



AGENDA
City of Dallas
Planning Commission
Tuesday, April 9, 2024 - 7:00 p.m.
City Hall Council Chambers
187 SE Court Street

**Planning
Commission**

President
John Swanson

Vice President
Andy Groh

Commissioner
Carol Kowash

Commissioner
Tory Banford

Commissioner
John Schulte

Commissioner
Rich Spofford

Commissioner
Mary Newell

Staff

City Attorney
Lane Shetterly

City Planner
Chase Ballew

Recording Secretary
Benjamin Curry

1. CALL TO ORDER
2. ROLL CALL
3. APPROVAL OF MINUTES - Regular meeting of March 12, 2024
4. PUBLIC COMMENT – This is an opportunity for citizens to speak to items not on the agenda (3 minutes per person please.)
5. PUBLIC HEARINGS
 - CUP 24-01 Carson Commons – Polk Community Development Corporation
Proposed 20-unit apartment building at 373 East Ellendale Avenue
 - SUB 24-01 Oakdale Estates Phase 3-7 – Steve Bennett Construction LLC
Phased development of 59-lot subdivision South of Hayter & Ellis Streets
7. COMMISSIONER COMMENTS
8. STAFF COMMENTS
9. ADJOURN

Next meeting will be 05/14/2024

To Join In Person: 187 SE Court Street, Dallas, OR 97338

To Watch Online: www.dallasor.gov/community/page/dallasyoutube

To Participate Virtually: Call +1 253 215 8782 - Meeting ID: 213 855 0622

If you are watching online and want to submit a comment either in the public comment period or during the Public Hearing comment period, you must telephone: +1 253 215 8782
Meeting ID: 213 855 0622

If you are unable to access the meeting by telephone or by computer, please contact the Administration Department (503-831-3502) at least 48 hours in advance to request alternative accommodation.

Dallas City Hall is accessible to all people with disabilities. Any requests for accommodation should be made at least 48 hours before the meeting to the Economic and Community Development Department, 503-831-3565 or TDD 503-623-7355.

For questions or comments on the agenda, contact: Chase Ballew at 503.831.3570 or chase.ballew@dallasor.gov.

MINUTES

1 **1. CALL TO ORDER**

2 Lane Shetterly as counsel, called the meeting to order at 7:00 p.m.
3 Mr. Schulte nominated Mr. Banford for Chair Pro Tem, Mr. Spofford seconded the motion. The
4 motion passed unanimously.
5

6 **2. ROLL CALL**

7 **Commissioners Present:** John Schulte, Mary Newell, Rich Spofford Tory Banford, Carol Kowash
8 **Not in Attendance:** John Swanson, Andy Groh
9 **Staff Present:** Chase Ballew, City Planner; Tom Gilson, Public Works Supervisor; Brian Latta,
10 City Manager; Lane Shetterly, City Attorney; Benjamin Curry, Recorder
11

12 **3. APPROVAL OF MINUTES**

13 Mr. Banford presented the minutes of the regular meeting of February 13th, 2024.
14 Mr. Schulte made a motion to approve the minutes as written. Ms. Newell seconded the motion. The
15 motion passed unanimously.
16

17 **4. PUBLIC COMMENT (3 minutes per person)**

18 There were none.
19

20 **5. PUBLIC HEARING – A**

21 **VAR 24-04 Parking Variance for short-term rental – Naomi & Joshua Smith**
22 Mr. Banford opened the public hearing at 7:04 p.m. He introduced the agenda item, the rules for
23 public testimony, and the quasi-judicial proceedings to follow. No ex-parte contact or conflicts of
24 interest were declared.
25

26 **STAFF REPORT**

27 Mr. Ballew read from the staff report and summarized the application and the criteria for approval.
28 Staff recommends that VAR 24-04 be approved as written with conditions.
29

30 **APPLICANT PRESENTATION**

31 **Naomi Smith – Owner, Smith Lane Falls City Oregon,**
32 Ms. Smith had added no additional comments to her applicant testimony.
33 Ms. Kowash inquired about how one driveway became shorter than the other. Ms. Smith shared
34 details about the broader site and space restrictions caused by other features of the property.
35

36 **PUBLIC TESTIMONY**

37 There was none.
38

39 **REBUTTAL**

40 No rebuttal was provided due to lack of opposing testimony.
41 Mr. Banford closed the Public Hearing at 7:10 p.m.
42

43 **DELIBERATIONS**

44 Mr. Schulte made a motion to approve VAR 24-04 with conditions of approval as written in the
45 staff report, Ms. Kowash seconded the motion. The motion passed unanimously with Ms. Kowash,
46 Mr. Schulte, Ms. Newell, Mr. Spofford and Mr. Banford voting in favor.
47
48

49 **6. COMMISSIONER COMMENTS**

50 There were none.

51

52 **7. STAFF COMMENTS**

53 Mr. Ballew provided an update on upcoming larger applications in the planning pipeline.

54

55 **8. ADJOURN**

56 Mr. Swanson adjourned the meeting at 7:12 p.m. Next meeting: April 9th, 2024, 7:00 p.m.

57

58 **APPROVED**

59

60

Mr. Banford, Planning Commission Chair Pro Tem

Date

DRAFT

**CITY OF DALLAS
PLANNING COMMISSION
STAFF REPORT**

Meeting Date: April 9, 2024
Topic: Carson Commons Apartment Building - #CUP-24-01

Application Type: Conditional Use
Applicant: Polk Community Development Corporation
Location: 373 East Ellendale Avenue

RECOMMENDED ACTION

Approval with Conditions

BACKGROUND INFORMATION

Zoning: CG – General Commercial
Comprehensive Plan: Commercial
Floodplain: No Floodplain
Adjacent Land Uses: Retail; Office; Quick Vehicle Servicing; Multi-Family Residential

PROJECT OVERVIEW

The applicant’s request is to construct a 20-unit apartment building on 0.41 acres in the General Commercial zone. In this zone, new dwellings on the ground floor or not in conjunction with a commercial use, and with a minimum density of 24 units per acre, require a conditional use permit and compliance with special standards. The applicant has submitted a conditional use permit application.

The applicant is also requesting adjustments to certain building architectural design standards; as the conditional use permit must be decided by the Planning Commission, the associated adjustment request is elevated to the Planning Commission for review as well.

APPROVAL CRITERIA:

DDC 4.4.040.A – Conditional Use Permit Approval Criteria
DDC 4.2.060.A – Site Design Review Approval Criteria
DDC 2.2.070 and 2.2.100 – Special Use Standards Applicable to Proposed Use

Staff refer to and incorporate the applicant’s written narrative for supportive findings in response to the above mentioned criteria (**Exhibit A**). Staff generally concur with the applicant’s findings, with additional specific findings as follows.

Staff note that the applicant requests “Variances” to the building design standards in DDC Section 2.3.080. Consistent with DDC 2.3.080.C, adjustments to the specific provisions of DDC Section 2.3.080 are allowed through a Type II procedure, when the adjustments are consistent with the

purposes of this section and the applicant provides an alternate proposal that meets the intent of the standard being adjusted.

CONDITIONAL USE CRITERIA

Applicable approval criteria for a conditional use permit are contained in Dallas Development Code section 4.4.040.A.

Criterion:

DDC 4.4.040.A.1. – The site size, dimensions, location, topography and access are adequate for the needs of the proposed use, considering the proposed building mass, parking, traffic, noise, vibration, exhaust/emissions, light, glare, erosion, odor, dust, visibility, safety and aesthetic considerations

Finding:

The application demonstrates that the site is adequate for the proposed use.

Criterion:

DDC 4.4.040.A.2. – The negative impacts of the proposed use on adjacent properties and on the public can be mitigated through application of other Code standards, or other reasonable conditions of approval.

Finding:

The applicant's narrative does not specify any potential negative impacts, and staff were not able to identify any potential negative impacts of the proposed use.

Criterion:

DDC 4.4.040.A.3. – All required public facilities have adequate capacity to serve the proposal.

Finding:

The site is already served by public facilities, including water, sewer, and storm drainage with adequate capacity to support the proposed use.

As the estimated traffic generation (20 apartments @ 4.54 ADT = 91 daily trips) does not meet the threshold for requiring further traffic analysis, and in the absence of other evidence to the contrary, it is presumed the roadway system has capacity to accommodate the use.

SITE DESIGN REVIEW CRITERIA

The Site Design Review approval criteria shall be met. Applicable approval criteria are contained in Dallas Development Code section 4.2.060.A.

Criterion:

DDC 4.2.060.A.1 – The application is complete, as determined in accordance with chapter 4.1 – Types of Applications and Section 4.2.050.

Finding:

The application was determined to be complete, and the Planning Official determined that the materials supplied with the conditional use application provides sufficient information to evaluate the proposal.

Criterion:

DDC 4.2.060.A.2 – *The application complies with all of the applicable provisions of the underlying Land Use District (Article 2), including building and yard setbacks, lot area and dimensions, density and floor area, lot coverage, building height, building orientation, architecture, and other applicable provisions.*

Finding:

In the General Commercial zone, new dwellings on the ground floor require a conditional use permit, and must have a density of at least 24 units per acre. This proposal is 20 apartments on 0.41 acres, for a density of 49 apartments per acre. (Note that DDC 2.2.050 specifies multi-family density is calculated fractionally by number of bedrooms. It is not clear if that metric is intended to also apply to this threshold, but under the fractional metric the project is 10.25 Dwelling “Units.” On 0.41 acres that is a density of 25 “units” per acre, so either way the minimum threshold of 24 per acre is satisfied.)

In the CG zone lot coverage is limited to 80%, and this standard is satisfied. The building is more than 10 feet from the abutting residential zones, so the CG zone setback standard is satisfied. No land division is proposed, so minimum lot size/dimension standards don’t apply.

The table of Land Uses Allowed in Commercial Districts (DDC 2.3.020.B) specifies that:

New residential buildings (not in conjunction with ground floor commercial use) must conform to the Architectural Standards contained in Section 2.2.070 and 2.2.100.

referring the building orientation and design standards generally applicable to residential zones, as the structure is a residential use. The building orientation section prohibits parking areas between the building and street, and requires buildings to have a primary entrance oriented to the street. The proposal has an entrance on Ellendale Avenue, so this requirement is satisfied. The building design standards address attached garages and variation of façade from neighboring buildings, neither of which apply to the proposal, and façade articulation, which does apply. The proposed façade is articulated with windows and doors, recesses and projections, building offsets, bellybands, and canopies, so this standard is satisfied.

Although the residential zone standards are specifically referenced as described above, the code does not say that those standards supersede the standards of the commercial zone, therefore both sets of standards apply. Standards for building architectural design in commercial zones are contained in DDC 2.3.080, and the applicant is requesting several design exceptions. This section specifically allows the standards to be adjusted through a Type II procedure, provided the adjustment is consistent with the stated purpose and the applicant demonstrates that an alternative proposal meets the intent of the standard.

The stated purpose and intent of the commercial zone Building Design Standards is:

To support the development of traditional downtown, village commercial, and mixed use commercial areas with architecture that responds to and reconciles Dallas’s historical context and its existing built environment. Because much of Dallas’s historic downtown is intact, the following standards draw on the available architectural vocabulary while allowing a contemporary interpretation of rural building forms and styles scaled to each land use district. It is not the City’s intent to create an architectural theme, but rather to ensure that new buildings and remodels fit within the context of their surroundings and contribute toward the development of

compact, walkable districts. The key elements of mixed use district building design are summarized as follows:

- 1. Draw upon the local vocabulary of building styles and elements, including compatibility with locally significant historic structures where applicable*
- 2. Create a sense of street enclosure with appropriate building heights and detailing that express a pedestrian-scale*
- 3. Address differences in scale between the Central Business District, Commercial General, and Commercial Neighborhood districts*
- 4. Transition building height between Commercial districts and adjacent residential neighborhoods*
- 5. Require the use of contextually appropriate materials, textures and colors*
- 6. Promote a storefront character (windows, pedestrian shelter, furnishings, etc.)*
- 7. Encourage a diversity of building facades and rooflines that fall into a consistent rhythm*
- 8. Promote corner lots as focal points*
- 9. Improve the streetscape with adequate civic space, street furnishings and public art*
- 10. Encourage advances in building design technology that make Dallas more sustainable*

As presented, the applicant's proposal calls for adjustments for the following standards:

- Build-To Line
- Corner Entry
- Building Base
- Ground Level Transparency
- Window Trim
- Pedestrian Shelters

DDC 2.3.080.C.2. Build-to Line

Commercial buildings, including mixed-use buildings containing residential and commercial uses, shall conform to the Build-to Line standards in Section 2.3.030. The standard is met in the CG and CN districts when at least fifty (50) percent of the abutting street frontage has a building placed no farther from at least one street property line than the required Build-to Line in Table 2.3.030. In the CBD, at least eighty (80) percent of the abutting street frontage shall have a building placed no farther from at least one street property line than the required Build-to-Line. An exception to the Build-to Line may be approved or required in the following situations:

- a) Where a proposed building is adjacent to a single-family dwelling, and an increased setback promotes compatibility with the adjacent dwelling.*
- b) Where access limitations or other applicable transportation requirements preclude development at the build-to line, the building shall orient to an internal shopping street, as described under subsection 2.3.060.D, where the build-to line shall apply.*
- c) Where the sidewalk width is extended for public use, or a public plaza is proposed to be placed between the building and public right-of-way, subject to Site Design Review. Exceptions to the build-to line may also be made through Site Design Review for planter boxes and other non-permanent structures incorporated into the building wall, provided the planter box does not exceed a height of thirty (30) inches above sidewalk grade.*

- d) *Where a significant tree or other environmental feature precludes strict adherence to the standard and will be retained and incorporated in the design of the project.*
- e) *Where a public utility easement or similar restricting legal conditions make conformance with the Build-to Line impracticable, the building shall instead be placed as close to the street as possible given the legal constraint, and pedestrian amenities (e.g., plaza, courtyard, landscaping, outdoor seating area, etc.) shall be provided within the street setback in said location.*

In the General Commercial zone, new buildings must be constructed to have at least 50 percent of their street-facing walls within 10 feet of the property line. The proposed building does not conform to this standard. There are utility easements that limit how close the building can be to the street. In addition, the deep articulations of the building push much of the building wall further away from the street. As stated above, the code provides for exceptions (c & e) when widened sidewalks or plazas are provided, however no such improvement is proposed by the applicant. To qualify for the exception Staff recommend the sidewalk be widened to at least 10 feet (**Condition of Approval 2**) for the length of the property along Ellendale.

DDC 2.3.080.E.1. Transparency along Ground Level

Except as approved for parking structures or accessory structures, buildings shall provide display windows, windowed doors and transom windows to express a storefront character. The ground floor, street-facing elevation(s) of all buildings shall comprise at least sixty percent (60%) transparent windows, measured as a section extending the width of the street-facing elevation between the building base (or 30 inches above the sidewalk grade, whichever is less) and a plane seventy-two (72) inches above the sidewalk grade. Upper floors may have less window area, but shall follow the vertical lines of the lower level piers and the horizontal definition of spandrels and any cornices. Buildings without a street-facing elevation, such as those that are setback behind another building and those that are oriented to a civic space (e.g., internal plaza or court), shall meet the sixty percent (60%) transparency standard on all elevations abutting civic spaces(s) and on elevations containing a primary entrance. All side and rear elevations, except for zero-lot line/common wall elevations (where windows are not required), shall provide no less than thirty percent (30%) transparency. Exceptions to the elevations described above (30" – 72" above sidewalk) may be approved where existing topography makes compliance impractical. Where an exception to the window transparency requirement is made for parking garages or similar structures, the building design must incorporate openings or other detailing that resembles the window patterns (rhythm and scale).

As part of the design intent to promote a storefront character, the code standards require a certain percentage of the ground floor to be transparent windows. The applicant requests an adjustment to this standard, and includes a graphic showing their measurement and their rate of non-compliance. Staff believe the applicant's calculations are in error, as they are based on area, whereas staff's interpretation is the required percentage is a linear measurement. Regardless, the result is non-compliant. The street-facing facades are required to have windows along at least 60% of their length, and staff calculate the Ellendale facade has windows along only 44% of its length, and 18% along the Uglow facade. A major factor to consider in this adjustment is the fact that the proposed building is a residence, and not a commercial storefront. Storefront-sized windows may be less appropriate for residential use. The use of pre-fabricated fiberboard siding panels is another limiting factor, as the

windows are sized to the size of the panels, making wider windows impractical. Staff finds the amount of transparent windows on each street-facing façade is appropriate for the proposed residential use of the building.

DDC 2.3.080.E.4. Window Trim.

At a minimum, windows shall contain trim, reveals or recesses of not less than four (4) inches in width or depth as applicable. The use of decorative detailing and ornamentation around windows (e.g., corbels, medallions, pediments, or similar features) is encouraged.

The applicant states that the windows at the northeast corner of the building will not have window trim, but that instead decorative brick patterns will be used (**Condition of Approval 3**). This section specifically encourages decorative detailing around windows. Staff finds the decorative brick patterning meets the intent of the purpose of this code section.

DDC 2.3.080.E.7 Corner Entrances

Buildings on corner lots shall have corner entrances that open onto a concrete or paver landing (widened sidewalk or plaza) that extends from the adjacent sidewalk; the landing shall be at least 3 feet in width and depth. Such building entrances are not required to be recessed, but shall have an awning, recess or canopy for weather protection. Where a corner entrance is not provided, the building plan shall provide for a corner plaza consistent with Section 2.3.090, below, and the building shall provide architectural features (e.g., alcove with seating or artwork) at the corner that emphasizes the corner as a civic space.

As designed, the building does not have a primary entry oriented towards the street corner. The applicant's narrative cites slopes as being a barrier to such a design, and staff note that the street corner is the high-point of the lot, being two feet higher than the finished floor elevation and four feet higher than the parking lot, so a design exception appears warranted. No corner plaza is proposed.

DDC 2.3.080.G.4. Building Base

Buildings shall have a foundation or base, typically from ground to the bottom of the lower window sills, with changes in volume or material, to give a sense of strength.

The applicant states that they have utilized an alternate approach, rather than have a defined base from bottom of window sill to the ground, due to topography. The alternative approach is to have the first two floors of the proposed building be defined as the building base, and be differentiated from the third floor in terms of exterior materials (**Condition of Approval 4**). Staff note that it appears that at the highest corner, the bottom of the windowsill is approximately one-and-a-half feet above grade of the sidewalk.

DDC 2.3.080.J Pedestrian Shelters.

Awnings, canopies, recesses or similar pedestrian shelters shall be provided along at least seventy-five percent (75%) of a building's ground floor elevation(s) where the building abuts a sidewalk, civic space (e.g., plaza), pedestrian access way, or outdoor seating area. Pedestrian shelters used to meet the above standard shall extend at least five (5) feet over the pedestrian area, be proportionate to the building in its dimensions, and not obscure the building's architectural details. If mezzanine or transom windows exist, the shelter shall be below such windows where practical.

Pedestrian shelters shall align with one another to the extent practical. Use of colored canvas (not plastic) awnings and wood canopies, consistent with historical styles, is encouraged, though metal and plexi-glass canopies may be approved when consistent with a building's overall composition. Exception: The City may reduce the minimum shelter depth upon finding that existing right-of-way dimensions, easements, or building code requirements preclude a larger shelter.

The applicant states the canopy over the door will have a depth of two feet eight inches, which is less than the required five foot depth. This is due to underground utility easements, and the canopy on the opposite side of the building will be designed to match. Staff agree that the canopy should not extend into the utility easement area.

In addition to the building design standards above, the applicant is also requesting adjustment to the Civic Space requirements of DDC 2.3.090. As before, this section specifically allows the standards to be adjusted without need for a variance, provided the adjustment is consistent with the stated purpose and the applicant demonstrates that an alternative proposal meets the intent of the standard. The stated purpose is as follows:

The increased development intensity, pedestrian activity, close building orientation and minimal private open space in Commercial Districts requires that civic space be provided along street frontages and in courtyards or plazas between buildings. Civic space, such as plazas, extra-wide sidewalks, outdoor seating areas, pedestrian access ways between buildings, alcoves and pocket parks, provide visual relief, pedestrian resting areas and opportunities for socialization. The provision of attractive and functional civic spaces is as important as building design and centralized parking areas to the success of commercial areas. Therefore, the City requires that all new commercial developments and redevelopment projects in these districts contribute their proportionate share of civic space.

DDC 2.3.090.C.1 Civic Space Standard.

At least three percent (3%) of every development site shall be designated and improved as civic space (plaza, landscaped courtyard, or similar space) that is accessible to the general public, with the highest priority locations being those areas with the highest pedestrian activity (e.g., street corners and pedestrian access ways), as generally illustrated in the examples accompanying this subsection. Such areas shall abut a public right-of-way or otherwise be connected to and visible from a public right-of-way by a sidewalk or pedestrian access way; access ways shall be identifiable with a change in paving materials (e.g., pavers inlaid in concrete or a change in pavement scoring patterns and/or texture). Where public access is not practical due to existing development patterns, physical site constraints, or other hardship presented by the applicant, the City may allow a private area such as an outdoor eating area attached to a restaurant in finding the project complies with the standard. All civic spaces shall have dimensions that allow for reasonable pedestrian access and civic use. For example, a small site may provide a 4-foot wide strip adjoining the sidewalk for an outdoor eating area; where as a larger site at a street corner may provide a plaza adjacent to a building entrance. Improvements shall conform to subsection B, below. See also, Chapter 3.2 Landscaping.

Exception for In Lieu Fee: Where the City finds that the creation of civic space is not practicable based on the project location or other relevant factors, it may accept an in lieu fee which shall be proportionate to the estimated cost of land and improvements (on-site) that otherwise would have been required. In such case, a licensed architect, landscape architect, or other qualified professional, shall prepare cost estimates for civic space improvements, which shall be subject to review and approval by the Community Development Director.

The applicant's narrative states that constructing a civic space / widened sidewalk / plaza at the street corner is impractical due to slopes, so the provided site plan designates as civic space the wheelchair ramp and adjacent sidewalk on the south side of the building, which includes benches backed up to a low retaining wall, and landscaping. Staff finds the alternate proposal is in line with the stated purpose of DDC Section 2.3.090.

Staff finds that the adjustments requested above are consistent with the stated purpose(s) and that the applicant has demonstrated that their alternative proposal meets the intent of the standard(s). This criterion is satisfied.

Criterion:

DDC 4.2.060.A.3 – The applicant shall be required to upgrade any existing development that does not comply with the applicable land use district standards, in conformance with Chapter 5.2, non-conforming uses and development.

Finding:

The proposal necessitates demolition of all existing development, so this criterion does not apply.

Criterion:

DDC 4.2.060.A.4 – The proposal complies with all of the design standards in Article 3.

Finding:

Chapter 3.1 – Site Access

The existing driveway from Ellendale Avenue will be removed, and a new driveway constructed from Uglow Street consistent with the required driveway spacing standard. Pedestrian access is provided via walkways from Ellendale and from Uglow.

Chapter 3.2 – Landscaping

A landscaping plan has been provided. No "Significant Vegetation" as defined in the Dallas Development Code exists on the site, although there are non-significant mature trees which will be removed as part of the project. The landscaping standards of Chapter 3 requires a minimum of 10% of the site be landscaped, and the proposal has 22% of the site landscaped. Street trees and parking lot perimeter trees are shown on plans.

Chapter 3.3 – Parking

For multi-family uses required automobile parking is based on the number of bedrooms; alternately DDC 3.3.030.A specifically allows the applicant to provide an analysis justifying a different quantity without need for a variance. Code standard for a building of this size would be 21 parking spaces, whereas 18 spaces are proposed. The applicant believes a smaller quantity is warranted as this development is regulated affordable housing for low-income people, a population known to have lower car ownership rates. Based on the developer's prior experience with similar projects for this

population, they are proposing 18 parking spaces, and staff support this adjustment. Bicycle parking is shown inside the building, and exceeds the required rate of 1 per 20 apartments. No designated loading area is required for a building of this size.

Chapter 3.4 – Public Facilities

The application does not propose constructing public infrastructure.

Chapter 3.6 – Signs

A monument sign is shown along Uglow Street, however no further details are provided. Any new signs shall be required to obtain a sign permit in compliance with Chapter 3.6.

In summary, staff finds the application complies with the design standards of Article 3.

Criterion:

DDC 4.2.060.A.5 – Existing conditions of approval required as part of a prior land use decision, including land divisions, conditional use permits, master planned developments, or other approval, shall be met.

Finding:

City staff are not aware of any prior conditions of approval. This criterion does not apply.

RECOMMENDED ACTION

Staff recommends that the Conditional Use Permit application be approved with the following conditions.

RECOMMENDED CONDITIONS OF APPROVAL

- 1) The applicant shall obtain all required building permits and receive final inspection from the Dallas Building Department prior to occupancy.
- 2) The sidewalk along Ellendale shall be widened to at least 10 feet for the length of the property frontage, and appropriate public easement or right-of-way dedication shall be provided.
- 3) Decorative brick patterns shall be used around windows located on walls clad with brick.
- 4) A change in cladding materials shall be used to differentiate between the third floor and lower floors.

RECOMMENDED MOTION:

I move to approve the Conditional Use Permit with the conditions stated in the staff report.

EXHIBITS

- A. Applicant's Narrative
- B. Applicant's Architectural & Site Plans
- C. Notice of Public Hearing

Conditional Use Permit Application
Dallas Planning Department
Development Code Type III Review

#233-24-000020-PLNG

Official Use Only

File No.: CUP-24-01

Date: 3-8-2024

Fee: \$ 1,250 ~~PAID~~

There are certain uses, which, due to the nature of their impacts on surrounding land uses and public facilities, require a case-by-case review and analysis. These are identified as "Conditional Uses." The purpose of a conditional use permit is to provide standards and procedures under which a conditional use may be permitted, enlarged or altered if the site is appropriate and if other appropriate conditions of approval can be met. An application for a new conditional use permit is processed as a Type III procedure (DDC 4.1.010). Modifications to approved or existing conditional uses shall be processed in accordance with DDC Chapter 4.6 – Modifications. A pre-application conference is required before a conditional use permit application is submitted.

Please return a completed application form with attachments, and the required fee to the Dallas Planning Department, Dallas City Hall, Second Floor, 187 SE Court Street, Dallas, Oregon 97338.

Section 1 – Applicant Information

Name(s): Polk Community Development Corporation

Mailing Address: PO Box 33, Dallas, OR 97338

Email: klyell@polkcdc.org Phone Number: 503.831.3173 Cell Number: 503.551.4919

Section 2 – Property Owner Information (If not applicant)

Property Owner(s): Polk Community Development Corporation

Mailing Address: PO Box 33, Dallas, OR 97338

Email: klyell@polkcdc.org Phone Number: 503.831.3173 Cell Number: 503.551.4919

Section 3 – Project Description

Please describe your project: Carson Commons - Construction of one, three story building made up of 20 units of affordable multifamily housing.

Site Address: 373 E. Ellendale Ave., Dallas, OR 97338 Total Land Area: 17,753 SF

Assessor Map/Taxlot No. 07528-CD-02204 Zoning: Commercial General

Present Use of Property: Demolish one single family residence

Section 4 – Application Submittal Information

Please submit one electronic copy (PDF format preferred) and one paper copy of the information listed below:

- Completed application form;
- Required fee;
- Written narrative that addresses the relevant criteria found in DDC Section 4.4.040 (see also Section 6, page 3);
- Existing site conditions map;
- Preliminary grading plan;
- A copy of all existing and proposed restrictions or covenants;
- Drawings of all proposed signs;

EXHIBIT A.2

- Site plan** with the following information:
 - The proposed development site, including boundaries, dimensions, and gross area;
 - Features identified on the existing site conditions map that are proposed to remain on the site;
 - Features identified on the existing site map, if any, which are proposed to be removed or modified by the development;
 - The location and dimensions of all proposed public and private streets, drives, rights-of-way, and easements;
 - The location and dimensions of all existing and proposed structures, utilities, pavement and other improvements on the site. Setback dimensions for all existing and proposed buildings shall be provided on the site plan;
 - The location and dimensions of entrances and exits to the site for vehicular, pedestrian, and bicycle access;
 - The location and dimensions of all parking and vehicle circulation areas (show striping for parking stalls and wheel stops);
 - Pedestrian and bicycle circulation areas, including sidewalks, internal pathways, pathway connections to adjacent properties, and any bicycle lanes or trails;
 - Loading and service areas for waste disposal, loading and delivery;
 - Outdoor recreation spaces, common areas, plazas, outdoor seating, street furniture, and similar improvements;
 - Location, type, and height of outdoor lighting;
 - Location of mail boxes, if known;
 - Name and address of project designer, if applicable;
 - Locations of bus stops and other public or private transportation facilities;
- Architectural drawings** of all structures showing one or all of the following shall be required for new commercial, commercial/residential, industrial and multifamily buildings, and major remodels of the same:
 - Building elevations (as determined by the City Planning Official) with building height and width dimensions;
 - Building materials, colors and type;
 - The name of the architect or designer;
- Landscape plan** showing the following:
 - The location and height of existing and proposed fences, buffering or screening materials;
 - The location of existing and proposed terraces, retaining walls, decks, patios, shelters, and play areas;
 - The location, size, and species of the existing and proposed plant materials (at time of planting);
 - Existing and proposed building and pavement outlines;
 - Specifications for soil at time of planting, irrigation if plantings are not drought-tolerant (may be automatic or other approved method of irrigation) and anticipated planting schedule;
 - Other information as deemed appropriate by the City Planning Official. An arborist's report may be required for sites with mature trees that are protected under Chapter 3.2. Landscape, Street Trees, Fences and Walls of this Code;
- Traffic Impact Analysis** when required, shall be prepared in accordance with the road authority's requirements. See Section 4.1.090, and Section 3.4.010 for relevant standards; and
- Other information** determined by the City Planning Official. The City may require studies or exhibits prepared by qualified professionals to address specific site features or project impacts (e.g., traffic, noise, environmental features, natural hazards, etc.), in conformance with the Dallas Development Code.

Section 5 – Signatures Required

I hereby certify the statements contained herein, along with the evidence submitted, are in all respects true and correct to the best of my knowledge:

PROPERTY OWNER(S):

Reta W. Hardy
Executive Director

Date: 2/22/24

Date: _____

APPLICANT(S)

Reta W. Hardy
Executive Director

Date: 2/22/24

Date: _____

Section 6 – Application Review Criteria

Approval Criteria. An application for a Conditional Use Permit shall be approved if the proposal meets all of the following criteria. The City decision making body may, in approving the application may impose reasonable conditions of approval, consistent with the applicable criteria.

1. The site size, dimensions, location, topography and access are adequate for the needs of the proposed use, considering the proposed building mass, parking, traffic, noise, vibration, exhaust/emissions, light, glare, erosion, odor, dust, visibility, safety, and aesthetic considerations;
2. The negative impacts of the proposed use on adjacent properties and on the public can be mitigated through application of other Code standards, or other reasonable conditions of approval; and
3. All required public facilities have adequate capacity to serve the proposal.

The Site Design Review approval criteria (DDC Section 4.2.060) shall also be met. The Planning Official may waive the application requirements for Site Design Review upon determining that the Conditional Use Permit application provides sufficient information to evaluate the proposal.

Additional criteria and requirements apply for Wireless Communication Facilities (see DDC Chapter 3.5) and Drive-up/Drive-through uses (See DDC Section 2.3.100).

Section 7 – Review and Approval

Official Use Only:

Approved Denied Reason for Denial: _____

Address Modification Required: Yes No

If yes, Add Remove _____
(Address)

Staff Signature: _____

Date: _____

BDA

Architecture & Planning, P.C.

1369 Olive Street
Eugene, OR 97405

bdarch.net
541.683.8661

March 7, 2024

To:

City of Dallas: Planning Division
187 SE Court Street
Dallas, OR 97338

RE: PCDC Carson Commons Conditional Use Permit

Please find (1) paper copy of the following documents:

8.5"x11":

Conditional Use Permit Application
Narrative

24"x36":

Existing Conditions Survey
A000 Demo Site Plan
A001 Site Plan
A201 Building Elevations
C121 Grading Plan
C131 Utility Plan
LA-1 Landscape Plan

Sincerely,



Kevin Ruhland, AIA

EXHIBIT A.5

Carson Commons

Polk Community Development Corporation
Dallas, Oregon

Preliminary Code Summary

This proposed **Multi-Family Housing** development consists of a single 3-story residential building with a combination of common areas and residential units on the ground level and residential occupancy above. The dwelling units consist of (19) 1-bedroom dwelling units, and (1) 2-bedroom unit for a total of (20) dwelling units. The ground floor community spaces consist of a property manager's office, lounge area, shared resident laundry room, and bicycle storage, with a separate lounge area located on the third floor. The project exterior improvements include a trash enclosure, common outdoor spaces, landscaping, parking and utilities. Vehicular site access would be exclusively from SE Uglow Street at the parking lot that will accommodate 18 spaces. The existing driveway from Ellendale Avenue will be vacated.

Project Address: 373 E ELLENDALE AVE
Tax ID: 0201-129978
Site Area: 17,724 SF; 0.41 acre
Zone: CG Commercial General

Ground Floor Area: 6,601 SF
Total Floor Area: 17,760 SF

of Buildings Proposed: 1
of Dwelling Units (19) 1 Bedroom Units
(1) 2 Bedroom Units
20 Total Units

2.3.020B – Land Uses Allowed in Commercial Districts

Uses: Residential at ground floor 24+ units/acre: Conditional Use with Standards (CU+S)

CG Density Allowed: 24+ Units/Acre
Proposed Calculated Density: 49 Units/Acre

2.3.030 – Development Standards for Commercial Districts

Lot Area, Min. Required: 5,000 SF
Lot Area, Actual: 17,724 SF

Height Allowed: 3 Stories; 40 Ft.
Height Calculated: 3 Stories; 34 Ft.

Fences and Screening Walls: Allowed for screening and security only. All fences and walls are outside of the yard setbacks and vision clearance triangles.

EXHIBIT A.6

Lot Coverage:	Impervious Surface Coverage 80%, Max Allowed: 14,179 SF (80%) Impervious Surface Coverage Proposed: 12,898 SF (73%)
	Required Landscape Area 10%, Max Required: 1,773 SF (10%) Min. Open Space Area Proposed: 4,826 SF (27%)
Setbacks:	Front, Steet, Side and Rear: 0 feet except as otherwise required for Civic Space, for future street improvement (Per Transportation System Plan), for utilities or clear vision at street intersection, or as required by other applicable codes; and a minimum setback of 10 feet is required abutting a residential district.
Build-To Line:	10 feet – Building entrance from Ellendale is located at 10' Build-To Line

2.3.080 – Building Design Standards

C.1 Maximum building height conforms to the zoning requirements.

C.2.E Variance Request: Less than 50% of abutting street frontage will meet this requirement due to site impracticality and site restrictions of Utility and Slope Easement. 11% (10 feet 6 inches of 93 feet) of the Ellendale Avenue building façade meets the build-to-line requirement. 55% (34 feet of 62 feet) of the Uglow Street building façade meets the build-to-line requirement. Overall, 29% (44 feet 6 inches of 155 feet) of street-facing building façades meets the build-to-line requirement. Ellendale Avenue and Uglow are not perpendicular streets; the building is oriented parallel to Ellendale Avenue as the higher classification street.

D. There are (3) primary building façade materials (brick, fiber cement lap siding, and fiber cement panel siding), and all are visible from each side of the building.

E.1 Variance Request: Less than 60% of the street-facing ground floor facades will be transparent to provide dwelling unit privacy. The ground-floor transparency percentage provided along Ellendale will be 25% and the ground-floor transparency percentage along Uglow will be 12%.

E.2 Ground Floor windows are framed by larger vertical architectural offsets in the building facades

E.3 Upper floor window orientation is vertical.

E.4 Window trim at fiber cement siding is nominal 4" wide. Variance Request: Windows at brick facades are a standard brick dimension to fit within the brick opening without requiring trim. A decorative brick pattern will be between window heads and sills at brick at northeast corner of building.

E.5 Windows will not project from the building.

EXHIBIT A.7

E.6 Ellendale Avenue entrance will be a full-lite storefront door.

E.7 Variance Request: No corner entrance or corner plaza will be provided due to site impracticality from existing slopes and restrictions of easements.

E.8 Remodel requirement not applicable.

E.9 All entrances will be ADA accessible.

E.10 Building elevations are divided horizontally by trim and siding changes between upper and lower stories.

F. Upper story step-back not applicable. Step-back required at 35 feet, this building is 34 feet.

G.1 Horizontal Rhythm: All building elevations facing a street are articulated not less than once every twenty-five (25) feet.

G.2 Horizontal Lines not applicable: no adjacent building at similar levels.

G.3 Building elevations are divided horizontally by trim and siding changes between upper and lower stories.

G.4 Building Base. Buildings shall have a foundation or base, typically from ground to the bottom of the lower windowsills, with changes in volume or material, to give a sense of strength. The proposed building has a finish floor set slightly lower than the corner due to existing slopes and intention to provide fully accessible building entries. With that in mind, attention to the base as defined will not be visible from the sidewalk or street due to slopes and plantings. An alternative approach has been utilized to unify the base of the building as the bottom two-stories of the three story building.

H. Elevations are orientated vertically by architectural offsets in the building facades.

I.1 Exterior building materials shall predominately consist of brick, wood or fiber cement. Window trim at fiber cement siding is nominal 4" wide. Windows at brick are a standard masonry dimension to fit within the brick opening without requiring trim.

I.2 Change in Materials. Elevations should incorporate changes in material that define a building's base, middle and top and create visual interest and relief. Side and rear elevations that do not face a street, public parking area, pedestrian access way or plaza may utilize changes in texture and/or color of materials in the interest of affordability, provided that the design is consistent with the overall composition of the building. This three story building meets the land use requirement by treating the building on all sides with a material change from the base to the middle. This is shown as either a base in brick or lap siding with the middle shown as panel siding. The top of the building is shown as a built up cornice at the corner and built up trim to emphasize the top of the parapet in other areas of the building. The cornice and trim will be painted a darker color to further enhance the top of the building as something different.

I.3 Secondary materials not applicable. The (3) primary building façade materials meet building design standards.

EXHIBIT A.8

I.4 Substitute materials not applicable. The (3) primary building façade materials meet building design standards.

I.5 Color scheme will be coordinated during construction with the intent to meet the standards of this section: “simple and coordinated over the entire building to establish a sense of overall composition”. There are (3) primary building façade materials: brick, fiber cement lap siding, and fiber cement panel siding. Door and window trim, entry awnings, metal flashing at fiber cement siding, and parapet flashing will be coordinated. Brick through-wall flashing will be stainless steel due to corrosion resistance interacting with mortar. At this time, the color scheme includes a red brick blend and painted fiber cement siding in neutral/brown tones using two body colors and one trim color throughout.

I.6 Restoration and Rehabilitation not applicable.

I.7 Signs. Signage will be coordinated during construction with the intent to meet the requirements of Chapter 3.6.

J. Variance Request: Due to placing the building entrance from Ellendale at the Build-To Line and the restrictions of the existing Utility and Slope Easement at Ellendale Avenue, we are precluded from providing an entry deeper than 2'-8". Entry overhang facing Uglow Street will be the same depth to match Ellendale Avenue.

K.1 No wall mounted equipment.

K.2 Rooftop equipment will be screened from view or pre-finished in a neutral color.

K.3 Ground floor equipment (vaults, meters, FDC) will be buried or not be placed in front of the street-facing facades.

K.4 No civic space planned. The trash enclosure will be located near the driveway in order to meet accessibility requirements on the sloped site. The enclosure is proposed to be enclosed by CMU and screened from view from the street with a planting buffer.

2.3.090 – Civic Space And Pedestrian Amenities

C.1 The project is providing a landscaped courtyard at the equivalent of approximately 6.5% of the site area. Given the nature of the program as a fully private residential building and the site impracticality of providing public space at the corner due to existing slopes and easements, we've provided a private landscape courtyard in the area with the most pedestrian activity on our site, outside of the main residential entry. The landscaped courtyard includes pedestrian circulations, an overhang at the building entry, bench seating, and plantings.

-C.2 The civic space includes a plaza space, benches, 5' wide sidewalks and ramps, and a weather protection canopy where this space meets the building entry. The cost estimate for the landscape courtyard is still under development, but we expect the cost for the pedestrian amenities in this 1,123 SF landscape courtyard to exceed \$26,000, which is approximately 0.05% of the current project budget.

3.1.020 – Access and Circulation

EXHIBIT A.9

- B Access Permit required for new curb cut on Uglow Street.
- D Traffic Impact Analysis (not required)
- F.2 Minimum 50 feet spacing between driveways (center to center) on local streets.
- K.3 Driveway and apron to be constructed in compliance with ADA
- N 15' vision clearance triangle as measured at the curb

Additional Requirements Per Pre-Development Meeting:

1. Uglow Street Frontage from intersection to driveway will be no parking and allocated for fire access
 - a. Curb to be painted red with required signage
 - b. Owner requests No Parking designation at additional length of curb south of driveway along entire frontage of property on Uglow Street.

3.1.030 – Pedestrian Access and Circulation

- A.1. Continuous walkway will be provided
- A.2. Safe direct and convenient, reasonable and practical
- A.3. Connections to all entries and amenities,
- A.3.c. Parking: Maximum 12 contiguous spaces. 6" Raised curb sidewalk, 4-6 ft wide.
- B.4 Accessible Route per ADA

3.2.030 – Landscaping, Street Trees, Fences and Walls

- B Landscape Plan
- C.3 Required Landscape Area: 10% Provided: 22%
- D Landscape designer to comply with standards for plant material, sizes, types, ground cover
- E.1 Yard setback landscaping required
- E.2 Parking area planting: 10% of the total surface area of all parking areas, as measured around the perimeter of all parking spaces and maneuvering areas, shall be landscaped. Provided: 12%
- E.3.b Buffering and screening: 5' between parking and buildings.
- E.c Screen mechanical equipment from street or adjacent residential districts (fence, hedge, wall; opaque per 3.2.050)
- F Irrigation specifications provided. Irrigation Plan to be provided with building permit package.

3.2.040 – Street Trees

Applies to all developments that are subject to Land Division or Site Design Review where landscape park strips exist or are required with the development. Landscape designer to comply with standards for tree, sizes, types, spacing.

3.2.050 – Fences and Walls

EXHIBIT A.10

All fences and walls are outside of the yard setbacks and vision clearance triangles.

3.3.030 – Auto Parking Standards

Parking: minimum for multi-family

19 = 1 space per 1-bedroom unit

1.5 = 1.5 space per 2-bedroom unit

TOTAL Required by City: **21** spaces

TOTAL Provided by Owner: 18 spaces- The owner only needs 18 parking spaces based on precedence of similar projects.

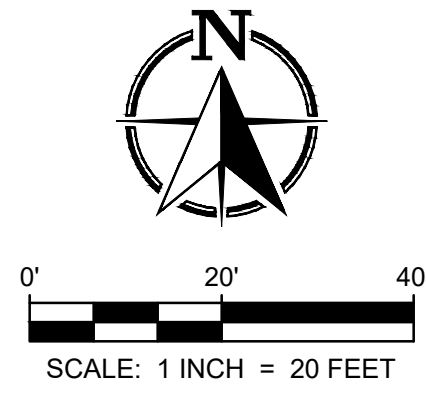
Standard Space: 8'-6" wide x 18' deep with minimum 23' back up aisle.

3.3.040 – Bicycle Parking Standards

Multi-family bike parking required: 2, or 1 per 20 units (whichever is more)

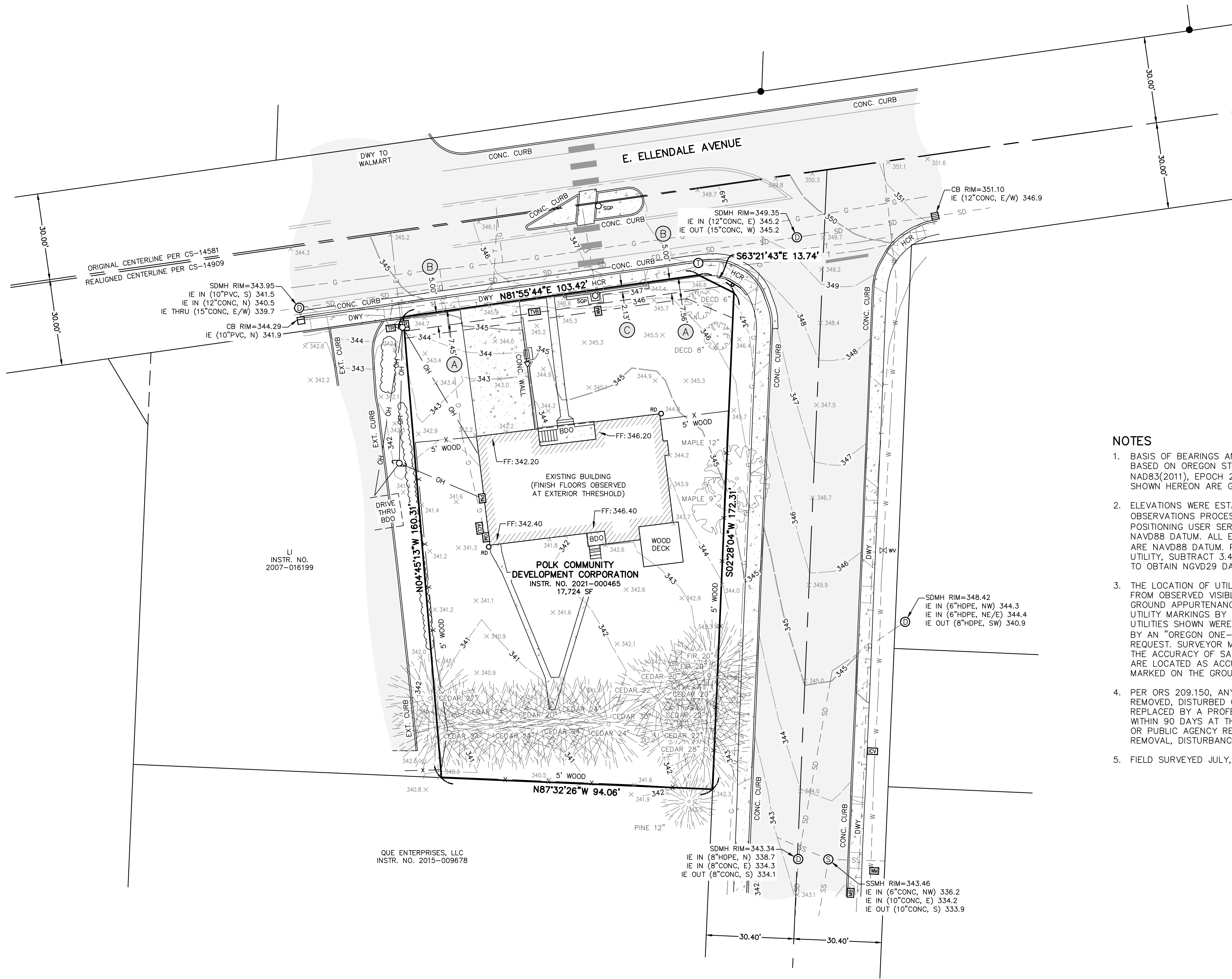
Multi-family bike parking provided: 16

20% of the required (4) should be within 100 feet of front entry, well lit, and covered wherever practical to incorporate into building design.



LEGEND

- FOUND MONUMENT
- ⊙ STORM DRAIN MANHOLE
- ▣ CATCH BASIN
- ▤ CURB INLET
- ⊙ ROOF DRAIN
- ⊙ SANITARY SEWER MANHOLE
- ⊙ WATER METER
- ⊙ WATER VALVE
- ⊙ IRRIGATION VALVE
- ⊙ POWER METER
- ⊙ GROUND LIGHT
- ⊙ UTILITY POLE
- ⊙ AIR CONDITIONING UNIT
- ⊙ COMMUNICATION MANHOLE
- ⊙ COMMUNICATION RISER
- ⊙ COMMUNICATION BOX
- ⊙ GAS METER
- ⊙ TRAFFIC SIGNAL POLE
- ⊙ SIGN
- ⊙ MAILBOX
- ▣ CONCRETE
- ▣ ASPHALT
- # ○ DECIDUOUS TREE & TRUNK SIZE
- # ○ CONIFEROUS TREE & TRUNK SIZE
- SS --- SEWER LINE UNDERGROUND
- SD --- STORM LINE UNDERGROUND
- W --- WATERLINE UNDERGROUND
- G --- GAS LINE UNDERGROUND
- T --- COMMUNICATION LINE UNDERGROUND
- E --- ELECTRICAL LINE UNDERGROUND
- OH --- OVERHEAD POWER LINE
- X --- FENCE LINE
- SHRUB ROW
- CONC CONCRETE
- BDO BUILDING OVERHANG
- EXT. EXTRUDED
- FF FINISH FLOOR
- HCR HANDICAP RAMP
- DWY DRIVEWAY
- INSTR. NO. DEED INSTRUMENT NUMBER
- SF SQUARE FEET



EASEMENT NOTES

- (A) SLOPE & UTILITY EASEMENT PER INSTR. NO. 2004-019650
- (B) PERMANENT SLOPE EASEMENT PER BOOK 178, PAGE 2274
- (C) SLOPE & PUBLIC UTILITY EASEMENT PER INSTR. NO. 2019-004098

NOTES

1. BASIS OF BEARINGS AND COORDINATE SYSTEM IS BASED ON OREGON STATE PLANE NORTH ZONE, NAD83(2011), EPOCH 2010.00. ALL DISTANCES SHOWN HEREON ARE GROUND DISTANCES.
2. ELEVATIONS WERE ESTABLISHED BY STATIC GPS OBSERVATIONS PROCESSED THROUGH NOAA'S ONLINE POSITIONING USER SERVICE (OPUS) TO OBTAIN NAVD88 DATUM. ALL ELEVATIONS NOTED HEREON ARE NAVD88 DATUM. PER NOAA'S "VERTCON" UTILITY, SUBTRACT 3.41 FEET FROM ALL ELEVATIONS TO OBTAIN NGVD29 DATUM.
3. THE LOCATION OF UTILITIES SHOWN HEREON ARE FROM OBSERVED VISIBLE EVIDENCE OF ABOVE GROUND APPURTENANCES ALONG WITH SURFACE UTILITY MARKINGS BY OTHERS. ALL UNDERGROUND UTILITIES SHOWN WERE MARKED ON THE SURFACE BY AN "OREGON ONE-CALL NOTIFICATION CENTER" REQUEST. SURVEYOR MAKES NO GUARANTEE AS TO THE ACCURACY OF SAID MARKINGS, HOWEVER, THEY ARE LOCATED AS ACCURATELY AS THEY ARE MARKED ON THE GROUND.
4. PER ORS 209.150, ANY SURVEY MONUMENT REMOVED, DISTURBED OR DESTROYED SHALL BE REPLACED BY A PROFESSIONAL LAND SURVEYOR WITHIN 90 DAYS AT THE EXPENSE OF THE PERSON OR PUBLIC AGENCY RESPONSIBLE FOR SAID REMOVAL, DISTURBANCE OR DESTRUCTION.
5. FIELD SURVEYED JULY, 2021.

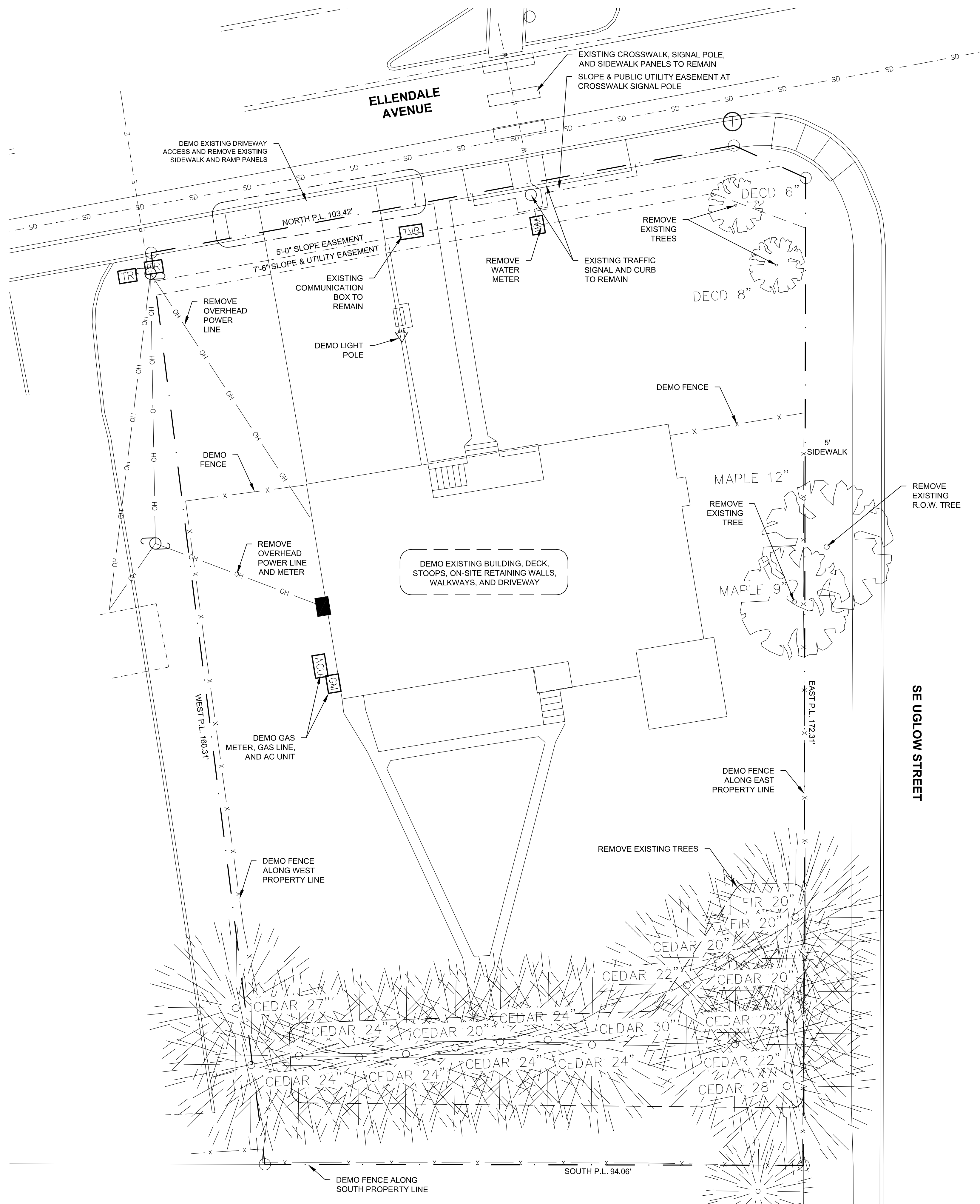
FORTY FIVE NORTH SURVEYING, LLC
 7230 3rd Street SE #145, Turner, OR 97392
 P: (503) 558-3330 E: info@fmsurveying.com

TOPOGRAPHIC SURVEY
FOR: 373 E. ELLENDALE AVENUE
 IN THE SW 1/4 OF SECTION 28, T.7S., R.5W., W.M.
 CITY OF DALLAS, POLK COUNTY, OREGON

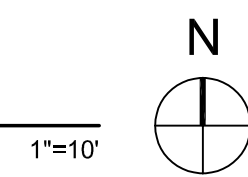
REGISTERED PROFESSIONAL LAND SURVEYOR
 OREGON 12, 2017
 SEPTEMBER 12, 2017
 STEVEN J. HOWELL
 91559
 RENEWS: 6-30-2023

NO.	DATE	DESCRIPTION
0	26/JUL/21	INITIAL RELEASE

JOB NO. 21-279



1 DEMO SITE PLAN
A000



BDA
Architecture & Planning, P.C.
1369 Olive Street
Eugene, Oregon 97401
bdarch.net
541.683.8661

**PRELIMINARY
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CONSTRUCTION**

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Revision Summary	
Revision Number	Revision Date

CARSON COMMONS
373 ELLENDALE AVENUE
DALLAS, OREGON 97338

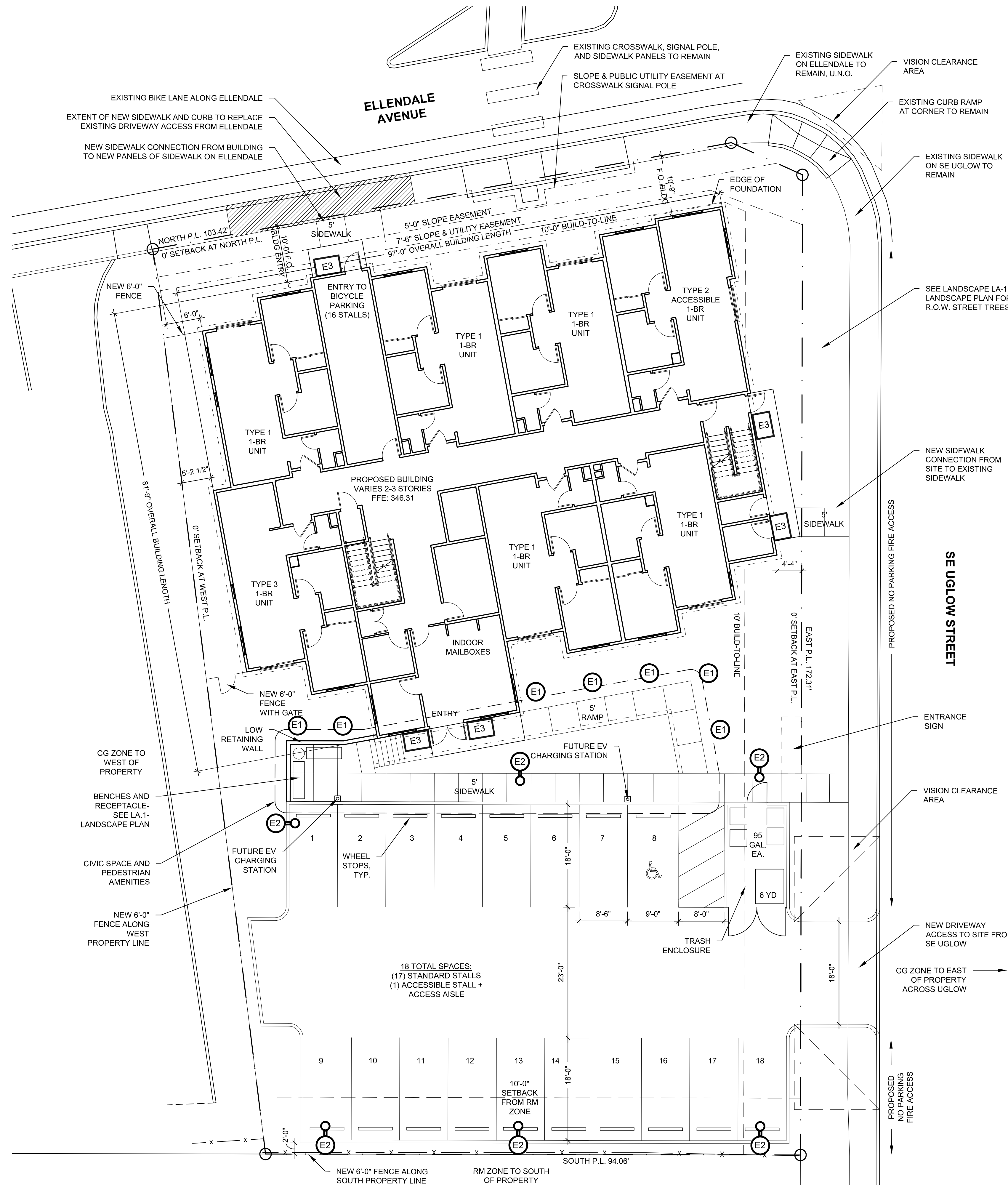
POLK COMMUNITY DEVELOPMENT CORPORATION

CONDITIONAL USE PERMIT

DEMO SITE PLAN

date 03-08-2024
file 2005
d.b. KGR

A000



SITE INFORMATION

This proposed Multi-Family Housing development consists of a single 3-story residential building with a combination of common areas and residential units on the ground level and residential occupancy above. The dwelling units consist of (19) 1-bedroom dwelling units, and (1) 2-bedroom unit for a total of (20) dwelling units. The ground floor community spaces consist of a property manager's office, lounge area, shared resident laundry room, and bicycle storage, with a separate lounge area located on the third floor. The project exterior improvements include a trash enclosure, common outdoor spaces, landscaping, parking and utilities. Vehicular site access would be exclusively from SE Uglow Street to the parking lot that would accommodate 18 spaces. The existing driveway from Ellendale Avenue would be vacated.

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Ground Floor Area:	6,601 SF
Total Floor Area:	17,760 SF
# of Buildings Proposed:	1
# of Dwelling Units:	(19) 1 Bedroom Units (1) 2 Bedroom Units 20 Total Units

SITE LIGHTING LEGEND
*SYMBOLS NOT TO SCALE

	LANDSCAPE WALKWAY LIGHTING
	14 FOOT POWDER COATED LIGHT POLE WITH VALULUME SERIES PLED
	EXTERIOR WALL PACK

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Architecture & Planning, P.C.
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Eugene, Oregon 97401
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Revision Summary

Revision Number	Revision Date

CARSON COMMONS
373 ELLENDALE AVENUE
DALLAS, OREGON 97338
POLK COMMUNITY DEVELOPMENT CORPORATION

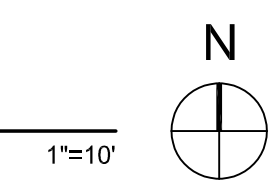
CONDITIONAL USE PERMIT

SITE PLAN

date 03-08-2024
file 2005
d.b. KGR

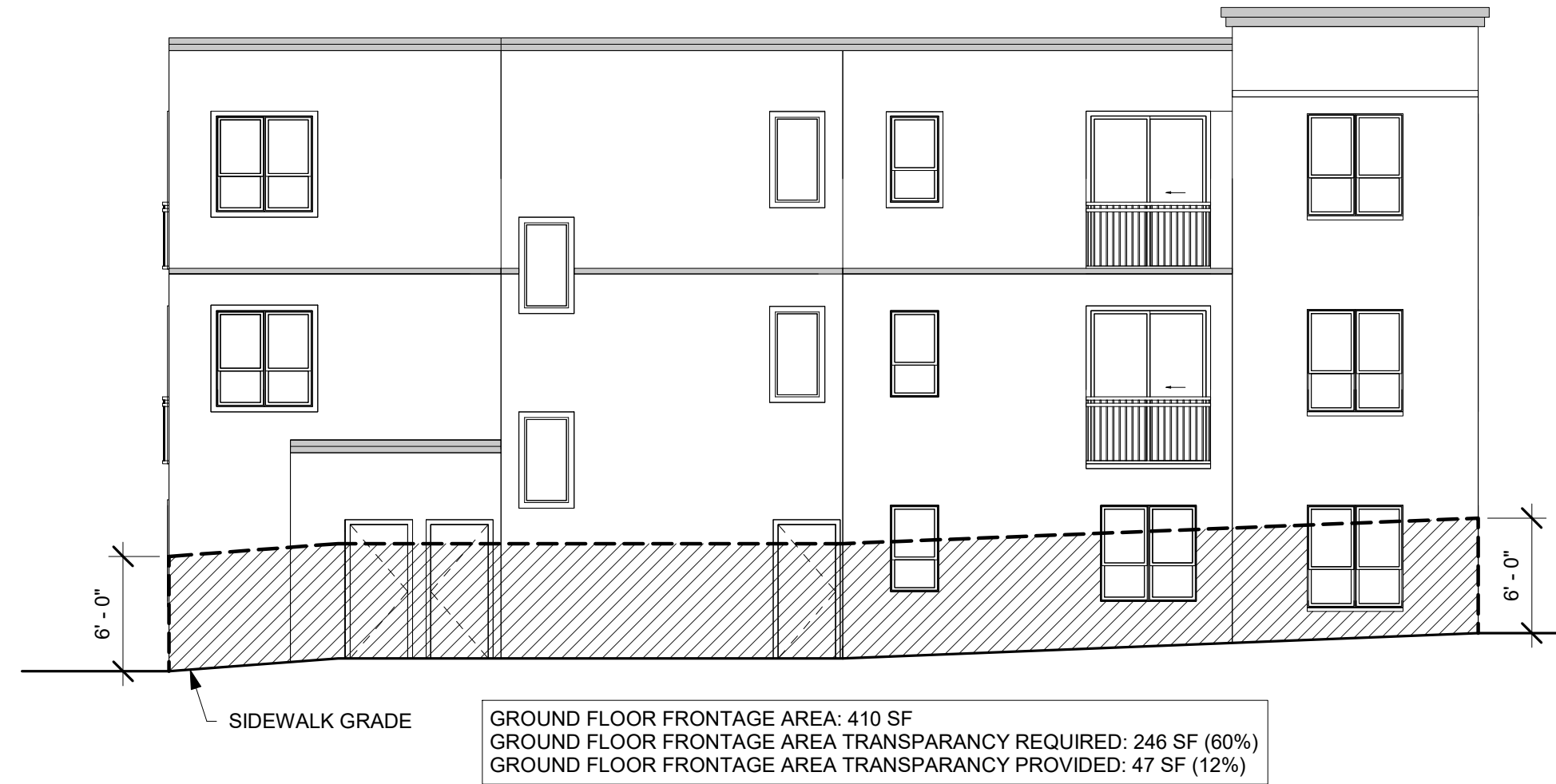
A001

1 SITE PLAN
A001

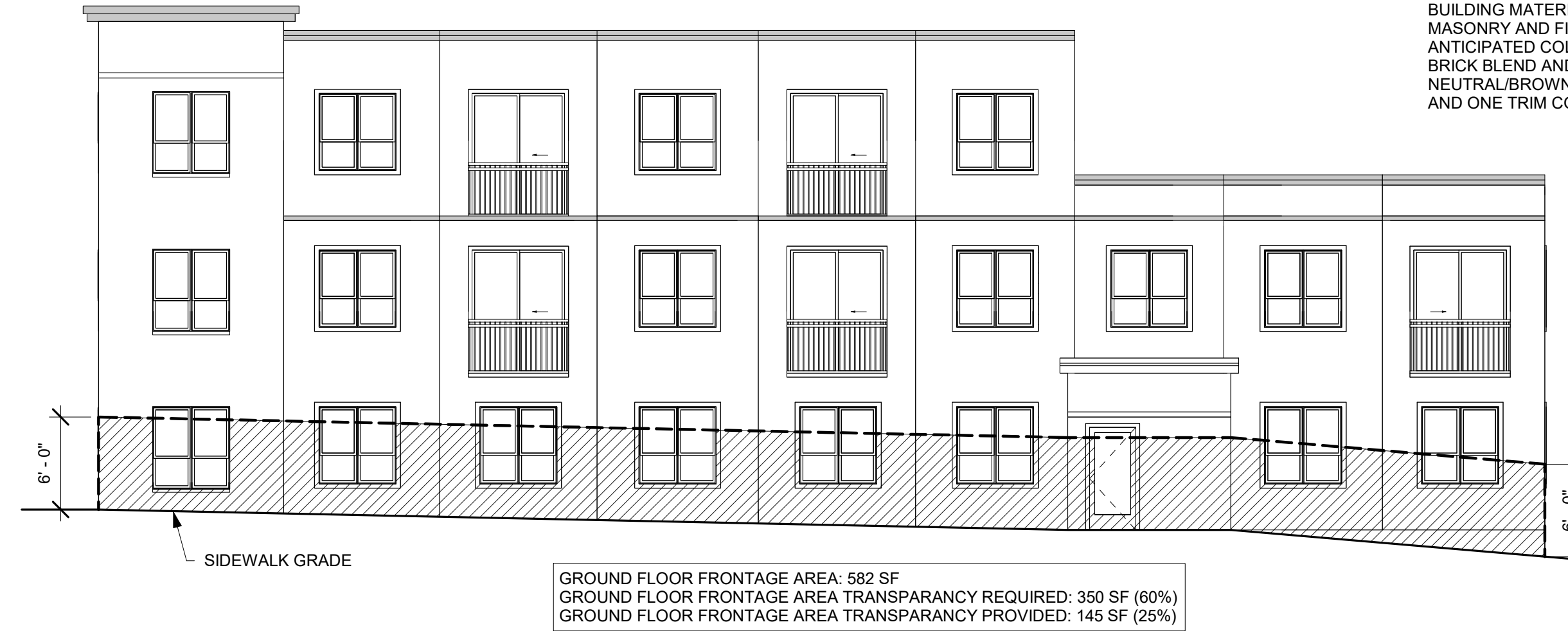


BUILDING MATERIALS, COLOR, AND TYPE:

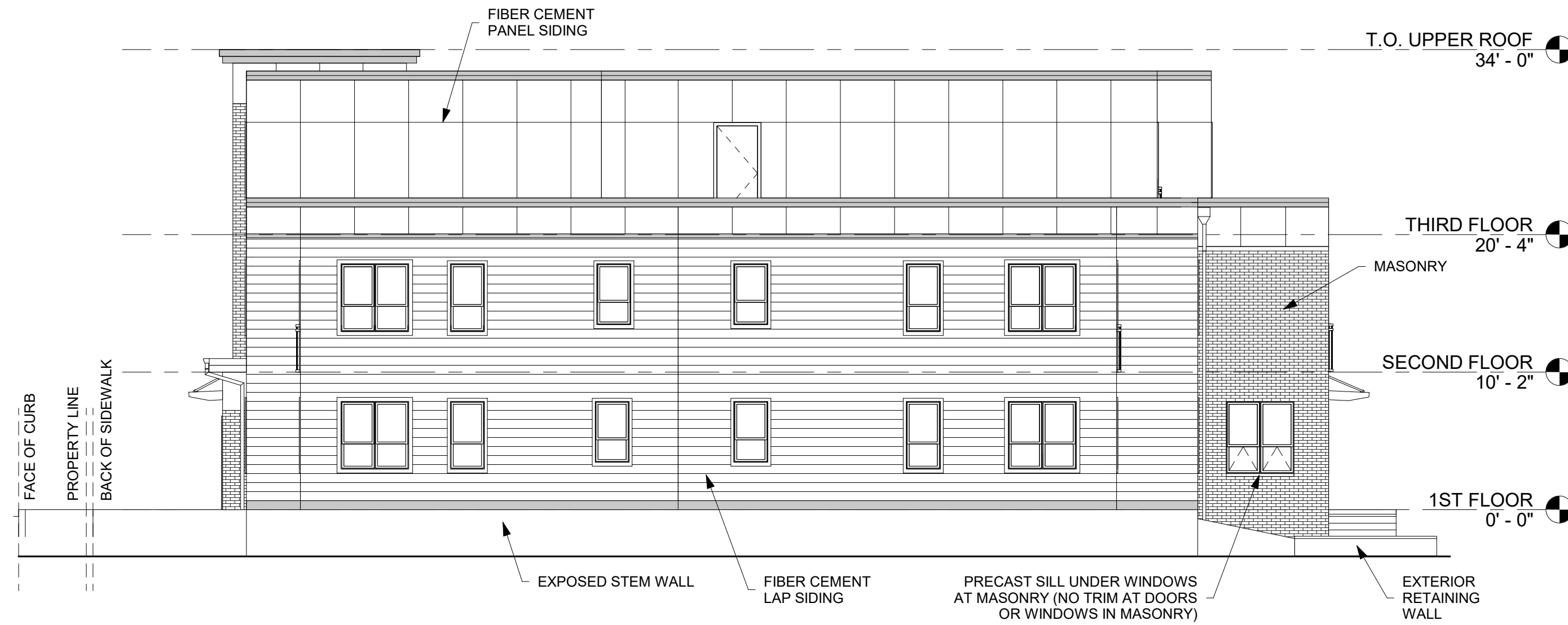
BUILDING MATERIALS PROPOSED INCLUDE MASONRY AND FIBER CEMENT PANELS AND TRIM. ANTICIPATED COLOR SCHEME INCLUDES A RED BRICK BLEND AND PAINTED FIBER CEMENT SIDING IN NEUTRAL/BROWN TONES USING TWO BODY COLORS AND ONE TRIM COLOR ARE PROPOSED.



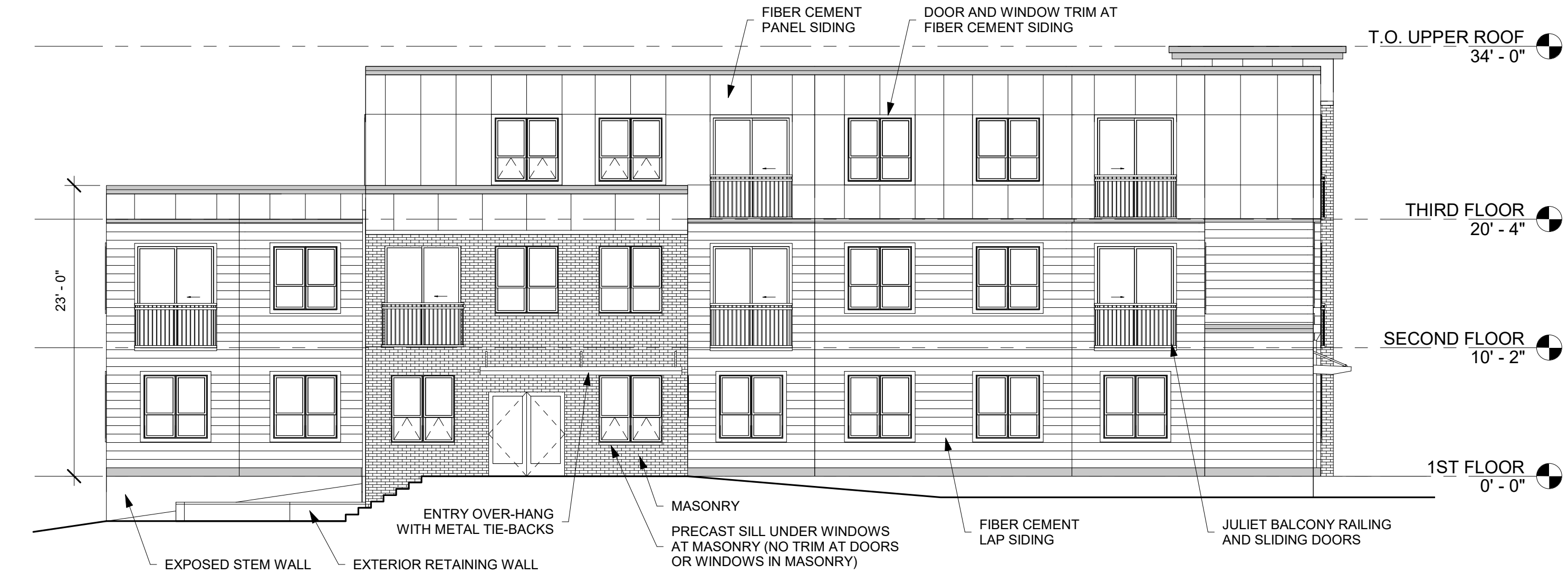
6 UGLW STREET FRONTAGE- GROUND FLOOR TRANSPARENCY DIAGRAM
A201 1/8" = 1'-0"



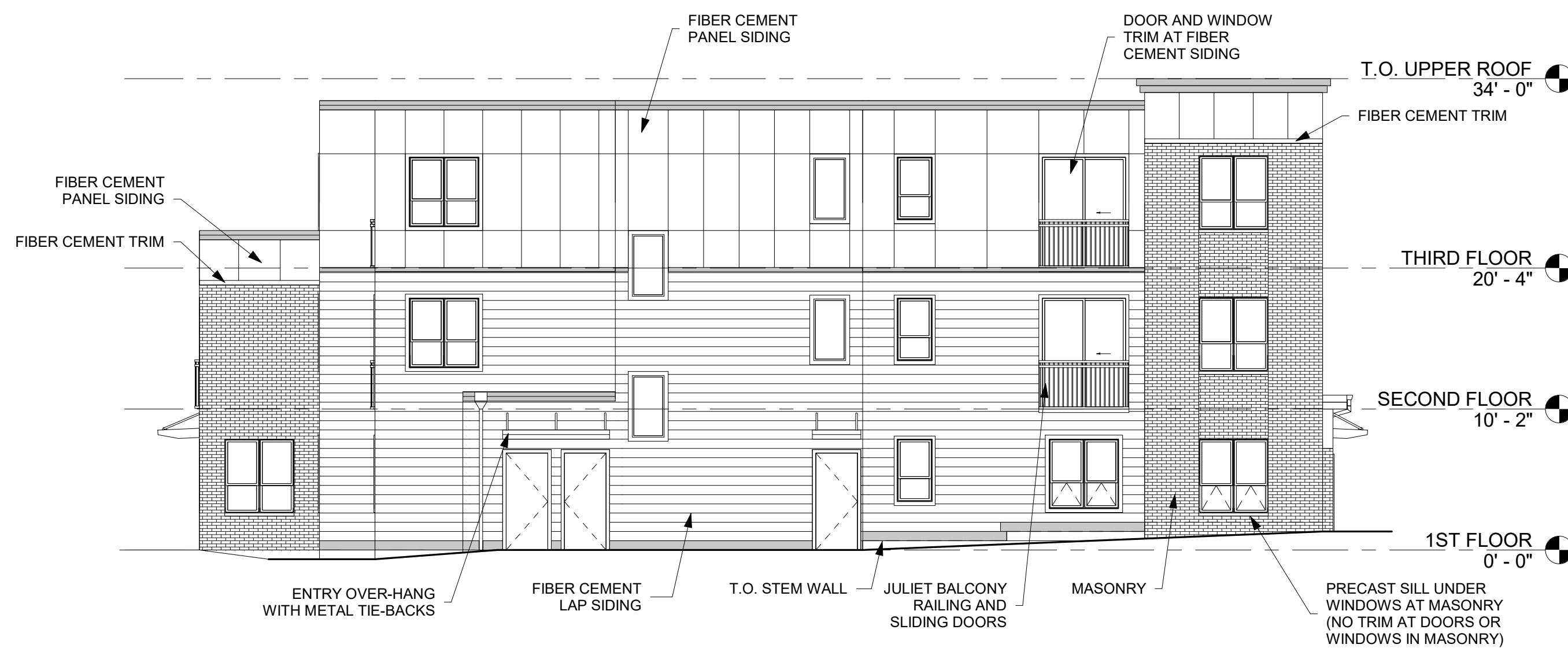
5 ELLENDALE AVENUE FRONTAGE- GROUND FLOOR TRANSPARENCY DIAGRAM
A201 1/8" = 1'-0"



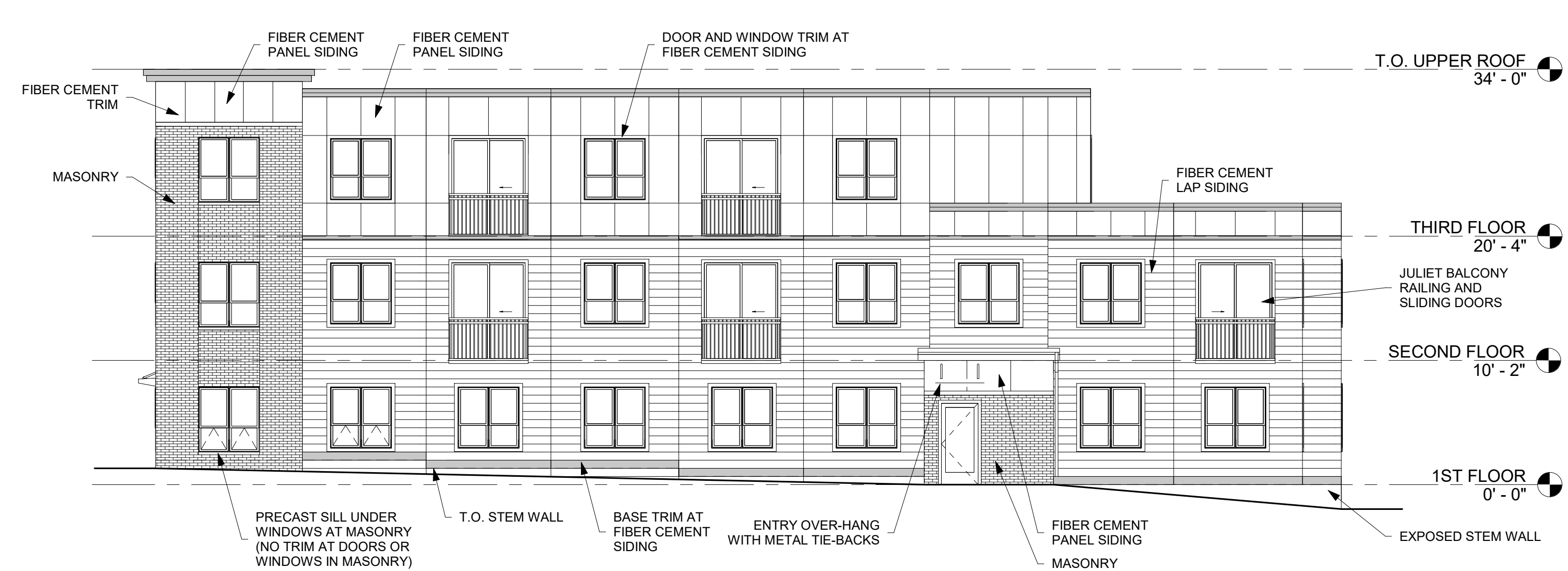
4 WEST ELEVATION
A201 1/8" = 1'-0"



3 SOUTH ELEVATION
A201 1/8" = 1'-0"



2 EAST ELEVATION
A201 1/8" = 1'-0"



1 NORTH ELEVATION
A201 1/8" = 1'-0"

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CARSON COMMONS
373 ELLENDALE AVENUE
DALLAS, OREGON 97338
POLK COMMUNITY DEVELOPMENT CORPORATION

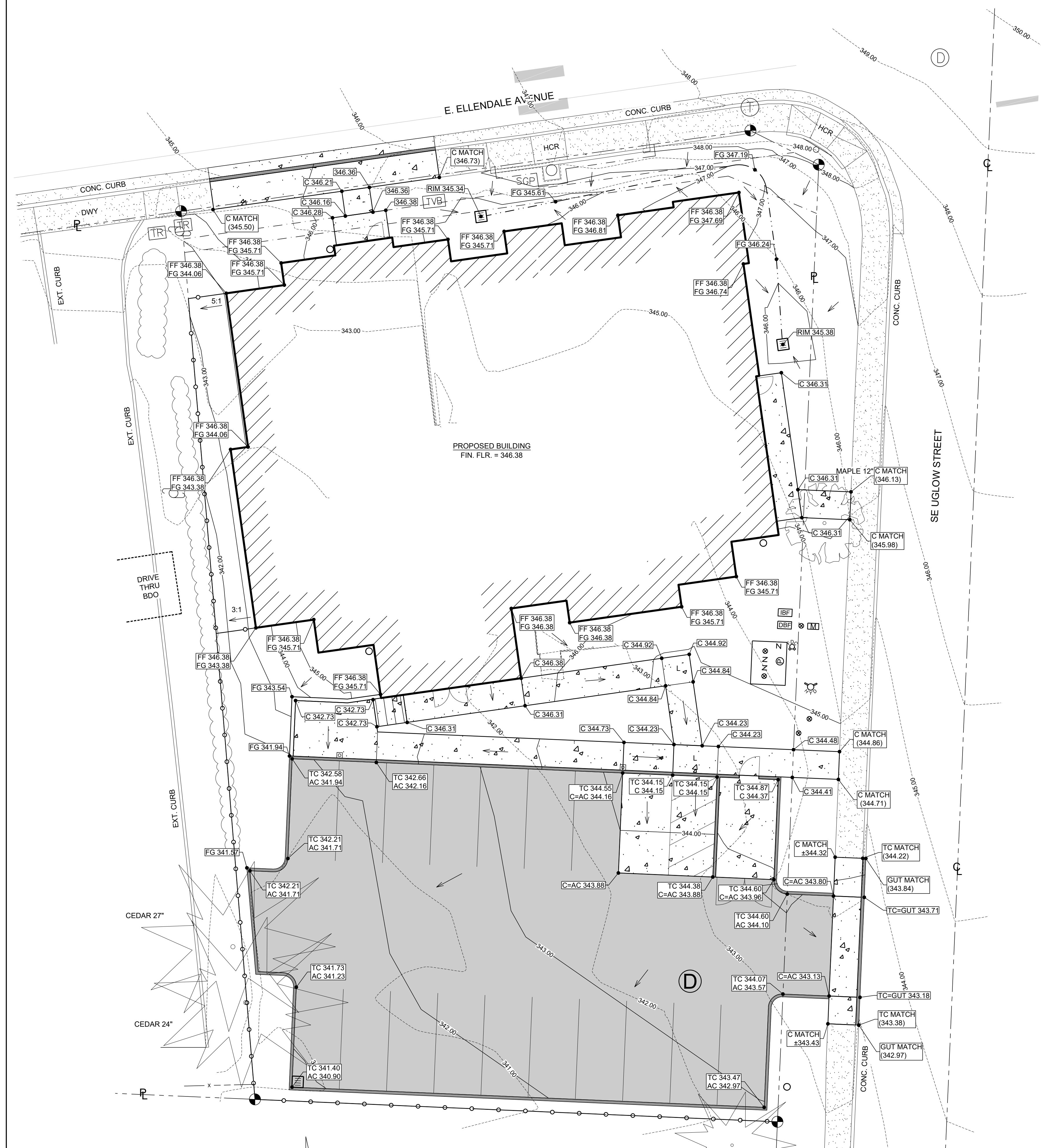
CONDITIONAL USE PERMIT

BUILDING ELEVATIONS

date 03-08-2024
file 2005
d.b. KGR

A201

REV.	DATE	DESCRIPTION



GRADING PLAN
1"=10'-0"
0' 10' 20'
0" 1" 2"
(PLAN IS TO SCALE IF BAR MEASURES 2')

Locke & ENGINEERS
CIVIL & STRUCTURAL ENGINEERS
289 E. Elendale Ave., Dallas, Oregon 97338
503.364.8207
www.LockeEngineers.com
J.O. 21011-1

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Only the electronic version of this document with a digital signature per OAR 820-010-0620(5) is an original. Contact Engineer of Record for electronic file if an authentic document is required or authenticity is in question.

Revision Summary	
Revision Number	Revision Date

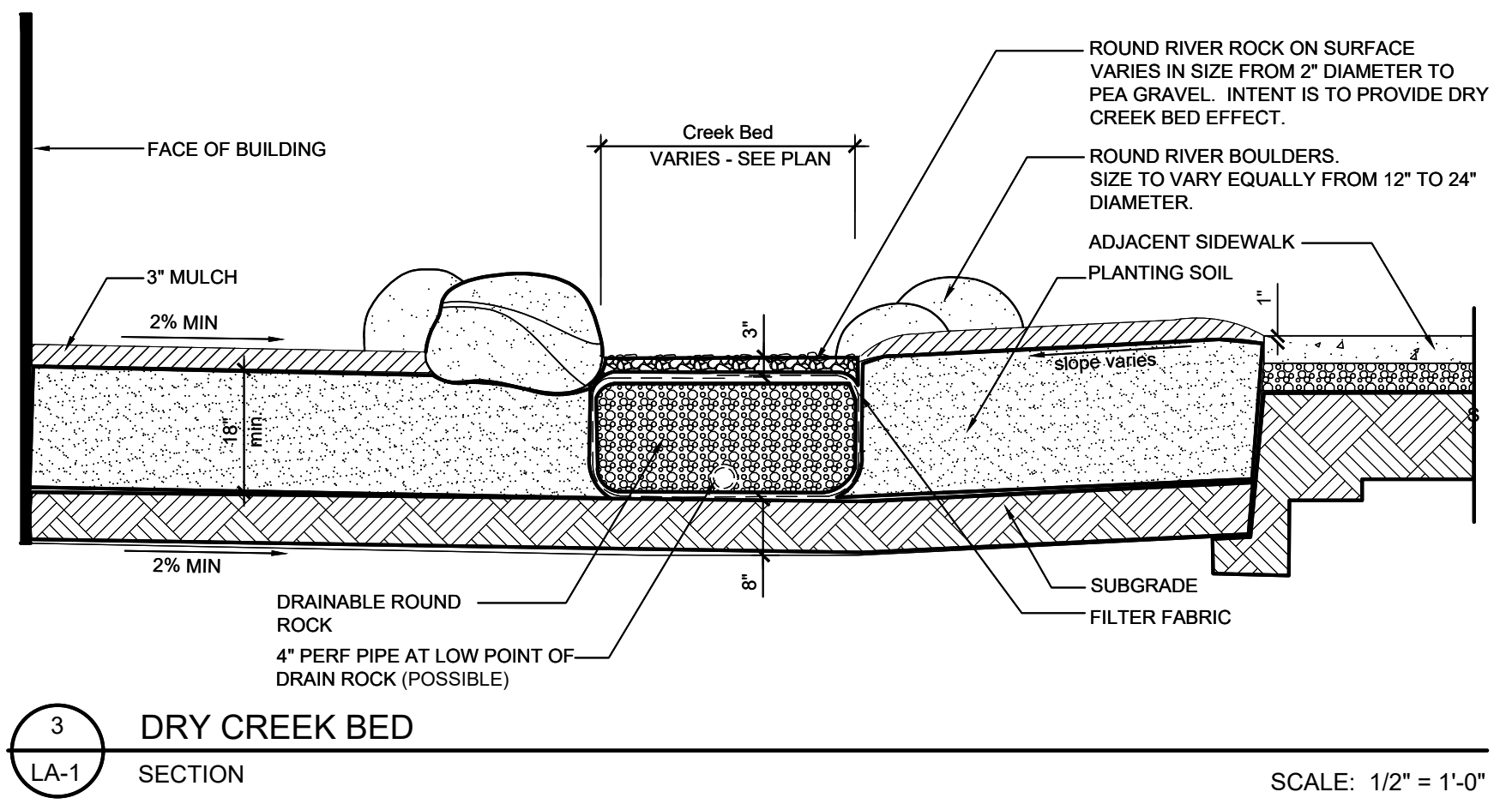
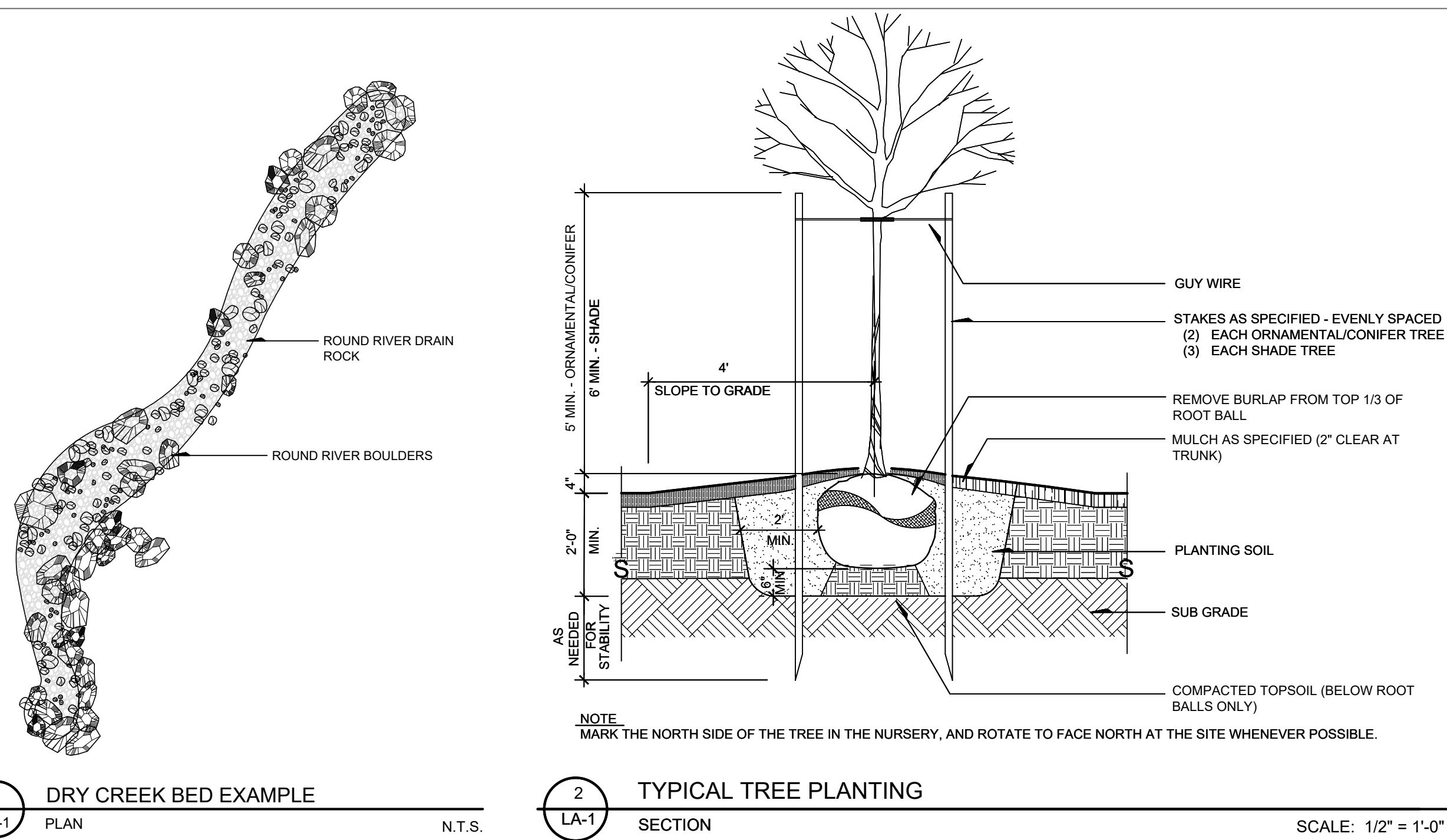
CARSON COMMONS
373 ELLENDALE AVENUE
DALLAS, OREGON 97338
POLK COMMUNITY DEVELOPMENT CORPORATION

CONDITIONAL USE PERMIT

GRADING PLAN

date 03/08/2024
file 21011-1
d.b. MO

C121



PRELIMINARY PLANT SCHEDULE - (Plants being considered to be selected from this list)

KEY	QTY.	BOTANICAL NAME	COMMON NAME	MIN. SIZE	COMMENTS
TREES					
ACAR		Acer rubrum 'Armstrong'	Armstrong Maple	2" cal.	Matching, limbed up to approx. 6 ft.
ACPB		Acer palmatum 'Bloodgood'	Bloodgood Japanese Maple	1.75" cal.	single stem, B&B, matching, full
ACRR		Acer rubrum 'Red Sunset'	Red Sunset Maple	2" cal.	Matching, limbed up to approx. 6 ft.
CECF		Cercis canadensis 'Forest Pansy'	Forest Pansy Red bud	6" ht.	single stem, B&B, matching, full
COK		Cornus kousa	Kousa Dogwood	5" ht.	single stem, B&B, matching, full
CJ		Cercidiphyllum japonica	Katsura Tree	1.5" cal.	single stem, B&B, matching, full
GIAG		Ginkgo biloba 'Autumn Gold'	Autumn Gold Ginkgo	2" cal.	Matching, limbed up to 6 ft.
PARV		Parrotia persica 'Ruby Vase'	Ruby Vase Parrotia	8" ht.	Matching, limbed up to 4 ft.
ZEGV		Zelkova serrata 'Green Vase'	Green Vase Zelkova	2" cal.	Matching, limbed up to approx. 6 ft.
SHRUBS					
BTCP		Berberis thunbergii 'Crimson Pygmy'	Dwarf Japanese Barberry	3 gal.	matching, full
CAJP		Camellia japonica 'Purity'	Purity Camellia	5 gal.	matching, full
CT		Choisya ternata	Mexican Orange	5 gal.	matching, full, staked
DO		Daphne odora	Winter Daphne	3 gal.	matching, full
EUAC		Euonymus alata 'Compacta'	Compact Burning Bush	5 gal.	matching, full
FOG		Fothergilla gardenii	Dwarf Fothergilla	3 gal.	matching, full
HS		Hibiscus syriacus	Rose of Sharon	4" ht.	matching, full
ICC		Ilex crenata 'Compacta'	Japanese Holly	3 gal.	matching, full
NDF		Nandina domestica 'Fire Power'	Fire Power Nandina	2 gal.	matching, full
NLL		Nandina domestica 'Lemon Lime'	Lemon Lime Nandina	3 gal.	matching, full
PET		Perovskia atriplicifolia	Russian Sage	1 gal.	matching, full
PIF		Pieris 'Forest Flame'	Forest Flame Pieris	5 gal.	matching, full
PLO		Prunus laurocerasus 'Otto Luyken'	Otto Luyken English Laurel	5 gal.	matching, full
POM		Polystichum munitum	Sword Fern	1 gal.	matching, full
RHA		Rhododendron 'Anah Krusche'	Anah Krusche Rhododendron	5 gal.	matching, full
RHU		Rhododendron 'Unique'	Unique Rhododendron	5 gal.	matching, full
SAR		Sarcococca ruscifolia	Fragrant Sarcococca	3 gal.	matching, full
SPGM		Spiraea japonica 'Goldmound'	Goldmound Spiraea	3 gal.	matching, full
VID		Viburnum davidii	David Viburnum	3 gal.	matching, full
VIPT		Viburnum plicatum tomentosum	Double File Viburnum	3" ht.	matching, full
VTSB		Viburnum tinus 'Spring Bouquet'	Spring Bouquet Viburnum	5 gal.	matching, full
GROUNDCOVERS, PERENNIALS, GRASSES AND BULBS					
AU		Arctostaphylos uva-ursi	Kinnikinnick	1 gal.	matching, full 24" o.c.
BC		Bergenia crassifolia	Heartleaf Bergenia	1 gal.	matching, full, 15" o.c.
FEO		Festuca ovina glauca	Dwarf Blue Fescue	1 gal.	matching, full
LAM		Lavandula angustifolia 'Munstead'	Dwarf English Lavender	1 gal.	matching, full 24" o.c.
LIM		Liriope muscari	Big Blue Lily Turf	1 gal.	matching, full 20" o.c.
NAK		Narcissus 'King Alfred'	King Alfred Daffodil	bulb	matching, full
PEAH		Pennisetum alopecuroides 'Hameln'	Hameln Fountain Grass	1 gal.	matching, full
PEKR		Pennisetum orientale 'Karley Rose'	Karley Rose Fountain Grass	1 gal.	matching, full
PLMV		Prunus laurocerasus 'Mount Vernon'	Mount Vernon Laurel	3 gal.	matching, full
RFG		Rudbeckia fulgida 'Goldsturm'	Goldsturm Black-Eyed Susan	1 gal.	15" o.c.
RUC		Rubus calycinoides	Creeping Raspberry	1 gal.	matching, full

NOTE: PLANTS SHOWN IN GREEN FONT ARE USED ON OTHER PCDC PROPERTIES

IRRIGATION SYSTEM DESCRIPTION

1. AUTOMATIC, UNDERGROUND IRRIGATION SYSTEM WILL BE PROVIDED FOR ALL LANDSCAPE AREAS.
2. SYSTEM WILL PROVIDE PRESSURE REGULATION AT HEADS.
3. IRRIGATION CONTROLLER FEATURES:
GLOBAL SEASONAL ADJUSTING CAPABILITIES
RAIN DELAY SHUT DOWN
INPUT FOR WEATHER AND SOLAR DATA
4. STREAM ROTATORS (MP ROTATORS) AT LAWNS. STREAM ROTORS, SPRAY HEADS OR DRIP AT PLANT BEDS.
5. IRRIGATION DISTRIBUTION COVERAGE TO BE HEAD TO HEAD.
6. SEPARATE ZONES WILL BE PROVIDED FOR LAWN AND SHRUB AREAS.
7. SEPARATE ZONES WILL BE PROVIDED FOR NE AND SW EXPOSURES.
8. COVERAGE AT PIPING WILL BE 18" MIN. AT MAIN LINES AND 15" AT LATERAL LINES.
9. 3" SAND BEDDING WILL BE PROVIDED BELOW ALL PIPES.
10. ISOLATION GATE VALVE WILL BE PROVIDED BEFORE EACH AUTOMATIC CONTROL VALVE.
11. MANUAL BRONZE DRAIN VALVES WILL BE PROVIDED AT MAIN LINE LOW POINTS.
12. MAIN LINE PIPING TO BE SCHEDULE 40 PVC.
13. LATERAL LINE PIPING TO BE CLASS 200 PVC.
14. SLEEVES TO BE SCHEDULE 40 PVC.
15. IRRIGATION HEADS TO BE LOCATED MIN. 24" FROM BUILDINGS.

SOIL AND PLANTING GUIDELINES

- A. PRODUCTS**
1. TOPSOIL AT PLANT BEDS: IMPORTED SANDY LOAM WITH 10% HUMUS AND CHARACTERISTIC OF LOAMS OF THE AREA. FREE OF ROCK, SUBSOIL, CLODS, LUMPS, PLANTS, ROOTS, STICKS, WEEDS, SEEDS AND OTHER DELETERIOUS SUBSTANCES.
 2. ORGANIC MATERIAL: GARDEN COMPOST AVAILABLE FROM REJUS OR LANE FOREST PRODUCTS.
 3. MULCH: SHREDDED FIR BARK: SCREENED AT 5/8" MINUS AT PLANT BEDS.
- B. SOIL PREPARATION**
1. EXCAVATE TO ALLOW FOR PLACEMENT OF A MINIMUM OF 18" TOPSOIL AT PLANT BEDS AND 8" TOPSOIL AT LAWNS.
 2. SCARIFY SUBGRADE TO A DEPTH OF 6" PRIOR TO PLACEMENT OF TOPSOIL.
 3. PLACE TOPSOIL TO WITHIN 1" OF ADJACENT FINISHED GRADE AT PLANT BEDS. CROWN SOIL TO CENTER OF BED AT 2" PER FOOT.
 4. AT LAWNS PLACE TOPSOIL TO FINISHED GRADE AND TO LEVEL THAT IS FLUSH WITH ADJACENT PAVING.
 5. AT PLANT BEDS: SCARIFY EXISTING TOPSOIL THOROUGHLY TO A DEPTH OF 3" MINIMUM PRIOR TO PLACEMENT OF NEW TOPSOIL.
 6. ADD 3" OF ORGANIC MATERIAL AND 15-5-10-10 FERTILIZER TO TOPSOIL AT THE RATE OF 20 LBS. PER 1000 SF. MIX AMENDMENTS AND TOPSOIL TO A DEPTH OF 6" MINIMUM. CROWN SOIL TO THE CENTER OF PLANT BEDS.
 7. COMPACTION: PLACE SOIL IN LAYERS. COMPACT EACH LAYER AT 85 PERCENT.
- C. PLANTING**
1. SET PLANTS IN PITS OR BEDS, PARTLY FILLED WITH PREPARED PLANT MIX, AT A MIN. OF 6" DEPTH UNDER EACH PLANT. REMOVE BURLAP, ROPES AND WIRES FROM ROOT BALLS.
 2. APPLY PLANTING TABLETS PER MANUFACTURER'S HIGH RATES.
 3. BACKFILL SOIL MIXTURE AND COMPACT IN LAYERS. MAINTAIN PLANT MATERIAL IN VERTICAL POSITION.
 4. SATURATE SOIL WITH WATER WHEN PIT OR BED IS HALF FULL WITH TOPSOIL AND AGAIN WHEN FULL.
 5. MULCHING: MULCH ALL PLANT BEDS TO A MINIMUM DEPTH OF 3" WITHIN 24 HOURS OF PLANTING. TAPER MULCH TO 1" AT PAVING EDGES.
- D. LAWN: SEED OR HYDROSEED. METHOD TO BE APPROVED BY LANDSCAPE ARCHITECT.**



DLA
474 Willamette Street
Suite 305
Eugene, Oregon 97401

DOUGHERTY LANDSCAPE ARCHITECTS
www.DLAdesign.com
P 541.683.5803
F 541.683.8183

PRELIMINARY LANDSCAPE PLAN

SCALE: 1" = 10'-0"

NORTH

BDA
Architecture & Planning, P.C.
1380 Olive Street
Eugene, Oregon 97401
bdarch.net
541.683.8661

REGISTERED
LANDSCAPE ARCHITECT
279
Day
Dougherty

REVISION SUMMARY

Revision Number	Revision Date

CARSON COMMONS
373 ELLENDALE AVENUE
DALLAS, OREGON 97338
POLK COMMUNITY DEVELOPMENT CORPORATION

CONDITIONAL USE PERMIT

LANDSCAPE PLAN

date 03-08-2024
file
d.b.

LA-1

CITY OF DALLAS
NOTICE OF PUBLIC HEARING
Conditional Use Permit #CUP-24-01

PROPERTY LOCATION: 373 East Ellendale Avenue

APPLICANT: Polk Community Development Corporation

NATURE OF REQUEST: Construct a 20 unit apartment building

APPROVAL CRITERIA: DDC Chapter 4.4 – Conditional Use Permits

HEARING DATE / TIME: 7:00 p.m. Tuesday, April 9, 2024

HEARING LOCATION: **In Person:** Dallas City Hall, 187 SE Court Street, Dallas, Oregon
Telephone: +1 253 215 8782 Passcode: **213 855 0622**
Watch Online: www.dallasor.gov/community/page/dallasyoutube

CITY STAFF CONTACT: Chase Ballew, City Planner Phone: 503-831-3570
chase.ballew@dallasor.gov TDD: 503-623-7355

At the above day and time the Dallas Planning Commission will hold a public hearing on this request. You may attend this meeting in-person at Dallas City Hall. You may also participate by telephone by dialing the number above and entering the passcode when prompted. Video of the proceedings will be broadcast live at the website above, but oral testimony must be in-person or by phone.

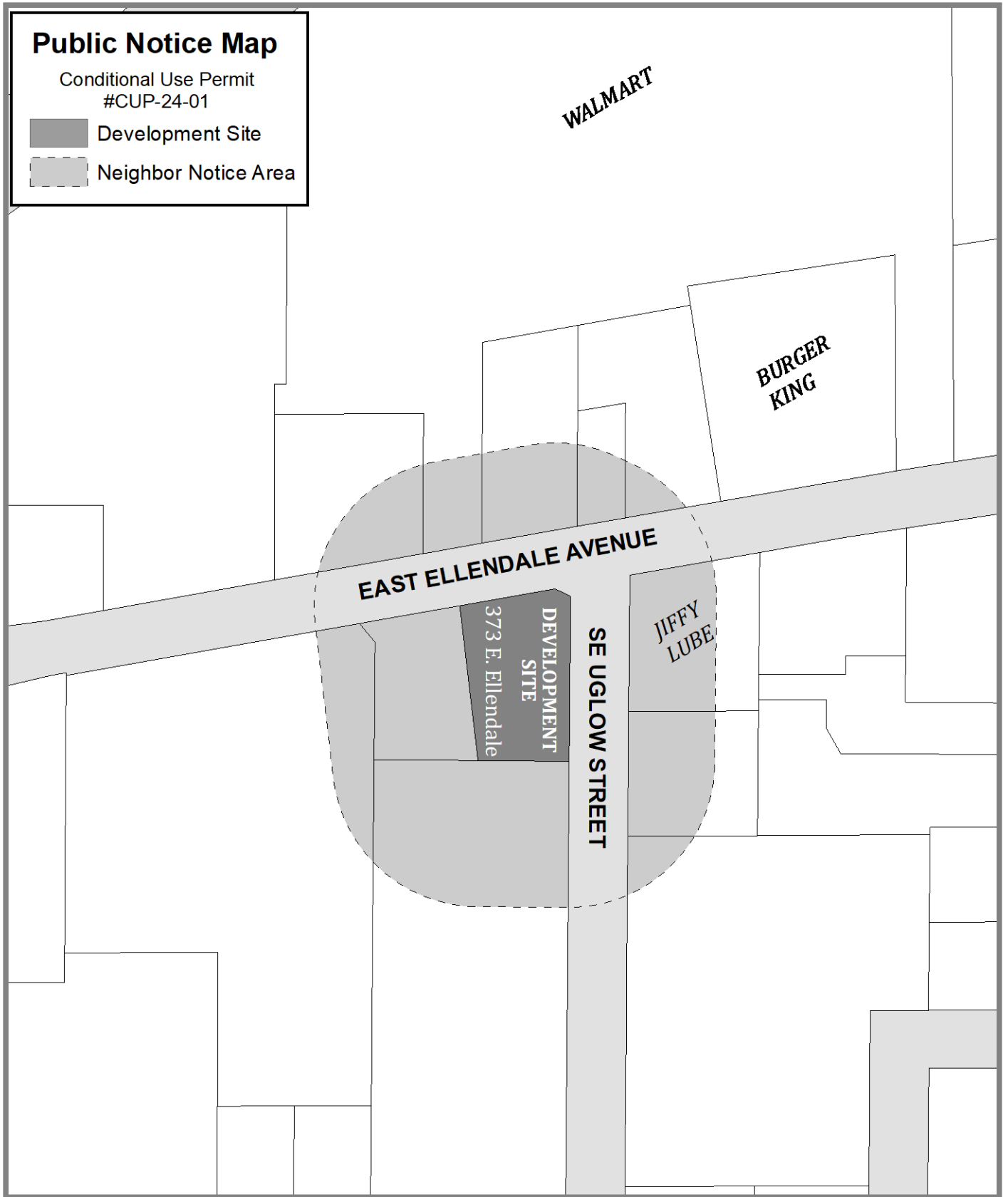
The Planning Commission will consider testimony which addresses the applicable criteria listed above. Testimony may be submitted in advance by writing to the Dallas Planning Department, 187 SE Court Street, Dallas, Oregon 97338, or given orally during the public hearing. The public hearing will be conducted in a manner that permits testimony from all interested parties.

At least seven days prior to the hearing the staff report, the application and documents and evidence submitted by or on behalf of the applicant, and the applicable approval criteria will be available for review online at www.dallasor.gov/meetings or in person at City Hall. Upon request, copies will be made at reasonable cost.

Failure of an issue to be raised in a hearing, in person or by letter, or failure to provide statements or evidence sufficient to afford the decision maker an opportunity to respond to the issue precludes appeal to the Land Use Board of Appeals (LUBA) based on that issue.

Dated: March 19, 2024

NOTICE TO MORTGAGEE, LIENHOLDER, VENDOR, OR SELLER, ORS 215 REQUIRES THAT IF YOU RECEIVE THIS NOTICE IT MUST BE PROMPTLY FORWARDED TO THE PURCHASER.
The recipient of this notice is hereby responsible to promptly forward a copy of this notice to every person with a documented interest, including a renter or lessee.



**CITY OF DALLAS
PLANNING COMMISSION
STAFF REPORT**

Meeting Date: April 9, 2024
Topic: Oakdale Estates Phases 3-7 - #SUB-24-01

Application Type: Subdivision
Applicant: Steve Bennett Construction LLC
Location: South of Hayter & Ellis Streets

RECOMMENDED ACTION

Approval with Conditions

BACKGROUND INFORMATION

Zoning: RL – Residential Low-Density
Comprehensive Plan Map: Residential
Floodplain: Property includes Floodplain and Floodway
Riparian Corridor Property includes the Ash Creek Riparian Corridor
Lot Size: 10.7 Acres
Adjacent Land Uses: Single-Family Residential
Prior Land Use Approvals: Oakdale Estates Phases 1-2

PROJECT OVERVIEW

Develop a residential subdivision in multiple phases with 59 lots and an open space tract.

APPROVAL CRITERIA:

4.3.070 - Land Division Preliminary Plat Criteria.

Staff refer to and incorporate the applicant’s written narrative for supportive findings in response to the above mentioned criteria (**Exhibit A**). These criteria are further identified in this report with specific findings, as follows:

LAND DIVISION PRELIMINARY PLAT

Land divisions are subject to the approval criteria of Dallas Development Code Section 4.3.070.

CRITERION:

DDC 4.3.070.A.1. - The proposed preliminary plat complies with the applicable Development Code sections and other applicable ordinances and regulations. At a minimum, the provisions of this Article, and the applicable chapters and sections of Article 2 (Land Use Districts) and Article 3 (Design Standards) shall apply.

FINDING:

Article 2 (Land Use District) Findings:

DDC 2.2.030.B. – General Development Standards: Minimum lot size and dimension standard is met.

2.2.050.A - Density: The allowable residential density range for the RL Zoning District is 4 – 9 dwelling units per net acre. After subtracting right-of-way the development site as proposed has 9.72 net acres (7.34 buildable acres + 2.38 acres open space), resulting in a net density of 6 dwellings per net acre, which is within the allowable range.

2.2.030.F - Minimum Open Space Area: Subdivisions are required to reserve a certain percentage of the gross area of the subdivision as open space, and a development agreement was previously recorded requiring at least two acres of open space in satisfaction of the proportion required for previous phases, this phase, and subsequent phases. The applicant proposes 2.38 of open space in a tract, which satisfies the open space requirement. City staff has evaluated the open space and consistent with Dallas Development Code Section 3.4.020(2)-(3) does not desire to accept this open space as a dedication to the City. Rather, city staff recommend a condition (**Condition of Approval 4.E**) requiring the applicant to reserve the 2.38 acre tract as open space. Ongoing ownership and maintenance of the proposed open space area shall be privately managed.

2.2.080 - Housing Variety Standards: Subdivisions of 20 or more lots are required to score at least 12 points towards the Housing Variety Standards, which are earned by having a mix of lot sizes (option 1), and/or by reserving lots for small houses (option 2), and/or by reserving lots for low-income housing (option 3). The maximum points for any single option is 9, so multiple options are required to achieve the 12 points.

The applicant proposes to score 6 points through ‘lot size variety’ (option 1) and the remaining 6 points by reserving lots for ‘small housing types’ (option 2). To ensure compliance with this section, staff recommends a condition of approval requiring the applicant to record CC&R’s or deed restrictions identifying which lots are subject to the dwelling size restriction.

2.7.060 – Floodplain Review Criteria: Refer to page 6 for specific findings for this section.

2.8 - Riparian Corridors & Wetlands Regulations: This chapter requires the applicant to map wetlands and riparian corridors, to coordinate with the Department of State Lands, and prohibits development within ten feet of the top of stream bank or associated wetland, and the applicant has provided removal/fill documentation from the Department of State Lands consistent with this chapter.

Article 3 (Design Standards) Findings: Chapter 3.1 and 3.2 and 3.4 are applicable to residential subdivisions.

Chapter 3.1 provides standards regarding **access and circulation**. The proposal includes shared driveways satisfying the 50’ access spacing standard; provisions for joint maintenance will need to be recorded along with the plat, either in covenants/conditions/restrictions for the subdivision, or in a separate agreement.

Chapter 3.2 provides standards regarding **landscaping, street trees and fences and walls**.

- “Significant vegetation” is defined in DDC 3.2.020.B, and all as such vegetation on the site is located within the proposed undeveloped open space; therefore, a canopy-level inventory is sufficient and a tree plan mapping the locations of individual trees is not necessary to evaluate the application, per DDC 3.2.020.C.

- Planting of street trees is required, but may be deferred until inspection of completed dwellings to avoid construction damage, as allowed under DDC 3.2.040. A recommended condition of approval is for the street tree locations to be shown on the infrastructure plans, to minimize utility conflicts.
- The applicant has not proposed any fences or walls as part of the development; places where the code allows the Planning Commission discretion to determine fences should be required are specified in DDC 2.2.120.A.6 and in DDC 3.2.030.E.3.d, which includes flag lots as needed for privacy.

Chapter 3.4 provides design standards that apply to **public facilities**, including transportation, sanitary sewer, water service, and storm drainage improvements. Engineering plans must be submitted to the City for review and approval before construction (**Condition of Approval 3**).

Regarding Streets and Transportation Facilities:

- The Dallas Transportation System Plan classifies SW Hayter Street as a collector street, to be extended south and west to intersect with Bridlewood Drive. Accordingly, the provided plan shows Hayter continuing through the site and developed to collector standards.
- In the RL zone the maximum allowable block length is 600 feet per DDC 3.4.015.G.4, and the property exceeds this length, however no additional street connectivity is proposed to the east. In this instance, the Planning Commission may reasonably determine that Ash Creek precludes further extension of streets to the east, in conformance with the standards of DDC 3.4.015.J.3.
- A Traffic Impact Analysis was provided documenting that the street system has adequate capacity to support the development.

Regarding **Storm Drainage, Sanitary Sewer and Water Service**, the Dallas Public Works Department has indicated that there are existing public utilities adjacent to the site with adequate capacity to serve the development. The applicant has provided a preliminary utility plan, however detailed infrastructure construction plans meeting applicable City of Dallas engineering standards must be submitted to the Engineering Services Division for review and approval prior to construction.

CRITERION:

DDC 4.3.070.A.2. - The proposed plat name is not already recorded for another subdivision, and satisfies the provisions of ORS Chapter 92;

FINDING:

The proposed name for this subdivision is “Oakdale Estates”. Subdivision naming is subject to review and approval by the County Surveyor.

CRITERION:

DDC 4.3.070.A.3. - The proposed streets, roads, sidewalks, bicycle lanes, pathways, utilities and surface water management facilities are laid out so as to conform or transition to the plats of subdivisions and maps of major partitions already approved for adjoining property as to width, general direction and in all other respects. All proposed public improvements and dedications are identified on the preliminary plat;

FINDING:

Refer to page 3 for discussion of street connectivity standards and street improvement standards.

CRITERION:

DDC 4.3.070.A.4. - All proposed private common areas and improvements (e.g. homeowner association property) are identified on the preliminary plat;

FINDING:

The open space proposed shown on the preliminary plat are to be owned and maintained by a homeowners association (**Condition of Approval 4.E**).

CRITERION:

DDC 4.3.070.A.5. - Evidence that any required State and Federal permits have been obtained, or shall be obtained before approval of the final plat;

FINDING:

A standard condition of approval is that all outside agency permits be obtained before the city issues a grading permit, as certain permits are required prior to construction activities, such as the National Pollutant Discharge Elimination System (NPDES) 1200c permit. With the standard condition of approval city staff believe the criterion can be satisfied.

CRITERION:

DDC 4.3.070.A.6. - Evidence that improvements or conditions required by the City, road authority, Polk County, special districts, utilities, and/or other service providers, as applicable to the project, have been or can be met;

FINDING:

This staff report and the final decision order identify the improvements and conditions that must be met and the time line for completing them. The proposed development can comply with this criterion.

CRITERION:

DDC 4.3.070.A.7. - If any part of the site is located within an Overlay Zone, or previously approved Master Planned Development, it shall conform to the applicable regulations and/or conditions.

FINDING:

The site is not located within an Overlay Zone. This criterion does not apply.

CRITERION:

DDC 4.3.070.B.1. - All lots shall comply with the General Development Standards of the applicable land use district (Article 2), and the standards of Section 3.4.010.G – Street Connectivity and Formation of Blocks.

FINDING:

Refer to page 3 for discussion of how the application satisfies the standards of Article 2 and street connectivity standards.

CRITERION:

DDC 4.3.070.B.2. - Setbacks shall be as required by the applicable land use district (Article 2).

FINDING:

Staff concurs that the applicable setbacks can be met at the time of building permit review. Therefore, this criterion is satisfied.

CRITERION:

DDC 4.3.070.B.3. - Each lot shall conform to the standards of Chapter 3.1 – Access and Circulation.

FINDING:

Proposed driveways are shown on preliminary plans, and will be reviewed at the time of building permit / construction plan.

CRITERION:

DDC 4.3.070.B.4. - Landscape or other screening may be required to maintain privacy for abutting uses.

FINDING:

The applicant does not propose any privacy screening as part of the project. Areas where buffers or screens are or may be required by code are specified in DDC 2.2.030.E.3.

CRITERION:

DDC 4.3.070.B.5. - In conformance with the Oregon Fire Code, a 20-foot width fire apparatus access drive shall be provided to serve all portions of a building that are located more than 150 feet from a public right-of-way or approved access drive.

FINDING:

Staff finds that a 20-foot wide access is provided to the buildable portions of the lots, therefore this criterion is satisfied.

CRITERION:

DDC 4.3.070.B.6. - Where a common drive is to be provided to serve more than one lot, a reciprocal easement for access and maintenance rights shall be recorded with the approved subdivision or partition plat.

FINDING:

This will be verified by city staff prior to approval of the final plat.

CRITERION:

DDC 4.3.070.B.7. - All applicable engineering design standards for streets, utilities, surface water management, and easements shall be met.

FINDING:

Staff concurs that engineering standards can feasibly be met with conditions of approval. A standard condition of approval is that the applicant shall submit detailed construction plans for review and approval by the Engineering Services Department, per DDC 3.4.070.

CRITERION:

DDC 3.4.050.E - Phased Development.

- 1) *The City may approve a time schedule for developing a subdivision in phases, but in no case shall the actual construction time period (i.e., for required public improvements, utilities, streets) for any partition or subdivision phase be more than 2 years without reapplying for a preliminary plat;*
- 2) *The criteria for approving a phased land division proposal are:*
 - a) *Public facilities shall be constructed in conjunction with or prior to each phase;*
 - b) *The development and occupancy of any phase dependent on the use of temporary public facilities shall require City Council approval. Temporary facilities shall be approved only upon City receipt of bonding or other assurances to cover the cost of required permanent public improvements, in accordance with Section 4.3.110. A temporary public facility is any facility not constructed to the applicable City or district standard;*

- c) *The phased development shall not result in requiring the City or a third party (e.g., owners of lots) to construct public facilities that were required as part of the approved development proposal; and*
- d) *The proposed time schedule for phased development approval shall be reviewed concurrently with the preliminary plat application, and the decision may be appealed in the same manner as the preliminary plat.*

FINDING:

Staff are concerned that proposed phases 6 and 7 unnecessarily delay the required extension of public facilities to the boundaries of the subject property, potentially impairing development of adjoining parcels relying on such public facility connections. Staff recommends a condition (**Condition of Approval 3.F**) requiring phases 6 and 7 be incorporated into phased 4 and 5 respectively. The extension of SW Hayter Street and associated public facilities to the southern boundary of the proposed property be included in proposed phase 4. The extension of C and D Streets and associated public facilities to the western boundary of the subject property be included in Phase 5

FLOODPLAIN DEVELOPMENT PERMIT

A floodplain development permit is required for the project, subject to the approval criteria of Dallas Development Code section 2.7.190/200, which states that where development in the flood hazard area is allowed, such development shall comply with the following:

CRITERION:

DDC 2.7.190.A. - Alteration of Watercourses

The flood carrying capacity within the altered or relocated portion of a watercourse must be maintained. Maintenance must be provided within the altered or relocated portion of a watercourse to ensure that the flood carrying capacity is not diminished. Any alteration of a watercourse shall require compliance with sections 2.7.150(C)(2) and 2.7.150(C)(3)

FINDING:

No alteration is proposed. This standard does not apply.

CRITERION:

DDC 2.7.190.B – Anchoring

1. *All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.*
2. *All manufactured dwellings shall be anchored per section 2.7.200(C)(4).*

FINDING:

Anchoring of buildings is part of building permits, not subdivisions. This standard does not apply.

CRITERION:

DDC 2.7.190.C - Construction Materials and Methods

1. *All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.*
2. *All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.*

FINDING:

Infrastructure construction plans must be approved by Dallas Public Works prior to installation. With appropriate conditions of approval this standard is satisfied.

CRITERION:

DDC 2.7.190.D - Utilities and Equipment

1. *Water Supply, Sanitary Sewer, and On-site Waste Disposal Systems*
 - a. *All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.*
 - b. *New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into flood waters.*
 - c. *On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding consistent with the Oregon Department of Environmental Quality.*
2. *Electrical, Mechanical, Plumbing, and Other Equipment*

Electrical, heating, ventilating, air-conditioning, plumbing, duct systems, and other equipment and service facilities shall be elevated at or above the base flood elevation or shall be designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during conditions of flooding. In addition, electrical, heating, ventilating, air- conditioning, plumbing, duct systems, and other equipment and service facilities shall, if replaced as part of a substantial improvement meet all the requirements of this section.

FINDING:

Infrastructure construction plans must be approved by Dallas Public Works prior to installation. With appropriate conditions of approval this standard is satisfied.

CRITERION:

DDC 2.7.190.E. – Tanks

1. *Underground tanks shall be anchored to prevent flotation, collapse and lateral movement under conditions of the base flood.*
2. *Above-ground tanks shall be installed one foot or more above the base flood level or shall be anchored to prevent flotation, collapse, and lateral movement under conditions of the base flood.*

FINDING:

No storage tanks are identified. This standard does not apply.

CRITERION:

DDC 2.7.060.F - Subdivision Proposals & Other Proposed Developments

1. *All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) greater than 50 lots or 5 acres, whichever is less, shall include within such proposals, Base Flood Elevation data.*
2. *All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) shall:*
 - a. *Be consistent with the need to minimize flood damage.*
 - b. *Have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize or eliminate flood damage.*
 - c. *Have adequate drainage provided to reduce exposure to flood hazards.*

FINDING:

Base flood elevation data is available for the site, and development appears to be above the elevation of the floodplain. Utility infrastructure plans must be approved by Dallas Public Works prior to installation, and structures must obtain flood elevation certificates verifying they are constructed above the flood elevation. With appropriate conditions of approval this standard is satisfied.

CRITERION:

DDC 2.7.190.G - Use of Other Base Flood Elevation Data

When Base Flood Elevation data has not been provided in accordance with section 2.7.070, the Floodplain Administrator shall obtain, review, and reasonably utilize any Base Flood Elevation data available from a federal, state, or other source, in order to administer section 2.7.180. All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) must meet the requirements of section 2.7.190(F).

Base Flood Elevations shall be determined for development proposals that are 5 acres or more in size or are 50 lots or more, whichever is lesser in any A zone that does not have an established base flood elevation. Development proposals located within a riverine unnumbered A Zone shall be reasonably safe from flooding; the test of reasonableness includes use of historical data, high water marks, FEMA provided Base Level Engineering data, and photographs of past flooding, and other relevant evidence where available. At a minimum, the elevation of residential structures and non-residential structures that are not dry flood proofed must be at least two feet above the highest adjacent grade. Failure to elevate at least two feet above grade in these zones may result in higher insurance rates.

FINDING:

Base flood elevation data is available, so alternate data is not necessary. This standard does not apply.

CRITERION:

DDC 2.7.190.H. - Structures Located in Multiple or Partial Flood Zones

In coordination with the Oregon Specialty Codes:

- 1. When a structure is located in multiple flood zones on the city's Flood Insurance Rate Maps (FIRM) the provisions for the more restrictive flood zone shall apply.*
- 2. When a structure is partially located in a special flood hazard area, the entire structure shall meet the requirements for new construction and substantial improvements*

FINDING:

No structures are included in the subdivision application. This standard does not apply.

CRITERION:

DDC 2.7.190.I. - Critical Facilities

Construction of new critical facilities shall be, to the extent possible, located outside the limits of the special flood hazard area. Construction of new critical facilities shall be permissible within the SFHA only if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated three (3) feet above the Base Flood Elevation (BFE) or to the height of the 500-year flood, whichever is higher. Access to and from the critical facility shall also be protected to the height utilized above. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters.

FINDING:

No critical facilities are proposed. This standard does not apply.

CRITERION:

DDC 2.7.190.J. - Maintaining Flood Storage Capacity

Development within the special flood hazard area shall result in no net loss in flood storage capacity. No net loss may be documented by demonstrating that the volume of material the development adds to the special flood hazard area below the BFE is less than or equal to the volume of material removed. No net loss may also be documented by hydraulic analysis certified by a registered professional engineer, subject to a Type II review per section 4.1.030.

FINDING:

The applicant's narrative states that fill is proposed within the flood area. Exact quantities of material added or removed and their impacts to flood storage are not available at this time. Documentation satisfying this requirement must be supplied prior to construction plan approval and issuance of a grading permit. With this condition of approval this standard is satisfied.

RECOMMENDED ACTION

Staff recommends that the Subdivision application be approved with the following conditions:

- 1) The project shall be completed in accordance with the general criteria, plans and specifications, documents, and all other information presented to/or modified by the Planning Commission.
- 2) The final plat for the first of the approved phase shall be submitted within 2 years of the date of this order, and each subsequent phase within two years of the previous phase, or this approval shall lapse, unless extended pursuant to DDC 4.3.050.D.
- 3) **Prior to Construction Plan Approval:**
 - a) The Applicant shall submit detailed construction plans for review and approval by the Engineering Services Department, per DDC 3.4.070. This shall also include all necessary permit applications and studies as required.
 - b) No work on the site shall commence until all permits and approvals have been secured from the Engineering Department, except for work allowed under separate permits.
 - c) The Applicant shall obtain applicable state and federal permits as needed for the development, including but not limited to a National Pollutant Discharge Elimination System (NPDES) 1200c permit for construction activities (e.g. clearing, excavation).
 - d) Construction plans shall include location of street trees, consistent with DDC 3.2.040.
 - e) Documentation showing no net loss in flood storage capacity shall be provided.
 - f) Phase boundaries shall be amended such that phase 4 includes extension of Hayter Street and associated public facilities to the southern boundary of the property, and phase 5 includes extension of C and D Streets and associated public facilities to the western boundary of the property.
- 4) **Prior to Final Plat Approval:**
 - a) The final plat shall show all grants of easement and rights of way.
 - b) The Applicant shall provide a two-year warranty bond valid for 15% of the total cost of public improvements, per DDC 3.4.090.G.
 - c) All public improvements shall be installed as approved by the Engineering Department, except those improvements the City at its discretion allows to be deferred, provided that the Applicant sign a deferred improvement agreement and provide a performance bond of 110% of the cost of the deferred improvements, per DDC 3.4.090.

- d) Floodplain boundary markers, which include the words ‘floodplain boundary’ or similar words, shall be placed where property lines intersect the floodplain boundary.
- e) A Homeowner’s Association or other method of private ownership and maintenance for the open space tract shall be established.

5) Prior to Building Permit Approval for each lot:

- a) The Applicant shall record the final subdivision plat at the Polk County Assessor’s Office within 60 days of signature by the City.
- b) The Developer or Home Builder shall provide a final soils engineering report for City review and approval. The report shall include, but is not limited to, the location and depth of fill by lot, a compaction report, and a soil expansive index rating for the development. If the soils report has an expansive index rating over 20 or soil bearing under 1500 PSF, then the lot shall have a specific evaluation report regarding soil issues and engineered solutions for the foundation systems.
- c) A site survey establishing building location shall be required before approval to place concrete for building foundations if property pins are not in place at the time of residential construction (e.g. post-monumentation).
- d) The Applicant shall comply with all applicable Building and Fire Code requirements.
- e) For each lot containing mapped floodplain, an elevation certificate shall be provided for each proposed structure, demonstrating finished floor to be at least 1 foot above the Base Flood Elevation.

RECOMMENDED MOTION:

I move to approve the Subdivision application with the conditions stated in the staff report.

EXHIBITS:

- A. Applicant’s Written Narrative and Plans
- B. Notice of Public Hearing



Subdivision Application Dallas Planning Department Type III Review

Official Use Only:File No.: SUB 24-01Date: 2-20-2024Fee: \$10,200 PAID

A SUBDIVISION means to divide land into four (4) or more lots in a calendar year. Lots created through the subdivision process shall meet the requirements for land divisions found in Dallas Development Code (DDC) Chapter 4.3. Each lot shall satisfy the dimensional standards of the applicable land use district, unless a variance from these standards is approved. In addition, adequate public facilities shall be available to serve the existing and newly created lots. A pre-application conference is required before application may be submitted. Please return a completed application form with attachments, and the required fee to the Dallas Planning Department, Dallas City Hall, Second Floor, 187 SE Court Street, Dallas, Oregon 97338.

Section 1 – Applicant Information

Name(s): Steve Bennett Construction, LLCMailing Address: 7658 Sunnyside Rd SE, Salem, OR 97306Email: jed@sbc-homes.com Phone Number: 971-600-4019 Cell Number: 971-600-4019

Section 2 – Property Owner Information

Property Owner(s): Same as applicantMailing Address: Same as applicantEmail: Same as applicant Phone Number: Same as applicant Cell Number: Same as applicant

Section 3 – Project Description

Please describe your project:

See attached narrative. The proposal includes the modification of 8-single detached lotsinto 16-single family attached lots, and a new 43-lot subdivisionSite Address: SW Rose and SW Hayter/SW Rose Total Land Area: 10.7 +/- acres07532-DC-10200, 10500, 07900, 07904Assessor Map/Taxlot No. 08505-A0-00101, 08505-AA-00803 Zoning: Residential LowPresent Use of Property: Vacant Land

Section 4 – Application Submittal Information

Submit one electronic copy (PDF format preferred) and one paper copy of the following information:

- Completed application form.
- Required fee.
- Deed of the property, including any restrictions or prior improvement agreements.
- Preliminary Plat (see Preliminary Plat Information Checklist)
- Narrative that addresses the relevant criteria in sufficient detail for review and decision-making (see Section 7 below).
- Traffic Impact Analysis, (if required).
- Public Facilities and Services Impact Study.

EXHIBIT A.2

Preliminary Plat Information Checklist

General Information:

- Name of subdivision (may not duplicate the name of another subdivision in Polk County);
- Date, north arrow, and scale of drawing;
- Location of the development sufficient to define its location in the City, boundaries, and a legal description of the site;
- A title block including the names, addresses, and telephone numbers of the owners of the subject property and, as applicable, the designer, and engineer and surveyor if any, and the date of the survey if submitted.

Site Analysis:

- Streets: Location, name, present width of all streets, alleys and rights-of-way on and abutting the site;
- Easements: Width, location and purpose of all existing easements of record on and abutting the site;
- Utilities: Location and identity of all utilities on and abutting the site. If water mains and sewers are not on or abutting the site, indicate the direction and distance to the nearest one and show how utilities will be brought to standards;
- Ground elevations shown by contour lines at 2-foot vertical interval, except where the City Engineer determines that larger intervals are adequate; i.e., for steep slopes. Such ground elevations shall be related to some established benchmark or other datum approved by the County Surveyor;
- The location and elevation of the closest benchmark(s) within or adjacent to the site;
- Potential natural hazard areas, including any areas identified as subject to a flood hazard as identified on FEMA Flood Insurance Rate Maps or as otherwise determined through site specific survey, areas subject to high water table, and areas designated by the City, County, or State as having a potential for geologic hazards;
- Sensitive lands, including wetland areas, streams, wildlife habitat, and other areas identified by the City or natural resource regulatory agencies as requiring protection;
- Site features, including existing structures, pavement, large rock outcroppings, areas having unique views, and drainage ways, canals and ditches;
- Designated historic and cultural resources on the site and adjacent parcels or lots;
- The location, size and species of trees having a caliper (diameter) of 6 inches or greater at 4 feet above grade; and
- Other information, as deemed necessary by the City Planning Official for review of the application.

Proposed Improvements:

- Public and private streets, tracts, driveways, open space and park land; location, names, right-of-way dimensions, approximate radius of street curves; and approximate finished street center line grades. All streets and tracts that are being held for private use and all reservations and restrictions relating to such private tracts shall be identified;
- Easements: location, width and purpose of all proposed easements;
- Lots and private tracts (e.g., private open space, common area, or street): approximate dimensions, area calculation (e.g., in square feet), and identification numbers for all proposed lots and tracts;
- Proposed uses of the property, including all areas proposed to be dedicated to the public or preserved as open space for the purpose of surface water management, recreation, or other use;
- Proposed improvements, as required by Article 3 (Design Standards), and timing of improvements (e.g., in the case of streets, sidewalks, street trees, utilities, etc.);
- Preliminary location of development showing those future buildings can meet siting and dimensional standards of the district.
- Proposed source of domestic water;
- Proposed method of sewage disposal;
- Proposed method of surface water drainage and treatment if required;
- The approximate location and identity of other utilities, including the locations of street lighting

EXHIBIT A.3

fixtures;

- Proposed railroad crossing or modifications to an existing crossing, if any, and evidence of contact with the affected railroad and the Oregon Department of Transportation Rail Division regarding proposed railroad crossing(s);
- Changes to navigable streams, or other watercourses. Status of public access to these areas shall be shown on the preliminary plat, as applicable;
- Written evidence of initiation of a FEMA flood plain map amendment shall be required when development is proposed to modify a designated 100-year flood plain;
- Evidence of contact with the road authority for any development requiring access to its facility; and
- Evidence of notice to applicable natural resource regulatory agencies for any development within or adjacent to wetlands, river, streams or other regulated water bodies.

Section 5 – Signatures Required


I hereby certify the statements contained herein, along with the evidence submitted, are in all respects true and correct to the best of my knowledge:

PROPERTY OWNER(S)

Property Owner's Signature:  Date: 19 Feb 24

Property Owner's Signature: _____ Date: _____

APPLICANT(S)

Applicant's Signature:  Date: 19 Feb 24

Applicant's Signature: _____ Date: _____

Section 6 – Application Review Process

Subdivisions are approved by means of a preliminary plat evaluation and a final plat evaluation. The preliminary plat is reviewed in accordance with the Type III land use review procedures found in DDC 4.1.040 before the final plat can be submitted for approval consideration. The final plat must include all conditions of approval of the preliminary plat. The City may attach conditions to the preliminary plat decision that are necessary to carry out the provisions of the Development Code, and other applicable ordinances and regulations.

When a preliminary plat subdivision application is submitted, the City will notify the applicant in writing within 30 days as to whether the application is complete or what information is required to make the application complete. Once a complete application is submitted, the City will schedule a public hearing before the Planning Commission and provided written notification of the hearing to abutting properties located within 100 feet of the property. A staff report and recommendation for the application will be available approximately one (1) week prior to the public hearing. Upon holding a public hearing, the Planning Commission will issue a decision on the application. The Planning Commission's decision may be appealed to the City Council within ten (10) days of the mailed decision.

Upon receiving preliminary plat approval, the final plat must be recorded within two (2) years of the preliminary plan approval. If the final plat is not recorded within two (2) years, the preliminary plan approval will lapse. The City Planning Official may, upon written request by the applicant, grant one (1) written extension of the approval period not to exceed one (1) year provided the request is made before expiration of the original approved plan, and the extension meets the approval criteria found in DDC 4.3.050.D.

Section 7 – Application Review Criteria

Approval of a preliminary subdivision plan is based upon whether or not the plan meets the following criteria:

General Subdivision Approval Criteria.

1. The proposed preliminary plat complies with the applicable Development Code sections and all other applicable ordinances and regulations. At a minimum, the provisions of Article 4, and the applicable chapters and sections of Article 2 (Land Use Districts) and Article 3 (Design Standards) shall apply. Where a variance is necessary to receive preliminary plat approval, the application shall also comply with the relevant sections of Article 5;
2. The proposed plat name is not already recorded for another subdivision, and satisfies the provisions of ORS Chapter 92;
3. The proposed streets, roads, sidewalks, bicycle lanes, pathways, utilities, and surface water management facilities are laid out so as to conform or transition to the plats of subdivisions and maps of major partitions already approved for adjoining property as to width, general direction and in all other respects. All proposed public improvements and dedications are identified on the preliminary plat;
4. All proposed private common areas and improvements (e.g., homeowner association property) are identified on the preliminary plat; and
5. Evidence that any required State and federal permits have been obtained, or shall be obtained before approval of the final plat;
6. Evidence that improvements or conditions required by the City, road authority, Polk County, special districts, utilities, and/or other service providers, as applicable to the project, have been or can be met; and
7. If any part of the site is located within an Overlay Zone, or previously approved Master Planned Development, it shall conform to the applicable regulations and/or conditions.

Layout and Design of Streets, Blocks and Lots.

All proposed blocks (i.e., one or more lots bound by public streets), lots and parcels conform to the specific requirements below:

1. All lots shall comply with the General Development Standards of the applicable land use district (Article 2), and the standards of Section 3.4.010.G.4 Street Connectivity and Formation of
2. Setbacks shall be as required by the applicable land use district (Article 2).
3. Each lot shall conform to the standards of Chapter 3.1 - Access and Circulation.
4. Landscape or other screening may be required to maintain privacy for abutting uses. See Article 2 - Land Use Districts, and Chapter 3.2 - Landscaping.
5. In conformance with the Uniform Fire Code, a 20-foot width fire apparatus access drive shall be provided to serve all portions of a building that are located more than 150 feet from a public right-of-way or approved access drive. See Chapter 3.1- Access and Circulation.
6. Where a common drive is to be provided to serve more than one lot, a reciprocal easement for access and maintenance rights shall be recorded with the approved subdivision or partition plat.
7. All applicable engineering design standards for streets, utilities, surface water management, and easements shall be met.

Housing Variety Standards (For 20 or more lots) DDC 2.2.080.

Requires new neighborhoods and large subdivisions to contain a variety of housing types. The purpose of the housing variety standards is to support housing at price ranges and rent levels that are commensurate to local incomes, promotes livability by offering housing choices, and contribute to the development of complete neighborhoods, consistent with the Comprehensive Plan. Section 2.2.080 applies to land divisions creating or having the potential to create twenty (20) or more lots on any parcel or contiguous parcels in the RL and RM zones.



SUBDIVISION APPLICATION NARRATIVE
OAKDALE ESTATES 3, 4, 5, 6, 7

Applicant:

Steve Bennett Construction, LLC
6578 Congressional Ct SE
Salem, OR 97306

Property Description:

Tracts A and D of the Oakdale Estates final plat recorded September 1, 2021, in Polk County Deed Records, Reel 2021, page 13971. The tracts consist of 27,856 SF and 24,453 SF respectively. Previous entitlements for these tracts included 8 single family detached homes on lots ranging in size from 6,001 SF to 7,098 SF. The applicant is seeking a modification to the existing entitlements to convert the 8 single family detached lots, to 16 single family attached lots, with no more than 2 dwellings units attached in a row.

Tract A of the Oakdale Estates 2 final plat recorded June 16, 2023, in Polk County Deed Records, Reel 16, page 23. This tract consists of 9.51 +/- acres. It is requested to subdivide this tract as follows: 2-acres of open space dedicated to the City of Dallas, and 7.5-acres into 43-single family homes. The property has been annexed into the City limits and is included in the Urban Growth Boundary. This is a follow-on phase to Oakdale Estates, and will be served by public roads and utility infrastructure extensions included in proposed right of way dedications of SW Ellis and SW Hayter.

Site Address/Location:

Tracts A & D, Oakdale Estates
Tax Lot 07532-DC-10200 (.63 acres)
Tax Lot 07532-DC-10500 (.56 acres)

Tract A, Oakdale Estates 2
Tax Lot 07532-DC-07900 (0.94 acres)
Tax Lot 07532-DC-07904 (0.17 acres)
Tax Lot 08505-A0-00101 (3.12 acres)
Tax Lot 08505-AA-00803 (5.28 acres)

EXHIBIT A.6

Total Land Area:

Tracts A & D, Oakdale Estates: 1.19 +/- acres
Tract A, Oakdale Estates 2: 9.51 +/- acres

Zoning: Residential Low (RL)

Present Use of Property: Vacant Land, stormwater retention

Open Space: In accordance with City of Dallas Development Code, table 2.2.030(F), the subdivision is required to provide 6% of residential subdivision as open space. The City of Dallas and the applicant entered into a Development Agreement for the subject subdivision to provide open space satisfying the requirements of the Oakdale Estates subdivisions that were previously approved, and the subdivisions currently seeking approval. The current proposal provides 2-acres of open space, which is equal to 13% of the residential subdivisions (approved and proposed), so the included open space more than satisfies the 6% minimum requirement.

Narrative:

Oakdale Estates 3 was previously entitled as 8 lots for single family detached homes. Given the need for a diversity of housing, it is proposed to modify the previous approval and create 16 lots for single family attached homes. In the RL district, no more than two homes may be attached in a row, and it is proposed to build duplex style townhomes on the 16-lots.

Oakdale Estates 4, 5, 6, 7 are proposed as 43-lot subdivision with lots ranging in size from 2,851SF to 13,781SF, and an average lot size of 5,193SF. The project is owned by Steve Bennett Construction, LLC, owner, developer and builder of Oakdale Estates. The proposed project is located south of Oakdale Estates, and will be accessed by SW Ellis St and SW Hayter St.

The property lies within the Residential Comprehensive Plan designation and is zoned Residential Low (RL). Currently the project is vacant land, save and except for a stormwater retention facility serving Oakdale Estates 1, 2 & 3. This stormwater facility will remain in place and is proposed to remain in place as part of this application.

As noted in the Oakdale Estates application, the subject property was included in an environmental assessment performed in August 2015, "and it was determined that there are no endangered species or regulated vegetation on the property." At that time the environmental analysis was completed by Pacific Habitat Services Inc. Subsequently Nation Wide Permit No. NWP-2017-516 was issued by the US Army Corps of Engineers and acknowledged by Oregon Department of Environmental Quality and Oregon Department of State Lands. Under the permit .15 acres of wetland was identified to be mitigated and filled, both of which were completed during the development of Oakdale Estates 1, 2 and 3. The original permit also identified wetlands on an additional .91 acres of wetlands located on the subject property. The .91 acres of wetlands was proposed to be avoided and has been identified in the current application as part of the open space to be dedicated to the City of Dallas.

The original environmental approvals from both state and federal agencies covered all property in Oakdale Estates 1, 2 and 3, and proposed Oakdale Estates 4, 5, 6 and 7, and the approvals granted were completed. As

EXHIBIT A.7

part of the land use approval process for Oakdale Estates, the applicant engaged Branch Engineering to complete an environmental assessment to renew the previous delineation approved by Oregon Department of State Lands. The renewal application was approved by Oregon Department of State Lands, and a copy of the renewal has been submitted with this application.

A traffic study for Oakdale Estates 1, 2 and 3, and proposed Oakdale Estates 4, 5, 6 and 7, was completed by Project Delivery Group in May of 2015 and was updated by Branch Engineering, November 1, 2023. A copy of the updated traffic analysis is included with this application.

The proposed project will install both wet and dry utility extensions to serve all new homes. The City of Dallas has confirmed there is sufficient capacity of all municipal utilities to serve this next phase. Likewise, the backbone infrastructure of dry utilities (electric, gas, telecommunications) for Oakdale Estates 1, 2 and 3, was designed and installed to support the future growth of additional phases.

Oakdale Estates 1, 2 and 3, and proposed Oakdale Estates 4, 5, 6 and 7, were contemplated to be cut/fill projects. As a result the site is currently stockpiled with dirt to be used as engineered fill in order to raise certain low areas of the proposed project out of the flood plain. The applicant will coordinate with the City of Dallas to submit a Letter of Map Revision based on fill, to FEMA for review and approval. All vegetation and trees in the proposed development areas do not have any significant value for protection and would be removed during development. However, the existing two-acres of land and associated vegetation and trees, identified to be dedicated to the City of Dallas will remain.

General Approval Criteria:

4.1.040 Type III Procedure (Quasi-Judicial)

A. Pre-application Conference. A pre-application conference is required for all Type III applications. The requirements and procedure for a pre-application conference are described in Section 4.1.060.

Applicant's Response: A pre-application for the proposed project was held on June 14, 2022. Applicant has met the requirement of this criteria.

B. Application Requirements.

1. Application forms. Type III applications shall be made on forms provided by the City Planning Official; if a Type II application is referred to a Type III hearing, either voluntarily by the applicant, or by staff, or upon appeal, no new application is required.
2. Submittal Information. When a Type III application is required, it shall:
 - a. Include the information requested on the application form;
 - b. Be filed with one copy of a narrative statement that explains how the application satisfies each and all relevant criteria and standards in sufficient detail for review and decision-making. Note: additional information may be required under the specific application requirements for each approval, e.g., Chapters 4.2 (Land Use Review and Site Design Review), 4.3 (Land Divisions), 4.6 (Modifications), 4.8 (Code Interpretations), and 4.9 (Miscellaneous Permits); and
 - c. Be accompanied by the required fee.
 - d. Be accompanied by a list of property owners of record within 100 feet of the subject site (by tax map and lot number) and mailing labels for the same.

Applicant's Response:

1. *A Subdivision Application Dallas Planning Department Type III Review was completed and submitted to the City of Dallas Planning Department.*
 - 2.a. *The application form was completed with the requisite information*
 - 2.b. *A narrative explaining how the application satisfies each and all relevant criteria and standards was submitted with the application.*
 - 2.c. *The required fee for a Type III Review was paid.*
 - 2.d. *A list of property owners of record within 100 feet of the subject site (by tax map and lot number) and mailing labels for the same, was provided with the application.*

All criteria of this section has been met.

C. Notice of Hearing

Applicant's Response: *The City of Dallas is responsible for noticing the public hearings; said notices satisfy this criteria.*

4.1.080 Neighborhood Meetings

A. **Purpose.** Applicants are required to hold meetings with neighbors before submitting an application for a master planned development, subdivision and multi-family housing projects containing more than 20 dwelling units. This is to ensure that affected property owners are given an opportunity to preview a proposal and offer input to the applicant before a plan is formally submitted to the City; thereby raising any concerns about the project and the project's compatibility with surrounding uses early in the design process when changes can be made relatively inexpensively.

Applicant's Response: *A neighborhood meeting was held on February 7, 2024.*

4.1.090 Traffic Impact Analysis

The purpose of this section of the code is to assist in determining which road authorities participate in land use decisions, and to implement Section 660-012-0045 (2) (e) of the State Transportation Planning Rule that requires the City to adopt a process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities. This Chapter establishes the standards for when a proposal must be reviewed for potential traffic impacts; when a Traffic Impact Analysis must be submitted with a development application in order to determine whether conditions are needed to minimize impacts to and protect transportation facilities; what must be in a Traffic Impact Analysis; and who is qualified to prepare the analysis.

A. **When a Traffic Impact Analysis is Required.** The City or other road authority with jurisdiction may require a Traffic Impact Analysis (TIA) as part of an application for development, a change in use, or a change in access. The current version of the Institute of Transportation Engineers *Trip Generation Manual* shall be used as a source for estimating development-generated traffic. A TIA shall be required when a land use application involves one or more of the following actions:

1. A change in zoning or a plan amendment designation;
2. Any proposed development or land use action that a road authority states may have operational or safety concerns along its facility(ies);

EXHIBIT A.9

3. An increase in site traffic volume generation by 300 Average Daily Trips (ADT) or more; or
 4. An increase in peak hour traffic volume of a particular turning movement to and from an arterial street, including State highways, by 20-percent or more; or
 5. An increase in use of adjacent streets by vehicles exceeding the 20,000 pound gross vehicle by weights by 10 vehicles or more per day; or
 6. The location of the access driveway does not meet minimum sight distance requirements, or is located where vehicles entering or leaving the property are restricted, or such vehicles queue or hesitate on the State highway, creating a safety hazard; or
-
7. A change in internal traffic patterns that may cause safety problems, such as back up onto a street or greater potential for traffic accidents.

B. Traffic Impact Analysis Preparation. A Traffic Impact Analysis shall be prepared by a professional engineer in accordance with the requirements of the road authority. If the road authority is the Oregon Department of Transportation (ODOT), the applicant shall consult ODOT's regional development review planner and OAR 734-051-180.

Applicant's Response: A Traffic Impact Analysis ("TIA") for the original Oakdale Estates project, consisting of 76-homes, dated May 27, 2015, was performed by Project Delivery Group, a copy of which is on file with the City of Dallas.

The previous TIA assumed 76 Single Family Detached Dwelling Units at build out of the Oakdale Estates project. At that time the TIA concluded current and forecasted traffic volumes of the project would not negatively impact the existing transportation system so as to fall below minimum level of service requirements.

As a part of the current application for Oakdale Estates 4, 5, 6 and 7, the applicant engaged Branch Engineering to review the TIA prepared by Project Delivery Group and assess if the conclusions reached in that analysis are still valid. Branch Engineering has provided a Technical Memorandum, dated February 13, 2024, and submitted with this application. Consistent with the conclusions reached in 2015 by Project Delivery Group, the modification to Oakdale Estates 3, and the proposed Oakdale Estates 4, 5, 6 and 7, projects will not impact the current transportation system in a way that falls below minimum level of service requirements.

Branch Engineering researched the assumptions of the previous TIA, and found actual data to be better than predicted. The original TIA completed in 2015 used a 2.5 average percent annual growth rate which was applied to background AM and PM peak hour approaching traffic volumes, to forecast traffic volumes over a 10-year period (2015 – 2025). Actual data collected by ODOT through year 2022, calculated an average annual growth rate of 1.2 percent, meaning there has been less forecasted additional demand on the current transportation system than anticipated. As a result, all conditions reported in the approved TIA should be considered consistent with the current land use applications for development.

4.2.040 Site Design Review – Application Review Procedure

Where Site Design Review is required, it shall be conducted using a Type III procedure, consistent with section 4.1.040, and using the application requirements and approval criteria contained in Sections 4.2.050 through 4.2.060, below.

4.2.050 Site Design Review – Application Submission Requirements

All of the following information is required for Site Design Review application submittal:

EXHIBIT A.10

A. General Submission Requirements. An application for Site Design Review shall contain all of the information required for a Type III review under Section 4.1.040, and provide:

1. Public Facilities and Services Impact Study. The impact study shall quantify and assess the effect of development on public facilities and services. The City shall advise as the scope of the study during the required pre-application conference (Section 4.1.060C). The study shall address, at a minimum, the transportation system, including required improvements for vehicles and pedestrians, the drainage system, the parks system, the water system, and the sewer system. For each public facility system and type of impact, the study shall propose improvements necessary to meet City standards;
2. Traffic Impact Analysis, if required by the City or other road authority. Traffic Impact Analysis shall conform to the standards and procedures in Section 4.1.090; and
3. In situations where the Code requires dedication of real property to the City, the City shall either (1) include in the written decision evidence that shows that the required property dedication is directly related to and roughly proportional to the projected impacts of the development on public facilities and services, or (2) not require the dedication as a condition of approval.

***Applicant's Response:** In the pre-application conference the City confirmed there is adequate water, sewer and storm drainage capacity to serve the proposed project. The previous TIA and Technical Memorandum thereof has also concluded the current transportation system is adequate to serve the additional dwellings proposed within the project. Development of the proposed project includes sewer, water, and storm drain main extensions to existing facilities in SW Ellis St and SW Hayter St. Right of Way dedications for public roads will also include extensions of SW Ellis St. and SW Hayter in a size and alignment consistent with the City's transportation plan. Please see the conceptual utility plan submitted with this application for additional information.*

B. Site Design Review Information. In addition to the general submission requirements for a Type III review (Section 4.1.040) an applicant for Site Design Review shall provide the following additional information, as deemed applicable by the City Planning Official. The Planning Official may deem applicable any information that he or she needs to review the request and prepare a complete staff report and recommendation to the approval body:

1. Site analysis map. At a minimum the site analysis map shall contain the following:
 - a. The applicant's entire property and the surrounding property to a distance sufficient to determine the location of the development in the City, and the relationship between the proposed development site and adjacent property and development. The property boundaries, dimensions and gross area shall be identified;
 - b. Topographic contour lines at 2-foot intervals for slopes, except where the City Engineer determines that larger intervals will be adequate for steeper slopes;
 - c. Identification of slopes greater than fifteen (15) percent, with slope categories identified in 5 percent increments (e.g., 0%-5%, >5%-10%, >10%-15%, >15%-20%, and so on.);
 - d. The location and width of all public and private streets, drives, sidewalks, pathways, rights-of-way, and easements on the site and adjoining the site;
 - e. Potential natural hazard areas, including any areas identified as subject to a flood hazard as identified on FEMA Flood Insurance Rate Maps or as otherwise determined through site specific survey, areas subject to high water table, and areas designated by the City, County, or State as having a potential for geologic hazards;
 - f. Resource areas, including marsh and wetland areas, streams, and wildlife habitat identified by the City or any natural resource regulatory agencies as requiring protection;

EXHIBIT A.11

- g. Site features, including existing structures, pavement, large rock outcroppings, areas having unique views, and drainage ways, canals and ditches;
- h. Locally or federally designated historic and cultural resources on the site and adjacent parcels or lots;
- i. The location, size and species of trees and other vegetation having a caliper (diameter) of six (6) inches or greater at four feet above grade;
- j. North arrow, scale, names and addresses of all persons listed as owners of the subject property on the most recently recorded deed;
- k. Name and address of project designer, engineer, surveyor, and/or planner, if applicable.

Applicant's Response: *The proposed subdivision application includes sufficient information to meet all applicable criteria listed in the Site Design Review Information.*

2. Proposed site plan. The site plan shall contain the following information:

- a. The proposed development site, including boundaries, dimensions, and gross area;
- b. Features identified on the existing site analysis maps that are proposed to remain on the site;
- c. Features identified on the existing site map, if any, which are proposed to be removed or modified by the development;
- d. The location and dimensions of all proposed public and private streets, drives, rights-of-way, and easements;
- e. The location and dimensions of all existing and proposed structures, utilities, pavement and other improvements on the site. Setback dimensions for all existing and proposed buildings shall be provided on the site plan;
- f. The location and dimensions of entrances and exits to the site for vehicular, pedestrian, and bicycle access;
- g. The location and dimensions of all parking and vehicle circulation areas (show striping for parking stalls and wheel stops);
- h. Pedestrian and bicycle circulation areas, including sidewalks, internal pathways, pathway connections to adjacent properties, and any bicycle lanes or trails;
- i. Loading and service areas for waste disposal, loading and delivery;
- j. Outdoor recreation spaces, common areas, plazas, outdoor seating, street furniture, and similar improvements;
- k. Location, type, and height of outdoor lighting;
- l. Location of mail boxes, if known;
- m. Name and address of project designer, if applicable;
- n. Locations of bus stops and other public or private transportation facilities;
- o. Locations, sizes, and types of signs;

Applicant's Response: *The proposed subdivision application includes all necessary and applicable information required by the outlined criteria for the Proposed Site Plan.*

3. Architectural drawings. Architectural drawings showing one or all of the following shall be required for new commercial, commercial/residential, industrial and multifamily buildings, and major remodels of the same:

- a. Building elevations (as determined by the City Planning Official) with building height and width dimensions;
- b. Building materials, colors and type;
- c. The name of the architect or designer.

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Applicant's Response: Architectural drawings are not included in this application. All house plans will be reviewed by staff when applications are submitted for building permits.

4. Preliminary grading plan. A preliminary grading plan prepared by a registered engineer shall be required for development sites one-half (½) acre or larger. The preliminary grading plan shall show the location and extent to which grading will take place, indicating general changes to contour lines, slope ratios, slope stabilization proposals, and location and height of retaining walls, if proposed. Surface water detention and treatment plans may also be required, in accordance with Section 3.4.040.

Applicant's Response: A preliminary grading is submitted with this Tentative Plat application. Please see sheet C1.0.

5. Landscape plan. Where a landscape plan is required, it shall show the following:

- a. The location and height of existing and proposed fences, buffering or screening materials;
- b. The location of existing and proposed terraces, retaining walls, decks, patios, shelters, and play areas;
- c. The location, size, and species of the existing and proposed plant materials (at time of planting);
- d. Existing and proposed building and pavement outlines;
- e. Specifications for soil at time of planting, irrigation if plantings are not drought-tolerant (may be automatic or other approved method of irrigation) and anticipated planting schedule;
- f. Other information as deemed appropriate by the City Planning Official. An arborist's report may be required for sites with mature trees that are protected under Chapter 3.2. Landscape, Street Trees, Fences and Walls of this Code.

Applicant's Response: The landscaping plan criteria does not apply to this application.

6. Deed restrictions. Copies of all existing and proposed restrictions or covenants, including those for access control.

Applicant's Response: There are no deed restrictions proposed with this subdivision. To the extent the City of Dallas requires any deed restrictions, such deed restrictions will be recorded via the final plat or against individual lots.

7. Narrative. Letter or narrative report documenting compliance with the applicable approval criteria contained in Section 4.2.060 Approval Criteria.

Applicant's Response: A narrative has been submitted with this application in compliance with the approval criteria of Section 4.2.060.

8. Traffic Impact Analysis, when required, shall be prepared in accordance with the road authority's requirements. See Section 4.1.090, and Section 3.4.010 for relevant standards.

Applicant's Response: A Traffic Impact Analysis was previously prepared by Project Delivery Group when the original Oakdale Estates project was approved. The analysis also included the units proposed in this current subdivision request. A Technical Memorandum prepared by Branch Engineering, dated February 13, 2024, evaluated the contents of the original TIA and summarized that all conclusions of the original TIA were still applicable, and there have been no significant changes or impacts to the current transportation system that would be of concern for the approval the current project(s) and modifications as proposed.

EXHIBIT A.13

9. Other information determined by the City Planning Official. The City may require studies or exhibits prepared by qualified professionals to address specific site features or project impacts (e.g., traffic, noise, environmental features, natural hazards, etc.), in conformance with this Code.

***Applicant's Response:** All previous studies submitted for the Oakdale Estates application, considered the previous and proposed unit count of Oakdale Estates, and as applicable, these studies have been reviewed and validated/renewed by qualified professionals to address any potential project impacts. Copies of those validation reports and renewal approvals have been provided with this application.*

4.2.060 Site Design Review Approval Criteria; Adjustments

- A. **Approval Criteria.** An application for Site Design Review shall be approved if the proposal meets all of the following criteria. The City decision making body may, in approving the application may impose reasonable conditions of approval, consistent with the applicable criteria:
1. The application is complete, as determined in accordance with Chapter 4.1 - Types of Applications and Section 4.2.050, above.
 2. The application complies with all of the applicable provisions of the underlying Land Use District (Article 2), including: building and yard setbacks, lot area and dimensions, density and floor area, lot coverage, building height, building orientation, architecture, and other applicable standards;
 3. The applicant shall be required to upgrade any existing development that does not comply with the applicable land use district standards, in conformance with Chapter 5.2, Non-Conforming Uses and Development;
 4. The proposal complies with all of the Design Standards in Article 3:
 - a. Chapter 3.1 - Access and Circulation;
 - b. Chapter 3.2 - Landscaping, Significant Vegetation, Street Trees, Fences and Walls;
 - c. Chapter 3.3 - Parking and Loading, for automobiles and bicycles;
 - d. Chapter 3.4 - Public Facilities and Franchise Utilities;
 - e. Chapter 3.6 – Signs.

***Applicant's Response:** As applicable, the application addresses all of the site design criteria outlined above. The application was submitted to the Planning Department for review of completeness, and is in compliance with the development standards of the RL district. All lots have been designed to meet building and yard setbacks, lot area and dimensions, density and floor area, and lot coverage. At building permit application the building height, orientation and architecture will be evaluated for compliance with the standards of the RL district. Please see sheet C1.0 of the Tentative Plat civil drawings for proposed development upgrades and compliance with the design standards in Article 3.*

5. Existing conditions of approval required as part of a prior land use decision, including Land Divisions (Chapter 4.3), Conditional Use Permits (Chapter 4.4), Master Planned Developments (Chapter 4.5) or other approval, shall be met.

Note: Compliance with other City codes and requirements, though not applicable land use criteria, may be required prior to issuance of building permits.

- B. **Adjustments.** Where this Code specifically authorizes an Adjustment to a Code standard through Site Design Review (Type III), the Planning Commission may approve such Adjustment only upon finding it equally or better meets the purpose and intent of the Code provision that is to be Adjusted; the Planning Commission shall consider the purpose and intent of all relevant Code chapters and sections. In addition, the Planning Commission shall find the Adjustment, as compared to the standard Code requirement, does not create incompatibilities between existing and proposed development relative land use, traffic patterns, noise, light,

glare, odor, emissions, vibration, building design, streetscape appearance and functionality, or similar types of impacts.

Applicant's Response: The applicant has proposed 5 lots where the minimum lot width for a single family detached lot is less than 50'. However, the needed adjustment for these lots is less than the 20% allowable by Dallas Development Code, and the adjustment helps to insure a variety of lot sizes, and housing size and type in the RL district.

4.2.070 Assurances

Public improvement required as part of a Site Design Review approval shall be subject to the performance guarantee and warranty bond provisions of Section 3.4.090, as applicable.

Applicant's Response: The applicant is familiar with the performance guarantees and warranty bond provisions for public improvements in the City of Dallas, and is willing and able to meet these requirements for the proposed project.

4.2.080 Compliance With Permit Approval; Modifications; Permit Expiration

Development shall not commence until the applicant has received all of the appropriate land use and development approvals (i.e., site design review approval) and building permits. Construction of public improvements shall not commence until the City has approved all required public improvement plans (e.g., utilities, streets, public land dedication, etc.). The City may require the applicant to enter into a development agreement (e.g., for phased developments and developments with required off-site public improvements), and may require bonding or other assurances for improvements, in accordance with Section 4.2.070. Development Review and Site Design Review approvals shall be subject to all of the following standards and limitations:

1. **Modifications to Approved Plans and Developments.** Minor modifications of an approved plan or existing development, as defined in Chapter 4.6, shall be processed as a Type I or Type II procedure and require only Land Use Review. Major modifications, as defined in Chapter 4.6, shall be processed as a Type III procedure and shall require Site Design Review. For information on Type I, Type II and Type III procedures, please refer to Chapter 4.1. For Modifications approval criteria, please refer to Chapter 4.6.
2. **Approval Period.** Development Review and Site Design Review approvals shall be effective for a period of one (1) year from the date of approval. The approval shall lapse if:
 1. A public improvement plan or building permit application for the project has not been submitted within one year of approval; or
 2. Construction on the site is in violation of the approved plan.
3. **Extension.** The Planning Official, upon written request by the applicant, may grant a written extension of the approval period not to exceed one year; provided that:
 1. No changes are made on the original approved site design review plan;
 2. The applicant can show intent of initiating construction on the site within the one-year extension period;
 3. There have been no changes to the applicable Code provisions on which the approval was based. If there have been changes to the applicable Code provisions and the expired plan does not comply with those changes, then the extension shall not be granted; in this case, a new site design review shall be required; and
 4. The applicant demonstrates that failure to obtain building permits and substantially begin construction within one year of site design approval was beyond the applicant's control.
4. **Phased Development.** Phasing of development may be approved with the Site Design Review application, subject to the following standards and procedures:

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1. A phasing plan shall be submitted with the Site Design Review application.
2. The Planning Commission shall approve a time schedule for developing a site in phases, but in no case shall the total time period for all phases be greater than 5 years without reapplying for site design review.
3. Approval of a phased site design review proposal requires satisfaction of all of the following criteria:
 1. The public facilities required to serve each phase are constructed in conjunction with or prior to each phase;
 2. The development and occupancy of any phase dependent on the use of temporary public facilities shall require City Council approval. Temporary facilities shall be approved only upon City receipt of bonding or other assurances to cover the cost of required public improvements, in accordance with Section 4.3.110. A temporary public facility is any facility not constructed to the applicable City or district standard, subject to review by the City Engineer;
 3. The phased development shall not result in requiring the City or other property owners to construct public facilities that were required as part of the approved development proposal; and
 4. An request to phase a project may be approved after Site Design Review approval as a modification to the approved plan, pursuant Chapter 4.6.

Applicant's Response: Applicant acknowledges the provisions and criteria of DDC 4.2.080. No development work requested for approval in this application has commenced, and will not commence until approvals and permits have been obtained from local, state and federal jurisdictions as applicable. Consistent with DDC 4.2.080D. the applicant is applying for a phased development. Please see the civil drawings submitted with this application for the requested phases.

4.3.020 General Requirements

- A. **Subdivision and Partition Approval Through Two-step Process.** Applications for subdivision or partition approval shall be processed by means of a preliminary plat evaluation and a final plat evaluation, according to the following two steps:
 1. The preliminary plat must be approved before the final plat can be submitted for approval consideration; and
 2. The final plat must include all conditions of approval of the preliminary plat.
- B. **Compliance With Oregon Revised Statutes (ORS) Chapter 92.** All subdivision and partition proposals shall conform to state regulations in Oregon Revised Statute (ORS) Chapter 92, Subdivisions and Partitions.
- C. **Future Re-division Plan.** When subdividing or partitioning tracts into large lots (i.e., greater than two times or 200 percent the minimum lot size allowed by the underlying land use district), the City shall require that the lots be of such size, shape, and orientation as to facilitate future re-division in accordance with the requirements of the land use district and this Code. A re-division plan shall be submitted for large lots identifying:
 1. Potential future lot division(s), consistent with the density and minimum lot size standards of Article 2;
 2. Potential street right-of-way alignments to serve future development of the property and connect to adjacent properties, including existing or planned rights-of-way;
 3. A disclaimer that the plan is a conceptual plan intended to show potential future development. It shall not be binding on the City or property owners, except as may be required through conditions of land division approval. For example, dedication and improvement of rights-of-way within the future plan area may be required to provide needed secondary access and circulation.

Applicant's Response: Applicant acknowledges the General Requirements of 4.3.020, paragraphs 1 through 3.

- D. **Lot Size Averaging.** The size of any lot intended for Single Family House or Duplex may be averaged to allow lots less than the minimum lot size in Residential districts, pursuant to Section 2.2.030, or through approval of a Master Planned Development under Chapter 4.5.

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Applicant's Response: Applicant has applied the Lot Size Averaging concept to the proposed development. Lots range in size from 2,851SF to 13,781SF with an average lot size of 5,193SF. A minimum average lot size of 5,000 SF is required in the RL district, so the proposal is in compliance with the City of Dallas Development Code.

- E. **Temporary Sales Office.** A temporary sales office in conjunction with a subdivision may be approved as set forth in Section 4.9.010, Temporary Uses.

Applicant's Response: Applicant acknowledges this section and will apply for a temporary use if a temporary sales office is desired.

- F. **Minimize Flood Damage.** All subdivisions and partitions shall be designed based on the need to minimize the risk of flood damage. No new building lots shall be created entirely within a floodway. All new lots shall be buildable without requiring development within the floodway and, where possible, allow building outside of the flood fringe. Development in a 100-year flood plain shall comply with the National Flood Insurance Program, State building code requirements, including elevating structures above the base flood elevation, and the City of Dallas Flood Plain Ordinance. The applicant shall be responsible for obtaining floodplain development permit from the NFIP and local jurisdiction.
- G. **Determination of Base Flood Elevation.** Where a development site consists of five (5) or more acres or 50 or more lots, and is located in or near areas prone to inundation for which the base flood elevation has not been mapped, the applicant shall have the base flood elevation it shall be prepared by a qualified professional as part of the land division application.

Applicant's Response: Applicant acknowledges DDC 4.3.020 paragraphs 6 and 7 above. The floodplain and base flood elevations have been identified for this project. Applicant will work with City of Dallas Public Works to apply for a Letter of Map Revision with Fill (LOMR-F) to remove certain lots that would otherwise be affected by the floodplain.

- H. **Need for Adequate Utilities.** All lots created through land division shall have adequate public utilities and facilities such as sewer, gas, electrical, and water systems. These systems shall be located and constructed to prevent or minimize flood damage, and to avoid impairment of the system and contamination from them during flooding.

Applicant's Response: Adequate utilities will be provided with the development of the proposed project. All utility mains about the proposed project in SW Ellis St and/or SW Hayter. These utility mains will be extended during development and stubbed to each approved buildable lot.

- I. **Need for Adequate Drainage.** All subdivision and partition proposals shall have adequate surface water drainage facilities that reduce exposure to flood damage and improve water quality. Water quality or quantity control improvements may be required.

Applicant's Response: Stormwater improvements have been proposed with this development. Applicant has engaged a licensed professional engineer to design and size stormwater facilities for the proposed subdivision. Final stormwater drainage and treatment plans will be reviewed and approved by the City of Dallas Public Works prior to issuance of a development permit.

- J. **Floodplain, Park, and Open Space Dedications.** Where land filling and/or development is allowed within or adjacent to regulatory flood plain and the Comprehensive Plan designates the subject flood plain for park, open space, or trail use, the City may require the dedication of sufficient open land area for a greenway and/or trail adjoining or within the flood plain for transportation, storm drainage/water quality, or park purposes in the

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public interest. When practicable, this area shall include portions at a suitable elevation for the construction of a multi-use pathway in accordance with the City's adopted trails plan or pedestrian and bikeway plans, as applicable. The City shall evaluate individual development proposals and determine whether the dedication of land is justified based on the development's impact to the park and/or trail system, or as may be required for stormwater management.

***Applicant's Response:** Applicant acknowledges DDC 4.3.020 paragraph 10. The proposed subdivision contemplates the conveyance of 2-acres of open space to the City of Dallas, the dedication of which was previously memorialized via a Development Agreement. Applicant proposes to dedicate the open space to the City of Dallas with the recordation of the Final Plat.*

4.3.030 Pre-Planning For Large Sites

***Applicant's Response:** DDC 4.3.030 does not apply to this application.*

4.3.040 Flexible Lot Size; Flag Lots; Lots Accessed By Mid-Block Lanes

- A. **Flexible Lot Size.** To allow creativity and flexibility in subdivision design and to address physical constraints, such as topography, existing development, significant trees and other natural and built features, the approval body may grant a twenty (20) percent modification to the lot area and/or lot dimension (width/depth) standards in Section 2.2.030, subject to the approval criteria of Section 2.2.040. The approval body may require that standard size lots be placed at the perimeter of the development where the abutting lots are standard size or larger; except that this provision shall not apply where the abutting lots are larger than 20,000 square feet.

***Applicant's Response:** The proposed site design makes use of the flexible lot size provision by providing a variety of lot sizes. Because the subject property is irregularly shaped and has several design constraints, including wetlands, floodplain/floodway, stormwater management facility and the alignment of the SW Hayter St extension, a diversity of lot sizes and thus housing sizes and types are proposed. However, in keeping with the what the approval body may require, larger lot sizes are proposed at the perimeter of the development, with smaller lots and homes proposed along the Hayter St extension.*

- B. **Flag Lots and Non-Street Fronting Lots.** Lots may be developed without fronting entirely onto a public street when lot access is provided by a shared mid-block lane or shared drive, as illustrated in Figure 4.3.040.B. Such lanes or drives shall either be part of the lot farthest from the public street, or a separate tract owned in common by all lots receiving access, such as a homeowner's association. Access and utility easements may be required to provide connectivity between infill developments. Mid-block lanes or shared drives with access easements for adjoining properties may be allowed as an alternative to requiring through streets where block lengths do not necessitate a through street. Flag lots with a single private drive may be created only when, in the determination of the Planning Official, existing development patterns or topographic constraints prevent the flag lot driveway from being extended to serve abutting uses or future development.

Development of non-street-facing lots shall meet the requirements below:

1. **Alignment.** Building placement and alignment of shared drives shall be designed so that future street connections can be made as surrounding properties develop (i.e., as shown in the Figure 4.3.040.B).
2. **Width.** The minimum drivable width of a drive or lane shall be 12 feet. New residences on drives or lanes which are less than 20 feet in width may be required to install fire suppression systems as determined by the Fire Chief.
3. **Length.** The maximum drive lane length shall not exceed 150 feet for a dead-end shared drive, and 400 feet for a shared lane which connects to public streets on both ends, unless otherwise approved by the Fire Chief. For drives and lanes exceeding these lengths a turn-around capable of accommodating a fire apparatus may be required.

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4. **Improvement.** All drives and lanes shall be improved with an all-weather driving surface approved by the City. Drives and lanes serving only a single dwelling may be unpaved (e.g. gravel) while those serving more than one dwelling shall be paved in accordance with DDC 3.1.020.Q – Vehicle Access & Circulation: Construction. Drives and lanes which serve three or more lots shall include a minimum 5' sidewalk behind a mountable curb, except where in the determination of the Planning Official such a sidewalk is not warranted. Improvements required by this subsection shall be installed prior to signing of final plat.
5. **Easements.** For lanes and drives serving more than one dwelling, or that are capable of serving more than one dwelling, the property owner shall record access and utility easements benefiting all properties that are to receive access. Dedication or recording, as applicable, shall be so indicated on the face of the subdivision or partition plat. No fence, structure or other obstacle shall be placed within the drive area
6. **Number of Units.** A dead-end shared drive or lane may serve as the only means of access for no more than four (4) dwelling units, including accessory dwellings. A shared drive or lane which connects to public streets on both ends may serve as the only means of access for no more than eight (8) dwelling units. Dwellings which also have frontage onto a public street do not count toward this limit.
7. **Utilities.** Connection to city utilities shall be through individual private service laterals meeting City standards; City-owned mainlines shall not extend onto the private property unless, in the determination of the of the Planning Official or City Engineer, doing so is in the best interests of the City. Improvements required by this subsection shall be installed and proper easements secured prior to signing of final plat.

Applicant's Response: The applicant has proposed only one true flag lot in order to make the best use of the property. To the extent the criteria of DDC 4.3.040 paragraph B, sections 1 – 7 apply, the applicant will ensure compliance.

4.3.050 Preliminary Plat Approval Process

Applicant's Response: The applicant acknowledges all of DDC 4.3.050 and understands the process for approval and appeals.

4.3.060 Preliminary Plat Submission Requirements

- A. **General Submission Requirements.** For all partitions (three or fewer parcels), the application shall contain all of the information required for a Type II procedure under Section 4.1.030, except as may be waived by the Planning Official. For all subdivisions (four or more lots) the application shall contain all of the information required for a Type III procedure under Section 4.1.040, and the information in subsections 1-4, below:
 1. **Public Facilities and Services Impact Study.** The impact study shall quantify and assess the effect of the development on public facilities and services. The City shall advise as to the scope of the study during the required pre-application conference (Section 4.1.060C). The study shall address, at a minimum, the transportation system, including pedestrian ways and bikeways, the drainage system, the parks system, the water system, and the sewer system. For each public facility system and type of impact, the study shall propose improvements necessary to meet City standards and to minimize the impact of the development on the public at large, public facilities systems, and affected private property users;

Applicant's Response: During the pre-application conference City staff indicated the City has adequate water, sewer and stormwater capacity to serve the proposed project. The applicant will install main utility extensions as part of the development of the proposed project, and will pay System Development Charges with each building permit, for the City's future expansion of the public facility system.

2. **Traffic Impact Analysis,** if required by the road authority. Traffic Impact Studies shall conform to the standards and procedures in Section 4.1.090;

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***Applicant's Response:** Although the previous traffic impact analysis included the current proposed project in the study, City staff asked the applicant to engage a qualified professional engineer to update the traffic analysis to ensure all previous assumptions and forecasts were still valid. As noted in an earlier response, the recent of the previous traffic analysis concluded that most assumptions were still valid, but growth forecasts were revised downward using actual ODOT data from 2015 – 2022, indicating impacts to the current transportation system were less than forecasted. The proposed project does not add more impact than was projected in the 2015 Traffic Impact Analysis.*

3. In situations where this Code requires the dedication of real property to the City, the City shall either (1) include in the written decision evidence that shows that the required property dedication is directly related to and roughly proportional to the projected impacts of the development on public facilities and services, or (2) delete the dedication as a condition of approval; and Geologic Report that addresses the soil and geologic conditions of the site.

***Applicant's Response:** The applicant is dedicating 2-acres of open space to the City of Dallas with the proposed development. As noted in a previous response, the open space dedication was previously memorialized between the City and applicant via a development agreement, and conveyance of the open space is proposed to occur with the recordation of the final plat. All other proposed right-of-way dedications for public utilities, roads and sidewalks, are acceptable to the applicant.*

- B. **Preliminary Plat Information.** In addition to the general information described in Subsection A above, the preliminary plat application shall consist of drawings and supplementary written material (i.e., on forms and/or in a written narrative) adequate to provide the following information:
 1. General information:
 - a. Name of subdivision (not required for partitions). This name must not duplicate the name of another subdivision in Polk County (please check with County Surveyor);
 - b. Date, north arrow, and scale of drawing;
 - c. Location of the development sufficient to define its location in the City, boundaries, and a legal description of the site;
 - d. A title block including the names, addresses and telephone numbers of the owners of the subject property and, as applicable, the designer, and engineer and surveyor if any, and the date of the survey if submitted; and
 - e. Identification of the drawing as a "preliminary plat".
 2. Site analysis:
 - a. Streets: Location, name, present width of all streets, alleys and rights-of-way on and abutting the site;
 - b. Easements: Width, location and purpose of all existing easements of record on and abutting the site;
 - c. Utilities: Location and identity of all utilities on and abutting the site. If water mains and sewers are not on or abutting the site, indicate the direction and distance to the nearest one and show how utilities will be brought to standards;
 - d. Ground elevations shown by contour lines at 2-foot vertical interval, except where the City Engineer determines that larger intervals are adequate; i.e., for steep slopes. Such ground elevations shall be related to some established benchmark or other datum approved by the County Surveyor; this requirement may be waived by the City Engineer for partitions when grades, on average, are less than 6 percent;
 - e. The location and elevation of the closest benchmark(s) within or adjacent to the site (i.e., for surveying purposes);
 - f. Potential natural hazard areas, including any areas identified as subject to a flood hazard as identified on FEMA Flood Insurance Rate Maps or as otherwise determined through site specific

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- survey, areas subject to high water table, and areas designated by the City, County, or State as having a potential for geologic hazards;
- g. Sensitive lands, including wetland areas, streams, wildlife habitat, and other areas identified by the City or natural resource regulatory agencies as requiring protection;
 - h. Site features, including existing structures, pavement, large rock outcroppings, areas having unique views, and drainage ways, canals and ditches;
 - i. Designated historic and cultural resources on the site and adjacent parcels or lots;
 - j. The location, size and species of trees having a caliper (diameter) of 6 inches or greater at 4 feet above grade in conformance with Chapter 3.2;
 - k. North arrow and scale;
 - l. Name and address of project designer, if applicable; and
 - m. Other information, as deemed necessary by the City Planning Official for review of the application. The City may require studies or exhibits prepared by qualified professionals to address specific site features and code requirements.
3. Proposed improvements:
- a. Public and private streets, tracts, driveways, open space and park land; location, names, right-of-way dimensions, approximate radius of street curves; and approximate finished street center line grades. All streets and tracts that are being held for private use and all reservations and restrictions relating to such private tracts shall be identified;
 - b. Easements: location, width and purpose of all proposed easements;
 - c. Lots and private tracts (e.g., private open space, common area, or street): approximate dimensions, area calculation (e.g., in square feet), and identification numbers for all proposed lots and tracts;
 - d. Proposed uses of the property, including all areas proposed to be dedicated to the public or reserved as open space for the purpose of surface water management, recreation, or other use; potential location of future buildings;
 - e. Proposed improvements, as required by Article 3 (Design Standards), and timing of improvements (e.g., in the case of streets, sidewalks, street trees, utilities, etc.);
 - f. Preliminary location of development showing those future buildings can meet siting and dimensional standards of the district.
 - g. The proposed source of domestic water;
 - h. The proposed method of sewage disposal;
 - i. Proposed method of surface water drainage and treatment if required;
 - j. The approximate location and identity of other utilities, including the locations of street lighting fixtures;
 - k. Proposed railroad crossing or modifications to an existing crossing, if any, and evidence of contact with the affected railroad and the Oregon Department of Transportation Rail Division regarding proposed railroad crossing(s);
 - l. Changes to navigable streams, or other watercourses. Status of public access to these areas shall be shown on the preliminary plat, as applicable;
 - m. Identification of the base flood elevation for development of more than 2 lots or ½ acre, whichever is less. Written evidence of initiation of a Federal Emergency Management Agency (FEMA) flood plain map amendment shall be required when development is proposed to modify a designated 100-year flood plain. FEMA approval of the amendment shall be a condition of City land use approval.
 - n. Evidence of contact with from the road authority for any development requiring access to its facility(ies); and
 - o. Evidence of written notice to the applicable natural resource regulatory agency(ies) for any development within or adjacent to jurisdictional wetlands, rivers, streams or other regulated water bodies.

Applicant's Response: The preliminary plat submitted with this application considered the criteria outlined in DDC 4.3.060B. and has included all applicable information. Final location, alignment, and size of all proposed improvements will be coordinated with the City of Dallas during review and approval of construction documents.

4.3.070 Approval Criteria: Preliminary Plat

A. **General Approval Criteria.** The City may approve, approve with conditions or deny a preliminary plat based on the following approval criteria:

1. The proposed preliminary plat complies with the applicable Development Code sections and all other applicable ordinances and regulations. At a minimum, the provisions of this Article, and the applicable chapters and sections of Article 2 (Land Use Districts) and Article 3 (Design Standards) shall apply. Where a variance is necessary to receive preliminary plat approval, the application shall also comply with the relevant sections of Article 5;

Applicant's Response: The proposed project complies with the applicable Development Code sections, ordinances and regulations. As proposed, density, average and minimum lot areas and dimensions comply with RL minimum requirements listed in Article 2, Table 2.2.030.

2. The proposed plat name is not already recorded for another subdivision, and satisfies the provisions of ORS Chapter 92;

Applicant's Response: The proposed plat name(s) have been conceptually approved by the Polk County surveyor via email: Oakdale Estates 3, Oakdale Estates 4, Oakdale Estates 5, Oakdale Estates 6 and Oakdale Estates 7.

3. The proposed streets, roads, sidewalks, bicycle lanes, pathways, utilities, and surface water management facilities are laid out so as to conform or transition to the plats of subdivisions and maps of major partitions already approved for adjoining property as to width, general direction and in all other respects. All proposed public improvements and dedications are identified on the preliminary plat;

Applicant's Response: The proposed streets, roads and sidewalks provide vehicular and pedestrian access to all planned lots, and said improvements conform to the streets, roads and sidewalks of the Oakdale Estates final plat.

4. All proposed private common areas and improvements (e.g., homeowner association property) are identified on the preliminary plat; and

Applicant's Response: There are no private common areas or improvements proposed with this plat.

5. Evidence that any required State and federal permits have been obtained, or shall be obtained before approval of the final plat;

Applicant's Response: All previous State and Federal permits applicable to this project were approved and completed during the development of Oakdale Estates. However, for the portion of the ditch identified on the western property boundary, the previous delineation was re-evaluated and renewed. A copy of the renewal permit is included with this application. Lastly, a 1200-C permit will be obtained from Oregon Department of Environmental Quality prior any grading of the project.

EXHIBIT A.22

6. Evidence that improvements or conditions required by the City, road authority, Polk County, special districts, utilities, and/or other service providers, as applicable to the project, have been or can be met; and

Applicant's Response: Full improvements will be installed and connect to existing facilities and providers.

7. If any part of the site is located within an Overlay Zone, or previously approved Master Planned Development, it shall conform to the applicable regulations and/or conditions.

Applicant's Response: The site is not located in an Overlay Zone.

B. Layout and Design of Streets, Blocks and Lots. All proposed blocks (i.e., one or more lots bound by public streets), lots and parcels conform to the specific requirements below:

1. All lots shall comply with the General Development Standards of the applicable land use district (Article 2), and the standards of Section 3.4.010.G - Street Connectivity and Formation of Blocks.

Applicant's Response: All lots and blocks have been designed to comply with the design criteria of the RL district, and with logical connectivity to abutting properties.

2. Setbacks shall be as required by the applicable land use district (Article 2).

Applicant's Response: Applicant acknowledges setbacks in the RL district, and a variety of housing will be constructed within the required building setbacks.

3. Each lot shall conform to the standards of Chapter 3.1 - Access and Circulation.

Applicant's Response: Please see preliminary plat submitted with this application for access and circulation of all proposed lots. Access and circulation for all lots complies with Dallas Development Code.

4. Landscape or other screening may be required to maintain privacy for abutting uses. See Article 2 - Land Use Districts, and Chapter 3.2 - Landscaping.

Applicant's Response: Acknowledged.

5. In conformance with the Oregon Fire Code, a 20-foot width fire apparatus access drive shall be provided to serve all portions of a building that are located more than 150 feet from a public right-of-way or approved access drive. See Chapter 3.1- Access and Circulation.

Applicant's Response: Applicant has proposed a minimum 20-foot street width for all lots located more than 150 feet from a public right-of-way or approved access drive.

6. Where a common drive is to be provided to serve more than one lot, a reciprocal easement for access and maintenance rights shall be recorded with the approved subdivision or partition plat.

Applicant's Response: If a private street is required to serve lots 38 – 40, a Shared Roadway Maintenance and Access agreement will be prepared by Applicant's counsel and recorded against affected lots.

7. All applicable engineering design standards for streets, utilities, surface water management, and easements shall be met.

Applicant's Response: All applicable engineering and design standards for streets, utilities and surface water management can and will be met. Final engineering of said improvements will be submitted to the City of Dallas for approval prior to the commencement of work.

- C. **Conditions of Approval.** The City may attach such conditions as are necessary to carry out provisions of this Code, and other applicable ordinances and regulations, and may require reserve strips be granted to the City for the purpose of controlling access to adjoining undeveloped properties. See Chapter 3.4 (Public Facilities).

Applicant's Response: Acknowledged.

4.3.080 Variances Authorized

Applicant's Response: Acknowledged.

4.3.090 Final Plat Submission Requirements And Approval Criteria

Applicant's Response: Applicant acknowledges the final plat submission and approval process.

4.3.100 Public Improvements Required

Applicant's Response: Applicant is familiar with this process and acknowledges certification and guaranty of public improvements.

4.3.110 Assurances

Applicant's Response: Applicant has provided Assurances as defined in DDC 4.3.110, to the City of Dallas for other projects, and is prepared to do the same for the proposed project.

4.3.120 Filing And Recording

Applicant's Response: Applicant is familiar with the filing and recording process outlined in DDC 4.3.120, and will comply with this code section for the proposed project.

4.3.130 Re-Platting And Vacation Of Plats

Applicant's Response: Acknowledged.

4.3.140 Property Line Adjustments

Applicant's Response: Acknowledged.

Article 3 Community Design Standards

Applicant's Response: Applicant acknowledges the relevant chapters of Article 3 that apply to the proposed project. Most of the design criteria contained in Article 3 have been addressed in responses to the applicable chapters of Article 4 above. Landscaping and street trees are evaluated at building permit and inspected prior to final certificate of occupancy of each new proposed residence.

2.2.080 Housing Variety Standards

EXHIBIT A.24

1. Purpose. Require new neighborhoods and large subdivisions to contain a variety of housing types. Housing variety is in the public interest because it supports housing at price ranges and rent levels that are commensurate to local incomes, promotes livability by offering housing choices, and contributes to the development of complete neighborhoods, consistent with the Comprehensive Plan.
2. Applicability. Section 2.2.080 applies to land divisions creating or having the potential to create twenty (20) or more lots on any parcel or contiguous parcels in the RL and RM zones. For the purpose of this Section, “project proposal” means the sum total of all proposed development (acres and dwellings) and potential future development on contiguous land under the same ownership that could occur under existing zoning. “Same ownership” means ownership by the same individual, group, organization, corporation or other legal entity; or such entity holds a majority interest. The standards of this Section may be adjusted through a Type II review, provided the adjustment is consistent with the above purpose and the applicant demonstrates that an alternative proposal meets the intent of the standard.
3. Housing Variety Standards. Project proposals shall achieve a minimum of twelve (12) points based on the following criteria. Lots and housing units used to comply with the standards below should be evenly distributed throughout all phases of the subdivision
 1. Minimum Density (required). Projects are required to meet the minimum density standard, per Table 2.2.030, except as allowed elsewhere in this code. No points are awarded for compliance with the minimum density standard.

Applicant’s Response: The applicant has proposed to meet the housing variety standards of section 2.2.080 by providing at least 20% of lots that are 20% smaller than the median lot size, and by building at least 10 homes that are 1,600 SF or less. See table below for a summary of compliance.

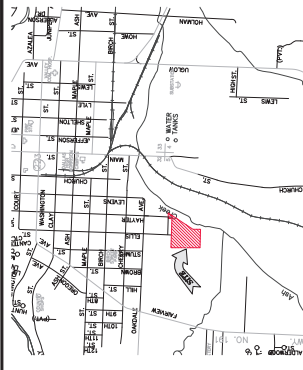
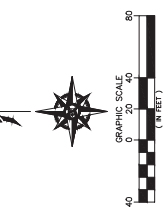
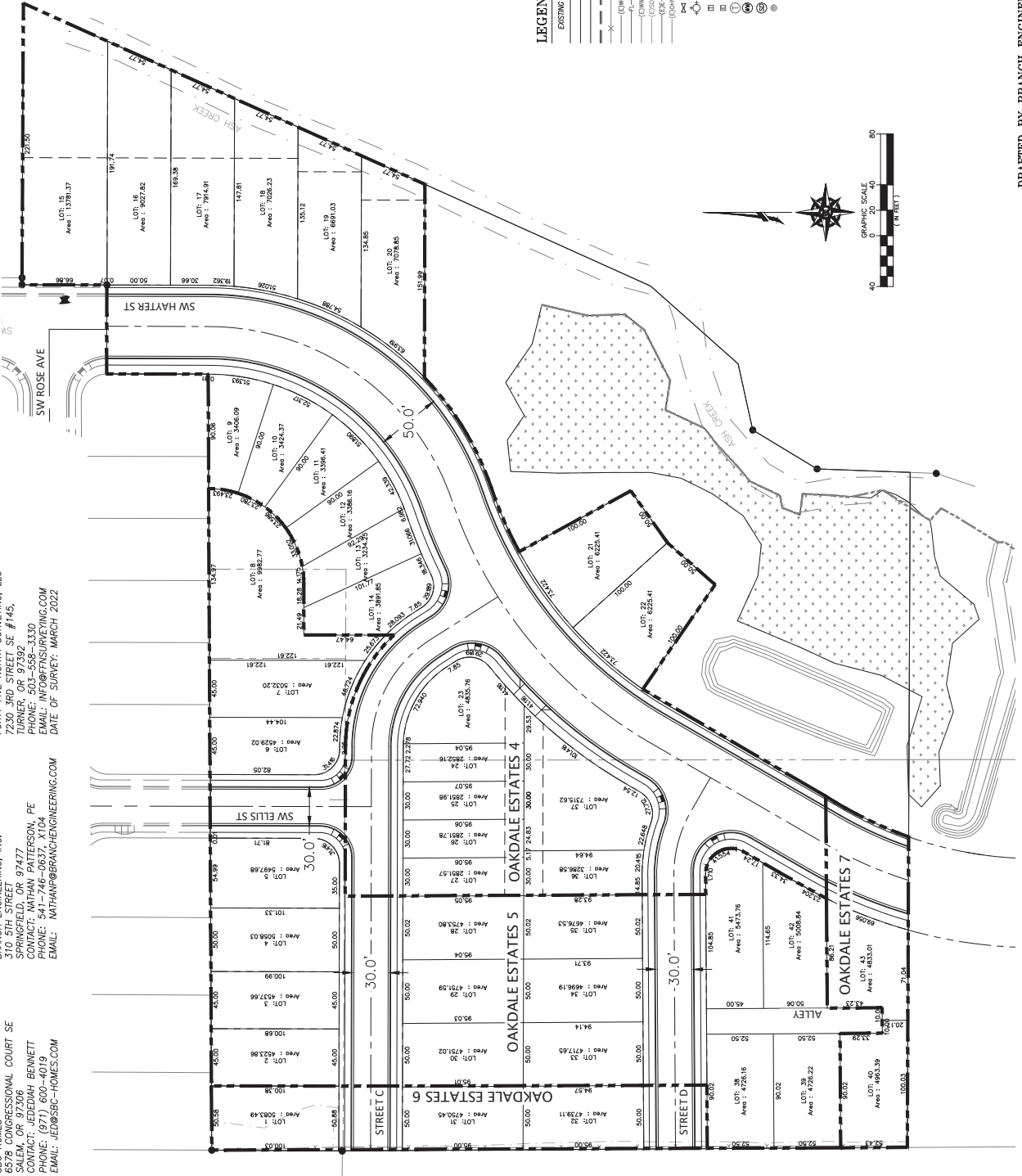
2.2.080 Housing Variety Standards		Points Available	Points Earned
Minimum Points Required	12		
Option 1: Lot Size Variety		9	
b) At least 20% of the lots in the project are at least 20% smaller than the project’s median lot size		6	
<i>Project as Proposed</i>			
<i>Proposed Median Lot Size (SF)</i>	4,751		
<i># of lots 20% smaller than Median lot size</i>	10		
<i>% of lots 20% smaller than Median lot size</i>	23%		
<i>Pointes Earned</i>			6
Option 2: Housing Choices		9	
b) At least 20% of the dwelling units in the project consist of “small housing types”		6	
<i>Total Lots</i>	43		
<i>20% of homes smaller than 1,600SF</i>	9		
<i># of homes smaller than 1,600SF</i>	10		
<i>Points Earned</i>			6
Total Points Earned			12

OWNER:
 SEC HOMES
 6578 CONGRESSIONAL COURT SE
 SALEM, OR 97306
 CONTACT: JEDIDAH BENNETT
 PHONE: 503-556-3330
 FAX: 503-556-3330
 EMAIL: JED@SEC-HOMES.COM

ENGINEER:
 BRANCH ENGINEERING, INC.
 310 5TH STREET
 SPRINGFIELD, OR 97477
 CONTACT: JEDIDAH BENNETT
 PHONE: 541-746-0831
 FAX: 541-746-0831
 EMAIL: JED@BRANCHENGINEERING.COM

SURVEYOR:
 FORTY FIVE NORTH SURVEYING, LLC
 7230 3RD STREET SE #145,
 TURNER, OR 97392
 PHONE: 503-556-3330
 FAX: 503-556-3330
 DATE OF SURVEY: MARCH, 2022

PRELIMINARY PLAT



SUBDIVISION AREAS
 GROSS AREA: 9.51 ACRES
 RESIDENTIAL: 7.13 ACRES
 OPEN SPACE: 2.38 ACRES

B.M. 340.16' NAVD 88
 BENCHMARK IS A U.S.G.S. DISC STAMPED "F193 1940".
 LOCATED NEAR THE INTERSECTION OF HAYTER ST &
 CHERRY ST, 28 FT EAST OF THE CENTRELINE OF
 CHERRY ST, 25 FT SOUTH OF THE CENTRELINE
 OF CHERRY ST.

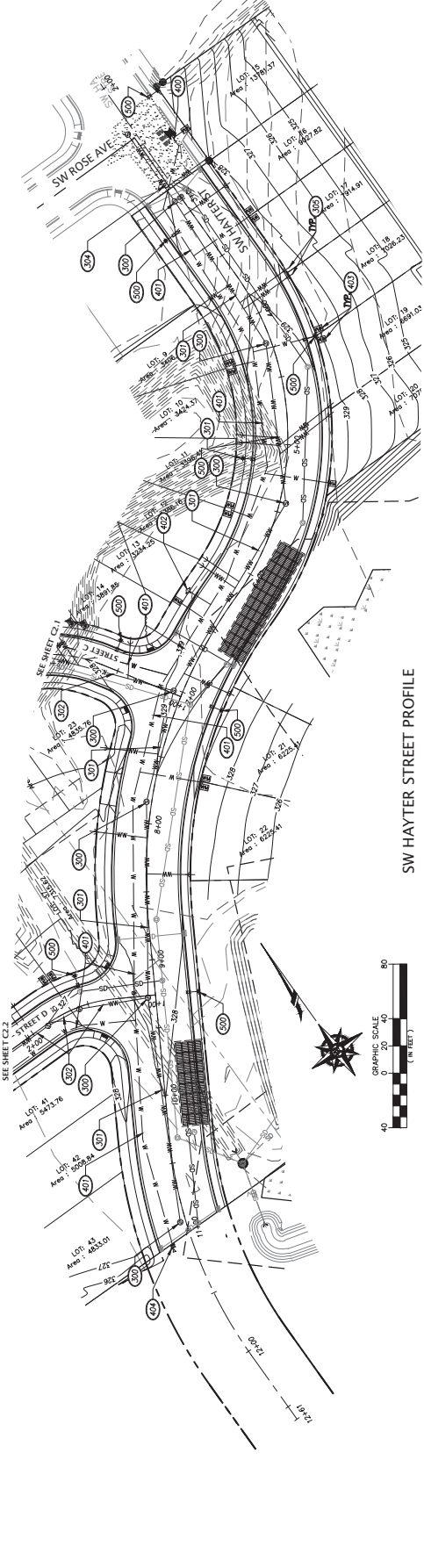
LEGEND

EXISTING	PROPOSED
SITE PROPERTY LINE	DOMESTIC WATER LINE
POWER POLE	WASTEWATER SEWER
BOUNDARY	STORM WATER
	ELECTRIC LINE
	SEWER
	OVERHEAD WIRE
	WATER MAIN
	TELEPHONE ROOF
	TELEPHONE MANHOLE
	WASTEWATER MANHOLE
	AREA DRAIN
	CONCRETE WATER LINE
	WATER MAIN
	ELECTRIC LINE
	SEWER
	OVERHEAD WIRE
	WATER MAIN
	TELEPHONE ROOF
	TELEPHONE MANHOLE
	WASTEWATER MANHOLE
	AREA DRAIN

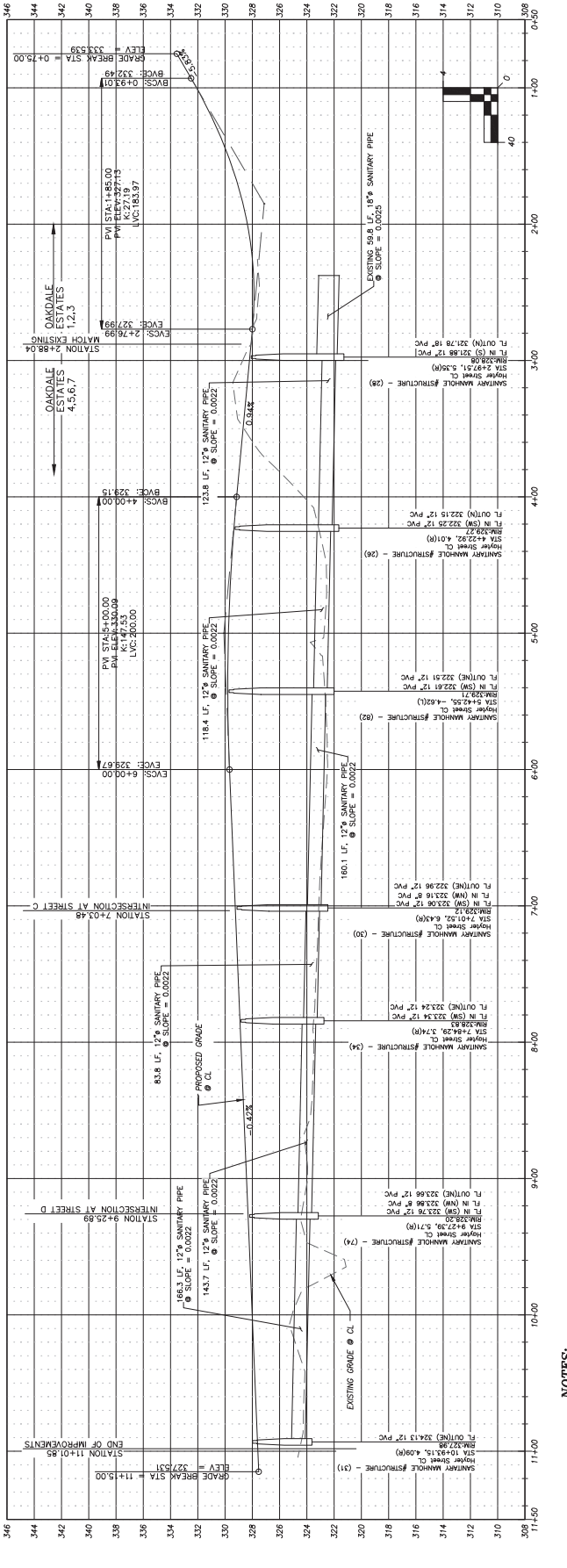
DRAFTED BY BRANCH ENGINEERING AT THE DIRECTION OF THE DEVELOPER

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LAND USE SUBMITTAL NOT FOR CONSTRUCTION



SW HAYTER STREET PROFILE



- NOTES:**
- (30) NEW PUBLIC CITY OF DALLAS STANDARD WASTEWATER MANHOLE.
 - (32) NEW PUBLIC 12" GRAVITY WASTEWATER MAIN.
 - (34) NEW PUBLIC 8" GRAVITY WASTEWATER MAIN.
 - (36) CONNECTION TO EXISTING PUBLIC WASTEWATER.
 - (38) NEW WASTEWATER LATERAL.
 - (40) APPROXIMATE WATER CONNECTION POINT.
 - (42) NEW 8" WATER LINE.
 - (44) NEW FIRE HYDRANT. FINAL LOCATION TO BE DETERMINED BY CITY OF DALLAS.
 - (46) NEW DOMESTIC WATER METER.
 - (48) NEW BLOW-OFF ASSEMBLY.

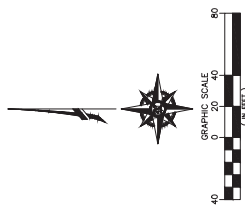


OAKDALE ESTATES 4, 5, 6, 7 SUBDIVISION

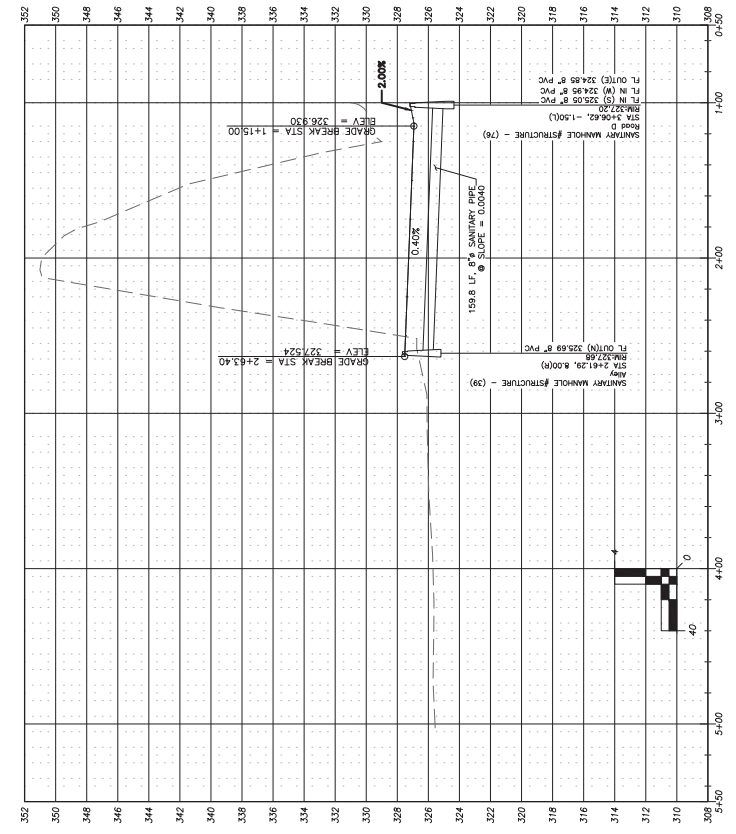
REVISIONS:
 date: FEB. 13, 2024
 drawn by: SMH
 NIP
 project no.: 23-228
ROADWAY & UTILITY PLAN

LAND USE SUBMITTAL, NOT FOR CONSTRUCTION.

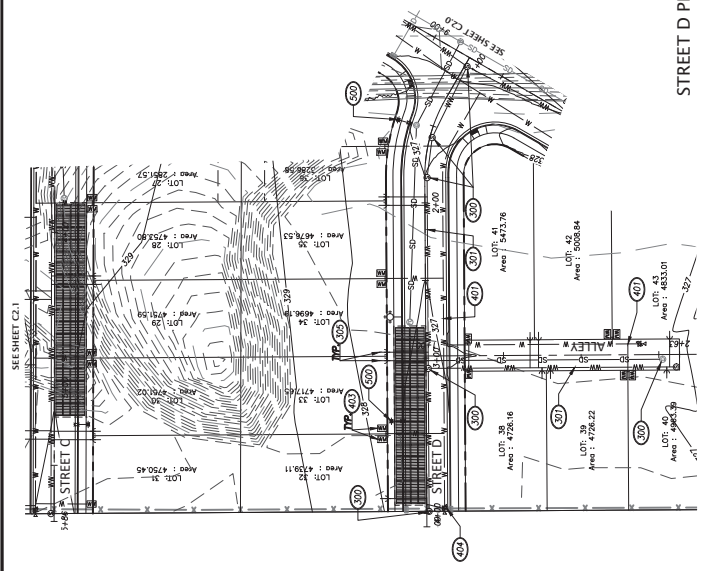
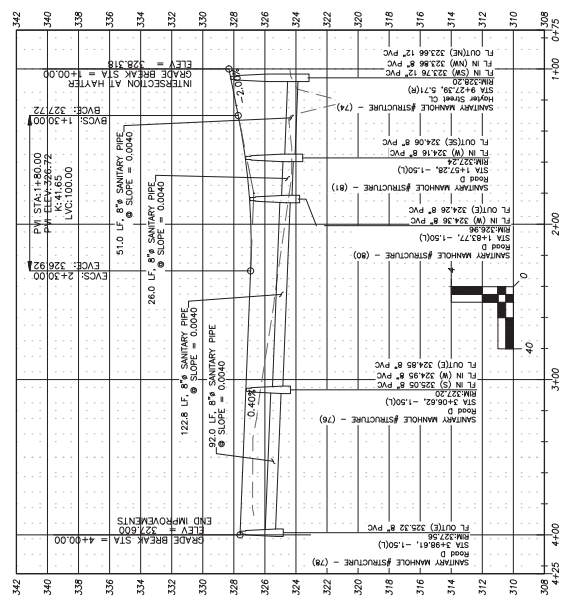
- NOTES:**
- 320 NEW PUBLIC CITY OF DALLAS STANDARD WASTEWATER
 - 321 NEW PUBLIC 8" GRAVITY WASTEWATER MAIN
 - 325 NEW WASTEWATER LATERAL
 - 427 NEW 8" WATER LINE
 - 423 NEW DOMESTIC WATER METER
 - 424 NEW BLOW-OFF ASSEMBLY
 - 520 NEW STREET LIGHT



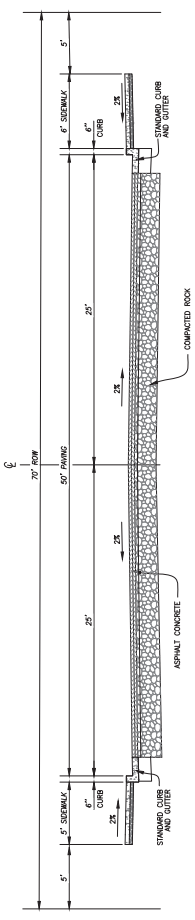
ALLEY PROFILE



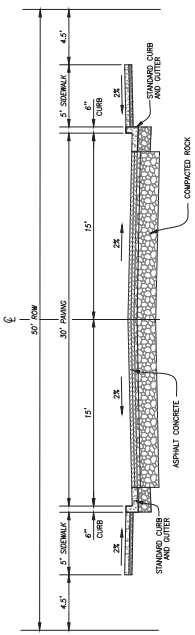
STREET D PROFILE



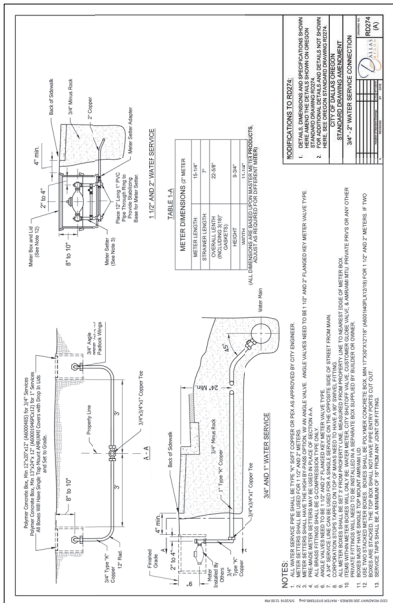
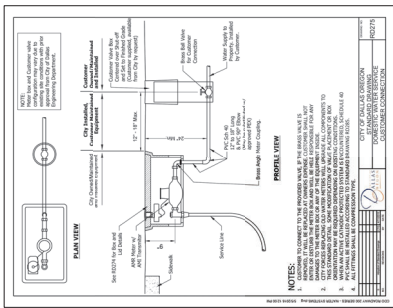
LAND USE SUBMITTAL, NOT FOR CONSTRUCTION.



2 SW HAYTER STREET TYPICAL SECTION
 SCALE: 1" = 5'

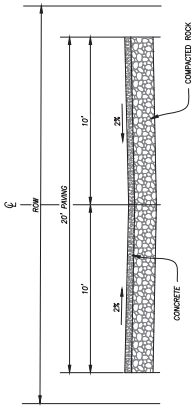


1 TYPICAL LOCAL STREET SECTION (STREET C, STREET D, AND ELLIS)
 SCALE: 1" = 5'

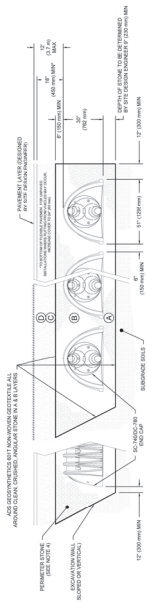


NOTES:
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 13. ALL DIMENSIONS ARE UNLESS OTHERWISE NOTED.
 14. ALL DIMENSIONS ARE UNLESS OTHERWISE NOTED.
 15. ALL DIMENSIONS ARE UNLESS OTHERWISE NOTED.

4 WATER SERVICE CONNECTION
 SCALE: NTS



3 ALLEY SECTION
 SCALE: 1" = 3'



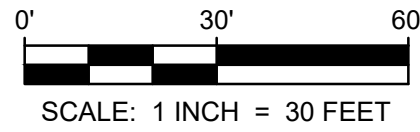
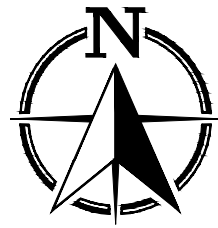
5 ADS STORMTECH CHAMBER SYSTEM DC-780
 NOT TO SCALE

OAKDALE ESTATES 3

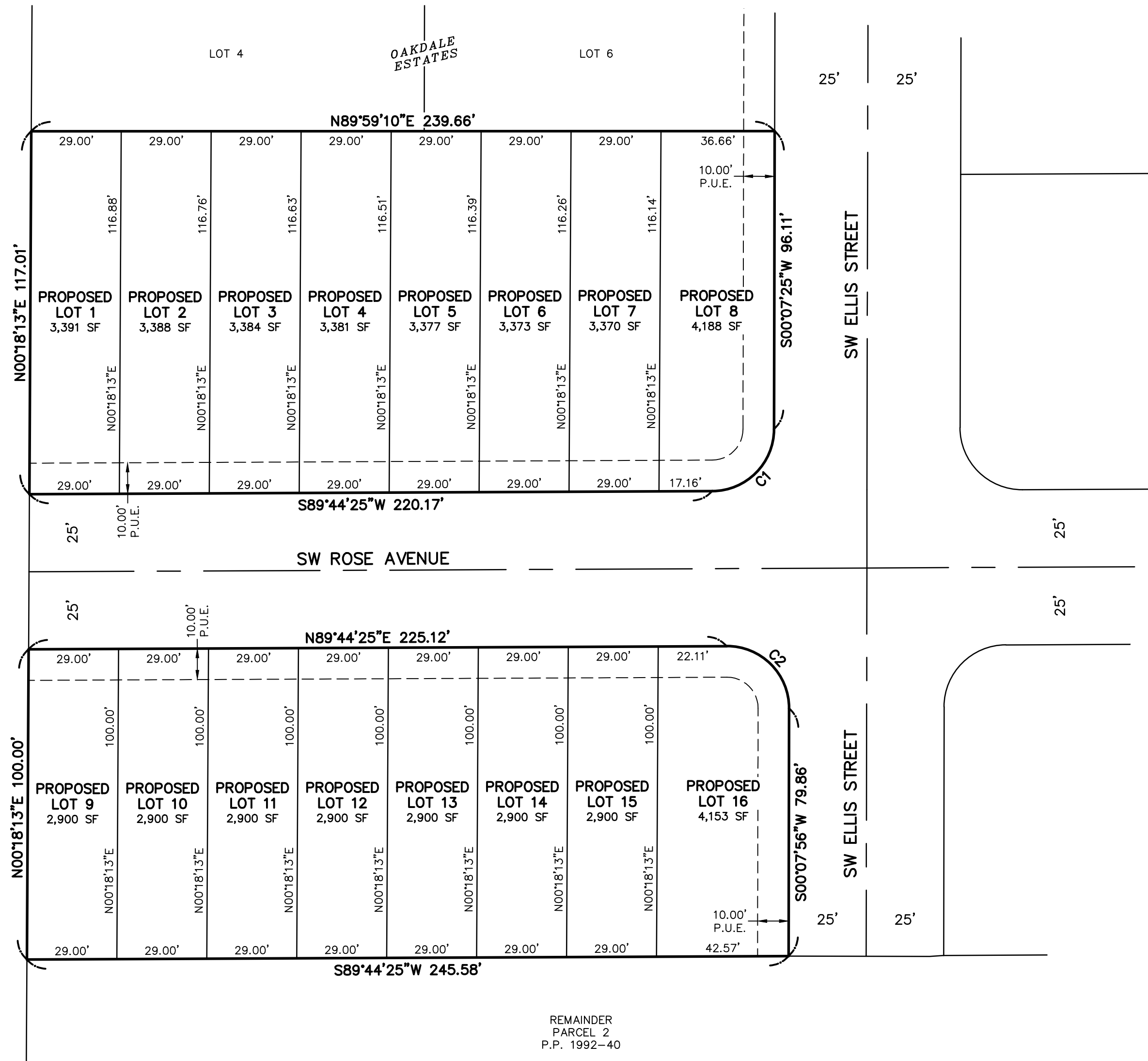
PROPOSED SUBDIVISION

A REPLAT OF TRACTS A AND D OF "OAKDALE ESTATES", BOOK 16, PAGE 07, POLK COUNTY BOOK OF TOWN PLATS IN THE NE 1/4 OF SECTION 5, T.8S., R.5W., W.M. AND THE SE 1/4 OF SECTION 32, T.7S., R.5W., W.M. CITY OF DALLAS, POLK COUNTY, OREGON

DATE: AUGUST 26, 2022



CARLSON
INSTR. NO.
2016-003084



REMAINDER
PARCEL 2
P.P. 1992-40

CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CH. BEARING	CH. LEN.
C1	31.28'	20.00'	89°37'00"	S44°55'55"W	28.19'
C2	31.55'	20.00'	90°23'31"	S45°03'50"E	28.38'

REGISTERED
PROFESSIONAL
LAND SURVEYOR
REVIEW
DRAWN
OREGON
SEPTEMBER 12, 2017
STEVEN LEE HOWELL
91569

RENEWS: 6-30-2023

SURVEYED FOR: STEVE BENNETT CONSTRUCTION



FORTY FIVE NORTH
SURVEYING, LLC

7230 3rd Street SE #145, Turner, OR 97392
P: (503) 558-3330 E: info@ffnsurveying.com

JOB NO. 20-198

SHEET 1/1

Stormwater Management Plan and Drainage Study

Oakdale Estates 4, 5, 6, 7
Tax Map 7.5.32DC, Tax Lots 7900 & 7904
Tax Map 8.5.5AA, Tax Lots 101 & 803
Dallas, Oregon

For
Jed Bennett
SBC Homes
6578 Congressional Court SE
Salem, OR 97306
(971) 600-4019

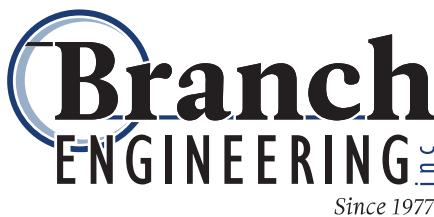
By
Nathan Patterson P.E.
310 5th Street
Springfield, OR 97477
(541) 746-0637

I hereby certify that this Drainage Report for Oakdale Estates has been prepared by me or under my direct supervision and complies with the City of Dallas Public Works Standards and standard engineering practice.

Nathan Patterson



EXPIRES: DECEMBER 31, 2024



civil · transportation
structural · geotechnical
SURVEYING

www.BranchEngineering.com

Preliminary: December 12, 2023

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Appendices

Description

Appendix A	Site Soils Map and Descriptions
Appendix B	Well Log Data
Appendix C	Wetlands Inventory Map
Appendix D	Stormwater Facility Map
Appendix E	HydroCAD Results

1. Introduction

This Stormwater Management Plan (SWMP) report has been prepared for SBC Homes and Oakdale Estates 4, 5, 6, & 7 subdivisions in Dallas, Oregon (Tax Lot 7900 and 7904 of Tax Map 7.5.32DC; Tax Lot 803 of Tax Map 8.5.5AA; and Tax Lot 101 of Tax Map 8.5.5A). The subject site is east of SW Fairview Avenue, south of SW Oakdale Avenue and west of the North Fork of Ash Creek in Dallas, Oregon.

The purpose of this report is to meet the stormwater requirements of the City of Dallas for new development. The stormwater requirements are detailed in the City of Dallas Stormwater Master Plan prepared April 2016. The requirements include flood control by conveying the peak 100-year flow at buildout and water quality per the Willamette TMDL Implementation Plan from the City of Dallas.

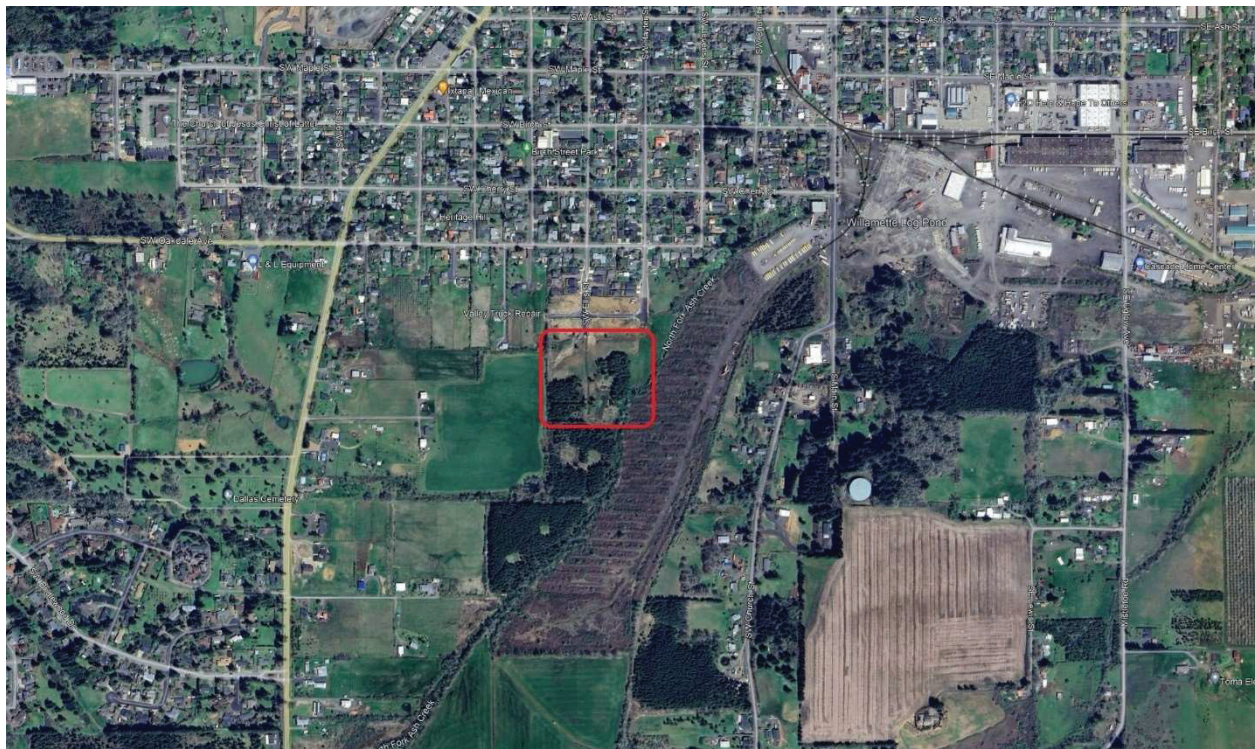


Figure 1: Aerial of Site

2. Project Overview

The site addressed in this storm report is a 9.51-acre site spanning four tax lots. The proposed development consists of 42 residential lots, streets, sidewalks, public utilities, and stormwater detention system. The proposed development is approximately 39% impervious area and 61% pervious area.

3. Existing Conditions

The existing conditions at the project site include woodlands which started out as commercial Christmas tree plantings from the year 2000. Prior to the commercial Christmas tree plantings, the site was agricultural meadowland and is now a combination of both.

3.1. Topography

The site has an approximately eight-foot difference in elevation from the northwest corner to the southeast property line at Ash Creek. This difference results in an average of 1.1 percent slope across the site with ranges between 0.4- to 10.6-percent.

Three large piles of fill have been imported to the site to raise the low areas near the eastern property line. This material was not taken into consideration for calculating the time of concentration for drainage across the site.

3.2. Soils

The Natural Resources Conservation Service (NRCS) Web Soil Survey maps the site area as containing 17-percent Bashaw silty clay loam soil type, 12-percent Salkum silty clay loam, and 70-percent Waldo silty clay loam. Bashaw silty clay loam is described as poorly drained clayey alluvium and is in Hydrologic Soil Group D. Salkum silty clay loam is described as a well-drained old, weathered, clayey alluvium and is in Hydrologic Soil Group C. Waldo silty clay loam is described as a poorly drained mixed silty and clayey alluvium and is in Hydrologic Soil Group C/D. A soils map and individual soil information is provided in Appendix A.

3.3. Infiltration Rates

Due to poor draining soils on site, no infiltration testing was conducted and for the purpose of design, it was assumed in all stormwater facilities will not dispose/infiltrate any runoff. Therefore, underground detention is being proposed for the site's stormwater management of flow control.

3.4. Groundwater

Based on area well logs, static groundwater levels in the area range from 18- to 30-feet below ground surface (BGS). A water level of at least 15-feet BGS is considered conservative for the subject site. See Appendix B for Polk County well logs.

3.5. Existing Stormwater System

Prior to Oakdale Estates 1, 2, & 3 developments, the site topography would sheet flow stormwater from north to south directly to Ash Creek. This development collects street and residential lot run-off with catch basins and piping that drains to an 18" pipe in Ellis Street. This pipe outlets to the project site where a ditch runs south and to a pond, flow control manhole, and water quality swale.

Offsite drainage from the west flows into wetlands along the west property line. The existing western wetlands drain south and do not impact the Oakdale Estates 4, 5, 6, & 7 development area.

3.6. Name and Status of Receiving Waters

The stormwater drains into Ash Creek. See Appendix C for Wetlands Inventory Map.

4. Stormwater Constraints

The design storms for the site include the 2-year, 5-year, 10-year, 25-year, 50-year, and 100-year storm event. The peak flow rate for the post-developed condition is required to be less than the

peak flow rate for the pre-developed condition under all storm events (2-year to 100-year). In addition, water quality is being met by the residence time through the existing water quality swale.

5. Hydrologic Design Methodology and Analysis

5.1. Computer Model

In preparing this Stormwater Management Plan for the project site, Branch Engineering utilized the HydroCAD 10.0 software. This is a computer program used to model, analyze, and design drainage basin water systems.

HydroCAD computes Santa Barbara Urban Hydrographs (SBUH) using 24-hour rainfall data. The SBUH method is a recognized analysis method by the City of Dallas and is appropriate for a project site of this size. Once the appropriate data is input to HydroCAD, each drainage basin has a hydrograph and runoff flow for the desired storm event.

5.2. Computer Model Data

HydroCAD needs data supplied from the designer that describes the drainage basin in order to create the hydrograph. Below is the data that is needed to describe each drainage basin.

Storm Event

The City of Dallas design storm events are as follows:

Source: City of Dallas Stormwater Master Plan from April 2016

WQ Storm Event	Half of 2-year Storm Event
	½ (3.1 inches / 24 hours) = 1.6 inches / 24 hours
2-year Storm Event	3.1 inches / 24 hours
5-year Storm Event	3.9 inches / 24 hours
10-year Storm Event	4.6 inches / 24 hours
25-year Storm Event	5.2 inches / 24 hours
50-year Storm Event	5.7 inches / 24 hours
100-year Storm Event	6.3 inches / 24 hours

Impervious Area

Impervious areas are those that do not allow water to pass through. Asphalt and rooftops are impervious areas.

Pervious Area

Stormwater facilities and landscaped areas are considered pervious due to their permeable nature. Typically, each drainage basin's pervious area is the area that is not impervious.

Runoff Curve Numbers

Each drainage basin has a Runoff Curve Number for the impervious areas and the pervious areas. The Runoff Curve Number is based on the type of surface and the Hydrologic Group of the soils. As stated earlier in the report, the soils on the site are in Soil Hydrologic Groups C, C/D, and D. Per HydroCAD's NRCS Runoff Curve Numbers table, the Curve Number for fair woods/grass combination and soil group C/D (an average of each soil group) is 79. The Curve Number is 98 for impervious areas and 82 (an average of each soil group) for grass cover.

Time of Concentration

For pre-developed conditions, the travel time is 33.4 minutes based on existing topography and vegetation. For post-developed conditions, the minimum time of concentration of ten minutes was used for modeling.

6. Drainage Facilities

The proposed development was separated into eight basin areas. All pavement surfaces and roofs sheet flow to the street gutters, collect in catch basins and are piped to four underground detention facilities.

Each detention facility was modeled using ADS Stormtech DC-780 modular chambers. The number of chambers vary depending on the inflow area. The configuration of chambers are encased in rock. The void ratio of the chambers is 100 percent while the void ratio of the rock is 40 percent. See Appendix D, sheet SW2 for stormwater system layout. Two other alternative underground stormwater detention facilities were modeled: Oldcastle CUDO modular units, similar to the ADS system, and rock detention volumes. See Appendix D, sheet SW3-SW4 for alternatives. Both of these alternatives should adequately meet the City's flow control requirements and give the city and contractor some flexibility to discuss alternative underground detention options that might best serve the site at time of construction.

Storm facility sizing (for ADS Stormtech) is provided below:

Storm Facility	D1	D2	D3	D4
Basin Area (Acres)	1.73	2.85	2.22	0.90
Bottom Width (Feet)	20.5	20.5	20.5	20.5
Bottom Length (Feet)	92.7	138.1	115.4	62.5
Height (Feet)	3.75	3.75	3.75	3.75
Bottom Elevation of Rock (Feet)	323.97	322.39	321.67	322.45
2-year Orifice Size (Inches)	2-7/8	3-3/4	3-1/4	2-1/8
2-year Orifice Elevation (Feet)	323.97	322.4	321.67	322.45
5-year Orifice Size (Inches)	3-1/2	4	3-5/8	2-3/8
5-year Orifice Elevation (Feet)	325.66	324.02	323.30	324.15
10-year Orifice Size (Inches)	2	3-1/8	2-1/2	2
10-year Orifice Elevation (Feet)	326.09	324.50	323.75	324.55
Overflow Elevation (Feet)	327.67	326.10	325.35	326.15

EXHIBIT A.38

The four detention facilities drain to the existing pond. The existing flow control manhole is required to be revised to accommodate and meet flow control requirements for the previous development as well as this development.

Storm Facility	Existing Manhole	Proposed Manhole
2-year Orifice Size (Inches)	1.20	7.0
2-year Orifice Elevation (Feet)	319.79	320.00
5-year Orifice Size (Inches)	9.20	10.0
5-year Orifice Elevation (Feet)	321.98	322.42
10-year Orifice Size (Inches)	3.50	NA
10-year Orifice Elevation (Feet)	323.28	NA
Overflow Elevation (Feet)	324.30	324.40

7. Pre-Developed Runoff Rates

Using HydroCAD stormwater modeling software, it has been determined that the existing site has pre-developed runoff rates as shown in the table below.

Storm event	Pre-development Runoff Rates
2-year	1.96 cfs
5-year	3.45 cfs
10-year	4.91 cfs
25-year	6.25 cfs
50-year	7.41 cfs
100-year	8.85 cfs
cfs = cubic feet per second	

The allowable runoff rates shown in the table above are the maximum runoff rates that the post-developed site may release.

8. Post-Developed Runoff Rates

The post-developed runoff rates after being routed through detention and flow control described in section 6 are shown in the table below.

Storm event	Allowable Runoff Rates	Post-Developed Runoff Rates
2-year	1.96 cfs	1.90 cfs
5-year	3.45 cfs	3.30 cfs
10-year	4.91 cfs	4.45 cfs
25-year	6.25 cfs	5.22 cfs
50-year	7.41 cfs	5.81 cfs
100-year	8.85 cfs	8.41 cfs
cfs = cubic feet per second		

See Appendix E for the more detailed Hydrocad results.

9. Water Quality

While water quality treatment isn't required by City of Dallas, the existing facility should adequately treat the water quality storm by meeting the nine-minute minimum residence time through the existing swale as shown below.

Because the City of Dallas does not have Stormwater Quality design standards, the Clean Water Services Standards were used as the basis of the design. The pollution reduction goal for the existing swale is 70-percent removal of total suspended solids (TSS) for 90-percent of the stormwater generated from the site.

The SCS Unit Hydrograph method was used to calculate the flow rate of the water quality event using HydroCAD 10.0. WQ hydrograph can be seen in Appendix E. The Hydraulic Toolbox 5.3 from the Federal Highway Administration (FHWA) was used to analyze the swale.

The calculated WQ flow rate from Oakdale Estates 1, 2, 3, 4, 5, 6, and 7 is 1.06 cubic feet per second from HydroCAD output. The existing swale has a bottom width of 5-feet with 4:1 side slopes and a longitudinal slope of 0.5 percent. Total swale length is 240 feet. The analysis yields an average velocity of 0.25 feet per second. Residence time is calculated to be 956 seconds, or 15.9 minutes. Minimum residence time to meet water quality standards is 9 minutes. Maximum depth is 0.58 feet, or nearly 7 inches. The computer output is below.

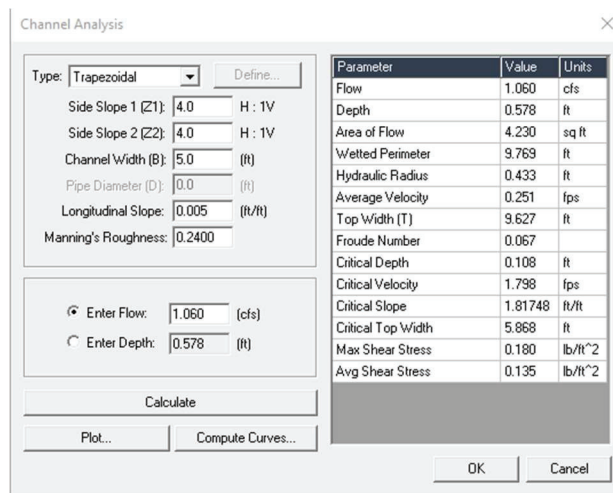


Figure 2: Water Quality Analysis

The water quality swale must convey all stormwater to Ash Creek. The 100-year storm event was used to analyze conveyance impacts. The flow rate for the 100-year storm event is 8.41 cubic feet per second. The average velocity is 0.44 feet per second and the water depth is 1.65 feet. The computer outlet is below.

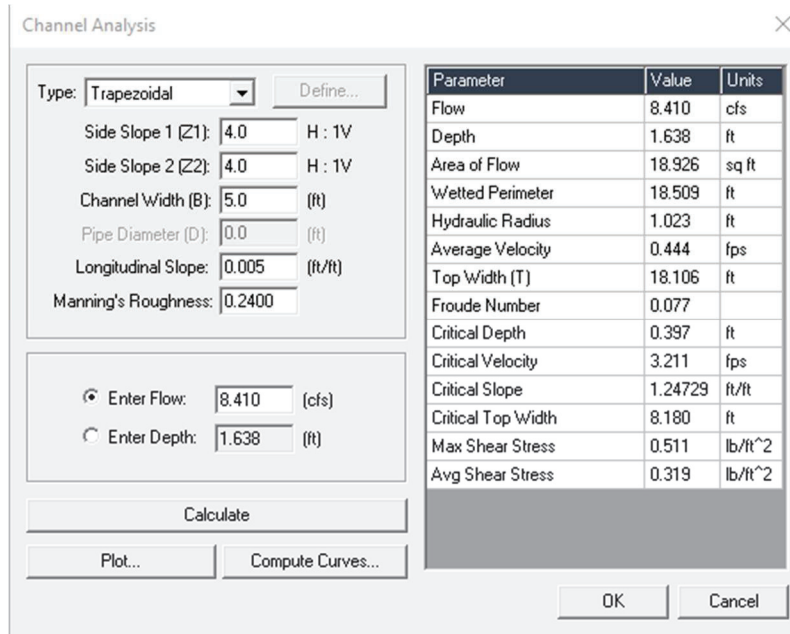


Figure 3. Conveyance Analysis

10. Conclusion

The proposed stormwater system for the development has been designed in accordance with the City of Dallas Public Works Design Standards for meeting detention, flow control, water quality and destination requirements. The development also meets water quality standards despite this not being a requirement.

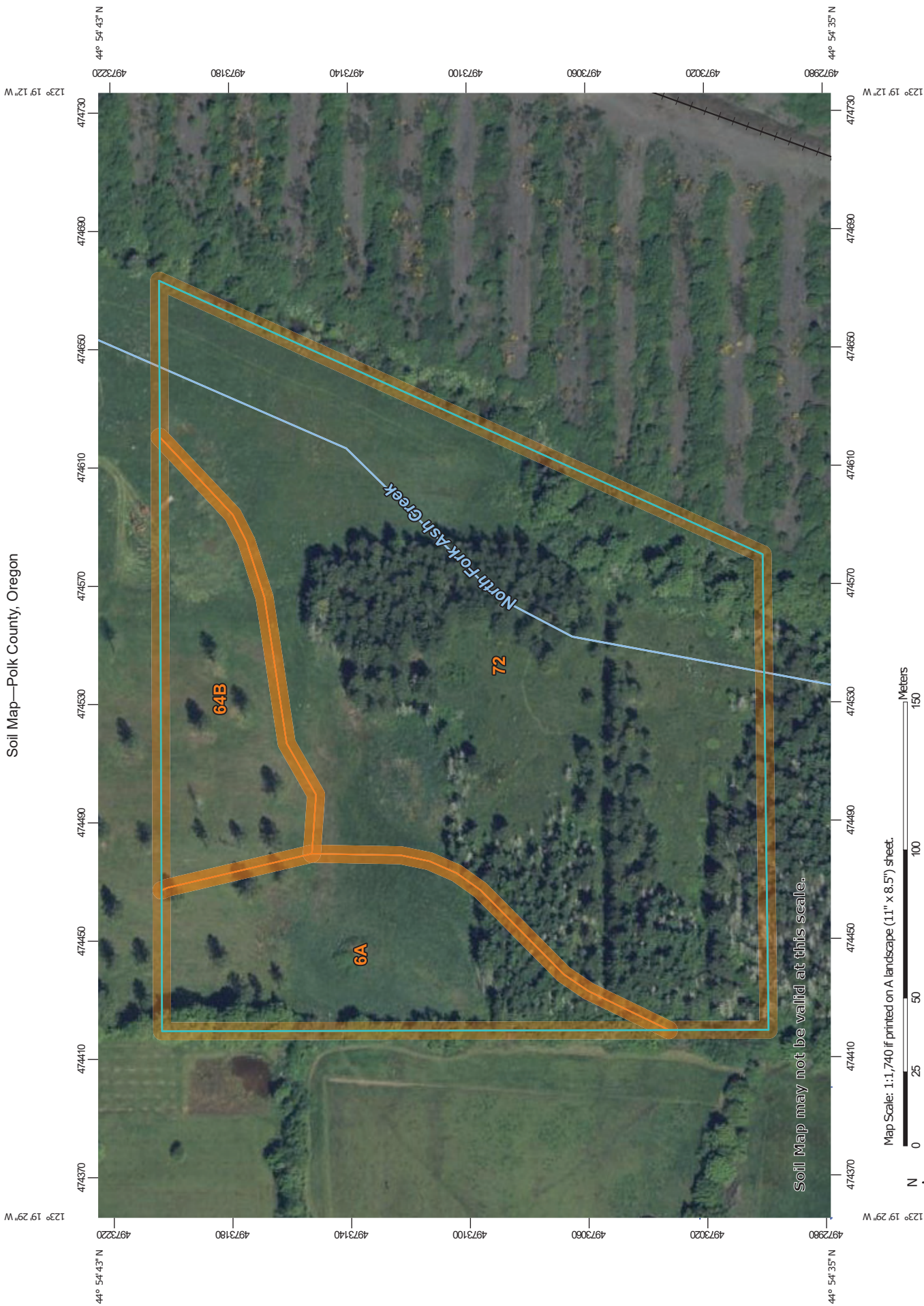
APPENDIX A

Site Soils Map and Description



EXHIBIT A.42

Soil Map—Polk County, Oregon



Natural Resources Conservation Service

Web Soil Survey National Cooperative Soil Survey

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: Polk County, Oregon
 Survey Area Data: Version 22, Sep 7, 2023

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

Date(s) aerial images were photographed: May 23, 2020—May 28, 2020

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.

**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

10/18/2023
Page 2 of 3

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
6A	Bashaw silty clay loam, 0 to 3 percent slopes	1.8	17.2%
64B	Salkum silty clay loam, 2 to 6 percent slopes	1.3	12.4%
72	Waldo silty clay loam	7.4	70.4%
Totals for Area of Interest		10.5	100.0%

EXHIBIT A.45

Map Unit Description: Bashaw silty clay loam, 0 to 3 percent slopes---Polk County, Oregon

Polk County, Oregon

6A—Bashaw silty clay loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 22yk

Elevation: 100 to 300 feet

Mean annual precipitation: 40 to 60 inches

Mean annual air temperature: 52 to 54 degrees F

Frost-free period: 165 to 210 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Bashaw and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bashaw

Setting

Landform: Terraces, fans, flood plains

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Clayey alluvium

Typical profile

H1 - 0 to 11 inches: silty clay loam

H2 - 11 to 51 inches: clay

H3 - 51 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: About 0 to 6 inches

Frequency of flooding: NoneFrequent

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): 4w

Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: D

Ecological site: R002XC005OR - High Flood Plain Group

Forage suitability group: Poorly Drained (G002XY006OR)

Other vegetative classification: Poorly Drained (G002XY006OR)

Hydric soil rating: Yes

EXHIBIT A.46

Map Unit Description: Bashaw silty clay loam, 0 to 3 percent slopes---Polk County, Oregon

Minor Components

Cove

Percent of map unit: 5 percent

Landform: Flood plains

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: Yes

Wapato

Percent of map unit: 5 percent

Landform: Swales on flood plains, depressions on flood plains

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Other vegetative classification: Poorly Drained (G002XY006OR)

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Polk County, Oregon

Survey Area Data: Version 22, Sep 7, 2023

EXHIBIT A.47

Map Unit Description: Salkum silty clay loam, 2 to 6 percent slopes---Polk County, Oregon

Polk County, Oregon

64B—Salkum silty clay loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 22y2

Elevation: 320 to 370 feet

Mean annual precipitation: 40 to 60 inches

Mean annual air temperature: 52 to 54 degrees F

Frost-free period: 165 to 200 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Salkum and similar soils: 90 percent

Minor components: 1 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Salkum

Setting

Landform: Terraces

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Old, weathered, clayey alluvium

Typical profile

H1 - 0 to 12 inches: silty clay loam

H2 - 12 to 37 inches: silty clay

H3 - 37 to 60 inches: silty clay

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 9.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Ecological site: R002XC011OR - Low Hill Group

Forage suitability group: Well drained < 15% Slopes
(G002XY002OR)

Other vegetative classification: Well drained < 15% Slopes
(G002XY002OR)

EXHIBIT A.48

Map Unit Description: Salkum silty clay loam, 2 to 6 percent slopes---Polk County, Oregon

Hydric soil rating: No

Minor Components

Aquults

Percent of map unit: 1 percent

Landform: Terraces

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Polk County, Oregon

Survey Area Data: Version 22, Sep 7, 2023

Polk County, Oregon

72—Waldo silty clay loam

Map Unit Setting

National map unit symbol: 22ys

Elevation: 90 to 1,000 feet

Mean annual precipitation: 30 to 60 inches

Mean annual air temperature: 50 to 55 degrees F

Frost-free period: 160 to 235 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Waldo and similar soils: 90 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Waldo

Setting

Landform: Flood plains

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed silty and clayey alluvium

Typical profile

H1 - 0 to 13 inches: silty clay loam

H2 - 13 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 0 to 6 inches

Frequency of flooding: OccasionalNone

Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): 3w

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C/D

Ecological site: R002XC005OR - High Flood Plain Group

Forage suitability group: Poorly Drained (G002XY006OR)

Other vegetative classification: Poorly Drained (G002XY006OR)

Hydric soil rating: Yes

EXHIBIT A.50

Map Unit Description: Waldo silty clay loam---Polk County, Oregon

Minor Components

Bashaw

Percent of map unit: 5 percent

Landform: Alluvial fans

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Polk County, Oregon

Survey Area Data: Version 22, Sep 7, 2023

APPENDIX B

Well Log Data



POIK
515

EXHIBIT A.52

7s/5w/32c
41422

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)

(START CARD) #

(1) OWNER: M. N. Delgado
Name: M. N. Delgado
Address: P.O. Box 208
City: Dallas, State: OR Zip: 97388

(9) LOCATION OF WELL by legal description:
County: Polk Latitude: Longitude:
Township: 7S N or S. Range: 5W E or W. WM.
Section: 32 SW 1/4 SW 1/4
Tax Lot: Lot: Block: Subdivision:
Street Address of Well (or nearest address): 1765 N. Highway 101, Dallas, OR 97308

(2) TYPE OF WORK:
 New Well Deepen Recondition Abandon

(3) DRILL METHOD
 Rotary Air Rotary Mud Cable
 Other

(4) PROPOSED USE:
 Domestic Community Industrial Irrigation
 Thermal Injection Other

(10) STATIC WATER LEVEL:
30 ft. below land surface. Date: 8-25-92
Artesian pressure: lb. per square inch. Date:

(5) BORE HOLE CONSTRUCTION:
Special Construction approval: Yes No
Explosives used: Yes No Type: Amount:

(11) WATER BEARING ZONES:
Depth at which water was first found:

HOLE SEAL

Diameter	From	To	Material	From	To	Amount
10 1/2"	0	19	Cement	0	19	754-cms
6"	19	202				

From	To	Estimated Flow Rate	SWL
80	81	1 G.p.m	
147	148	1/2 G.p.m	
180	182	1/2 G.p.m	

How was seal placed: Method A B C D E
Backfill placed from: ft. to: ft. Material:
Gravel placed from: ft. to: ft. Size of gravel:

(12) WELL LOG: Ground elevation:

(6) CASING/LINER:

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
6	7	19	250	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	2	202		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Material	From	To	SWL
Topsoil	0	2	
Brown + C Clay	2	11	
FIRM GRAY SHALE with unstable layers	11	202	

RECEIVED
AUG 27 1992
WATER RESOURCES DEPT.
SALEM, OREGON

Date started: Aug 20, 92 Completed: Aug 24, 92

Final location of shoets):

(7) PERFORATIONS/SCREENS:
 Perforations Method: 3/8" Canadian drilled
 Screens Type: Electric Drill Material:

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
167	202		120	3/8" Canadian		<input type="checkbox"/>	<input checked="" type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour
 Pump Bailer Air Flowing Artesian
Yield gal/min: 2 Drawdown: Drill stem at: 202 Time: 1 hr.

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.
Signed: _____ WWC Number: _____
Date: _____

Temperature of water: 52 Depth Artesian Flow Found:
Was a water analysis done? Yes By whom:
Did any strata contain water not suitable for intended use? Too little
 Salty Muddy Odor Colored Other:
Depth of strata:

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.
Signed: James M. Wilson WWC Number: 765
Date: Aug 25, 92

STATE OF OREGON
WATER SUPPLY WELL REPORT

(as required by ORS 537.765)

WELL I.D. # L 56696
START CARD # 148579

Instructions for completing this report are on the last page of this form.

(1) LAND OWNER Well Number 1
Name Andy Breen
Address 1311 Clay St.
City Dallas State Oregon Zip 97338

(2) TYPE OF WORK
 New Well Deepening Alteration (repair/recondition) Abandonment

(3) DRILL METHOD:
 Rotary Air Rotary Mud Cable Auger
 Other _____

(4) PROPOSED USE:
 Domestic Community Industrial Irrigation
 Thermal Injection Livestock Other _____

(5) BORE HOLE CONSTRUCTION:
Special Construction approval Yes No Depth of Completed Well 145 ft.
Explosives used Yes No Type _____ Amount _____

HOLE			SEAL			Sacks or pounds
Diameter	From	To	Material	From	To	
10"	0	30	bentonite	0	30	12
6"	30	154				

How was seal placed: Method A B C D E
 Other poured dry + hydrated
Backfill placed from _____ ft. to 154 ft. Material cement w/ 2% caco
Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing: 6"	+2	31	.250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Liner: 4"	0	145 #160		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drive Shoe used Inside Outside None
Final location of shoe(s) 31

(7) PERFORATIONS/SCREENS:

Perforations Method SKILSAW
 Screens Type _____ Material PVC

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
15	124	6"	100	1/8"	4"	<input type="checkbox"/>	<input checked="" type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour

Yield gal/min	Drawdown	Drill stem at	Time
2-2 1/2	126'	144	1 hr.

Temperature of water 54° Depth Artesian Flow Found _____
Was a water analysis done? Yes By whom _____
Did any strata contain water not suitable for intended use? Too little
 Salty Muddy Odor Colored Other _____
Depth of strata: 150-154 1300us.
Useable H2O via 490 us

(9) LOCATION OF WELL by legal description:
County Polk Latitude N. 44° 55.054' Longitude W 123° 20.111'
Township 7 N or S Range 5 E or W WM.
Section 32 CC SW 1/4 SW 1/4
Tax Lot 305 Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) 1311 Clay St.
Elevation is 444'

(10) STATIC WATER LEVEL:
18 ft. below land surface. Date 8-28-02
Artesian pressure _____ lb. per square inch Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found 10'

From	To	Estimated Flow Rate	SWL
10	11	Trace	9
33	35	2-2 1/2	18
150	154	2 1/2 NaCl	—

(12) WELL LOG:

Ground Elevation _____

Material	From	To	SWL
Topsoil	0	2	—
Clay, brown - sticky	2	6	—
Shale, light brown	6	9	—
Claystone, grey (hard)	9	154	18
SEP 03 2002			
WATER RESOURCES DEPARTMENT SALEM, OREGON			
Dickerson Well Drilling, Inc			
pH # 503-623-2664			

Date started 8-27-02 Completed 8-28-02

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number _____
Signed _____ Date _____

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1571
Signed William A. Blair Date _____

APPENDIX C

Wetland Inventory Map





U.S. Fish and Wildlife Service

National Wetlands Inventory

23-228 Oakdale Estates Phase II

EXHIBIT A.57



U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands.team@fws.gov

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

October 19, 2023

Wetlands

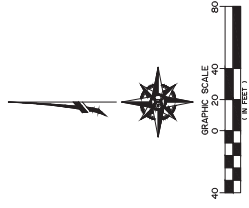
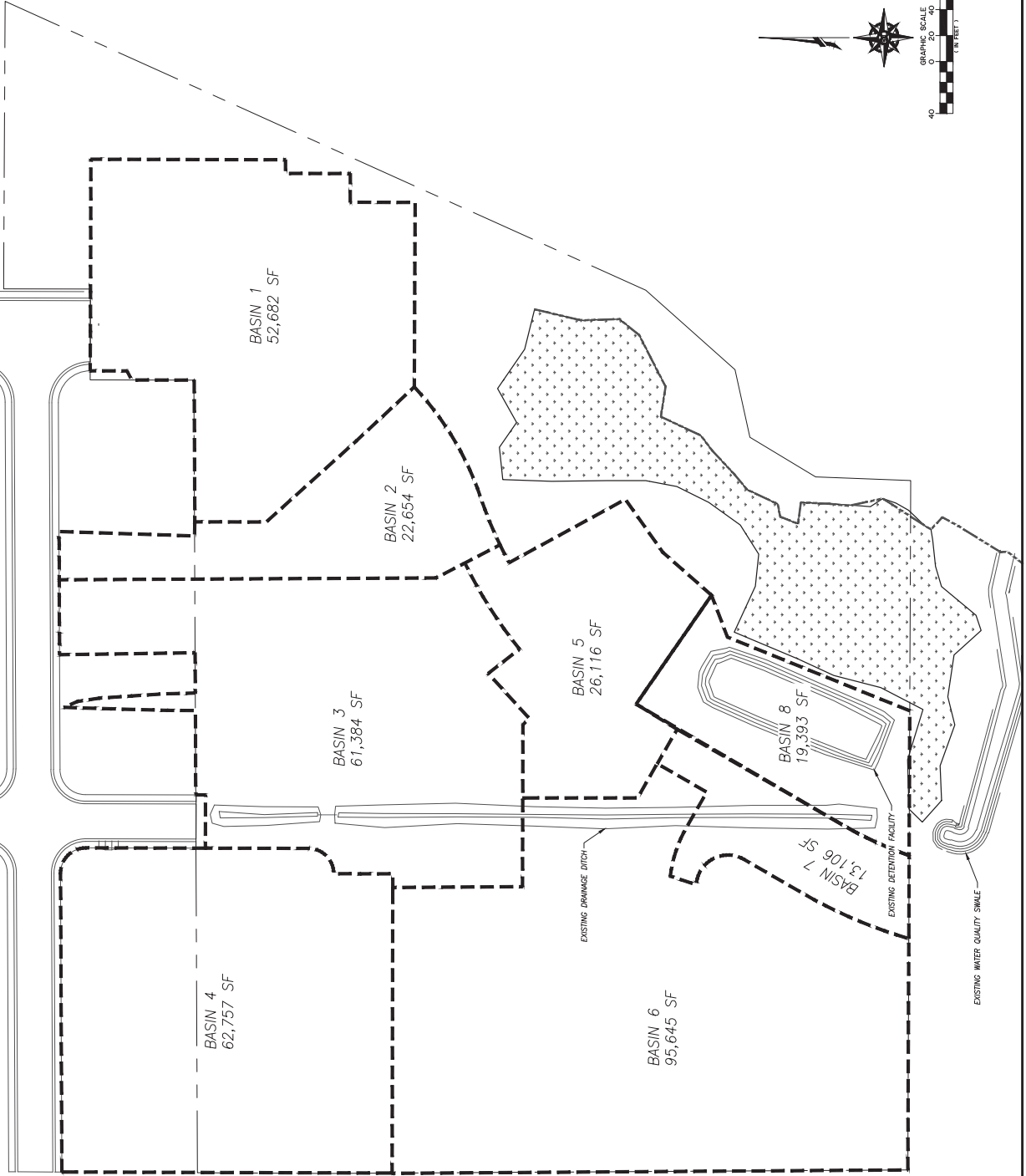
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

APPENDIX D

Stormwater Facility Map



OAKDALE ESTATES 1, 2, 3
 247,370 SF



**OAKDALE ESTATES 4, 5, 6
 SUBDIVISION**
 DALLAS, OREGON

DATE: NOV. 30, 2023
 DRAWN BY: SMH
 DESIGNED BY: NP
 PROJECT NO.: 23-228

**STORMWATER
 PLAN**

SW1

sheet

PROJECT TITLE:

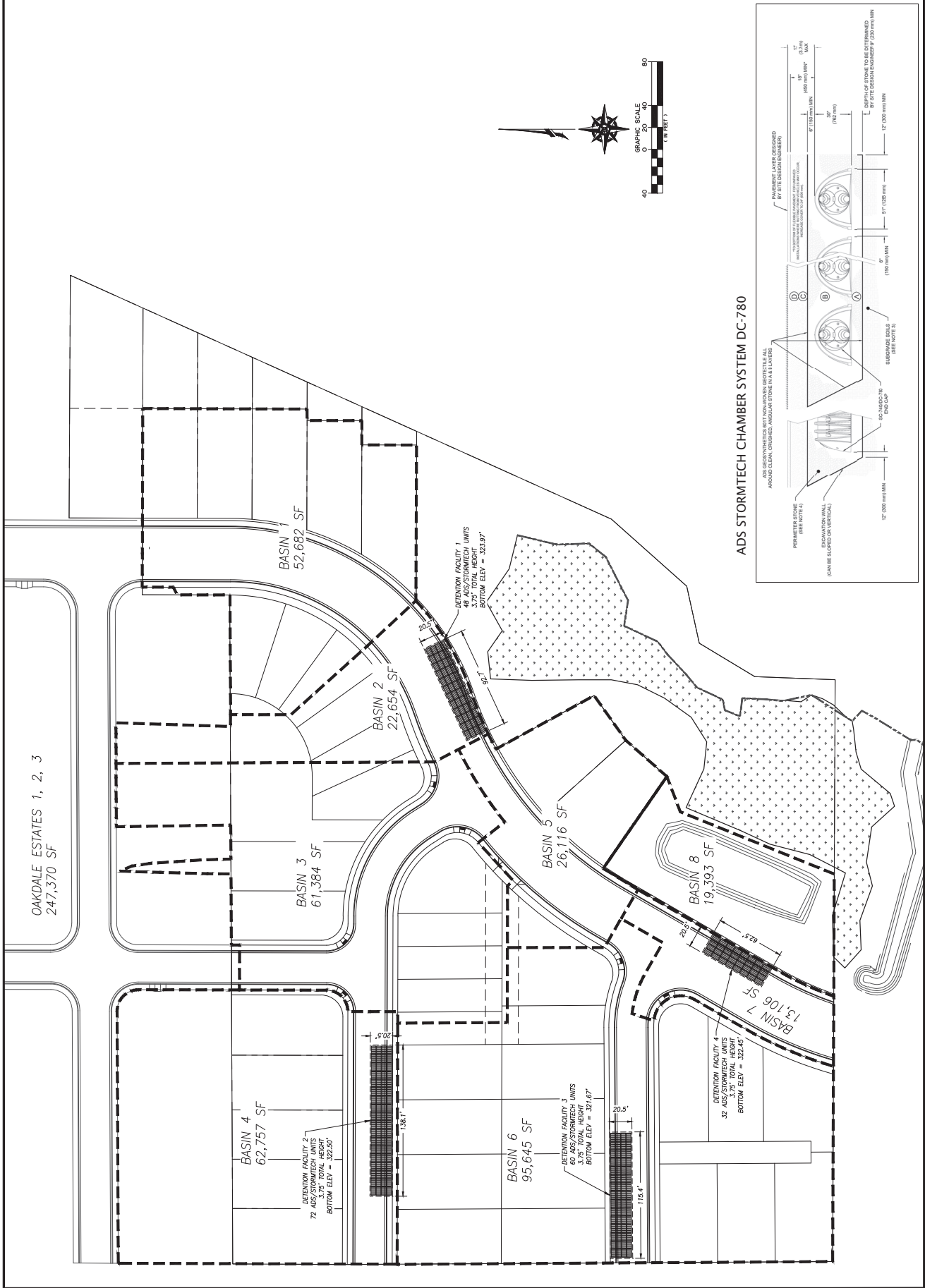
OAKDALE ESTATES 4, 5, 6
 SUBDIVISION
 DALLAS, OREGON

REVISIONS:

DATE: NOV. 30, 2023
 DRAWN BY: SMH
 DESIGNED BY: NP
 PROJECT NO.: 23-228

STORMWATER
 PLAN
 ADS CHAMBER
 DETENTION

SHEET
SW2



PROJECT TITLE:

**OAKDALE ESTATES 4, 5, 6
 SUBDIVISION**
 DALLAS, OREGON

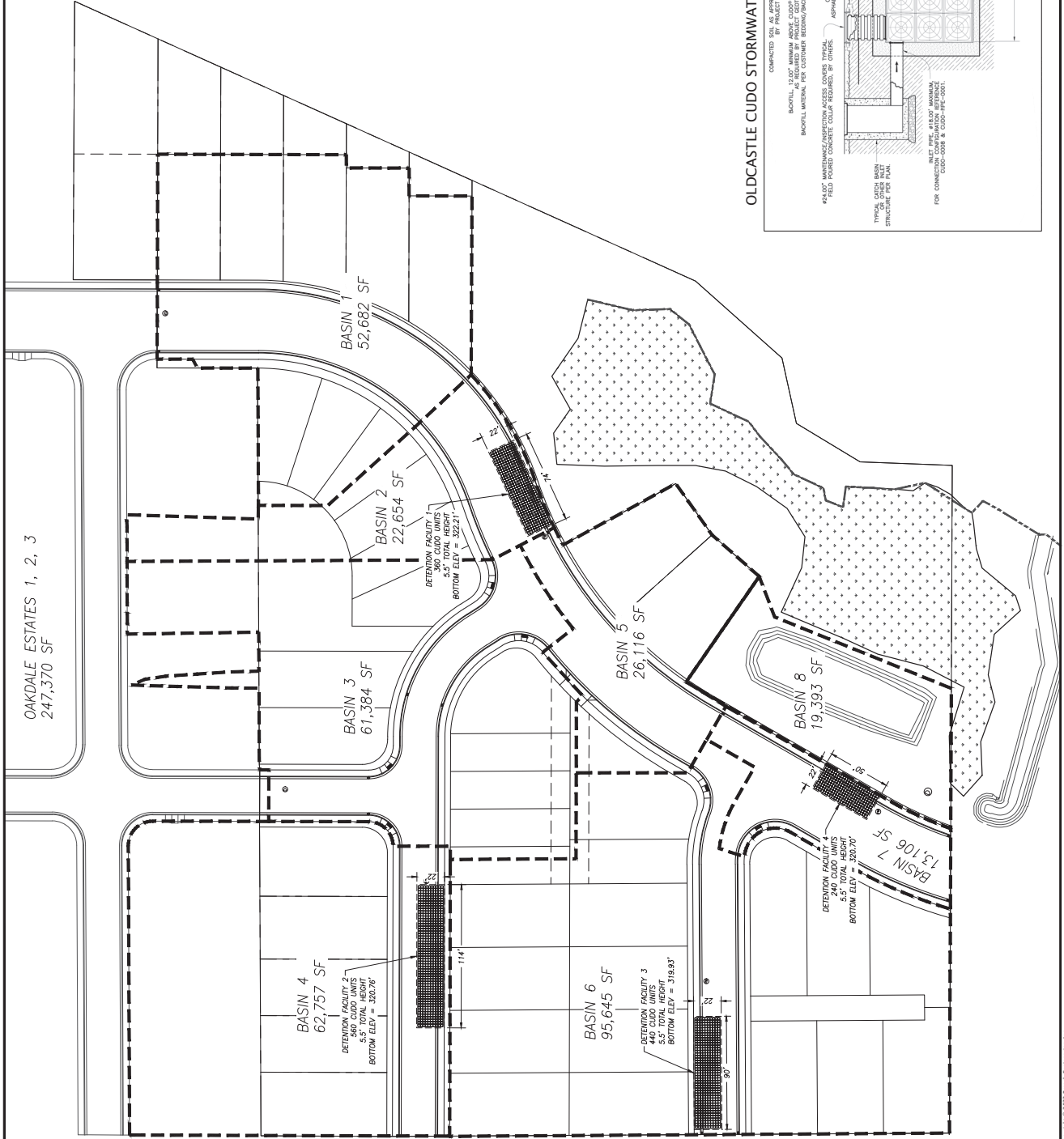
REVISIONS:

DATE: NOV. 30, 2023
 DRAWN BY: SMH
 DESIGNED BY: NP
 PROJECT NO.: 23-228

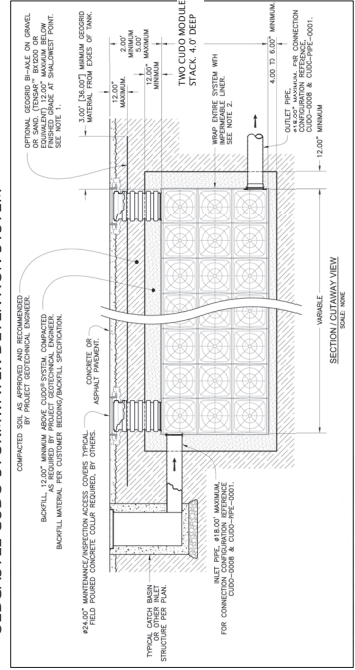
**STORMWATER
 PLAN
 CUDO
 DETENTION**

SHEET

SW3



OLDCASTLE CUDO STORMWATER DETENTION SYSTEM



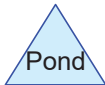
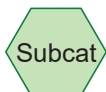
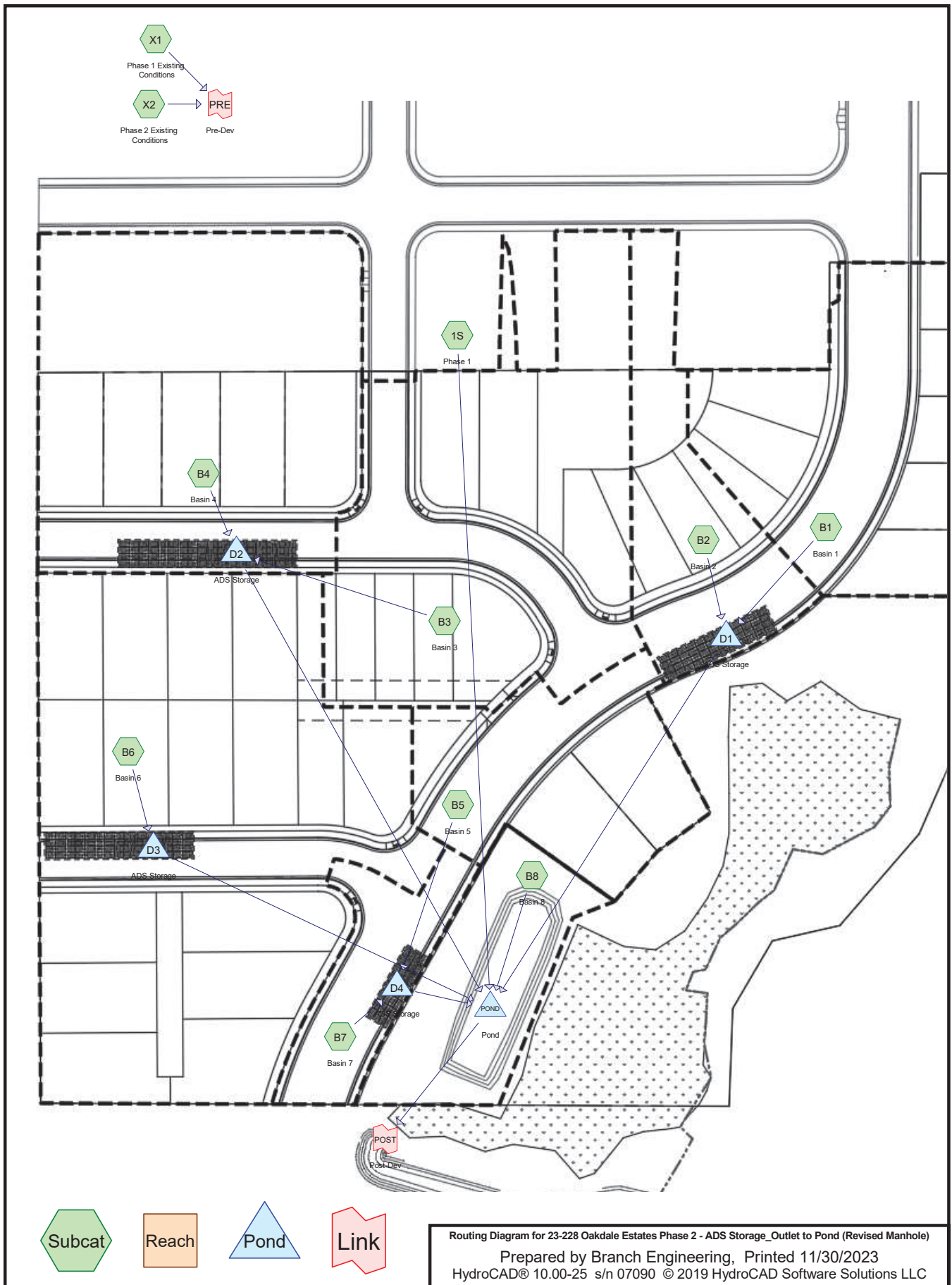
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APPENDIX E

Hydrocad Report



EXHIBIT A.64



Routing Diagram for 23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Pond (Revised Manhole)

Prepared by Branch Engineering, Printed 11/30/2023

HydroCAD® 10.00-25 s/n 07090 © 2019 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: Phase 1

Runoff = 2.52 cfs @ 8.00 hrs, Volume= 43,935 cf, Depth= 1.98"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type IA 24-hr 2-yr Rainfall=3.10"

Area (ac)	CN	Description
* 3.172	98	Impervious
* 2.640	74	Landscape
* 0.288	80	Landscape
6.100	87	Weighted Average
2.928	75	48.00% Pervious Area
3.172	98	52.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

Summary for Subcatchment B1: Basin 1

Runoff = 0.60 cfs @ 7.99 hrs, Volume= 9,490 cf, Depth= 2.16"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type IA 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
* 14,939	98	Streets
* 9,009	98	Houses
* 2,340	98	Driveways
* 26,394	82	Pervious
52,682	90	Weighted Average
26,394	82	50.10% Pervious Area
26,288	98	49.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B2: Basin 2

Runoff = 0.27 cfs @ 7.99 hrs, Volume= 4,204 cf, Depth= 2.23"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type IA 24-hr 2-yr Rainfall=3.10"

EXHIBIT A.66

23-228 Oakdale Estates 4,5,6

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 2-yr Rainfall=3.10"

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	Area (sf)	CN	Description
*	7,992	98	Streets
*	3,465	98	Houses
*	900	98	Driveways
*	10,297	82	Pervious
	22,654	91	Weighted Average
	10,297	82	45.45% Pervious Area
	12,357	98	54.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B3: Basin 3

Runoff = 0.68 cfs @ 8.00 hrs, Volume= 10,768 cf, Depth= 2.11"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.10"

	Area (sf)	CN	Description
*	15,948	98	Streets
*	9,702	98	Houses
*	2,520	98	Driveways
*	33,214	82	Pervious
	61,384	89	Weighted Average
	33,214	82	54.11% Pervious Area
	28,170	98	45.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B4: Basin 4

Runoff = 0.67 cfs @ 8.00 hrs, Volume= 10,583 cf, Depth= 2.02"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.10"

	Area (sf)	CN	Description
*	9,458	98	Streets
*	12,474	98	Houses
*	3,240	98	Driveways
*	37,585	82	Pervious
	62,757	88	Weighted Average
	37,585	82	59.89% Pervious Area
	25,172	98	40.11% Impervious Area

EXHIBIT A.67

23-228 Oakdale Estates 4,5,6

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 2-yr Rainfall=3.10"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B5: Basin 5

Runoff = 0.32 cfs @ 7.99 hrs, Volume= 4,954 cf, Depth= 2.28"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
* 10,794	98	Streets
* 3,465	98	Houses
* 900	98	Driveways
* 10,957	82	Pervious
26,116	91	Weighted Average
10,957	82	41.96% Pervious Area
15,159	98	58.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B6: Basin 6

Runoff = 1.09 cfs @ 7.99 hrs, Volume= 17,157 cf, Depth= 2.15"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
* 11,641	98	Streets
* 24,948	98	Houses
* 6,480	98	Driveways
* 48,537	82	Pervious
* 4,044	98	Alley
95,650	90	Weighted Average
48,537	82	50.74% Pervious Area
47,113	98	49.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

EXHIBIT A.68

23-228 Oakdale Estates 4,5,6

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 2-yr Rainfall=3.10"

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Summary for Subcatchment B7: Basin 7

Runoff = 0.21 cfs @ 7.96 hrs, Volume= 3,132 cf, Depth= 2.87"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
* 13,106	98	Streets
13,106	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B8: Basin 8

Runoff = 0.14 cfs @ 8.00 hrs, Volume= 2,356 cf, Depth= 1.46"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
* 19,393	82	Pervious
19,393	82	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment X1: Phase 1 Existing Conditions

Runoff = 0.58 cfs @ 8.17 hrs, Volume= 19,225 cf, Depth= 0.87"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
* 239,580	71	Meadow, non-grazed, HSG C
* 26,136	78	Meadow, non-grazed, HSG D
265,716	72	Weighted Average
265,716	72	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					Direct Entry,

EXHIBIT A.69

23-228 Oakdale Estates 4,5,6

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 2-yr Rainfall=3.10"

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Summary for Subcatchment X2: Phase 2 Existing Conditions

Runoff = 1.38 cfs @ 8.12 hrs, Volume= 37,205 cf, Depth= 1.26"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr Rainfall=3.10"

Area (sf)	CN	Description
* 353,742	79	Soil C/D (Phase 2)
353,742	79	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.8	100	0.0014	0.06		Sheet Flow, n= 0.150 P2= 3.10"
4.6	204	0.0112	0.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
33.4	304	Total			

Summary for Pond D1: ADS Storage

Inflow Area = 75,336 sf, 51.30% Impervious, Inflow Depth = 2.18" for 2-yr event
 Inflow = 0.87 cfs @ 7.99 hrs, Volume= 13,694 cf
 Outflow = 0.28 cfs @ 9.23 hrs, Volume= 13,694 cf, Atten= 68%, Lag= 74.4 min
 Primary = 0.28 cfs @ 9.23 hrs, Volume= 13,694 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 325.65' @ 9.23 hrs Surf.Area= 2,762 sf Storage= 2,255 cf

Plug-Flow detention time= 75.8 min calculated for 13,692 cf (100% of inflow)
Center-of-Mass det. time= 75.8 min (793.8 - 718.0)

Volume	Invert	Avail.Storage	Storage Description
#1	323.97'	3,434 cf	20.50'W x 94.72'L x 3.75'H Rock Z=2.0 10,803 cf Overall - 2,219 cf Embedded = 8,584 cf x 40.0% Voids
#2	324.72'	2,219 cf	ADS_StormTech DC-780 +Cap x 48 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 48 Chambers in 4 Rows
		5,653 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	323.77'	12.000" Round Culvert L= 38.0' Ke= 0.500 Inlet / Outlet Invert= 323.77' / 322.02' S= 0.0461 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	323.97'	2.875" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	325.66'	3.500" Vert. 5-yr Orifice C= 0.600
#4	Device 1	326.09'	2.000" Vert. 10-yr Orifice C= 0.600

EXHIBIT A.70

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23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 2-yr Rainfall=3.10"

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#5 Device 1 327.67' **24.000" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.28 cfs @ 9.23 hrs HW=325.65' TW=322.39' (Dynamic Tailwater)

- ↑ 1=Culvert (Passes 0.28 cfs of 4.45 cfs potential flow)
- ↑ 2=2-yr Orifice (Orifice Controls 0.28 cfs @ 6.24 fps)
- ↑ 3=5-yr Orifice (Controls 0.00 cfs)
- ↑ 4=10-yr Orifice (Controls 0.00 cfs)
- ↑ 5=Overflow (Controls 0.00 cfs)

Summary for Pond D2: ADS Storage

Inflow Area = 124,141 sf, 42.97% Impervious, Inflow Depth = 2.06" for 2-yr event
 Inflow = 1.35 cfs @ 8.00 hrs, Volume= 21,351 cf
 Outflow = 0.46 cfs @ 9.15 hrs, Volume= 21,339 cf, Atten= 66%, Lag= 68.8 min
 Primary = 0.46 cfs @ 9.15 hrs, Volume= 21,339 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 323.98' @ 9.15 hrs Surf.Area= 4,082 sf Storage= 3,208 cf

Plug-Flow detention time= 64.1 min calculated for 21,336 cf (100% of inflow)
 Center-of-Mass det. time= 63.8 min (792.9 - 729.1)

Volume	Invert	Avail.Storage	Storage Description
#1	322.39'	5,284 cf	20.50'W x 145.64'L x 3.85'H Rock Z=2.0 16,724 cf Overall - 3,514 cf Embedded = 13,210 cf x 40.0% Voids
#2	323.15'	3,514 cf	ADS_StormTech DC-780 +Cap x 76 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 76 Chambers in 4 Rows
		8,798 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	322.30'	24.000" Round 24" Culvert L= 216.0' Ke= 0.500 Inlet / Outlet Invert= 322.30' / 322.02' S= 0.0013 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	322.40'	3.750" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	324.02'	4.000" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.50'	3.125" Vert. 10-yr Orifice C= 0.600
#5	Device 1	326.10'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.46 cfs @ 9.15 hrs HW=323.98' TW=322.37' (Dynamic Tailwater)

- ↑ 1=24" Culvert (Passes 0.46 cfs of 7.21 cfs potential flow)
- ↑ 2=2-yr Orifice (Orifice Controls 0.46 cfs @ 6.05 fps)
- ↑ 3=5-yr Orifice (Controls 0.00 cfs)
- ↑ 4=10-yr Orifice (Controls 0.00 cfs)
- ↑ 5=Overflow (Controls 0.00 cfs)

EXHIBIT A.71

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Summary for Pond D3: ADS Storage

Inflow Area = 95,650 sf, 49.26% Impervious, Inflow Depth = 2.15" for 2-yr event
 Inflow = 1.09 cfs @ 7.99 hrs, Volume= 17,157 cf
 Outflow = 0.31 cfs @ 8.05 hrs, Volume= 17,157 cf, Atten= 72%, Lag= 3.4 min
 Primary = 0.31 cfs @ 8.05 hrs, Volume= 17,157 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 323.41' @ 9.90 hrs Surf.Area= 3,565 sf Storage= 3,059 cf

Plug-Flow detention time= 100.2 min calculated for 17,155 cf (100% of inflow)
 Center-of-Mass det. time= 100.3 min (820.9 - 720.6)

Volume	Invert	Avail.Storage	Storage Description
#1	321.67'	4,521 cf	20.50'W x 122.96'L x 3.85'H Rock Z=2.0 14,262 cf Overall - 2,959 cf Embedded = 11,303 cf x 40.0% Voids
#2	322.42'	2,959 cf	ADS_StormTech DC-780 +Cap x 64 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 64 Chambers in 4 Rows
		7,480 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	321.44'	12.000" Round Culvert L= 35.0' Ke= 0.500 Inlet / Outlet Invert= 321.44' / 321.33' S= 0.0031 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	321.67'	3.250" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	323.30'	3.625" Vert. 5-yr Orifice C= 0.600
#4	Device 1	323.75'	2.500" Vert. 10-yr Orifice C= 0.600
#5	Device 1	325.35'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.31 cfs @ 8.05 hrs HW=322.91' TW=321.69' (Dynamic Tailwater)

- 1=Culvert (Passes 0.31 cfs of 2.99 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 0.31 cfs @ 5.32 fps)
- 3=5-yr Orifice (Controls 0.00 cfs)
- 4=10-yr Orifice (Controls 0.00 cfs)
- 5=Overflow (Controls 0.00 cfs)

Summary for Pond D4: ADS Storage

Inflow Area = 39,222 sf, 72.06% Impervious, Inflow Depth = 2.47" for 2-yr event
 Inflow = 0.52 cfs @ 7.98 hrs, Volume= 8,086 cf
 Outflow = 0.15 cfs @ 9.34 hrs, Volume= 8,086 cf, Atten= 71%, Lag= 81.5 min
 Primary = 0.15 cfs @ 9.34 hrs, Volume= 8,086 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 324.14' @ 9.34 hrs Surf.Area= 1,941 sf Storage= 1,551 cf

Plug-Flow detention time= 100.4 min calculated for 8,086 cf (100% of inflow)

EXHIBIT A.72

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Center-of-Mass det. time= 100.2 min (795.0 - 694.8)

Volume	Invert	Avail.Storage	Storage Description
#1	322.45'	2,459 cf	20.50'W x 64.48'L x 3.75'H Rock Z=2.0 7,628 cf Overall - 1,480 cf Embedded = 6,149 cf x 40.0% Voids
#2	323.20'	1,480 cf	ADS_StormTech DC-780 +Cap x 32 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 4 Rows
		3,939 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	319.44'	12.000" Round Culvert L= 27.0' Ke= 0.500 Inlet / Outlet Invert= 319.44' / 319.36' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	322.45'	2.125" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	324.15'	2.375" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.55'	2.000" Vert. 10-yr Orifice C= 0.600
#5	Device 1	326.15'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.15 cfs @ 9.34 hrs HW=324.14' TW=322.40' (Dynamic Tailwater)

- 1=Culvert (Passes 0.15 cfs of 4.98 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 0.15 cfs @ 6.26 fps)
- 3=5-yr Orifice (Controls 0.00 cfs)
- 4=10-yr Orifice (Controls 0.00 cfs)
- 5=Overflow (Controls 0.00 cfs)

Summary for Pond POND: Pond

Inflow Area = 619,458 sf, 49.32% Impervious, Inflow Depth = 2.06" for 2-yr event
 Inflow = 3.73 cfs @ 8.00 hrs, Volume= 106,568 cf
 Outflow = 1.90 cfs @ 10.25 hrs, Volume= 106,535 cf, Atten= 49%, Lag= 134.5 min
 Primary = 1.90 cfs @ 10.25 hrs, Volume= 106,535 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 322.46' @ 10.25 hrs Surf.Area= 6,055 sf Storage= 12,770 cf

Plug-Flow detention time= 92.5 min calculated for 106,521 cf (100% of inflow)
 Center-of-Mass det. time= 92.6 min (862.5 - 769.9)

Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	38,516 cf	Existing Pond (Prismatic) Listed below (Recalc)

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
320.00	4,334	0	0
320.50	4,671	2,251	2,251
321.00	5,014	2,421	4,673
321.50	5,364	2,595	7,267
322.00	5,719	2,771	10,038
322.50	6,081	2,950	12,988
323.00	6,448	3,132	16,120
323.50	6,823	3,318	19,438
324.00	7,202	3,506	22,944
324.50	7,590	3,698	26,642
325.00	7,981	3,893	30,535
326.00	7,981	7,981	38,516

Device	Routing	Invert	Outlet Devices
#1	Primary	319.79'	24.000" Round Culvert L= 50.0' Ke= 0.100 Inlet / Outlet Invert= 319.79' / 319.74' S= 0.0010 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	320.00'	7.000" Vert. 2-yr Orifice C= 0.600
#3	Device 1	322.42'	10.000" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.40'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.90 cfs @ 10.25 hrs HW=322.46' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Passes 1.90 cfs of 16.34 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 1.90 cfs @ 7.10 fps)
- 3=5-yr Orifice (Orifice Controls 0.01 cfs @ 0.72 fps)
- 4=Overflow (Controls 0.00 cfs)

Summary for Link POST: Post-Dev

Inflow Area = 619,458 sf, 49.32% Impervious, Inflow Depth > 2.06" for 2-yr event
 Inflow = 1.90 cfs @ 10.25 hrs, Volume= 106,535 cf
 Primary = 1.90 cfs @ 10.25 hrs, Volume= 106,535 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link PRE: Pre-Dev

Inflow Area = 619,458 sf, 0.00% Impervious, Inflow Depth = 1.09" for 2-yr event
 Inflow = 1.96 cfs @ 8.14 hrs, Volume= 56,430 cf
 Primary = 1.96 cfs @ 8.14 hrs, Volume= 56,430 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

EXHIBIT A.74

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23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 5-yr Rainfall=3.90"

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Summary for Subcatchment 1S: Phase 1

Runoff = 3.44 cfs @ 8.00 hrs, Volume= 59,125 cf, Depth= 2.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-yr Rainfall=3.90"

Area (ac)	CN	Description
* 3.172	98	Impervious
* 2.640	74	Landscape
* 0.288	80	Landscape
6.100	87	Weighted Average
2.928	75	48.00% Pervious Area
3.172	98	52.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

Summary for Subcatchment B1: Basin 1

Runoff = 0.81 cfs @ 7.99 hrs, Volume= 12,688 cf, Depth= 2.89"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-yr Rainfall=3.90"

Area (sf)	CN	Description
* 14,939	98	Streets
* 9,009	98	Houses
* 2,340	98	Driveways
* 26,394	82	Pervious
52,682	90	Weighted Average
26,394	82	50.10% Pervious Area
26,288	98	49.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B2: Basin 2

Runoff = 0.36 cfs @ 7.98 hrs, Volume= 5,592 cf, Depth= 2.96"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-yr Rainfall=3.90"

EXHIBIT A.75

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	Area (sf)	CN	Description
*	7,992	98	Streets
*	3,465	98	Houses
*	900	98	Driveways
*	10,297	82	Pervious
	22,654	91	Weighted Average
	10,297	82	45.45% Pervious Area
	12,357	98	54.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B3: Basin 3

Runoff = 0.93 cfs @ 7.99 hrs, Volume= 14,466 cf, Depth= 2.83"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-yr Rainfall=3.90"

	Area (sf)	CN	Description
*	15,948	98	Streets
*	9,702	98	Houses
*	2,520	98	Driveways
*	33,214	82	Pervious
	61,384	89	Weighted Average
	33,214	82	54.11% Pervious Area
	28,170	98	45.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B4: Basin 4

Runoff = 0.92 cfs @ 7.99 hrs, Volume= 14,322 cf, Depth= 2.74"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-yr Rainfall=3.90"

	Area (sf)	CN	Description
*	9,458	98	Streets
*	12,474	98	Houses
*	3,240	98	Driveways
*	37,585	82	Pervious
	62,757	88	Weighted Average
	37,585	82	59.89% Pervious Area
	25,172	98	40.11% Impervious Area

EXHIBIT A.76

23-228 Oakdale Estates 4,5,6

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 5-yr Rainfall=3.90"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B5: Basin 5

Runoff = 0.42 cfs @ 7.98 hrs, Volume= 6,564 cf, Depth= 3.02"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-yr Rainfall=3.90"

Area (sf)	CN	Description
* 10,794	98	Streets
* 3,465	98	Houses
* 900	98	Driveways
* 10,957	82	Pervious
26,116	91	Weighted Average
10,957	82	41.96% Pervious Area
15,159	98	58.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B6: Basin 6

Runoff = 1.47 cfs @ 7.99 hrs, Volume= 22,956 cf, Depth= 2.88"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-yr Rainfall=3.90"

Area (sf)	CN	Description
* 11,641	98	Streets
* 24,948	98	Houses
* 6,480	98	Driveways
* 48,537	82	Pervious
* 4,044	98	Alley
95,650	90	Weighted Average
48,537	82	50.74% Pervious Area
47,113	98	49.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

EXHIBIT A.77

23-228 Oakdale Estates 4,5,6

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 5-yr Rainfall=3.90"

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Summary for Subcatchment B7: Basin 7

Runoff = 0.26 cfs @ 7.96 hrs, Volume= 4,003 cf, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-yr Rainfall=3.90"

Area (sf)	CN	Description
* 13,106	98	Streets
13,106	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B8: Basin 8

Runoff = 0.21 cfs @ 8.00 hrs, Volume= 3,423 cf, Depth= 2.12"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-yr Rainfall=3.90"

Area (sf)	CN	Description
* 19,393	82	Pervious
19,393	82	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment X1: Phase 1 Existing Conditions

Runoff = 1.17 cfs @ 8.06 hrs, Volume= 30,788 cf, Depth= 1.39"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-yr Rainfall=3.90"

Area (sf)	CN	Description
* 239,580	71	Meadow, non-grazed, HSG C
* 26,136	78	Meadow, non-grazed, HSG D
265,716	72	Weighted Average
265,716	72	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					Direct Entry,

EXHIBIT A.78

23-228 Oakdale Estates 4,5,6

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 5-yr Rainfall=3.90"

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Summary for Subcatchment X2: Phase 2 Existing Conditions

Runoff = 2.28 cfs @ 8.08 hrs, Volume= 55,497 cf, Depth= 1.88"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-yr Rainfall=3.90"

Area (sf)	CN	Description
* 353,742	79	Soil C/D (Phase 2)
353,742	79	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.8	100	0.0014	0.06		Sheet Flow, n= 0.150 P2= 3.10"
4.6	204	0.0112	0.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
33.4	304	Total			

Summary for Pond D1: ADS Storage

Inflow Area = 75,336 sf, 51.30% Impervious, Inflow Depth = 2.91" for 5-yr event
 Inflow = 1.17 cfs @ 7.99 hrs, Volume= 18,279 cf
 Outflow = 0.48 cfs @ 8.78 hrs, Volume= 18,279 cf, Atten= 59%, Lag= 47.4 min
 Primary = 0.48 cfs @ 8.78 hrs, Volume= 18,279 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 326.08' @ 8.78 hrs Surf.Area= 2,987 sf Storage= 3,018 cf

Plug-Flow detention time= 90.3 min calculated for 18,279 cf (100% of inflow)
 Center-of-Mass det. time= 90.1 min (800.3 - 710.2)

Volume	Invert	Avail.Storage	Storage Description
#1	323.97'	3,434 cf	20.50'W x 94.72'L x 3.75'H Rock Z=2.0 10,803 cf Overall - 2,219 cf Embedded = 8,584 cf x 40.0% Voids
#2	324.72'	2,219 cf	ADS_StormTech DC-780 +Cap x 48 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 48 Chambers in 4 Rows
		5,653 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	323.77'	12.000" Round Culvert L= 38.0' Ke= 0.500 Inlet / Outlet Invert= 323.77' / 322.02' S= 0.0461 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	323.97'	2.875" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	325.66'	3.500" Vert. 5-yr Orifice C= 0.600
#4	Device 1	326.09'	2.000" Vert. 10-yr Orifice C= 0.600

EXHIBIT A.79

23-228 Oakdale Estates 4,5,6

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 5-yr Rainfall=3.90"

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#5 Device 1 327.67' **24.000" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.48 cfs @ 8.78 hrs HW=326.08' TW=322.99' (Dynamic Tailwater)

- ↑ 1=Culvert (Passes 0.48 cfs of 5.09 cfs potential flow)
- ↑ 2=2-yr Orifice (Orifice Controls 0.32 cfs @ 7.00 fps)
- ↑ 3=5-yr Orifice (Orifice Controls 0.17 cfs @ 2.53 fps)
- ↑ 4=10-yr Orifice (Controls 0.00 cfs)
- ↑ 5=Overflow (Controls 0.00 cfs)

Summary for Pond D2: ADS Storage

Inflow Area = 124,141 sf, 42.97% Impervious, Inflow Depth = 2.78" for 5-yr event
 Inflow = 1.84 cfs @ 7.99 hrs, Volume= 28,788 cf
 Outflow = 0.69 cfs @ 8.88 hrs, Volume= 28,776 cf, Atten= 63%, Lag= 53.1 min
 Primary = 0.69 cfs @ 8.88 hrs, Volume= 28,776 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 324.51' @ 8.98 hrs Surf.Area= 4,465 sf Storage= 4,639 cf

Plug-Flow detention time= 85.0 min calculated for 28,776 cf (100% of inflow)
 Center-of-Mass det. time= 84.5 min (804.8 - 720.3)

Volume	Invert	Avail.Storage	Storage Description
#1	322.39'	5,284 cf	20.50'W x 145.64'L x 3.85'H Rock Z=2.0 16,724 cf Overall - 3,514 cf Embedded = 13,210 cf x 40.0% Voids
#2	323.15'	3,514 cf	ADS_StormTech DC-780 +Cap x 76 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 76 Chambers in 4 Rows
		8,798 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	322.30'	24.000" Round 24" Culvert L= 216.0' Ke= 0.500 Inlet / Outlet Invert= 322.30' / 322.02' S= 0.0013 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	322.40'	3.750" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	324.02'	4.000" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.50'	3.125" Vert. 10-yr Orifice C= 0.600
#5	Device 1	326.10'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.69 cfs @ 8.88 hrs HW=324.51' TW=323.02' (Dynamic Tailwater)

- ↑ 1=24" Culvert (Passes 0.69 cfs of 10.76 cfs potential flow)
- ↑ 2=2-yr Orifice (Orifice Controls 0.45 cfs @ 5.87 fps)
- ↑ 3=5-yr Orifice (Orifice Controls 0.24 cfs @ 2.72 fps)
- ↑ 4=10-yr Orifice (Orifice Controls 0.00 cfs @ 0.25 fps)
- ↑ 5=Overflow (Controls 0.00 cfs)

EXHIBIT A.80

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23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 5-yr Rainfall=3.90"

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Summary for Pond D3: ADS Storage

Inflow Area = 95,650 sf, 49.26% Impervious, Inflow Depth = 2.88" for 5-yr event
 Inflow = 1.47 cfs @ 7.99 hrs, Volume= 22,956 cf
 Outflow = 0.51 cfs @ 9.06 hrs, Volume= 22,956 cf, Atten= 65%, Lag= 64.5 min
 Primary = 0.51 cfs @ 9.06 hrs, Volume= 22,956 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 323.88' @ 9.09 hrs Surf.Area= 3,870 sf Storage= 4,155 cf

Plug-Flow detention time= 123.0 min calculated for 22,956 cf (100% of inflow)
 Center-of-Mass det. time= 122.8 min (835.4 - 712.6)

Volume	Invert	Avail.Storage	Storage Description
#1	321.67'	4,521 cf	20.50'W x 122.96'L x 3.85'H Rock Z=2.0 14,262 cf Overall - 2,959 cf Embedded = 11,303 cf x 40.0% Voids
#2	322.42'	2,959 cf	ADS_StormTech DC-780 +Cap x 64 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 64 Chambers in 4 Rows
		7,480 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	321.44'	12.000" Round Culvert L= 35.0' Ke= 0.500 Inlet / Outlet Invert= 321.44' / 321.33' S= 0.0031 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	321.67'	3.250" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	323.30'	3.625" Vert. 5-yr Orifice C= 0.600
#4	Device 1	323.75'	2.500" Vert. 10-yr Orifice C= 0.600
#5	Device 1	325.35'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.51 cfs @ 9.06 hrs HW=323.88' TW=323.04' (Dynamic Tailwater)

- 1=Culvert (Passes 0.51 cfs of 3.48 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 0.26 cfs @ 4.43 fps)
- 3=5-yr Orifice (Orifice Controls 0.23 cfs @ 3.17 fps)
- 4=10-yr Orifice (Orifice Controls 0.03 cfs @ 1.25 fps)
- 5=Overflow (Controls 0.00 cfs)

Summary for Pond D4: ADS Storage

Inflow Area = 39,222 sf, 72.06% Impervious, Inflow Depth = 3.23" for 5-yr event
 Inflow = 0.68 cfs @ 7.97 hrs, Volume= 10,567 cf
 Outflow = 0.23 cfs @ 9.02 hrs, Volume= 10,567 cf, Atten= 66%, Lag= 62.7 min
 Primary = 0.23 cfs @ 9.02 hrs, Volume= 10,567 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 324.58' @ 9.05 hrs Surf.Area= 2,118 sf Storage= 2,090 cf

Plug-Flow detention time= 121.1 min calculated for 10,567 cf (100% of inflow)

EXHIBIT A.81

23-228 Oakdale Estates 4,5,6

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 5-yr Rainfall=3.90"
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Center-of-Mass det. time= 121.0 min (809.4 - 688.4)

Volume	Invert	Avail.Storage	Storage Description
#1	322.45'	2,459 cf	20.50'W x 64.48'L x 3.75'H Rock Z=2.0 7,628 cf Overall - 1,480 cf Embedded = 6,149 cf x 40.0% Voids
#2	323.20'	1,480 cf	ADS_StormTech DC-780 +Cap x 32 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 4 Rows
		3,939 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	319.44'	12.000" Round Culvert L= 27.0' Ke= 0.500 Inlet / Outlet Invert= 319.44' / 319.36' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	322.45'	2.125" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	324.15'	2.375" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.55'	2.000" Vert. 10-yr Orifice C= 0.600
#5	Device 1	326.15'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.23 cfs @ 9.02 hrs HW=324.58' TW=323.04' (Dynamic Tailwater)

- 1=Culvert (Passes 0.23 cfs of 4.70 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 0.15 cfs @ 5.98 fps)
- 3=5-yr Orifice (Orifice Controls 0.09 cfs @ 2.76 fps)
- 4=10-yr Orifice (Orifice Controls 0.00 cfs @ 0.57 fps)
- 5=Overflow (Controls 0.00 cfs)

Summary for Pond POND: Pond

Inflow Area = 619,458 sf, 49.32% Impervious, Inflow Depth = 2.77" for 5-yr event
 Inflow = 4.85 cfs @ 8.00 hrs, Volume= 143,127 cf
 Outflow = 3.30 cfs @ 9.15 hrs, Volume= 143,093 cf, Atten= 32%, Lag= 68.9 min
 Primary = 3.30 cfs @ 9.15 hrs, Volume= 143,093 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 323.04' @ 9.15 hrs Surf.Area= 6,479 sf Storage= 16,384 cf

Plug-Flow detention time= 95.4 min calculated for 143,073 cf (100% of inflow)
 Center-of-Mass det. time= 95.5 min (869.2 - 773.8)

Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	38,516 cf	Existing Pond (Prismatic) Listed below (Recalc)

EXHIBIT A.82

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23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 5-yr Rainfall=3.90"

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
320.00	4,334	0	0
320.50	4,671	2,251	2,251
321.00	5,014	2,421	4,673
321.50	5,364	2,595	7,267
322.00	5,719	2,771	10,038
322.50	6,081	2,950	12,988
323.00	6,448	3,132	16,120
323.50	6,823	3,318	19,438
324.00	7,202	3,506	22,944
324.50	7,590	3,698	26,642
325.00	7,981	3,893	30,535
326.00	7,981	7,981	38,516

Device	Routing	Invert	Outlet Devices
#1	Primary	319.79'	24.000" Round Culvert L= 50.0' Ke= 0.100 Inlet / Outlet Invert= 319.79' / 319.74' S= 0.0010 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	320.00'	7.000" Vert. 2-yr Orifice C= 0.600
#3	Device 1	322.42'	10.000" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.40'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.30 cfs @ 9.15 hrs HW=323.04' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Passes 3.30 cfs of 21.91 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 2.13 cfs @ 7.98 fps)
- 3=5-yr Orifice (Orifice Controls 1.17 cfs @ 2.68 fps)
- 4=Overflow (Controls 0.00 cfs)

Summary for Link POST: Post-Dev

Inflow Area = 619,458 sf, 49.32% Impervious, Inflow Depth = 2.77" for 5-yr event
 Inflow = 3.30 cfs @ 9.15 hrs, Volume= 143,093 cf
 Primary = 3.30 cfs @ 9.15 hrs, Volume= 143,093 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link PRE: Pre-Dev

Inflow Area = 619,458 sf, 0.00% Impervious, Inflow Depth = 1.67" for 5-yr event
 Inflow = 3.45 cfs @ 8.07 hrs, Volume= 86,285 cf
 Primary = 3.45 cfs @ 8.07 hrs, Volume= 86,285 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 10-yr Rainfall=4.60"

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Summary for Subcatchment 1S: Phase 1

Runoff = 4.29 cfs @ 8.00 hrs, Volume= 72,876 cf, Depth= 3.29"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.60"

Area (ac)	CN	Description
* 3.172	98	Impervious
* 2.640	74	Landscape
* 0.288	80	Landscape
6.100	87	Weighted Average
2.928	75	48.00% Pervious Area
3.172	98	52.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

Summary for Subcatchment B1: Basin 1

Runoff = 1.01 cfs @ 7.98 hrs, Volume= 15,551 cf, Depth= 3.54"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.60"

Area (sf)	CN	Description
* 14,939	98	Streets
* 9,009	98	Houses
* 2,340	98	Driveways
* 26,394	82	Pervious
52,682	90	Weighted Average
26,394	82	50.10% Pervious Area
26,288	98	49.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B2: Basin 2

Runoff = 0.44 cfs @ 7.98 hrs, Volume= 6,831 cf, Depth= 3.62"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.60"

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23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 10-yr Rainfall=4.60"

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	Area (sf)	CN	Description
*	7,992	98	Streets
*	3,465	98	Houses
*	900	98	Driveways
*	10,297	82	Pervious
	22,654	91	Weighted Average
	10,297	82	45.45% Pervious Area
	12,357	98	54.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B3: Basin 3

Runoff = 1.15 cfs @ 7.99 hrs, Volume= 17,784 cf, Depth= 3.48"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.60"

	Area (sf)	CN	Description
*	15,948	98	Streets
*	9,702	98	Houses
*	2,520	98	Driveways
*	33,214	82	Pervious
	61,384	89	Weighted Average
	33,214	82	54.11% Pervious Area
	28,170	98	45.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B4: Basin 4

Runoff = 1.14 cfs @ 7.99 hrs, Volume= 17,686 cf, Depth= 3.38"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.60"

	Area (sf)	CN	Description
*	9,458	98	Streets
*	12,474	98	Houses
*	3,240	98	Driveways
*	37,585	82	Pervious
	62,757	88	Weighted Average
	37,585	82	59.89% Pervious Area
	25,172	98	40.11% Impervious Area

EXHIBIT A.85

23-228 Oakdale Estates 4,5,6

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 10-yr Rainfall=4.60"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B5: Basin 5

Runoff = 0.52 cfs @ 7.98 hrs, Volume= 8,000 cf, Depth= 3.68"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.60"

Area (sf)	CN	Description
* 10,794	98	Streets
* 3,465	98	Houses
* 900	98	Driveways
* 10,957	82	Pervious
26,116	91	Weighted Average
10,957	82	41.96% Pervious Area
15,159	98	58.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B6: Basin 6

Runoff = 1.82 cfs @ 7.98 hrs, Volume= 28,151 cf, Depth= 3.53"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.60"

Area (sf)	CN	Description
* 11,641	98	Streets
* 24,948	98	Houses
* 6,480	98	Driveways
* 48,537	82	Pervious
* 4,044	98	Alley
95,650	90	Weighted Average
48,537	82	50.74% Pervious Area
47,113	98	49.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 10-yr Rainfall=4.60"

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Summary for Subcatchment B7: Basin 7

Runoff = 0.31 cfs @ 7.96 hrs, Volume= 4,766 cf, Depth= 4.36"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.60"

Area (sf)	CN	Description
* 13,106	98	Streets
13,106	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B8: Basin 8

Runoff = 0.28 cfs @ 8.00 hrs, Volume= 4,402 cf, Depth= 2.72"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.60"

Area (sf)	CN	Description
* 19,393	82	Pervious
19,393	82	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment X1: Phase 1 Existing Conditions

Runoff = 1.77 cfs @ 8.02 hrs, Volume= 41,952 cf, Depth= 1.89"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.60"

Area (sf)	CN	Description
* 239,580	71	Meadow, non-grazed, HSG C
* 26,136	78	Meadow, non-grazed, HSG D
265,716	72	Weighted Average
265,716	72	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					Direct Entry,

EXHIBIT A.87

23-228 Oakdale Estates 4,5,6

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 10-yr Rainfall=4.60"

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Summary for Subcatchment X2: Phase 2 Existing Conditions

Runoff = 3.14 cfs @ 8.06 hrs, Volume= 72,535 cf, Depth= 2.46"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr Rainfall=4.60"

Area (sf)	CN	Description
* 353,742	79	Soil C/D (Phase 2)
353,742	79	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.8	100	0.0014	0.06		Sheet Flow, n= 0.150 P2= 3.10"
4.6	204	0.0112	0.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
33.4	304	Total			

Summary for Pond D1: ADS Storage

Inflow Area = 75,336 sf, 51.30% Impervious, Inflow Depth = 3.57" for 10-yr event
 Inflow = 1.45 cfs @ 7.98 hrs, Volume= 22,382 cf
 Outflow = 0.66 cfs @ 8.56 hrs, Volume= 22,382 cf, Atten= 54%, Lag= 34.4 min
 Primary = 0.66 cfs @ 8.56 hrs, Volume= 22,382 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 326.47' @ 8.56 hrs Surf.Area= 3,195 sf Storage= 3,701 cf

Plug-Flow detention time= 97.3 min calculated for 22,379 cf (100% of inflow)
 Center-of-Mass det. time= 97.4 min (802.0 - 704.6)

Volume	Invert	Avail.Storage	Storage Description
#1	323.97'	3,434 cf	20.50'W x 94.72'L x 3.75'H Rock Z=2.0 10,803 cf Overall - 2,219 cf Embedded = 8,584 cf x 40.0% Voids
#2	324.72'	2,219 cf	ADS_StormTech DC-780 +Cap x 48 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 48 Chambers in 4 Rows
		5,653 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	323.77'	12.000" Round Culvert L= 38.0' Ke= 0.500 Inlet / Outlet Invert= 323.77' / 322.02' S= 0.0461 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	323.97'	2.875" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	325.66'	3.500" Vert. 5-yr Orifice C= 0.600
#4	Device 1	326.09'	2.000" Vert. 10-yr Orifice C= 0.600

EXHIBIT A.88

23-228 Oakdale Estates 4,5,6

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 10-yr Rainfall=4.60"

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#5 Device 1 327.67' **24.000" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.66 cfs @ 8.56 hrs HW=326.47' TW=323.41' (Dynamic Tailwater)

- ↑ 1=Culvert (Passes 0.66 cfs of 5.61 cfs potential flow)
- ↑ 2=2-yr Orifice (Orifice Controls 0.34 cfs @ 7.62 fps)
- ↑ 3=5-yr Orifice (Orifice Controls 0.26 cfs @ 3.93 fps)
- ↑ 4=10-yr Orifice (Orifice Controls 0.06 cfs @ 2.63 fps)
- ↑ 5=Overflow (Controls 0.00 cfs)

Summary for Pond D2: ADS Storage

Inflow Area = 124,141 sf, 42.97% Impervious, Inflow Depth = 3.43" for 10-yr event
 Inflow = 2.29 cfs @ 7.99 hrs, Volume= 35,469 cf
 Outflow = 0.96 cfs @ 8.64 hrs, Volume= 35,457 cf, Atten= 58%, Lag= 39.3 min
 Primary = 0.96 cfs @ 8.64 hrs, Volume= 35,457 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 324.94' @ 8.77 hrs Surf.Area= 4,784 sf Storage= 5,787 cf

Plug-Flow detention time= 94.6 min calculated for 35,452 cf (100% of inflow)
 Center-of-Mass det. time= 94.4 min (808.4 - 714.0)

Volume	Invert	Avail.Storage	Storage Description
#1	322.39'	5,284 cf	20.50'W x 145.64'L x 3.85'H Rock Z=2.0 16,724 cf Overall - 3,514 cf Embedded = 13,210 cf x 40.0% Voids
#2	323.15'	3,514 cf	ADS_StormTech DC-780 +Cap x 76 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 76 Chambers in 4 Rows
		8,798 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	322.30'	24.000" Round 24" Culvert L= 216.0' Ke= 0.500 Inlet / Outlet Invert= 322.30' / 322.02' S= 0.0013 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	322.40'	3.750" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	324.02'	4.000" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.50'	3.125" Vert. 10-yr Orifice C= 0.600
#5	Device 1	326.10'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.96 cfs @ 8.64 hrs HW=324.93' TW=323.45' (Dynamic Tailwater)

- ↑ 1=24" Culvert (Passes 0.96 cfs of 12.26 cfs potential flow)
- ↑ 2=2-yr Orifice (Orifice Controls 0.45 cfs @ 5.87 fps)
- ↑ 3=5-yr Orifice (Orifice Controls 0.36 cfs @ 4.16 fps)
- ↑ 4=10-yr Orifice (Orifice Controls 0.14 cfs @ 2.65 fps)
- ↑ 5=Overflow (Controls 0.00 cfs)

EXHIBIT A.89

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23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 10-yr Rainfall=4.60"

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Summary for Pond D3: ADS Storage

Inflow Area = 95,650 sf, 49.26% Impervious, Inflow Depth = 3.53" for 10-yr event
 Inflow = 1.82 cfs @ 7.98 hrs, Volume= 28,151 cf
 Outflow = 0.68 cfs @ 8.67 hrs, Volume= 28,151 cf, Atten= 62%, Lag= 41.0 min
 Primary = 0.68 cfs @ 8.67 hrs, Volume= 28,151 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 324.33' @ 8.95 hrs Surf.Area= 4,159 sf Storage= 5,151 cf

Plug-Flow detention time= 129.4 min calculated for 28,151 cf (100% of inflow)
 Center-of-Mass det. time= 129.2 min (836.1 - 706.8)

Volume	Invert	Avail.Storage	Storage Description
#1	321.67'	4,521 cf	20.50'W x 122.96'L x 3.85'H Rock Z=2.0 14,262 cf Overall - 2,959 cf Embedded = 11,303 cf x 40.0% Voids
#2	322.42'	2,959 cf	ADS_StormTech DC-780 +Cap x 64 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 64 Chambers in 4 Rows
		7,480 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	321.44'	12.000" Round Culvert L= 35.0' Ke= 0.500 Inlet / Outlet Invert= 321.44' / 321.33' S= 0.0031 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	321.67'	3.250" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	323.30'	3.625" Vert. 5-yr Orifice C= 0.600
#4	Device 1	323.75'	2.500" Vert. 10-yr Orifice C= 0.600
#5	Device 1	325.35'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.68 cfs @ 8.67 hrs HW=324.30' TW=323.45' (Dynamic Tailwater)

- 1=Culvert (Passes 0.68 cfs of 3.49 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 0.26 cfs @ 4.44 fps)
- 3=5-yr Orifice (Orifice Controls 0.32 cfs @ 4.44 fps)
- 4=10-yr Orifice (Orifice Controls 0.11 cfs @ 3.23 fps)
- 5=Overflow (Controls 0.00 cfs)

Summary for Pond D4: ADS Storage

Inflow Area = 39,222 sf, 72.06% Impervious, Inflow Depth = 3.91" for 10-yr event
 Inflow = 0.83 cfs @ 7.97 hrs, Volume= 12,766 cf
 Outflow = 0.32 cfs @ 8.73 hrs, Volume= 12,766 cf, Atten= 61%, Lag= 45.4 min
 Primary = 0.32 cfs @ 8.73 hrs, Volume= 12,766 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 324.93' @ 8.83 hrs Surf.Area= 2,263 sf Storage= 2,519 cf

Plug-Flow detention time= 130.0 min calculated for 12,766 cf (100% of inflow)

EXHIBIT A.90

23-228 Oakdale Estates 4,5,6

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 10-yr Rainfall=4.60"

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Center-of-Mass det. time= 129.8 min (813.9 - 684.0)

Volume	Invert	Avail.Storage	Storage Description
#1	322.45'	2,459 cf	20.50'W x 64.48'L x 3.75'H Rock Z=2.0 7,628 cf Overall - 1,480 cf Embedded = 6,149 cf x 40.0% Voids
#2	323.20'	1,480 cf	ADS_StormTech DC-780 +Cap x 32 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 4 Rows
		3,939 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	319.44'	12.000" Round Culvert L= 27.0' Ke= 0.500 Inlet / Outlet Invert= 319.44' / 319.36' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	322.45'	2.125" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	324.15'	2.375" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.55'	2.000" Vert. 10-yr Orifice C= 0.600
#5	Device 1	326.15'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.32 cfs @ 8.73 hrs HW=324.93' TW=323.47' (Dynamic Tailwater)

- 1=Culvert (Passes 0.32 cfs of 4.56 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 0.14 cfs @ 5.81 fps)
- 3=5-yr Orifice (Orifice Controls 0.12 cfs @ 3.96 fps)
- 4=10-yr Orifice (Orifice Controls 0.06 cfs @ 2.61 fps)
- 5=Overflow (Controls 0.00 cfs)

Summary for Pond POND: Pond

Inflow Area = 619,458 sf, 49.32% Impervious, Inflow Depth = 3.41" for 10-yr event
 Inflow = 6.46 cfs @ 8.01 hrs, Volume= 176,034 cf
 Outflow = 4.45 cfs @ 9.02 hrs, Volume= 176,000 cf, Atten= 31%, Lag= 60.7 min
 Primary = 4.45 cfs @ 9.02 hrs, Volume= 176,000 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 323.51' @ 9.02 hrs Surf.Area= 6,827 sf Storage= 19,474 cf

Plug-Flow detention time= 92.8 min calculated for 175,975 cf (100% of inflow)
 Center-of-Mass det. time= 92.9 min (865.9 - 772.9)

Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	38,516 cf	Existing Pond (Prismatic) Listed below (Recalc)

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
320.00	4,334	0	0
320.50	4,671	2,251	2,251
321.00	5,014	2,421	4,673
321.50	5,364	2,595	7,267
322.00	5,719	2,771	10,038
322.50	6,081	2,950	12,988
323.00	6,448	3,132	16,120
323.50	6,823	3,318	19,438
324.00	7,202	3,506	22,944
324.50	7,590	3,698	26,642
325.00	7,981	3,893	30,535
326.00	7,981	7,981	38,516

Device	Routing	Invert	Outlet Devices
#1	Primary	319.79'	24.000" Round Culvert L= 50.0' Ke= 0.100 Inlet / Outlet Invert= 319.79' / 319.74' S= 0.0010 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	320.00'	7.000" Vert. 2-yr Orifice C= 0.600
#3	Device 1	322.42'	10.000" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.40'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.45 cfs @ 9.02 hrs HW=323.51' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Passes 4.45 cfs of 25.52 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 2.31 cfs @ 8.63 fps)
- 3=5-yr Orifice (Orifice Controls 2.15 cfs @ 3.94 fps)
- 4=Overflow (Controls 0.00 cfs)

Summary for Link POST: Post-Dev

Inflow Area = 619,458 sf, 49.32% Impervious, Inflow Depth = 3.41" for 10-yr event
 Inflow = 4.45 cfs @ 9.02 hrs, Volume= 176,000 cf
 Primary = 4.45 cfs @ 9.02 hrs, Volume= 176,000 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link PRE: Pre-Dev

Inflow Area = 619,458 sf, 0.00% Impervious, Inflow Depth = 2.22" for 10-yr event
 Inflow = 4.91 cfs @ 8.04 hrs, Volume= 114,487 cf
 Primary = 4.91 cfs @ 8.04 hrs, Volume= 114,487 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 25-yr Rainfall=5.20"

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Summary for Subcatchment 1S: Phase 1

Runoff = 5.03 cfs @ 8.00 hrs, Volume= 84,911 cf, Depth= 3.83"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-yr Rainfall=5.20"

Area (ac)	CN	Description
* 3.172	98	Impervious
* 2.640	74	Landscape
* 0.288	80	Landscape
6.100	87	Weighted Average
2.928	75	48.00% Pervious Area
3.172	98	52.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

Summary for Subcatchment B1: Basin 1

Runoff = 1.17 cfs @ 7.98 hrs, Volume= 18,039 cf, Depth= 4.11"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-yr Rainfall=5.20"

Area (sf)	CN	Description
* 14,939	98	Streets
* 9,009	98	Houses
* 2,340	98	Driveways
* 26,394	82	Pervious
52,682	90	Weighted Average
26,394	82	50.10% Pervious Area
26,288	98	49.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B2: Basin 2

Runoff = 0.51 cfs @ 7.98 hrs, Volume= 7,907 cf, Depth= 4.19"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-yr Rainfall=5.20"

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23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 25-yr Rainfall=5.20"

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	Area (sf)	CN	Description
*	7,992	98	Streets
*	3,465	98	Houses
*	900	98	Driveways
*	10,297	82	Pervious
	22,654	91	Weighted Average
	10,297	82	45.45% Pervious Area
	12,357	98	54.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B3: Basin 3

Runoff = 1.34 cfs @ 7.98 hrs, Volume= 20,669 cf, Depth= 4.04"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-yr Rainfall=5.20"

	Area (sf)	CN	Description
*	15,948	98	Streets
*	9,702	98	Houses
*	2,520	98	Driveways
*	33,214	82	Pervious
	61,384	89	Weighted Average
	33,214	82	54.11% Pervious Area
	28,170	98	45.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B4: Basin 4

Runoff = 1.34 cfs @ 7.99 hrs, Volume= 20,617 cf, Depth= 3.94"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-yr Rainfall=5.20"

	Area (sf)	CN	Description
*	9,458	98	Streets
*	12,474	98	Houses
*	3,240	98	Driveways
*	37,585	82	Pervious
	62,757	88	Weighted Average
	37,585	82	59.89% Pervious Area
	25,172	98	40.11% Impervious Area

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 25-yr Rainfall=5.20"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B5: Basin 5

Runoff = 0.60 cfs @ 7.98 hrs, Volume= 9,245 cf, Depth= 4.25"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-yr Rainfall=5.20"

Area (sf)	CN	Description
* 10,794	98	Streets
* 3,465	98	Houses
* 900	98	Driveways
* 10,957	82	Pervious
26,116	91	Weighted Average
10,957	82	41.96% Pervious Area
15,159	98	58.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B6: Basin 6

Runoff = 2.12 cfs @ 7.98 hrs, Volume= 32,665 cf, Depth= 4.10"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-yr Rainfall=5.20"

Area (sf)	CN	Description
* 11,641	98	Streets
* 24,948	98	Houses
* 6,480	98	Driveways
* 48,537	82	Pervious
* 4,044	98	Alley
95,650	90	Weighted Average
48,537	82	50.74% Pervious Area
47,113	98	49.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 25-yr Rainfall=5.20"

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Summary for Subcatchment B7: Basin 7

Runoff = 0.35 cfs @ 7.96 hrs, Volume= 5,420 cf, Depth= 4.96"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-yr Rainfall=5.20"

Area (sf)	CN	Description
* 13,106	98	Streets
13,106	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B8: Basin 8

Runoff = 0.34 cfs @ 8.00 hrs, Volume= 5,266 cf, Depth= 3.26"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-yr Rainfall=5.20"

Area (sf)	CN	Description
* 19,393	82	Pervious
19,393	82	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment X1: Phase 1 Existing Conditions

Runoff = 2.34 cfs @ 8.01 hrs, Volume= 52,102 cf, Depth= 2.35"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-yr Rainfall=5.20"

Area (sf)	CN	Description
* 239,580	71	Meadow, non-grazed, HSG C
* 26,136	78	Meadow, non-grazed, HSG D
265,716	72	Weighted Average
265,716	72	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					Direct Entry,

EXHIBIT A.96

23-228 Oakdale Estates 4,5,6

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Summary for Subcatchment X2: Phase 2 Existing Conditions

Runoff = 3.92 cfs @ 8.04 hrs, Volume= 87,686 cf, Depth= 2.97"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-yr Rainfall=5.20"

Area (sf)	CN	Description
* 353,742	79	Soil C/D (Phase 2)
353,742	79	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.8	100	0.0014	0.06		Sheet Flow, n= 0.150 P2= 3.10"
4.6	204	0.0112	0.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
33.4	304	Total			

Summary for Pond D1: ADS Storage

Inflow Area = 75,336 sf, 51.30% Impervious, Inflow Depth = 4.13" for 25-yr event

Inflow = 1.68 cfs @ 7.98 hrs, Volume= 25,946 cf

Outflow = 0.79 cfs @ 8.50 hrs, Volume= 25,946 cf, Atten= 53%, Lag= 31.3 min

Primary = 0.79 cfs @ 8.50 hrs, Volume= 25,946 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 326.87' @ 8.50 hrs Surf.Area= 3,411 sf Storage= 4,369 cf

Plug-Flow detention time= 101.5 min calculated for 25,946 cf (100% of inflow)

Center-of-Mass det. time= 101.4 min (801.9 - 700.5)

Volume	Invert	Avail.Storage	Storage Description
#1	323.97'	3,434 cf	20.50'W x 94.72'L x 3.75'H Rock Z=2.0 10,803 cf Overall - 2,219 cf Embedded = 8,584 cf x 40.0% Voids
#2	324.72'	2,219 cf	ADS_StormTech DC-780 +Cap x 48 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 48 Chambers in 4 Rows
		5,653 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	323.77'	12.000" Round Culvert L= 38.0' Ke= 0.500 Inlet / Outlet Invert= 323.77' / 322.02' S= 0.0461 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	323.97'	2.875" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	325.66'	3.500" Vert. 5-yr Orifice C= 0.600
#4	Device 1	326.09'	2.000" Vert. 10-yr Orifice C= 0.600

EXHIBIT A.97

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#5 Device 1 327.67' **24.000" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.79 cfs @ 8.50 hrs HW=326.87' TW=323.82' (Dynamic Tailwater)

- ↑ 1=Culvert (Passes 0.79 cfs of 6.09 cfs potential flow)
- ↑ 2=2-yr Orifice (Orifice Controls 0.37 cfs @ 8.20 fps)
- ↑ 3=5-yr Orifice (Orifice Controls 0.33 cfs @ 4.96 fps)
- ↑ 4=10-yr Orifice (Orifice Controls 0.09 cfs @ 4.01 fps)
- ↑ 5=Overflow (Controls 0.00 cfs)

Summary for Pond D2: ADS Storage

Inflow Area = 124,141 sf, 42.97% Impervious, Inflow Depth = 3.99" for 25-yr event
 Inflow = 2.68 cfs @ 7.99 hrs, Volume= 41,286 cf
 Outflow = 1.14 cfs @ 8.56 hrs, Volume= 41,274 cf, Atten= 58%, Lag= 34.8 min
 Primary = 1.14 cfs @ 8.56 hrs, Volume= 41,274 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 325.39' @ 8.73 hrs Surf.Area= 5,124 sf Storage= 6,918 cf

Plug-Flow detention time= 100.3 min calculated for 41,268 cf (100% of inflow)
 Center-of-Mass det. time= 100.1 min (809.5 - 709.4)

Volume	Invert	Avail.Storage	Storage Description
#1	322.39'	5,284 cf	20.50'W x 145.64'L x 3.85'H Rock Z=2.0 16,724 cf Overall - 3,514 cf Embedded = 13,210 cf x 40.0% Voids
#2	323.15'	3,514 cf	ADS_StormTech DC-780 +Cap x 76 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 76 Chambers in 4 Rows
		8,798 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	322.30'	24.000" Round 24" Culvert L= 216.0' Ke= 0.500 Inlet / Outlet Invert= 322.30' / 322.02' S= 0.0013 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	322.40'	3.750" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	324.02'	4.000" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.50'	3.125" Vert. 10-yr Orifice C= 0.600
#5	Device 1	326.10'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.14 cfs @ 8.56 hrs HW=325.38' TW=323.85' (Dynamic Tailwater)

- ↑ 1=24" Culvert (Passes 1.14 cfs of 14.36 cfs potential flow)
- ↑ 2=2-yr Orifice (Orifice Controls 0.46 cfs @ 5.95 fps)
- ↑ 3=5-yr Orifice (Orifice Controls 0.46 cfs @ 5.26 fps)
- ↑ 4=10-yr Orifice (Orifice Controls 0.22 cfs @ 4.17 fps)
- ↑ 5=Overflow (Controls 0.00 cfs)

EXHIBIT A.98

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Summary for Pond D3: ADS Storage

Inflow Area = 95,650 sf, 49.26% Impervious, Inflow Depth = 4.10" for 25-yr event
 Inflow = 2.12 cfs @ 7.98 hrs, Volume= 32,665 cf
 Outflow = 0.77 cfs @ 8.57 hrs, Volume= 32,665 cf, Atten= 64%, Lag= 35.3 min
 Primary = 0.77 cfs @ 8.57 hrs, Volume= 32,665 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 324.88' @ 9.00 hrs Surf.Area= 4,530 sf Storage= 6,272 cf

Plug-Flow detention time= 130.9 min calculated for 32,660 cf (100% of inflow)
 Center-of-Mass det. time= 130.9 min (833.5 - 702.6)

Volume	Invert	Avail.Storage	Storage Description
#1	321.67'	4,521 cf	20.50'W x 122.96'L x 3.85'H Rock Z=2.0 14,262 cf Overall - 2,959 cf Embedded = 11,303 cf x 40.0% Voids
#2	322.42'	2,959 cf	ADS_StormTech DC-780 +Cap x 64 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 64 Chambers in 4 Rows
		7,480 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	321.44'	12.000" Round Culvert L= 35.0' Ke= 0.500 Inlet / Outlet Invert= 321.44' / 321.33' S= 0.0031 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	321.67'	3.250" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	323.30'	3.625" Vert. 5-yr Orifice C= 0.600
#4	Device 1	323.75'	2.500" Vert. 10-yr Orifice C= 0.600
#5	Device 1	325.35'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.76 cfs @ 8.57 hrs HW=324.80' TW=323.86' (Dynamic Tailwater)

- 1=Culvert (Passes 0.76 cfs of 3.68 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 0.27 cfs @ 4.68 fps)
- 3=5-yr Orifice (Orifice Controls 0.34 cfs @ 4.68 fps)
- 4=10-yr Orifice (Orifice Controls 0.16 cfs @ 4.68 fps)
- 5=Overflow (Controls 0.00 cfs)

Summary for Pond D4: ADS Storage

Inflow Area = 39,222 sf, 72.06% Impervious, Inflow Depth = 4.49" for 25-yr event
 Inflow = 0.95 cfs @ 7.97 hrs, Volume= 14,665 cf
 Outflow = 0.38 cfs @ 8.66 hrs, Volume= 14,665 cf, Atten= 61%, Lag= 41.3 min
 Primary = 0.38 cfs @ 8.66 hrs, Volume= 14,665 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 325.29' @ 8.80 hrs Surf.Area= 2,415 sf Storage= 2,948 cf

Plug-Flow detention time= 135.0 min calculated for 14,665 cf (100% of inflow)

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Center-of-Mass det. time= 134.8 min (815.7 - 680.9)

Volume	Invert	Avail.Storage	Storage Description
#1	322.45'	2,459 cf	20.50'W x 64.48'L x 3.75'H Rock Z=2.0 7,628 cf Overall - 1,480 cf Embedded = 6,149 cf x 40.0% Voids
#2	323.20'	1,480 cf	ADS_StormTech DC-780 +Cap x 32 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 4 Rows
		3,939 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	319.44'	12.000" Round Culvert L= 27.0' Ke= 0.500 Inlet / Outlet Invert= 319.44' / 319.36' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	322.45'	2.125" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	324.15'	2.375" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.55'	2.000" Vert. 10-yr Orifice C= 0.600
#5	Device 1	326.15'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.37 cfs @ 8.66 hrs HW=325.28' TW=323.89' (Dynamic Tailwater)

- 1=Culvert (Passes 0.37 cfs of 4.46 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 0.14 cfs @ 5.68 fps)
- 3=5-yr Orifice (Orifice Controls 0.15 cfs @ 4.89 fps)
- 4=10-yr Orifice (Orifice Controls 0.08 cfs @ 3.88 fps)
- 5=Overflow (Controls 0.00 cfs)

Summary for Pond POND: Pond

Inflow Area = 619,458 sf, 49.32% Impervious, Inflow Depth = 3.97" for 25-yr event
 Inflow = 7.93 cfs @ 8.01 hrs, Volume= 204,726 cf
 Outflow = 5.22 cfs @ 9.01 hrs, Volume= 204,692 cf, Atten= 34%, Lag= 59.9 min
 Primary = 5.22 cfs @ 9.01 hrs, Volume= 204,692 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 323.94' @ 9.01 hrs Surf.Area= 7,159 sf Storage= 22,541 cf

Plug-Flow detention time= 90.3 min calculated for 204,692 cf (100% of inflow)
 Center-of-Mass det. time= 90.2 min (861.3 - 771.1)

Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	38,516 cf	Existing Pond (Prismatic) Listed below (Recalc)

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
320.00	4,334	0	0
320.50	4,671	2,251	2,251
321.00	5,014	2,421	4,673
321.50	5,364	2,595	7,267
322.00	5,719	2,771	10,038
322.50	6,081	2,950	12,988
323.00	6,448	3,132	16,120
323.50	6,823	3,318	19,438
324.00	7,202	3,506	22,944
324.50	7,590	3,698	26,642
325.00	7,981	3,893	30,535
326.00	7,981	7,981	38,516

Device	Routing	Invert	Outlet Devices
#1	Primary	319.79'	24.000" Round Culvert L= 50.0' Ke= 0.100 Inlet / Outlet Invert= 319.79' / 319.74' S= 0.0010 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	320.00'	7.000" Vert. 2-yr Orifice C= 0.600
#3	Device 1	322.42'	10.000" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.40'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.22 cfs @ 9.01 hrs HW=323.94' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Passes 5.22 cfs of 28.51 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 2.46 cfs @ 9.20 fps)
- 3=5-yr Orifice (Orifice Controls 2.76 cfs @ 5.07 fps)
- 4=Overflow (Controls 0.00 cfs)

Summary for Link POST: Post-Dev

Inflow Area = 619,458 sf, 49.32% Impervious, Inflow Depth = 3.97" for 25-yr event
 Inflow = 5.22 cfs @ 9.01 hrs, Volume= 204,692 cf
 Primary = 5.22 cfs @ 9.01 hrs, Volume= 204,692 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link PRE: Pre-Dev

Inflow Area = 619,458 sf, 0.00% Impervious, Inflow Depth = 2.71" for 25-yr event
 Inflow = 6.25 cfs @ 8.02 hrs, Volume= 139,789 cf
 Primary = 6.25 cfs @ 8.02 hrs, Volume= 139,789 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

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Summary for Subcatchment 1S: Phase 1

Runoff = 5.66 cfs @ 8.00 hrs, Volume= 95,078 cf, Depth= 4.29"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=5.70"

Area (ac)	CN	Description
* 3.172	98	Impervious
* 2.640	74	Landscape
* 0.288	80	Landscape
6.100	87	Weighted Average
2.928	75	48.00% Pervious Area
3.172	98	52.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

Summary for Subcatchment B1: Basin 1

Runoff = 1.31 cfs @ 7.98 hrs, Volume= 20,131 cf, Depth= 4.59"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=5.70"

Area (sf)	CN	Description
* 14,939	98	Streets
* 9,009	98	Houses
* 2,340	98	Driveways
* 26,394	82	Pervious
52,682	90	Weighted Average
26,394	82	50.10% Pervious Area
26,288	98	49.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B2: Basin 2

Runoff = 0.57 cfs @ 7.98 hrs, Volume= 8,810 cf, Depth= 4.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=5.70"

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	Area (sf)	CN	Description
*	7,992	98	Streets
*	3,465	98	Houses
*	900	98	Driveways
*	10,297	82	Pervious
	22,654	91	Weighted Average
	10,297	82	45.45% Pervious Area
	12,357	98	54.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B3: Basin 3

Runoff = 1.50 cfs @ 7.98 hrs, Volume= 23,097 cf, Depth= 4.52"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=5.70"

	Area (sf)	CN	Description
*	15,948	98	Streets
*	9,702	98	Houses
*	2,520	98	Driveways
*	33,214	82	Pervious
	61,384	89	Weighted Average
	33,214	82	54.11% Pervious Area
	28,170	98	45.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B4: Basin 4

Runoff = 1.51 cfs @ 7.98 hrs, Volume= 23,085 cf, Depth= 4.41"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=5.70"

	Area (sf)	CN	Description
*	9,458	98	Streets
*	12,474	98	Houses
*	3,240	98	Driveways
*	37,585	82	Pervious
	62,757	88	Weighted Average
	37,585	82	59.89% Pervious Area
	25,172	98	40.11% Impervious Area

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B5: Basin 5

Runoff = 0.67 cfs @ 7.98 hrs, Volume= 10,290 cf, Depth= 4.73"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=5.70"

Area (sf)	CN	Description
* 10,794	98	Streets
* 3,465	98	Houses
* 900	98	Driveways
* 10,957	82	Pervious
26,116	91	Weighted Average
10,957	82	41.96% Pervious Area
15,159	98	58.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B6: Basin 6

Runoff = 2.37 cfs @ 7.98 hrs, Volume= 36,460 cf, Depth= 4.57"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=5.70"

Area (sf)	CN	Description
* 11,641	98	Streets
* 24,948	98	Houses
* 6,480	98	Driveways
* 48,537	82	Pervious
* 4,044	98	Alley
95,650	90	Weighted Average
48,537	82	50.74% Pervious Area
47,113	98	49.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

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Summary for Subcatchment B7: Basin 7

Runoff = 0.38 cfs @ 7.96 hrs, Volume= 5,966 cf, Depth= 5.46"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=5.70"

	Area (sf)	CN	Description
*	13,106	98	Streets
	13,106	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B8: Basin 8

Runoff = 0.40 cfs @ 8.00 hrs, Volume= 5,999 cf, Depth= 3.71"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=5.70"

	Area (sf)	CN	Description
*	19,393	82	Pervious
	19,393	82	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment X1: Phase 1 Existing Conditions

Runoff = 2.83 cfs @ 8.01 hrs, Volume= 60,888 cf, Depth= 2.75"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=5.70"

	Area (sf)	CN	Description
*	239,580	71	Meadow, non-grazed, HSG C
*	26,136	78	Meadow, non-grazed, HSG D
	265,716	72	Weighted Average
	265,716	72	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					Direct Entry,

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 50-yr Rainfall=5.70"

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Summary for Subcatchment X2: Phase 2 Existing Conditions

Runoff = 4.58 cfs @ 8.03 hrs, Volume= 100,609 cf, Depth= 3.41"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr Rainfall=5.70"

Area (sf)	CN	Description
* 353,742	79	Soil C/D (Phase 2)
353,742	79	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.8	100	0.0014	0.06		Sheet Flow, n= 0.150 P2= 3.10"
4.6	204	0.0112	0.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
33.4	304	Total			

Summary for Pond D1: ADS Storage

Inflow Area = 75,336 sf, 51.30% Impervious, Inflow Depth = 4.61" for 50-yr event

Inflow = 1.88 cfs @ 7.98 hrs, Volume= 28,941 cf

Outflow = 0.88 cfs @ 8.44 hrs, Volume= 28,941 cf, Atten= 53%, Lag= 27.3 min

Primary = 0.88 cfs @ 8.44 hrs, Volume= 28,941 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 327.26' @ 8.51 hrs Surf.Area= 3,629 sf Storage= 4,955 cf

Plug-Flow detention time= 103.1 min calculated for 28,937 cf (100% of inflow)

Center-of-Mass det. time= 103.1 min (800.6 - 697.5)

Volume	Invert	Avail.Storage	Storage Description
#1	323.97'	3,434 cf	20.50'W x 94.72'L x 3.75'H Rock Z=2.0 10,803 cf Overall - 2,219 cf Embedded = 8,584 cf x 40.0% Voids
#2	324.72'	2,219 cf	ADS_StormTech DC-780 +Cap x 48 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 48 Chambers in 4 Rows
		5,653 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	323.77'	12.000" Round Culvert L= 38.0' Ke= 0.500 Inlet / Outlet Invert= 323.77' / 322.02' S= 0.0461 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	323.97'	2.875" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	325.66'	3.500" Vert. 5-yr Orifice C= 0.600
#4	Device 1	326.09'	2.000" Vert. 10-yr Orifice C= 0.600

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#5 Device 1 327.67' **24.000" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.88 cfs @ 8.44 hrs HW=327.25' TW=324.15' (Dynamic Tailwater)

- ↑ 1=Culvert (Passes 0.88 cfs of 6.53 cfs potential flow)
- ↑ 2=2-yr Orifice (Orifice Controls 0.38 cfs @ 8.48 fps)
- ↑ 3=5-yr Orifice (Orifice Controls 0.39 cfs @ 5.79 fps)
- ↑ 4=10-yr Orifice (Orifice Controls 0.11 cfs @ 5.00 fps)
- ↑ 5=Overflow (Controls 0.00 cfs)

Summary for Pond D2: ADS Storage

Inflow Area = 124,141 sf, 42.97% Impervious, Inflow Depth = 4.46" for 50-yr event
 Inflow = 3.01 cfs @ 7.98 hrs, Volume= 46,182 cf
 Outflow = 1.29 cfs @ 8.50 hrs, Volume= 46,170 cf, Atten= 57%, Lag= 30.7 min
 Primary = 1.29 cfs @ 8.50 hrs, Volume= 46,170 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 325.85' @ 8.72 hrs Surf.Area= 5,475 sf Storage= 7,916 cf

Plug-Flow detention time= 103.1 min calculated for 46,163 cf (100% of inflow)
 Center-of-Mass det. time= 102.9 min (808.8 - 705.9)

Volume	Invert	Avail.Storage	Storage Description
#1	322.39'	5,284 cf	20.50'W x 145.64'L x 3.85'H Rock Z=2.0 16,724 cf Overall - 3,514 cf Embedded = 13,210 cf x 40.0% Voids
#2	323.15'	3,514 cf	ADS_StormTech DC-780 +Cap x 76 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 76 Chambers in 4 Rows
		8,798 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	322.30'	24.000" Round 24" Culvert L= 216.0' Ke= 0.500 Inlet / Outlet Invert= 322.30' / 322.02' S= 0.0013 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	322.40'	3.750" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	324.02'	4.000" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.50'	3.125" Vert. 10-yr Orifice C= 0.600
#5	Device 1	326.10'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.29 cfs @ 8.50 hrs HW=325.82' TW=324.19' (Dynamic Tailwater)

- ↑ 1=24" Culvert (Passes 1.29 cfs of 15.75 cfs potential flow)
- ↑ 2=2-yr Orifice (Orifice Controls 0.47 cfs @ 6.16 fps)
- ↑ 3=5-yr Orifice (Orifice Controls 0.54 cfs @ 6.16 fps)
- ↑ 4=10-yr Orifice (Orifice Controls 0.28 cfs @ 5.26 fps)
- ↑ 5=Overflow (Controls 0.00 cfs)

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Summary for Pond D3: ADS Storage

Inflow Area = 95,650 sf, 49.26% Impervious, Inflow Depth = 4.57" for 50-yr event
 Inflow = 2.37 cfs @ 7.98 hrs, Volume= 36,460 cf
 Outflow = 0.93 cfs @ 8.82 hrs, Volume= 36,460 cf, Atten= 61%, Lag= 50.3 min
 Primary = 0.93 cfs @ 8.82 hrs, Volume= 36,460 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 325.38' @ 8.84 hrs Surf.Area= 4,872 sf Storage= 7,210 cf

Plug-Flow detention time= 131.4 min calculated for 36,455 cf (100% of inflow)
 Center-of-Mass det. time= 131.5 min (831.0 - 699.5)

Volume	Invert	Avail.Storage	Storage Description
#1	321.67'	4,521 cf	20.50'W x 122.96'L x 3.85'H Rock Z=2.0 14,262 cf Overall - 2,959 cf Embedded = 11,303 cf x 40.0% Voids
#2	322.42'	2,959 cf	ADS_StormTech DC-780 +Cap x 64 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 64 Chambers in 4 Rows
		7,480 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	321.44'	12.000" Round Culvert L= 35.0' Ke= 0.500 Inlet / Outlet Invert= 321.44' / 321.33' S= 0.0031 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	321.67'	3.250" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	323.30'	3.625" Vert. 5-yr Orifice C= 0.600
#4	Device 1	323.75'	2.500" Vert. 10-yr Orifice C= 0.600
#5	Device 1	325.35'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.93 cfs @ 8.82 hrs HW=325.38' TW=324.31' (Dynamic Tailwater)

- 1=Culvert (Passes 0.93 cfs of 3.91 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 0.29 cfs @ 4.98 fps)
- 3=5-yr Orifice (Orifice Controls 0.36 cfs @ 4.98 fps)
- 4=10-yr Orifice (Orifice Controls 0.17 cfs @ 4.98 fps)
- 5=Overflow (Weir Controls 0.12 cfs @ 0.59 fps)

Summary for Pond D4: ADS Storage

Inflow Area = 39,222 sf, 72.06% Impervious, Inflow Depth = 4.97" for 50-yr event
 Inflow = 1.05 cfs @ 7.97 hrs, Volume= 16,255 cf
 Outflow = 0.42 cfs @ 8.62 hrs, Volume= 16,255 cf, Atten= 60%, Lag= 38.8 min
 Primary = 0.42 cfs @ 8.62 hrs, Volume= 16,255 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 325.63' @ 8.81 hrs Surf.Area= 2,565 sf Storage= 3,326 cf

Plug-Flow detention time= 137.3 min calculated for 16,253 cf (100% of inflow)

EXHIBIT A.108

23-228 Oakdale Estates 4,5,6

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr 50-yr Rainfall=5.70"

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Center-of-Mass det. time= 137.3 min (816.0 - 678.6)

Volume	Invert	Avail.Storage	Storage Description
#1	322.45'	2,459 cf	20.50'W x 64.48'L x 3.75'H Rock Z=2.0 7,628 cf Overall - 1,480 cf Embedded = 6,149 cf x 40.0% Voids
#2	323.20'	1,480 cf	ADS_StormTech DC-780 +Cap x 32 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 4 Rows
		3,939 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	319.44'	12.000" Round Culvert L= 27.0' Ke= 0.500 Inlet / Outlet Invert= 319.44' / 319.36' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	322.45'	2.125" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	324.15'	2.375" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.55'	2.000" Vert. 10-yr Orifice C= 0.600
#5	Device 1	326.15'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.42 cfs @ 8.62 hrs HW=325.62' TW=324.25' (Dynamic Tailwater)

- 1=Culvert (Passes 0.42 cfs of 4.42 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 0.14 cfs @ 5.63 fps)
- 3=5-yr Orifice (Orifice Controls 0.17 cfs @ 5.63 fps)
- 4=10-yr Orifice (Orifice Controls 0.10 cfs @ 4.78 fps)
- 5=Overflow (Controls 0.00 cfs)

Summary for Pond POND: Pond

Inflow Area = 619,458 sf, 49.32% Impervious, Inflow Depth = 4.43" for 50-yr event
 Inflow = 9.02 cfs @ 8.01 hrs, Volume= 228,902 cf
 Outflow = 5.81 cfs @ 9.03 hrs, Volume= 228,867 cf, Atten= 36%, Lag= 61.3 min
 Primary = 5.81 cfs @ 9.03 hrs, Volume= 228,867 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 324.34' @ 9.03 hrs Surf.Area= 7,464 sf Storage= 25,421 cf

Plug-Flow detention time= 88.1 min calculated for 228,867 cf (100% of inflow)
 Center-of-Mass det. time= 87.9 min (857.1 - 769.1)

Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	38,516 cf	Existing Pond (Prismatic) Listed below (Recalc)

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
320.00	4,334	0	0
320.50	4,671	2,251	2,251
321.00	5,014	2,421	4,673
321.50	5,364	2,595	7,267
322.00	5,719	2,771	10,038
322.50	6,081	2,950	12,988
323.00	6,448	3,132	16,120
323.50	6,823	3,318	19,438
324.00	7,202	3,506	22,944
324.50	7,590	3,698	26,642
325.00	7,981	3,893	30,535
326.00	7,981	7,981	38,516

Device	Routing	Invert	Outlet Devices
#1	Primary	319.79'	24.000" Round Culvert L= 50.0' Ke= 0.100 Inlet / Outlet Invert= 319.79' / 319.74' S= 0.0010 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	320.00'	7.000" Vert. 2-yr Orifice C= 0.600
#3	Device 1	322.42'	10.000" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.40'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.81 cfs @ 9.03 hrs HW=324.34' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Passes 5.81 cfs of 30.96 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 2.59 cfs @ 9.69 fps)
- 3=5-yr Orifice (Orifice Controls 3.22 cfs @ 5.90 fps)
- 4=Overflow (Controls 0.00 cfs)

Summary for Link POST: Post-Dev

Inflow Area = 619,458 sf, 49.32% Impervious, Inflow Depth = 4.43" for 50-yr event
 Inflow = 5.81 cfs @ 9.03 hrs, Volume= 228,867 cf
 Primary = 5.81 cfs @ 9.03 hrs, Volume= 228,867 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link PRE: Pre-Dev

Inflow Area = 619,458 sf, 0.00% Impervious, Inflow Depth = 3.13" for 50-yr event
 Inflow = 7.41 cfs @ 8.01 hrs, Volume= 161,497 cf
 Primary = 7.41 cfs @ 8.01 hrs, Volume= 161,497 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

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Summary for Subcatchment 1S: Phase 1

Runoff = 6.43 cfs @ 8.00 hrs, Volume= 107,411 cf, Depth= 4.85"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=6.30"

Area (ac)	CN	Description
* 3.172	98	Impervious
* 2.640	74	Landscape
* 0.288	80	Landscape
6.100	87	Weighted Average
2.928	75	48.00% Pervious Area
3.172	98	52.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

Summary for Subcatchment B1: Basin 1

Runoff = 1.48 cfs @ 7.98 hrs, Volume= 22,657 cf, Depth= 5.16"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=6.30"

Area (sf)	CN	Description
* 14,939	98	Streets
* 9,009	98	Houses
* 2,340	98	Driveways
* 26,394	82	Pervious
52,682	90	Weighted Average
26,394	82	50.10% Pervious Area
26,288	98	49.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B2: Basin 2

Runoff = 0.64 cfs @ 7.98 hrs, Volume= 9,901 cf, Depth= 5.24"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=6.30"

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet t Type IA 24-hr 100-yr Rainfall=6.30"

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	Area (sf)	CN	Description
*	7,992	98	Streets
*	3,465	98	Houses
*	900	98	Driveways
*	10,297	82	Pervious
	22,654	91	Weighted Average
	10,297	82	45.45% Pervious Area
	12,357	98	54.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B3: Basin 3

Runoff = 1.70 cfs @ 7.98 hrs, Volume= 26,031 cf, Depth= 5.09"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=6.30"

	Area (sf)	CN	Description
*	15,948	98	Streets
*	9,702	98	Houses
*	2,520	98	Driveways
*	33,214	82	Pervious
	61,384	89	Weighted Average
	33,214	82	54.11% Pervious Area
	28,170	98	45.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B4: Basin 4

Runoff = 1.71 cfs @ 7.98 hrs, Volume= 26,070 cf, Depth= 4.98"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=6.30"

	Area (sf)	CN	Description
*	9,458	98	Streets
*	12,474	98	Houses
*	3,240	98	Driveways
*	37,585	82	Pervious
	62,757	88	Weighted Average
	37,585	82	59.89% Pervious Area
	25,172	98	40.11% Impervious Area

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B5: Basin 5

Runoff = 0.75 cfs @ 7.97 hrs, Volume= 11,551 cf, Depth= 5.31"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=6.30"

Area (sf)	CN	Description
* 10,794	98	Streets
* 3,465	98	Houses
* 900	98	Driveways
* 10,957	82	Pervious
26,116	91	Weighted Average
10,957	82	41.96% Pervious Area
15,159	98	58.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B6: Basin 6

Runoff = 2.68 cfs @ 7.98 hrs, Volume= 41,045 cf, Depth= 5.15"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=6.30"

Area (sf)	CN	Description
* 11,641	98	Streets
* 24,948	98	Houses
* 6,480	98	Driveways
* 48,537	82	Pervious
* 4,044	98	Alley
95,650	90	Weighted Average
48,537	82	50.74% Pervious Area
47,113	98	49.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

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Summary for Subcatchment B7: Basin 7

Runoff = 0.43 cfs @ 7.96 hrs, Volume= 6,620 cf, Depth= 6.06"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=6.30"

	Area (sf)	CN	Description
*	13,106	98	Streets
	13,106	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B8: Basin 8

Runoff = 0.46 cfs @ 8.00 hrs, Volume= 6,891 cf, Depth= 4.26"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=6.30"

	Area (sf)	CN	Description
*	19,393	82	Pervious
	19,393	82	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment X1: Phase 1 Existing Conditions

Runoff = 3.44 cfs @ 8.01 hrs, Volume= 71,750 cf, Depth= 3.24"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=6.30"

	Area (sf)	CN	Description
*	239,580	71	Meadow, non-grazed, HSG C
*	26,136	78	Meadow, non-grazed, HSG D
	265,716	72	Weighted Average
	265,716	72	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					Direct Entry,

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Summary for Subcatchment X2: Phase 2 Existing Conditions

Runoff = 5.40 cfs @ 8.02 hrs, Volume= 116,401 cf, Depth= 3.95"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr Rainfall=6.30"

Area (sf)	CN	Description
* 353,742	79	Soil C/D (Phase 2)
353,742	79	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.8	100	0.0014	0.06		Sheet Flow, n= 0.150 P2= 3.10"
4.6	204	0.0112	0.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
33.4	304	Total			

Summary for Pond D1: ADS Storage

Inflow Area = 75,336 sf, 51.30% Impervious, Inflow Depth = 5.19" for 100-yr event
 Inflow = 2.12 cfs @ 7.98 hrs, Volume= 32,558 cf
 Outflow = 1.08 cfs @ 8.43 hrs, Volume= 32,558 cf, Atten= 49%, Lag= 27.0 min
 Primary = 1.08 cfs @ 8.43 hrs, Volume= 32,558 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 327.70' @ 8.43 hrs Surf.Area= 3,886 sf Storage= 5,628 cf

Plug-Flow detention time= 103.6 min calculated for 32,558 cf (100% of inflow)
 Center-of-Mass det. time= 103.4 min (797.7 - 694.3)

Volume	Invert	Avail.Storage	Storage Description
#1	323.97'	3,434 cf	20.50'W x 94.72'L x 3.75'H Rock Z=2.0 10,803 cf Overall - 2,219 cf Embedded = 8,584 cf x 40.0% Voids
#2	324.72'	2,219 cf	ADS_StormTech DC-780 +Cap x 48 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 48 Chambers in 4 Rows
		5,653 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	323.77'	12.000" Round Culvert L= 38.0' Ke= 0.500 Inlet / Outlet Invert= 323.77' / 322.02' S= 0.0461 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	323.97'	2.875" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	325.66'	3.500" Vert. 5-yr Orifice C= 0.600
#4	Device 1	326.09'	2.000" Vert. 10-yr Orifice C= 0.600

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#5 Device 1 327.67' **24.000" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.08 cfs @ 8.43 hrs HW=327.70' TW=324.61' (Dynamic Tailwater)

- 1=Culvert (Passes 1.08 cfs of 6.65 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 0.38 cfs @ 8.46 fps)
- 3=5-yr Orifice (Orifice Controls 0.44 cfs @ 6.63 fps)
- 4=10-yr Orifice (Orifice Controls 0.13 cfs @ 5.96 fps)
- 5=Overflow (Weir Controls 0.13 cfs @ 0.60 fps)

Summary for Pond D2: ADS Storage

Inflow Area = 124,141 sf, 42.97% Impervious, Inflow Depth = 5.04" for 100-yr event
 Inflow = 3.40 cfs @ 7.98 hrs, Volume= 52,102 cf
 Outflow = 2.00 cfs @ 8.33 hrs, Volume= 52,090 cf, Atten= 41%, Lag= 20.7 min
 Primary = 2.00 cfs @ 8.33 hrs, Volume= 52,090 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 326.20' @ 8.34 hrs Surf.Area= 5,750 sf Storage= 8,707 cf

Plug-Flow detention time= 103.1 min calculated for 52,082 cf (100% of inflow)
 Center-of-Mass det. time= 103.0 min (805.2 - 702.2)

Volume	Invert	Avail.Storage	Storage Description
#1	322.39'	5,284 cf	20.50'W x 145.64'L x 3.85'H Rock Z=2.0 16,724 cf Overall - 3,514 cf Embedded = 13,210 cf x 40.0% Voids
#2	323.15'	3,514 cf	ADS_StormTech DC-780 +Cap x 76 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 76 Chambers in 4 Rows
		8,798 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	322.30'	24.000" Round 24" Culvert L= 216.0' Ke= 0.500 Inlet / Outlet Invert= 322.30' / 322.02' S= 0.0013 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	322.40'	3.750" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	324.02'	4.000" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.50'	3.125" Vert. 10-yr Orifice C= 0.600
#5	Device 1	326.10'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.99 cfs @ 8.33 hrs HW=326.20' TW=324.53' (Dynamic Tailwater)

- 1=24" Culvert (Passes 1.99 cfs of 15.90 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 0.48 cfs @ 6.22 fps)
- 3=5-yr Orifice (Orifice Controls 0.54 cfs @ 6.22 fps)
- 4=10-yr Orifice (Orifice Controls 0.32 cfs @ 6.03 fps)
- 5=Overflow (Weir Controls 0.65 cfs @ 1.04 fps)

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Summary for Pond D3: ADS Storage

Inflow Area = 95,650 sf, 49.26% Impervious, Inflow Depth = 5.15" for 100-yr event
 Inflow = 2.68 cfs @ 7.98 hrs, Volume= 41,045 cf
 Outflow = 1.74 cfs @ 8.25 hrs, Volume= 41,045 cf, Atten= 35%, Lag= 16.5 min
 Primary = 1.74 cfs @ 8.25 hrs, Volume= 41,045 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 325.48' @ 8.27 hrs Surf.Area= 4,937 sf Storage= 7,394 cf

Plug-Flow detention time= 127.3 min calculated for 41,045 cf (100% of inflow)
 Center-of-Mass det. time= 127.1 min (823.3 - 696.2)

Volume	Invert	Avail.Storage	Storage Description
#1	321.67'	4,521 cf	20.50'W x 122.96'L x 3.85'H Rock Z=2.0 14,262 cf Overall - 2,959 cf Embedded = 11,303 cf x 40.0% Voids
#2	322.42'	2,959 cf	ADS_StormTech DC-780 +Cap x 64 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 64 Chambers in 4 Rows
		7,480 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	321.44'	12.000" Round Culvert L= 35.0' Ke= 0.500 Inlet / Outlet Invert= 321.44' / 321.33' S= 0.0031 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	321.67'	3.250" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	323.30'	3.625" Vert. 5-yr Orifice C= 0.600
#4	Device 1	323.75'	2.500" Vert. 10-yr Orifice C= 0.600
#5	Device 1	325.35'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.73 cfs @ 8.25 hrs HW=325.48' TW=324.41' (Dynamic Tailwater)

- 1=Culvert (Passes 1.73 cfs of 3.91 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 0.29 cfs @ 4.97 fps)
- 3=5-yr Orifice (Orifice Controls 0.36 cfs @ 4.97 fps)
- 4=10-yr Orifice (Orifice Controls 0.17 cfs @ 4.97 fps)
- 5=Overflow (Weir Controls 0.92 cfs @ 1.16 fps)

Summary for Pond D4: ADS Storage

Inflow Area = 39,222 sf, 72.06% Impervious, Inflow Depth = 5.56" for 100-yr event
 Inflow = 1.18 cfs @ 7.97 hrs, Volume= 18,171 cf
 Outflow = 0.46 cfs @ 9.01 hrs, Volume= 18,171 cf, Atten= 61%, Lag= 62.5 min
 Primary = 0.46 cfs @ 9.01 hrs, Volume= 18,171 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 326.09' @ 8.82 hrs Surf.Area= 2,770 sf Storage= 3,812 cf

Plug-Flow detention time= 138.7 min calculated for 18,171 cf (100% of inflow)

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23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet t Type IA 24-hr 100-yr Rainfall=6.30"

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Center-of-Mass det. time= 138.5 min (814.7 - 676.2)

Volume	Invert	Avail.Storage	Storage Description
#1	322.45'	2,459 cf	20.50'W x 64.48'L x 3.75'H Rock Z=2.0 7,628 cf Overall - 1,480 cf Embedded = 6,149 cf x 40.0% Voids
#2	323.20'	1,480 cf	ADS_StormTech DC-780 +Cap x 32 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 4 Rows
		3,939 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	319.44'	12.000" Round Culvert L= 27.0' Ke= 0.500 Inlet / Outlet Invert= 319.44' / 319.36' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	322.45'	2.125" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	324.15'	2.375" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.55'	2.000" Vert. 10-yr Orifice C= 0.600
#5	Device 1	326.15'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.46 cfs @ 9.01 hrs HW=326.07' TW=324.53' (Dynamic Tailwater)

- 1=Culvert (Passes 0.46 cfs of 4.70 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 0.15 cfs @ 5.98 fps)
- 3=5-yr Orifice (Orifice Controls 0.18 cfs @ 5.98 fps)
- 4=10-yr Orifice (Orifice Controls 0.13 cfs @ 5.77 fps)
- 5=Overflow (Controls 0.00 cfs)

Summary for Pond POND: Pond

Inflow Area = 619,458 sf, 49.32% Impervious, Inflow Depth = 5.00" for 100-yr event
 Inflow = 10.23 cfs @ 8.00 hrs, Volume= 258,166 cf
 Outflow = 8.41 cfs @ 8.50 hrs, Volume= 258,131 cf, Atten= 18%, Lag= 29.7 min
 Primary = 8.41 cfs @ 8.50 hrs, Volume= 258,131 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 324.63' @ 8.50 hrs Surf.Area= 7,689 sf Storage= 27,611 cf

Plug-Flow detention time= 84.1 min calculated for 258,095 cf (100% of inflow)
 Center-of-Mass det. time= 84.2 min (849.4 - 765.3)

Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	38,516 cf	Existing Pond (Prismatic) Listed below (Recalc)

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
320.00	4,334	0	0
320.50	4,671	2,251	2,251
321.00	5,014	2,421	4,673
321.50	5,364	2,595	7,267
322.00	5,719	2,771	10,038
322.50	6,081	2,950	12,988
323.00	6,448	3,132	16,120
323.50	6,823	3,318	19,438
324.00	7,202	3,506	22,944
324.50	7,590	3,698	26,642
325.00	7,981	3,893	30,535
326.00	7,981	7,981	38,516

Device	Routing	Invert	Outlet Devices
#1	Primary	319.79'	24.000" Round Culvert L= 50.0' Ke= 0.100 Inlet / Outlet Invert= 319.79' / 319.74' S= 0.0010 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	320.00'	7.000" Vert. 2-yr Orifice C= 0.600
#3	Device 1	322.42'	10.000" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.40'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=8.41 cfs @ 8.50 hrs HW=324.63' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Passes 8.41 cfs of 32.63 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 2.68 cfs @ 10.03 fps)
- 3=5-yr Orifice (Orifice Controls 3.51 cfs @ 6.44 fps)
- 4=Overflow (Weir Controls 2.22 cfs @ 1.56 fps)

Summary for Link POST: Post-Dev

Inflow Area = 619,458 sf, 49.32% Impervious, Inflow Depth = 5.00" for 100-yr event
 Inflow = 8.41 cfs @ 8.50 hrs, Volume= 258,131 cf
 Primary = 8.41 cfs @ 8.50 hrs, Volume= 258,131 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link PRE: Pre-Dev

Inflow Area = 619,458 sf, 0.00% Impervious, Inflow Depth = 3.64" for 100-yr event
 Inflow = 8.85 cfs @ 8.01 hrs, Volume= 188,152 cf
 Primary = 8.85 cfs @ 8.01 hrs, Volume= 188,152 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Subcatchment 1S: Phase 1

Runoff = 0.97 cfs @ 8.00 hrs, Volume= 17,274 cf, Depth= 0.78"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type IA 24-hr WQ Rainfall=1.55"

Area (ac)	CN	Description
* 3.172	98	Impervious
* 2.640	74	Landscape
* 0.288	80	Landscape
6.100	87	Weighted Average
2.928	75	48.00% Pervious Area
3.172	98	52.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

Summary for Subcatchment B1: Basin 1

Runoff = 0.22 cfs @ 8.00 hrs, Volume= 3,733 cf, Depth= 0.85"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type IA 24-hr WQ Rainfall=1.55"

Area (sf)	CN	Description
* 14,939	98	Streets
* 9,009	98	Houses
* 2,340	98	Driveways
* 26,394	82	Pervious
52,682	90	Weighted Average
26,394	82	50.10% Pervious Area
26,288	98	49.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B2: Basin 2

Runoff = 0.10 cfs @ 8.00 hrs, Volume= 1,689 cf, Depth= 0.89"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type IA 24-hr WQ Rainfall=1.55"

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	Area (sf)	CN	Description
*	7,992	98	Streets
*	3,465	98	Houses
*	900	98	Driveways
*	10,297	82	Pervious
	22,654	91	Weighted Average
	10,297	82	45.45% Pervious Area
	12,357	98	54.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B3: Basin 3

Runoff = 0.25 cfs @ 8.00 hrs, Volume= 4,154 cf, Depth= 0.81"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.55"

	Area (sf)	CN	Description
*	15,948	98	Streets
*	9,702	98	Houses
*	2,520	98	Driveways
*	33,214	82	Pervious
	61,384	89	Weighted Average
	33,214	82	54.11% Pervious Area
	28,170	98	45.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B4: Basin 4

Runoff = 0.23 cfs @ 8.00 hrs, Volume= 3,958 cf, Depth= 0.76"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.55"

	Area (sf)	CN	Description
*	9,458	98	Streets
*	12,474	98	Houses
*	3,240	98	Driveways
*	37,585	82	Pervious
	62,757	88	Weighted Average
	37,585	82	59.89% Pervious Area
	25,172	98	40.11% Impervious Area

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B5: Basin 5

Runoff = 0.12 cfs @ 8.00 hrs, Volume= 2,020 cf, Depth= 0.93"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.55"

Area (sf)	CN	Description
* 10,794	98	Streets
* 3,465	98	Houses
* 900	98	Driveways
* 10,957	82	Pervious
26,116	91	Weighted Average
10,957	82	41.96% Pervious Area
15,159	98	58.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B6: Basin 6

Runoff = 0.40 cfs @ 8.00 hrs, Volume= 6,729 cf, Depth= 0.84"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.55"

Area (sf)	CN	Description
* 11,641	98	Streets
* 24,948	98	Houses
* 6,480	98	Driveways
* 48,537	82	Pervious
* 4,044	98	Alley
95,650	90	Weighted Average
48,537	82	50.74% Pervious Area
47,113	98	49.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

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Summary for Subcatchment B7: Basin 7

Runoff = 0.10 cfs @ 7.97 hrs, Volume= 1,452 cf, Depth= 1.33"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.55"

	Area (sf)	CN	Description
*	13,106	98	Streets
	13,106	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment B8: Basin 8

Runoff = 0.02 cfs @ 8.01 hrs, Volume= 603 cf, Depth= 0.37"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.55"

	Area (sf)	CN	Description
*	19,393	82	Pervious
	19,393	82	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					Direct Entry,

Summary for Subcatchment X1: Phase 1 Existing Conditions

Runoff = 0.06 cfs @ 19.22 hrs, Volume= 2,833 cf, Depth= 0.13"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.55"

	Area (sf)	CN	Description
*	239,580	71	Meadow, non-grazed, HSG C
*	26,136	78	Meadow, non-grazed, HSG D
	265,716	72	Weighted Average
	265,716	72	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					Direct Entry,

Summary for Subcatchment X2: Phase 2 Existing Conditions

Runoff = 0.15 cfs @ 16.35 hrs, Volume= 8,315 cf, Depth= 0.28"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Type IA 24-hr WQ Rainfall=1.55"

Area (sf)	CN	Description
* 353,742	79	Soil C/D (Phase 2)
353,742	79	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.8	100	0.0014	0.06		Sheet Flow, n= 0.150 P2= 3.10"
4.6	204	0.0112	0.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
33.4	304	Total			

Summary for Pond D1: ADS Storage

Inflow Area = 75,336 sf, 51.30% Impervious, Inflow Depth = 0.86" for WQ event
 Inflow = 0.33 cfs @ 8.00 hrs, Volume= 5,423 cf
 Outflow = 0.17 cfs @ 8.46 hrs, Volume= 5,423 cf, Atten= 49%, Lag= 28.1 min
 Primary = 0.17 cfs @ 8.46 hrs, Volume= 5,423 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 324.56' @ 8.46 hrs Surf.Area= 2,221 sf Storage= 494 cf

Plug-Flow detention time= 27.1 min calculated for 5,422 cf (100% of inflow)
 Center-of-Mass det. time= 27.2 min (767.6 - 740.4)

Volume	Invert	Avail.Storage	Storage Description
#1	323.97'	3,434 cf	20.50'W x 94.72'L x 3.75'H Rock Z=2.0 10,803 cf Overall - 2,219 cf Embedded = 8,584 cf x 40.0% Voids
#2	324.72'	2,219 cf	ADS_StormTech DC-780 +Cap x 48 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 48 Chambers in 4 Rows
		5,653 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	323.77'	12.000" Round Culvert L= 38.0' Ke= 0.500 Inlet / Outlet Invert= 323.77' / 322.02' S= 0.0461 '/ Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	323.97'	2.875" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	325.66'	3.500" Vert. 5-yr Orifice C= 0.600
#4	Device 1	326.09'	2.000" Vert. 10-yr Orifice C= 0.600

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#5 Device 1 327.67' **24.000" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.17 cfs @ 8.46 hrs HW=324.56' TW=320.89' (Dynamic Tailwater)

- ↑ 1=Culvert (Passes 0.17 cfs of 2.03 cfs potential flow)
- ↑ 2=2-yr Orifice (Orifice Controls 0.17 cfs @ 3.71 fps)
- ↑ 3=5-yr Orifice (Controls 0.00 cfs)
- ↑ 4=10-yr Orifice (Controls 0.00 cfs)
- ↑ 5=Overflow (Controls 0.00 cfs)

Summary for Pond D2: ADS Storage

Inflow Area = 124,141 sf, 42.97% Impervious, Inflow Depth = 0.78" for WQ event
 Inflow = 0.47 cfs @ 8.00 hrs, Volume= 8,112 cf
 Outflow = 0.26 cfs @ 8.41 hrs, Volume= 8,100 cf, Atten= 44%, Lag= 25.0 min
 Primary = 0.26 cfs @ 8.41 hrs, Volume= 8,100 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 322.91' @ 8.41 hrs Surf.Area= 3,332 sf Storage= 651 cf

Plug-Flow detention time= 27.6 min calculated for 8,100 cf (100% of inflow)
 Center-of-Mass det. time= 26.4 min (779.8 - 753.3)

Volume	Invert	Avail.Storage	Storage Description
#1	322.39'	5,284 cf	20.50'W x 145.64'L x 3.85'H Rock Z=2.0 16,724 cf Overall - 3,514 cf Embedded = 13,210 cf x 40.0% Voids
#2	323.15'	3,514 cf	ADS_StormTech DC-780 +Cap x 76 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 76 Chambers in 4 Rows
		8,798 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	322.30'	24.000" Round 24" Culvert L= 216.0' Ke= 0.500 Inlet / Outlet Invert= 322.30' / 322.02' S= 0.0013 '/ Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	322.40'	3.750" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	324.02'	4.000" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.50'	3.125" Vert. 10-yr Orifice C= 0.600
#5	Device 1	326.10'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.26 cfs @ 8.41 hrs HW=322.91' TW=320.88' (Dynamic Tailwater)

- ↑ 1=24" Culvert (Passes 0.26 cfs of 1.02 cfs potential flow)
- ↑ 2=2-yr Orifice (Orifice Controls 0.26 cfs @ 3.42 fps)
- ↑ 3=5-yr Orifice (Controls 0.00 cfs)
- ↑ 4=10-yr Orifice (Controls 0.00 cfs)
- ↑ 5=Overflow (Controls 0.00 cfs)

Summary for Pond D3: ADS Storage

Inflow Area = 95,650 sf, 49.26% Impervious, Inflow Depth = 0.84" for WQ event
 Inflow = 0.40 cfs @ 8.00 hrs, Volume= 6,729 cf
 Outflow = 0.21 cfs @ 8.46 hrs, Volume= 6,729 cf, Atten= 48%, Lag= 27.9 min
 Primary = 0.21 cfs @ 8.46 hrs, Volume= 6,729 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 322.23' @ 8.46 hrs Surf.Area= 2,847 sf Storage= 601 cf

Plug-Flow detention time= 27.9 min calculated for 6,728 cf (100% of inflow)
 Center-of-Mass det. time= 27.9 min (771.3 - 743.3)

Volume	Invert	Avail.Storage	Storage Description
#1	321.67'	4,521 cf	20.50'W x 122.96'L x 3.85'H Rock Z=2.0 14,262 cf Overall - 2,959 cf Embedded = 11,303 cf x 40.0% Voids
#2	322.42'	2,959 cf	ADS_StormTech DC-780 +Cap x 64 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 64 Chambers in 4 Rows
		7,480 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	321.44'	12.000" Round Culvert L= 35.0' Ke= 0.500 Inlet / Outlet Invert= 321.44' / 321.33' S= 0.0031 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	321.67'	3.250" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	323.30'	3.625" Vert. 5-yr Orifice C= 0.600
#4	Device 1	323.75'	2.500" Vert. 10-yr Orifice C= 0.600
#5	Device 1	325.35'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.21 cfs @ 8.46 hrs HW=322.23' TW=320.89' (Dynamic Tailwater)

- 1=Culvert (Passes 0.21 cfs of 1.37 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 0.21 cfs @ 3.60 fps)
- 3=5-yr Orifice (Controls 0.00 cfs)
- 4=10-yr Orifice (Controls 0.00 cfs)
- 5=Overflow (Controls 0.00 cfs)

Summary for Pond D4: ADS Storage

Inflow Area = 39,222 sf, 72.06% Impervious, Inflow Depth = 1.06" for WQ event
 Inflow = 0.22 cfs @ 7.99 hrs, Volume= 3,472 cf
 Outflow = 0.10 cfs @ 8.61 hrs, Volume= 3,472 cf, Atten= 55%, Lag= 37.3 min
 Primary = 0.10 cfs @ 8.61 hrs, Volume= 3,472 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 323.16' @ 8.61 hrs Surf.Area= 1,573 sf Storage= 413 cf

Plug-Flow detention time= 37.5 min calculated for 3,472 cf (100% of inflow)

Center-of-Mass det. time= 37.3 min (753.9 - 716.6)

Volume	Invert	Avail.Storage	Storage Description
#1	322.45'	2,459 cf	20.50'W x 64.48'L x 3.75'H Rock Z=2.0 7,628 cf Overall - 1,480 cf Embedded = 6,149 cf x 40.0% Voids
#2	323.20'	1,480 cf	ADS_StormTech DC-780 +Cap x 32 Inside #1 Effective Size= 45.4"W x 30.0"H => 6.49 sf x 7.12'L = 46.2 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 32 Chambers in 4 Rows
		3,939 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	319.44'	12.000" Round Culvert L= 27.0' Ke= 0.500 Inlet / Outlet Invert= 319.44' / 319.36' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	322.45'	2.125" Horiz. 2-yr Orifice C= 0.600 Limited to weir flow at low heads
#3	Device 1	324.15'	2.375" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.55'	2.000" Vert. 10-yr Orifice C= 0.600
#5	Device 1	326.15'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.10 cfs @ 8.61 hrs HW=323.16' TW=320.92' (Dynamic Tailwater)

- 1=Culvert (Passes 0.10 cfs of 5.66 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 0.10 cfs @ 4.07 fps)
- 3=5-yr Orifice (Controls 0.00 cfs)
- 4=10-yr Orifice (Controls 0.00 cfs)
- 5=Overflow (Controls 0.00 cfs)

Summary for Pond POND: Pond

Inflow Area = 619,458 sf, 49.32% Impervious, Inflow Depth = 0.81" for WQ event
 Inflow = 1.63 cfs @ 8.01 hrs, Volume= 41,602 cf
 Outflow = 1.06 cfs @ 9.19 hrs, Volume= 41,570 cf, Atten= 35%, Lag= 71.2 min
 Primary = 1.06 cfs @ 9.19 hrs, Volume= 41,570 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 320.97' @ 9.19 hrs Surf.Area= 4,993 sf Storage= 4,522 cf

Plug-Flow detention time= 74.7 min calculated for 41,570 cf (100% of inflow)
 Center-of-Mass det. time= 74.0 min (832.1 - 758.1)

Volume	Invert	Avail.Storage	Storage Description
#1	320.00'	38,516 cf	Existing Pond (Prismatic) Listed below (Recalc)

23-228 Oakdale Estates Phase 2 - ADS Storage_Outlet to Type IA 24-hr WQ Rainfall=1.55"

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Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
320.00	4,334	0	0
320.50	4,671	2,251	2,251
321.00	5,014	2,421	4,673
321.50	5,364	2,595	7,267
322.00	5,719	2,771	10,038
322.50	6,081	2,950	12,988
323.00	6,448	3,132	16,120
323.50	6,823	3,318	19,438
324.00	7,202	3,506	22,944
324.50	7,590	3,698	26,642
325.00	7,981	3,893	30,535
326.00	7,981	7,981	38,516

Device	Routing	Invert	Outlet Devices
#1	Primary	319.79'	24.000" Round Culvert L= 50.0' Ke= 0.100 Inlet / Outlet Invert= 319.79' / 319.74' S= 0.0010 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	320.00'	7.000" Vert. 2-yr Orifice C= 0.600
#3	Device 1	322.42'	10.000" Vert. 5-yr Orifice C= 0.600
#4	Device 1	324.40'	24.000" Horiz. Overflow C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.06 cfs @ 9.19 hrs HW=320.97' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Passes 1.06 cfs of 4.72 cfs potential flow)
- 2=2-yr Orifice (Orifice Controls 1.06 cfs @ 3.97 fps)
- 3=5-yr Orifice (Controls 0.00 cfs)
- 4=Overflow (Controls 0.00 cfs)

Summary for Link POST: Post-Dev

Inflow Area = 619,458 sf, 49.32% Impervious, Inflow Depth > 0.81" for WQ event
 Inflow = 1.06 cfs @ 9.19 hrs, Volume= 41,570 cf
 Primary = 1.06 cfs @ 9.19 hrs, Volume= 41,570 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link PRE: Pre-Dev

Inflow Area = 619,458 sf, 0.00% Impervious, Inflow Depth = 0.22" for WQ event
 Inflow = 0.21 cfs @ 17.43 hrs, Volume= 11,148 cf
 Primary = 0.21 cfs @ 17.43 hrs, Volume= 11,148 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

TECHNICAL MEMORANDUM



DATE: February 13, 2024

PROJECT: Oakdale Estates Subdivision, Phase 2

TO: Chase Ballew, City Planner
City of Dallas

FROM: Dan Haga, PE

RE: Oakdale Estates Phase 2 Traffic



The purpose of this memorandum is to satisfy the City of Dallas codified criteria for providing a traffic impact analysis (TIA) for the currently proposed Phase 2 of the Oakdale Estates residential subdivision. Because there has already been a full traffic impact analysis prepared and approved for the subject site's development plan, the City of Dallas has indicated that a letter demonstrating that conditions reported in the TIA are consistent with the current post development conditions associated with the current proposal is sufficient to address the City's TIA criteria. The Oakdale Estates Phase 1 subdivision land use applications were originally approved as Oakdale Heights in 2015, which included a traffic impact analysis that was prepared for development of the site with a total of 76 single family detached dwelling units. Because the current application is separate from the original application, the applicant is required to demonstrate that the intent of the City of Dallas Development Codified criteria is upheld with the current land use and development proposal. The subject site is located at the south termini of Hayter and Ellis Streets, north of the North Fork of Ash Creek in Dallas, Oregon. The site is identified on tax lots 7900 and 7904 of Polk County Assessor's Map 7.5.32DC, tax lot 803 of map 8.5.5AA, and tax lot 101 of map 8.5.5A. The proposed Oakdale Estates, Phase 2 subdivision application includes 43 residential lots on approximately 9.51 acres of land. The current plan includes a modification to the previously approved plan for phase 1, as will be discussed below.

Existing Conditions and Approvals

The original development approval of Phase 1 (SUB/15-07) from 2015, included approval for 34 residential lots, located north of the Oakdale Estates Phase 2 site boundary. To date, the Oakdale Estates Phase 1 approval has been developed with 26 single family detached dwelling lots that have been platted, with 21 homes currently built and occupied.

Although the land use approval at the time of application of Oakdale Estates (Oakdale Heights) in 2015 was planned to include two phases of development, the previously prepared Oakdale Heights TIA provided analyses of traffic conditions for the year of application (2015) and at the end of a ten-year planning horizon in 2025. The 2015 analysis year was analyzed with both the existing conditions (no-build) and the anticipated full build scenario with all 76 single family detached dwelling units proposed for both phases, that were assumed to be constructed and occupied for the analysis year scenarios. The 2025 conditions were modeled and analyzed assuming full build-out of all 76 single family dwelling units, with a 2.5 percent average annual growth rate applied to background year 2015 design hour traffic volumes to represent growth on the transportation system from other development and transportation trends in the area.

Oakdale Heights Traffic Impact Analysis

As described previously, the Oakdale Heights TIA included analysis of intersection performances for the year 2015, which was the year of application at that time, and the future year 2025 (a ten-year analysis horizon). Both analysis year scenarios included an assumed full build-out of 76 single family residential lots that were anticipated to be developed and occupied for the analysis years. The TIA analyzed operational performance at five (5) intersections, including: SW Oakdale Ave @ SW Hayter St; SW Oakdale Ave @ SW Ellis St; SW Oakdale Ave @ Fairview St; SW Washington St @ SW Ellis St; SW Washington St @ SW Hayter St, and; SW Cherry St @ Main St. With exception to the intersection of SW Washington St @ SW Hayter St, all the intersections analyzed were shown to meet the minimum City level of service (LOS) standards, or otherwise not to further degrade the LOS below background conditions. The intersections analyzed were also shown to meet the Oregon Department of Transportation's (ODOT's) volume-to-capacity (v/c) ratio standards for facilities within ODOT's jurisdiction (Kings Valley Highway). Drivers making southbound left-turns at SW Hayter and SW Washington St in the AM Peak hour were determined to experience longer delays than allowed by the minimum Dallas LOS standard, however, the addition of development traffic (trip generation) to background traffic conditions (volumes) was shown to not further degrade the LOS beyond existing or projected future year 2025 background conditions. The intersection performances for the forecast year 2025 horizon conditions with full development traffic added to grown background traffic is provided in the following table:

2015 Oakdale Heights TIA Table 3: Future (2025) level of service (LOS) and volume to capacity (v/c) ratios		
Intersection:	AM Peak LOS, v/c	PM Peak LOS, v/c
SW Oakdale Ave at SW Hayter St	LOS A/0.06	LOS A, v/c 0.05
SW Oakdale Ave at SW Ellis St	LOS A, v/c 0.00	LOS A, v/c 0.00
SW Oakdale Ave at Fairview St	LOS D, v/c 0.47	LOS C, v/c 0.33
SW Washington St at SW Ellis St	LOS E, v/c 0.10	LOS C, v/c 0.04
SW Washington St at SW Hayter St, and; SW Cherry St at Main St	LOS E, v/c 0.21	LOS D, v/c 0.15
	LOS A, v/c 0.06	LOS A, v/c 0.05

It should be noted that a minimum level of service or v/c standard was not located in the current City of Dallas Code in section 4.1.090 *Traffic Impact Analysis*, but maximum volume to capacity ratios were located in section in 3.4.015 *Transportation Standards*. Specifically, the current performance standards for transportation facilities are provided in the following table:

Table 3.4.010 Traffic Operations Standards within Dallas:		
Facility	Speed Limit	Maximum Volume/Capacity Ratio
OR 223; within STA or CBD Zone	[All]	0.95*
OR 223; outside STA	Less than 45 MPH	0.85*
OR 223; outside STA	45 MPH or Greater	0.80*
City Streets	Less than 45 MPH	0.85
City Streets	45 MPH or Greater	0.80

*Maximum volume to capacity ratio per the current Oregon Highway Plan, Table 6

Per the maximum volume to capacity ratio standards identified in Table 3.4.010 of the Dallas Development Code, the performance results with the build-out traffic from the full development of Oakdale Heights (now Oakdale Estates) were well below the maximum v/c ratio thresholds.

The 2015 TIA did not identify any significant safety concerns at the intersections that would be indicated by an unusually high number of accidents at any of the studied intersections. A review of currently available ODOT crash data for the most recent period of data available (2020-2022) revealed that the crash history does not indicate a significant identifiable crash pattern/frequency at the intersections studied that would be a cause for concern or warrant an additional safety analysis.

Anticipated growth to year 2015 existing peak hour traffic volumes was accounted for in the approved Oakdale Heights TIA by applying a 2.5 percent linear annual growth rate factored for 10 years to forecast year 2025 background approaching traffic at the study area intersections. Although ODOT did not require a TIA because there is not direct access from the site to an ODOT facility, for reference, the Oregon Department of Transportation’s Development Review Guidelines (May 2017) recommend

the anticipated year of opening as the only analysis year scenario that needs to be included in traffic impact analyses (no future year) when the average daily traffic (ADT) for the development is projected to be 999 ADT, or less. The TIA most likely included the future year 2025 to address the potential for the development to be phased, which was not formally discussed in the approved TIA.

Oakdale Estates Phase 2 Traffic

As described above, the current development plan for the site includes completing construction of single-family homes that are currently platted on 26 lots remaining from the approved phase 1 subdivision development, as well as a modification of the remaining 8 lots by reconfiguring the lots approved for single-family detached dwelling units to provide 16 attached dwelling unit lots. Development of phase 2, as planned, includes subdividing the remaining vacant area on the site that was not included with the phase 1 approval into 31 single family detached dwelling unit lots and 12 attached dwelling unit lots. The combined total number of lots for phase 1 and phase 2 of Oakdale Estates would then be 85 total lots, with 57 of the total lots to be approved as single family detached dwellings (including the 26 currently platted) and 28 of the total lots seeking approval to be developed with attached single-family dwellings (townhouses). The table below provides a summary and comparison of the housing units at build-out for phases 1 and 2:

Oakdale Estates Lots			
Oakdale Estates	Single Family Attached	Single Family Detached (Townhouses)	Total Lots
Approved Oakdale Heights TIA	-	76	76
Phase 1	16	26	42
Phase 2	12	31	43
Total	28	57	85

Trip Generation

Because the trip generation rate for single family residential dwelling units varies between attached dwelling units (townhouses) and detached dwelling units, a comparison of the trip generation for the current proposal at full build-out with the development scenario included in the approved 2015 Oakdale Heights TIA was made. To estimate development level traffic generated by the site at build-out, a reference was made to the Institute of Traffic Engineers' (ITE's) *Trip Generation, 11th Edition*. A summary of the trip generation is presented in the following table:

EXHIBIT A.132

Oakdale Estates Trip Generation: Full Build-Out					
Land Use Type	ITE Land Use Code	Independent Variable	QTY (Units)	Avg Rate (T/Unit)	Total Trips
AM Peak Hour of Adjacent Street Traffic (Transportation System Peak hour)					
Single Family Detached (2015 TIA)	210	Dwelling Units	76	0.70	53
Single Family Detached (Current Total)	210	Dwelling Units	57	0.70	40
Single Family Attached (Townhouses) (Current)	215	Dwelling Units	28	0.48	13
Current Proposal (Phase 1 + Phase 2) AM Peak Hour Trips:					53
Net Difference in AM peak hour trips generated with Phases 1&2 Compared to 2015 Approval:					0
PM Peak Hour of Adjacent Street Traffic (Transportation System Peak hour)					
Single Family Detached (2015 TIA)	210	Dwelling Units	76	0.94	71
Single Family Detached (Current Total)	210	Dwelling Units	57	0.94	54
Single Family Attached (Townhouses) (Current)	215	Dwelling Units	28	0.57	16
Current Proposal (Phase 1 + Phase 2) PM Peak Hour Trips:					70
Net Difference in PM peak hour trips generated with Phases 1&2 Compared to 2015 Approval:					-1
Average Daily Traffic (ADT)					
Single Family Detached (2015 TIA)	210	Dwelling Units	76	9.43	717
Single Family Detached (Current Total)	210	Dwelling Units	57	9.43	538
Single Family Attached (Townhouses) (Current)	215	Dwelling Units	28	7.20	202
Current Proposal (Phase 1 + Phase 2) ADT:					740
Net Difference in ADT generated with Phases 1&2 Compared to 2015 Approval:					+23

As shown in the table, the traffic generated by the site that was analyzed for peak hour traffic impacts in the approved 2015 Oakdale Heights Traffic Impact Analysis is not exceeded with the currently proposed phase 2 trip generation at full build-out, which includes the Phase 1 development traffic. In total, the AM and PM peak hour traffic conditions will result in equal or less trip generation demand than was reported in the TIA for Oakdale Heights because the single family attached dwelling unit trip generation rates are lower per unit than the trip generation rates for single family detached dwelling units, and the current proposal includes some of the lots to be developed with attached dwelling units. The average daily traffic is slightly increased from a projected 717 daily trips that are calculated with the number of units from the approved TIA, to 740 daily trips with the current proposal, but there is not an applicable analysis methodology for ADT traffic performance, since facility performance is based on level of service and/or volume to capacity ratio(s) criteria that are applicable only for peak hour traffic conditions. The approved Oakdale Estates (Heights) TIA did not include ADT information for the originally proposed 76 single family detached dwelling units, and the trip generation numbers are based on the current edition of the ITE *Trip Generation Manual, 11th Edition* (2023).

Background Growth:

As discussed previously, the approved 2015 TIA for Oakdale Heights utilized a 2.5 percent annual growth rate that was applied to background AM and PM peak hour approaching traffic volumes to grow existing year 2015 design hour traffic volumes to forecast year 2025 peak hour background traffic conditions before adding development level build-out traffic. The Oregon Department of Transportation keeps records of traffic volumes (AADT) on Kings Valley Highway (OR223/ODOT Highway #191) at several locations in Dallas near the studied area intersections. To compare the growth rate applied to the background traffic conditions reported in the Oakdale Heights TIA to the growth that has actually occurred since the 2015 approval of Phase 1 at key locations on Kings Valley Highway within the study area, a reference was made to ODOT's Traffic Volumes Tables. The average annual daily traffic volumes (AADT) reported in Dallas at locations within the study area for the years 2015 and 2022 (most recent available year of data) are summarized in the following table:

ODOT Traffic Volumes Table (TVT) Average Annual Traffic (AADT) on Kings Valley Highway						
ODOT Station	Description	Milepoint	2015 AADT (2-Way)	2022 AADT (2-Way)	7 Years Growth	Annual Growth Rate (%)
3645	0.02 mi. West of Main Street	3.42	9,900	10,781	881	1.3%
3646	0.02 mi. East of Levens Street	3.54	9,100	10,021	921	1.4%
3647	0.02 mi. West of Levens Street	3.58	10,000	10,814	814	1.2%
3648	0.02 mi. East of Fairview Avenue	3.75	9,100	9,594	494	0.8%
3649	0.02 mi. South of Clay Street	3.88	8,400	9,091	691	1.2%
3650	0.02 mile South of Birch	4.13	6,700	7,263	563	1.20%
Average:						1.20%
ODOT TVT volumes are available at: https://www.oregon.gov/odot/data/pages/traffic-counting.aspx						

As shown in the table, the anticipated growth and resulting annual growth rate that was applied to the background traffic volumes in the approved 2015 Oakdale Heights TIA over estimated projected growth on the transportation system in the future year background conditions reported for the 2025 AM and 2025 PM peak hour traffic analysis scenarios. The calculated average growth that has occurred at locations on Kings Valley Highway where ODOT keeps records of approaching traffic volumes, is calculated as an average of 1.2 percent per year, which is less than half of the 2.5 percent annual growth rate that was applied to background traffic volumes in the 2015 TIA to represent future year

conditions. Utilizing ODOT traffic volumes tables (TVT) and Future Volumes Tables (FVT) is discussed in the ODOT Analysis Procedures Manual (APM) as an acceptable way to calculate background growth and forecast future approaching traffic volumes. The ODOT APM is the standard for preparing traffic impact studies in the state of Oregon. It is unlikely that there will be a significant change in the growth pattern between 2022 and the anticipated build-out year of the proposed Oakdale Estates Phase 2 development.

Conclusion

The trip generation of the Oakdale Estates Development as approved with the 2015 Oakdale Heights TIA was compared to full build-out of Oakdale Estates with phase 1 and the currently proposed phase 2, and it was demonstrated that the current proposal does not result in a significant additional unforeseen traffic demand on the transportation system than what was reported in the approved TIA. The current plan includes modifications to the phase 1 approval to convert 8 out of the 34 previously approved single family detached dwelling unit lots, into 16 attached dwelling unit lots, and approval for development of phase 2, which includes a proposed 12 attached dwelling unit lots and 31 detached dwelling unit lots. A review of actual background traffic growth, which was calculated as an average of 1.2%/year for the seven (7) years of growth that have occurred between the 2015 approval and 2022 that is reported in ODOT's traffic volumes tables, was compared to the 2.5% adjusted annual growth rate that was applied to background traffic that was analyzed in the approved Oakdale Heights TIA, and it was determined that the approved TIA overstated background growth, which indicates that traffic conditions associated with build-out in 2025 or beyond, are likely to have less potential for an impact than was reported in the approved TIA. The analysis results arrived at in the 2015 Oakdale Heights TIA concluded that no mitigation was (is) necessary to accommodate the additional traffic from development, which is consistent with the current development plan that includes completing Oakdale Estates Phase 1, with modifications, and build-out as proposed. The conclusion is supported by background traffic growth that is shown to have grown at a lower rate than anticipated and a development plan that results in an equal or lower peak hour trip generation demand than was anticipated in 2015, with a revised mix of residential use types. It is unlikely that the background traffic volumes on the public street network are going to have a significant increase between the current year (2024) and build-out of phase 2 of Oakdale Estates, which is anticipated to be complete within a couple of years. All conditions reported in the approved TIA should be considered consistent with the current land use applications for development, as a full TIA would not likely identify any impact that was not already identified in the approved 2015 Oakdale Heights TIA.

Please do not hesitate to contact us if you have any questions or comments.

Department of State Lands
775 Summer Street, Suite 100
Salem, OR 97301-1279
☎ 503-986-5200

EXHIBIT A.135

Permit No.:	<u>60787-FP Renewal</u>
Permit Type:	<u>Fill</u>
Waterway:	<u>Wetland</u>
County:	<u>Polk</u>
Expiration Date:	<u>September 10, 2024</u>

OAKDALE HEIGHTS PHASE 1, LLC

IS AUTHORIZED IN ACCORDANCE WITH ORS 196.800 TO 196.990 TO PERFORM THE OPERATIONS DESCRIBED IN THE REDDERENCED APPLICATION, SUBJECT TO THE SPECIAL CONDITIONS LISTED ON ATTACHMENT A AND TO THE FOLLOWING GENERAL CONDITIONS:

1. This permit does not authorize trespass on the lands of others. The permit holder must obtain all necessary access permits or rights-of-way before entering lands owned by another.
2. This permit does not authorize any work that is not in compliance with local zoning or other local, state, or federal regulation pertaining to the operations authorized by this permit. The permit holder is responsible for obtaining the necessary approvals and permits before proceeding under this permit.
3. All work done under this permit must comply with Oregon Administrative Rules, Chapter 340; Standards of Quality for Public Waters of Oregon. Specific water quality provisions for this project are set forth on Attachment A.
4. Violations of the terms and conditions of this permit are subject to administrative and/or legal action, which may result in revocation of the permit or damages. The permit holder is responsible for the activities of all contractors or other operators involved in work done at the site or under this permit.
5. Employees of the Department of State Lands (DSL) and all duly authorized representatives of the Director must be permitted access to the project area at all reasonable times for the purpose of inspecting work performed under this permit.
6. Any permit holder who objects to the conditions of this permit may request a hearing from the Director, in writing, within twenty-one (21) calendar days of the date this permit was issued.
7. In issuing this permit, DSL makes no representation regarding the quality or adequacy of the permitted project design, materials, construction, or maintenance, except to approve the project's design and materials, as set forth in the permit application, as satisfying the resource protection, scenic, safety, recreation, and public access requirements of ORS Chapters 196, 390, and related administrative rules.
8. Permittee must defend and hold harmless the State of Oregon, and its officers, agents and employees from any claim, suit, or action for property damage or personal injury or death arising out of the design, material, construction, or maintenance of the permitted improvements.
 9. Authorization from the U.S. Army Corps of Engineers may also be required.

NOTICE: If removal is from state-owned submerged and submersible land, the permittee must comply with leasing and royalty provisions of ORS 274.530. If the project involves creation of new lands by filling on state-owned submerged or submersible lands, you must comply with ORS 274.905 to 274.940 if you want a transfer of title; public rights to such filled lands are not extinguished by issuance of this permit. This permit does not relieve the permittee of an obligation to secure appropriate leases from DSL, to conduct activities on state-owned submerged or submersible lands. Failure to comply with these requirements may result in civil or criminal liability. For more information about these requirements, please contact Department of State Lands, 503-986-5200.

Carrie Landrum, Aquatic Resource Coordinator
Aquatic Resource Management
Oregon Department of State Lands


Authorized Signature

August 22, 2023
Date

ATTACHMENT A**Permit Holder: Oakdale Heights Phase 1, LLC****Project Name: Oakdale Estates-Phase 1****Special Conditions for Removal/Fill Permit No. 60787-FP****READ AND BECOME FAMILIAR WITH CONDITIONS OF YOUR PERMIT.**

The project site may be inspected by the Department of State Lands (DSL) as part of our monitoring program. A copy of this permit must be available at the work site whenever authorized operations are being conducted.

- 1. Responsible Party:** By signature on the application, Harlan Howard is acting as the representative of Oakdale Heights Phase 1, LLC. By proceeding under this permit, Oakdale Heights Phase 1, LLC agrees to comply with and fulfill all terms and conditions of this permit, unless the permit is officially transferred to another party as approved by DSL.
- 2. Authorization to Conduct Removal and/or Fill:** This permit authorizes fill of material in T07S R05W Section 32DC, Tax Lots 7900, 7904, and T08S, R05W, Section 05AA, Tax Lot 803, in Polk County, as described in the referenced permit application, map and drawings (See Attachment B for project locations), with a final date of March 29, 2018 and summarized as follows:

Summary of Authorized Wetland Impacts

Wetland #	Permanent		
	Acres	Removal (cy)	Fill (cy)
Wetland B	0.15		228

- 3. Changes to the Project or Inconsistent Requirements from Other Permits:** It is the permittee's responsibility to ensure that all state, federal and local permits are consistent and compatible with the final approved project plans and the project as executed. Any changes made in project design, implementation or operating conditions to comply with conditions imposed by other permits resulting in removal-fill activity must be approved by DSL prior to implementation.
- 4. DSL May Halt or Modify:** DSL retains the authority to temporarily halt or modify the project or require rectification in case of unforeseen adverse effects to aquatic resources or permit non-compliance.
- 5. DSL May Modify Conditions Upon Permit Renewal:** DSL retains the authority to modify conditions upon renewal, as appropriate, pursuant to the applicable rules in effect at the time of the request for renewal or to protect waters of this state.

Pre-Construction

- 6. Stormwater Management Approval Required Before Beginning Work:** Prior to the start of construction, the permittee must obtain a National Pollution Discharge Elimination System (NPDES) permit from the Oregon Department of Environmental Quality (DEQ), if one is required by DEQ.

7. **Pre-construction Resource Area Fencing or Flagging:** Prior to any site grading, the boundaries of the avoided wetlands, waterways, areas adjacent to the project site must be surrounded by noticeable construction fencing or flagging. The marked areas must be maintained during construction of the project and be removed immediately upon project completion.

General Construction Conditions

8. **Water Quality Certification:** The Department of Environmental Quality (DEQ) may evaluate this project for a Clean Water Act Section 401 Water Quality Certification (WQC). If the evaluation results in issuance of a Section 401 WQC, that turbidity condition will govern any allowable turbidity exceedance and monitoring requirements.
9. **Erosion Control Methods:** The following erosion control measures (and others as appropriate) must be installed prior to construction and maintained during and after construction as appropriate, to prevent erosion and minimize movement of soil into waters of this state.
- All exposed soils must be stabilized during and after construction to prevent erosion and sedimentation.
 - Filter bags, sediment fences, sediment traps or catch basins, leave strips or berms, or other measures must be used to prevent movement of soil into waterways and wetlands.
 - To prevent erosion, use of compost berms, impervious materials or other equally effective methods, must be used to protect soil stockpiled during rain events or when the stockpile site is not moved or reshaped for more than 48 hours.
 - Unless part of the authorized permanent fill, all construction access points through, and staging areas in, wetland areas must use removable pads or mats to prevent soil compaction. However, in some wetland areas under dry summer conditions, this requirement may be waived upon approval by DSL. At project completion, disturbed areas with soil exposed by construction activities must be stabilized by mulching and native vegetative plantings/seeding. Sterile grass may be used instead of native vegetation for temporary sediment control. If soils are to remain exposed more than seven days after completion of the work, they must be covered with erosion control pads, mats or similar erosion control devices until vegetative stabilization is installed.
 - Where vegetation is used for erosion control on slopes steeper than 2:1, a tackified seed mulch must be used so the seed does not wash away before germination and rooting.
 - Erosion control measures must be inspected and maintained as necessary to ensure their continued effectiveness until soils become stabilized.
 - All erosion control structures must be removed when the project is complete and soils are stabilized and vegetated.
10. **Hazardous, Toxic, and Waste Material Handling:** Petroleum products or other deleterious waste materials must not be allowed to enter waters of this state. Machinery refueling is to occur at least 150 feet from waters of this state and confined in a designated area to prevent spillage into waters of this state. Project-related spills into waters of this state or onto land with a potential to enter waters of this state must be reported to the Oregon Emergency Response System (OERS) at 1-800-452-0311.
11. **Archaeological Resources:** If any archaeological resources, artifacts or human remains are encountered during construction, all construction activity must immediately cease. The State

Historic Preservation Office must be contacted at 503-986-0674. You may be contacted by a Tribal representative if it is determined by an affected Tribe that the project could affect Tribal cultural or archeological resources.

12. **Construction Corridor:** There must be no removal of vegetation or heavy equipment operating or traversing outside the designated construction corridor or footprint (Figure(s) 6,7).

Compensatory Mitigation

Mitigation Bank Credits Purchase

13. **Mitigation Bank Credit Purchase:** Mitigation for the unavoidable loss of 0.15 acres of slope, Palustrine Emergent (PEM) and Palustrine Scrub-shrub (PSS) wetland has been accomplished via purchase of 0.15 credits from the Mud Slough Wetland Mitigation Bank, per the proof of purchase.

ATTACHMENT B

Permit Holder: Oakdale Heights Phase 1, LLC

Project Name: Oakdale Estates Phase 1

Maps and Drawings for Removal/Fill Permit No. 60787-FP

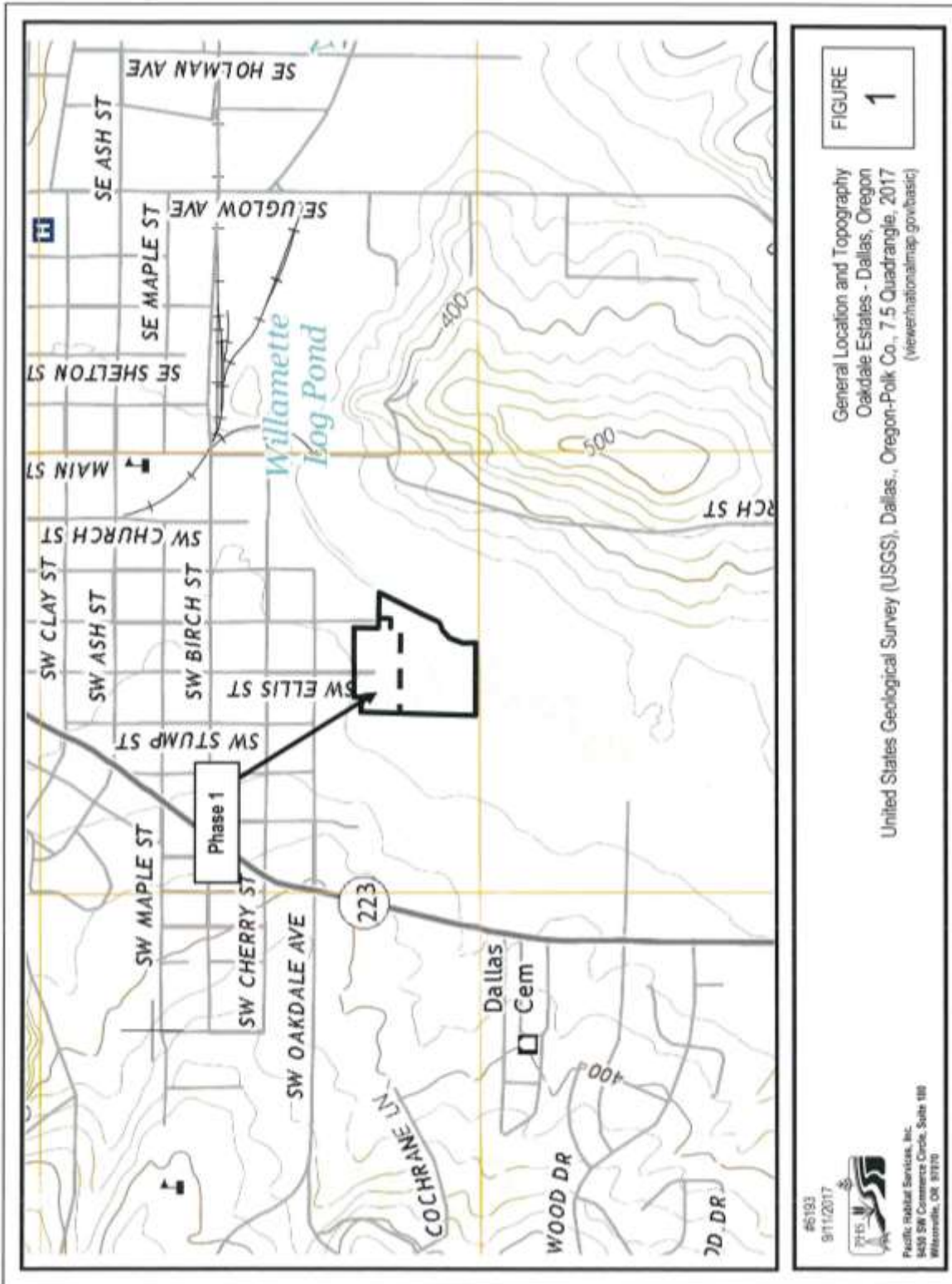




FIGURE
3

Aerial Photo
Oakdale Estates - Dallas, Oregon
GoogleEarth, 2017

#6193
9/11/2017



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 140
Wilsonville, OR 97070

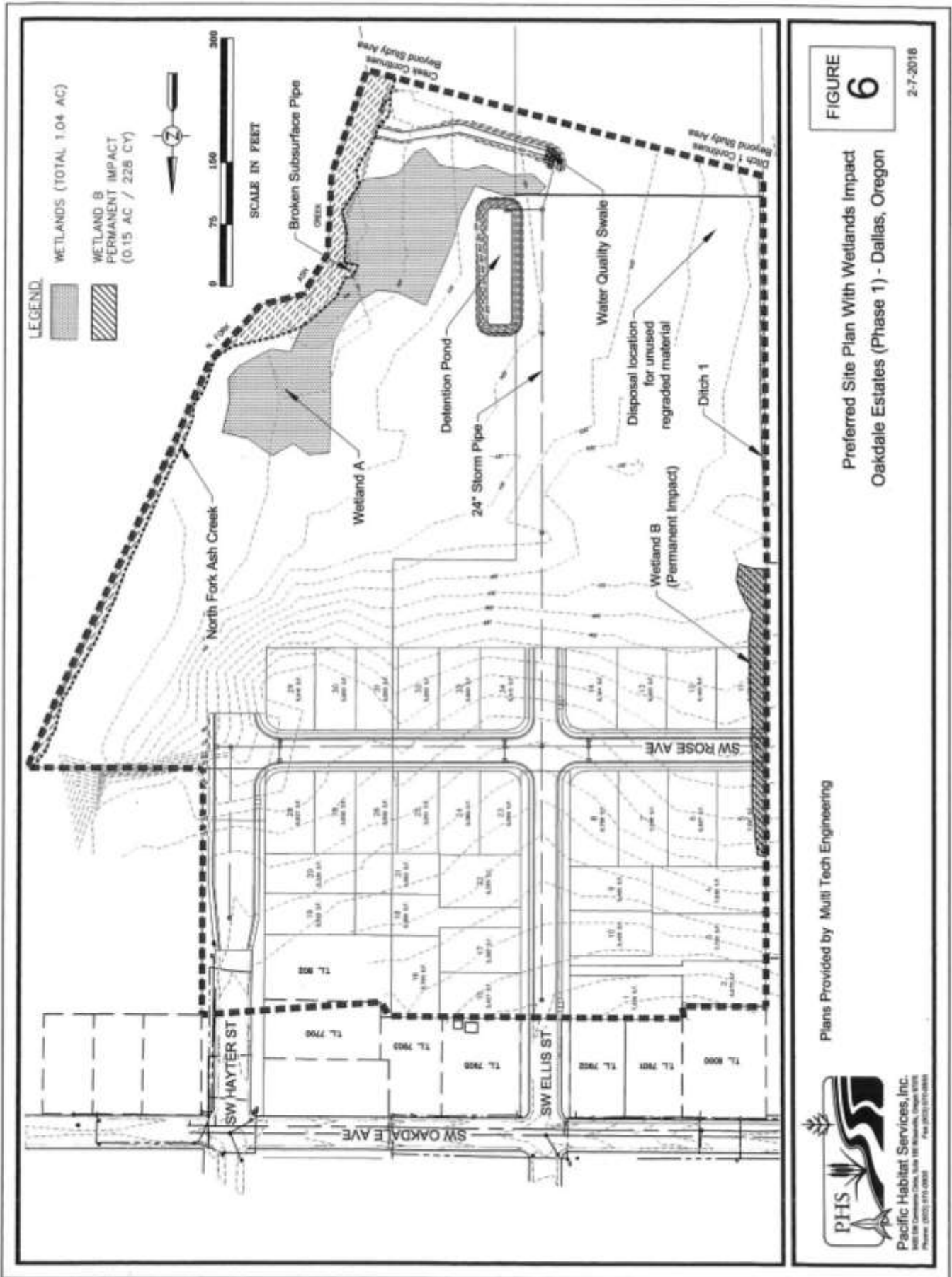


FIGURE
6

Preferred Site Plan With Wetlands Impact
Oakdale Estates (Phase 1) - Dallas, Oregon

2-7-2018

Plans Provided by Multi Tech Engineering

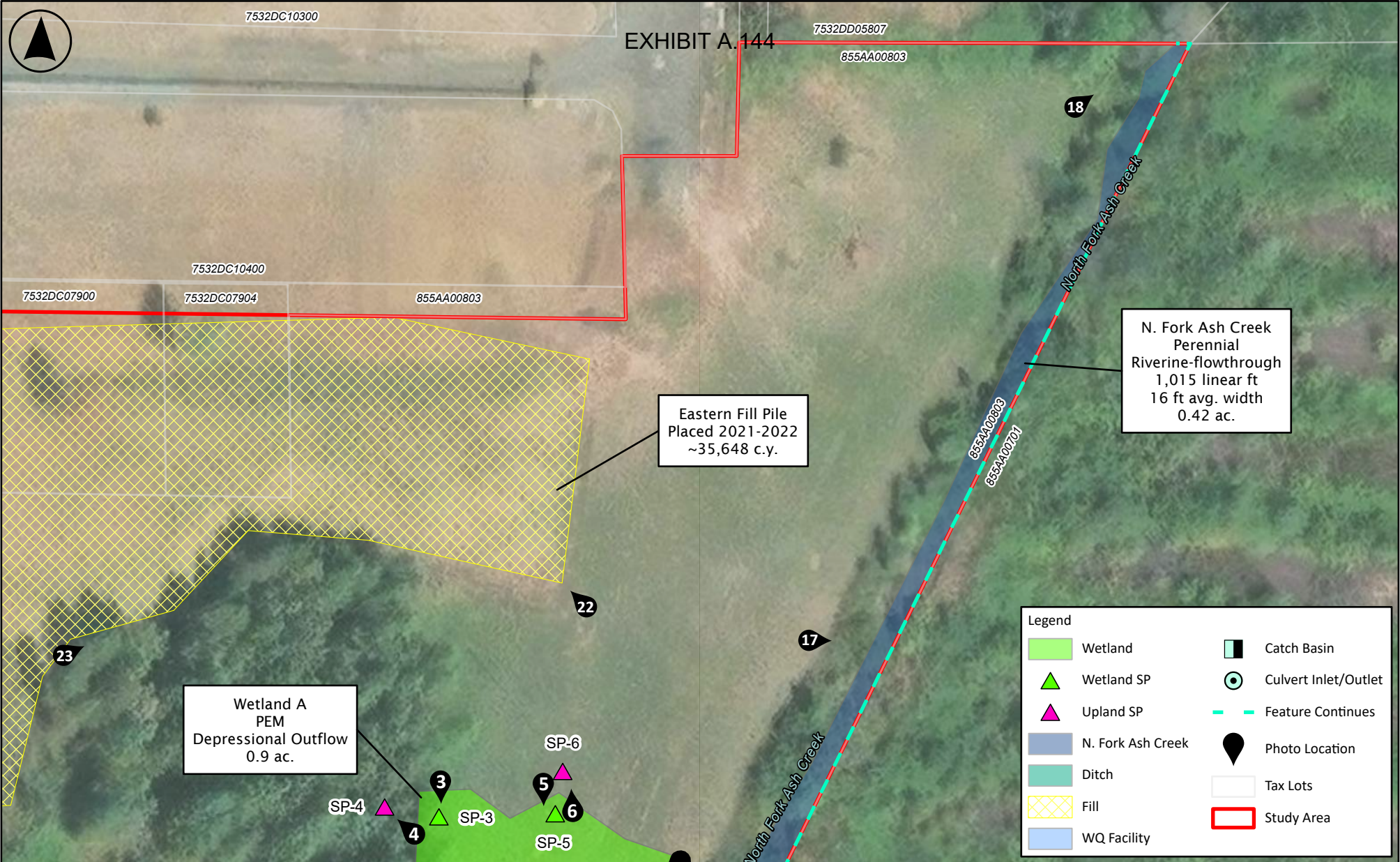
PHS
Pacific Habitat Services, Inc.
10000 SW 15th Street, Suite 100, Beaverton, OR 97005
Phone: (503) 670-0000 Fax: (503) 670-0000

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM
EXHIBIT A.142

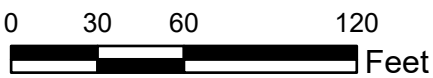
Fully completed and signed report cover forms and applicable fees are required before report review timelines are initiated by the Department of State Lands. Make checks payable to the Oregon Department of State Lands. To pay fees by credit card, go online at: <https://apps.oregon.gov/DSL/EPS/program?key=4>.

Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (single PDF file of the report cover form and report, minimum 300 dpi resolution) and submit to: **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279**. A single PDF of the completed cover form and report may be e-mailed to: **Wetland_Delineation@dsl.state.or.us**. For submittal of PDF files larger than 10 MB, e-mail DSL instructions on how to access the file from your ftp or other file sharing website.

Contact and Authorization Information	
<input type="checkbox"/> Applicant <input type="checkbox"/> Owner Name, Firm and Address:	Business phone # Mobile phone # (optional) E-mail:
<input type="checkbox"/> Authorized Legal Agent, Name and Address (if different):	Business phone # Mobile phone # (optional) E-mail:
I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.	
Typed/Printed Name: _____ Signature: _____ Date: _____ Special instructions regarding site access: _____	
Project and Site Information	
Project Name:	Latitude: _____ Longitude: _____ decimal degree - centroid of site or start & end points of linear project
Proposed Use:	Tax Map # Tax Lot(s) ----- Tax Map # Tax Lot(s)
Project Street Address (or other descriptive location):	Township _____ Range _____ Section _____ QQ _____ Use separate sheet for additional tax and location information
City: _____ County: _____	Waterway: _____ River Mile: _____
Wetland Delineation Information	
Wetland Consultant Name, Firm and Address:	Phone # Mobile phone # (if applicable) E-mail:
The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.	
Consultant Signature: <i>Lauren E. Zatkos</i>	Date: _____
Primary Contact for report review and site access is <input type="checkbox"/> Consultant <input type="checkbox"/> Applicant/Owner <input type="checkbox"/> Authorized Agent	
Wetland/Waters Present? <input type="checkbox"/> Yes <input type="checkbox"/> No	Study Area size: _____ Total Wetland Acreage: _____
Check Applicable Boxes Below	
<input type="checkbox"/> R-F permit application submitted	<input type="checkbox"/> Fee payment submitted \$ _____
<input type="checkbox"/> Mitigation bank site	<input type="checkbox"/> Resubmittal of rejected report (\$100)
<input type="checkbox"/> EFSC/ODOE Proj. Mgr:	<input type="checkbox"/> Request for Reissuance. See eligibility criteria. (no fee)
<input type="checkbox"/> Wetland restoration/enhancement project (not mitigation)	DSL # _____ Expiration date _____
<input type="checkbox"/> Previous delineation/application on parcel If known, previous DSL # _____	<input type="checkbox"/> LWI shows wetlands or waters on parcel Wetland ID code _____
For Office Use Only	
DSL Reviewer: _____	Fee Paid Date: ____ / ____ / ____
Date Delineation Received: ____ / ____ / ____	Scanned: <input type="checkbox"/> Electronic: <input type="checkbox"/> DSL App.# _____
DSL WD # _____	



Project Title: Oakdale Subdivision
BEI PN: 23-142



DATE: 04/17/2023

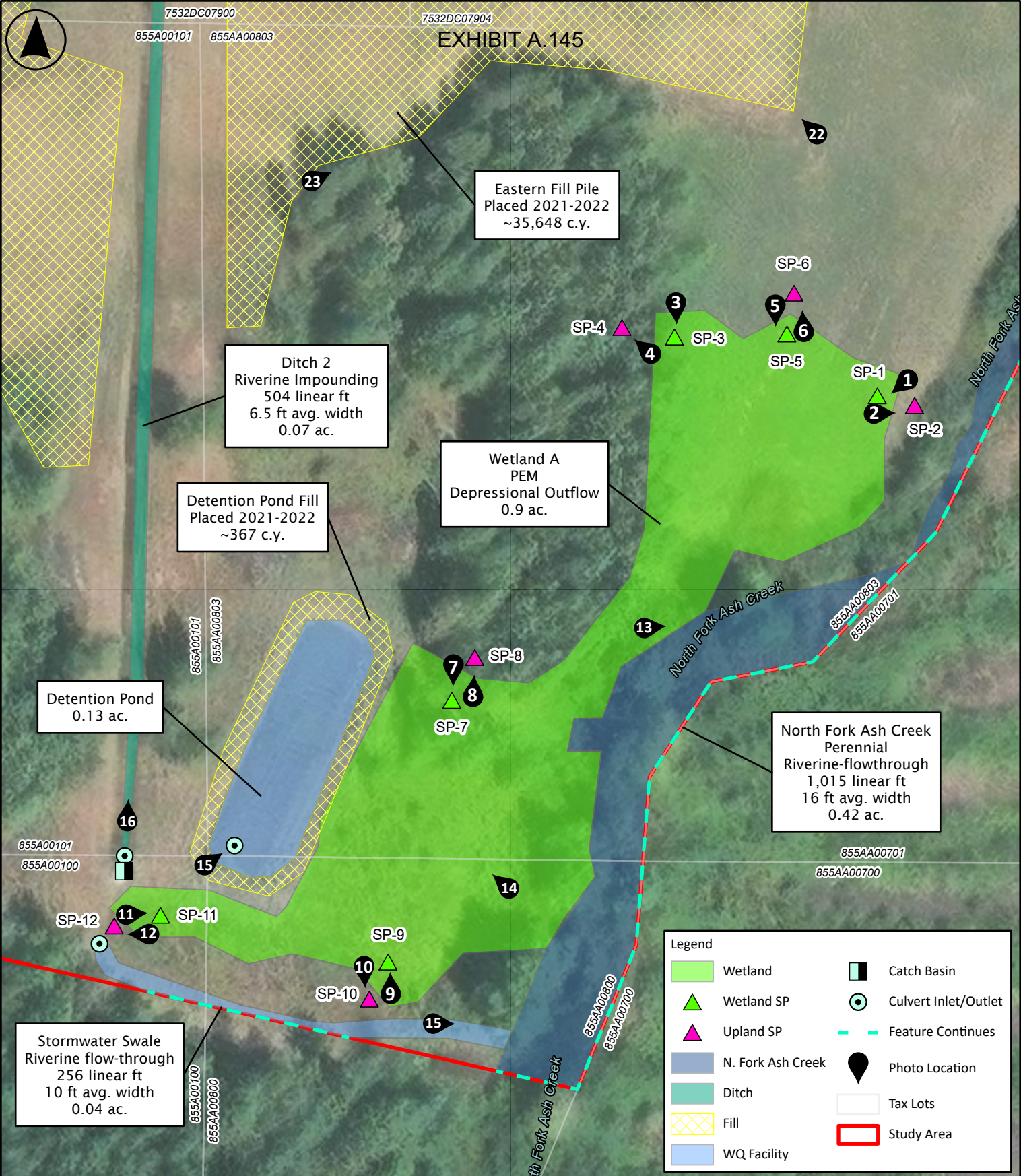


Figure:
6a

Data Source Statement:

Locations of Sample Points, Wetland Boundaries, and other Mapped Features were collected using a GNSS receiver and handheld GPS collection device that achieved sub-meter accuracy in the field. No warranties are expressed or implied with this map product or mapped features.

Wetland
Delineation Map



Project: Oakdale Subdivision
BEI PN: 23-142

Drawn By: Lauren Zatkos

0 20 40 80 Feet

Date: 04/17/2023



Figure:
6b

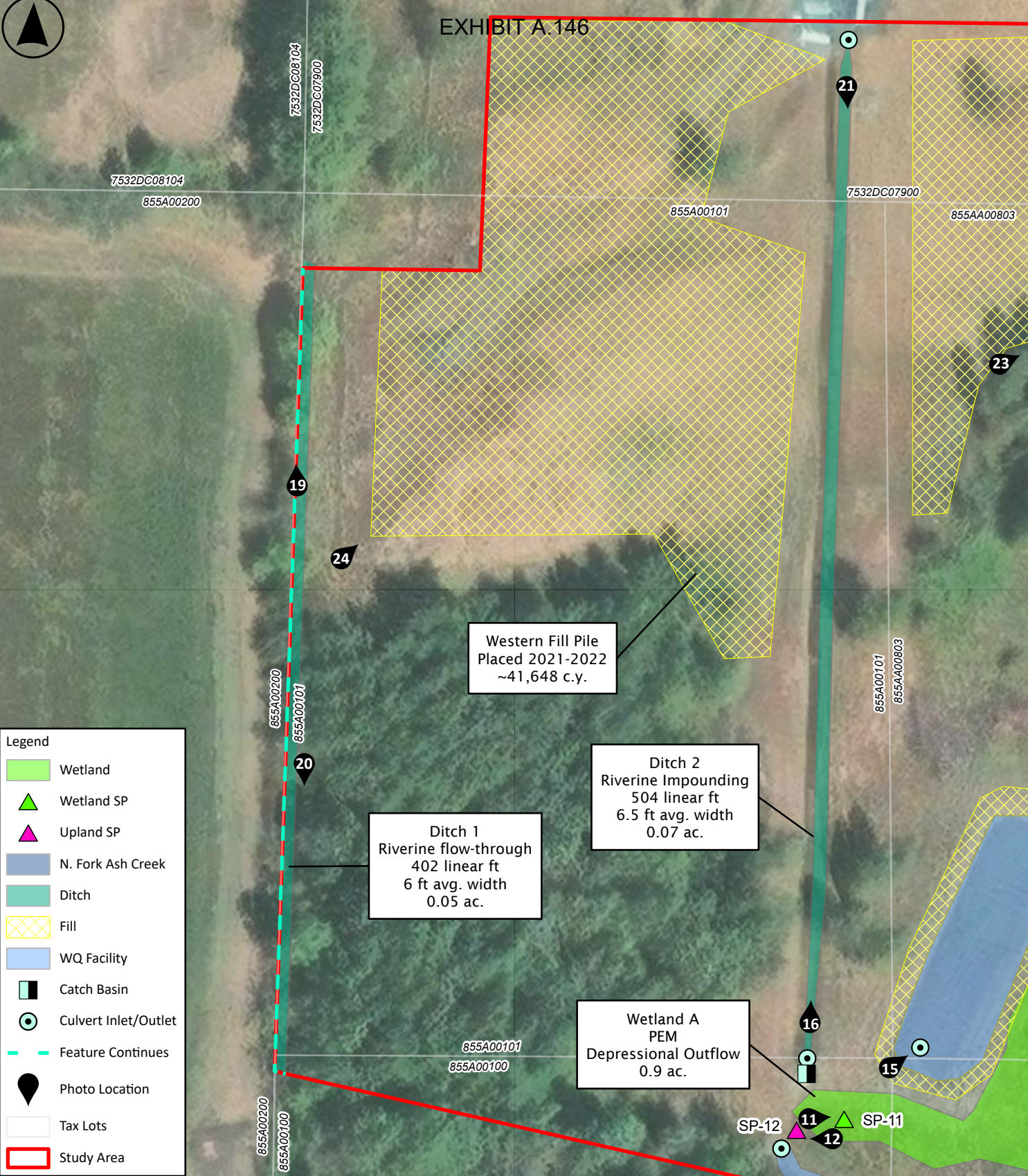
Data Source Statement
Locations of Sample Points, Wetland Boundaries, and other Mapped Features were collected using sub-meter accurate GNSS receiver and handheld GPS collection devices. No warranties are expressed or implied with this map product or mapped features.

civil · transportation
structural · geotechnical
SURVEYING

**Wetland
Delineation Map**



EXHIBIT A.146



Legend

- Wetland
- Wetland SP
- Upland SP
- N. Fork Ash Creek
- Ditch
- Fill
- WQ Facility
- Catch Basin
- Culvert Inlet/Outlet
- Feature Continues
- Photo Location
- Tax Lots
- Study Area

Western Fill Pile
Placed 2021-2022
~41,648 c.y.

Ditch 2
Riverine Impounding
504 linear ft
6.5 ft avg. width
0.07 ac.

Ditch 1
Riverine flow-through
402 linear ft
6 ft avg. width
0.05 ac.

Wetland A
PEM
Depressional Outflow
0.9 ac.

Project: Oakdale Subdivision
BEI PN: 23-142

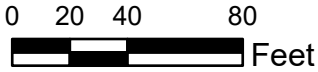


Figure:
6c

Drawn By: Lauren Zatkos

Date: 04/17/2023

Wetland
Delineation Map

Data Source Statement
Locations of Sample Points, Wetland Boundaries, and other Mapped Features were collected using sub-meter accurate GNSS receiver and handheld GPS collection devices. No warranties are expressed or implied with this map product or mapped features.

THIS MAP IS FOR ASSESSMENT AND TAXATION PURPOSES ONLY

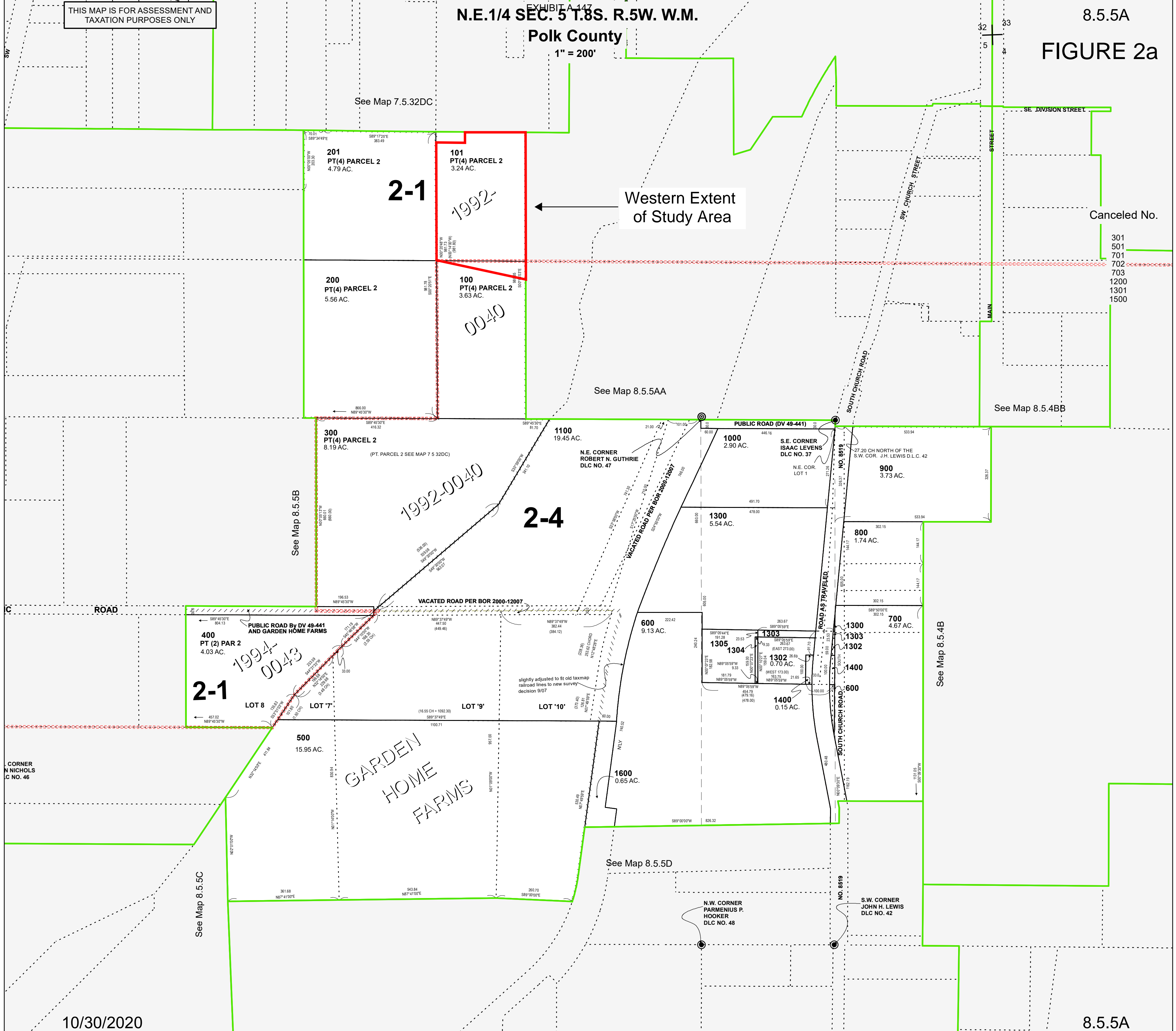
N.E.1/4 SEC. 5T.8S. R.5W. W.M.

Polk County

1" = 200'

8.5.5A

FIGURE 2a



See Map 7.5.32DC

2-1

1992-

Western Extent of Study Area

Canceled No.

- 301
- 501
- 701
- 702
- 703
- 1200
- 1301
- 1500

See Map 8.5.5AA

See Map 8.5.4BB

See Map 8.5.5B

1992-0040

2-4

See Map 8.5.4B

2-1

1994-0043

CORNER NICHOLS C NO. 46

See Map 8.5.5C

See Map 8.5.5D

N.W. CORNER PARMENIUS P. HOOKER DLC NO. 48

S.W. CORNER JOHN H. LEWIS DLC NO. 42

10/30/2020

8.5.5A

THIS MAP IS FOR ASSESSMENT AND TAXATION PURPOSES ONLY

N.E.1/4 N.E.1/4 SEC. 5 T.8S. R.5W. W.M.

Polk County

1" = 100'

8.5.5AA

FIGURE 2b

SW

HAYTER STREET

See Map 7.5.32DC

See Map 7.5.32DD

32 33
5 4

Canceled No.

801
901
1300
1400

E. DIVIS

See Map 8.5.4BB

STREET

MAIN

1992-0036

2-1

Eastern Extent of Study Area

2-4

See Map 8.5.5A

800
PT PARCEL 2
2.22 AC.

700
6.41 AC.

600
4.39 AC.

500
0.61 AC.

1004

903

1000

4

902

900
3.75 AC.

SOUTH CHURCH ROAD

NO. 8519

PUBLIC ROAD (DV 49-441)

PT IS 27.22 CH NORTH OF S.W. COR. OF THE JOHN LEWIS DLC NO. 42

E.L. LEVENS DLC NO.37
W.L. LEWIS DLC NO.67

S.E. CORNER ISAAC LEVENS DLC NO. 37

NE CORNER OF BLOCK 4, HIGHLAND ADDITION PER CS 13784 WHICH IS 9.54 FEET NORTHERLY AS SET BY CS5530

1/2" IP FROM CS5530 10.32 FEET SOUTHWERLY FROM CS14284

VACATED HIGH ST.

Old railroad RW based on old Taxmap

BOR 2000-12007

2/28/2022

8.5.5AA

Neighborhood Meeting Notice

January 23, 2024

Dear Property Owner:

In accordance with the City of Dallas Development Code, Article 4, Section 4.1.080, this neighborhood meeting notice is being sent to property owners within 100' of a proposed development containing more than 20 dwelling units. You are invited to attend a neighborhood meeting regarding the proposed development on February 7, 2024 at 6pm. The meeting will be held in the Oakdale Heights Elementary library located at 1375 SW Maple St., Dallas, OR 97338.

Steve Bennet Construction, LLC, dba SBC Homes proposes to develop a 9.5-acre parcel with new homes. Attached to this letter is a site plan indicating the location of the proposed development, located south of the Hayter St and Rose Ave.

Please come to the neighborhood meeting to learn more about the proposed development that will soon be submitted for land use approval.

[End of Notice]

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For delivery information, visit our website at www.usps.com®.

Dallas, OR 97338

Certified Mail Fee	\$4.40
Extra Services & Fees (check box, add fee as appropriate)	\$3.65
<input type="checkbox"/> Return Receipt (hardcopy)	\$0.00
<input type="checkbox"/> Return Receipt (electronic)	\$0.00
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00
<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00

Postage	\$0.68
Total Postage and Fees	\$8.73

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 Street and Apt. No., or PO Box No.
 City, State, ZIP+4®
 PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions



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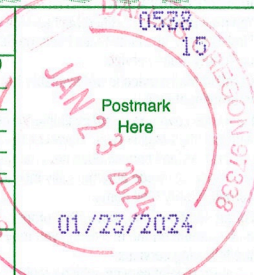
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Salem, OR 97305

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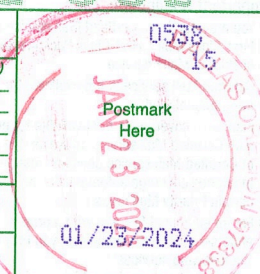
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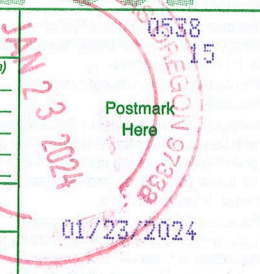
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Salem, OR 97305

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<input type="checkbox"/> Return Receipt (electronic)	\$0.00
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9589 0710 5270 1035 0697 48

9589 0710 5270 1035 0697 31

9589 0710 5270 1035 0697 24

9589 0710 5270 1035 0697 17

9589 0710 5270 1035 0696 94

9589 0710 5270 1035 0697 55

9589 0710 5270 1035 0697 00

9589 0710 5270 1035 0697 00

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Postage \$0.68

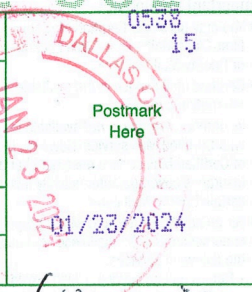
Total Postage and Fees \$8.73

Sent To Patricia Cummins

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Postage \$0.68

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9589 0710 5270 1035 0696 87

9589 0710 5270 1035 0697 00

9589 0710 5270 1035 0697 00

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Postage \$0.68

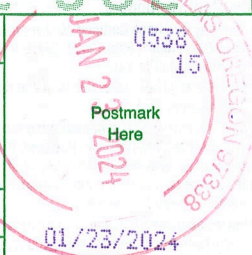
Total Postage and Fees \$8.73

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<input type="checkbox"/> Return Receipt (electronic)	\$0.00
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00
<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00

Postage \$0.68

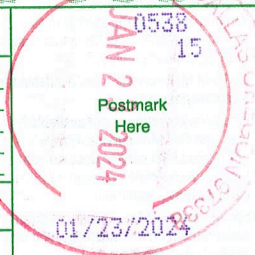
Total Postage and Fees \$8.73

Sent To Wife living trust

Street and Apt. No., or PO Box No.


City, State, ZIP+4®

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions



AFTER RECORDING RETURN TO:

City of Dallas
Dallas City Hall
187 SE Court Street
Dallas, OR 97338

RECORDED IN POLK COUNTY		2021-014420
Valerie Unger, County Clerk		
		\$101.00
00406385202100144200030037		09/10/2021 09:59:05 AM
REC-AGM	Cnt=1	Stn=1 K. WILLIAMS
\$15.00	\$10.00	\$11.00 \$60.00 \$5.00

DEVELOPMENT AGREEMENT

Agreement, made and entered into this 10th day of ~~August~~ ^{SEPTEMBER}, 2021, by and between the City of Dallas, a municipal corporation located in Polk County, Oregon, hereinafter called the "City", and STEVE BEAUMONT CONST. LLC, hereinafter called the "Owner", WITNESSETH:

WHEREAS, the Owner owns the following described parcel of real property located in the City of Dallas, to-wit:

Parcel 2 of Partition No. 1992-0040 filed October 14, 1992 in Volume 1992, Page 0040, Book of Partitions for Polk County, Oregon

ALSO: Parcel 2 of Partition No. 1992-0036 filed September 9, 1992 in Volume 1992, Page 0036, Book of Partitions for Polk County, Oregon.

WHEREAS, the Owner desires to develop a 34 lot subdivision in two phases ("Phase 1" and "Phase 2" herein, as shown on the map attached hereto as Exhibit 1, and by reference incorporated herein), and has applied to the City for appropriate permits or legislative approval for undertaking such development or improvement, as approved by the Planning Commission on September 9, 2020 as Dallas file number #MOD-20-03, a modification of subdivision #SUB-15-07 approved by the Planning Commission in 2015, and previously modified in 2018, as Dallas file number #MOD-18-03; and

WHEREAS, as a condition of the approval of development of the above described real property, the City required the Owner to dedicate to the city two acres of land for public park and open space purposes; and

WHEREAS, the Owner intends to develop the Remainder Tract shown on Exhibit 1 in the future, but has not proposed or made application for such development at this time; and

WHEREAS, it is beneficial to the Owner and to the City to defer such open space dedication to the time of future development of the Remainder Tract, or otherwise to such time that the City may require; and

WHEREAS, the Owner is willing to agree to said conditions, and City is willing to allow Owner to defer dedication of the two acres required for public park and open space as provided herein:

NOW, THEREFORE, in consideration of the premises and the mutual covenants and agreements hereinafter contained, the City and the Owner agree as follows:

1. The City agrees to issue such permit or permits or to take such action as may be required to enable the owner to develop or improve the above-described real property in the respects hereinabove set forth.
2. The Owner agrees that, upon and as part of the development of the Remainder Tract, or at such earlier time as City may require upon the giving notice in writing, Owner shall, at their own expense, forthwith undertake the public dedication of no less than two (2) acres within the time fixed by the City.

The Owner may specify the boundary of the land to be dedicated, subject to the satisfaction of the city. The land to be dedicated shall not conflict with planned future street right-of-way extensions. The land to be dedicated may include environmental features, such as wetlands, creeks, and storm water management facilities.

3. In the event Owner fails or refuses to make the dedication required herein, the City may revoke or suspend all development approvals and declare that all development activities on the Property cease until such time as Owner makes the dedication as required herein.
4. This agreement shall constitute a covenant running with the above-described real property and is binding upon the parties hereto, their heirs, successors, personal representatives and assigns.

IN WITNESS WHEREOF, the City and the Owner have hereunto subscribed their names the day and year hereinabove first written.

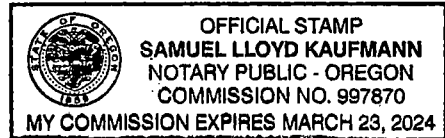
OWNER: JED BENNETT, MEMBER OF STEVE BENNETT CONST., LLC

[Signature]

CITY OF DALLAS:

[Signature]
Brian Latta, City Manager

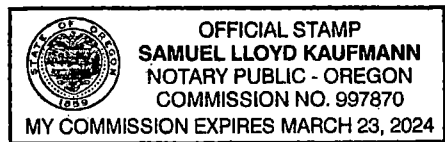
STATE OF OREGON,)
) ss.
County of Polk.)



The foregoing instrument was acknowledged before me this 10th day of ~~August~~ ^{September}, 2021, by JED BENNETT, MEMBER OF STEVE BENNETT CONSTRUCTION, LLC, AN OREGON LIMITED LIABILITY COMPANY.

[Signature]
NOTARY PUBLIC FOR OREGON
My Commission Expires: March 23, 2024

STATE OF OREGON,)
) ss.
County of Polk.)



The foregoing instrument was acknowledged before me this 20th day of August, 2021, by Brian Latta, City Manager of the City of Dallas, a municipal corporation, on behalf of the corporation.

[Signature]
NOTARY PUBLIC FOR OREGON
My Commission Expires: March 23, 2024

EXHIBIT A

