydraulic Manual, it states that the rational method is recommended for small projects (less than 200 acres). The study area for this drainage report is 3.8 acres, so therefore the rational method was used. The design storm will be the 25-year event, and the 100 year storm event was used to size all components for possible high-water conditions.

To use the Rational Method, there are several steps to follow to achieve a (Tt) Travel Time, (Tc) Time of Concentration, (I) Intensity, ($\sum CA$) Summation of Runoff Coefficients, areas and (Q) Flow (cfs).

Tc in this report was developed by using the TR-55 method which uses known quantities for length of the segment in feet, the slope of the segment in feet per feet, and type of storm water conveyance device, and cover coefficients and storm intensity based upon the 24 hr, 2 year storm event from the Oregon Atlas 2 Volume 10 stormwater reference manual.

To find the intensity for the various storm events for the calculated Tc, the Intensity Frequency and Duration Curve for zone 5 was used attained from Appendix A of the ODOT Hydraulic Manual. Both rainfall intensity references are located in Appendix D of this report.

Using drainage areas from the construction plans, along with the Rational Method, runoff flows were developed for various drainage segments deemed necessary for analysis. The AutoCAD HydraFlow Express program was used for the reports and calculation generation.

EXISTING CONDITIONS

The 3.8 acre project site area is primarily comprised of Hazelair Silty Clay Loam, a class C soil. The site is covered mainly with grass, and shrubs and a general westerly slope of roughly 7%-10%

with areas of steeper slopes. Stormwater runoff currently drains to either the northern or southern drainages, or sheet flows to the west towards the first phase of the development.

The southern drainage course can drain a sizable area to the east and can carry a proportionally large amount of water during storm events. This drainage heads to larger drainages to the south that eventually travels to the Dexter Reservoir. This drainage can be seen in Exhibit 1 of this report. The area that develops the offsite flow to this drainage is shown in Appendix D of this report.

A stormwater manhole was placed at the easternmost edge of the first phase development boundary to accept the stormwater flow for the second phase. The existing storm line heads to the west and towards an existing drainage to the north.

There is a modular home located beyond the subject property to the east and a rocked access road and utility service lines currently cross the property to the modular home. The existing conditions can be seen in Exhibit 1 of this report.

Pre-Developed Flows

AREA	Runoff Coeff - C	Tc	25 yr Rainfall Intensity	25 yr Flow (Q)	100 yr Rainfall Intensity	100 yr Flow (Q)
(acres)	(cfs)	(min)	(in/hr)	(cfs)	(in/hr)	(cfs)
3.8	0.30	14	2.723	3.10	4.217	4.81

DEVELOPED CONDITIONS

The developed conditions of the property will be an extension of the existing roads and 17 new homes. The home sites will be graded to allow drainage away from the homes and towards the road or to the designated onsite drainage swales such as drainage swale 2 on Exhibit 2 of this report. The road sections will have curb and gutters to convey the runoff towards curb inlet that drain the stormwater to the storm pipes and manholes. The new infrastructure will head to the west and connect with the existing stormwater manhole.

Impervious surfaces in the form of roads, driveways, sidewalks and roofs will be constructed for this development which will impact the weighted runoff coefficient in the rational method calculation leading to shorter times of concentrations and increase the total runoff generated.

No additional flows from offsite or surcharge drainage areas will enter this stormwater drainage system. Drainage swales near the eastern property lines will collect the additional offsite flow and redirect them to existing drainages to the north and south. Exhibit 2 of this report shows the proposed swale locations and where they direct the flow. The southern drainage course diversion swale will intercept the south drainage and carry it around the home sites, under the road, and through its natural discharge point.

Post-Developed Flows

AREA	Runoff Coeff - C	Tc	25 yr Rainfall Intensity	25 yr Flow (Q)	100 yr Rainfall Intensity	100 yr Flow (Q)
(acres)	(cfs)	(min)	(in/hr)	(cfs)	(in/hr)	(cfs)
3.8	0.63	9	2.33	5.58	3.425	8.2

The extra runoff generated by the development does not require mitigation, or treatment prior to discharge into the existing storm system. Calculations for these pre and post development storm events are located in Appendix A.

DIVERSION SWALE AND CULVERT

The storm/drainage design for this subdivision includes a diversion swale that will capture the Southern Drainage Course and divert it around the property to the south as explained in the previous section. To allow the southern drainage course to discharge to its existing drainage path, a culvert is needed under the proposed road as shown in Exhibit 2. Both the swale and culvert will be analyzed for proper conveyance and capacities.

Diversion Swale Design

ITEM	BOTTOM WIDTH (ft)	SIDE SLOPE H:V (ft)	SLOPE (°/FT)	LENGTH (ft)	DEPTH (ft)
SWALE	1	1:1	0.07	260	1.0

Diversion Swale Calculation Results

ITEM	25-YEAR	100-YEAR
Area (ac)	6.04	6.04
Tc (min)	7	7
Rainfall Intensity (I)	2.57	3.41
Weighted C Coefficient	0.30	0.30
Q – FLOW (cfs)	4.66	6.17
D- Depth of Water (ft)	0.47	0.54
V – Velocity (fps)	6.74	7.42
T – Time (sec)	38.6	35.0

18-in Culvert Analysis Results

ITEM	25-YEAR	100-YEAR
S – SLOPE (ft/')	0.02	0.02
N – Manning's Number	0.012	0.012
Q – Flow (cfs)	4.66	6.17
V – Velocity (fps)	3.17	3.98
Capacity - Hw/D	0.80	0.97

Based on the analysis results, the swale and 18-in culvert as designed have the capacity to handle the flows generated by the offsite drainage basin for the 25 and 100 year storm events without overtopping or causing flooding conditions to the subdivision. Calculations for both elements are located in Appendix B.

STORM WATER COVEYANCE PIPE

As a critical element to stormwater conveyance and site drainage, the stormwater pipe sizes were checked to determine the correct size of the pipe to handle a design storm event and to check for high water conditions during a 100 year storm event.

The storm system will include two new storm manholes and several different area drains along the curb and gutter. The four segments that will be analyzed will be the runs of pipe between the storm manholes and to the furthest area drains.

8-in PVC Storm Conveyance Pipe – Drop Inlet #5 to Drop Inlet #3

S _{MIN} '/ft	N	Area (ac)	Q ₂₅ (cfs)	Q ₂₅ d/D	V ₂₅ (fps)	Q ₁₀₀ (cfs)	Q ₁₀₀ d/D	V ₁₀₀ (fps)
0.1	0.01	0.70	1.03	0.31	10.86	1.51	0.39	11.84

8-in PVC Storm Conveyance Pipe – Drop Inlet #3 to Drop Inlet #1

S _{MIN} '/ft	N	Area (ac)	Q ₂₅ (cfs)	Q ₂₅ d/D	V ₂₅ (fps)	Q ₁₀₀ (cfs)	Q ₁₀₀ d/D	V ₁₀₀ (fps)
0.1	0.01	1.71	2.51	0.28	13.79	3.69	0.34	15.52

8-in PVC Storm Conveyance Pipe – Drop Inlet #1 to Existing 12" STM Line

S _{MIN} '/ft	N	Area (ac)	Q ₂₅ (cfs)	Q ₂₅ d/D	V ₂₅ (fps)	Q ₁₀₀ (cfs)	Q ₁₀₀ d/D	V ₁₀₀ (fps)
0.1	0.01	3.51	4.93	0.40	16.79	7.16	0.50	18.14

Using the 25 year and 100 year storm event for measuring pipe conveyance, the storm water piping for the 17 lot subdivision meets and exceeds design requirements and shows the capacity to handle larger storm events. Calculations for pipe conveyances are located in Appendix C.

CONCLUSION

Using Rational Method for determining the storm runoff flows for The Sunset View 17 unit Subdivision the pre-development and post-development flows for the 25 year and 100 year storm events were determined. The storm system will handle the design storm event and won't cause flooding conditions for the 100 year storm event. The southern drainage course diversion swale and culvert were both analyzed for depth of flow and capacity and both are deemed acceptable. The results of these analyses supported the inputs for the swales, pipes, and culvert and demonstrated that the system is capable of handling a design storm event and has the capacity to handle larger storm events.

It is the recommendation of this report that the storm report for the 17 unit subdivision be approved as designed.

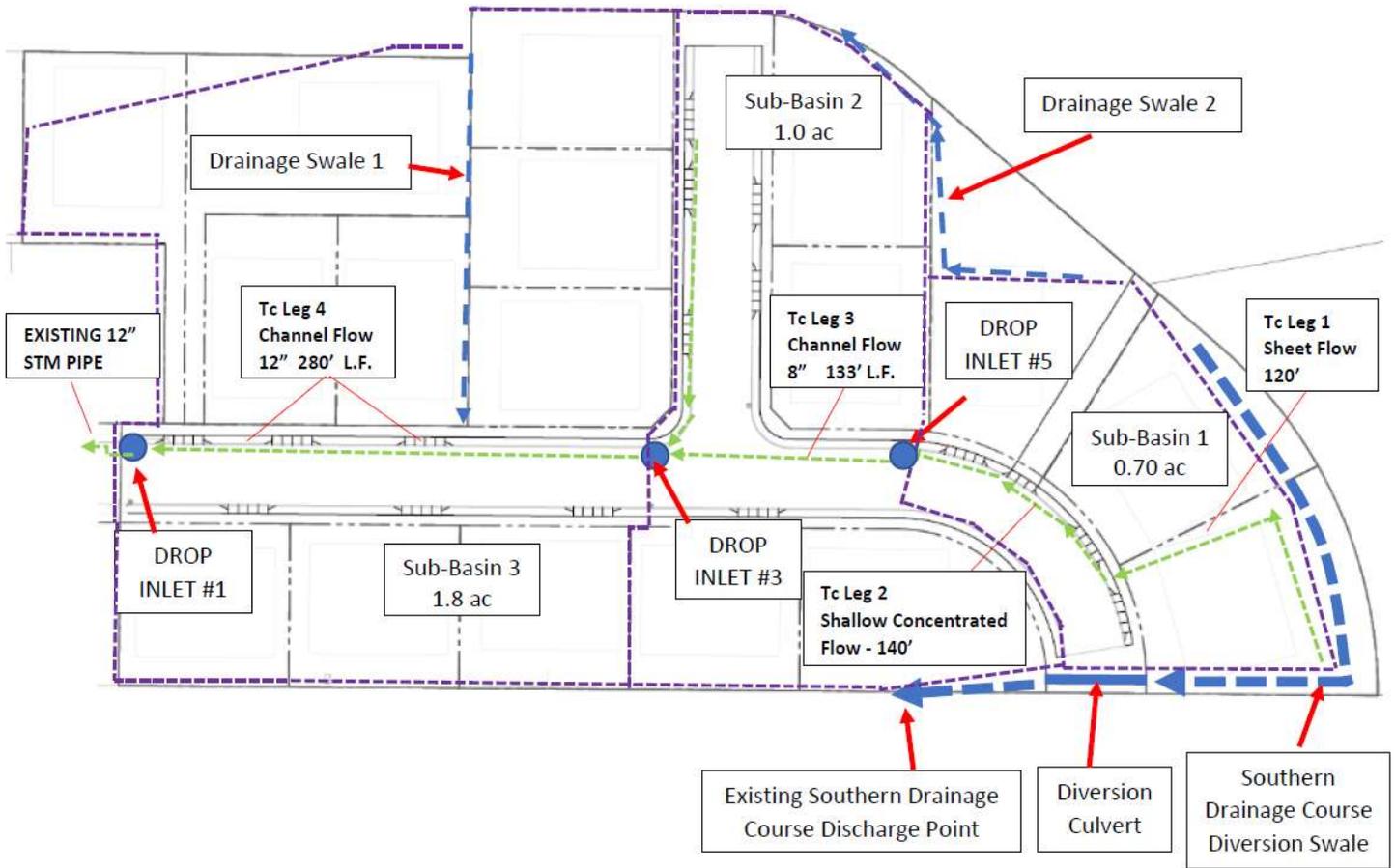


EXHIBIT 2

APPENDIX A:
Pre and Post Development Storm Events

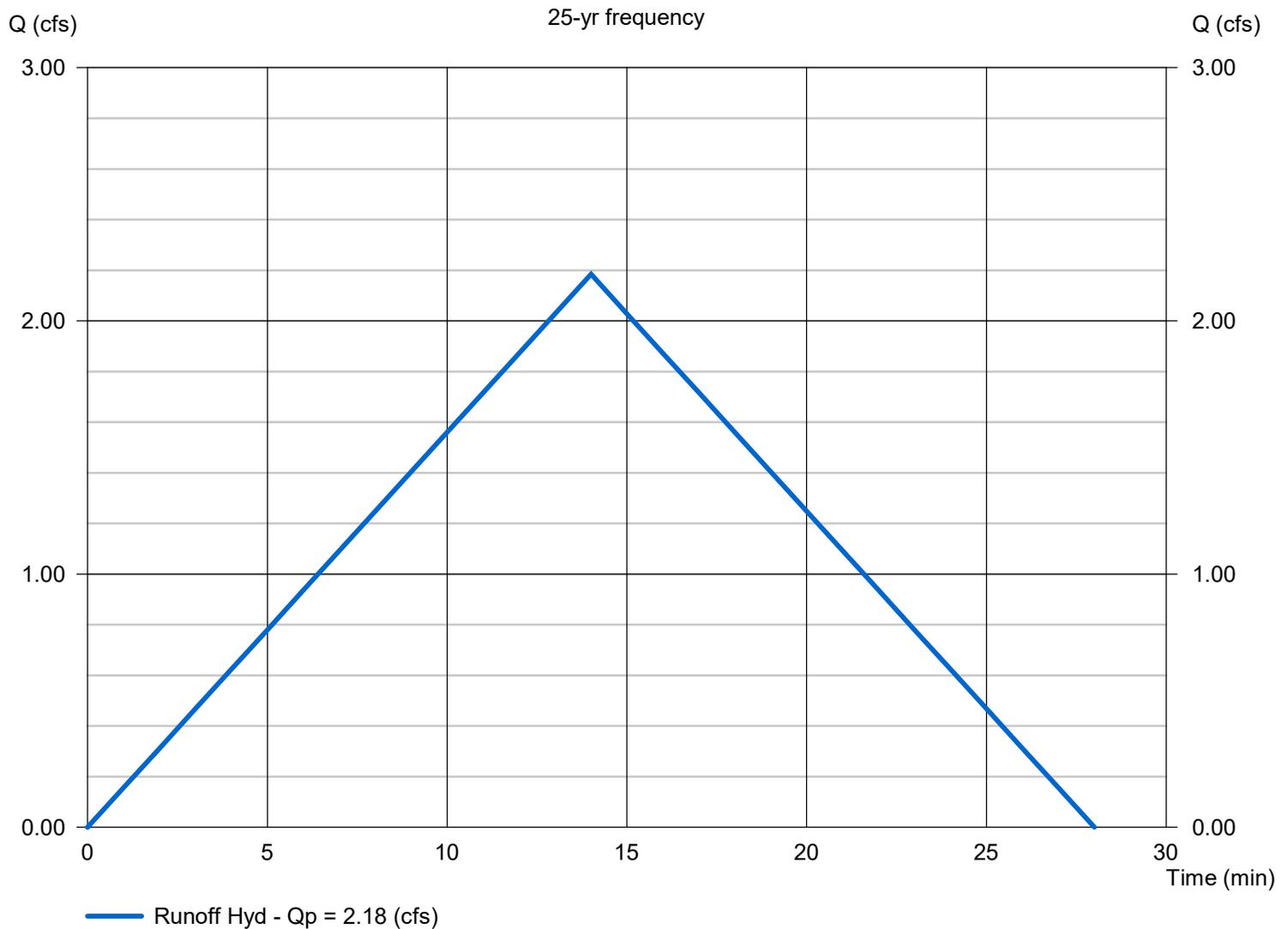
Hydrology Report

Pre Dev Discharge 25 yr

Hydrograph type	= Rational	Peak discharge (cfs)	= 2.184
Storm frequency (yrs)	= 25	Time interval (min)	= 1
Drainage area (ac)	= 3.800	Runoff coeff. (C)	= 0.3
Rainfall Inten (in/hr)	= 1.916	Tc by TR55 (min)	= 14
IDF Curve	= zone 5 IDF.IDF	Rec limb factor	= 1.00

Hydrograph Volume = 1,835 (cuft); 0.042 (acft)

Runoff Hydrograph



TR55 Tc Worksheet

Rational

Pre Dev Discharge 25 yr

<u>Description</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Totals</u>
Sheet Flow				
Manning's n-value	= 0.050	0.011	0.011	
Flow length (ft)	= 300.0	0.0	0.0	
Two-year 24-hr precip. ((in))	= 3.30	0.00	0.00	
Land slope (%)	= 1.00	0.00	0.00	
Travel Time (min)	= 12.73	+ 0.00	+ 0.00	= 12.73
Shallow Concentrated Flow				
Flow length (ft)	= 420.00	0.00	0.00	
Watercourse slope (%)	= 11.00	0.00	0.00	
Surface description	= Unpaved	Paved	Paved	
Average velocity (ft/s)	= 5.35	0.00	0.00	
Travel Time (min)	= 1.31	+ 0.00	+ 0.00	= 1.31
Channel Flow				
X sectional flow area ((sqft))	= 0.00	0.00	0.00	
Wetted perimeter ((ft))	= 0.00	0.00	0.00	
Channel slope (%)	= 0.00	0.00	0.00	
Manning's n-value	= 0.011	0.015	0.015	
Velocity (ft/s)	= 0.00	0.00	0.00	
Flow length (ft)	= 0.0	0.0	0.0	
Travel Time (min)	= 0	+ 0	+ 0	= 0.00
Total Travel Time, Tc				14.00 min

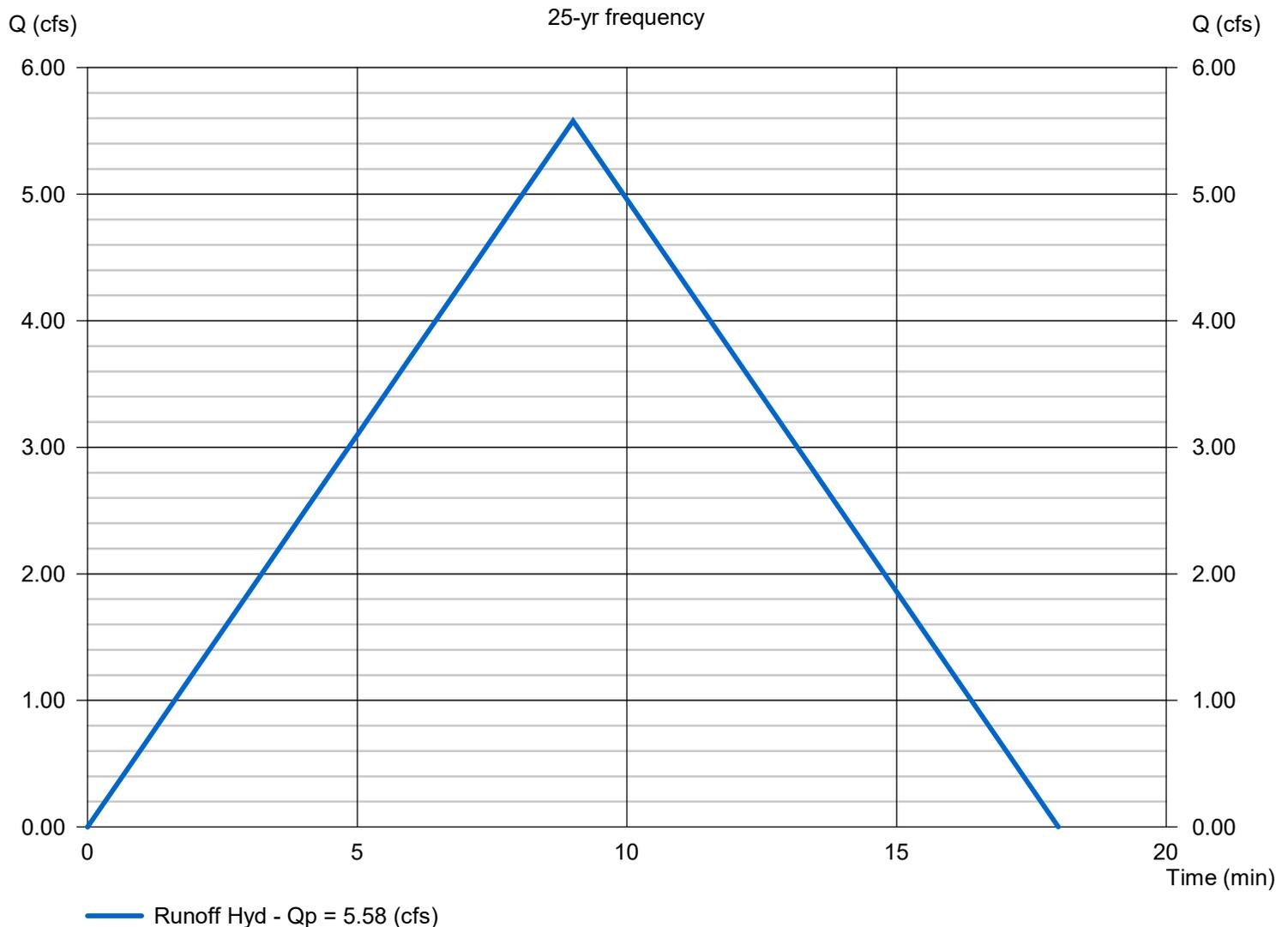
Hydrology Report

Post-Dev Discharge 25 yr

Hydrograph type	= Rational	Peak discharge (cfs)	= 5.578
Storm frequency (yrs)	= 25	Time interval (min)	= 1
Drainage area (ac)	= 3.800	Runoff coeff. (C)	= 0.63
Rainfall Inten (in/hr)	= 2.330	Tc by TR55 (min)	= 9
IDF Curve	= zone 5 IDF.IDF	Rec limb factor	= 1.00

Hydrograph Volume = 3,012 (cuft); 0.069 (acft)

Runoff Hydrograph



TR55 Tc Worksheet

Rational

Post-Dev Discharge 25 yr

<u>Description</u>	<u>A</u>		<u>B</u>		<u>C</u>		<u>Totals</u>
Sheet Flow							
Manning's n-value	= 0.050		0.011		0.011		
Flow length (ft)	= 120.0		0.0		0.0		
Two-year 24-hr precip. ((in))	= 3.10		0.00		0.00		
Land slope (%)	= 0.50		0.00		0.00		
Travel Time (min)	= 8.33	+	0.00	+	0.00	=	8.33
Shallow Concentrated Flow							
Flow length (ft)	= 140.00		0.00		0.00		
Watercourse slope (%)	= 10.00		0.00		0.00		
Surface description	= Paved		Paved		Paved		
Average velocity (ft/s)	= 6.43		0.00		0.00		
Travel Time (min)	= 0.36	+	0.00	+	0.00	=	0.36
Channel Flow							
X sectional flow area ((sqft))	= 0.35		0.79		0.00		
Wetted perimeter ((ft))	= 2.09		3.14		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.011		0.011		0.015		
Velocity (ft/s)	= 0.00		0.00		0.00		
Flow length (ft)	= 125.0		300.0		0.0		
Travel Time (min)	= ∞0.00	+	∞0.00	+	0	=	inf.00
Total Travel Time, Tc							9.00 min

APPENDIX B:
Stormwater Pipe Conveyances

Channel Report

25 yr- Post Dev- Drop Inlet #5 to #3

Circular

Diameter (ft) = 0.67

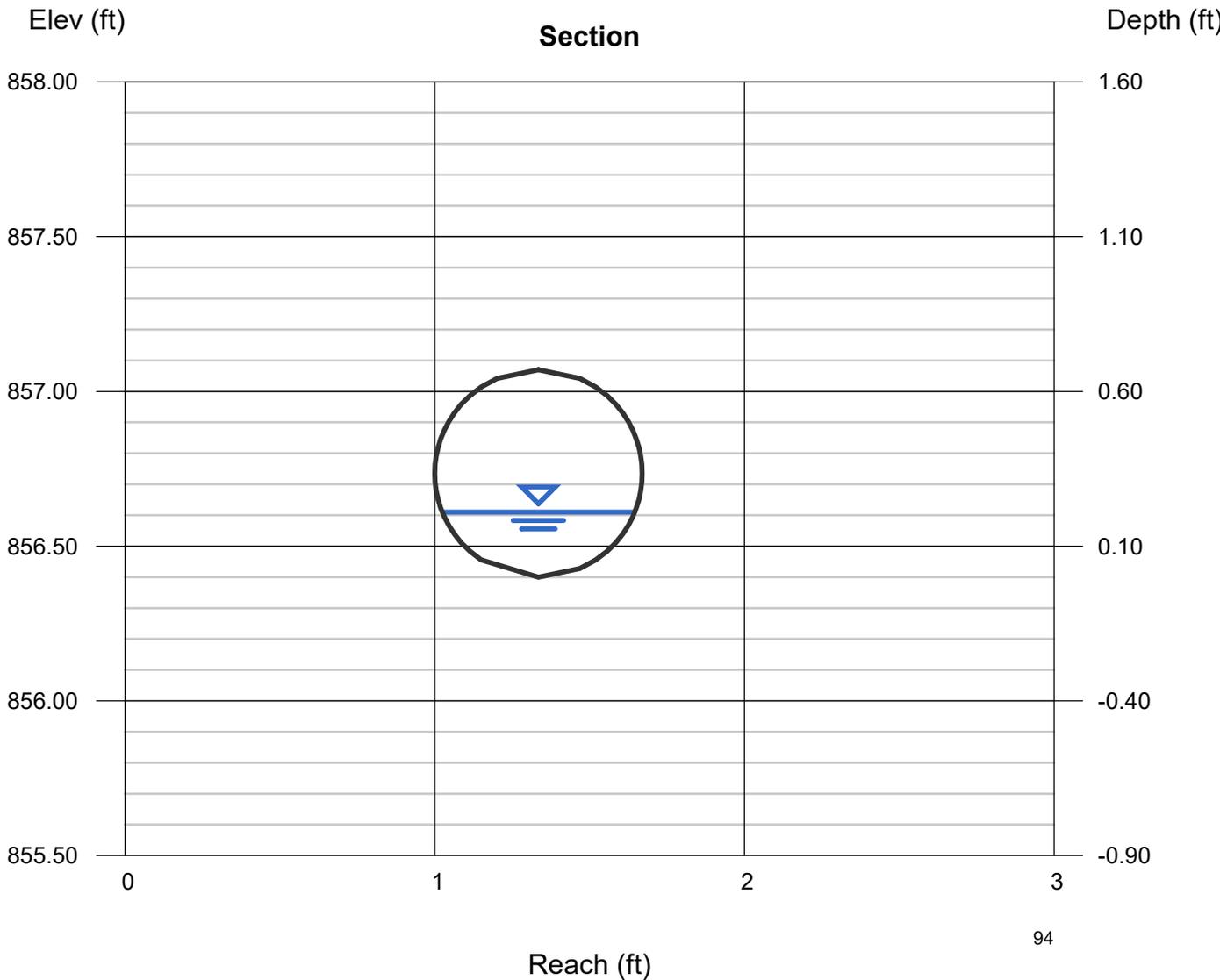
Invert Elev (ft) = 856.40
Slope (%) = 10.00
N-Value = 0.010

Highlighted

Depth (ft) = 0.21
Q (cfs) = 1.030
Area (sqft) = 0.09
Velocity (ft/s) = 10.86
Wetted Perim (ft) = 0.80
Crit Depth, Yc (ft) = 0.49
Top Width (ft) = 0.62
EGL (ft) = 2.04

Calculations

Compute by: Known Q
Known Q (cfs) = 1.03



Channel Report

100 yr- Post Dev- Drop Inlet #5 to #3

Circular

Diameter (ft) = 0.67

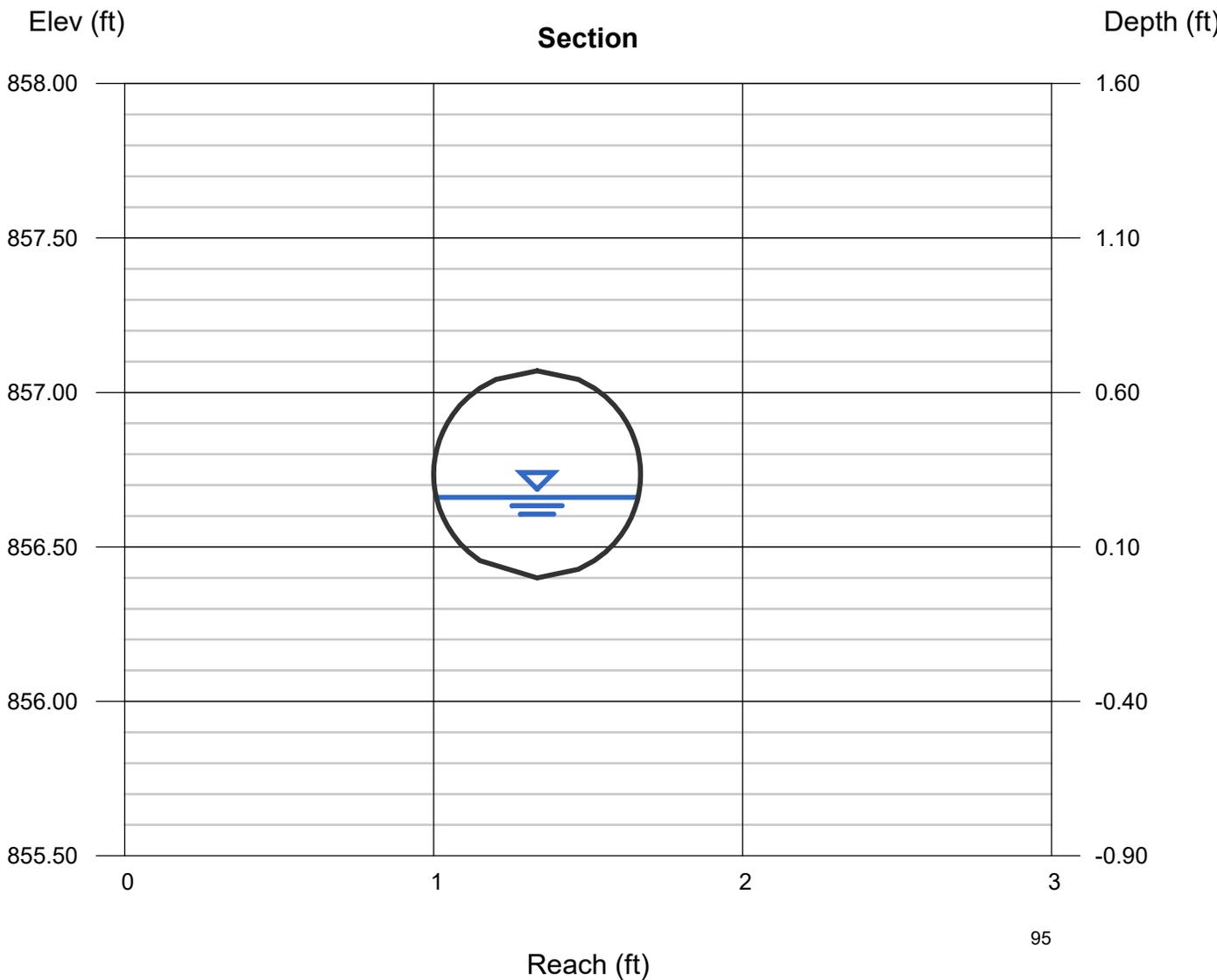
Invert Elev (ft) = 856.40
Slope (%) = 10.00
N-Value = 0.010

Highlighted

Depth (ft) = 0.26
Q (cfs) = 1.510
Area (sqft) = 0.13
Velocity (ft/s) = 11.84
Wetted Perim (ft) = 0.90
Crit Depth, Yc (ft) = 0.58
Top Width (ft) = 0.65
EGL (ft) = 2.44

Calculations

Compute by: Known Q
Known Q (cfs) = 1.51



Channel Report

25 yr- Post Dev- Drop Inlet #3 to #1

Circular

Diameter (ft) = 1.00

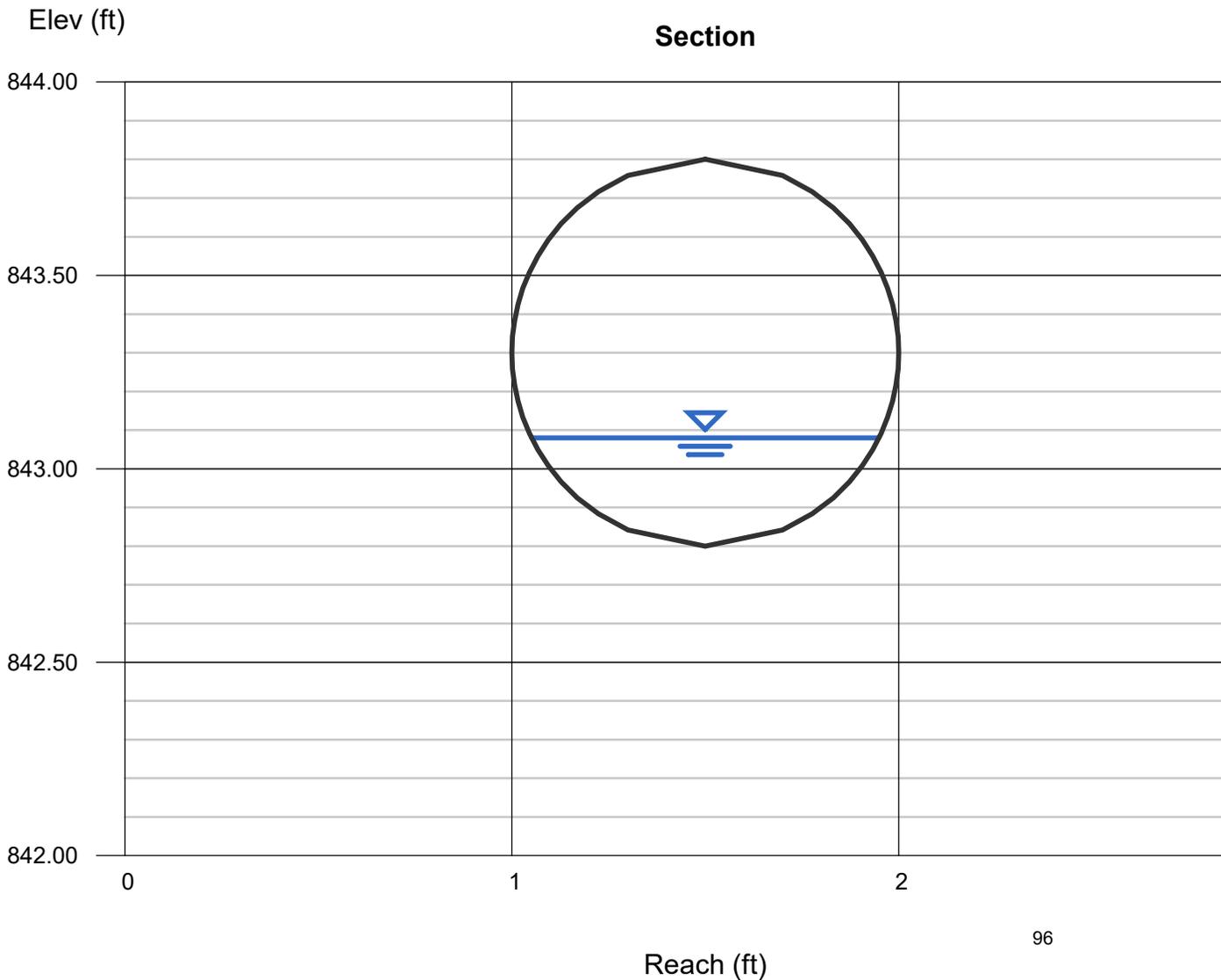
Invert Elev (ft) = 842.80
Slope (%) = 10.00
N-Value = 0.010

Highlighted

Depth (ft) = 0.28
Q (cfs) = 2.510
Area (sqft) = 0.18
Velocity (ft/s) = 13.79
Wetted Perim (ft) = 1.12
Crit Depth, Yc (ft) = 0.68
Top Width (ft) = 0.90
EGL (ft) = 3.24

Calculations

Compute by: Known Q
Known Q (cfs) = 2.51



Channel Report

100 yr- Post Dev- Drop Inlet #3 to #1

Circular

Diameter (ft) = 1.00

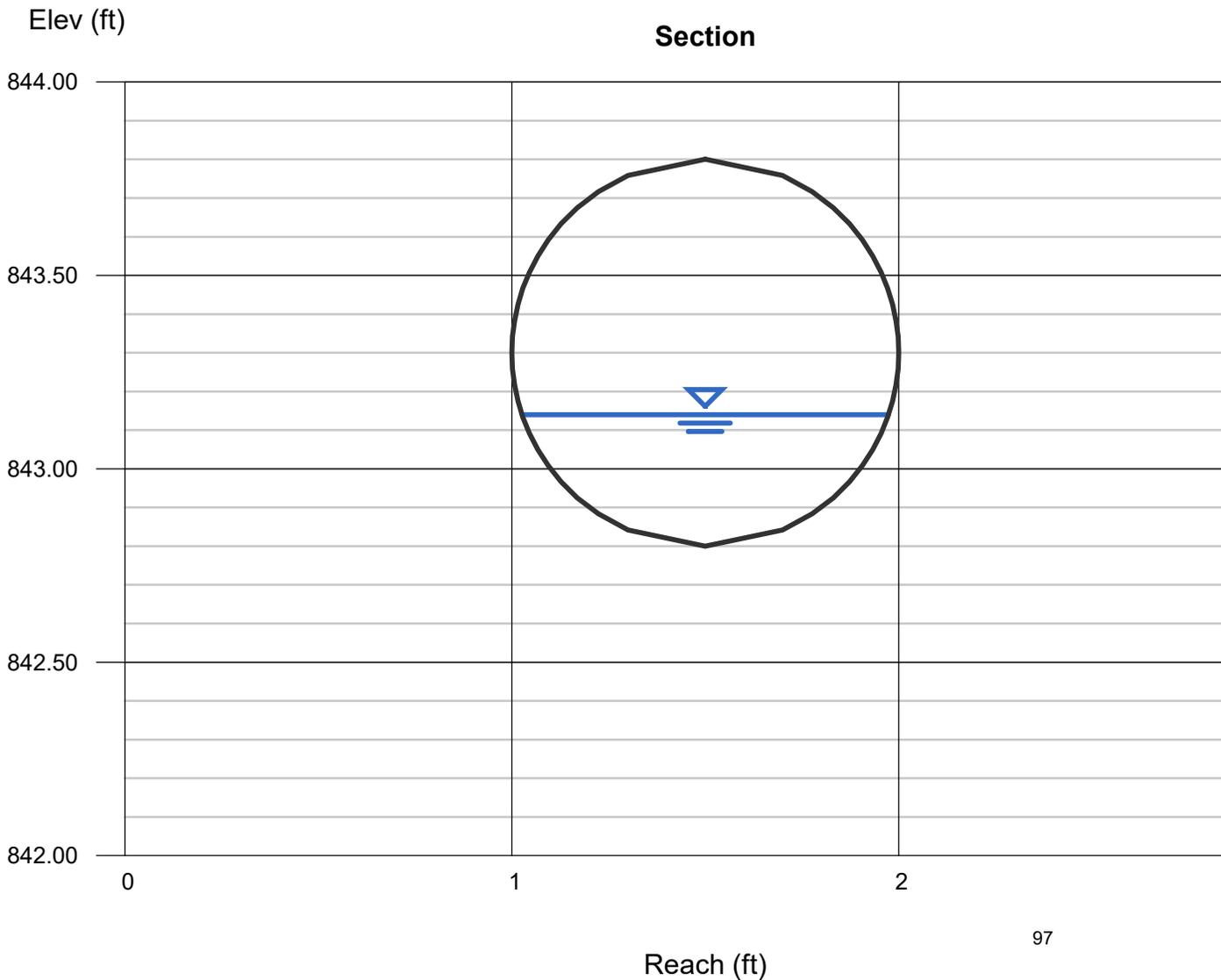
Invert Elev (ft) = 842.80
Slope (%) = 10.00
N-Value = 0.010

Highlighted

Depth (ft) = 0.34
Q (cfs) = 3.690
Area (sqft) = 0.24
Velocity (ft/s) = 15.52
Wetted Perim (ft) = 1.25
Crit Depth, Yc (ft) = 0.82
Top Width (ft) = 0.95
EGL (ft) = 4.09

Calculations

Compute by: Known Q
Known Q (cfs) = 3.69



Channel Report

25 yr- Post Dev- Drop Inlet #1 to Ex. 12in ST Line

Circular

Diameter (ft) = 1.00

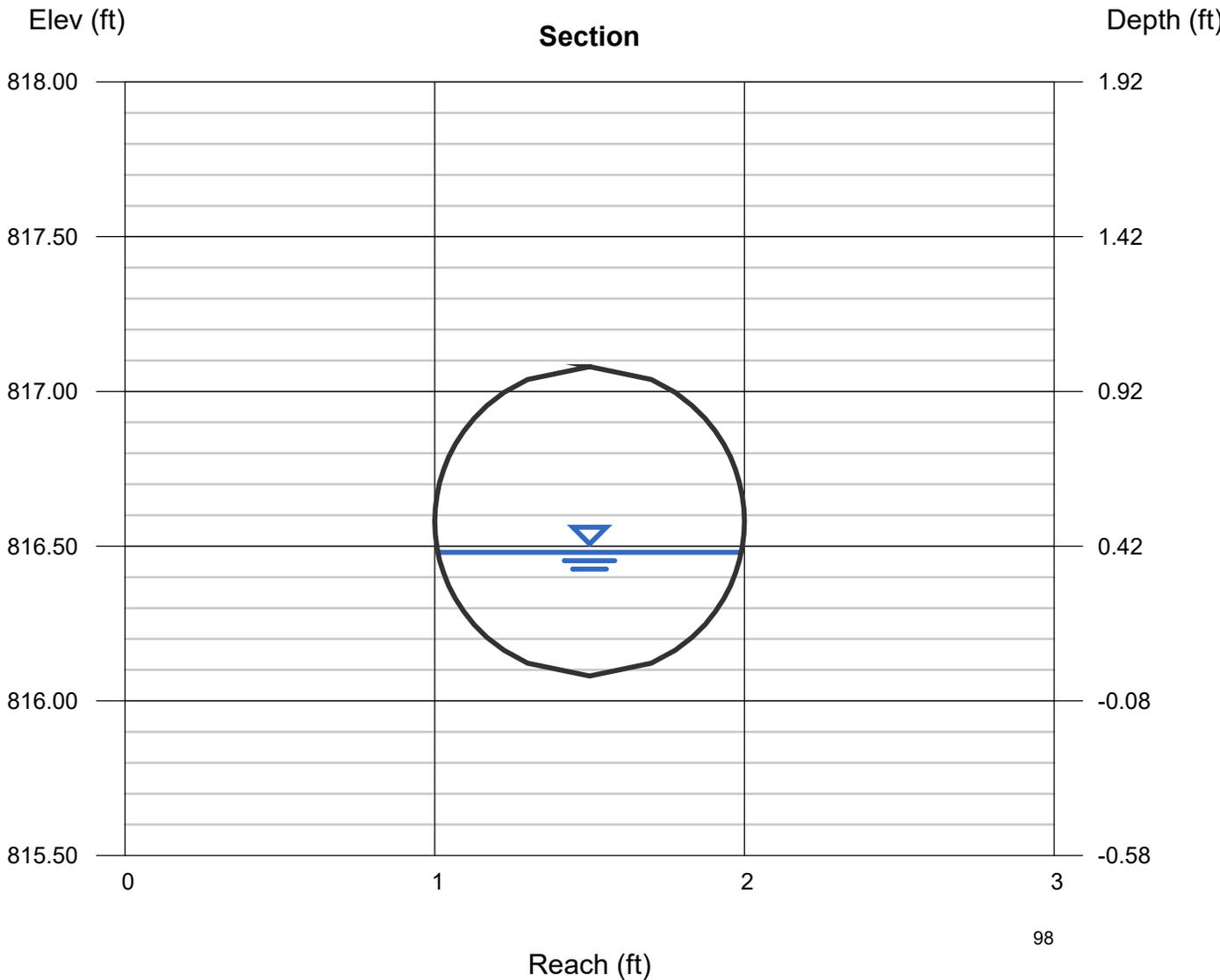
Invert Elev (ft) = 816.08
Slope (%) = 10.00
N-Value = 0.010

Highlighted

Depth (ft) = 0.40
Q (cfs) = 4.930
Area (sqft) = 0.29
Velocity (ft/s) = 16.79
Wetted Perim (ft) = 1.37
Crit Depth, Yc (ft) = 0.92
Top Width (ft) = 0.98
EGL (ft) = 4.78

Calculations

Compute by: Known Q
Known Q (cfs) = 4.93



Channel Report

100 yr- Post Dev- Drop Inlet #1 to Ex. 12in ST Line

Circular

Diameter (ft) = 1.00

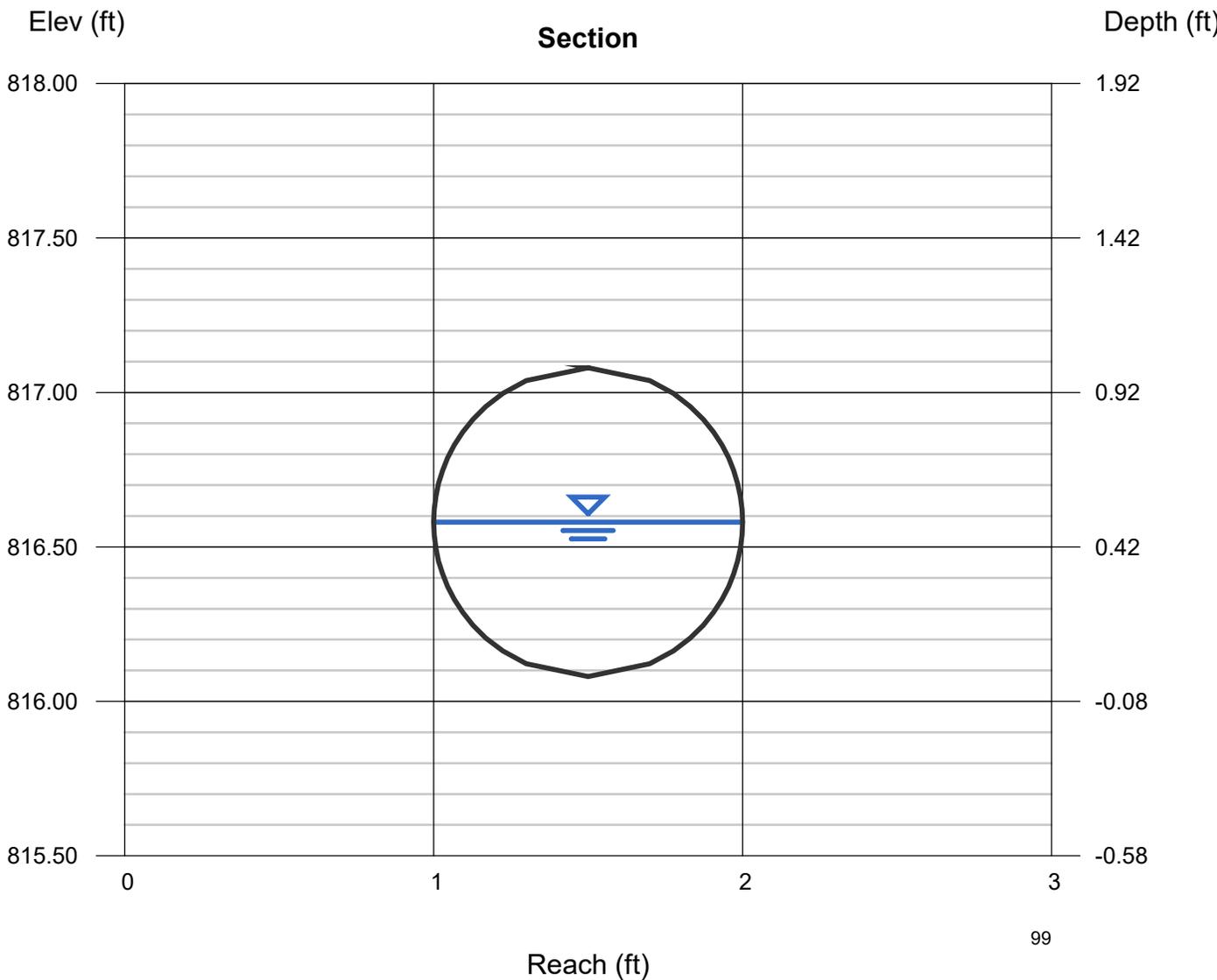
Invert Elev (ft) = 816.08
Slope (%) = 10.00
N-Value = 0.010

Highlighted

Depth (ft) = 0.50
Q (cfs) = 7.160
Area (sqft) = 0.39
Velocity (ft/s) = 18.14
Wetted Perim (ft) = 1.57
Crit Depth, Yc (ft) = 0.98
Top Width (ft) = 1.00
EGL (ft) = 5.61

Calculations

Compute by: Known Q
Known Q (cfs) = 7.16



APPENDIX C:
Additional Onsite Flow Calculations

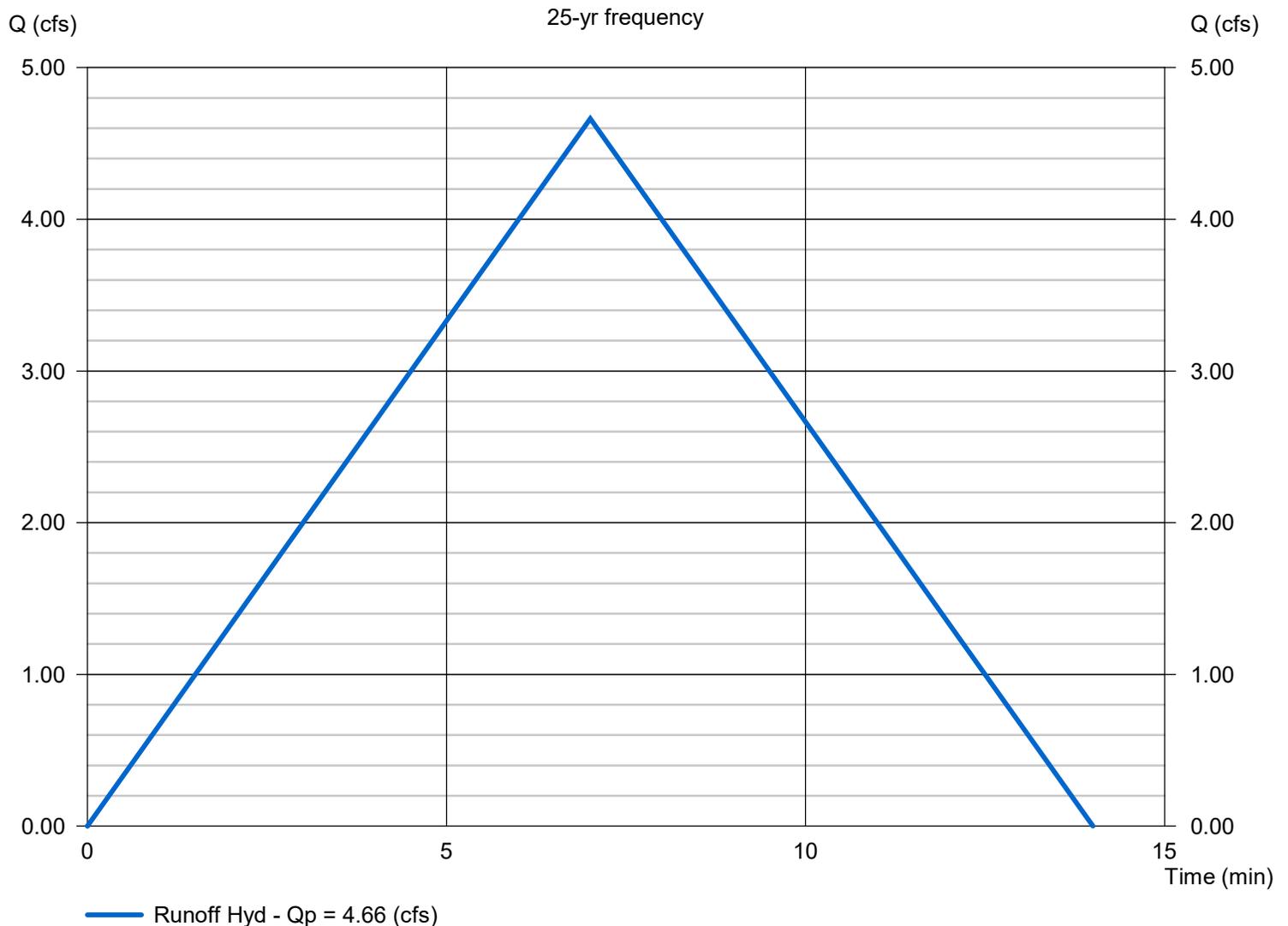
Hydrology Report

Southern Surchage 25 year

Hydrograph type	= Rational	Peak discharge (cfs)	= 4.664
Storm frequency (yrs)	= 25	Time interval (min)	= 1
Drainage area (ac)	= 6.040	Runoff coeff. (C)	= 0.3
Rainfall Inten (in/hr)	= 2.574	Tc by TR55 (min)	= 7
IDF Curve	= zone 5 IDF.IDF	Rec limb factor	= 1.00

Hydrograph Volume = 1,959 (cuft); 0.045 (acft)

Runoff Hydrograph



TR55 Tc Worksheet

Rational

Southern Surcharge 25 year

<u>Description</u>	<u>A</u>		<u>B</u>		<u>C</u>		<u>Totals</u>	
Sheet Flow								
Manning's n-value	= 0.075		0.011		0.011			
Flow length (ft)	= 300.0		0.0		0.0			
Two-year 24-hr precip. ((in))	= 3.00		0.00		0.00			
Land slope (%)	= 14.00		0.00		0.00			
Travel Time (min)	= 6.43	+	0.00	+	0.00	=	6.43	
Shallow Concentrated Flow								
Flow length (ft)	= 290.00		0.00		0.00			
Watercourse slope (%)	= 12.00		0.00		0.00			
Surface description	= Unpaved		Paved		Paved			
Average velocity (ft/s)	= 5.59		0.00		0.00			
Travel Time (min)	= 0.86	+	0.00	+	0.00	=	0.86	
Channel Flow								
X sectional flow area ((sqft))	= 0.00		0.00		0.00			
Wetted perimeter ((ft))	= 0.00		0.00		0.00			
Channel slope (%)	= 0.00		0.00		0.00			
Manning's n-value	= 0.015		0.015		0.015			
Velocity (ft/s)	= 0.00		0.00		0.00			
Flow length (ft)	= 0.0		0.0		0.0			
Travel Time (min)	= 0	+	0	+	0	=	0.00	
Total Travel Time, Tc							=	7.00 min

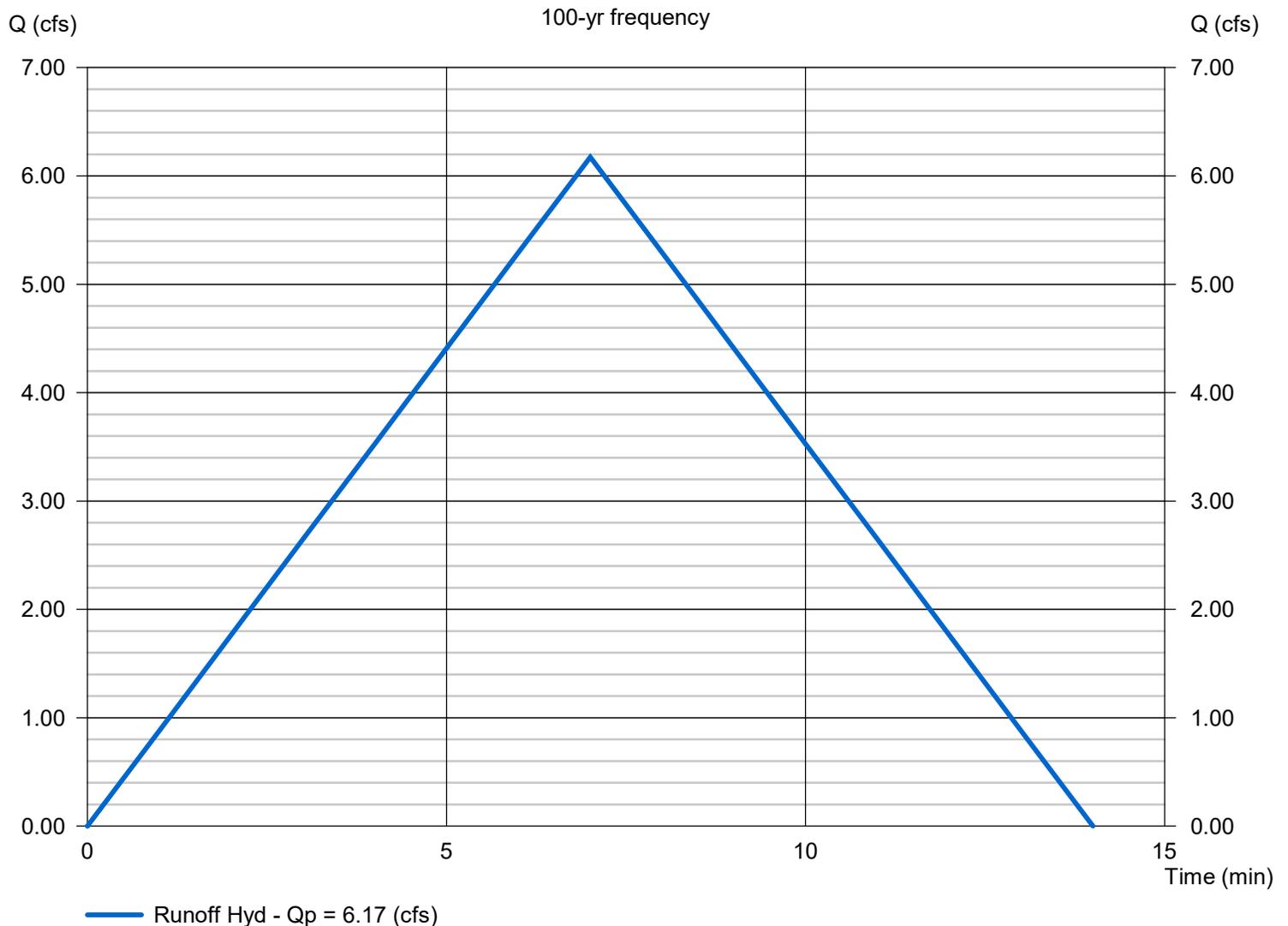
Hydrology Report

Southern Surchage 100 year

Hydrograph type	= Rational	Peak discharge (cfs)	= 6.174
Storm frequency (yrs)	= 100	Time interval (min)	= 1
Drainage area (ac)	= 6.040	Runoff coeff. (C)	= 0.3
Rainfall Inten (in/hr)	= 3.408	Tc by TR55 (min)	= 7
IDF Curve	= zone 5 IDF.IDF	Rec limb factor	= 1.00

Hydrograph Volume = 2,593 (cuft); 0.060 (acft)

Runoff Hydrograph



TR55 Tc Worksheet

Rational

Southern Surcharge 100 year

<u>Description</u>	<u>A</u>		<u>B</u>		<u>C</u>		<u>Totals</u>	
Sheet Flow								
Manning's n-value	= 0.075		0.011		0.011			
Flow length (ft)	= 300.0		0.0		0.0			
Two-year 24-hr precip. ((in))	= 3.00		0.00		0.00			
Land slope (%)	= 14.00		0.00		0.00			
Travel Time (min)	= 6.43	+	0.00	+	0.00	=	6.43	
Shallow Concentrated Flow								
Flow length (ft)	= 290.00		0.00		0.00			
Watercourse slope (%)	= 12.00		0.00		0.00			
Surface description	= Unpaved		Paved		Paved			
Average velocity (ft/s)	= 5.59		0.00		0.00			
Travel Time (min)	= 0.86	+	0.00	+	0.00	=	0.86	
Channel Flow								
X sectional flow area ((sqft))	= 0.00		0.00		0.00			
Wetted perimeter ((ft))	= 0.00		0.00		0.00			
Channel slope (%)	= 0.00		0.00		0.00			
Manning's n-value	= 0.015		0.015		0.015			
Velocity (ft/s)	= 0.00		0.00		0.00			
Flow length (ft)	= 0.0		0.0		0.0			
Travel Time (min)	= 0	+	0	+	0	=	0.00	
Total Travel Time, Tc							=	7.00 min

Channel Report

Drainage Swale South 25 year

Trapezoidal

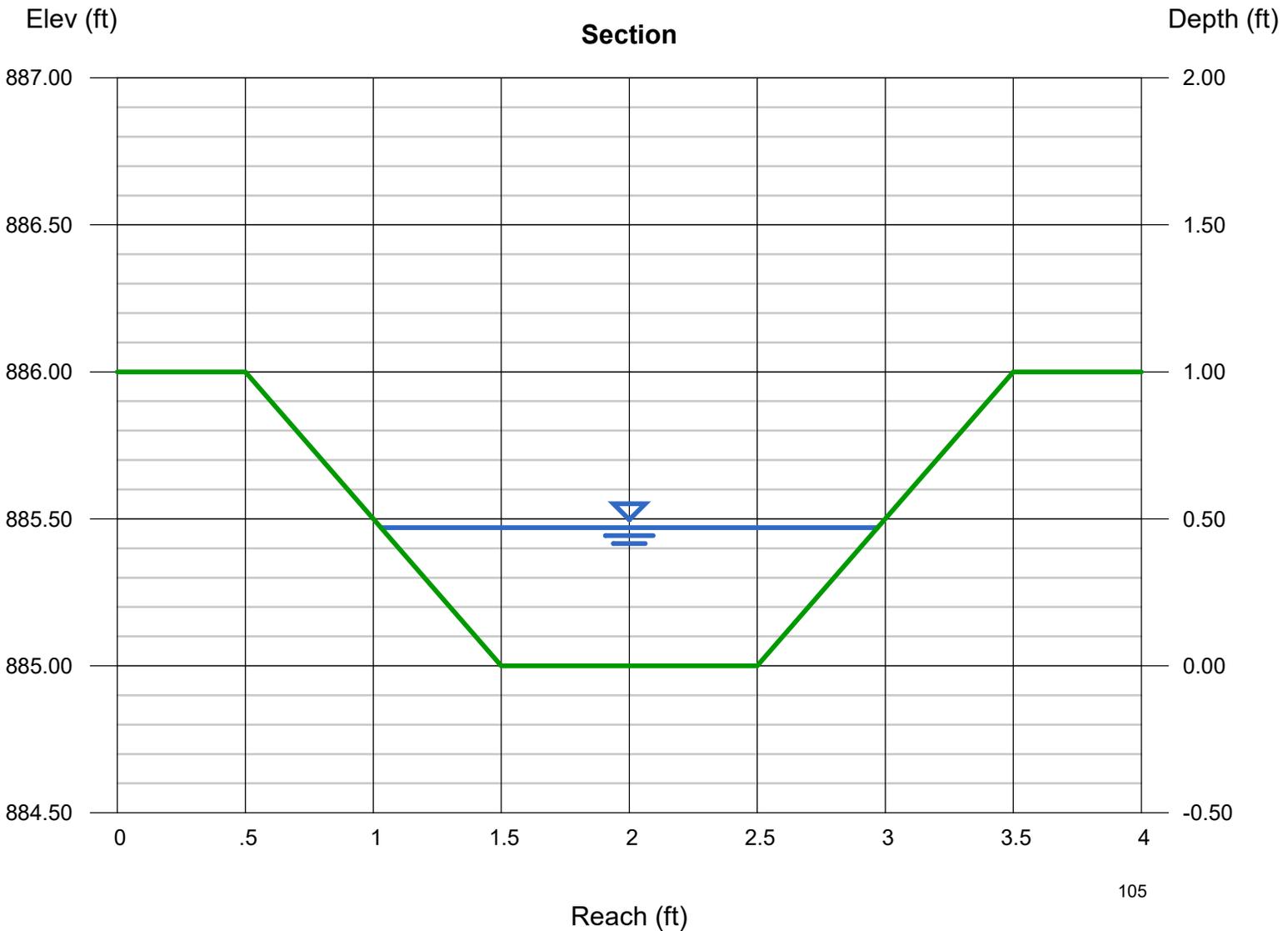
Bottom Width (ft) = 1.00
Side Slopes (z:1) = 1.00, 1.00
Total Depth (ft) = 1.00
Invert Elev (ft) = 885.00
Slope (%) = 7.00
N-Value = 0.025

Highlighted

Depth (ft) = 0.47
Q (cfs) = 4.660
Area (sqft) = 0.69
Velocity (ft/s) = 6.74
Wetted Perim (ft) = 2.33
Crit Depth, Yc (ft) = 0.70
Top Width (ft) = 1.94
EGL (ft) = 1.18

Calculations

Compute by: Known Q
Known Q (cfs) = 4.66



Channel Report

Drainage Swale South 100 year

Trapezoidal

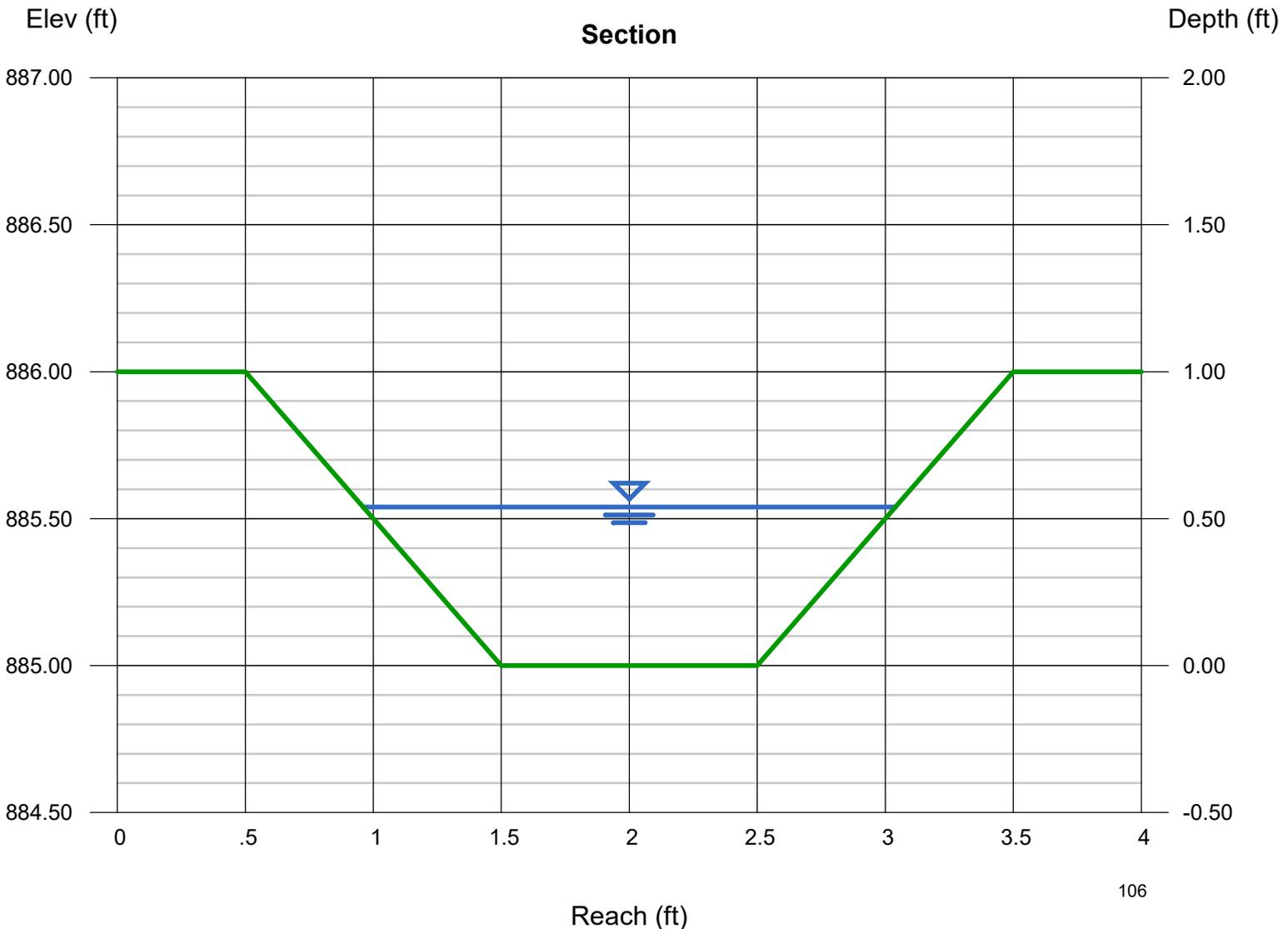
Bottom Width (ft) = 1.00
Side Slopes (z:1) = 1.00, 1.00
Total Depth (ft) = 1.00
Invert Elev (ft) = 885.00
Slope (%) = 7.00
N-Value = 0.025

Highlighted

Depth (ft) = 0.54
Q (cfs) = 6.170
Area (sqft) = 0.83
Velocity (ft/s) = 7.42
Wetted Perim (ft) = 2.53
Crit Depth, Yc (ft) = 0.81
Top Width (ft) = 2.08
EGL (ft) = 1.40

Calculations

Compute by: Known Q
Known Q (cfs) = 6.17



Culvert Report

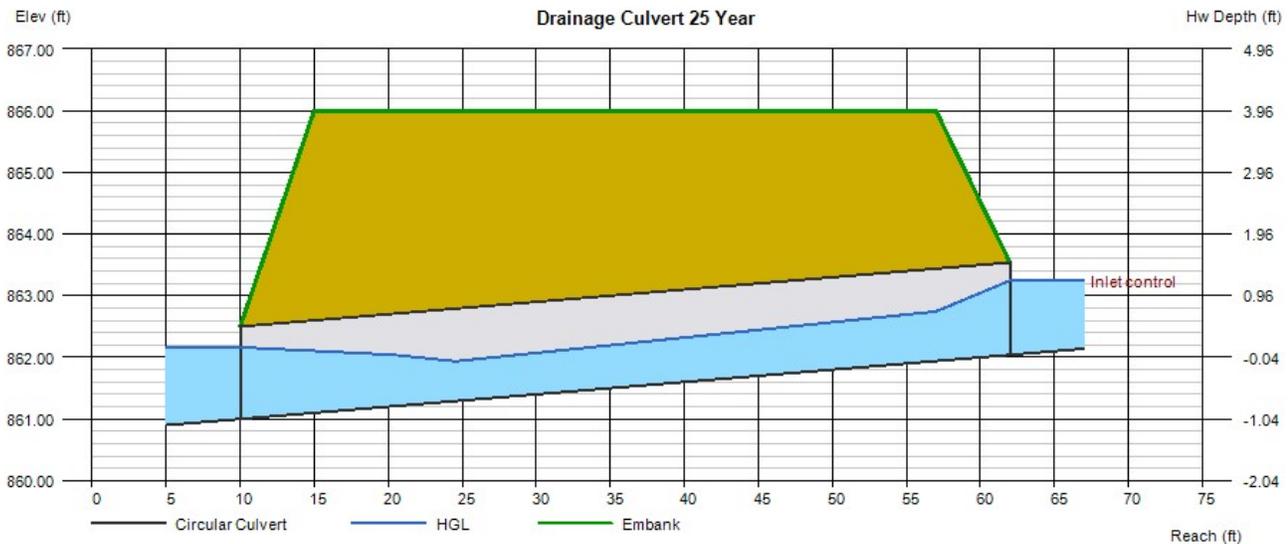
Drainage Culvert 25 Year

Invert Elev Dn (ft)	=	861.00
Pipe Length (ft)	=	52.00
Slope (%)	=	2.00
Invert Elev Up (ft)	=	862.04
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Corrugate Metal Pipe
Culvert Entrance	=	Headwall
Coeff. K,M,c,Y,k	=	0.0078, 2, 0.0379, 0.69, 0.5

Embankment	
Top Elevation (ft)	= 866.00
Top Width (ft)	= 42.00
Crest Width (ft)	= 10.00

Calculations	
Qmin (cfs)	= 4.66
Qmax (cfs)	= 6.17
Tailwater Elev (ft)	= (dc+D)/2

Highlighted	
Qtotal (cfs)	= 4.66
Qpipe (cfs)	= 4.66
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 3.17
Veloc Up (ft/s)	= 4.66
HGL Dn (ft)	= 862.16
HGL Up (ft)	= 862.87
Hw Elev (ft)	= 863.24
Hw/D (ft)	= 0.80
Flow Regime	= Inlet Control



Culvert Report

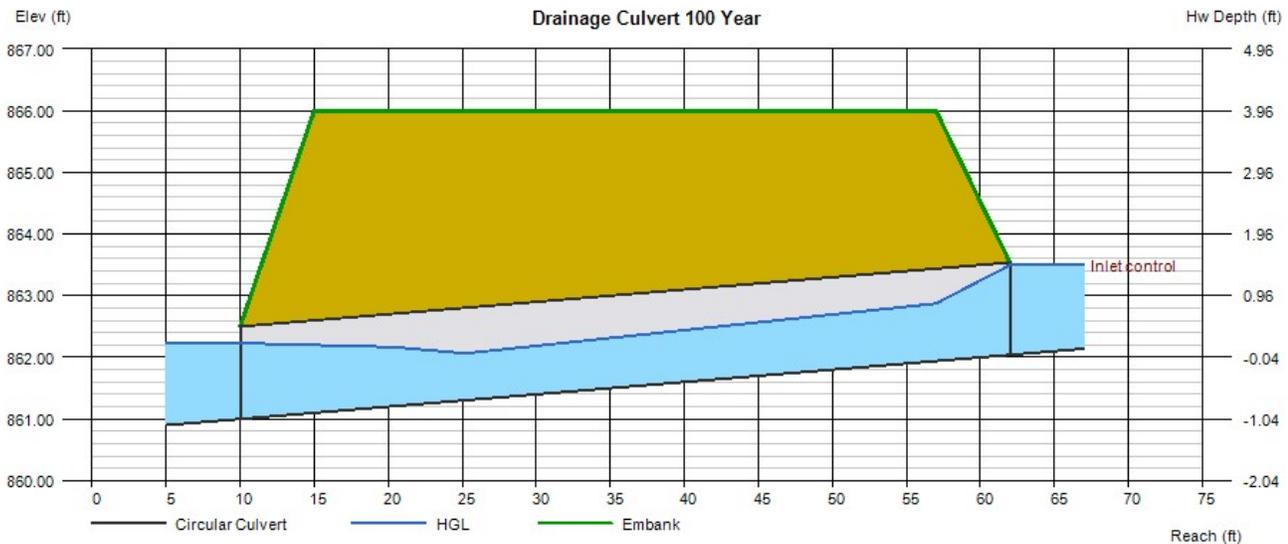
Drainage Culvert 100 Year

Invert Elev Dn (ft)	= 861.00
Pipe Length (ft)	= 52.00
Slope (%)	= 2.00
Invert Elev Up (ft)	= 862.04
Rise (in)	= 18.0
Shape	= Circular
Span (in)	= 18.0
No. Barrels	= 1
n-Value	= 0.012
Culvert Type	= Circular Corrugate Metal Pipe
Culvert Entrance	= Headwall
Coeff. K,M,c,Y,k	= 0.0078, 2, 0.0379, 0.69, 0.5

Embankment	
Top Elevation (ft)	= 866.00
Top Width (ft)	= 42.00
Crest Width (ft)	= 10.00

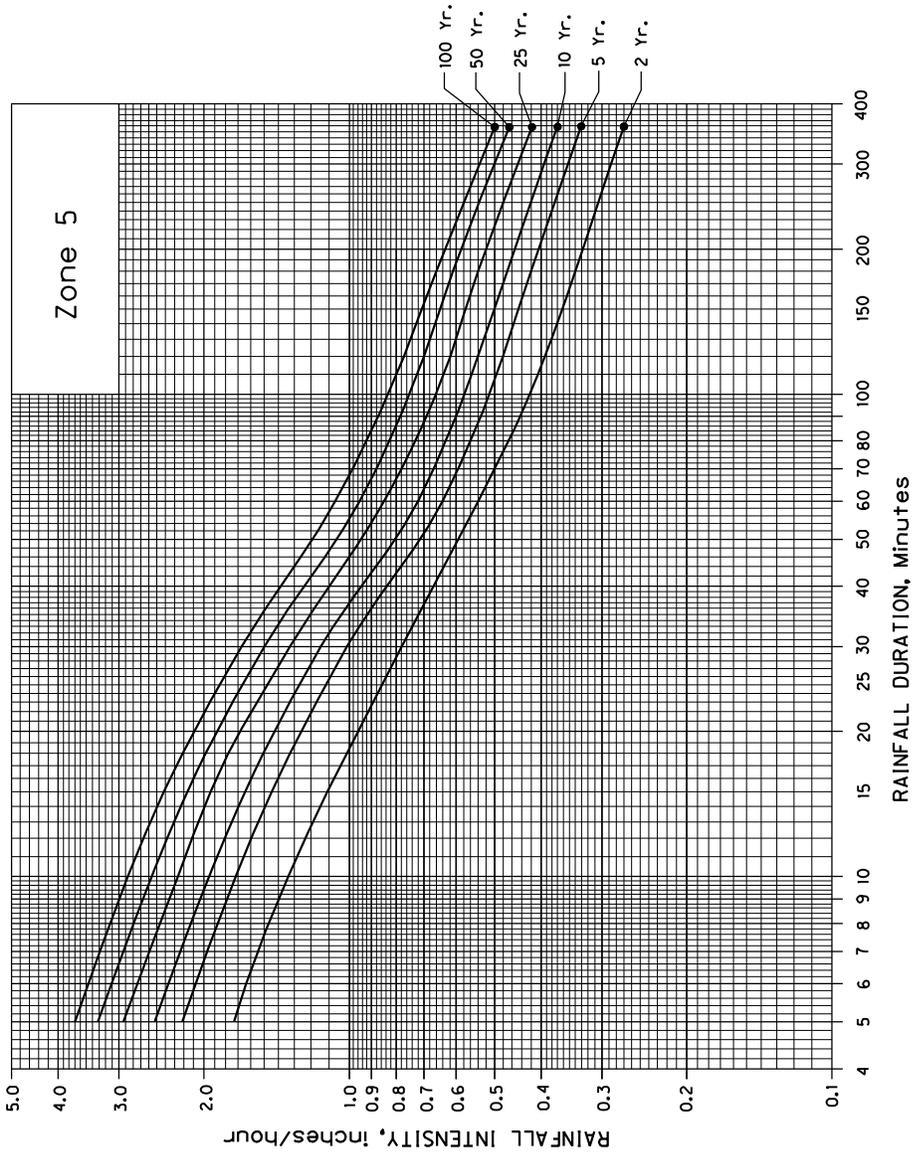
Calculations	
Qmin (cfs)	= 6.17
Qmax (cfs)	= 6.17
Tailwater Elev (ft)	= (dc+D)/2

Highlighted	
Qtotal (cfs)	= 6.17
Qpipe (cfs)	= 6.17
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 3.98
Veloc Up (ft/s)	= 5.17
HGL Dn (ft)	= 862.23
HGL Up (ft)	= 863.00
Hw Elev (ft)	= 863.49
Hw/D (ft)	= 0.97
Flow Regime	= Inlet Control



APPENDIX D:
Supplemental Material

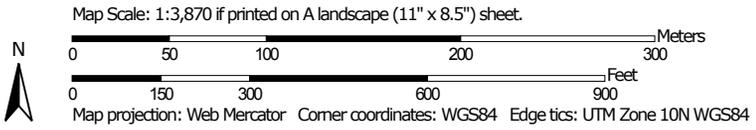
RAINFALL INTENSITY - DURATION - RECURRENCE INTERVAL CURVES



Soil Map—Lane County Area, Oregon



Soil Map may not be valid at this scale.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lane County Area, Oregon
 Survey Area Data: Version 15, Sep 18, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 18, 2013—Sep 9, 2016

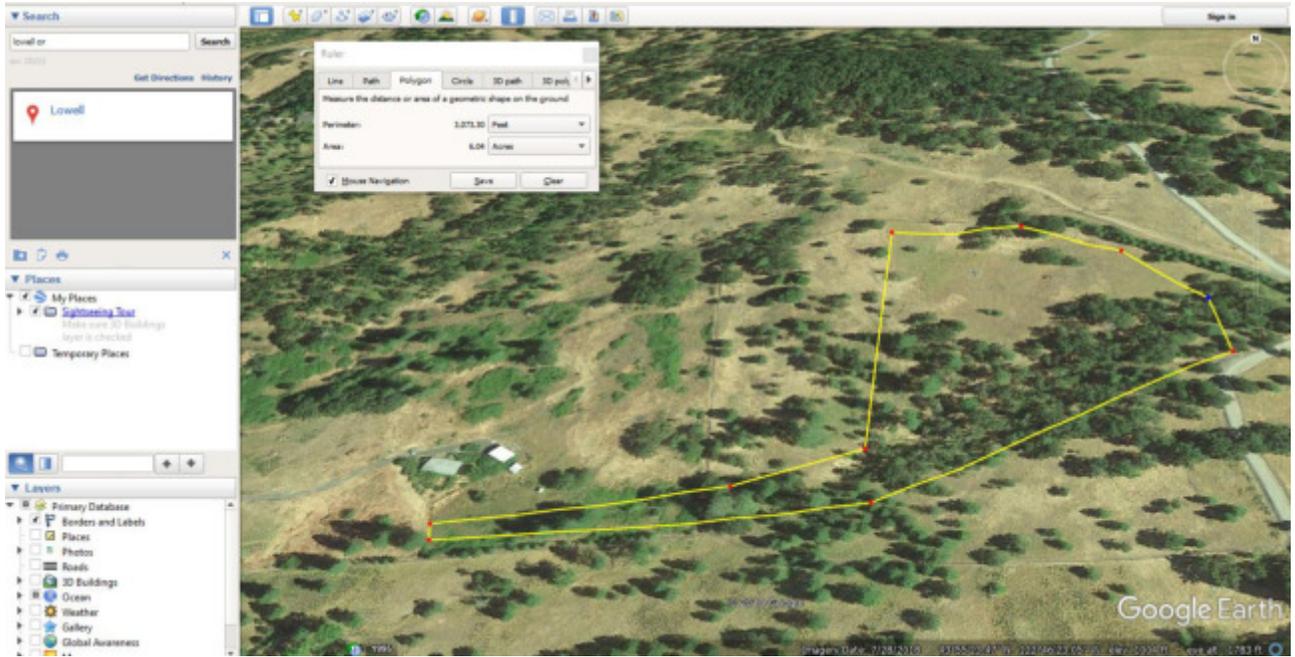
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
43E	Dixonville-Philomath-Hazelair complex, 12 to 35 percent slopes	32.1	42.6%
52B	Hazelair silty clay loam, 2 to 7 percent slopes	18.4	24.4%
52D	Hazelair silty clay loam, 7 to 20 percent slopes	18.6	24.7%
138G	Witzel very cobbly loam, 30 to 75 percent slopes	6.3	8.4%
Totals for Area of Interest		75.5	100.0%







ATTACHMENT D

Response Page

Department of State Lands (DSL) WN#*
WN2019-0625

Responsible Jurisdiction

Staff Contact Henry Hearley	Jurisdiction Type City	Municipality Lowell
Local case file # LU 2019 04	County Lane	

Activity Location

Township 19S	Range 01W	Section 14	QQ section AD	Tax Lot(s) 5000
------------------------	---------------------	----------------------	-------------------------	---------------------------

Street Address
 Address Line 2
 City
 Postal / Zip Code

State / Province / Region
 Country
 Lane

Latitude
43.922306

Longitude
-122.776021

Wetland/Waterway/Other Water Features

There are/may be wetlands, waterways or other water features on the property that are subject to the State Removal-Fill Law based upon a review of wetland maps, the county soil survey and other available information.

Your Activity

It appears that the proposed project **may** impact wetlands and **may** require a State permit.

Applicable Oregon Removal-Fill Permit Requirement(s)

- A state permit is required for 50 cubic yards or more of fill removal or other ground alteration in wetlands, below ordinary high water of waterways, within other waters of the state, or below highest measured tide.

Closing Information



Additional Comments

Based on review of available information and submitted site plan, proposed construction may impact jurisdictional wetlands or other waters associated with feature delineated in WD1997-0473-2. A delineation report of this area is recommended prior to development to determine if jurisdictional wetlands/waters exist.

This is a preliminary jurisdictional determination and is advisory only.

This report is for the State Removal-Fill law only. City or County permits may be required for the proposed activity.

- A Federal permit may be required by The Army Corps of Engineers: (503)808-4373

Contact Information

- o For information on permitting, use of a state-owned water, wetland determination or delineation report requirements please contact the respective DSL Aquatic Resource, Proprietary or Jurisdiction Coordinator for the site county. The current list is found at: <http://www.oregon.gov/dsl/ww/pages/wwstaff.aspx>
- o The current Removal-Fill permit and/or Wetland Delineation report fee schedule is found at: <https://www.oregon.gov/dsl/WW/Documents/Removal-FillFees.pdf>

Response Date

11/8/2019

Response by:

Matthew Unitis

Response Phone:

503-986-5262

TENTATIVE SUBDIVISION PLAN SUNSET HILLS

NE 1/4, NW 1/4, SECTION 14, T. 19 S., R. 1 W., W.M.
ASSESSOR'S MAP 19-01-14-21, TAX LOT 5000
LOWELL, LANE COUNTY, OREGON
OCTOBER 10, 2019

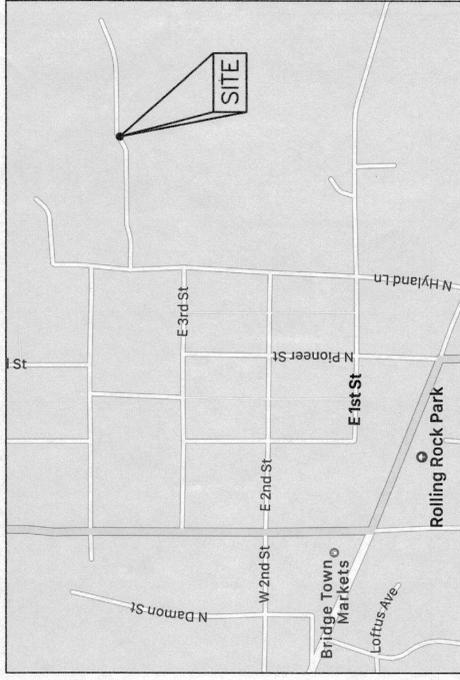
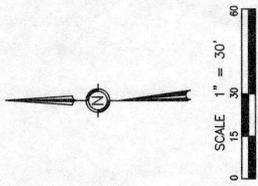
OWNER/APPLICANT
BAHEN INVESTMENT GROUP, LLC
195 MELTON RD
CREWELL, OR 97426

LOT AREA
142,116 SQ. FT. / 3.26 ACRES

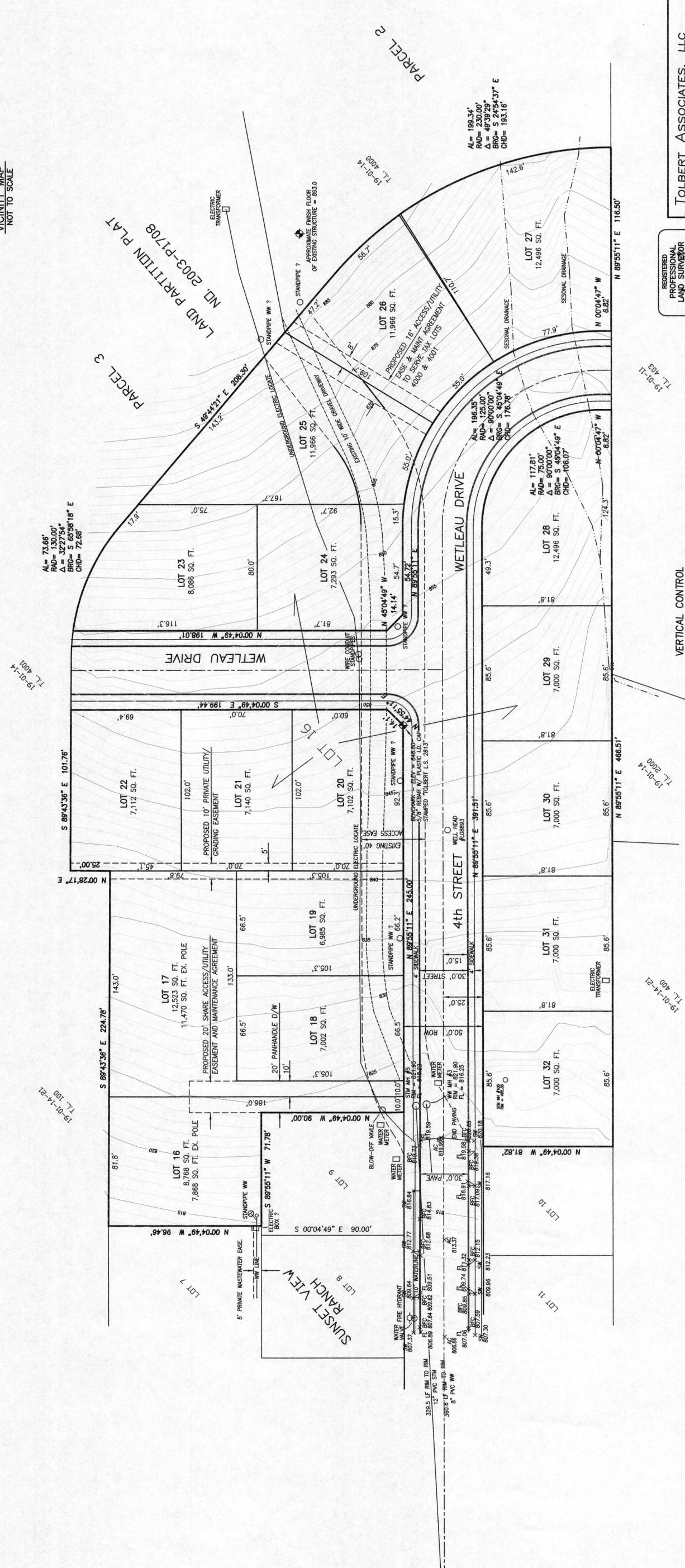
ZONING
R1 - SINGLE FAMILY RESIDENTIAL

SURVEYOR
LLOYD L. TOLBERT, LS
TOLBERT ASSOCIATES, LLC
P.O. BOX 22603
EUGENE, OR 97402
541-359-8426

ENGINEER
DENNIS J. BOEGER, PE, CWRP
BOEGER & ASSOCIATES, LLC
P.O. BOX 1923
EUGENE, OR 97402
541-302-4986



VICINITY MAP
NOT TO SCALE



VERTICAL CONTROL

ELEVATIONS ARE BASED ON LANE COUNTY BENCHMARK LCCM 1177
ELEVATION 742.20 (NGVD29) - LOCATED AT THE INTERSECTION OF PENROA
ROAD AND JASPER-LOWELL ROAD.

REGISTERED PROFESSIONAL LAND SURVEYOR
LLOYD L. TOLBERT
JUNE 30, 1997
2813
EXPIRES: JUNE 30, 2020

TOLBERT ASSOCIATES, LLC
LAND SURVEYING & LAND USE PLANNING
P.O. BOX 22603
EUGENE, OREGON 97402
(541) 359-8426
WWW.TOLBERTASSOCIATES.COM
CADD FILE-146812.DWG DWN BY: LLT

ATTACHMENT F

HEARLEY Henry O

From: Max Baker <mbaker@ci.lowell.or.us>
Sent: August 14, 2020 10:43 AM
To: HEARLEY Henry O
Subject: turn arounds for 4th street extension

Hi Henry,

Just a reminder about the turn arounds on 4th street extension. Chief was saying anything over 150' requires a turn around. Both proposed streets are over 150'.

Best Regards,

Max Baker

Public Works Director
City of Lowell
107 East Third Street
Lowell, OR 97452
Office: 541-937-2776
mbaker@ci.lowell.or.us

APPENDIX D

FIRE APPARATUS ACCESS ROADS

The provisions contained in this appendix are adopted by the State of Oregon.

SECTION D101
GENERAL

D101.1 Scope. Fire apparatus access roads shall be in accordance with this appendix and all other applicable requirements of the *International Fire Code*. The fire code official may be guided by the Oregon Department of Land Conservation and Development's Neighborhood Street Design Guidelines, June 2001.

SECTION D102
REQUIRED ACCESS

D102.1 Access and loading. Facilities, buildings or portions of buildings hereafter constructed shall be accessible to fire department apparatus by way of an *approved* fire apparatus access road with an asphalt, concrete or other *approved* driving surface capable of supporting the imposed load of fire apparatus weighing at least 60,000 pounds (27 240 kg).

Exception: The minimum weight specified in Section D102.1 may be increased by the fire code official based upon the actual weight of fire apparatus vehicles serving the jurisdiction that provides structural fire protection services to the location including fire apparatus vehicles that respond under automatic and mutual aid agreements.

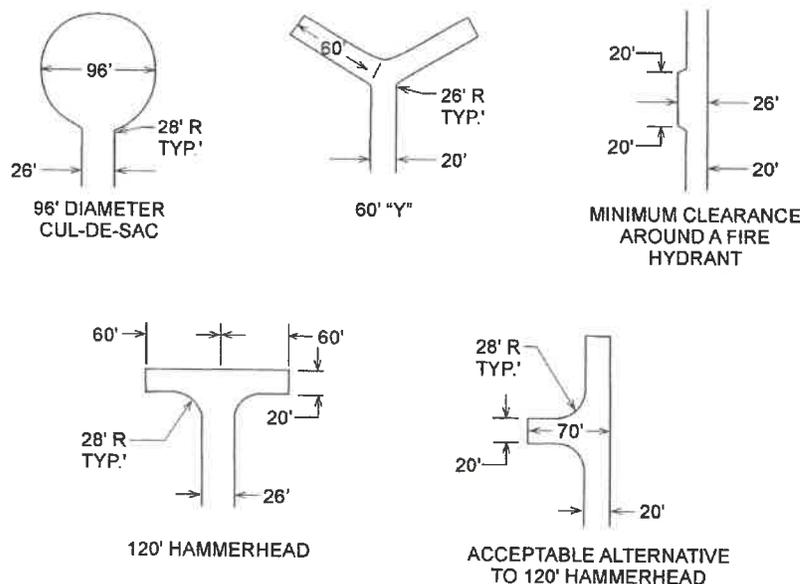
D102.1.1 Access in wildland-urban interface areas. For egress and access concerns in wildland-urban interface locations, the fire code official may be guided by the *International Wildland-Urban Interface Code*.

SECTION D103
MINIMUM SPECIFICATIONS

D103.1 Access road width with a hydrant. Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet (7925 mm), exclusive of shoulders (see Figure D103.1).

Exceptions: The fire code official is authorized to modify the provisions of Section D103.1 when:

1. In accordance with OAR 918-480-0100, all buildings are completely protected with an approved automatic fire sprinkler system;
2. Provisions are made for the emergency use of sidewalks by such means as rolled or mountable curbs capable of supporting the fire department's apparatus;
3. Streets or roadways are identified for one-way circulating flow of traffic or pullouts are provided every 150 feet (45 720 mm) on streets or roadways identified for two-way traffic; or
4. A grid system for traffic flow is provided and streets or roadways in the grid do not exceed 300 feet (91 400 mm) in length but are accessible at each end from approved access roadways or streets.



For SI: 1 foot = 304.8 mm.

FIGURE D103.1
DEAD-END FIRE APPARATUS ACCESS ROAD TURNAROUND

D103.2 Grade. Fire apparatus access roads shall not exceed 10 percent in grade.

Exception: Grades steeper than 10 percent as *approved* by the fire chief.

D103.3 Turning radius. The minimum turning radius shall be determined by the *fire code official*.

D103.3.2 Drainage. When subject to run-off damage, the fire code official is authorized to require approved drainage.

D103.4 Dead ends. Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) shall be provided with width and turnaround provisions in accordance with Table D103.4.

**TABLE D103.4
REQUIREMENTS FOR DEAD-END FIRE
APPARATUS ACCESS ROADS**

LENGTH (feet)	WIDTH (feet)	TURNAROUNDS REQUIRED
0-150	20	None required
151-500	20	120-foot Hammerhead, 60-foot "Y" or 96-foot-diameter cul-de-sac in accordance with Figure D103.1
501-750	26	120-foot Hammerhead, 60-foot "Y" or 96-foot-diameter cul-de-sac in accordance with Figure D103.1
Over 750		Special approval required

For SI: 1 foot = 304.8 mm.

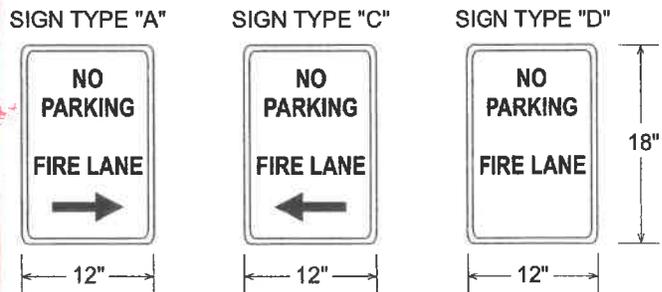
D103.5 Fire apparatus access road gates. Gates securing the fire apparatus access roads shall comply with all of the following criteria:

1. The minimum gate width shall be 20 feet (6096 mm).
2. Gates shall be of the swinging or sliding type.
3. Construction of gates shall be of materials that allow manual operation by one *person*.
4. Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.
5. Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be *approved* by the *fire code official*.
6. Manual opening gates shall not be locked with a padlock or chain and padlock unless they are capable of being opened by means of forcible entry tools or when a key box containing the key(s) to the lock is installed at the gate location.
7. Locking device specifications shall be submitted for approval by the *fire code official*.
8. Electric gate operators, where provided, shall be *listed* in accordance with UL 325.
9. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.

D103.6 Signs. Where required by the *fire code official*, fire apparatus access roads shall be marked with permanent NO PARKING—FIRE LANE signs complying with Figure D103.6. Signs shall have a minimum dimension of 12 inches (305 mm) wide by 18 inches (457 mm) high and have red letters on a white reflective background. Signs shall be posted on one or both sides of the fire apparatus road as required by Section D103.6.1 or D103.6.2.

D103.6.1 Roads 20 to 26 feet in width. Fire apparatus access roads 20 to 26 feet wide (6096 to 7925 mm) shall be posted on both sides as a *fire lane*.

D103.6.2 Roads more than 26 feet in width. Fire apparatus access roads more than 26 feet wide (7925 mm) to 32 feet wide (9754 mm) shall be posted on one side of the road as a *fire lane*.



**FIGURE D103.6
FIRE LANE SIGNS**

**SECTION D104
COMMERCIAL AND INDUSTRIAL DEVELOPMENTS**

D104.1 Buildings exceeding three stories or 30 feet in height. Buildings or facilities exceeding 30 feet (9144 mm) or three stories in height shall have at least two means of fire apparatus access for each structure.

D104.2 Buildings exceeding 62,000 square feet in area. Buildings or facilities having a gross *building area* of more than 62,000 square feet (5760 m²) shall be provided with two separate and *approved* fire apparatus access roads.

Exception: Projects having a gross *building area* of up to 124,000 square feet (11 520 m²) that have a single *approved* fire apparatus access road when all buildings are equipped throughout with *approved automatic sprinkler systems*.

D104.3 Remoteness. Where two access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses.

**SECTION D105
AERIAL FIRE APPARATUS ACCESS ROADS**

D105.1 Where required. Buildings or portions of buildings or facilities exceeding 30 feet (9144 mm) in height above the low-

(8) The developer is responsible for all pavement structure testing requirements. *(Revised by Ordinance 10-04, Effective 6.4.04)*

15.708 Turnaround Areas.

(1) Turnarounds are required on dead-end roads over 200 feet in length. If insufficient right-of-way exists to construct a turnaround to the required specifications, a temporary, non-exclusive easement dedicated to the public will be required on the property to be developed or other property where the turnaround will be located, to provide for improvement and maintenance of the required turnaround area. The easement may be removed when and if the road is extended.

(a) Cul-de-sacs. A cul-de-sac is a “bulb”-shaped design at the closed end of a dead-end road that allows vehicles to turn around without backing up. Diagram 6 in LC 15.710 illustrates the cul-de-sac design standard.

(i) Cul-de-sacs shall have a minimum 36 foot improved surface turning radius with sufficient right-of-way to provide improvements matching those of the intersecting road, except that bicycle facility improvements are not required within the cul-de-sac.

(ii) The radii of the intersecting road and cul-de-sac turnaround shall be a minimum 20 feet.

(iii) Other designs will be considered provided they allow for 40 foot long, single turning axis emergency vehicles to turn around without backing up.

(iv) The road intersecting the cul-de-sac shall meet the applicable road design standards for its functional classification.

(b) Hammerhead Turnarounds. Hammerhead turnarounds consist of a “three-legged” road design generally shaped like a “T” at the closed end of a dead-end road, that allows vehicles to turn around with minimal backing up. Diagram 7 in LC 15.710 illustrates minimum dimensions required for hammerhead turnarounds.

(i) The hammerhead turnaround area extends from an intersecting dead-end road and may include a driveway as one of the three road legs. No gate or fencing is allowed across the driveway within the turnaround area.

(ii) Hammerhead turnarounds shall be designed to allow large emergency equipment to negotiate a maximum three-point turning on dead-end roads.

(iii) One of the following combinations of road width and radius dimensions shall be used:

(aa) The “T” at the terminus of the hammerhead shall be a minimum 100 feet in length. Each of the three legs shall be a minimum 20 feet in width, and the radii of the intersecting road and hammerhead shall be 30 feet; or

(bb) The “T” at the terminus of the hammerhead shall be a minimum 115 feet in length. Each of the three legs shall be a minimum 12 feet in width, and the radii of the intersecting road and hammerhead shall be 50 feet; or

(cc) Other designs will be considered provided they allow for three-point turnarounds by 40 feet long, single axle turning emergency vehicles.

(iv) The road intersecting the hammerhead turnaround shall meet the applicable standards for its functional classification. The hammerhead road surface shall match the surface of the intersecting road and shall have adequate right-of-way to provide improvements matching those of the intersecting road, except that bicycle facility improvements are not required in the hammerhead turnaround. *(Revised by Ordinance 10-04, Effective 6.4.04)*

July 10, 2019

ATTACHMENT H

Boeger & Associates, LLC
P.O. Box 21623
Eugene, OR 97402



RE: Sunset Hills Subdivision

Mr Brenner,

Civil West Engineering has reviewed the plans for the Sunset Hills Subdivision on behalf of the City of Lowell. The plans, titled "Sunset Hills Residential Subdivision" were received by Civil West Engineering on June 10, 2019.

Some of our comments are merely drafting, or typo, related, while others identify concerns with the design itself.

General Comments:

1. Drainage Report identifies the subdivision as "Sunset View Subdivision Phase 2", while the improvement plans identify it as "Sunset Hills Residential Subdivision".
2. The City will need a copy of the DEQ approved 1200-c permit prior to any ground disturbance.
3. Per City requirements, stormwater detention and quality infrastructure must be included in order to not increase flow or decrease water quality as compared to pre-development conditions. Development Code 9.520(g)

Sheet 1 of 12 (Cover Sheet)

4. General Notes #7, last sentence; typo - "thee".
5. General Notes #8, reference is made to "Golden Oaks Manufactured Home Park".
6. Concrete #10, Per City Construction Standards 215.2.03 &.04, Concrete shall have a minimum strength of 3300 psi.
7. Concrete #11, first sentence; typo "...concrete shall be coasted with a release agent."
8. Concrete #11, third sentence; typo "Concrete shall to be "overworked"..."
9. Site Safety #1, third sentence is missing the work "responsibility" after the word "exclusive".
10. Site Safety #1. Last sentence "responsibility" is misspelled.
11. Utilities #3; "Contracted" should be "Contractor"
12. Utilities #5; Please remove the word "Private".
13. Utilities: please add note that says "All materials in contact with drinking water shall be NSF approved."
14. Sheet index includes sheets 10-13 as Erosion and Sediment Control 1 – 4, however these sheets were not included in the plan set. Further, the Sheet index identifies 13 sheets, but the sheet number is 1 of 12.
15. Please identify the City Engineer as "Civil West Engineering Services" rather than just "Civil West".

Sheet 2 of 12 (Site Plan)

16. Please extend the window of the Typical Lot Drainage + Layout to show the sidewalk and driveway grades.
17. Drainage easements will be required wherever drainage from any lot drains onto, or across, any other lot. This would apply to lots 17, 19, 20, 21, 23, 27, 28, 29.
18. Label dashed line that runs through the site. Is this existing ROW?
19. Label north/south street.
20. Typical Street Section Detail; See Lowell Standard Detail 201 for local street detail, detail 202 for curb and gutter details, and 204 for sidewalk detail. Need an integral curb & gutter, base course should extend under curb, sidewalk should be a minimum of 5' wide, measured from back of curb.
21. Construction notes need to identify which detail they are referring to, rather than just the page.
22. Clarify on which lot the 16' easement to the existing house is on. Where is the PL?

Sheet 3 of 12 (Grading & Drainage 1)

23. Top of slopes between lots should be located at the property line or on the downhill lot. Otherwise a drainage easement is required.
24. Cross section is called out between lots 19 and 20 but needs to have a sheet number if the section is not on this sheet.
25. Detail "A" referenced at the intersection does not include a sheet number.

26. Calculations need to be included in the Drainage Report showing that the catch basins (Drop Inlet per Detail Sheet 7) will capture the entire runoff volume. Catch basins on a continuous grade need to be calculated differently than those in a sag.
27. Paving, Grading & Miscellaneous note #71; Driveways (at least the public portion and ramps) need to be 6" concrete.
28. Section B shown at the back of lot 27 does not refer to where the detail is shown. Add sheet number.
29. At the east end of the street, add inlet and outlet grades to the 18" CMP. Show that the road extension will be able to cross over the culvert with appropriate cover.
30. Note in bottom right corner of plan sheet has typo. "... around NE development..."
31. Show water and sewer pipes (lightly) and call out crossing separations between all utilities.

Sheet 4 of 12 (Grading & Drainage 2)

32. Show slopes of street grades.
33. Flat grade at end of "North/South Road" is not acceptable. Minimum street grade is 0.5%.
34. Provide stationing for "North/South Road".
35. Proposed topography line in Detail A intersecting the west curb return, does not show that the valley gutter continues to the end of the curb return.
36. Grades shown at the access ramp on the NE corner indicate a cross slope of the ramp of 4.4%. Per ADA requirements, cross slope should be below 2%.

Sheet 5 of 12 (Site Utilities)

37. Show (lightly) stormdrain pipes and label all utility crossings & vertical separation.
38. Waterline to fire hydrant needs a 6" valve. This connection is mis-labeled as #29. Maybe should be #26.
39. Label (#43) all sewer laterals.
40. Water services for lots 25 and 26 appear to attach to the main at bends. Show service connections offset from fittings.
41. Label watermain fittings (bends).
42. Existing water line serving the existing house linetype does not match legend.
43. Sewer line running north from MH#1 is not accessible by the City and therefore is not acceptable.
44. The end of the sewer lines (behind lot 22, in front of lot 23, and in front of lot 27) are currently designed with a cleanout. Per City standards, these all need to be manholes.
45. Sewer lateral to serve existing house is shown going all the way to the edge of the property. As this is an easement, the public portion of the lateral ends at the property line. Indicate that a cleanout will be required at the edge of ROW and the remaining lateral is private.
46. I can't find a sewer lateral shown for lot 17.
47. There may need to be a larger scale detail of the area in front of lots 16/17 and lot 32. There is a lot going on and it's unclear.
48. Ensure with the Fire Department that the fire hydrant spacing is allowable.

Sheet 6 of 12 (Site Utilities)

49. Water shown in North/South Road profile appears too shallow. Maintain 36" cover.
50. Manhole invert elevations are all labeled as 4". Should be 8"
51. All Sewer pipe shall be 8" diameter.
52. Show and label utility crossings in profiles.

Sheet 7 of 12 (Details #1)

53. 4" cleanout detail should refer to SD 311 on sheet 8 for additional requirements.
54. 4" cleanout detail should show a temporary plug or cap in the lateral.
55. Custom Catch Basin Inlet #1 should have an access over the pipe. Access can be a vault style door, or a manhole. Blind connections are not allowed.
56. Sidewalk and Curb Drain detail. Provide calculations that show that a 12" x 3" tube will convey the peak stormwater beneath the sidewalk.
57. Sidewalk and Curb Drain detail. Provide reinforcement of concrete above the tube. At 2½" to 3" thick, the concrete will crack.

Sheet 9 of 12 (Details #3)

58. Water service details shall be City of Lowell Standard Details.

Drainage Report (Dated March 21, 2019)

59. Project Title doesn't match plans
60. Project will require detention. Provide calculations.
61. Provide calculations for continuous grade inlet capacity. See comment #26.
62. Table on page 3 shows Runoff Coeff – C with a unit of cfs. C is unitless.
63. Why is rainfall intensity different in pre vs. post development? See tables on pages 3 and 4.
64. What is the Time identified in the bottom table on page 4? This seems very low.

Please let me know if you have any comments or questions regarding our comments above. Feel free to contact me at 541-223-5130 or by email at mwadlington@civilwest.net.

Sincerely,



Matt Wadlington, P.E.
City of Lowell, City Engineer

ATTACHMENT I

Geotechnical Engineering Report

Proposed Sunset Ranch Residential Subdivision
Tax Lot 5000, Tax Map 19-01-14-21, Lane County
4th Street, Lowell, Oregon

Project: 19004
February 12, 2019

Prepared for:

Bahen Investment Group LLC
195 Melton Road
Creswell, OR 97426

Prepared by:

Michael Remboldt, P.E., G.E.
K & A Engineering, Inc.
Coburg, Oregon

K & A Engineering, Inc.
91051 S. Willamette Street
P. O. Box 8486, Coburg, OR 97408
(541) 684-9399 Voice
(541) 684-9358 FAX
kaengineers.com



February 12, 2019

Project: 19004

Bahen Investment Group LLC
Attn: Matthew Bahen
195 Melton Road
Creswell, OR 97426

Subject: Level II Geotechnical Engineering Report
Proposed Sunset Ranch Residential Subdivision
4th Street, Lowell, Oregon

K & A Engineering, Inc. is pleased to present our Geotechnical Engineering Report for the subject development.

Our Services were completed in accordance with our Contract for Engineering Services, dated January 2, 2019 and meet the requirements of 2014 Oregon Structural Specialty Code, Section 1803, Geotechnical Investigations.

Our report:

- Presents a summary of the existing subsurface conditions at the subject project site,
- Identifies and characterizes geologic hazards, and
- Presents recommendations for the design and construction for the proposed site developments.

Thank you for the opportunity to be involved with your project. Please call us if you have any questions.

Sincerely,

A handwritten signature in black ink that reads 'M Remboldt'.

Michael Remboldt, P.E., G.E.
K & A Engineering, Inc.



EXPIRES: DECEMBER 31, 2020

Geotechnical Engineering Report

Proposed Sunset View Ranch Residential Subdivision

4th Street, Lowell, Oregon

February 12, 2019

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EXECUTIVE SUMMARY

The soil profile at the site is relatively uniform, consisting of:

- 0 to 4.5-feet of undocumented FILL, over
- 0 to 3.5-feet of organic and non-organic, soft to moderately stiff, high plasticity, CLAY, over
- 0 to 5-feet of sandy-CLAY and clayey-SAND, over
- Basalt bedrock.

Due to the presence of undocumented FILL and soft, expansive CLAY we are recommending that foundation support consist conventional spread footing systems supported either directly on Approved subgrade consisting of non-organic CLAY or sandy-CLAY, or on Select Granular Fill that extends to Approved Subgrade.

Foundation pads should extend a minimum depth of 3-ft, below the soil “active zone” minimizing shrinking/swelling hazard associated with the high plasticity (expansive) CLAY found at the ground surface.

Other than the high plasticity CLAY found near the ground surface across the project site, there are no unusual hazards at the subject project site that would prohibit development including the proposed earthwork and conventional shallow spread footing foundation systems.

1 INTRODUCTION

This report provides Geotechnical engineering design criteria for the proposed 3.28-acre Sunset View Ranch Residential Subdivision which is centered on an extension of 4th Street in Lowell, Oregon. Our understanding is that earthwork for the project site will consist of the construction of HMAC roads, utilities, and lot grading.

At your request, we have made a preliminary Level II geotechnical investigation for the purposes of:

- Characterizing site surface and subsurface conditions,
- Delineating geologic hazards at the site,
- Providing preliminary design recommendations for:
 - Suitable foundation systems, and
 - Geologic hazard mitigation.

The scope of our services included:

- Fieldwork including
 - Four (4) probes, and
 - Two (2) continuous-sample borings
- Laboratory analysis of boring samples,
- Analysis of field data,
- Development of geotechnical design and construction criteria, and
- This written Geotechnical Engineering Report.

Our services meet the requirements of the 2014 Oregon Structural Specialty Code, Section 1803 - Geotechnical Investigations.

2 PROJECT SITE DESCRIPTION

2.1 SITE LOCATION

The project site is located in the city of Lowell, 0.4-mi northeast of Jasper-Lowell Road and 1-mi north of Willamette Highway (OR-58). Nearby bodies of water include Dexter Reservoir, 0.5-mi south, and Fall Creek Lake, 1.5-mi northeast.

See the attached Vicinity Map.

2.2 SURFACE CONDITIONS

The project site is located on a gentle west facing slope with an average ground surface slope ranging approximately 10 to 15%. Small areas in the south part of the proposed development exceed 20-percent.

Two cut and fill embankments were noted in lots 31 and 32 in which approximately 3 to 4-ft of material was cut from the hillside in both lots and used as fill further downslope. Probe FC-3 was completed on the FILL portion of the embankment between lots 31 and 32.

Vegetation around the project site consists some native grasses and blackberry bushes.

Other than what is noted, we observed no indication of unusual or unstable ground conditions at the time of our investigation.

2.3 SUBSURFACE CONDITIONS

We investigated subsurface soil conditions by making four (4) probes¹, and two (2) continuous sample borings² using our track-mounted geotechnical drill. Subsurface conditions, as observed in the probes and boring, generally consist of (approximately):

- **Undocumented FILL:** 0 to 4.5-ft of undocumented FILL consisting of
 - SAND and GRAVEL (FC-3 only), or
 - Loose to moderately stiff, dark brown and grayish-brown, moist, high plasticity, organic and non-organic, native CLAY (FC-1 only), over
- **CLAY:** 0 to 3.5-feet of
 - Dark brown, damp, soft to moderately stiff, high plasticity, *organic-laden* (roots) CLAY, and
 - Light brown & grayish-brown with variably colored clasts (generally orange, black, red white), damp to moist, soft to moderately stiff, high plasticity, *non-organic* sandy-CLAY or clayey-SAND, over
- **Decomposed Bedrock or Residual Sand & Clay:** 0 to 5-feet of light brown with variably colored clasts, damp, very stiff, low plasticity, sandy-CLAY or clayey-SAND (possible Mehama Formation), over
- **Bedrock:** Gray, dry, hard, weathered to fresh BASALT.

Groundwater was observed at FC-1 and FC-4, at 6.9 and 8.8-feet, respectively, on or just above the weathered basalt surface.

The approximate locations of the probes (FC-1 to FC-4) and borings (B-1 and B-4) are shown on the Geotechnical Site Plan in Appendix A. Graphic logs of the probes and borings are found in Appendix B.

¹ A 3.55-in² cone is pushed into the soil using a 140-lb. hammer falling 30-in. The energy required to advance the cone is recorded in the field as the number of blows per 6-inches of penetration. Soil friction on the side of the cone is measured using a torque wrench. Calculated cone tip pressure is used to estimate soil engineering properties, and the ratio of side friction to tip pressure identifies soil behavior type.

² 1.5-in diameter x 3-foot continuous samples obtained using a G7 2-3/8" direct push dual tube system manufactured by AMS, Inc.

2.4 LOCAL GEOLOGY

Geology at the project site is mapped³ near the boundary of two units, “Miocene and Pliocene Volcanics” and “Mehama Volcanics” (Oligocene). The Miocene and Pliocene Volcanics are described as mainly being andesite and basalt flows interbedded with pebbly and lapilli tuffs. The Mehama Volcanics are described as consisting of coarse, indurated tuff and pebbly tuff breccia with interbedded basalt, flow breccia, and welded tuff flows.

In our opinion, the observed high plasticity CLAY and underlying sandy-CLAY and BASALT is consistent with the described geology. The high plasticity CLAY found near the ground surface of the project site appear to be of colluvial (gravity driven erosion) origin. The underlying gravel is consistent with the Mehama Volcanics units. Hard basalt or basalt fragments found at some probe and boring locations may either be interbedded basalts within the Mehama formation, or the Miocene and Pliocene Volcanics.

3 RECOMMENDATIONS FOR DESIGN AND CONSTRUCTION

3.1 GEOLOGIC HAZARDS

3.1.1 Design Earthquake

Based on the observed subsurface soil conditions and criteria in ASCE 7-10, the soil site class is “C” for stiff soil. While hard rock was observed across the project site, the site is more appropriately classified as “C” due to shallow BASALT bedrock.

The design earthquake was determined using criteria including an event having a 10-percent chance, or higher, of occurring within a 50-year period, and soil site class C. *Based on analysis using current modeling of local sources of earthquake ground motion (crustal, deep, and subduction zone)⁴, the design earthquake is a Cascadia Megathrust event with a magnitude between 8.9 to 9.1 and peak ground acceleration of 0.13g.*

³ Schlicker, H.G., and Dole, H.M., “Reconnaissance Geology of the Marcola, Leaburg, and Lowell Quadrangles, Oregon”, Oregon Department of Geology and Mineral Industries, Ore.-Bin Vol. 19 No. 7 (1957).

⁴ 2014 USGS dynamic conterminous PSHA, online at the USGS Earthquake Hazards Program: <https://earthquake.usgs.gov/hazards/interactive/>

3.1.2 Faulting and Lateral Spreading

Table 1 summarizes nearby mapped *active* faults^{5,6,7} within a 50-mile radius of the project site. A few seismic events ($M > 4.0$) have occurred within 50-miles of the project site^{8,9,10}. These events are summarized in Table 2 below.

Table 1. Nearby Quaternary Faults.

	Fault Name	Fault ID	Length (km)	Slip Rate (mm/yr)	Type ¹¹	Distance ¹² and Direction from Site (miles)
Pacific Border Physiographic Zone	Unnamed Sutherlin Faults	862	28	< 0.2	N, T	31 SW
	Owl Creek Fault	870	15	< 0.2	R	43 N-NW
Cascade-Sierra Mountains	Unnamed Faults North of Diamond Lake	854	45	< 0.2	N	46 SE
	Upper Willamette River Fault Zone	863	44	< 0.2	RL, N	8 E-SE
	White Ranch Fault Zone	1809	18	< 0.2	N	40 E
	La Pine Graben Faults	838	40	< 0.2	N	47 E

The nearest mapped fault is the Upper Willamette River fault zone, a collection of lateral and normal faults forming the upper valley of the Middle Fork of the Willamette River, over 8-mi SE of the project site.

⁵ Active defined as having ruptured within the current geologic age (Quaternary – 1.5Ma).

⁶ Personius, S.F., Dark, R.L., Bradley, L.A., and Haller, K.M., “Map of Quaternary Faults and Folds in Oregon”, U.S. Geologic Survey, OFR-03-095 (2003).

⁷ U.S. Geological Survey, 2006, Quaternary fault and fold database for the United States, accessed May 9, 2018, from USGS web site: <http://earthquake.usgs.gov/hazards/qafaults>.

⁸ University of Washington (1963): Pacific Northwest Seismic Network. International Federation of Digital Seismograph Networks. Other/Seismic Network. 10.7914/SN/UW

⁹ Johnson, A.G., Schofield, D.H., and Madin, I.P., “Earthquake Database for Oregon, 1833 through October 25, 1993”, Oregon Department of Geology and Mineral Industries, OFR 94-04 (1994).

¹⁰ NCEDC (2016), Northern California Earthquake Data Center. UC Berkeley Seismological Laboratory. Dataset. doi:10.7932/NCEDC

¹¹ Types of Faults: T = thrust, LL = left lateral (strike-slip), RL = right lateral (strike slip), N = normal, R = reverse, A = anticline, H = homocline.

¹² Distance was measured from the site to the (approximate) closest location along the fault or collection of faults.

No active or inactive faults are mapped in the vicinity of the city of Lowell¹³. *As there are no active faults mapped through or in the near vicinity of the project site, there is not a significant hazard of ground rupture due to faulting.*

The Cascadia Subduction zone is the greatest contributor to seismic hazard. Local crustal faults, including those listed above are not major contributors to seismic hazard, but are considered in deaggregation for the project site. See the deaggregation summary for this project site, Appendix C.

Table 2. Nearby seismic events with $M > 3.0$.

Date	Time ¹⁴	Latitude	Longitude	Magnitude	Nearby Fault(s)
July 4, 2015	15:42:18.10	44.0895	-122.8310	4.0	N/A
September 14, 1988	04:10:36.90	43.7750	-123.4940	5.4	N/A

These ground motions are not associated with nearby shallow crustal faults and are likely a result of ground motion occurring in the “Benioff Zone” of the Cascadia Subduction Zone.

Due to the absence of loose, saturated sands, there is not a significant hazard of lateral spreading at the project site.

3.1.3 Expansive Soils

The high plasticity organic and non-organic clays found in the soil profile are a moderate to high hazard of volume change for shallow spread footings due to seasonal changes in moisture content (i.e. high expansive soil hazard). Based on laboratory evaluation of water content, the active zone extends to a depth of approximately 3 to 4-feet below the ground surface.

This hazard increases the risk of heaving and damage to slabs-on-grade. Our recommendations in this report are made, in part, to mitigate this hazard.

3.1.4 Foundation Settlement

The surface layers of undocumented fill and soft, high plasticity, *organic-laden* CLAY presents a moderate to high hazard of total and differential settlement for conventional shallow spread footings due to long-term decomposition of organics, consolidation of soft clays, and immediate settlement of loose fill.

Conventional spread footings supported directly on undocumented FILL and *organic* CLAY will result in differential settlements limiting building serviceability and risking significant damage to finishes and moderate damage to structural connections.

Our recommendations in “Foundations” are made to mitigate this hazard.

¹³ Schlicker, H.G., and Dole, H.M., “Reconnaissance Geology of the Marcola, Leaburg, and Lowell Quadrangles, Oregon”, Oregon Department of Geology and Mineral Industries, Ore.-Bin Vol. 19 No. 7 (1957).

¹⁴ Time expressed in coordinated universal time (8-hrs ahead of PTS, 7-hrs ahead of PDT).

3.1.5 Liquefaction

Due to the absence of loose, saturated SAND, *there is a low hazard of liquefaction at the project site.*

3.1.6 Seismic Design Criteria

For designing lateral bracing systems and other structural elements for earthquake ground motion, we recommend that design criteria be selected based on a site class “C – Very Stiff Soil or Soft Rock”. The recommended design spectral response acceleration parameters¹⁵ are shown on Table 1.

Table 3 – Recommended Seismic Design Parameters

Design Parameter	Design Value
S _{MS} (site class “C”)	0.741
S _{M1} (site class “C”)	0.499
S _{DS} (site class “C”)	0.494
S _{D1} (site class “C”)	0.332

For design of “non-structural” elements and anchorages for lateral earthquake loads, we recommend a design peak ground acceleration of 0.13g (10% chance of exceedance in 50-years).

3.2 SLOPE STABILITY

Since basalts are relatively shallow across the project site, slope stability was modeled using the infinite slope model. This method is appropriate for sites having a relatively shallow and consistent “hard layer”, and even and continuous slopes.

Slope stability modelling compares the ratio¹⁶ of available shear resistance (which in this case is cohesion and friction stress) to driving forces (self-weight of the slope).

We modelled the “worst-case scenario” which considered:

- The steepest slope at the project site, 23% or 13-degrees (Lot 23), having
- The deepest “weak or soft” soil of 6.5-ft (see FC-1), with
- Groundwater perched 1-ft above the hard, weathered basalt, with
- Dynamic lateral loading due to the design ground motion described above.

The “weak or soft” soil layer was modelled as a CLAY having $\phi' = 25$ -degrees, and $c' = 50$ -psf.

Under static conditions (i.e. no lateral seismic loading), we calculated the FOS of the site to be 2.3. With dynamic loading (PGA = 0.13g), we calculated FOS = 1.4. These FOS meet our minimum requirements of 1.5 and 1.1 for static and transient conditions, respectively. Therefore, *we recommend that there is not a significant hazard of slope movement at the project site in the current condition.*

¹⁵ <http://earthquake.usgs.gov/designmaps/us/application.php?>

¹⁶ This ratio, FOS = resisting forces / driving forces, is the Factor of Safety (FOS) of the slope. FOS greater than 1.0 implies that the slope is stable, while FOS less than 1.0 implies unstable conditions may exist.

However, Fill or Cut embankments that are not made according to our recommendations below could present hazards of local slope movement, and we recommend carefully implementing our recommendations in this report for earthwork to minimize this hazard.

3.3 EARTHWORK

3.3.1 General Discussion

It is our assumption that the proposed development will require conventional excavation and grading for construction of roadways, utilities, and general site grading for foundation pads.

Due to the relatively gentle gradient (from east to west) on the project site, we anticipate that some small cuts or fills will be required for general grading and road building.

We do not recommend construction of structural fill using native clayey-soils due to the difficulty in maintaining an optimum water content and the variability of organic content of clay materials found on the site. We recommend that foundations be supported on native, undisturbed, non-organic CLAY, sandy-CLAY, clayey-SAND, or bedrock, or on Select Granular Fill that extends to these non-organic native undisturbed soils.

3.3.2 Utility Trenches

Utility excavations may be deep, depending on required gradients and elevation for sanitary and storm systems. Trenching in the weathered Basalt may be challenging at some locations of the project site.

Due to the cohesive nature of the clayey soils found at the site, utility trench excavations may be vertical for unsupported heights of 4-feet or less. Unsupported (i.e. un-shored) trenches having a height exceeding 4-feet to a maximum of 8-feet shall have a maximum slope of 0.5 H : 1V.

Trenches exceeding 8-feet in depth shall be shored.

3.3.3 Cut Embankments

3.3.3.1 Temporary Cut Embankments

Temporary cut embankments may be vertical for cuts less than 4-ft in height.

During hot, dry weather conditions, cuts that are to remain open and unsupported for more than 10-days should be either dampened on a daily basis or covered with plastic to maintain moisture content.

K & A Engineering, Inc. should be consulted for specific review and additional recommendations for temporary cut embankments that exceed 4-ft height.

3.3.3.2 Permanent Cut Embankments

Permanent cut embankments above groundwater in native, undisturbed CLAY and having heights of 8-feet or less should have a final slope not exceeding 2H : 1V. If cut embankments exceed 8-ft in height, K & A Engineering, Inc. should be consulted for further review and additional recommendations.

3.3.4 Fill Embankments

Permanent fills shall be constructed of either:

- Native non-organic CLAY, sandy-CLAY, or clayey-SAND excavated from the project site, or
- Non-organic imported materials approved by K & A Engineering, Inc.

Fill embankments constructed of non-organic CLAY, sandy-CLAY, or clayey-SAND materials shall be used only for non-load bearing fills, such as pond embankments or landscaping. Fill embankments constructed of non-organic CLAY, sandy-CLAY, or clayey-SAND materials are not recommended for structural, or load-bearing fills.

Permanent fills embankments constructed using on-site, non-organic CLAY, sandy-CLAY, or clayey-SAND shall be constructed by placing excavated soils in layers not exceeding 6-inches and compacted using a vibratory sheepsfoot roller until “walk-out” is achieved, based on observation and approval by representative of K & A Engineering, Inc.

Fill embankments constructed of non-organic CLAY, sandy-CLAY, or clayey-SAND materials shall have a maximum slope of 3H : 1V.

Fill embankments shall be over-built and compacted laterally a minimum distance equal to the finish height of the embankment. The over-built embankment should then be pulled-back and shaped using a smooth bucket excavator for finish grading.

K & A Engineering, Inc. shall provide additional recommendations for geometry and construction of permanent fills constructed of imported materials, prior to placement.

3.4 FOUNDATION SUPPORT

3.4.1 General Discussion

Conventional spread footing systems, if supported on the undocumented FILL and/or soft, high-plasticity organic-laden and non-organic CLAY are likely to experience significant total and differential settlement over the lifetime of the proposed structure.

Additionally, the underlying CLAY soils are moderately to highly expansive. Our field and laboratory data suggest that mitigation of this hazard for spread footings would require excavation to a depth of approximately 3-feet and replacement with select granular fill to footing grade.

We are recommending that conventional spread footing systems are suitable to provide foundation support if foundation loads are placed either:

- Directly on Approved Subgrade consisting of native, undisturbed, non-organic moderately stiff CLAY or stiff sandy-CLAY, at a minimum depth of 3-feet below final grade; or
- On Select Granular Fill that extends to Approved Subgrade that is a minimum depth of 3-feet below final grade.

Subdivision grading and drainage should be designed to ensure that stormwater runoff does not pond or run into the foundations.

3.4.2 Conventional Spread Footing Systems

3.4.2.1 Design Criteria

For conventional spread footing systems supported as recommended in this report, we recommend a maximum allowable design bearing pressure of:

- 1.5-kips per square foot for load combinations NOT including transient wind and earthquake loads, and
- 2.0-kips per square foot for load combinations including transient wind and earthquake loads.

3.4.2.2 Recommendations for Construction

For conventional, cast-in-place, concrete isolated and continuous “strip” footings, we recommend that the foundation pad(s) supporting foundations be constructed as follows:

- Excavate and remove of all undocumented fill and organic-CLAY, exposing underlying native undisturbed moderately stiff non-organic CLAY or stiff sandy-CLAY. Excavation should extend a minimum depth of 3-ft below final grade or to native Approved Subgrade, whichever is greater;
- Grade the Approved Subgrade. We recommend excavation using a smooth bucket to minimize disturbance to the subgrade. The foundation Subgrade shall be a minimum depth of 3-ft below final grade for perimeter strip footings or 3-ft below final floor elevation for interior strip or isolated footings.
- Place Select Granular Fill on the Approved foundation pad subgrade to the specified footing elevation(s) and compact.

The prepared foundation pad subgrade shall extend, laterally, from the outside edges of the perimeter footings a minimum horizontal distance equivalent to the vertical distance between footing grade and Approved Subgrade. See Figure 1.

K & A Engineering, Inc. should be on site to inspect foundation pad preparation and verify suitable subgrade prior to the placement Select Granular Fill or construction of foundations.

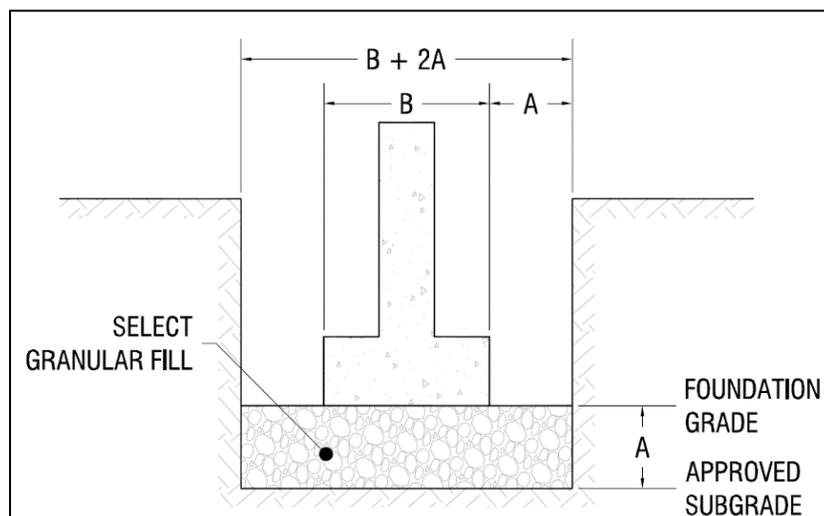


Figure 1- Lateral Excavation Requirement for New Footings.

3.5 SLABS-ON-GRADE

Due to the expansive nature of the CLAY soil at the project site, slabs-on-grade may be affected by seasonal changes in water content. Even if our recommendations are implemented, some minor cracking is expected. Our recommendations below are to control cracking to the extent possible and limit heaving to serviceable ranges.

Slabs-on-grade shall be constructed on Select Granular Fill that extends to non-organic moderately stiff CLAY soils at an elevation that is a minimum of 3-ft below final floor elevation (slab-grade). The slab-on-grade area shall be prepared as follows:

- Excavate and remove loose undocumented FILL and organic CLAY to Approved Subgrade to the depth described above. K & A Engineering, Inc. shall inspect and approve of the Subgrade for slabs-on-grade.
- Cover the CLAY Subgrade with Select Granular Fill immediately to avoid drying. If the CLAY Subgrade cannot be covered immediately with Select Granular Fill, the Subgrade shall be covered with plastic to maintain soil moisture.

Additionally, we recommend that slabs-on-grade shall be designed and constructed to include:

- A minimum thickness of 4-inches,
- Reinforcement consisting of Grade 40 No. 4 deformed reinforcing bar spaced at 24-inches O.C. each way, in the middle of the slab. Bar chairs or blocks are required to ensure that the reinforcement is in the middle of the slab.
- Control joints spaced no further apart than 10-feet each way.

3.6 PAVEMENTS

3.6.1 Preliminary Pavement Design Structure

At the time of our field work and this Report, we do not have enough information to evaluate expected traffic. However, based on our experience with similar developments we recommend the following pavement structure for use in preliminary design and cost estimating:

- 3-in of HMAc Pavement, over
- 12-in of Aggregate Base Rock, over
- Pavement Geotextile.

These recommendations take into consideration that the underlying CLAY has a relatively low modulus of resilience and is poorly-drained.

After the pavement requirements have been finalized, K & A Engineering, Inc. should be consulted to issue a final recommended pavement structure.

3.6.2 Preparation of Pavement Subgrade

Organic CLAY should be stripped and removed from paved areas and nonorganic soils graded to the specified subgrade. The underlying subgrade shall be inspected and approved by K & A Engineering, Inc. prior to the placement of pavement geotextile.

Disturbed subgrade soils, or native non-organic CLAY fills, shall be compacted using a sheepsfoot roller until “walk-out” is achieved. Proctor testing and in-place density testing is not required. Strength and consistency of compacted subgrade shall be evaluated by making “proof-roll” tests, observed by K & A Engineering, Inc. using a loaded 40-kip conventional tandem axle dump truck. Soft areas identified shall be removed and replaced with Coarse Select Granular Fill or Aggregate Base Rock.

3.7 RETAINING WALLS

3.7.1 Retaining Wall Design Criteria

The final location and required lengths and heights required for retaining walls in the subdivision have not yet been finalized. At your request, we are providing preliminary design recommendations for 6-ft tall retaining walls with retained soils having a maximum 2H : 1V gradient. For our analyses we assumed:

- Retained backfill will consist of soft, native, disturbed and undisturbed CLAY,
- Foundation soil will consist of moderately stiff, native, non-organic CLAY.
- Our analyses do not consider surcharge loading, if any, from adjacent structures.

We recommend the following design criteria for gravity retaining wall systems:

- **Passive earth pressure:** An equivalent fluid pressure (EFP) of 250-pcf/ft
- **Active earth pressure:** Including earthquake PGA of 0.13-g, the recommended design active earth pressure (EFP) 75-pcf/ft. This assumes a maximum back slope behind the wall of 26-degrees.
- **At-rest earth pressure:** (for basement retaining walls restrained at top and bottom) EFP of 53-pcf/ft. This assumes level backfill, no earthquake loading.
- **Coefficient of friction against sliding:** 0.30
- **Allowable bearing capacity:** 1,500-psf

As the scope of the design is refined, K & A Engineering, Inc. can provide additional design recommendations for the retaining wall structure. K & A Engineering, Inc. shall be onsite during retaining wall excavation to inspect and approve of subgrade.

3.7.2 Retaining Wall Drainage

Drainage system for retaining walls shall consist of:

- 4-inch schedule 40 PVC pipe with 1/2-inch diameter holes spaced every 6-in, placed at the heel of the retaining wall,
- 12-inches of Drain Rock surrounded by Separation Geotextile shall be placed to cover the drain pipe and envelope the vertical composite drain.
- The drain pipe shall be placed with holes facing down.

- Connect the perforated drain pipe to a solid schedule 40 PVC collector Drainpipe that routes away from the retaining wall system and terminates at an appropriate disposal area, as determined by the project Civil Engineer.

4 SPECIFICATIONS

4.1 SUBGRADE

Approved Subgrade for all foundation elements shall consist of:

- Native, undisturbed, moderately stiff CLAY or
- Native, undisturbed, stiff sandy-CLAY.

Excavation for spread footings shall extend a minimum depth of 3-ft below finish grade or to Approved Subgrade, whichever is greater. All Subgrades shall be inspected and approved by K & A Engineering, Inc. prior to placement of fills or foundation forms.

4.2 SELECT GRANULAR FILL

4.2.1 General Requirements

Select granular fill may consist entirely of fine select granular fill or a minimum of 9-inches of coarse select granular fill covered with a minimum of 3-inches of fine select granular fill.

4.2.2 Coarse Select Granular Fill

Coarse select granular fill shall consist of clean, well-graded quarry stone having a maximum particle size of 5-inches. Quarry stone should be durable and have 100-percent fractured faces.

4.2.3 Fine Select Granular Fill

Fine select granular fill should consist of clean, durable, well-graded material with a maximum particle size of 3/4-inches and a maximum of 10-percent passing the no. 200 sieve. Select granular fill shall be placed in layers not to exceed 12-inches (loose) and mechanically compacted to a dry density exceeding 95-percent of maximum as determined by ASTM D698 (Std. Proctor).

4.3 AGGREGATE BASE ROCK

Aggregate base rock, *used to support pavements*, shall consist of clean, durable, well-graded material having a maximum particle size of 1.5-inches and a maximum of 5% passing the no. 200 sieve. Aggregate Base rock shall be placed in layers not exceeding 12-inches (loose) and mechanically compacted to a dry density exceeding 95-percent of maximum as determined by ASTM D1557 (Modified Proctor).

4.4 DRAINAGE ROCK

Drain rock should consist of clean, durable, 1 ½-inch round rock. The rock should be placed over and to the side of the perforated pipe so that the pipe has a minimum of 12-inches of cover. The drain rock should be wrapped with separation geotextile.

4.5 PAVEMENT GEOTEXTILE

Pavement geotextile should consist of a woven, polypropylene fabric having minimum average roll values meeting the specifications in Table 4.

Table 4. Pavement Geotextile Specifications.

Property		Test Method	Specification
Hydraulic Properties	Apparent Opening Size (AOS)	ASTM D4751	< U.S. Std. Sieve 30
	Permittivity	ASTM D4491	> 0.05-sec ⁻¹
	Flow Rate	ASTM D4491	> 4-gal/min/ft ²
Mechanical Properties	Puncture Strength	ASTM D6241	> 700-lb
	Trapezoid Tear Strength	ASTM D4533	> 75-lb
	Grab Tensile Strength	ASTM D4632	> 200-lb
	Grab Tensile Elongation	ASTM D4632	< 50%
	UV Resistance	ASTM D4355	> 50% strength retained after 500 hr. exposed

A manufacturer's printed certification is acceptable as proof of compliance in lieu of laboratory testing.

Subgrade geotextile should be placed free of wrinkles or other discontinuities. Torn, punctured, or damaged fabric should be replaced. Subgrade geotextile should have a minimum overlap at the seams of 12-inches.

4.6 SEPARATION GEOTEXTILE

Separation geotextile should consist of a non-woven, needle-punched, polypropylene fabric having minimum average roll values meeting the specifications in Table 5.

Table 5. Separation Geotextile Specifications.

Property		Test Method	Specification
Hydraulic Properties	Apparent Opening Size (AOS)	ASTM D4751	< U.S. Std. Sieve 70
	Permittivity	ASTM D4491	> 1.5-sec ⁻¹

	Property	Test Method	Specification
	Flow Rate	ASTM D4491	> 110-gal/min/ft ²
Mechanical Properties	Puncture Strength	ASTM D6241	> 410-lb
	Trapezoid Tear Strength	ASTM D4533	> 60-lb
	Grab Tensile Strength	ASTM D4632	> 160-lb
	Grab Tensile Elongation	ASTM D4632	> 50%
	UV Resistance	ASTM D4355	> 50% strength retained after 500 hr. exposed

A manufacturer’s printed certification is acceptable as proof of compliance in lieu of laboratory testing.

Drainage geotextile should be placed free of wrinkles or other discontinuities. Torn, punctured, or damaged fabric should be replaced. Drainage geotextile should have a minimum overlap at the seams of 12-inches.

5 LIMITATION AND USE OF GEOTECHNICAL RECOMMENDATIONS

This report has been prepared for the exclusive use of the Bahen Investment Group LLC for the subject project.

This geotechnical investigation, analysis, and recommendations meet the standards of care of competent geotechnical engineers providing similar services at the time these services were provided.

We do not warrant or guarantee site surface subsurface conditions. Exploration test holes indicate soil conditions only at specific locations (i.e. the test hole locations) to the depths penetrated. They do not necessarily reflect soil/rock materials or groundwater conditions that exist between or beyond exploration locations or limits.

The scope of our services does not include construction safety precautions, techniques, sequences, or procedures, except as specifically recommended in this report. Our services should not be interpreted as an environmental assessment of site conditions.

Appendix A

Maps

- Vicinity Map
- Probe Location Plan
- Field Developed Cross Section

*Level II Geotechnical Engineering Report
Proposed Sunset Ranch Residential Subdivision
4th Street, Lowell, Oregon*

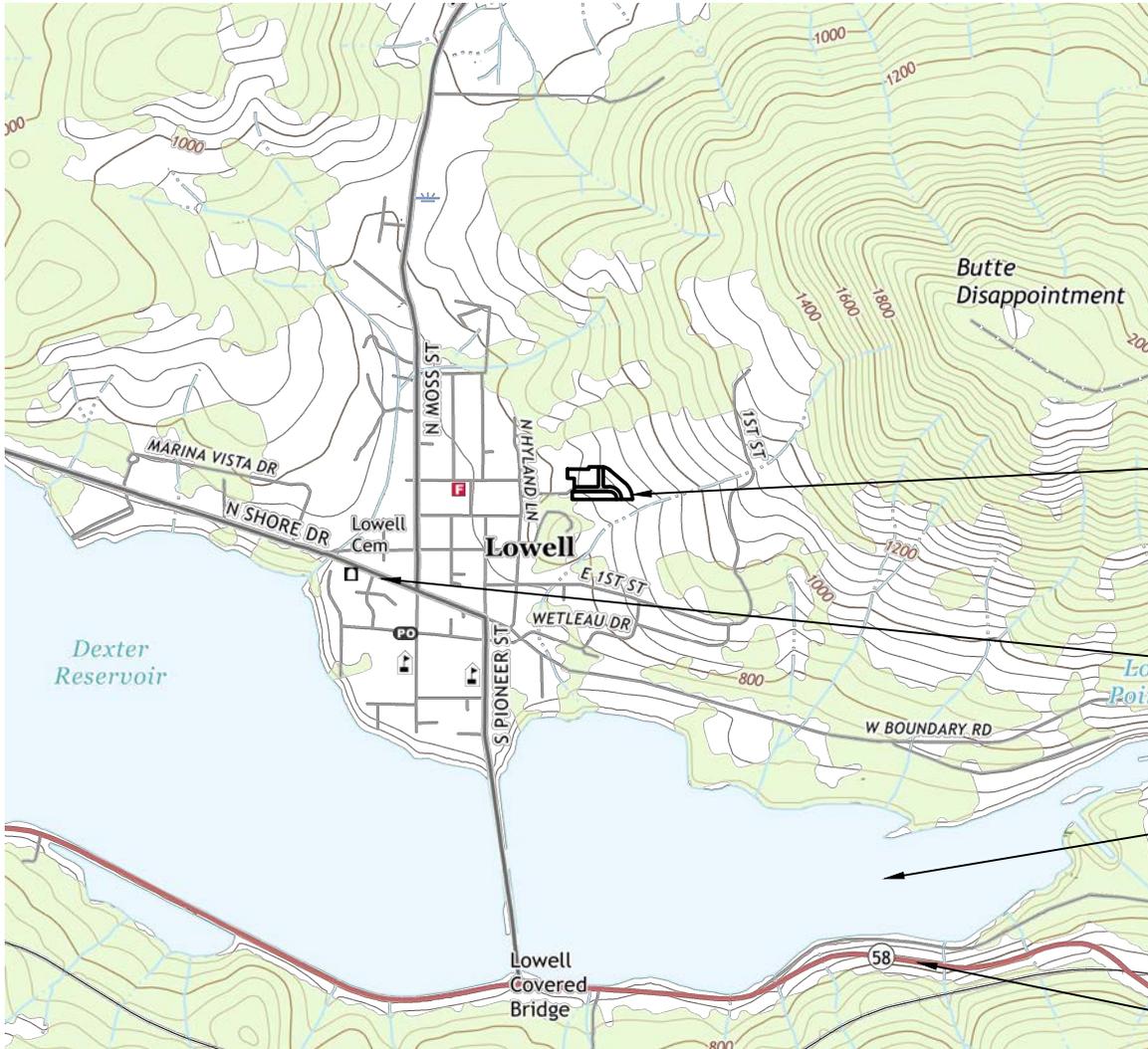
*Project: 19004
February 12, 2019*

Prepared for:

Bahen Investment Group LLC
195 Melton Road
Creswell, OR 97426

Prepared by:

Michael Remboldt, P.E., G.E.
K & A Engineering, Inc.
Coburg, Oregon

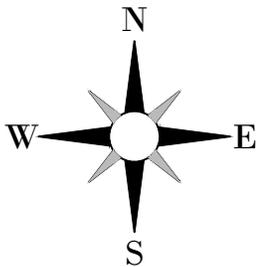


PROJECT SITE LOCATION:
 TAX LOT 5000, MAP 19-01-14-21
 LANE COUNTY
 LOWELL, OREGON

JASPER-LOWELL ROAD

DEXTER RESERVOIR

HIGHWAY 58 (OR-58)



Scale: 1" = 2000'

K & A Engineering, Inc

91051 S. Willamette St.
 Coburg, OR 97408

541 684 9399 541 684 9358 fax



VICINITY MAP

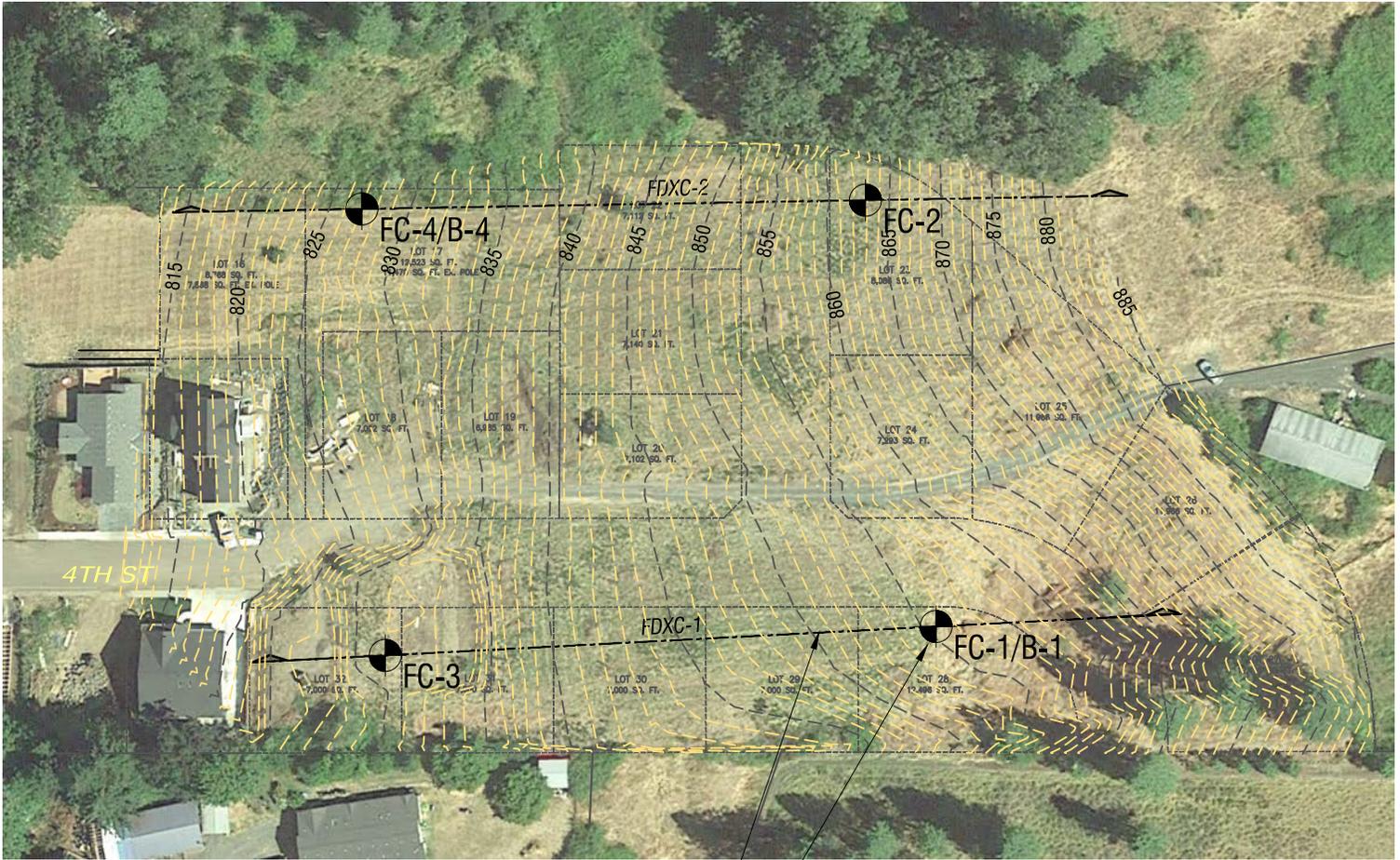
Geotechnical Site Investigation

Sunset View Ranch Subdivision
 4th Street, Lowell, Oregon

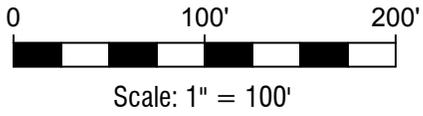
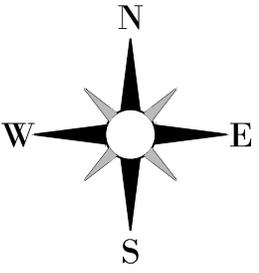
1/31/19 Project: 19004 Drawing 1 / 3



EXPIRES: ~~DECEMBER 31, 2020~~



FIELD-DEVELOPED CROSS SECTION
 GEOTECHNICAL PROBE/BORING (TYP.)
 (4) LOCATIONS TOTAL



K & A Engineering, Inc
 91051 S. Willamette St.
 Coburg, OR 97408
 541 684 9399 541 684 9358 fax

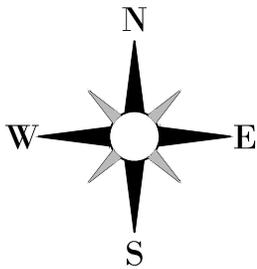
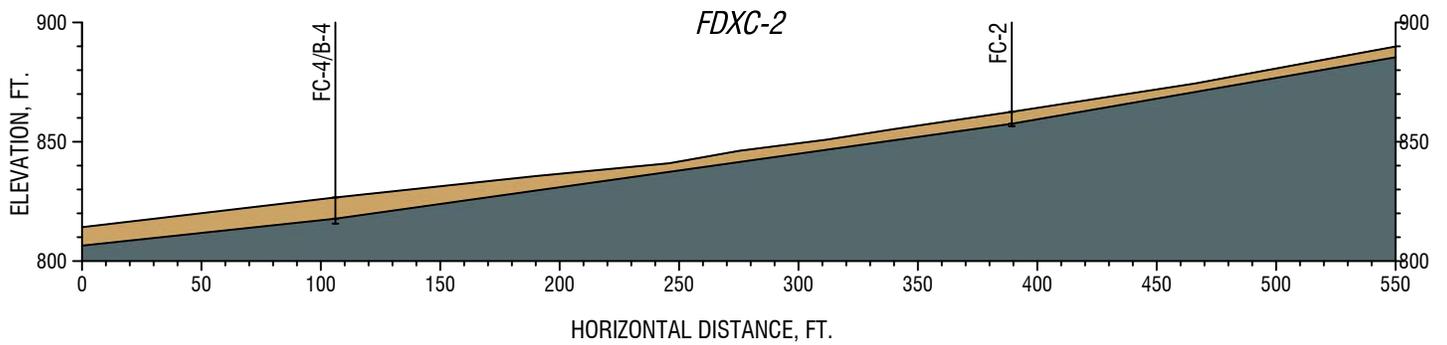
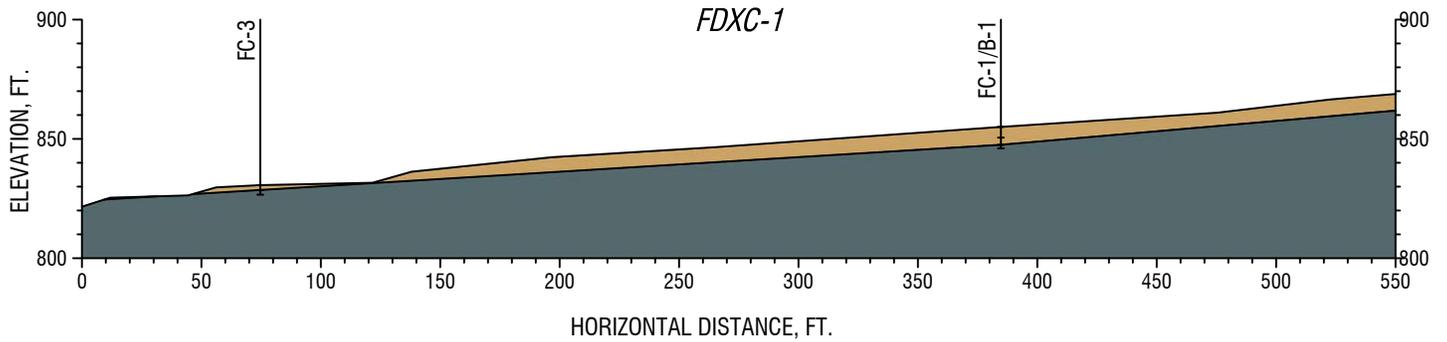


GEOTECHNICAL SITE PLAN
 Geotechnical Site Investigation
 Sunset View Ranch Subdivision
 4th Street, Lowell, Oregon

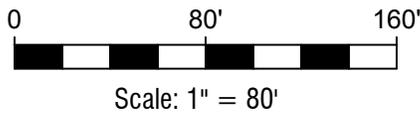
2/12/19 Project: 19004 Drawing 2 / 3



EXPIRES: ~~DECEMBER 16, 2017~~ **147** DECEMBER 31, 2020



LEGEND	
	SURFICIAL SOIL - CLAY, CLAYEY-SAND, FILL
	BEDROCK - MEHAMA FORMATION, WEATHERED BASALT



K & A Engineering, Inc
 91051 S. Willamette St.
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FIELD DEVELOPED CROSS SECTIONS
 Geotechnical Site Investigation
 Sunset View Ranch Subdivision
 4th Street, Lowell, Oregon

2/12/19 Project: 19004 Drawing 3 / 3



EXPIRES: ~~DECEMBER 31, 2020~~ 148

Appendix B

Probes and Borings

- Probe Logs
- Boring Logs
- Atterberg Limits

*Level II Geotechnical Engineering Report
Proposed Sunset Ranch Residential Subdivision
4th Street, Lowell, Oregon*

*Project: 19004
February 12, 2019*

Prepared for:

Bahen Investment Group LLC
195 Melton Road
Creswell, OR 97426

Prepared by:

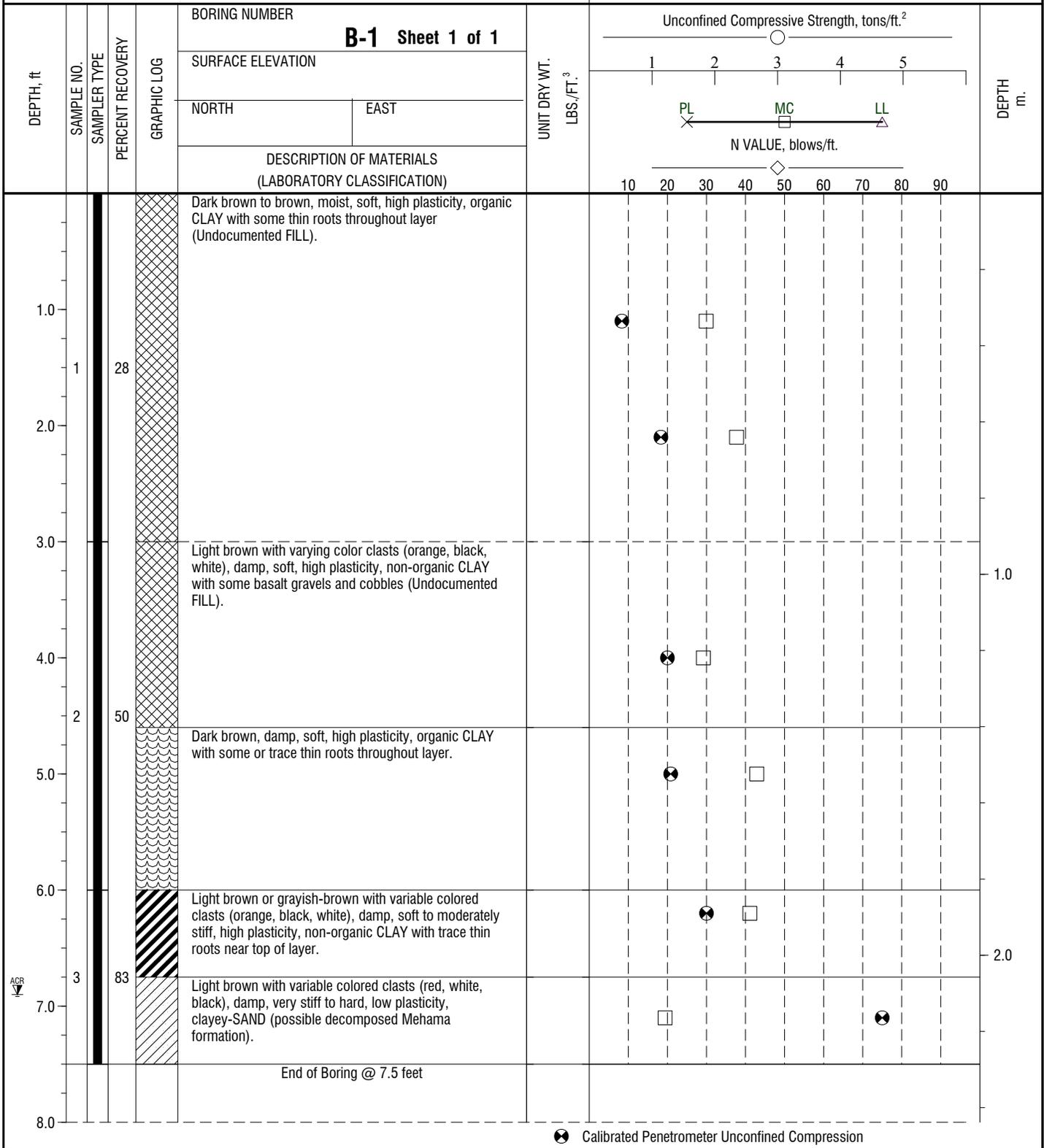
Michael Remboldt, P.E., G.E.
K & A Engineering, Inc.
Coburg, Oregon



K & A Engineering, Inc.
 PO Box 8486
 Coburg, OR 97408
 Telephone: 541-852-6939

Job No. 19004

CLIENT: **Bahen Investment Group LLC**
 PROJECT: **Sunset View Ranch Residential Subdivision**
 SITE ADDRESS: **4th Street, Lowell, OR**



☉ Calibrated Penetrometer Unconfined Compression

WATER LEVEL MEASUREMENTS

DATE	TIME	SAMPLED	CASING	CAVE-IN	WATER
1/25/19	16:45	ACR			6.9

BORING STARTED	1/25/19		
BORING COMPLETED	1/25/19		
DRILLER	K&A	RIG	Dando
ENGINEER	JDB	APPROVED	

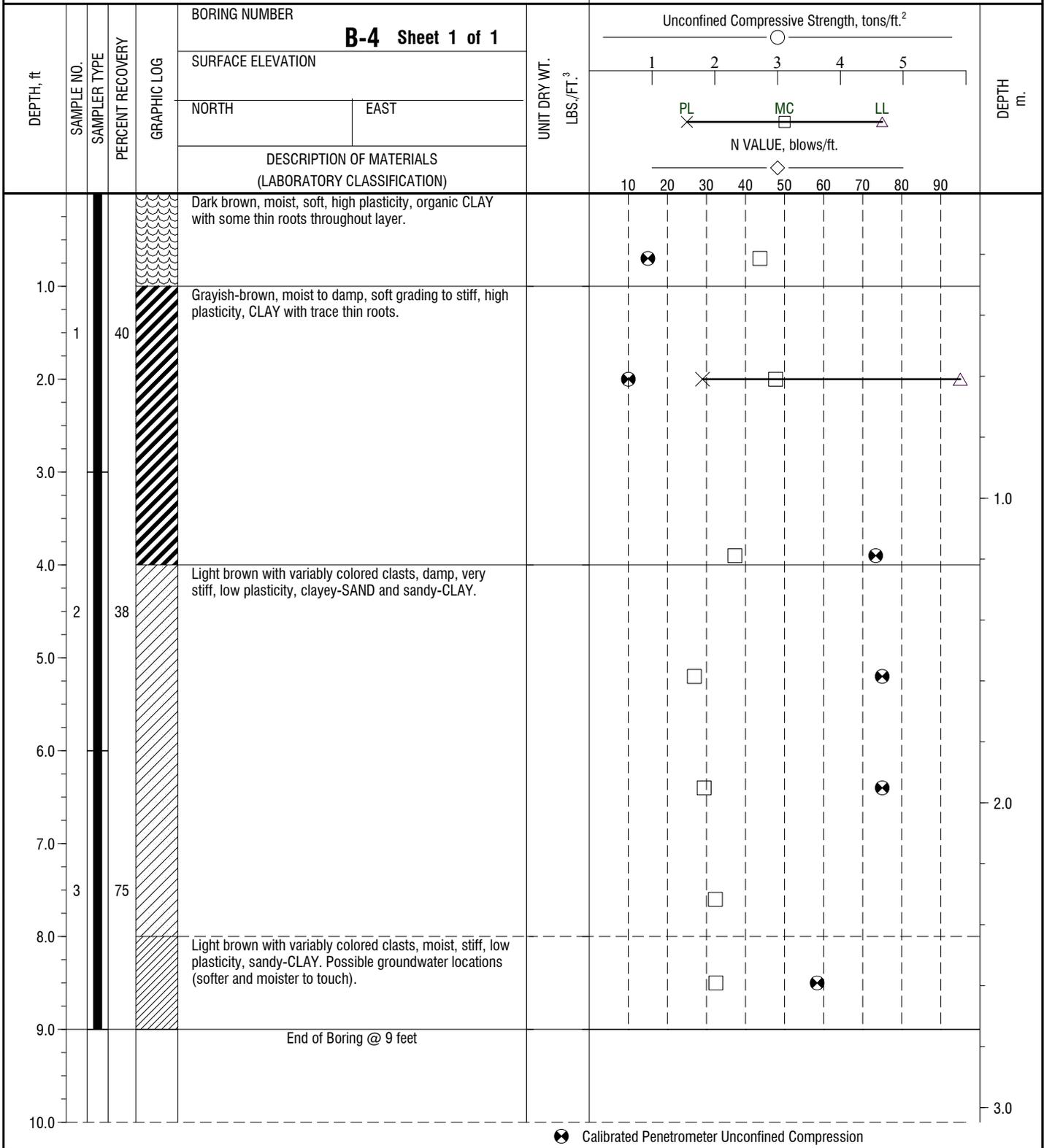
LOG-A-GNGN03 SUNSETVIEW RANCH BORING LOGS 1.29 19.GPJ LOG-A-GNGN03.GDT 1/31/19



K & A Engineering, Inc.
 PO Box 8486
 Coburg, OR 97408
 Telephone: 541-852-6939

Job No. 19004

CLIENT: **Bahen Investment Group LLC**
 PROJECT: **Sunset View Ranch Residential Subdivision**
 SITE ADDRESS: **4th Street, Lowell, OR**



Calibrated Penetrometer Unconfined Compression

WATER LEVEL MEASUREMENTS

DATE	TIME	SAMPLED	CASING	CAVE-IN	WATER
1/25/19	16:45	ACR		8.8	

BORING STARTED	1/25/19		
BORING COMPLETED	1/25/19		
DRILLER	K&A	RIG	Dando
ENGINEER	JDB	APPROVED	

LOG-A-GNGN03 SUNSETVIEW RANCH BORING LOGS 1 29 19.GPJ LOG A GNGN03.GDT 1/31/19

DYNAMIC PROBE LOG FC-1



K & A Engineering, Inc.
541-684-6966
kaengineers.com

HOLE #: FC-1
CREW: K & A Engineering, Inc.
PROJECT: Sunset View Ranch Residential Subdivision
ADDRESS: Tax Lot 5000, Tax Map 19-01-14-21, Lane County
LOCATION: Lowell, Oregon

PROJECT NUMBER: 19004
DATE STARTED: 01-25-2019
DATE COMPLETED: 01-25-2019
DEPTH COMPLETED (ft): 9.0
SURFACE ELEVATION: N/A
STATIC WATER DEPTH ON COMPLETION (ft): 6.9
FIRST ENCOUNTERED WATER DEPTH (ft): 6.9
HAMMER WEIGHT: 63.5 kg
CONE AREA: 25.7 sq. cm

DEPTH ft.	BLOWS PER 6-in.	SLEEVE TORQUE ft.-lbs.	Tip Pressure q_c kg/cm ² (Raw and Normalized)				Friction Ratio, %				Equiv. SPT N_{60}^2 (Raw and Normalized)			SOIL BEHAVIOUR TYPE (SBT) ZONE ^{1,3}	REMARKS
			1	10	100	1000	0%	5%	10%	15%	1	10	100		
-	0	5												5	
-1	0	8												4	
-	0	6												5	
-2	1	4												5	Soft to Mod. Stiff CLAY, Sandy-CLAY (Undocumented FILL)
-	1	7												4	
-3	2	11												4	
-	2	12												4	
-4	2	12												4	
-	2	17												3	
-5	4	21												3	
-	3	23												3	Stiff to Very Stiff CLAY (Native)
-6	2	24												3	
-	12	27												4	
-7	26	30												5	
-	51	58												6	
-8	45	86												8	Weathered Basalt
-	38	109												9	
-9	48	131												9	
-10															
-11															
-12															

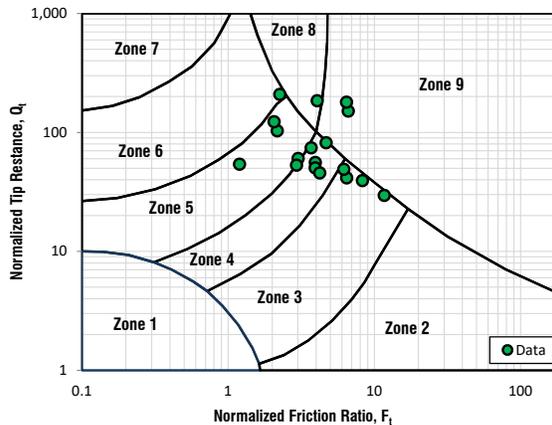
¹P.K. Robertson, 2010. "Evaluation of flow liquefaction and liquefied strength using Cone Penetration Test." ASCE Journal of Geotechnical and Geoenvironmental Engineering, Vol 136, No. 6. and P.K. Robertson, 2000. "Soil classification using the cone penetration test," Canadian Geotechnical Journal, 27(1).

²John H. Schmertmann, "Statics of SPT", Journal of the Geotechnical Engineering Division, American Society of Civil Engineers. May 1979.

³P.K. Robertson, K.L. Cabal (Robertson), 2015. "Guide to Cone Penetration Testing for Geotechnical Engineering, 6th Edition" Gregg Drilling and Testing, Inc.

Note: Dashed lines show tip pressure and N normalized for overburden pressure

Zone	Soil Behaviour Type (SBT) Description
1	Sensitive, fine grained
2	Organic soils - clay
3	Clays - silty-clay to clay
4	Silt Mixtures - clayey-silt to silty-clay
5	Sand Mixtures - silty-sand to sandy-silt
6	Sands - clean sand to silty-sand
7	Gravelly sand to dense sand
8	Very stiff sand to clayey sand
9	Fine grained (weak rock, cemented, relic structure)



DYNAMIC PROBE LOG FC-2



K & A Engineering, Inc.
541-684-6966
kaengineers.com

HOLE #: FC-2
CREW: K & A Engineering, Inc.
PROJECT: Sunset View Ranch Residential Subdivision
ADDRESS: Tax Lot 5000, Tax Map 19-01-14-21, Lane County
LOCATION: Lowell, Oregon

PROJECT NUMBER: 19004
DATE STARTED: 01-25-2019
DATE COMPLETED: 01-25-2019
DEPTH COMPLETED (ft): 6.0
SURFACE ELEVATION: N/A
STATIC WATER DEPTH ON COMPLETION (ft): None Observed
FIRST ENCOUNTERED WATER DEPTH (ft): None Observed
HAMMER WEIGHT: 63.5 kg
CONE AREA: 25.7 sq. cm

DEPTH ft.	BLOWS PER 6-in.	SLEEVE TORQUE ft.-lbs.	Tip Pressure q_c kg/cm ² (Raw and Normalized)				Friction Ratio, %				Equiv. SPT N_{60} ² (Raw and Normalized)			SOIL BEHAVIOUR TYPE (SBT) ZONE ^{1,3}	REMARKS
			1	10	100	1000	0%	5%	10%	15%	1	10	100		
-	0	6												5	
-1	0	8												4	
-	0	12												9	Soft to Mod. Stiff CLAY
-2	0	16												9	
-	0	17												9	
-3	1	18												9	
-	8	24												9	
-4	10	30												9	Stiff CLAY, Sandy-CLAY
-	14	24												5	
-5	33	19												6	
-	53	210												9	Weathered BASALT
-6	200	402												8	
-7															Refusal @ 5.75-ft 100 blows for 3-inches
-8															
-9															
-10															
-11															
-12															

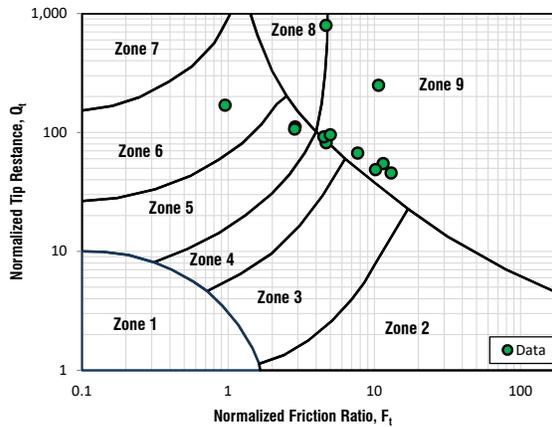
¹P.K. Robertson, 2010. "Evaluation of flow liquefaction and liquefied strength using Cone Penetration Test." ASCE Journal of Geotechnical and Geoenvironmental Engineering, Vol 136, No. 6. and P.K. Robertson, 2000. "Soil classification using the cone penetration test," Canadian Geotechnical Journal, 27(1).

²John H. Schmertmann, "Statics of SPT", Journal of the Geotechnical Engineering Division, American Society of Civil Engineers. May 1979.

³P.K. Robertson, K.L. Cabal (Robertson), 2015. "Guide to Cone Penetration Testing for Geotechnical Engineering, 6th Edition" Gregg Drilling and Testing, Inc.

Note: Dashed lines show tip pressure and N normalized for overburden pressure

Zone	Soil Behaviour Type (SBT) Description
1	Sensitive, fine grained
2	Organic soils - clay
3	Clays - silty-clay to clay
4	Silt Mixtures - clayey-silt to silty-clay
5	Sand Mixtures - silty-sand to sandy-silt
6	Sands - clean sand to silty-sand
7	Gravelly sand to dense sand
8	Very stiff sand to clayey sand
9	Fine grained (weak rock, cemented, relic structure)



DYNAMIC PROBE LOG FC-3



K & A Engineering, Inc.
541-684-6966
kaengineers.com

HOLE #: FC-3
CREW: K & A Engineering, Inc.
PROJECT: Sunset View Ranch Residential Subdivision
ADDRESS: Tax Lot 5000, Tax Map 19-01-14-21, Lane County
LOCATION: Lowell, Oregon

PROJECT NUMBER: 19004
DATE STARTED: 01-25-2019
DATE COMPLETED: 01-25-2019
DEPTH COMPLETED (ft): 4.0
SURFACE ELEVATION: N/A
STATIC WATER DEPTH ON COMPLETION (ft): None Observed
FIRST ENCOUNTERED WATER DEPTH (ft): None Observed
HAMMER WEIGHT: 63.5 kg
CONE AREA: 25.7 sq. cm

DEPTH ft.	BLOWS PER 6-in.	SLEEVE TORQUE ft.-lbs.	Tip Pressure q_c kg/cm ² (Raw and Normalized)				Friction Ratio, %				Equiv. SPT N_{60} ² (Raw and Normalized)			SOIL BEHAVIOUR TYPE (SBT) ZONE ^{1,3}	REMARKS
			1	10	100	1000	0%	2%	4%	6%	1	10	100		
-	2	4												6	Loose to Mod. Dense Granular FILL?
-1	12	4												6	
-	27	17												6	Stiff
-2	39	31												6	Clayey-SAND
-	46	68												8	Weathered to Fresh BASALT
-3	51	105												8	
-	90	149												8	
-4	101	193												8	
-5															
-6															
-7															
-8															
-9															
-10															
-11															
-12															

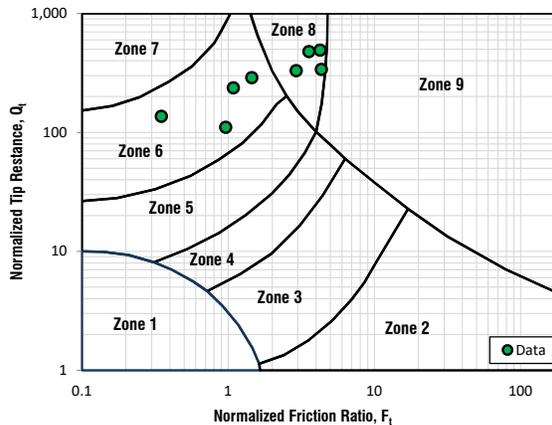
¹P.K. Robertson, 2010. "Evaluation of flow liquefaction and liquefied strength using Cone Penetration Test." ASCE Journal of Geotechnical and Geoenvironmental Engineering, Vol 136, No. 6. and P.K. Robertson, 2000. "Soil classification using the cone penetration test," Canadian Geotechnical Journal, 27(1).

²John H. Schmertmann, "Statics of SPT", Journal of the Geotechnical Engineering Division, American Society of Civil Engineers. May 1979.

³P.K. Robertson, K.L. Cabal (Robertson), 2015. "Guide to Cone Penetration Testing for Geotechnical Engineering, 6th Edition" Gregg Drilling and Testing, Inc.

Note: Dashed lines show tip pressure and N normalized for overburden pressure

Zone	Soil Behaviour Type (SBT) Description
1	Sensitive, fine grained
2	Organic soils - clay
3	Clays - silty-clay to clay
4	Silt Mixtures - clayey-silt to silty-clay
5	Sand Mixtures - silty-sand to sandy-silt
6	Sands - clean sand to silty-sand
7	Gravelly sand to dense sand
8	Very stiff sand to clayey sand
9	Fine grained (weak rock, cemented, relic structure)



DYNAMIC PROBE LOG FC-4



K & A Engineering, Inc.
541-684-6966
kaengineers.com

HOLE #: FC-4
CREW: K & A Engineering, Inc.
PROJECT: Sunset View Ranch Residential Subdivision
ADDRESS: Tax Lot 5000, Tax Map 19-01-14-21, Lane County
LOCATION: Lowell, Oregon

PROJECT NUMBER: 19004
DATE STARTED: 01-25-2019
DATE COMPLETED: 01-25-2019
DEPTH COMPLETED (ft): 11.0
SURFACE ELEVATION: N/A
STATIC WATER DEPTH ON COMPLETION (ft): 8.8 est.
FIRST ENCOUNTERED WATER DEPTH (ft): 8.8 est.
HAMMER WEIGHT: 63.5 kg
CONE AREA: 25.7 sq. cm

DEPTH ft.	BLOWS PER 6-in.	SLEEVE TORQUE ft.-lbs.	Tip Pressure q_c kg/cm ² (Raw and Normalized)				Friction Ratio, %			Equiv. SPT N_{60}^2 (Raw and Normalized)			SOIL BEHAVIOUR TYPE (SBT) ZONE ^{1,3}	REMARKS
			1	10	100	1000	0%	5%	10%	1	10	100		
-	0	5											5	
-1	0	7											4	
-	0	10											4	
-2	0	12											9	Soft to Mod. Stiff CLAY or Sandy-CLAY
-	0	14											9	
-3	2	16											3	
-	6	25											9	
-4	12	35											9	
-	13	33											9	
-5	12	31											4	
-	11	31											4	Stiff to Very Stiff Sandy-CLAY and Clayey-SAND
-6	11	30											4	
-	15	38											4	
-7	12	46											9	
-	11	46											9	
-8	11	45											9	
-	19	66											9	
-9	35	86											9	
-	33	68											9	Weathered to Fresh BASALT
-10	31	50											5	
-	41	89											9	
-11	91	128											8	
-12														

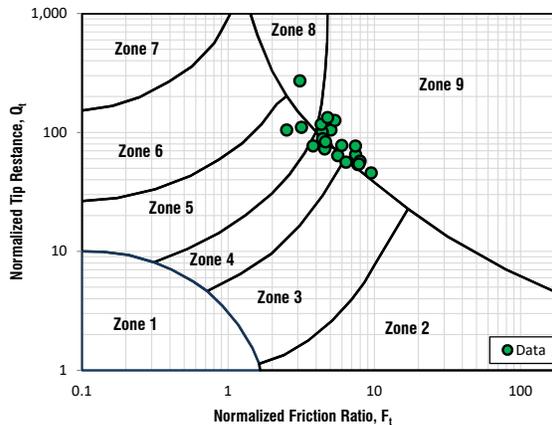
¹P.K. Robertson, 2010. "Evaluation of flow liquefaction and liquefied strength using Cone Penetration Test." ASCE Journal of Geotechnical and Geoenvironmental Engineering, Vol 136, No. 6. and P.K. Robertson, 2000. "Soil classification using the cone penetration test," Canadian Geotechnical Journal, 27(1).

²John H. Schmertmann, "Statics of SPT", Journal of the Geotechnical Engineering Division, American Society of Civil Engineers. May 1979.

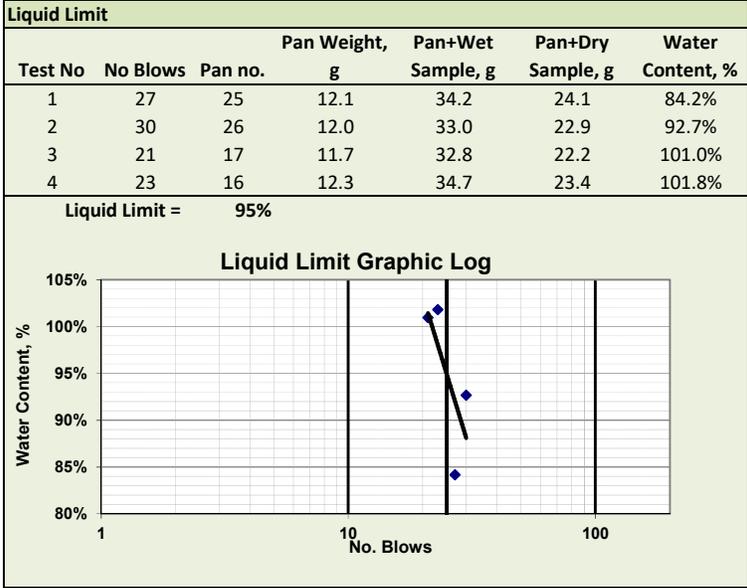
³P.K. Robertson, K.L. Cabal (Robertson), 2015. "Guide to Cone Penetration Testing for Geotechnical Engineering, 6th Edition" Gregg Drilling and Testing, Inc.

Note: Dashed lines show tip pressure and N normalized for overburden pressure

Zone	Soil Behaviour Type (SBT) Description
1	Sensitive, fine grained
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5	Sand Mixtures - silty-sand to sandy-silt
6	Sands - clean sand to silty-sand
7	Gravelly sand to dense sand
8	Very stiff sand to clayey sand
9	Fine grained (weak rock, cemented, relic structure)

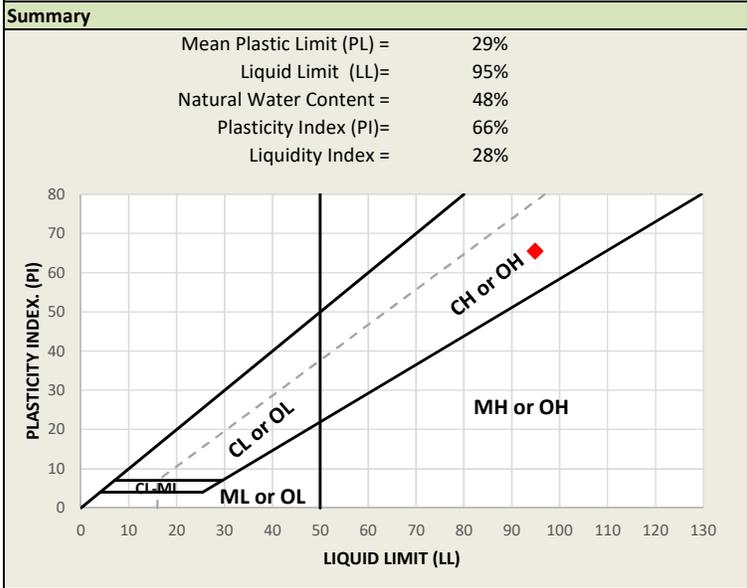


Atterberg Limits	
Date:	1/28/2019
Sample No.:	B-4 from 1.0 to 3.0-ft
Client:	Bahen Investment Group LLC
Project:	19004



Plastic Limit						
Test No	Pan No.	Pan Weight, g	Pan+Wet Sample, g	Pan+Dry Sample, g	Water Content, %	
1	23	11.7	27.5	23.9	29.5%	
2	24	12.0	31.0	26.7	29.3%	
					Mean Plastic Limit =	29.4%

Natural Water Content						
Depth	Pan No.	Pan Weight, g	Pan+Wet Sample, g	Pan+Dry Sample, g	Water Content, %	
2.0	27	12.3	74.5	54.4	47.7%	



Appendix C

Reference Reports

- Design Earthquake Summary
- USGS Unified Hazard Deaggregation

*Level II Geotechnical Engineering Report
Proposed Sunset Ranch Residential Subdivision
4th Street, Lowell, Oregon*

*Project: 19004
February 12, 2019*

Prepared for:

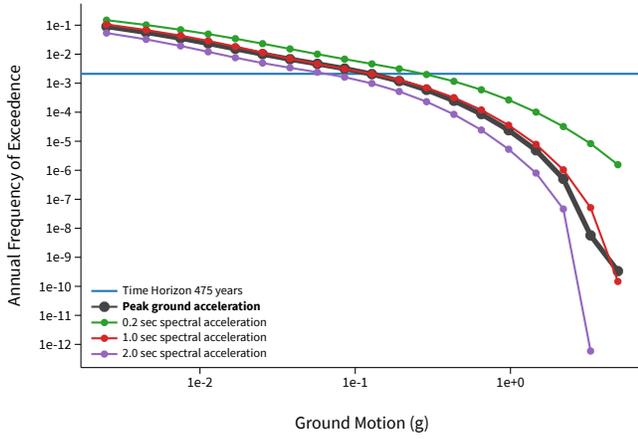
Bahen Investment Group LLC
195 Melton Road
Creswell, OR 97426

Prepared by:

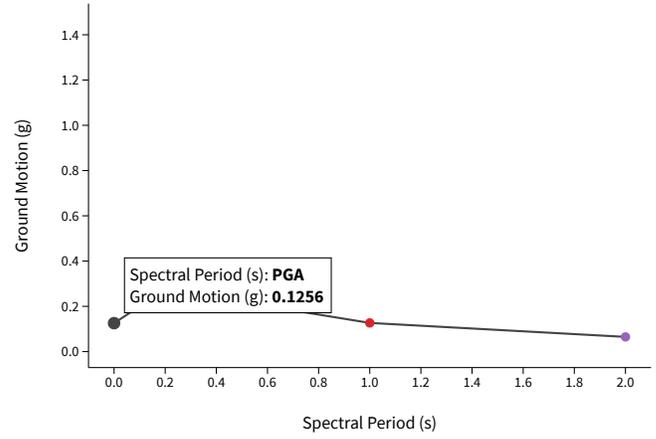
Michael Remboldt, P.E., G.E.
K & A Engineering, Inc.
Coburg, Oregon

^ Hazard Curve

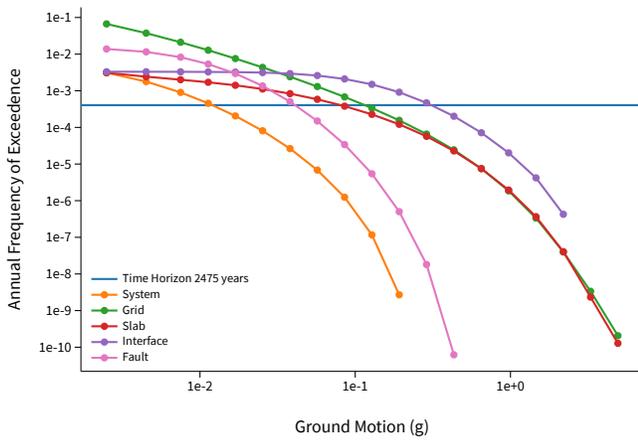
Hazard Curves



Uniform Hazard Response Spectrum



Component Curves for Peak ground acceleration

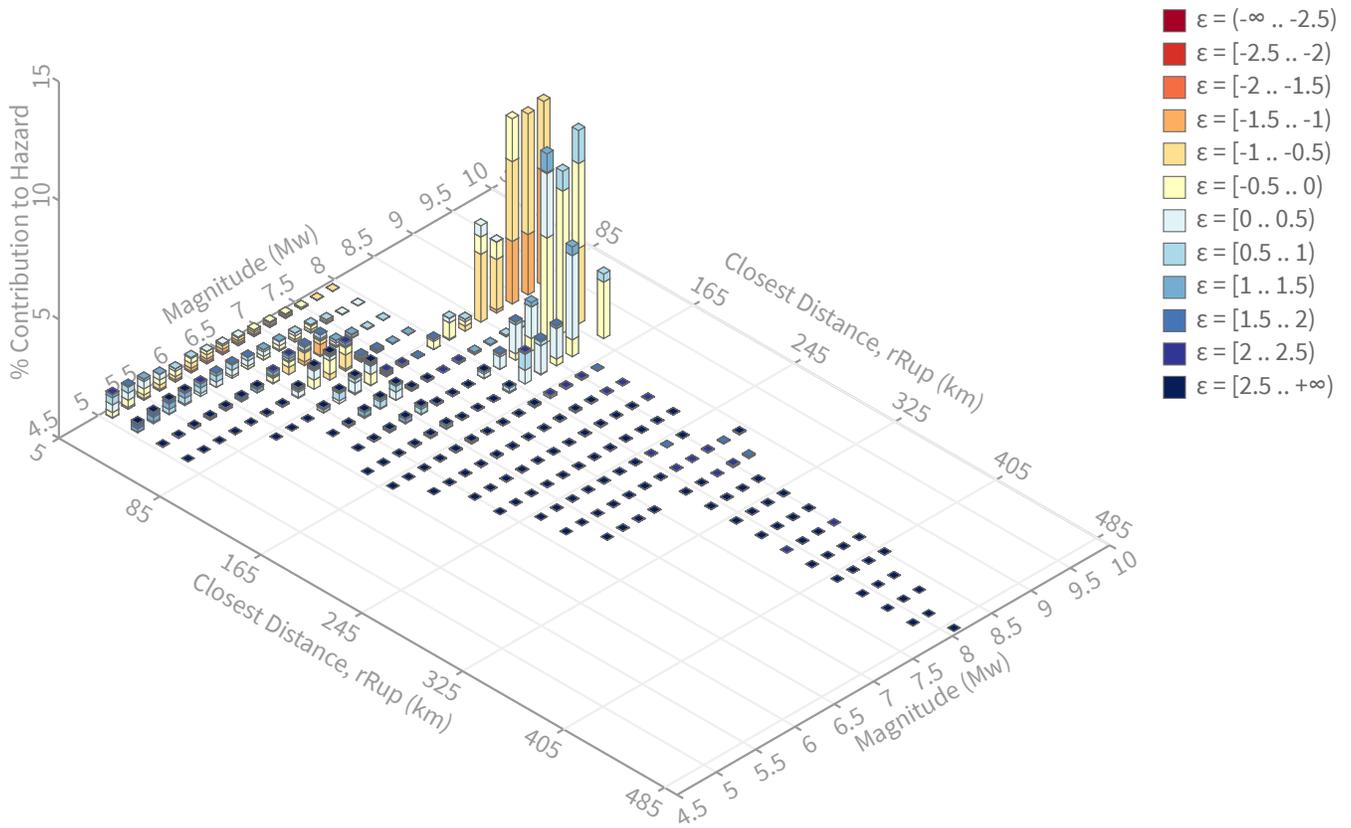


[View Raw Data](#)

^ Deaggregation

Component

Total



Summary statistics for, Deaggregation: Total

Deaggregation targets

Return period: 475 yrs
Exceedance rate: 0.0021052632 yr⁻¹
PGA ground motion: 0.12564723 g

Recovered targets

Return period: 476.81487 yrs
Exceedance rate: 0.00209725 yr⁻¹

Totals

Binned: 100 %
Residual: 0 %
Trace: 1.06 %

Mean (for all sources)

r: 99.21 km
m: 8.17
ε₀: -0.16 σ

Mode (largest r-m bin)

r: 137.03 km
m: 9.12
ε₀: -0.22 σ
Contribution: 8.14 %

Mode (largest ε₀ bin)

r: 137.03 km
m: 8.82
ε₀: -0.17 σ
Contribution: 5.97 %

Discretization

r: min = 0.0, max = 1000.0, Δ = 20.0 km
m: min = 4.4, max = 9.4, Δ = 0.2
ε: min = -3.0, max = 3.0, Δ = 0.5 σ

Epsilon keys

ε0: [-∞ .. -2.5)
ε1: [-2.5 .. -2.0)
ε2: [-2.0 .. -1.5)
ε3: [-1.5 .. -1.0)
ε4: [-1.0 .. -0.5)
ε5: [-0.5 .. 0.0)
ε6: [0.0 .. 0.5)
ε7: [0.5 .. 1.0)
ε8: [1.0 .. 1.5)
ε9: [1.5 .. 2.0)
ε10: [2.0 .. 2.5)
ε11: [2.5 .. +∞]

Deaggregation Contributors

Source Set ↘ Source	Type	r	m	ϵ_0	lon	lat	az	%
sub0_ch_bot.in	Interface							21.88
Cascadia Megathrust - whole CSZ Characteristic		84.73	9.08	-0.92	123.764°W	43.882°N	267.04	21.88
sub0_ch_mid.in	Interface							21.21
Cascadia Megathrust - whole CSZ Characteristic		137.03	8.90	-0.09	124.492°W	43.863°N	267.82	21.21
sub0_ch_top.in	Interface							7.00
Cascadia Megathrust - whole CSZ Characteristic		148.63	8.80	0.09	124.630°W	43.858°N	267.89	7.00
coastalOR_deep.in	Slab							5.72
coastalOR_deep.in	Slab							3.74
sub3_ch_bot.in	Interface							2.48
Cascadia Megathrust - Goldfinger Case D Characteristic		88.74	8.56	-0.51	123.780°W	43.700°N	253.26	2.48
sub2_ch_bot.in	Interface							2.45
Cascadia Megathrust - Goldfinger Case C Characteristic		84.36	8.71	-0.68	123.764°W	43.882°N	267.04	2.45
sub2_ch_mid.in	Interface							1.96
Cascadia Megathrust - Goldfinger Case C Characteristic		136.81	8.46	0.18	124.492°W	43.863°N	267.82	1.96
sub1_GRb0_bot.in	Interface							1.85
Cascadia floater over southern zone - Goldfinger Case B		88.74	8.40	-0.40	123.764°W	43.882°N	267.04	1.85
noPuget_2014_adSm.ch.in (opt)	Grid							1.80
WUSmap_2014_adSm.ch.in (opt)	Grid							1.80
noPuget_2014_adSm.gr.in (opt)	Grid							1.80
WUSmap_2014_adSm.gr.in (opt)	Grid							1.80
sub3_ch_mid.in	Interface							1.75
Cascadia Megathrust - Goldfinger Case D Characteristic		142.05	8.29	0.37	124.509°W	43.700°N	260.50	1.75
WUSmap_2014_fixSm.ch.in (opt)	Grid							1.73
noPuget_2014_fixSm.ch.in (opt)	Grid							1.73
WUSmap_2014_fixSm.gr.in (opt)	Grid							1.73
noPuget_2014_fixSm.gr.in (opt)	Grid							1.73
sub1_GRb1_bot.in	Interface							1.65

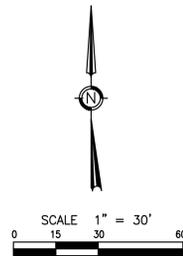
Source Set	Source	Type	r	m	ϵ_0	lon	lat	az	%
	Cascadia floater over southern zone - Goldfinger Case B		91.18	8.29	-0.29	123.764°W	43.882°N	267.04	1.65
sub1_GRb0_mid.in		Interface							1.59
	Cascadia floater over southern zone - Goldfinger Case B		140.18	8.42	0.26	124.492°W	43.863°N	267.82	1.59
sub1_GRb1_mid.in		Interface							1.35
	Cascadia floater over southern zone - Goldfinger Case B		142.14	8.30	0.37	124.492°W	43.863°N	267.82	1.35
sub1_ch_bot.in		Interface							1.13
	Cascadia Megathrust - Goldfinger Case B Characteristic		84.33	8.84	-0.76	123.764°W	43.882°N	267.04	1.13

OWNER/APPLICANT
 BAHEN INVESTMENT GROUP, LLC
 195 MELTON RD
 CRESWELL, OR 97426

LOT AREA
 142,116 SQ. FT. / 3.26 ACRES
 ZONING
 R1 - SINGLE FAMILY RESIDENTIAL

SURVEYOR
 LLOYD L. TOLBERT, LS
 TOLBERT ASSOCIATES, LLC
 P.O. BOX 22603
 EUGENE, OR 97402
 541-359-8426

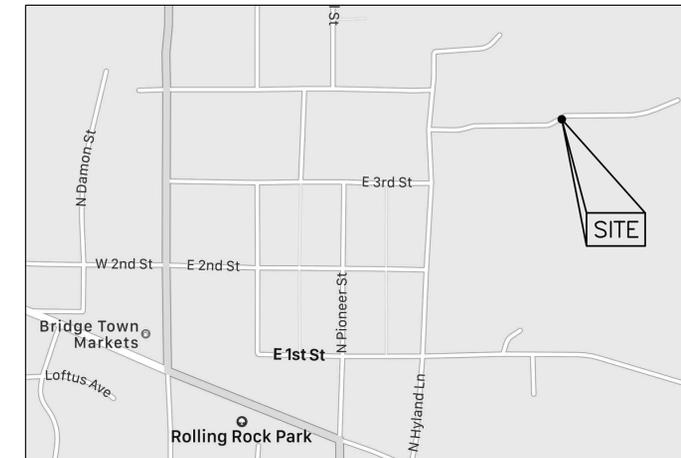
ENGINEER
 DENNIS J. BOEGER, PE, CWRE
 BOEGER & ASSOCIATES, LLC
 P.O. BOX 21623
 EUGENE, OR 97402
 541-302-4996



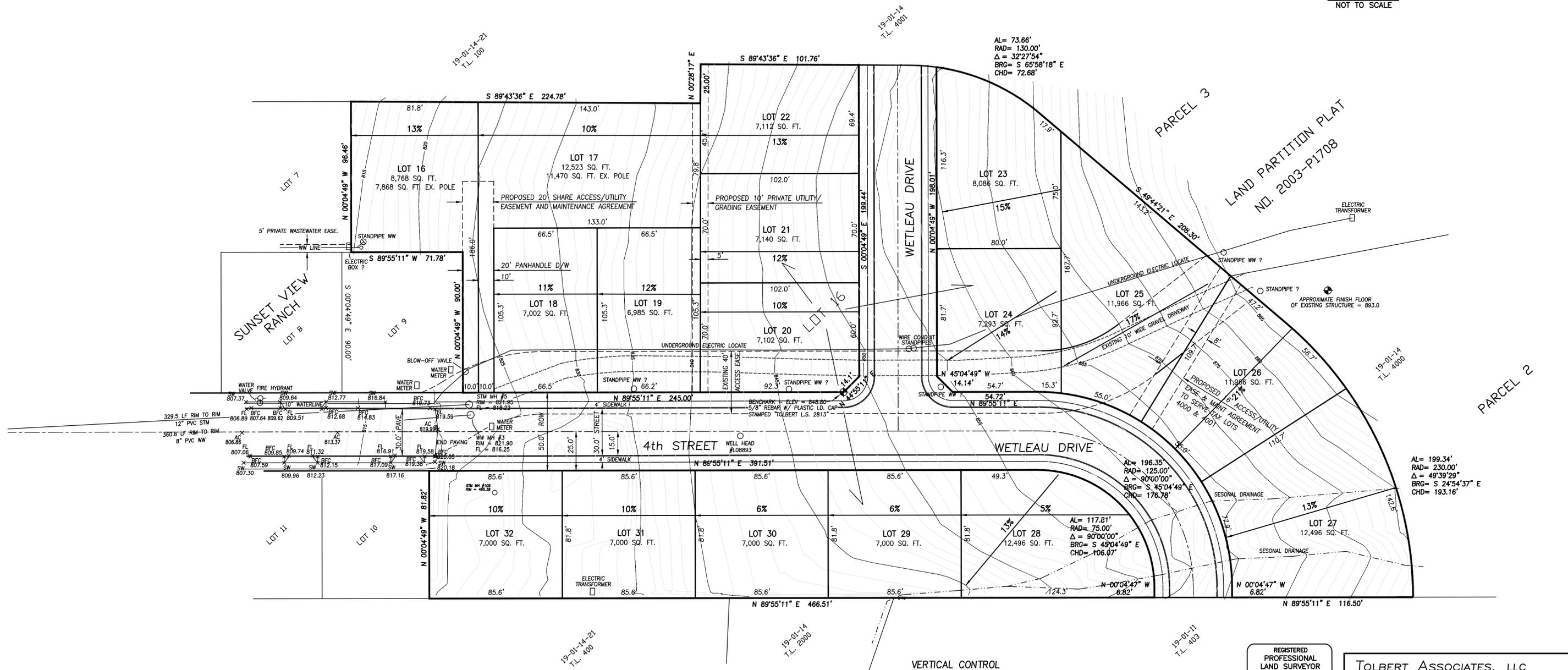
TENTATIVE SUBDIVISION PLAN SUNSET HILLS

NE 1/4, NW 1/4, SECTION 14, T. 19 S., R. 1 W., W.M.
 ASSESSOR'S MAP 19-01-14-21, TAX LOT 5000
 LOWELL, LAKE COUNTY, OREGON
 OCTOBER 10, 2019

ATTACHMENT J



VICINITY MAP
 NOT TO SCALE



VERTICAL CONTROL

ELEVATIONS ARE BASED ON LAKE COUNTY BENCHMARK, LCCM 1177,
 ELEVATION 742.20 (NGVD29) - LOCATED AT THE INTERSECTION OF PENGRA
 ROAD AND JASPER-LOWELL ROAD.

REGISTERED
 PROFESSIONAL
 LAND SURVEYOR

OREGON
 JUNE 30, 1997
 LLOYD L. TOLBERT
 2813
 EXPIRES: JUNE 30, 2020

TOLBERT ASSOCIATES, LLC

LAND SURVEYING & LAND USE PLANNING
 P.O. BOX 22603
 EUGENE, OREGON 97402
 (541) 359-8426
 WWW.TOLBERTASSOCIATES.COM
 CADD FILE-1485TENT.DWG DWN BY: LLT

ATTACHMENT K

HEARLEY Henry O

From: STANKA Danielle E <danielle.stanka@lanecountyor.gov>
Sent: November 8, 2019 2:26 PM
To: HEARLEY Henry O; ODOTR2PLANMGR@odot.state.or.us
Cc: COBB Jared
Subject: RE: Referral Comment for Sunset Hills Subdivision

Follow Up Flag: Follow up
Flag Status: Flagged

Henry,

This subdivision is not taking direct access off of a Lane County road, which means we will not have any referral comments for it.

Danielle Stanka

From: HEARLEY Henry O [mailto:HHEARLEY@Lcog.org]
Sent: Thursday, November 7, 2019 2:30 PM
To: STANKA Danielle E <danielle.stanka@lanecountyor.gov>; ODOTR2PLANMGR@odot.state.or.us
Cc: COBB Jared <jcobb@ci.lowell.or.us>
Subject: Referral Comment for Sunset Hills Subdivision

[EXTERNAL 

Please see attached documents for a subdivision proposal in Lowell, Oregon.

Application is still in completeness review.

Please let me know if you need anything else.

Henry O. Hearley
Assistant Planner
Lane Council of Governments
hhearley@locg.org
541-682-3089

HEARLEY Henry O

From: Lon Dragt <dragt2300@gmail.com>
Sent: July 31, 2020 10:45 AM
To: HEARLEY Henry O
Subject: Fwd: Message from KM_C308
Attachments: SKM_C30820073109290.pdf; LC 15.708 Turn around areas.pdf

I really hope everyone understands that I am in full support of these houses going in. However, there is a reason for the Fire Codes set the way they are. I cannot compromise the overall safety of the Fire personnel or the community members. I did address the issue back at the first meeting along with the City Manager. Oregon Fire Code is available for everyone to see. It is my job to point out these issues when I see them. The last set of plans did not show the proper turnaround at the dead end of either street. Attached is Oregon Fire Code Appendix D Section D103.4 Dead Ends as well as LC 15.708.

----- Forwarded message -----
From: <lowellfirecopier@gmail.com>
Date: Fri, Jul 31, 2020 at 9:20 AM
Subject: Message from KM_C308
To: <dragt2300@gmail.com>

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Lon Dragt, Fire Chief
Lowell RFPD
389 N. Pioneer St.
Lowell, Or. 97452
541-937-3393
dragt2300@gmail.com

ATTACHMENT L
CITY OF LOWELL
NOTICE OF PUBLIC HEARING
Mailing Date August 14,2020

Notice is hereby given for a Public Hearing by the Lowell Planning Commission and City Council for a **17-lot subdivision** of a property located at 19-01-14-21 Tax Lot 5000. Per Lowell Development Code, a subdivision requires a recommendation by Planning Commission forwarded onto City Council for final action. The dates for the Planning Commission and City Council hearings are listed below.

The Planning Commission Hearing will occur on September 9 at 7:00 pm.

The City Council Hearing will occur on September 15, 2020 at 7:00.

Due to the current pandemic, the City will be holding the meeting via Zoom. No physical location will be available for the public to attend the hearing. All persons are welcomed and encouraged to attend and submit comment via Zoom. Please contact Henry Hearley, for the meeting link to the meeting. A phone-call number option is also available, please contact Henry to receive the call-in number.

Requested Action: Creation of a 17- lot Subdivision for single family dwellings.

Owner/Applicant: Bahen Investments Group LCC

Applicant's Representative: Lloyd L. Tolbert, Surveyor & Dennis J. Boeger, Engineer

Property Location: No Address

Assessor Map: 19-01-14-21

Tax Lot: 5000

Existing Area: 3.27 acres

Existing Zone: R-1, Single Family Residential

The Lowell Land Use Development Code specifies the applicable procedures and criteria for evaluation of the requested action. Applicable Code Sections include: **Section 9.204 Application Site Plan, Section 9.220 Subdivision or Partition Tentative Plan, Section 9.223 General Information, Section 9.520 Storm Drainage, Section 9.516 Access, Section 9.517 Streets, Section 9.518 Sidewalks, Section 9.236 Dedication Requirements, Wetland Development, and Section 9.630 Hillside Development.** Additional criteria may be identified and incorporated into the Staff Report. The specific criteria will be addressed in the Staff Report. See map on reverse.

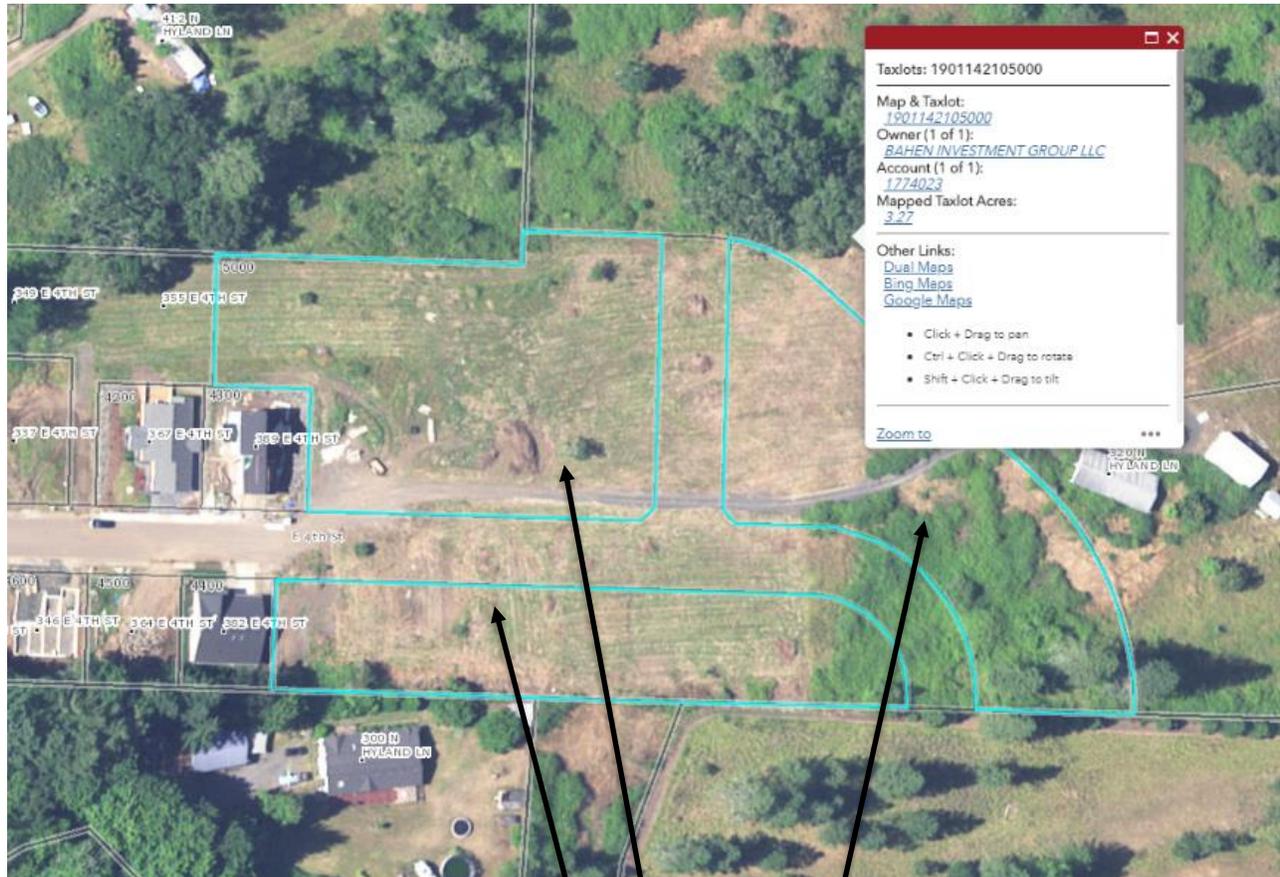
A copy of the Application, all documents and evidence relied upon by the Applicant and the Staff Report containing the applicable criteria will be available for inspection at the Lowell City Hall at least seven days prior to the public hearing meeting. The application and all applicant maps are available for anyone to inspect at City Hall or by calling or emailing Henry Hearley. See below for contact information. Copies provided at cost of printing.

Failure of an issue to be raised in the Hearing or by letter, or failure to provide sufficient detail to afford the decision makers an opportunity to respond to the issue precludes appeal to the Land Use Board of Appeals (LUBA) on that issue.

A Subdivision requires a Public Hearing (dates noted above). Oral testimony may be presented at the Hearing viz Zoom or written testimony may be delivered or mailed to the Lowell City Hall located at 107 East Third Street, Lowell, Oregon 97452 or emailed to Marsha Miller, City Administrator, at mmiller@ci.lowell.or.us. Or to Henry Hearley, Lane Council of Governments, 859 Willamette Street, Suite 500, Eugene, OR, 97401, hhearley@lcog.org 541-682-3089.

Written Testimony shall be received by the City no later than 3:00 pm on September 1, 2020 to be included in the Packets presented to Commissioners and Councilors.

For additional information please write to City Hall at the above address or call City Hall at (541) 937-2157 or fax to 541-937-2066, or to Henry Hearley at the address listed in this notice.



Subject Property

